

11 00 Engine in general N55 B30

Cylinder		6
Bore hole	mm	84
Stroke	mm	89,6
Effective displacement	cm ³	2979
Compression ratio	:1	10,2
Max. permissible engine speed	1/min	7000
Permissible constant speed	1/min	6500
Compression pressure:		10...16
Minimum and maximum values, Valvetronic at full load.		
Compression pressure:	bar	2
Maximum deviation of all cylinders to each other.		

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11 11 Engine Block, Cylinder Crankcase N55 B30

Bore $\varnothing$ stage 0 ^{a)}	mm	84,000+0,02
Bore $\varnothing$ stage 00 a)	mm	
Bore $\varnothing$ stage 1 a)	mm	84,250+0,02
Permitted out-of-round of cylinder bore a)	mm	0,01
Permitted conicity of cylinder bore a)	mm	0,01
Permissible total wear tolerance between piston and cylinder (engine operated)	mm	0,15

a) *New condition or reworking*

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11 12 Cylinder head with lid N55 B30

Cylinder head height: Original dimension	mm	112,00 ± 0,05
Machining limit	mm	111,70 ± 0,05
Valve guides are not available as replacement parts.		
Inner diameter of installed valve guide		
Original intake valve	mm	5,00 ... 5,02
Original exhaust valve	mm	6,00 ... 6,02
Tilt clearance, maximum (wear between valve and valve guide)	mm	cannot be measured
Bearing of camshaft		
Guide bearing (width)	mm	22,00 ... 22,05

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11 12 Cylinder Head with Valve Seat Cover N55 B30

Valve seat angle	°	45
Correction angle: outer	°	35
Correction angle: Inner, exhaust valve	°	60
Correction angle: Inner, intake valve	°	65
Valve seat width: Intake	mm	1,25 +0,2
Valve seat width: Exhaust	mm	1,65+0,2
∅ theoretical valve seat		
Valve seat surface: Outside dia. inlet	mm	30,4+0,1
Valve seat surface: Outside dia. exhaust	mm	26,6+0,1

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11 66 Vacuum pump N55 B30

Vacuum pump pressure without consumer	mbar $\leq$	-950
Vacuum pump pressure with main consumer	mbar $\leq$ 7s	-550
Vacuum pump pressure with main consumer	mbar $\leq$ 15s	-800
Vacuum pump pressure with main consumer	mbar $\leq$ 120s	-900
Vacuum pump pressure with consumer	mbar $\leq$ 120s	-830

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11 21 Crankshaft and Bearings N55 B30

Grinding stage of main bearing journals		Main bearing journal number 1
Original (identification mark S/1)	mm	55,989 ... 55,983
Original (identification mark S/2)	mm	55,982 ... 55,977
Original (identification mark S/3)	mm	55,976 ... 55,970
Crankshaft bearing play, radial	mm	0,020 ... 0,046
Max. permitted runout at main bearing journal	mm	0,15

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11 21 Crankshaft and Bearings N55 B30

Grinding stage of main bearing journals		Main bearing journal numbers .2,3,4,5,6
Original (identification mark S/1)	mm	55,999 ... 55,993
Original (identification mark S/2)	mm	55,992 ... 55,987
Original (identification mark S/3)	mm	55,986 ... 55,980
Crankshaft bearing play, radial	mm	0,020 ... 0,046
Max. permitted runout at main bearing journal	mm	0,15

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11 21 Crankshaft and Bearings N55 B30

Grinding stage of main bearing journals		Guide bearing journal number 7
Original (identification mark S/1)	mm	64,999 ... 64,993
Original (identification mark S/2)	mm	64,992 ... 64,987
Original (identification mark S/3)	mm	64,986 ... 64,980
Crankshaft bearing play, radial	mm	0,020 ... 0,046
Max. permitted runout at main bearing journal	mm	0,15

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11 21 Crankshaft and Bearings N55 B30

