

2005 BMW Z4
2003-05 SUSPENSION Wheels & Tires - Repair Instructions - Z4

2003-05 SUSPENSION

Wheels & Tires - Repair Instructions - Z4

WHEELS

36 10 209 CHECKING FRONT AND REAR WHEEL FOR FACE AND RADIAL RUNOUT

Special tools required:

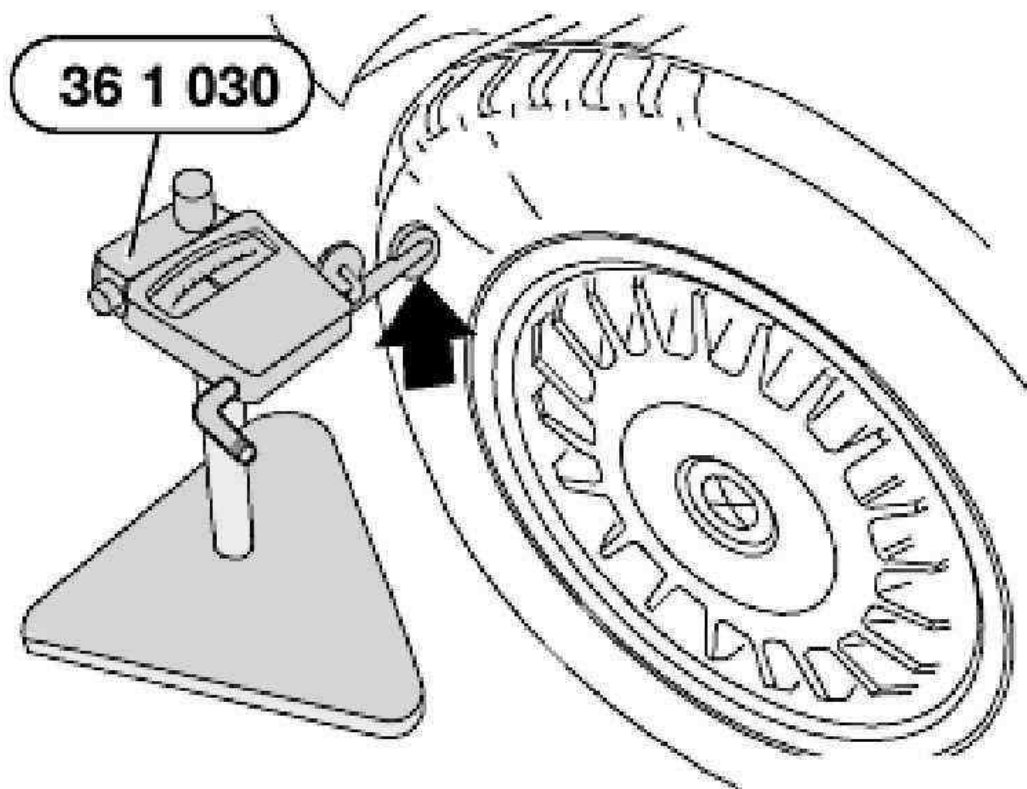
- 36 1 030

Necessary preliminary tasks:

- Check wheel bearings

Lift vehicle.

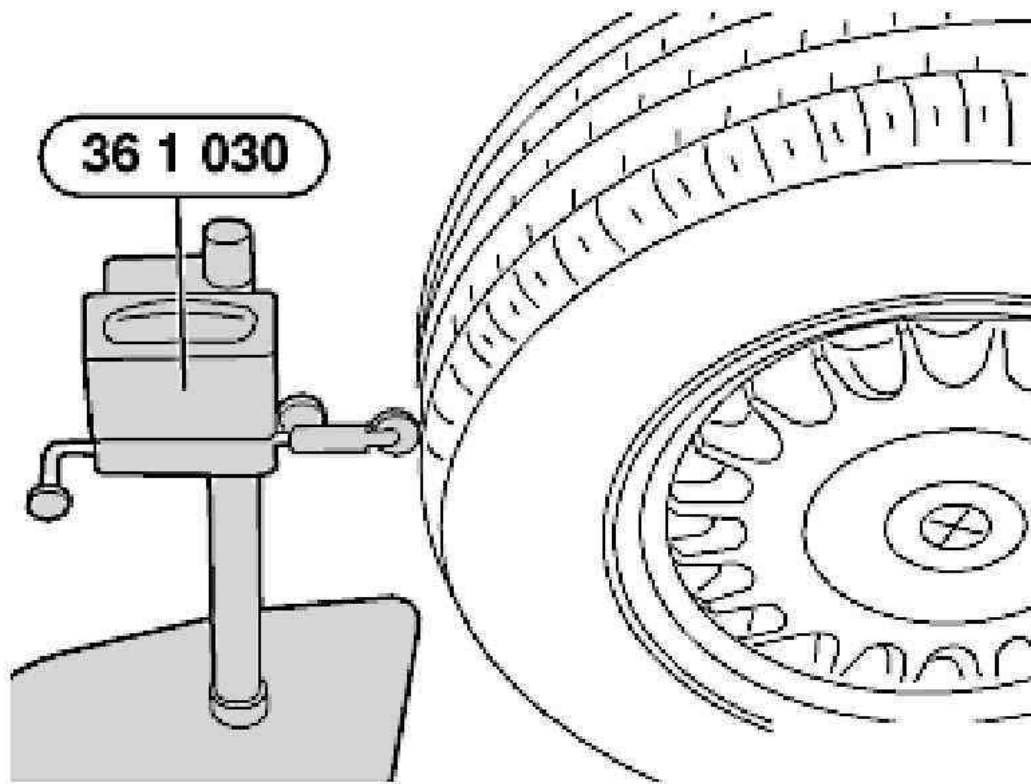
Check wheel with special tool 36 1 030 (measuring fixture) for lateral runout.



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Fig. 1: Checking Wheel With Special Tool 36 1 030 For Lateral Runout
Courtesy of BMW OF NORTH AMERICA, INC.

Check wheel with special tool 36 1 030 (measuring fixture) for radial runout.

