Workshop Manual

CC 2010 ➤ , Eos 2006 ➤ , Golf 2004 ➤ , Golf 2009 ➤ , Golf Plus 2005 ➤ , Golf Plus 2009 ➤ , Passat 2006 ➤ , Passat CC 2009 ➤ , Scirocco 2009 ➤ , Sharan 2011 ➤ , Touran 2003 ➤

6-speed dual clutch gearbox 02E

Edition 11.2015

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List of Workshop Manual Repair Groups

Repair Group

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34 - Controls, housing
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39 - Final drive - differential

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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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00 – Technical data

1 General repair notes

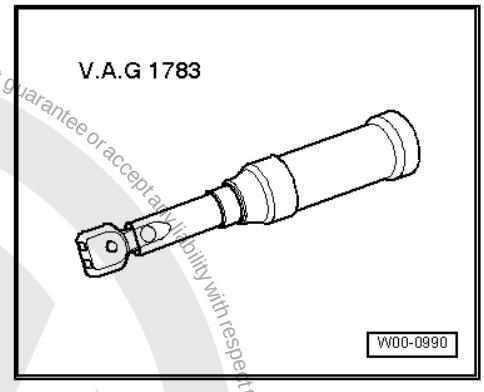
(VRL008590; Edition 11.2015)

1.1 Tools

A summary of the special tools and workshop equipment used in the workshop manual precedes each repair procedure and can be found in “Special tools/Workshop equipment” binder.

The catalogue is also available on ⇒ CD-ROM and can be ordered the usual way from Bertelsmann.

Uncertainty often occurs with smaller bolts having low tightening forces. Torque wrench - V.A.G 1783- can be used with these bolts.



1.2 Gearbox

Always make sure that no dirt can enter an »open« gearbox. In particular, dirt entering an »exposed« mechatronic unit for dual clutch gearbox - J743- and/or oil pump can lead to gearbox failure.

- If gearbox covers have been unbolted or gearbox has no fluid, do not run engine or tow vehicle.
- First thoroughly clean connecting points and surrounding areas and then loosen bolts.
- When installing the gearbox, ensure that dowel sleeves between the engine and gearbox are correctly located.
- Place removed parts on a clean surface. Cover parts to prevent soiling. Use plastic sheeting and paper. Use lint-free cloths only!
- Install only clean parts; do not remove Genuine parts from packaging until immediately before installing.
- If repair work cannot be performed immediately, carefully cover or seal components.

1.3 Overview

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1 - Filter ⇒ page 300

- ❑ Notes on filter change ⇒ page 3

2 - Inspection plug ⇒ page 3

- ❑ Near pendulum support.

3 - Drain plug

- ❑ ⇒ page 3
- ❑ Plug was discontinued as of September 2004. The oil can be drained via the inspection plug

4 - Gearbox oil cooler ⇒ page 47

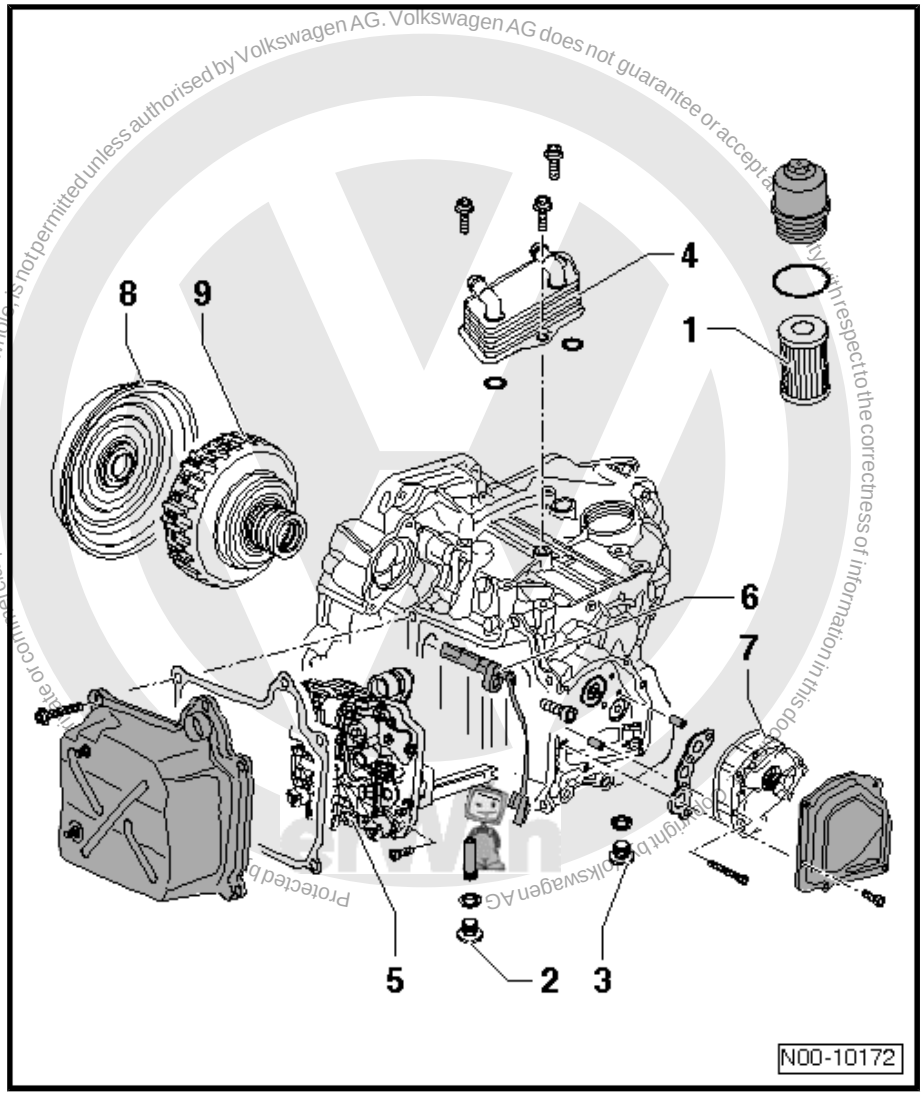
5 - Mechatronic unit for dual clutch gearbox - J743- ⇒ page 30

6 - Gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509- ⇒ page 30

7 - Oil pump ⇒ page 50

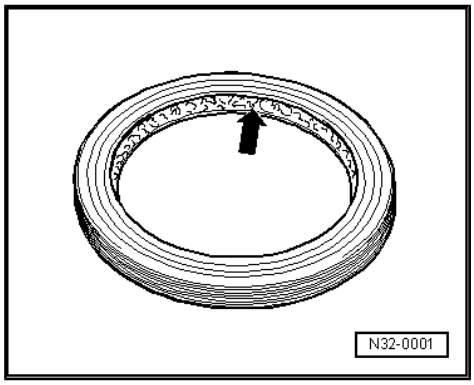
8 - Cover (end cover) for dual clutch

9 - Dual clutch ⇒ page 15



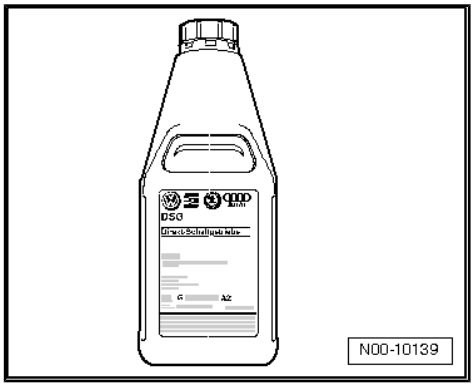
1.4 Seals

- After removing gaskets and seals, always inspect contact surface of housing or shaft for burrs resulting from removal or for other signs of damage.
- Before installing seals, lightly oil outer diameter and half-fill space between sealing lips -arrow- with sealing grease - G 052 128 A1- .
- The open side of the oil seal faces the side with fluid filling.
- Only use dual clutch gearbox oil. Other lubricants will cause problems in function.
- After renewing gaskets, O-rings and seals, check oil level in gearbox and top up if necessary ⇒ page 301 .



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1.5 ⇒ DSG® oil



Shake before opening.

The oil is available as a Genuine part. Therefore the Genuine part number for it can be found in the ⇒ Electronic parts catalogue “ETKA” .

The oil quality is of decisive importance for the function of the gearbox.

Do not mix additives in oil. Do not fill any other oil.

Oil which has been drained out cannot be filled again.

Caution

Be careful when working with oil. Dispose of drained oil according to regulations. Remember: one drop of oil will contaminate 600 litres of water.

1.6 Oil filter change - »Yes or no?«

The oil filter does not have to be changed as a matter of course.

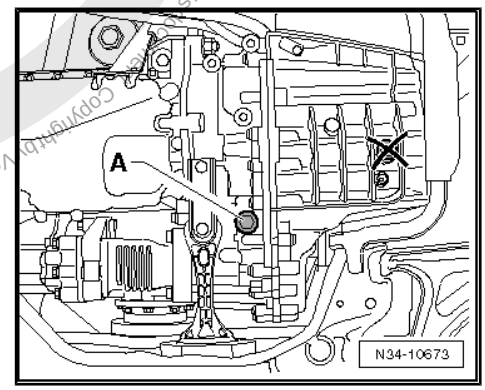
Do not change the filter if:

- The gearbox oil cooler or its O-rings have been renewed and no coolant has got into the oil.
- The oil seal for the selector shaft has been renewed.
- The oil seal for the flange or stub shaft has been renewed.
- Leaking covers in the mechatronic unit, dual clutch or oil pump have been renewed.
- The gearbox input speed sender - G182- with oil temperature sender in multi-plate clutch - G509- has been renewed.

The filter must be changed if:

- The 60,000 kilometre service interval has been reached.
- Coolant has got into the oil.
- Metal particles have been found in the oil.
- The clutch is burnt out or has a mechanical defect.

1.7 Oil drain and inspection plug -A-



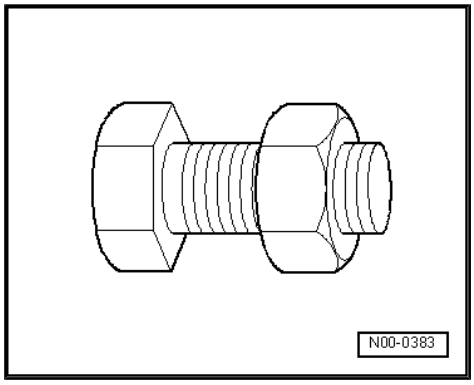
To gearbox manufacture date “20 September 2004”, gearboxes were constructed with 2 plugs.

The second plug was then discontinued, and oil could be drained and the level checked with only one plug -A-.

A plastic overflow tube (with 8 mm hexagon socket head bolt, torque setting 3 Nm) is located behind the plug. Its length determines the oil level in the gearbox.

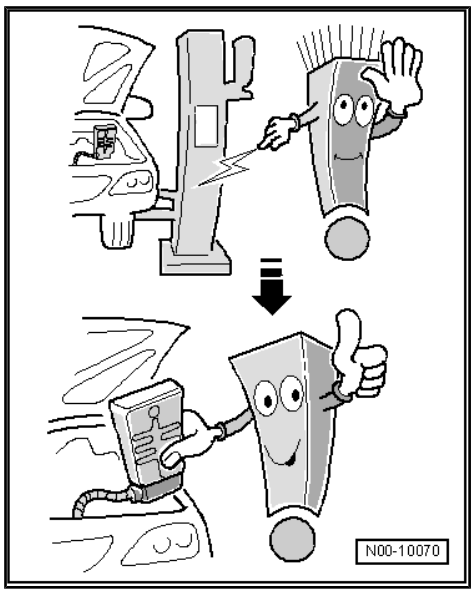
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1.8 Nuts and bolts



- Loosen and tighten securing bolts and nuts for covers and housings diagonally.
- Torque settings are specified for unoiled bolts and nuts.
- Threads of bolts secured with locking fluid must be cleaned with a wire brush. Then insert bolts with locking fluid AMV 185 100 A1.
- Use a thread chaser to clear residual locking fluid from all threaded holes into which self-locking bolts are to be screwed. Otherwise there is a danger of bolts shearing when subsequently being removed.
- Always renew self-locking bolts and nuts.

1.9 Electrical components



You have probably at some time received an electrical shock when touching a metal object. This is due to the electrostatic charge of the human body. This charge can disturb the function of electrical components of the gearbox and of the selector mechanism.

– Before working on electrical components, electrostatically discharge yourself (touch something that is earthed). Do not touch connectors or electronic components directly.

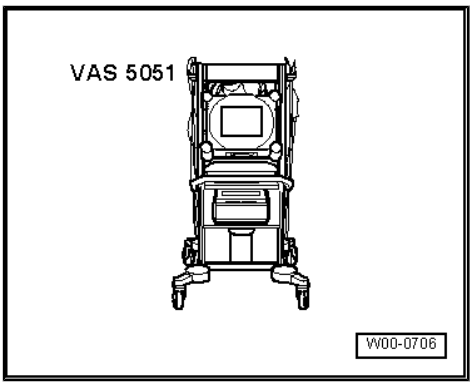
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2 Fault finding

2.1 General notes on fault finding

Before making repairs, determine the cause of the fault with the aid of “guided fault finding”.

Initiate Guided fault finding using the vehicle diagnosis, testing and information system - VAS 5051- .



2.2 Useful information about the “behaviour of the control unit in the event of a gearbox fault”

The control unit works with highly developed software. This software is able to execute, monitor and control electronic functions in milliseconds. This control unit »has everything« that a modern gearbox electronics »has to offer«. This must also be considered when looking for faults.

But no electronics can do something for which it was not designed. So it is just not possible to identify electronically, for example, where oil is leaking from the gearbox housing. But it is possible to detect the effects of »insufficient oil«. First a fault in “gear monitoring” will be detected and finally the control unit will react by opening both clutches (no power transfer).

You should be aware of this when looking for faults and working with testers. It might happen that the source of a fault is not discovered with Guided fault finding.

As well as the more advanced software, a great deal has been done to protect the gearbox in case of a malfunction (safety functions). Consequently, when a fault occurs, if it is necessary, the fault is saved and a substitute program is started.

Behaviour of the control unit in the event of a fault

If a component in the gearbox malfunctions, the control unit responds with a substitute function. Because the gearbox must be protected, there are 4 fault responses:

1 - The fault is so minor that travel may be continued with a substitute program and driving safety will be preserved. The driver will not be warned via the selector lever position display - Y5- . The display indicates the selector lever position as usual. It may be possible to notice changes in driving behaviour.

2 - Individual selector lever positions blink in the selector lever position display - Y5- . The driver is being warned that it is not possible to select this gear at the moment. For example, driving in reverse: the lever is in “R” and the vehicle is travelling backwards. If “D” is selected in this situation, the letter “D” in selector lever position display - Y5- will begin blinking. In this situation, the control unit prevents 1st gear from being

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engaged to prevent damage to the gearbox. The gear will not be engaged until the vehicle has stopped moving.

3 - The selector lever position display - Y5- is completely illuminated and is blinking. The selected selector lever position is recognisable or is highlighted. For example: the gearbox oil temperature is too high. Some possible causes may be the towing of a trailer with too great a load or retrofitted components at the front of the vehicle leading to »insufficient air cooling«.

4 - The selected selector lever position is not recognisable. The selected range display - Y5- flashes. Changes in driving and gearshift behaviour are clearly apparent. Reversing is not possible. A »major fault« has occurred. Part of the gearbox has been switched off and the gearbox must be repaired.

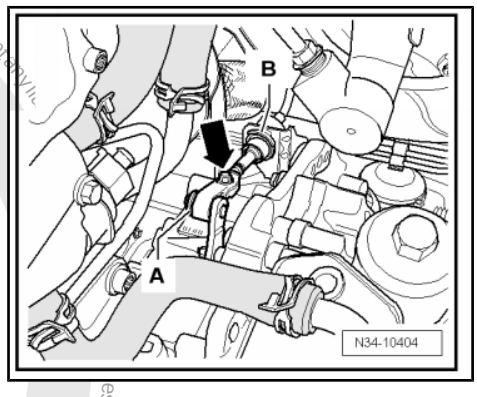
2.3 Special notes on fault finding

Selector lever position display - no “R”

Simultaneous illumination of all selector lever position display segments indicates gearbox emergency running mode. The vehicle cannot reverse.

Touch function does not work - no gear change

Check securing clip on cable support bracket of selector lever cable on top of gearbox. In particular, clip -B- must never be reused.



Due to the loss of its »own tension«, this clip -B- may go lost. The -arrow- points to the cable adjusting screw.

»Power transfer« inadequate - possibly insufficient fluid

First click here ⇒ page 3 .

Top up fluid only when it has been ascertained that fluid has escaped. Anything else is »expensive fun« which will not help.

No faults have been saved:

In this case, the solution depends on you. Experience shows that »faults« attributed to the gearbox often are caused by other components or assemblies.

It has occurred in the past that poor shifting behaviour was due to insufficient air intake of the engine. Don't make the same sort of mistakes.

Only after such faults have been excluded can one work meaningfully with the VW tester.

Faults have been saved:

First consider what the saved faults indicate. The VW testers offer `Guided fault finding`. Properly used, `Guided fault finding` will locate the sources of many faults.

If there are faults »not caused by the gearbox«:

For example, if the fault “ABS signal missing” is saved in the gearbox memory and additionally another control unit reports “ABS signal missing”, then the gearbox control unit is not likely to be »faulty«.

The entry means only that the gearbox (and possibly other control units) are expecting a signal via the bus, but does not receive it. In this case, it is more likely that the ⇒ ABS control unit has a problem. In such a case, under no circumstances should the mechatronic unit for dual clutch gearbox - J743- be removed without further consideration. The fault in this example indicates problems in the ⇒ ABS.

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3 Gearbox identification

Example -arrow-:

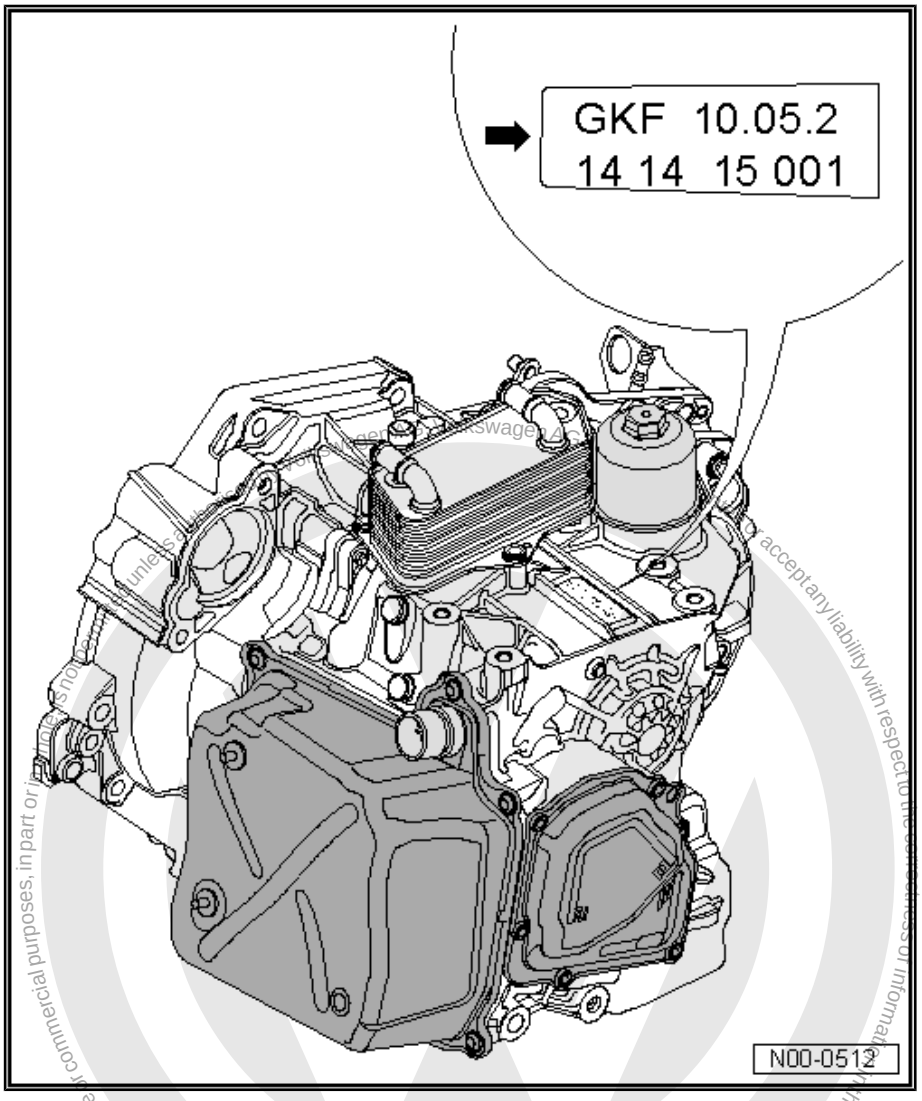
GKF - Gearbox code letters

10.05.2 - 10 May 2002

14 - Factory code

14 15 - Time

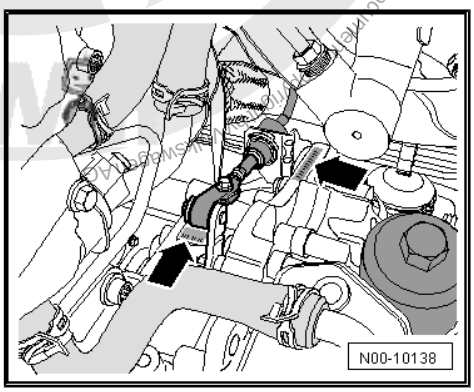
001 - Serial number



On some gearboxes, gearbox code is also located on the top of the gearbox near the selector lever cable -arrows-.

The gearbox code is also included on the vehicle data stickers.

If there is no vehicle data sticker, if the installed gearbox does not match the one indicated on the sticker or if the installed gearbox cannot be definitively identified: read gearbox code off gearbox ⇒ page 7 .



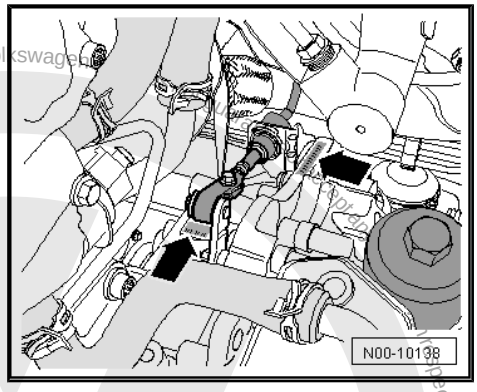
3.1 Reading gearbox code letters

The code appears on every gearbox in at least two places.

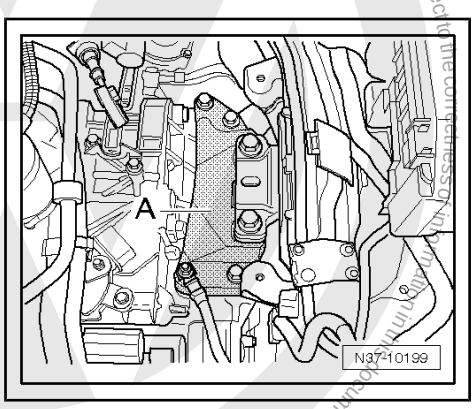
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Once on top of the gearbox close to the selector lever cable -2 arrows-.

If it is not legible or is»upside down«, the gearbox code may also be found under the bracket of the right assembly mounting.



To see the code directly on the gearbox behind the bracket, the engine and gearbox must be supported. Bracket -A- for the left-hand assembly mounting must be removed. In the process, it is important to lower the engine and gearbox only enough so that the bracket can be pushed back. If it is lowered further, the ⇒ pendulum support will be damaged. Following assembly, the selector lever cable must be adjusted ⇒ page 69 .

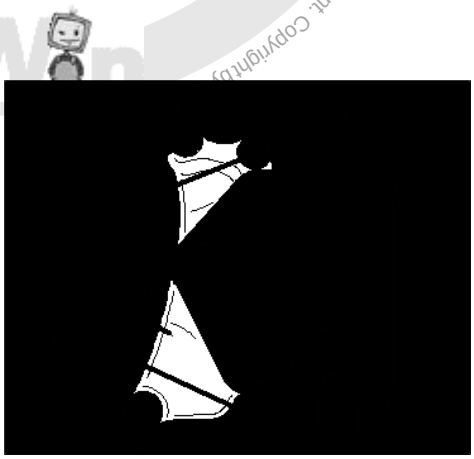


A detailed description of bracket removal will not be provided in this chapter. Please refer to the respective chapter “Removing and installing gearbox” for information on removing the bracket.

Brief description

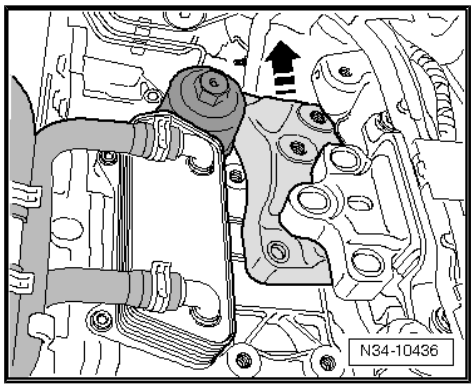
Remove air filter and battery.

Set up support bracket - 10 - 222 A- and support engine with gearbox. Do not raise.



– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.

In most cases, 2 turns of the spindle will be sufficient to remove the bracket -arrow-.



– Always adjust selector lever cable after installing bracket ⇒ page 69 .

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4 Code - engine allocation

Codes for Golf 2004 ► ⇒ page 10

Codes for Golf Plus 2005 ► ⇒ page 9

Codes for Touran 2003 ► ⇒ page 11

Codes for Passat 2006 ► ⇒ page 12

Codes for Eos 2006 ► ⇒ page 12

Codes for Passat CC 2009 ► CC 2010 ► ⇒ page 13

Codes for Scirocco 2009 ► ⇒ page 10

Codes for Golf 2009 ► ⇒ page 10

Codes for Golf Plus 2009 ► ⇒ page 9

Codes for Sharan 2011 ► ⇒ page 13

4.1 Golf Plus 2009 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
»LQV«, KQC, LTE, MFL, MSV	HJP, JPK, KPT, HQM, KMY, LQV, KQC, LQW, LTG, HXT, HFQ, KCV, MFL, MSV, NJK, NLP, PBF, PBY	LQT	LQZ	MDJ
2.0 l - 81 kW TDI	2.0 l - 100, 103 kW TDI	2.0 l - 125 kW TDI	2.0 l - 147 kW TDI	2.0 l - 155 kW TDI

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
KNF, KDC, JBT, JPS,	JPL, LQS, KPQ, HQN, KMZ, KCW, HXU			
1.4 l - 103 and 125 kW petrol turbo	1.9 l - 77kW TDI			

4.2 Golf Plus 2005 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E		
»HQN« »HQH« »GPW«, HXU, JPL, KCW, KMZ, LQS, KPQ, HQN, KMZ, KCW, KPQ, GYR	»HJP« »HQM« »HQG«, »HQG«, HXT, HBP, HXU, GPU, GYM, GYQ, GYR, JPT, JPK, HFQ, KMY, KCV, KPT	HVV, JPT, JPS, KDC, KNF, JBT

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Dual clutch gearbox (⇒ DSG®) 02E		
1.9 l - 77 kW TDI	2.0 l - 100 ⇒ or 103 kW TDI	1.4 l - 103 and 125 kW FSI turbo

4.3 Golf 2009 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
LQV, KQC	LTE, LQV, »KQC«, MFL, MSV, NJK	LTD, LQT, MFM, MSU, NJJ	LTL, LQZ, MDJ, MMA, MSY, NJR, NJL, NLR	NJP, NLT, PBL
2.0 l - 81 kW TDI	2.0 l - 103 kW TDI	2.0 l - 125 kW TDI	2.0 l - 147 and 155 kW FSI turbo	2.0 l - 173 kW FSI turbo

4.4 Scirocco 2009 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
PQK, PDY	KMX, KQC, LQV, KMX, KCU, MFL, LTE, MSV, NJK, NLP	LQT, LTD, MFM, MSU, NJJ, NLN	LPY, MMD, MTC, NJP, NLT	LQZ, KNC, KPV, LTL, MMA, MSY, NJL, NLR
2.0 l - 130 kW TDI	2.0 l - 100 ⇒ or 103 kW TDI	2.0 l - 125 kW TDI	2.0 l - 188 kW, 195 kW FSI turbo	2.0 l - 147 and 155 kW FSI turbo

4.5 Golf 2004 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«							
with drain plug through 20 Sep-tem-ber 2004		» GYQ, HLH«, GPW	GPU , GYM , »HBP, HLE, « HFQ			»HBQ, HRW«	

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Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«							
without drain plug from 20 September 2004	»JPS«, JBT, »KDC«, KNF, KPY, LRC	HQN, HZJ, JPL, HXU, KCW, KMZ, KPQ, LQS	»HQL«, JPJ, HFQ, HXS, KCU, KMX, KQC, LQV, LTE	»HYC«, HTB, JPQ, KDA, KMW, LQT, LTD	HVV, »JBT«, KDC	HUS, HUT, HXW, JPP, KCZ, KNC, KPV	JVG, »KFV«, KFW, KNB, LBK, LRD
	1.4 l - 103 and 125 kW TSI	1.9 l - 77 kW TDI	2.0 l - 100 ⇒ or 103 kW TDI	2.0 l - 120 and 125 kW TDI	1.4 l - 125 kW FSI turbo	2.0 l - 147 kW FSI turbo	2.0 l - 169 kW FSI turbo
Installed in	Golf 2004 ►						individual

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »all-wheel drive«				
	»HUV«, GUF, GYB, HDD, HKA, HPZ, HXZ, JUQ, KDE, JUQ, KNL, JPZ, KQA, JYX, KQA, LRF, LTU			
	3.2 l - 184 kW			

4.6 Touran 2003 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E							
HZH, JPS, KDC, KNF, KPY	PSN	HZH, JBT, JPS, HVV, KDC, KNF, KPY	GPV, GYR, GYQ, HLH, HQH, HQN, HXU, JPL, KCW, KMZ	MSV, NJK, NLP, PBF, PPY	GPQ, GYP, HQM, HQG, HJP, HXT, JPK, KCV, KMY, KPT, LQW, LTG, MLX, MSV, NJK, PBE, PBF, PPX, PPY	HTB, HYC, JPQ, KDA, KMW, LQT, LTD, MFM, MSU, NJJ, PBE	PDY, PQK

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Dual clutch gearbox (⇒ DSG®) 02E							
1.4 l - 103 kW FSI turbo	1.4 l - 110 kW Eco-Fuel	1.4 l - 125 kW TSI	1.9 l - 77 kW TDI	2.0 l - 81 kW TDI	2.0 l - 103 kW TDI	2.0 l - 125 kW TDI	2.0 l - 130 kW TDI

4.7 Passat 2006 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«						
JPJ	HQL, HXS	HFQ, GSS, HQF, HQL, HXS, JPJ, KCU, KMX, KQC, LTE, LTF, LQV	HYC, HTB, JPQ, KDA, KPS, KMW	HYC, HTB, JPQ, KDA, KMW, »KPS«, LQT, LTD	»LQY«, LTK, MLZ	HBR, HXX
2.0 l - 88 kW TDI	2.0 l - 90 kW TDI	2.0 l - 100, 103, 105 kW TDI	2.0 l - 120 kW TDI	2.0 l - 125 kW TDI	2.0 l - 125 and 147 kW FSI turbo	3.2 l - 184 kW FSI

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »all-wheel drive«						
»HXX«, HBR, JPY, JVY, JYW, KDF, KPZ, KNK, LRE, LTT	JQZ, KJL, KNM, LHS, LHQ, KQB, LRH, LTW	MKM, MMH				
3.2 l - 184 kW FSI	3.6 l - 220 kW FSI	2.0 l - 125 kW TDI				

4.8 Eos 2006 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
JPJ, HQL, HXS, KCU, KMX, KQC, LQV, LTE, MFL, MSV, NJK, NLP, PBF, PPY	HYD, JPR, KDB, KNH, LQY, KPU, LTK, MLZ, MSK, NJM, NLQ, PBG, PPZ	LTK, MLZ, MSX, NJM, NLQ, PBG, PPZ	HYE, HTG, JPN, KCY, KNJ, KPX, LRB	LPW, LXZ, MHL

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Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«				
2.0 l - 100, 103 kW TDI	2.0 l - 147 kW FSI turbo	2.0 l - 155 kW FSI turbo	3.2 l - 184 kW petrol engine⇒ SRE	3.6 l - 191 kW petrol engine

4.9 Passat CC 2009 ►, CC 2010 ►

If Genuine parts are required for a repair, always refer to the gearbox code.

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«							
	KMX, KQC	KMX, KQC, MSV, MFL, NJK, NLP	KMW, KPS, MFM, MSU, NJJ, NLN	LQY, LTK, MLZ, MSX, NJM, NLQ, NNU	MLZ, MSX, NJM, NLQ		
	2.0 l - 100 kW TDI	2.0 l - 103, 105 kW TDI	2.0 l - 125 kW TDI	2.0 l - 147 kW FSI turbo	2.0 l - 155 kW FSI turbo		

Dual clutch gearbox (⇒ DSG®) 02E »all-wheel drive«						
KSA, KSB, LHT, LHR, LRJ, LTX, MTW, NHZ	MKM, MMH, MTZ, NJD					
3.6 l - 220 kW petrol engine	2.0 l - 125 kW diesel engine					

4.10 Sharan 2011 ►

Dual clutch gearbox (⇒ DSG®) 02E »front-wheel drive«					
LTQ, NJF, NLS, PBJ	PBM, PQE	LTR, NJG, NLU, PBM	LTA, MSS, NJQ, NLL, PBC, PPW	MFY, MST, NJR, NLM, PBD	PDX, PQJ
1.4 l - 110 kW TSI	1.8 l - 118 kW TFSI	2.0 l - 147 kW TFSI	2.0 l - 100, 103 kW TDI	2.0 l - 125 kW TDI	2.0 l - 130 kW TDI

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5 Capacity

Capacity	Dual clutch gearbox 02E
Initial filling in factory	6.9 l to 7.2 l depending on vehicle and date of gearbox construction
Change quantity	about 5.2 l
Change quantity only mechatronic unit removal and installation (gearbox installed)	3 - 4 litres
Lubricant:	⇒ DSG® oil

Further information in the part number designates the container size.

The oil is available as a genuine part in ⇒ Electronics parts catalogue “ETKA” .

Capacity	Front bevel box
Initial filling	0.9 l
Change	Filled for life, no change
Lubricant	Gear oil - G 052 145-

Further information in the part number designates the container size.

The oil is available as a genuine part in ⇒ Electronics parts catalogue “ETKA” .

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30 – Clutch

1 Clutch

⇒ “1.1 Assembly overview - dual clutch”, page 15

⇒ “1.2 Removing and installing clutch end cover”, page 17

⇒ “1.3 Removing dual clutch”, page 23

⇒ “1.4 Installing dual clutch”, page 24

1.1 Assembly overview - dual clutch

Brief description

- The clutch has 2 sets of plates. The outer, larger set of plates is called “C 1” (clutch 1). The “C 1” selects reverse gear and gears »1«, »3« and »5«. The smaller inner “C 2” (clutch 2) selects gears »2«, »4« and »6«.
- The assembly of the dual clutch requires special care because all components were balanced together during manufacture. If parts are rotated relative to each other during assembly, imbalances develop which are detrimental to ease of shifting and service life.

Spare parts

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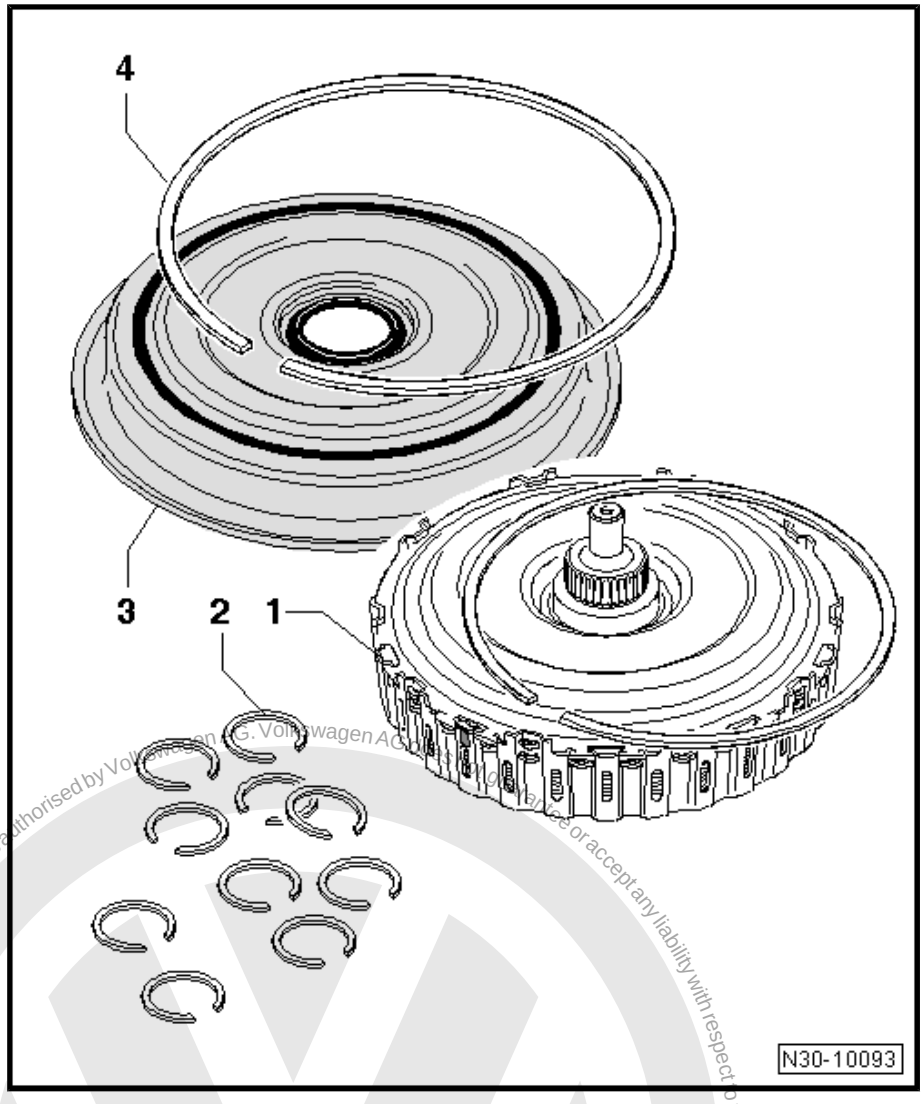
1 - Dual clutch with retaining ring

2 - Retaining ring

- ❑ Qty. 10, of varying thickness as appropriate
- ❑ The thickness of the retaining ring has to be determined when installing the clutch ⇒ page 27

3 - Clutch end cover

4 - Retaining ring for clutch end cover



Individual parts of the disassembled dual clutch

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1 - Dual clutch/clutch housing
- ❑ Outer plate carrier

2 - Oil seals
- ❑ Qty. 4

3 - Inner plate carrier
- ❑ Do not remove

> **Caution**
> *Under no circumstances raise or remove the inner plate carrier. The plates could turn.*

4 - Outer plates
- ❑ Qty. 4

5 - Inner plates
- ❑ Qty. 4

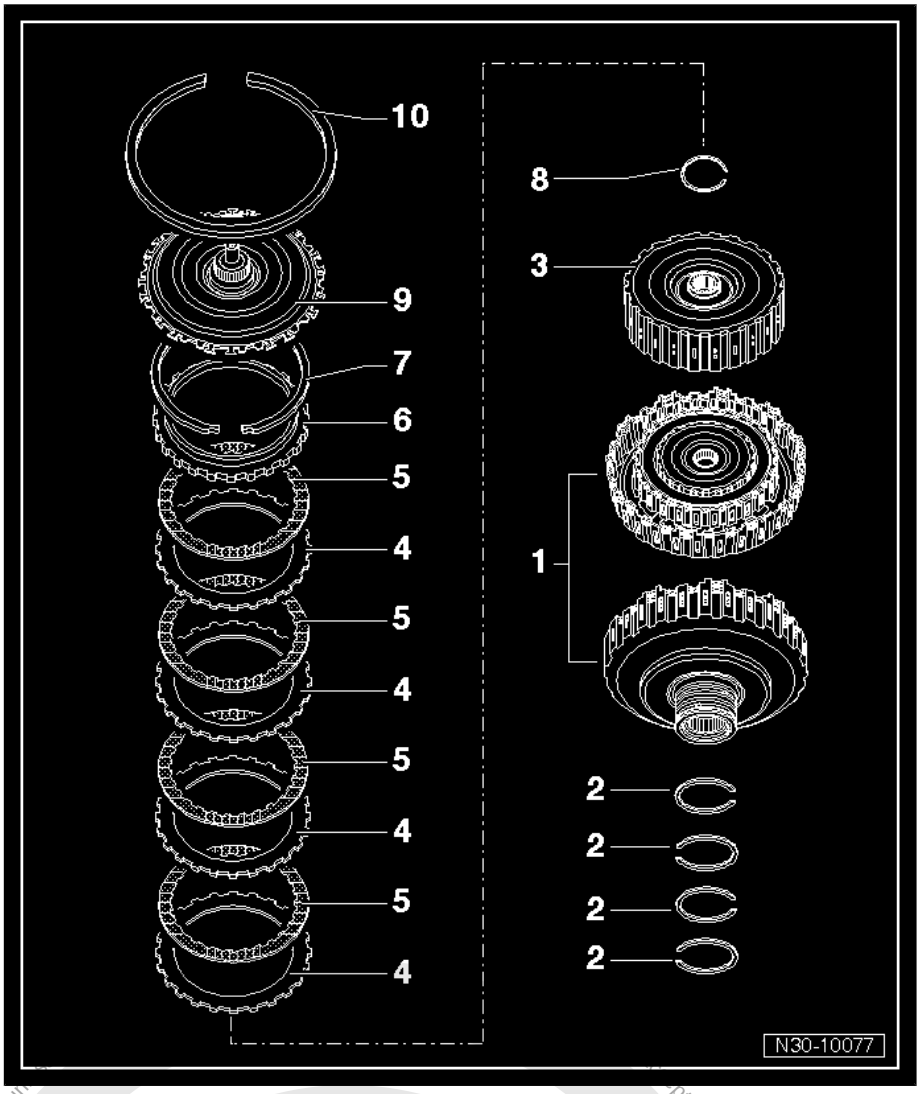
6 - Thrust washer

7 - Retaining ring
- ❑ If retaining ring was removed to insert new plates, it should be renewed with a new, equally thick ring.

8 - Retaining ring
- ❑ Determine thickness again if a new clutch has been fitted ⇒ page 27

9 - Drive plate

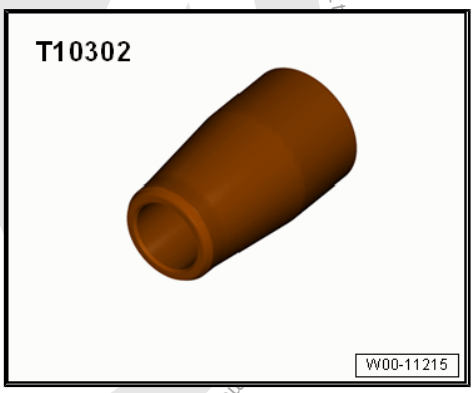
10 - Retaining ring



1.2 Removing and installing clutch end cover

Special tools and workshop equipment required

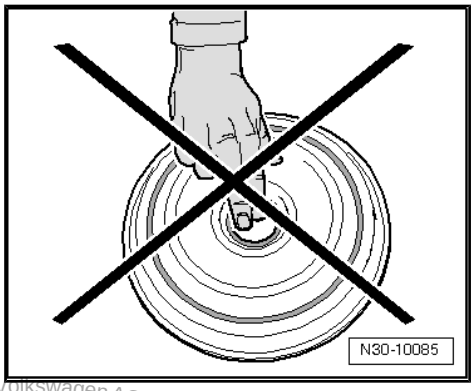
♦ Assembly sleeve - T10302-



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Brief description

The cover seals the gearbox. It is held in place by a retaining ring. After the retaining ring has been removed, the cover can be levered out of its seat. Cover and retaining ring must always be renewed. Never install a new cover with a hammer and never oil the centre seal or touch it with a hand! However, if this should happen, the cover is certain to leak!



To remove or install cover, gearbox must be securely attached to an assembly stand in vertical position.

Removing

– Drain gear oil.

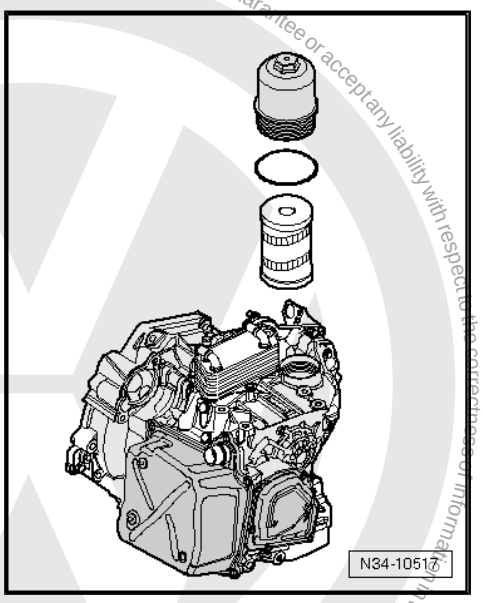
– Remove gearbox.

– Secure gearbox to assembly stand.

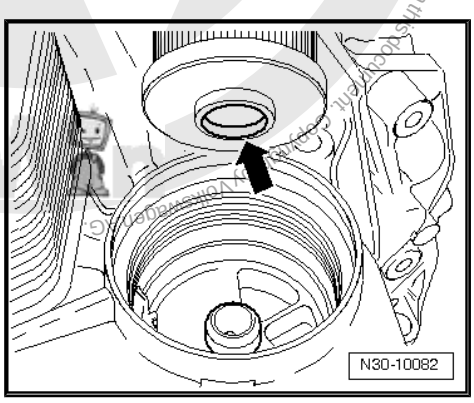
– Remove the filter if necessary.

Often, doubts arise as to whether the filter must be renewed or not.

The notes on the oil filter change can help you in reaching this decision.

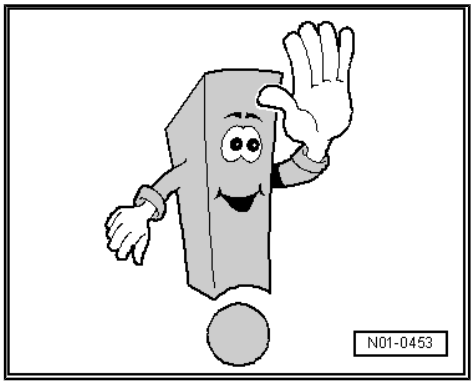


– Insert new filter with shoulder downwards and tighten cover to 20 Nm.



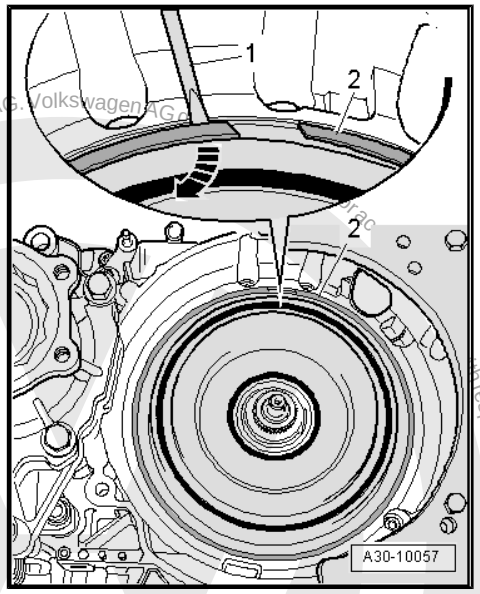
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– Following repair work, it is not necessary to change the filter again when filling oil.

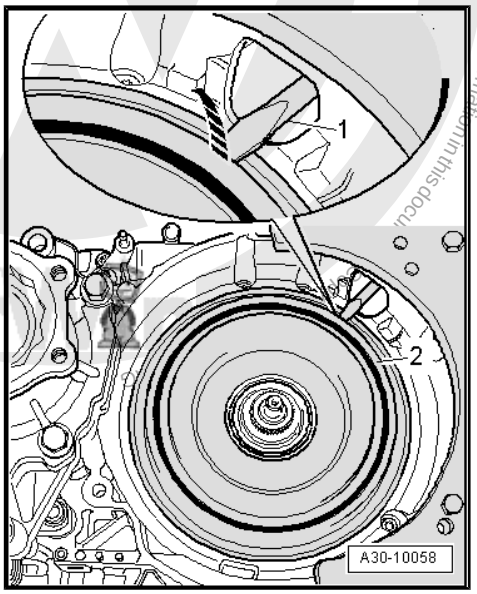


Removing clutch end cover

– Lever out retaining ring -2- of clutch end cover using screwdriver -1- -arrow- and remove.



– Lever clutch end cover -2- out through opening for starter motor using screwdriver -1- or tyre lever -arrow- and remove clutch end cover.



Note

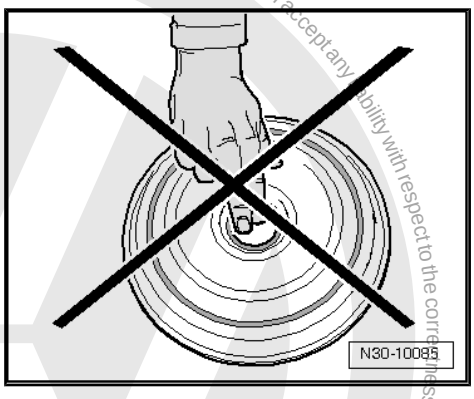
Never reinstall a cover which has been removed.

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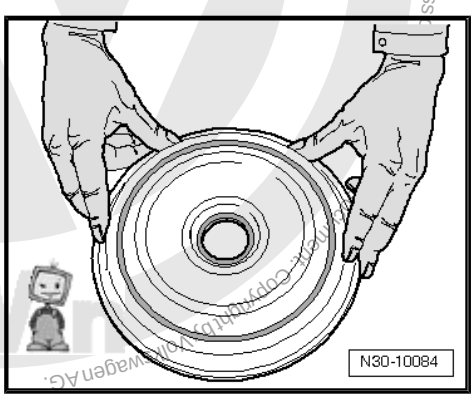
Installing

Caution

Cover and retaining ring must always be renewed. Never use a hammer to install a new cover and never oil the centre seal or touch it with a hand! Leaks will result.

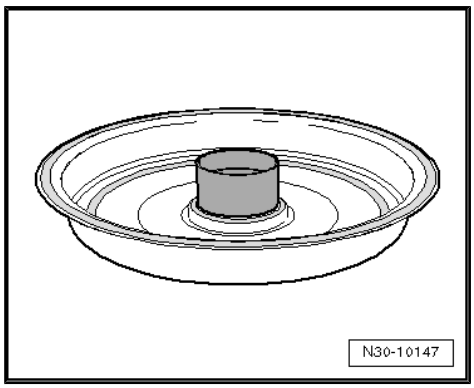


– Only handle cover as shown -in this picture-.

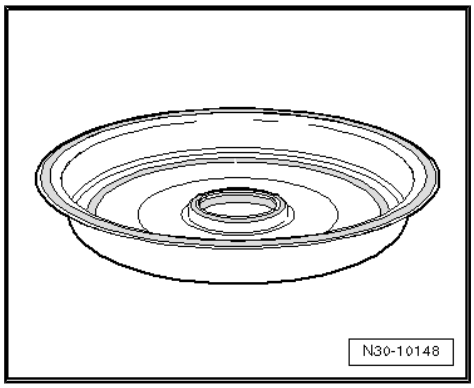


Note

There are 2 types of cover.



- Covers supplied with a white bush.
- Covers supplied without a bush.



Observe the following before installing cover:

New cover must be free of oil and dry around centre seal!

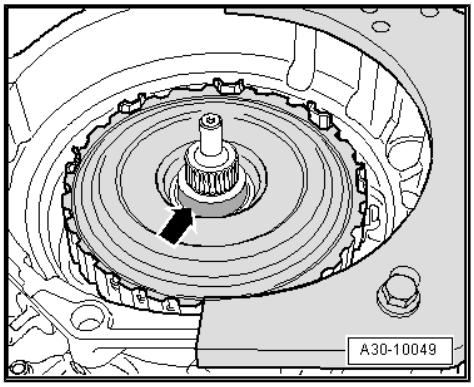
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– If required, thoroughly clean sealing surface of drive plate -arrow-.

There must be no stickers on the inside of the cover.

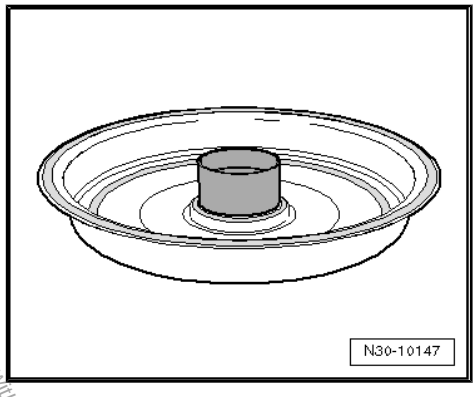
– If, however, stickers are present, remove them carefully.

Moisten only the outer edge of the seal with oil.

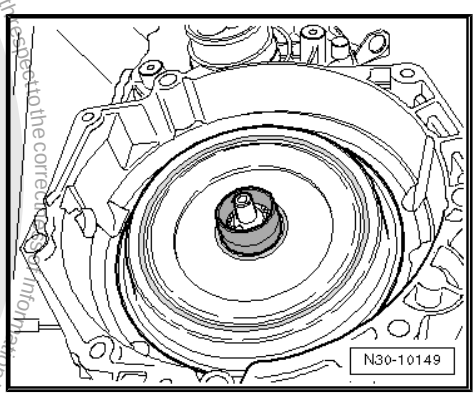


Installing covers supplied with bush

> **Caution**
>
> ***Do not remove bush!***



– Install clutch end cover with bush.

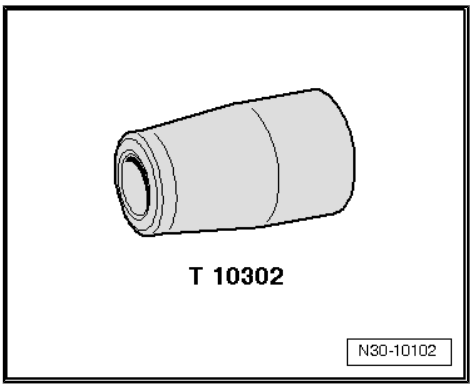


Installing covers supplied without bush

– Clean assembly sleeve - T10302- before using. Do not use a scratched sleeve.

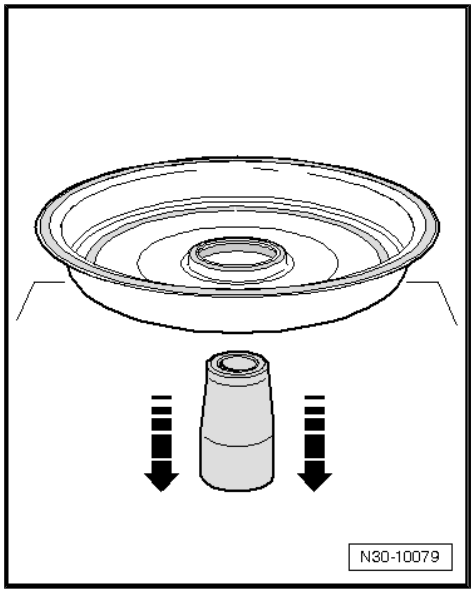
– Set sleeve on a flat surface.

The centre seal of the new cover must now be »preformed«:



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– Guide cover horizontally and evenly over entire sleeve. This will bring the sealing lip into installation position.
– Now remove sleeve upwards out of cover and set sleeve on end of clutch shaft.

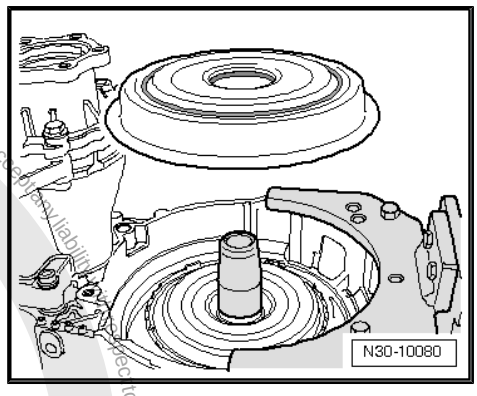


– Guide cover horizontally over sleeve and press evenly onto its seat.

Continued for all covers

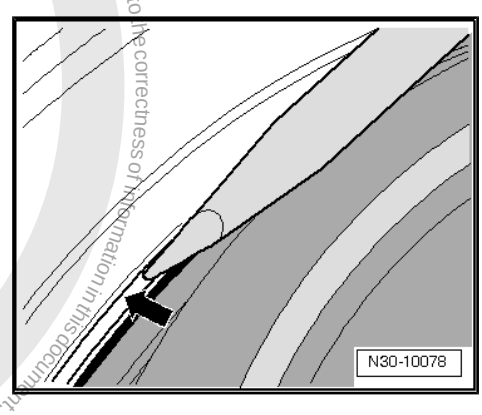
Caution

Work carefully. Any sort of blow to the cover is certain to cause leaks.



It is possible to lever cover carefully into its seat with a -screwdriver- until »new« retaining ring can be installed.

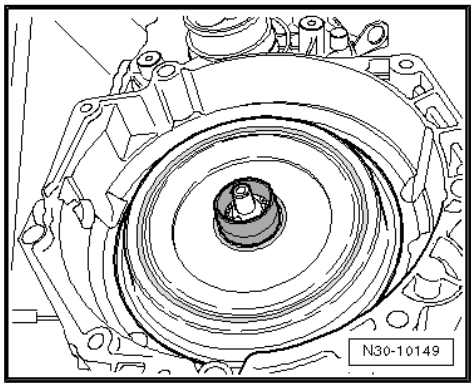
– Install new retaining ring.



– Do not remove bush until retaining ring is installed.
– Installing gearbox
– Fill with gear oil

WARNING

Do not start engine if there is no oil in gearbox.



– After installation of gearbox, initiate `default settings` by means of `Guided Functions` ⇒ vehicle diagnostic tester .

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1.3 Removing dual clutch

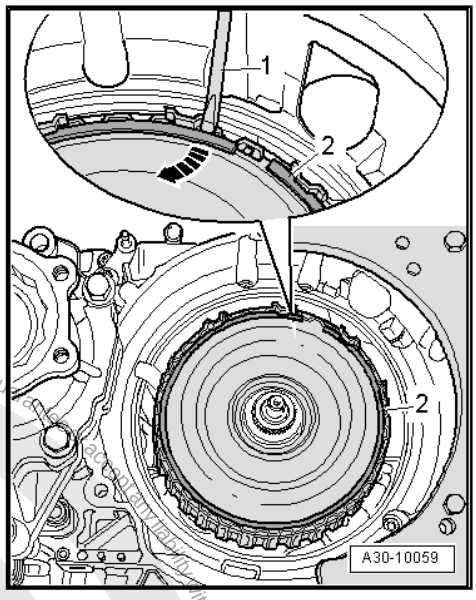
Brief description

To remove or install clutch, gearbox must be securely attached to an assembly stand in vertical position. Only in this way it is possible later to adjust the axial clearance of the new clutch without error.

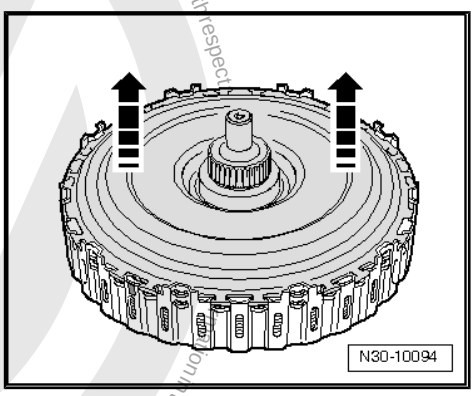
Removing

– Remove clutch end cover ⇒ page 17 .

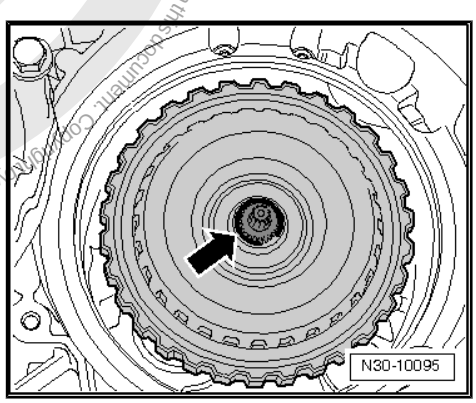
– Lever out retaining ring -2- of drive plate using screwdriver -1- -arrow-.



– Remove drive plate -arrows-.



– Remove and dispose of retaining ring -arrow-.



Note

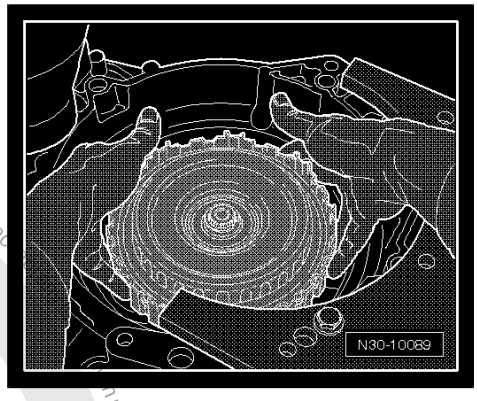
During installation a new retaining ring must be measured and fitted.

Caution

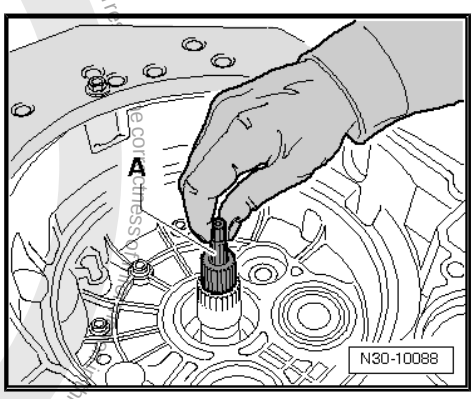
Carefully remove the dual clutch. Take care that no parts fall out. Therefore, do not turn the clutch over!

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– Remove dual clutch.



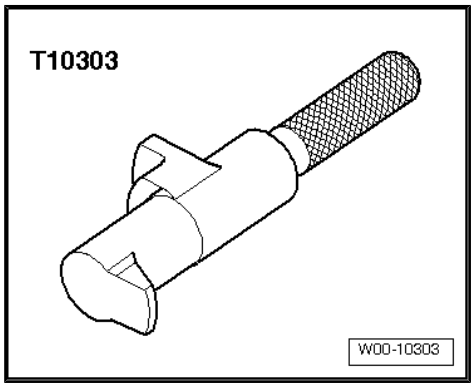
– Remove pump shaft -A-.
– Pump shaft is not inserted until after new clutch is installed. Set shaft aside until then.
– Install dual clutch ⇒ page 24



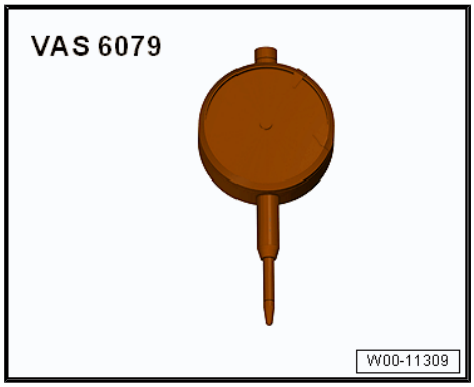
1.4 Installing dual clutch

Special tools and workshop equipment required

♦ Retaining pin - T10303-

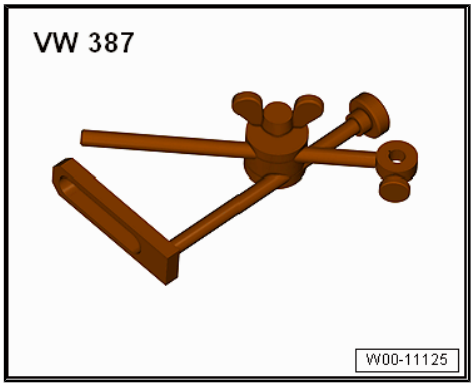


♦ Dial gauge - VAS 6079-



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♦ Universal dial gauge bracket - VW 387-

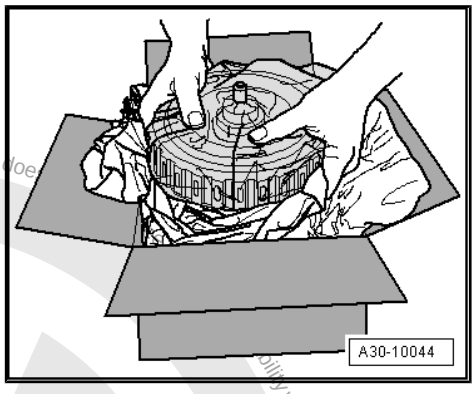


Brief description

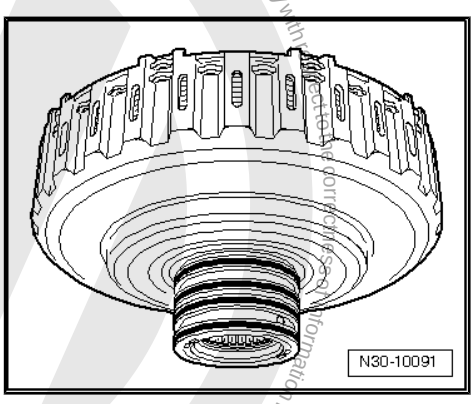
- The axial play of the clutch is readjusted during installation procedure.
- To remove or install clutch, gearbox must be securely attached to an assembly stand in vertical position. Only this way is it possible later to adjust axial play of the clutch without error.
- Inside the clutch, the large plate carrier goes through all plates. It must not slip out of the lowest plates.
- The pump shaft of the oil pump is removed.
- Do not install corrugated retaining rings.

Installing

– Remove new dual clutch from its packaging.



– Check that 4 hub seals on underside of dual clutch are correctly seated. If necessary, ensure that seals engage with each other.



- The butt joints of the rings should be offset relative to each other, i.e. should not be positioned above each other.

– Turn rings once. They must move freely and must not bind.

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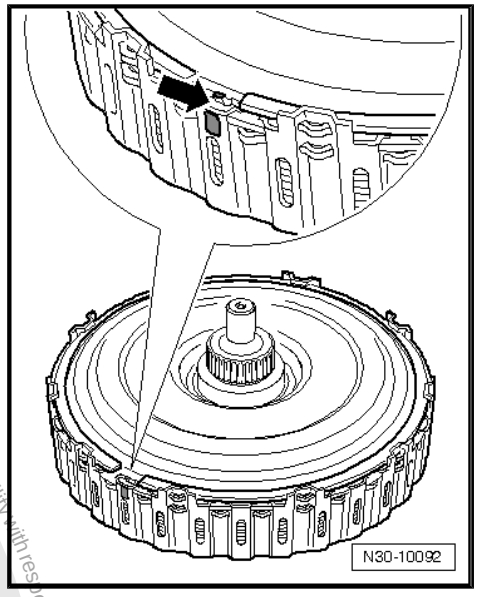
Important! Installation location of the drive plate

– Please check whether projecting lug -arrow- of drive plate is positioned between colour-marked teeth of outer plate carrier.

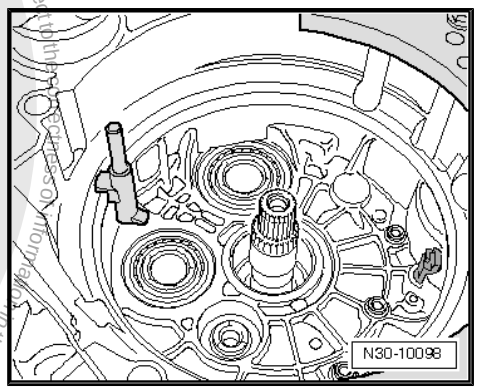
If there is no mark:

– Mark installation location of lug relative to periphery of outer plate carrier with permanent marker, as shown in illustration.

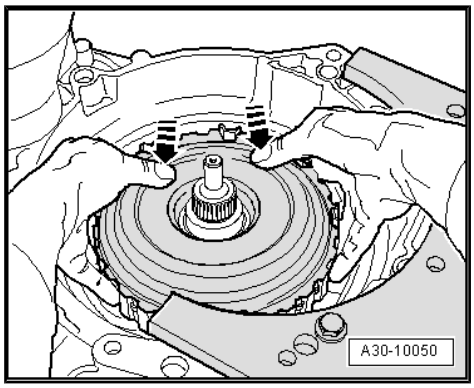
• During installation, the drive plate lug must always be repositioned at this marked location.



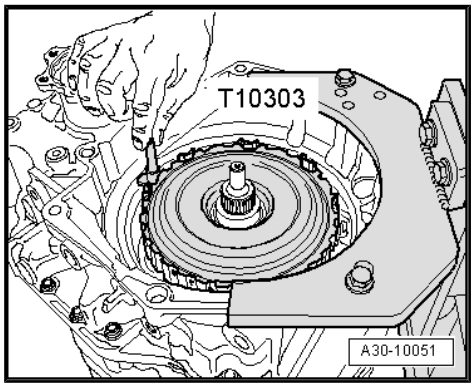
– Fit retaining pin - T10303- onto seat of clutch end cover as shown in illustration.



– Locate dual clutch in clutch housing, rotating and raising/lowering it as you do so, but do not drop into position.



• The retaining pin - T10303- should be held by a second mechanic in the process.



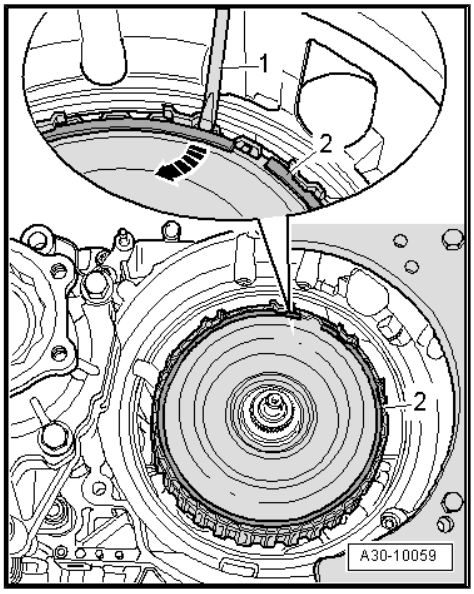
Note

♦ *The retaining pin remains inserted until the clutch end cover is installed.*

♦ *The dual clutch must then not be rotated any more as this can shift the position of the retaining pin - T10303- .*

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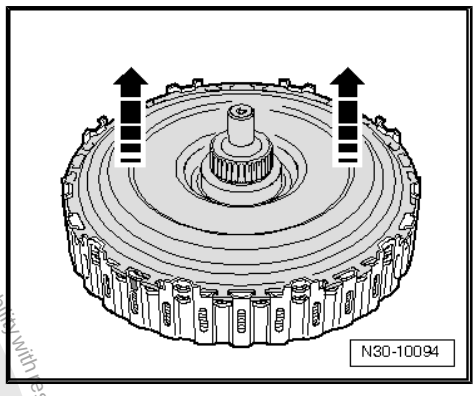
– Lever out retaining ring -2- for drive plate using a screwdriver -1- -arrow-, and lay it to one side.



Caution

Only this retaining ring, which was removed, may be reinstalled. Never reinstall »a different« retaining ring.

– Remove drive plate from »new« installed clutch -arrows-. If necessary, carefully lever it off teeth of outer plate carrier using a screwdriver.



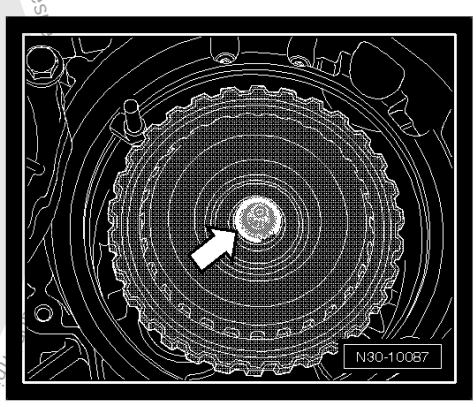
– Lay drive plate aside.

Caution

Under no circumstances remove or raise the inner plate carrier. The plates could turn.

Determining correct retaining ring for dual clutch

– Select 2 mm retaining ring from among rings supplied and install it -arrow-.



Note

This retaining ring is used temporarily to measure the axial play.

First measurement:

- Retaining pin - T10303- remains in!

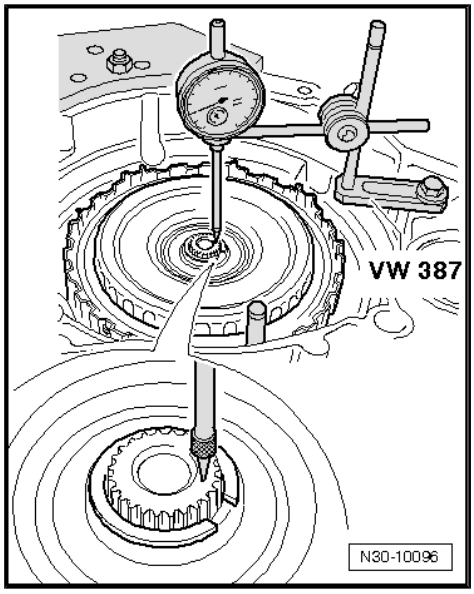
– Screw universal dial gauge - VW 387- to gearbox flange.

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– Set -tip of dial gauge- on input shaft.
– Set -dial gauge- to »0« with preload.
– Raise clutch to stop and note result of measurement.

Second measurement:

• Retaining pin - T10303- remains in!



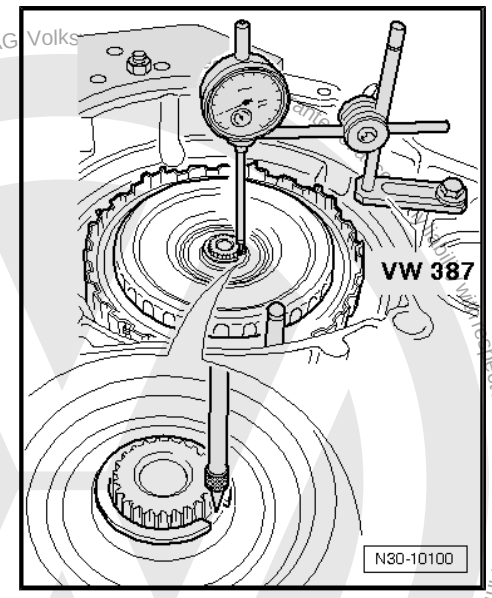
– Set tip of dial gauge -on hub of large plate carrier-.
• Tip must not sit on retaining ring.
– Set -dial gauge- to »0« with preload again.
– Raise clutch to stop again and also note this result.

Now it can be determined which of the remaining 9 rings will ultimately be installed:

– Use this formula:

  2. reading – 1st reading + 1.85 mm = thickness of retaining ring to fit

– Please note down this result.

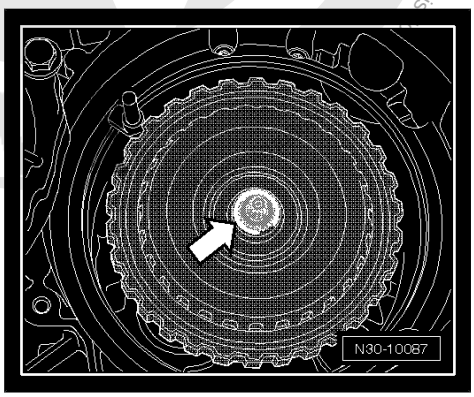


The remaining 9 retaining rings are in increments of 0.1 millimetre.

– Measure all rings and determine which ring is closest to your result.

Determined size for new retaining ring	New retaining ring
2.27 mm	2.3 mm
2.24 mm	2.2 mm

– Remove 2 mm thick ring and install calculated ring.
– Dispose of all remaining rings and the 2 mm ring.

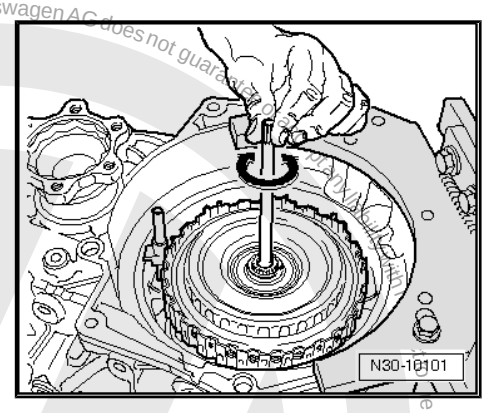


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– Insert -pump shaft-.

Note

Slightly raise and rotate the pump shaft in the process -arrow- so that it fully engages the gearing.

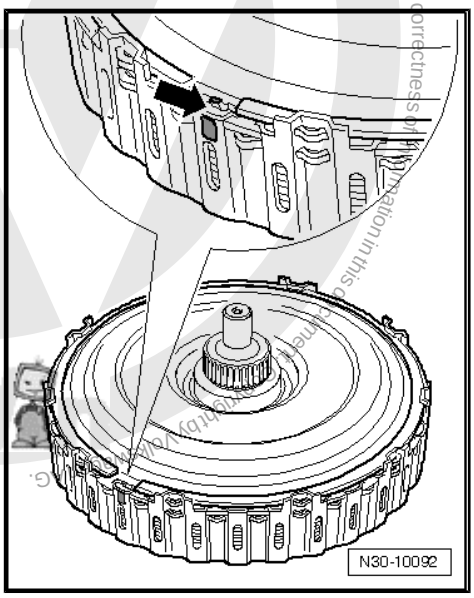


– Fit drive plate in dual clutch.

• The projecting lug of the drive plate must be positioned between the colour-marked teeth of the outer plate carrier. Align subsequently applied markings.

Caution

Only the securing clip which was removed may be reinstalled. Never reinstall »a different« retaining ring.



– Install drive plate retaining ring.

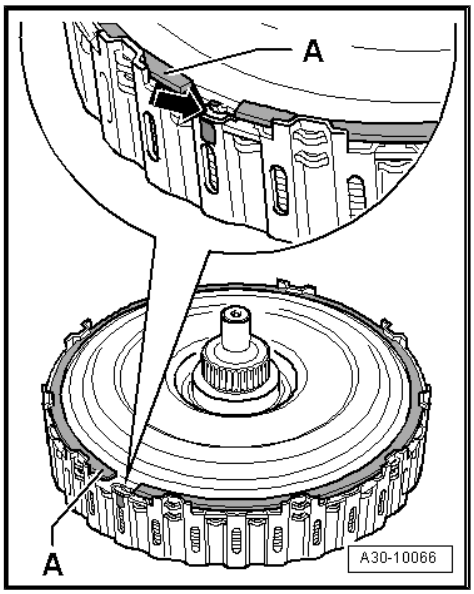
• The retaining ring must be fitted such that the lug of the drive plate -arrow- and the colour-marked teeth of the outer plate carrier lie between the two ends of the retaining ring.

• The retaining ring must be fully engaged.

– Use screwdriver to check that retaining ring is correctly seated and engaged.

– Then remove retaining pin - T10303- from between dual clutch and housing.

– Install clutch end cover ⇒ page 17 .



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34 – Controls, housing

1 Electrical and electronic components and their locations ⇒ DSG

The electrical components are located in the gearbox.

Only the selector lever sensors control unit - J587- and the selector lever lock solenoid - N110- are located on the selector lever.

1 - Mechatronic unit for dual clutch gearbox - J743-

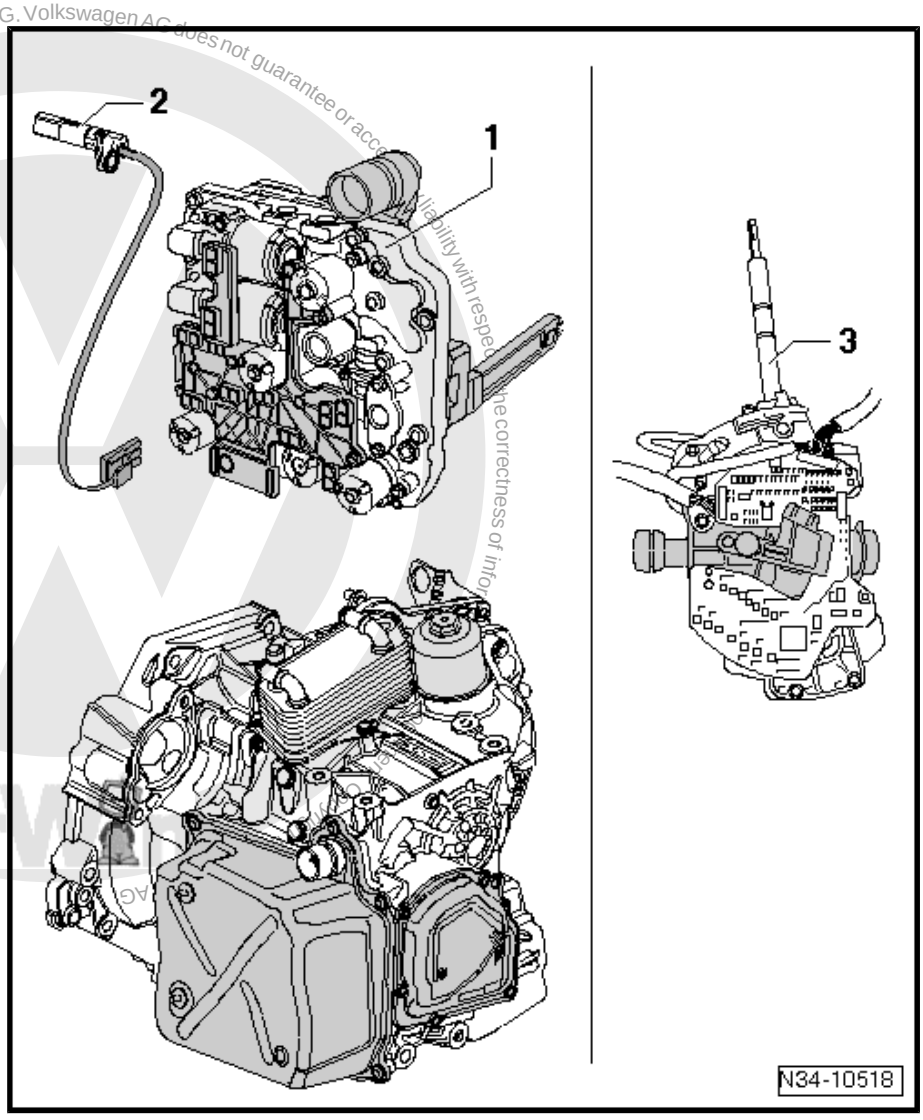
- ❑ Behind »large« sheet metal cover
- ❑ Removing and installing with gearbox installed ⇒ page 30 .
- ❑ Removing and installing with gearbox removed ⇒ page 39

2 - Gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509-

- ❑ Before sender can be removed, mechatronic unit for dual clutch gearbox - J743- must be removed ⇒ page 30 .

3 - Selector lever - E313-

- ❑ For information about selector lever, see ⇒ page 61 Selector mechanism



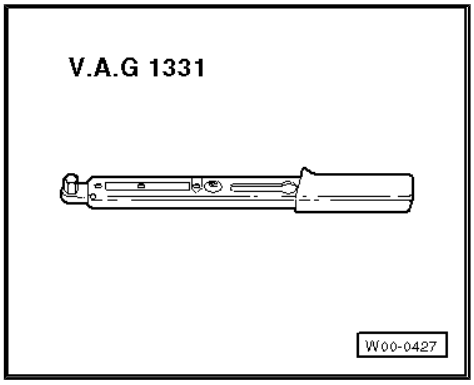
1.1 Removing and installing mechatronic unit for dual clutch gearbox - J743- (gearbox installed)

Removing and installing with gearbox removed is described in ⇒ page 39 .

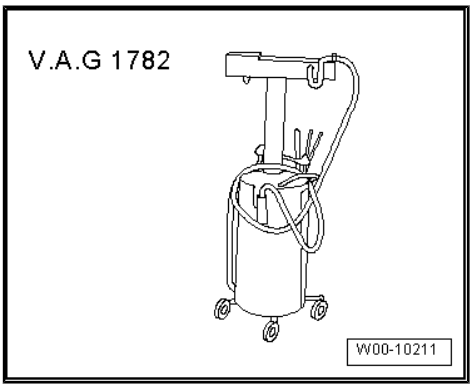
Special tools and workshop equipment required

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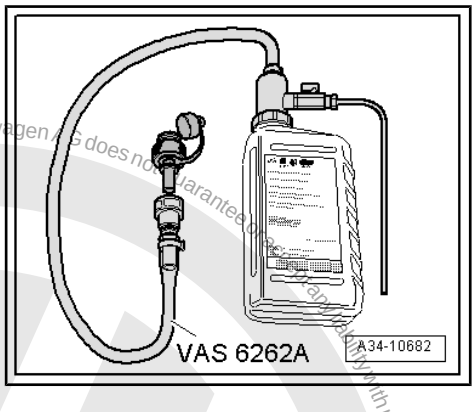
- Torque wrench - V.A.G 1331-



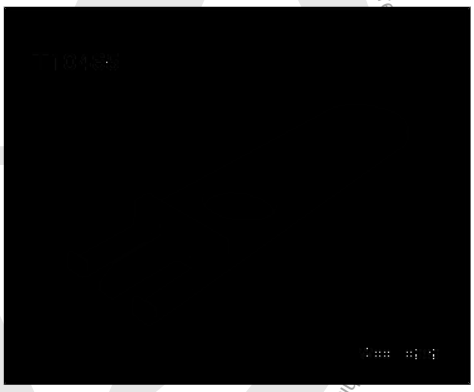
- Used oil collection and extraction unit - V.A.G 1782-



- Adapter for filling oil - VAS 6262 A-



- Release tool - T10465-



Removing mechatronic unit

Always make sure that no dirt can enter an »open« gearbox.

In particular, dirt entering an »exposed« mechatronic unit for dual clutch gearbox - J743- and/or oil pump can lead to gearbox failure.

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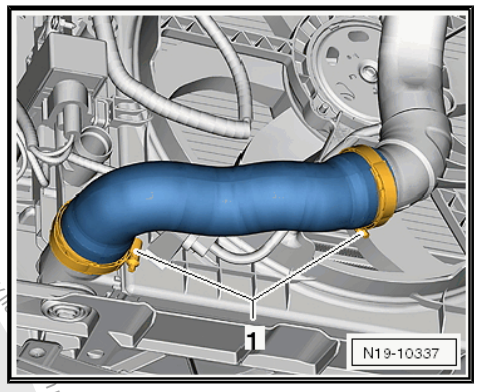
Please also refer to the notes on the oil filter change regarding »dirty oil« ⇒ page 3 .

The mechatronic unit can stick on the dowel pins when the gearbox is very warm. Then let the gearbox cool off.

– Raise vehicle. All 4 supports of lifting platform must be at same height.
– Move selector lever to position “P” position.
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

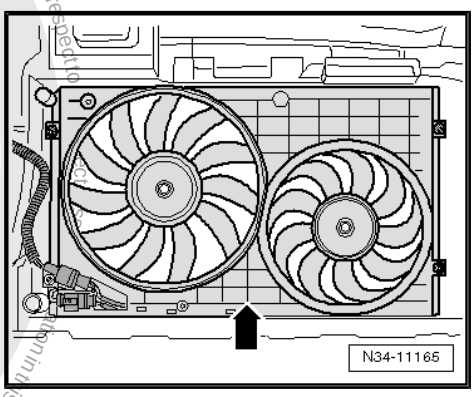
If present:

– Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .



Note

It is possible that parts having nothing to do with the mechatronic unit must be removed. This depends on the vehicle's equipment. This will create enough space to remove the mechatronic unit.



- Depending on the vehicle, these parts may include, for example,
- Radiator fan support
- Additional lines for air conditioner
- Charge air or air cooling pipes

– Release mechatronic unit connector -1- by turning and pull off connector.



Note

Item -A- can be disregarded.

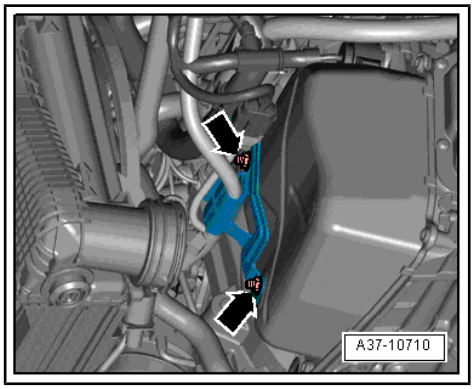
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– Unbolt wiring retainer from front of »large« gearbox cover (2 nuts M6).

Torque setting: 10 Nm

– Raise lines near cover and tie.

– Position used oil collection and extraction unit - V.A.G 1782- under gearbox in area of »large« cover.



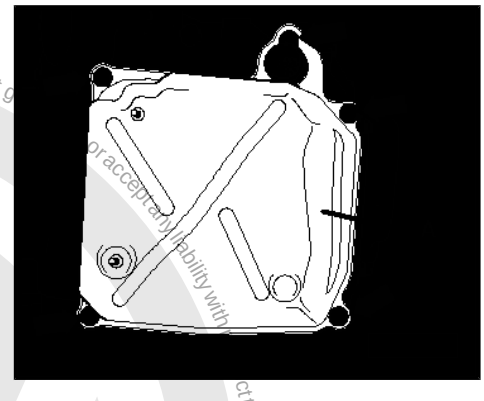
Caution

Oil runs out of cover when bolts are unscrewed. Danger of injury from hot gear oil.

– Loosen bolts -arrows- of cover diagonally and remove. Hold cover when doing this.

– Allow oil to drain out and then remove cover with seal.

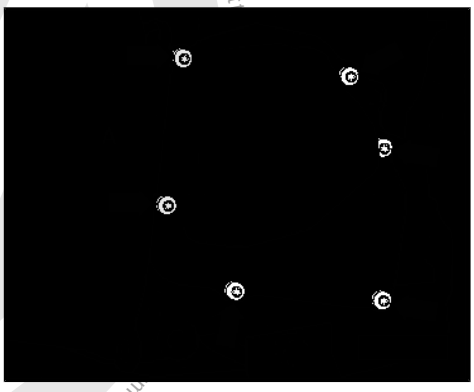
About 3 litres of oil will drain out.



Note

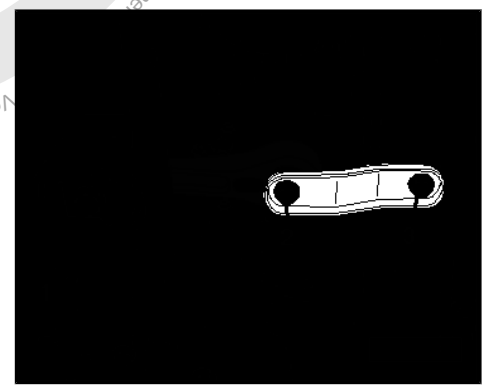
»Small« cover of oil pump, as well as seal and bolts of »large« cover must always be renewed.

– Remove oil pump cover -A-.



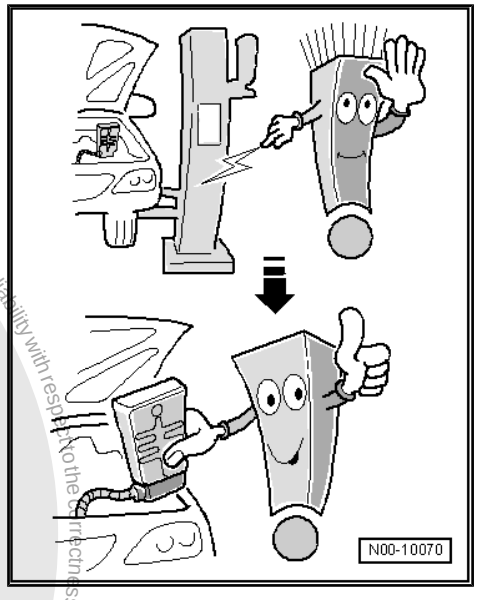
– Remove bolts -2, 3- of the pendulum support on gearbox ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

This allows the gearbox to be »pushed back« a little in order to remove the mechatronic unit.

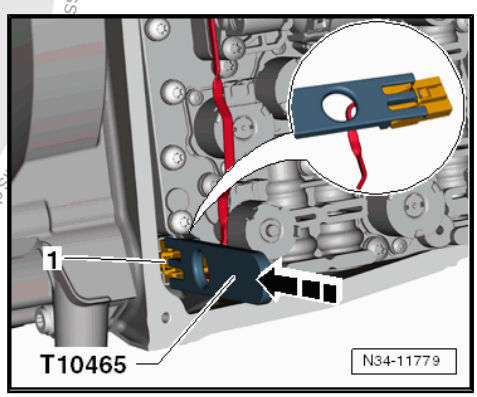


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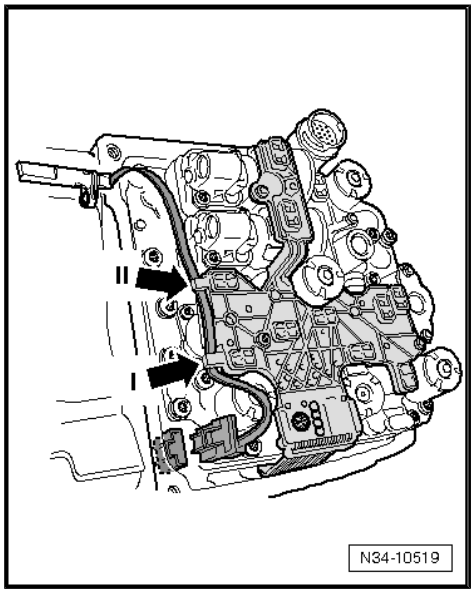
Before touching mechatronic unit, touch an earthed object ⇒ page 4 .



Release connector -1- of gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509- using release tool - T10465- and pull connector off.

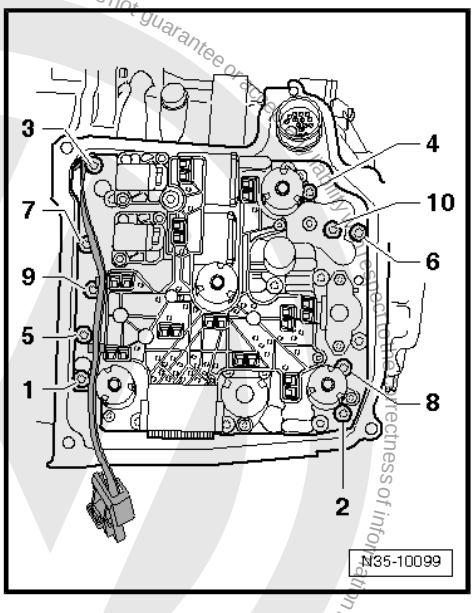


– First pull line out of lower clip -arrow I-.
– Then remove it from upper clip -arrow II- and lay to side. Do not kink line.



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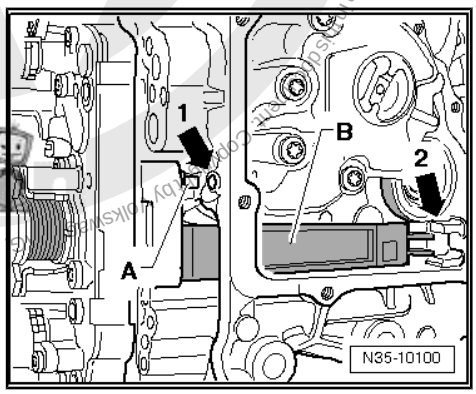
– Loosen securing bolts -1- through -10- in given order and remove.



– Carefully pull mechatronic unit out of gearbox housing so that sender arm -B- on back is no longer in gearbox housing.

When handling mechatronic unit, pay special attention to the »long« sender arm.

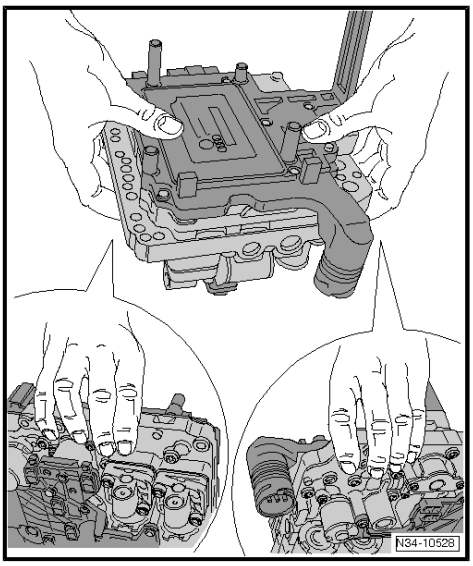
– Carefully swing mechatronic unit for dual clutch gearbox - J743- downwards.



Laying mechatronic unit to side properly

Caution

Never lift mechatronic unit on »sender arm« or lay it on arm.

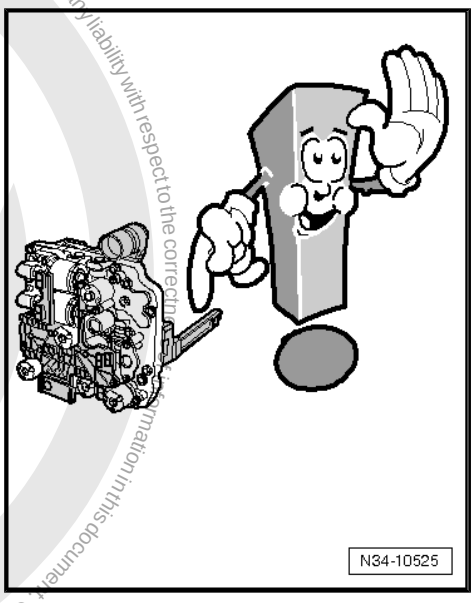


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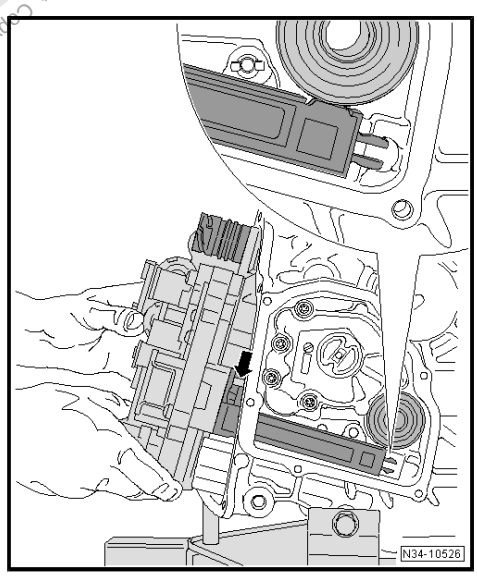
If »arm« is damaged, mechatronic unit must be renewed.

Installing mechatronic unit

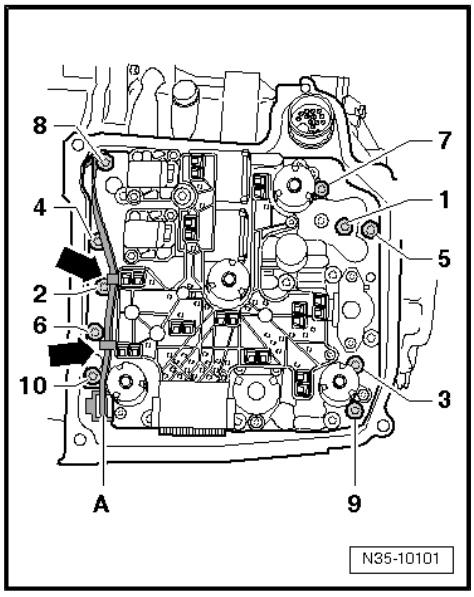
Before touching mechatronic unit, touch an earthed object ⇒ page 4 .



– Carefully set mechatronic unit for dual clutch gearbox - J743- in gearbox housing.
– Do not pinch wiring.
– Carefully set mechatronic unit on dowel pins -arrow-. Ensure that »sender arm« locates in its -fitting position-.
– Look to see if mechatronic unit has made contact correctly.



– Screw in new bolts -1- through -10- hand-tight.
– Tighten bolts in given order to 5 Nm + 90° ($^1/_4$ turn).
– Hook line -A- first in upper retaining lug, and then in lower -arrows-.
– Push on connector and engage.

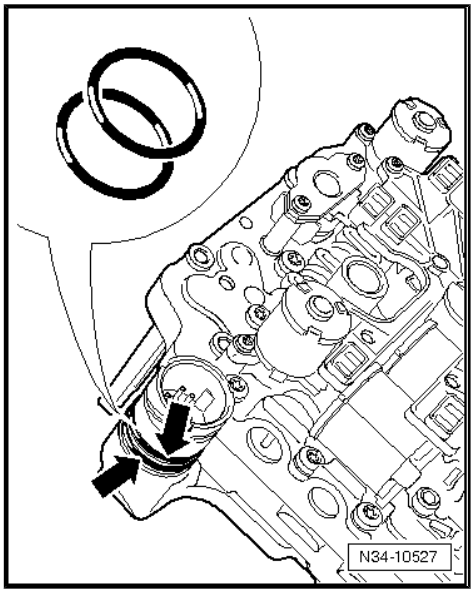


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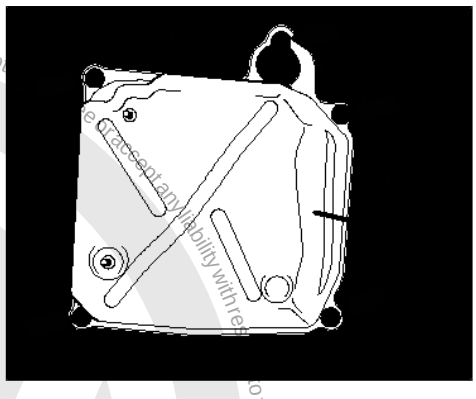
– Renew both -O-rings- if you reinstall the »old« mechatronic unit.

Of course a »new« mechatronic unit already has »new« seals.

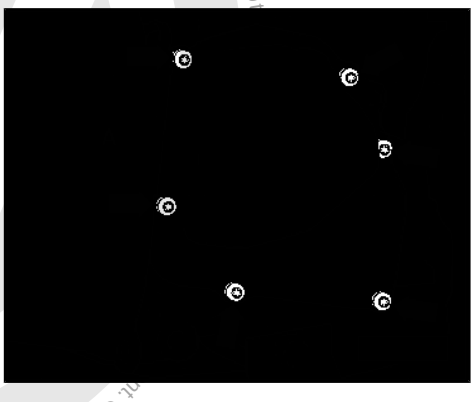
– Moisten O-rings with dual clutch gearbox oil.
– Clean cover seal and sealing surfaces on gearbox.
– Ensure proper seating of seal.
– Set cover over mechatronic unit, being careful not to pinch any wiring.



– Insert new bolts -arrows- and tighten diagonally in several stages to 16 Nm.

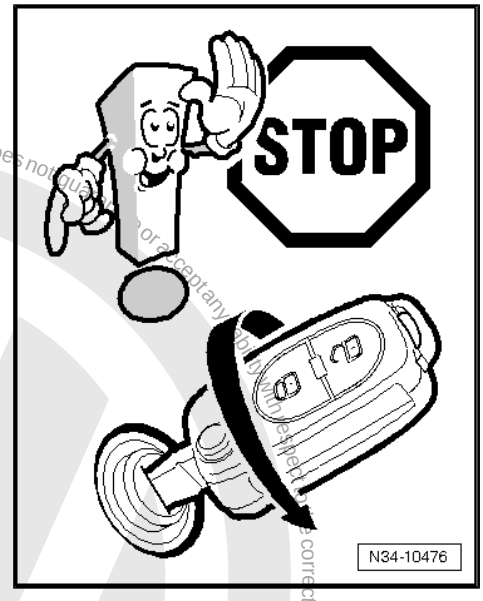


– Set new oil pump cover -A- in place and tighten bolts -arrows- diagonally in several stages to 8 Nm.
– Attach wire retainer to cover and tighten nuts to 10 Nm.
– Push on connector for mechatronic unit for dual clutch gearbox - J743- and engage lock by turning.
– If present: install connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .
– Reinstall any parts which may have been removed from the vehicle.

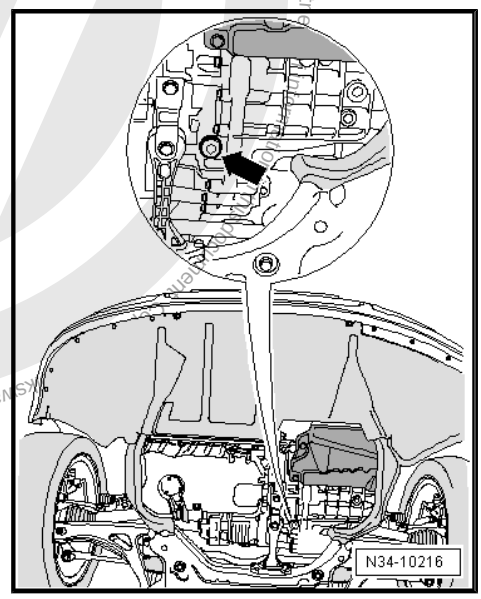


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– Do not start engine!
– Please renew filter if oil is contaminated ⇒ page 300 .
– Connect ⇒ Vehicle diagnostic tester.
– Position used oil collection and extraction unit - V.A.G 1782- under gearbox in area of oil drain plug.

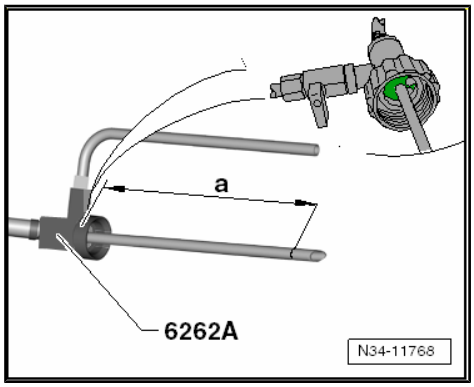


– Remove oil drain plug close to pendulum support -arrow-.



– Before screwing adapter for oil filling - VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension -a- and shorten ⇒ page 300 .

Dimension -a- = 210 mm

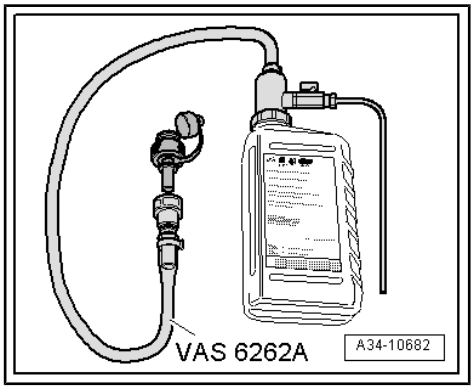


Note

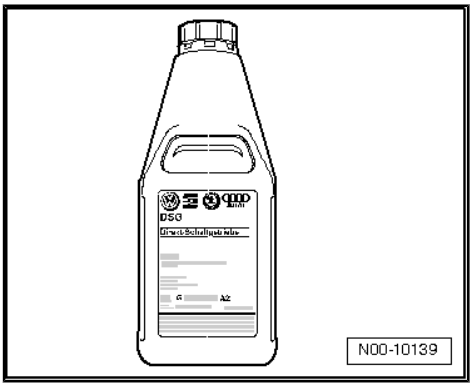
The dimension -a- is measured from the shaft (green area in the counting glass) of the adapter for oil filling - VAS 6262 A- .

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– Screw adapter of adapter for filling oil - VAS 6262 A- hand-tight into inspection hole.



– Shake bottles before opening.
– Fill 3 litres of oil.
– To change bottle, shut off tap or hold adapter for filling oil - VAS 6262 A- higher than gearbox.



Next, start engine, check oil level and top up oil. Adapter for filling oil - VAS 6262 A- remains installed initially.

– Check oil level and top up. ⇒ page 301
– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation; Assembly overview - noise insulation .
– Carry out basic settings.

1.2 Removing and installing mechatronic unit for dual clutch gearbox - J743- (gearbox removed)

Always make sure that no dirt can enter an »open« gearbox.

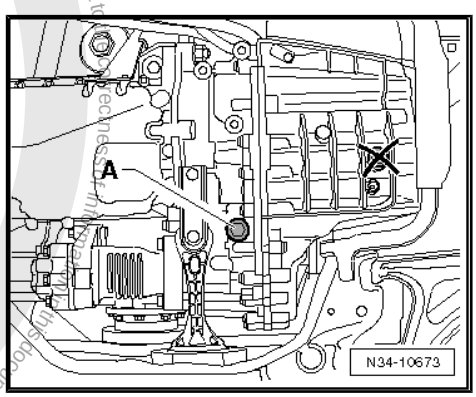
In particular, dirt entering an »exposed« mechatronic unit for dual clutch gearbox - J743- and/or oil pump can lead to gearbox failure.

Please also refer to the notes on the oil filter change regarding »dirty oil« ⇒ page 3 .

Removing mechatronic unit

To gearbox manufacture date “20 September 2004”, gearboxes were constructed with 2 plugs.

– Remove bolt -A- near pendulum support.



A plastic overflow tube (with 8 mm hexagon socket head bolt, torque setting 3 Nm) is located in this hole. Its length determines the oil level in the gearbox.

– Remove this oil pipe.
– Drain oil.

Please also refer to the notes on the oil filter change regarding »dirty oil« ⇒ page 3 .

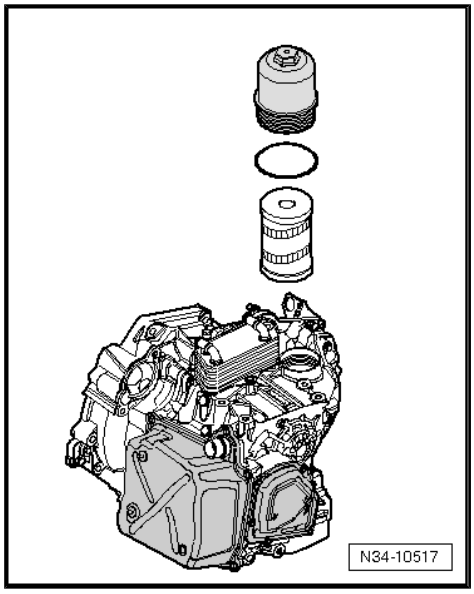
– Screw overflow tube back in, torque setting: 3 Nm.

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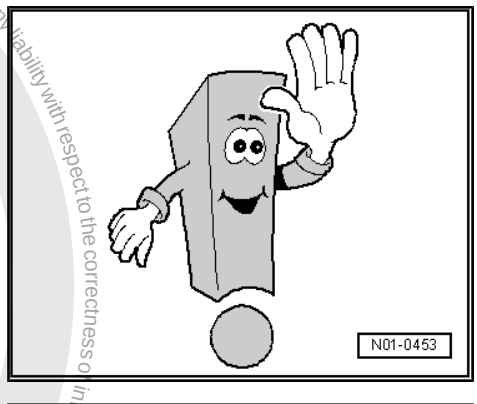
– Remove filter if necessary.

Often, doubts arise as to whether the filter must be renewed or not.

The notes on the oil filter change can help you in reaching this decision ⇒ page 3 .



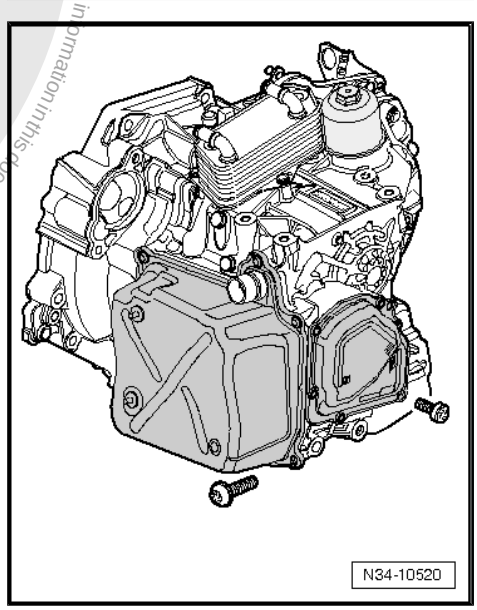
– Insert new filter with shoulder downwards and tighten cover to 20 Nm.
– Following repair work, it is not necessary to change filter again when filling oil.



– Remove both -covers-.

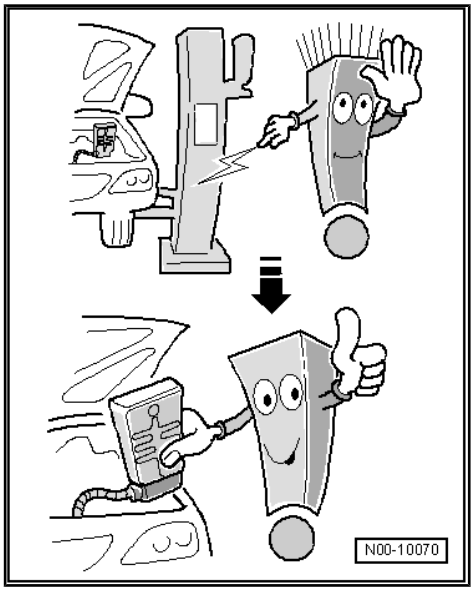
»Small« cover of oil pump and bolts of »large« cover must always be renewed.

Likewise, seal of »large« cover must be renewed.