Grinding stages, crankshaft guide bearing		
Original	mm	24,020 ... 24,053
Level 1	mm	No machining possible
Level 2	mm	No machining possible
Crankshaft side clearance	mm	0.060 ... 0.250
Coefficient of friction of crankshaft	Nm	2 to 2.5

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11 21 Crankshaft and Bearings N55 B30

Grinding stages connecting rod bearing journals		
Identification mark (b)	mm	49,9730...49,9834
Identification mark (R)	mm	49,9835...49,9930
Level 1	mm	No machining possible
Level 2	mm	No machining possible
Radial connecting-rod bearing play	mm	0,025 ... 0,071

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11 23 Vibration damper N55 B30

Max. permitted radial runout	mm	0,10
Max. permitted lateral runout	mm	0,10

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11 24 Connecting Rods and Bearings N55 B30

∅ Large connecting rod eye (without bearing)	mm	53,600 ... 53,616
Conrod bush: Inner diameter	mm	22.004 ... 22.013
Permissible total deviation of connecting rods in one engine (without bearing shells)	g	± 5

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11 25 Pistons with Rings and Pins N55 B30

Piston and pin are paired to each other - replace together only.		
Measuring point "A" (position)	mm	12
Piston diameter at measuring point "A"		
Original 7 610 295	mm	83,958 ... 83,971
Original 7 577 581	mm	83,958 ... 83,971
Original 8 619 196	mm	83,943 ... 83,956
Repair stage (new dimension)	mm	84,06 ... 84,09
Oversize (new dimension)	mm	84,23 ... 84,26
Piston installation clearance (piston new)	mm	0,01...0,03
Piston installation clearance (piston worn)	mm	0,02...0,08
Permissible total wear tolerance between piston and cylinder (engine operated)	mm	0,15



11 25 Pistons with Rings and Pins N55 B30

1st groove		
End clearance	mm	0,15...0,30
Side clearance	mm	0,020...0,060
2st groove		
End clearance	mm	0,30...0,50
Side clearance	mm	0,015...0,060
3rd groove		
End clearance	mm	0,20...0,90
Side clearance	mm	can't be measured

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11 31 Intake camshaft N55 B30

Guide bearing (width)	mm	21,890 ... 21,920
Radial runout	mm	0,054 ... 0,099
Side clearance	mm	0,08... 0,162

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11 34 Valves with Springs N55 B30

Plate dia.		
Intake	mm	32,0 ±0,05
Exhaust		28.0 ±0.1
Stem ∅		
Intake	mm	4,968 ±0,0075
Exhaust	mm	5,960±0,0075

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11 40 Oil supply N55 B30

Oil grades and consumption:		
see recommended engine oils for BMW Group engines		
Filling capacity, engine oil change with oil filter element	Liter	6,50

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11 41 Oil pump with strainer and motor N55 B30

Oil pressure at idle speed with engine at operating temperature	min bar	1,5
Control pressure with engine at operating temperature	bar	4,0 ... 6,0

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17 00 Coolant, Cooling System Test F30 / F31 / F34 / F35 / N55

Model series	F30, F31	F35	F34	F34 USA
Model designation	335i, 335ixDrive	335Li	335i	335i
Coolant quantity on vehicles with manual gearbox	6,7 l		6,9 l	6,7 l
Coolant quantity on vehicles with automatic transmission	7,2 l	8,5 l	7,1 l	7,1 l
Top-up quantity of coolant in the event of repair with disconnected coolant hoses. Observe the mixture ratio and filling level!	2,0 l	2,0 l	2,0 l	2,0 l
Test pressure for cooling system excess pressure (in bar)	1,5	1,5	1,5	1,5

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17 11 Radiator with mounting F20 / F21 / F22 / F23 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / N55 / N55 Hybrid

Cap for cooling system		
Pressure relief valve opens when the pressure exceeds the ambient pressure.	bar	1,4 +0,1 _ 0,2
Electric changeover valve must open at latest when the pressure is lower than the ambient pressure	bar	0.1
Test radiator pressure (excess pressure)	bar	1,5