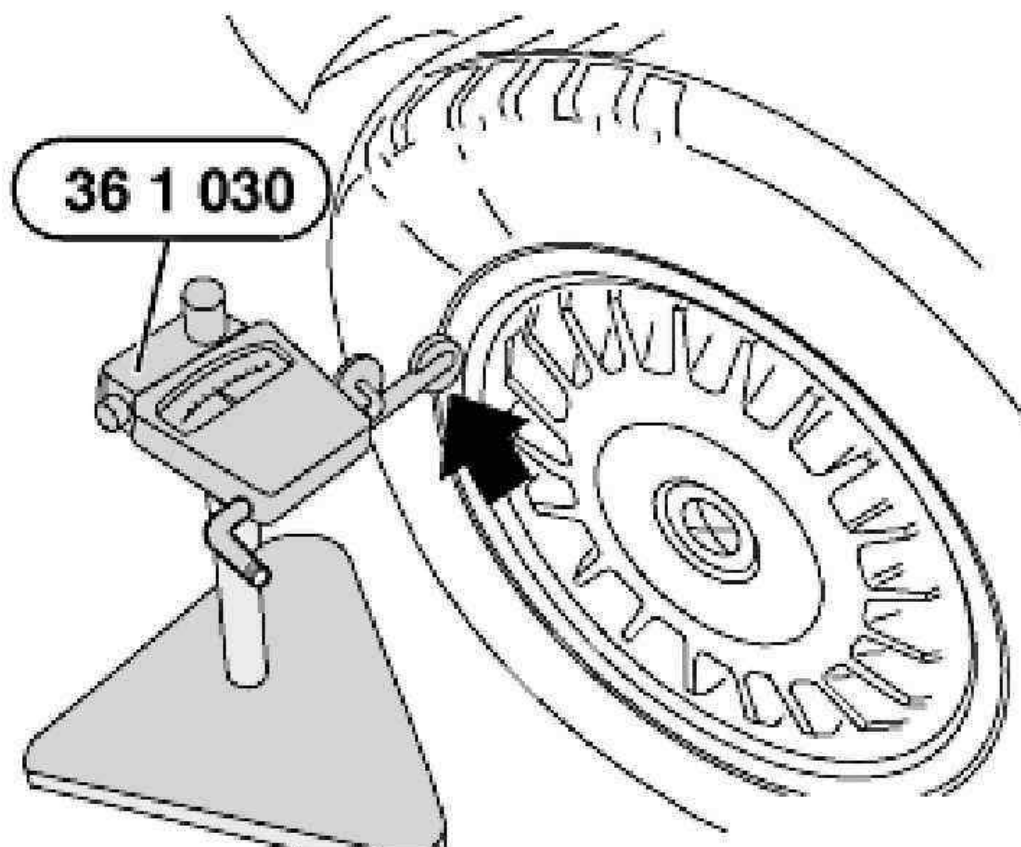


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Fig. 2: Checking Wheel With Special Tool 36 1 030 For Radial Runout
Courtesy of BMW OF NORTH AMERICA, INC.

If applicable, remove balance weights.

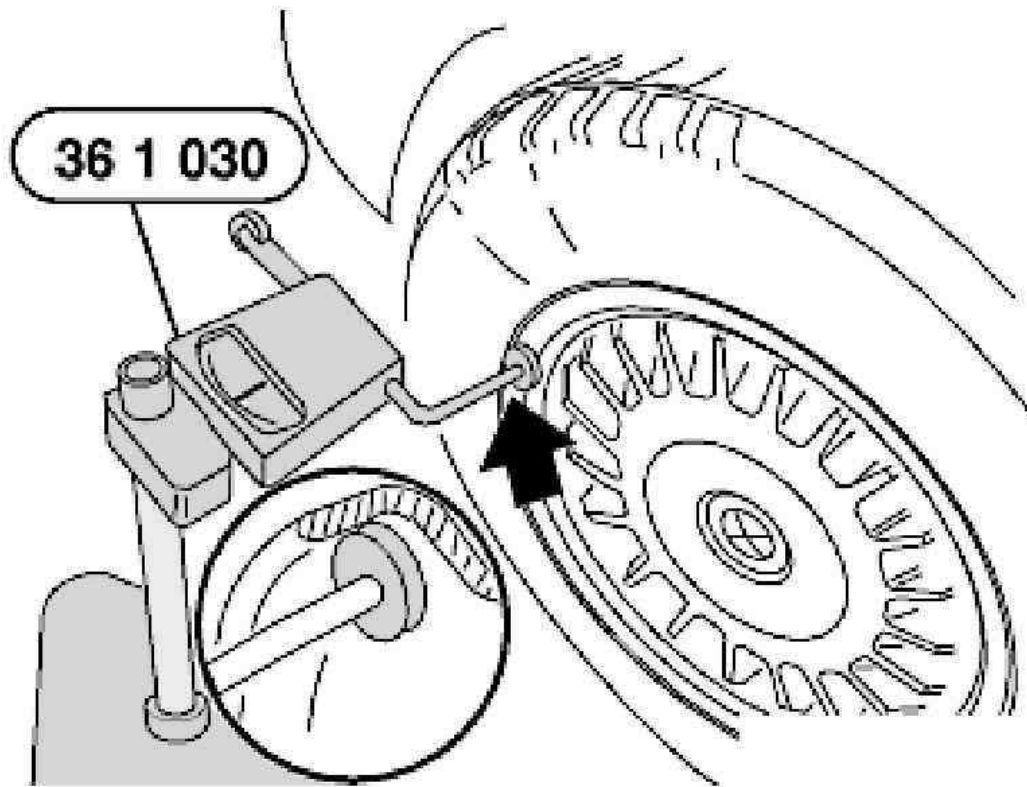
Check lateral runout of rim with special tool 36 1 030 (measuring fixture).



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Fig. 3: Checking Lateral Runout Of Rim With Special Tool 36 1 030
Courtesy of BMW OF NORTH AMERICA, INC.

Check radial runout of rim with special tool 36 1 030 (measuring fixture).



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Fig. 4: Checking Radial Runout Of Rim With Special Tool 36 1 030
Courtesy of BMW OF NORTH AMERICA, INC.

36 10 300 REMOVING OR INSTALLING FRONT OR REAR WHEEL

Special Tools Required:

- 36 1 250
- 36 1 300

IMPORTANT: Wheel was balanced electronically.

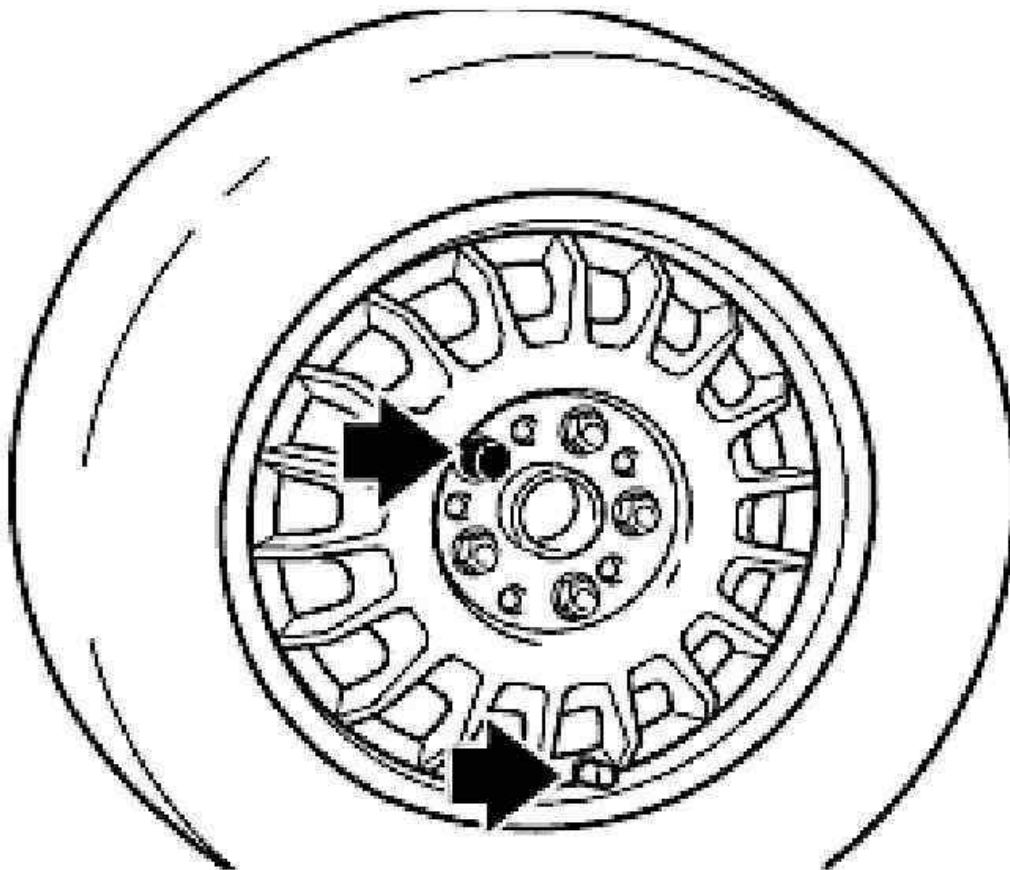
Observe the following in order to avoid positioning errors and imbalance:

- Loosen wheel bolts.
- Wheel positioned with valve facing down.
- If several wheels are removed at the same time, mark the installation location of the wheels on the tires

(e.g. with chalk).