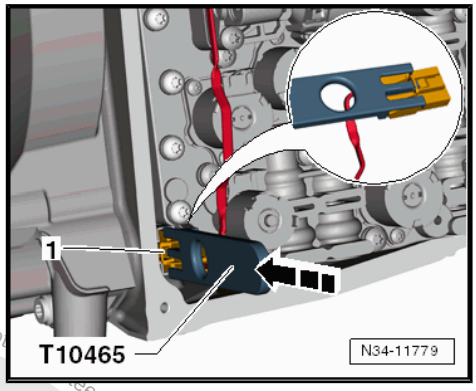


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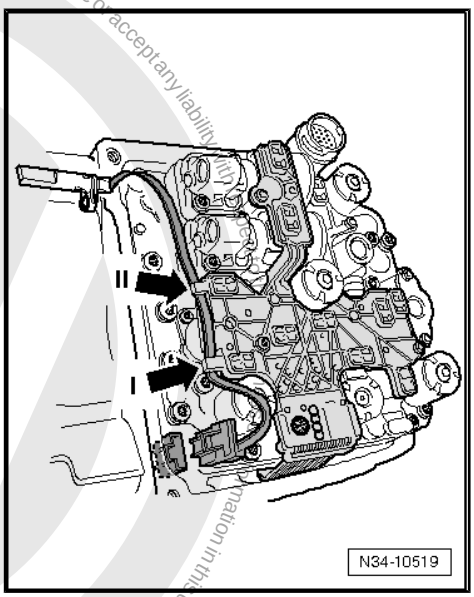
Before touching mechatronic unit, touch an earthed object ⇒ page 4 .



– Release connector -1- of gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509- using release tool - T10465- and pull connector off.



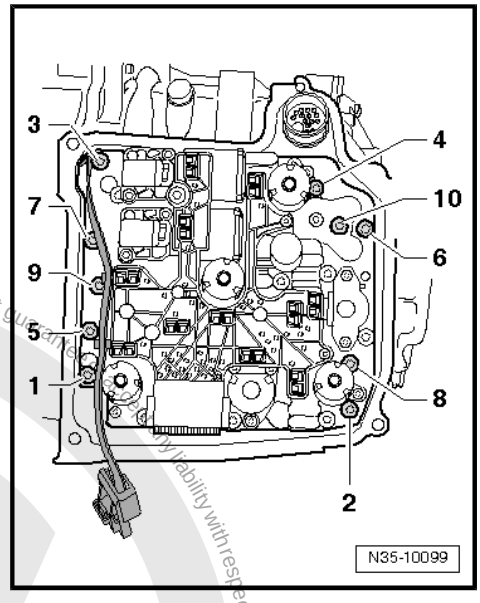
– First pull line out of lower clip -arrow I-.
– Then remove it from second clip -arrow II- and lay to side. Do not kink line.



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– Remove -securing bolts- diagonally. Start with bolt -1-.

All 10 -securing bolts- must be renewed.

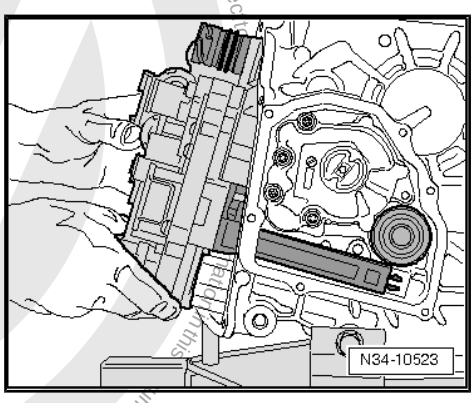


– Remove mechatronic unit for dual clutch gearbox - J743- .

When handling mechatronic unit, pay special attention to the »long« sender arm.

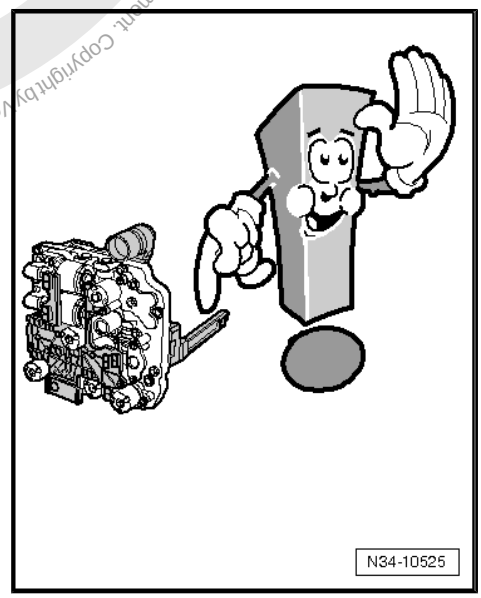
Caution

Never lift mechatronic unit on »sender arm« or lay it on arm.



If »arm« is damaged, mechatronic unit must be renewed.

– Lay mechatronic unit to side properly.



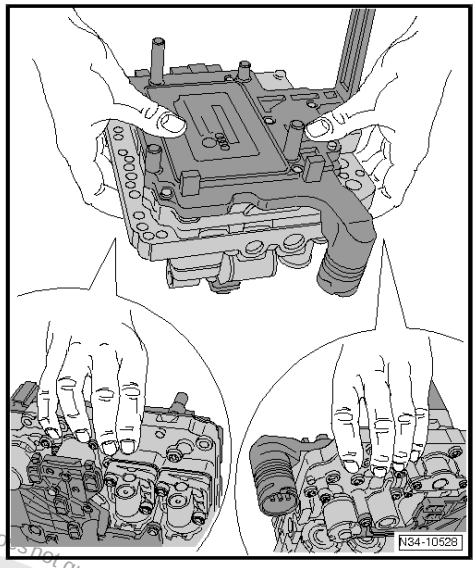
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Laying mechatronic unit to side properly

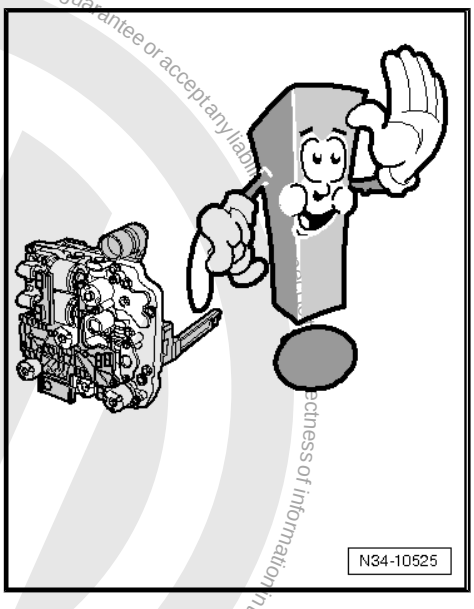
Installing mechatronic unit

Caution

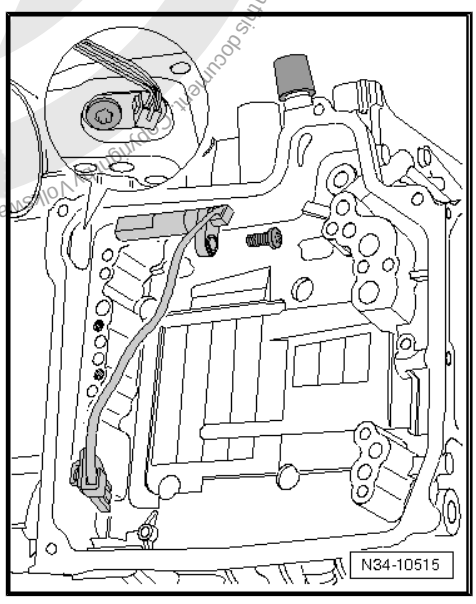
Never lift mechatronic unit on »sender arm« or lay it on arm.



If »arm« is damaged, mechatronic unit must be renewed.



– Before installation of mechatronic unit, make certain that gearbox input speed sender - G182- with oil temperature sender in multi-plate clutch - G509- is installed.

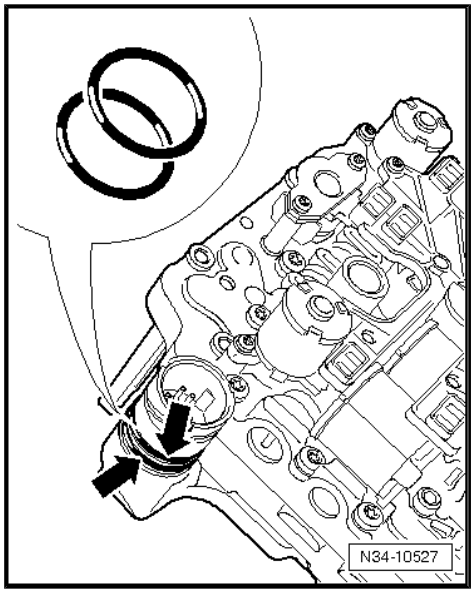


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– Renew both -O-rings- if you reinstall the »old« mechatronic unit.

(Of course a »new« mechatronic unit already has »new« seals.)

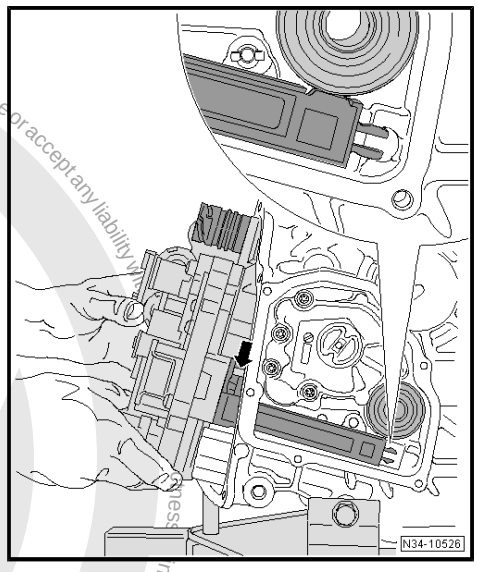
– Moisten O-rings with dual clutch gearbox oil.



– Carefully set mechatronic unit on dowel pins -arrow-. Ensure that »sender arm« locates in its -fitting position-.

– Do not pinch wiring.

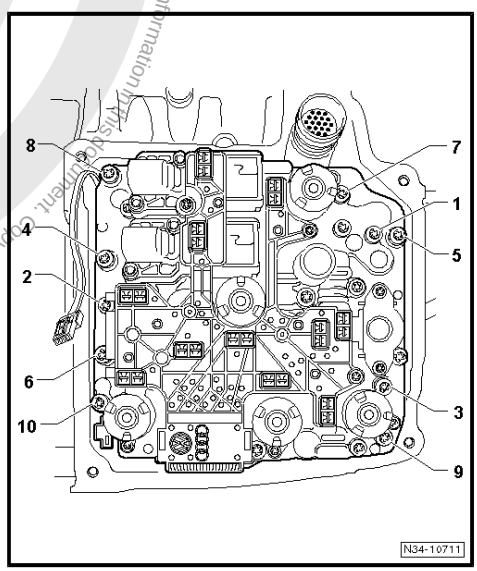
Be very careful: do not pinch wiring!



All 10 -securing bolts- must be renewed.

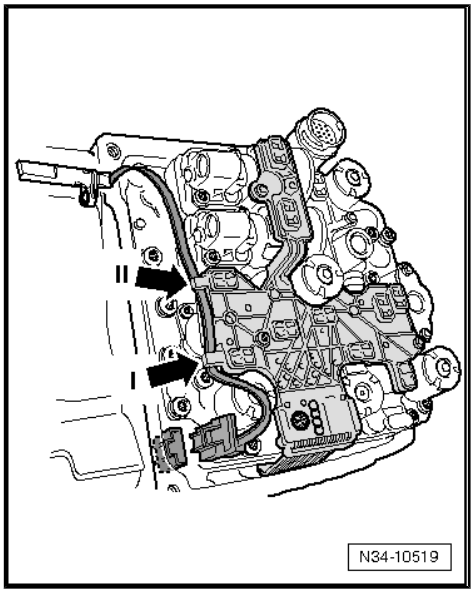
– First start all -securing bolts- »by hand«.

– Then tighten all 10 -bolts- diagonally to 5 Nm. After this, turn a further 90° in same sequence. Start with bolt -1-.

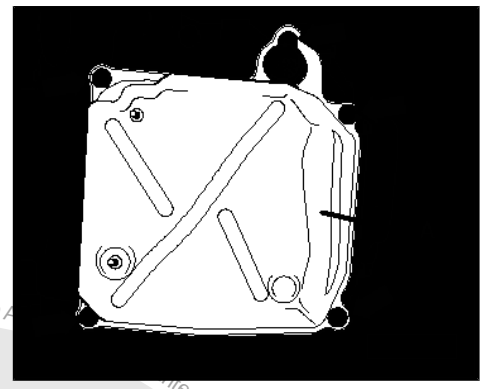


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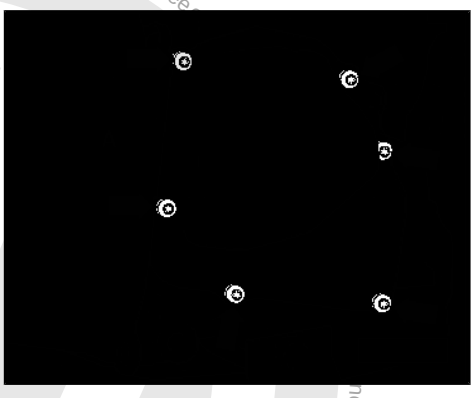
– First press wiring for gearbox input speed sender - G182- with oil temperature sender in multi-plate clutch - G509- into clip -II-. Then into clip -I-.
– Press connection onto mechatronic unit.
– Set cover over mechatronic unit, being careful not to pinch any wiring.



– Insert new bolts -arrows- and tighten diagonally in several stages to 16 Nm.



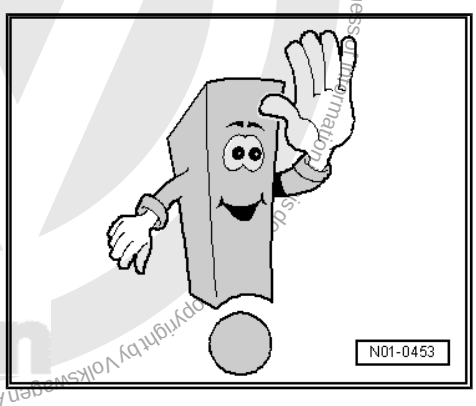
– Set new oil pump cover -A- in place and tighten bolts -arrows- diagonally in several stages to 8 Nm.



After installing gearbox

– Top up oil, check level and top up ⇒ page 304 .

– Connect ⇒ Vehicle diagnostic tester.
– Carry out basic settings.



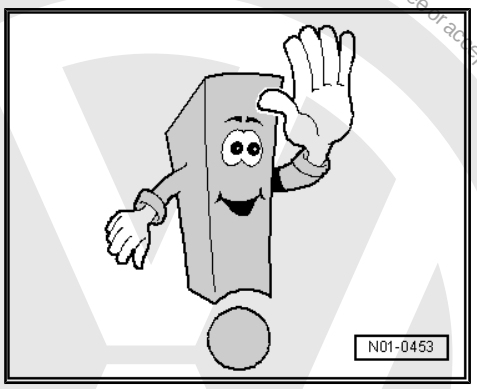
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1.3 Removing and installing gearbox input speed sender - G182- and oil temperature sender in multi-plate clutch - G509-

Brief description

Both senders are combined in one component and can be renewed together only. They are »bathed in oil« in the gearbox near the dual clutch. Before removal, the mechatronic unit for dual clutch gearbox - J743- must be removed.

It often occurs that the wiring for the sender is pulled. The sender will be damaged. Consequently, if the cable is pulled on, the sender must be renewed.

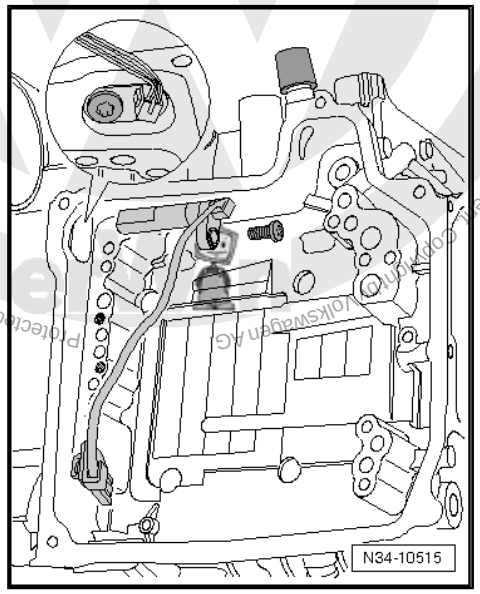


Removing

– Remove mechatronic unit for dual clutch gearbox - J743- ⇒ page 30 .

Do not pull on line!

– Remove bolt and carefully lever out sender with a screwdriver and/or pliers.



Installing

Reinstall »old« sender only if you know for certain:

- The sender has no defect.
- The cable was not pulled on when it was removed.

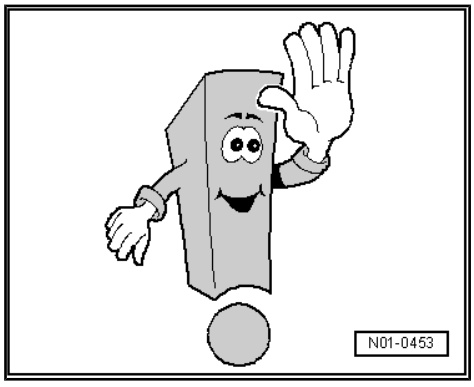
If this is not the case, install a »new« sender.

– Insert sender moistened with ⇒ DCG® oil.

– Tighten bolt to 10 Nm.

– Install mechatronic unit for dual clutch gearbox - J743- ⇒ page 30 .

Never pinch mechatronic unit wiring during installation!

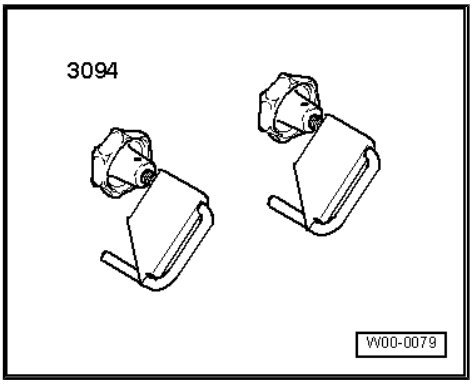


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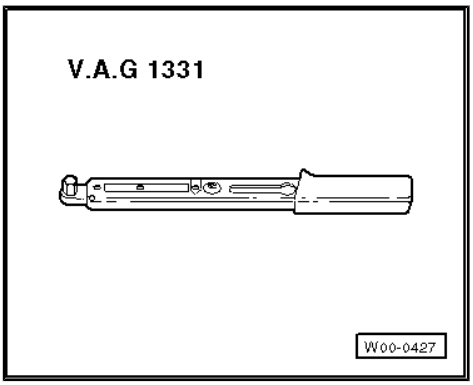
2 Removing and installing gearbox oil cooler

Special tools and workshop equipment required

- Hose clamps to 25 mm - 3094-



- Torque wrench - V.A.G 1331-



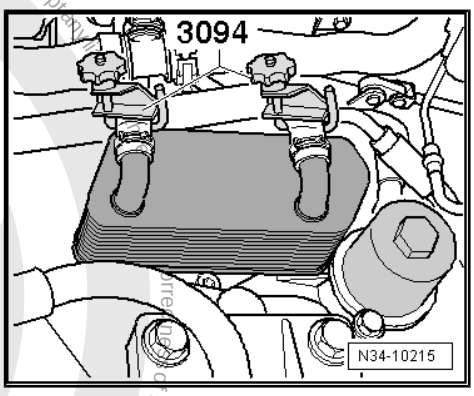
Removing

– Move selector lever to position “P” position.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

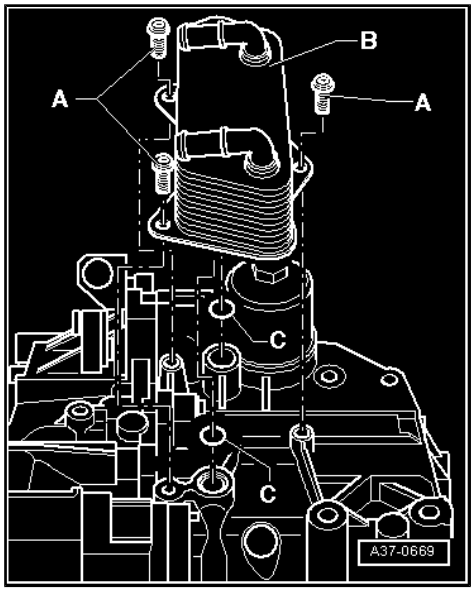
– Lay lint-free cloths on gearbox oil cooler and gearbox to catch escaping coolant.

– Clamp off coolant hoses using hose clamps - 3094- and remove from cooler.



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– Remove bolts -A- and remove cooler -B-.



Caution

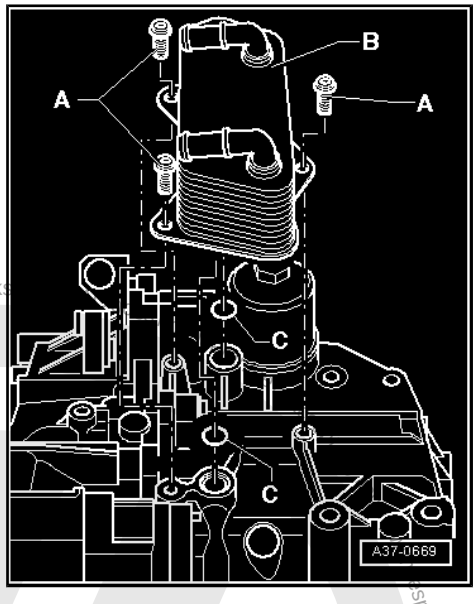
No coolant must be allowed to drip into gearbox!

Installing

– Renew O-rings -C- of gearbox oil cooler -B-.

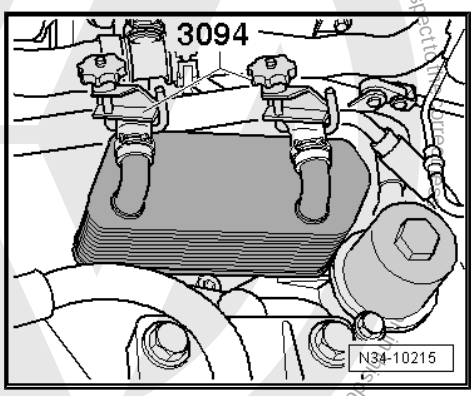
– Set gearbox oil cooler -B- in place, observing O-rings -C-.

– Screw in new bolts -A- and tighten to 20 Nm + 90° ($^1/_4$ turn).



– Attach coolant hoses to gearbox oil cooler and remove hose clamps - 3094- .

– Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Removing and installing battery .

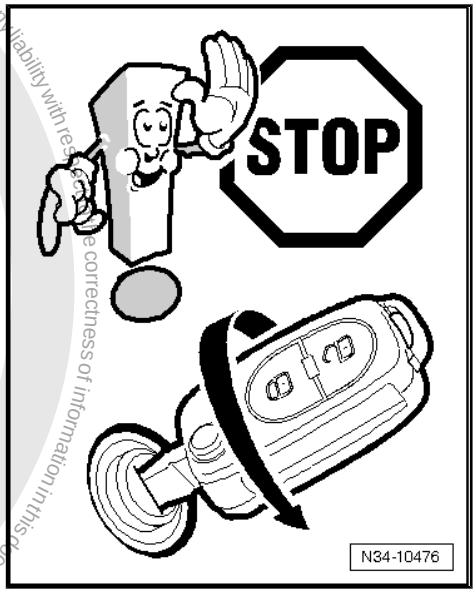


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– Check coolant level and top up with coolant as needed ⇒ Rep. gr. 19 ; Removing and installing parts of cooling system .
– After repair, check oil level and top up ⇒ page 301 .

Caution

Do not start engine while checking coolant level if gearbox oil has not yet been filled.

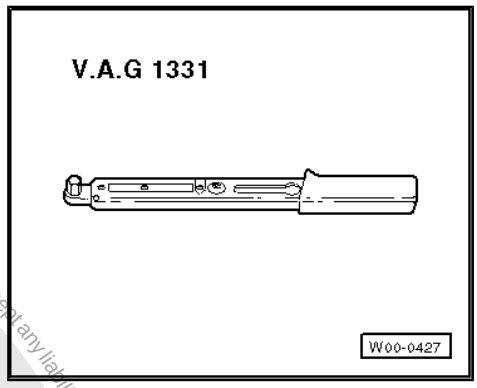


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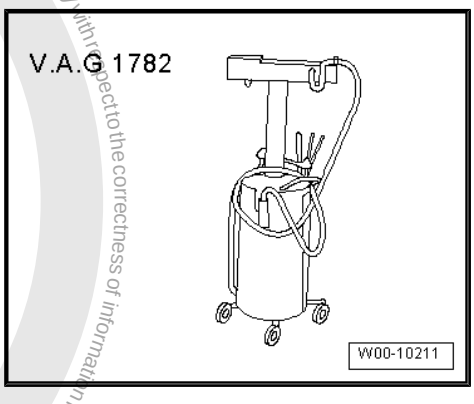
3 Removing and installing oil pump

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



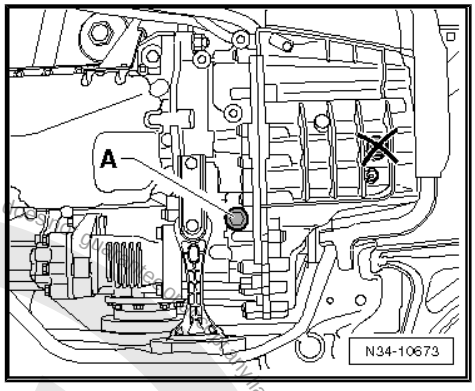
- Used oil collection and extraction unit - V.A.G 1782-



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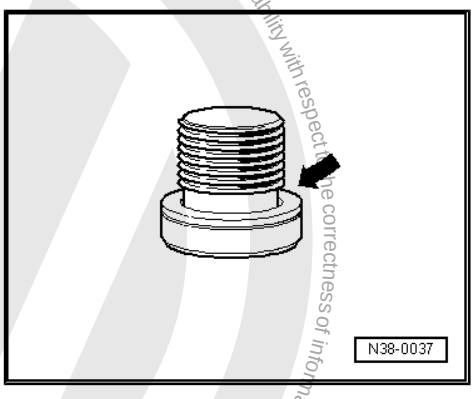
– Remove bolt -A- near pendulum support.

A plastic overflow tube (with 8 mm hexagon socket head bolt, torque setting 3 Nm) is located in this hole. Its length determines the oil level in the gearbox.



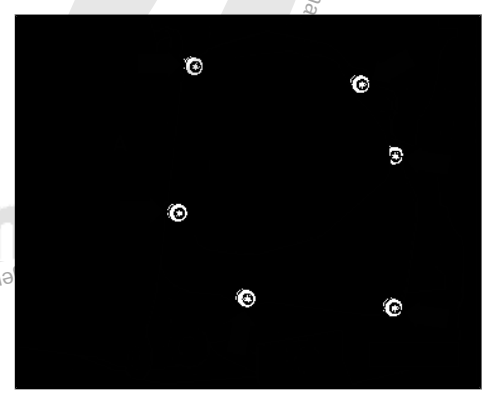
– Remove this oil pipe.
– Drain oil.
– Screw overflow tube back in, torque setting: 3 Nm.

– Renew seal -arrow- for plug.
– Used oil collection and extraction unit - V.A.G 1782- remains under gearbox.

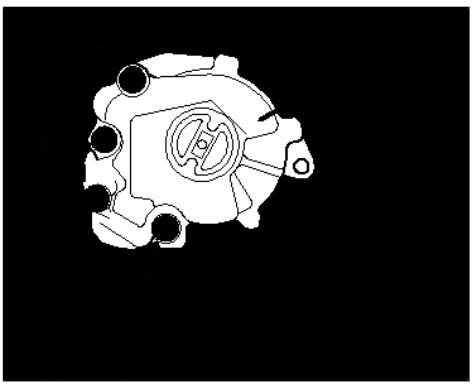


– Remove bolts -arrows- and remove oil cooler cover -A-.

There will still be oil in oil pump cover.

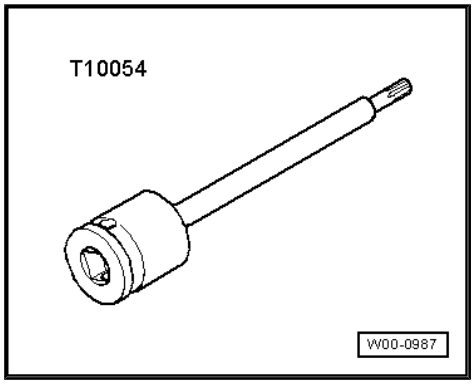


– Remove bolts -arrows- and pull oil pump -1- off dowel pins and pull out oil pump drive shaft.



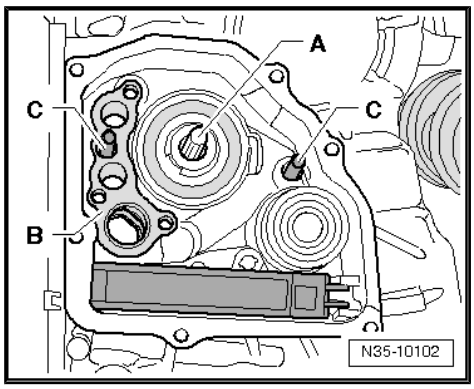
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It may be necessary to use socket - T10054- to remove upper bolt.



Installing oil pump

– Push input shaft -A- for oil pump into gearbox as far as stop. Turn input shaft slightly whilst doing this.
– Always use a new metal seal -B-.
• The 2 dowel pins -C- must be located in gearbox housing.
– When fitting oil pump, observe splines of input shaft and proper seating of dowel pins.

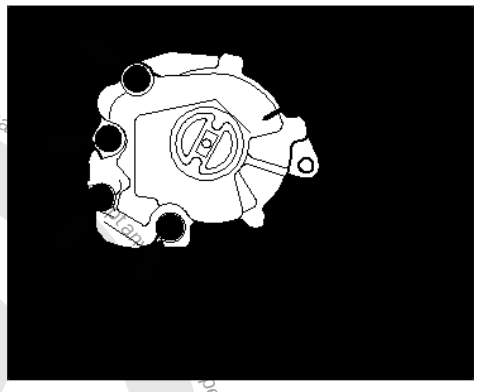


Various bolts for oil pump -1-

All 4 bolts with flat heads

Torque setting

♦ 5 Nm + 90° ($^1/_4$ turn)

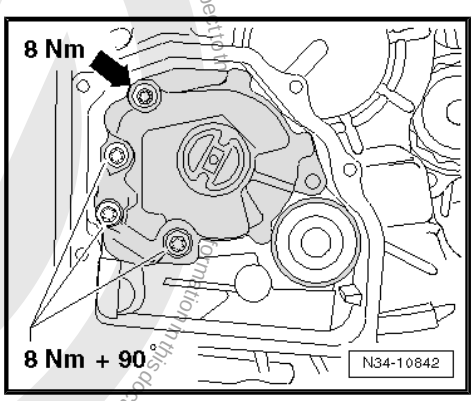


3 bolts with flat heads, uppermost bolt with countersunk head

Torque setting

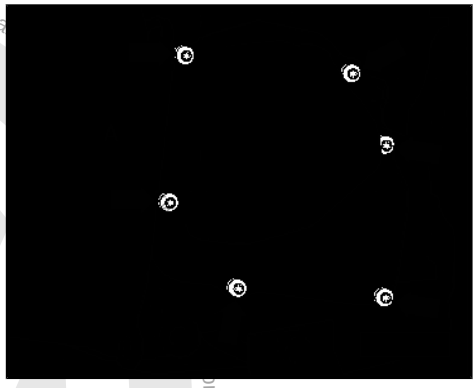
♦ Countersunk head bolt: 8 Nm (tighten with socket - T10054-)

♦ Flathead bolts: 8 Nm + 90° ($^1/_4$ turn)



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– Set new oil pump cover -A- in place and tighten new bolts -arrows- diagonally in several stages to 8 Nm.



There is no oil in the gearbox. »New« oil must now be filled and adjusted to the proper level ⇒ page 304 .

– Change oil and filter for dual clutch gearbox ⇒ page 300 .

– Install left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Assembly overview - front wheel housing liner .

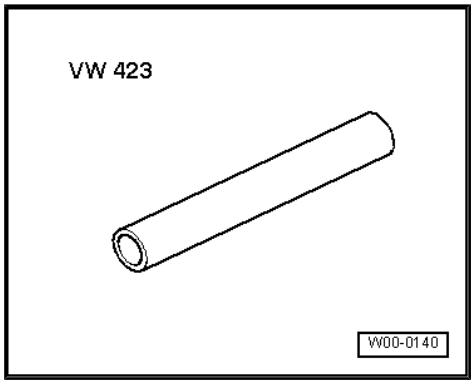
– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation; Assembly overview - noise insulation .

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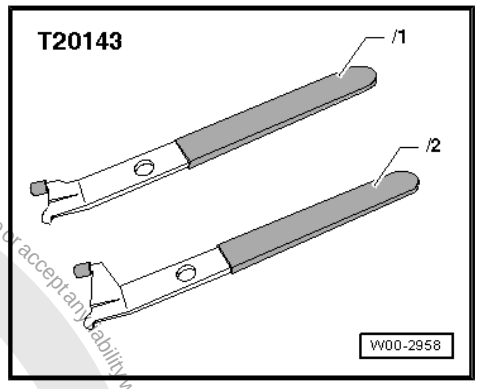
4 Renewing selector shaft lever oil seal with gearbox removed

Special tools and workshop equipment required

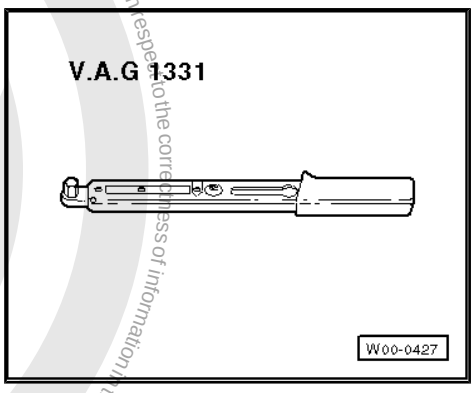
- Tube - VW 423-



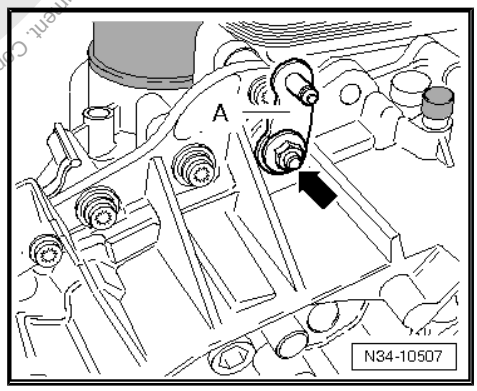
- Puller hooks - T20143-



- Torque wrench - V.A.G 1331-

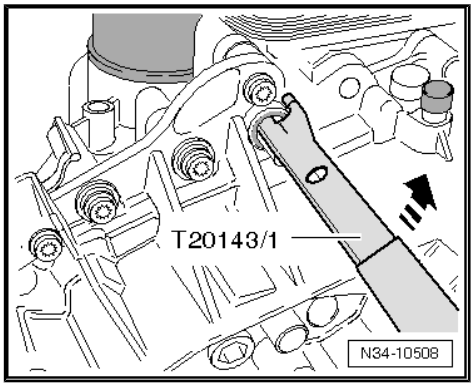


– Remove selector lever cable from gearbox ⇒ page 62 .
– Carefully pry lever -A- off selector shaft.

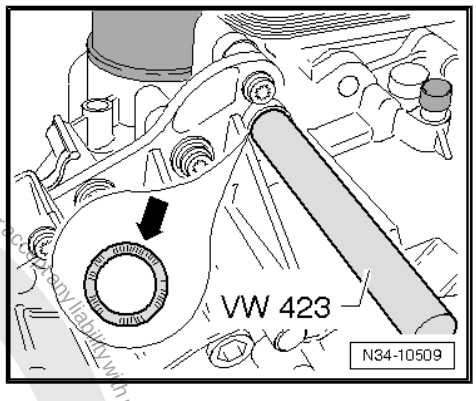


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– Lever out seal.
– Lightly oil outer circumference of new oil seal.
– Half-fill space between sealing lip and dust lip with sealing grease - G 052 128- .



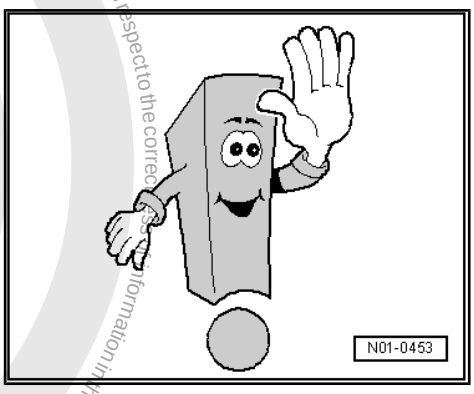
– Drive in new seal to stop, being careful not to cant seal.



– Set lever in place and tighten to 20 Nm.

Selector shaft lever fits on splines in only one position.

– Install and adjust selector lever cable on gearbox ⇒ page 62 .



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5 Emergency release of selector lever

Do not remove knob.

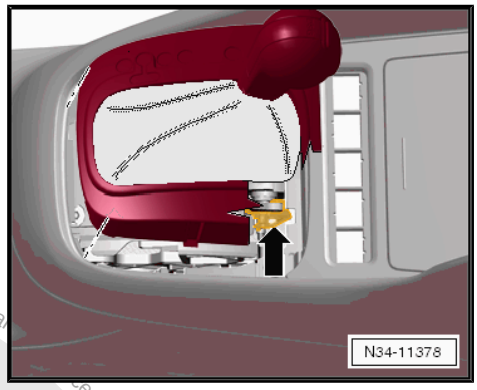
– Depress brake pedal or set handbrake.

In an emergency:

– Grip leather bellows and pull trim upwards.

Vehicles up to 02.2009

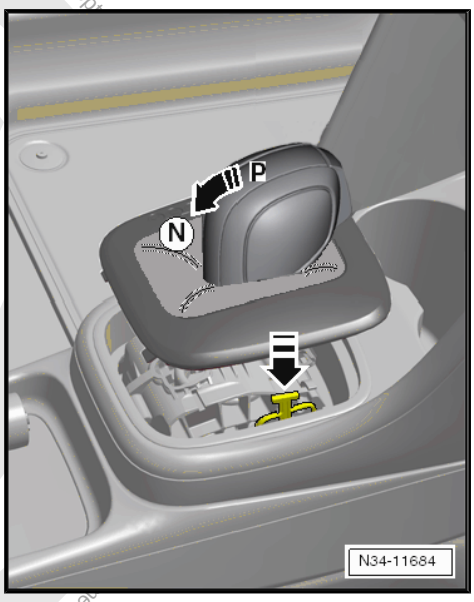
– Press yellow plastic wedge from right to left.



Vehicles from 03.2009 onwards

– Unclip selector cover and hold to side.

– Press yellow plastic wedge -arrow-.



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6 Removing and installing selector lever handle

Brief description

Different handles may be installed depending on model.

It is possible with all knobs that the button is pressed into the knob. Never install handle with button pressed in.

Handle is removed together with selector cover.

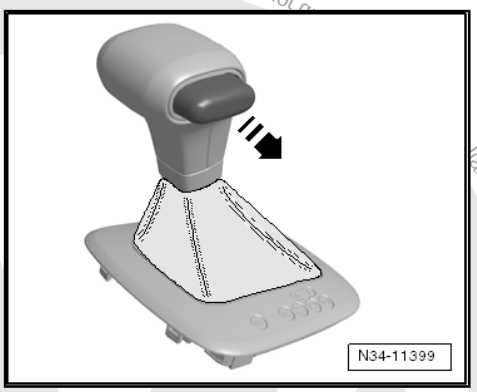
Removing:

– Shift selector lever to position “D”.

Handle with pushbutton on side:

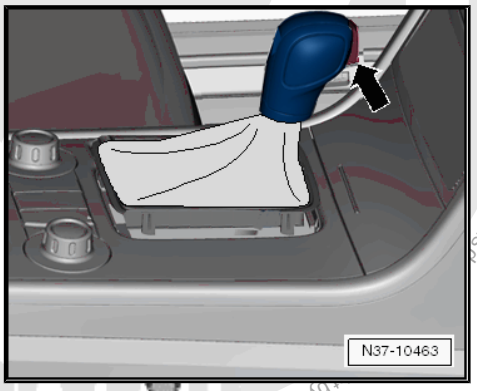
– First pull button far enough out of knob that a small gap is visible between knob and button. Button locks when released.

– Hold button in this position with a cable tie or wire to prevent it from being pressed in.



Handle with front pushbutton:

Button does not need to be pulled out by hand. Button automatically engages in installation position -arrow- when handle is pulled off.



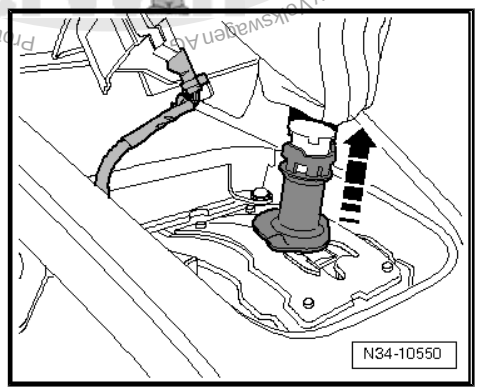
Continuation for all handles:

– Unclip cover.

– Pull connector from gearshift cover.

– Push sleeve upwards to release knob.

– Pull handle off selector lever without pressing button.



Note

Do not continue to press button after removal, otherwise it will no longer be possible to install handle.

Installing

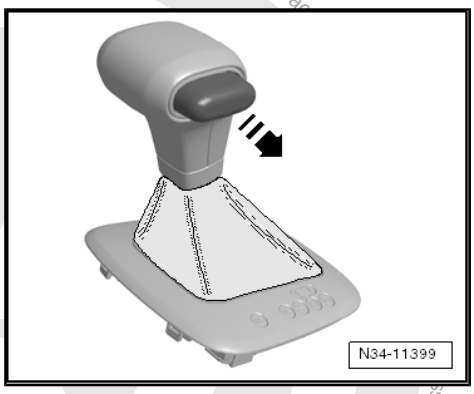
– Install in reverse order of removal, observing the following:

• Selector lever is in position “D”.

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Handle with pushbutton on side:

- Button in handle is pulled out and secured against being pressed in.

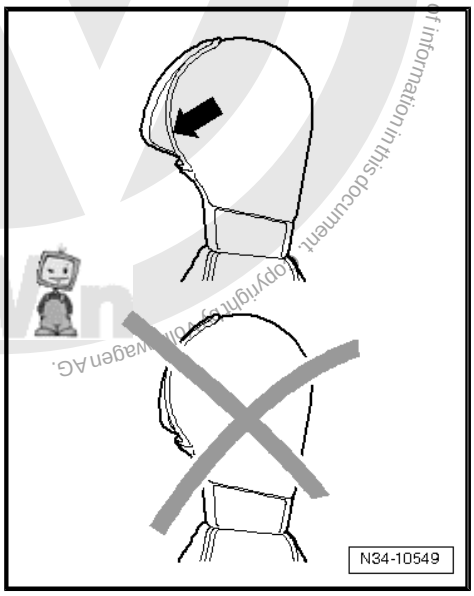


Handle with front pushbutton:

- Pushbutton is in installation position -arrow-.

If the push-button was pressed by mistake, the installation position can be restored.

– Move pushbutton to installation position ⇒ page 59 .

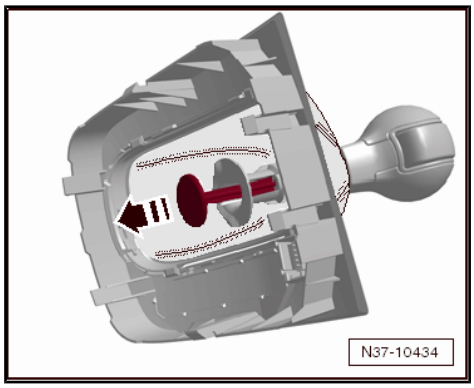


Note

New handle is supplied with installation guard. Do not remove guard until just before installing. To remove, pull it out.

Handle with front pushbutton

If the push-button was pressed by mistake, the installation position can be restored. To do this, push installation guard fully in whilst button is pressed, release button and pull installation guard out again. Pushbutton engages in installation position.



Continuation for all handles

– Push handle completely onto selector lever and lock.

– Push sleeve downwards to lock.

– After installation, press button in selector lever grip.

Note

If not installed correctly, pushbutton remains inserted in handle after being pressed. If this has happened, handle will have to be installed again. To do this, pull handle off selector lever, move button into installation position using installation guard and install handle again.

Continue installation in reverse order of removal.

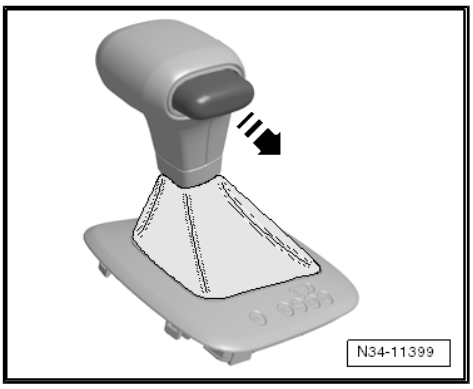
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6.1 Moving pushbutton to installation position in the handle

6.1.1 Handle with pushbutton on side

– First pull button far enough out of knob that a small gap is visible between knob and button. Button locks when released.

– Hold button in this position with a cable tie or wire to prevent it from being pressed in.



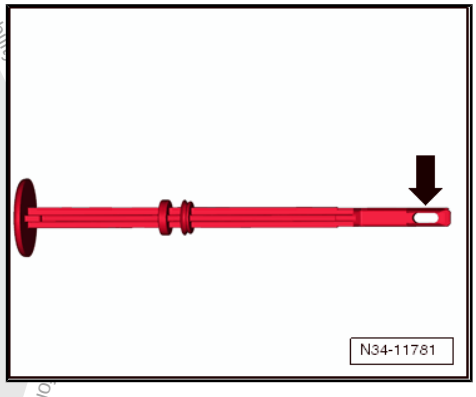
6.1.2 Handle with front pushbutton

With this kind of handle, the pushbutton cannot be pulled out.

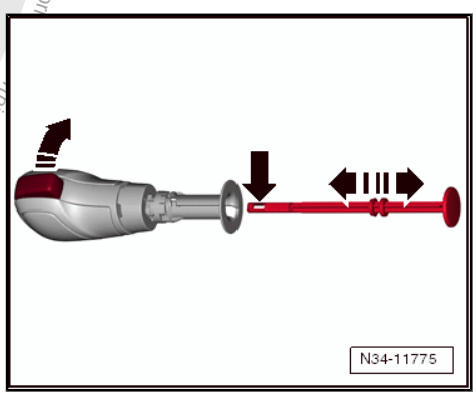
There are 2 ways of moving the pushbutton into the installation position, »with« and »without« installation guard. Both of them are described here.

Place handle »with« installation guard in installation position:

When using the installation guard, make sure that it has an eyelet -arrow- at the front. Other types of installation guard are not suitable.



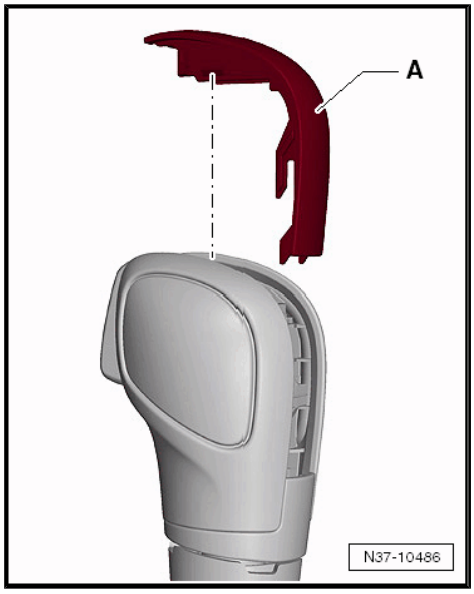
– Holding the button down, completely push in installation guard with eyelet -arrow- until the installation guard engages, then release the button. When the installation guard is pulled out, the pushbutton engages in the installation position.



Place handle »without« installation guard in installation position:

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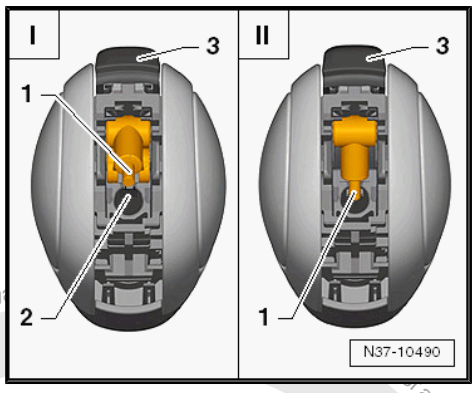
– Carefully unclip trim of handle -A- upwards.



– Using a screwdriver, press the small lever -1- for the tie rod into the groove -2-. When this is done, the pushbutton -3- is pressed into the installation position.

-I- Pushbutton in pressed position

-II- Pushbutton in installation position



Note

- *Only press the lever into the groove and no further.*
- *Do not clip the trim of the handle onto the selector mechanism until the handle has been fitted. This makes it possible to check whether the small lever engages in the tie rod when the push-button is pressed.*

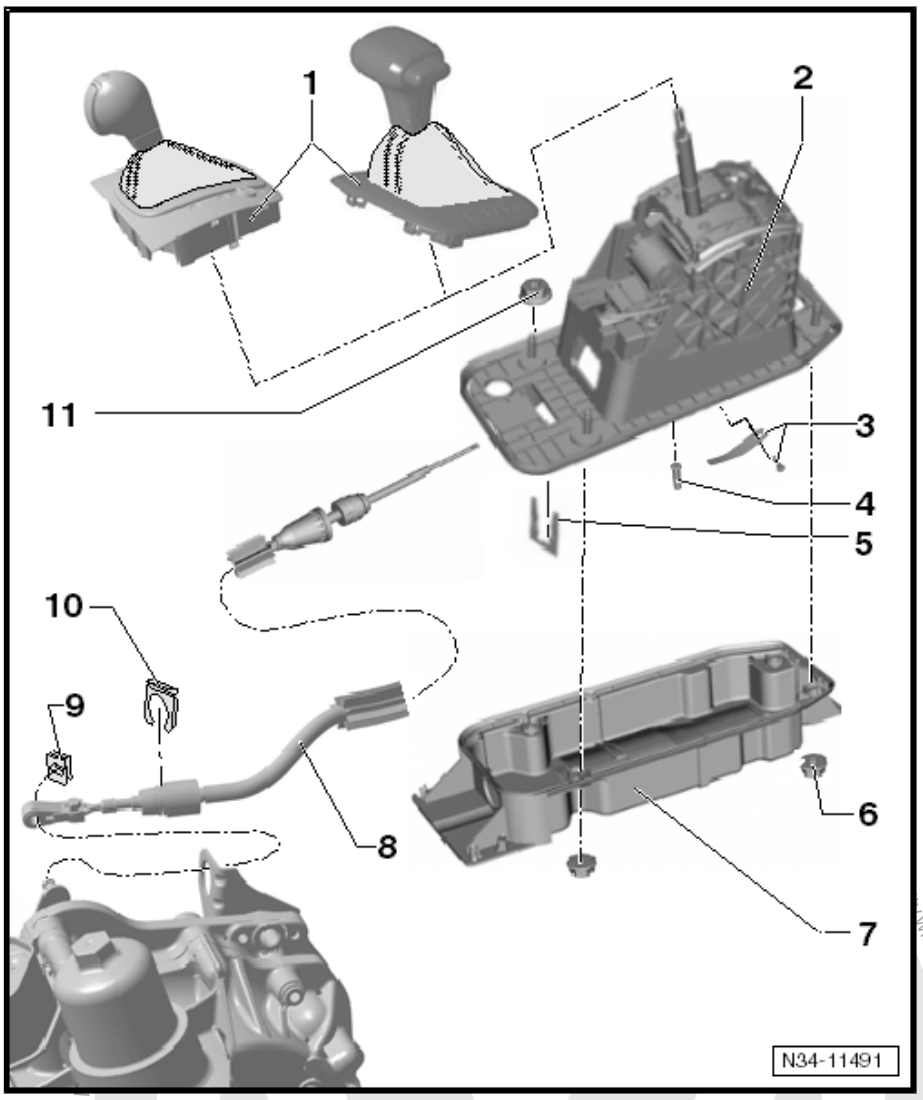
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7 Selector mechanism up to 02.2009

WARNING

Before working on vehicle with engine running, move selector lever into position "P" and apply handbrake.

7.1 Overview of selector mechanism up to 02.2009



1 - Selector cover with knob

- ❑ Do not remove knob without reason. For emergency release, only the cover needs to be unclipped ⇒ page 56 .
- ❑ Right knob in figure: first pull button far enough out of knob until a small gap is visible between knob and button. Button locks in this position when released. Hold button in this position with a cable tie or wire to prevent it from being pressed in.
- ❑ Left grip in figure: do not press button in. However, if this should happen, the knob must be dismantled and prepared for installation ⇒ page 59 .

2 - Selector lever and selector mechanism

- ❑ With selector lever lock solenoid - N110-
- ❑ Emergency release ⇒ page 56 .
- ❑ Brief instructions for removing and installing:

– Remove centre console.

– Remove cable from gearbox and separate selector mechanism ⇒ page 62 .

– If necessary, disconnect or remove parts of ⇒ exhaust system; Rep. gr. 26 .

– Remove heat shield beneath vehicle.

– Adjust selector lever cable after installing ⇒ page 69 .

3 - Bolt with spring

- ❑ 3 Nm

4 - Pin

- ❑ Removing ⇒ page 62

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- ❑ Do not grease

5 - Securing clip

- ❑ Always renew after removing

6 - Nut

- ❑ 9 Nm
- ❑ Qty. 4

7 - Selector lever housing

- ❑ With seal

8 - Selector lever cable

- ❑ Cable must not be greased
- ❑ Removing and installing ⇒ page 62
- ❑ Checking ⇒ page 69
- ❑ Adjusting ⇒ page 69

9 - Securing clip

- ❑ Always renew after removing

10 - Securing clip

- ❑ Always renew after removing

11 - Hexagon nut with washer

- ❑ 8 Nm
- ❑ Qty. 4

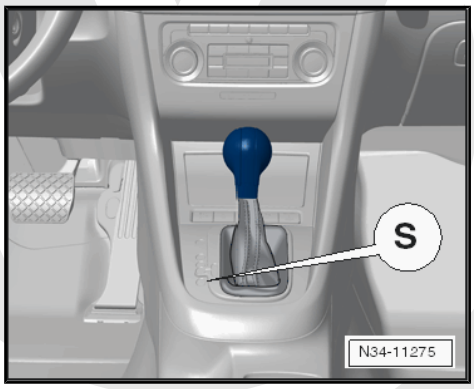
7.2 Removing and installing selector lever cable up to 02.2009

Note

Following installation, cable must be checked for ease of movement and be adjusted.

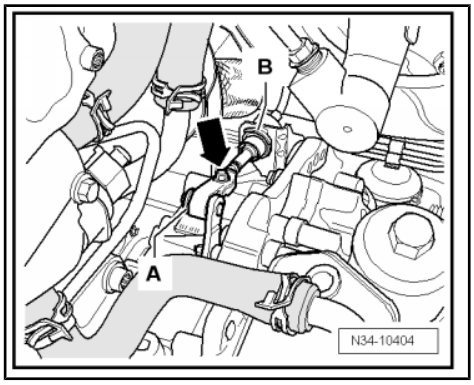
Removing

– Move selector lever to position “S” position.

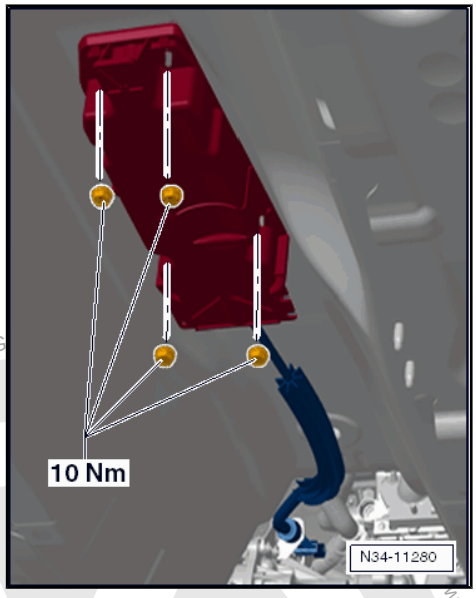


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Loosen adjustment screw -arrow-.

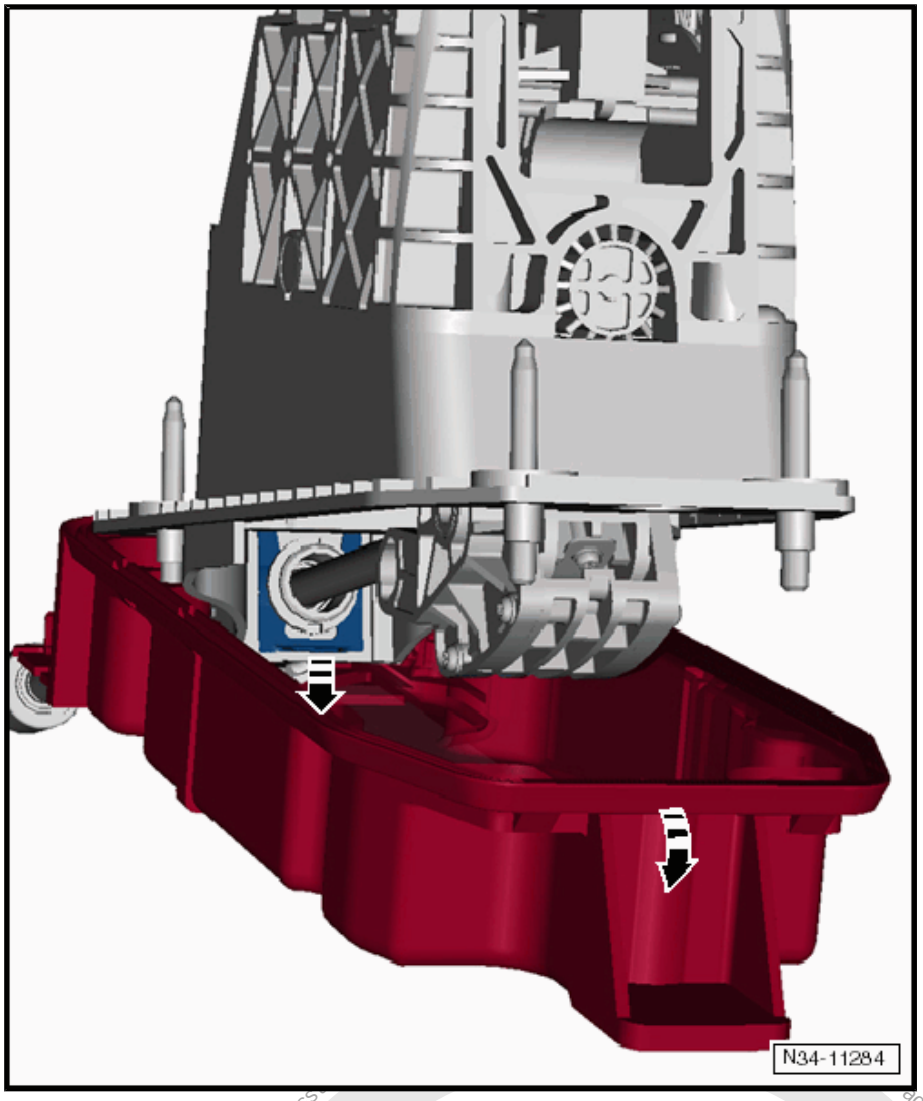


- Remove securing clips -A- and -B-. Securing clips must be renewed when cable is adjusted.
- Raise vehicle.
- To remove cable and/or selector mechanism, heat shield must now be removed and, if necessary, parts of exhaust system.
- ⇒ Rep. gr. 26 ; Removing and installing parts of the exhaust system
- Remove heat shield.
- Remove -selector housing- beneath selector lever.

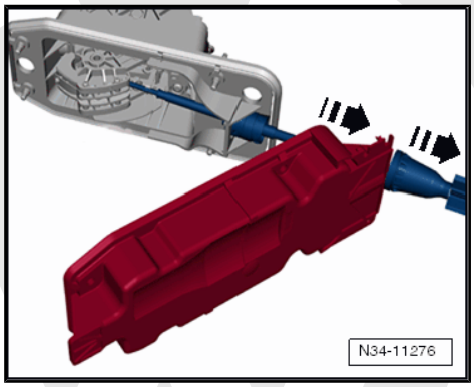


- Remove securing clip of cable support bracket. Always renew securing clip.

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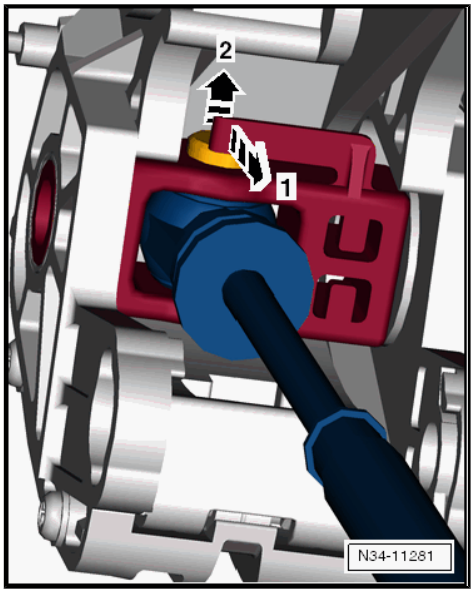
-Selector housing- is pushed forwards slightly on cable.



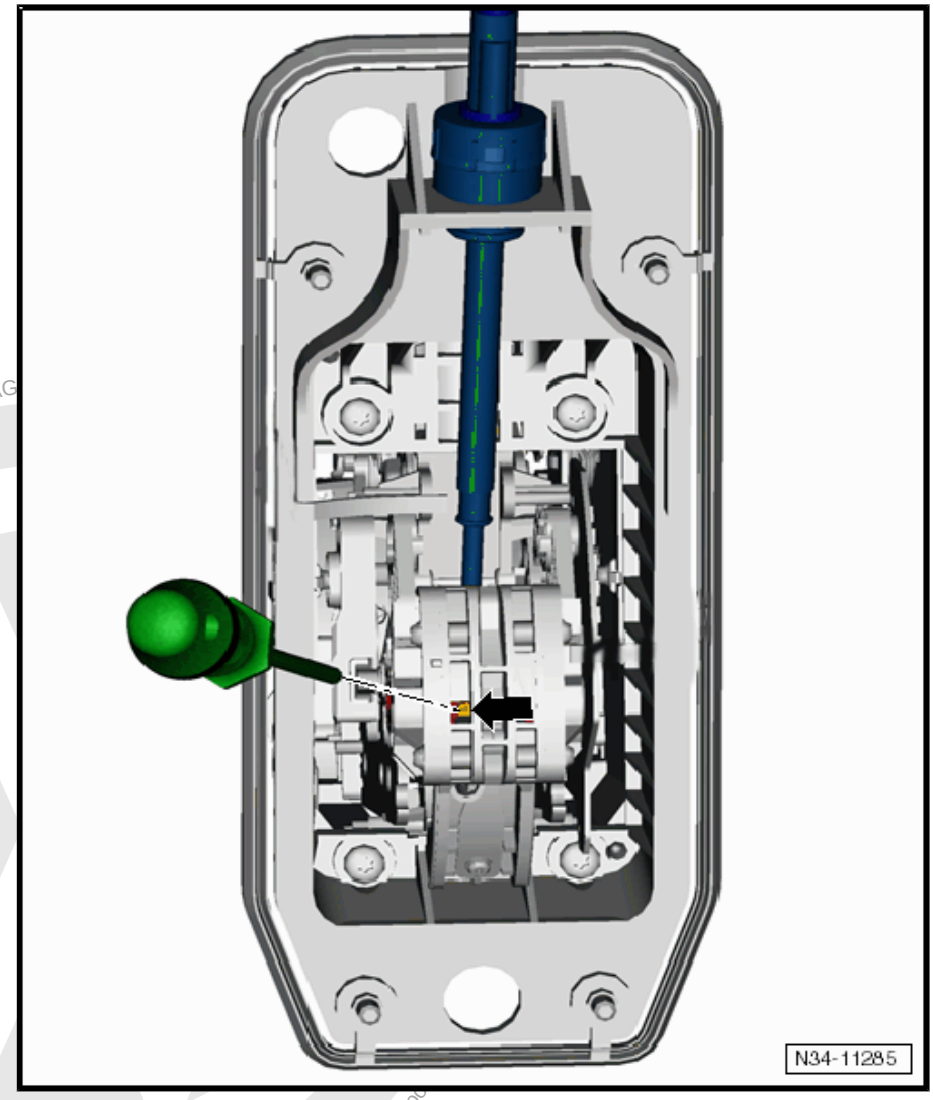
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To remove cable, securing tab must be pushed forwards -1-.

– At same time, push -pin- up with a screwdriver -2-.

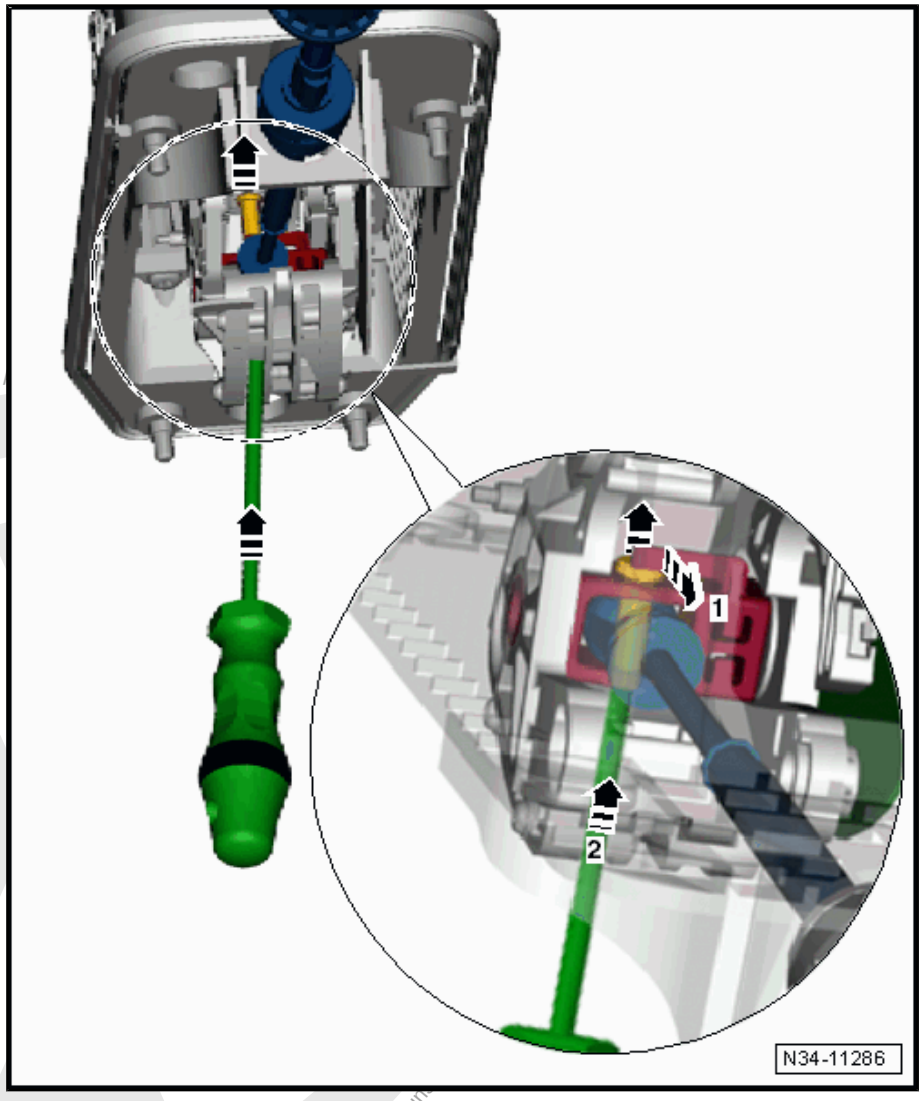


– Insert -screwdriver- from below.



Clarification:

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– Remove selector lever cable.

Remove selector housing from cable.

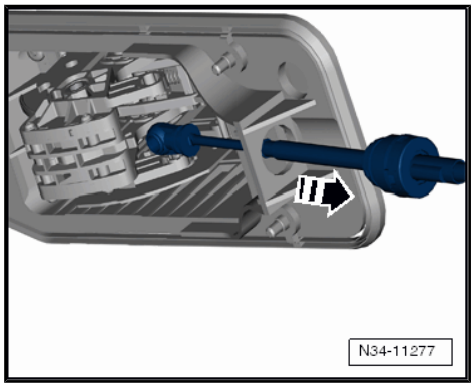
Installing

Do not grease cable.

– Route selector lever cable without tension. Also insert in cable support bracket on gearbox. Do not secure with securing clips yet. Do not clip in ball head.

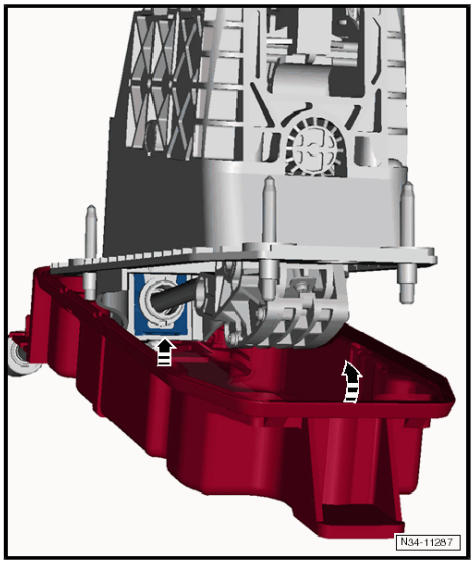
– Ensure that selector lever cable is properly routed during installation.

– Put selector housing onto cable.

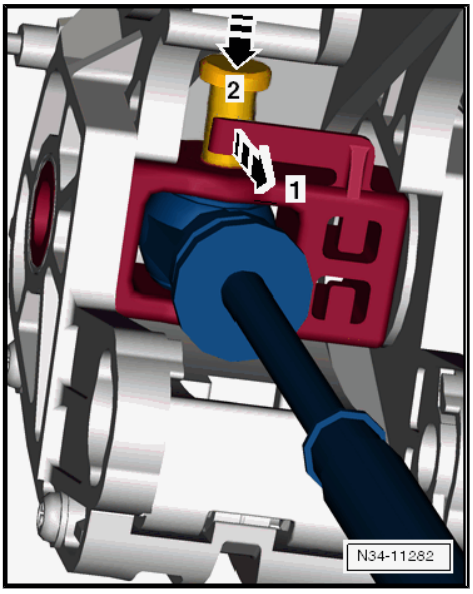


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– Insert selector lever cable into selector mechanism.



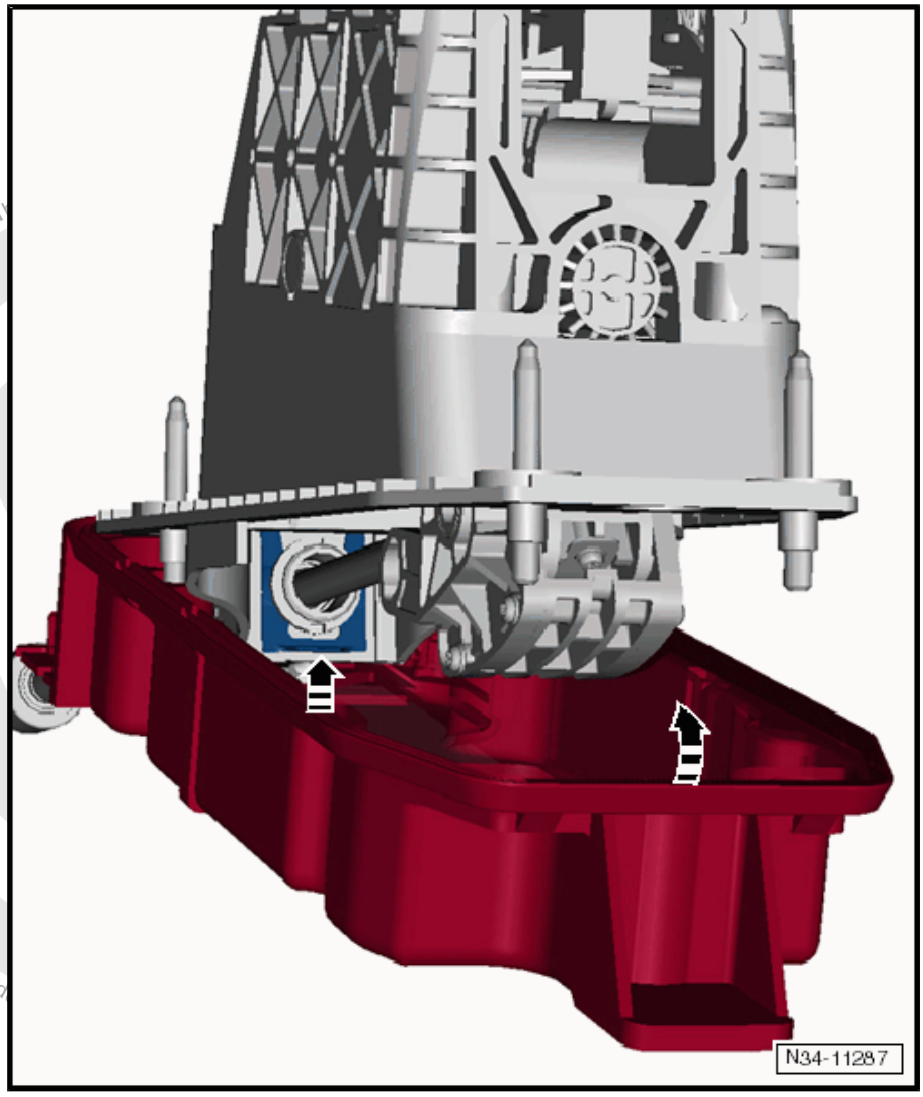
– Insert cable into bearing and insert pin from above, downwards through eye.
– Check selector lever cable for ease of movement ⇒ page 69 .
– Then insert new securing clip.



– Attach cable with new securing clip on cable support bracket of selector mechanism.

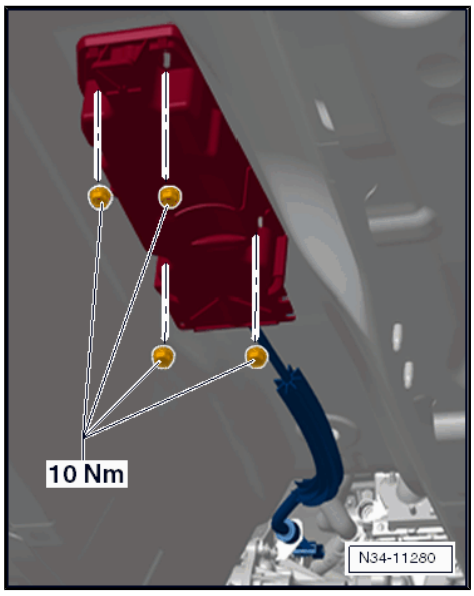
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– Install selector housing.
– Adjust selector lever cable ⇒ page 69 .
– Install heat shield.

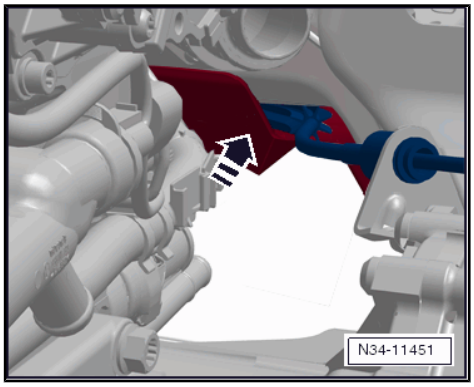
If the sheet metal is bent downwards, it may cause noises. The cable will »vibrate« against the sheet metal.



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– Press sheet metal up in the tunnel during installation -arrow-.

– Install exhaust system ⇒ Rep. gr. 26 ; Removing and installing parts of exhaust system .



7.3 Checking selector lever cable

Brief description

The ease of movement is checked on the cable. Selector lever cable must be removed from gearbox so that its ease of movement can be checked. Put removed end down so it does not rub against anything.

The selector lever must be moved and then the cable must be reattached to the gearbox.

Then the selector lever cable must be adjusted.

Do not grease connections of cable!

Checking

– Move selector lever to position »P« position.

– Remove cable from lever on gearbox.

– Move selector lever repeatedly from »P« to »S« and back to »P«.

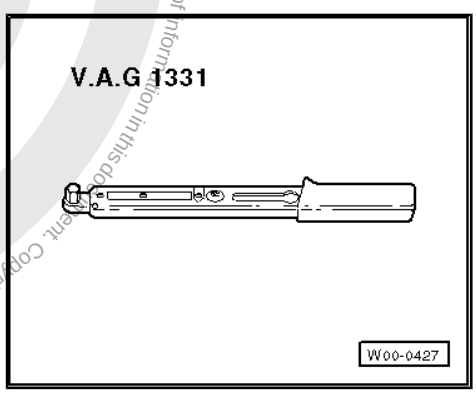
• Selector lever must move easily.

– Adjust selector lever cable ⇒ page 69 .

7.4 Adjusting selector lever cable

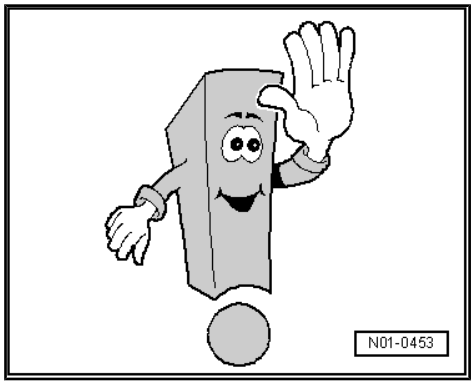
Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1331-



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The selector lever cable must always be adjusted whenever:

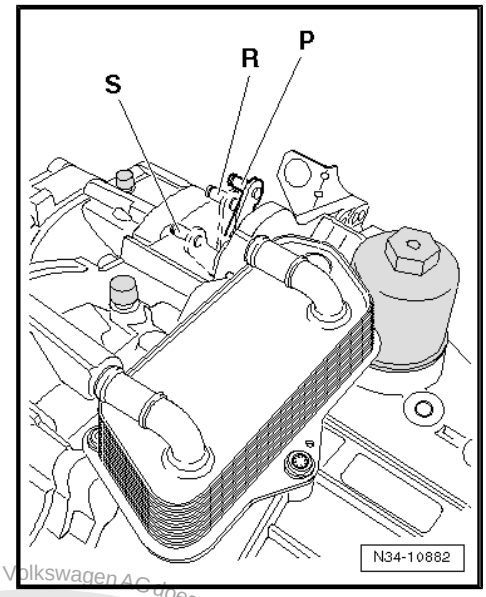


- The selector lever cable has been removed from the gearbox.
- The engine and/or gearbox has been removed and installed.
- Parts of the assembly mounting have been removed and installed.
- The cable itself or the selector mechanism has been removed and installed.
- The position of the engine and gearbox is shifted, for example to install it free of tension.

Adjusting

– Move selector lever in vehicle to “P” position.

Shift lever on gearbox to position “P”.



Lever on gearbox must be pressed »all the way back«.

– Pull lever forwards to check.

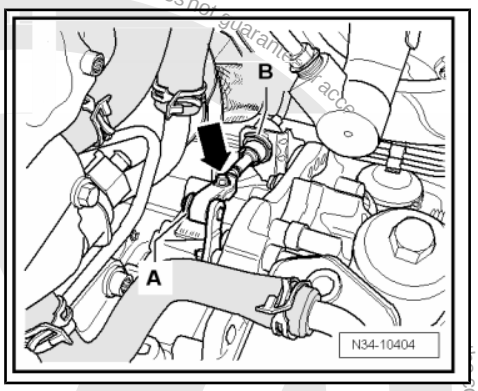
– Then push lever »backwards«.

“P” is in second detent.

Note

- *Raise vehicle, to be sure that the gearbox is actually in “P” (parking lock engaged). It should not be possible to turn both front wheels together in the same direction.*
- *Gearbox is also in “P” if vehicle cannot be pushed although its wheels are free to turn.*

– Install cable with loosened adjusting screw -arrow- and new securing clips -A- and -B-.



– Gently push knob of selector lever forwards and backwards but under no circumstances must you shift out of “P”.

In this way the ⇒ inner cable of the Bowden cable finds it optimal position.

– Tighten adjusting screw to 13 Nm.

This completes the adjustment.

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8 Checking selector mechanism

The starter must not turn in the selector lever positions “R”, “D” or “S”.

On a right-hand drive vehicle, starter must only turn in selector lever positions “P” and “N” when lock button is not pressed.

When selector lever is shifted to position “N” at speeds above 5 km/h, solenoid for selector lever lock must not engage and block selector lever. Selector lever can be shifted into a driving range.

When travelling at speeds below 5 km/h (almost stationary) and engaging selector lever position “N”, solenoid for selector lever lock should only engage after about 1 second. Selector lever cannot be shifted out of “N” position until brake pedal is depressed.

8.1 Selector lever in “P” position and ignition switched on

- Brake pedal not depressed:

Selector lever is locked and cannot be shifted out of “P” position with the lock button pressed. Solenoid for selector lever lock blocks selector lever.

- Brake pedal is depressed:

Solenoid for selector lever lock releases selector lever. It is possible to shift into a driving gear. Slowly shift selector lever from “P” through to “S”, checking whether selector lever position in dash panel insert corresponds to selector lever position.

8.2 Selector lever in “N” position and ignition switched on

- Brake pedal not depressed:

Selector lever is locked and cannot be shifted out of “P” position with the lock button pressed. Solenoid for selector lever lock blocks selector lever.

- Brake pedal is depressed:

Solenoid for selector lever lock releases selector lever. It is possible to shift into a driving gear.

8.3 Selector lever in position “Tiptronic”

- Shift selector lever into Tiptronic gate.

The illumination of the “D” symbol in the selector mechanism cover must go out. “+” and “-” symbols must light up.

When the selector lever is shifted into the Tiptronic gate, the selector lever position display in the dash panel insert must change from “P R N D S” to “6 5 4 3 2 1”.

8.4 Ignition and light switched on

The respective symbol in the shift mechanism cover lights up.

8.5 Selector lever position display

Simultaneous illumination of all selector lever position display segments indicates gearbox emergency running mode.

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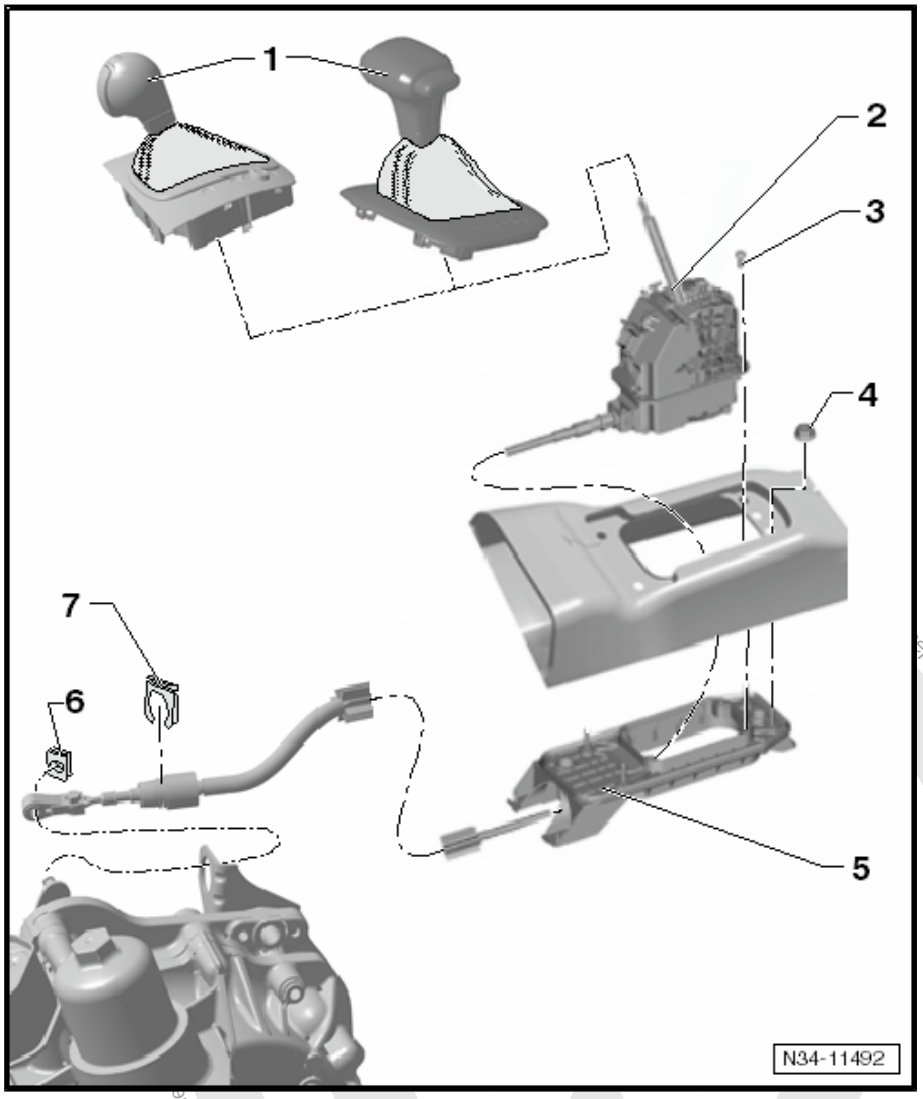
9 Selector mechanism from 03.2009 onwards

WARNING

Before working on vehicle with engine running, move selector lever into position "P" and apply handbrake.

Selector mechanism in vehicles up to 02.2009 ⇒ page 61

9.1 Overview of selector mechanism in vehicles from 03.2009 onwards



1 - Selector cover with knob

- ❑ Do not remove knob without reason. For emergency release, only the cover needs to be unclipped ⇒ page 56 .
- ❑ Right knob in figure: first pull button far enough out of knob until a small gap is visible between knob and button. Button locks in this position when released. Secure button against being pressed in with a cable tie or wire.
- ❑ Left grip in figure: button engages in installation position when handle is pulled off. Do not continue to press button after removal, otherwise it will no longer be possible to install handle.
- ❑ Removing and installing ⇒ page 57

2 - Selector lever and selector mechanism with selector lever cable

- ❑ With selector lever lock solenoid - N110-
- ❑ Cable must not be greased
- ❑ Removing and installing ⇒ page 73
- ❑ Checking ⇒ page 69
- ❑ Adjusting ⇒ page 69

3 - Bolt

- ❑ 8 Nm

4 - Hexagon flange nut

- ❑ 8 Nm
- ❑ Qty. 4

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5 - Selector lever housing

6 - Securing clip

- ❑ Always renew after removing

7 - Securing clip

- ❑ Always renew after removing

9.2 Removing and installing selector mechanism, from 03.2009

⇒ “9.2.1 Removing and installing selector mechanism with selector housing”, page 73

⇒ “9.2.2 Removing and installing selector mechanism without selector housing”, page 76

9.2.1 Removing and installing selector mechanism with selector housing

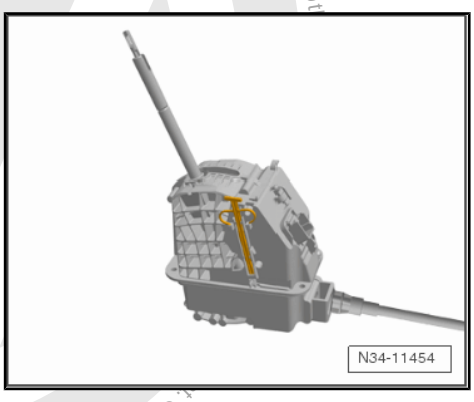
Brief description

Selector mechanism and selector lever cable are not allowed to be separated from one another. Both are removed together with the selector housing.

In the interior the centre console is to be removed.

The heat shield beneath the vehicle must be removed.

The selector mechanism with selector lever cable can be removed and installed separately without removing and installing the selector housing ⇒ page 76 .



Note

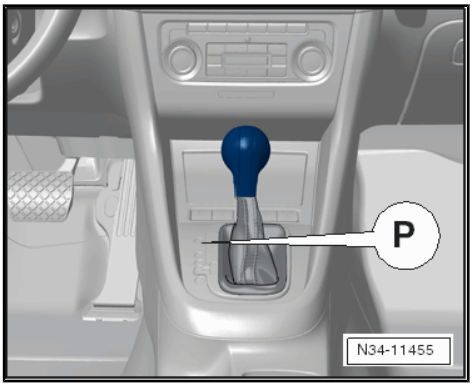
Following installation of selector mechanism, selector lever cable must be checked for ease of movement and be adjusted.

Removing

– Move selector lever to position “P” position.

– Remove selector lever handle ⇒ page 57 .

– Remove centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .



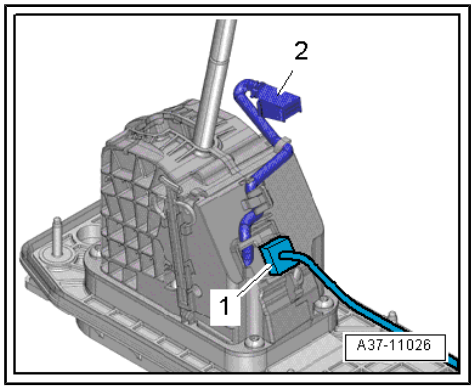
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– Separate electrical wiring connector -1- from selector mechanism to vehicle wiring harness.

– Remove complete air filter housing:

♦ Petrol engine ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

♦ Diesel engine ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

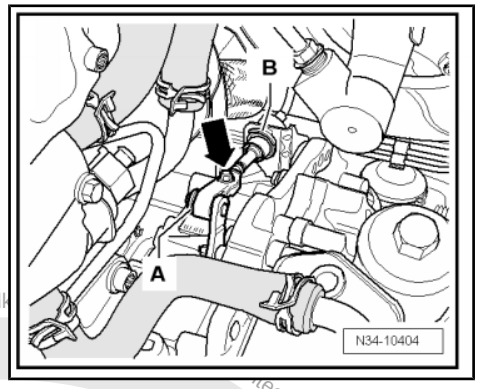


– Remove securing clips -A- and -B-. Securing clips must be renewed when selector lever cable is later adjusted.

Loosen adjustment screw -arrow-.

Use pliers to remove the securing clip -B- on the cable support bracket. Do not use a sharp-edged lever. The selector lever cable could otherwise be damaged.

– Remove heat shield for middle tunnel beneath selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Assembly overview - underbody cladding .

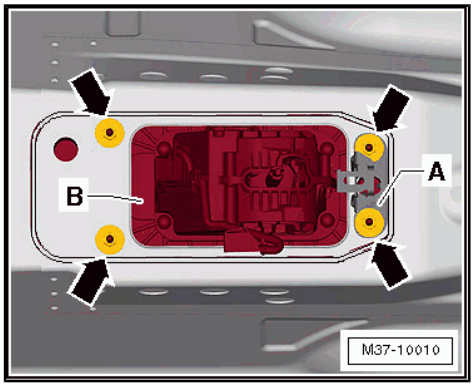


Note

To remove selector mechanism, a 2nd mechanic is required under the vehicle.

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– Remove nuts -arrows- inside vehicle.
– If fitted, remove bracket -A-.
– Remove selector mechanism -B- together with selector lever cable and selector housing downwards.



Installing

Install in reverse order of removal.

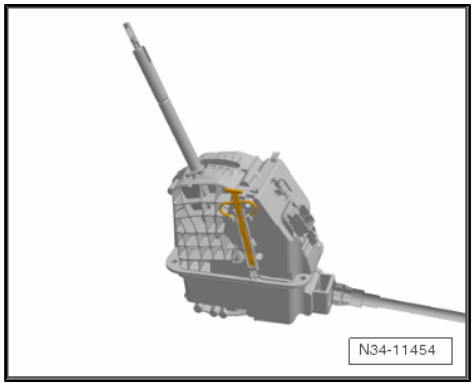
Note

♦ *Do not bend or kink selector lever cable.*
♦ *Do not grease selector lever cable.*
♦ *Torque settings ⇒ page 72 .*

– Install heat shield for middle tunnel beneath selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody cladding; Assembly overview - underbody cladding .
– Install centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .
– Install selector lever handle ⇒ page 57 .
– Adjust selector lever cable ⇒ page 69 .
– Check selector mechanism ⇒ page 71 .
– Install complete air filter housing:
♦ Petrol engine ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .
♦ Diesel engine ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

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9.2.2 Removing and installing selector mechanism without selector housing



Brief description

Selector mechanism and selector lever cable are not allowed to be separated from one another. Both are removed together.

In the interior the centre console is to be removed.

A cord must be attached to the Bowden cable before it is removed. The cord is needed to guide the Bowden cable between the tunnel and the heat shield.

The selector mechanism with selector lever cable can be removed and installed together with the selector housing ⇒ page 73 .

Removing

– Remove selector lever handle ⇒ page 57 .

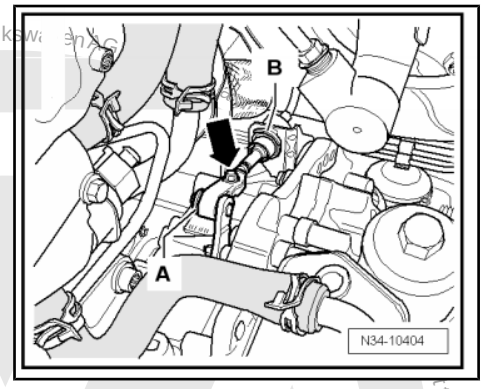
– Remove centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .

– Separate electrical connector from selector mechanism to vehicle wiring harness.

– Remove air filter housing.

♦ Petrol engine ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

♦ Diesel engine ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

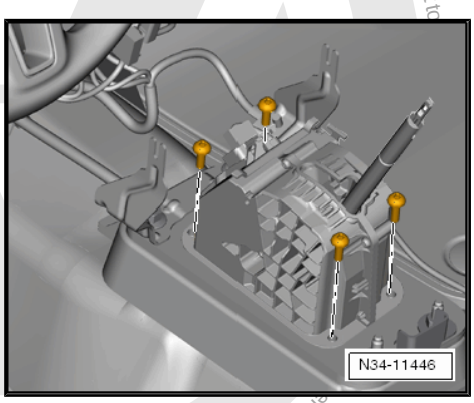


– Remove securing clips -A- and -B-. Securing clips must be renewed when selector lever cable is later adjusted.

Loosen adjustment screw -arrow-.

Use pliers to remove the securing clip -B- on the cable support bracket. Do not use a sharp-edged lever. The selector lever cable could otherwise be damaged.

– Then a long cord must be attached to the end of the Bowden cable. The cord in needed to guide the Bowden cable between the tunnel and heat shield during installation.

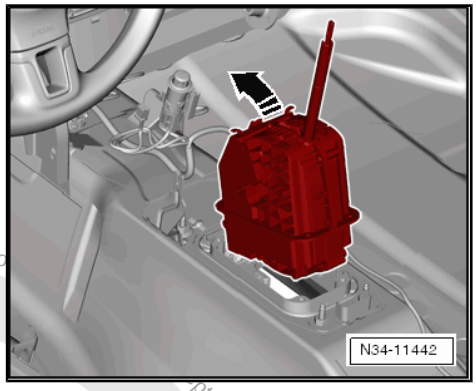


– Remove 4 bolts.

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– Carefully pull selector mechanism with Bowden cable out of the centre tunnel. Ensure that the cord remains accessible from the engine compartment after being pulled by the Bowden cable.

– Remove cord from Bowden cable.



Installing

Install in reverse order of removal. Note:

A second mechanic is needed to guide Bowden cable from passenger compartment into engine compartment.

Note

- *Do not bend or kink selector lever cable.*
- *Do not grease selector lever cable.*
- *Torque settings ⇒ page 72 .*

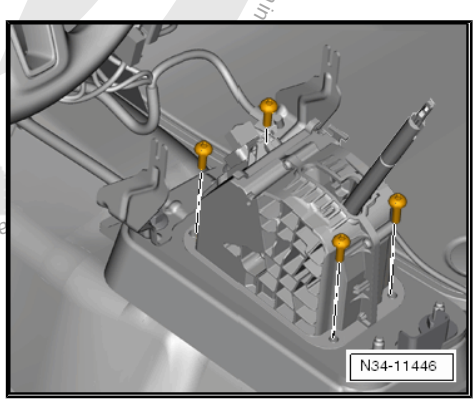
– Attach Bowden cable to cord which was drawn into the passenger compartment during removal.

– Carefully guide selector mechanism with Bowden cable through opening in centre tunnel.

– Have the second mechanic pull cord with Bowden cable through tunnel from engine compartment until Bowden cable can be attached to support bracket.

– Remove cord from Bowden cable.

– Secure selector mechanism to selector housing using 4 bolts.



Torque setting 8 Nm.

– Install centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console .

– Install selector lever handle ⇒ page 57 .

– Adjust selector lever cable ⇒ page 69 .

– Check selector mechanism ⇒ page 71 .

– Install air filter housing:

- Petrol engine ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .
- Diesel engine ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

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10 Removing and installing gearbox

10.1 Removing gearbox, Passat CC 2009 ►, CC 2010 ► with 2.0 l petrol engine

Brief description

The gearbox is removed downwards separately. »From above«

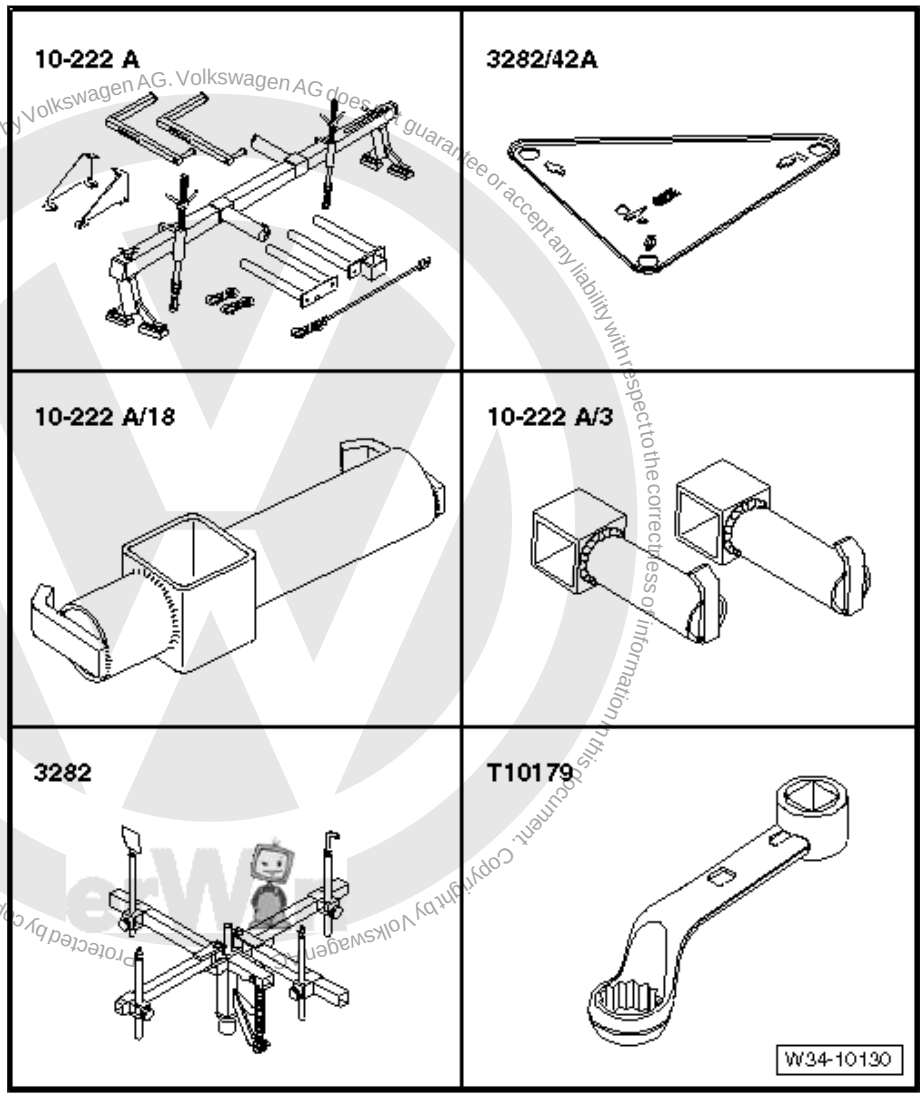
Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

»From below«:

⇒ Pendulum support and left drive shaft removed. The subframe remains in the vehicle.

Special tools and workshop equipment required

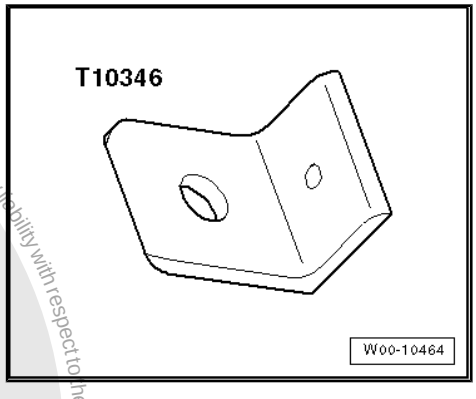
- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



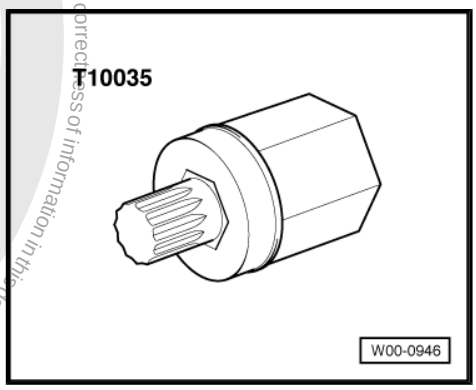
Special tools and workshop equipment required

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- Bracket - T10346-



- Socket - T10035-



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Special tools and workshop equipment required

- Tools without illustration:
- Adapter - 10 - 222 A /8-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Remove front left wheel.

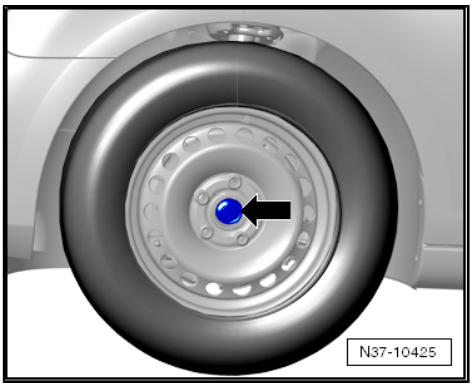
– Move selector lever to position »P« position.

Note

After loosening centre bolt, do not lower vehicle to ground again.

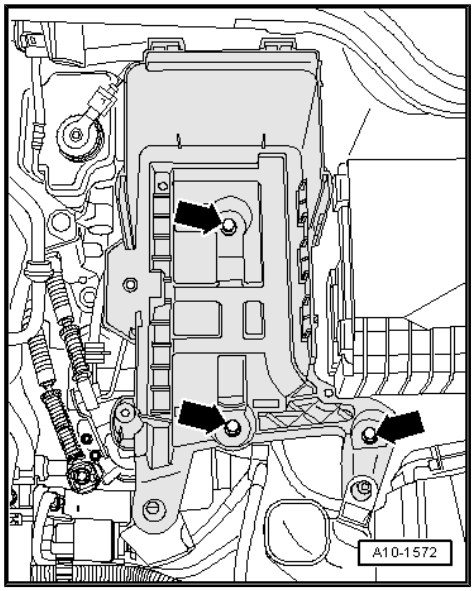
– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .



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– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

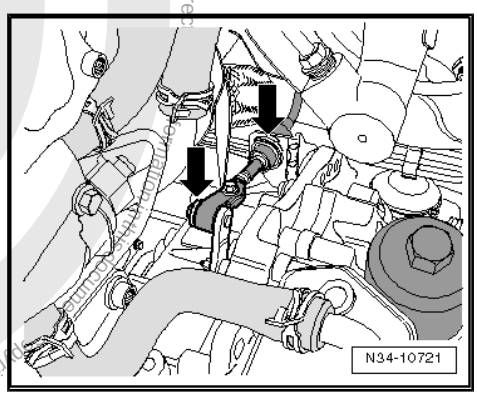
It is advisable to remove the »lower« bolt first.

– Unbolt earth strap from bracket.



– Remove selector lever cable from gearbox.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

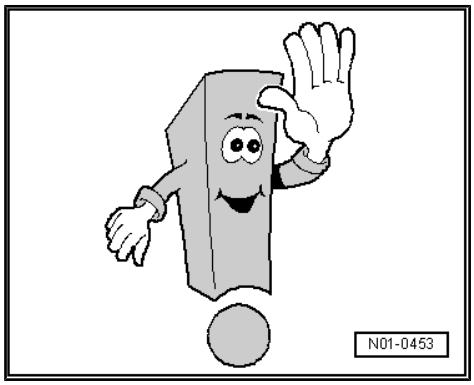


Always renew both securing clips.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

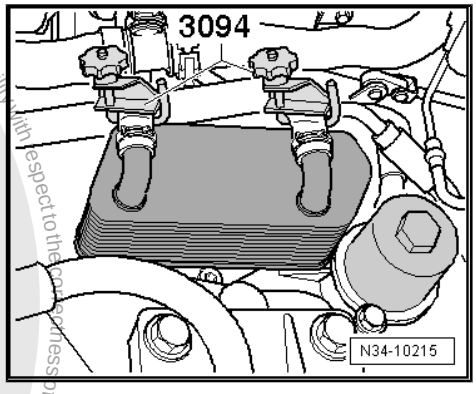
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

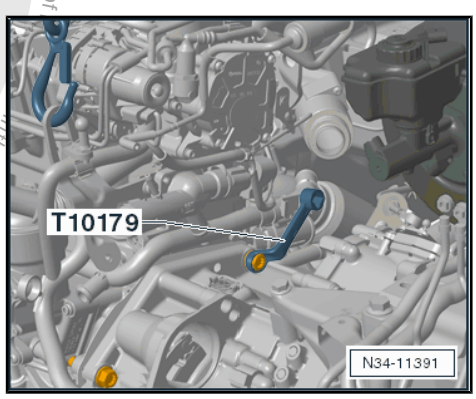


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– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.



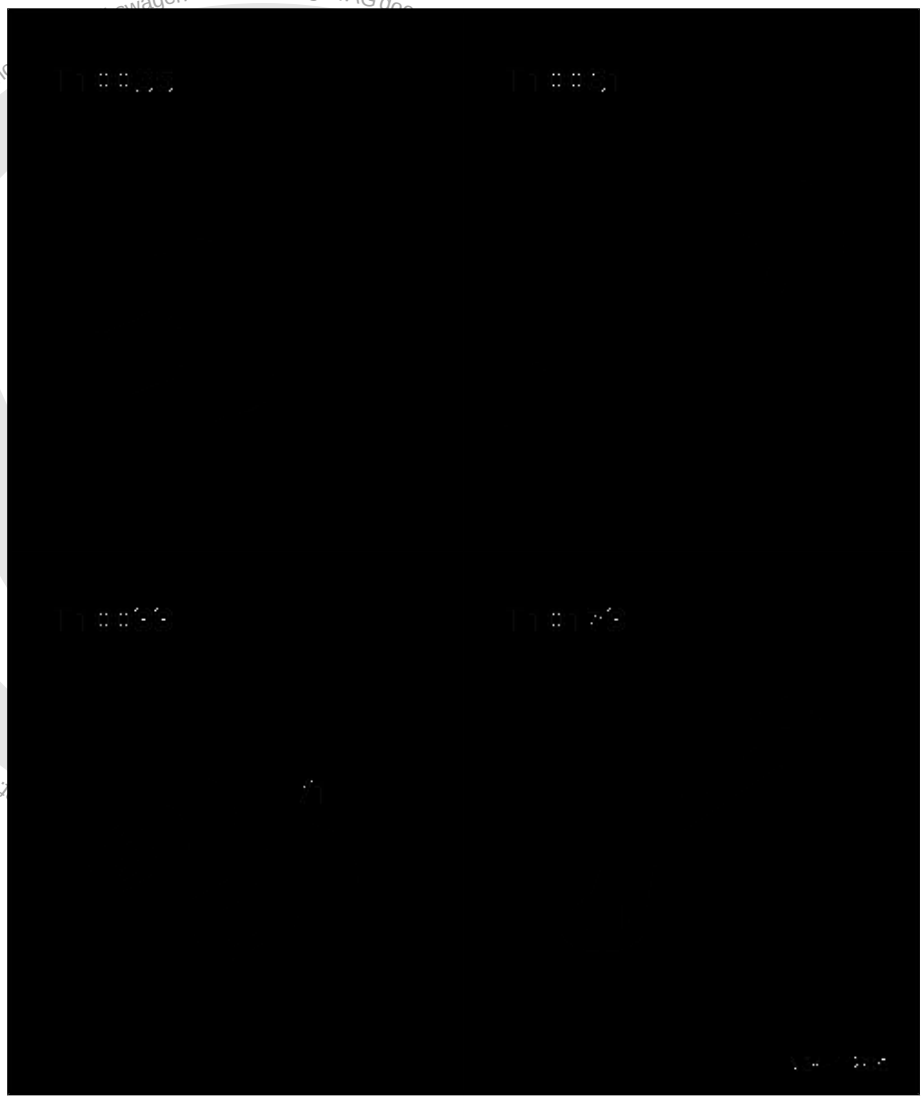
– Remove upper engine/gearbox connecting bolts.



These tools are appropriate for this.

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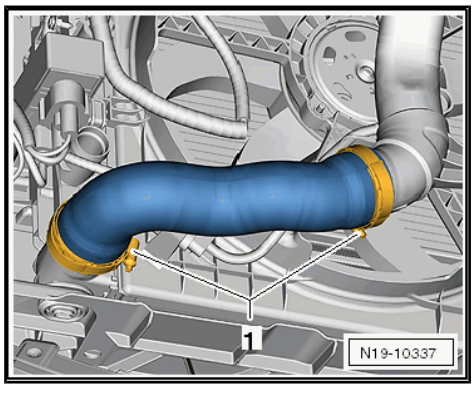
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It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

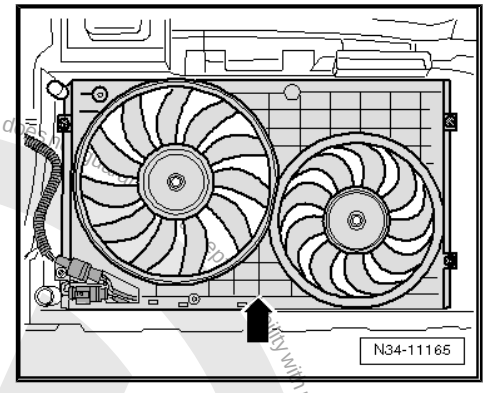
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .



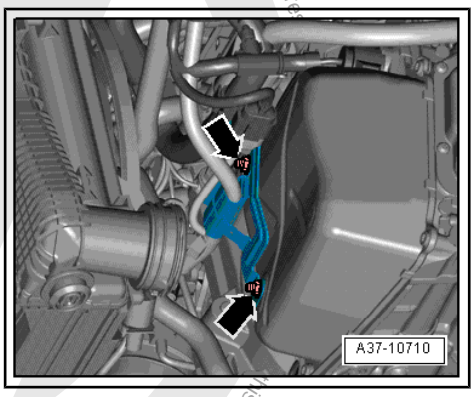
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– Remove fan cover ⇒ Rep. gr. 19 ; Removing and installing fan cover .

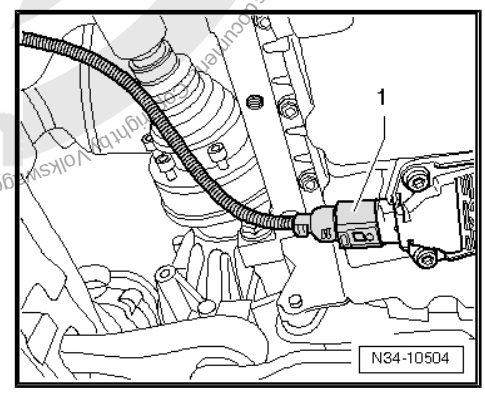


– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

Torque setting: 10 Nm



– Pull connector -1- off oil level and oil temperature sender -G266- .

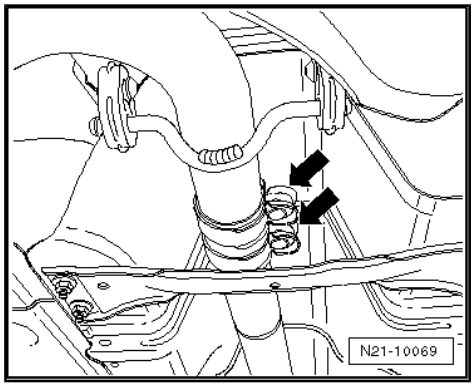


– Remove exhaust system bracket from subframe -arrows-.

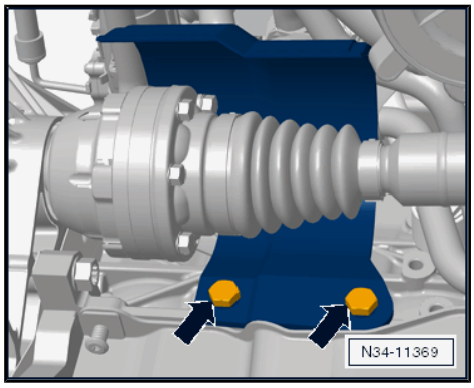


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– Separate exhaust system at double clamp -arrows-.
– Tie up front exhaust pipe or put down tunnel cross member.
– Remove left drive shaft ⇒ Rep. gr. 40 ; Removing and installing drive shafts .