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21 21 Clutch Disc and Drive Plate MANUAL

Lateral run-out of disc spring relative to pressure plate	mm	0.6
Minimum lining thickness for each side of the clutch disc:	mm	0.4
Measured lining surface to rivet closing head		

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23 00 Transmission filling capacities GS6-45DZ/BZ / MANUAL

Oil grade:		
refer to Operating Fluids Specification		
Oil capacity	litre	approx. 1,2
Oil capacity for refilling or exchange transmission	litre	Transmission or AT transmission is delivered filled

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23 00 Transmission in general S7S 47BG

Oil grade, refer to Operating Fluids		
Oil fill quantity for oil change	Litres	2.55
Oil fill quantity for initial fill or replacement transmission	Litres	2.75

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23 11 Case and Cover S6-37BZ/DZ / MECH

Temperature for installation of bearings	°C	80
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23 21 Transmission Shafts GS6-53DZ / MECH

Axial play Δ (axial bearing play) of:		
Output shaft	mm	
Input shaft	Max. mm	
Output journal:		
Radial runout	Max. mm	0.15
Output flange		
Radial runout	Max. mm	0.15
Axial runout	Max. mm	0.15

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23 23 Synchronization GS6-37BZ/DZ / MECH

Distance between synchronizer ring and clutch body		
New condition		
1st/2nd gear	mm	1.3 ... 2.05
Wear limit size	mm	1.0
3st/4nd gear	mm	0.8 ... 1.40
Wear limit size	mm	0.7
5/6st gear	mm	0.95 ... 1.5
Wear limit size	mm	0.75
Reverse gear		
New condition	mm	0.65 ... 1.25
Max. wear limit size	mm	0.5

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23 23 Synchronization GS6-53DZ

Distance between synchronizer ring and clutch body		
New condition		
1st/2nd gear	mm	2.70 ... 3.50
3rd/4th gear	mm	2.40 ... 3.10
5th/6th gear	mm	1.75 ... 2.10
Max. wear limit size	mm	
Reverse gear		
New condition	mm	2.70 ... 3.25
Max. wear limit size	mm	

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23 23 Synchronization Guide Sleeves GS6-37BZ/DZ / MECH

1st / 2nd gear	kN	10 ... 36
3rd / 4th gear	kN	20 ... 58
5th / 6th gear	kN	19 ... 55

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**24 00 Transmission filling capacities F10 / F11 / F20 / F21 / F22 / F23 / F30 / F31 / F36
GA8HP50Z**

Code letters / code on type plate or label:		
Refer to Electronic Parts Catalogue.		
Total oil filling quantity (initial filling)	approx. ltr.	8,8

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24 00 Transmission filling capacities Fxx GA8HP45Z GA8HP70Z

Code letters / code on type plate or label:		
Refer to Electronic Parts Catalogue.		
Total oil volume (transmission and torque converter drained)	Ca. ltr.	8,5

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31 00 Front axle - ride height F30

Ride height in normal position		
Attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch		
Tolerance ride height in		
- Normal position maximum 10 mm		
- Design position maximum 2 mm		
Difference ride height between left/right in		
- normal position 10 mm		
- Design position 2 mm		
Series		
16" wheel rim	mm	595
17" wheel rim	mm	610
18" wheel rim	mm	623
19" rim	mm	636
20" rim	mm	648
Sports suspension settings with low-slung		
16" wheel rim	mm	585
17" wheel rim	mm	600
18" wheel rim	mm	613
19" rim	mm	625
20" rim	mm	638
Standard suspension Japan		
16" wheel rim	mm	595
17" rim	mm	610
18" rim	mm	623
19" rim	mm	636
20" rim	mm	648
Sports suspension settings with low-slung Japan		
16" rim	mm	585
17" rim	mm	600
18" rim	mm	613
19" rim	mm	625
20" rim	mm	638
Rough road chassis and suspension, national-market version EAST		
16" rim	mm	612
17" rim	mm	628
18" rim	mm	640
19" rim	mm	653
20" rim	mm	666