- Mark out wheel to wheel hub.
- Mark out lockable wheel bolt in relation to wheel.
- Release wheel bolts and remove wheel.

IMPORTANT: Contact faces between brake disk and disk wheel and between brake disk and wheel hub must be free of grease.
Follow instructions on initializing Run Flat Indicator (RPA). See owner's manual.



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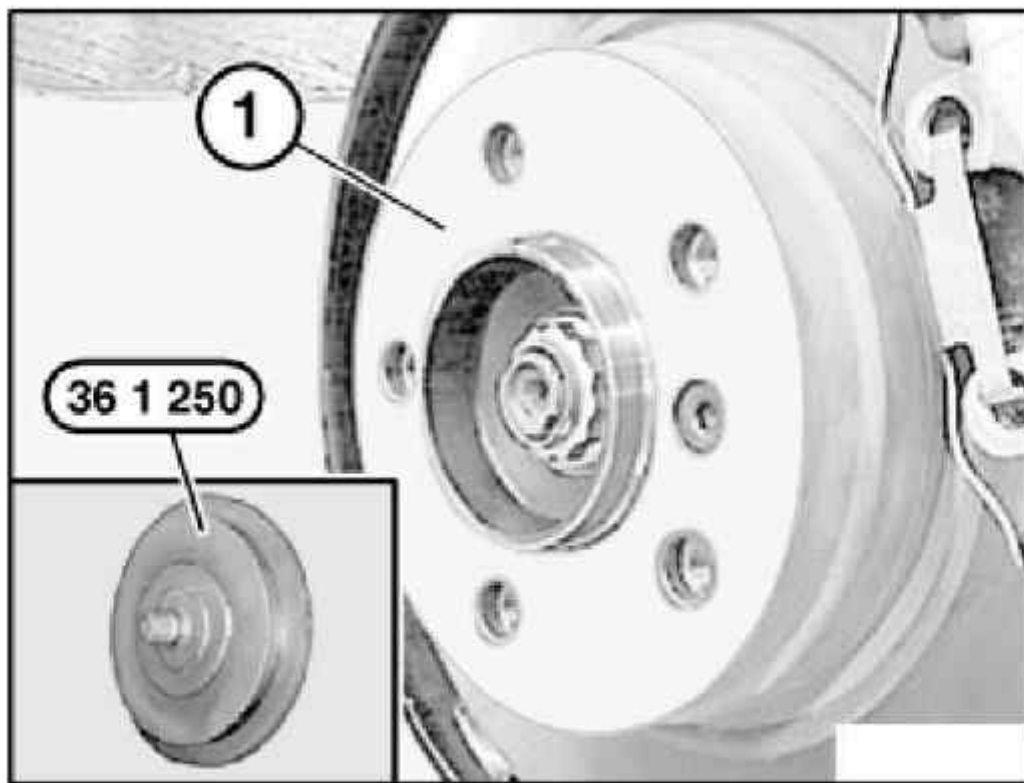
Fig. 5: Loosening Wheel Bolts
Courtesy of BMW OF NORTH AMERICA, INC.

Remove dirt, grease residues and corrosion from contact face (1) with a drill and special tool 36 1 250.

IMPORTANT: Do not operate special tool 36 1 250 with an impact screwdriver!

NOTE: Degrease contact face with universal cleaner.

NOTE: If there are grease residues in the area of the wheel stud bore, the brake disk must be removed and cleaned.



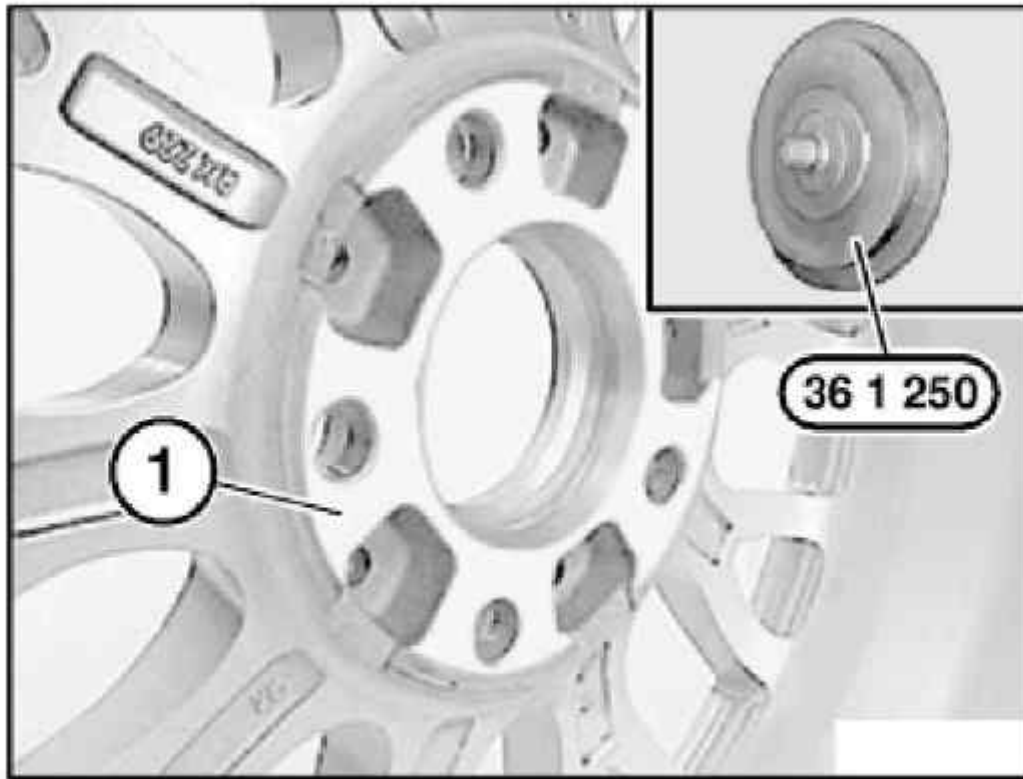
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Fig. 6: Removing Dirt, Grease Residue And Corrosion From Contact Face (1 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

Remove dirt, grease residues and corrosion from contact face (1) with a drill and special tool 36 1 250.

IMPORTANT: Do not operate special tool 36 1 250 with an impact screwdriver!

NOTE: Degrease contact face with universal cleaner.