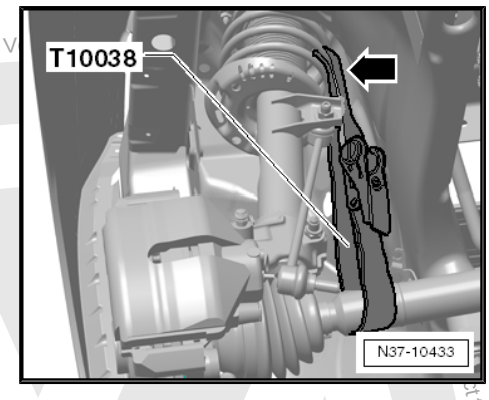


– If present, remove heat shield above right drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts
– Unbolt right drive shaft from gearbox⇒ Rep. gr. 40 ; Removing and installing drive shafts .

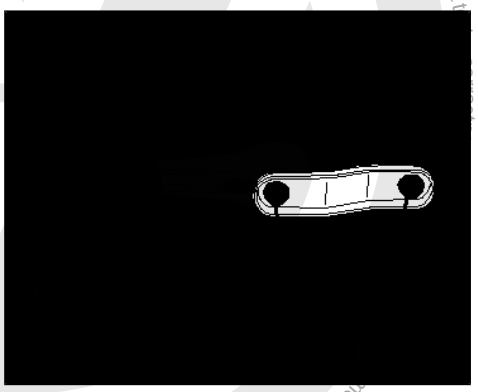


– Secure drive shaft to suspension strut with tensioning strap -T10038- .

The surface protection of the shafts must not be damaged.



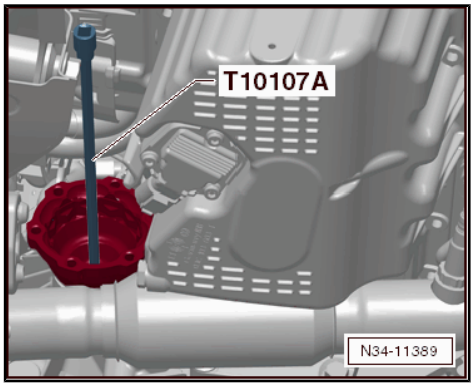
– Remove ⇒ pendulum support. First remove bolt -1-, followed by bolts -2- and -3- ⇒ Rep. gr. 40 .



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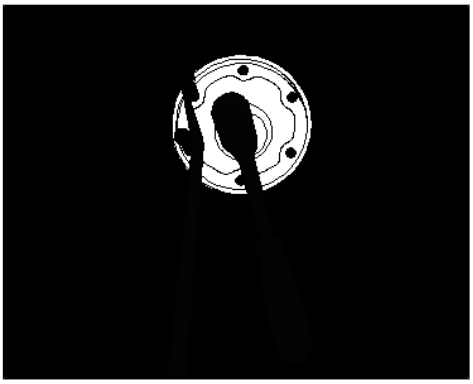
– Remove right flange shaft of gearbox using socket - T10107 A- .

Bolt has a 6 mm hexagon socket. It can also be removed and installed using socket V.A.G 1669 .



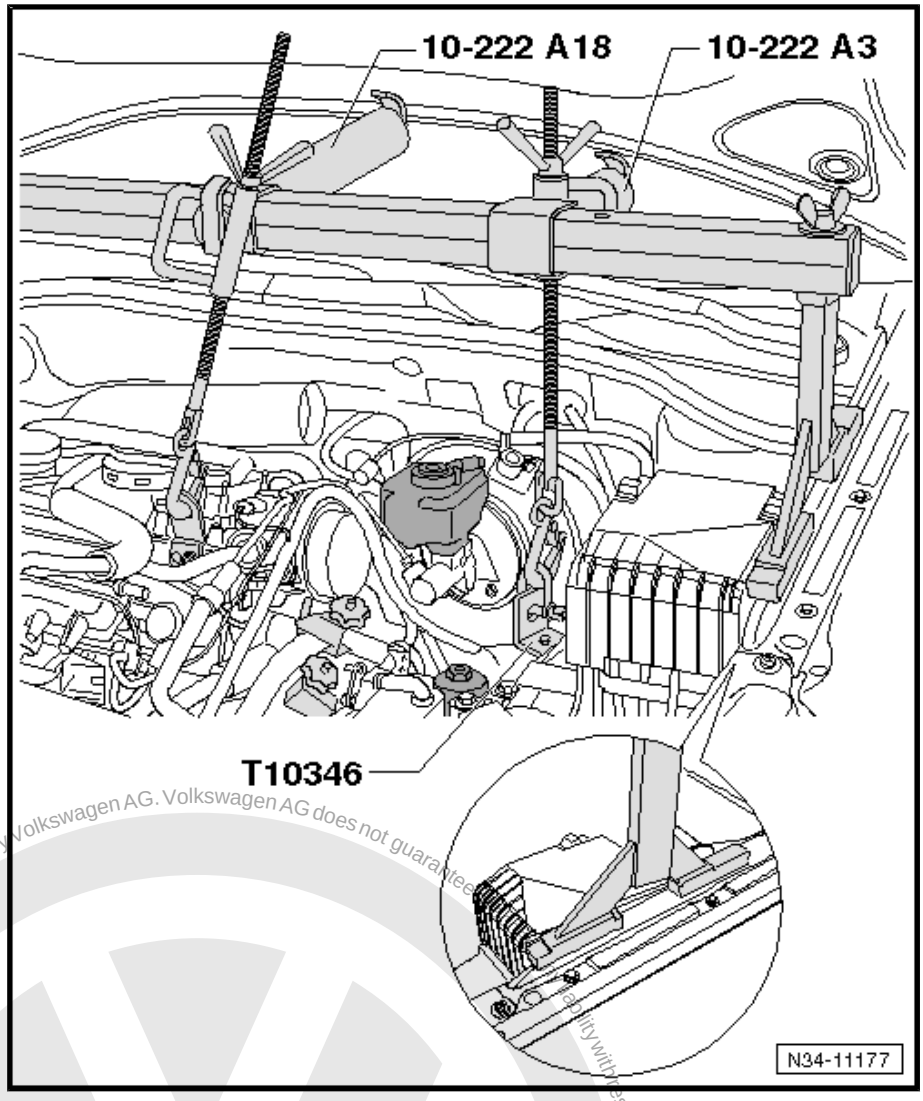
– Screw 2 bolts into flange and counterhold flange shaft with a lever in order to remove and install flange shaft.
– Pull out flange shaft with compression spring.
– Close opening in drive shaft using a suitable plug.
– To install flange shaft, if necessary press against gearbox with a lever and screw in bolt.

Torque setting: 30 Nm



– Remove filler pieces from upper edges of both wings.
– If there are hose and cable connections in area of engine support eye for support bracket - 10-222 A- , remove these now.

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– Place support bracket - 10 - 222 A- onto upper longitudinal member.

Caution

The support bracket must not be placed on the wings, otherwise these might be damaged.

– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.

– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine/gearbox using spindles of support bracket - 10 - 222 A- until bracket -A- can be removed.



At most, 5 turns of the spindle should be sufficient to remove bracket.

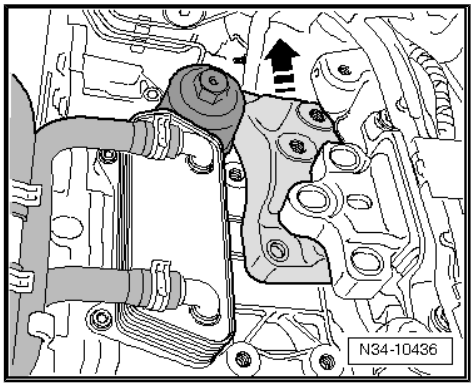
In many cases, the spindle does not need to be lowered further for the later removal of the gearbox.

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Remove bracket -arrow-.

– If necessary, remove bracket with secondary pump and lay to side with pump.
– Remove all connecting bolts except one which is in an easily accessible place between engine and gearbox.

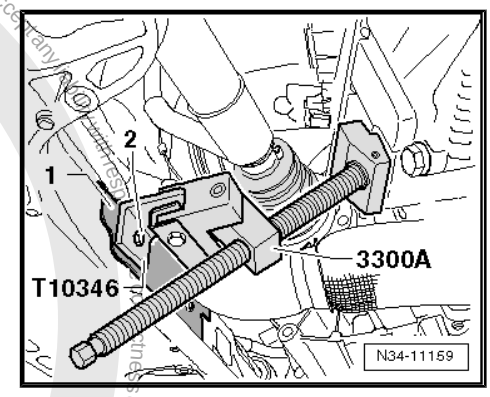
It is advisable to leave an easily accessible bolt installed.



– Unscrew right securing bolt for heat shield -1- from subframe.
– Screw bracket - T10346- tightly onto subframe using a suitable bolt -2-.

Bolt -2- = M6 X 20

– Attach engine support - 3300 A- on bracket - T10346- .
– Set engine support against engine crank case.
– Push engine/gearbox far enough forward until there is enough room to remove gearbox.



Note

When moving engine/gearbox assembly, make sure that no connecting lines, hoses or radiator are kinked or damaged.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove last engine/gearbox connecting bolt.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.2 Removing gearbox, Golf 2009 ►, Golf Plus 2009 ► with 2.0 l petrol engine

Brief description

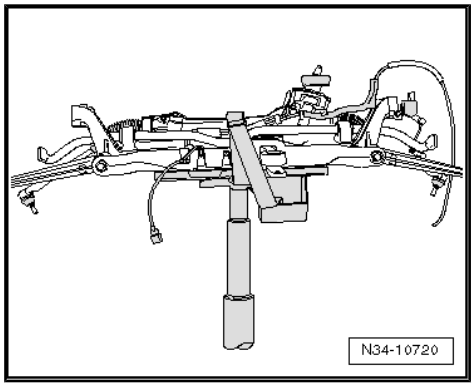
The gearbox is removed downwards separately. The engine remains in the vehicle. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

»From below«:

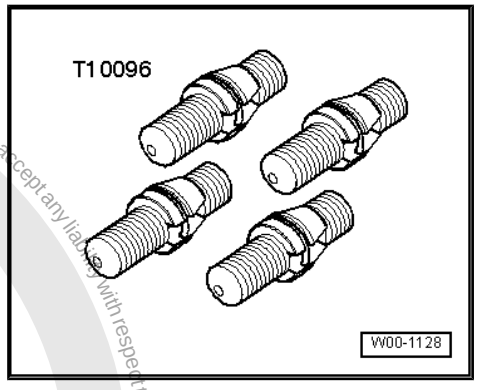
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Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

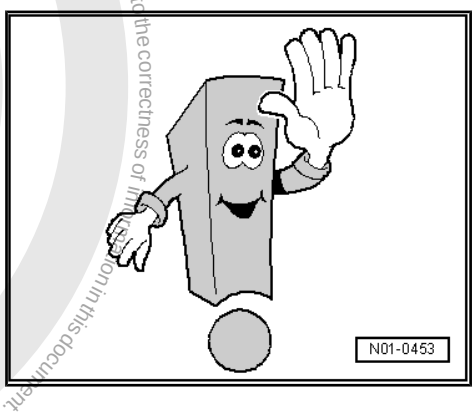
In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!

It requires only a small effort to install the locating pins - T10096- . Their benefit is enormous.

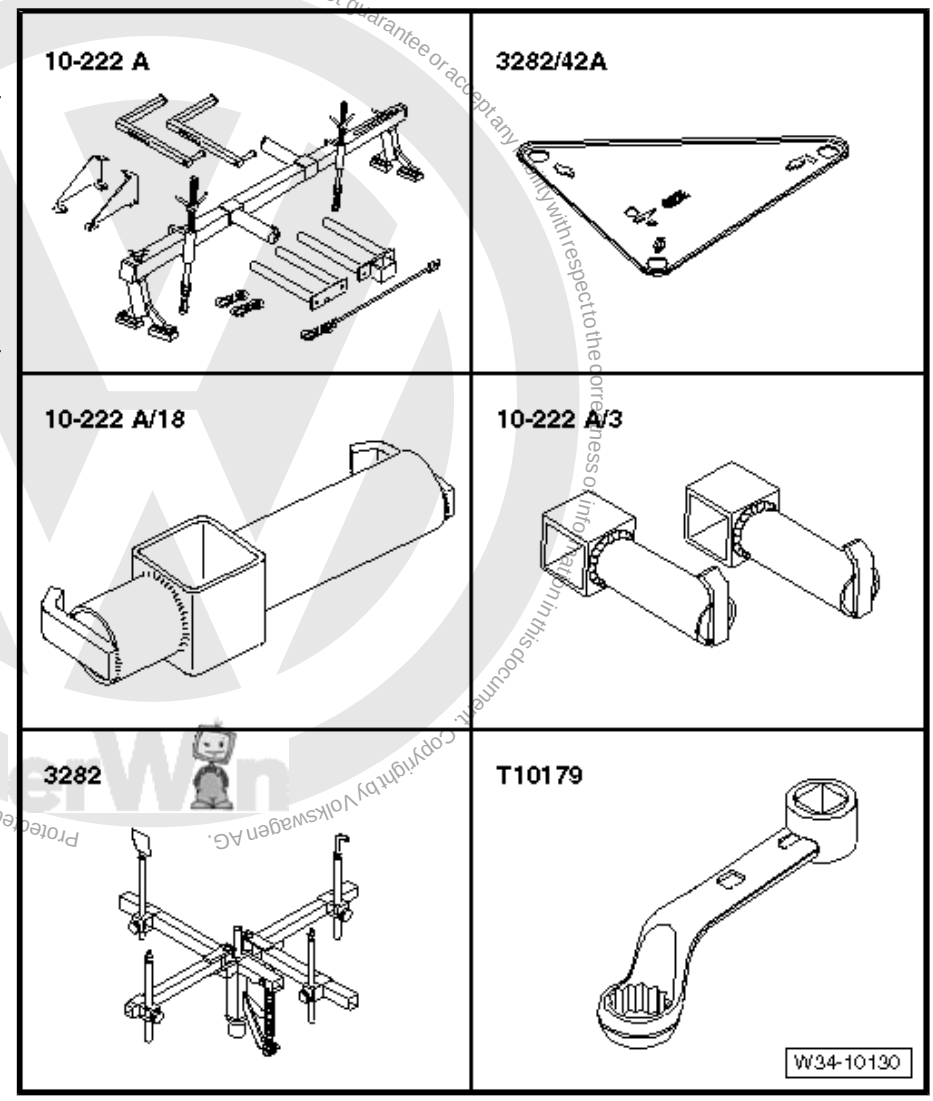


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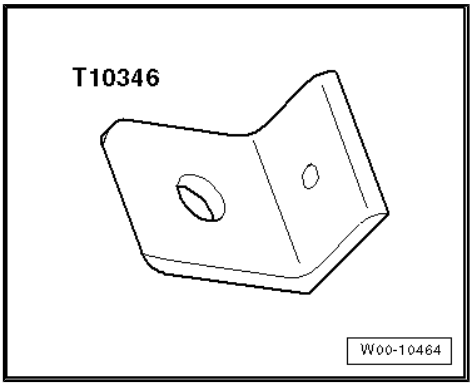
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



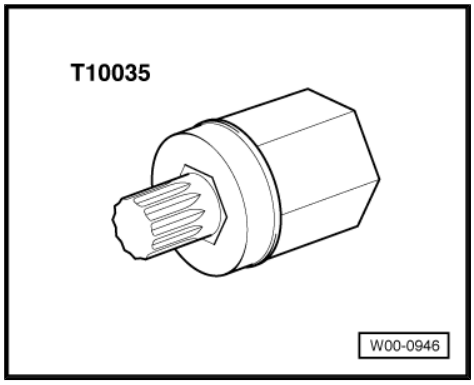
Special tools and workshop equipment required

- Bracket - T10346-



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- Socket - T10035-



Special tools and workshop equipment required

- Tools without illustration:
- Adapter - 10 - 222 A /8-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

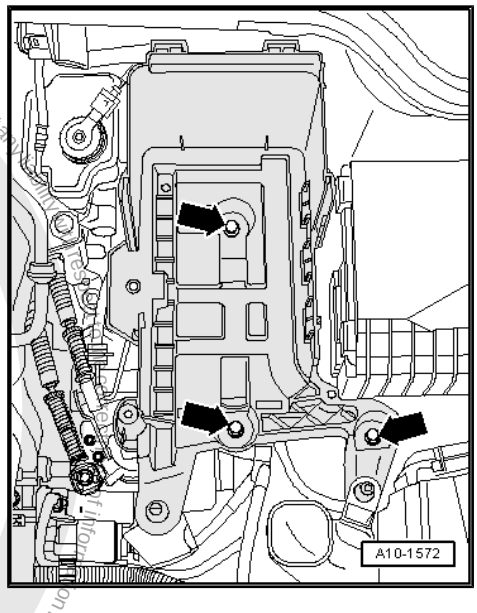
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove both front wheels.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

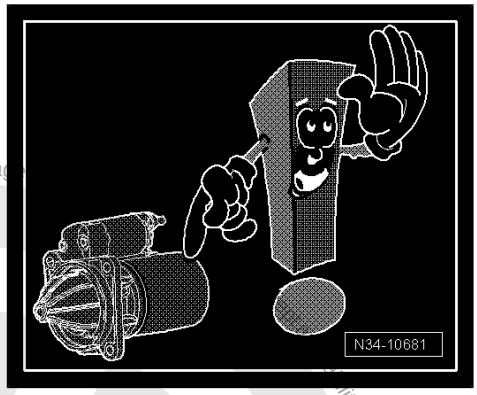
– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



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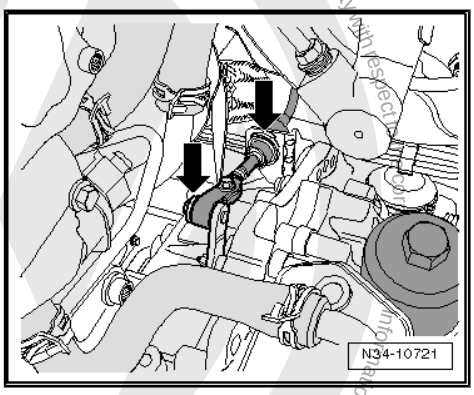
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

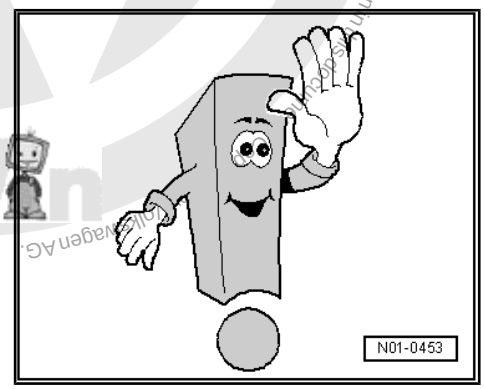


Both securing clips must be later renewed when cable is adjusted.

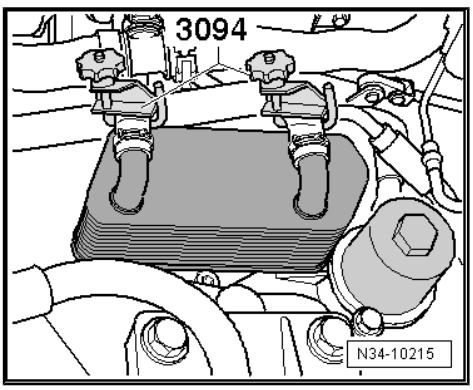
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

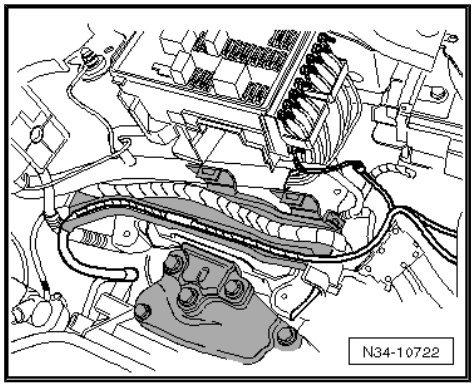


– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Release mechatronic unit connector by turning and pull off connector.
– Unbolt wiring retainer from front of »black« gearbox cover (2 M6 nuts).

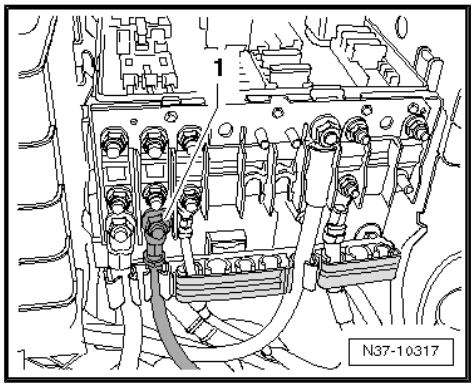


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– Disconnect -wiring harness- coming »from below« from subframe.

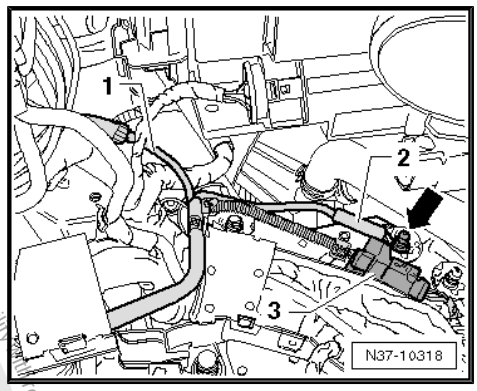


– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.



This wiring harness will later be removed together with the subframe. This way, you can avoid time-consuming work on the steering and heat shield ⇒ Rep. gr. 40 ; Removing and installing subframe with steering box .

– Remove all upper connecting bolts from engine and gearbox. Insert 18 mm - T10179- is especially good for this purpose.

– Remove filler pieces from upper edges of both wings.

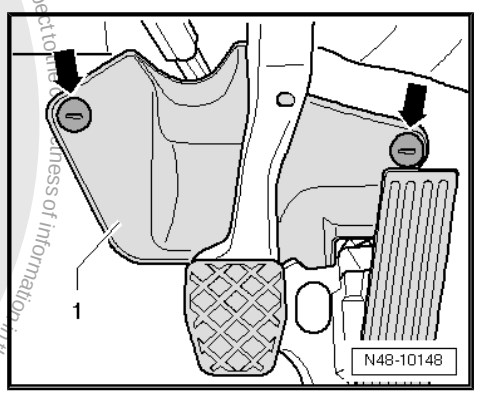
– If there are hose or wiring connections near the engine lifting eyes, remove them now.

– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.



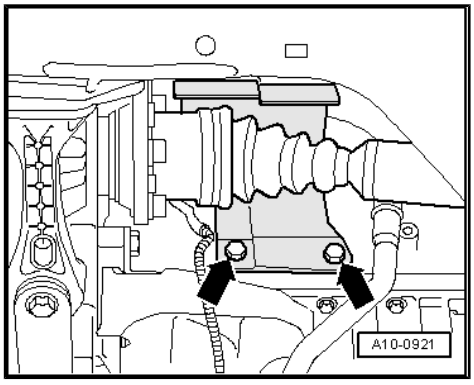
It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove left wheel housing liner.

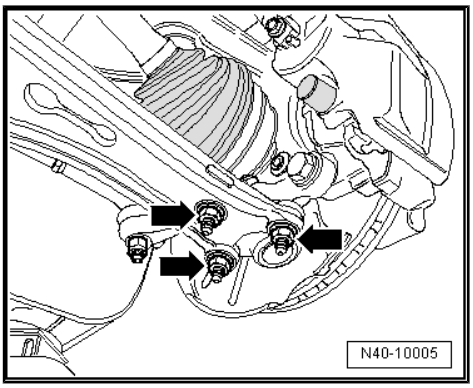
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– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts



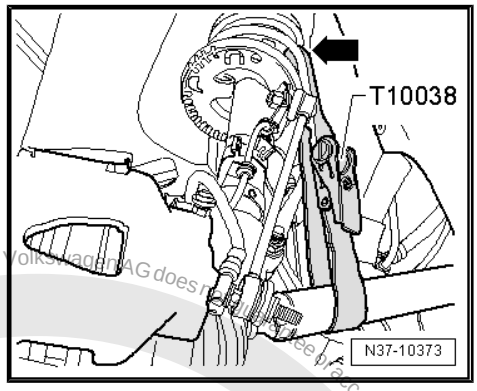
– Unbolt both transverse links from suspension struts.
– Remove coupling rods from anti-roll bar.
– Unbolt both drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



Secure both drive shafts to suspension struts using tensioning straps - T10038- .

– Unbolt ⇒ pendulum support from gearbox.



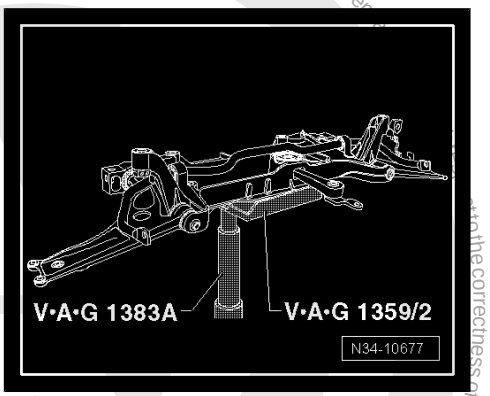
Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

If the position of the subframe was not fixed, the wheels must now be aligned.

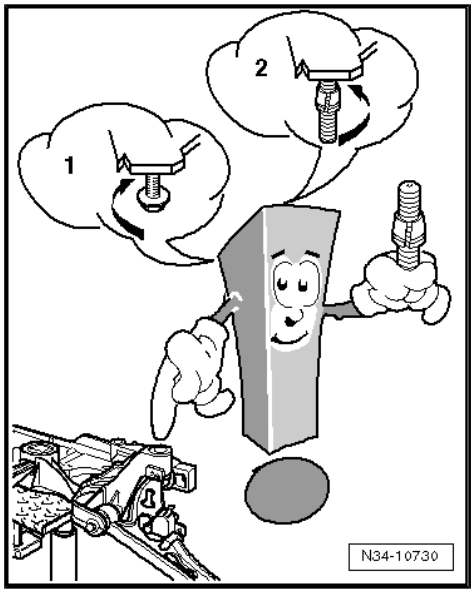
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:



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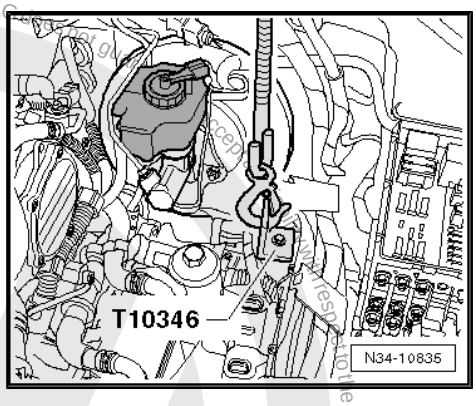
– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.



– Fit retainer - T10346- on longitudinal member.

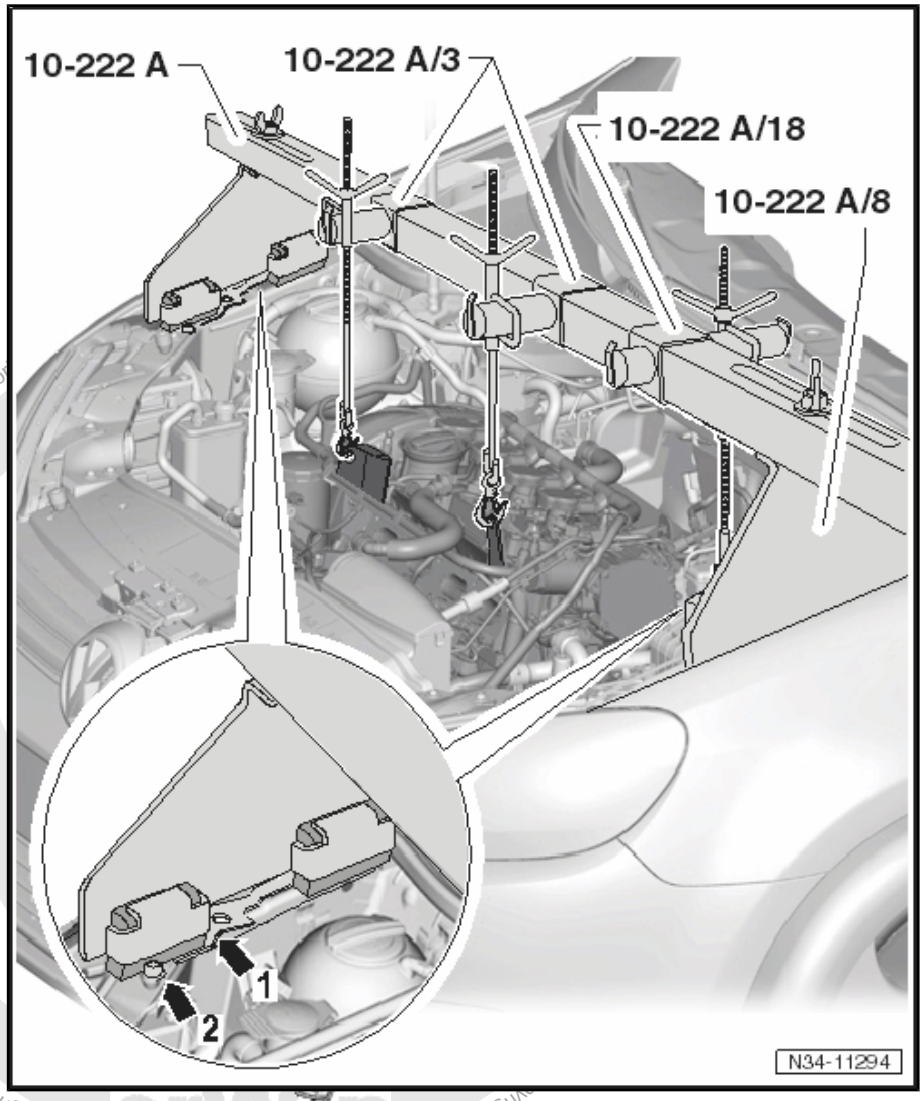
(At rearmost of the 3 support points of the battery tray)

– Remove filler pieces from upper edges of both wings.



2 l petrol engine

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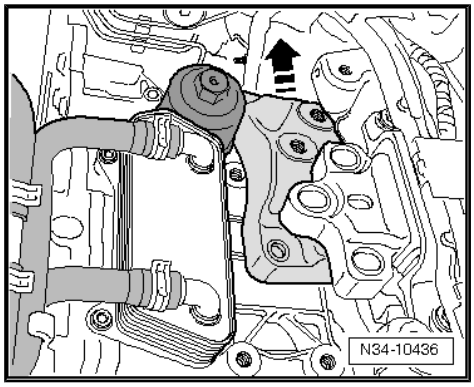


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– Support engine and gearbox. Do not raise.
– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.



About 3 turns are sufficient to remove bracket -arrow-.



The gearbox is separated from the engine in this position.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.3 Removing gearbox, Golf Plus 2005 ► with 1.4 l petrol engine

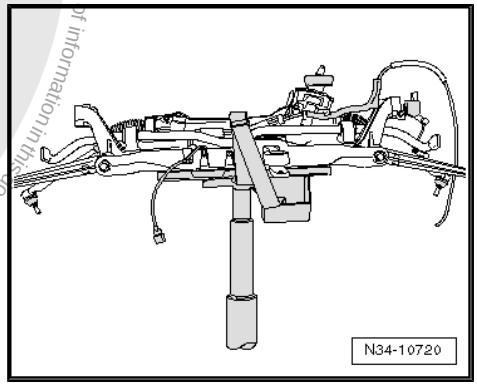
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

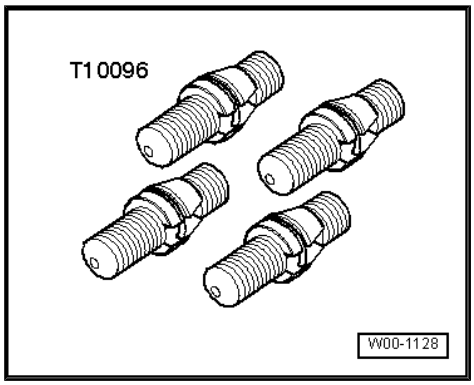
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

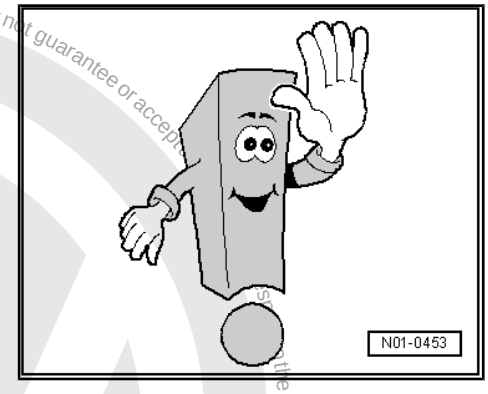
In any case, locating pins - T10096- are necessary.



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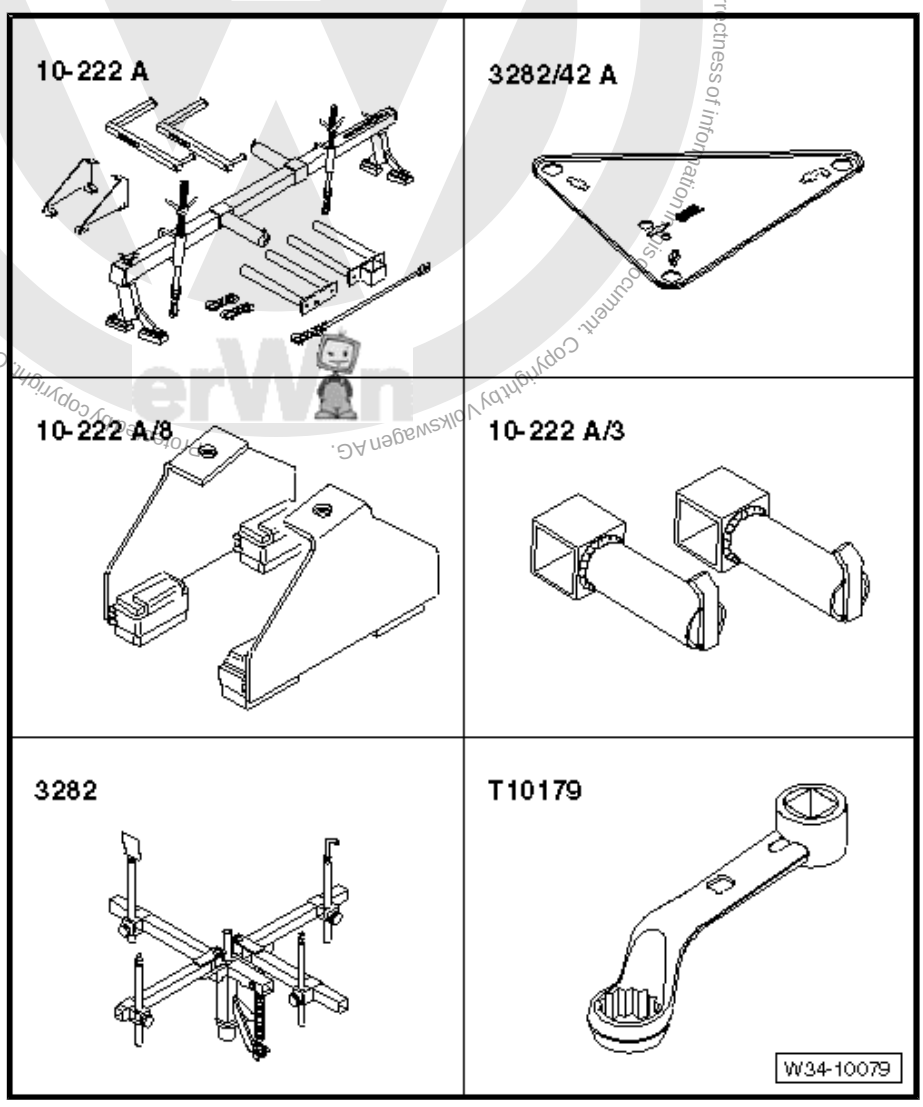
If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Adapter - 10-222A/3-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10061-
- Socket - T10035-
- Bit - T10099/1-

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- Support - 3282/59-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

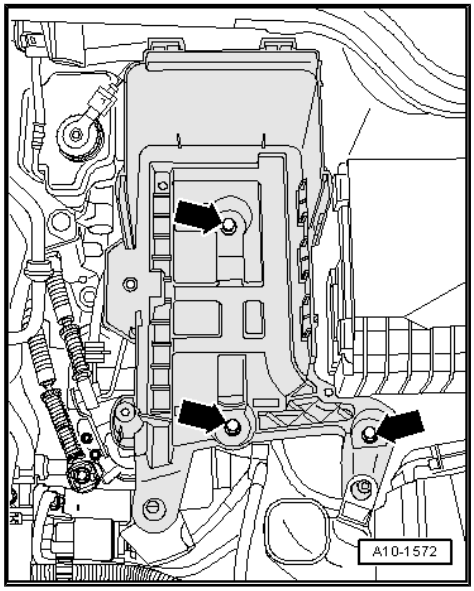
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

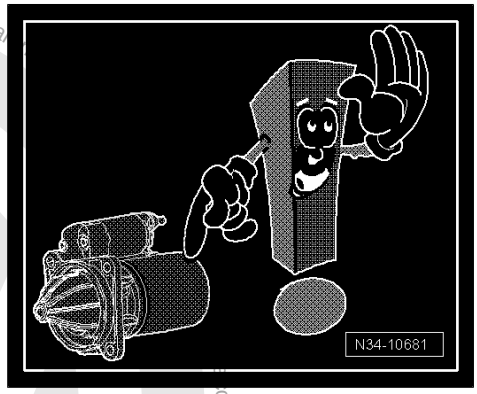
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove engine cover.

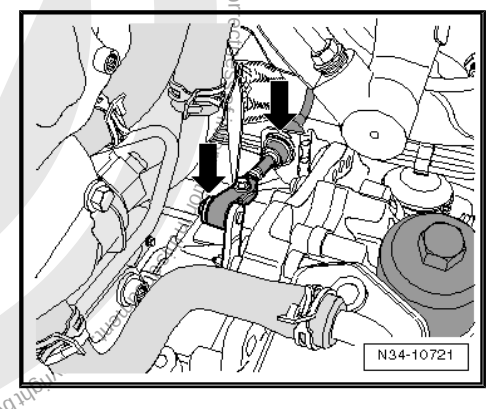


– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



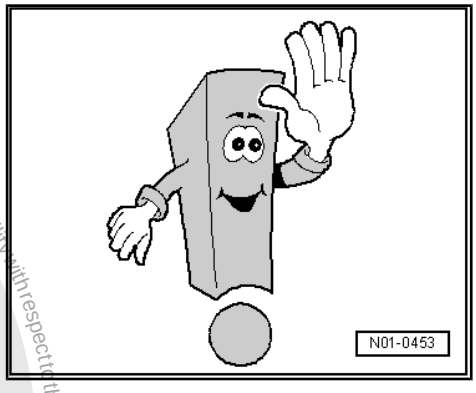
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Both securing clips must be later renewed when cable is adjusted.

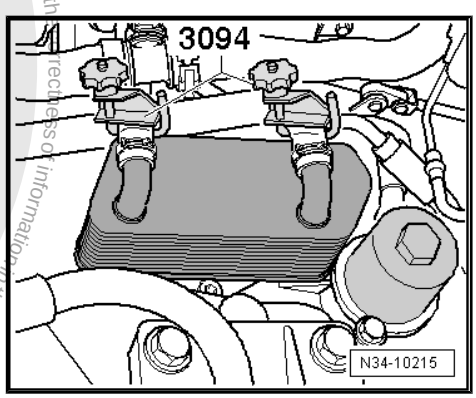
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.

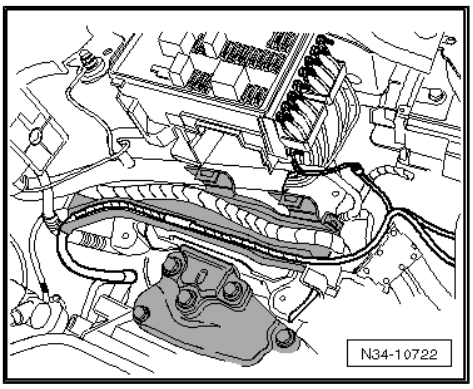


– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Remove all upper engine/gearbox connecting bolts.

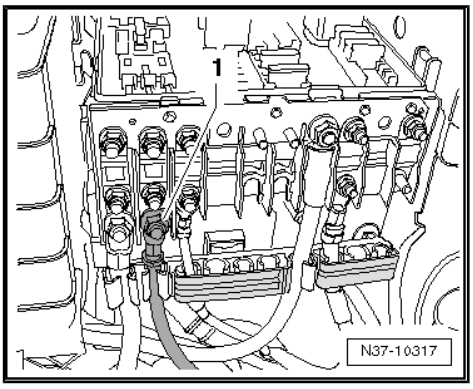
Insert 18 mm - T10179- is especially good for this purpose.

One bolt is located in hole for starter at the height of the solenoid. Socket - T10061- , 18 mm insert - T10179- or insert tool - T10099/1- can be used instead of an 18 mm socket.

– Disconnect -wiring harness- coming »from below« from sub-frame.



– Disconnect wire -1- from electronics box.



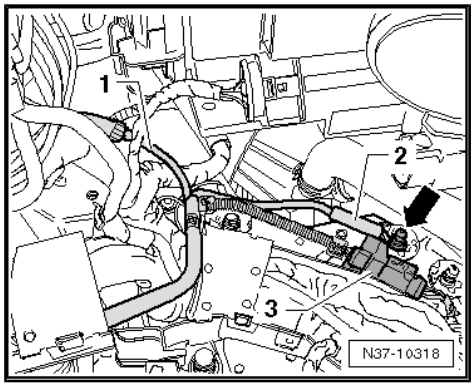
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– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.



– Now separate steering from steering column.

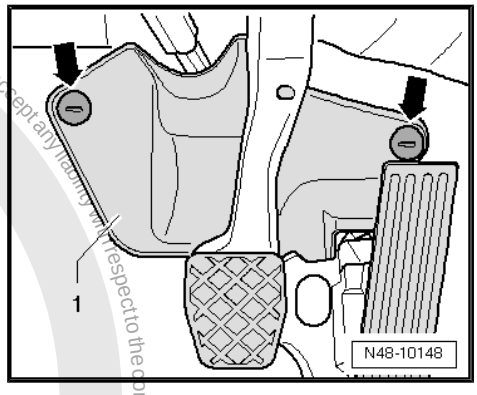
Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

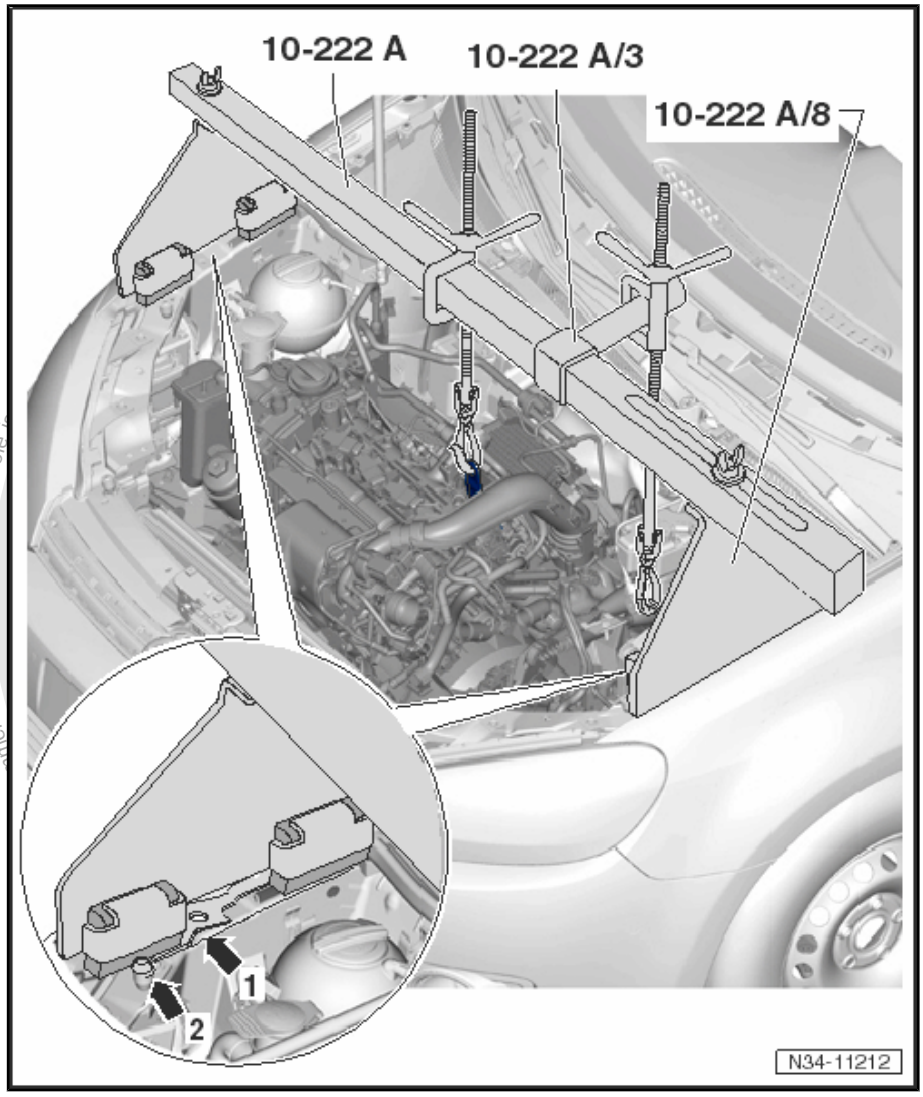
– Separate steering box from steering column.

– Remove filler pieces from upper edges of both wings.

– Support engine and gearbox with support bracket - 10 - 222 A- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /13- . Do not raise.

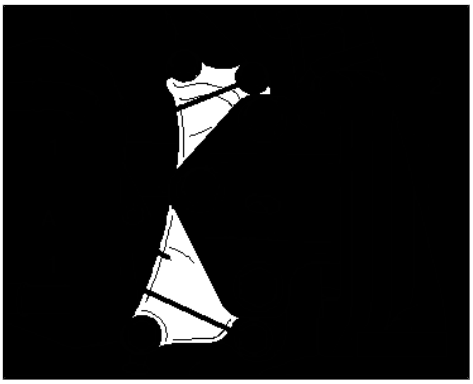


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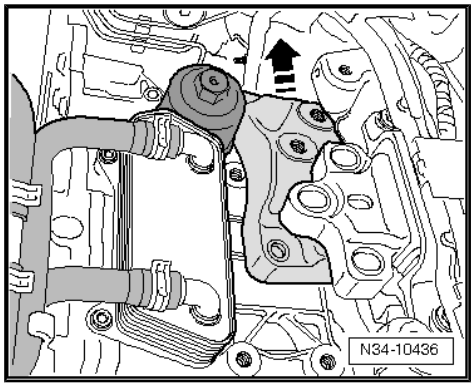
– Position adapter - 10 - 222 A /8- :
– Connect left support eye on engine to support bracket .
– Connect bracket - T10346- to support bracket .
– Take up weight of engine/gearbox assembly and support bracket on spindles.
– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



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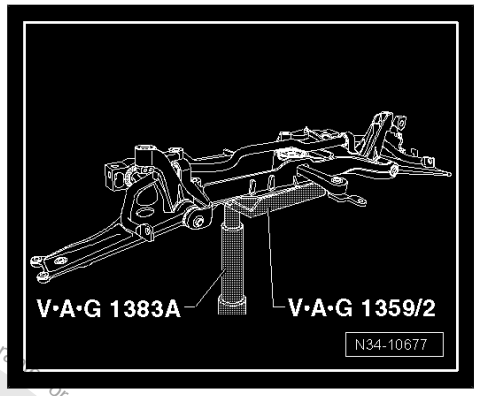
At most, 4 turns are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

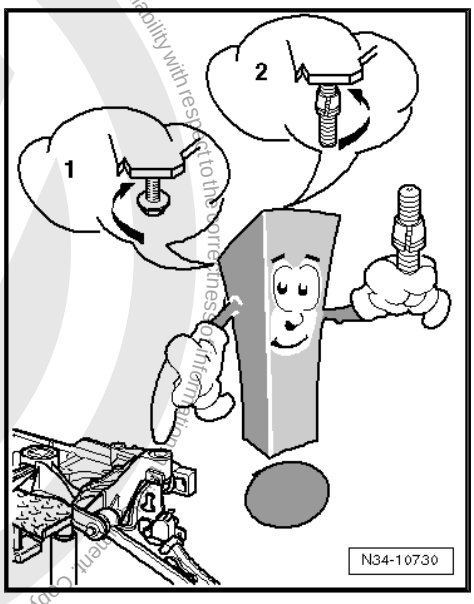


If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

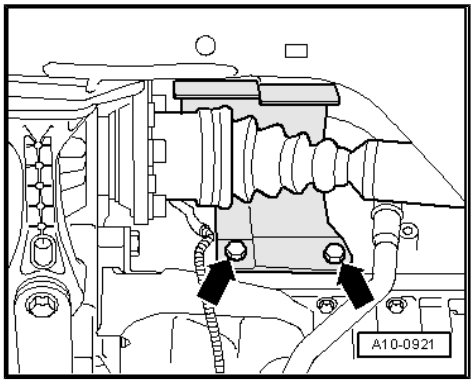


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– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



The air pipe and the electric coolant pump in front of the gearbox are still »in the way«.

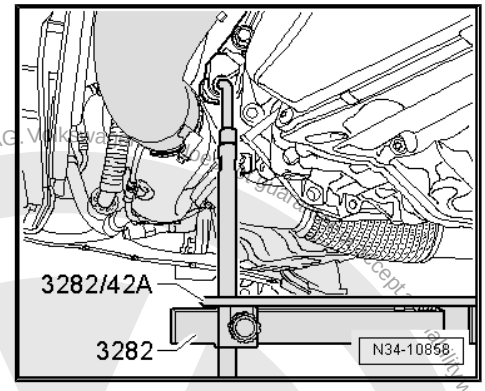
– Remove brackets for air pipe and coolant pump.

This is sufficient and creates space to support the gearbox. The coolant circuit and charge air pipe do not need to opened or separated, respectively.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .

– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

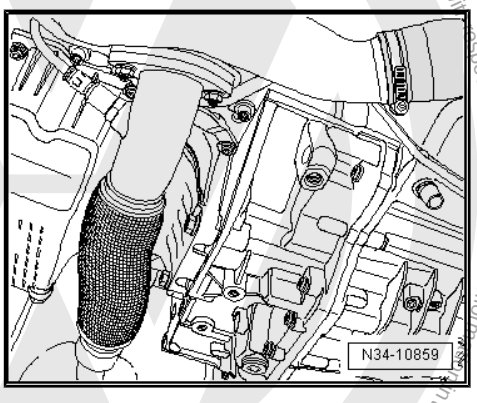
The gearbox is separated from the engine in this position.



– Remove remaining engine/gearbox connecting bolts.

A lower connecting bolt can be loosened but need not be removed.

If this bolt needs to be renewed, the exhaust system must be separated.



– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.4 Removing gearbox, Passat CC 2009 ►, CC 2010 ► diesel engine

Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

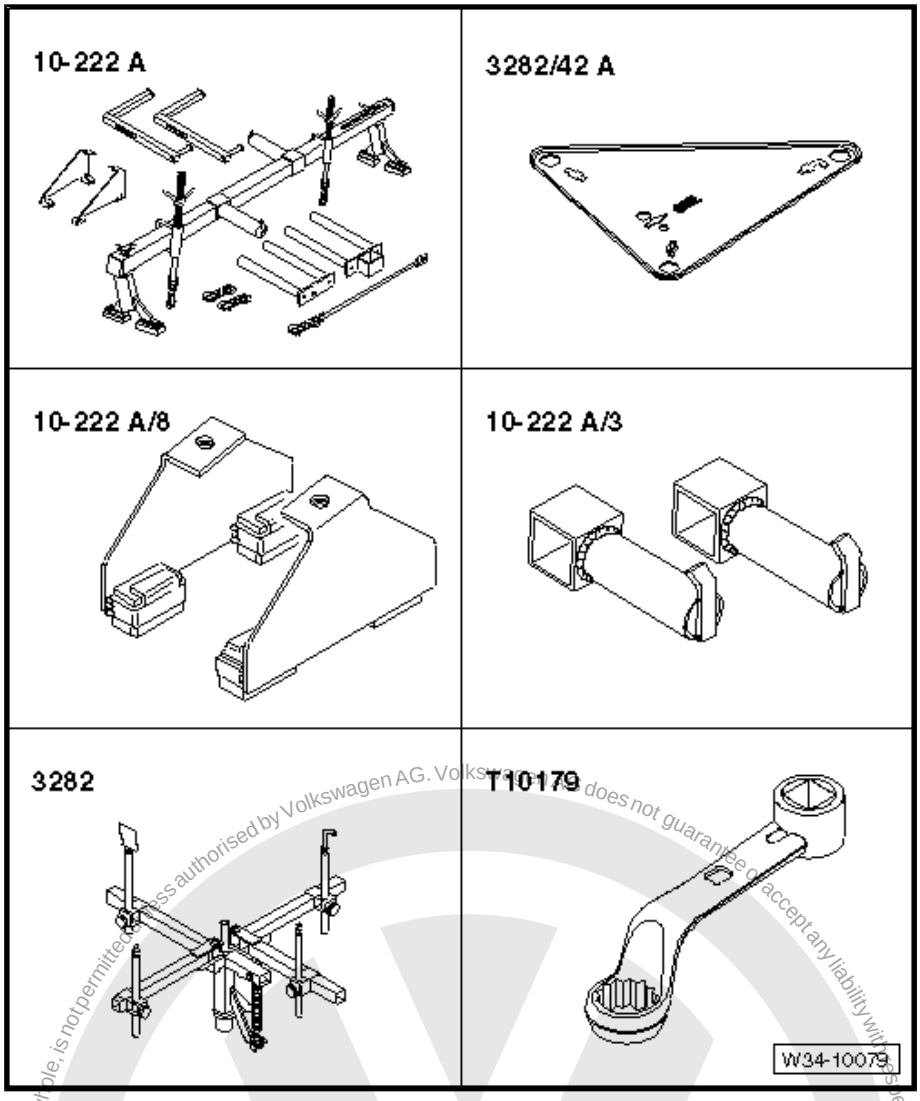
»From below«:

⇒ Pendulum support and left drive shaft removed. The subframe remains in the vehicle.

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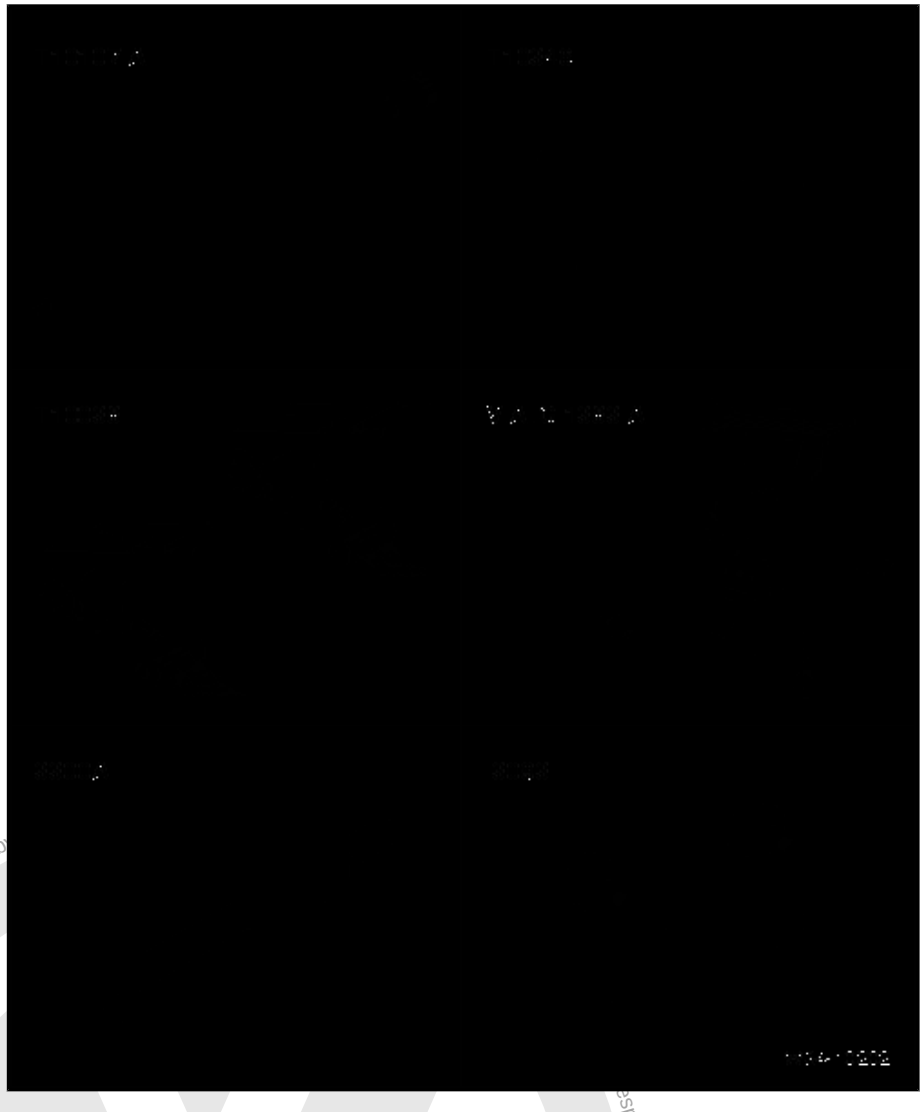
Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Adapter - 10-222A/3-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



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- Socket - T10107 A-
- Bracket - T10346-
- Securing strap - T10038-
- Engine and gearbox jack - V.A.G 1383 A-
- Support device - 3300 A-
- Hose clamps up to 40 mm - 3093- if available, or hose clamps up to 25 mm - 3094-



Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

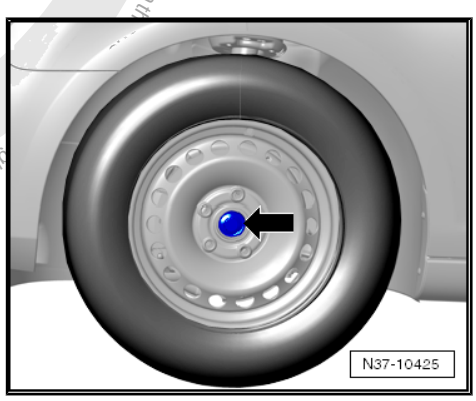
– Move selector lever to position »P« position.

Note

After loosening centre bolt, do not lower vehicle to ground again.

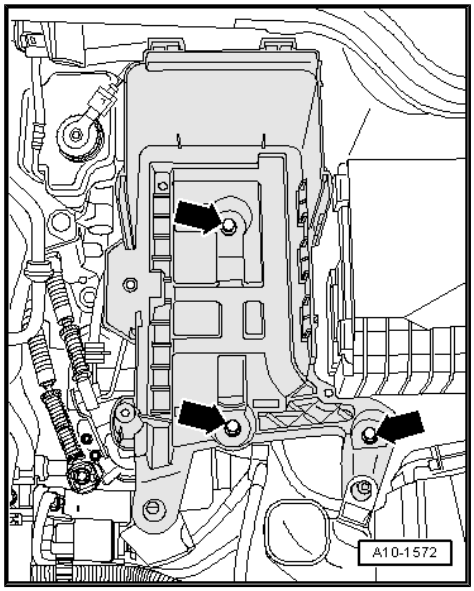
– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter.



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– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

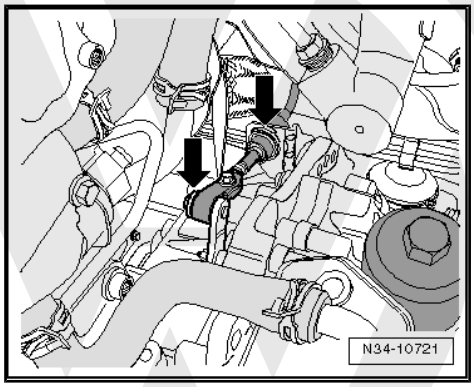
It is advisable to remove the »lower« bolt first.

– Unbolt earth strap from bracket.



– Remove selector lever cable from gearbox -arrows-.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

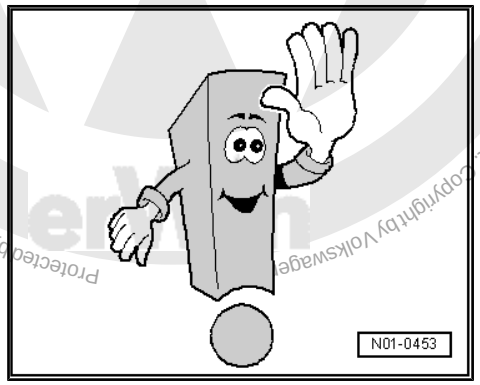


Always renew both securing clips.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

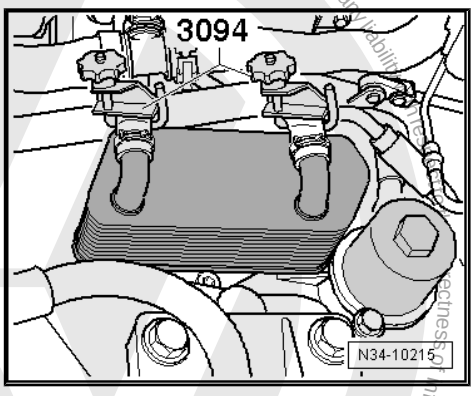
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



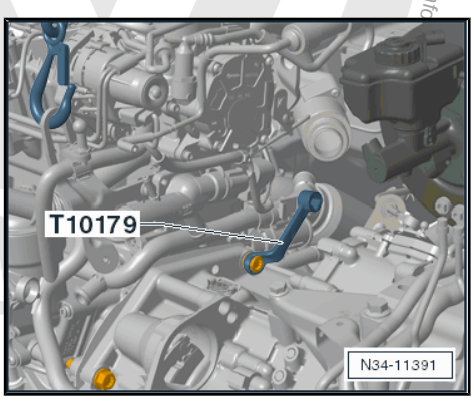
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– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.

– Remove charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling

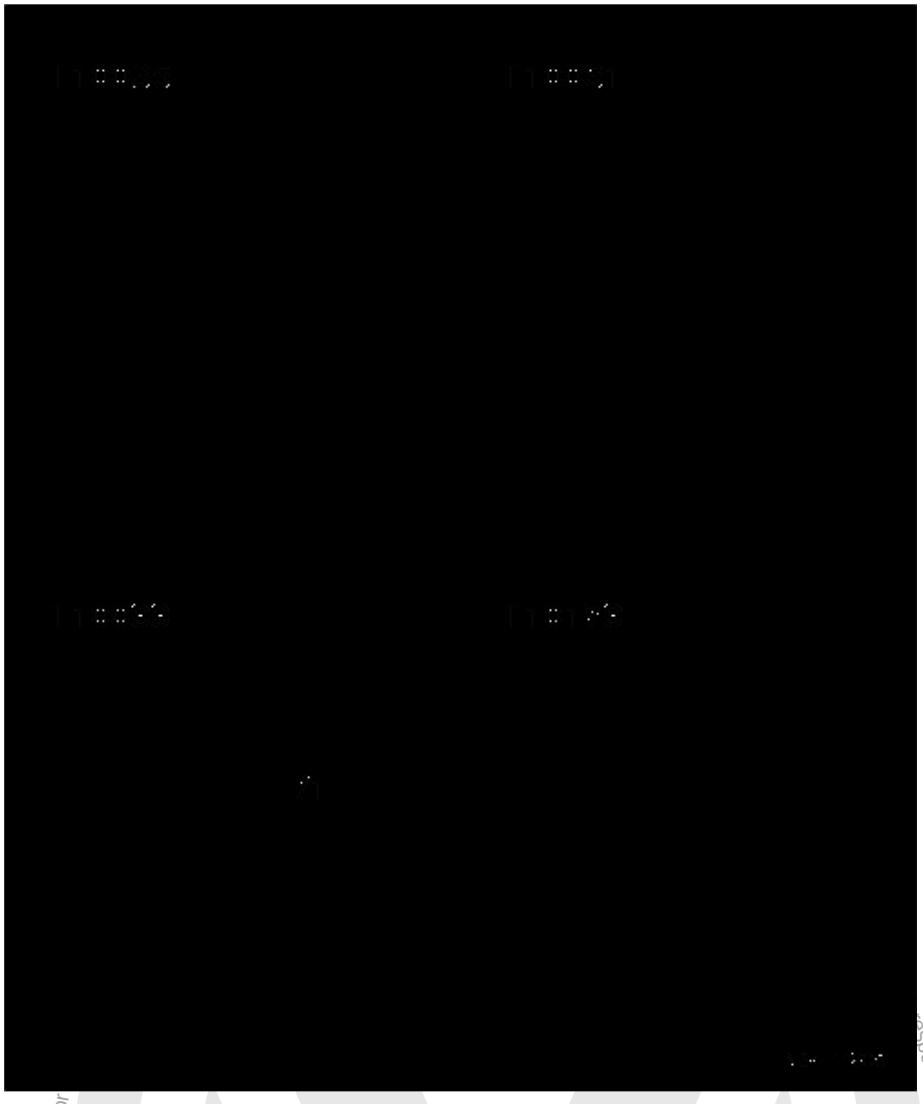


– Remove upper engine/gearbox connecting bolts.



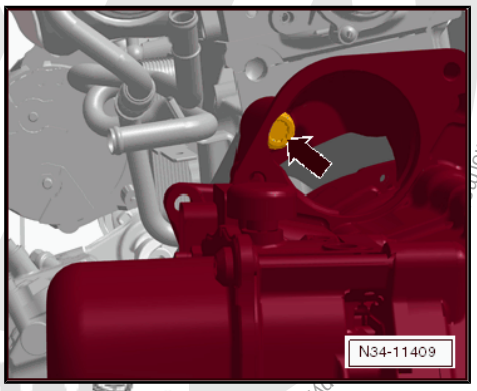
These tools are appropriate for this.

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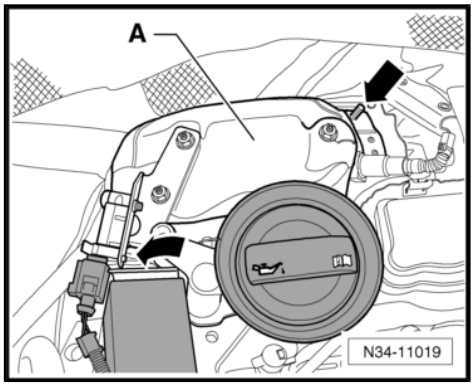
A bolt is located in the starter motor hole -arrow-.

Diesel particulate filter must be removed from engine in order for engine/gearbox assembly to be pushed far enough forward subsequently using support device - 3300 A- .



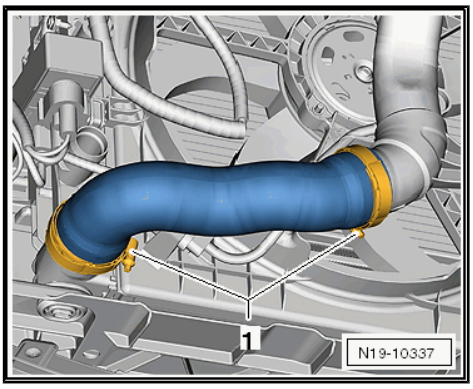
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– Remove diesel particulate filter -A- from top of engine -arrows-. Use suitable means to secure filter on plenum chamber bulkhead to prevent it from falling down⇒ Rep. gr. 26 ; Removing and installing particulate filter .

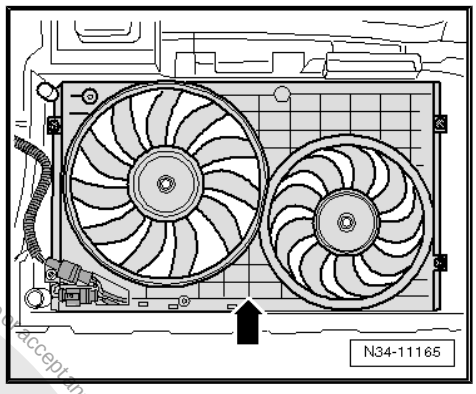


– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .

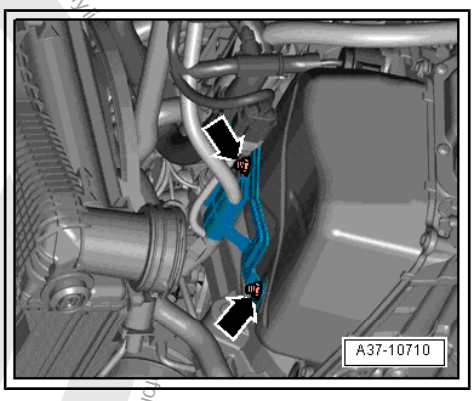


– Remove fan cover ⇒ Rep. gr. 19 ; Removing and installing fan cover .



– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

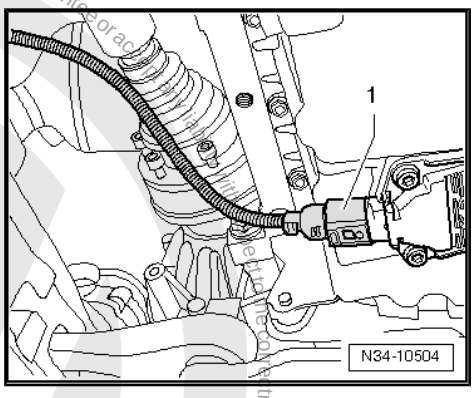
Torque setting: 10 Nm



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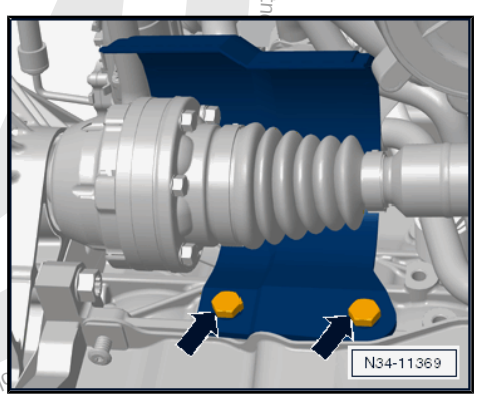
– Pull connector -1- off oil level and oil temperature sender - G266- .

– Remove left drive shaft ⇒ Rep. gr. 40 ; Removing and installing drive shafts .



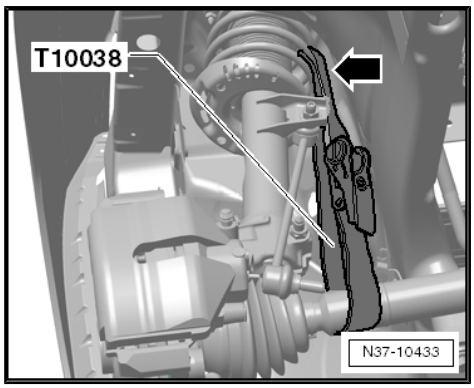
– If present, remove heat shield above right drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts .

– Unbolt right drive shaft from gearbox⇒ Rep. gr. 40 ; Removing and installing drive shafts .

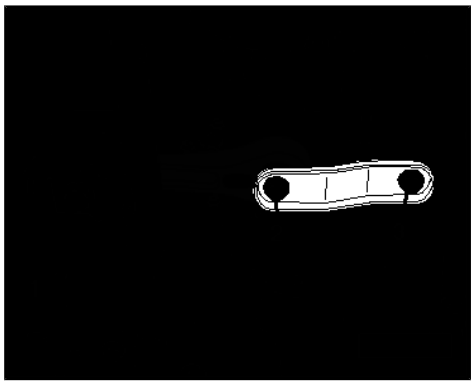


– Secure drive shaft to suspension strut with tensioning strap - T10038- .

The surface protection of the shafts must not be damaged.



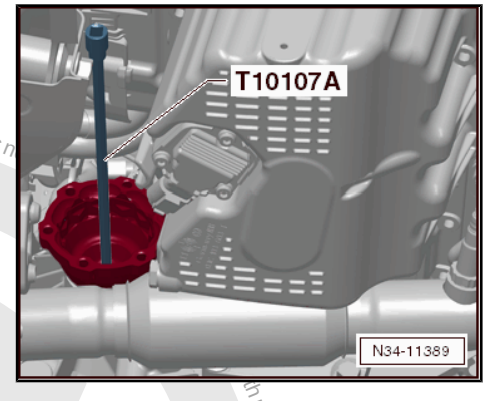
– Remove ⇒ pendulum support. First remove bolt -1-, followed by bolts -2- and -3- ⇒ Rep. gr. 40 .



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– Remove right flange shaft of gearbox using socket - T10107 A- .

Bolt has a 6 mm hexagon socket. It can also be removed and installed using socket V.A.G 1669 .



– Screw 2 bolts into flange and counterhold flange shaft with a lever in order to remove and install flange shaft.
– Pull out flange shaft with compression spring.
– Close opening in drive shaft using a suitable plug.
– To install flange shaft, if necessary press against gearbox with a lever and screw in bolt.

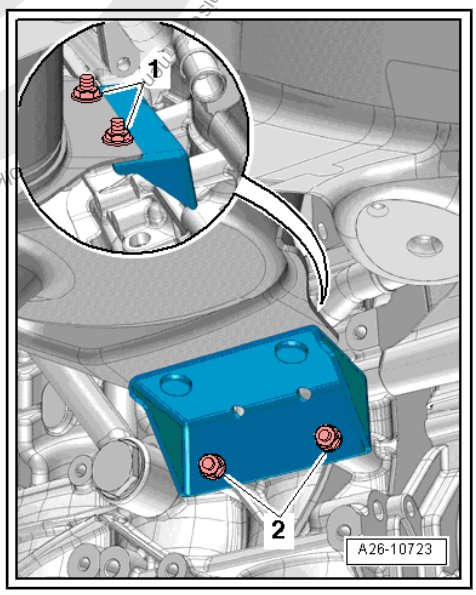
Torque setting: 30 Nm



– Unscrew lower bracket for diesel particulate filter from engine -2- and pull bracket off threaded pins ⇒ Rep. gr. 26 ; Removing and installing particulate filter .

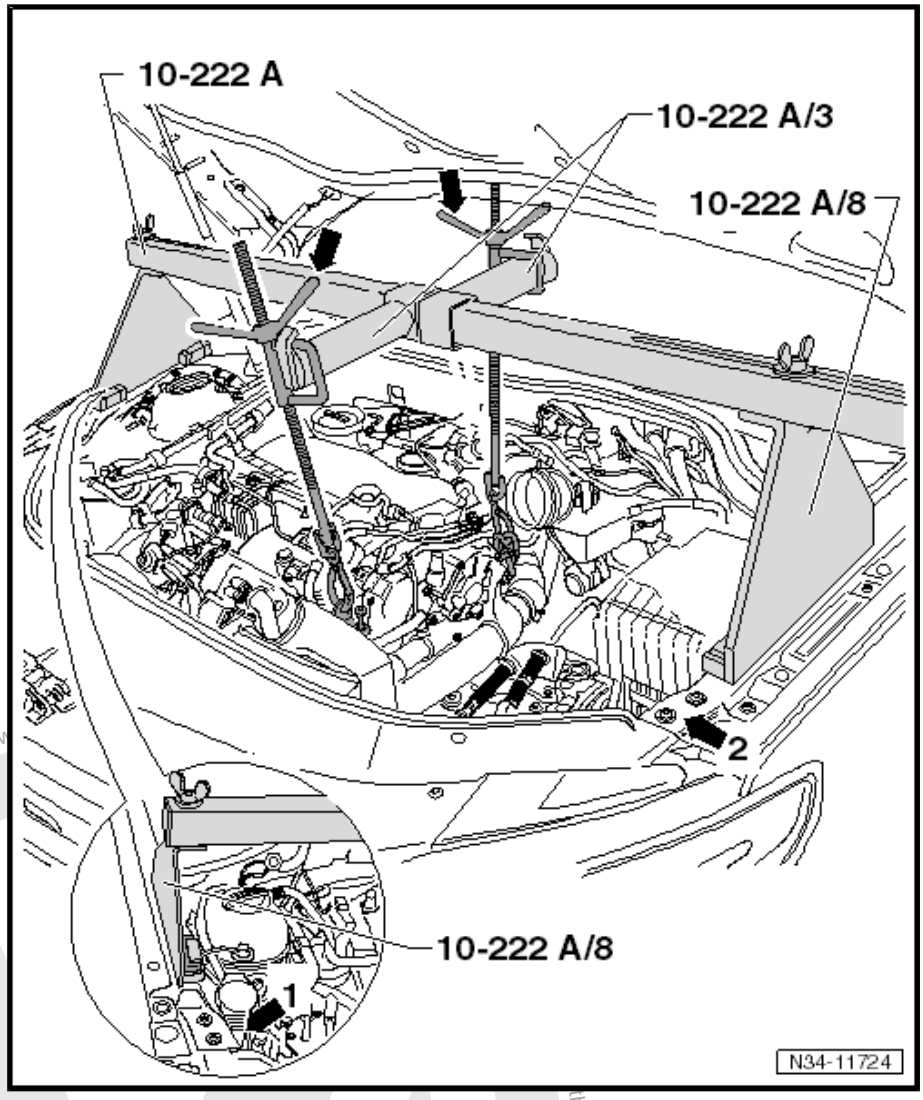
Note

-Item 1- can be disregarded.



– Remove filler pieces from upper edges of both wings.
– If there are hose and cable connections in area of engine support eye for support bracket - 10-222 A- , remove these now.

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– Place support bracket - 10 - 222 A- onto upper longitudinal member.

Caution

Do not place support bracket on the wings, otherwise these might be damaged.

– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.

– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine/gearbox using spindles of support bracket - 10 - 222 A- until bracket -A- can be removed.

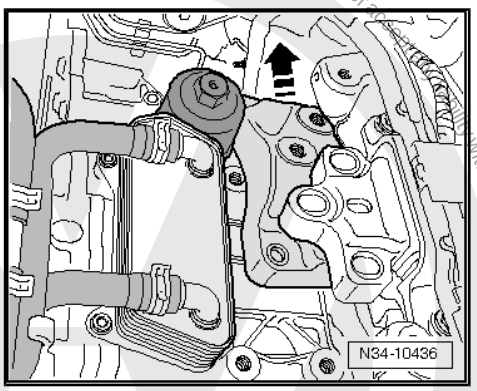
At most, 5 turns of each spindle should be sufficient to remove bracket.

In many cases, the spindle does not need to be lowered further for the later removal of the gearbox.



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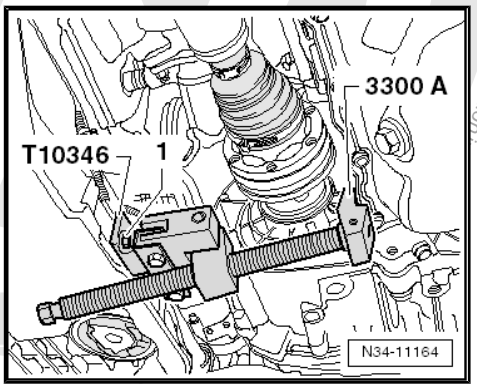
– Remove bracket -arrow-.



– Remove all connecting bolts except one which is in an easily accessible place between engine and gearbox.
– Secure bracket - T10346- onto subframe using a suitable bolt.

Bolt -1- = M6 X 20

– Secure engine support - 3300 A- on bracket - T10346- .
– Set engine support against engine crank case.
– Push engine/gearbox far enough forward until there is enough room to remove gearbox.



Note

When moving engine/gearbox assembly, make sure that no connecting lines, hoses or radiator are kinked or damaged.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove last engine/gearbox connecting bolt.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.5 Removing gearbox, Passat CC 2009 ►, CC 2010 ► diesel engine (all-wheel drive)

Brief description

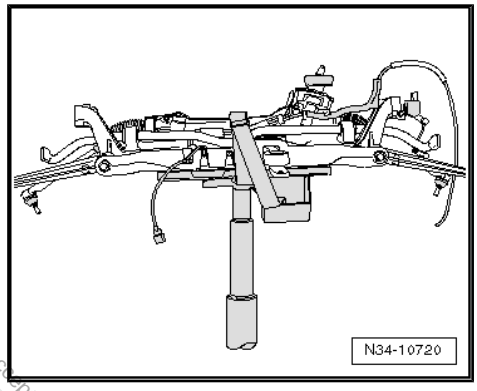
The gearbox is removed downwards together with the bevel box. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

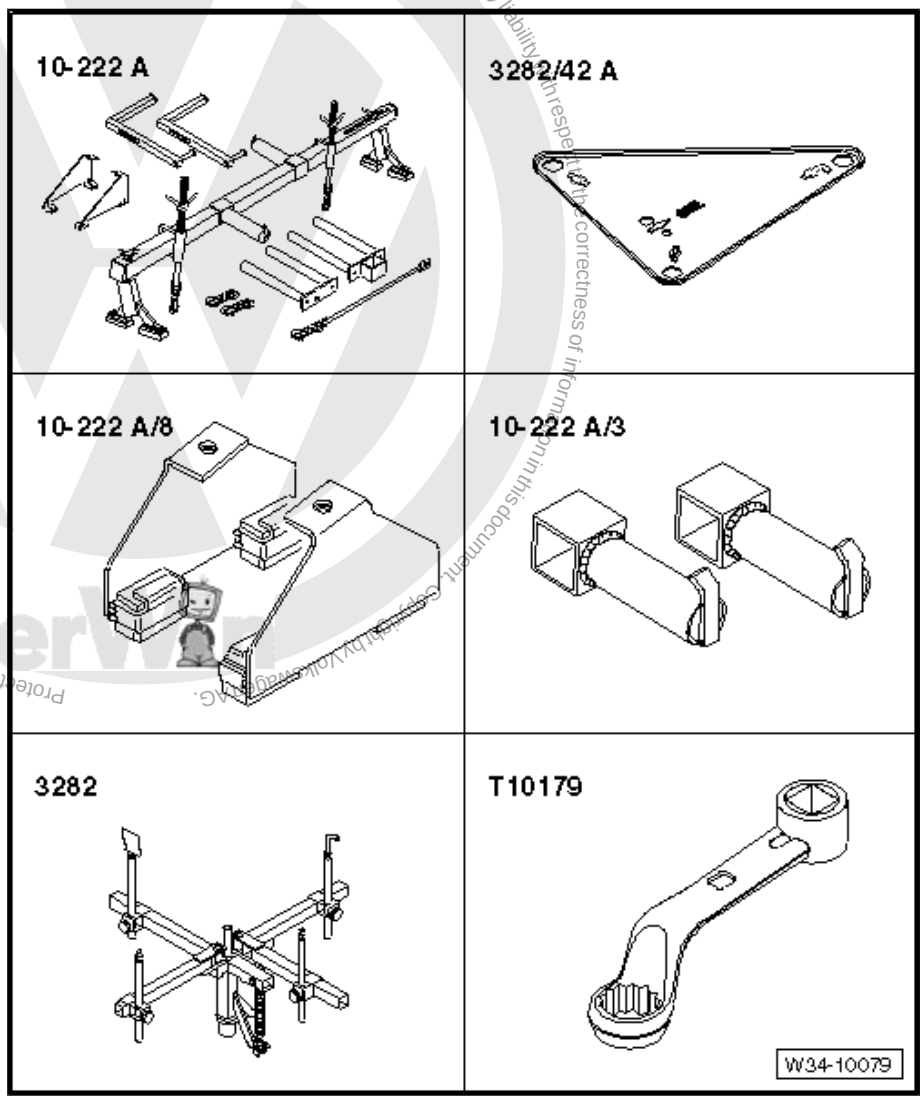
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Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Adapter - 10-222A/3-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- 2 tensioning straps - T10038-
- Hose clamps to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-

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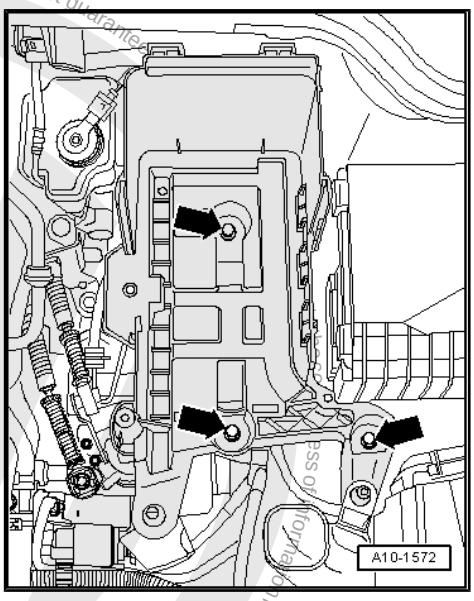
Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

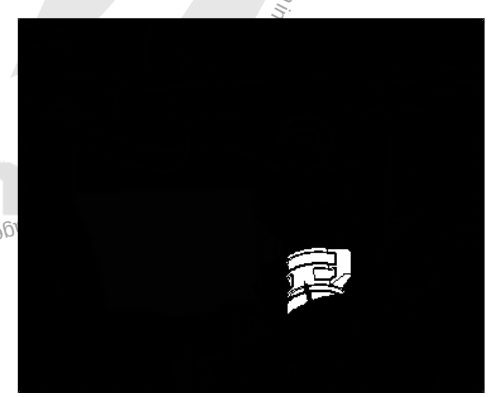


– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

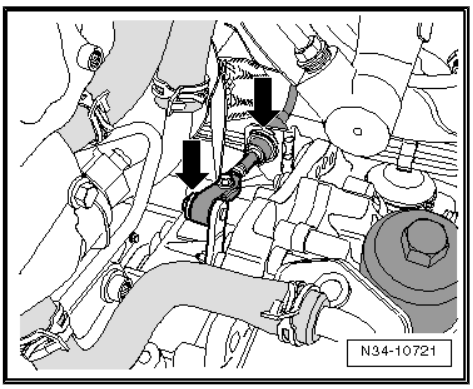
It is advisable to remove the »lower« bolt first.

– Unbolt earth strap from bracket.



– Remove selector lever cable from gearbox -arrows-.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



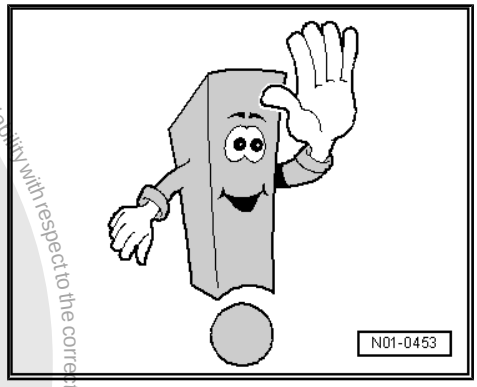
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Always renew both securing clips.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

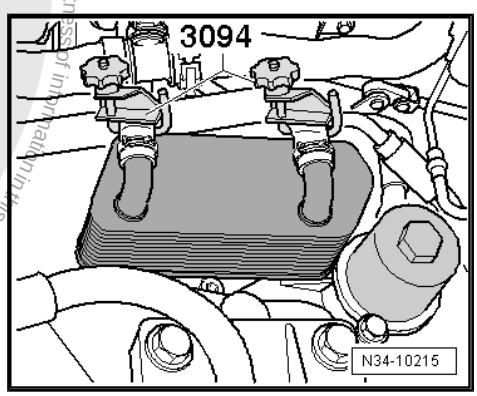
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

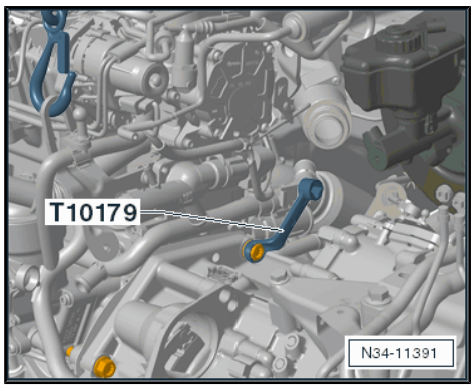


– Clamp off coolant hoses using hose clamps to 25 mm - 3094- and remove.

– Remove charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .

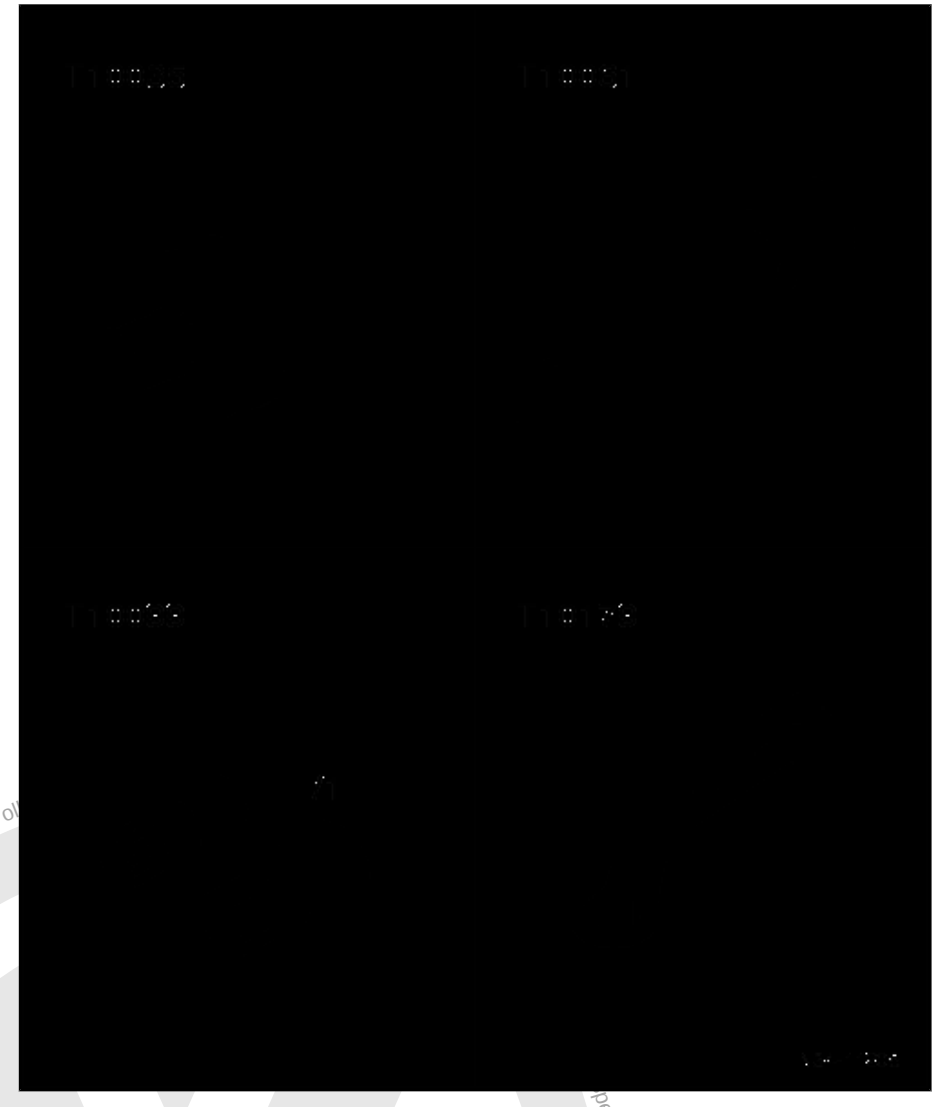


– Remove upper engine/gearbox connecting bolts.

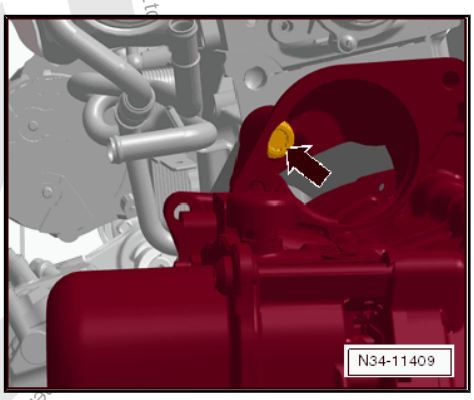


These tools are appropriate for this.

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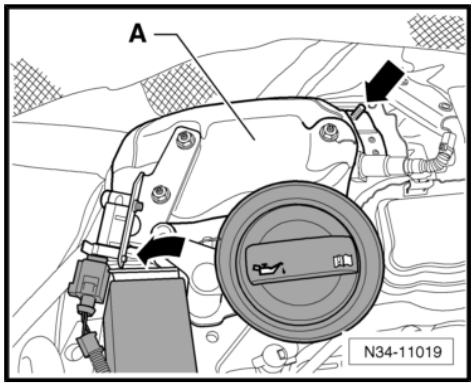
A bolt is located in the starter motor hole -arrow-.



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Only vehicles with auxiliary heater:

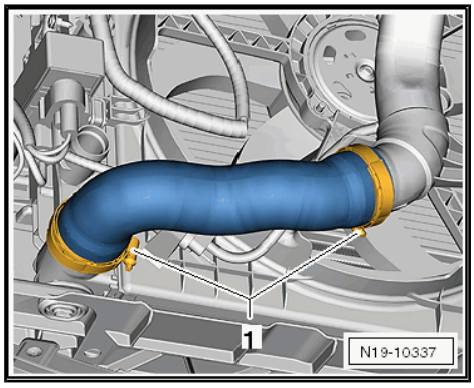
– Remove diesel particulate filter -A- from top of engine -arrows-. Use suitable means to secure filter on plenum chamber bulkhead to prevent it from falling down⇒ Rep. gr. 26 ; Removing and installing particulate filter .



Continued for all vehicles:

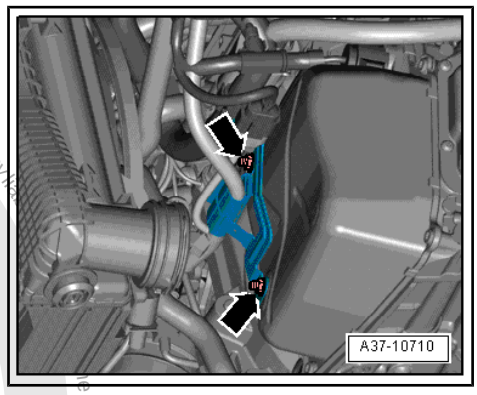
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .



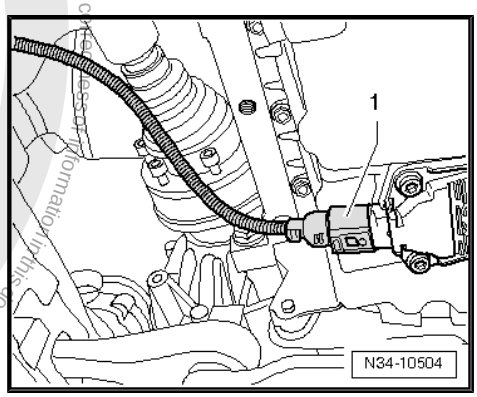
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

Torque setting: 10 Nm



– Pull connector -1- off oil level and oil temperature sender - G266- .

– Unbolt left and right drive shaft from gearbox ⇒ Rep. gr. 40 ; Removing and installing drive shafts .



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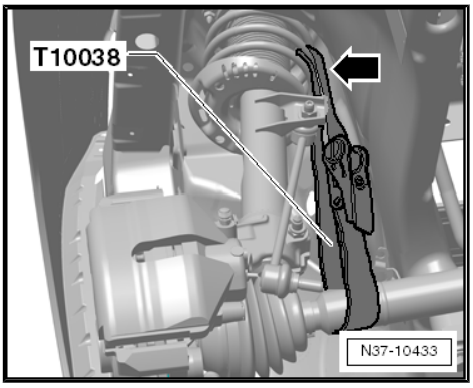
– Remove drive shaft heat shield from bevel box (-arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Repairing drive shafts .

In vehicles with auxiliary heater, a bracket for coolant hoses is also removed with heat shield. When installing, first place bracket onto threaded pins and only then install heat shield.



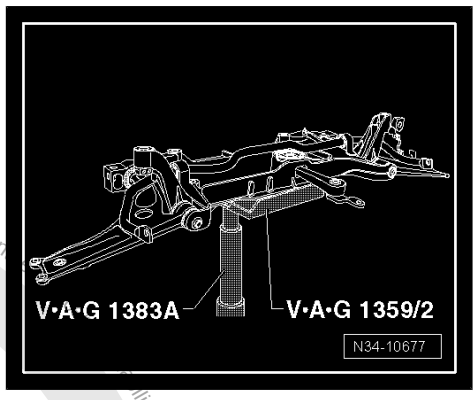
– Secure both drive shafts on suspension strut with tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.



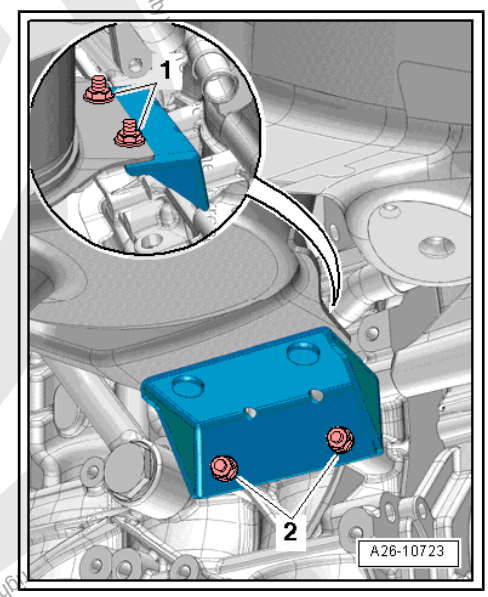
Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing subframe with steering box



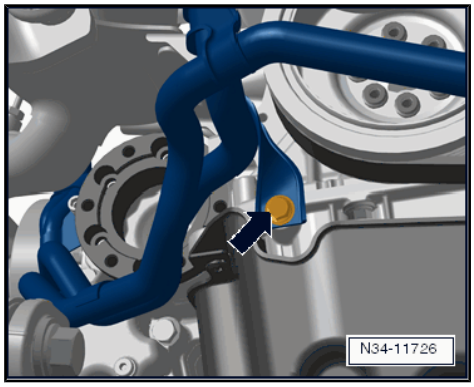
Only vehicles with auxiliary heater:

– Remove lower bracket for diesel particulate filter ⇒ Rep. gr. 26 ; Removing and installing particulate filter .



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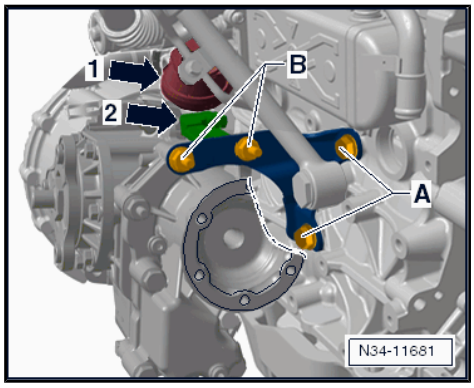
– Unscrew coolant hoses of auxiliary heater from engine -arrow-, pull off from threaded pins and push to one side until gearbox carrier can be unscrewed ⇒ Auxiliary heater; Rep. gr. 82 ; Removing and installing Thermo Top V auxiliary heater .



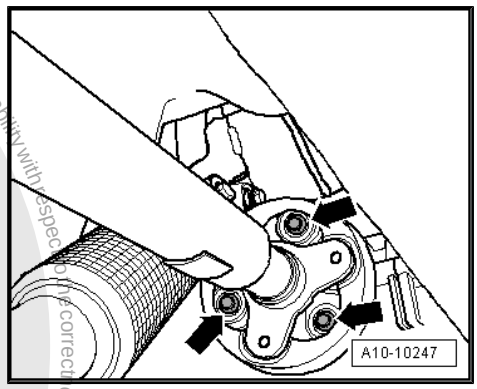
Do not open the pipe/hose system.

Continued for all vehicles:

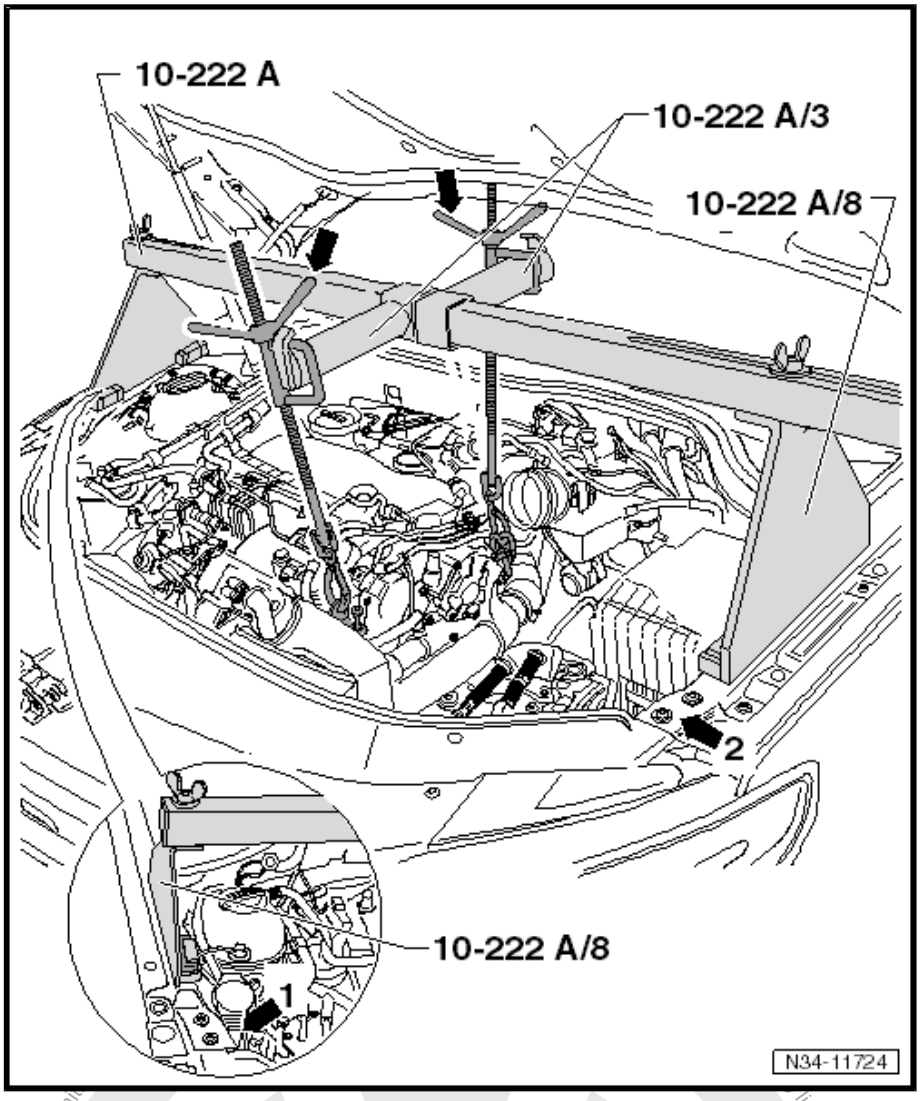
– Remove bolts -B- for gearbox carrier to bevel box.
– Loosen bolts -A-.



– Mark position of propshaft with flexible coupling relative to bevel box flange with paint.
– Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Removing and installing propshaft .
– Push front propshaft back to stop and place down on heat shield.
– Remove filler pieces from upper edges of both wings.
– If there are hose and cable connections in area of engine support eye for support bracket - 10-222 A- , remove these now.



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– Place support bracket - 10 - 222 A- onto upper longitudinal member.

Caution

Do not place support bracket on the wings, otherwise these might be damaged.

– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.

– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine/gearbox using spindles of support bracket - 10 - 222 A- until bracket -A- can be removed.

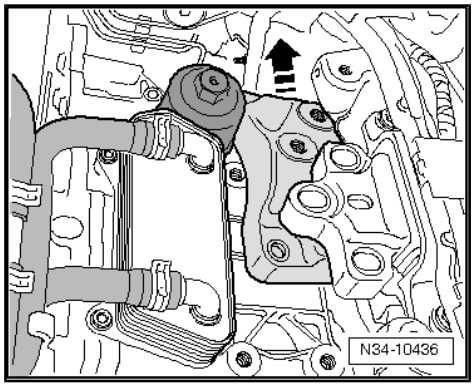
At most, 5 turns of each spindle should be sufficient to remove bracket.

In many cases, the spindle does not need to be lowered further for the later removal of the gearbox.



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– Remove bracket -arrow-.
– Remove all connecting bolts except one which is in an easily accessible place between engine and gearbox.



– An engine/gearbox connecting bolt -arrow- is located next to bevel box -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

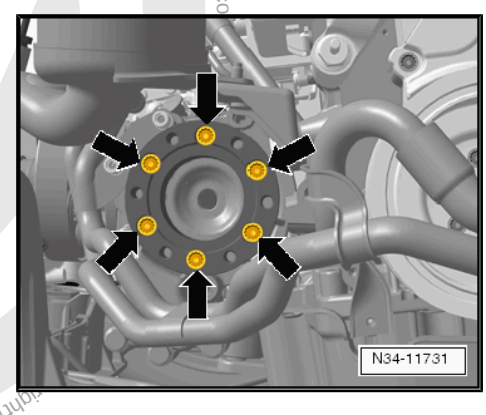
The gearbox is separated from the engine in this position.

– Remove last engine/gearbox connecting bolt.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.



Some vehicles have an intermediate flange on flange shaft/bevel box.

– Unscrew intermediate flange -arrows- if a »new« bevel box is installed, because there is no intermediate flange on »new« bevel box.



Torque setting: 70 Nm

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.6 Removing gearbox, Golf Plus 2009 ► with 2.0 l diesel engine

Brief description

The gearbox is removed downwards separately. »From above«

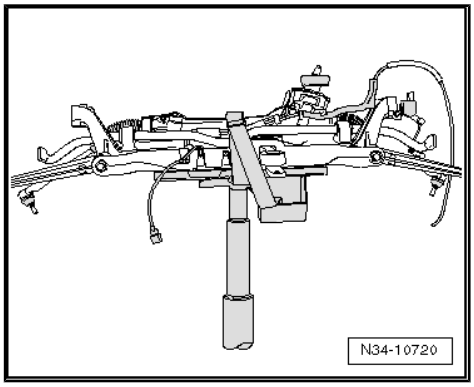
Remove battery, air filter and starter. Wiring harness of steering box is disconnected and »laid clear«. This allows it to be lowered together with subframe and steering box. The engine and gearbox must be supported before the left subframe mounting is removed.

»From below«:

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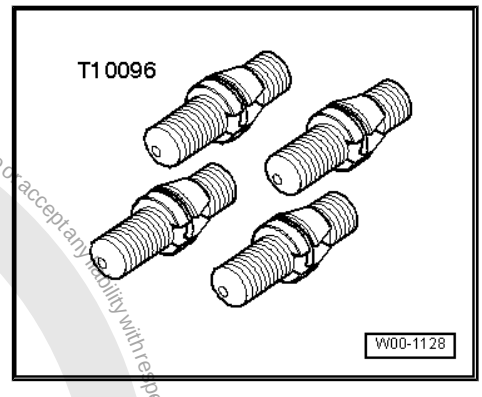
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.

Both drive shafts are disconnected from gearbox and left installed in wheel bearing housings. They are only swivelled to one side, but are left on vehicle.



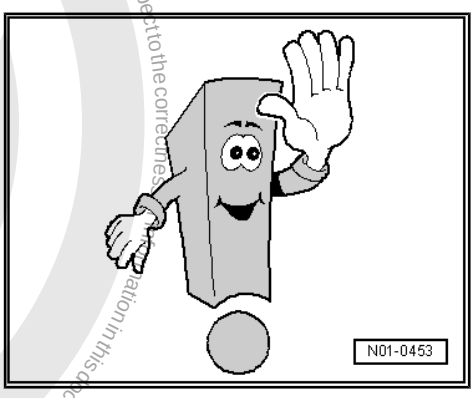
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

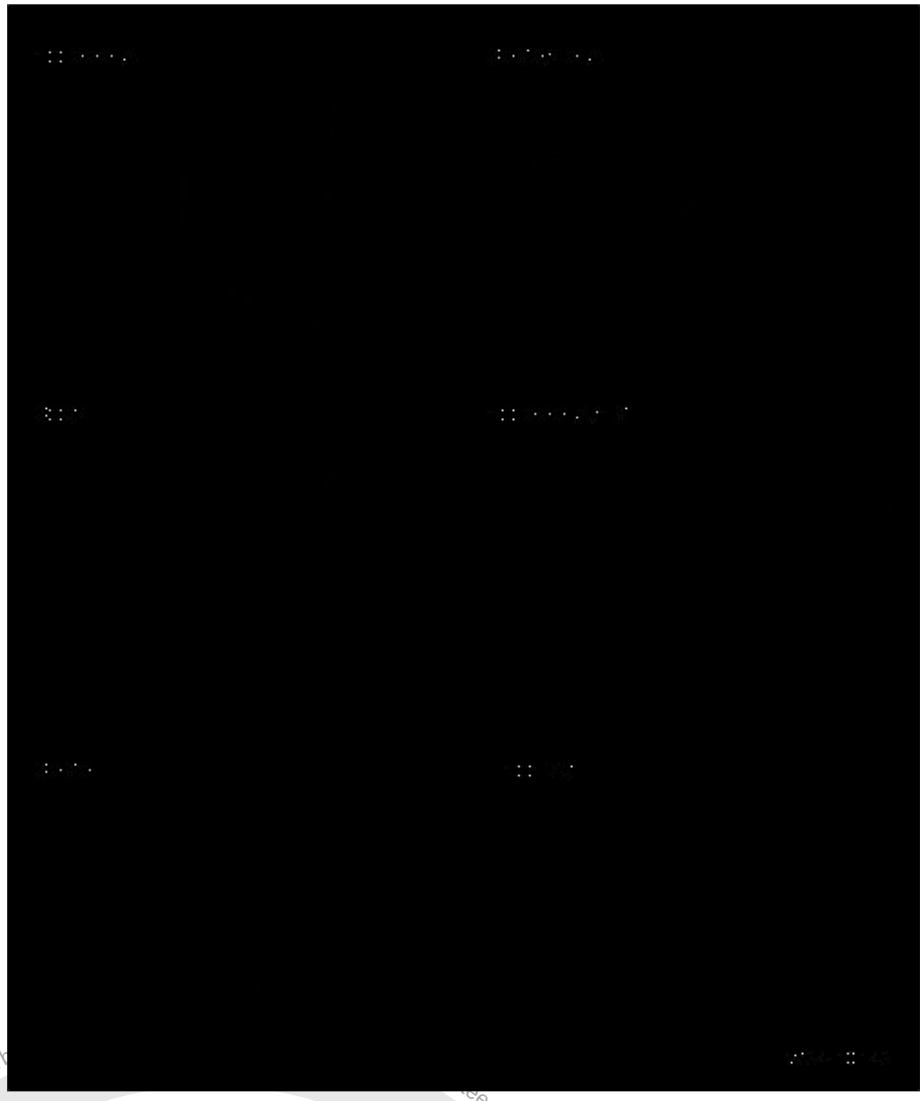
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adjustment plate - 3282/42 A-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10035-
- Support - 3282/59-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

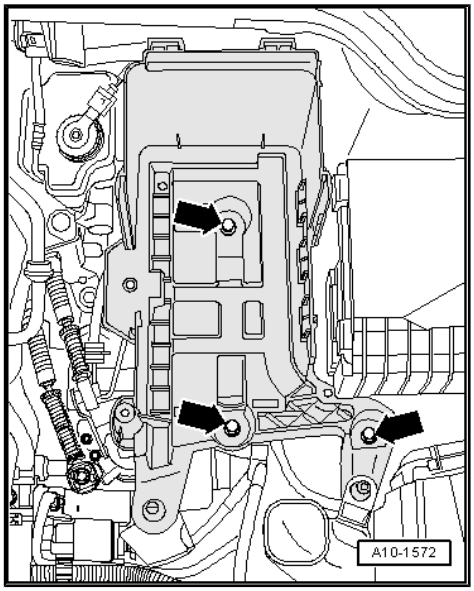
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

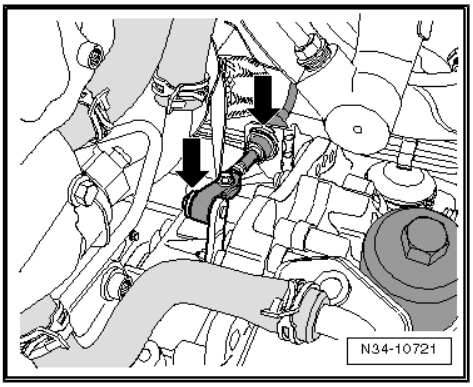
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– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

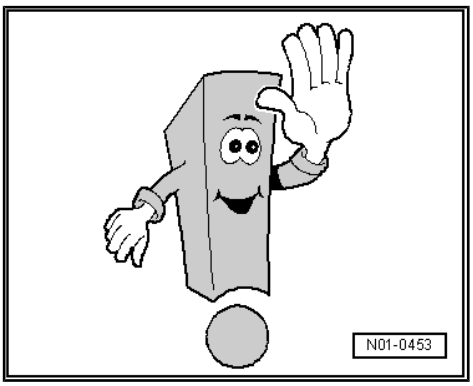


Both securing clips must be later renewed when cable is adjusted.