31 00 Front axle - ride height F30 Alpina / Rear end

Ride height in normal position		
Attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch		
Tolerance ride height in		
- Normal position maximum 10 mm		
- Design position maximum 2 mm		
Difference ride height between left/right in		
- normal position 10 mm		
- Design position 2 mm		
Series		
20" wheel rim	mm	639

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31 00 General - Track Width / Wheelbase F30 Alpina

Track width for normal position and rim offset (ET)		
Rear-wheel drive		
- Rim offset 36	mm	1540
Four-wheel drive		
- Rim offset 36	mm	1538

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31 00 General - Track Width / Wheelbase F30 / Rear end

Track width for normal position and rim offset (ET)		
Standard suspension		
- ET 31	mm	1543
- ET 34	mm	1537
- ET 36	mm	1534
- ET 37	mm	1531
Sports suspension settings with low-slung		
- ET 31	mm	1543
- ET 34	mm	1537
- ET 36	mm	1534
- ET 37	mm	1531
Chassis and suspension (India)		
- ET 31	mm	1539
- ET 34	mm	1533
- ET 36	mm	1530
- ET 37	mm	1527
Wheelbase	mm	2810



32 00 Chassis/wheel alignment - normal position F30

Car loaded down to normal position	Vehicle with complete equipment for normal driving with: 2 x 68 kg on front seats (seats in centre position); 1 x 68 kg on rear seat (centre); 1 x 21 kg in luggage compartment (centre) and full fuel tank.
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32 00 Wheel Alignment F20 / REAR WHEEL Sports suspension settings with low-slung (except M135i)

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 29' ± 30'
Camber adjustment*		- 0° 29' ± 25'
Toe difference angle (difference between left/right max. 30')		- 1° 33'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 12'
- Outer cornering wheel	Ca. °	33° 36'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 45' ± 25'
Camber adjustment*		-1° 45' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 Alpina / REAR WHEEL

Observe test conditions!		
Front axle:		
Total toe-in		0° 10' ± 12'
Total toe-in adjustment*		0° 10' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (Difference between left/right maximum 30')		- 0° 53' ± 30'
Camber adjustment*		- 0° 53' ± 25'
Toe difference angle (difference between left/right max. 30')		- 1° 23'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 00'
- Outer cornering wheel	Ca. °	33° 24'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 50' ± 25'
Camber adjustment*		-1° 50' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 / REAR WHEEL Chassis and suspension (India)

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 02' ± 30'
Camber adjustment*		- 0° 02' ± 25'
Toe difference angle (difference between left/right max. 30')		-1° 26'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 42'
- Outer cornering wheel	Ca. °	34° 00'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 07' ± 25'
Camber adjustment*		-1° 07' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 / REAR WHEEL Japanese version

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 29' ± 30'
Camber adjustment*		- 0° 29' ± 25'
Toe difference angle (difference between left/right max. 30')		-1° 26'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 00'
- Outer cornering wheel	Ca. °	33° 24'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 40' ± 25'
Camber adjustment*		-1° 40' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 / REAR WHEEL Series

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 20' ± 30'
Camber adjustment*		- 0° 20' ± 25'
Toe difference angle (difference between left/right max. 30')		-1° 26'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 30'
- Outer cornering wheel	Ca. °	33° 48'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 30' ± 25'
Camber adjustment*		-1° 30' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 / REAR WHEEL Sports suspension settings with low-slung

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 29' ± 30'
Camber adjustment*		- 0° 29' ± 25'
Toe difference angle (difference between left/right max. 30')		- 1° 26'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 00'
- Outer cornering wheel	Ca. °	33° 24'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 45' ± 25'
Camber adjustment*		-1° 45' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