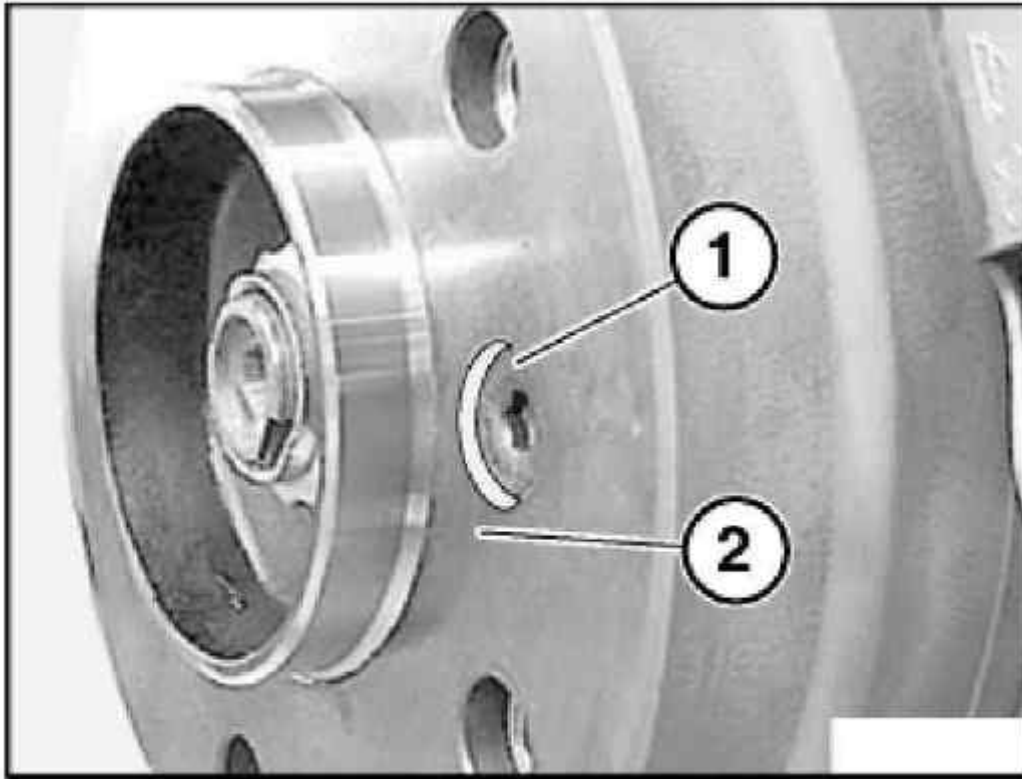


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Fig. 7: Removing Dirt, Grease Residue And Corrosion From Contact Face (2 Of 2)
Courtesy of BMW OF NORTH AMERICA, INC.

Check brake disk retaining bolt (1) for secure seating.

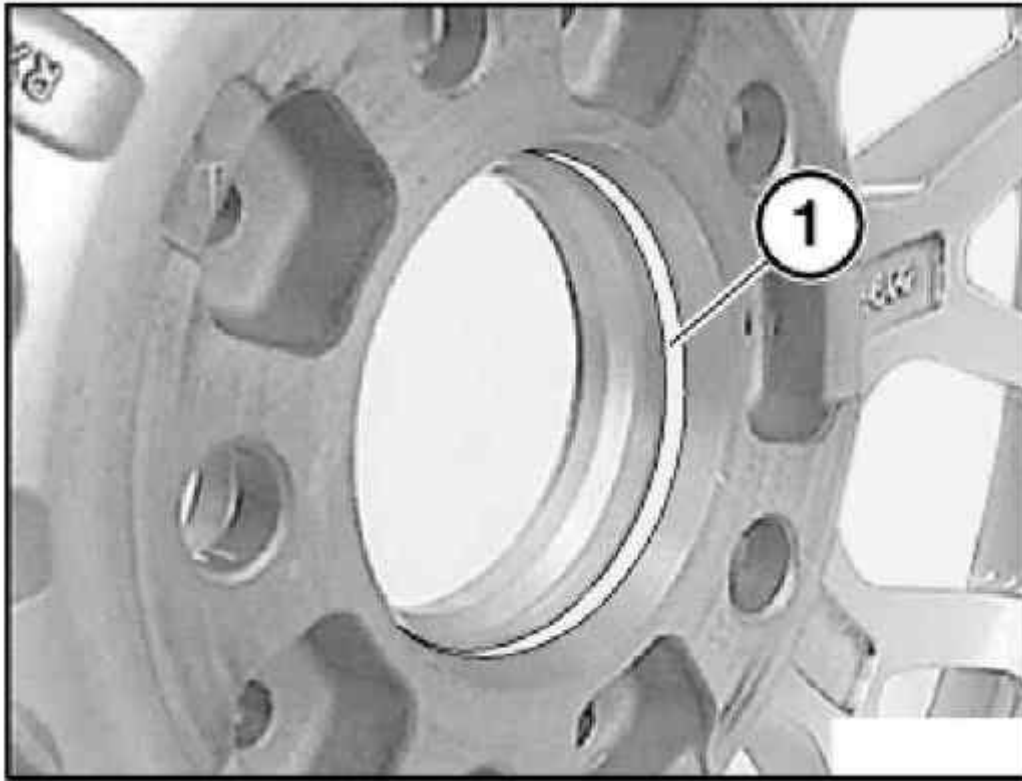
IMPORTANT: Brake disk retaining bolt must under no circumstances protrude over contact face (2) between brake disk and disk wheel.
Tightening torque for brake disk retaining screw, see 34 11 1AZ (front axle), or 34 21 1AZ (rear axle) in **BRAKES - TIGHTENING TORQUES** .



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Fig. 8: Checking Brake Disk Retaining Bolt
Courtesy of BMW OF NORTH AMERICA, INC.

Apply a thin coat of grease to wheel centering (1) in disk wheel.



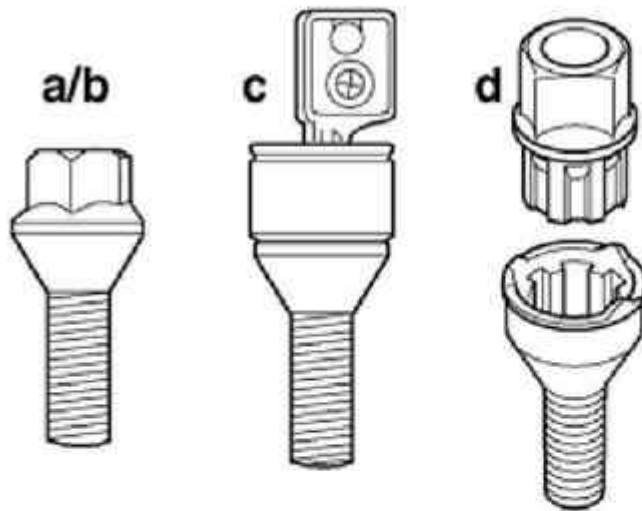
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Fig. 9: Applying Thin Coat Of Grease To Wheel Centering In Disk Wheel
Courtesy of BMW OF NORTH AMERICA, INC.

Wheel studs with taper:

- a. Wheel bolt - galvanized
- b. Wheel bolt - black chrome plated
- c. Wheel bolt - black chrome plated and lockable
- d. Lockable wheel stud with adapter, black chrome-plated

NOTE: To release and tighten down lockable wheel stud, use a matching adapter from special tool 36 1 300 (wheel stud adapter set).



- a) Wheel bolt - galvanised
- b) Wheel bolt - black chrome plated
- c) Wheel bolt - black chrome plated and lockable
- d) Lockable wheel stud with adapter, black chrome-plated

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Fig. 10: Identifying Wheel Studs With Taper
Courtesy of BMW OF NORTH AMERICA, INC.

Clean wheel bolts and check threads for damage, replace, if necessary.