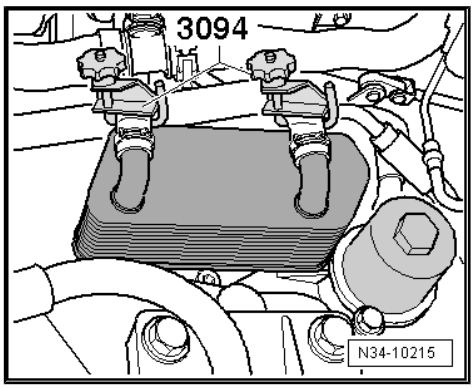
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

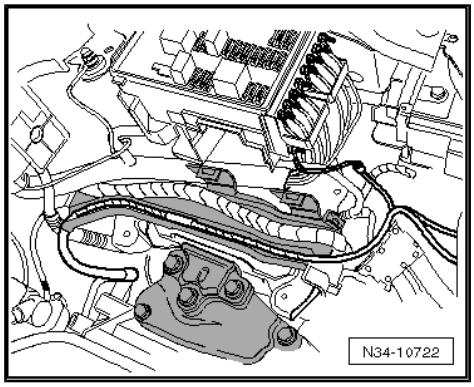


– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.

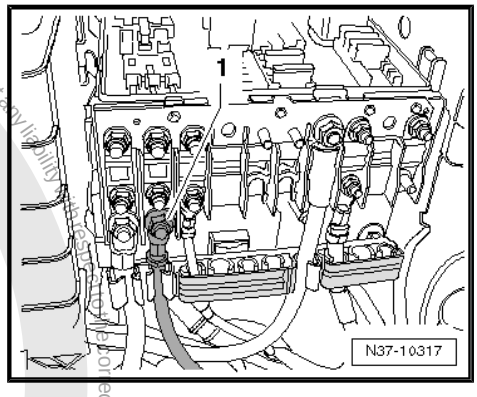


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– Disconnect -wiring harness- coming »from below« from sub-frame.



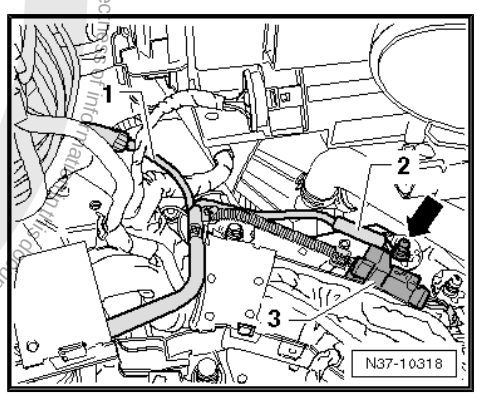
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.

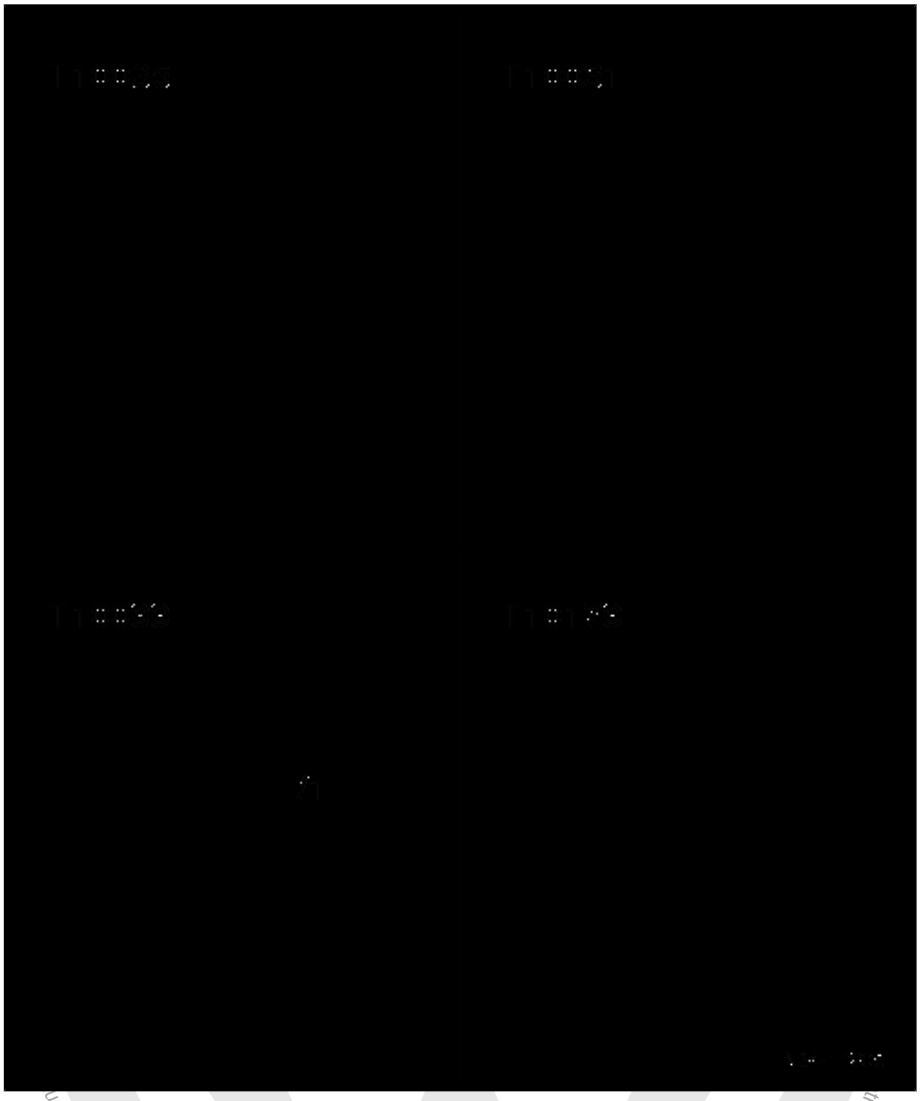
This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.



– Remove all upper engine/gearbox connecting bolts.

These tools are appropriate for this.

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– Now separate steering from steering column.

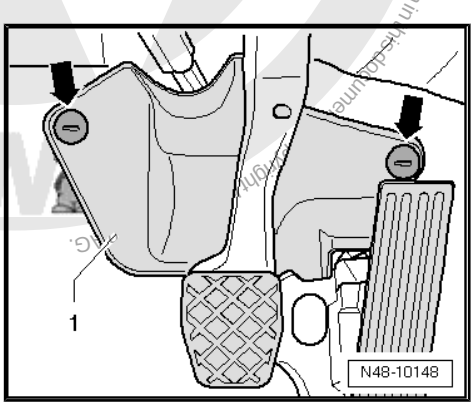
Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

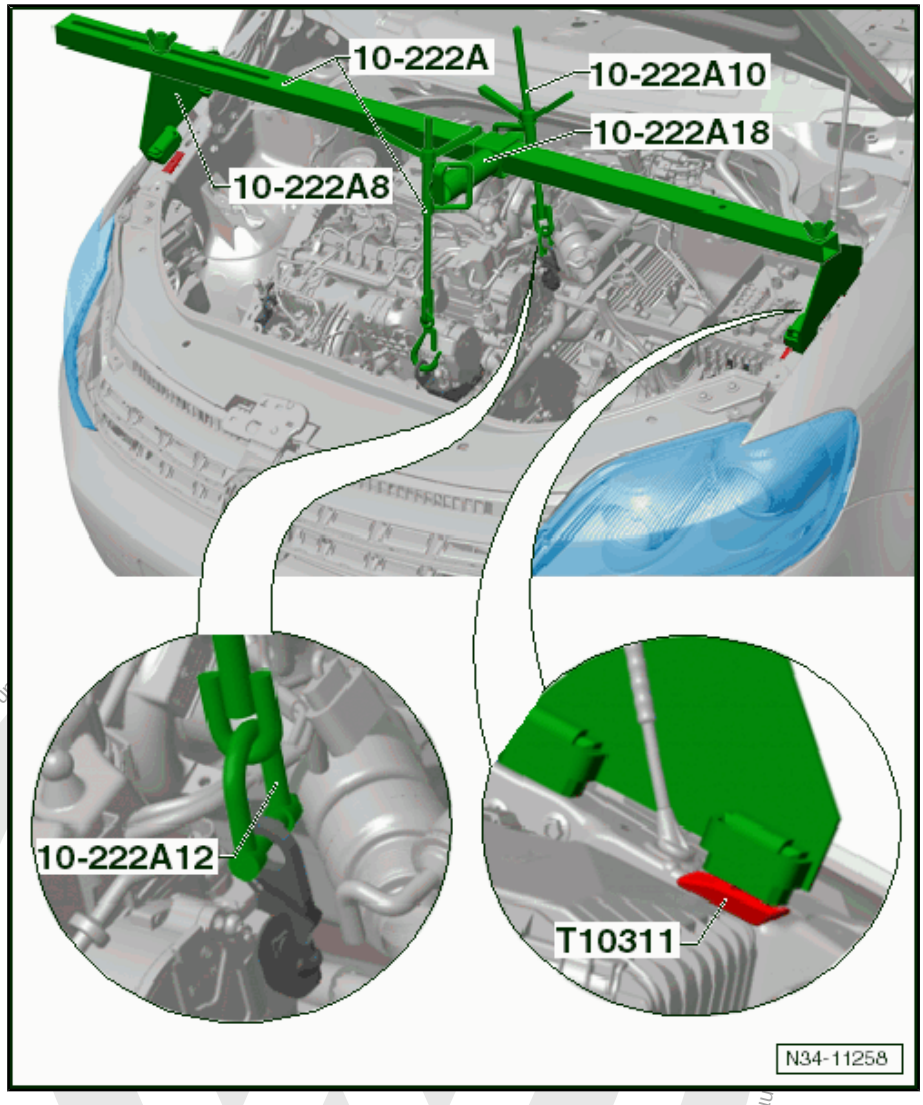
– Separate steering box from steering column.

– Remove filler pieces from upper edges of both wings.

– Support engine and gearbox. Do not raise.



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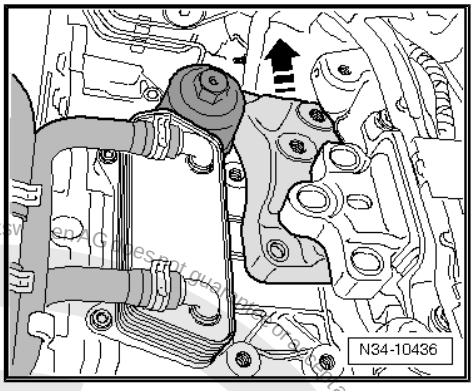


– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



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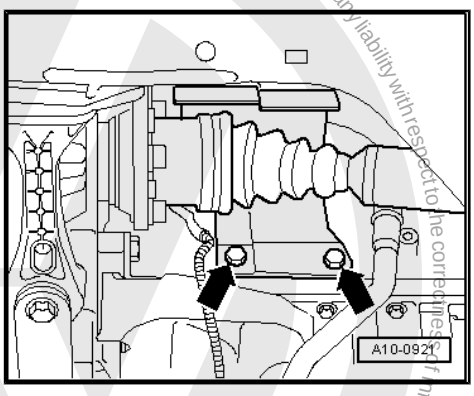
At most, 4 turns are sufficient to remove bracket -arrow-.



– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

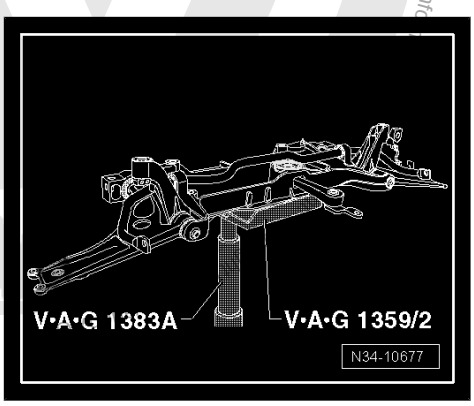
– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.



Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

Valuable information concerning the installation of the -subframe- can be found in ⇒ Rep. gr. 40 . It is recommended to read this information »before« removing gearbox. Then it will be clear how to fix the position of the -subframe- so it can then be removed as shown in this figure.



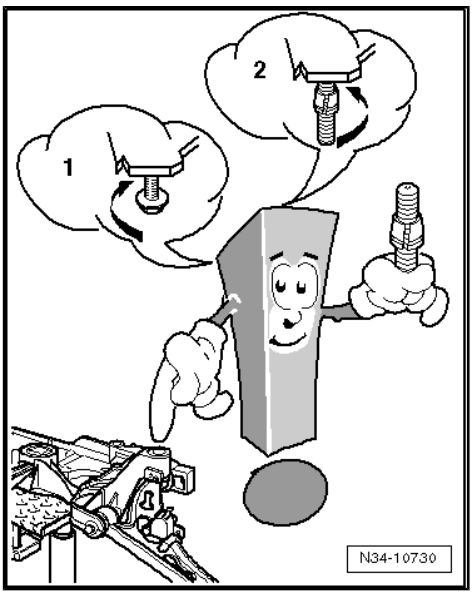
If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

Once the subframe has been removed, the engine and gearbox must be supported.



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– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.



– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.7 Removing gearbox, Golf 2009 ► 2.0 l diesel engine

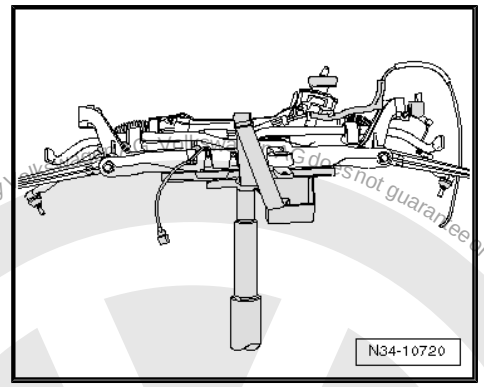
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. Wiring harness of steering box is disconnected and »laid clear«. This allows it to be lowered together with subframe and steering box. The engine and gearbox must be supported before the left subframe mounting is removed.

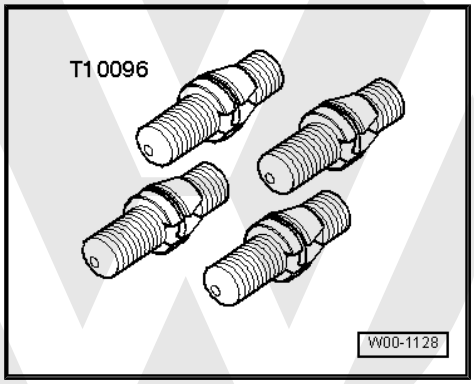
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



Both drive shafts are disconnected from gearbox and left installed in wheel bearing housings. They are only swivelled to one side, but are left on vehicle.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

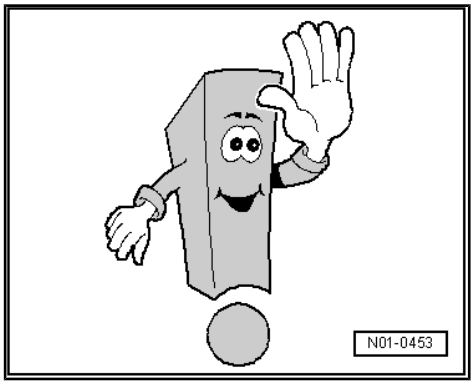


In any case, locating pins - T10096- are necessary.

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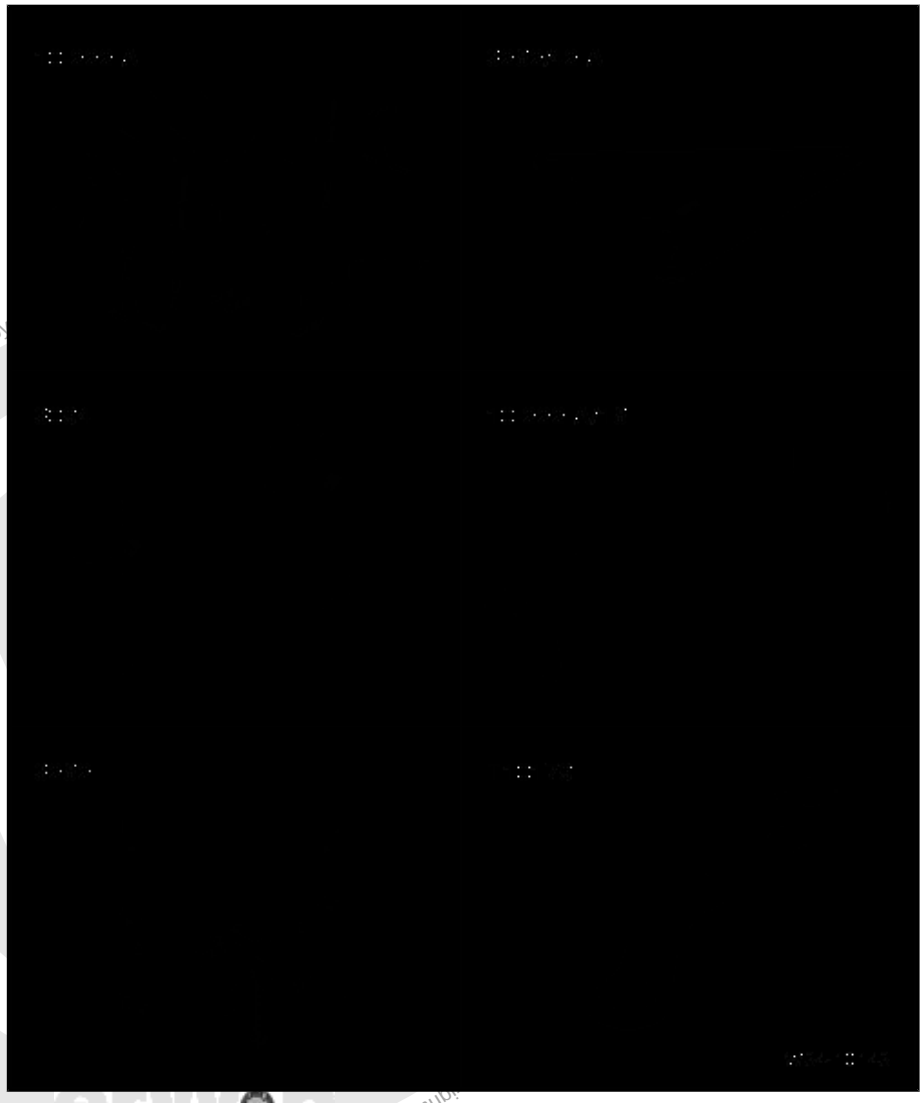
If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adjustment plate - 3282/42 A-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Insert tool, 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10035-
- Support - 3282/59-
- Engine and gearbox jack - V.A.G 1383 A-

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Removing:

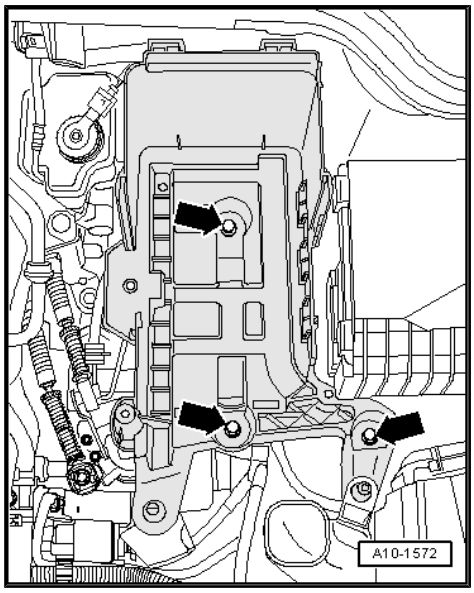
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

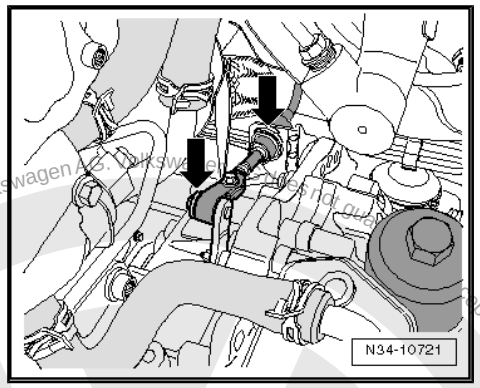
– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

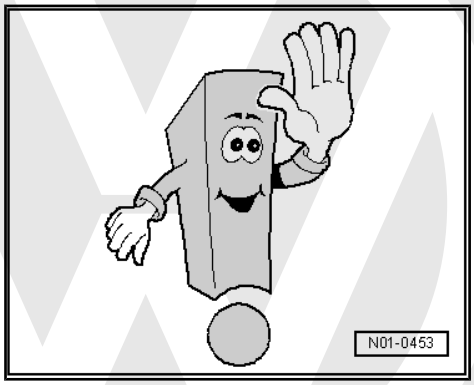


Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

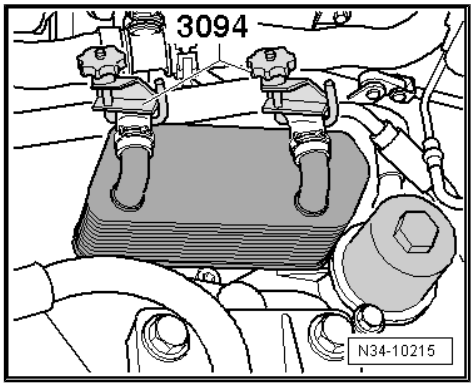
Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

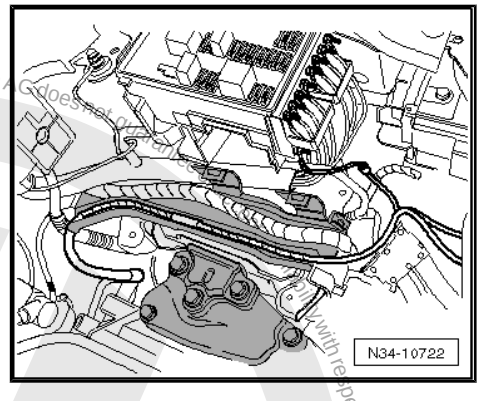


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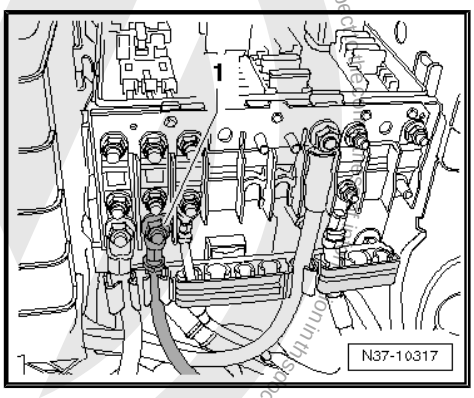
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 M6 nuts).
– Release mechatronic unit connector by turning and pull off connector.



– Disconnect -wiring harness- coming »from below« from sub-frame.

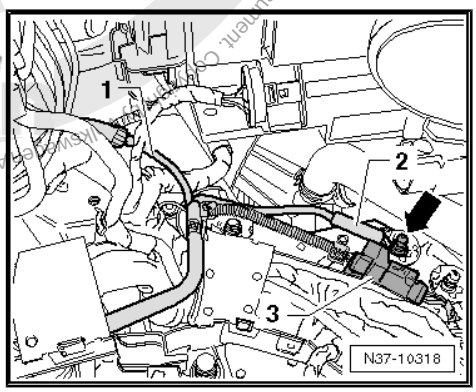


– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.
– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.

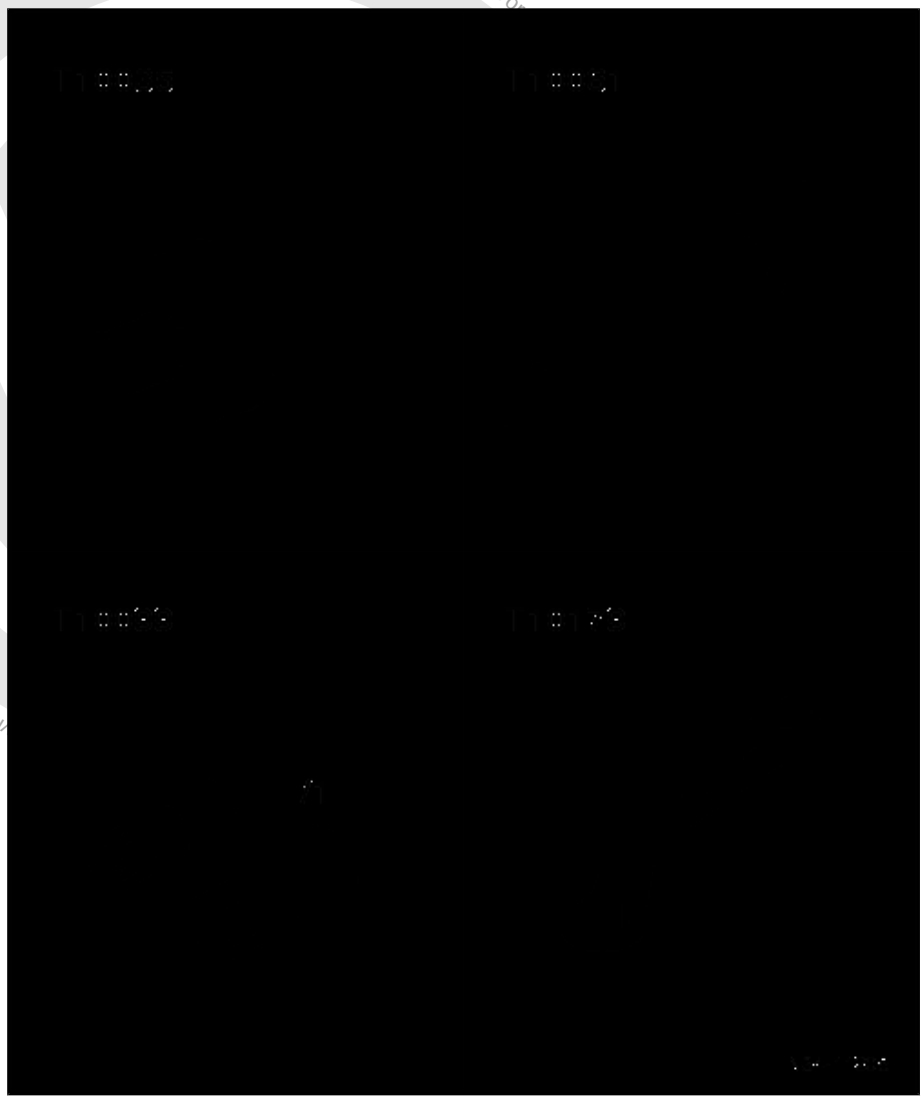


– Remove all upper engine/gearbox connecting bolts.

These tools are appropriate for this.

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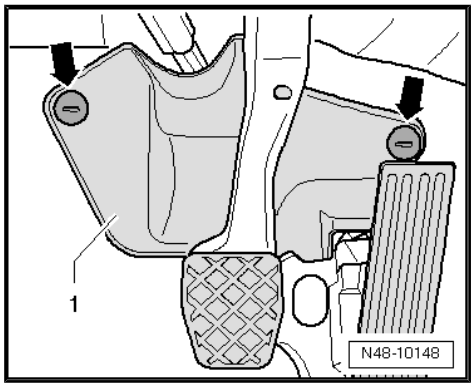
– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

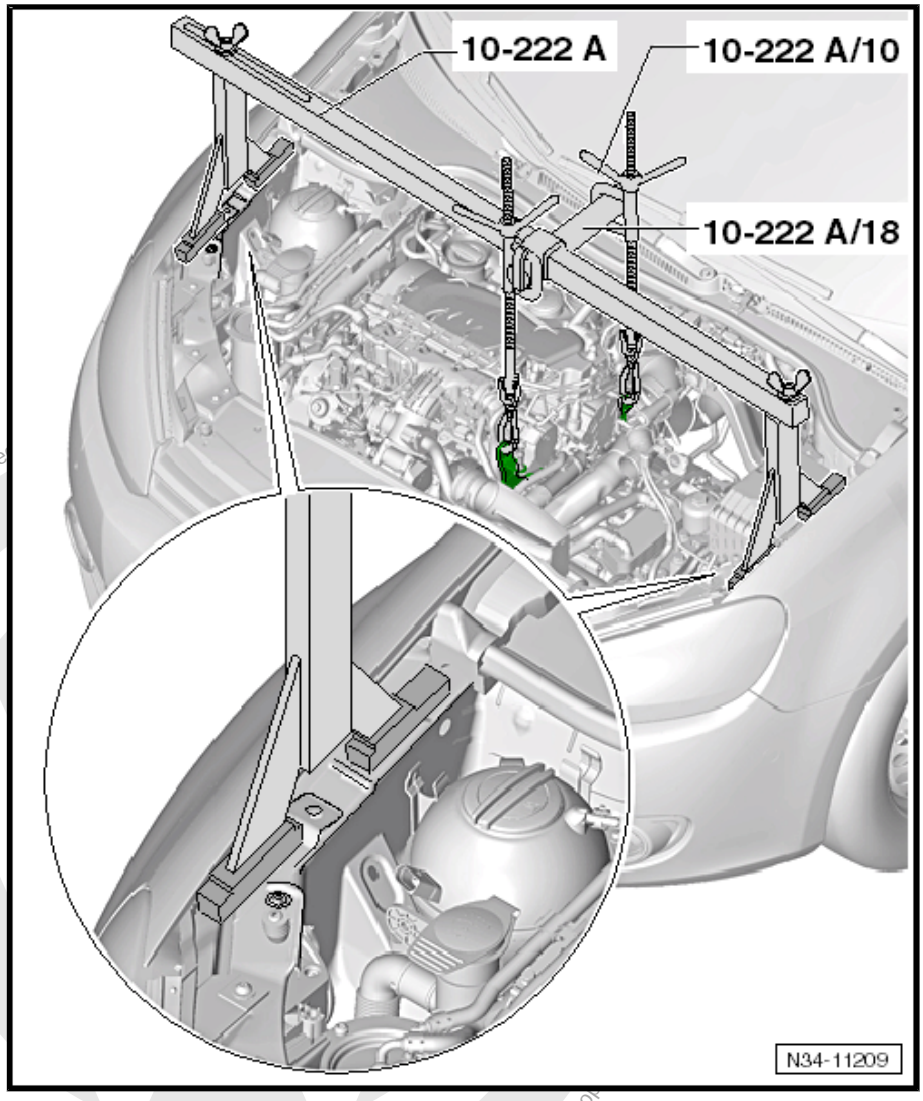
In any case, return the steering wheel to the straight-ahead position. Then engage steering lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.

– Support engine and gearbox. Do not raise.



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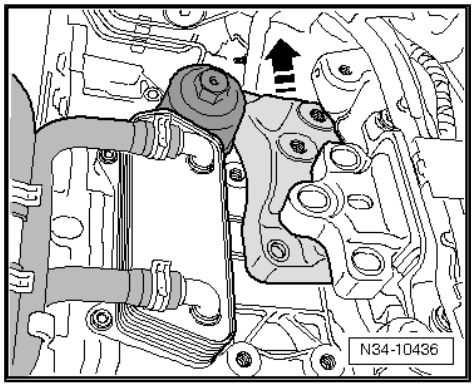
– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



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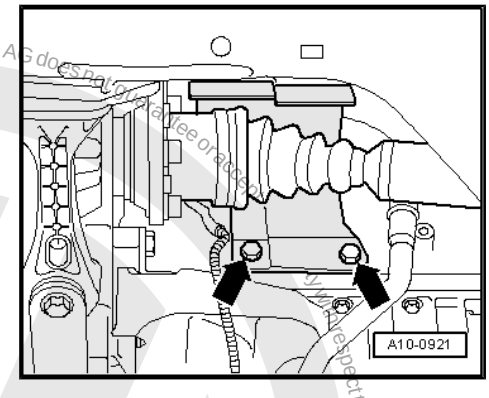
At most, 4 turns are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.



Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

Valuable information concerning the installation of the -subframe- can be found in ⇒ Rep. gr. 40 . It is recommended to read this information »before« removing gearbox. Then it will be clear how to fix the position of the -subframe- so it can then be removed as shown in this figure.

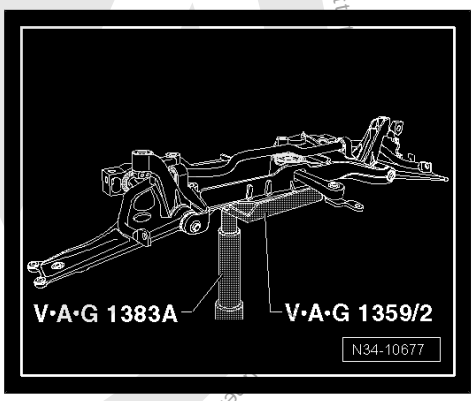
If the position of the subframe is not fixed with the pins, the wheels must later be aligned.

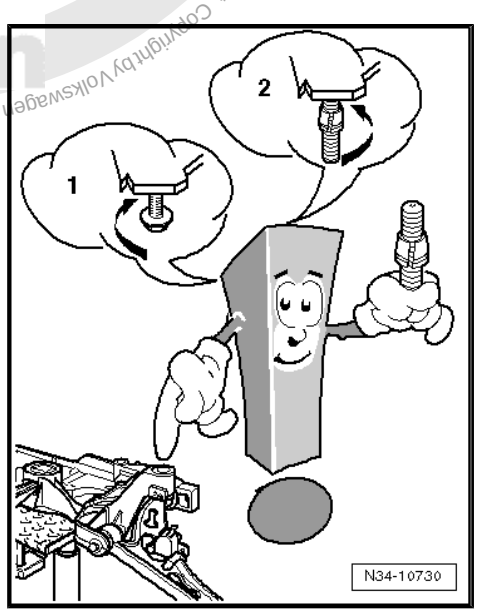
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

Once the subframe has been removed, the engine and gearbox must be supported.





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– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand
⇒ page 283

Installing gearbox ⇒ page 273 .

10.8 Removing gearbox, Passat CC 2009 ►, CC 2010 ► with 3.6 l - V6 engine (all-wheel drive)

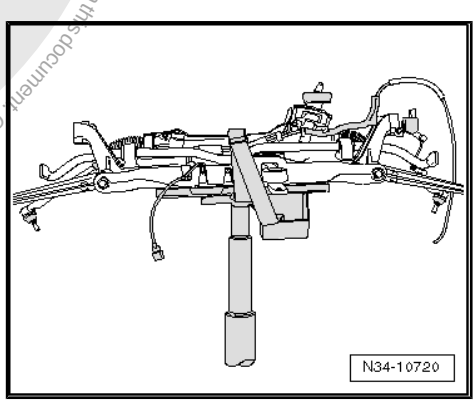
Brief description

The gearbox is removed downwards together with the bevel box.
»From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

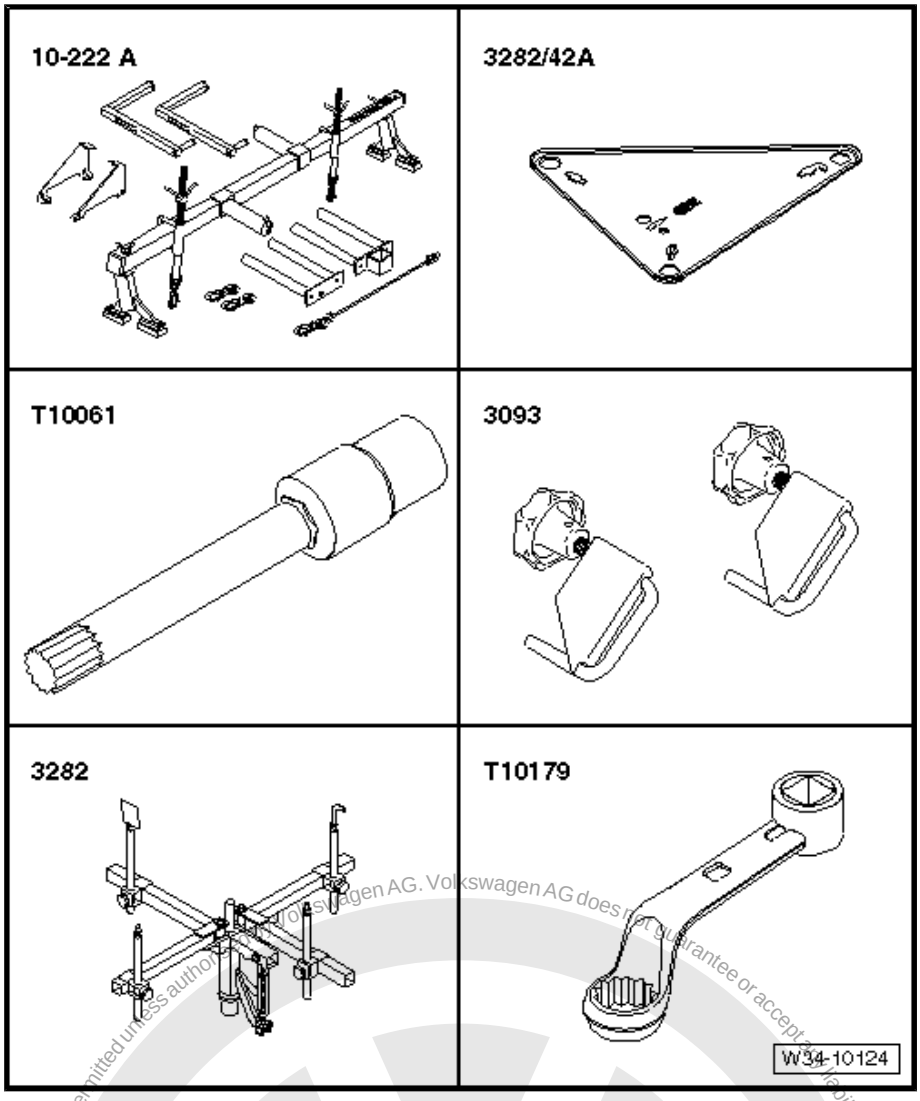
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Socket - T10061-
- Hose clamps up to 40 mm - 3093- if available, or hose clamps up to 25 mm - 3094-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Bracket - T10013-
- Adapter - 10 - 222 A /18-
- 2 tensioning straps - T10038-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

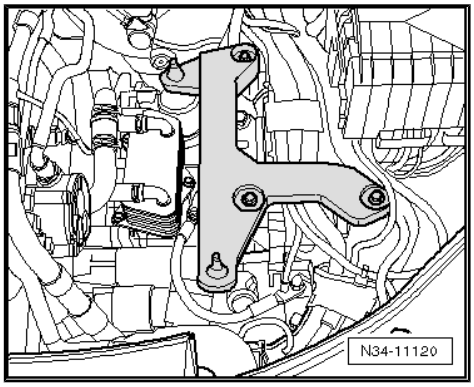
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Disconnect battery ⇒ Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

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– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter , and remove bracket beneath that.
– Unbolt earth strap from bracket.



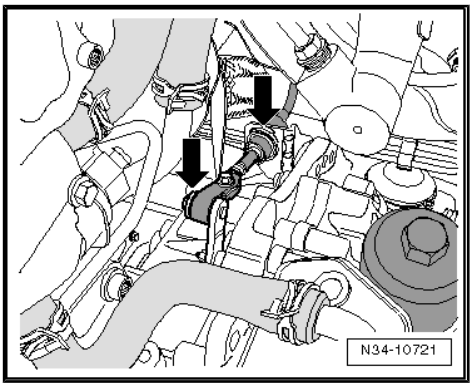
– Release mechatronic unit connector -1- by turning and pull off connector.
– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

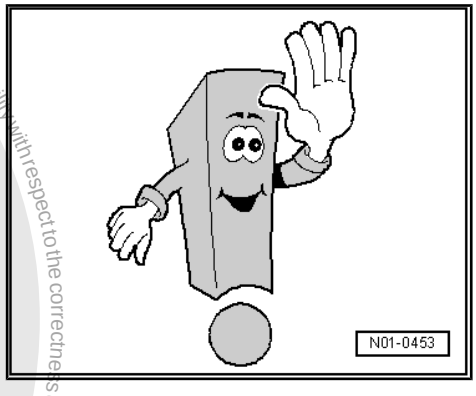


Both securing clips must be later renewed when cable is adjusted.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

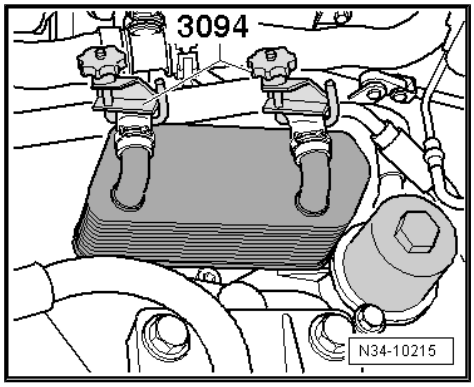
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

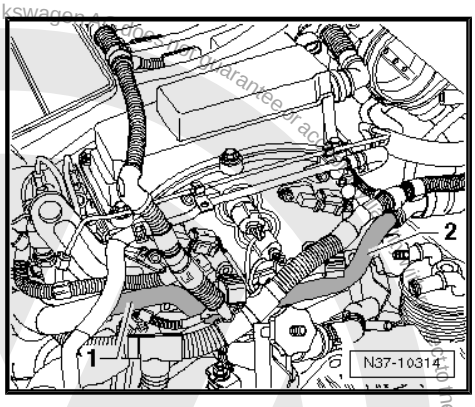


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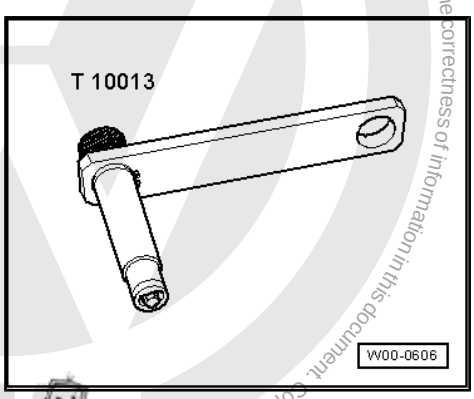
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.



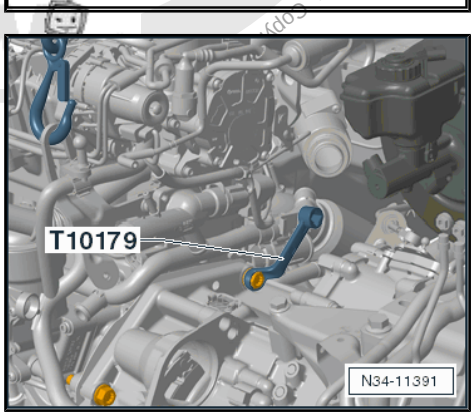
– Unbolt coolant line from engine -1- and -2-.



– Insert bracket - T10013- in eye of crankcase.



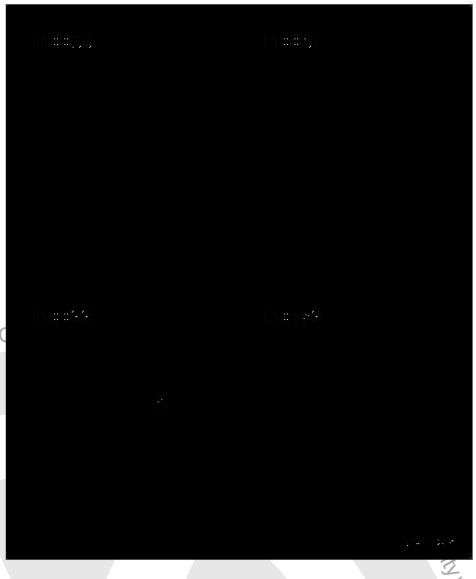
– Remove all upper engine/gearbox connecting bolts.



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The following tools are appropriate for this:

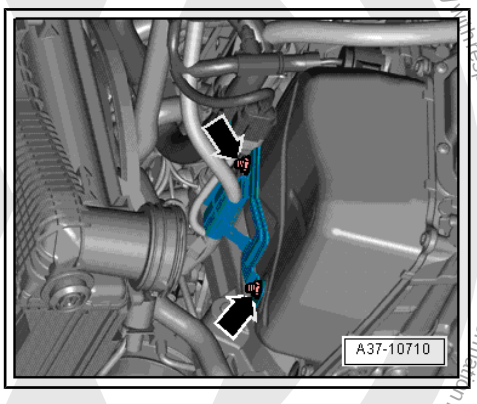
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



– Unbolt wiring retainer from front of »black« gearbox cover -arrows- (2 nuts M6).

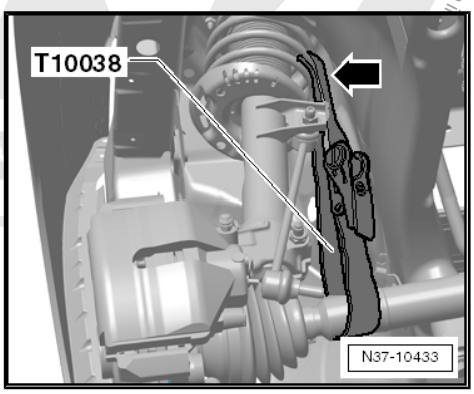
Torque setting: 10 Nm

– Unbolt left and right drive shaft from gearbox ⇒ Rep. gr. 40 ; Removing and installing drive shafts .



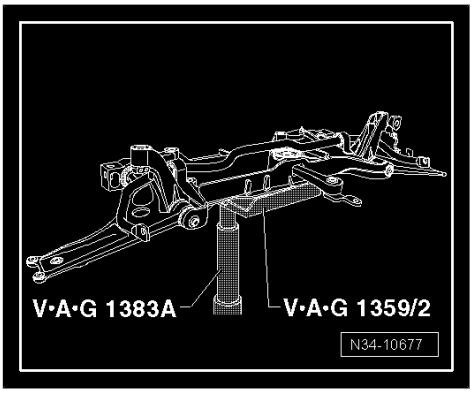
– Secure both drive shafts on suspension strut with tensioning straps - T10038- .

The surface protection of the shafts must not be damaged.



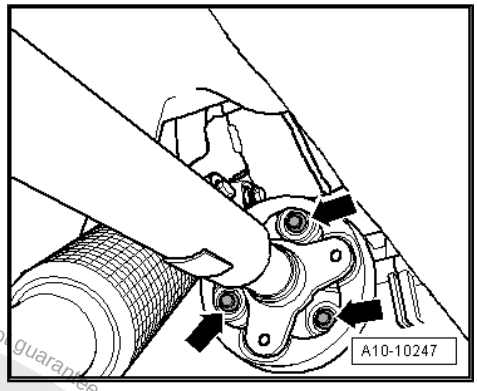
Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing subframe with steering box

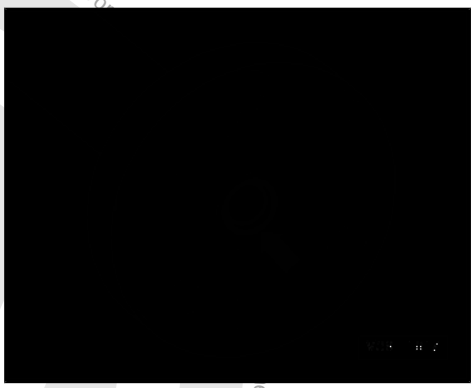


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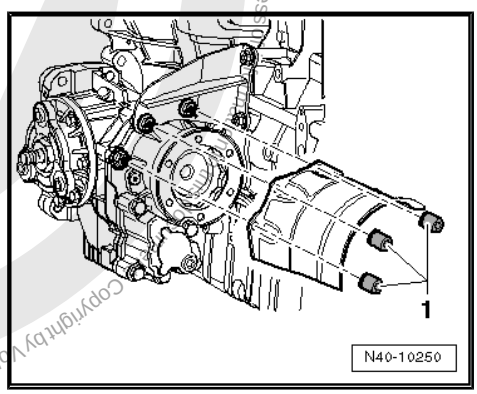
– Mark position of propshaft with flexible coupling relative to bevel box flange with paint.
– Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Removing and installing propshaft .
– Push front propshaft tube to stop.



The -seal- in the propshaft must not be damaged. If seal is damaged, propshaft must be renewed.



– Remove heat shield above right drive shaft -1- ⇒ Rep. gr. 40 ; Heat shields for drive shafts .

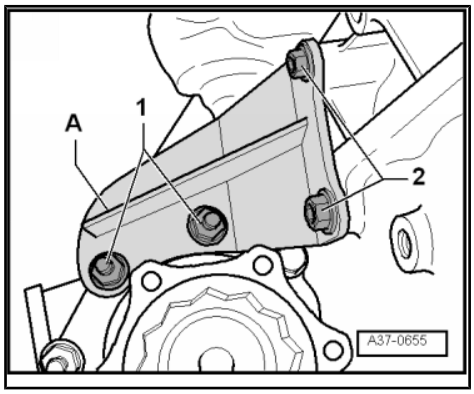


– Remove bolts -1- for gearbox carrier to bevel box.
– Loosen bolts -2-.

Torque setting

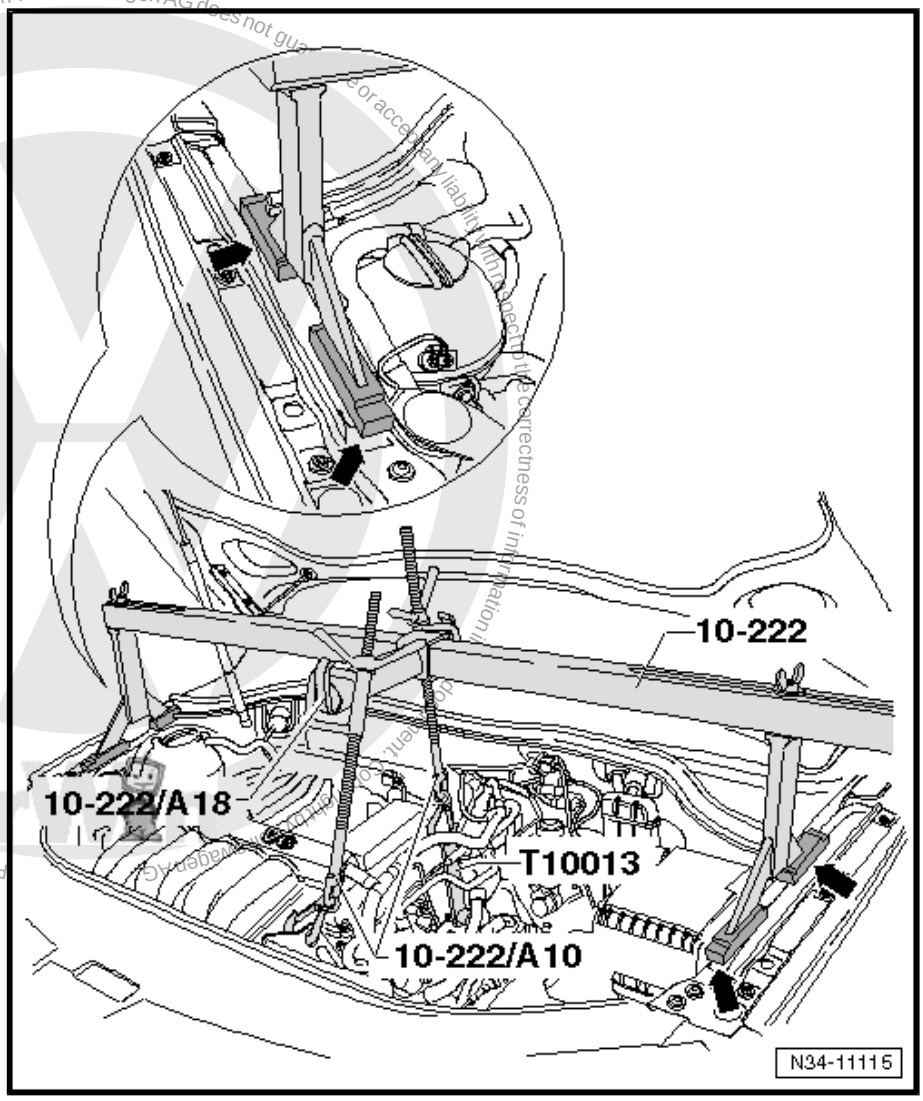
40 Nm

– Remove filler pieces from upper edges of both wings.



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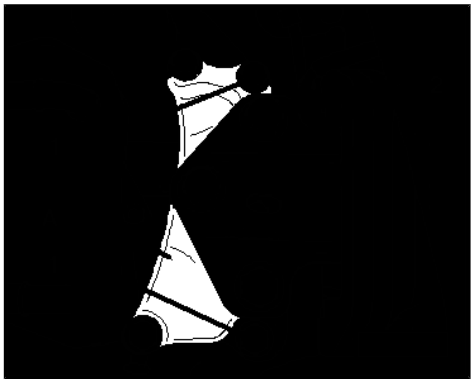
– Place support bracket - 10 - 222 A- onto upper longitudinal member.

Caution

The support bracket must not be placed on the wings, otherwise these might be damaged.

– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.

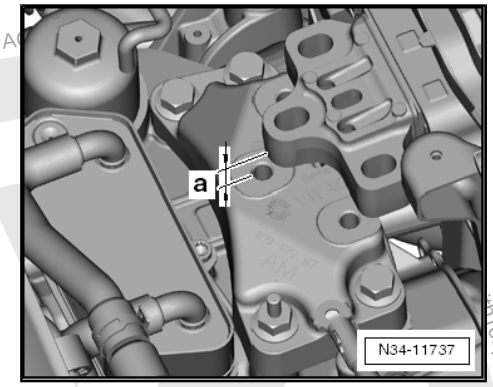
– Remove all bolts -1- and -2- for bracket -A-.



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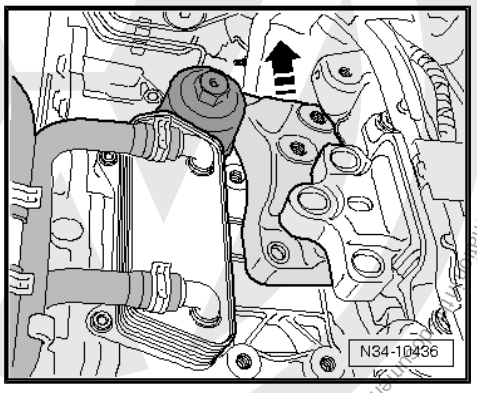
– Then lower engine/gearbox assembly to dimension -a- using spindle of support bracket - 10 - 222 A- .

Dimension -a- = about 20mm



Remove bracket -arrow-.

– Remove all connecting bolts except one which is in an easily accessible place between engine and gearbox.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.



The gearbox is separated from the engine in this position.

– Remove last engine/gearbox connecting bolt.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.9 Removing gearbox, Golf 2004 ▸ with 1.9 l und 2.0 l diesel engine

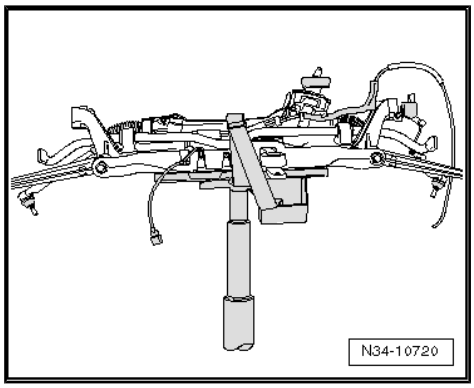
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

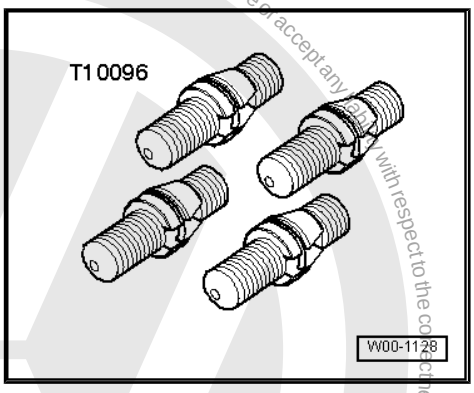
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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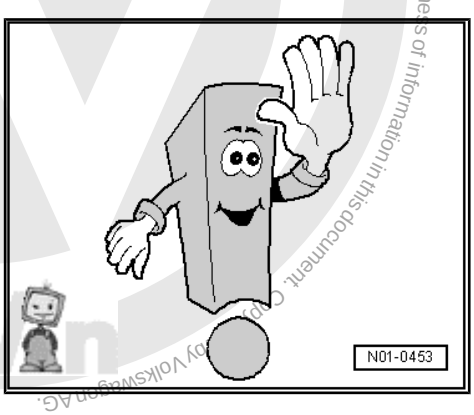
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

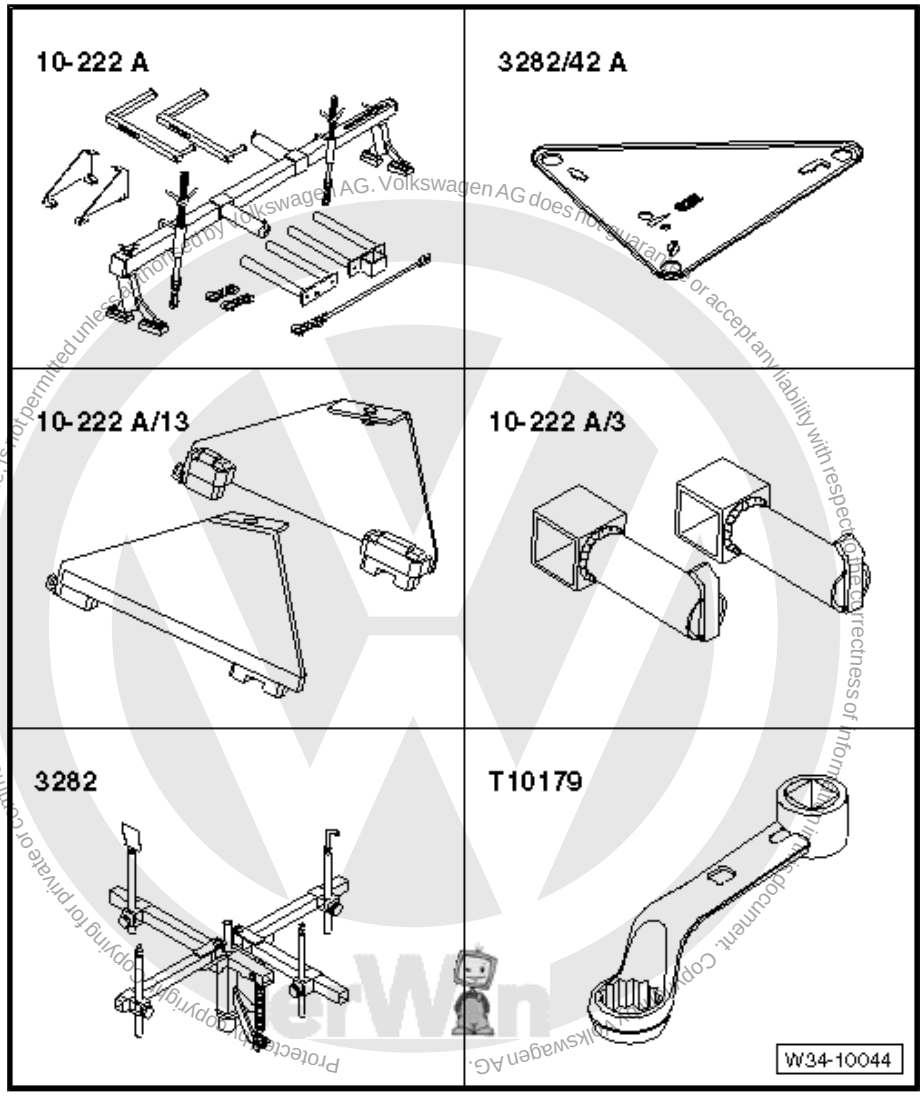
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Hook - 10-222A/13-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10035-
- Support - 3282/59-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

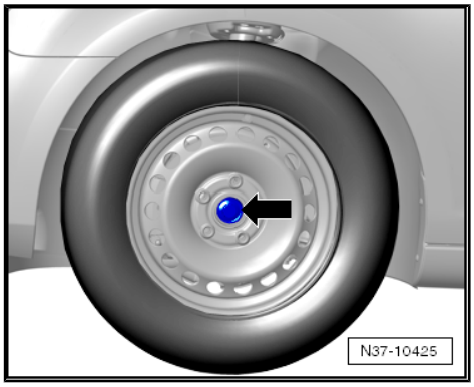
Note

After loosening centre bolt, do not lower vehicle to ground again.

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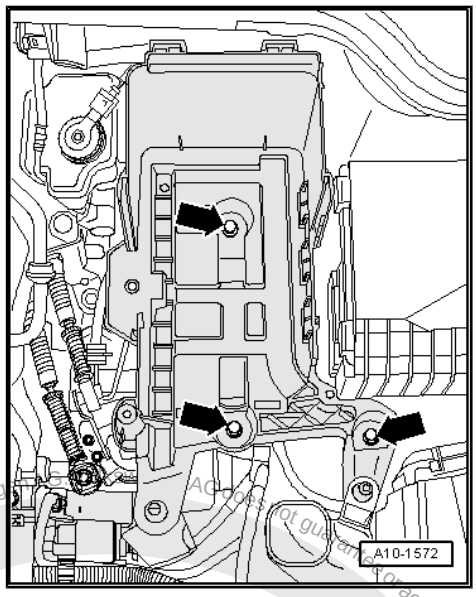
– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .



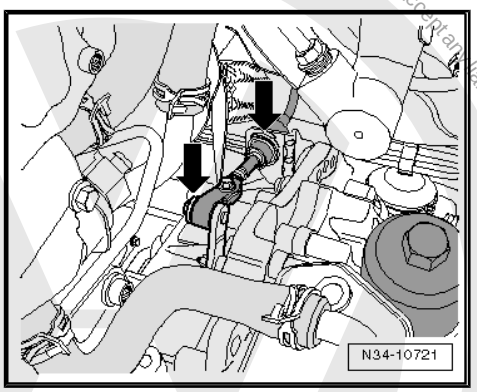
– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

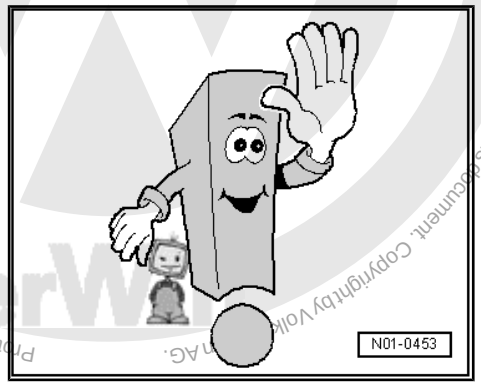


Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

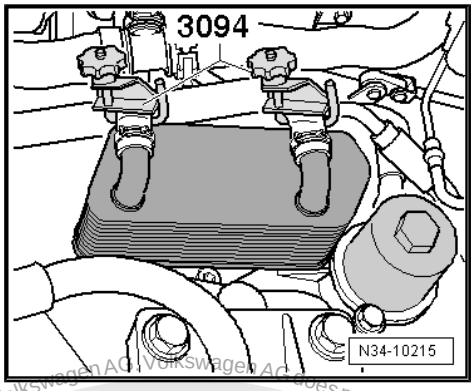
Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

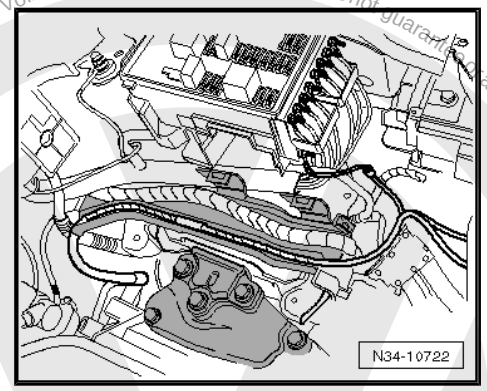


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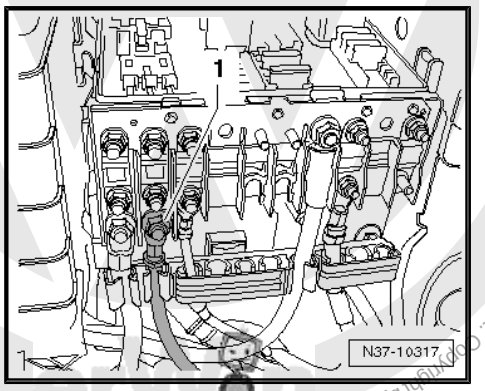
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Remove all upper engine/gearbox connecting bolts. Insert 18 mm - T10179- is especially good for this purpose.



– Disconnect -wiring harness- coming »from below« from sub-frame.



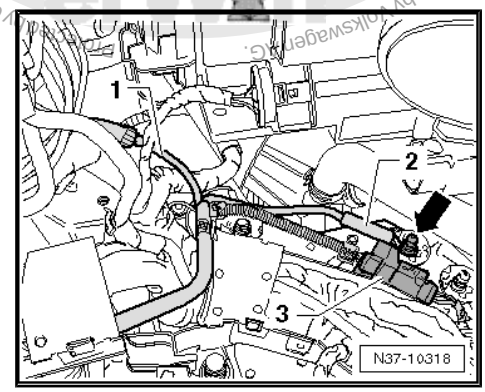
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.
– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.

– Remove all upper engine/gearbox connecting bolts. Insert 18 mm - T10179- is especially good for this purpose.
– If there are hose or wiring connections near the engine lifting eyes, remove them now.



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– Now separate steering from steering column.

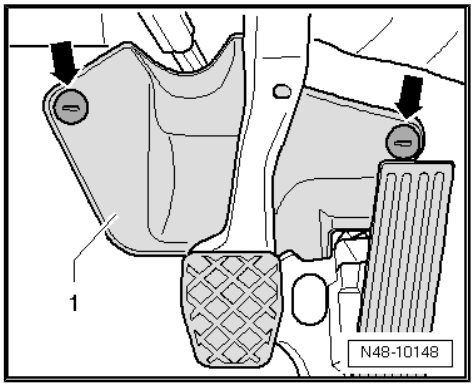
Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

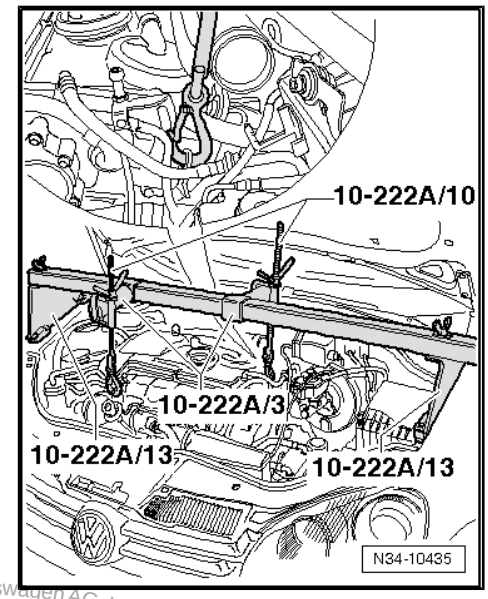
– Separate steering box from steering column.

– Remove filler pieces from upper edges of both wings.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.

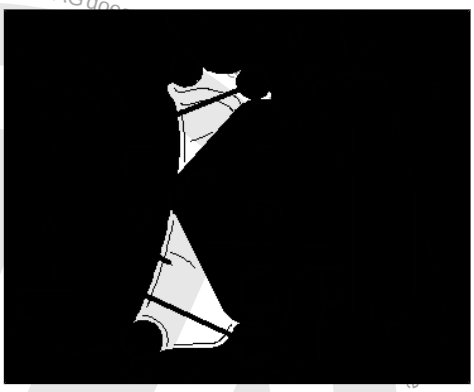


– Support engine and gearbox with support bracket - 10 - 222 A- , adapter - 10 - 222 A /3- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /13- . Do not raise.



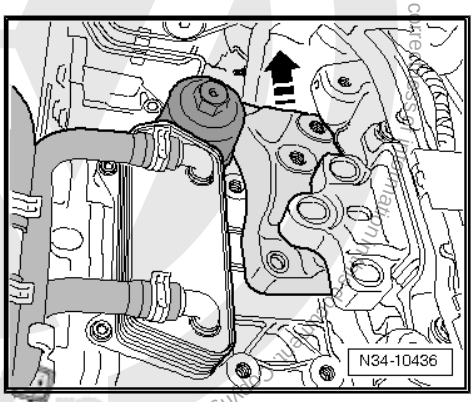
– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



At most, 4 turns are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

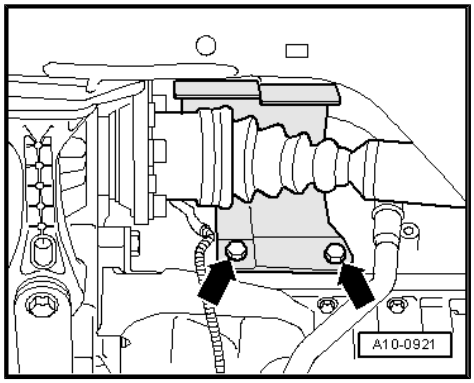


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– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts
– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

If the subframe is removed now, the left drive shaft may be removed.

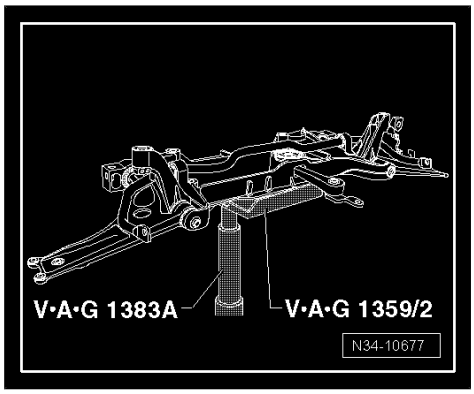


Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

Valuable information concerning the installation of the -subframe- can be found in ⇒ Rep. gr. 40 . It is recommended to read this information »before« removing gearbox. Then it will be clear how to fix the position of the -subframe- so it can then be removed as shown in this figure.

If the position of the subframe was not fixed, the wheels must now be aligned.

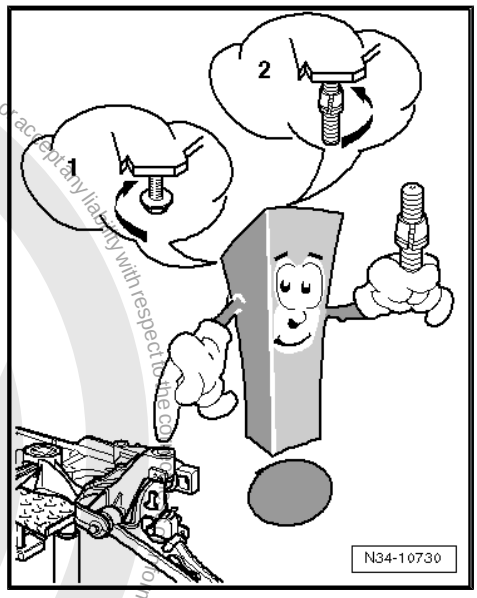
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .



When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

Once the subframe has been removed, the engine and gearbox must be supported.



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– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.10 Removing gearbox, Golf 2004 ► with 125 kW - 2.0 l diesel engine

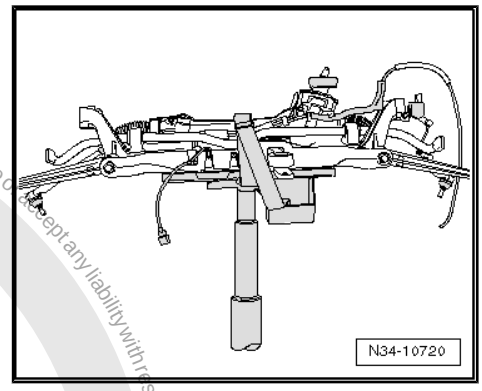
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

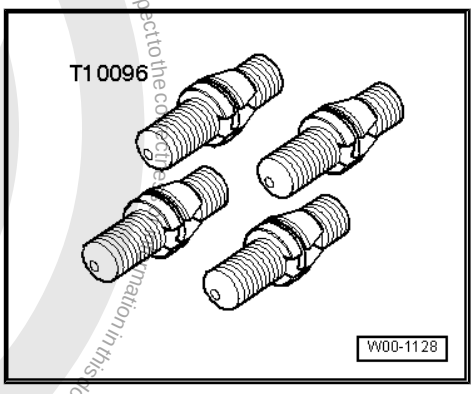
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

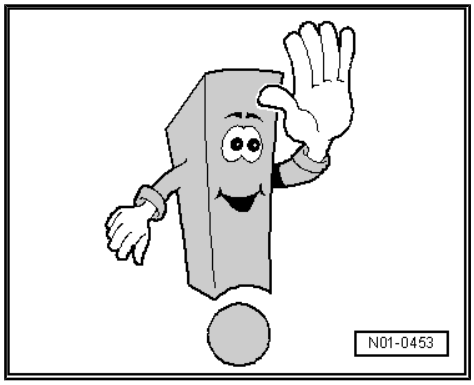
In any case, locating pins - T10096- are necessary.



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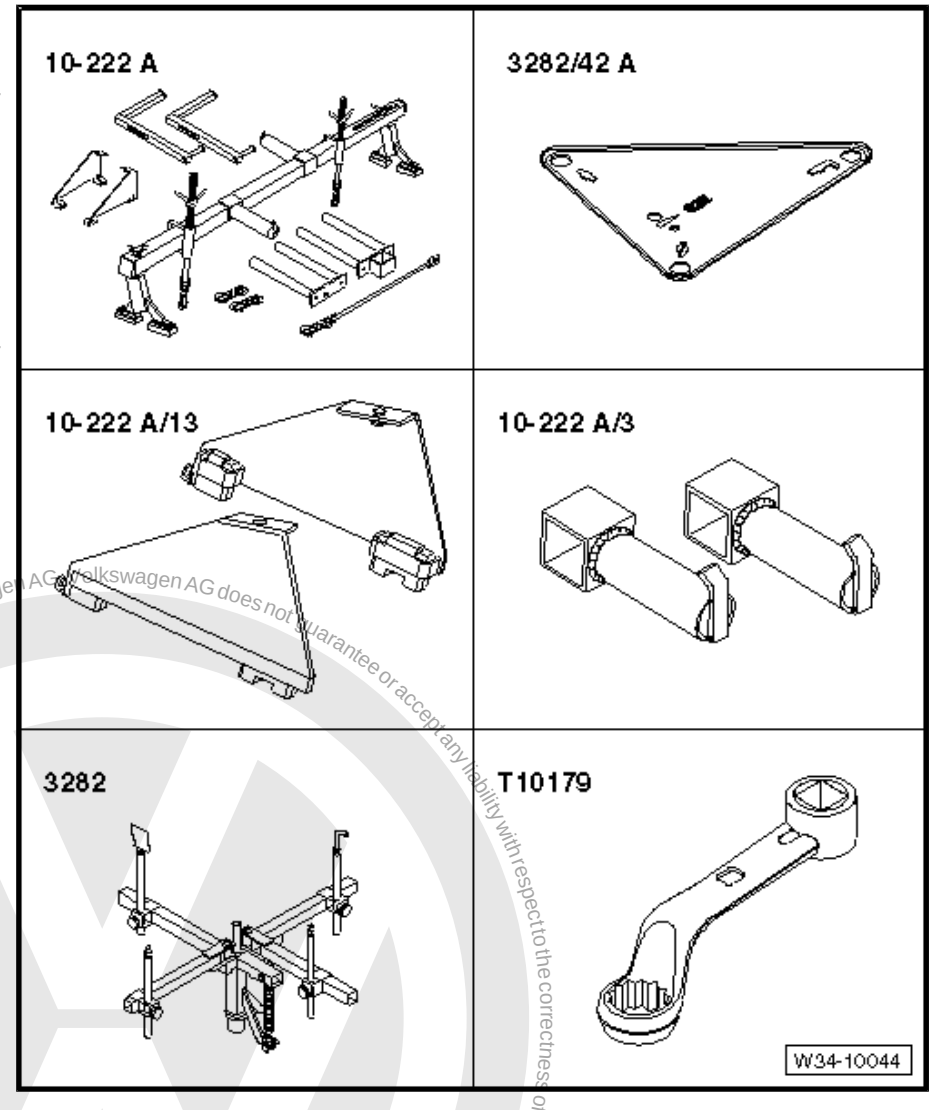
If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Hook - 10-222A/13-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10035-
- Support - 3282/59-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .

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♦ Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

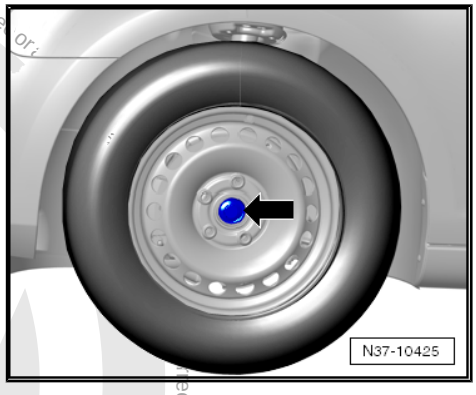
– Move selector lever to position »P« position.

Note

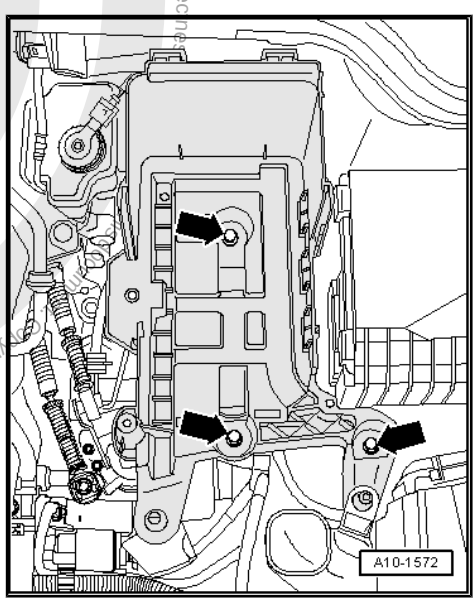
After loosening centre bolt, do not lower vehicle to ground again.

– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

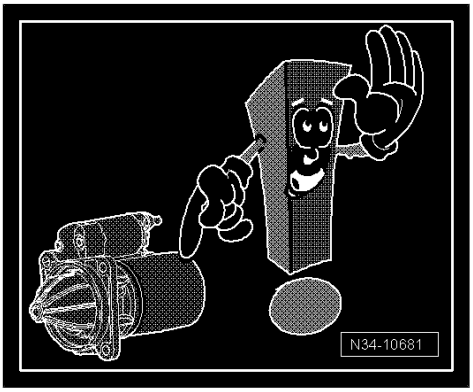
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .



– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



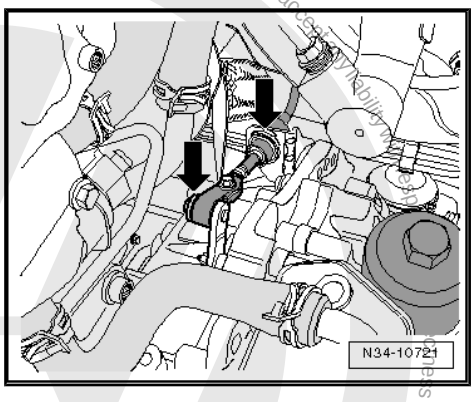
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



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– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

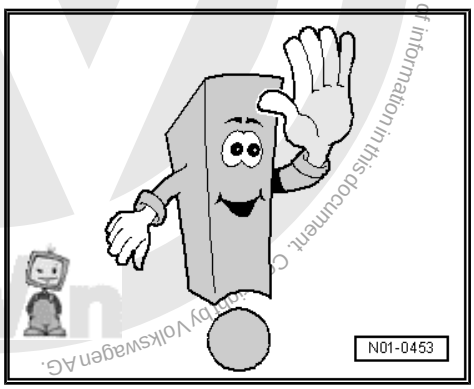


Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

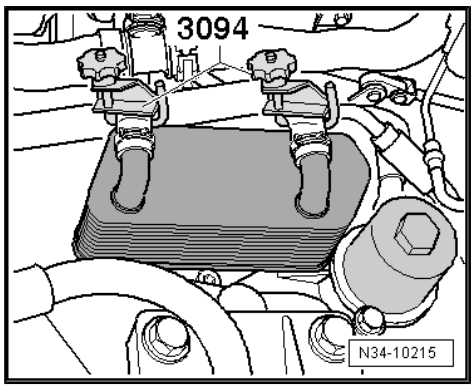
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



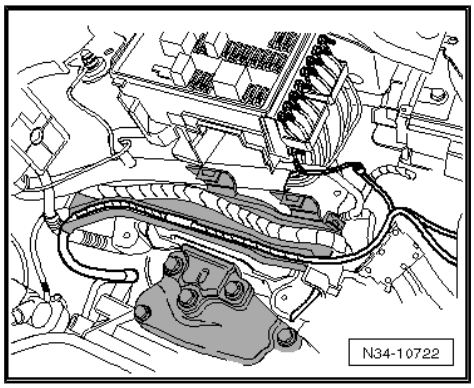
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Remove all upper engine/gearbox connecting bolts.

Insert 18 mm - T10179- is especially good for this purpose.

One bolt is located in hole for starter at the height of the solenoid. Bit - T10061- can be used instead of an 18 mm socket.

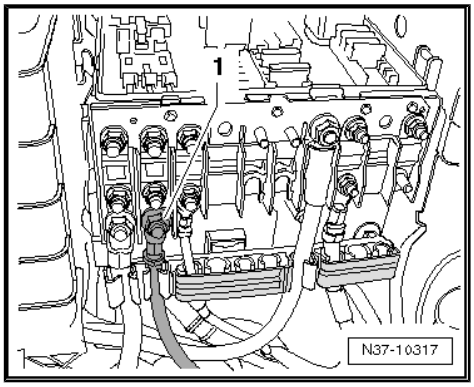


– Disconnect -wiring harness- coming »from below« from sub-frame.



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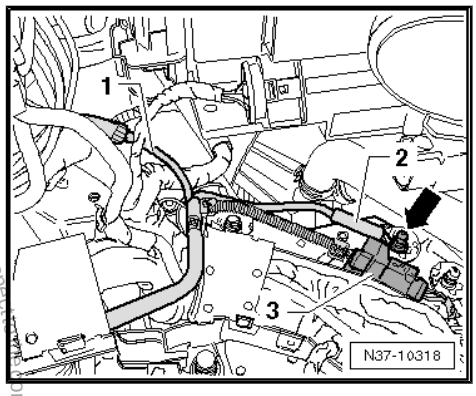
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.



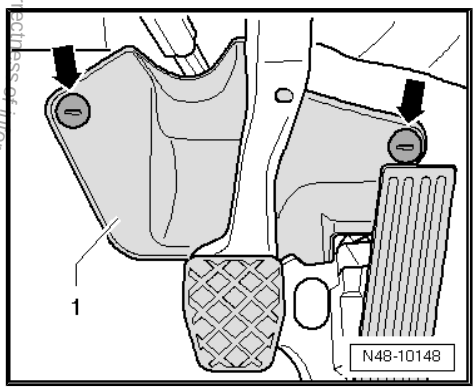
– Remove all upper engine/gearbox connecting bolts. Insert 18 mm - T10179- is especially good for this purpose.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.

– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

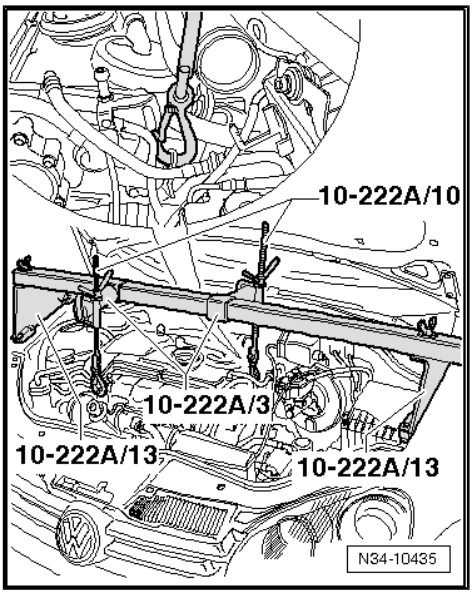


– Separate steering box from steering column.

– Remove filler pieces from upper edges of both wings.

– Support engine and gearbox with support bracket - 10 - 222 A- , adapter - 10 - 222 A /3- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /13- . Do not raise.

»Long« spindle in back.



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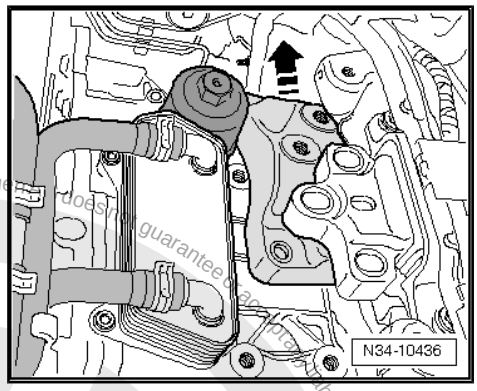
– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



At most, 4 turns are sufficient to remove bracket -arrow-.

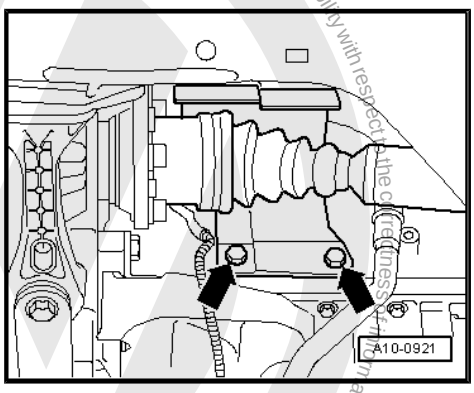
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



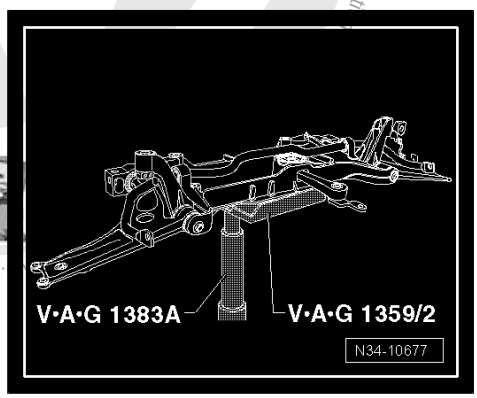
Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

If the position of the subframe was not fixed, the wheels must now be aligned.

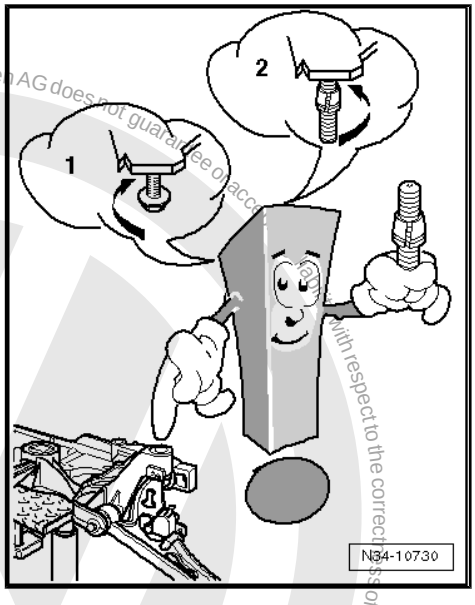
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

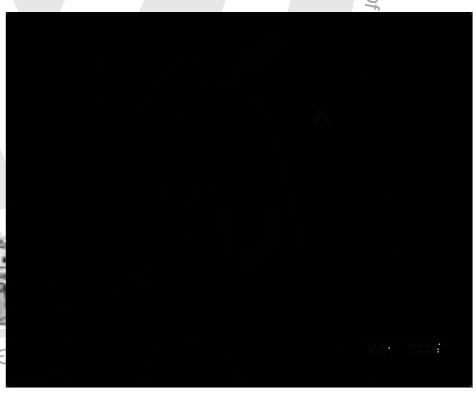


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– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.



The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.11 Removing gearbox, Eos 2006 ►, with 3.2 and 3.6 l - V6 engine

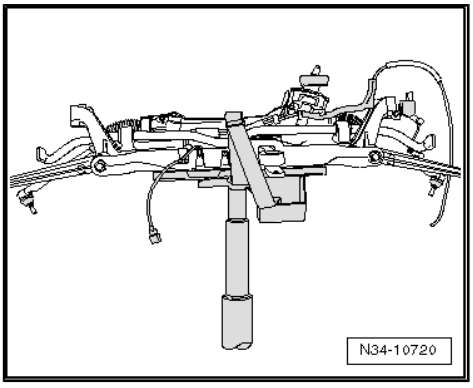
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

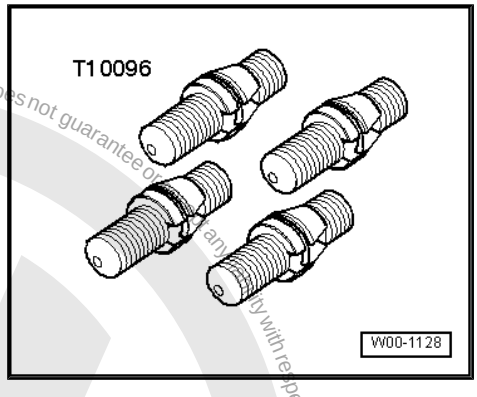
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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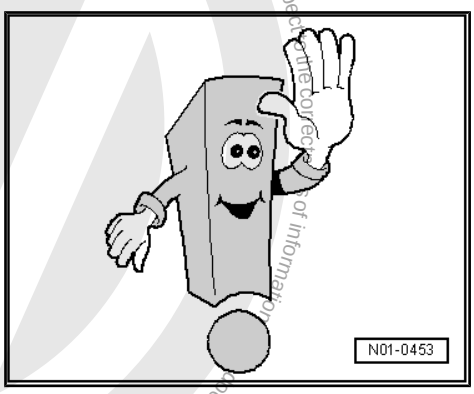
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

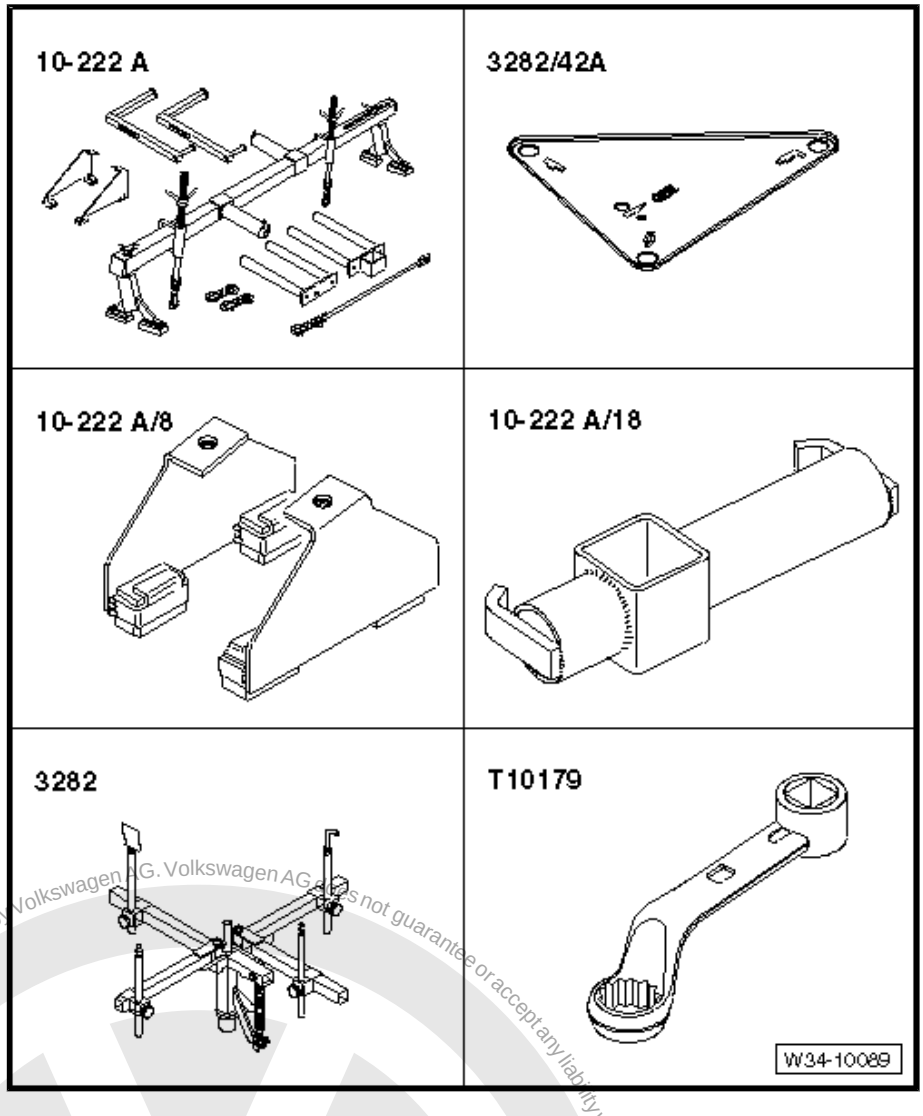
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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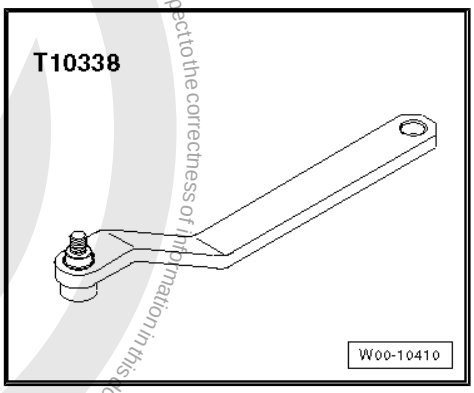
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/18-
- Adapter - 10-222A/8-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Bracket - T10338-



- Tools without illustration:
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

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– Move selector lever to position »P« position.

– Remove both front wheels.

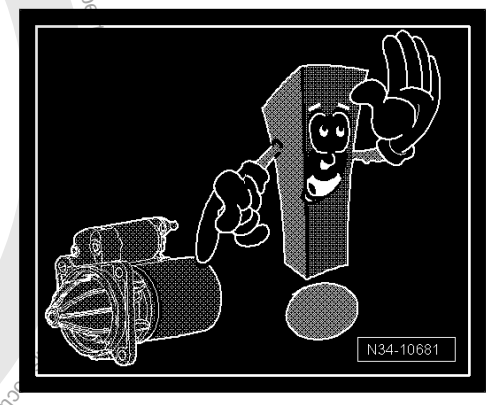
Unlike most other vehicles, in this case the left drive shaft does not need to be removed. It is sufficient to later lay it to the side and secure it to the underbody with cable ties.

– Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Disconnecting and connecting battery .

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Unbolt bracket beneath air filter from longitudinal carrier (3 bolts).

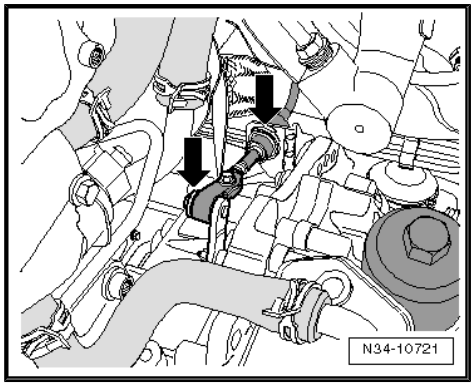
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



It is advisable to remove the »lower« bolt first.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove selector lever cable from gearbox.



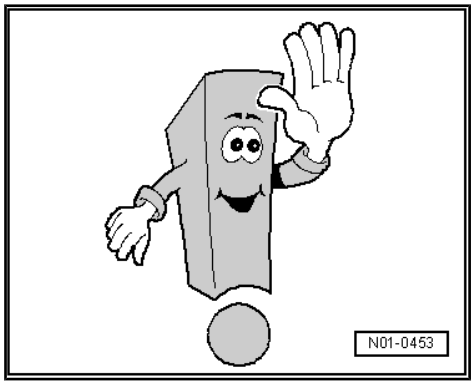
Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

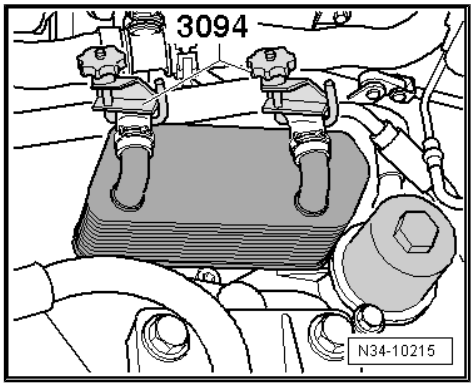


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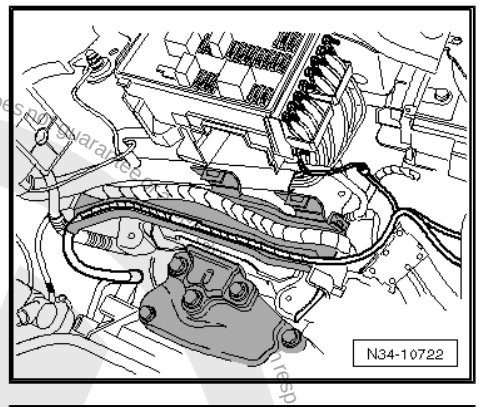
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.

– Release mechatronic unit connector by turning and pull off connector.

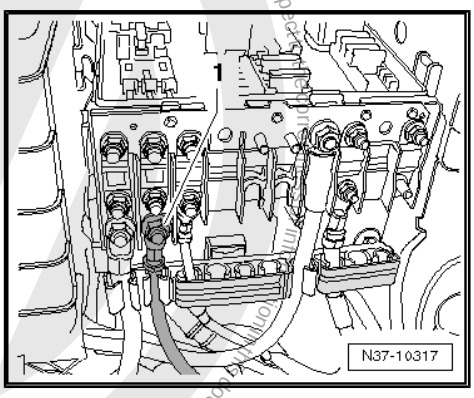
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).



– Disconnect -wiring harness- coming »from below« from sub-frame.



– Disconnect wire -1- from electronics box.



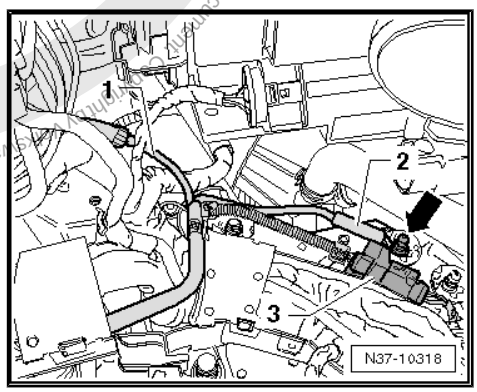
– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.

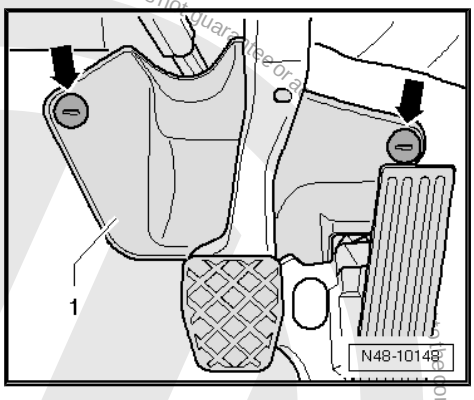
– Remove all upper engine/gearbox connecting bolts. Insert 18 mm - T10179- is especially good for this purpose.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.



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– Now separate steering from steering column.



Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

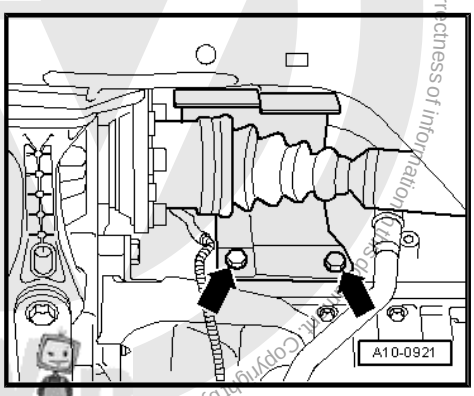
In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.

It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.



The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

– Remove secondary air pump motor - V101- with bracket from front of engine and lay to side.

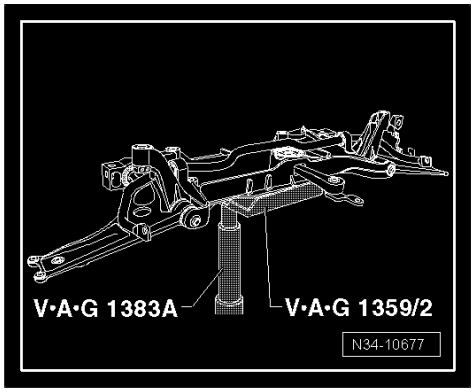
It is not necessary to separate lines to pump or to remove pump.

– Remove coupling rods from suspension links.

– Pull connector off front left vehicle level sender - G78- .

– Unbolt ⇒ pendulum support from gearbox.

Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

If the position of the subframe was not fixed, the wheels must now be aligned.

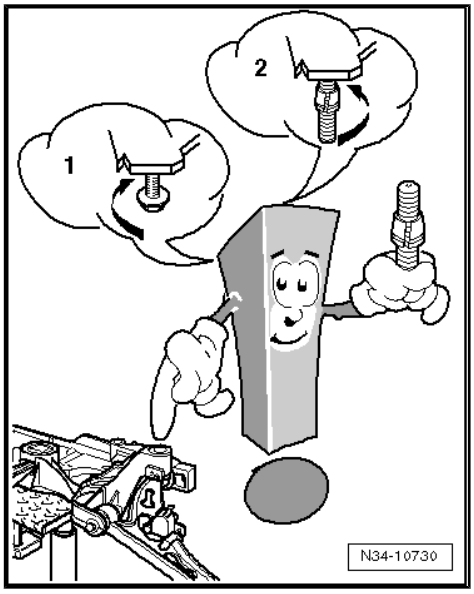
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

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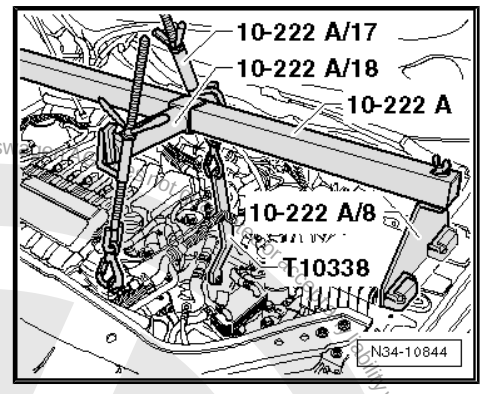
– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

Once the subframe has been removed, the engine and gearbox must be supported.



– Just support; do not raise. Position the »short« spindle with the spacer tube - 10 - 222 A /17- to the rear.

- ♦ Support bracket - 10 - 222 A-
- ♦ Adapter - 10 - 222 A /18-
- ♦ Adapter - 10 - 222 A /8- »smooth side« to engine compartment
- ♦ Bracket - T10338-
- ♦ Use spacer tube - 10 - 222 A /17- on the »rear« spindle

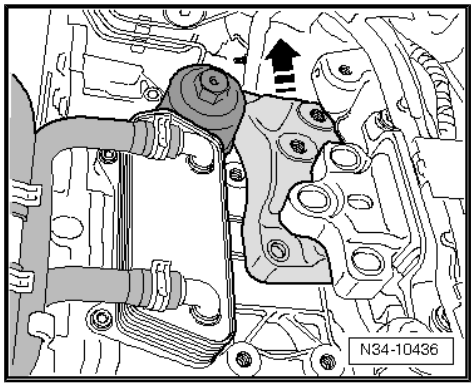


– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.



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About 6 turns are sufficient to remove bracket -arrow-.



The gearbox is separated from the engine in this position.

– Set up gearbox support - 3282- with adjustment plate - 3282/42A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.12 Removing gearbox, Golf 2004 ►with 1.4 l petrol engine

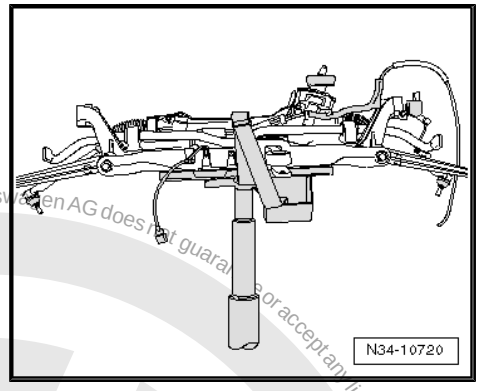
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

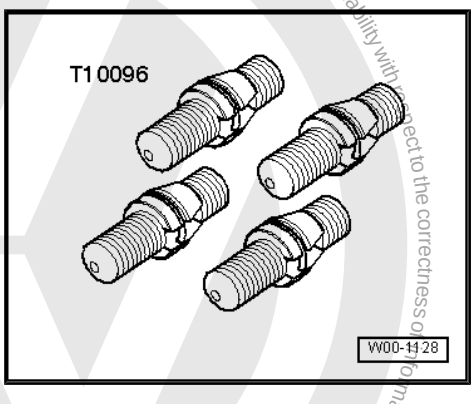
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

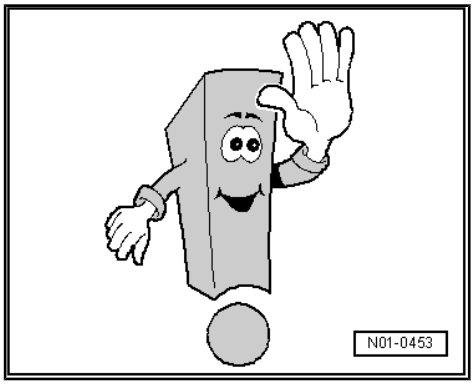
In any case, locating pins - T10096- are necessary.



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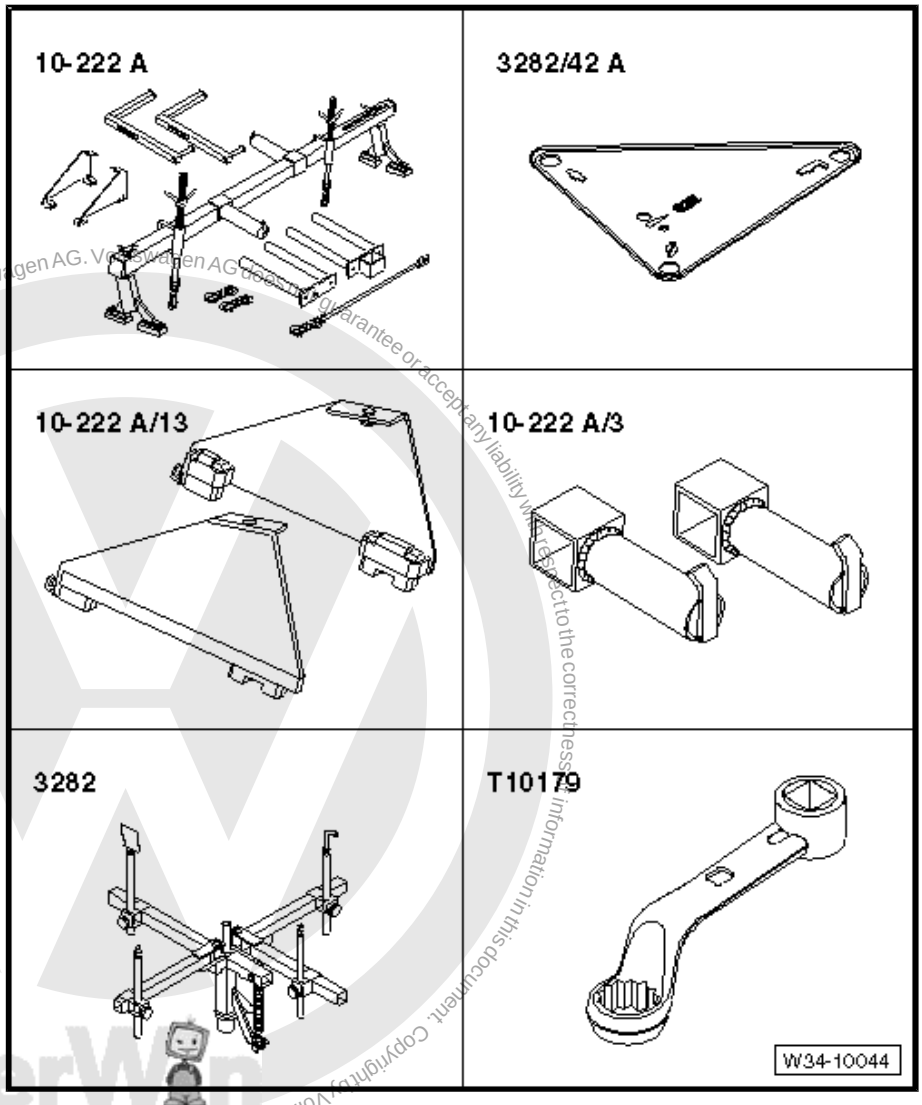
If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Hook - 10-222A/13-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Pin - 3282/29-
- Socket - T10061-
- Socket - T10035-
- Bit - T10099/1-

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- Support - 3282/59-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

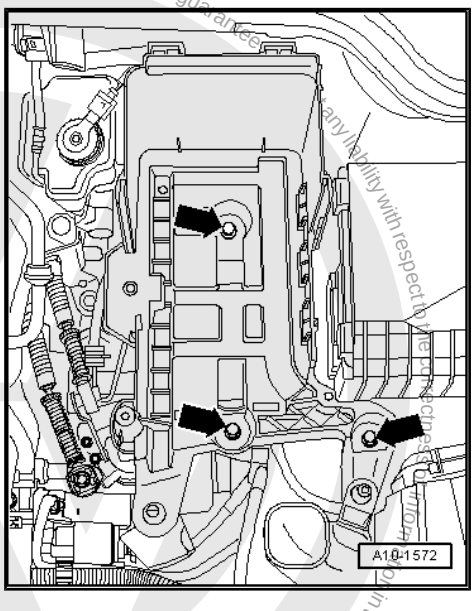
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

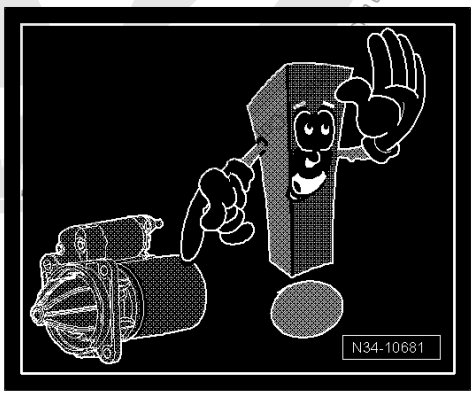
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove engine cover.

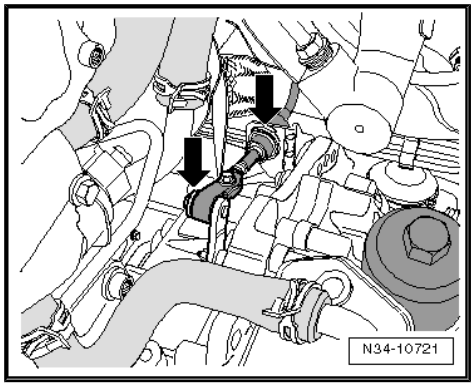


– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



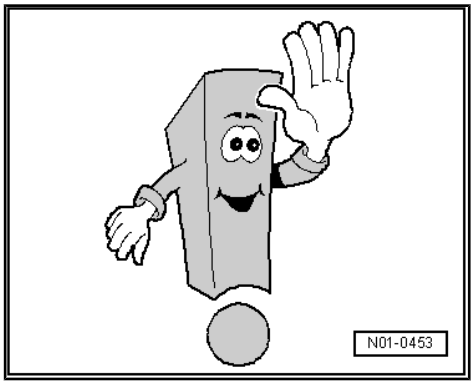
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Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

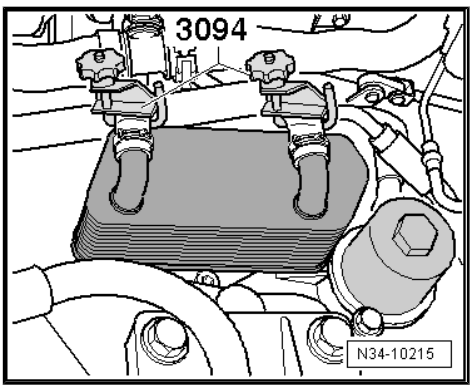
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



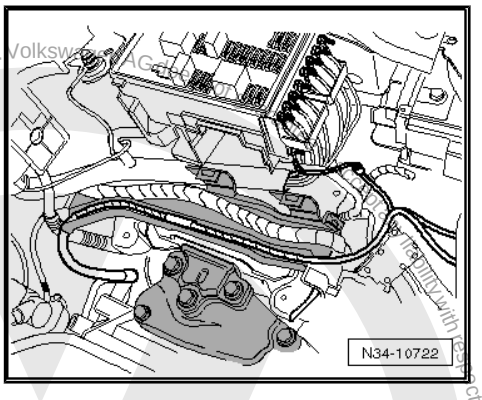
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Now remove all upper connecting bolts between gearbox and engine.

Insert 18 mm - T10179- is especially good for this purpose.

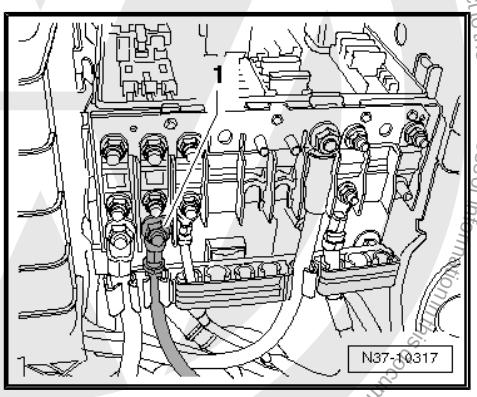
One bolt is located in hole for starter at the height of the solenoid. Socket - T10061- , 18 mm insert - T10179- or insert tool - T10099/1- can be used instead of an 18 mm socket.