32 00 Wheel Alignment F30 / REAR WHEEL Sports suspension settings with low-slung Japan

Observe test conditions!		
Front axle:		
Total toe-in		0° 14' ± 12'
Total toe-in adjustment*		0° 14' ± 4'
Toe difference** single wheel between left/ right		max. 12'
Camber (difference between left/right max. 30')		- 0° 29' ± 30'
Camber adjustment*		- 0° 29' ± 25'
Toe difference angle (difference between left/right max. 30')		- 1° 26'
Castor angle		(difference between left/right max. 30')
Front wheel offset		0° ± 15'
Maximum steering angle		
- Inner cornering wheel	Ca. °	40° 00'
- Outer cornering wheel	Ca. °	33° 24'
Rear axle:		
Total toe-in		0° 18' ± 12'
Total toe-in adjustment*		0° 18' ± 4'
Camber (difference between left/right max. 30')		-1° 55' ± 25'
Camber adjustment*		-1° 55' ± 5'
Geometrical driving axis		0° ± 12'
*Note: To minimise adjusting errors (measuring inaccuracies), use a narrower tolerance for adjusting toe/camber.		
**Note: Toe difference front axle = criterion for steering wheel inclination		



33 00 General - track width F30 Alpina

Track width for normal position and rim offset (ET)		
Rear-wheel drive		
- Rim offset 47	mm	1556
Four-wheel drive		
- Rim offset 47	mm	1556

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33 00 General - track width F30 / REAR WHEEL

Track width for normal position and rim offset (ET)		
Standard suspension		
- ET 31	mm	1583
- ET 34	mm	1578
- ET 37	mm	1571
- ET 47	mm	1552
Sports suspension settings with low-slung		
- ET 31	mm	1586
- ET 34	mm	1581
- ET 37	mm	1574
- ET 47	mm	1554
Chassis and suspension (India)		
- ET 31	mm	1578
- ET 34	mm	1572
- ET 37	mm	1566
- ET 47	mm	1546

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33 00 Rear axle - ride height F30 Alpina / 4WD

Ride height in normal position (attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in - Normal position maximum ± 10 mm - Design position maximum ± 2 mm		
Difference ride height between left/right in - normal position 10 mm - Design position 2 mm		
Series		
20" wheel rim	mm	618

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33 00 Rear axle - ride height F30 Alpina / REAR WHEEL

Ride height in normal position (attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in - Normal position maximum ± 10 mm - Design position maximum ± 2 mm		
Difference ride height between left/right in - normal position 10 mm - Design position 2 mm		
Series		
20" wheel rim	mm	618

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33 00 Rear axle - ride height F30 / REAR WHEEL

Ride height in normal position		
(attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in		
- normal position max. ± 10 mm		
- Design position max. ± 2 mm		
Difference ride height between left/right in		
- normal position 10 mm		
- Design position 2 mm		
Series		
16" wheel rim	mm	576
17" wheel rim	mm	591
18" wheel rim	mm	604
19" rim	mm	616
20" rim	mm	629
Sports suspension settings with low-slung		
16" wheel rim	mm	565
17" wheel rim	mm	581
18" wheel rim	mm	593
19" rim	mm	606
20" rim	mm	619
Standard suspension Japan		
16" rim	mm	575
17" rim	mm	591
18" rim	mm	603
19" rim	mm	616
20" rim	mm	629
Sports suspension settings with low-slung Japan		
16" rim	mm	565
17" rim	mm	580
18" rim	mm	593
19" rim	mm	606
20" rim	mm	618
Chassis and suspension (India)		
16" rim	mm	593
17" rim	mm	609
18" rim	mm	621
19" rim	mm	634
20" rim	mm	647



33 00 Rear axle - ride height F31 Alpina / 4WD

Ride height in normal position (attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in - Normal position maximum ± 10 mm - Design position maximum ± 2 mm		
Difference ride height between left/right in - normal position 10 mm - Design position 2 mm		
Series		
20" wheel rim	mm	618