Replace rusty wheel bolts.

IMPORTANT: Do not apply oil to new wheel bolts.

In the case of used wheel bolts, apply an extremely thin coating of engine oil to the threads and tapers before reinstalling them.

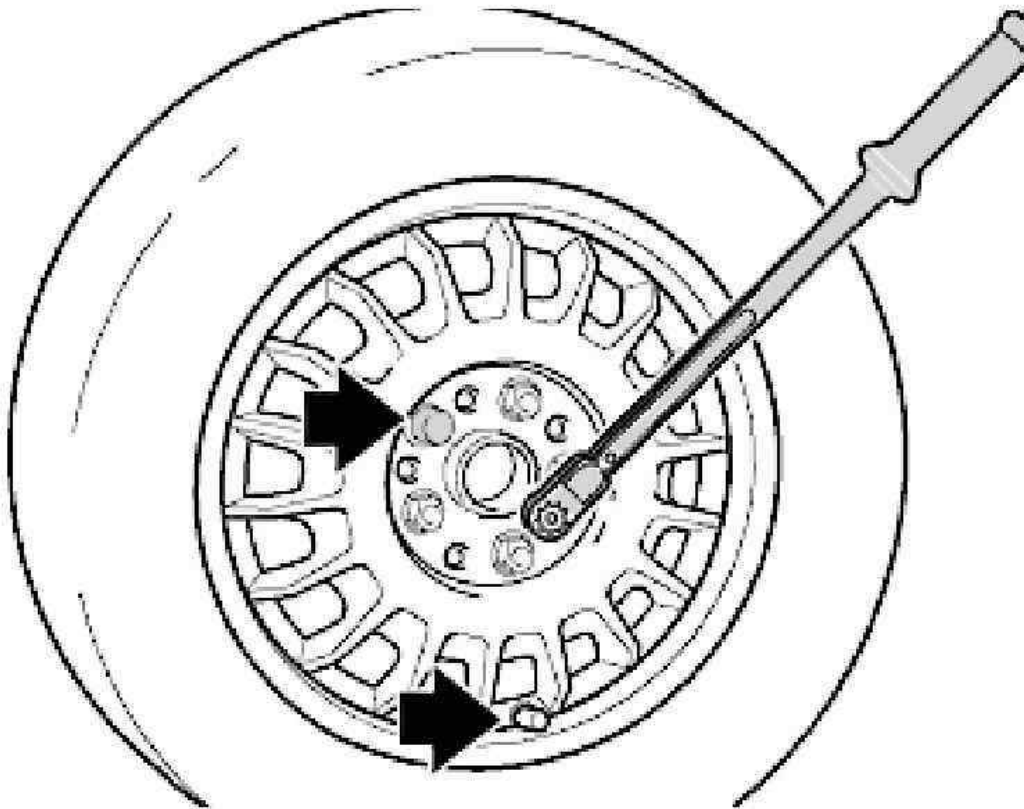
IMPORTANT: Under no circumstances use pneumatic or power screwdrivers to install and tighten the wheel bolts.

IMPORTANT: Disk wheel must rest uniformly against brake disk.

Screw in wheel studs and, to center disk wheel, tighten down by hand diagonally and evenly.

Using torque wrench, firmly tighten wheel studs in diagonal and even sequence.

Tightening torque, see 36 10 1AZ in **WHEEL AND TIRES - TIGHTENING TORQUES**



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Fig. 11: Tightening Wheel Studs

Courtesy of BMW OF NORTH AMERICA, INC.

36 10 508 BALANCING WHEEL DYNAMICALLY (WHEEL REMOVED)

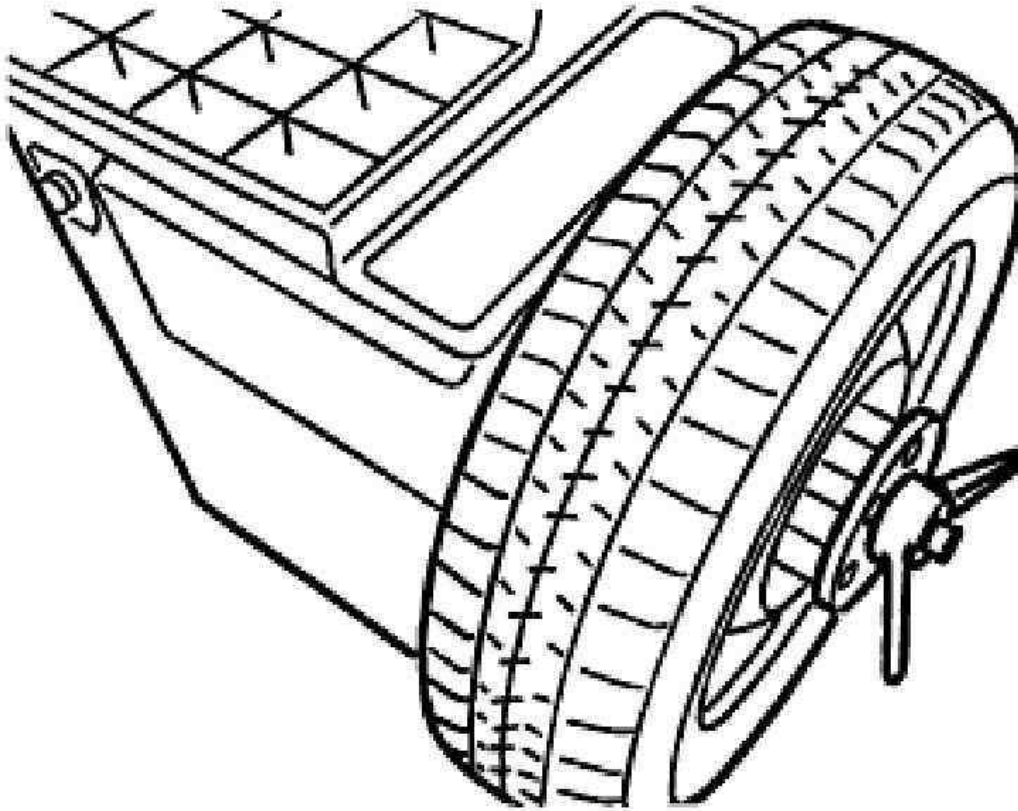
Special tools required:

- 36 1 010
- 36 1 020

IMPORTANT: Use only BMW-approved balance weights.

Remove any fitted balancing weights, stones in tread pattern and larger contaminants.

Check tire pressure, check tire for condition, damage, flat spots (out-of-round caused by e.g. stopping the car with hot tires); if necessary, check wheel and tire for **Radial And Lateral Runout** .