– Disconnect -wiring harness- coming »from below« from sub-frame.



– Disconnect wire -1- from electronics box.



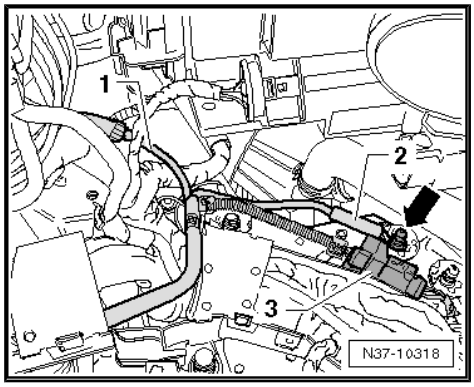
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– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.



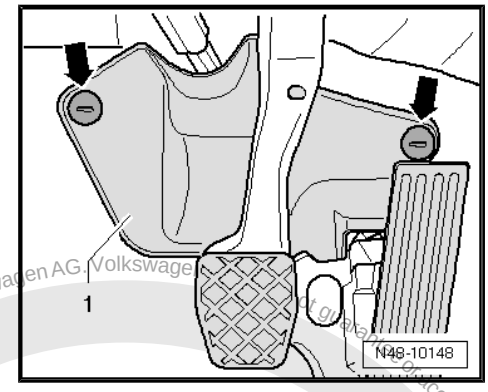
– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

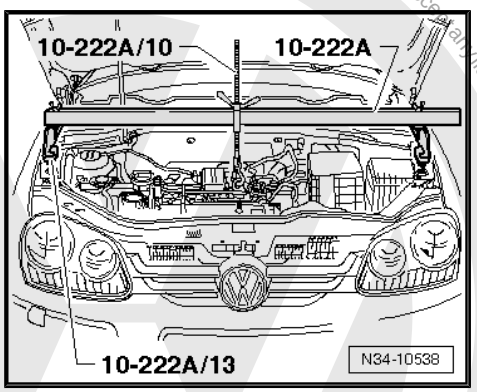
In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.

– Remove filler pieces from upper edges of both wings.



– Support engine and gearbox with support bracket - 10 - 222 A- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /13- . Do not raise.



– Remove all bolts -1- and -2- for bracket -A-.

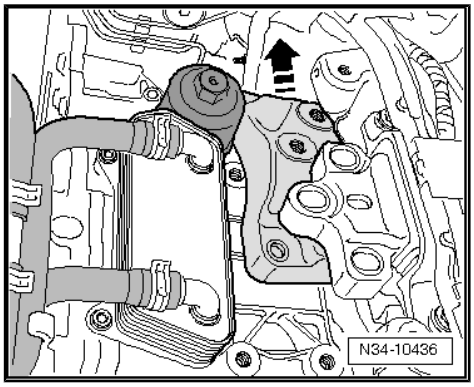
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



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At most, 4 turns are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

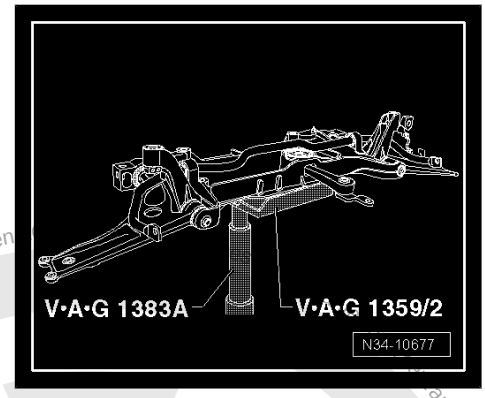
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

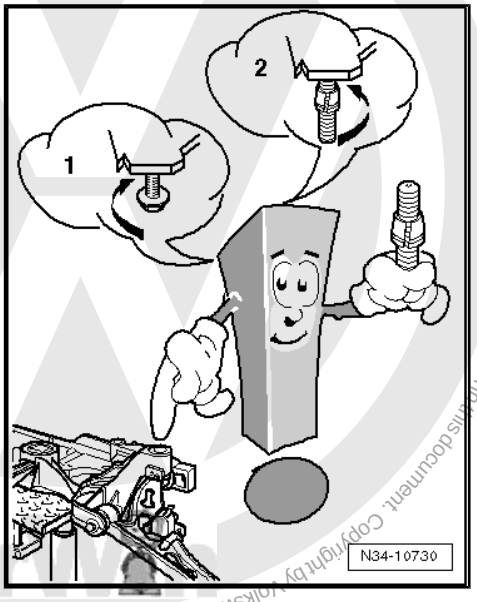
If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.





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– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.

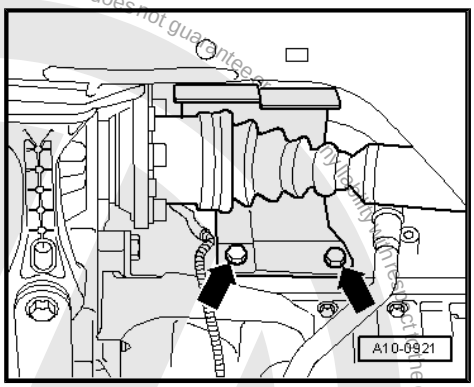
The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

The air pipe and the electric coolant pump in front of the gearbox are still »in the way«.

– Remove brackets for air pipe and coolant pump.

This is sufficient and creates space to support the gearbox. The coolant circuit and charge air pipe do not need to opened or separated, respectively.

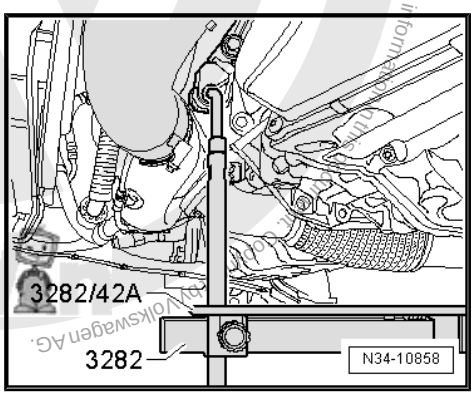
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .



– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.



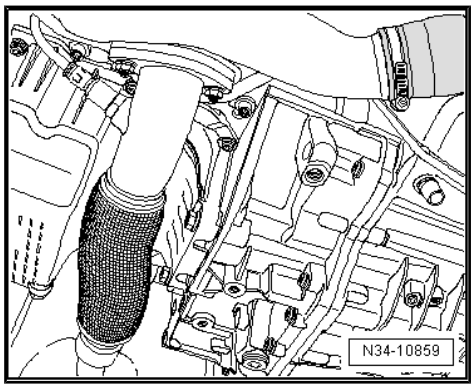
A lower connecting bolt can be loosened but need not be removed.

If this bolt needs to be renewed, the exhaust system must be separated.

– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .



10.13 Removing gearbox, Golf 2004 ►with 2.0 l petrol engine

Brief description

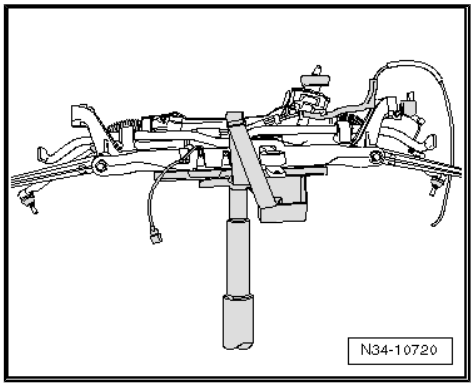
The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

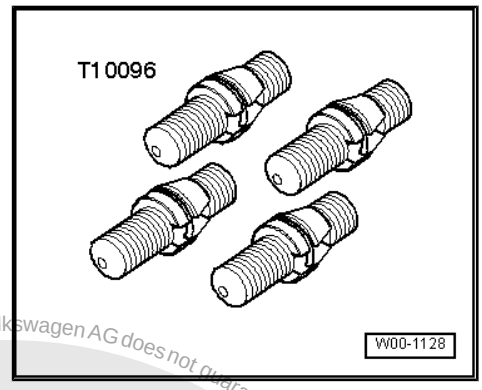
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Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



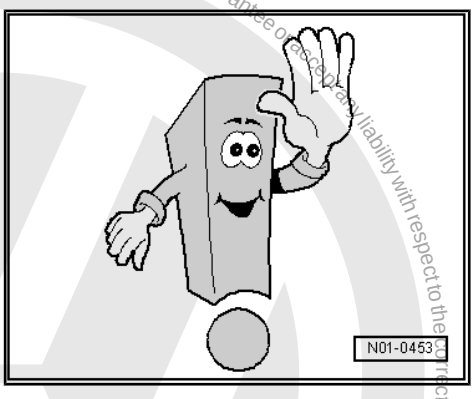
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

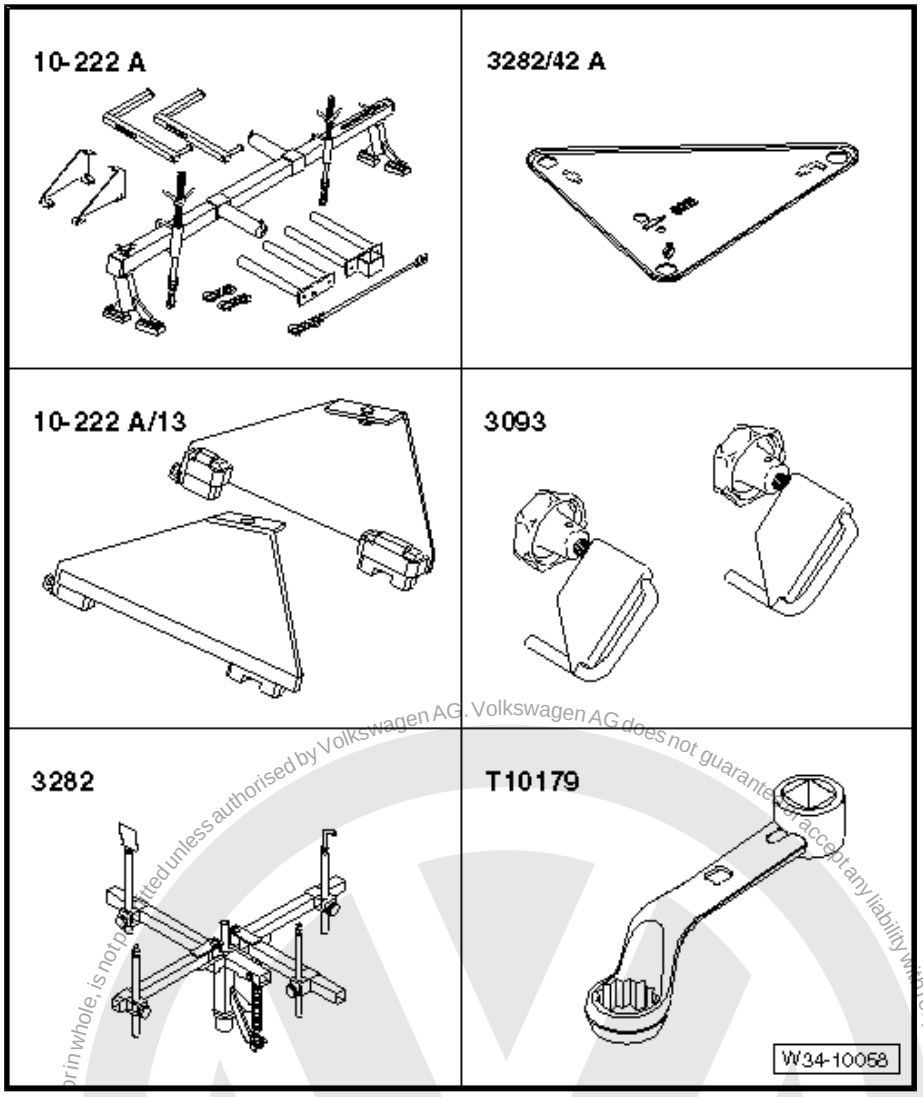
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Hook - 10-222A/13-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Pin - 3282/29-
- Support - 3282/59-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

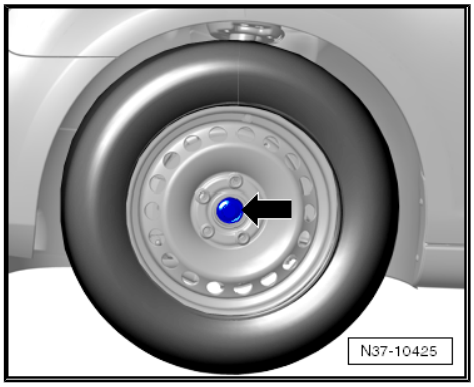
Note

After loosening centre bolt, do not lower vehicle to ground again.

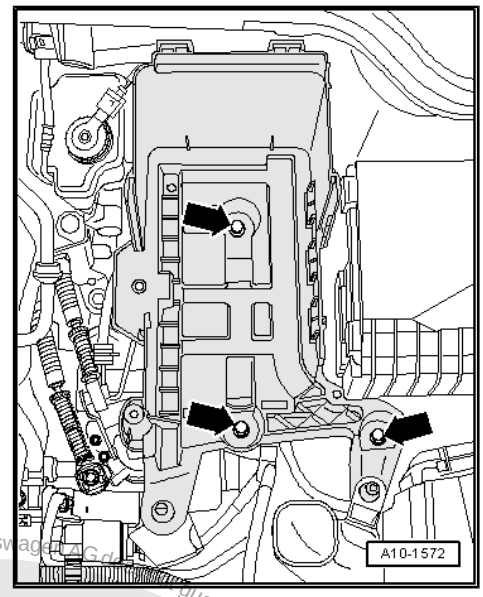
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– Depress brake pedal to remove bolt for left drive shaft -arrow- (second mechanic required).

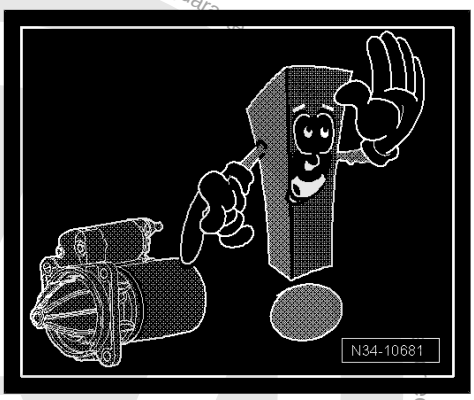
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .



– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

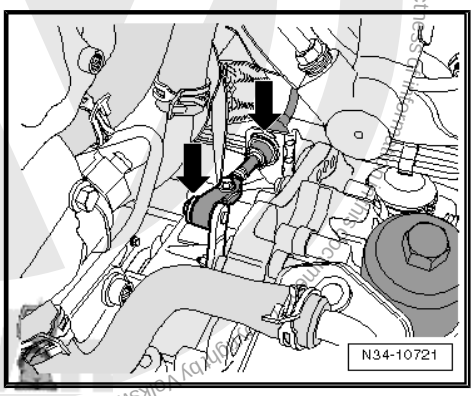


– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



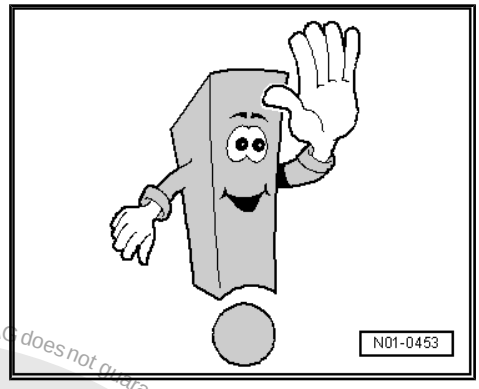
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Both securing clips must be later renewed when cable is adjusted.

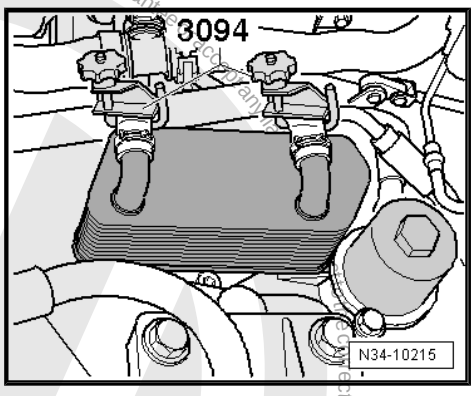
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

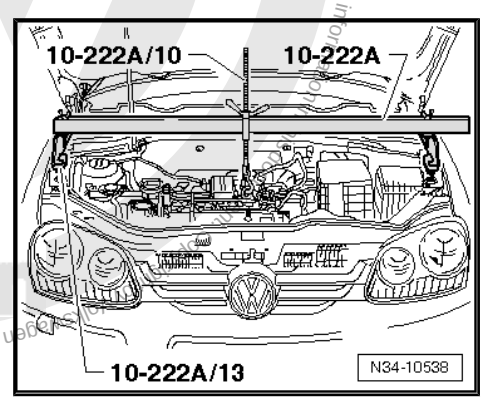
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.
– Remove filler pieces from upper edges of both wings.
– If there are hoses and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.



– Support engine and gearbox with support bracket - 10 - 222 A- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /13- . Do not raise.

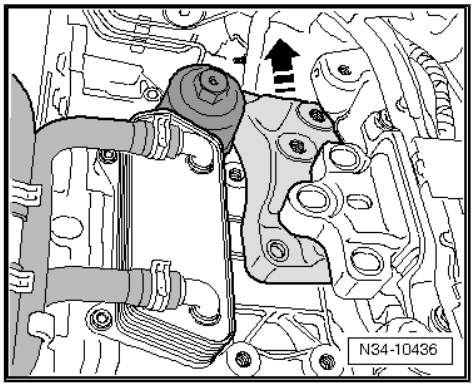


– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



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Remove bracket -arrow-.



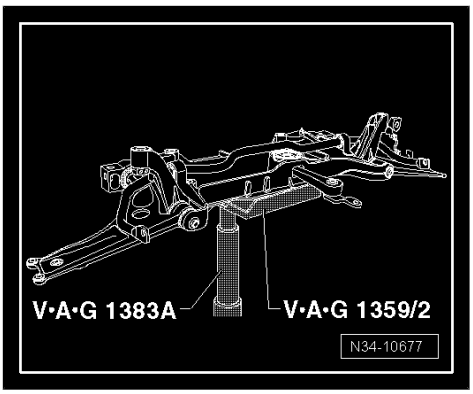
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .
– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

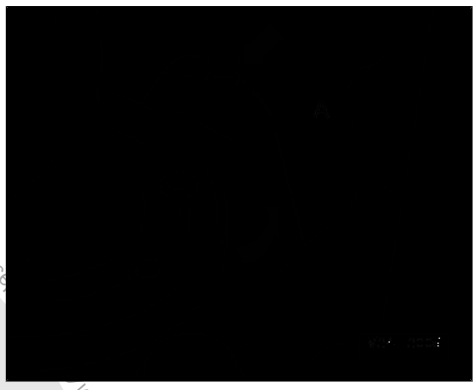
If the subframe is removed now, the left drive shaft may be removed.

Now remove -subframe- ⇒ Rep. gr. 40 .

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.



The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.14 Removing gearbox, Golf 2004 ►, with 3.2 l - V6 engine (R32 four-wheel drive)

Brief description

The gearbox is removed downwards separately. »From above«

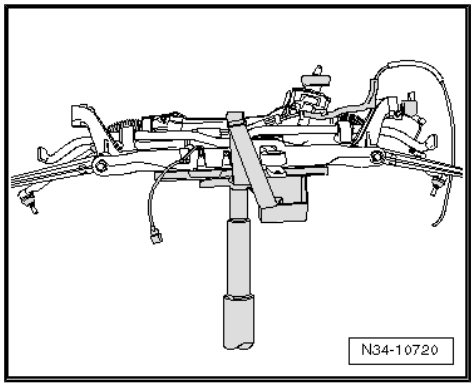
Remove air filter and starter. Wiring harness which comes from »beneath« from subframe must be disconnected so that subframe can later be removed. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

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Remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

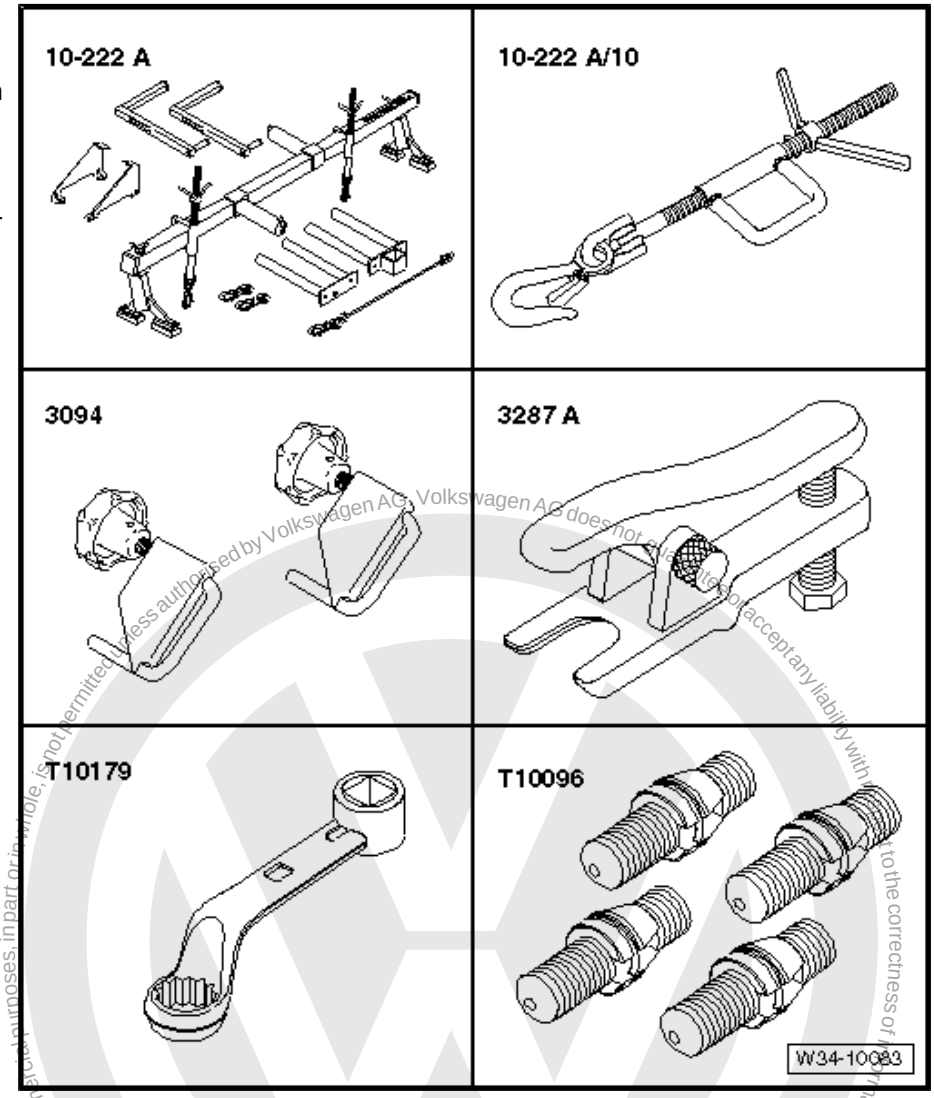


If the position of the subframe was not fixed, the wheels must now be aligned.

After the subframe has been removed, the engine and gearbox must be supported and the left assembly mounting must be separated. Then the »last« connecting bolt between the engine and gearbox must be removed and the gearbox lowered.

Special tools and workshop equipment required

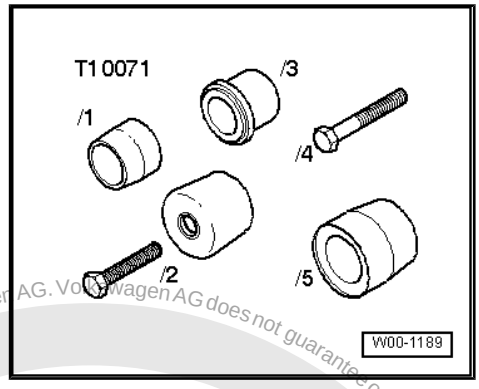
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Insert tool 18 mm - T10179-
- Ball joint puller - 3287 A-
- Locking device - T10096-
- Support bar - 10 - 222 A- with hook - 10 - 222 A /10-
- Adapter - 10 - 222 A /18-



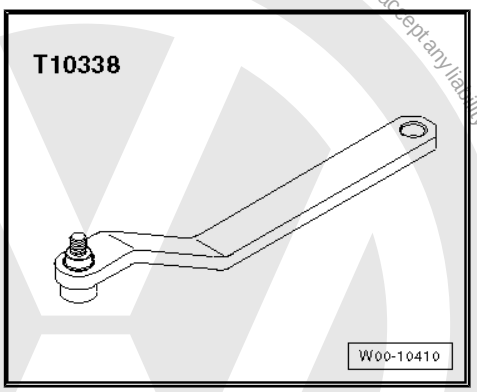
Special tools and workshop equipment required

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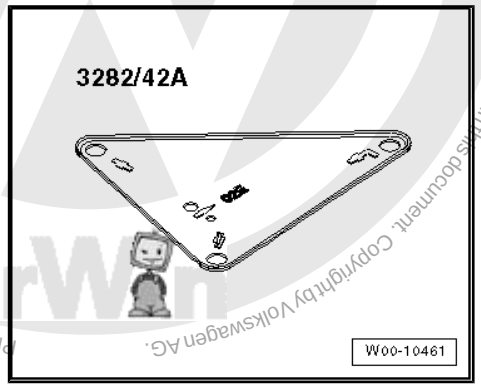
- Assembly tool - T10071-



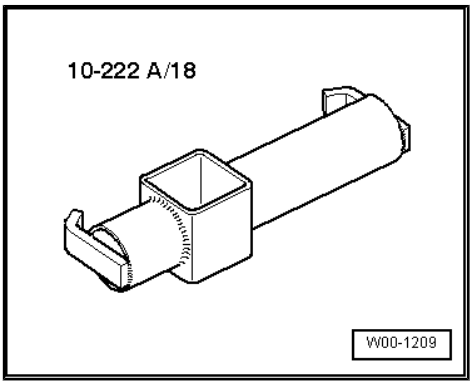
- Bracket - T10338-



- Adjustment plate - 3282/42 A-



- Adapter - 10 - 222 A /18-



Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Disconnect battery ⇒ Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

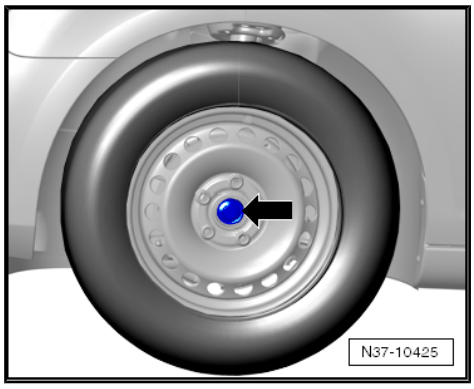
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Note

After loosening centre bolt, do not lower vehicle to ground again.

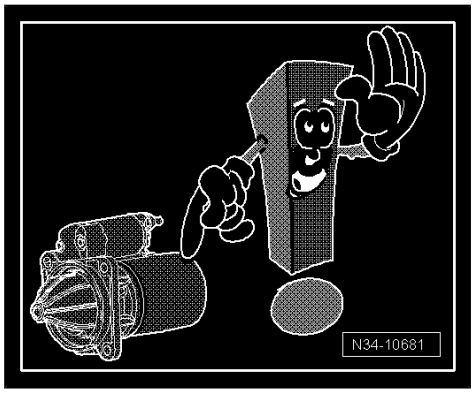
– Depress brake pedal to remove bolt for left drive shaft -arrow- (second mechanic required).

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter , and remove retaining plate beneath that.



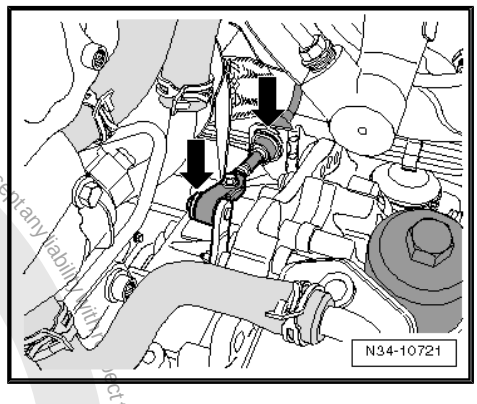
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

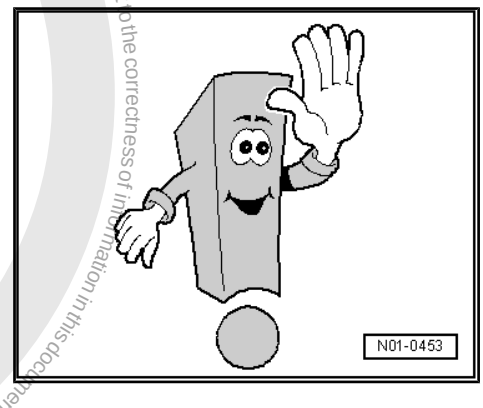


Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

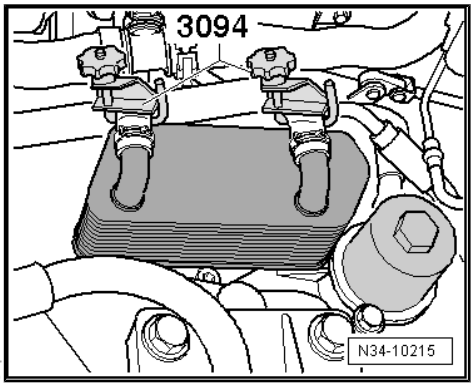
Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



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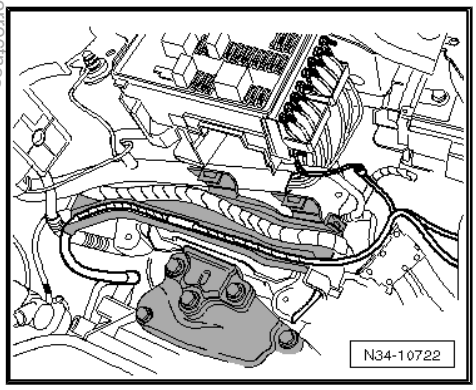
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.



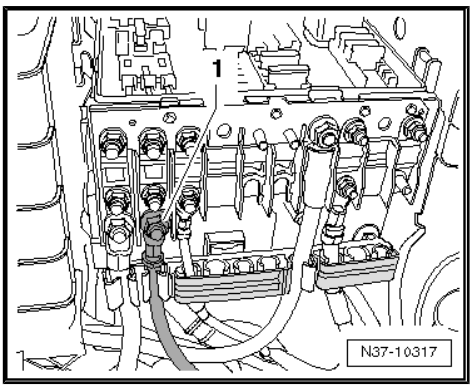
– Release mechatronic unit connector by turning and pull off connector.

– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

– Disconnect -wiring harness- coming »from below« from sub-frame.



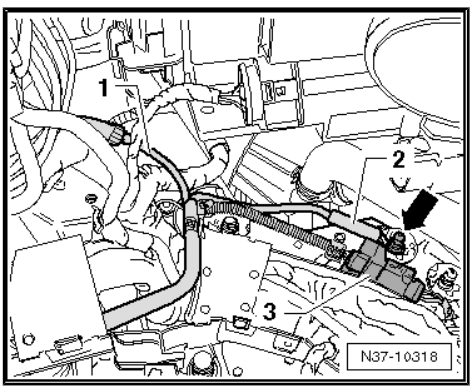
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.



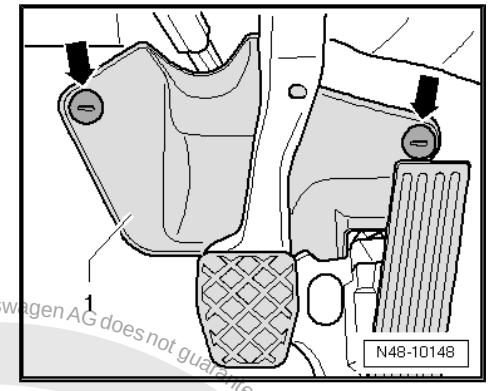
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– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.

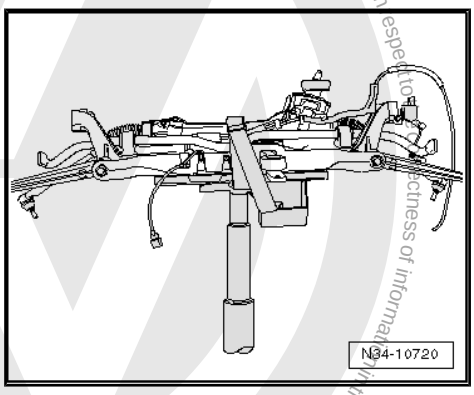


It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

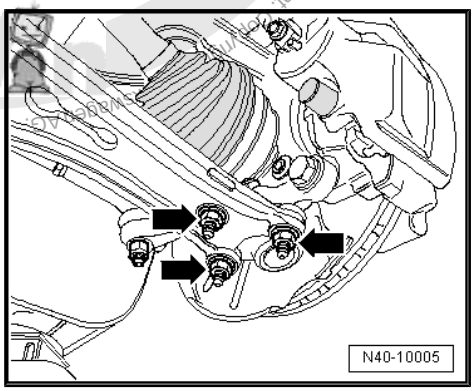


If the position of the subframe was not fixed, the wheels must now be aligned.

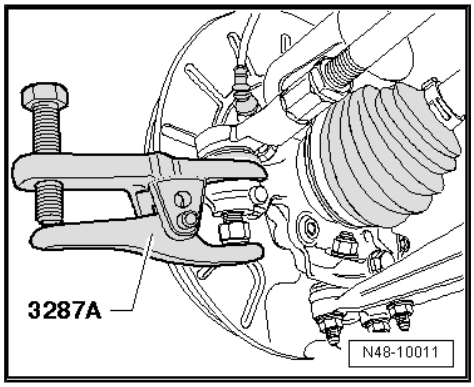
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

Remove subframe.

– First unscrew -nuts- from lower suspension links on both sides.
– Pull connector off front left vehicle level sender - G78- .
– Remove both coupling rods from anti-roll bar.

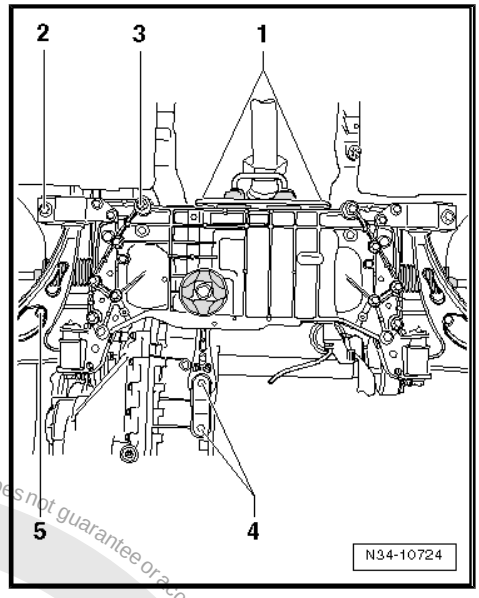


– Press off both track rod ball joints.
– Unbolt pendulum support from gearbox only.

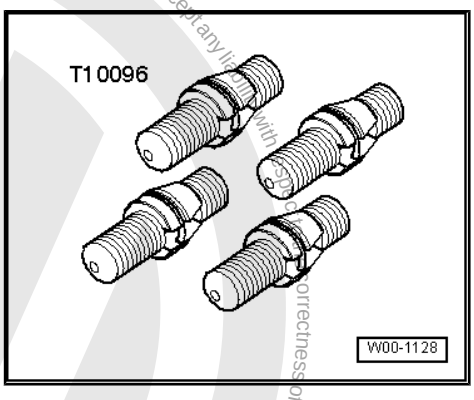


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– Unbolt bracket for exhaust system -1-.
– Remove pendulum support bolts -4-.



Before removing bolts -2- through -5- on both sides, have locating pins - T10096- at hand and support subframe with engine and gearbox support - V.A.G 1383 A- .

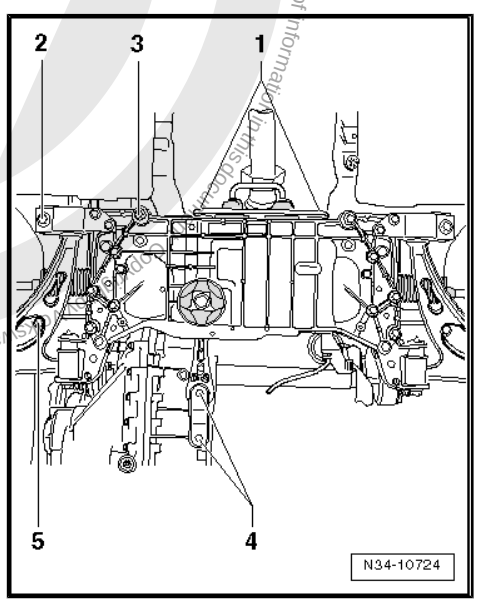


– After subframe has been supported, remove bolts -2- on both sides.

As soon as bolt -2- has been removed, immediately insert a locating pin - T10096- in the “left and right” sides.

Do this for bolt -5- also.

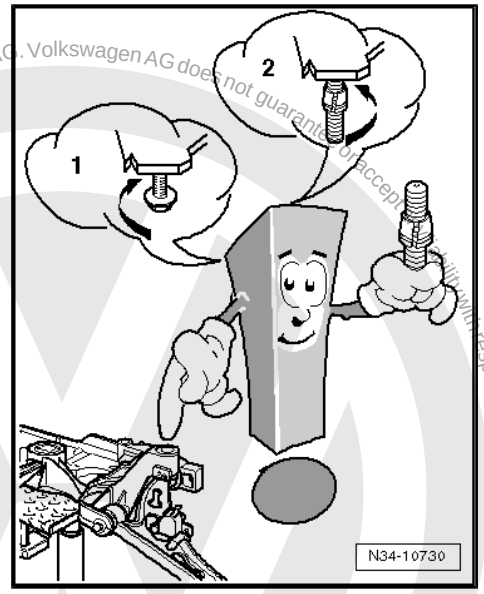
If the position of the subframe was not fixed, the wheels must now be aligned.



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Important: remove bolt -1- and immediately install locating pin -2-.

– Carefully lower subframe, observing wiring harness to engine compartment.

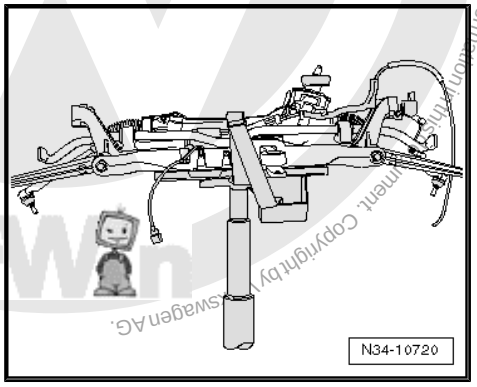


Set subframe to side.

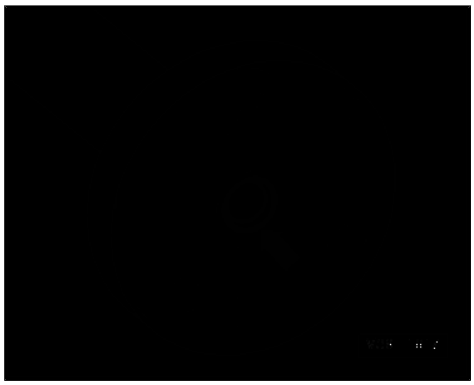
– Remove heat shield above right drive shaft.
– Unbolt both drive shafts from gearbox and carefully lay to side.
– Remove left drive shaft.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

– Unbolt propshaft from gearbox.

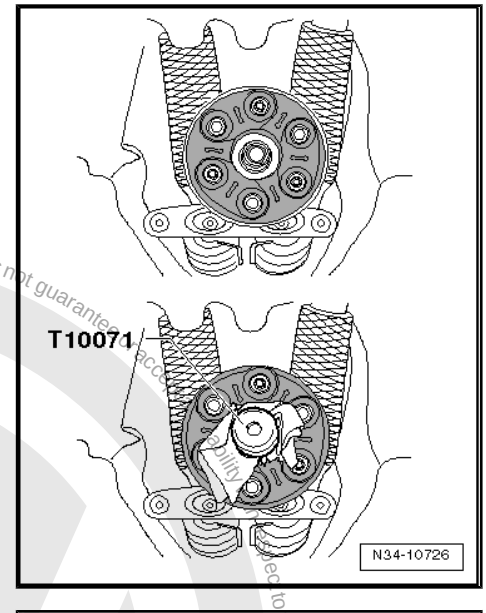


The -seal- in the propshaft must not be damaged.



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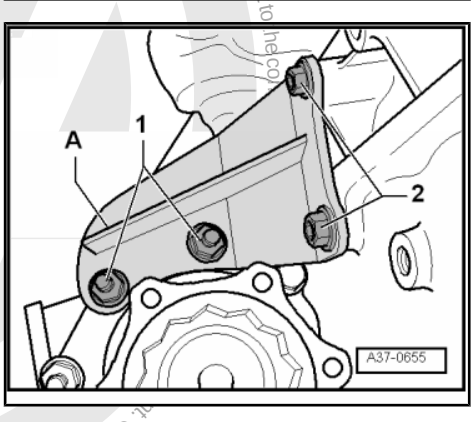
– Therefore, clamp assembly tool - T10071- tight with a cloth. This »protects« the ring.



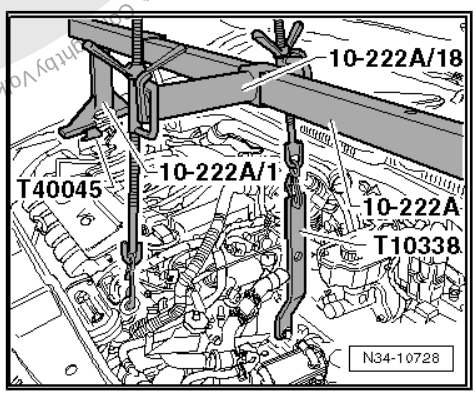
– Remove bracket -A- between cylinder block and bevel box.
– If necessary, remove bracket with secondary pump and lay to side with pump.
– Remove all connecting bolts but one between engine and gearbox.

It is advisable to leave an easily accessible bolt installed.

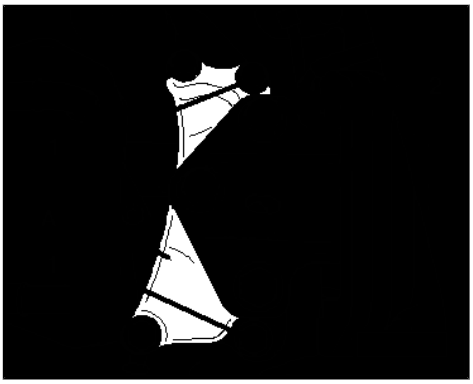
– Remove filler pieces from upper edges of both wings.
– If there are hoses and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.



– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.
– Move »long« spindle on adapter - 10 - 222 A /18- forwards.

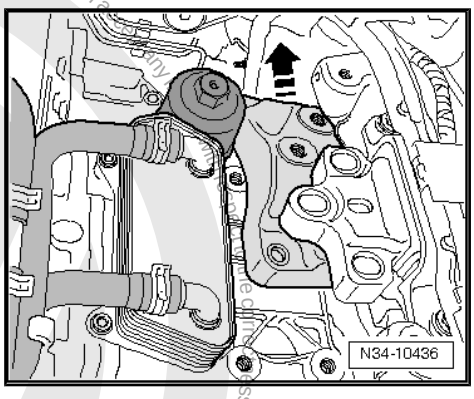


– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket -A- can be removed.



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Remove bracket -arrow-.



Lower only slightly. As soon as the bracket can be removed, the space is sufficient to later guide the gearbox past the longitudinal member. Turn each spindle a maximum of 4 additional turns.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.15 Removing gearbox, Golf Plus 2005 ► with 1.9 l and 2.0 l diesel engine, with 2.0 l petrol engine

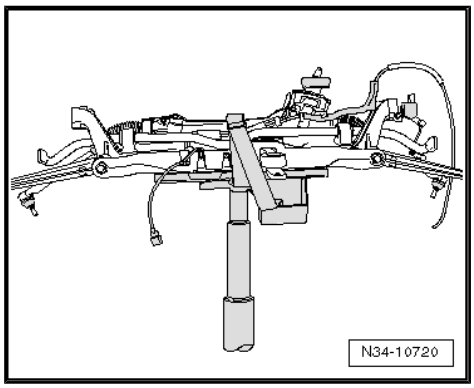
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed, engine and gearbox supported.

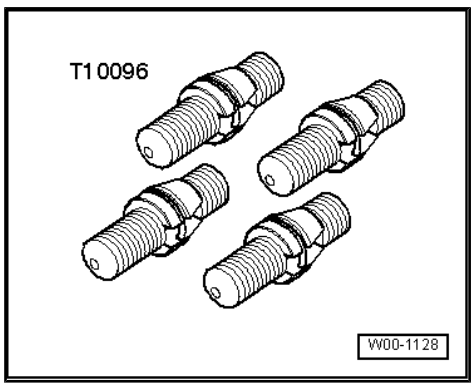
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

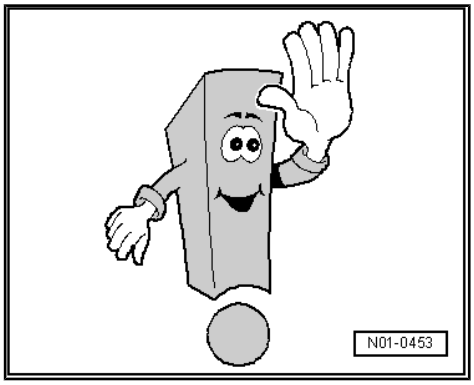
In any case, locating pins - T10096- are necessary.



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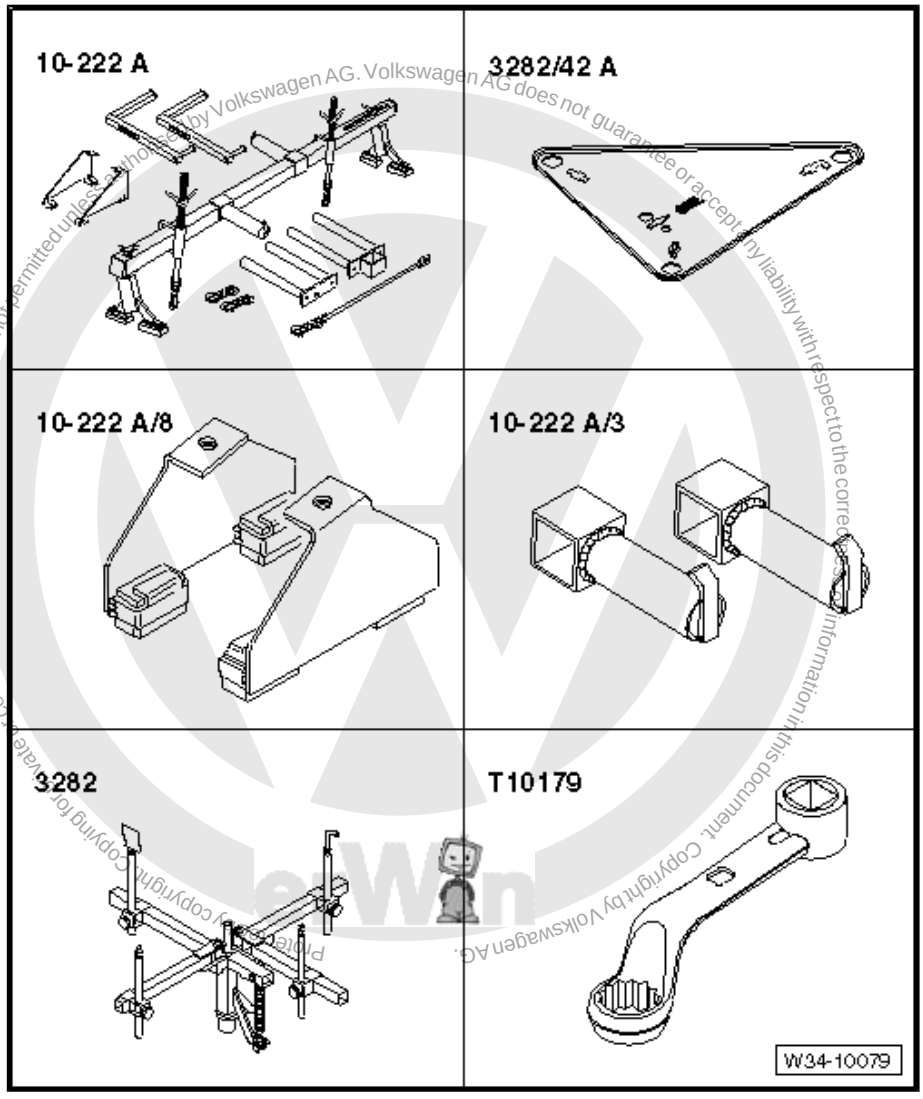
If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10-222A/8-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Wing supports - T10311-
- Pin - 3282/29-
- Support - 3282/59-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .

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♦ Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

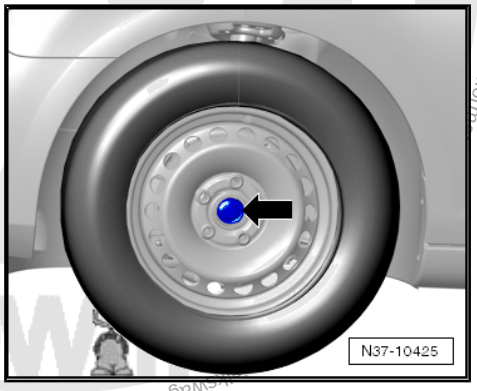
– Move selector lever to position »P« position.

Note

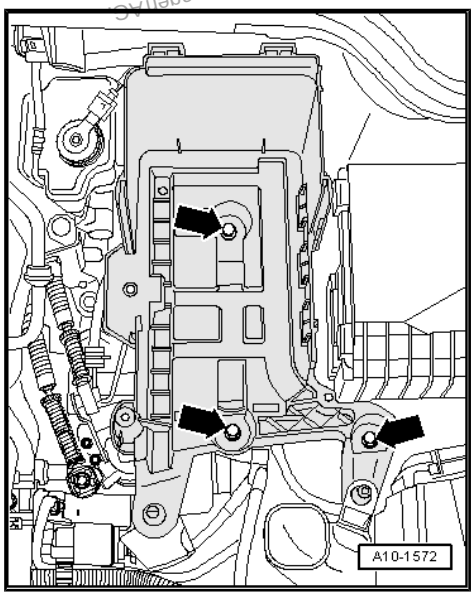
After loosening centre bolt, do not lower vehicle to ground again.

– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

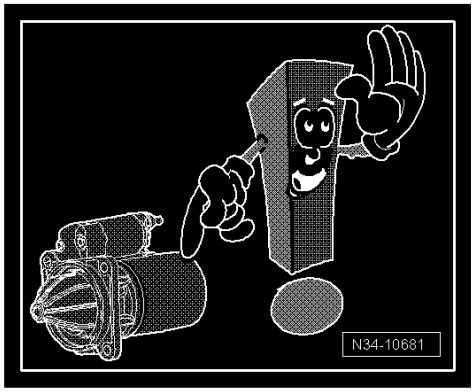
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .



– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



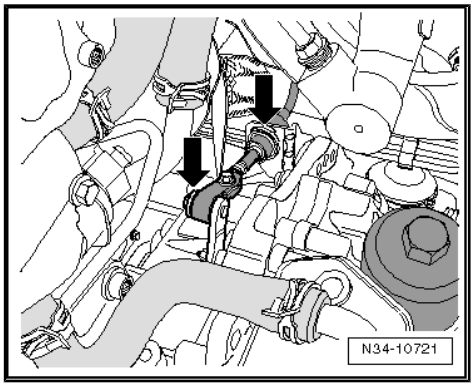
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



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– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

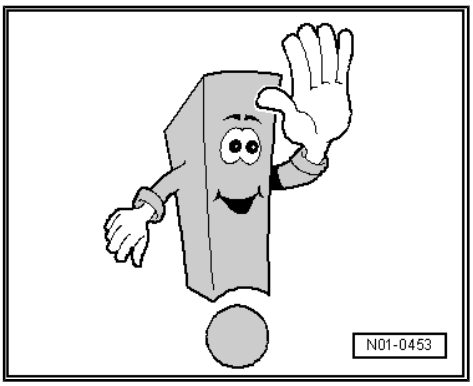


Both securing clips must be later renewed when cable is adjusted.

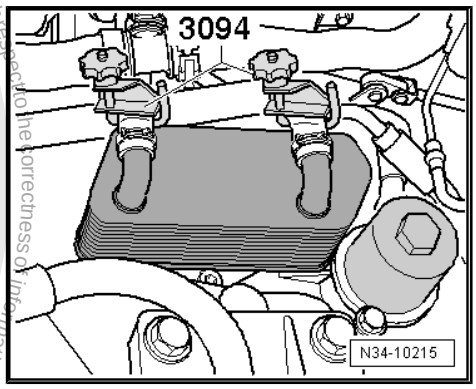
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



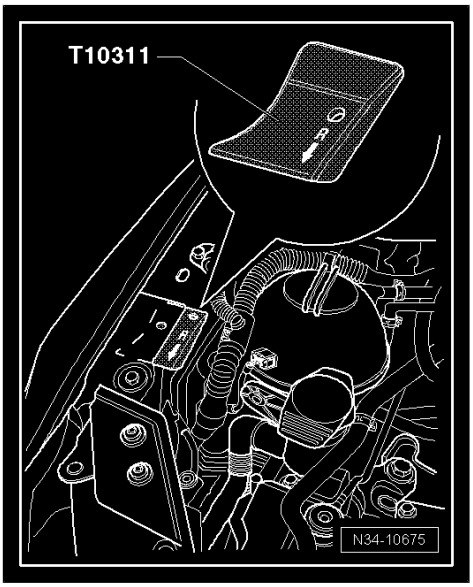
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.



– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.
– Remove filler pieces from upper edges of both wings.
– If there are hose or wiring connections near the engine lifting eyes, remove them now.
– Use wing supports - T10311- on both sides.

The wing supports - T10311- prevent the weight of the engine from damaging the wings.

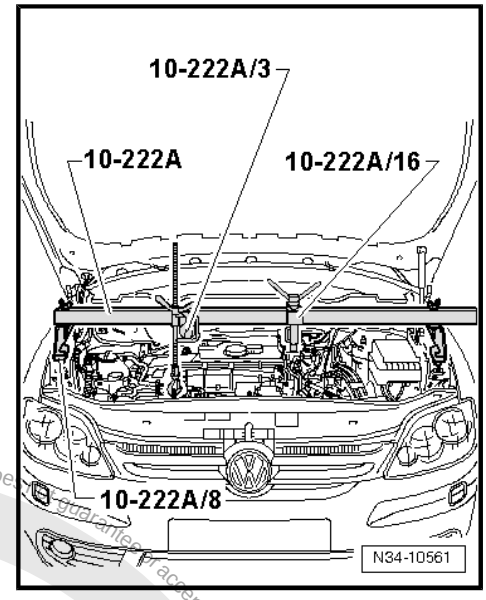
Check the various engines below to see which tools are required to support the engine.



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1.9 l - TDI engine

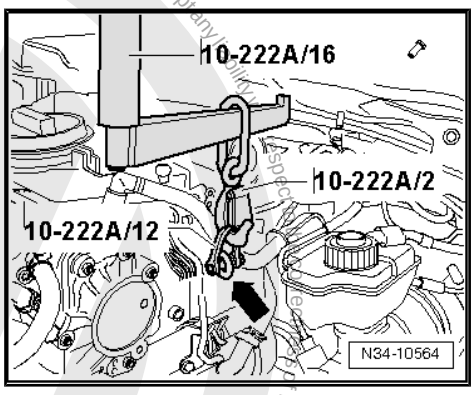
- Rack - 10 - 222 A /1-
- Adapter - 10 - 222 A /3-
- Adapter - 10 - 222 A /8-
- Adapter - 10 - 222 A /16-



Adapter - 10 - 222 A /16-

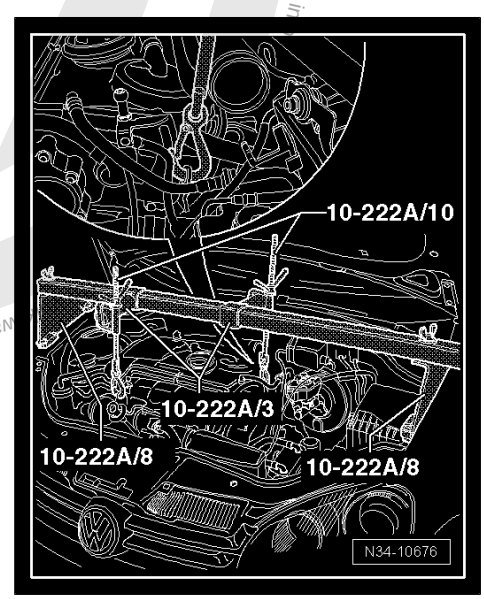
- Shackle - 10 - 222 A /12-
- Hook - 10 - 222 A /2-

– Support engine and gearbox. Do not raise.



2 l - TDI engine

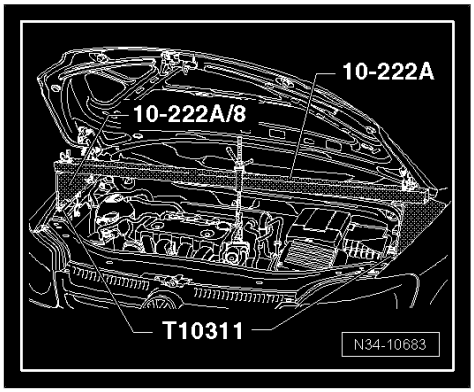
– Support engine and gearbox. Do not raise.



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2 l - FSI engine

– Support engine and gearbox. Do not raise.



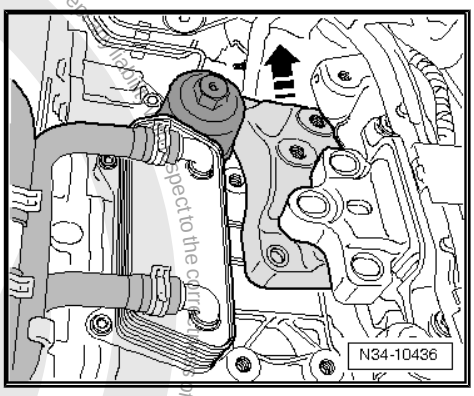
– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



At most, 4 turns are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

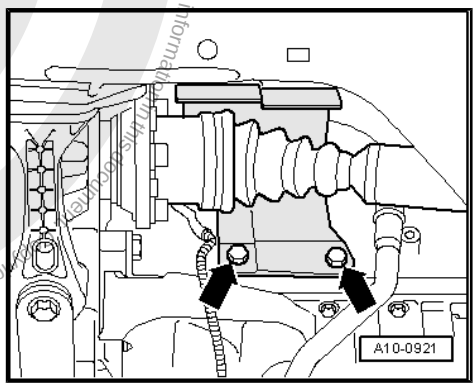


– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

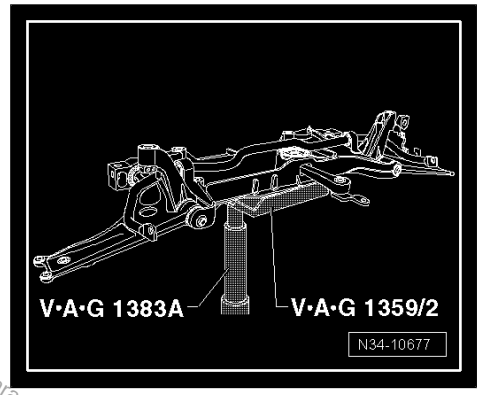
If the subframe is removed now, the left drive shaft may be removed.



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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

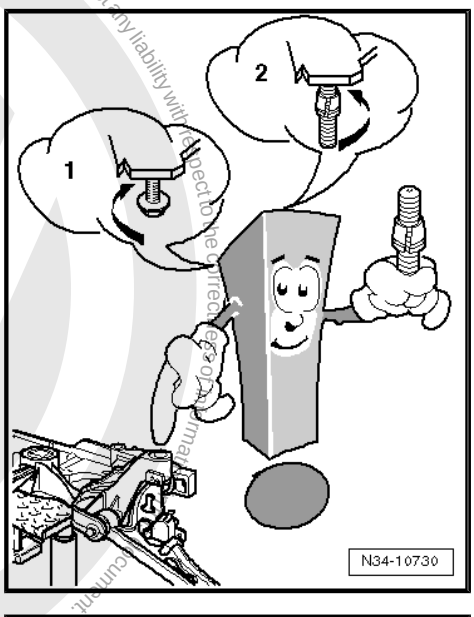


If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove this cover plate -A-.



– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.16 Removing gearbox, Eos 2006 ► with 2.0 l petrol engine

Brief description

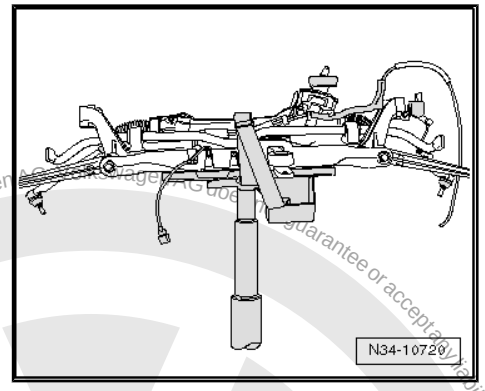
The gearbox is removed downwards separately. »From above«

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Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

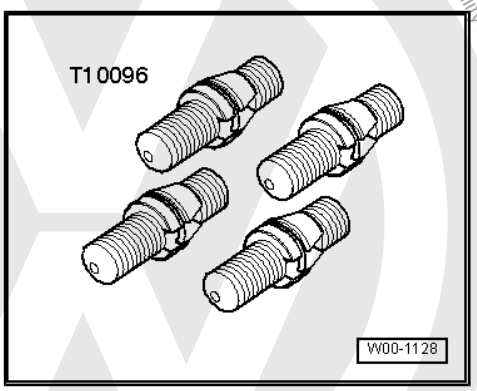
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



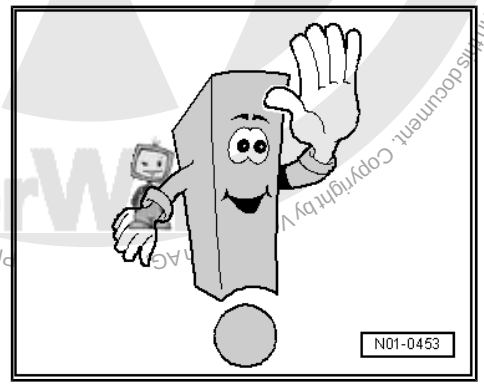
For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

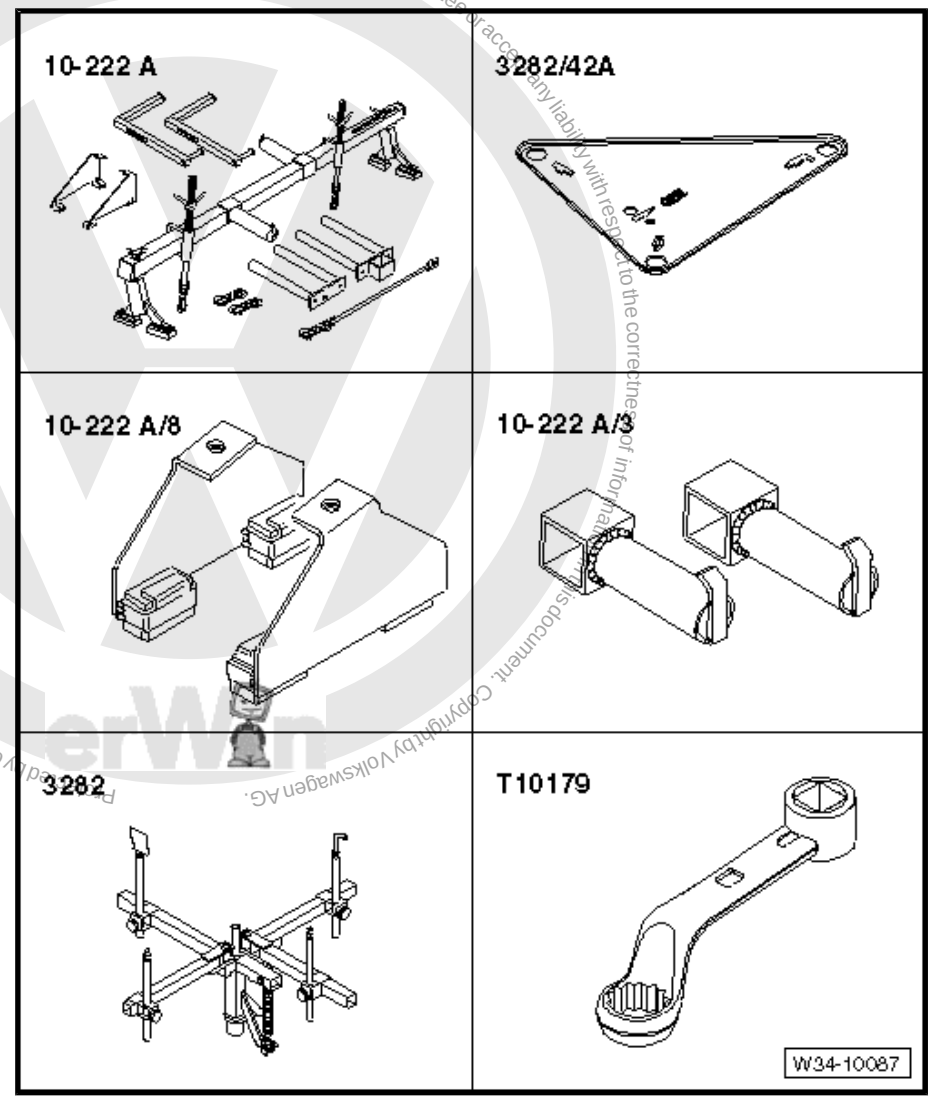
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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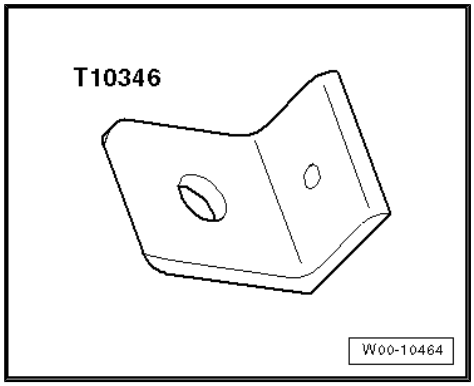
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10-222A/8-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Bracket - T10346-



Special tools and workshop equipment required

- Tools without illustration:
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

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Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

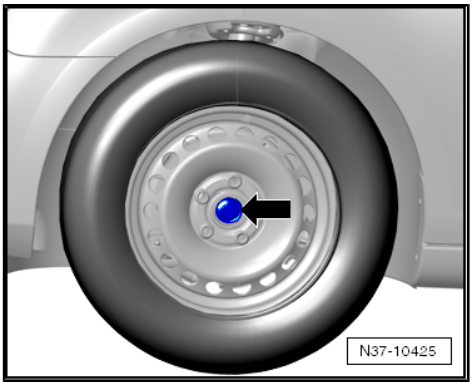
Note

After loosening centre bolt, do not lower vehicle to ground again.

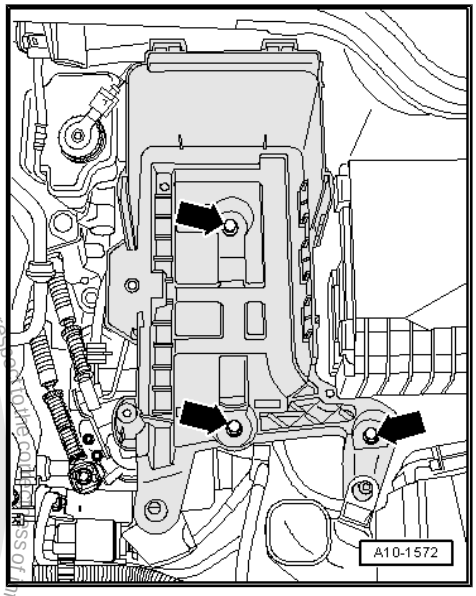
– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

– Remove both front wheels.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

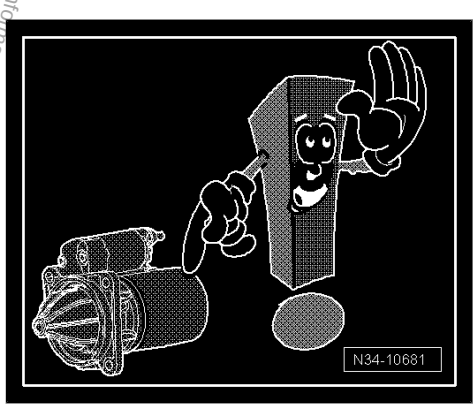


– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

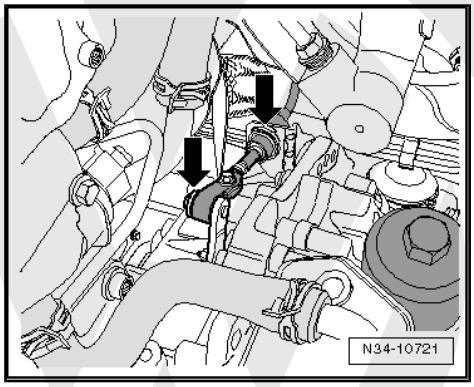
It is advisable to remove the »lower« bolt first.



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– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

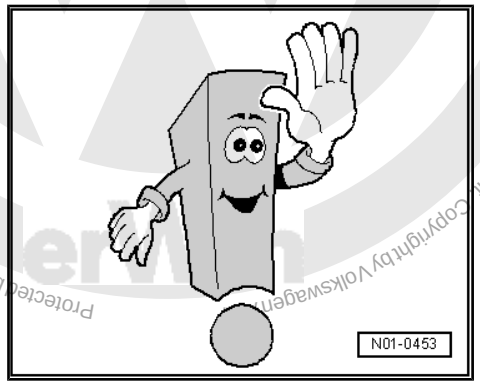


Both securing clips must be later renewed when cable is adjusted.

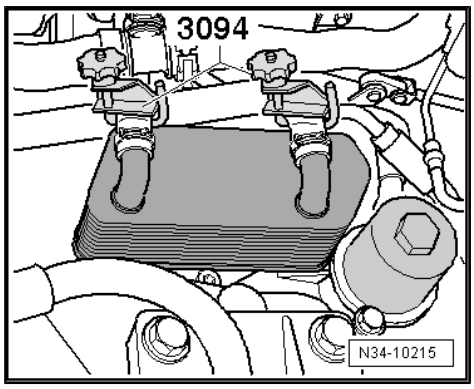
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

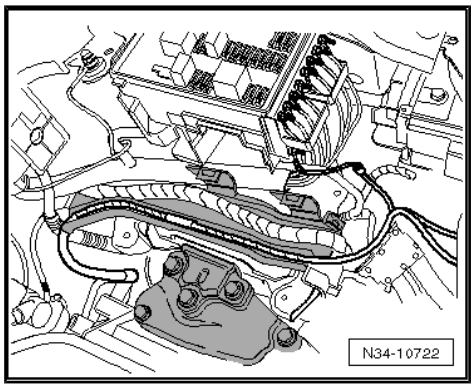
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Release mechatronic unit connector by turning and pull off connector.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

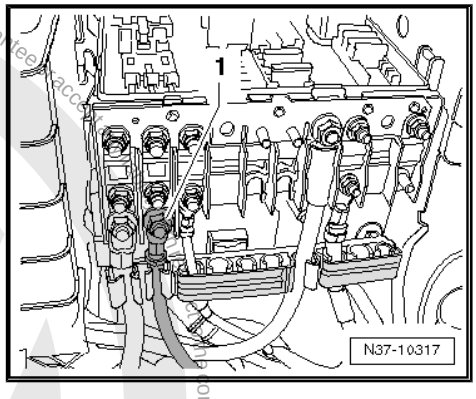


– Disconnect -wiring harness- coming »from below« from sub-frame.



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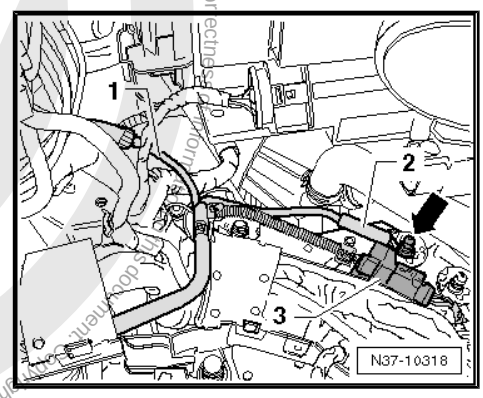
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This will save time-consuming work on the steering and heat shield.



– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.

– Remove filler pieces from upper edges of both wings.

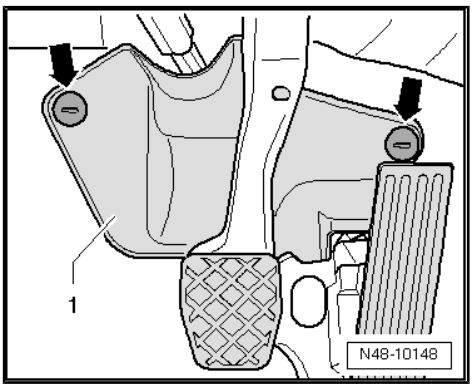
– If there are hose or wiring connections near the engine lifting eyes, remove them now.

– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.



It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

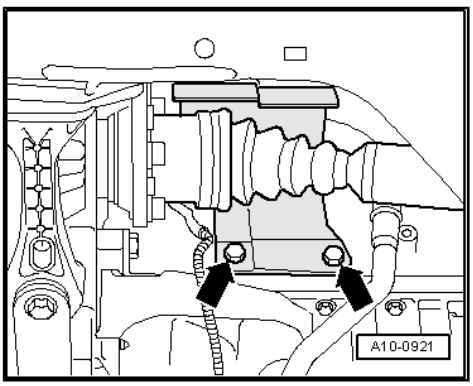
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.

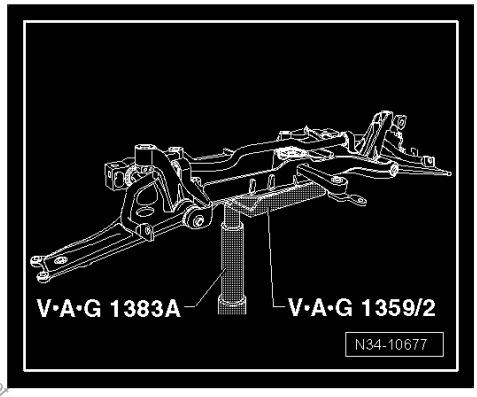
– Unbolt ⇒ pendulum support from gearbox.



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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

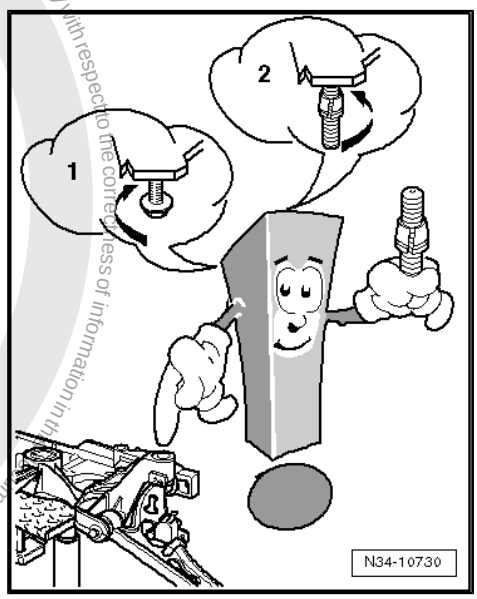


If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

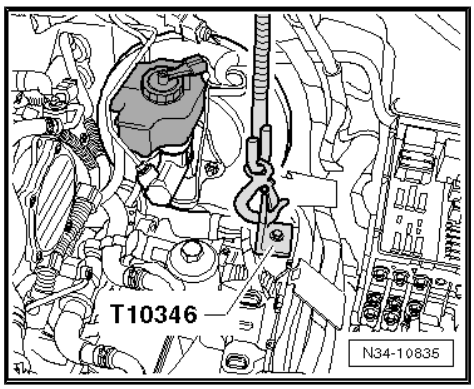
When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.



– Fit retainer - T10346- on longitudinal member.

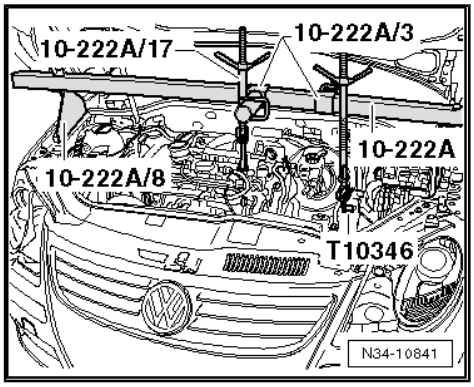
(At rearmost of the 3 support points of the battery tray)



2 l - FSI turbocharged engine

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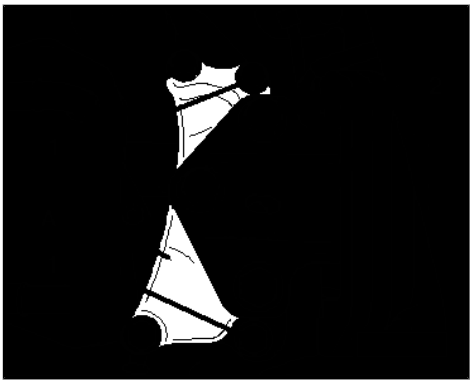
– Support engine and gearbox. Do not raise.



- ♦ Support bracket - 10 - 222 A-
- ♦ Adapter - 10 - 222 A /3-
- ♦ Adapter - 10 - 222 A /8- »smooth side« to engine compartment
- ♦ Bracket - T10346-
- ♦ Use spacer tube - 10 - 222 A /17- on the »front« spindle

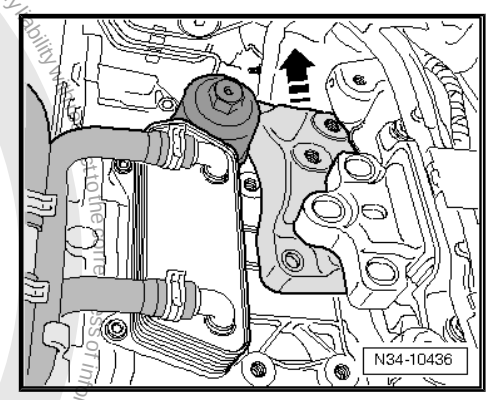
– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.



About 5 turns are sufficient to remove bracket -arrow-.

The gearbox is separated from the engine in this position.



– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .

– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

– Remove remaining engine/gearbox connecting bolts.

– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.17 Removing gearbox, Eos 2005 ► with 2.0 l diesel engine

Brief description

The gearbox is removed downwards separately. »From above«

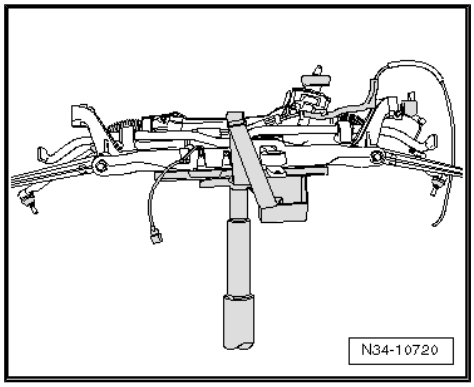
Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

»From below«:

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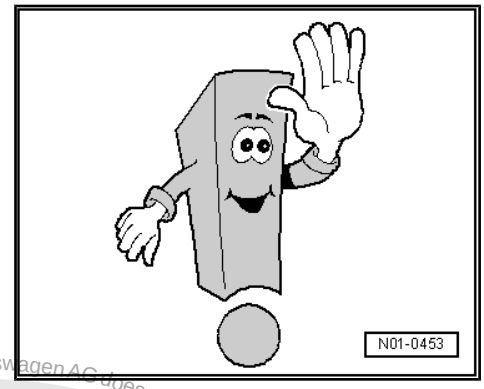
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

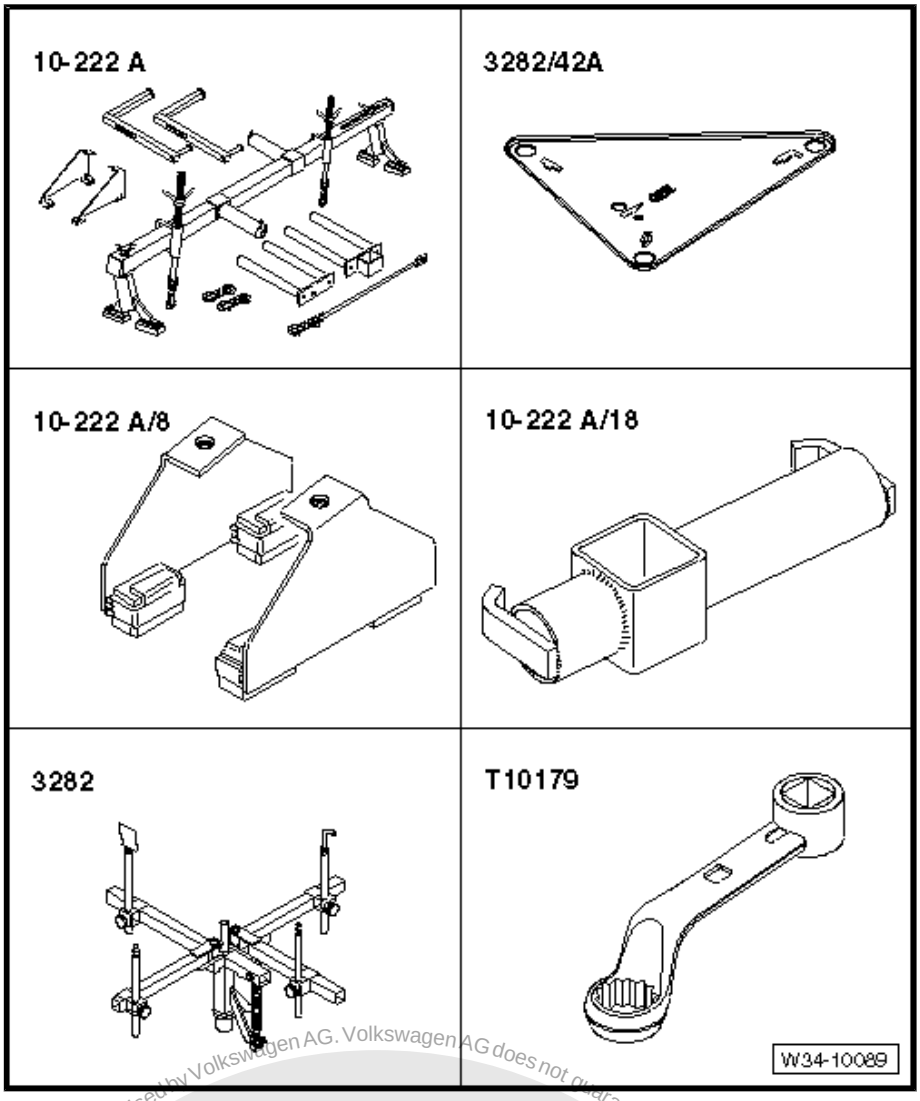
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!



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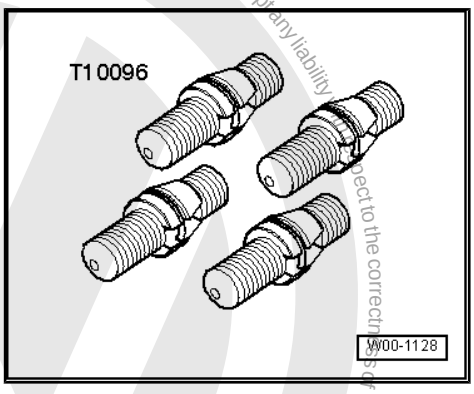
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/8-
- Hook - 10-222A/13-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



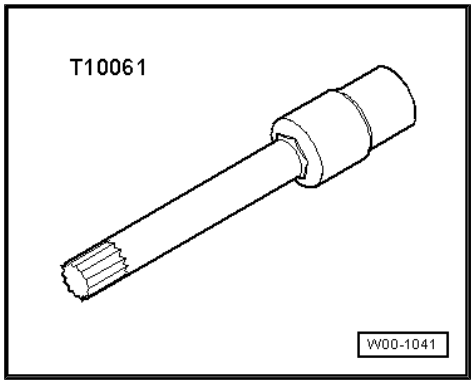
Special tools and workshop equipment required

- In any case, locating pins - T10096- are necessary.

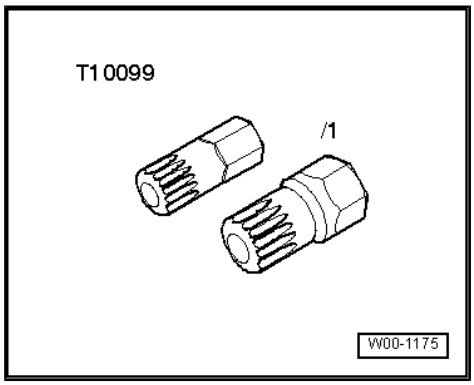


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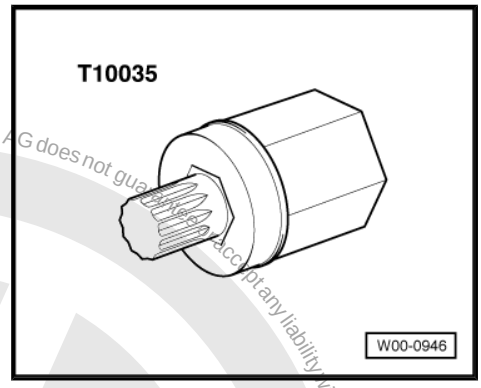
- Socket - T10061-



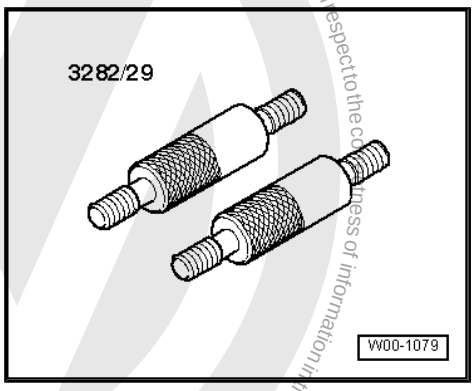
- or bit - T10099/1-



- Socket - T10035-



- Pin - 3282/29-



- Tools without illustration:
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

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Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

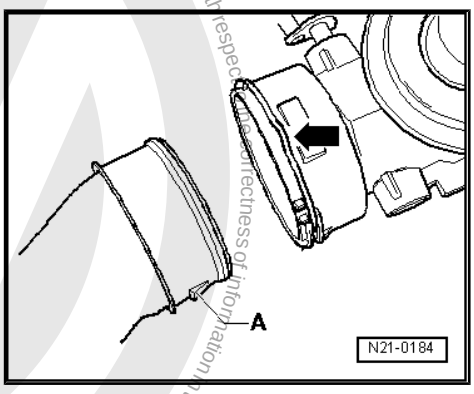
– Move selector lever to position »P« position.

– Remove both front wheels.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

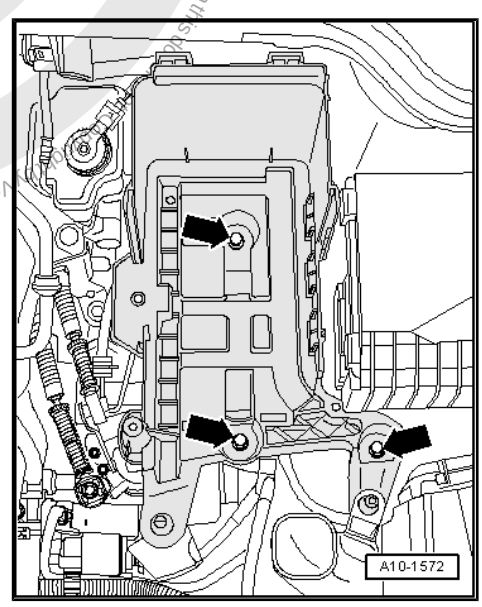
– Also remove charge air pipe -A- from turbocharger ⇒ Rep. gr. 21 ; Charge air system with turbocharger .

This will provide access to the rear engine support eye.



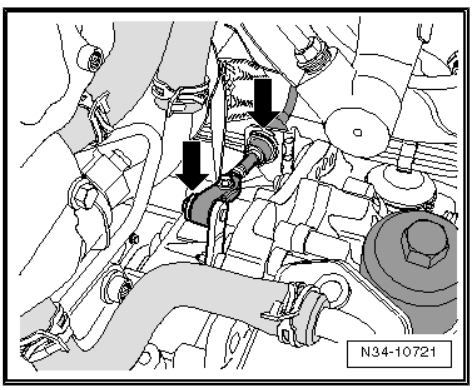
– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



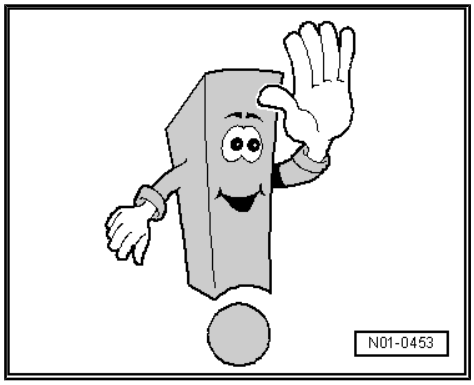
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Both securing clips must be later renewed when cable is adjusted.

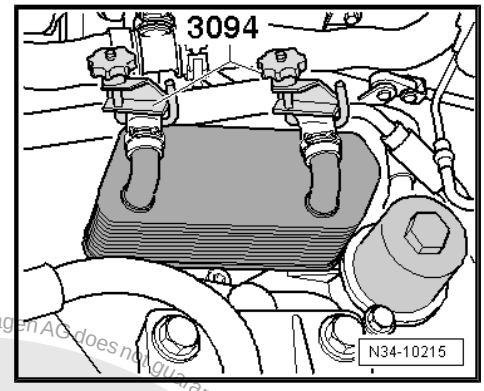
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

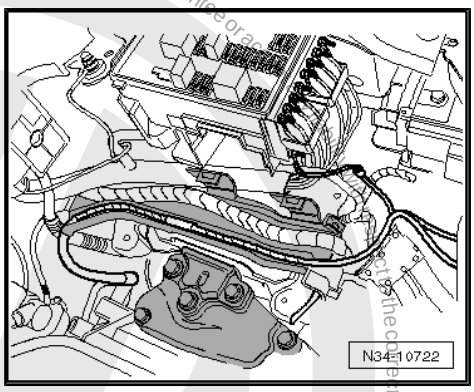
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



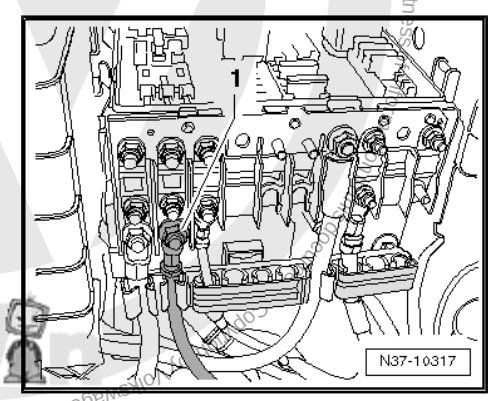
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Release mechatronic unit connector by turning and pull off connector.
– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.



– Disconnect -wiring harness- coming »from below« from subframe.



– Disconnect wire -1- from electronics box.

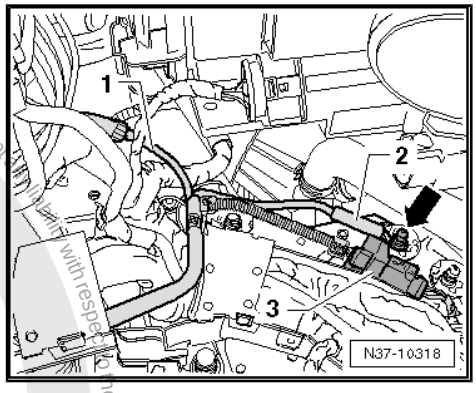


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– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the subframe. This will save time-consuming work on the steering and heat shield.



– Now remove all upper connecting bolts between gearbox and engine. Insert 18 mm - T10179- is especially good for this purpose.

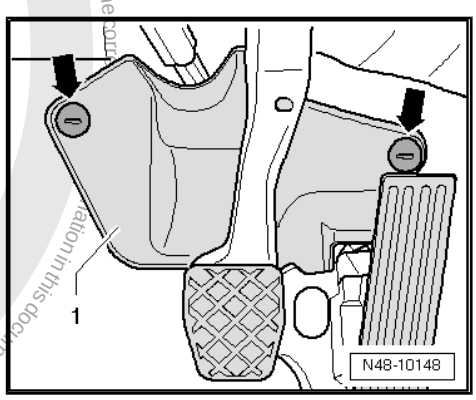
– If there are hose or wiring connections near the engine lifting eyes, remove them now.

– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

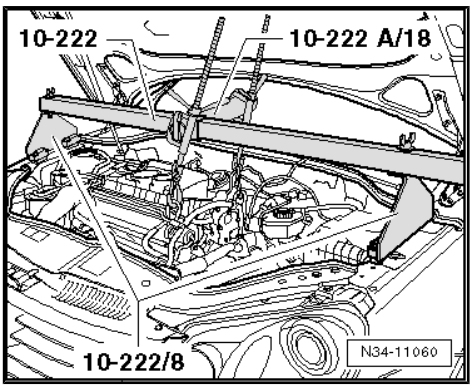
In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.



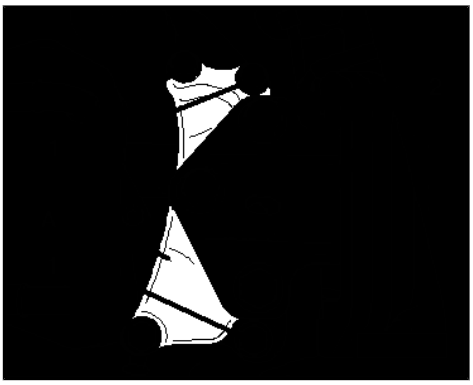
– Support engine and gearbox with support bracket - 10 - 222 A- , adapter - 10 - 222 A /8- and adapter - 10 - 222 A /18- . Do not raise.

– Use shackles - 10 - 222 A /12- for eyes on engine.



– Remove all bolts -1- and -2- for bracket -A-.

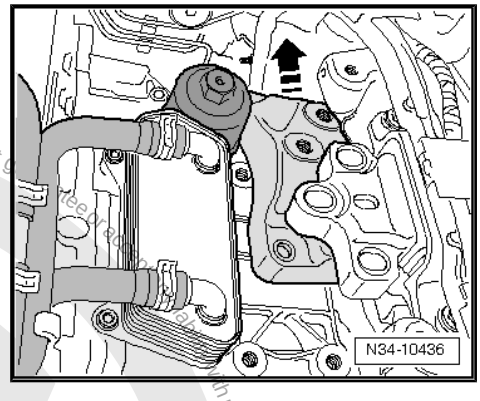
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



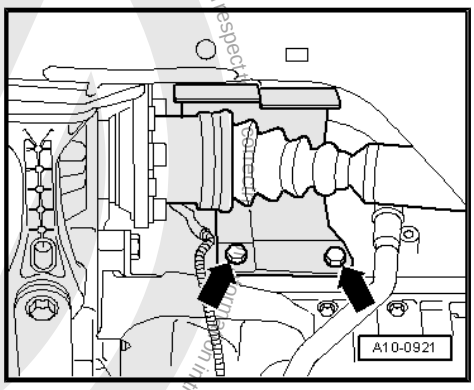
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At most, 3 turns of each spindle are sufficient to remove bracket -arrow-.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .



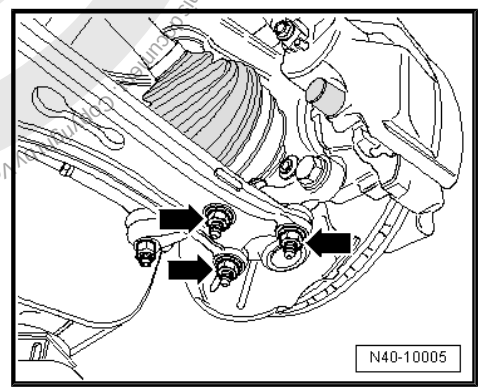
– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts



– Unbolt suspension links from suspension struts on both sides.

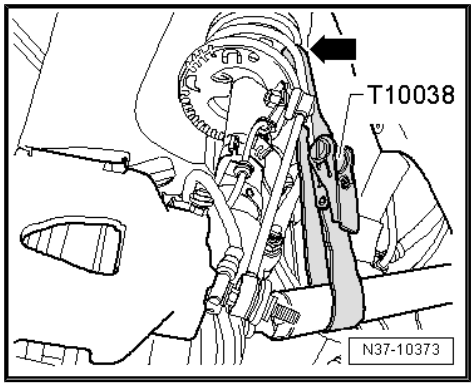
– Unbolt drive shafts from gearbox and carefully lay to side.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



The tensioning straps - T10038- are also very good for securing the drive shafts.

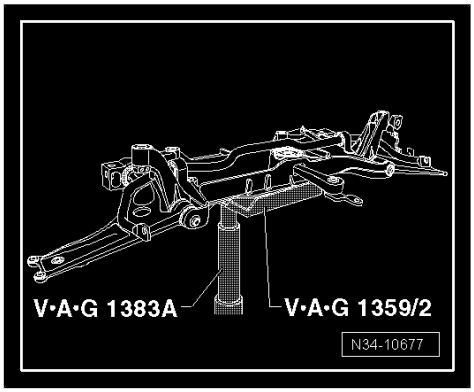
The left drive shaft can be set aside in the wheel housing.



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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

Valuable information concerning the installation of the -subframe- can be found in ⇒ Rep. gr. 40 . It is recommended to read this information »before« removing gearbox. Then it will be clear how to fix the position of the -subframe- so it can then be removed as shown in this figure.



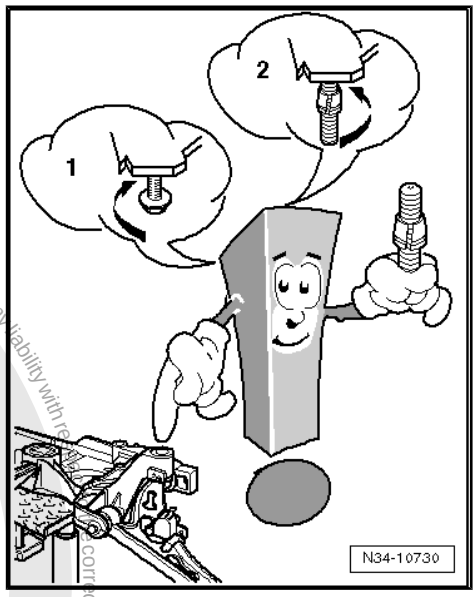
If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

Once the subframe has been removed, the engine and gearbox must be supported.



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove this cover plate -A-.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.



The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.18 Removing gearbox, Touran 2003 ►

Brief description

The gearbox is removed downwards separately, without engine. »From above«

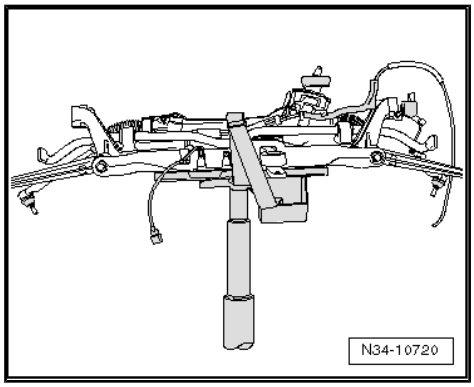
Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

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»From below«:

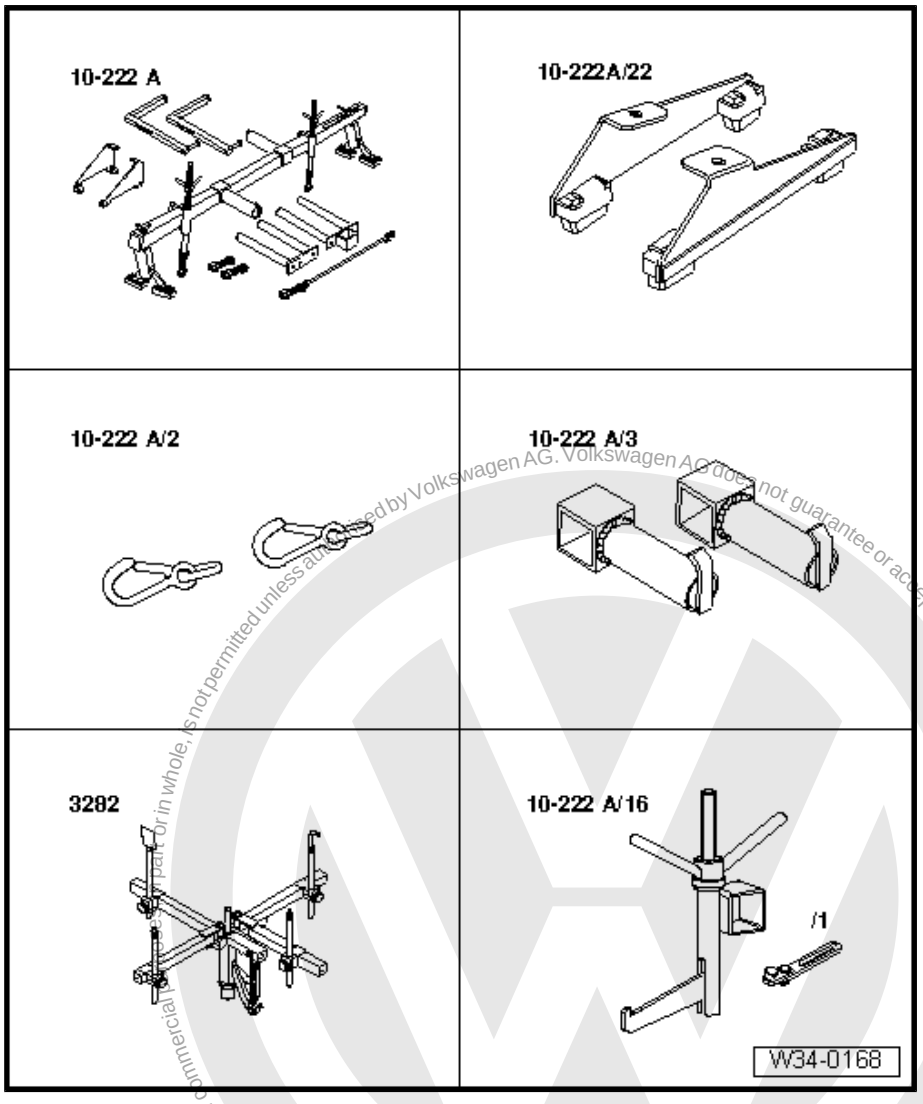
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.

Left drive shaft is removed. Right drive shaft is only removed from gearbox, but remains in vehicle.



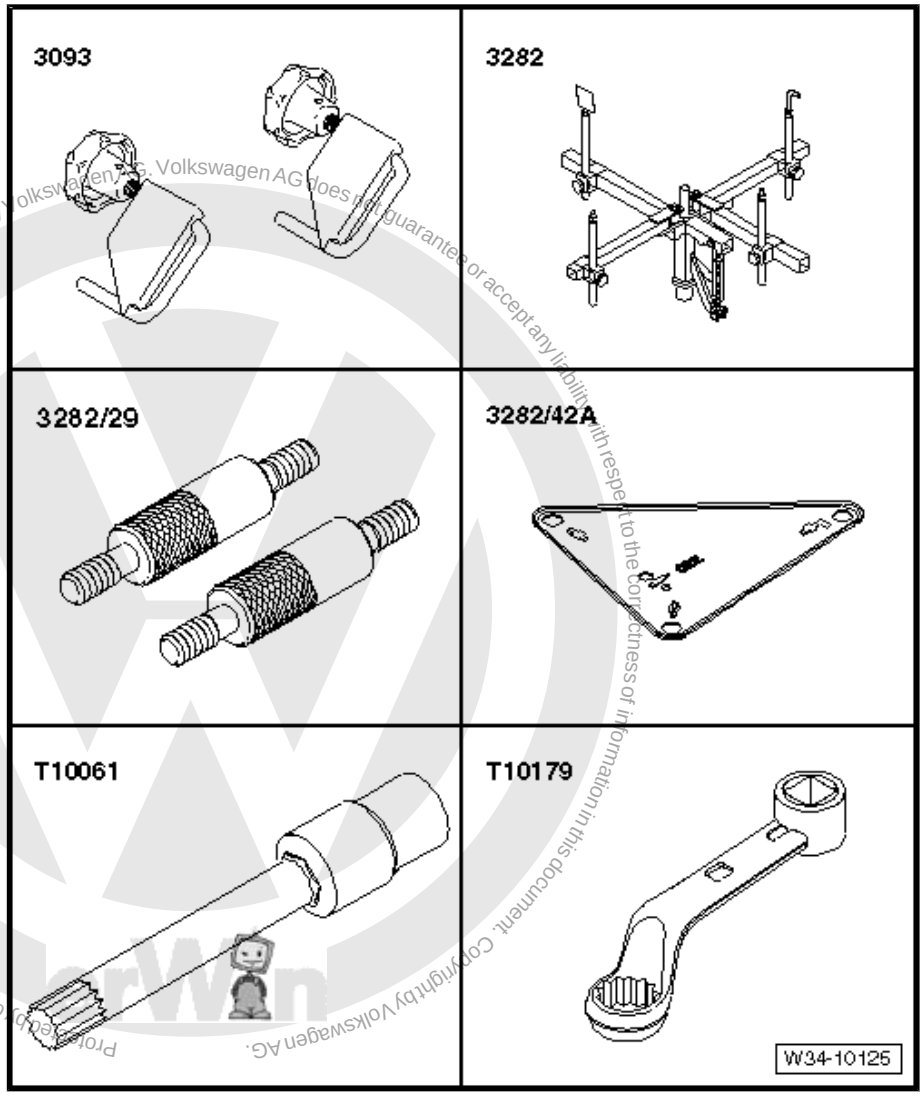
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Hook - 10-222A/2-
- Adapter - 10-222A/3-
- Gearbox support - 3282-
- Adapter - 10-222A/16-
- Support - 3282/59-



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- Pin - 3282/48A-
- Pin - 3282/29-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Tools without illustration:
- Engine and gearbox jack - V.A.G 1383 A-

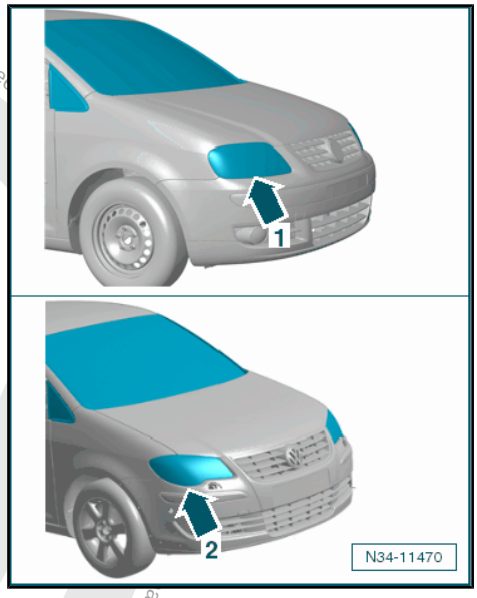


Support engine and gearbox in the Touran.

Contour of headlights has been changed several times in the Touran. This means there are different contact surfaces for support bracket - 10 - 222 A- on wing.

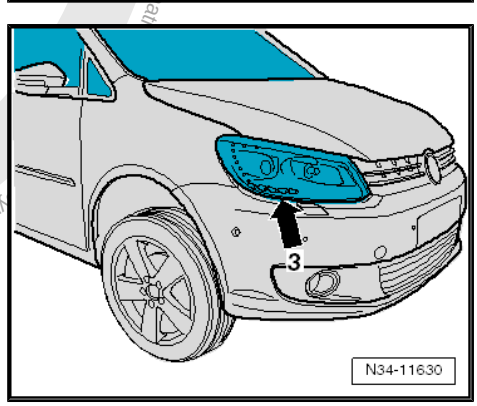
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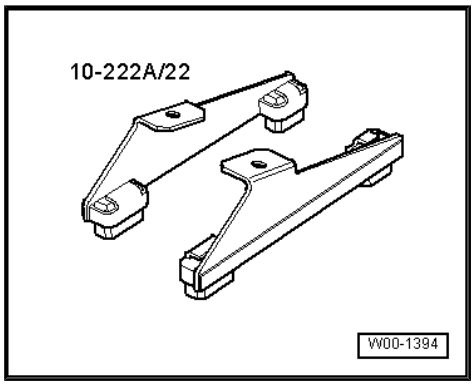


- To 11.06: small headlights -arrow 1-.
- From 11.06 to 05.10: large headlights with curvature -arrow 2-.
- From 05.10: large headlights without curvature -arrow 3-

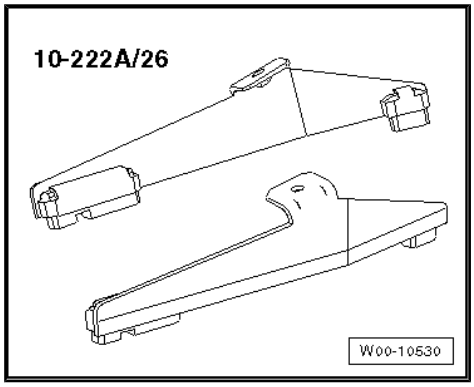
Adapters have been adjusted accordingly. It is essential to take this into account.



– Small headlights -arrow 1-: adapter - 10 - 222 A /22- .

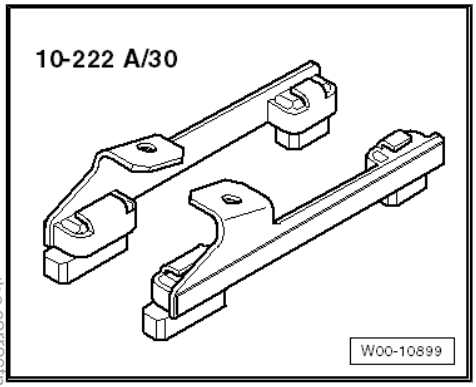


– Large headlights with curvature -arrows 2-: adapter - 10 - 222 A /26- .



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– Large headlights without curvature -arrow 3-: adapter - 10 - 222 A /30- .

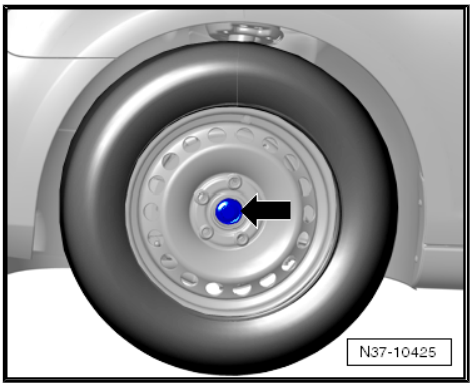


Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Step on the brake pedal while a 2nd mechanic loosens the left drive shaft bolt -arrow-.



Note

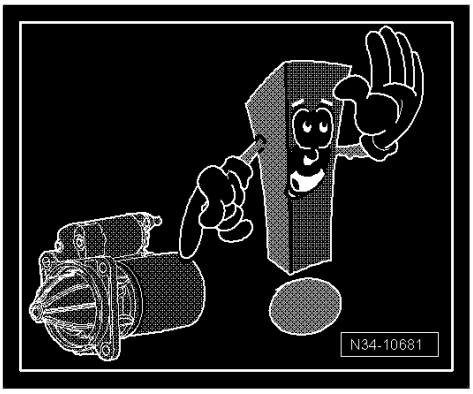
After loosening centre bolt, do not lower vehicle to ground again.

– Remove engine cover.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

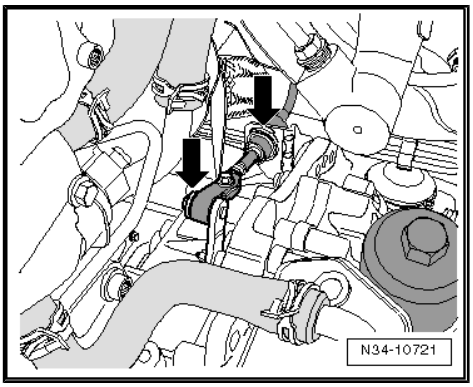
– Remove battery with battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



It is advisable to remove the »lower« bolt first.

– Remove selector lever cable from gearbox.



Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

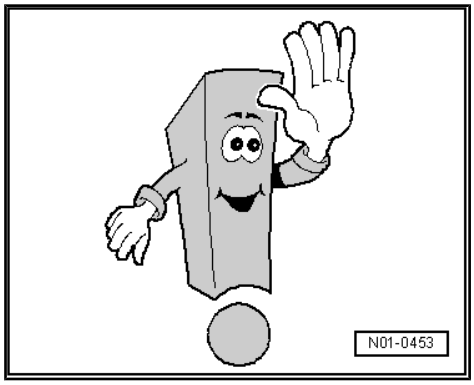
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Both securing clips must be later renewed when cable is adjusted.