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33 00 Rear axle - ride height F31 Alpina / REAR WHEEL

Ride height in normal position (attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in - Normal position maximum ± 10 mm - Design position maximum ± 2 mm		
Difference ride height between left/right in - normal position 10 mm - Design position 2 mm		
Series		
20" wheel rim	mm	618

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33 00 Rear axle - ride height F31 / REAR WHEEL

Ride height in normal position		
(attach tape measure to bottom middle of rim flange and measure to lower edge of wheel arch)		
Tolerance ride height in		
- normal position max. ± 10 mm		
- Design position max. ± 2 mm		
Difference ride height between left/right in		
- normal position 10 mm		
- Design position 2 mm		
Series		
16" wheel rim	mm	576
17" wheel rim	mm	591
18" wheel rim	mm	604
19" rim	mm	616
20" rim	mm	629
Sports suspension settings with low-slung		
16" wheel rim	mm	565
17" wheel rim	mm	581
18" wheel rim	mm	593
19" rim	mm	606
20" rim	mm	619
Standard suspension Japan		
16" rim	mm	575
17" rim	mm	591
18" rim	mm	603
19" rim	mm	616
20" rim	mm	629
Sports suspension settings with low-slung Japan		
16" rim	mm	565
17" rim	mm	580
18" rim	mm	593
19" rim	mm	606
20" rim	mm	618



33 10 Rear axle final drive 168LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,75

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33 10 Rear axle final drive 188LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,8

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33 10 Rear axle final drive 215LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,9

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33 10 Rear axle final drive 168LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,75

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33 10 Rear axle final drive 188LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,8

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33 10 Rear axle final drive 215LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,9

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33 10 Rear axle final drive 168LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,75

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33 10 Rear axle final drive 188LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,8

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33 10 Rear axle final drive 215LW

Use only approved final drive oils (refer to BMW Service Operating Fluids).		
New oil quantity	ltr.	0,9

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34 .. Specifications for brake performance testing as part of regular periodic vehicle inspections as prescribed in § 29 StVZO German Motor Vehicle Safety Standards F30

Model series	F30
Base model	328i
Remarks	Saloon/sedan
Approved gross vehicle weight (kg)	1960 kg
Maximum brake pedal force to achieve a deceleration rate of 58 % in (N)	170 N
Minimum front axle brake force ratio in %	52,8 %
Minimum proportion of rear axle braking force in %	20,6 %
Test area for brake pedal force (N)	70 – 150 N

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34 11 Front Brake F30

Attention! Installation of new brake pads is approved only provided that the brake disc thickness exceeds the specified dimension for "MIN TH" (see table). Brake discs must be replaced when they reach the nominal thickness (see table) minus 2.4 mm! (Not applicable to perforated brake discs and M vehicles) . Applies only to M vehicles and perforated ventilated brake discs: The brake discs must be replaced once they wear to the nominal specified thickness (see table) minus 1.6 mm! . Depending on: - Engine type - Transmission version - Equipment specification (e.g. maximum load increase, chassis official-use, national version, etc.) different brake discs can be fitted The brake discs must always be assigned by way of the relevant vehicle identification number and the Electronic Parts Catalogue!		
Different thicknesses on brake linings	Max. mm	0,01
(MIN TH) is stamped in brake disc chamber	mm	22,4
Nominal size (diameter x thickness)	mm	330x24
(MIN TH) is stamped in brake disc chamber	mm	22,4
Nominal size (diameter x thickness)	mm	312x24
(MIN TH) is stamped in brake disc chamber	mm	20,4
Nominal size (diameter x thickness)	mm	300x22
(MIN TH) is stamped in brake disc chamber	mm	28,4
Nominal size (diameter x thickness)	mm	340x30
(MIN TH) is stamped in brake disc chamber	mm	28,4
Nominal size (diameter x thickness)	mm	370x30
Wear warning from residual lining thickness	mm	3,7