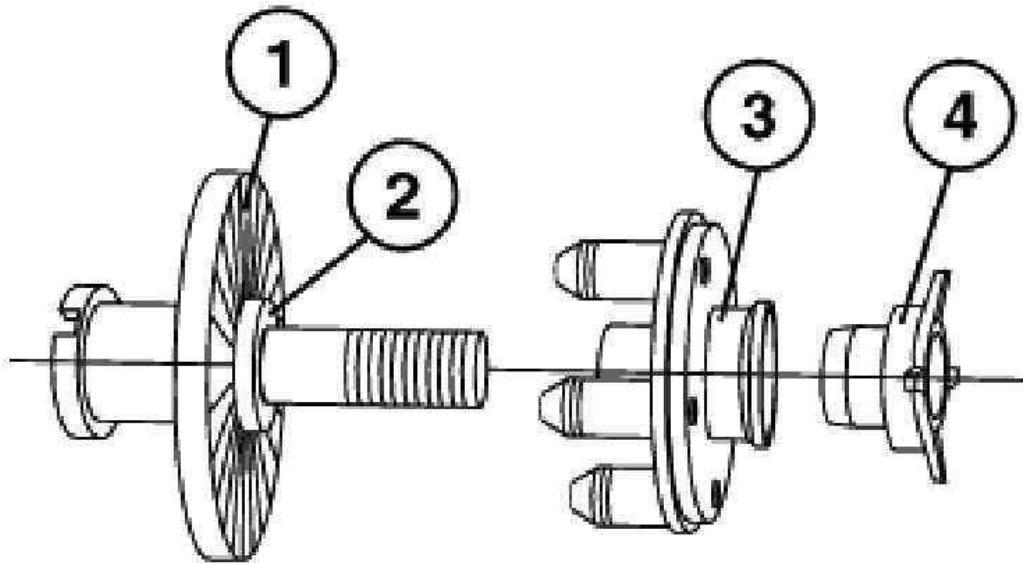


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Fig. 12: Removing Weights, Stones In Tread, And Larger Contaminants
Courtesy of BMW OF NORTH AMERICA, INC.

Use BMW-approved centering elements.

1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut



1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut

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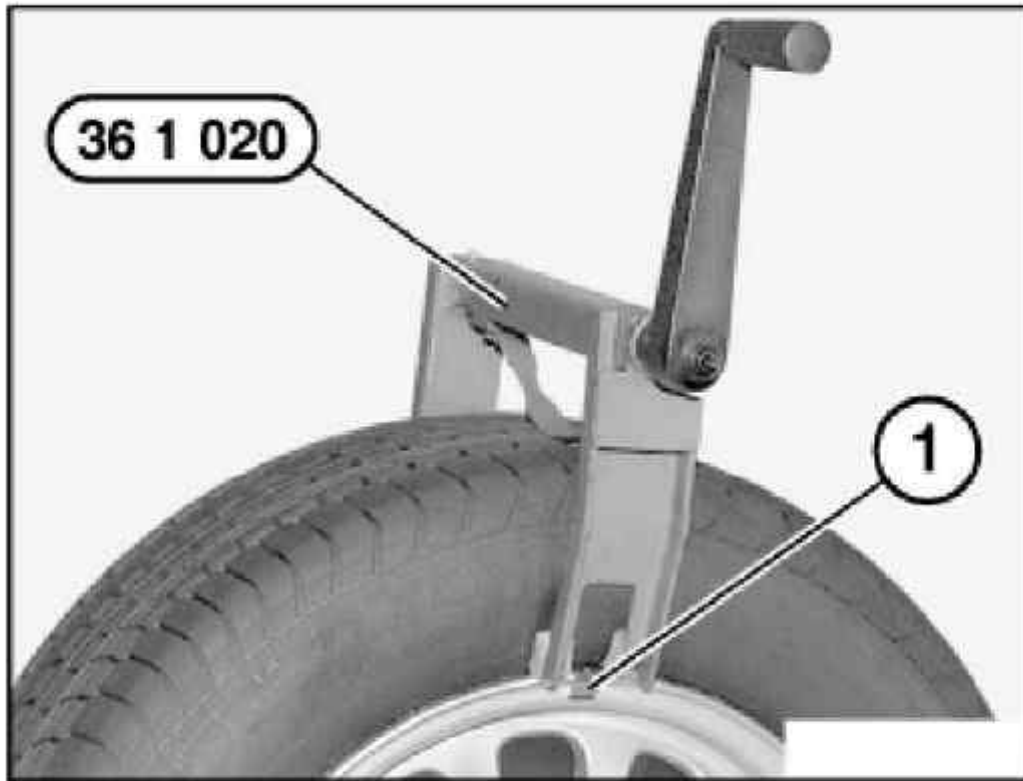
Fig. 13: Identifying BMW-Approved Centering Elements
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: To avoid retooling errors, it will be necessary to fit the wheel on the balancing machine in the same way (e.g. valve facing down) as it is then fitted on the car. Balance wheel in accordance with operating instructions of relevant balancing machine.

On light-alloy rims with distinctive J-shape rim flange, proceed as follows:

1. Gently force off tire sidewall with special tool 36 1 020 at appropriate point from rim flange.
2. Install retaining clip (1).

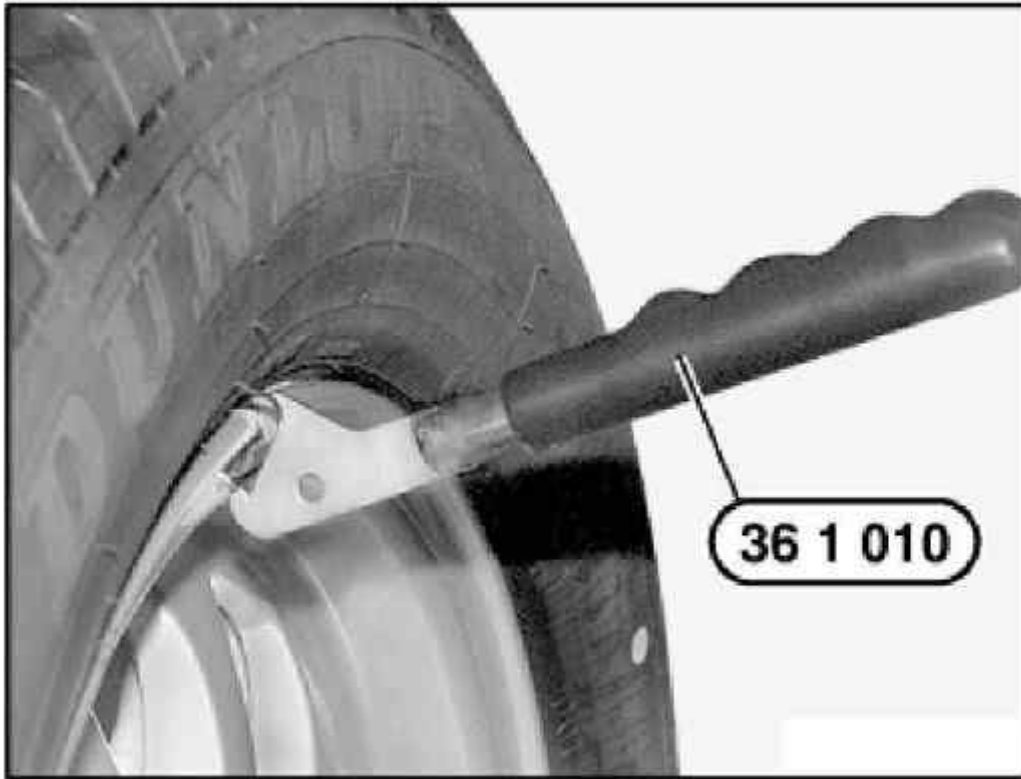
3. Remove special tool 36 1 020.



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Fig. 14: Forcing Off Tire Sidewall With Special Tool 36 1 020
Courtesy of BMW OF NORTH AMERICA, INC.

Raise retaining clip with special tool 36 1 010. Slide balance weight underneath and allow it to snap into place.