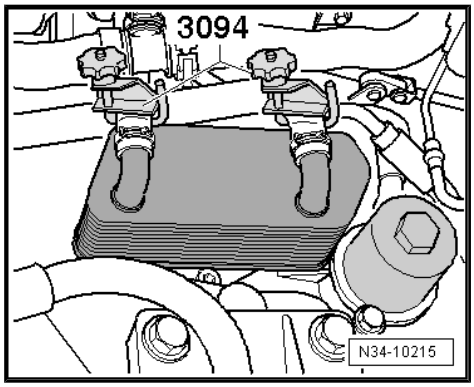
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

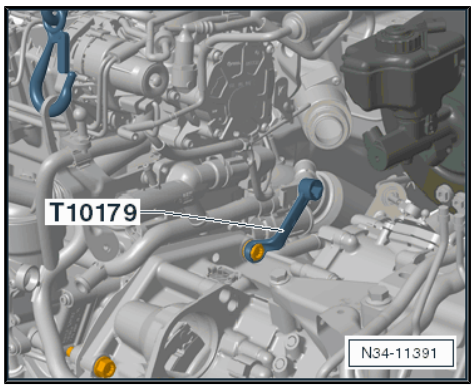
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Remove upper engine/gearbox connecting bolts.

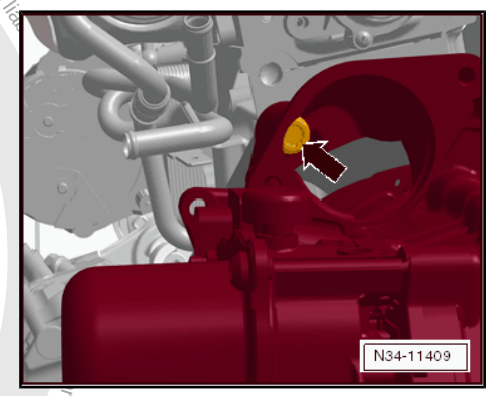


Insert 18 mm - T10179- is especially good for this purpose.



One bolt is located in hole for starter at the height of the solenoid. Bit - T10061- can be used instead of an 18 mm socket.

– Remove filler pieces from upper edges of both wings.
– If there are hose and cable connections or retainers in area of support eyes for support bracket - 10-222A- , remove these now.

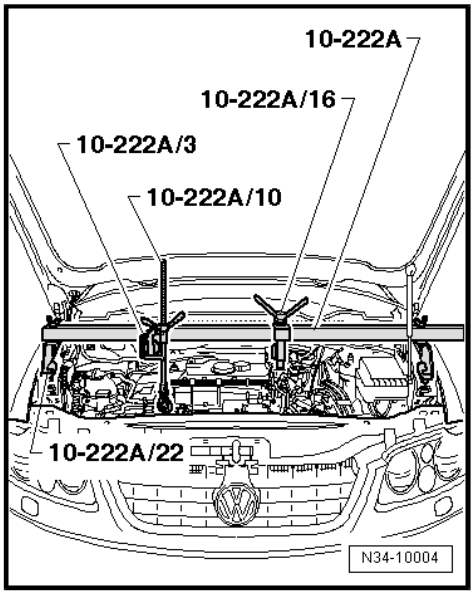


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– For vehicles with small headlights, use adapter - 10 - 222 A / 22- .

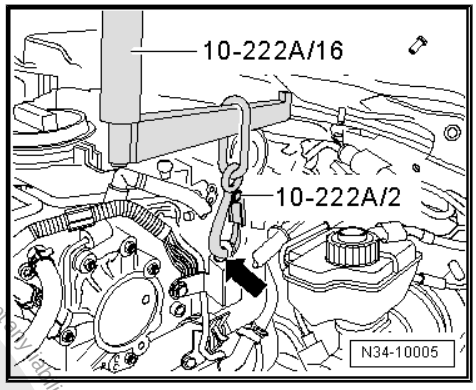
Figure shows Touran with diesel engine.

– Attach hook - 10-222A/10- to front right of engine.



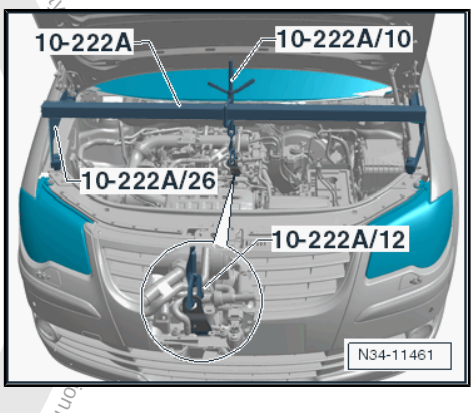
– Now attach additional hook - 10-222A/2- to rear left of engine -arrow-.

– Then connect hook - 10-222A/2- using adapter - 10-222A/16- .



– For vehicles with large headlights with round profile, use adapter - 10 - 222 A /26- .

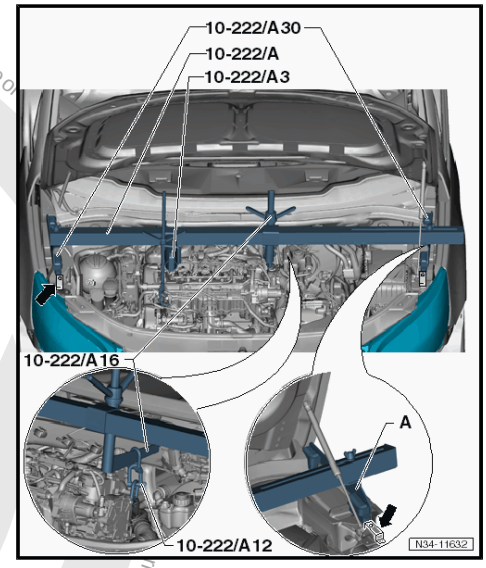
Figure shows Touran with petrol engine.



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– For vehicles with large headlights without round profile, use adapter - 10 - 222 A /30- .

Figure shows Touran with diesel engine.

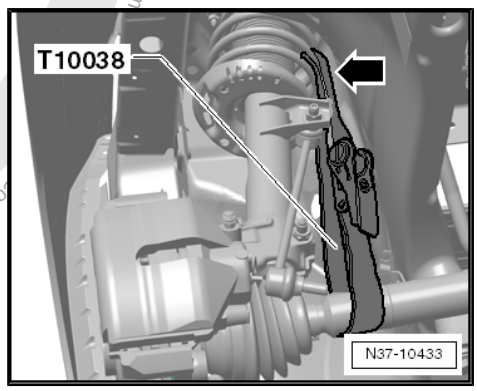


Continuation for all vehicles

– Take up weight of engine and gearbox assembly on spindles but do not raise.
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .
– Unbolt drive shafts from gearbox.
– Remove left drive shaft.

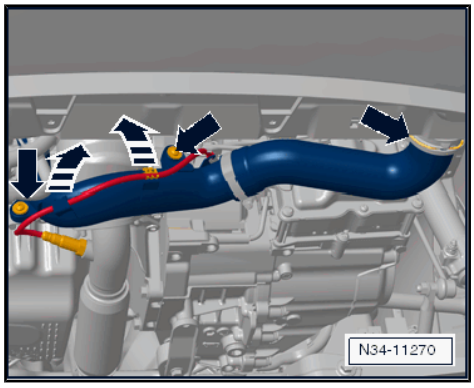
– Secure right drive shaft to suspension strut with securing strap - T10038- .

Do not damage surface protection of shafts.



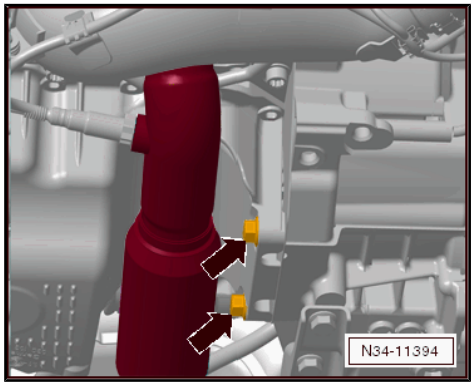
Only in some 1.4 l petrol engines:

– Unclip line to Lambda probe.
– Remove hose for charge air ducting.
– Unscrew charge air pipe from engine at bottom and swivel it forwards.



– Remove front exhaust pipe. In this way, lower engine/gearbox connecting bolts -arrows- can be unscrewed and removed later.

Continuation for all vehicles

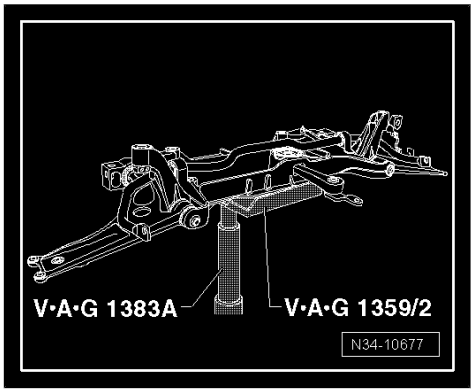


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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

Remove subframe with steering box. ⇒ Rep. gr. 40 ; Removing and installing subframe with steering box

For some diesel engines only:



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove cover plate -A-.



– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine/gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket -A- can be removed.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.



Installing gearbox ⇒ page 273 .

10.19 Removing gearbox, Passat 2006 ► with 2.0 l diesel engine

Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

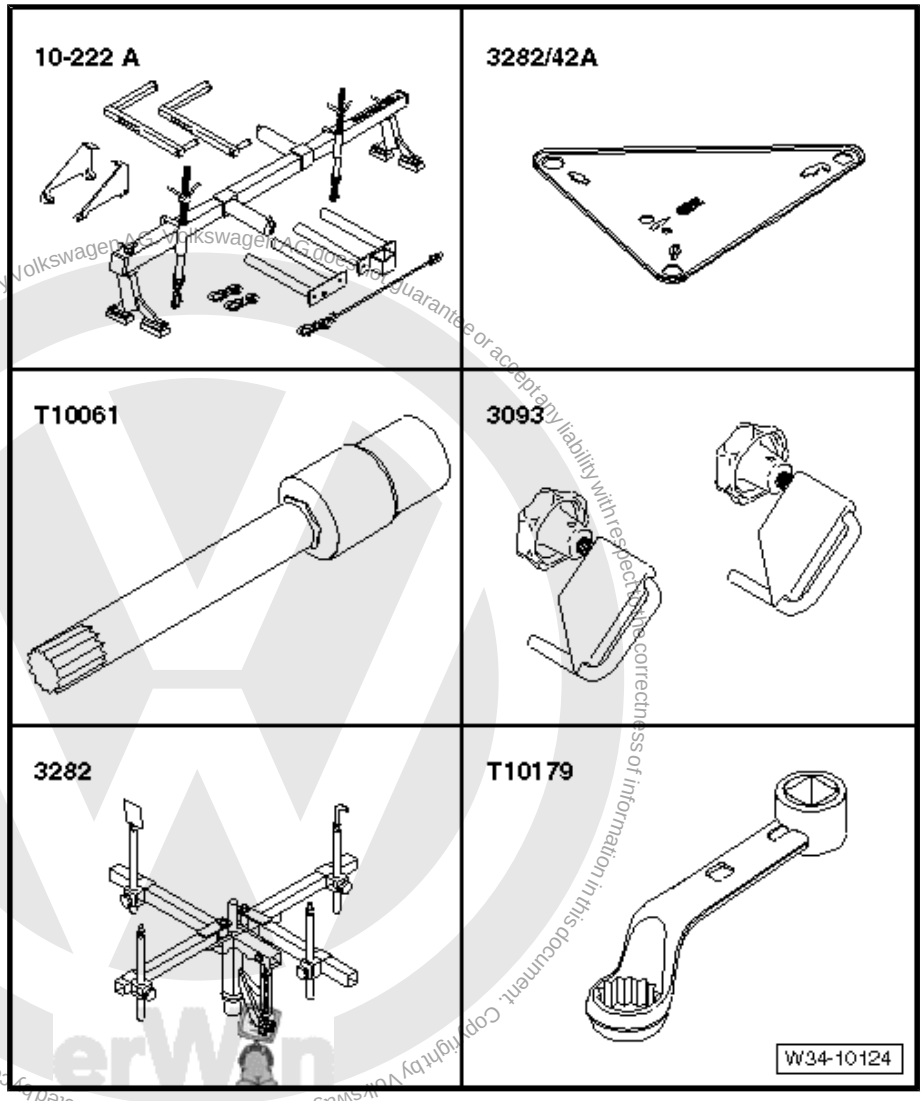
»From below«:

Remove ⇒ pendulum support. The subframe remains in the vehicle.

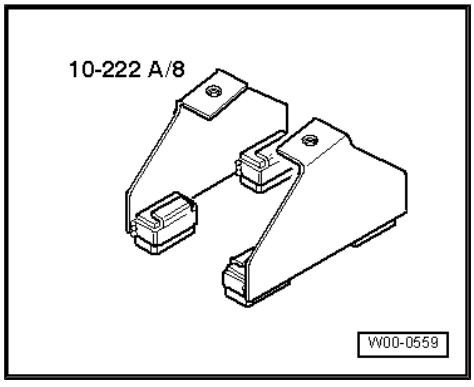
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Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Socket - T10061-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-

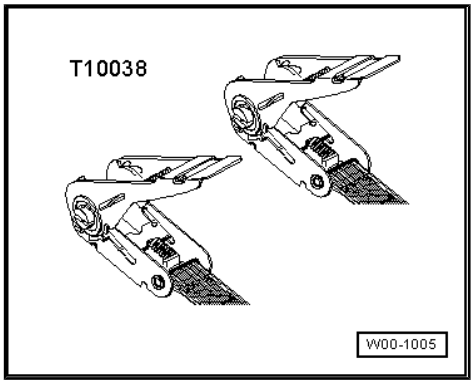


- Adapter - 10 - 222 A /8-



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- 2 tensioning straps - T10038-



Special tools and workshop equipment required

- Tools without illustration:
- Engine support - 3300 A-
- Pin - 3282/29-
- Adjustment plate - 3282/42 A-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

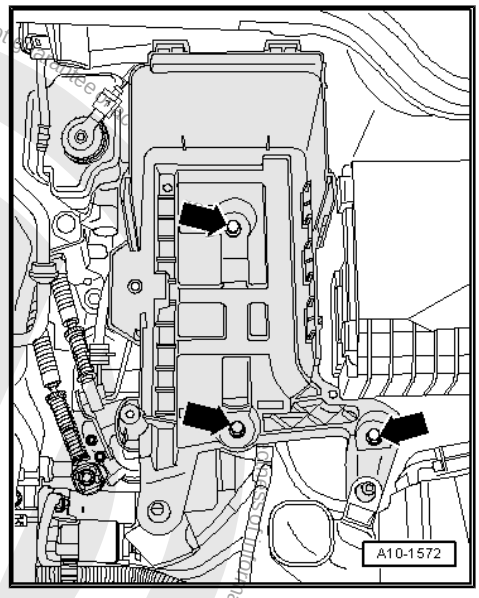
– Move selector lever to position »P« position.

– Remove complete air filter housing ⇒ Rep. gr. 23 ; Removing and installing air filter .

– Remove intake hose from turbocharger so that rear eye is accessible for »hanging« engine.

– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery.

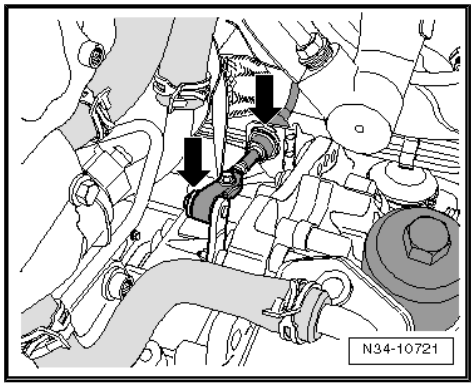
– Remove upper starter motor bolt.



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– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

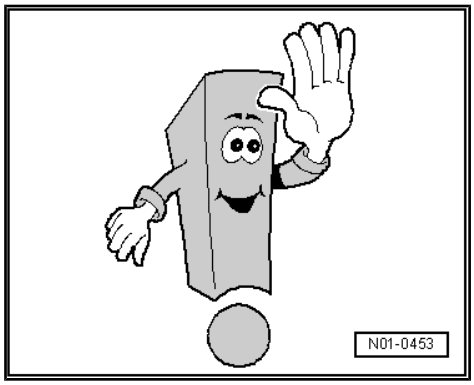


Both securing clips must be later renewed when cable is adjusted.

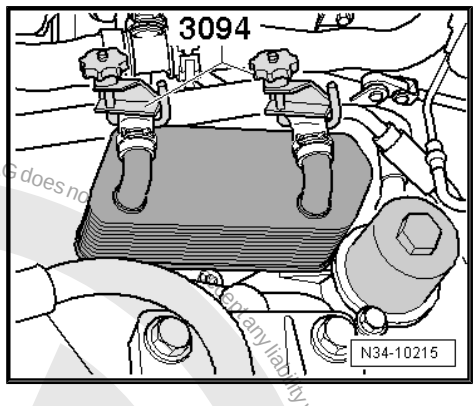
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Release mechatronic unit connector by turning and pull off connector.
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
– Now remove all upper connecting bolts between gearbox and engine.



The following tools are appropriate for this:

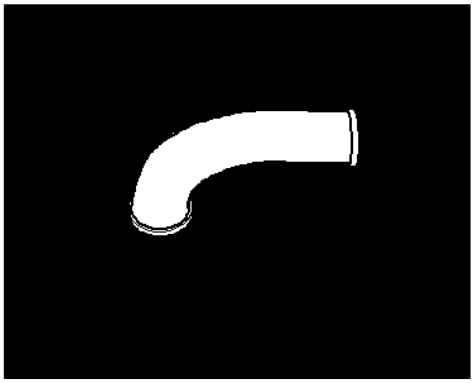
- Socket - T10061-
- Socket - T10035-
- Insert tool 18 mm - T10179-

It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

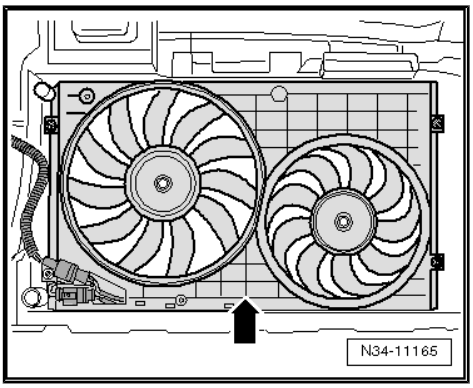
– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

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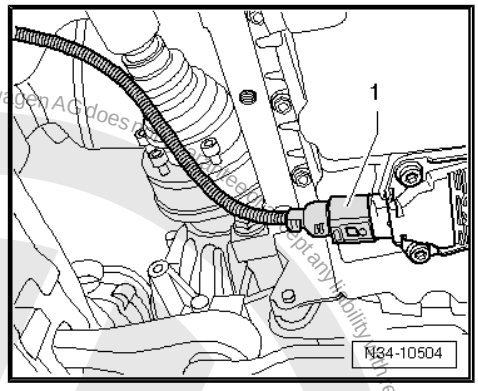
– Remove connecting hose between charge air cooler and charge air pipe ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .



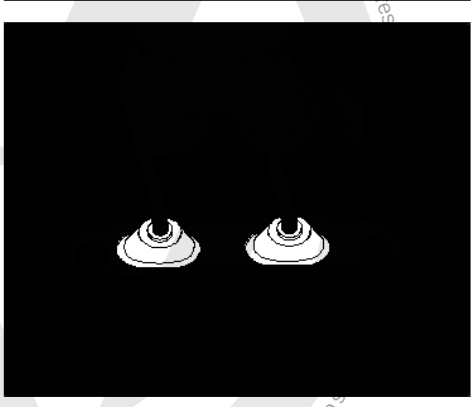
– Remove radiator fan support.



– Pull connector -1- off oil level and oil temperature sender - G266- .

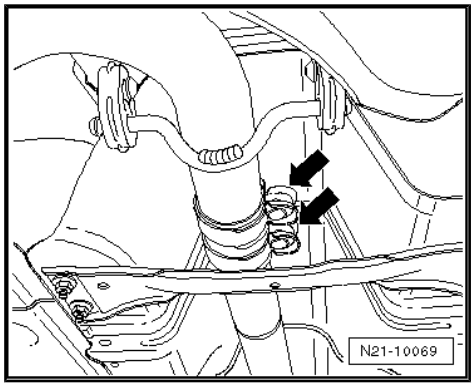


– Remove exhaust system bracket from subframe -arrows-.



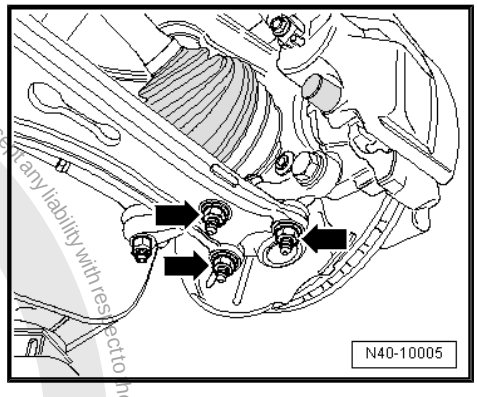
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– Separate exhaust system at double clamp -arrows-.
– Tie up front exhaust pipe or put down tunnel cross member.
– Remove left coupling rod from suspension link and lay to side.

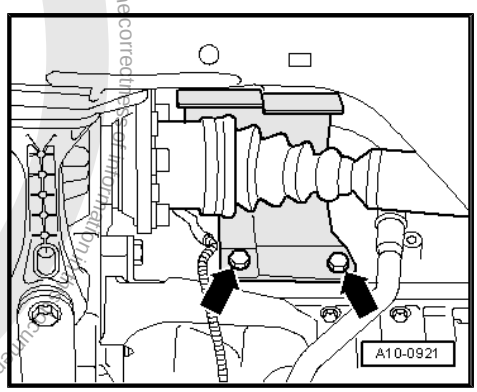


– Unscrew left transverse link from suspension strut.
– Unbolt both drive shafts from gearbox and carefully lay to side.
– Swing left drive shaft into wheel housing onto longitudinal member. This will keep the shaft out of the way during further work.

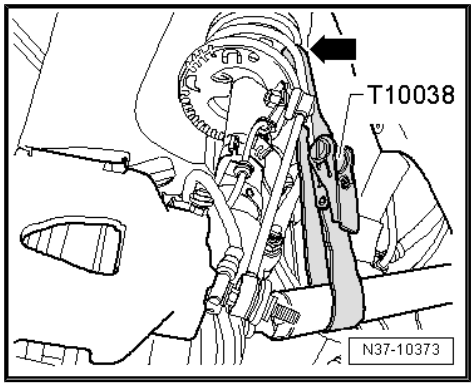
The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

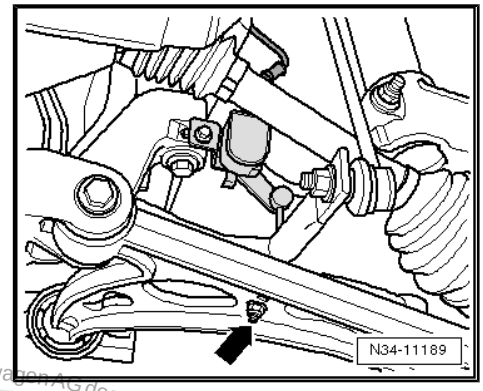


Secure both drive shafts to suspension struts using tensioning straps - T10038- .

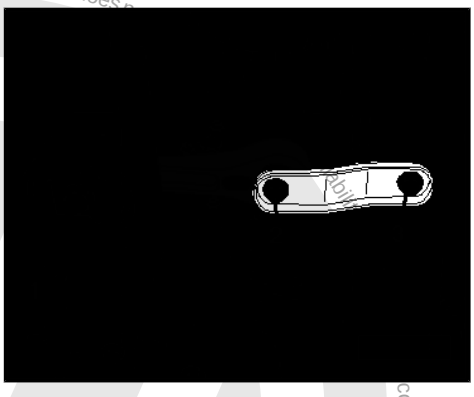


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– Unbolt front left vehicle level sender - G78- from suspension link.



– Remove ⇒ pendulum support, bolt -1-, -2- and bolt -3-.



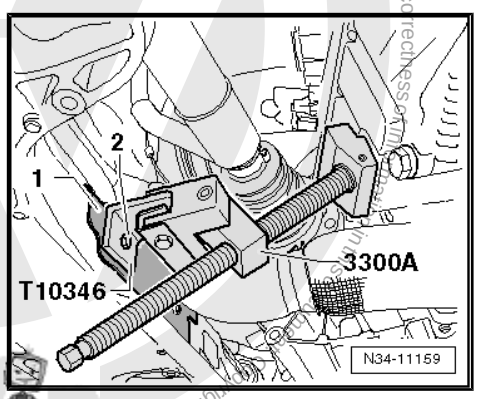
– Unbolt right securing bolt for heat shield -1- from subframe.

– Screw bracket - T10346- tight using a suitable bolt -2-.

Bolt -2- = M6 X 20

– Attach engine support - 3300 A- on bracket - T10346- .

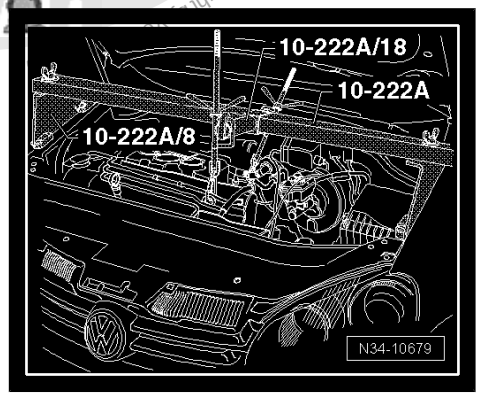
Set engine support against engine crank case. Do not exert pressure yet!



– If there are hose or wiring connections near the engine lifting eyes, remove them now.

Use two spindles.

– Support engine and gearbox with support bracket - 10 - 222 A- , adapter - 10 - 222 A /18- , hooks - 10 - 222 A /10- and adapter - 10 - 222 A /8- . Do not raise.



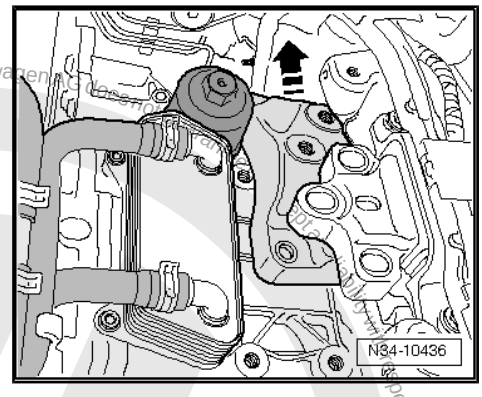
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– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket can be removed.



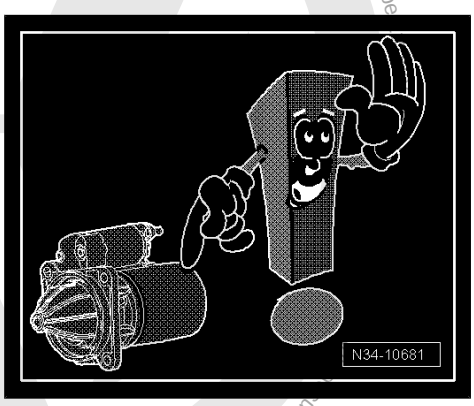
At most, 6 turns are sufficient to remove bracket -arrow-.



– Remove lower starter bolt and remove starter.

It is easier to remove the starter »from above«. Lower vehicle. There is now a working step »from above«.

– Remove bolt in starter hole.



– A small cover plate is located above the right drive shaft flange on the intermediate plate for engine and gearbox. Remove this cover plate -A-.

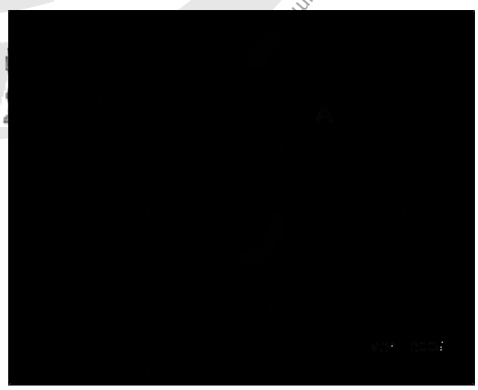
– Lower engine and gearbox until there is sufficient »clearance« between upper edge of gearbox and left longitudinal member.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .

– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

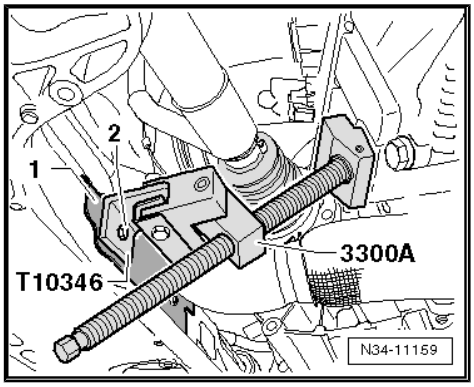
The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.



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– Carefully press engine and gearbox forwards.



Note

Observe connecting lines, hoses and radiator when moving engine/gearbox assembly.

– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.20 Removing gearbox, Passat 2006 ► with 2.0 l petrol engine

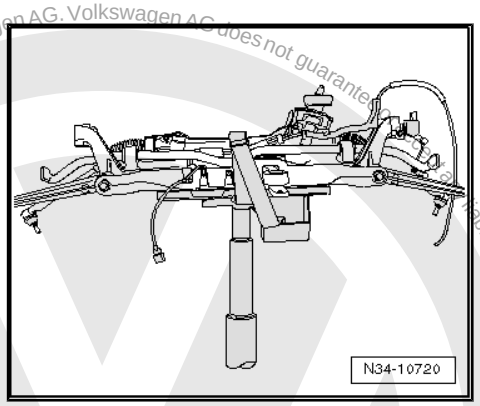
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

»From below«:

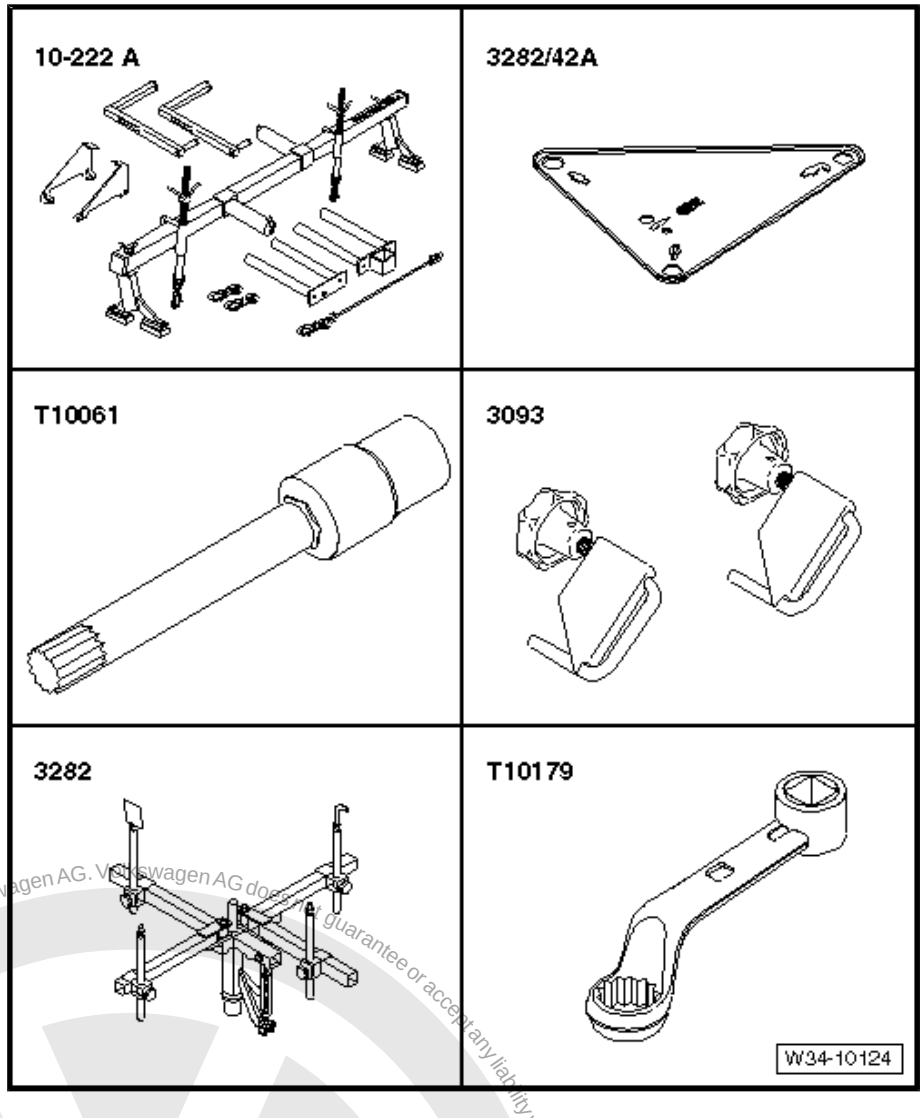
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Socket - T10061-
- If no hose clamps to 25 mm - 3094- are available, use hose clamps to 40 mm - 3093- .
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



- Tools without illustration:
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove air filter housing ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery .

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– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

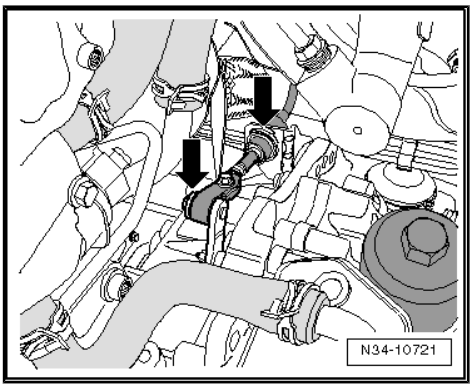


It is advisable to remove the »lower« bolt first.

– Unbolt earth strap from bracket.

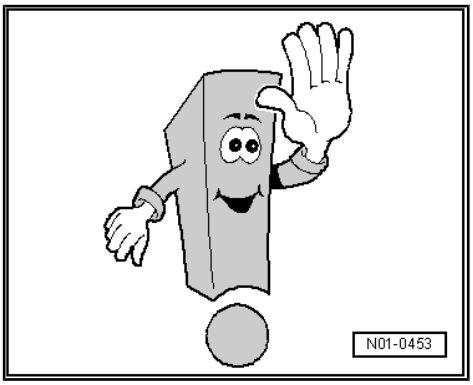
– Remove selector lever cable from gearbox.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



Always renew both securing clips.

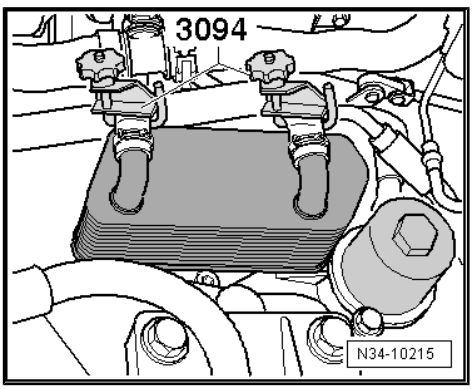
– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.



Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

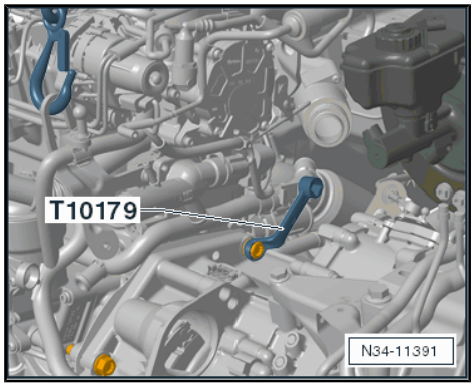
During later installation, do not clip »small« securing clips on until cable has been checked and adjusted.

– Clamp off coolant hoses using hose clamps to 25 mm - 3094- and remove.



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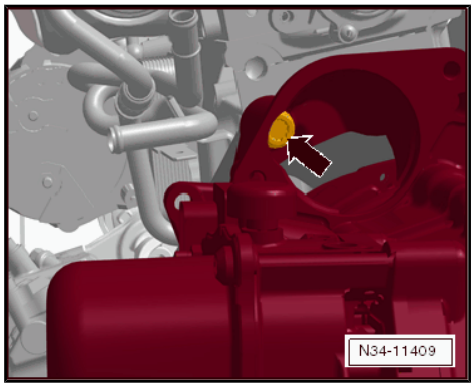
– Remove upper engine/gearbox connecting bolts.



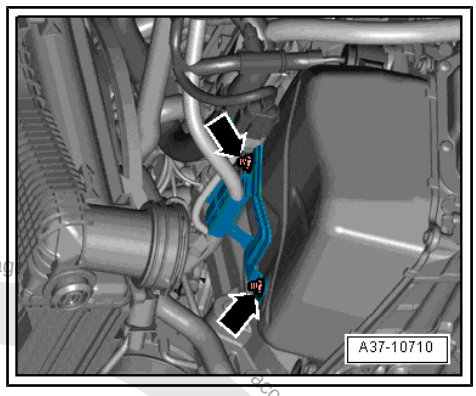
A bolt is located in the starter motor hole -arrow-.

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .

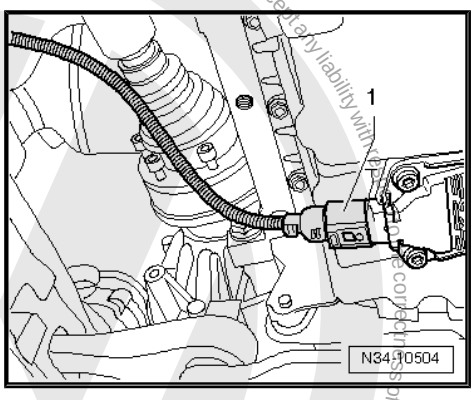
– Remove lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing wheel housing liner .



– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).



– Pull connector -1- off oil level and oil temperature sender - G266- .

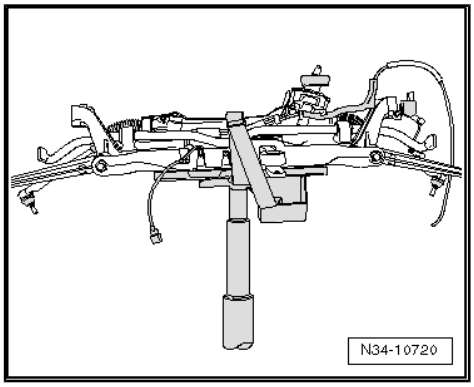


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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing subframe with steering box

– Disconnect both drive shafts from gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing drive shaft .

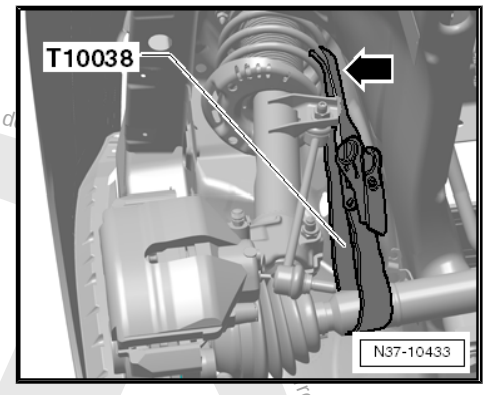


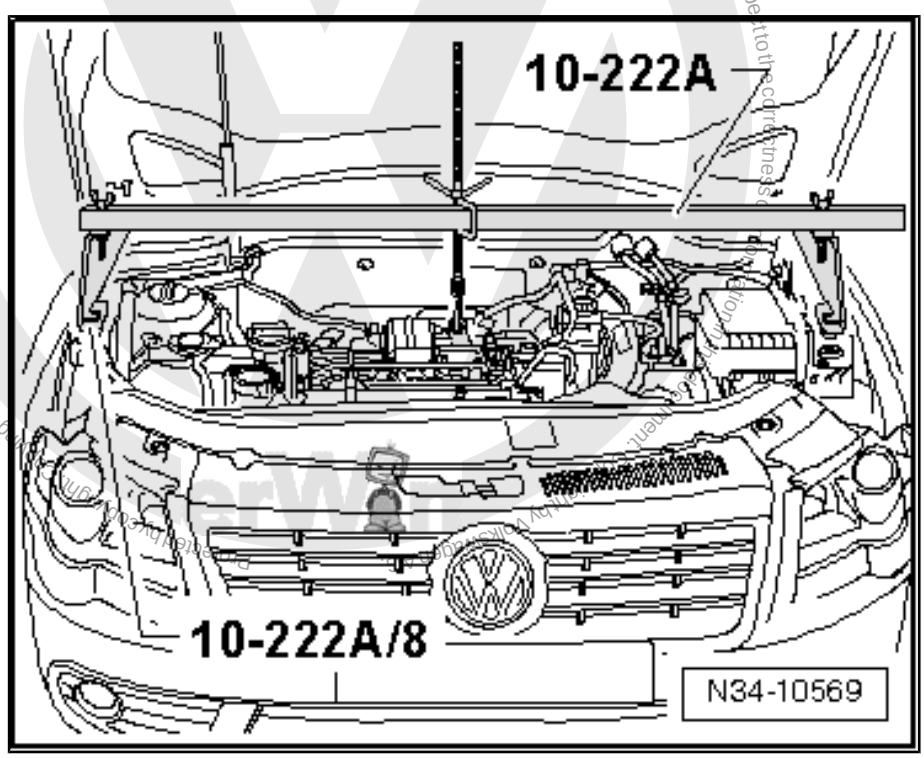
– Secure drive shaft to suspension strut with tensioning strap - T10038- .

The surface protection of the shafts must not be damaged.

– Remove filler pieces from upper edges of both wings.

– If there are hose and cable connections in area of engine support eye for support bracket - 10-222 A- , remove these now.





– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /8- . Do not raise.

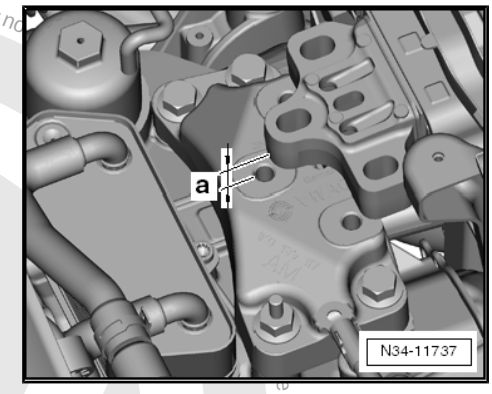
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– Remove all bolts -1- and -2- for bracket -A-.

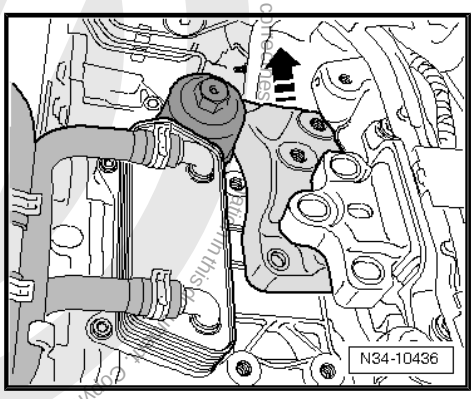


– Then lower engine/gearbox assembly to dimension -a- using spindles of support bracket - 10 - 222 A- .

Dimension -a- = about 50 mm



– Remove gearbox bracket -arrow-.
– Remove all connecting bolts except one which is in an easily accessible place between engine and gearbox.
– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.



The gearbox is separated from the engine in this position.

– Remove last engine/gearbox connecting bolt.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.21 Removing gearbox, Passat 2006 ►, with 3.6 l - V6 engine (four-wheel drive)

Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. Coolant hoses are clamped off and engine and gearbox are supported.

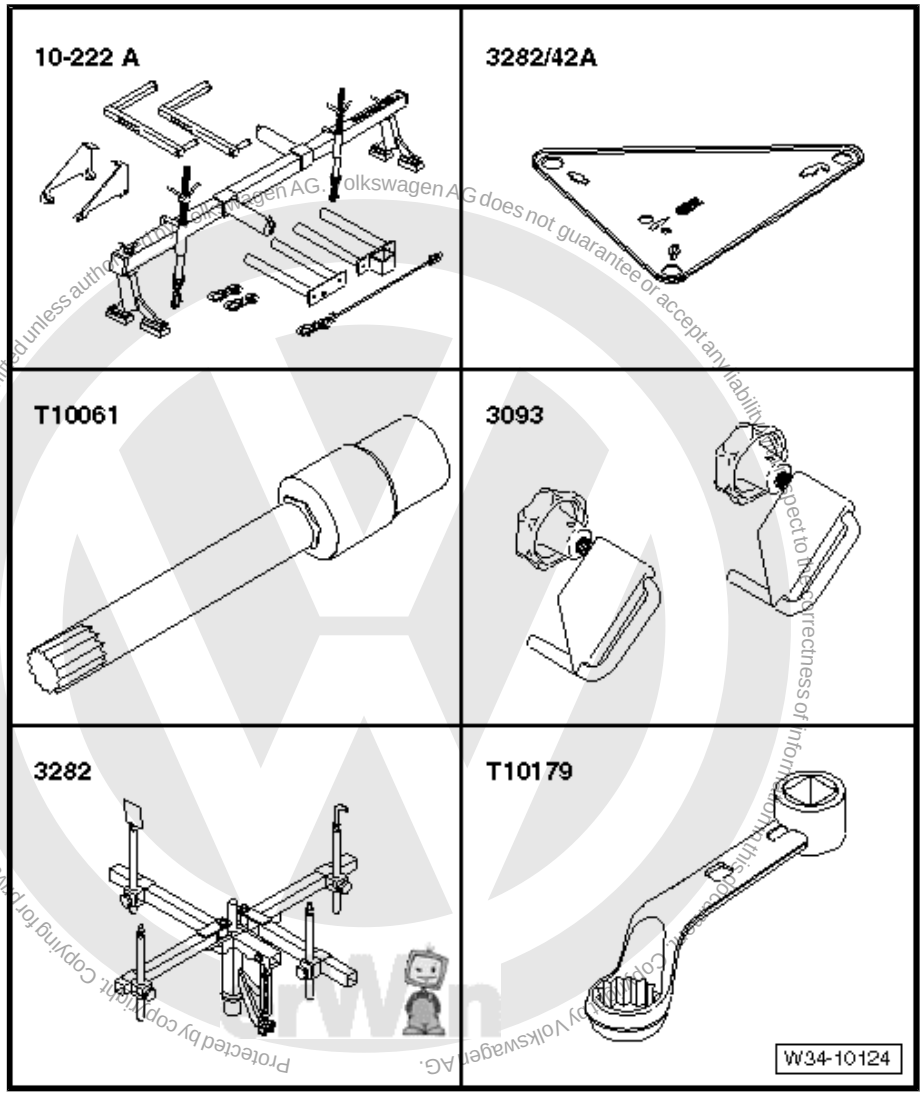
»From below«:

First pendulum support and bevel box are removed. The sub-frame remains in the vehicle. The propshaft remains in the vehicle. Then the gearbox is removed downwards.

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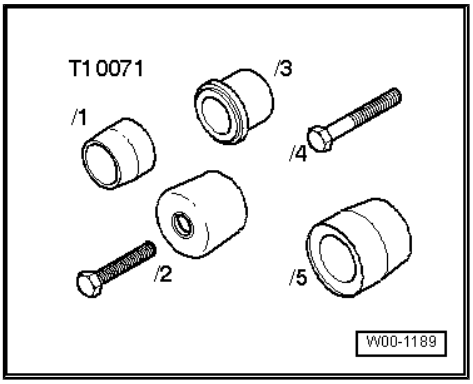
Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Socket - T10061-
- If no hose clamps to 40 mm - 3093- are available, use hose clamps to 25 mm - 3094- .
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



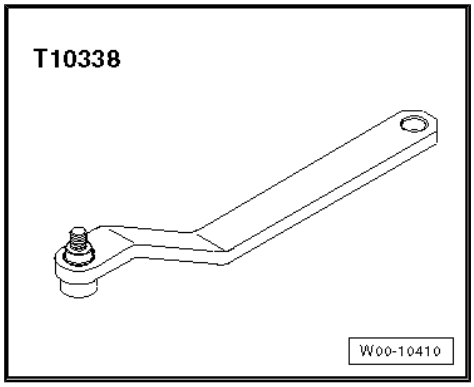
Special tools and workshop equipment required

- Assembly tool - T10071-



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♦ Bracket - T10338-



♦ Without illustration

♦ Engine and gearbox jack - V.A.G 1383 A-

♦ Gearbox support - 3282-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

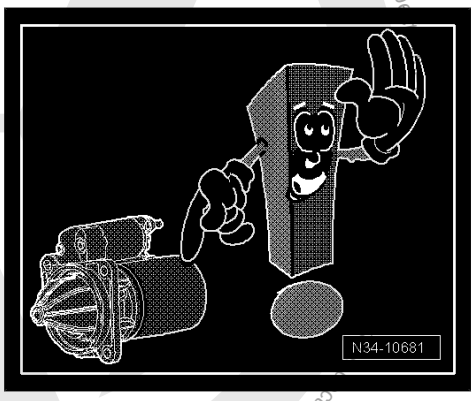
– Move selector lever to position »P« position.

– Disconnect battery ⇒ Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter , and remove retaining plate beneath that.

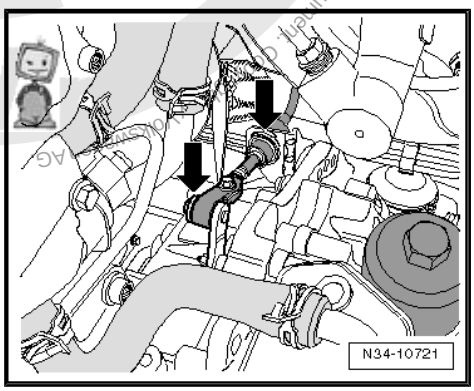
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.



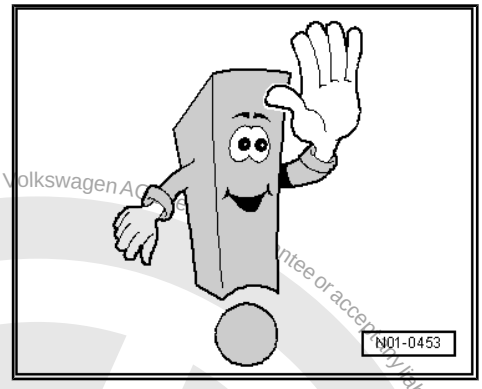
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Both securing clips must be later renewed when cable is adjusted.

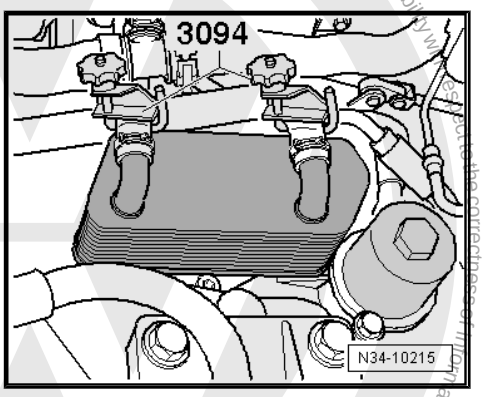
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69.



- Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
- Release mechatronic unit connector by turning and pull off connector.
- Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).
- Now remove all upper connecting bolts between gearbox and engine.

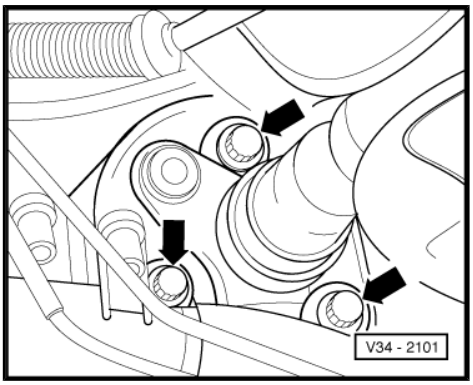


The following tools are appropriate for this:

- Socket - T10061-
- Socket - T10035-
- Insert tool 18 mm - T10179-

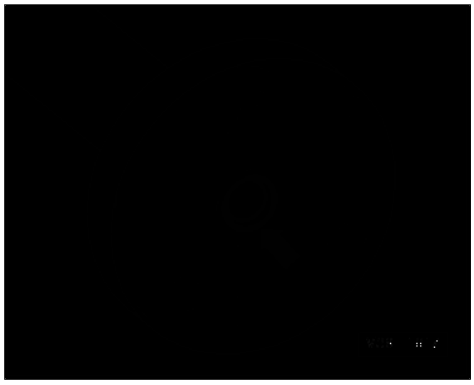
It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

- Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .
- Remove left coupling rod from suspension link and lay to side.
- Unbolt front left vehicle level sender - G78- from suspension link.
- Remove pendulum support ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links
- Unbolt propshaft from gearbox.

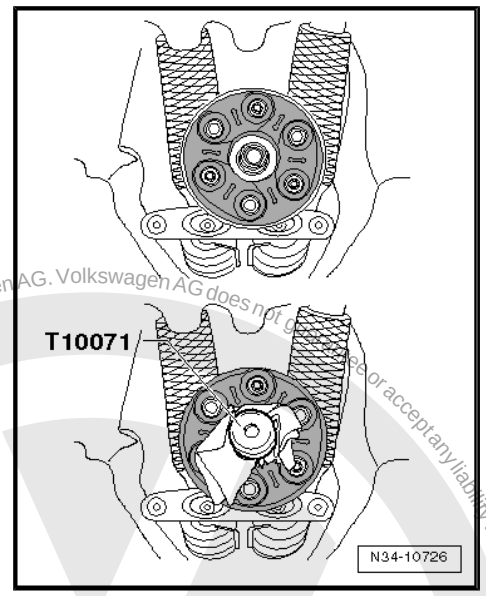


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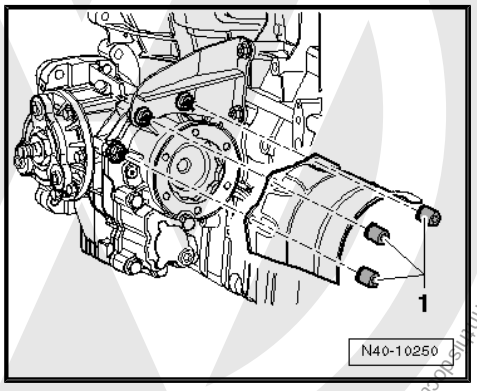
The -seal- in the propshaft must not be damaged.



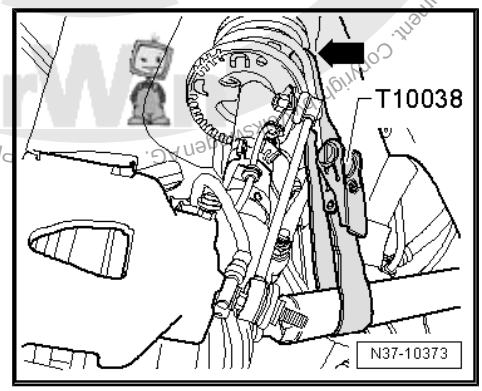
– Therefore, clamp assembly tool - T10071- tight with a cloth. This »protects« the ring.



– Remove heat shield above right drive shaft -1- ⇒ Rep. gr. 40 ; Heat shields for drive shafts .
– Unbolt both drive shafts from gearbox and carefully lay to side.
– Swing left drive shaft into wheel housing.



Secure both drive shafts to suspension struts using tensioning straps - T10038- .



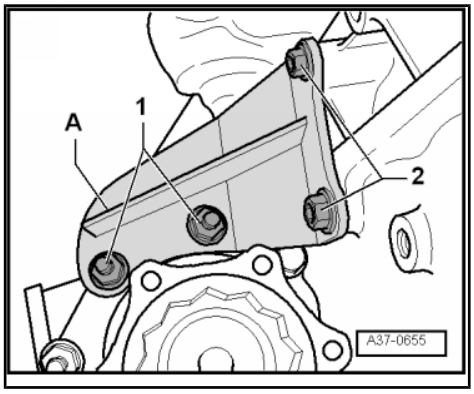
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– Remove bracket -A- between cylinder block and bevel box.

First remove bolt -1-.

When installing, hand-tighten all bolts until the heads make contact. Then tighten bolts -2-.

Specified torque: 40 Nm



– Remove counter-sunk bolt using insert - T10107 A- .

The flange shaft remains in the gearbox.

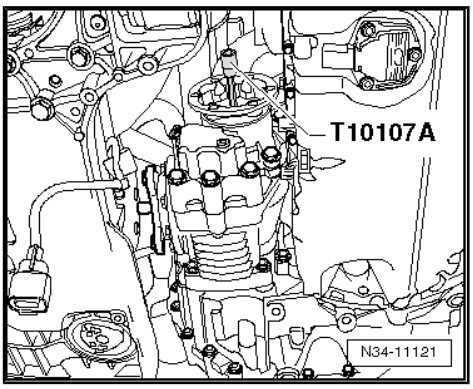
– Unbolt bevel box from gearbox and remove it.

A second mechanic must press the engine forward slightly while the bevel box is being removed.

– If necessary, remove bracket with secondary pump and lay to side with pump.

– Remove all connecting bolts but one between engine and gearbox.

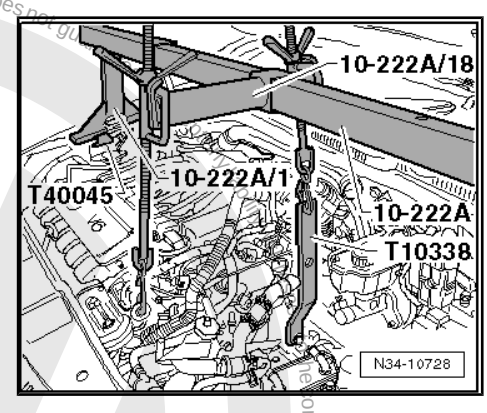
It is advisable to leave an easily accessible bolt installed.



– Remove filler pieces from upper edges of both wings.

– If there are hoses and cable connections in area of engine support eyes for support bracket - 10-222A- , remove these now.

– Support engine and gearbox with support bracket - 10 - 222 A- and hooks - 10 - 222 A /10- . Do not raise.



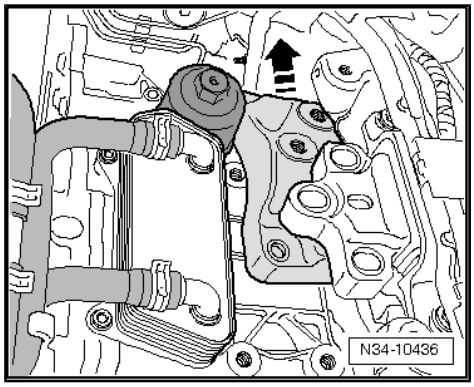
– Remove all bolts -1- and -2- for bracket -A-.

– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- so that bracket -A- can be removed.



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Remove bracket -arrow-.



Lower only slightly. As soon as the bracket can be removed, the space is sufficient to later guide the gearbox past the longitudinal member. Turn each spindle a maximum of 4 additional turns.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.22 Removing gearbox, Scirocco 2009 ► with 2.0 l diesel engine

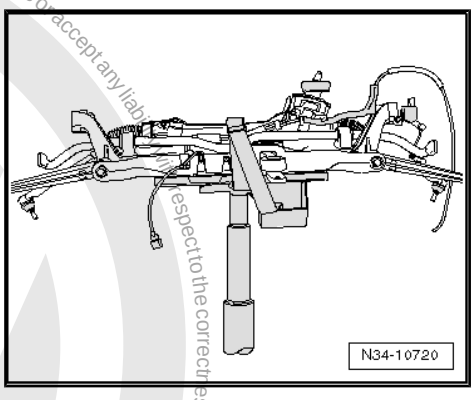
Brief description

The gearbox is removed downwards separately. The engine remains in the vehicle. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

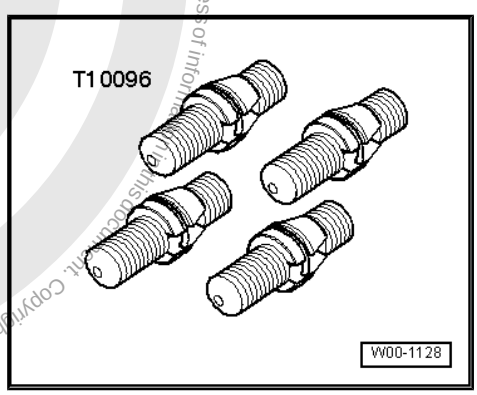
»From below«:

Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

In any case, locating pins - T10096- are necessary.

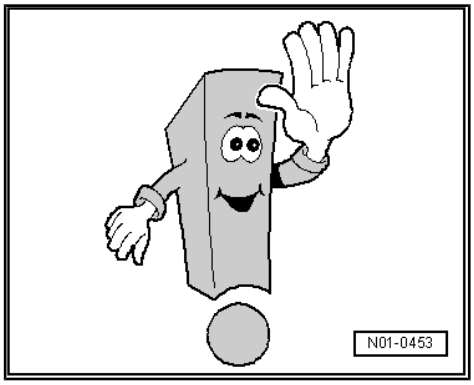


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If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

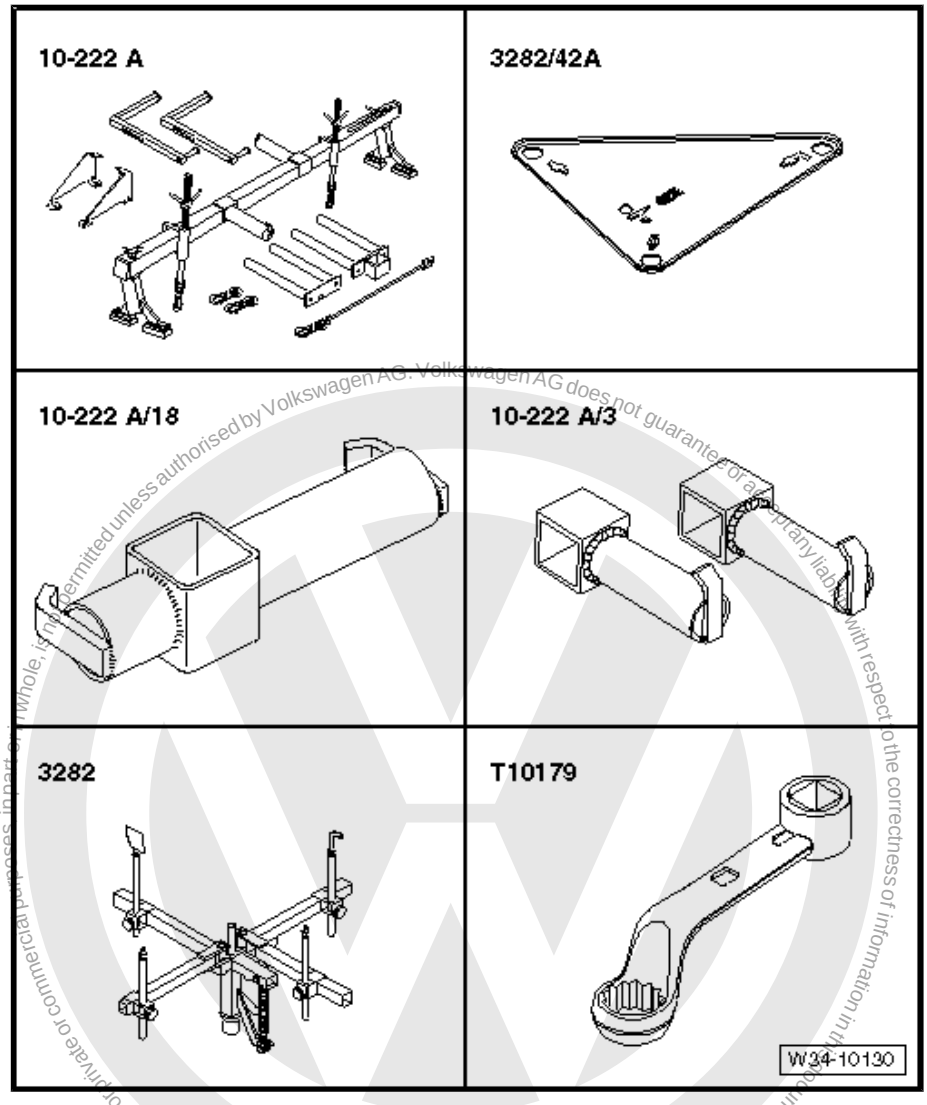
In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!

It requires only a small effort to install the locating pins - T10096- . Their benefit is enormous.



Special tools and workshop equipment required

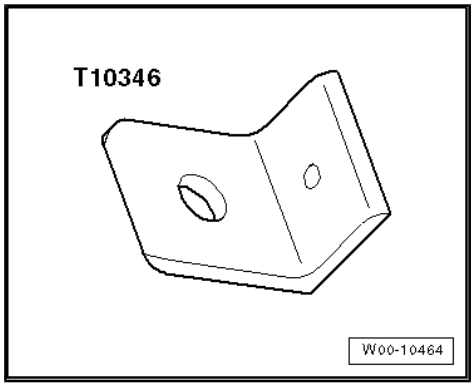
- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



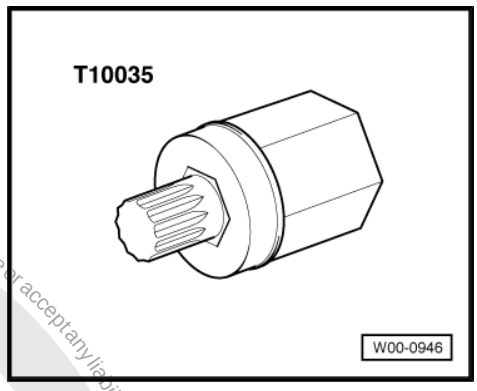
Special tools and workshop equipment required

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- Bracket - T10346-



- Socket - T10035-



Special tools and workshop equipment required

- Tools without illustration:
- 2 Hose clamps to 40 mm - 3093-
- Or 2 hose clamps to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

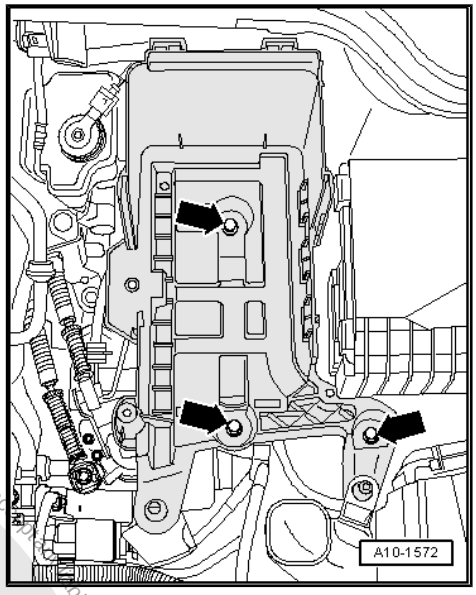
– Move selector lever to position »P« position.

– Remove both front wheels.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

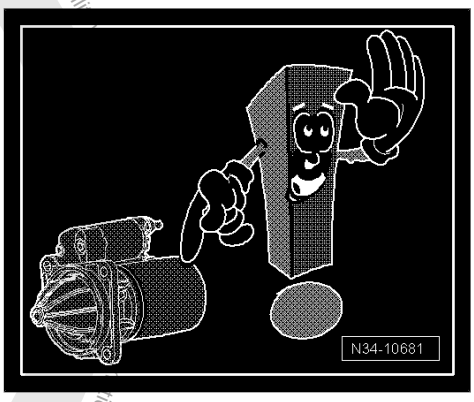
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– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



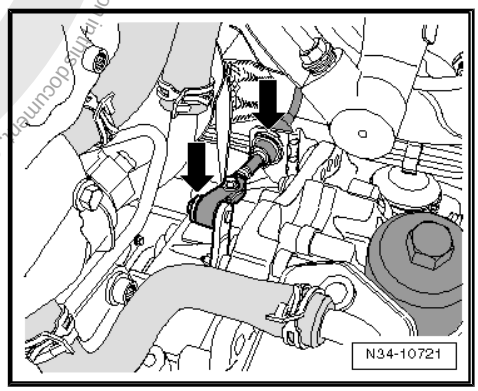
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

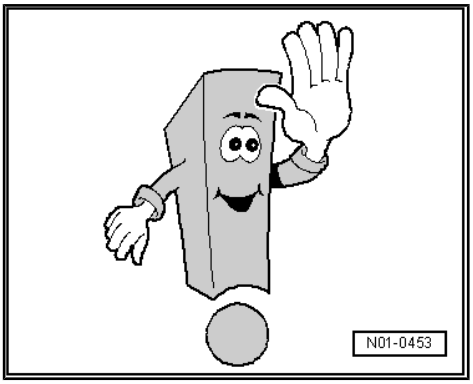


Both securing clips must be later renewed when cable is adjusted.

Remove cable with great care from cable support bracket on gearbox. Do not bend it.

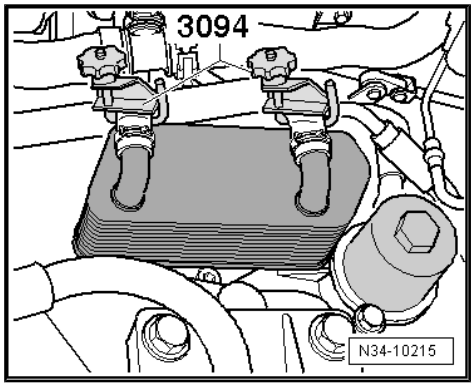
Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

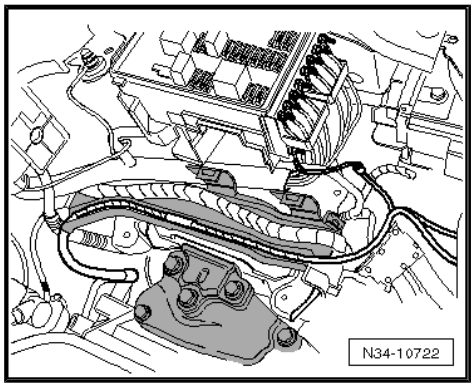


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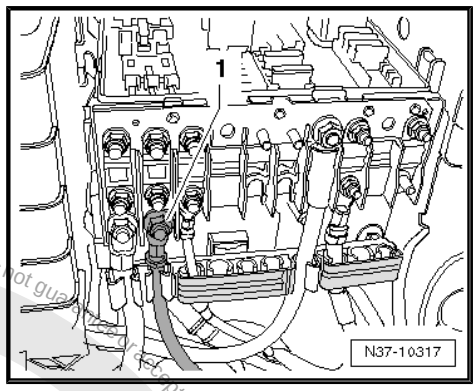
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Release mechatronic unit connector by turning and pull off connector.
– Unbolt wiring retainer from front of »black« gearbox cover (2 M6 nuts).



– Disconnect -wiring harness- coming »from below« from sub-frame.

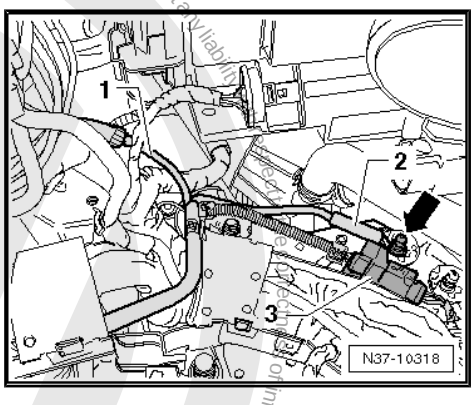


– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.
– Separate connector -3-.

This wiring harness will later be removed together with the sub-frame. This way, you can avoid time-consuming work on the steering and heat shield ⇒ Rep. gr. 40 ; Removing and installing subframe with steering box .



– Now remove all upper connecting bolts from engine and gearbox. Insert 18 mm - T10179- is especially good for this purpose.
– Remove filler pieces from upper edges of both wings.
– If there are hose or wiring connections near the engine lifting eyes, remove them now.

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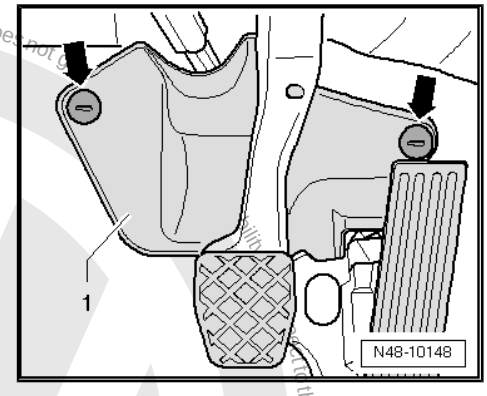
– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.

– Separate steering box from steering column.

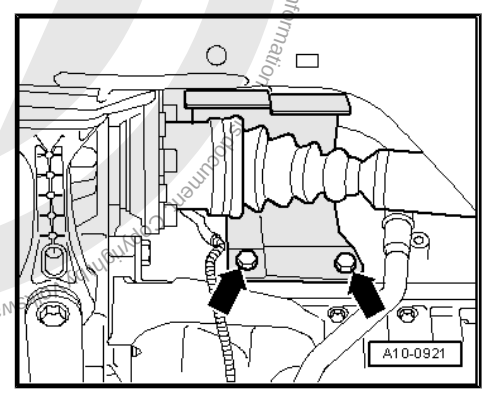
It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.



– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove left wheel housing liner.

– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts



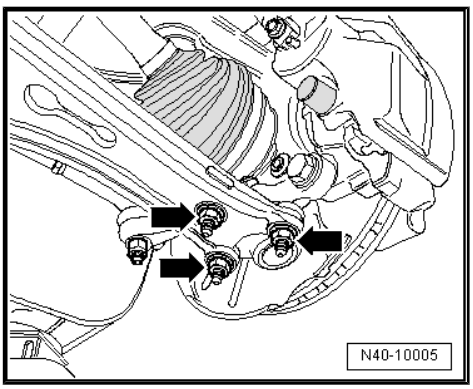
– Unbolt both transverse links from suspension struts.

– Remove coupling rods from anti-roll bar.

– Unbolt both drive shafts from gearbox and carefully lay to side.

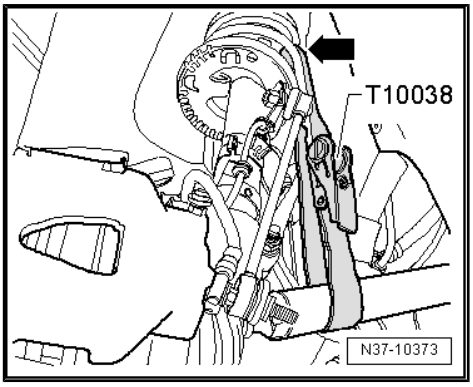
– Swing left drive shaft into wheel housing.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



Secure both drive shafts to suspension struts using tensioning straps - T10038- .

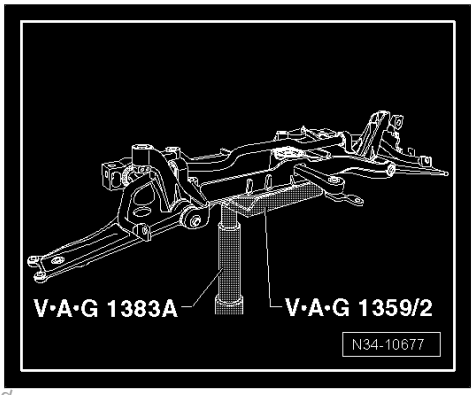
– Unbolt ⇒ pendulum support from gearbox.



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Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

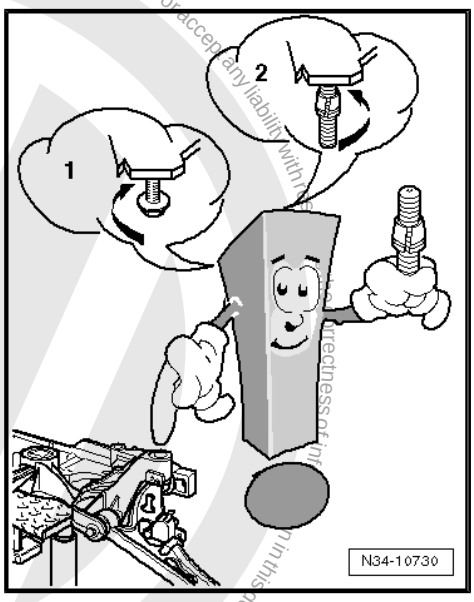


If the position of the subframe was not fixed, the wheels must now be aligned.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .

When removing subframe, please remember:

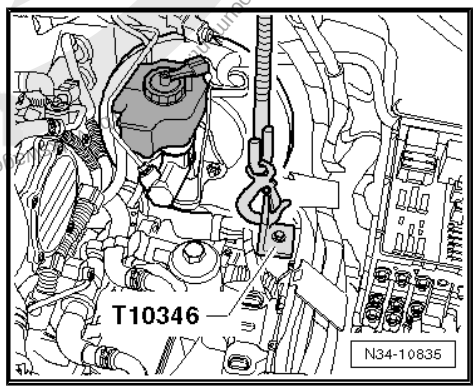
– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.



– Fit retainer - T10346- on longitudinal member.

(At rearmost of the 3 support points of the battery tray)

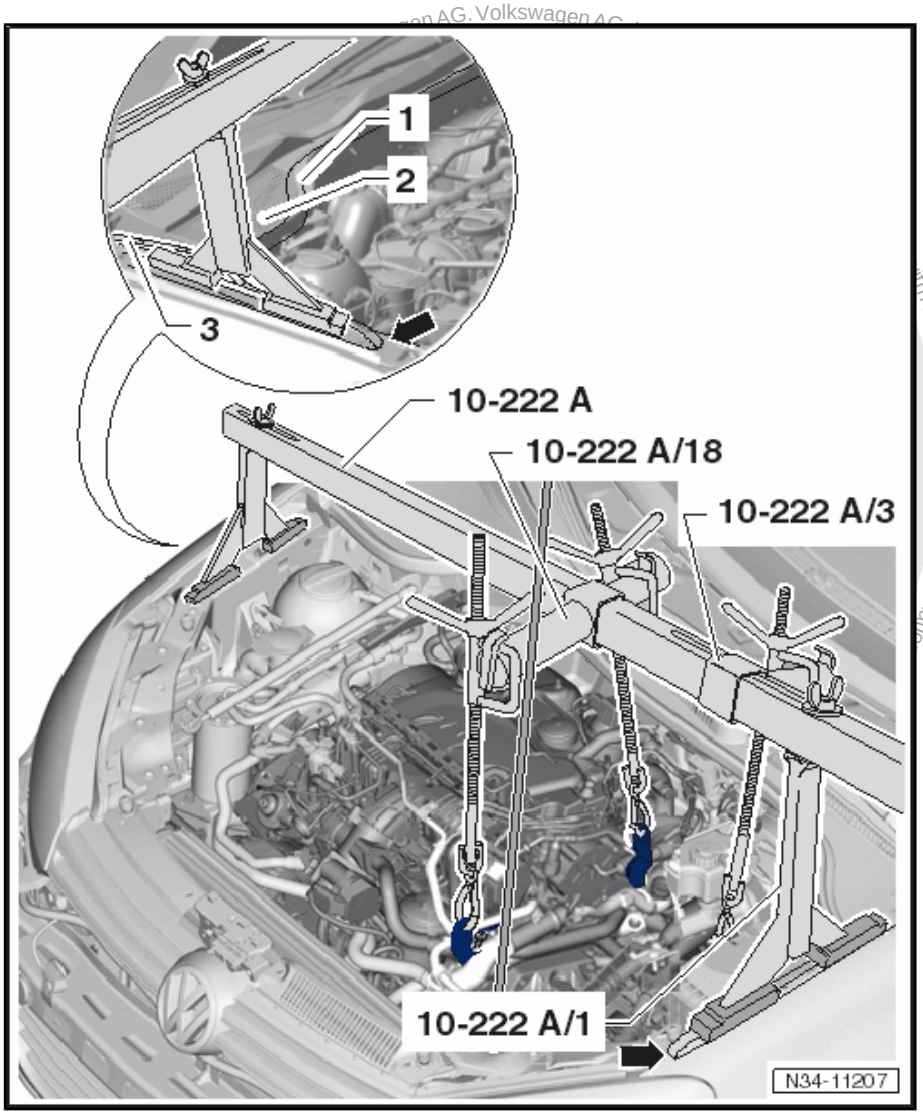
– Remove filler pieces from upper edges of both wings.



2 l - 103 kW engine

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– Support engine and gearbox. Do not raise.
– Position rack feet - 10 - 222 A /1- :
– Pull off seal -1- for plenum chamber cover -2- near both rack feet - 10 - 222 A /1- if they can not be set in place as shown.
– Observe line -3-.

Caution

The rack feet - 10 - 222 A /1- must not be placed on the bolted on sheet metal of the wings. The metal panel could be damaged.

– Connect bracket - T10346- to support bracket .

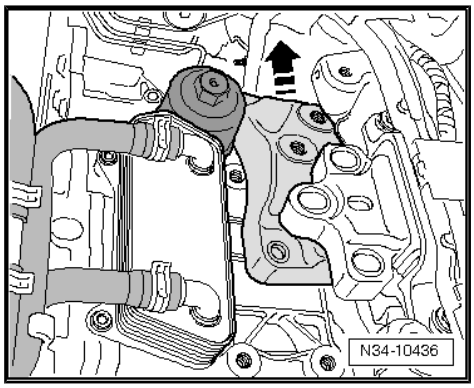
...with respect to the correctness of information...
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– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.



About 3 turns are sufficient to remove bracket -arrow-.

The gearbox is separated from the engine in this position.



– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.23 Removing gearbox, Scirocco 2009 ► with 2.0 l petrol engine

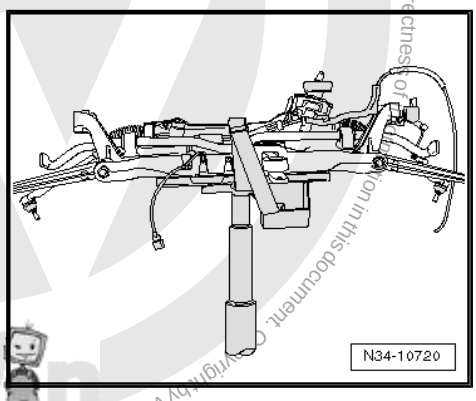
Brief description

The gearbox is removed downwards separately. The engine remains in the vehicle. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

»From below«:

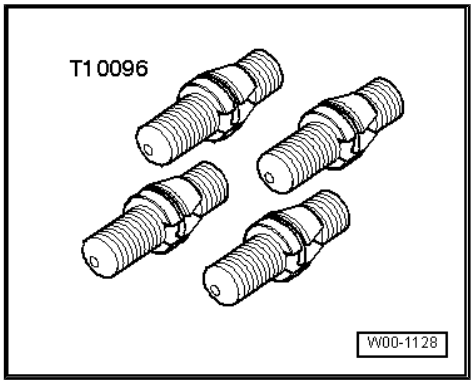
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

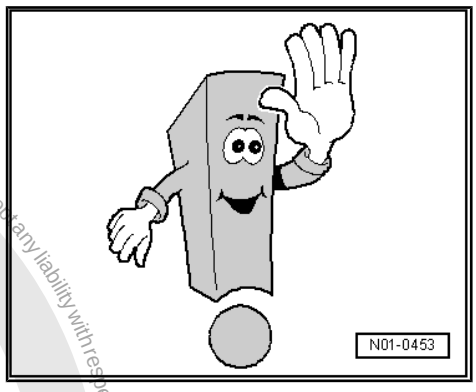
In any case, locating pins - T10096- are necessary.



If the position of the -subframe- is not fixed with the pins, the wheels must later be aligned.

In this case, wheel alignment would be an unnecessary and expensive additional job! Save yourself this work and your customer the expense!

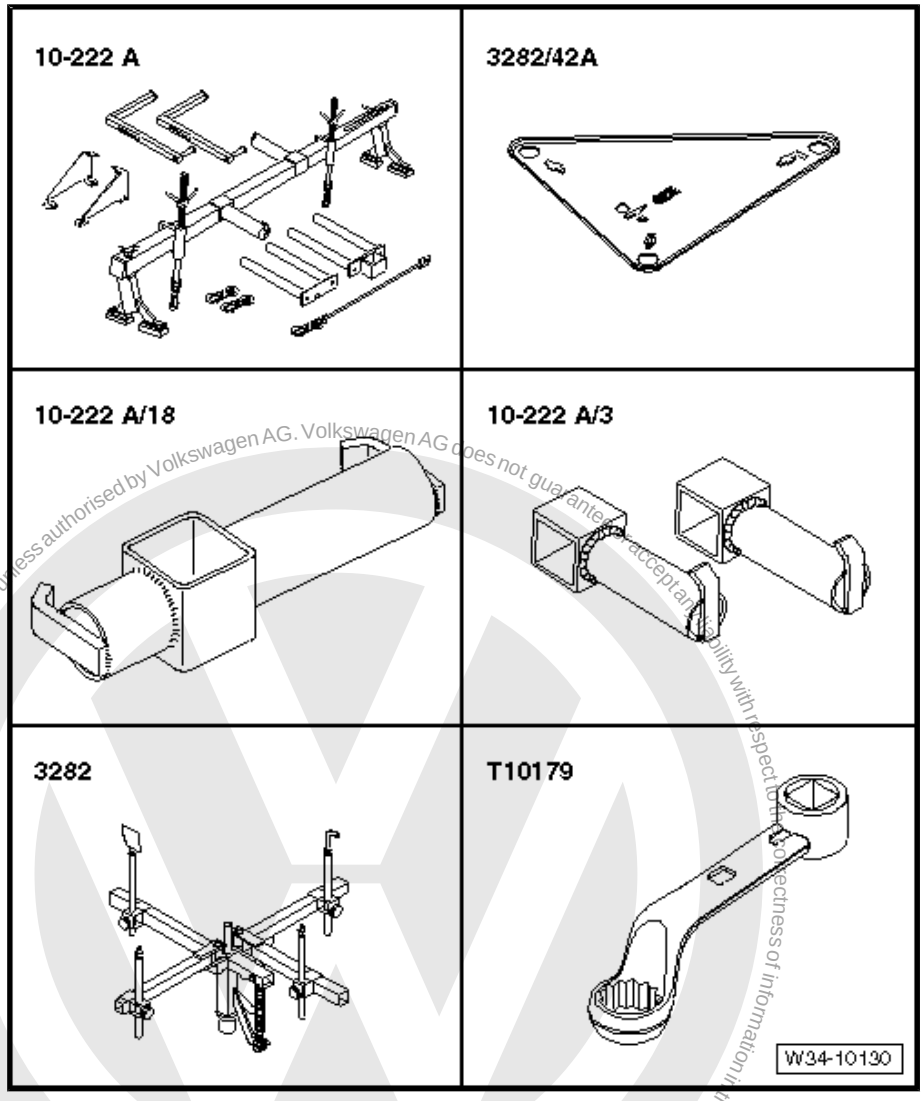
It requires only a small effort to install the locating pins - T10096- . Their benefit is enormous.



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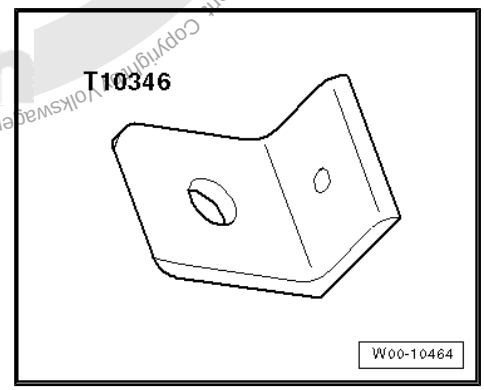
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adapter - 10-222A/3-
- Adapter - 10 - 222 A /18-
- Gearbox support - 3282-
- Adjustment plate - 3282/42 A-
- Insert tool 18 mm - T10179-



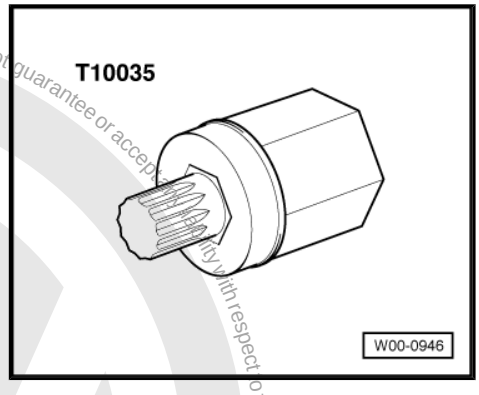
Special tools and workshop equipment required

- Bracket - T10346-



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- Socket - T10035-



Special tools and workshop equipment required

- Tools without illustration:
- 2 Hose clamps to 40 mm - 3093-
- Or 2 hose clamps to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

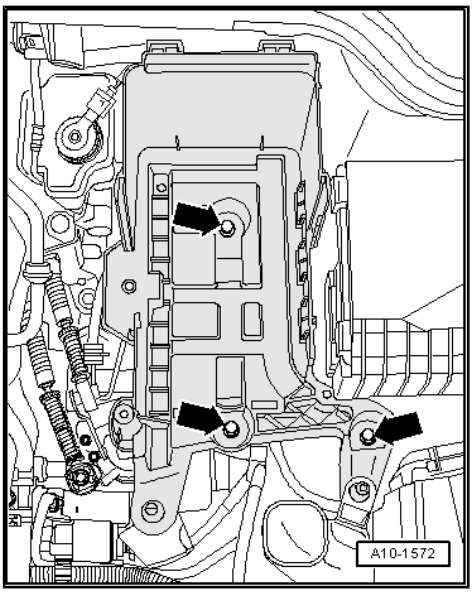
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

– Remove both front wheels.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

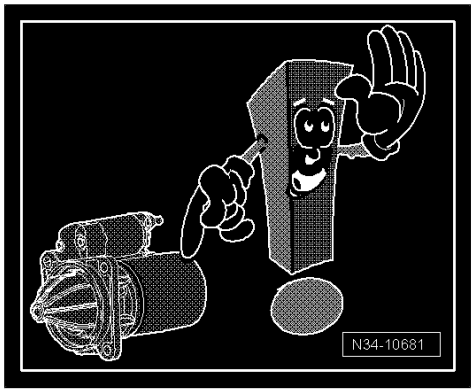
– Remove battery and -battery box- ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



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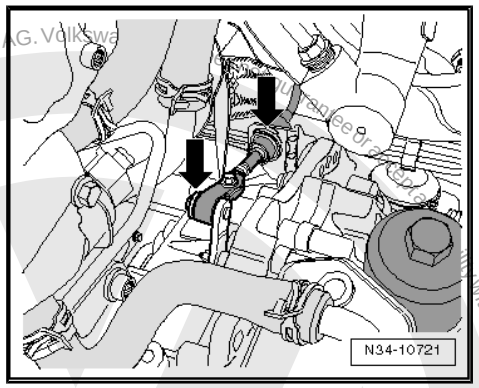
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

It is advisable to remove the »lower« bolt first.



– Remove selector lever cable from gearbox.

Use pliers to remove the washer on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

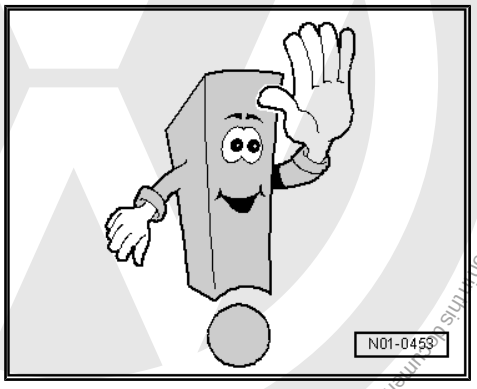


Both securing clips must be later renewed when cable is adjusted.

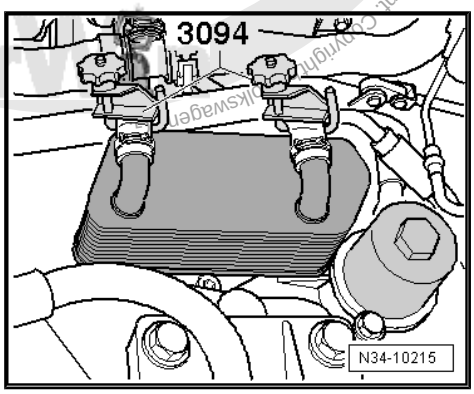
Remove cable with great care from cable support bracket on gearbox. Do not bend it.

Cable may also be pushed slightly backwards out of cable support bracket and removed later when gearbox is lowered. But then observe cable when lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

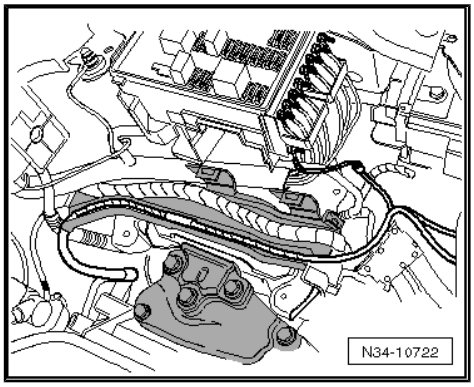


– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.
– Release mechatronic unit connector by turning and pull off connector.
– Unbolt wiring retainer from front of »black« gearbox cover (2 M6 nuts).

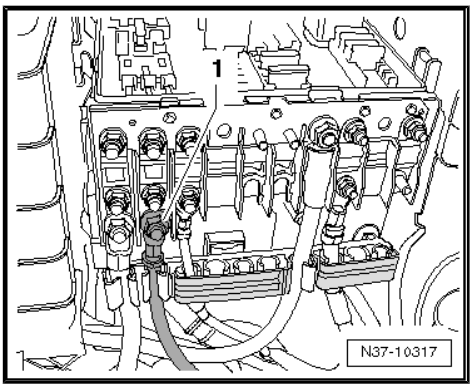


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– Disconnect -wiring harness- coming »from below« from subframe.



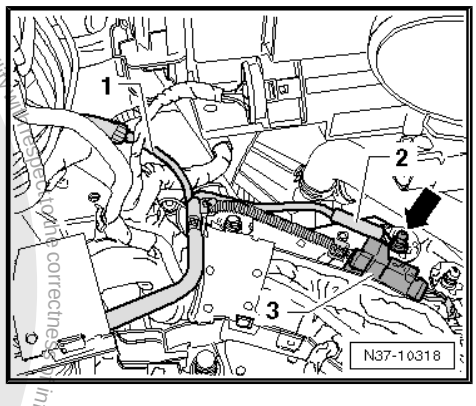
– Disconnect wire -1- from electronics box.



– Disconnect earth cable -2-.

– Separate connector -3-.

This wiring harness will later be removed together with the subframe. This way, you can avoid time-consuming work on the steering and heat shield ⇒ Rep. gr. 40 ; Removing and installing subframe with steering box .



– Now remove all upper connecting bolts from engine and gearbox. Insert 18 mm - T10179- is especially good for this purpose.

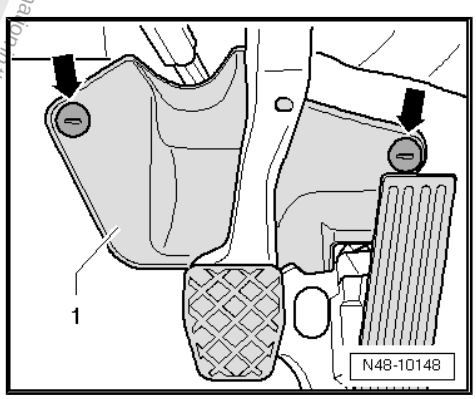
– Remove filler pieces from upper edges of both wings.

– If there are hose or wiring connections near the engine lifting eyes, remove them now.

– Now separate steering from steering column.

Refer to ⇒ Running gear, axles, steering; Rep. gr. 48 ; Removing and installing steering box to see what must be done.

In any case, first return the steering wheel to the straight-ahead position. Engage steering wheel lock. Notes on tightening the bolt can also be found in these instructions.



– Separate steering box from steering column.

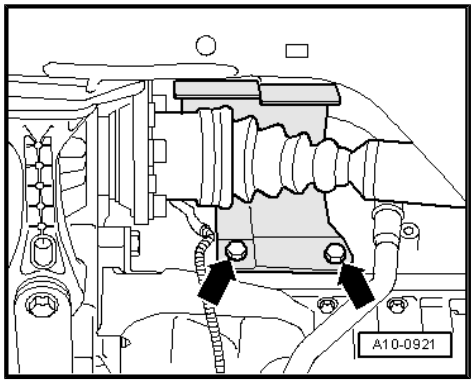
It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

– Remove noise insulation and lower part of front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liners; Front wheel housing liners .

– Remove left wheel housing liner.

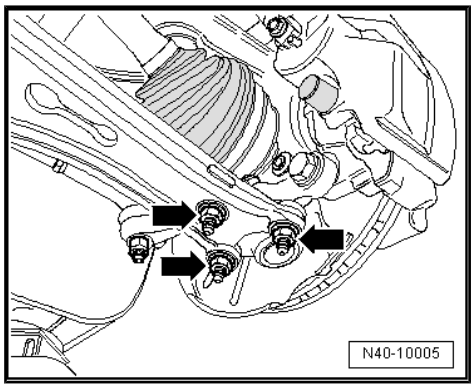
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– If fitted, remove the heat shield over the right-hand drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts



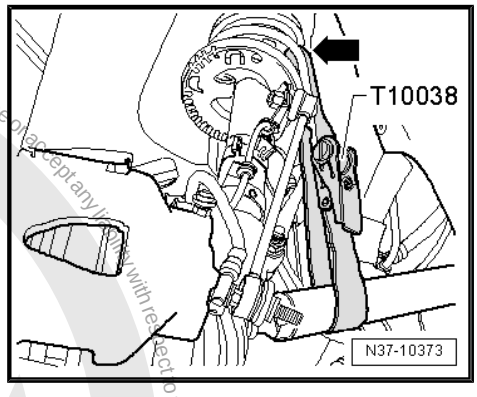
– Unbolt both transverse links from suspension struts.
– Remove coupling rods from anti-roll bar.
– Unbolt both drive shafts from gearbox and carefully lay to side.
– Swing left drive shaft into wheel housing.

The surface protection of the shafts must not be damaged. Plastic cable ties or a pair of tensioning straps - T10038- are therefore very good for this.



Secure both drive shafts to suspension struts using tensioning straps - T10038- .

– Unbolt ⇒ pendulum support from gearbox.

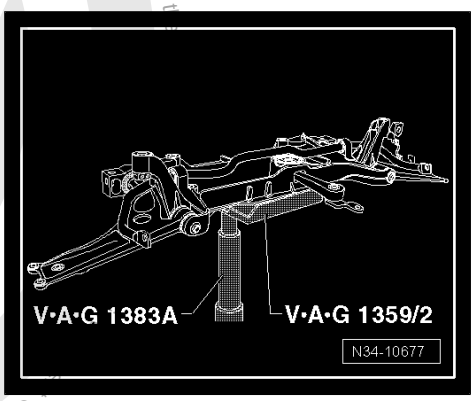


Next remove -subframe- together with -pendulum support- and -both suspension links- and -steering-.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

If the position of the subframe was not fixed, the wheels must now be aligned.

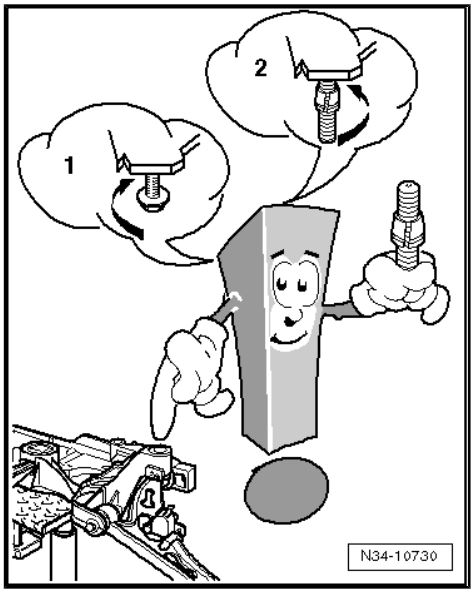
⇒ Running gear, axles, steering; Rep. gr. 40 ; Locating subframe and brackets .



When removing subframe, please remember:

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– After removing a bolt -1-, immediately screw in a locating pin - T10096- -2-.

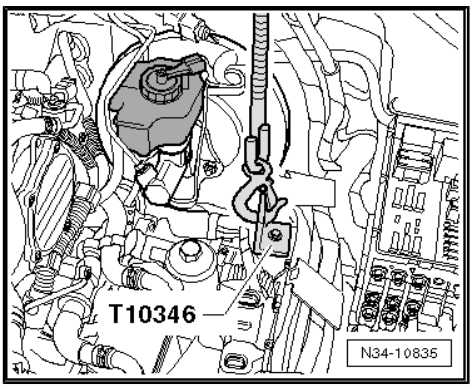


– Fit retainer - T10346- on longitudinal member.

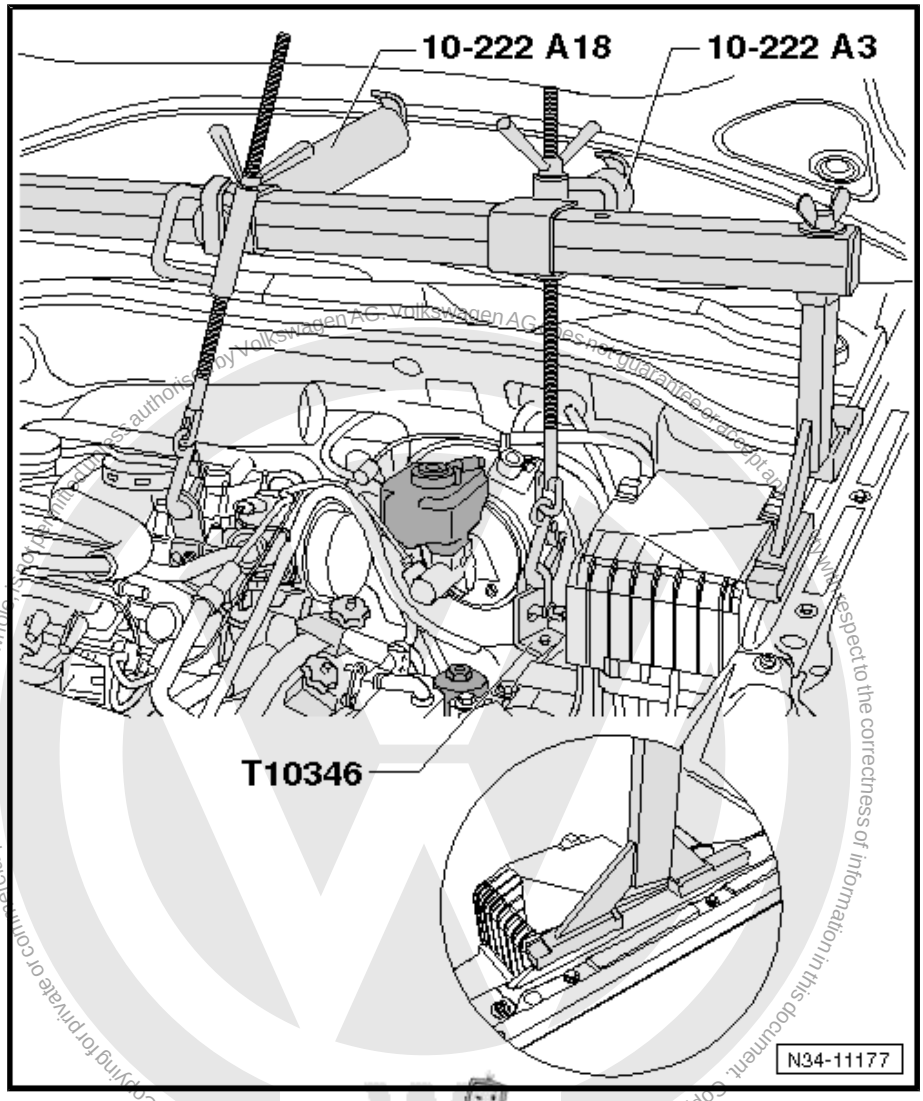
(At rearmost of the 3 support points of the battery tray)

– Remove filler pieces from upper edges of both wings.

2 l - 147 kW engine



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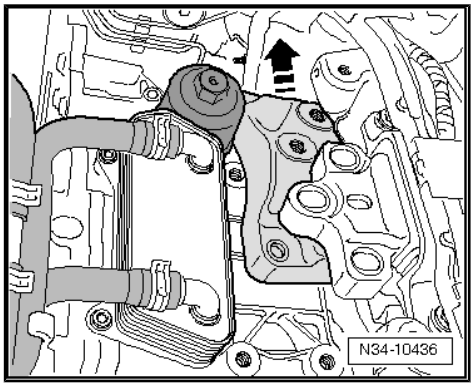


– Support engine and gearbox. Do not raise.
– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine and gearbox slightly using spindles of support bracket - 10 - 222 A- until bracket can be removed.



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About 3 turns are sufficient to remove bracket -arrow-.



The gearbox is separated from the engine in this position.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.24 Removing gearbox, Sharan 2011 ► with 2.0 l diesel engine

Brief description

The gearbox is removed downwards separately. »From above«

Remove battery with battery tray, air filter and starter. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

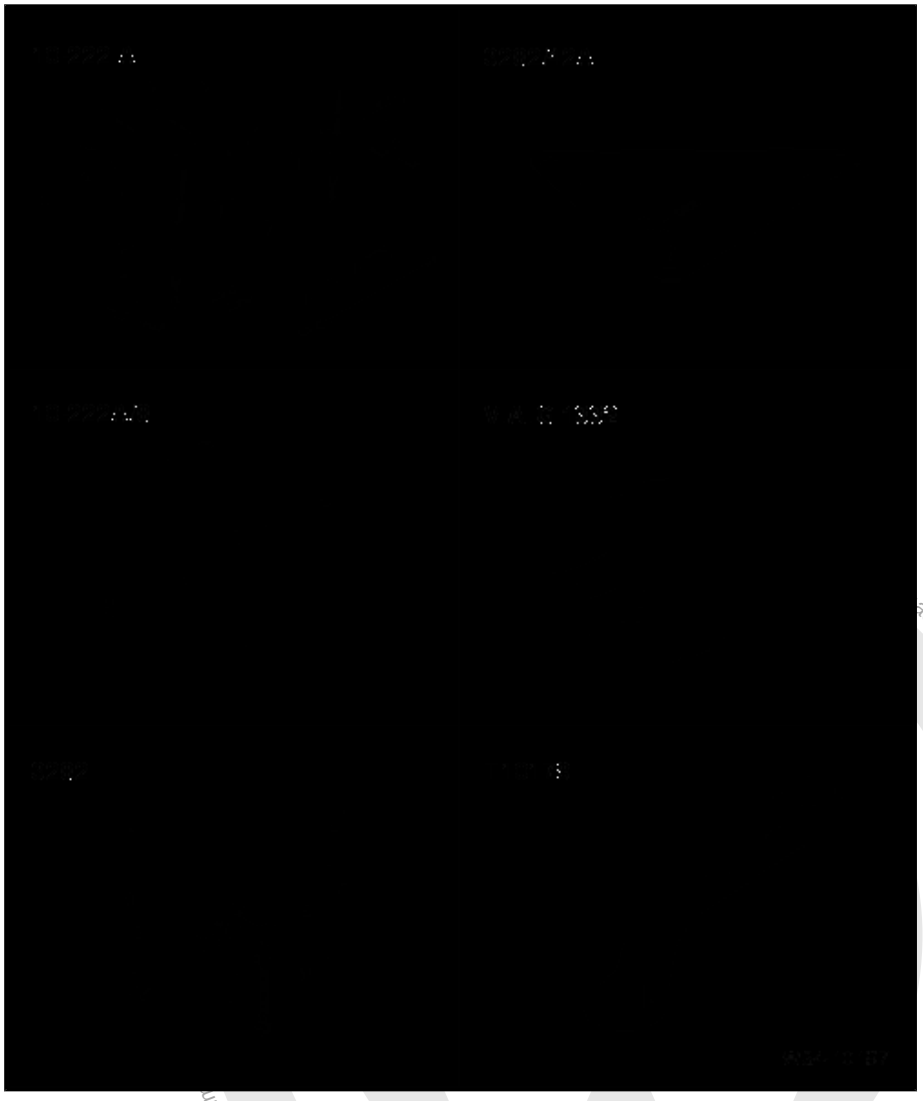
»From below«:

Remove ⇒ pendulum support. The subframe remains in the vehicle.

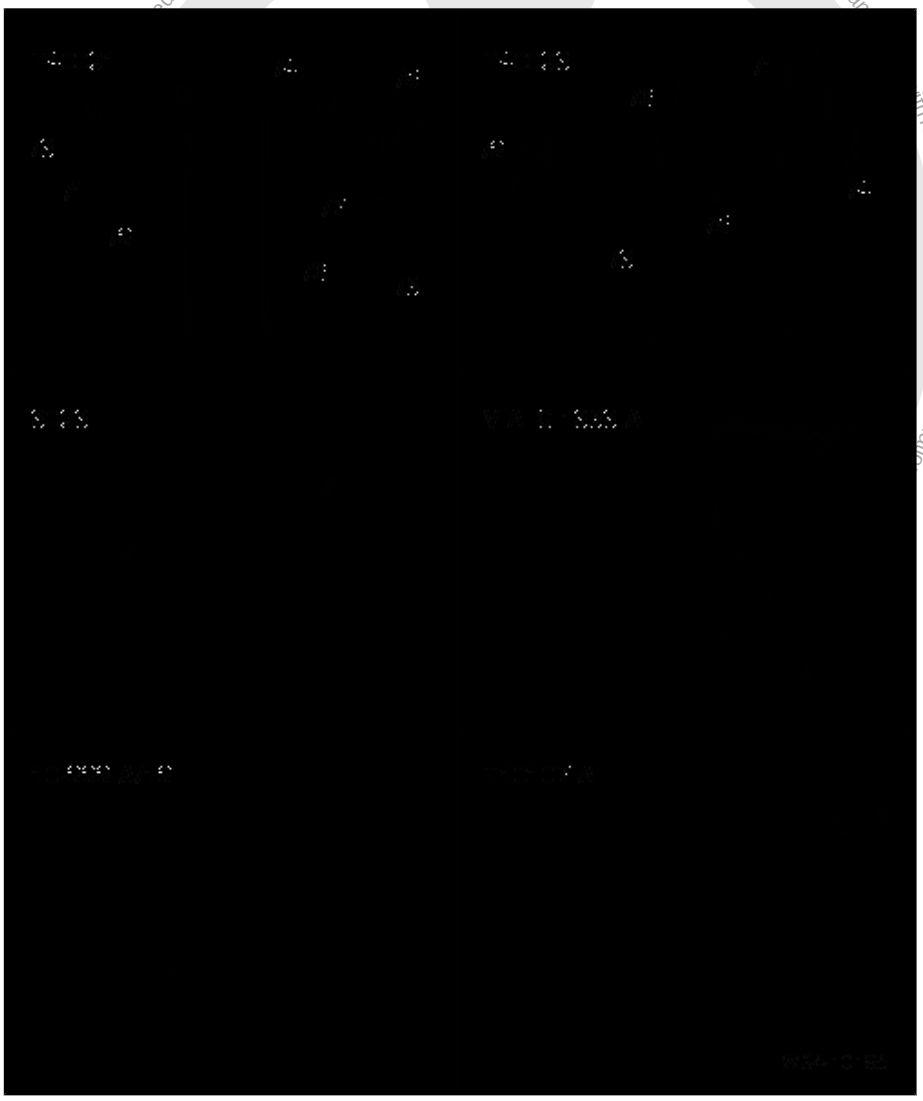
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Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Socket - T10035-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



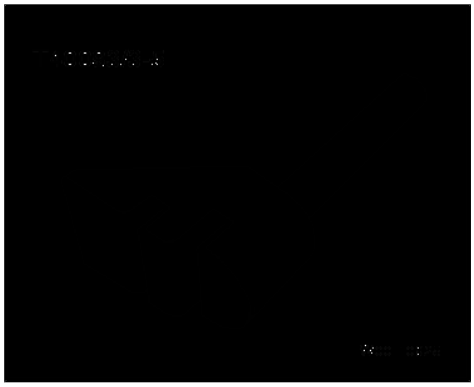
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- Square tube - T40091 / 1- with connector - T40091/3- of engine support basic set - T40091-
- Adapter - T40093/3- of engine support supplement set - T40093-
- Hose clamps up to 40 mm - 3093- if available, or hose clamps up to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-
- Shackle - 10 - 222 A /12-
- Socket - T10107 A-

Special tools and workshop equipment required

- Adapter - T40093/3-5 - of engine support supplement set - T40093-



Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

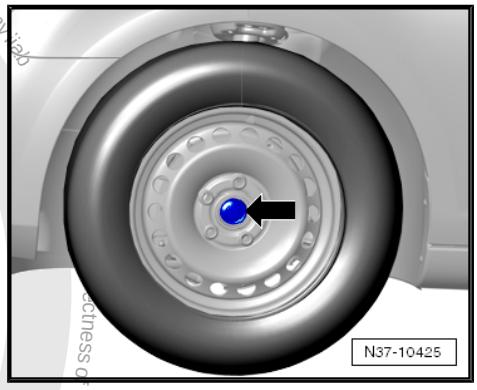
– Move selector lever to position »P« position.

Note

After loosening centre bolt, do not lower vehicle to ground again.

– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.

– Remove cover from engine.



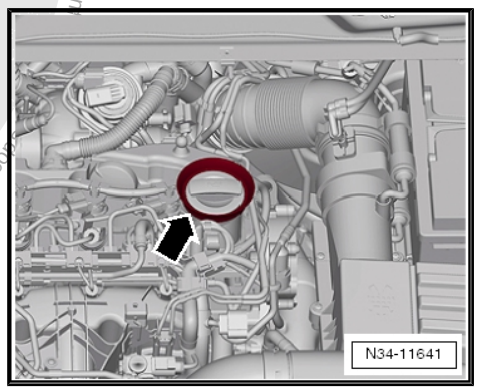
– Then pull off grommet -arrow- so that it is not damaged when supporting engine.