34 21 Rear Brake Discs F30

Important! Installation of new brake pads is approved only provided that the brake disc thickness exceeds the specified dimension for "MIN TH" (see table). Brake discs must be replaced when they reach the nominal thickness (see table) minus 2.4 mm! (Not applicable to perforated brake discs and M vehicles) . Applies only to M vehicles and perforated ventilated brake discs: The brake discs must be replaced once they wear to the nominal specified thickness (see table) minus 1.6 mm! . Depending on: - Engine type - Transmission version - Equipment specification (e.g. maximum load increase, chassis official-use, national version, etc.) different brake discs can be fitted The brake discs must always be assigned by way of the relevant vehicle identification number and the Electronic Parts Catalogue!		
Different thicknesses on brake linings	Max. mm	0,01
Nominal size (diameter x thickness)	mm	300x20
(MIN TH) is stamped in brake disc chamber	mm	18,4
Nominal size (diameter x thickness)	mm	330x20
(MIN TH) is stamped in brake disc chamber	mm	18,4
Nominal size (diameter x thickness)	mm	345x24
(MIN TH) is stamped in brake disc chamber	mm	22,4
Wear warning from residual lining thickness	mm	3,7



36 10 Wheels One-part alloy wheels

Max. radial runout of tire	max. mm	1.1
Rim with tire		
Max. axial runout of tire	max. mm	1.3
Rim with tire		
Max. radial runout out rim	max. mm	0.3
Max. axial runout of rim	max. mm	0.3
Max. imbalance for each side (before balancing)	max. g	90 for clamp weights 120 for stick-on weights
Permissible residual imbalance for each side (after balancing)	max. g	4
Elimination of imbalance: Up to 60 g with one weight or more than 60 g with two weights		

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36 10 Wheels Steel and aluminium strip wheels

Max. radial runout of tire	max. mm	1.6
Rim with tire		
Max. axial runout of tire	max. mm	1.8
Rim with tire		
Max. radial runout out rim	max. mm	0.8
Max. axial runout of rim	max. mm	0.8
Max. imbalance for each side (before balancing)	max. g	90 for clamp weights 120 for stick-on weights
Permissible residual imbalance for each side (after balancing)	max. g	4
Elimination of imbalance: Up to 60 g with one weight or more than 60 g with two weights		

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36 10 Wheels Two-part alloy wheels

Max. radial runout of tire	max. mm	1.3
Rim with tire		
Max. axial runout of tire	max. mm	1.5
Rim with tire		
Max. radial runout out rim	max. mm	0.5
Max. axial runout of rim	max. mm	0.5
Max. imbalance for each side (before balancing)	max. g	90 for clamp weights 120 for stick-on weights
Permissible residual imbalance for each side (after balancing)	max. g	4
Elimination of imbalance: Up to 60 g with one weight or more than 60 g with two weights		

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61 71 Windscreen washer system All F-series

Filling capacity, fluid reservoir, windscreen washer system F15,F16,F85,F86	Liter	5.5
Filling capacity, fluid reservoir, windscreen washer system F01,F02,F03,F04,F06,F07,F10,F11,F12,F13,F18,F25,F25	Liter	5.0
Filling capacity, fluid reservoir, windscreen washer system F20,F21,F22,F23,F30,F31,F32,F33,F34,F35,F36,F80,F82,F83,F87	Liter	3.0

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63 12 Headlight F30,F31,F32,F33,F34,F35,F36,F80,F82,F83

Xenon headlight bulb	Xenon bulb with ignition unit,D1 12V 35W
Daytime driving lights/side lights, xenon headlight	LED module
Light bulb - turn indicator (halogen headlight/Xenon headlight)	12V 21W PSY 24 W
Driving light / daytime riding light / side light (LED headlight)	LED module
Light bulb - turn indicator (LED headlight)	LED module
Bulb - low-beam headlight (halogen headlight)	H7/55W , Longlife 12V 55WH7
Light bulb - high-beam headlight (halogen headlight)	H7/55W , Longlife 12V 55WH7
Bulb - side lights (halogen headlight)	6W Halogen
Bulb - daytime driving lights (halogen headlight)	PW 24W
Bulb - Fog lights	H8 12V 35W