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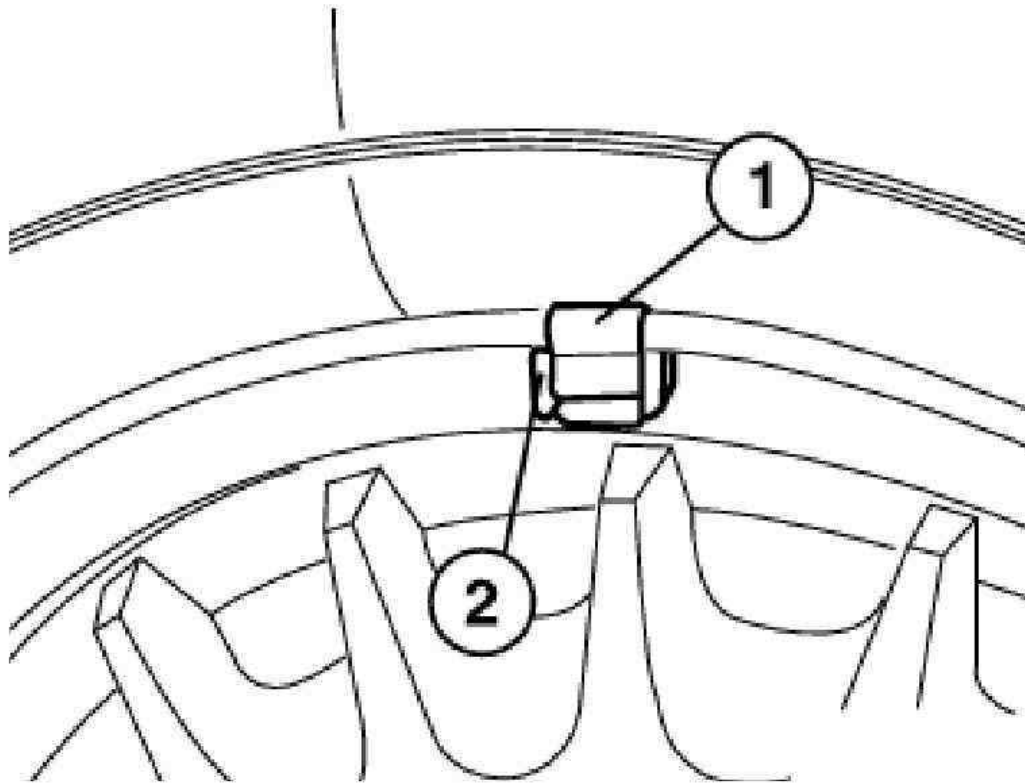
Fig. 15: Raising Retaining Clip With Special Tool 36 1 010
Courtesy of BMW OF NORTH AMERICA, INC.

Arrangement of balance weights for light-alloy rims with distinctive J-shape rim flanges.

1. Spring retainer
2. Balance weight

Adhesive weights must be used on all other light-alloy rims.

Max. imbalance per wheel, see **WHEEL AND TIRES - TECHNICAL DATA** .



1. Spring retainer
2. Balance weight

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Fig. 16: Identifying Spring Retainer And Balance Weight
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: When using adhesive weights, proceed as follows:

1. Carefully remove any adhesive weights. Do not damage rim when doing so.
2. Select suitable location for fitting.
3. Clean adhesive area thoroughly.

IMPORTANT: On the E87 with 16" tires, do not use stick-on weights; use only clamp-on

weights instead.

36 10 713 CHECKING ONE ROAD WHEEL ON BALANCING MACHINE FOR FACE AND RADIAL RUNOUT (WHEEL REMOVED)

Special tools required:

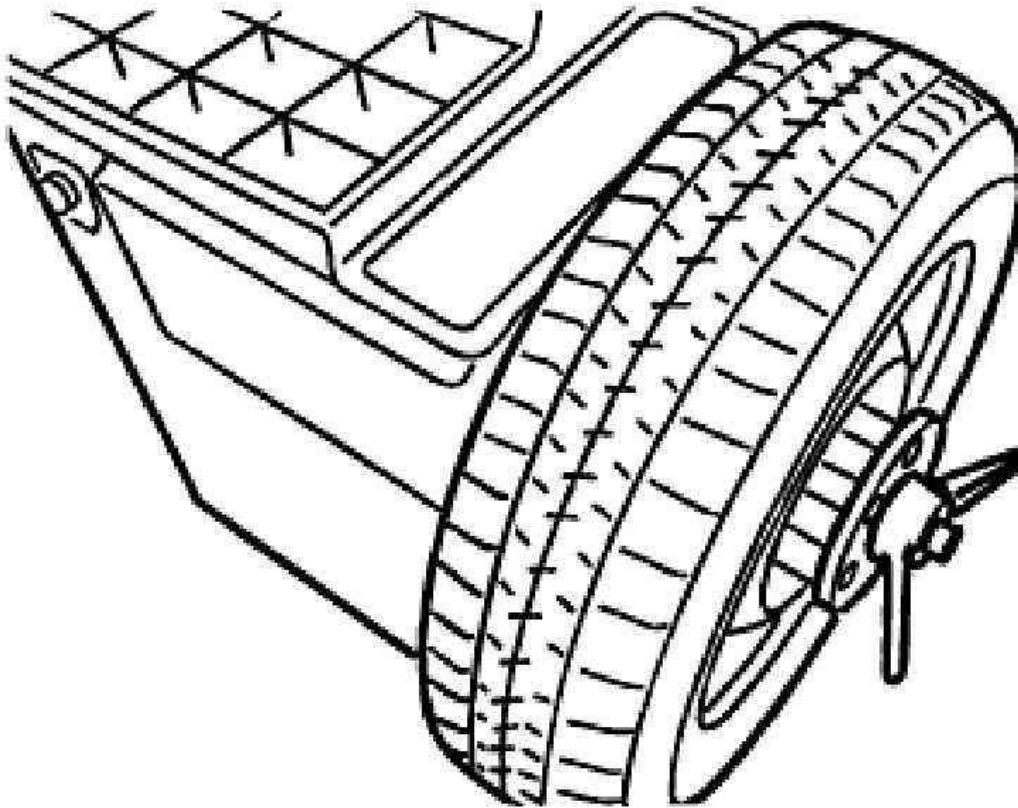
- 36 1 030
- 36 1 031
- 36 1 032
- 36 1 033
- 36 1 034
- 36 1 035
- 36 1 036

Necessary preliminary tasks:

- **Remove Wheel** .

Mount wheel in balancing machine.

To avoid retooling errors, fit the wheel on the balancing machine in the same way as it is also fitted on the car (valve position facing down).