Supports for support bracket - 10-222 A- are placed in area of plenum chamber cover and radiator grille.

– Therefore remove plenum chamber cover: ⇒ Rep. gr. 50 ; Plenum chamber cover ; and remove radiator grille ⇒ Rep. gr. 66 ; Radiator grille .

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



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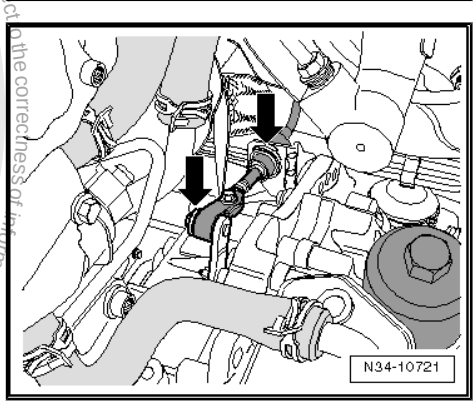
– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

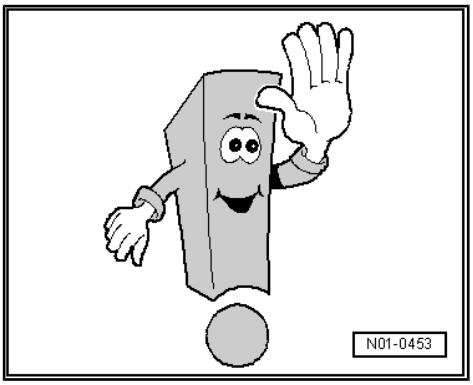


Both securing clips must be later renewed when cable is adjusted.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

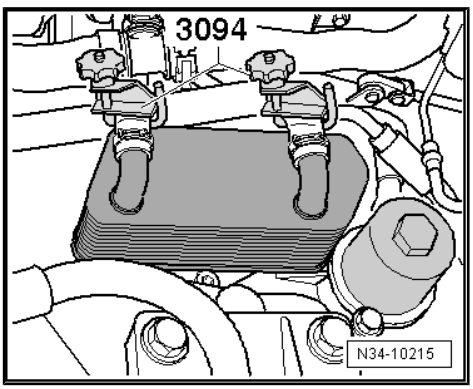
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .



– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.

– Remove charge air line ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .

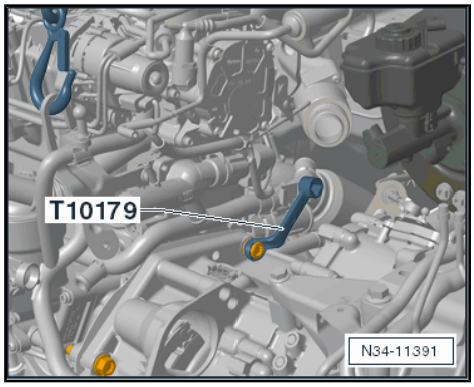


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– Remove upper engine/gearbox connecting bolts.

The following tools are appropriate for this:

- Socket - T10061-
- Socket - T10035-
- Insert tool 18 mm - T10179-

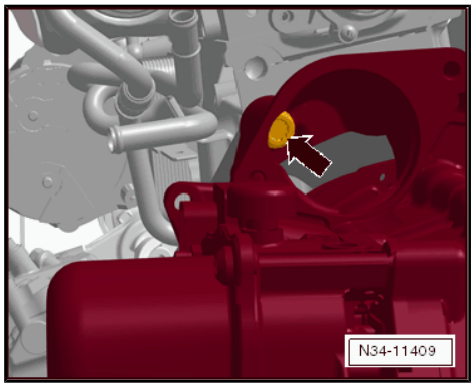


A bolt is located in the starter motor hole -arrow-.

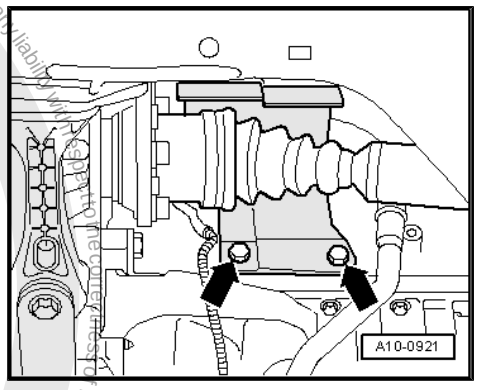
It is advisable to now do all the work which must be done »beneath« the car. This will avoid having the weight of the engine carried by the support bar and, consequently, by the body, for »a long time«.

– Remove noise insulation and front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liner; Front wheel housing liner .

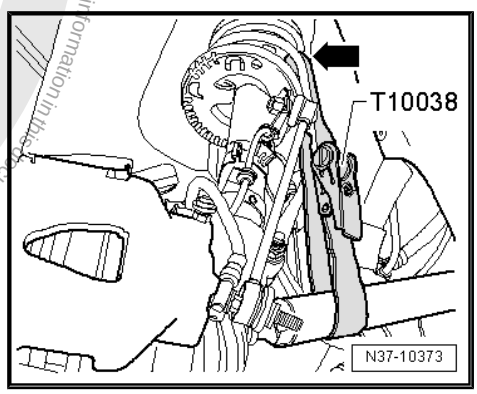
– Remove left drive shaft ⇒ Rep. gr. 40 .



– If present, remove heat shield above right drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts

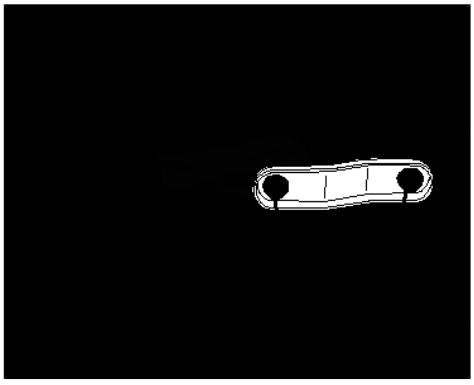


– Unbolt right drive shaft from gearbox and secure to suspension strut using securing straps - T10038- ⇒ Rep. gr. 40 .



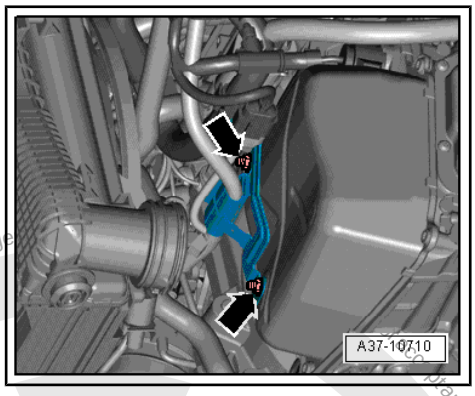
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– Remove ⇒ pendulum support. First remove bolt -1-, followed by bolts -2- and -3- ⇒ Rep. gr. 40 .

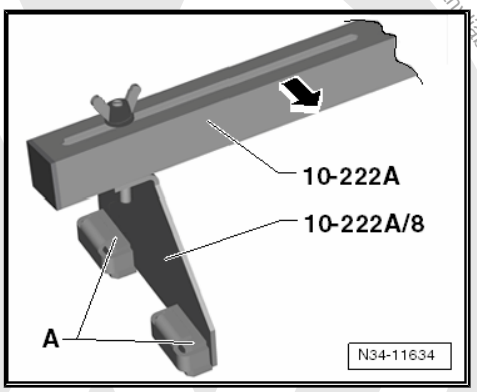


– Unbolt wiring retainer from front of »black« gearbox cover -arrows- (2 nuts M6).

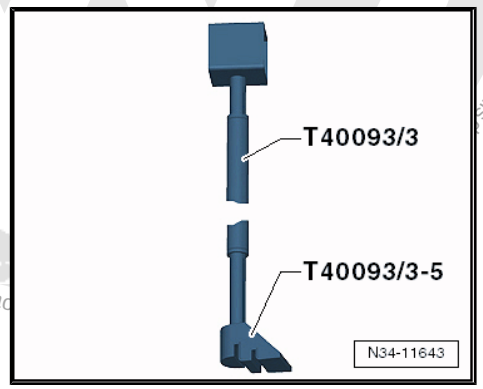
– Support engine and gearbox.



- Before putting on support bracket - 10-222 A- , note assembly of following special tools:
- Adapters - 10-222 A /8- must be mounted as shown.
- Supports -A- are pointing outwards.
- -Arrow- = vehicle driving direction.

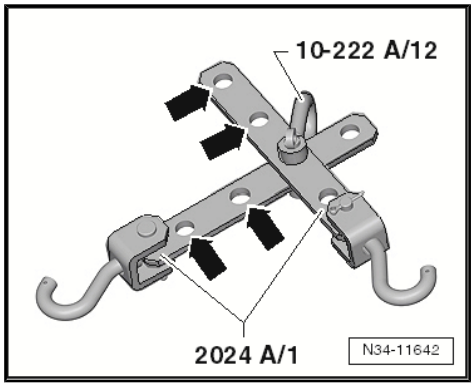


- Bolt adapter - T40093/3-5 - onto adapter - T40093/3- .

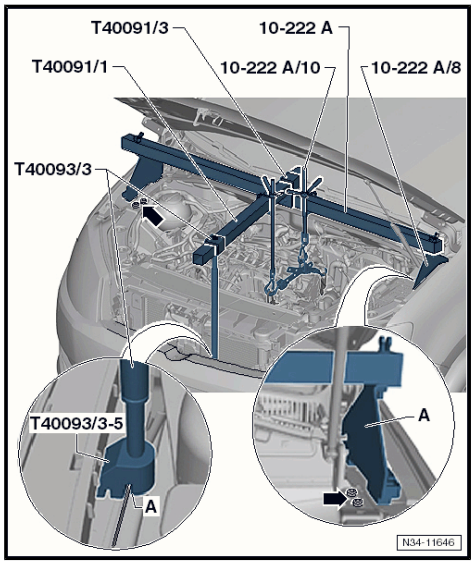


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- 2 Connect 2 link plates - 2024 A / 1- of support bracket - 2024 A- together using shackle - 10 - 222 A /12- .
- 2 holes -arrows- each point in one direction.



– Set up support bracket - 10-222 A- behind bonnet support:
– First put on adapter -10-222A/8- -A- next to bolts -arrow- on left side.
– Then set up support bracket - 10-222A- behind bonnet support. Also set up right adapter - 10-222A/8- next to bolts -arrow-.

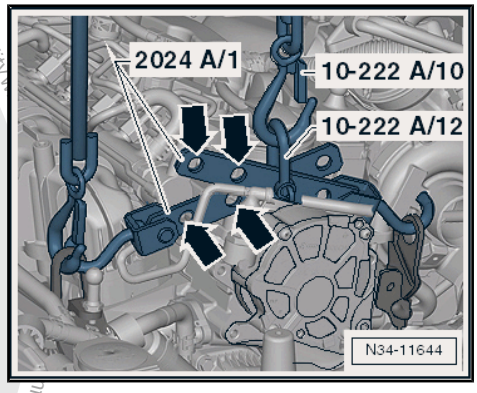


– Attach lugs - 2024 A / 1- in engine support eyes.
• 2 holes -arrows- each point towards front end.

Connect lugs - 2024 A / 1- to spindle - 10 - 222 A /10- using shackle - 10 - 222 A /12- .

(⇒ previous illustration)

– Set up adapter - T40093/3- with adapter - T40093/3-5 - (notch -A-) on sheet metal fold of bumper carrier.
– Push one spindle onto square tube - T40091/1- .
– Assemble square tube - T40091/1- with adapter - T40093/3- and support bracket - 10-222A- .
– Then attach spindle in front engine support eye.
– Take up weight of engine/gearbox assembly on spindle .



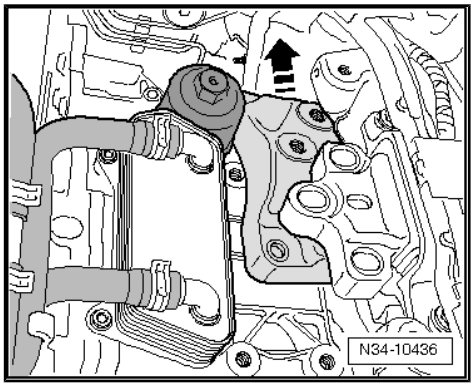
– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine/gearbox slightly using spindles of support bracket - 10 - 222 A- and remove bracket.



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At most, 5 turns are sufficient to remove bracket -arrow-.

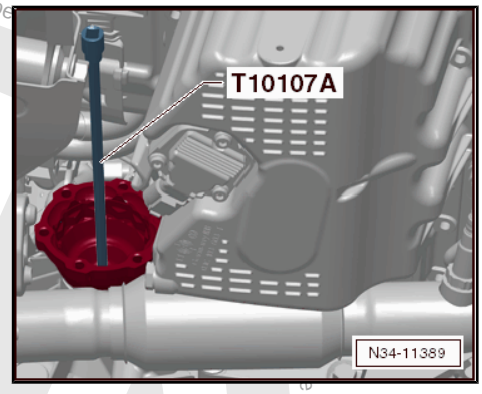
In many cases, the spindle does not need to be lowered further for the later removal of the gearbox.



Note

Before removing flange shaft, check oil seal for leaks. If oil seal is leaking, it must be renewed before flange shaft is installed.

– Remove right flange shaft of gearbox using socket -T10107 A- .



Bolt has a 6 mm hexagon socket. It can also be removed and installed using socket V.A.G 1669 .

– Screw 2 bolts into flange and counterhold flange shaft with a lever in order to remove and install flange shaft.
– Pull out flange shaft with compression spring.
– Close opening in drive shaft using a suitable plug.
– When flange shaft is reinstalled, compression spring prevents bolt engaging in thread. If necessary press flange shaft against gearbox with a lever and screw in bolt.

Torque setting 30 Nm

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.25 Removing gearbox, Sharan 2011 ► with 1.8 l and 2.0 l petrol engine

Brief description

The gearbox is removed downwards separately. »From above«

Remove battery with battery tray, air filter, starter and radiator grille removed. The coolant hoses must be clamped off. The engine and gearbox must be supported before the left subframe mounting is unbolted.

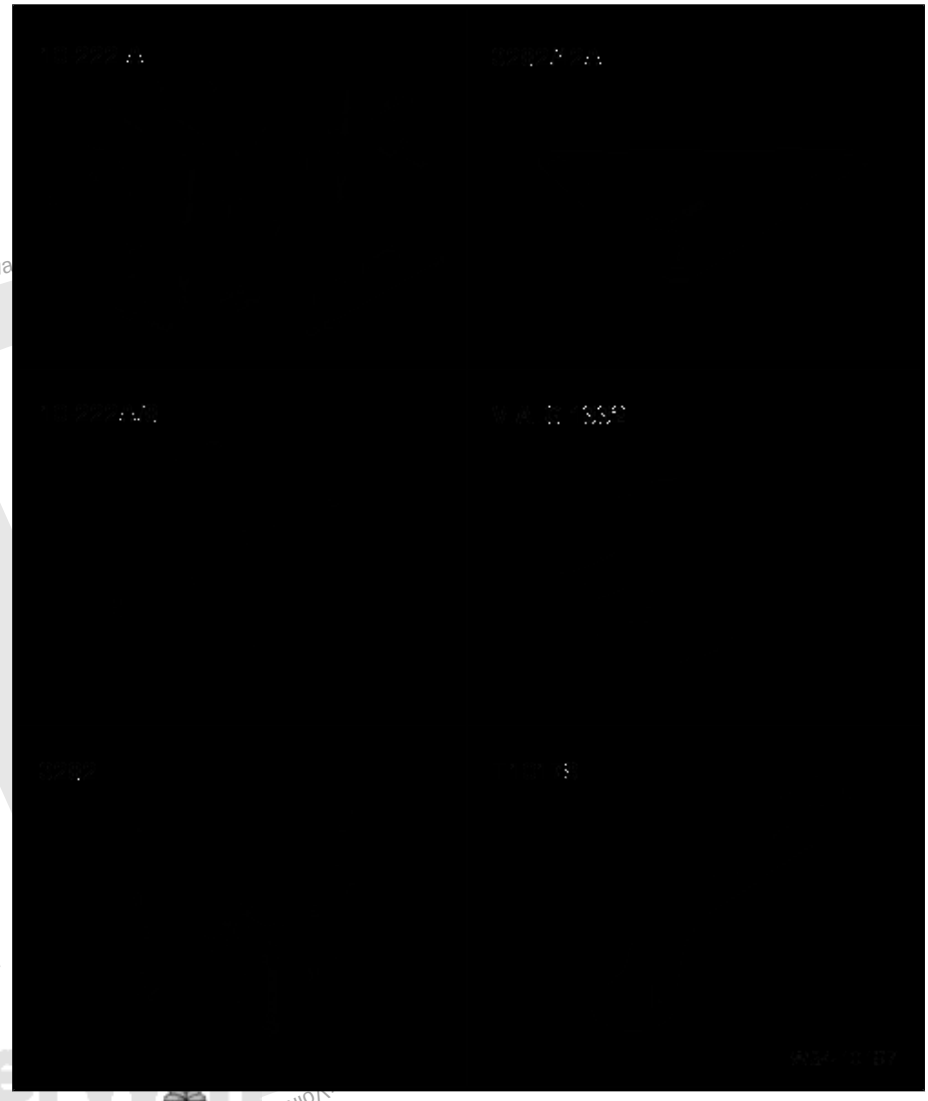
»From below«:

⇒ Pendulum support and both flange shafts removed from gearbox. The subframe remains in the vehicle.

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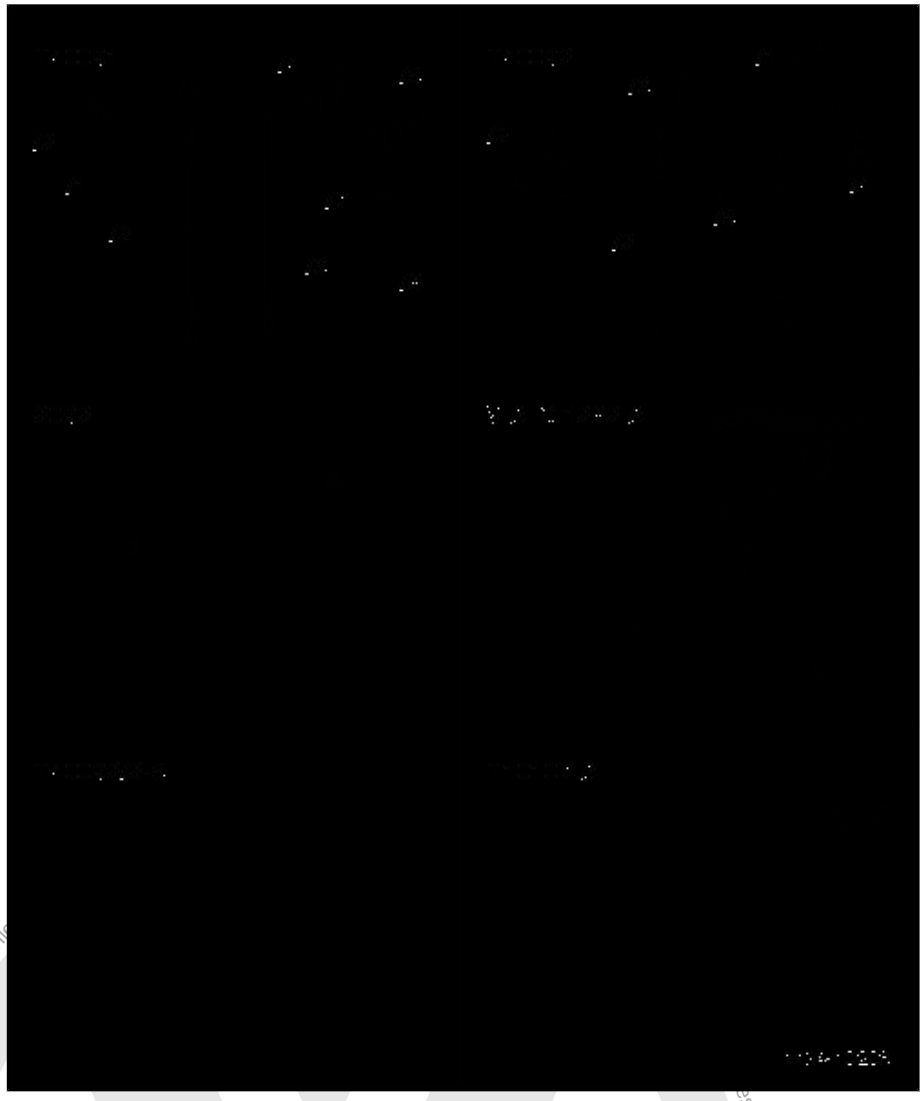
Special tools and workshop equipment required

- Support bracket - 10-222A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Socket - T10035-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



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- Square tube - T40091 / 1- with connector - T40091/3- of engine support basic set - T40091-
- Adapter - T40093/3- of engine support supplement set - T40093-
- Hose clamps up to 40 mm - 3093- if available, or hose clamps up to 25 mm - 3094-
- Engine and gearbox jack - V.A.G 1383 A-
- Adapter - T40093/3-5- of engine support supplement set - T40093-
- Socket - T10107 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

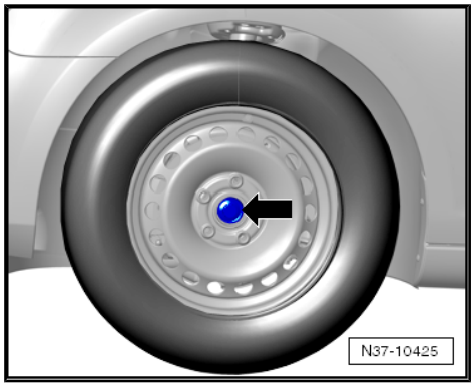
– Move selector lever to position »P« position.

Note

After loosening centre bolt, do not lower vehicle to ground again.

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– Depress brake pedal to remove bolt for left drive shaft -arrow-. A second mechanic is required.



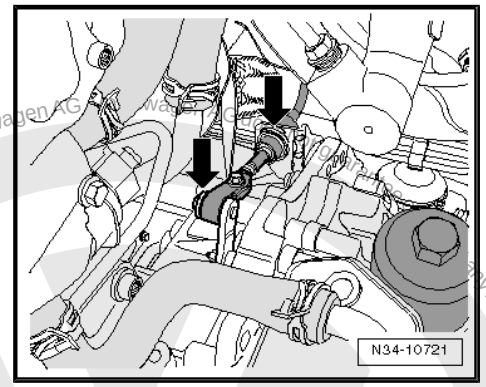
– Remove cover from engine.
– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .
– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

– Release mechatronic unit connector -1- by turning and pull off connector.
– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .



– Remove selector lever cable from gearbox.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

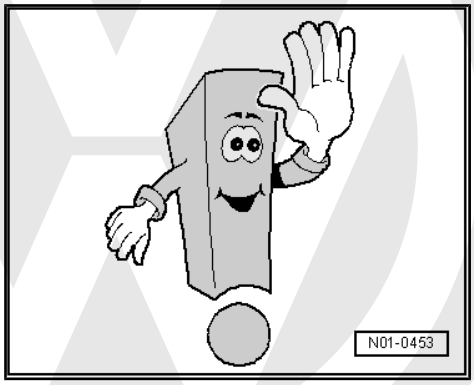


Both securing clips must be later renewed when cable is adjusted.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

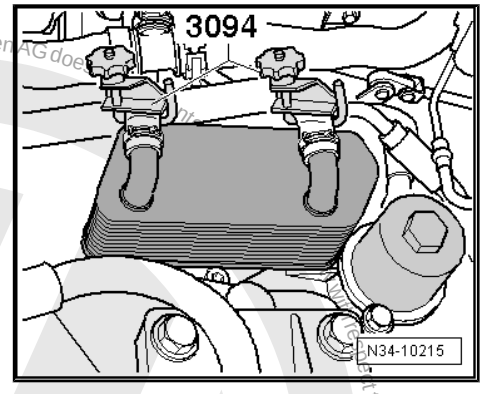
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

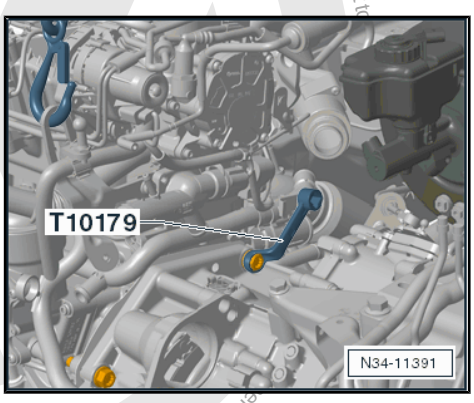


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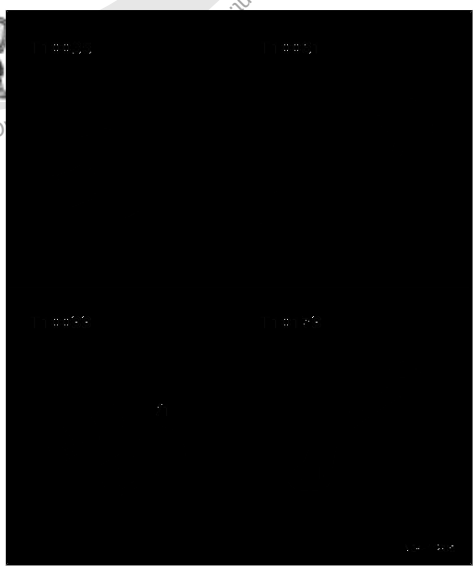
– Clamp off coolant hoses using hose clamps to 40 mm - 3093- or hose clamps to 25 mm - 3094- and remove.



– Remove upper engine/gearbox connecting bolts.

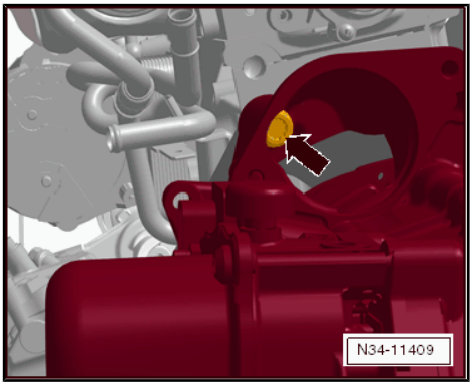


The following tools are appropriate for this:



A bolt is located in the starter motor hole -arrow-.

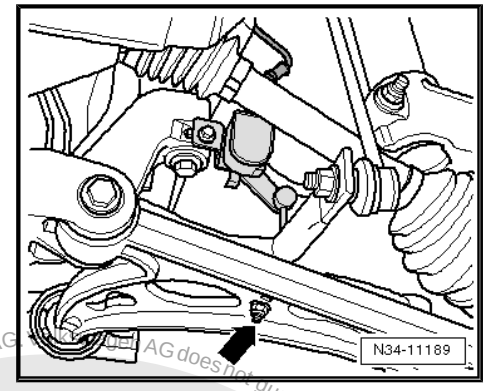
– Remove noise insulation and front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liner; Front wheel housing liner .



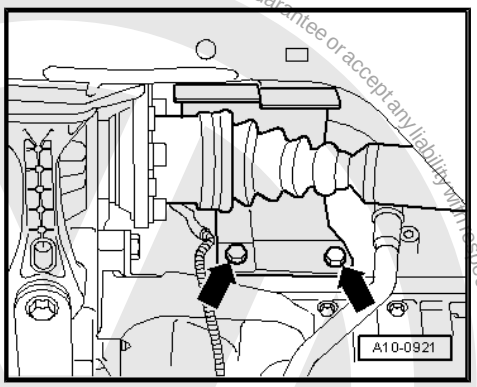
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– If fitted, remove front vehicle level sender from transverse link on »left« and »right« ⇒ Rep. gr. 43 ; Level control .

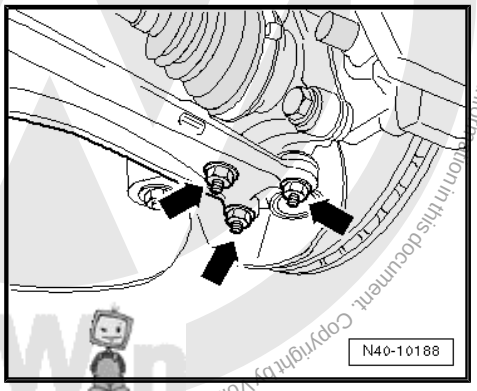
– Remove left drive shaft ⇒ Rep. gr. 40 .



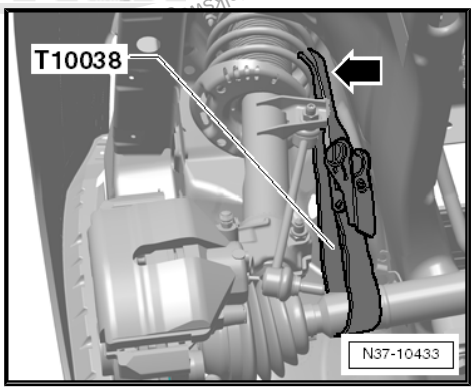
– If present, remove heat shield above right drive shaft. Tightening torque ⇒ Rep. gr. 40 ; Repairing drive shafts



– Unscrew right transverse link from suspension strut -arrows- ⇒ Rep. gr. 40 .

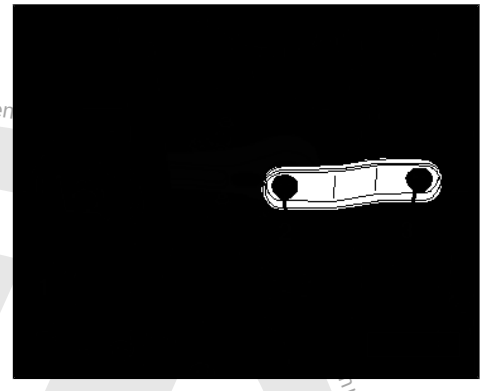


– Unbolt right drive shaft from gearbox and secure to suspension strut using securing straps - T10038- ⇒ Rep. gr. 40 .



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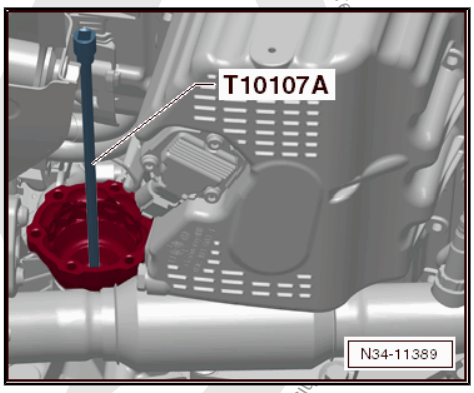
– Remove ⇒ pendulum support. First remove bolt -1-, followed by bolts -2- and -3- ⇒ Rep. gr. 40 .



Note

Before removing flange shaft, check oil seal for leaks. If oil seal is leaking, it must be renewed before flange shaft is installed.

– Remove »left« and »right« flange shafts from gearbox using insert -T10107 A- .

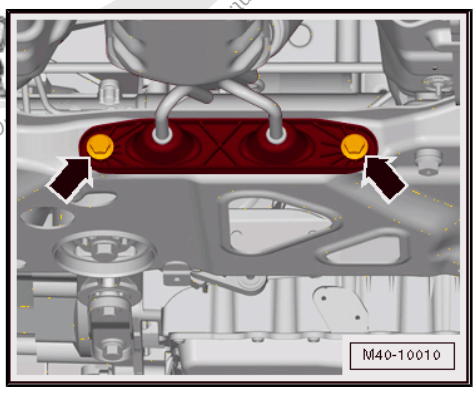


Bolt has a 6 mm hexagon socket. It can also be removed and installed using socket V.A.G 1669 .

– Screw 2 bolts into flange and counterhold flange shaft with a lever in order to remove and install flange shaft.
– Pull out flange shaft with compression spring.
– Close opening in drive shaft using a suitable plug.
– When flange shaft is reinstalled, compression spring prevents bolt engaging in thread. If necessary press flange shaft against gearbox with a lever and screw in bolt.

Torque setting 30 Nm

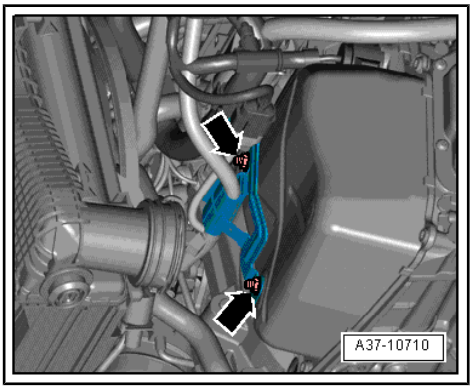
– Remove exhaust system bracket from subframe -arrows- ⇒ Rep. gr. 26 ; Exhaust system .



– Unbolt wiring retainer from front of »black« gearbox cover -arrows- (2 nuts M6).
– Support engine and gearbox.

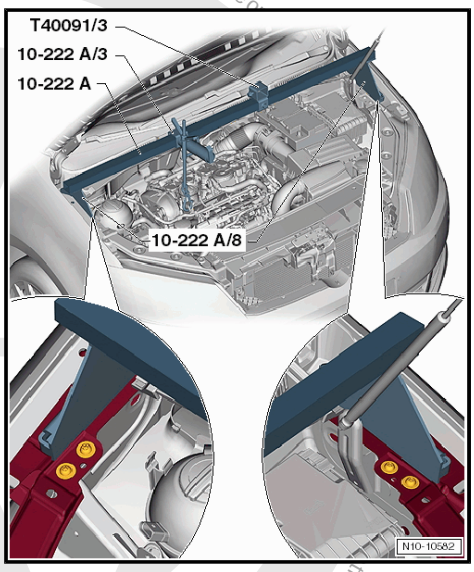
Remove following components before fitting support bracket:

- Windscreen wiper arms ⇒ Electrical system; Rep. gr. 92 ; Windscreen wash/wipe system
- Plenum chamber cover ⇒ Rep. gr. 50 ; Plenum chamber cover
- Radiator grille ⇒ Rep. gr. 66 ; Radiator grille

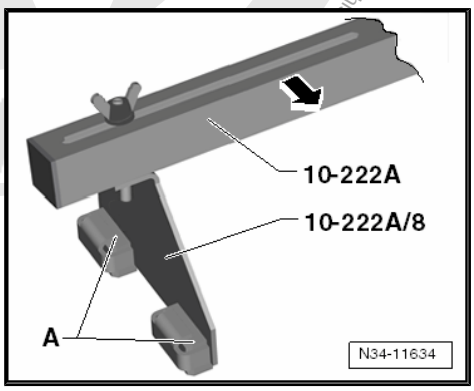


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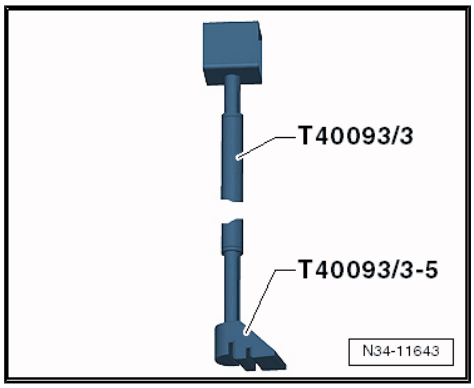
– Push articulated joint - T40091/3- as well as adapter - 10 - 222 A /3- onto square tube of support bracket - 10 - 222 A- .
– Fit adapter - 10-222 A /8- as shown and bolt to support bracket - 10-222 A- .



- Rubber blocks -A- are pointing outwards.
- -Arrow- = vehicle driving direction.
- Set up support bracket - 10-222 A- behind bonnet support.

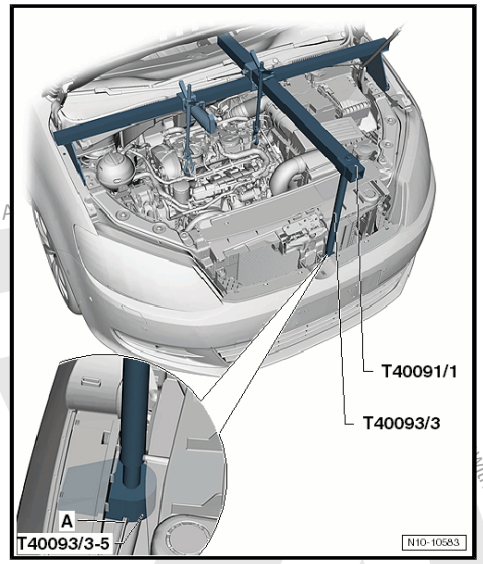


- Bolt adapter - T40093/3-5 - onto adapter - T40093/3- .

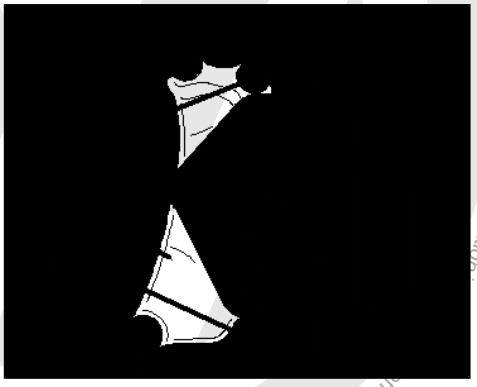


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– Push mounting - T40093/3- as well as one spindle onto square tube - T40091/1- .
– Place mounting - T40093/3- with adapter - T40093/3-5- onto bumper carrier and push square tube - T40091/1- into articulated joint - T40091/3- .
– Align support bracket and tighten all bolts hand-tight.
– Take up weight of engine/gearbox assembly on spindle .

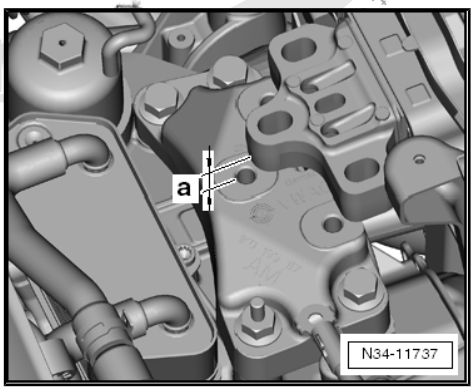


– Remove all bolts -1- and -2- for bracket -A-.



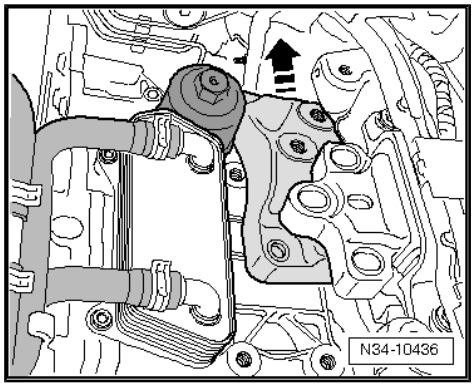
– Then lower engine/gearbox assembly to dimension -a- using spindle of support bracket - 10 - 222 A- .

Dimension -a- = about 20mm



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Remove bracket -arrow-.



In many cases, the spindle does not need to be lowered further for the later removal of the gearbox.

– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.26 Removing gearbox, Sharan 2011 ► with 1.4 l petrol engine

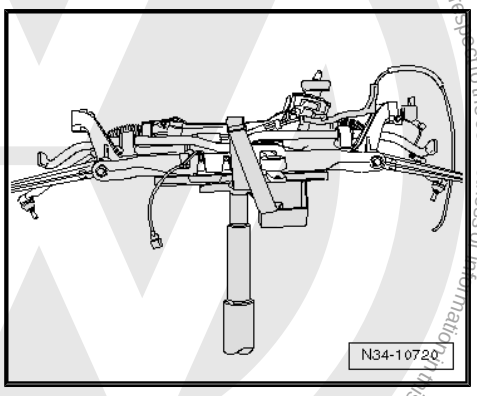
Brief description

The gearbox is removed downwards separately. »From above«

Remove battery, air filter and starter. The coolant hoses must be clamped off. Left subframe mounting is removed and engine and gearbox supported.

»From below«:

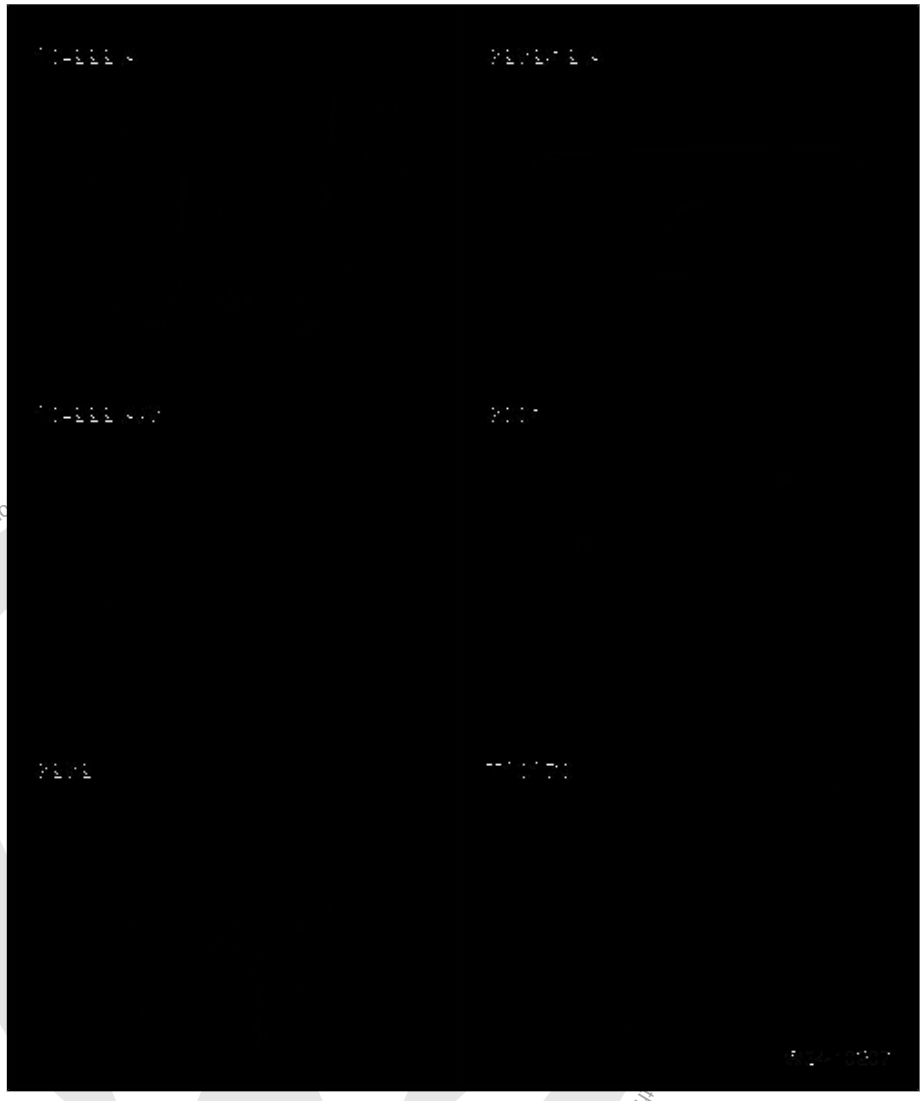
Remove -subframe- together with -pendulum support-, -steering box- and -both suspension links-.



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Special tools and workshop equipment required

- Support bracket - 10 - 222 A-
- Adjustment plate - 3282/42 A-
- Adapter - 10 - 222 A /8-
- Hose clamps to 25 mm - 3094-
- Gearbox support - 3282-
- Insert tool 18 mm - T10179-



Special tools and workshop equipment required

- Tools without illustration:
- Securing strap - T10038-
- Engine and gearbox jack - V.A.G 1383 A-

Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

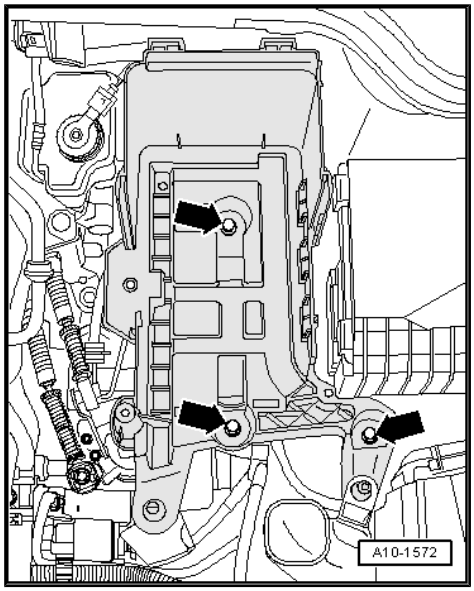
– Move selector lever to position »P« position.

– Remove cover from engine.

– Remove complete air filter housing ⇒ Rep. gr. 24 ; Removing and installing air filter .

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– Remove battery and battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .



– Release mechatronic unit connector -1- by turning and pull off connector.

– Remove starter -A- ⇒ Electrical system; Rep. gr. 27 ; Removing and installing starter .

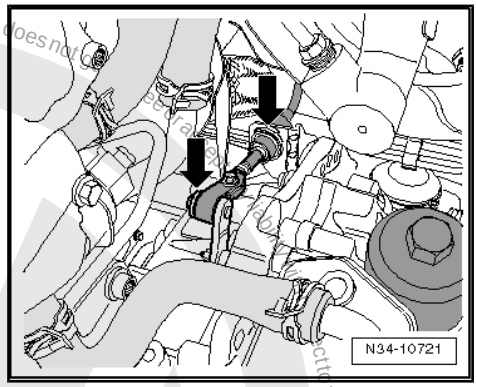
It is advisable to remove the »lower« bolt first.

– Unbolt earth strap from bracket.



– Remove selector lever cable from gearbox -arrows-.

Use pliers to remove the securing clip on the cable support bracket. Do not use a sharp-edged lever, as the rubber grommet on the cable could be damaged.

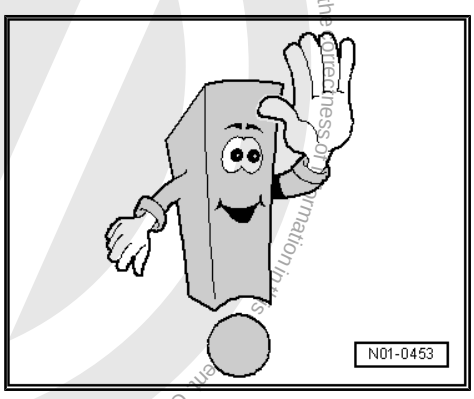


Always renew both securing clips.

– Remove cable with great care from cable support bracket on gearbox. Do not bend cable.

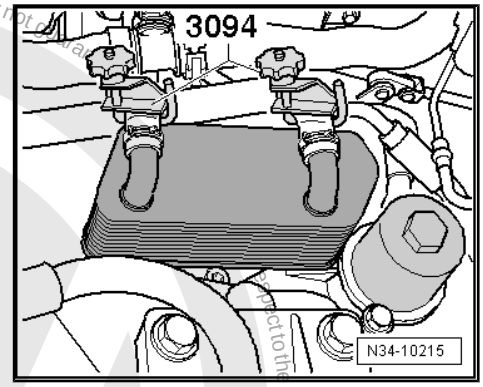
Cable can also be removed later on when gearbox is being lowered. Then observe cable whilst lowering gearbox.

During later installation, do not clip »small« securing clips on until cable has been checked and adjusted ⇒ page 69 .

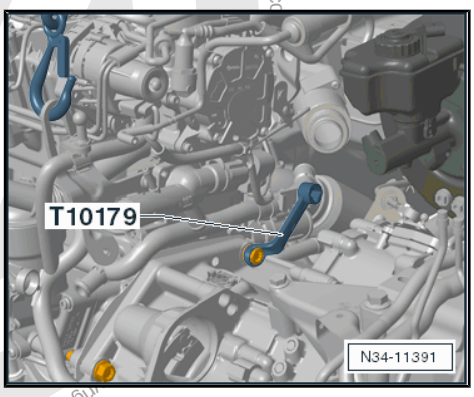


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– Clamp off coolant hoses using hose clamps to 25 mm - 3094- and remove.



– Remove upper engine/gearbox connecting bolts.



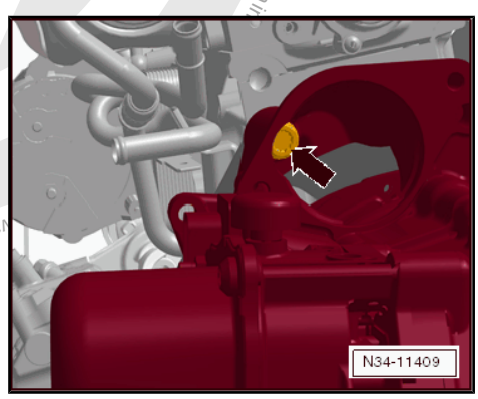
These tools are appropriate for this.

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A bolt is located in the starter motor hole -arrow-.

– Remove noise insulation and front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liner; Front wheel housing liner .

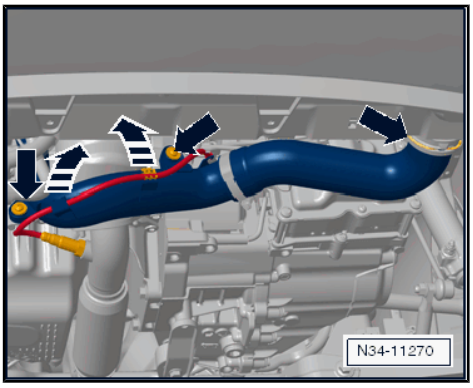


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– Remove coolant circulation pump - V50- -arrow 1-; do not open coolant lines ⇒ Rep. gr. 19 .

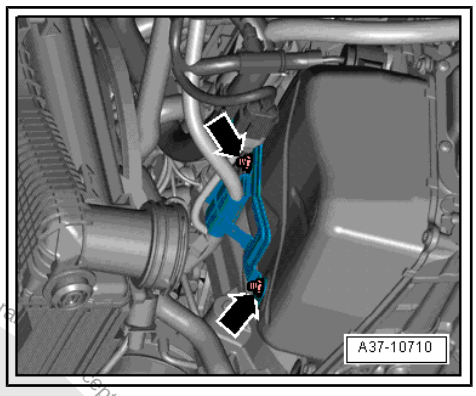


– Unclip line to Lambda probe.
– Remove connecting hose between charge air cooler and charge air pipe.
– Unbolt bottom of charge air pipe from engine and swing forwards ⇒ Rep. gr. 21 ; Removing and installing parts of charge air cooling .



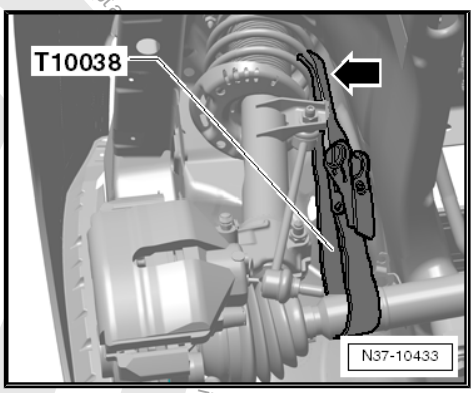
– Unbolt wiring retainer from front of »black« gearbox cover (2 nuts M6).

Torque setting: 10 Nm



– Unbolt both drive shafts from gearbox and secure to suspension strut using securing straps - T10038- ⇒ Rep. gr. 40 ; Removing and installing drive shafts .

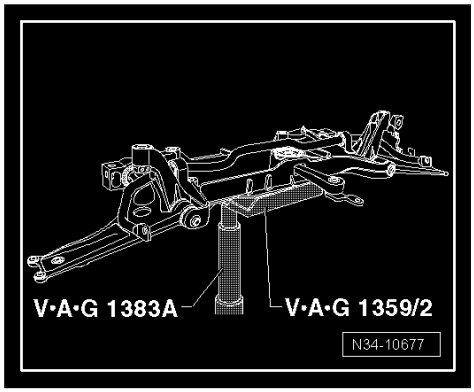
The surface protection of the shafts must not be damaged.



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Next remove -subframe- together with -pendulum support-, both -suspension links- and -steering-.

⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing subframe with steering box

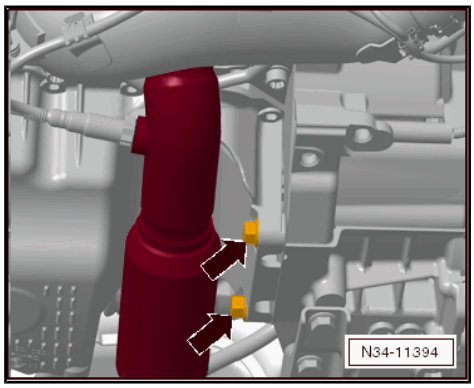


– Disconnect front exhaust pipe from catalytic converter so that lower engine/gearbox connecting bolts -arrows- can be removed ⇒ Rep. gr. 26 ; Removing and installing parts of exhaust system .

– Support engine and gearbox.

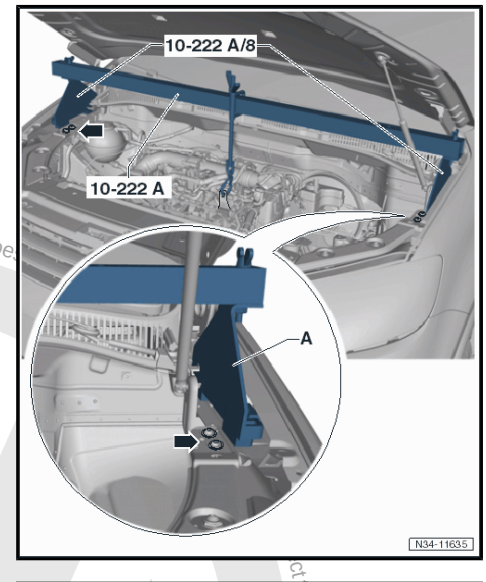
Remove following components before fitting support bracket:

- Windscreen wiper arms ⇒ Electrical system; Rep. gr. 92 ; Windscreen wash/wipe system
- Plenum chamber cover ⇒ Rep. gr. 50 ; Plenum chamber cover



Adapters - 10-222 A /8- for support bracket - 10-222 A- are placed in area of plenum chamber cover.

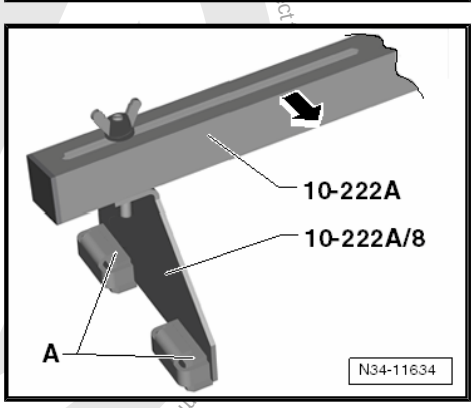
– Fit adapter - 10-222 A /8- as shown and bolt to support bracket - 10-222 A- .



- Rubber blocks -A- are pointing outwards.
- -Arrow- = vehicle driving direction.
- Set up support bracket - 10-222 A- behind bonnet support.

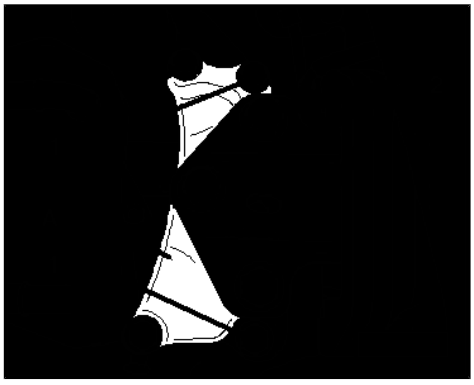
– Attach spindle to left support eye on engine.

– Take up weight of engine/gearbox assembly on spindles.

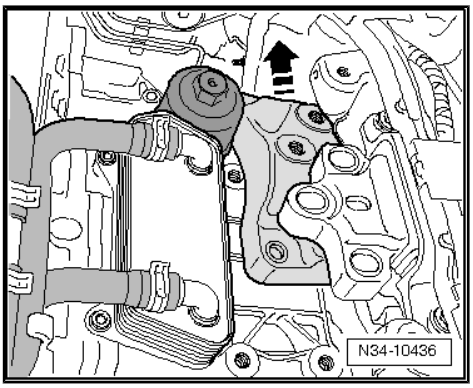


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– Remove all bolts -1- and -2- for bracket -A-.
– Then lower engine/gearbox slightly using spindles of support bracket - 10 - 222 A- and remove bracket.



At most, 5 turns are sufficient to remove bracket -arrow-.



– Set up gearbox support - 3282- with adjustment plate - 3282/42 A- .
– Move engine and gearbox jack - V.A.G 1383 A- under gearbox and support gearbox. Do not raise.

The gearbox is separated from the engine in this position.

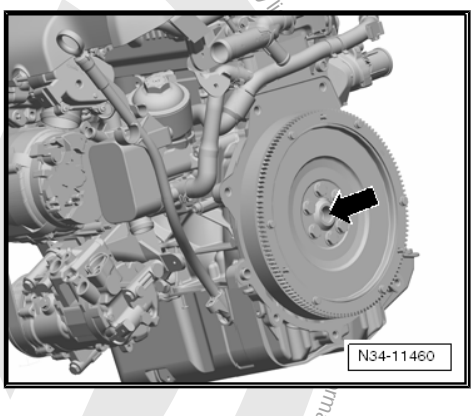
– Remove remaining engine/gearbox connecting bolts.
– Press gearbox off engine, »observing selector lever cable« and lower gearbox.

Transporting gearbox and securing to assembly stand ⇒ page 283 .

Installing gearbox ⇒ page 273 .

10.27 Installing gearbox

Install in reverse order of removal. Nevertheless, important steps are listed here:



– Renew needle bearing -arrow- in crankshaft ⇒ Rep. gr. 13 ; Crankshaft; Renewing needle bearing in crankshaft .
– Lightly grease journal and splines on gearbox using high-temperature grease - G052133A2- .
– Check for proper seating of both dowel sleeves between engine and gearbox.
– Check for proper seating of intermediate plate.

It must be possible to guide the engine and gear box together by hand until the flanges make contact all around.

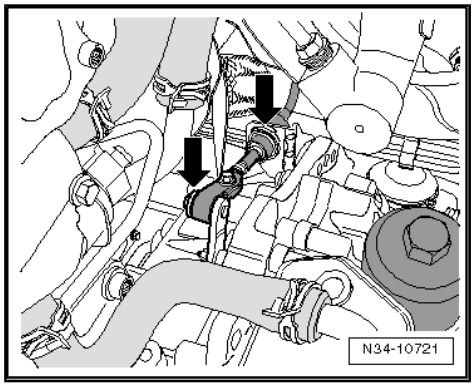
If this is not so, then »something is wrong«!

– Readjust gearbox support until engine and gearbox are »aligned with each other«.

Pay attention to selector lever cable when raising gearbox. Guide cable as soon as possible into cable support bracket.

Cable must not be greased!

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- Securing clips -arrows- for selector lever cable must be renewed.
- Check and adjust selector lever cable ⇒ page 69 .
- Check coolant level and top up if necessary ⇒ Rep. gr. 19 .
- Checking oil level and topping up ⇒ page 301

Torque settings ⇒ page 275

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11 Torque settings »gearbox to engine«

The »next chapters« list the torque settings for gearbox installation.

There is also information about the »left-hand« assembly mounting.

Threaded connections that are not directly assigned to the gearbox can be found in the associated assembly groups.

Example: subframe.

The subframe is part of the running gear.

Consequently, further descriptions can also be found in ⇒ Running gear; Rep. gr. 40 .

The correct torque settings for the engine/gearbox combination can be found in⇒ ELSA ⇒ page 275 .

11.1 Torque settings (⇒ ELSA)

Petrol engine	Eos 2006 ►	Golf 2004 ►	Golf Plus	Scirocco 2009 ►	Passat 2006 ► and Passat CC 2009 ►	Touran 2003 ►	Golf 2009 ►	Sharan 2011 ►
1.4 l - 103 - 110 kW		⇒ page 277	⇒ page 277			⇒ page 277		⇒ page 277
1.4 l - 125 kW		⇒ page 277	⇒ page 277			⇒ page 277		
1.4 l - 188 kW							⇒ page 277	
2.0 l - 147 kW	⇒ page 278	⇒ page 278						
2.0 l - 147 - 155 kW	⇒ page 276		⇒ page 276	⇒ page 276	⇒ page 276		⇒ page 276	⇒ page 276
2.0 l - 169 kW		⇒ page 278						
3.2 l - 184 kW	⇒ page 280	⇒ page 281			⇒ page 281			
3.6 and 3.6 l - V6 engine					⇒ page 282			

Diesel engine	Eos 2006 ►	Scirocco 2009 ►	Golf 2004 ►	Golf Plus	Passat 2006 ► and Passat CC 2009 ►	Touran 2003 ►	Golf 2009 ►	Sharan 2011 ►
1.9 l - 77 kW			⇒ page 281	⇒ page 278		⇒ page 278		
2.0 l - 81 kW and 103 kW		⇒ page 278					⇒ page 278	

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Diesel engine	Eos 2006 ►	Scirocco 2009 ►	Golf 2004 ►	Golf Plus	Passat 2006 ► and Passat CC 2009 ►	Touran 2003 ►	Golf 2009 ►	Sharan 2011 ►
2.0 l - 88 kW					⇛ page 278			
2.0 l - 100 kW			⇛ page 278	⇛ page 278	⇛ page 278			⇛ page 278
2.0 l - 103 - 105 kW	⇛ page 278		⇛ page 278	⇛ page 278	⇛ page 278	⇛ page 278		⇛ page 278
2.0 l - 120 kW					⇛ page 278			
2.0 l - 125 kW		⇛ page 278	⇛ page 278		⇛ page 278	⇛ page 278		⇛ page 278

11.1.1 Torque settings and notes concerning engine mountings

For:

Scirocco 2009 ►, Golf 2009 ►, Golf Plus 2009 ►, Passat 2006 ► and Passat CC 2009 ► Eos 2006 ► with 2.0 l - 147- 155 kW

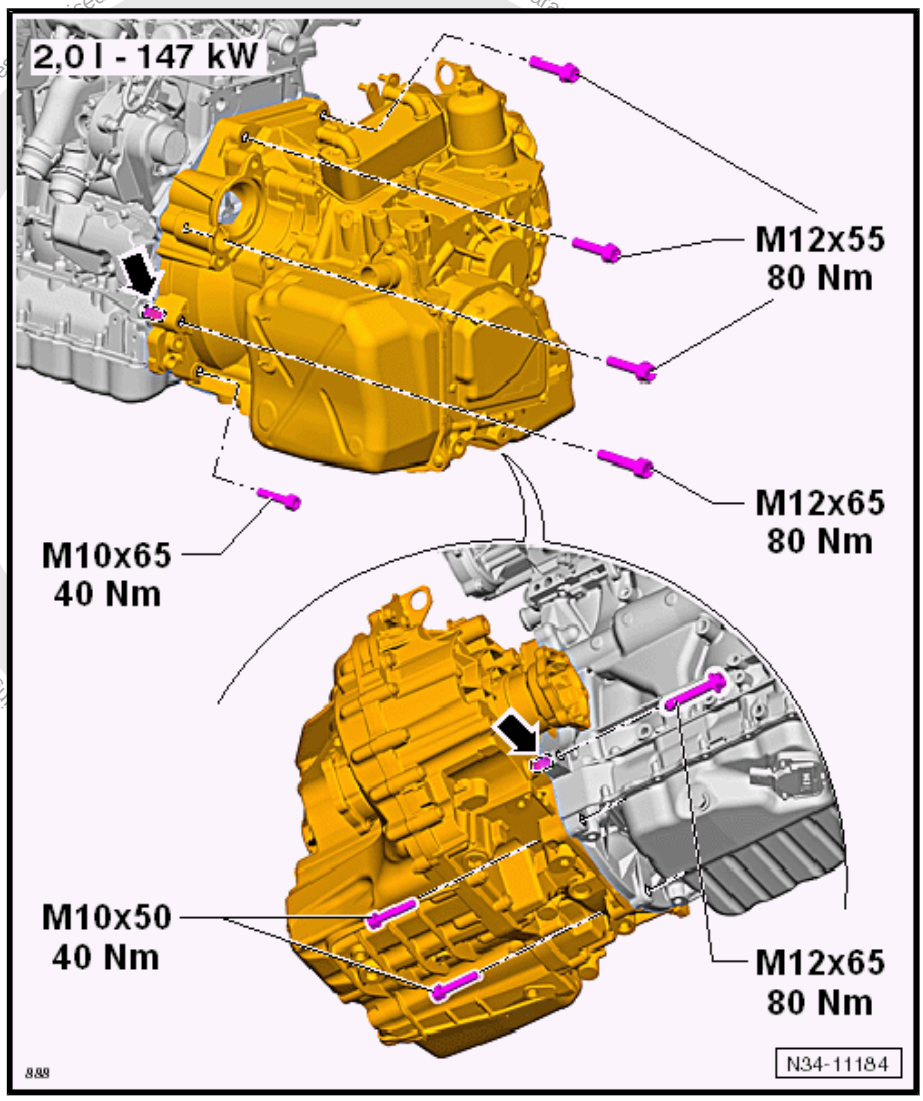
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M12 - 80 Nm

❑ If insert 18 mm - T10179- is used: 65 Nm.

M10 - 40 Nm

- Arrows point towards dowel sleeves



– Renew all bolts on left assembly mounting.

– First screw in all bolts by hand.

– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.

– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque settings of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

11.1.2 Torque settings and notes concerning engine mountings

For:

Golf 2004, Golf Plus 2005, Touran 2003 with 1.4 l - 103 and 125 kW TSI and Sharan with 1.4l - 110 kW TSI

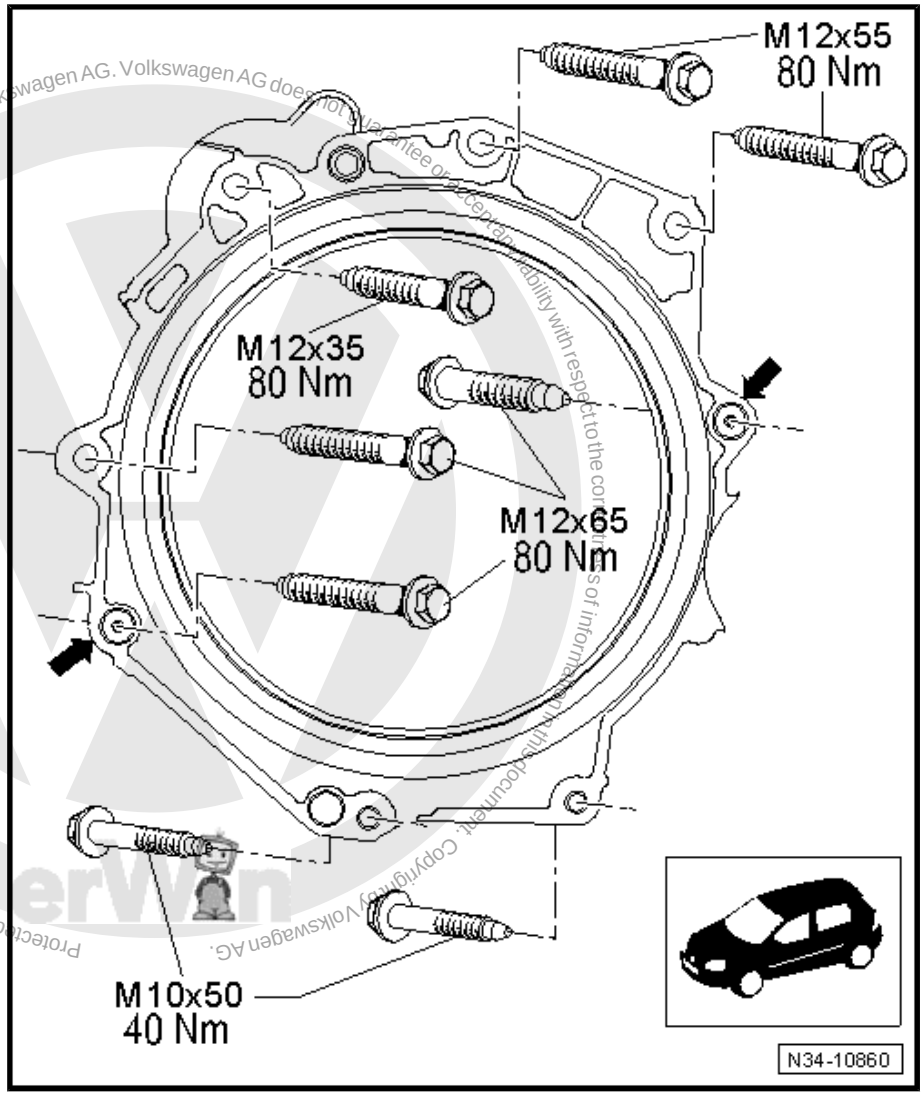
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M12 - 80 Nm

- ❑ If insert 18 mm - T10179- is used: 65 Nm.

M10 - 40 Nm

- Arrows point towards dowel sleeves



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– Renew all bolts on left assembly mounting.
– First screw in all bolts by hand.
– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.
– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque settings of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

11.1.3 Torque settings and notes concerning engine mountings

For:

- ♦ Golf with 2.0 l - 147 and 169 kW »petrol engines«

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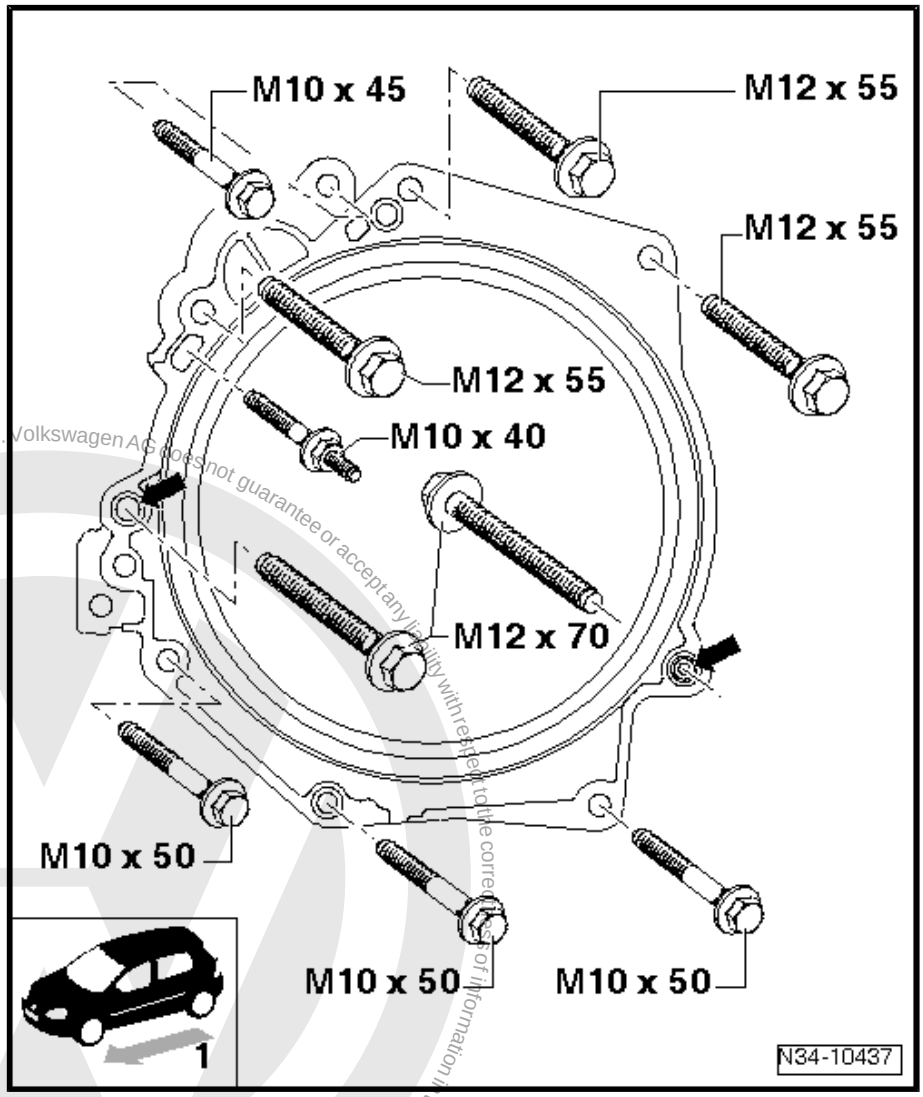
- Golf with 1.9 l - 77 kW and 2.0 l - 100, 103 and 125 kW »diesel engines«
- Golf Plus with 1.9 l - 77 kW and 2.0 l - 100, 103 and 125 kW »diesel engines«
- Touran with 1.9 l - 77 kW and 2.0 l - 100, 103 and 125 kW »diesel engines«
- Passat and Passat CC with 1.9 l - 77 kW and 2.0 l - 88, 100, 103 and 125 kW »diesel engines«
- Eos with 2.0 l - 147 kW »petrol engines«
- Eos with 2.0 l - 103 kW »diesel engines«
- Scirocco »diesel engine«: 2.0 l - 103 kW
- Sharan with 2.0 l - 100, 103 and 125 kW »diesel engines«

M12 - 80 Nm

❑ If insert 18 mm - T10179- is used: 65 Nm.

M10 - 40 Nm

- Arrows point towards dowel sleeves



– Renew all bolts on left assembly mounting.
– First screw in all bolts by hand.

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– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.
– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque settings of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

11.1.4 Torque settings and notes concerning engine mountings

For:

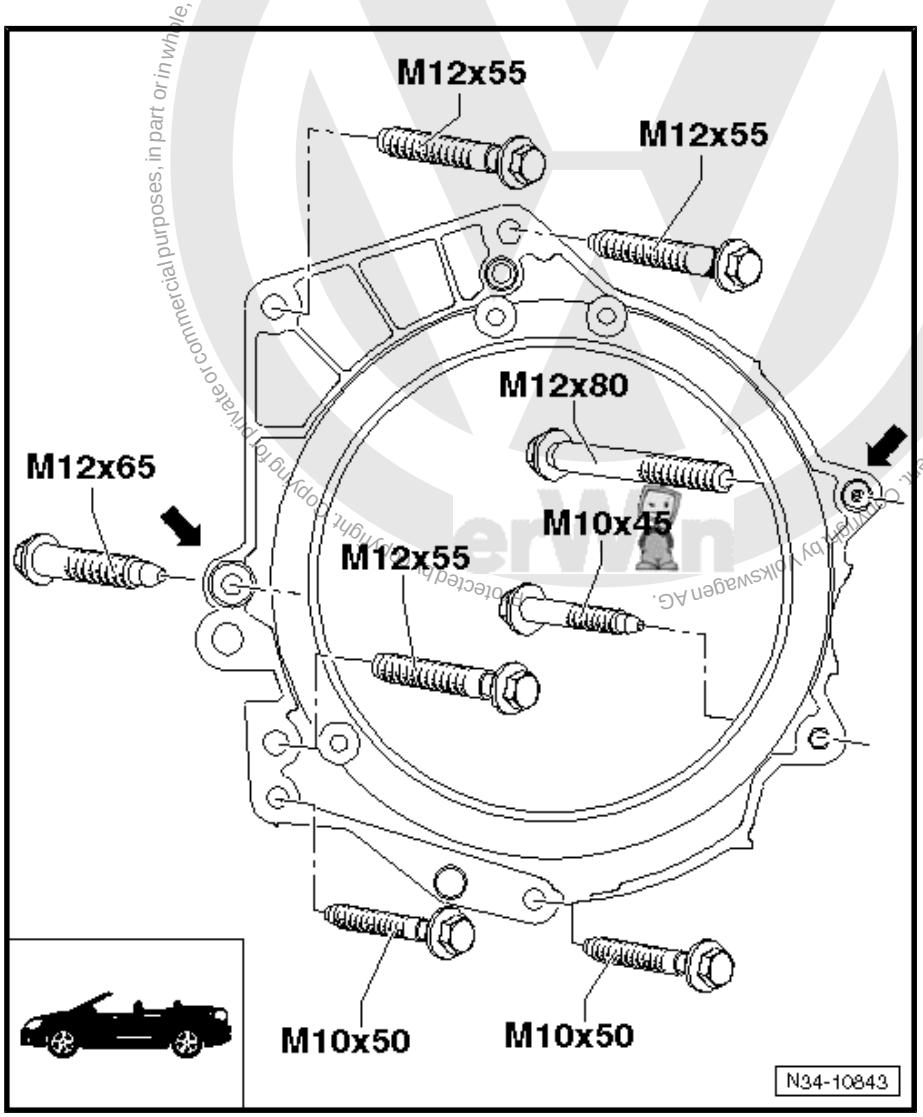
Eos with 3.2 l - 184 kW »petrol engine«

M12 - 80 Nm

❑ If insert 18 mm - T10179- is used: 65 Nm.

M10 - 40 Nm

- Arrows point towards dowel sleeves

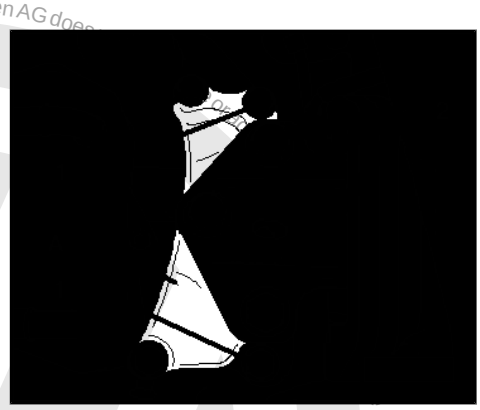


Heat shield/drive shaft	25 Nm

– Renew all bolts on left assembly mounting.

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– First screw in all bolts by hand.
– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.
– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque setting of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

11.1.5 Torque settings and notes concerning engine mountings

For:

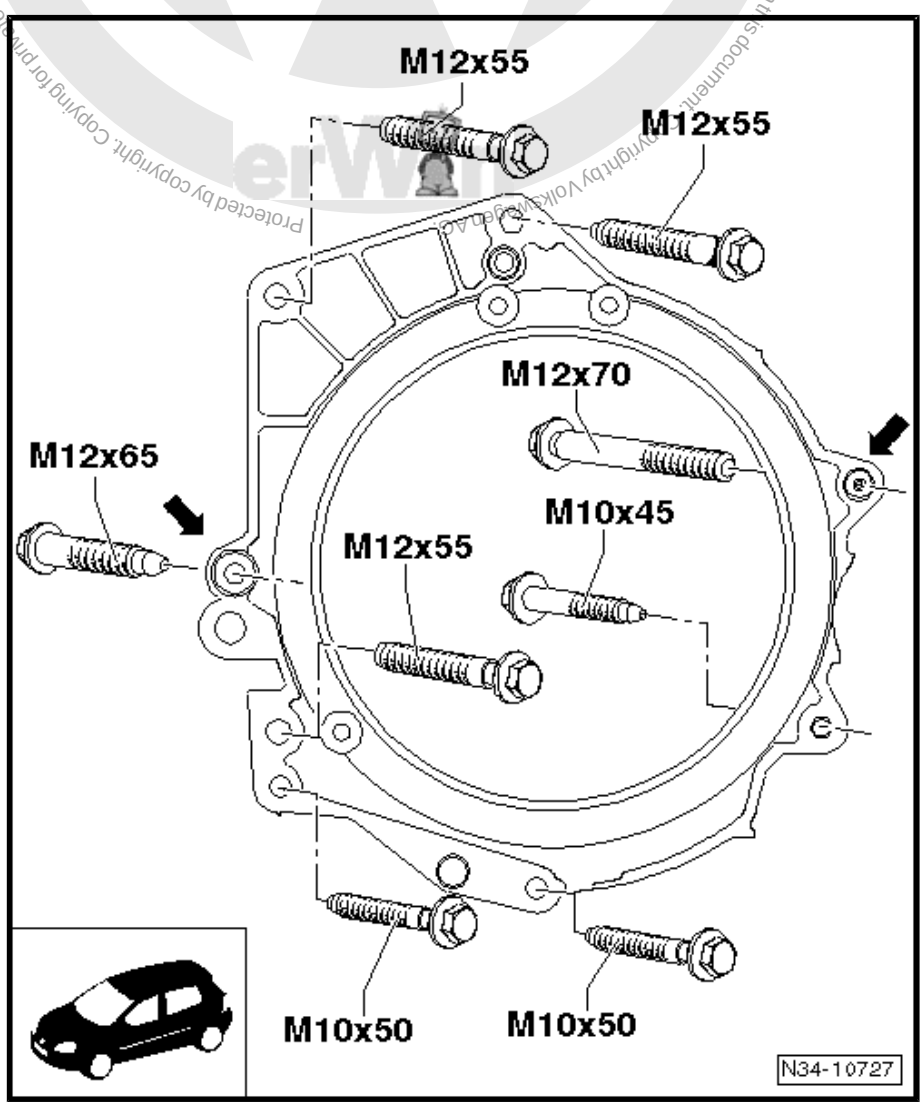
Golf 2004 and Passat 2006 with 3.2 l - V6 engine (four-wheel drive)

M12 - 80 Nm

❑ If insert 18 mm - T10179- is used: 65 Nm.

M10 - 40 Nm

- Arrows point towards dowel sleeves



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Propshaft

- ♦ Drive shaft heat shield to bevel box: 25 Nm
- ♦ Propshaft to bevel box ⇒ Final drive 02D, 0AV (01Z); Rep. gr. 39 ; Removing and installing propshaft

– Renew all bolts on left assembly mounting.

– First screw in all bolts by hand.

– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.

– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque setting of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

11.1.6 Torque settings and notes concerning engine mountings

For:

3.2 and 3.6 l - V6 engine

Gearbox to engine

Bolts M12 “80 Nm”

- If insert 18 mm - T10179- is used: 65 Nm.

Bolts M10 “40 Nm”

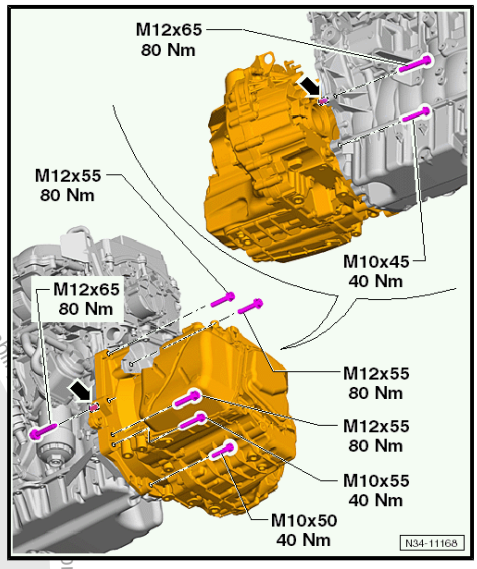
Propshaft

- ♦ Drive shaft heat shield to bevel box: 25 Nm
- ♦ Propshaft to bevel box ⇒ Final drive 02D, 0AV (01Z); Rep. gr. 39 ; Removing and installing propshaft

Assembly mountings

– Renew all bolts on left assembly mounting.

– First screw in all bolts by hand.



– First bolt bracket -A- to gearbox -1- with 40 Nm + 90° further turn.

– The bracket can be levered into the correct position with a screwdriver as bolts -2- are tightened. Torque setting of -bolts 2-: 60 Nm + 90°.



Starter to gearbox ⇒ Rep. gr. 27 ; Removing and installing starter .

Assembly mounting bolts must be renewed.

Subframe to body ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .

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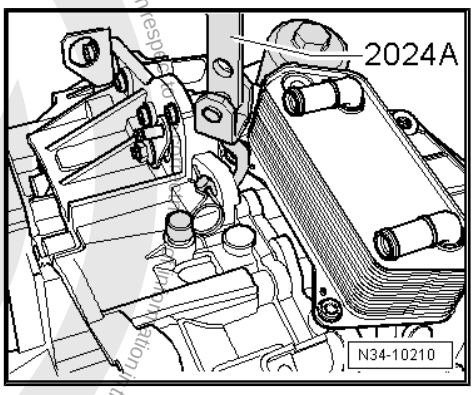
12 Transporting gearbox and securing to assembly stand

Always secure heavy parts for transport.

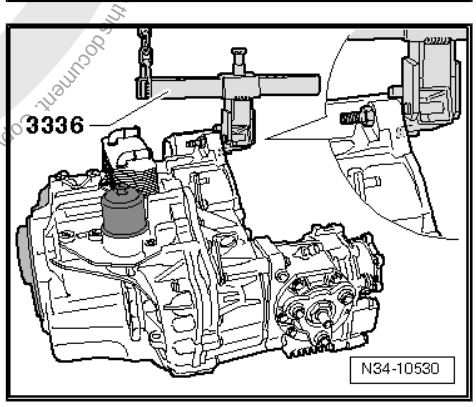
Keep in mind that there is oil in the gearbox. Do not turn gearbox with breather downwards during transport or while on repair stand. Oil will run out.

Transporting gearbox

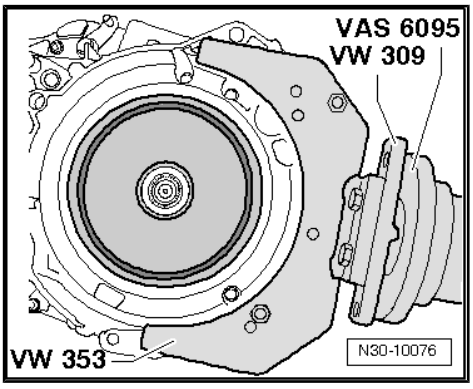
– Use appropriate lifting tools, for example part of lifting tackle - 2024 A- and shackle - 10 - 222 A /12- (not illustrated).



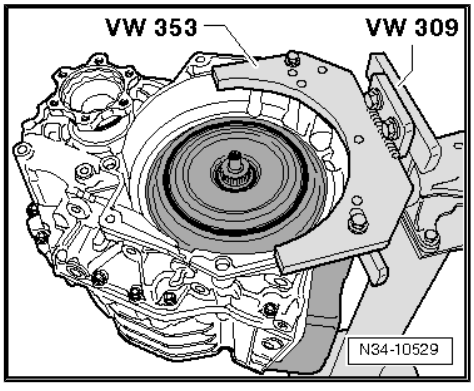
Gearbox may also be lifted with gearbox lifting tackle - 3336- .



Example: securing four-wheel drive gearbox to assembly stand.



Example: securing front-wheel drive gearbox to assembly stand.

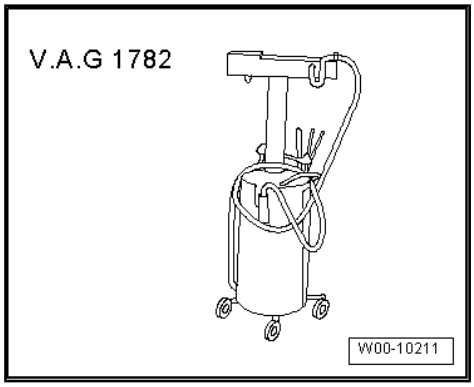


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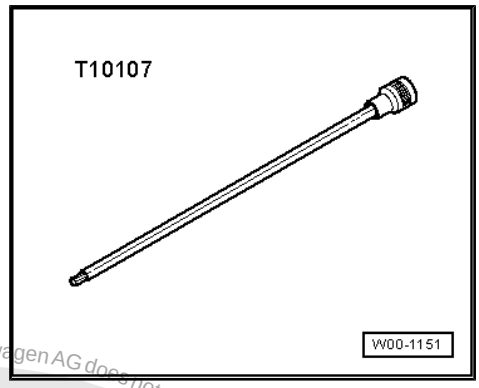
13 Removing and installing bevel box, Golf 2004 ► and Passat 2006 ►

Special tools and workshop equipment required

- Used oil collection and extraction unit - V.A.G 1782-



- Socket - T10107-



Removing

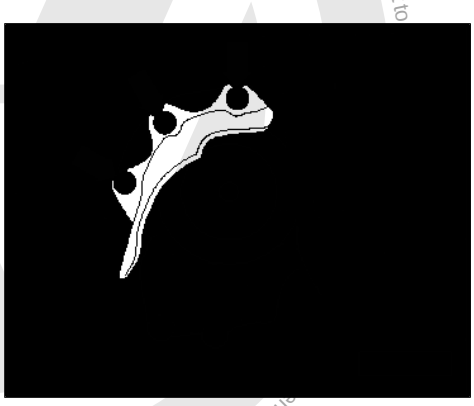
– Move selector lever to position »P« position.

– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Remove front right wheel.

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liner; Front wheel housing liner.

– Unbolt heat shield for right drive shaft from bevel box -arrows-.



– Unbolt right drive shaft from gearbox flange.

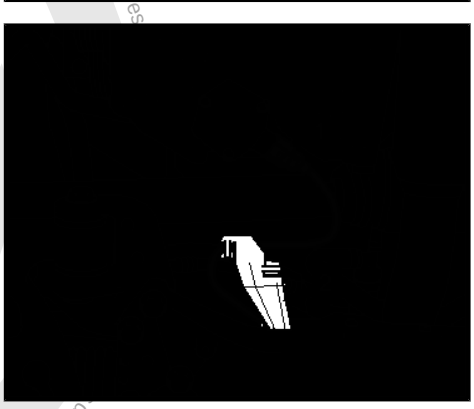
– Raise right drive shaft and secure with wire.

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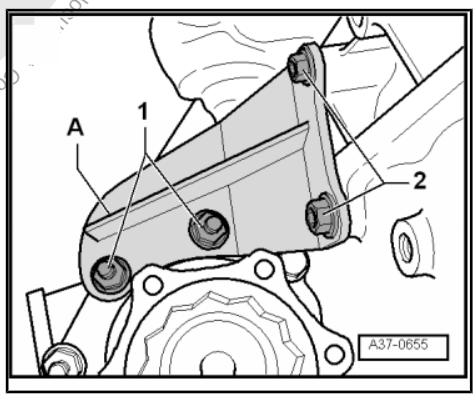
– Unbolt bracket for exhaust system.



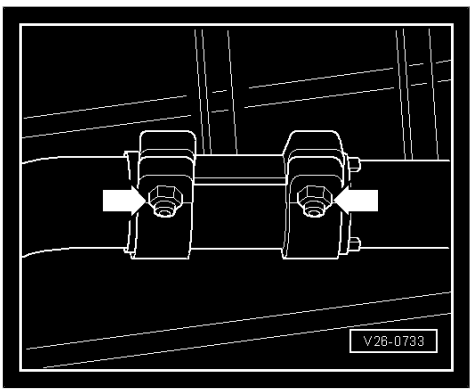
– Remove bracket -2- for electrical cable to oil level and oil temperature sender - G266- at subframe.



– Remove bolts -1- and -2- from bevel box bracket.
– Remove bracket -A- for bevel box.



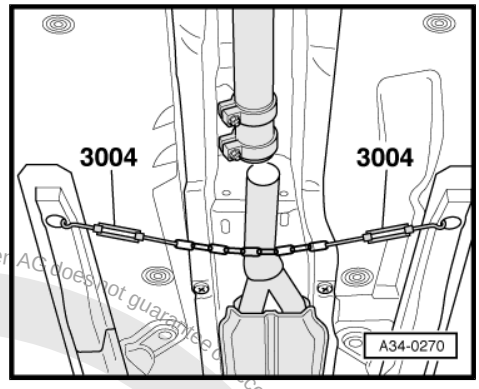
– Disconnect exhaust system.



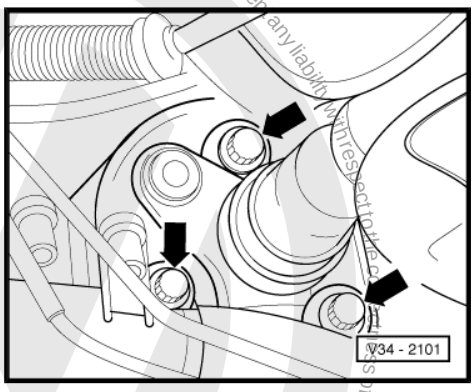
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– Suspend exhaust system with a chain. To do this, insert hook - 3004- in openings on underbody (remove plugs if necessary).

– Mark position of flexible coupling and bevel box flange relative to each other.



– Unscrew flexible coupling of propshaft at bevel box.



– Push propshaft horizontally as far back as possible.

Caution

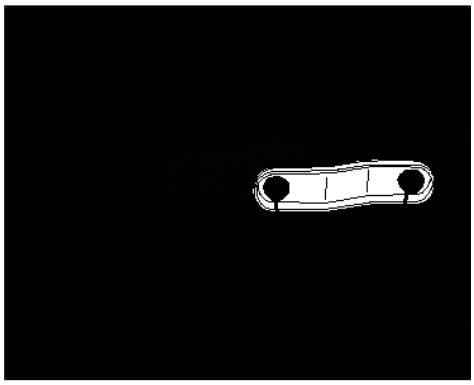
- ***Seal -arrow- in flange of propshaft must not be damaged when gearbox is removed. If seal is damaged, propshaft must be renewed.***
- ***When pendulum support/subframe bolts are loosened, the engine/gearbox assembly will swing slightly forwards.***



– Unscrew bolts -2- and -3-.

– Push engine and gearbox forwards slightly and then pull propshaft off bevel box.

– Put down propshaft on top of bevel box and secure to prevent falling down.

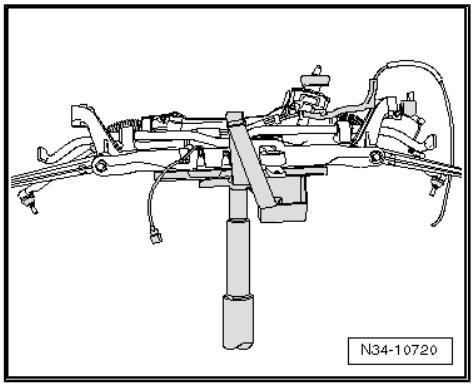


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– Remove subframe.

For information on how to remove the -subframe-, refer to ⇒ Rep. gr. 40 . If the job is done correctly, the subframe can be removed and reinstalled without subsequently causing increased tyre wear, which may lead to customer complaints. It is recommended to read this information »before« removing gearbox. Then the position of the -subframe- can be properly fixed and the subframe removed.

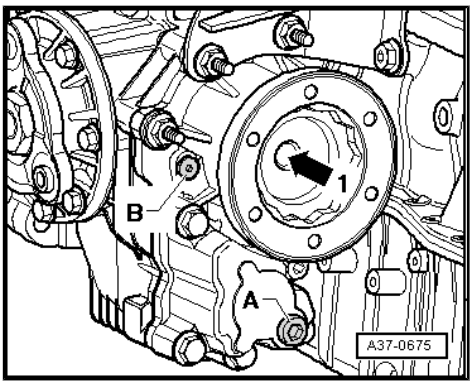
– Position used oil collection and extraction unit - V.A.G 1782- under gearbox.



– Remove right flange shaft bolt -arrow 1- with socket - T10107- . Torque setting ⇒ page 323

– Remove 4 securing bolts of bevel box on gearbox.

– Pull bevel box together with flange shaft off gearbox.



Installing

Install in reverse order of removal. During this step, observe the following:

– Push bevel box together with flange shaft onto gearbox while turning flange shaft.

– Bolt bevel box onto gearbox using 4 new bolts.

Torque setting

40 Nm

– Screw in bolts -1- and -2- hand-tight.

– Observe assembly order:

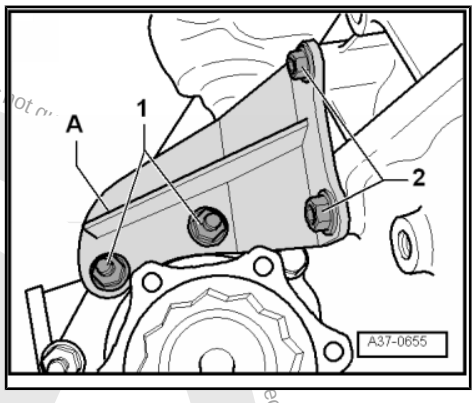
1 - First tighten bolts -1- to 3 Nm.

2 - Tighten bolts -2- to 35 Nm.

3 - Finally tighten bolts -1- to 45 Nm.

– Install subframe ⇒ Rep. gr. 40 .

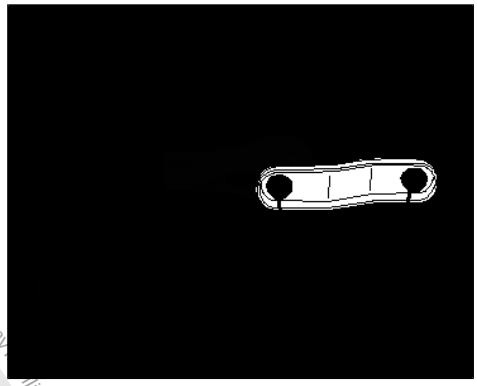
– Press engine/gearbox towards bulkhead panel, carefully guiding bevel box pin into propshaft flange.



– Pay attention to oil seal.



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- Bolt pendulum support onto gearbox - 2- and -3- with new bolts.
- Install exhaust system without tension ⇒ Rep. gr. 26 .
- Install right drive shaft ⇒ Rep. gr. 40 .
- Check oil level in bevel box and top up ⇒ page 332 .

Specified torques

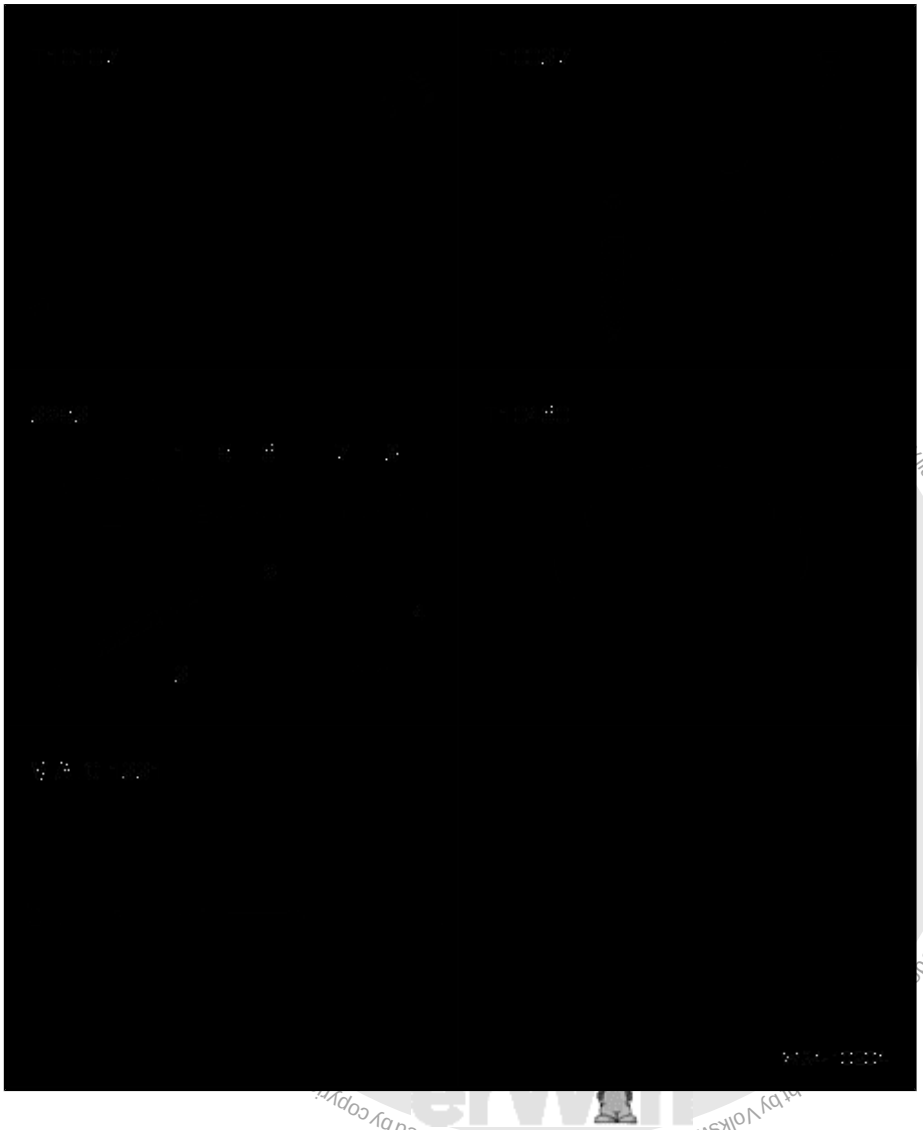
Component	Nm
Heat shield for drive shaft to bevel box	25

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14 Removing and installing bevel box, Passat CC 2009 ►, CC 2010 ► with diesel engine

Special tools and workshop equipment required

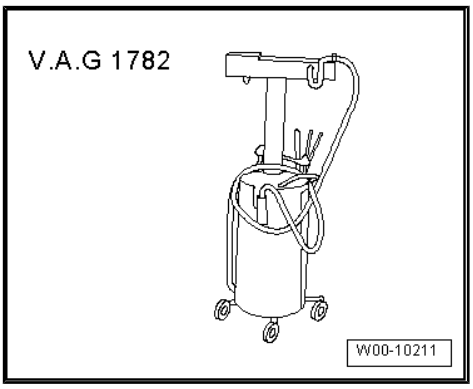
- Socket - T10107-
- or Socket - T10107 A-
- Puller - T10037-
- Assembly tool - 3253/5-
- Cover plate - T10460-
- Torque wrench - V.A.G 1331-



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Special tools and workshop equipment required

- Used oil collection and extraction unit - V.A.G 1782-



Removing

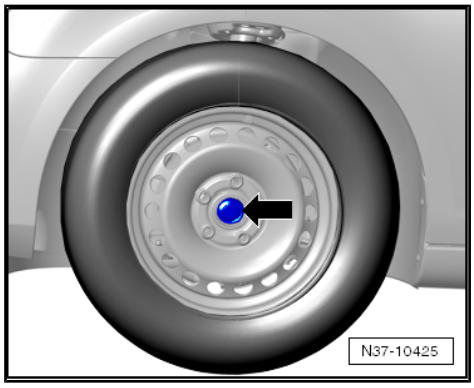
– Raise vehicle. All 4 supports of lifting platform must be at same height.

– Move selector lever to position »P« position.

Note

After loosening centre bolt, do not lower vehicle to ground again.

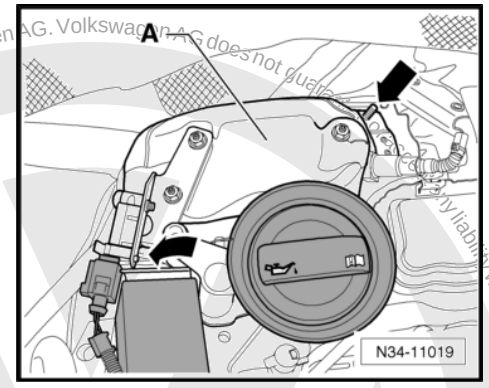
– Depress brake pedal to remove bolt for right drive shaft -arrow-. A second mechanic is required.



– Remove cover for engine.

– Remove diesel particulate filter -A- in upper area of engine -arrows- and secure on plenum chamber bulkhead to prevent it from falling down ⇒ Rep. gr. 26 ; Removing and installing particulate filter .

– Remove noise insulation below engine and gearbox. ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation .



– Remove drive shaft heat shield from bevel box (2 nuts -arrows-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Repairing drive shafts .

In vehicles with auxiliary heater, a bracket for coolant hoses is also removed with heat shield. When installing, first place bracket onto threaded pins and only then install heat shield.



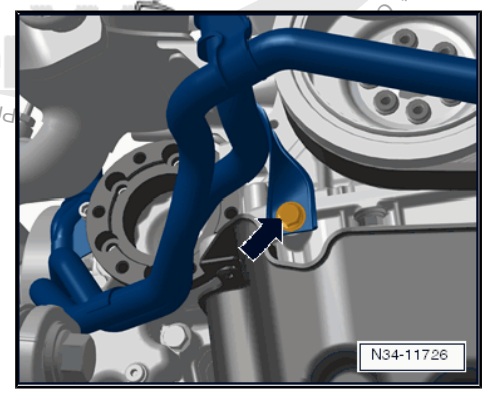
Only vehicles with auxiliary heater:

– Unscrew coolant hoses of auxiliary heater from engine -arrow-, pull off from threaded pins and push to one side until gearbox carrier can be unscrewed ⇒ Auxiliary heater; Rep. gr. 82 ; Removing and installing Thermo Top V auxiliary heater .

Do not open the pipe/hose system.

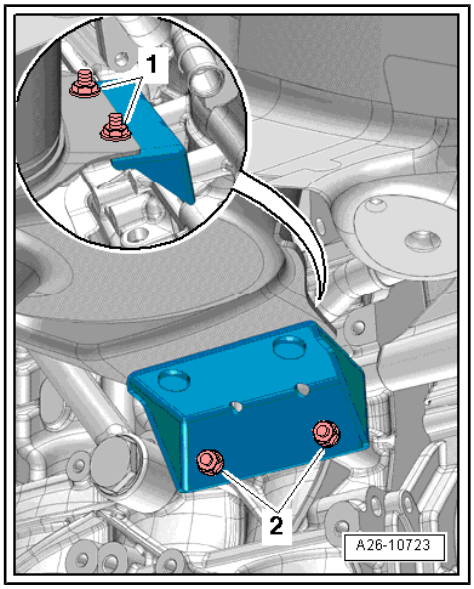
Continued for all vehicles:

– Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Removing and installing drive shafts .

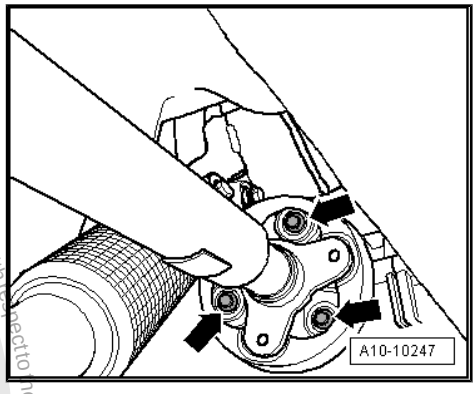


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– Remove lower bracket for diesel particulate filter ⇒ Rep. gr. 26 ; Removing and installing particulate filter .

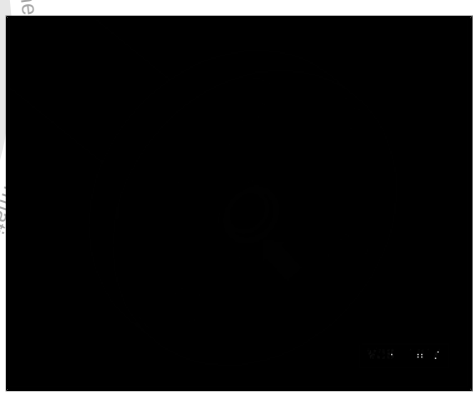


– Mark position of propshaft with flexible coupling relative to bevel box flange with paint.
– Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Removing and installing propshaft .
– Push front propshaft tube to stop.



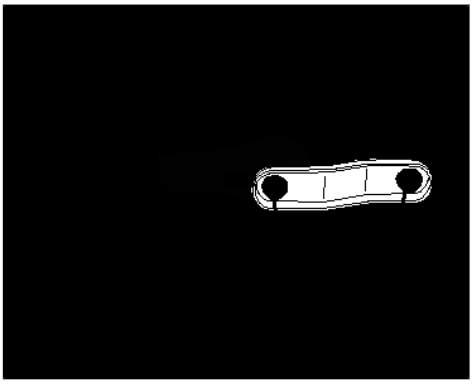
The -seal- in the propshaft must not be damaged.

– Place a cloth on subframe and put propshaft on it.



– Remove pendulum support from gearbox, bolt -2- and bolt -3-.

Do not take account of bolt -1-.

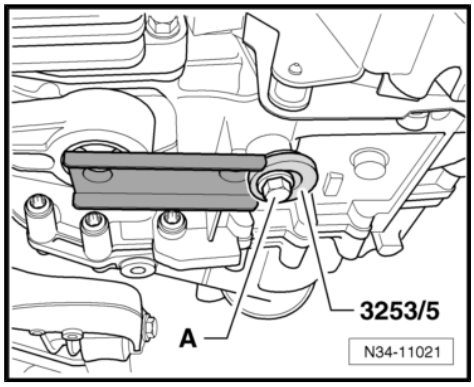


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– Push engine/gearbox to front end and support using pendulum support as shown.

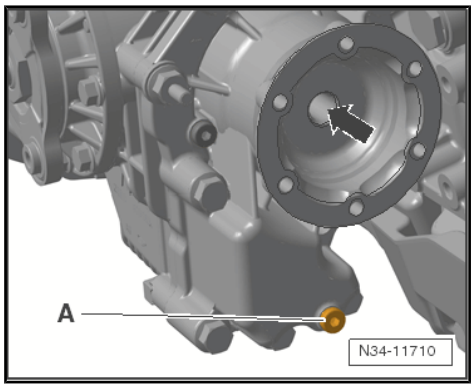
-A- = Collar bolt M10 x 35

– Position used oil collection and extraction unit - V.A.G 1782- under bevel box.

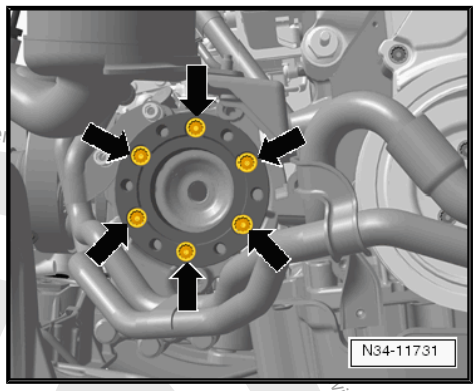


– Unscrew and remove oil drain plug -A- from bevel box and allow oil to drain out. Then screw in new bolt and tighten to 15 Nm.

Some vehicles have an intermediate flange on flange shaft/bevel box.



– Unscrew intermediate flange -arrows- if a »new« bevel box is installed, because there is no intermediate flange on »new« bevel box.



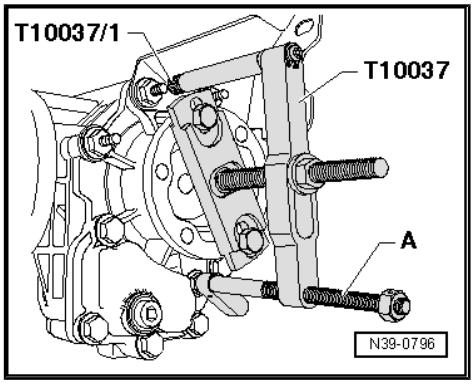
– Remove countersunk bolt for right flange shaft with socket - T10107 A- by screwing 2 bolts into flange and counterholding flange shaft with a lever.

Always renew countersunk bolt.



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– Now bolt puller - T10037- to right flange shaft.

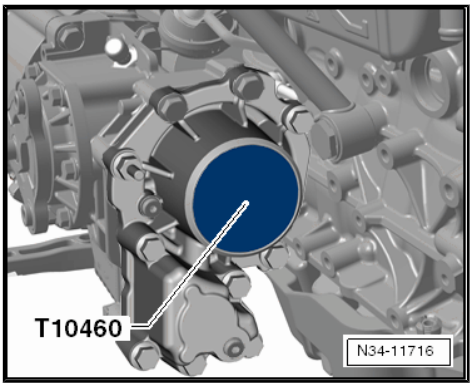


Note

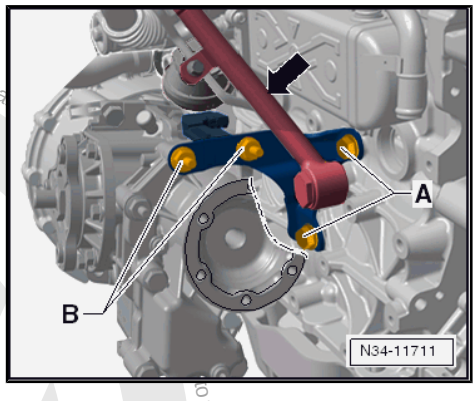
To remove right flange shaft, use puller - T10037- to avoid damage to bearings of flange shaft.

– Lay a spacer (e.g. press piece - VW 434-) between bevel box carrier and knurled nut - T10371/1- .
– Using spindle -A-, align puller parallel with flange.
– Pull out right flange shaft.

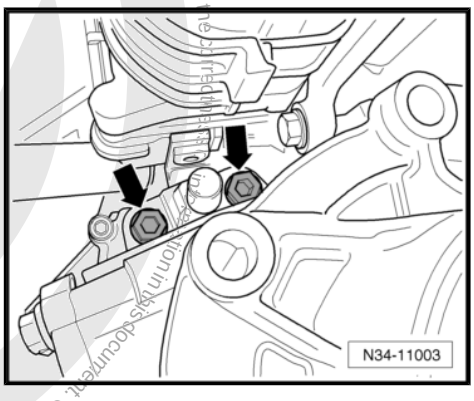
– Seal bevel box with cap - T10460- .



– Remove support for turbocharger -arrow- ⇒ Rep. gr. 21 ; Assembly overview - turbocharger.
– Remove bolts -A- and -B- for bevel box carrier to engine and bevel box.
– Remove bevel box carrier.



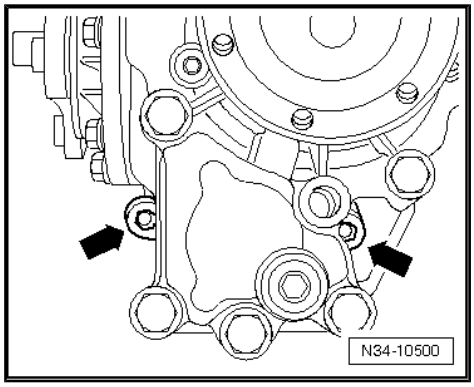
– Remove upper securing bolts -arrows- for joining bevel box to gearbox.