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63 21 Rear light cluster F30 / F31 / F35 / F80

Light bulb - turn indicator	P21W, 12V 21W
Light bulb - brake light	P21W, 12V 21W
Bulb â€” rear light	LED
Light bulb - rear fog light	12V 27W or H21W, 12V 21W
Light bulb - reversing light	P21W, 12V 21W
Bulb - 3rd Brake light	LED

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63 26 Number plate light F-series

LED number plate light	LED
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63 31 Interior lighting F01 / F02 / F03 / F06 / F07 / F10 / F11 / F12 / F13 / F18 / F20 / F21 / F22 / F23 / F25 / F30 / F31 / F32 / F33 / F34 / F35 / F36 / F80 / F82 / F83 / F87

Interior light, front	W6 W 12 V 6 W xenon
Reading light, front	W6 W 12 V 6 W xenon
Interior light, rear	W6 W 12 V 6 W xenon
Reading light, rear	W6 W 12 V 6 W xenon
Interior light, side	12 V 5 W
Vanity mirror light	T5 12 V 2.3 W
Luggage compartment light	12 V 10 W festoon
.	W8W 12 V 8 W
Tailgate light	12 V 10 W festoon
Glove box	W5 W 12 V 5 W
Footwell, front	W5 W 12 V 5 W
Footwell, rear	W5 W 12 V 5 W
Door entry lighting	W5 W 12 V 5 W
Rear vanity mirror light	12 V 10 W festoon
Interior LED technology lights can only be replaced completely! .	

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64 50 air conditioning, refrigerant amounts F20, F21, F22, F23, F30, F31, F32, F33, F34, F35, F36, F54, F55, F56, F57, F80, F82, F83, F87

F20, F21, F22, F23, F30 without hybrid 3/PHEV, F31, F32, F33, F34, F35, F36, B37 / B38 /B47	Refrigerant capacity (The data on the type plate in the engine compartment is definitive) Sourcing reference for refrigerant in Electronic Parts Catalogue	g	500±10
F20, F21, F22, F23, F30 without hybrid 3/PHEV, F31, F32, F33, F34, F35, F36, B48/B58	Refrigerant capacity (The data on the type plate in the engine compartment is definitive) Sourcing reference for refrigerant in Electronic Parts Catalogue	g	540±10
F20, F21, F22, F23, F30 without hybrid 3/PHEV, F31, F32, F33, F34, F35, F36, F80, F82, F83, F87 Other motorisation	Refrigerant capacity (The data on the type plate in the engine compartment is definitive) Sourcing reference for refrigerant in Electronic Parts Catalogue	g	550±10
F30 hybrid 3/PHEV	Refrigerant capacity (The data on the type plate in the engine compartment is definitive) Sourcing reference for refrigerant in Electronic Parts Catalogue	g	740±10
F54, F55, F56, F57	Refrigerant capacity (The data on the type plate in the engine compartment is definitive) Sourcing reference for refrigerant in Electronic Parts Catalogue	g	490±10



64 51 Heating and air-conditioning unit (evaporator), switching elements

Resistance as a function of temperature	°C/kΩ	-5/11.4 ... 11.9 0/8.8 ... 9.2 5/6.8 ... 7.2 10/5.3 ... 5.6 15/4.2 ... 4.5 20/3.3 ... 3.6 25/2.6 ... 2.9 30/2.1 ... 2.3 35/1.7 ... 1.9
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64 51 Heating and air-conditioning unit (expansion valve), switching elements

Inlet pressure (excess pressure)	bar	14
Outlet pressure (excess pressure)	bar	1.8
Leak test with detector at excess pressure	bar	1 ... 2

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