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– Remove lower securing bolts -arrows- for joining bevel box to gearbox.

– Carefully press off bevel box and remove.



Installing

Install in the reverse order of removal, observing the following:

Bevel box is installed with flange shaft removed.

– Before installing, lightly grease stub shaft splines on differential of gearbox with clutch plate spline grease - G 000 100- .

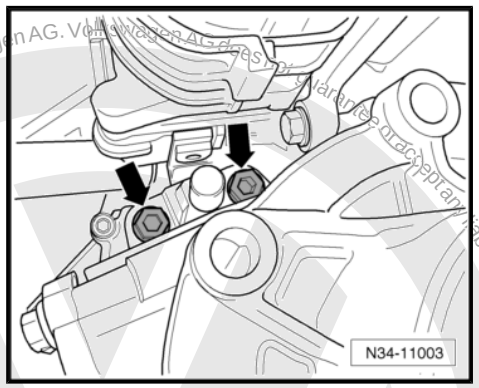
– Push bevel box completely onto gearbox, ensuring that splines of bevel box input shaft and differential are centred when brought together.

– If splines are correctly positioned and shafts are centred, then bevel box will slide to stop against gearbox.

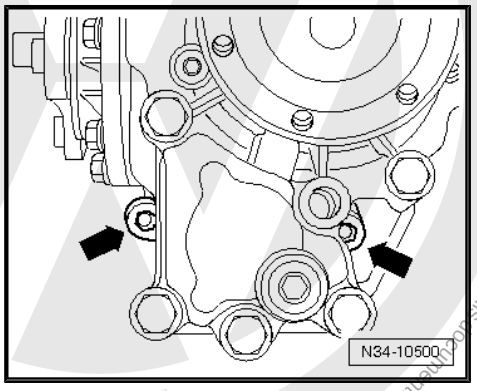
Note

Do not use securing bolts to pull bevel box onto gearbox, or bevel box will cant and bolt holes can break off.

– Screw in upper securing bolts -arrows- for joining bevel box to gearbox. Torque setting: ⇒ page 295 .



– Screw in lower securing bolts -arrows- for joining bevel box to gearbox. Torque setting: ⇒ page 295 .



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– Bolt bevel box carrier to engine and bevel box, observing tightening sequence of bolts -A- and -B- ⇒ page 295 .

– Install support for turbocharger -arrow- ⇒ Rep. gr. 21 ; Assembly overview - turbocharger .

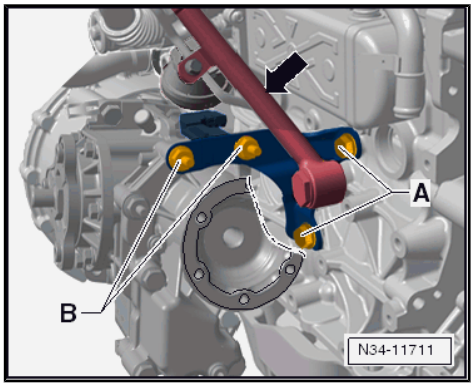
– Drive in right flange shaft carefully, turning flange shaft as you do so, in order to avoid damaging bearings.

– Secure flange shaft with new countersunk bolt. Torque setting ⇒ Item 13 (page 323)

Continue installation in reverse order of removal.

– Fill bevel box with gear oil ⇒ page 333 .

– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation .

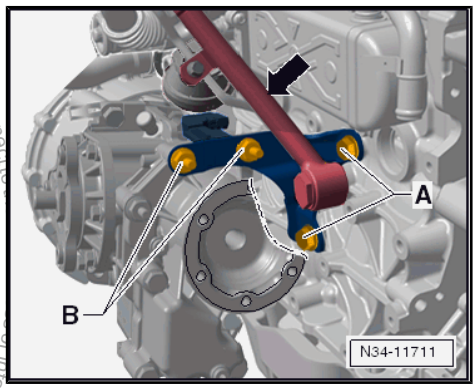


14.1 Specified torques

Bevel box to gearbox ♦ Renew bolts.	40 Nm + 90° further
Intermediate flange on right flange shaft	70 Nm

Allocation of bolts for gearbox carrier to engine and bevel box

Item	Bolt	Quantity
A	M10 x 21	2
B	M10 x 45	2



– Screw in all bolts hand-tight.

– Tighten bolts -B- to 40 Nm.

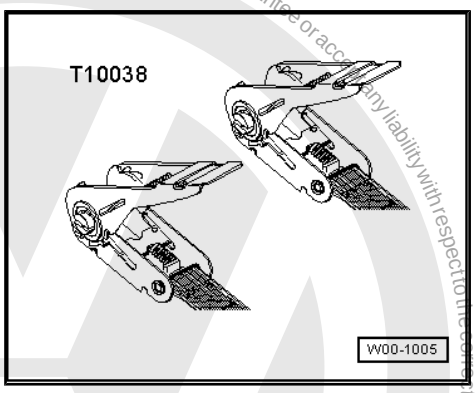
– Tighten bolts -A- to 40 Nm.

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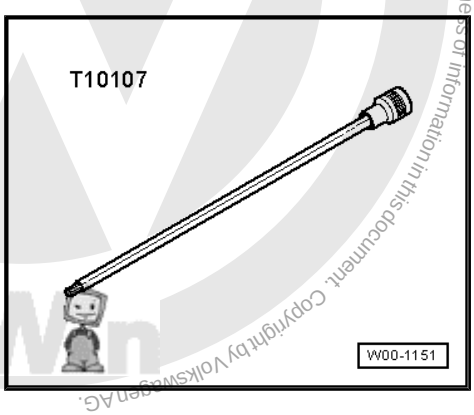
15 Removing and installing bevel box, Passat CC 2009 ►, CC 2010 ► with 3.6 l V6 engine

Special tools and workshop equipment required

- Securing strap - T10038-



- Socket - T10107 A-



Removing:

– Raise vehicle. All 4 supports of lifting platform must be at same height.

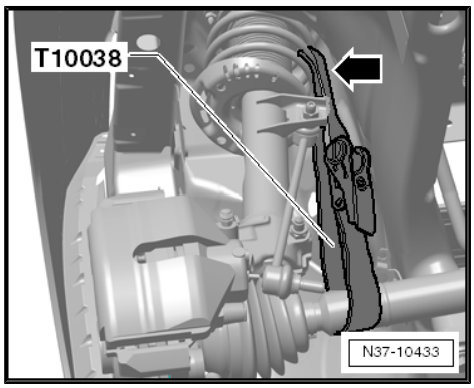
– Move selector lever to position »P« position.

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Removing and installing wheel housing liner; Front wheel housing liner .

– Unbolt right drive shaft from gearbox⇒ Rep. gr. 40 ; Removing and installing drive shafts .

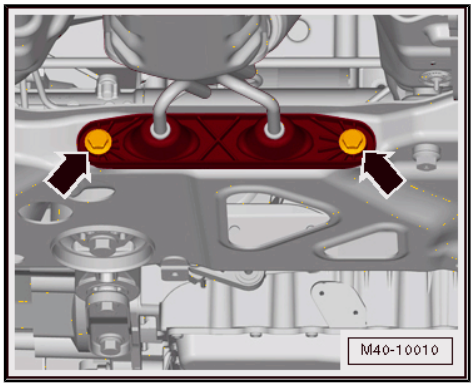
– Secure drive shaft to suspension strut with tensioning strap - T10038- .

– Remove pendulum support ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links

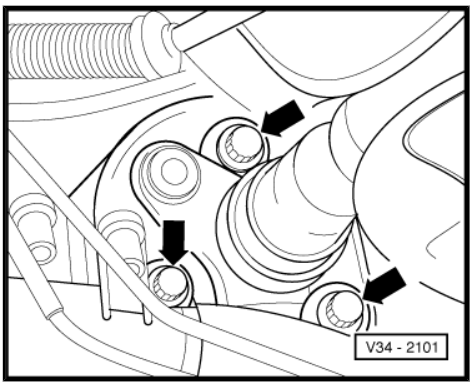


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– Remove exhaust system bracket from subframe -arrows- ⇒ Rep. gr. 26 ; Exhaust system .



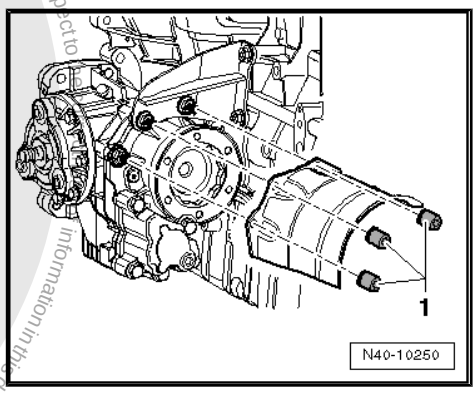
– Mark position of propshaft with flexible coupling relative to bevel box flange with paint.
– Unbolt propshaft from bevel box -arrows- ⇒ Rep. gr. 39 ; Removing and installing propshaft .
– Push front propshaft tube to stop.



The -seal- in the propshaft must not be damaged.



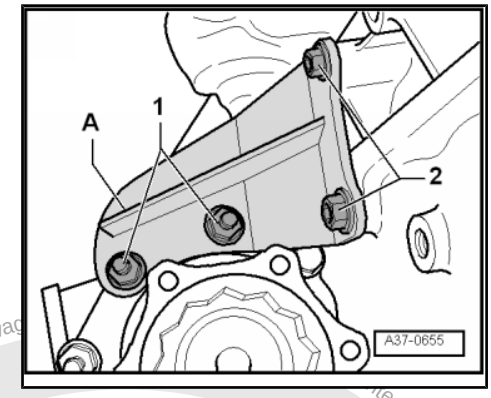
– Remove heat shield above right drive shaft -1- ⇒ Rep. gr. 40 ; Heat shields for drive shafts .



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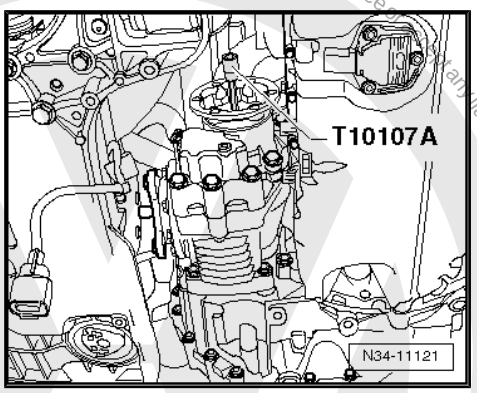
– Remove bracket -A- between engine and bevel box.

First remove bolt -1-.



– Remove counter-sunk bolt using insert - T10107 A- .

Flange shaft remains in bevel box.



– Unbolt bevel box from gearbox -arrows- and remove it.

To remove bevel box, push engine forwards slightly (second mechanic).

Installing

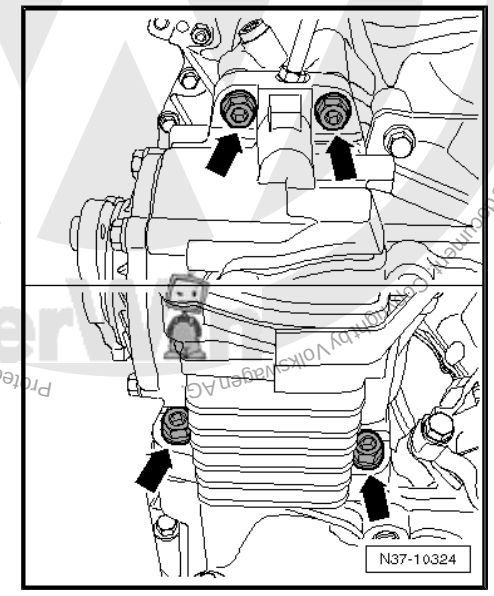
Install in reverse order of removal. During this step, observe the following:

– Push bevel box together with flange shaft onto gearbox while turning flange shaft.

– Bolt bevel box onto gearbox using 4 new bolts.

Torque setting

40 Nm



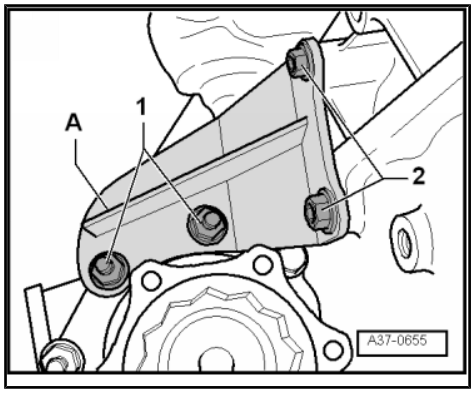
– Screw in bolts -1- and -2- hand-tight.

– Observe assembly order:

1 - First tighten bolts -1- to 3 Nm.

2 - Tighten bolts -2- to 40 Nm.

3 - Finally tighten bolts -1- to 40 Nm.

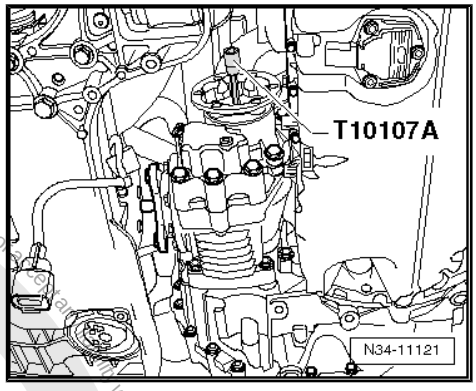


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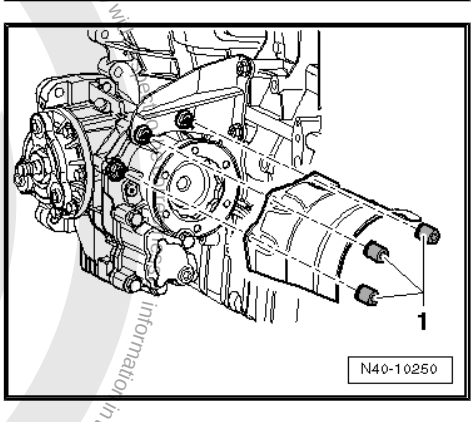
– Install counter-sunk bolt using insert - T10107 A- .

Torque setting

30 Nm



– Install heat shield above right drive shaft -1- ⇒ Rep. gr. 40 ; Heat shields for drive shafts .
– Bolt right drive shaft to gearbox⇒ Rep. gr. 40 ; Removing and installing drive shafts .
– Install pendulum support ⇒ Rep. gr. 40 ; Assembly overview - subframe, anti-roll bar, suspension links .
– Bolt propshaft to bevel box -arrows- ⇒ Rep. gr. 39 ; Removing and installing propshaft .
– Bolt exhaust system bracket to subframe -arrows- ⇒ Rep. gr. 26 ; Exhaust system .



Continue installation in reverse order of removal.

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16 Oil and oil filter

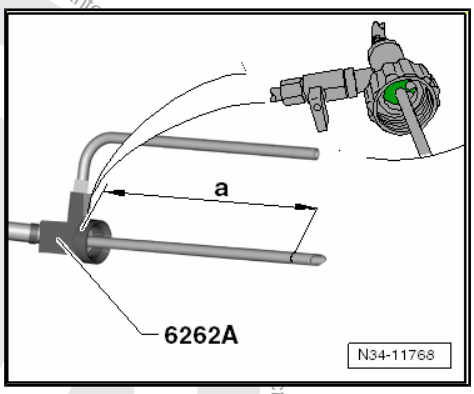
Please also follow instructions:

- About this workshop manual ⇒ page 1
- Breather pipe of adapter for oil filling - VAS 6262 A- may need to be shortened.

Shortening breather pipe of adapter for oil filling - VAS 6262 A- :

– In order to ensure that the breather pipe of the adapter for oil filling - VAS 6262 A- does not contact the bottom of some oil bottles, the pipe must be shortened to the length -a-.

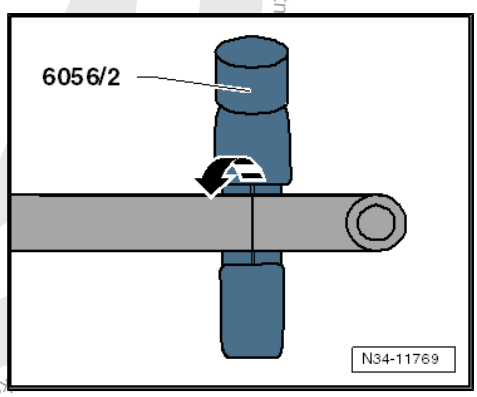
Dimension -a- = 210 mm



Note

The dimension -a- is measured from the shaft (green area in the counting glass) of the adapter for oil filling - VAS 6262 A- .

– Mark dimension -a- on the breather pipe and shorten pipe with pipe cutter - VAS 6056/2- .



16.1 Renewing oil filter

Note

- *Normally, there is no need to renew oil filter.*
- *Oil filter change "Yes or no?":*

Removing

– Move selector lever to position »P« position.

– Removing air filter ⇒ Rep. gr. 24 ; Removing and installing air filter .

– Remove battery with battery tray ⇒ Rep. gr. 27 ; Battery; Removing and installing battery .

Note

- *A residual amount of oil remains in oil filter. It runs out when oil filter is unscrewed.*
- *Before unscrewing oil filter, cover area around oil filter with a sufficient number of cloths.*

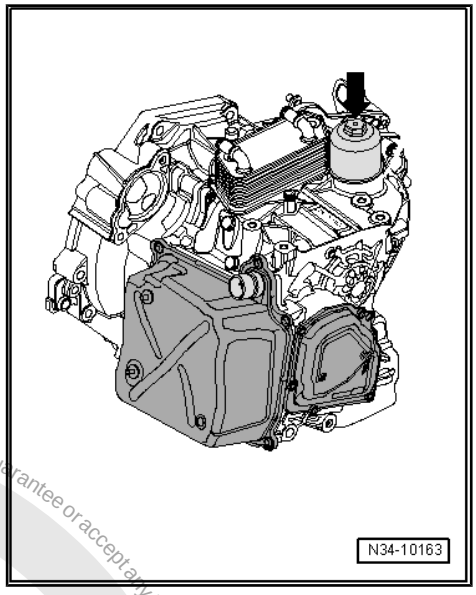
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– First loosen filter housing -arrow- by about 7 turns.

– Wait about 10 seconds.

This way, the oil will flow from the filter housing back into the gearbox.

– Only now remove filter housing and oil filter.



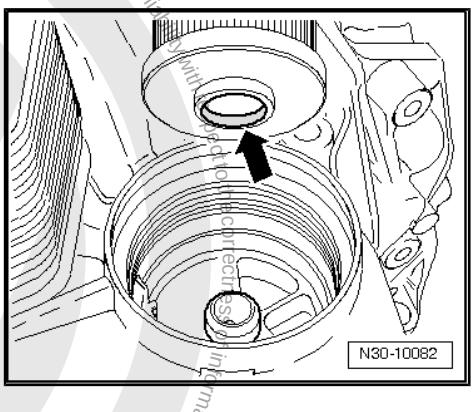
Installing

Install in reverse order of removal. During this step, observe the following:

– Thoroughly clean oily areas on gearbox.

– Insert oil filter with collar -arrow- downwards.

– Screw in filter housing and tighten to 20 Nm.



Continue installation in reverse order of removal.

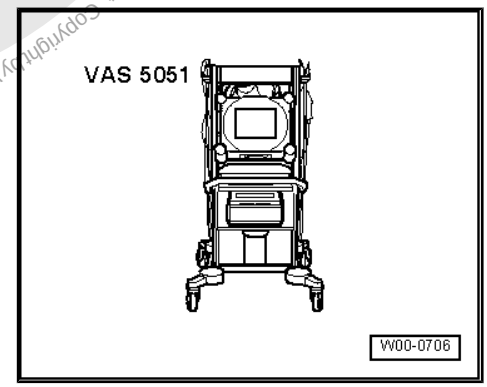
– Check oil level and top up ⇒ page 301 .

16.2 Checking oil level and topping up

If DSG oil must be added, use only oil listed in ⇒ Electronic parts catalogue "ETKA" .

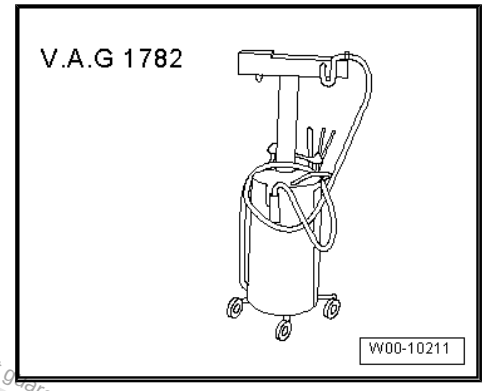
Special tools and workshop equipment required

♦ Vehicle diagnosis, testing and information system - VAS 5051B-



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- Used oil collection and extraction unit - V.A.G 1782-



- Adapter for filling oil - VAS 6262 A-



Prerequisites

- Vehicle level, all supports in lifting platform at same height.
- Noise insulation removed.
- Vehicle diagnosis, testing and information system - VAS 5051B- is connected.
- At start of work, oil temperature must not be above 45 °C.
- Test temperature: 35 - 45 °Celsius

Checking

– Connect vehicle diagnosis, testing and information system - VAS 5051B- and identify the vehicle in `Guided functions`.

– Select `dual clutch gearbox`.

– Select `Check fluid level`.

Note

If oil temperature is above 45 °C, let the gearbox cool off.

Engine is running at idling speed with selector lever in “P”.

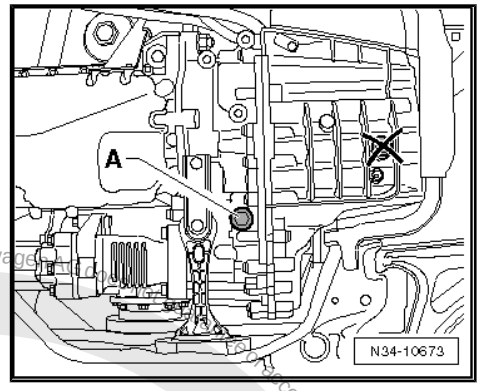
– Remove oil drain plug.

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To gearbox manufacture date “20 September 2004”, gearboxes were constructed with 2 plugs.

It is important not to interchange these bolts. Unscrew only bolt -A-, near ⇒ pendulum support

Gearboxes built after 20th September 2004, i.e. which are »later«, are fitted with bolt -A- only.



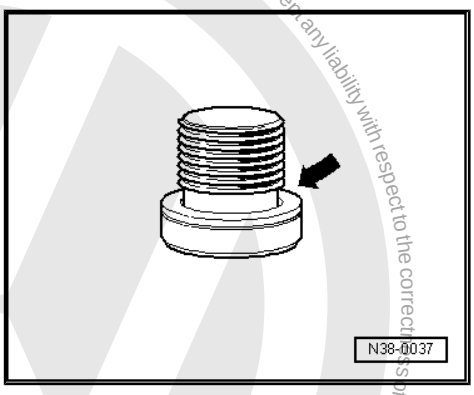
– Renew oil seal -arrow- of bolt.

Note

Even if oil level is too low, a small amount of oil will initially run out of oil level pipe because pipe fills up during operation.

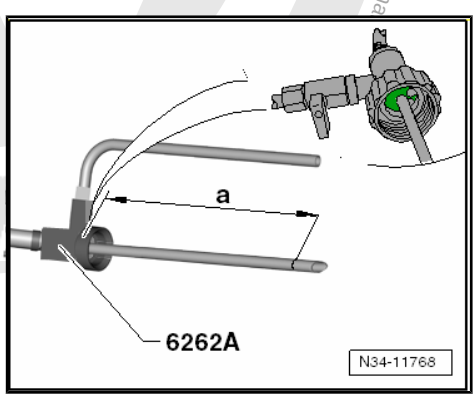
– Let surplus oil flow out.
– When excess oil has run out (when it begins only to drip), install plug with new seal.
– Top up oil if no oil flows out.

Topping up



– Before screwing adapter for oil filling - VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension -a- and shorten ⇒ page 300 .

Dimension -a- = 210 mm



Note

The dimension -a- is measured from the shaft (green area in the counting glass) of the adapter for oil filling - VAS 6262 A- .

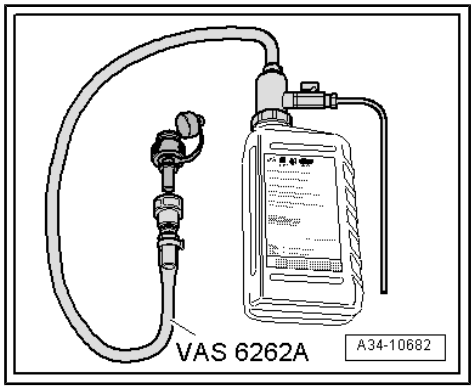
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– Screw adapter of adapter for filling oil - VAS 6262 A- hand-tight into inspection hole.

Shake bottles before opening.

– Fill 1.0 litres of oil.

– Pull off adapter for oil filling - VAS 6262- at quick-release connection and check:



If oil now flows out of hole in adapter:

Oil does not need topping up.

– Let surplus oil drain out.

– When excess oil has run out (when it begins only to drip), remove adapter for filling oil - VAS 6262 A- and install plug with new seal.

If no oil drips out of inspection hole:

– If a further litre has to be added ⇒ page 301 .

WARNING

An oil level which is too low or too high will impair the function of the gearbox.

Torque setting for drain plug: 45 Nm

16.3 Draining and filling oil

If DSG oil must be added, use only oil listed in ⇒ Electronic parts catalogue "ETKA" .

Brief description

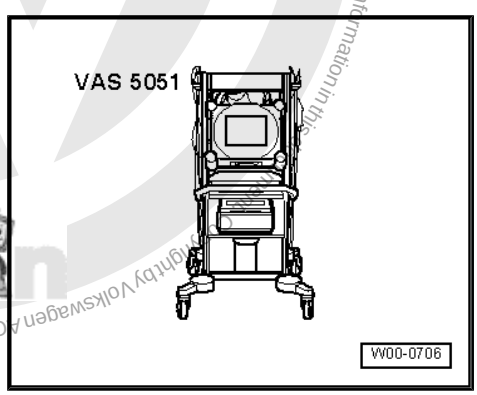
First read the oil temperature. If it is above 50 °C, let the gearbox cool off.

With engine stopped, unscrew and remove overflow pipe and let the oil drain out. Then reinstall overflow pipe and »overfill« gearbox with oil.

Then start engine and drain excess oil until oil level attains level of overflow pipe.

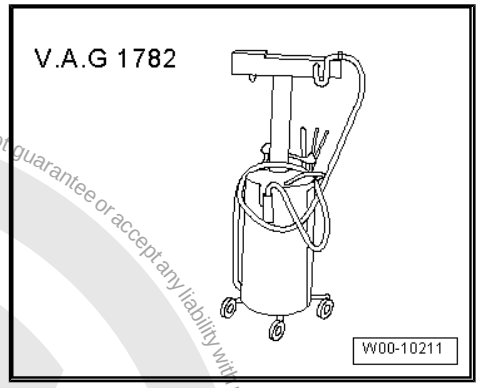
Special tools and workshop equipment required

♦ Vehicle diagnosis, testing and information system - VAS 5051B-

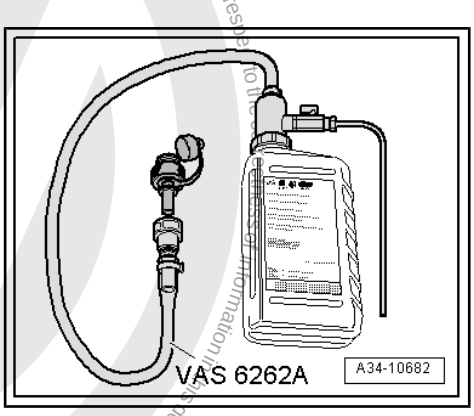


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- Used oil collection and extraction unit - V.A.G 1782-



- Adapter for filling oil - VAS 6262 A-



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Prerequisites

- Engine off.
- Vehicle level, all supports in lifting platform at same height.
- If noise insulation tray is present, it must be removed
- Selector lever in “P”.
- Vehicle diagnosis, testing and information system - VAS 5051B- is connected.
- At start of work, oil temperature must not be above 45 °C.

Procedure

– Comply with rules for cleanliness when working on gearbox.

– Only gear oil available as spare part is allowed to be used for dual clutch gearbox. Other oils will lead to malfunctions or failure of gearbox.

WARNING

Danger of injury from hot gear oil.

– Connect vehicle diagnosis, testing and information system - VAS 5051B- and identify the vehicle in `Guided functions`.

– Select `dual clutch gearbox`.

– Select `Check fluid level`.

Note

If oil temperature is above 45 °C, let the gearbox cool off.

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WARNING

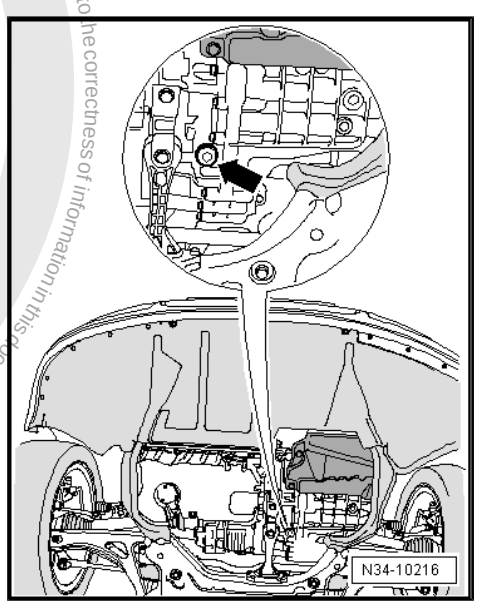
Do not start engine if there is no oil in gearbox.

– Engine off - Do not start engine!

– Remove oil drain plug close to pendulum support -arrow-.

A plastic overflow tube (with 8 mm hexagon) is located in this hole. Its length determines the oil level in the gearbox.

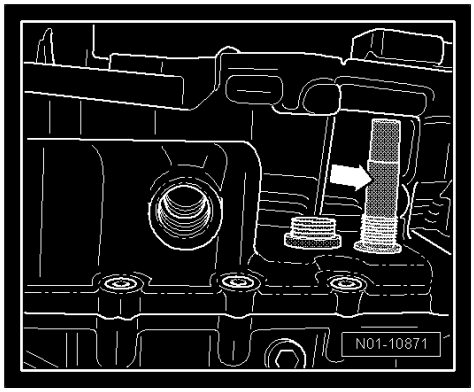
Allocation via ⇒ Electronic parts catalogue “ETKA”



– Remove oil level pipe -arrow- and allow oil to run out.

Approximately 5 litres of oil will run out.

– Screw oil level pipe back in to stop and tighten to 3 Nm.

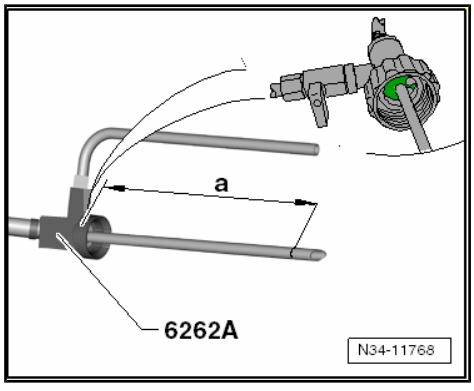


– Before screwing adapter for oil filling - VAS 6262 A- onto oil bottle, measure length of breather pipe, dimension -a- and shorten ⇒ page 300 .

Dimension -a- = 210 mm

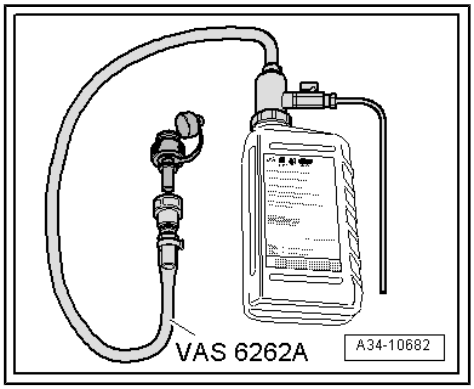
Note

The dimension -a- is measured from the shaft (green area in the counting glass) of the adapter for oil filling - VAS 6262 A- .

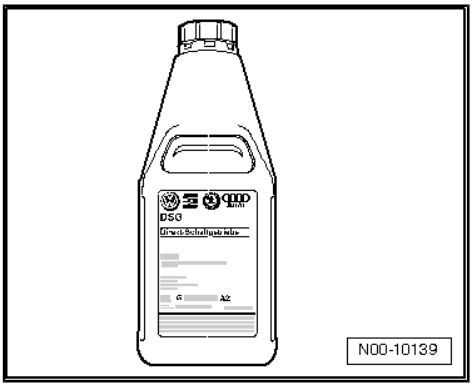


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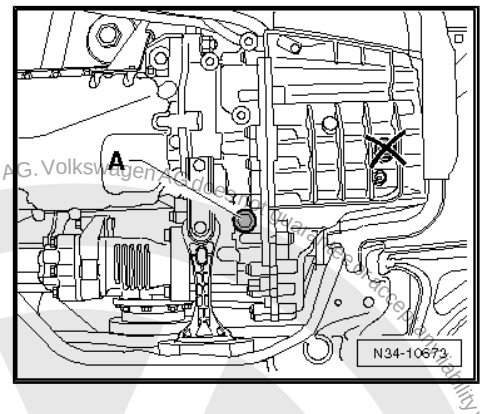
– Screw adapter of adapter for filling oil - VAS 6262 A- hand-tight into inspection hole.



– Shake bottles before opening.
– Fill 5.5 litres of oil.
– To change bottle, shut off tap or hold adapter for filling oil - VAS 6262 A- higher than gearbox.



– Tighten oil drain plug -A- only until finger tight.
– Start engine.
– Depress brake pedal, select each selector lever position for about 3 seconds and then move lever back to »P«.
– Do not switch off engine.
– Then check oil level and top up. ⇒ page 301



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35 – Gears, shafts

1 Currently, no repairs can be made to gears and shafts

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39 – Final drive - differential

1 Overview - seals

1 - Checking oil level in bevel box ⇒ page 332
- ❑ Four-wheel drive only

2 - Seal for propshaft ⇒ page 317

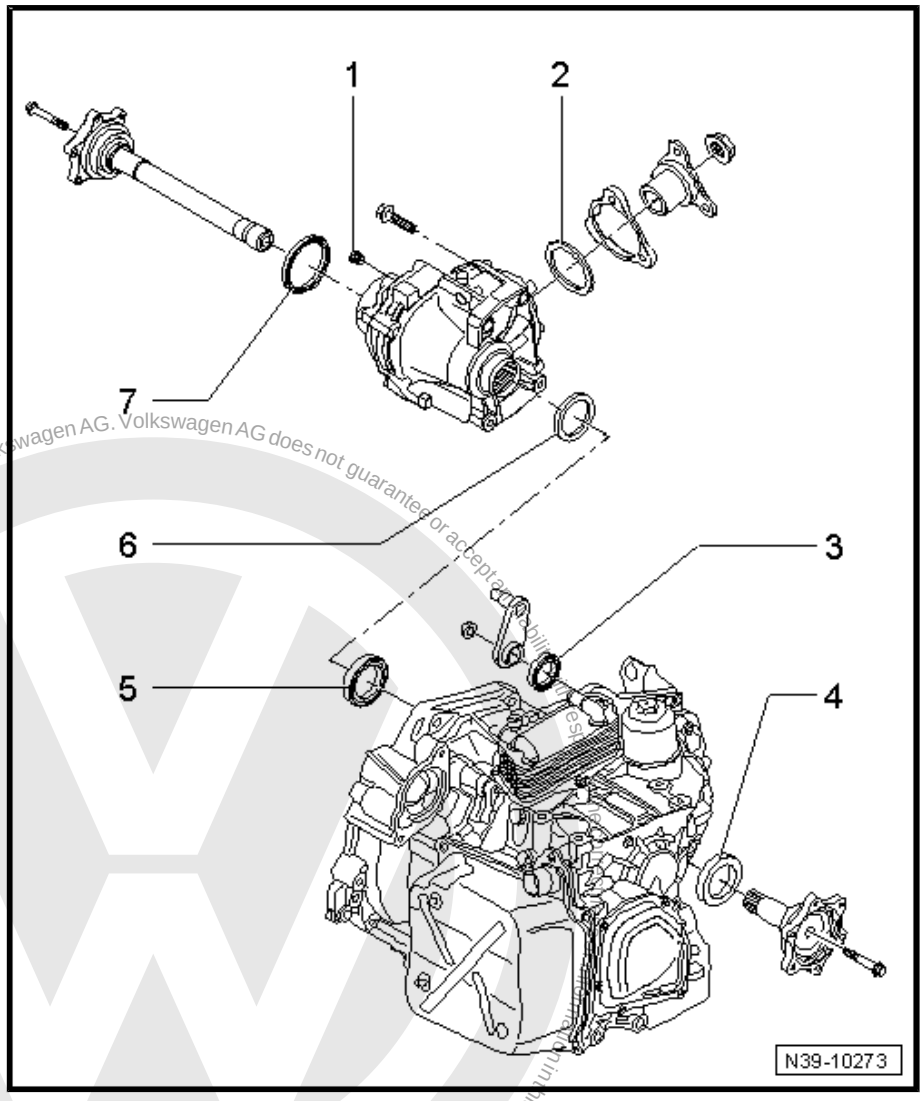
3 - Seal for selector shaft ⇒ page 54

4 - »Left« seal ⇒ page 312

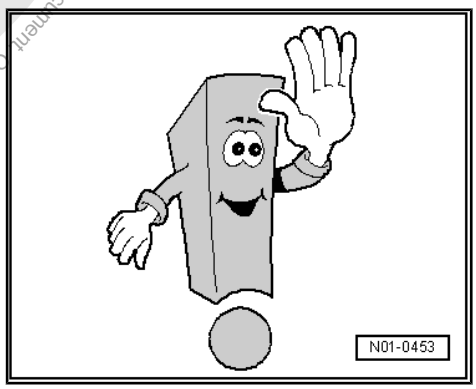
5 - Seal »right«
- ❑ Front-wheel drive ⇒ page 310
- ❑ Four-wheel drive ⇒ page 324

6 - Seal in bevel box ⇒ page 330

7 - Only four-wheel drive »right« seal
- ❑ Four-wheel drive ⇒ page 313
- ❑ Front-wheel drive ⇒ page 310



Never loosen both securing bolts in left and right flange shafts at the same time. If the differential bevel gears turn, it is difficult to reinstall the bolts.



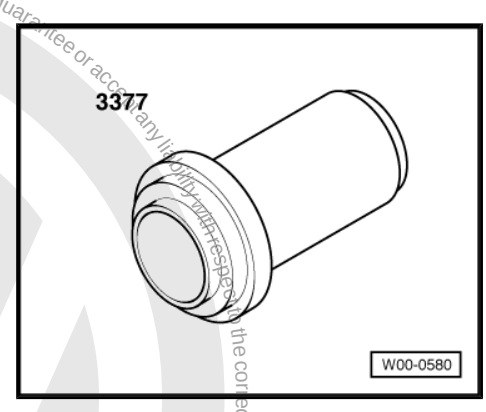
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1.1 Renewing seals for right flange shaft or stub shaft - front-wheel drive

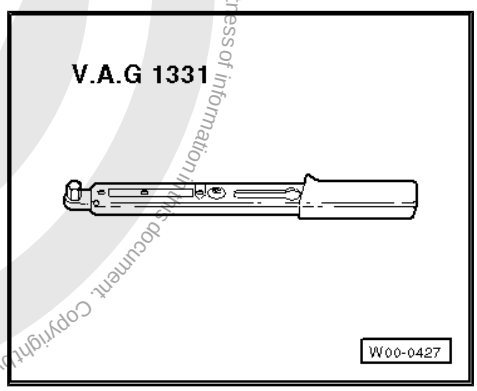
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Special tools and workshop equipment required

- Drift sleeve - 3158-



- Torque wrench - V.A.G 1331-



- Torque wrench - V.A.G 1332-
- Sealing grease - G 052 128 A1-
- All-purpose grease - G 052 735-

Removing

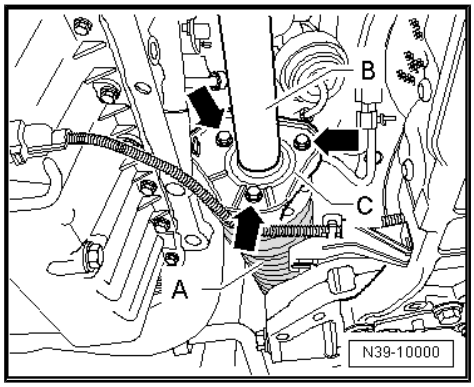
– Remove right wheel.

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation; Assembly overview - noise insulation .

– Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

Vehicles with intermediate shaft

– After removing right drive shaft -A-, unbolt intermediate shaft -B- from bearing bracket -C- -arrows- and pull out stub shaft of gearbox.

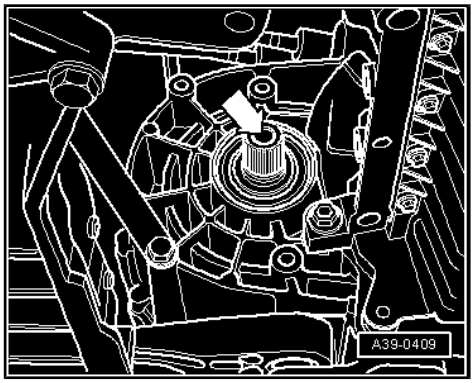


Continuation for all vehicles

– Place drip tray under gearbox.

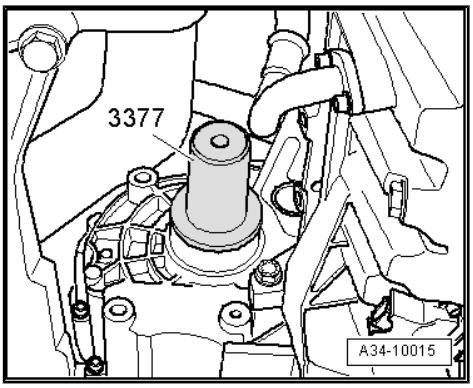
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– Remove securing bolts -arrow- for stub shaft or flange shaft.
– Pull out stub shaft or flange shaft together with compression spring.
– Pry seal out using assembly lever.



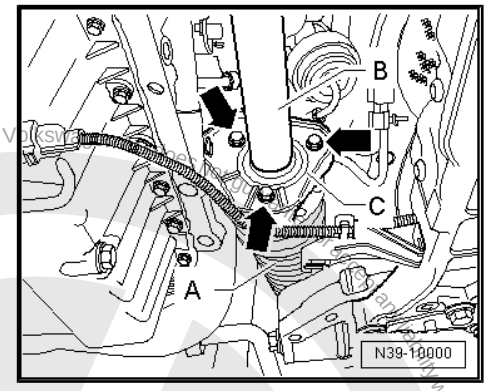
Installing

– Lightly oil outer circumference of new oil seal.
– Half-fill space between sealing lip and dust lip with sealing grease - G 052 128- .
– Drive in new seal to stop, being careful not to cant seal.
– Insert stub shaft or flange shaft.
– Screw in new countersunk bolt for securing stub shaft or flange shaft and tighten to 30 Nm.



Vehicles with intermediate shaft

– Renew O-ring of stub shaft.
– Grease splines of stub shaft with grease for clutch plate splines - G 000 100- .
– Guide intermediate shaft -B- through bearing bracket -C- onto stub shaft of gearbox.
– Bolt intermediate shaft to bearing bracket to specified torque -arrows- ⇒ Running gear, axles, steering; Rep. gr. 40 ; Repairing drive shaft; Removing and installing drive shafts .



Continuation for all vehicles

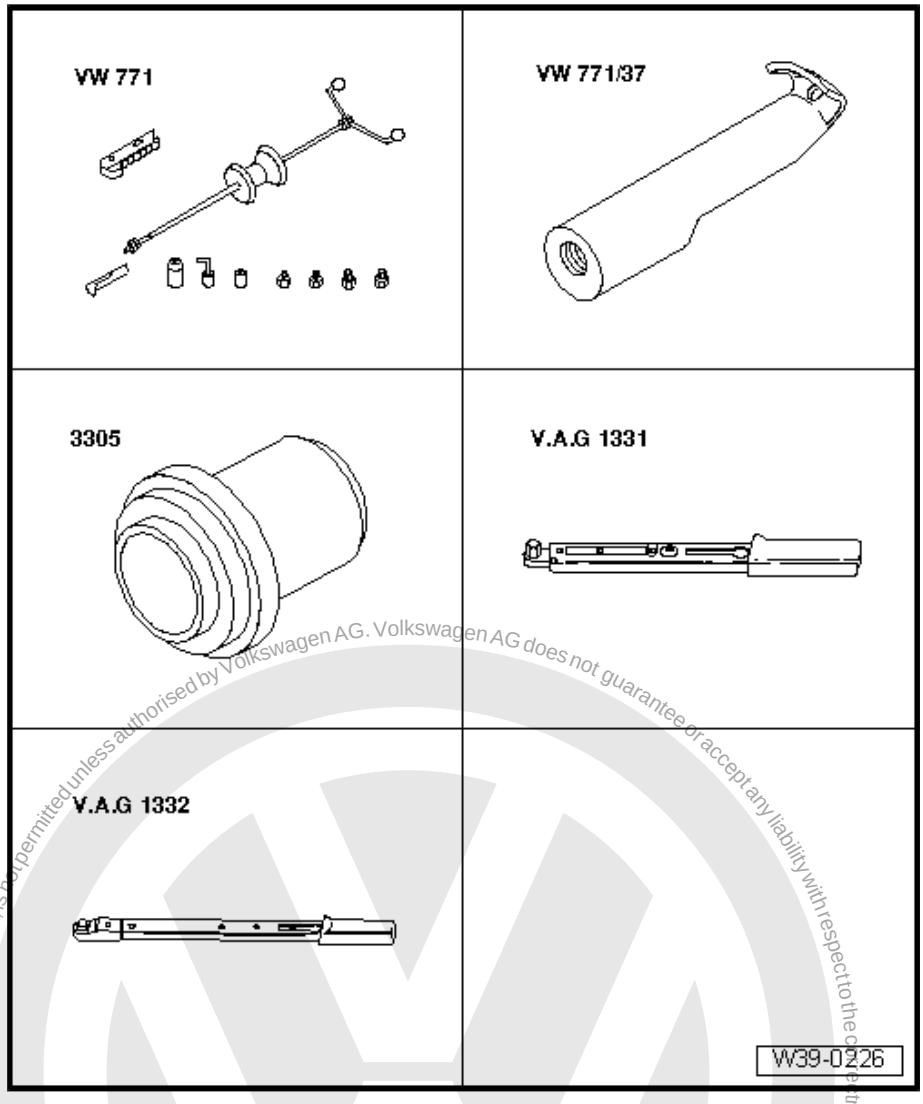
– Install right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Repairing drive shaft; Removing and installing drive shafts .
– Install right wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Torque settings for mounting wheels .
– Check oil level and top up ⇒ page 301 .
– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation; Assembly overview - noise insulation .

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2 Renewing oil seal for left flange shaft - front and four-wheel drive

Special tools and workshop equipment required

- Multipurpose tool - VW 771-
- Puller hooks - VW 771/37-
- Thrust piece - 3305-
- Torque wrench - V.A.G 1331-
- Torque wrench - V.A.G 1332-



Removing

- Gearbox is installed.

– Remove wheel.

– Remove centre and left parts of noise insulation below engine and gearbox, if fitted.

– Remove left drive shaft.

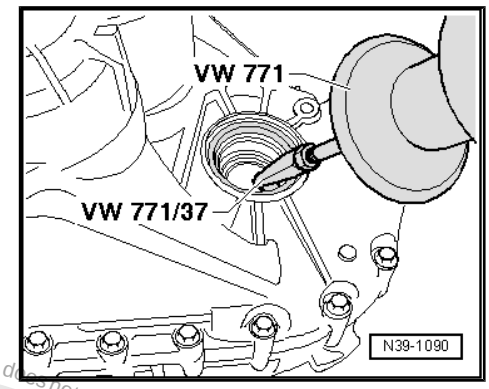
– Place drip tray under gearbox.

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– Remove flange shaft securing bolts by screwing 2 bolts into flange and counterholding flange shaft with a lever.
– Pull out flange shaft with compression spring.

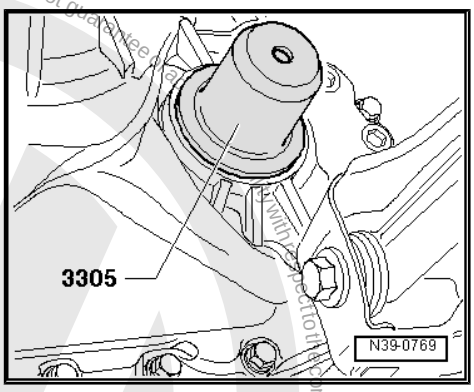


– Pull out flange shaft oil seal with multi-purpose tool -VW 771- and puller hooks -VW 771/37-.



Installing

– Half-fill space between sealing lip and dust lip with sealing grease - G 052 128- .
– Drive in new seal to stop, being careful not to cant seal.
– Insert flange shaft.
– Screw in new countersunk bolt for securing stub shaft or flange shaft and tighten to 30 Nm.
– Bolt swivel joint to suspension link at old impression marks using new bolts. ⇒ Rep. gr. 40 ; I - Assembly overview, sub-frame, anti-roll bar, wishbone
– Install left drive shaft. ⇒ Rep. gr. 40 ; Repairing drive shafts; Removing and installing drive shafts
– Install front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing wheel housing liner .
– Install left wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Torque settings for mounting wheels .
– Check oil level and top up ⇒ page 301 .
– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation; Assembly overview - noise insulation .

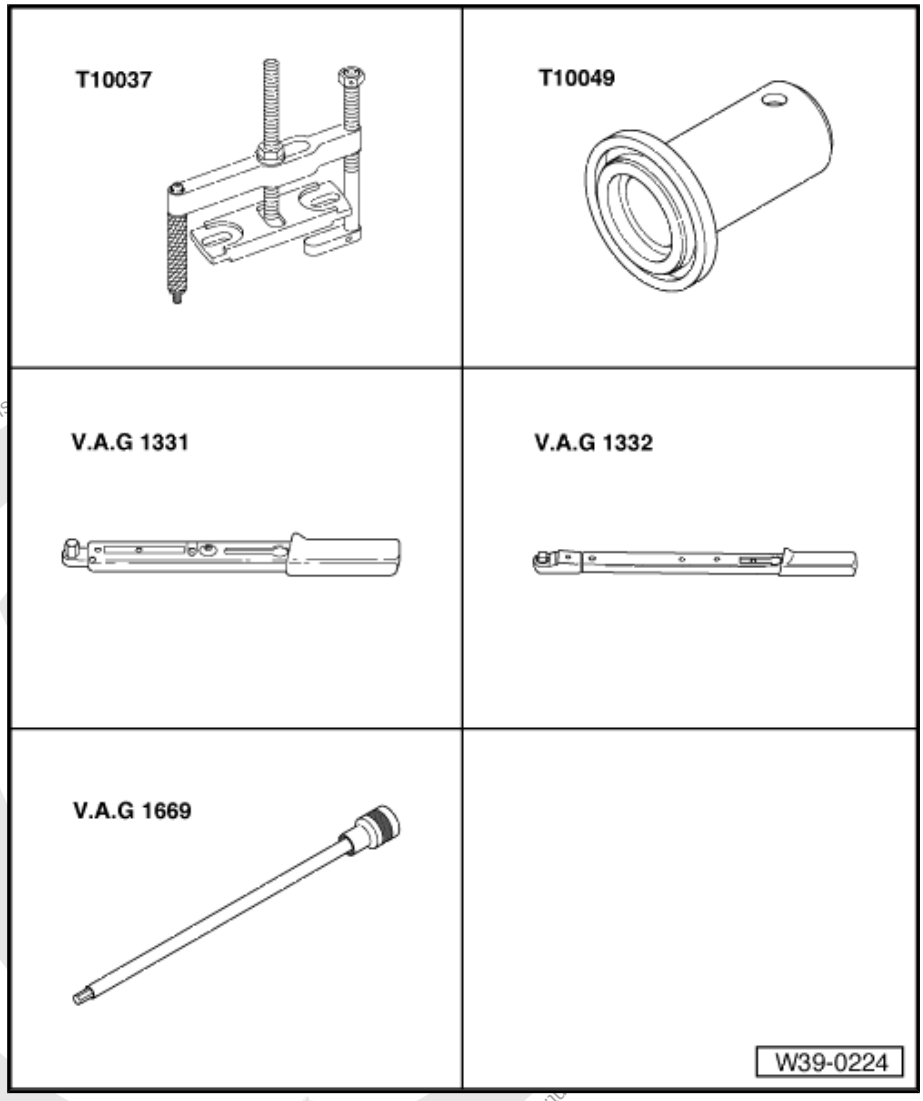


2.1 Renewing oil seal for right flange shaft - four-wheel drive

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Special tools and workshop equipment required

- Puller - T10037-
- Thrust piece - T10049-
- Torque wrench - V.A.G 1331-
- Torque wrench - V.A.G 1332-
- Hexagon key - V.A.G 1669- or socket and extended bit - T10107-



Removing

- Gearbox is installed.

WARNING

Follow the instructions below exactly to avoid damaging polygon bearings of flange shaft.

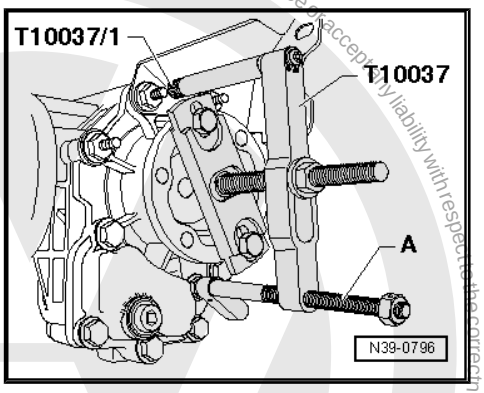
– Remove drive shaft ⇒ Rep. gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .

– Place drip tray under gearbox.

– Remove bolt for right flange shaft using hexagon key - V.A.G 1669- or socket and extended bit - T10107- .

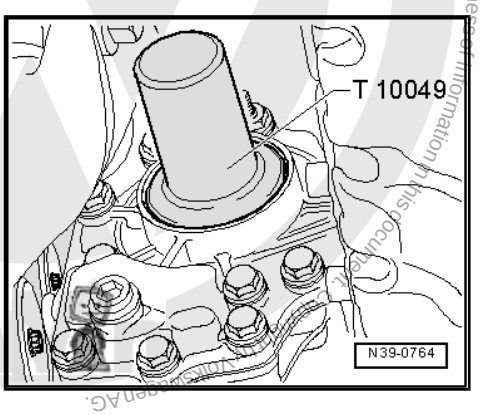
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– Bolt puller - T10037- to right flange shaft.
– Align puller parallel to flange using knurled knob - T10037/1- and lower support -A-.
– Pull out flange shaft.
– Pry seal out using assembly lever.



Installing

– Half-fill space between sealing lip and dust lip with sealing grease - G 052 128- .
– Drive in new seal to stop, being careful not to cant seal.
– »Carefully« drive in flange shaft while turning it.
– Secure flange shaft using countersunk bolt and tighten to 30 Nm torque.
– Install drive shaft ⇒ Rep. gr. 40 ; Repairing drive shafts; Removing and installing drive shafts .
– Attach drive shaft heat shield to bevel box.
– Check oil level in bevel box ⇒ page 332 .
– Install noise insulation, if fitted.



Specified torques

Heat shield for drive shaft to bevel box	25 Nm

2.2 Dismantling and assembling flange shaft

The flange shaft will now be dismantled for cleaning.

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1 - Bolt with hexagon socket head

- ❑ Do not remove bolt from both sides at once.
- ❑ 30 Nm
- ❑ Always renew

2 - Flange shaft

3 - Protective ring

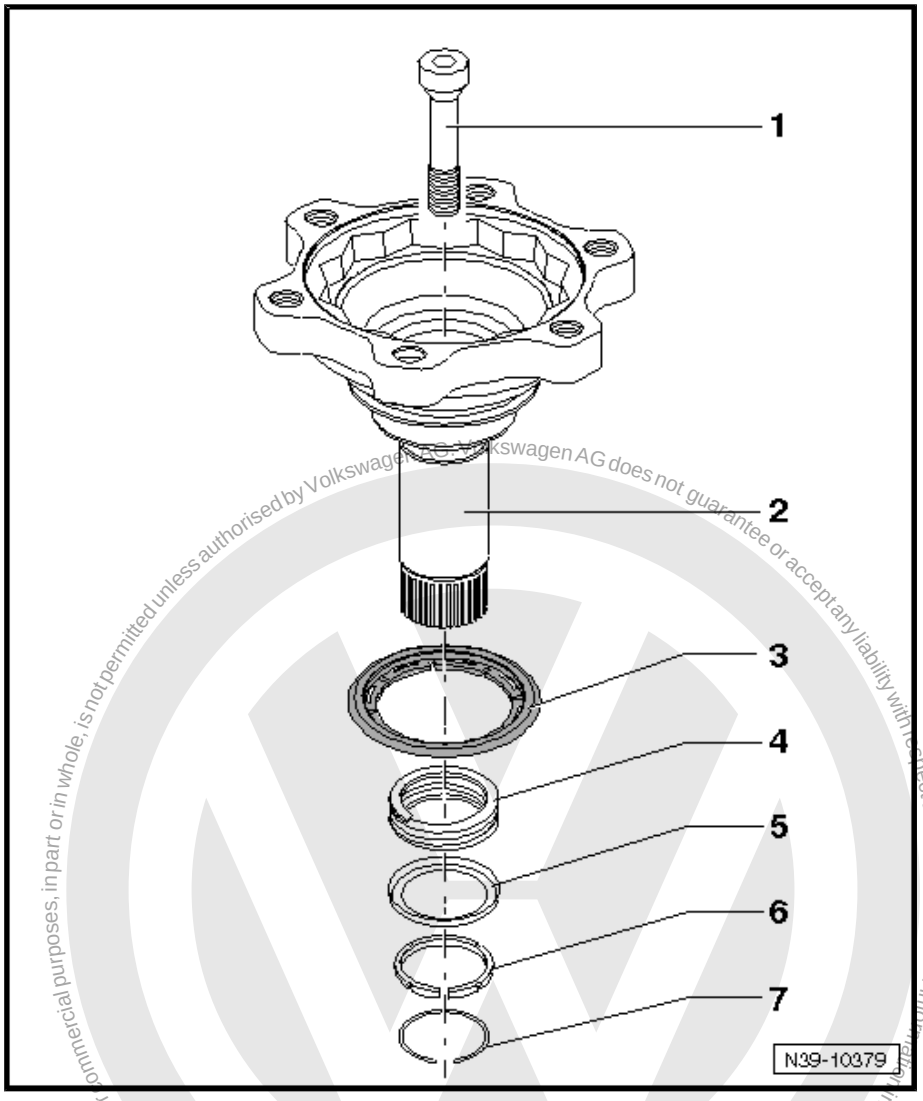
- ❑ Removing and installing ⇒ page 316

4 - Compression spring

5 - Thrust washer

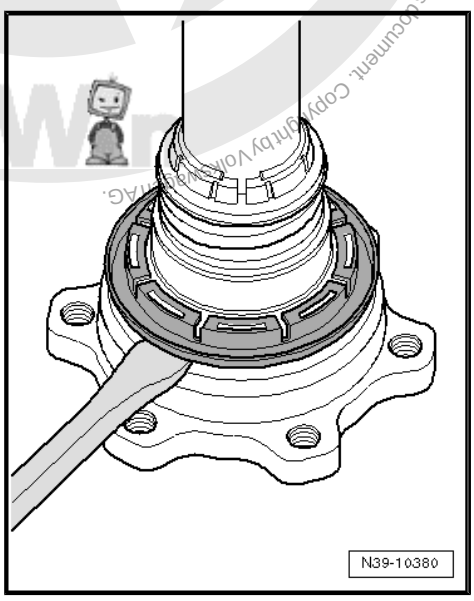
6 - Tapered ring

7 - Retaining ring



Removing and installing protective ring for flange shaft

– Press on protective ring by hand to stop.

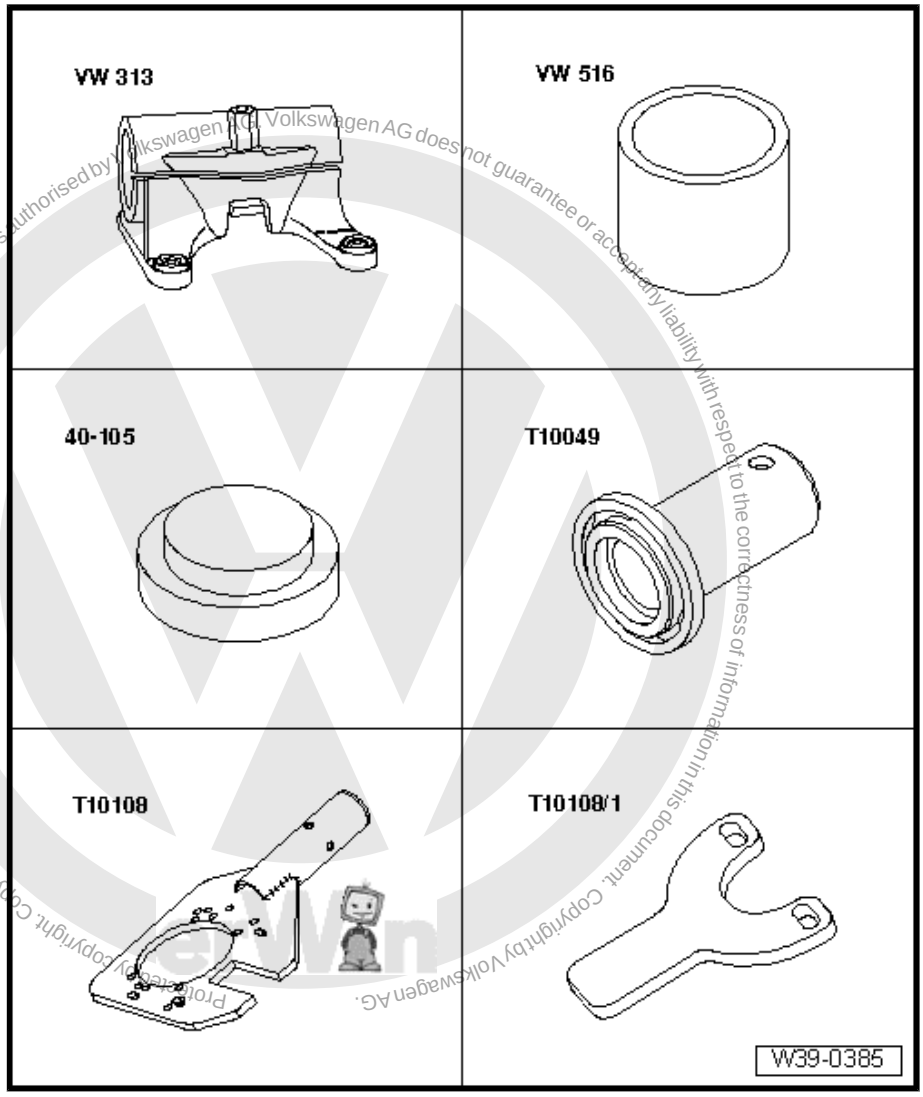


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3 Renewing oil seal for propshaft drive flange at bevel box

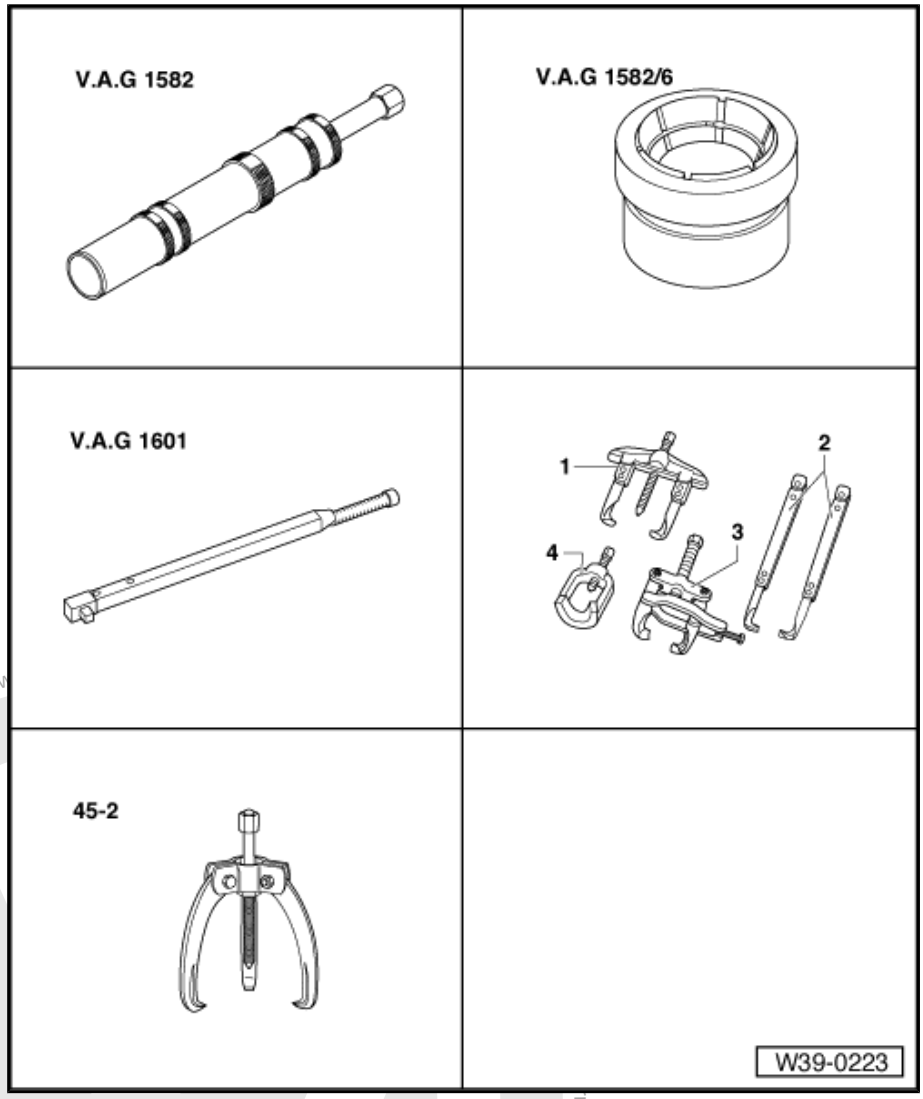
Special tools and workshop equipment required

- Support clamp - VW 313-
- Tube - VW 516-
- Thrust plate - 40-105-
- Thrust piece - T10049-
- Gearbox support - T10108-
- Support plate -T10108/1-

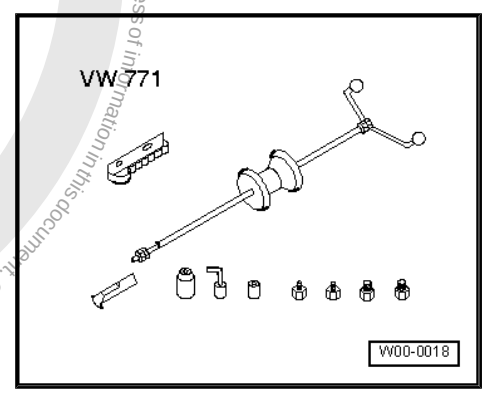


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- Tapered roller bearing puller - V.A.G 1582-
- Adapter - V.A.G 1582/6A-
- Torque wrench - V.A.G 1601-
- -1- Two-arm puller KUKKO 20/10
- Three-arm puller KUKKO 45-2

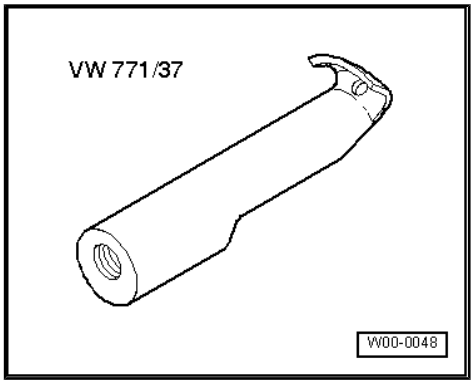


- Multipurpose tool - VW 771-

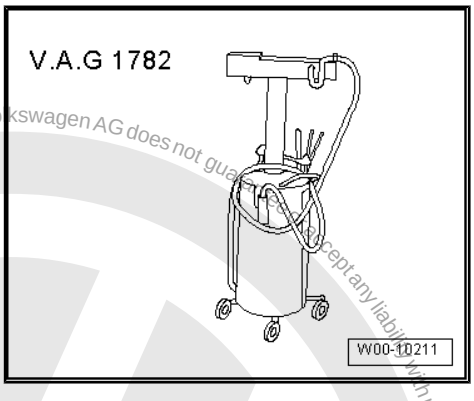


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- Puller hooks VW 771/37



- Used oil collection and extraction unit - V.A.G 1782-



- Sealing grease - G 052 128 A1-
- 2 bolts M10x30
- 4 nuts ⇒ M12 x 10

Procedure

Note

The oil seal for the output flange of the bevel box can be renewed only with the bevel box removed.

– Remove bevel box:

Golf 2004 ►, with 3.2 l - V6 engine, Passat 2006 ►, with 3.6 l - V6 engine ⇒ page 284

Passat CC 2009 ►, CC 2010 ► Passat 2011 ► with diesel engine ⇒ page 289

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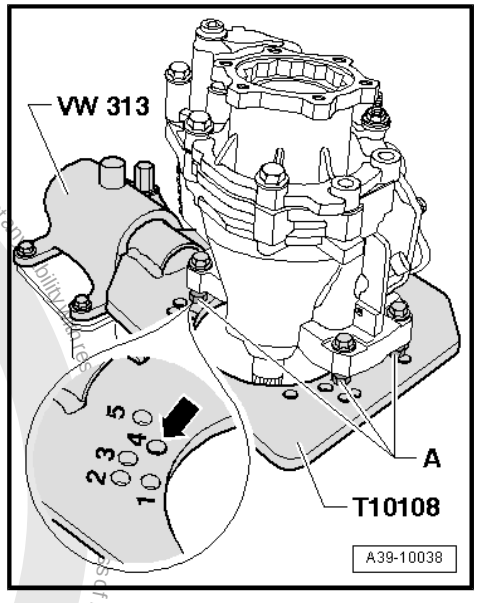
– Set bevel box in gearbox support - T10108- on hole -arrow- marked with the number -4-.

A - Lay nuts ⇒ M12 x 10 (Qty. 4) between bevel box and gearbox support.

– Then align bevel box with remaining 3 holes and secure.

– Put used oil collection and extraction unit - V.A.G 1782- underneath.

– Drain oil from bevel box.

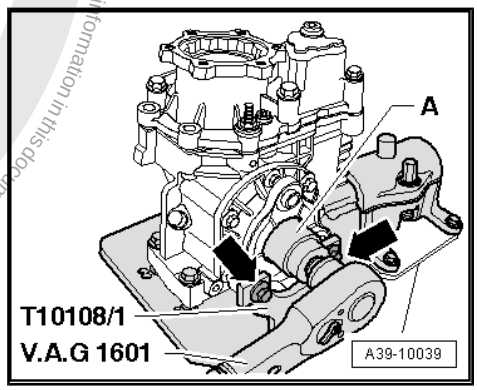


– Lock bevel box output flange with stop plate -T10108/1- , screwing in M10x30 bolts -arrows-.

– Remove hexagon nut for output flange.

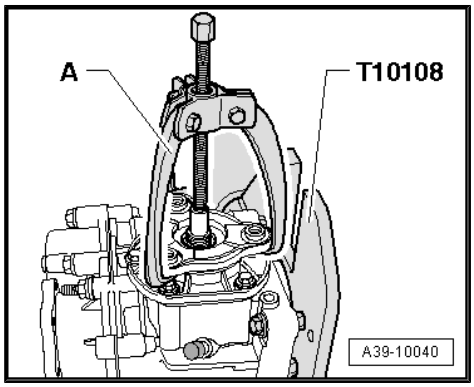
A - 36 mm socket for 3/4" drive

– Swing bevel box so that output flange points upwards.



– Pull output flange off shaft bevel gear of bevel box.

A - Three arm puller, e.g. KUKKO 45-2

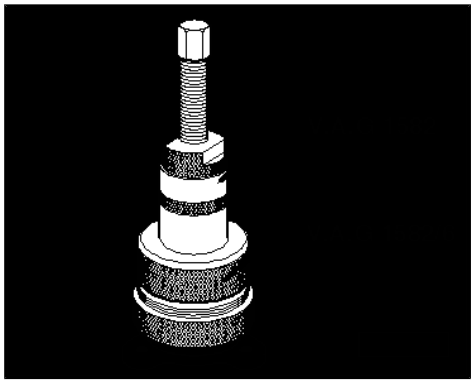


Note

Tapered roller bearing inner ring remains on output flange when output flange is pulled off. Inner ring is then pulled off output flange *⇒ page 320* *.*

– Place thrust plate - 40-105- on output flange.

– Pull inner tapered roller bearing race off output flange using tapered roller bearing puller.



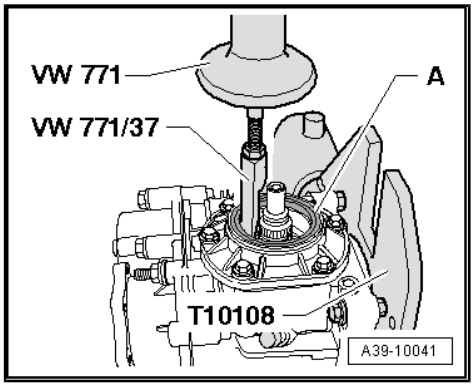
Note

Grip - V.A.G 1582/6A- may be used in place of grip - V.A.G 1582/6- .

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– Pull out seal -A- for output flange.

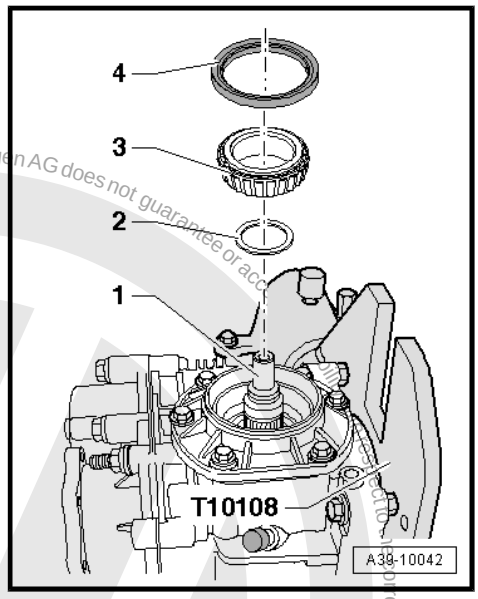
– Clean residual locking fluid from thread of shaft bevel gear.



• Old shim -2- for preloading bearing of shaft bevel gear -1- must be installed.

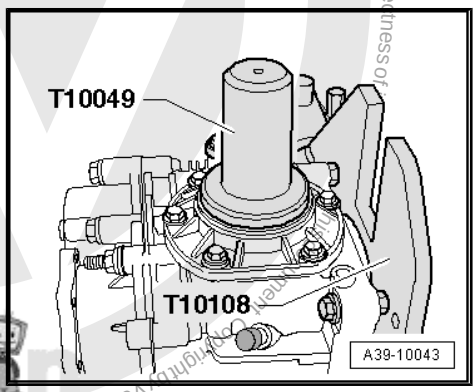
– Lay tapered roller bearing inner race -3- in outer race in bevel box.

– Lightly oil outer circumference of new seal -4- for output flange.



– Drive in new oil seal to stop using thrust piece - T10049- .

– Half-fill space between sealing lip and dust lip with sealing grease - G 052 128 A1-.

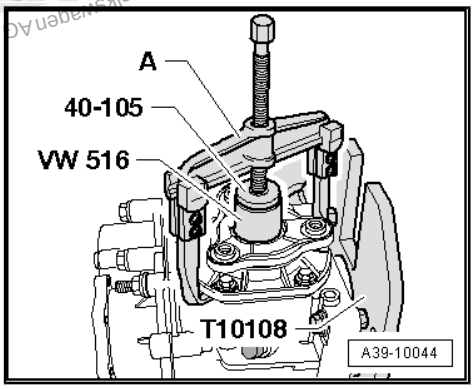


– Pull on output flange using two arm puller -A-.

A - Two arm puller, e.g. KUKKO 20/10

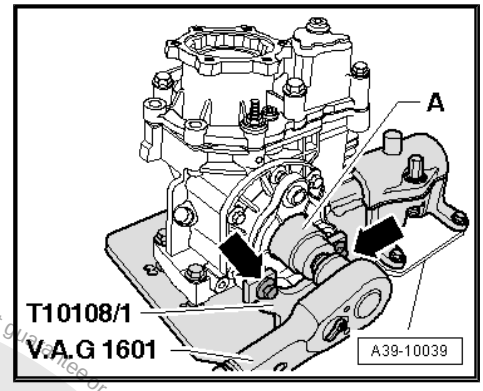
– Apply puller hooks to underside of pinion housing for this purpose.

– Coat thread of new hexagon nut with locking fluid - D 000 600- .



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– Tighten new nut for output flange, specified torque ⇒ Item 1 (page 323)



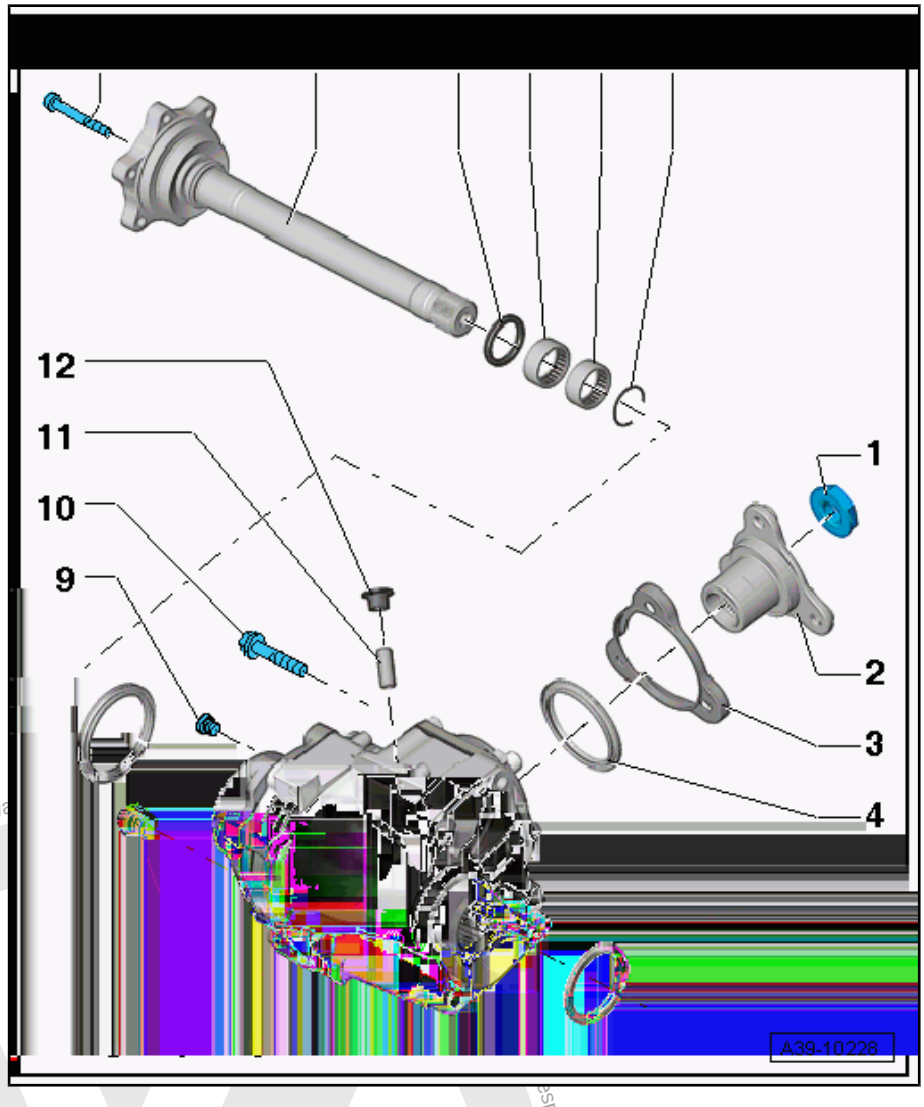
A - 36 mm socket for 3/4" drive

– Install bevel box ⇒ page 284 .

– Fill gear oil into bevel box ⇒ page 332 .

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4 Assembly overview - Flange shafts and seals on bevel box



1 - Hexagon nut
- ❑ For output flange
- ❑ Always renew, ⇒ Electronic parts catalogue
- ❑ 480 Nm

2 - Bevel box output flange

3 - Cover for output flange
- ❑ Renew only if damaged

4 - Seal
- ❑ ⇒ “3 Renewing oil seal for propshaft drive flange at bevel box”, page 317

5 - Seal
- ❑ ⇒ “4.5 Renewing seal on bevel box between gearbox and bevel box”, page 330

6 - Bevel box
- ❑ Removing and installing ⇒ page 284

7 - Oil drain plug
- ❑ For bevel box
- ❑ M6 bolt: 15 Nm
- ❑ M8 bolt: 60 Nm

8 - Seal
- ❑

9 - Filling and inspection plug
- ❑ For bevel box
- ❑ Always renew, ⇒ Electronic parts catalogue
- ❑ 15 Nm

10 - Bolt
- ❑ Attachment of bevel box to gearbox
- ❑ Qty. 4
- ❑ 30 Nm

11 - Breather pipe

12 - Breather cap

13 - Countersunk bolt
- ❑ Always renew
- ❑ 30 Nm

14 - Right flange shaft
- ❑ ⇒ “4.2 Removing and installing right flange shaft”, page 325

15 - Seal
- ❑ Always renew after removing right flange shaft

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16 - Bearings

- ❑ Needle bearing (polygon bearing) is difficult to turn with flange shaft removed The fact it is difficult to move does not mean that the bearing is defective. An acoustic test can only be performed with the bearings installed.
- ❑ Inspect for signs of damage to bearings, such as cracking in outer race, and renew if necessary.
- ❑ ⇒ “4.4 Renewing needle bearing (polygon bearing) for right output shaft drive flange”, page 328

17 - Bearings

- ❑ Needle bearing (polygon bearing) is difficult to turn with flange shaft removed The fact it is difficult to move does not mean that the bearing is defective. An acoustic test can only be performed with the bearings installed.
- ❑ Inspect for signs of damage to bearings, such as cracking in outer race, and renew if necessary.
- ❑ ⇒ “4.4 Renewing needle bearing (polygon bearing) for right output shaft drive flange”, page 328

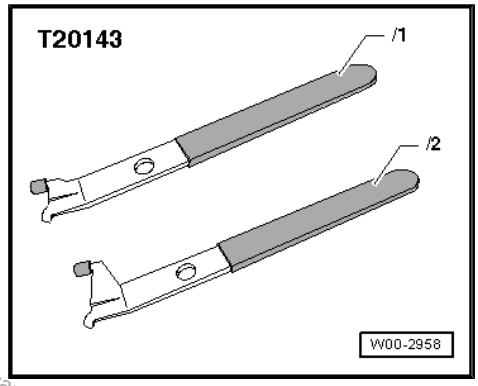
18 - Retaining ring

- ❑ Always renew after removing

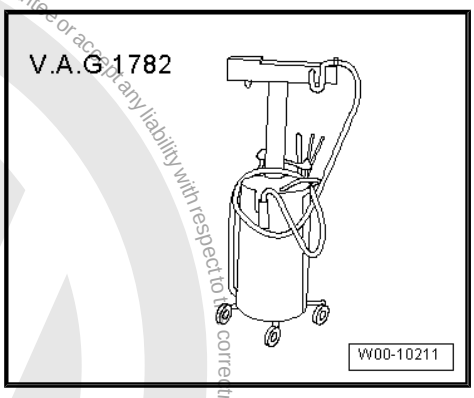
4.1 Renewing seal on gearbox between bevel box and gearbox

Special tools and workshop equipment required

- ♦ Extractor tool -T20143-

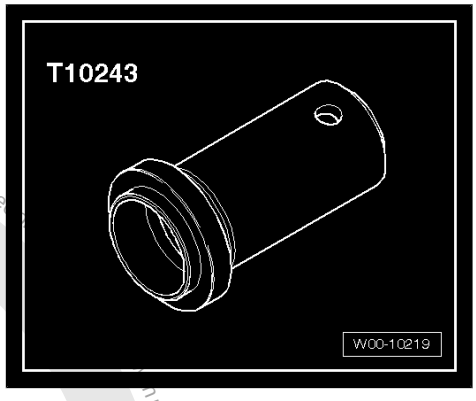


- ♦ Used oil collection and extraction unit - V.A.G 1782-



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♦ Thrust piece - T10243-



Procedure

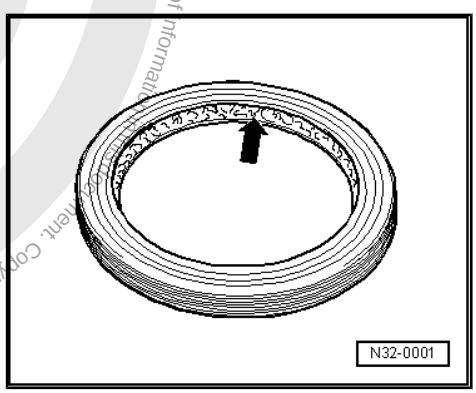
– Remove bevel box ⇒ page 284 .

Position used oil collection and extraction unit - V.A.G 1782- under gearbox.

– Lever out seal on gearbox using puller hook - T20143/1- or - T20143/2- .

– Fill space between sealing lip and dust lip -arrow- with sealing grease - G 052 128 A1- .

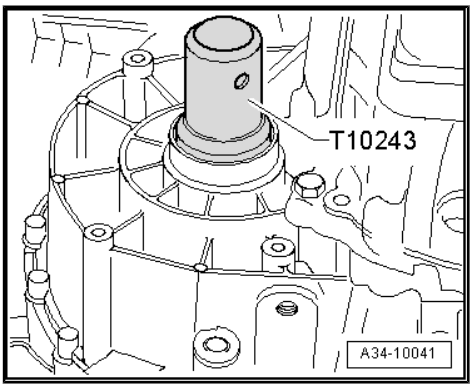
– Lightly oil outer circumference of oil seal.



– Carefully drive in oil seal to stop using thrust piece - T10243- .

– Install bevel box ⇒ page 284 .

– Check oil level and top up ⇒ page 301 .

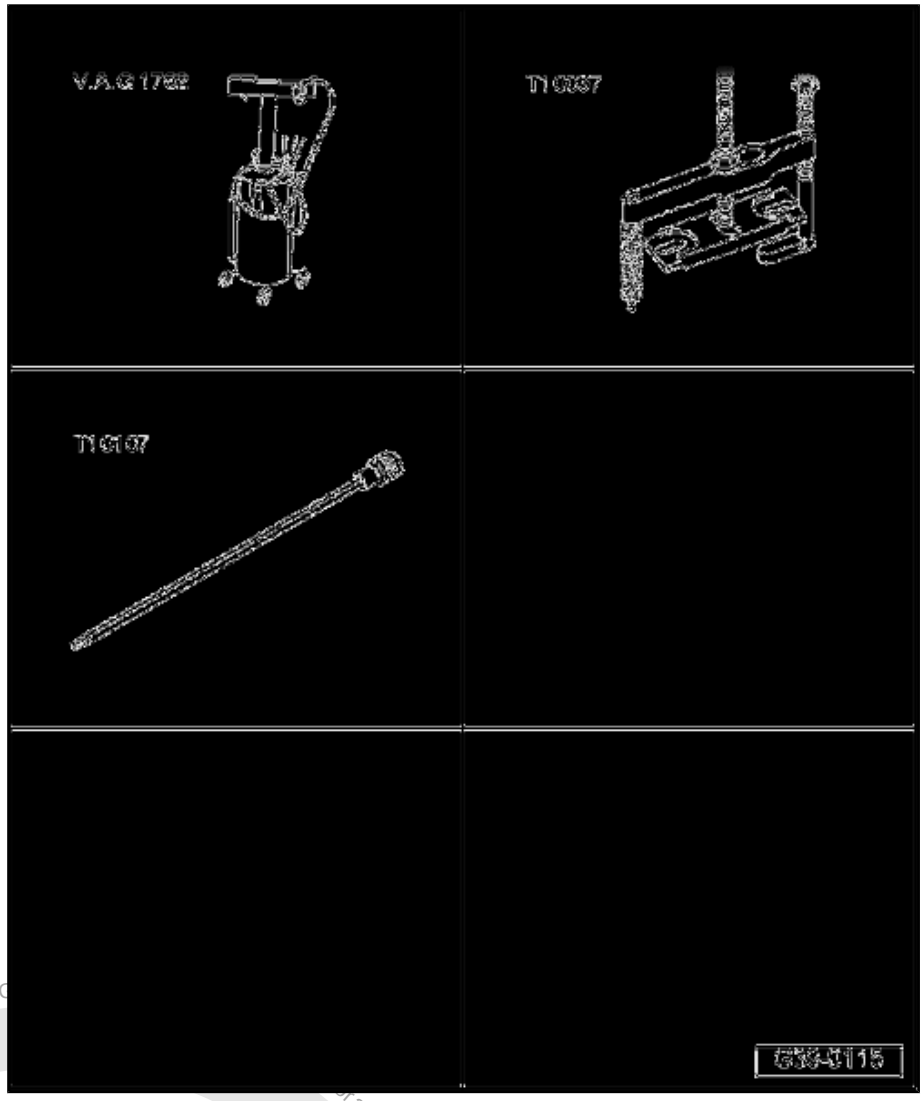


4.2 Removing and installing right flange shaft

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Special tools and workshop equipment required

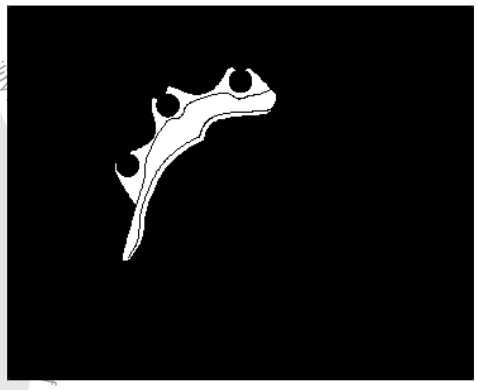
- Used oil collection and extraction unit - V.A.G 1782-
- Puller - T10037-
- Socket - T10107-



Removing

– Remove right drive shaft ⇒ Running gear - front and four-wheel drive; Rep. gr. 40 .

– Unbolt heat shield for right drive shaft from bevel box -arrows-.

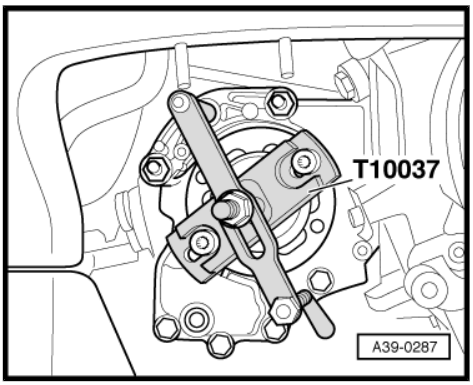


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– Position used oil collection and extraction unit - V.A.G 1782- under gearbox.
– Remove countersunk bolt for right flange shaft with socket - T10107- by screwing 2 bolts into flange and counterholding flange shaft with a lever.



– Pull out flange shaft with puller - T10037- .



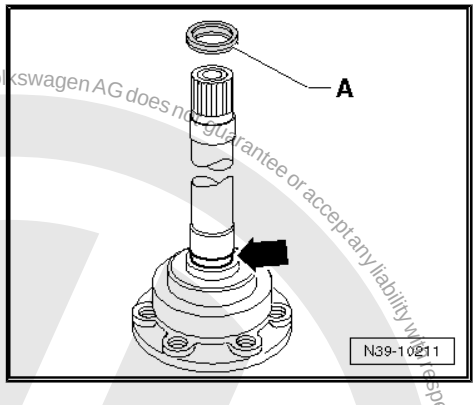
Installing

Install in reverse order of removal. During this step, observe the following:

Note

Renew flange shaft countersunk bolt.

– Remove seal -A- from groove -arrow- and renew.
– Carefully drive in flange shaft while turning it.
– Secure flange shaft with new countersunk bolt, torque specification ⇒ page 323
– Install right drive shaft ⇒ Running gear - front and four-wheel drive; Rep. gr. 40 .
– Check oil level in bevel box and top up ⇒ page 332 .



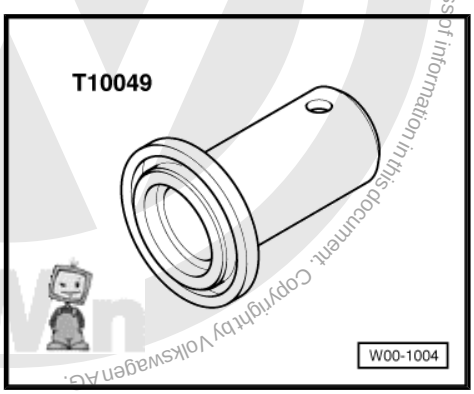
Specified torques

Component	Nm
Heat shield for drive shaft to bevel box	25

4.3 Renewing seal for right flange shaft on outside of bevel box

Special tools and workshop equipment required

♦ Thrust piece - T10049-

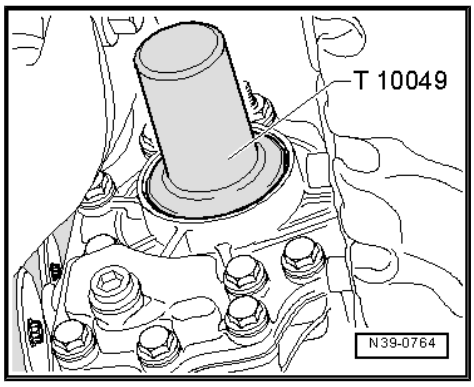


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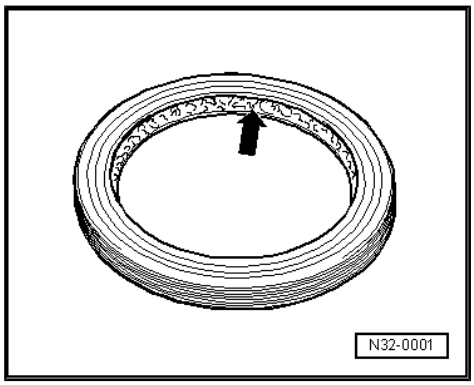
Procedure

The seal can be renewed with gearbox installed.

– Remove right flange shaft ⇒ page 325 .
– Lever out flange shaft oil seal with assembly lever.
– Drive in new oil seal to stop using thrust piece - T10049- .



– Fill space between sealing lip and dust lip -arrow- with sealing grease - G 052 128 A1- .
– Install right flange shaft ⇒ page 325 .
– Check oil level in bevel box and top up ⇒ page 332 .

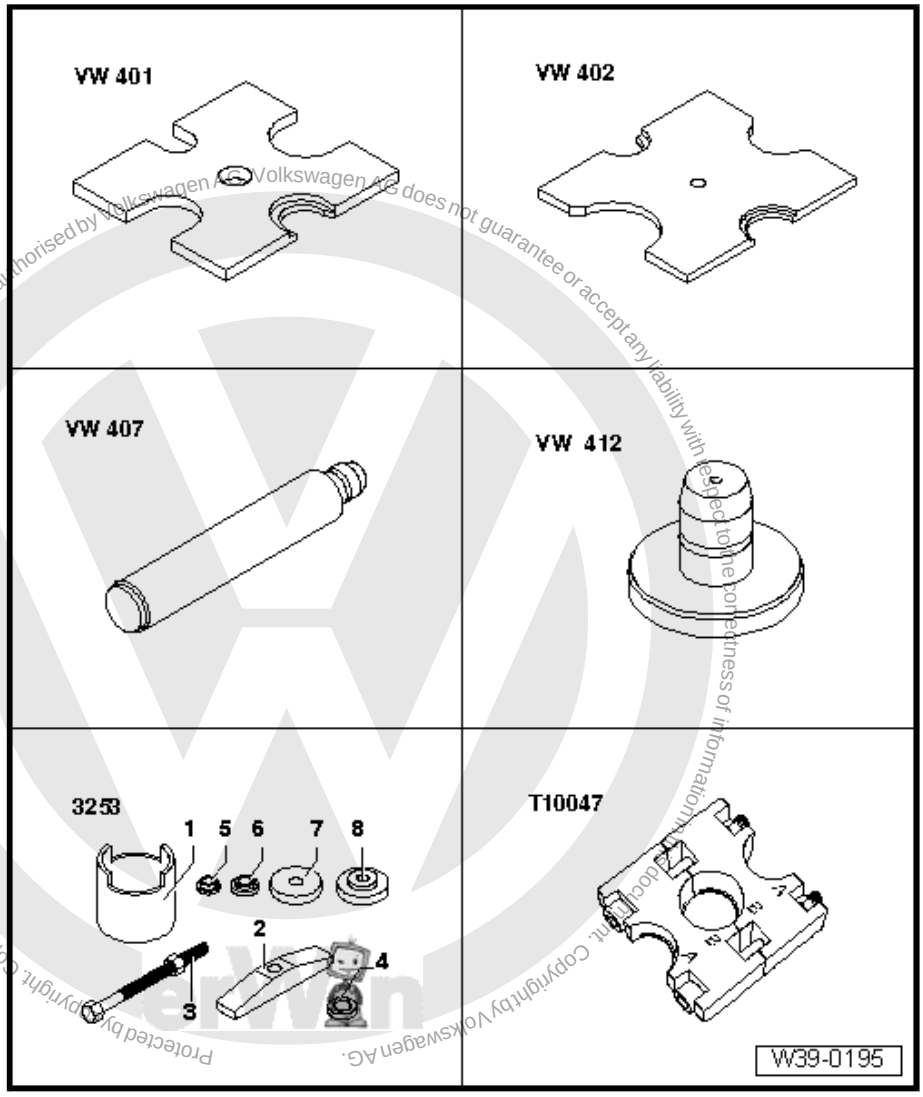


4.4 Renewing needle bearing (polygon bearing) for right output shaft drive flange

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Special tools and workshop equipment required

- Pressure plate - VW 401-
- Pressure plate - VW 402-
- Press tool - VW 407-
- Press tool - VW 412-
- Assembly tool - VAS 3253-
- Clamp - T10047-



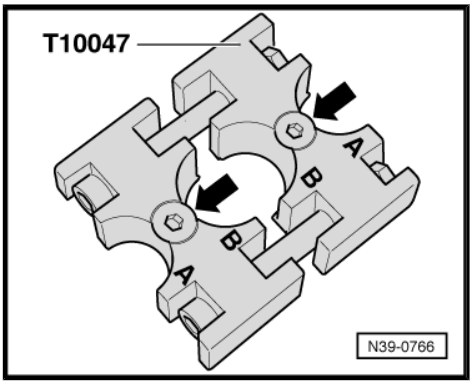
Procedure

– Remove right flange shaft ⇒ page 325 .

– Mount clamp - T10047- so that marks “B” on both parts of tool are facing one another.

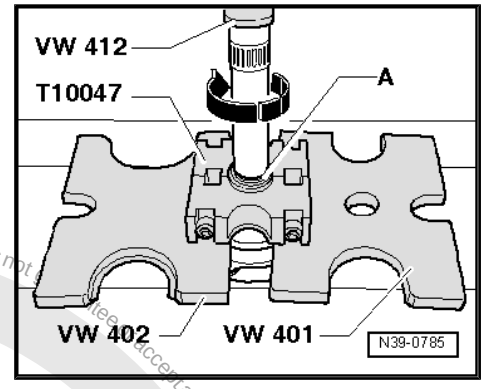
• The shoulders -arrows- must then be below the bearing.

– Screw both parts together up to stop.

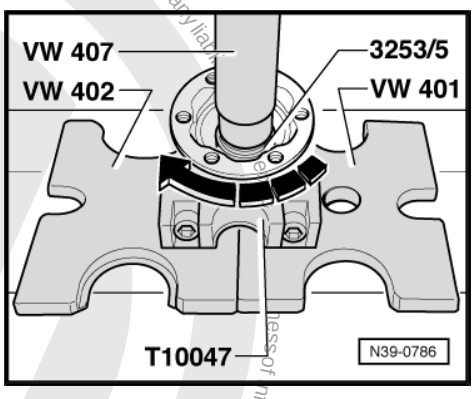


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– Remove retaining ring -A- for bearings.



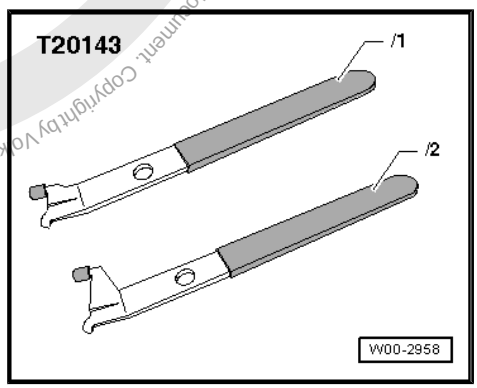
– Turn shaft while pressing it off -arrow-. This will prevent damage to bearing race on shaft.
– Secure bearing with a new retaining ring.
– Install right flange shaft ⇒ page 325 .



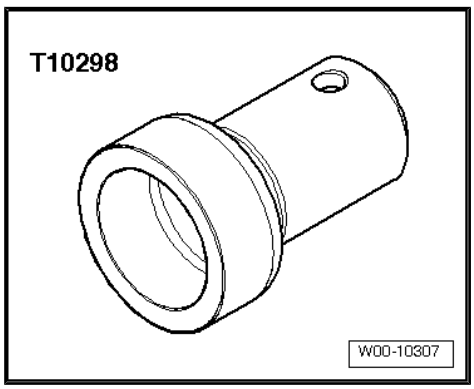
4.5 Renewing seal on bevel box between gearbox and bevel box

Special tools and workshop equipment required

♦ Extractor tool -T20143-



♦ Thrust piece - T10298-

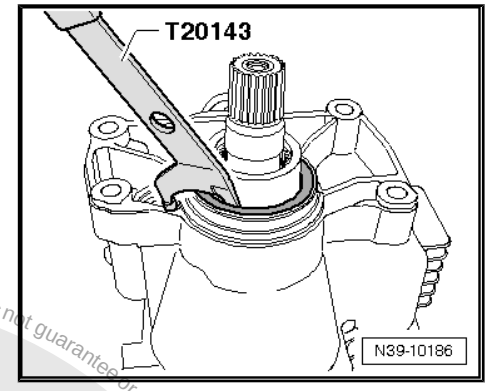


Procedure

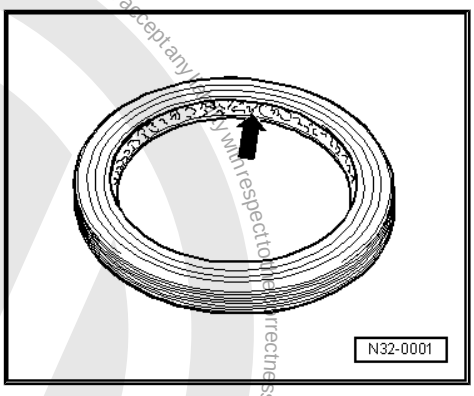
– Remove bevel box ⇒ page 284 .

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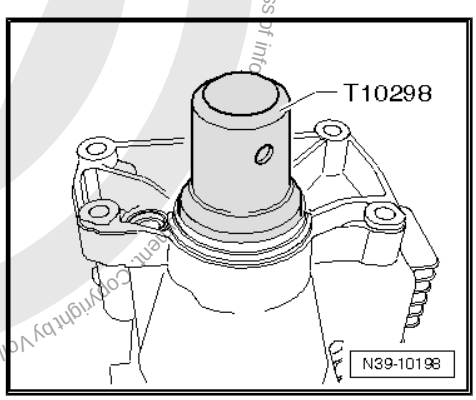
– Lever out seal on bevel box using puller hook - T20143/1- or - T20143/2- .



– Fill space between sealing lip and dust lip -arrow- with sealing grease - G 052 128 A1- .
– Lightly oil outer circumference of oil seal.



– Drive in oil seal to stop using thrust piece - T10298- .

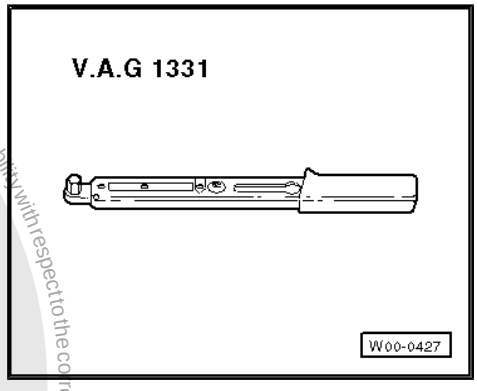


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5 Checking and topping up gear oil in bevel box

Special tools and workshop equipment required

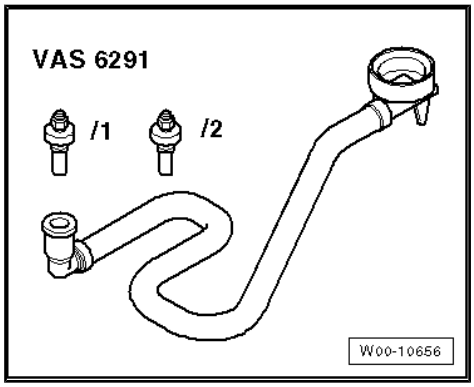
- Torque wrench - V.A.G 1331-



- Also required for topping up:
- Filling device - VAS 6291 A-



- Adapter - VAS 6291/2-



Bevel box is bolted to side of gearbox and has its own oil supply.

Gear oil specification for bevel boxes ⇒ Electronic parts catalogue “ETKA” .

5.1 Checking gear oil in bevel box

Conditions

- Bevel box must be in installation position.

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation .

– Set drip tray for workshop hoist - VAS 6208- underneath.

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Note

Cover area beneath oil filler plug -arrow- with a cloth.

– Remove oil filler plug -arrow- from bevel box.

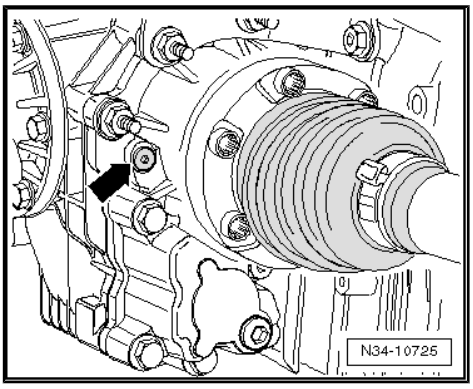
Oil filler plug -arrow- must be renewed.

Oil level is correct when bevel box is filled to lower edge of filler hole.

If oil should get on bevel box, carefully remove it.

– Top up gear oil if necessary ⇒ page 333 .

– Install new oil filler plug -arrow- and tighten to 15 Nm.



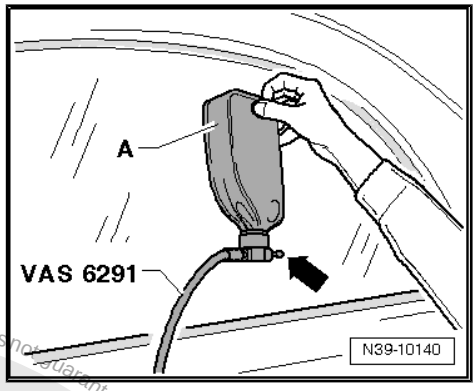
5.2 Topping up gear oil in bevel box

Conditions

- Vehicle level.

– To top up oil, use filler device - VAS 6291- .

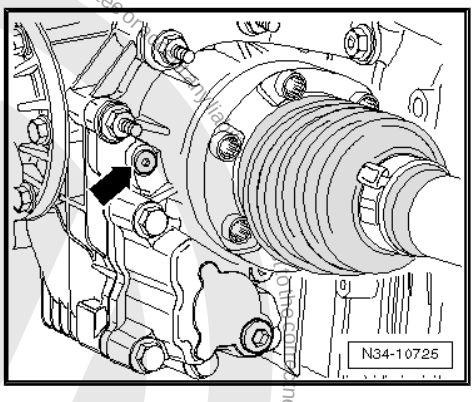
– Route hose of filler device - VAS 6291- behind right drive shaft through right wheel housing to outside.



Note

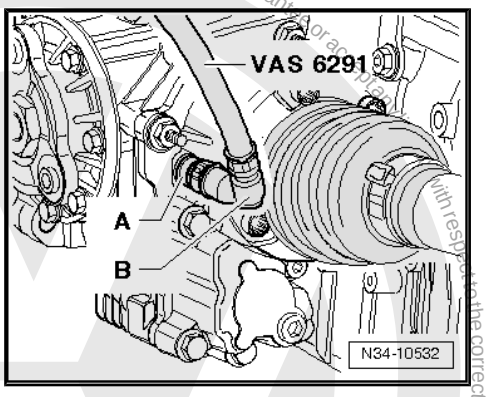
Cover area under oil filler plug -arrow- with a cloth.

– Remove oil filler plug -arrow- from bevel box.

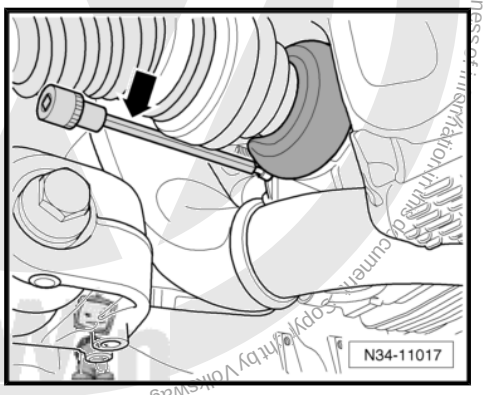


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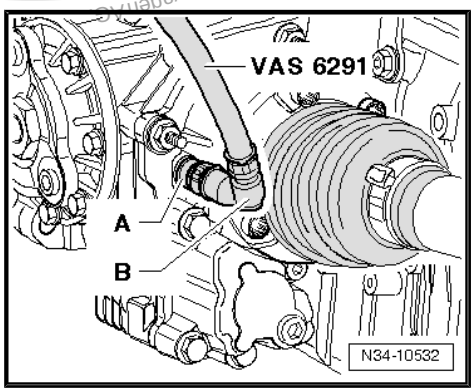
– Screw adapter - VAS 6291/2- -A- in to stop.
– An Allen key can be used for this.



-Arrow- = Allen key, 5 mm, commercially available.

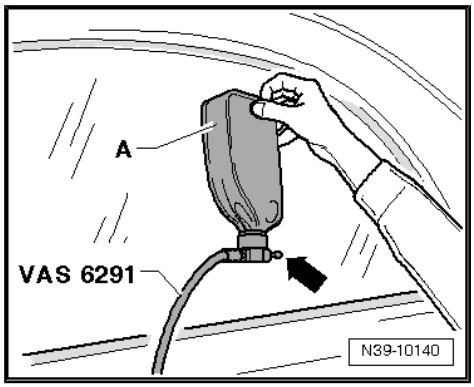


– Engage elbow -B- in adapter -A-.
• Hose must not sag.



– Ensure that valve -arrow- is closed.
– Screw oil reservoir -A- onto adapter for oil filling - VAS 6291- .
– Open valve -arrow- and hold oil reservoir up as shown in figure.

Bevel box will now be filled.

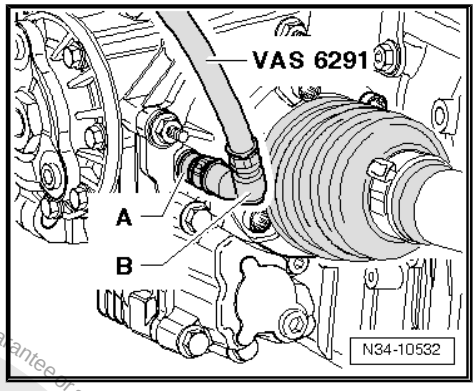


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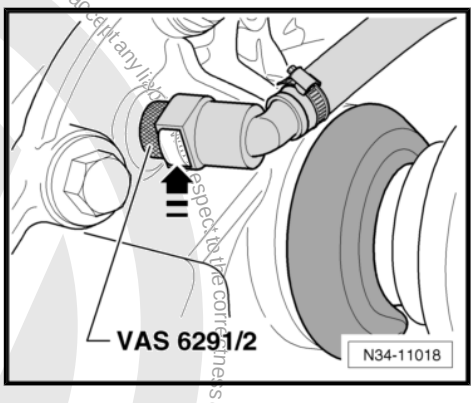
Note

- *If bevel box has been properly filled, oil will have run out at adapter -A-.*
- *Continue with filling procedure if no oil has run out yet.*

– If oil has emerged from adapter -A-, position oil reservoir so that surplus oil can run back into oil reservoir.



– When no more oil flows back, remove filler device by pushing detent in -direction of arrow-.
– Unscrew adapter - VAS 6291/2- .
– Screw in »old« oil drain plug and tighten slightly.
– Start engine, engage gear and allow gearbox to turn for approx. 2 minutes.
– Turn off engine and remove plug from oil filler hole.
– Check oil level, if necessary top up gear oil again to lower edge of filler hole.
– Install new oil filler plug -arrow- and tighten to 15 Nm.



If oil should get on bevel box, carefully remove it.

– Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 50 ; Noise insulation .

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