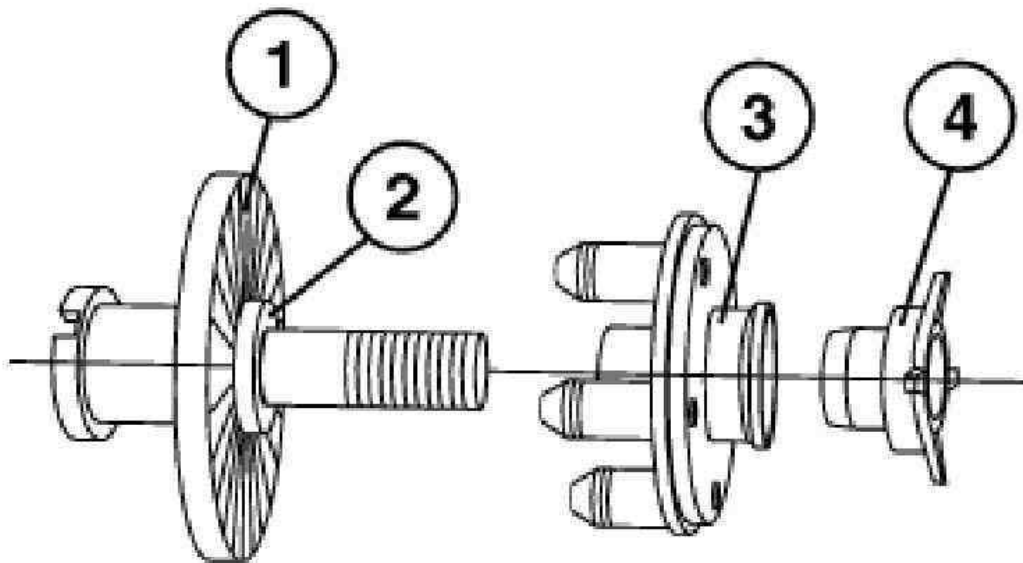


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Fig. 17: Mounting Wheel In Balancing Machine
Courtesy of BMW OF NORTH AMERICA, INC.

Use suitable wheel centering element supplied with corresponding balancing machine.

1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut



1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut

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Fig. 18: Identifying Wheel Centering Element Supplied With Corresponding Balancing Machine
Courtesy of BMW OF NORTH AMERICA, INC.

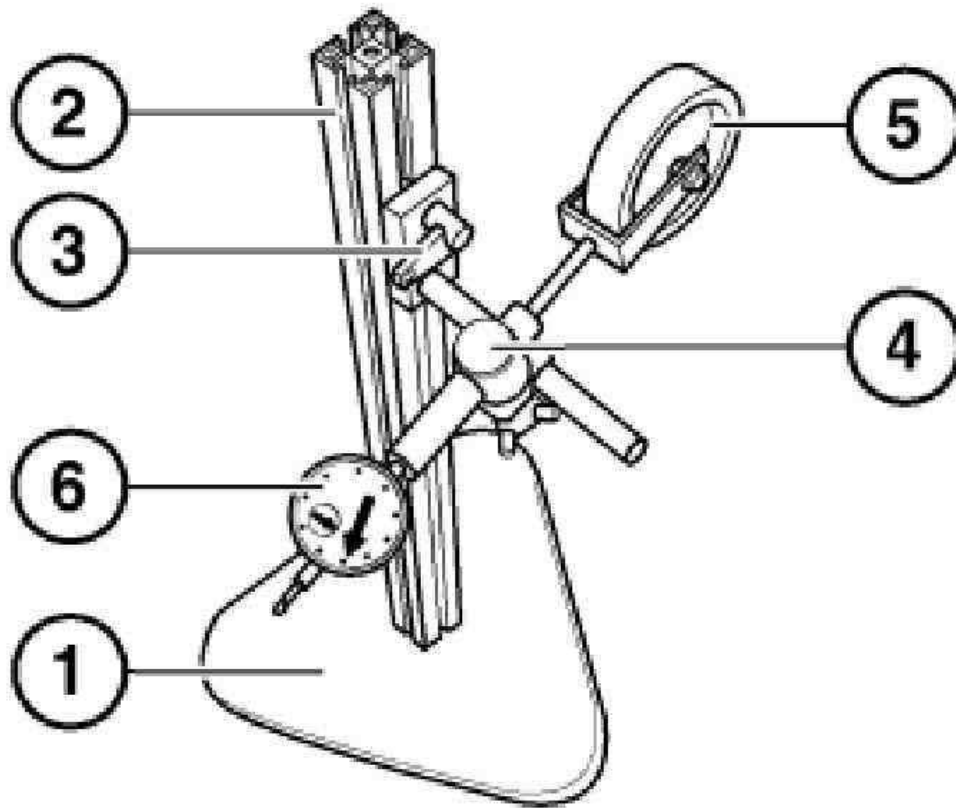
Use special tool 36 1 030 for testing.

Special tool 36 1 030 consists of:

1. Stand 36 1 031
2. Post with clamp 36 1 032
3. Holder with clamp 36 1 033
4. Clamp 36 1 034
5. Measuring roller 36 1 035

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6. Dial gauge 36 1 036



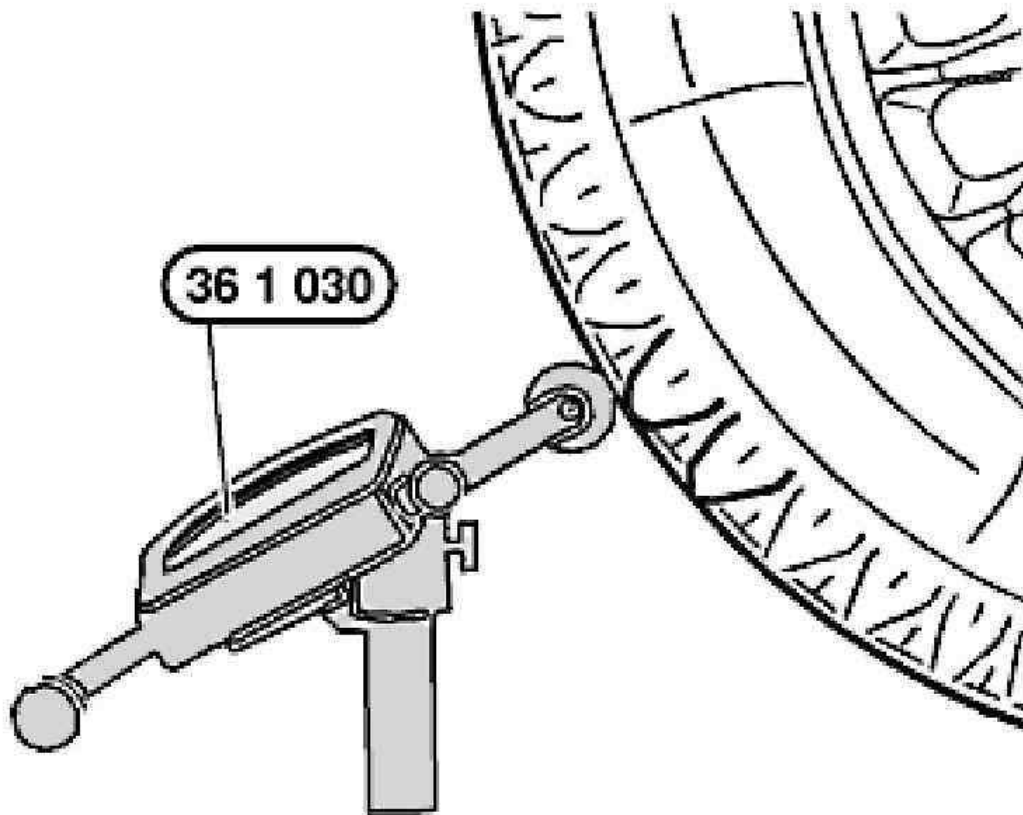
- (1) Stand 36 1 031
- (2) Post with clamp 36 1 032
- (3) Holder with clamp 36 1 033
- (4) Clamp 36 1 034
- (5) Measuring roller 36 1 035
- (6) Dial gauge 36 1 036

Fig. 19: Identifying Special Tool 36 1 030 Components
Courtesy of BMW OF NORTH AMERICA, INC.

Position special tool 36 1 030 on tire tread.

Turn wheel by hand and measure max. radial tire runout.

NOTE: **Measuring device must be vertical to tire tread.**



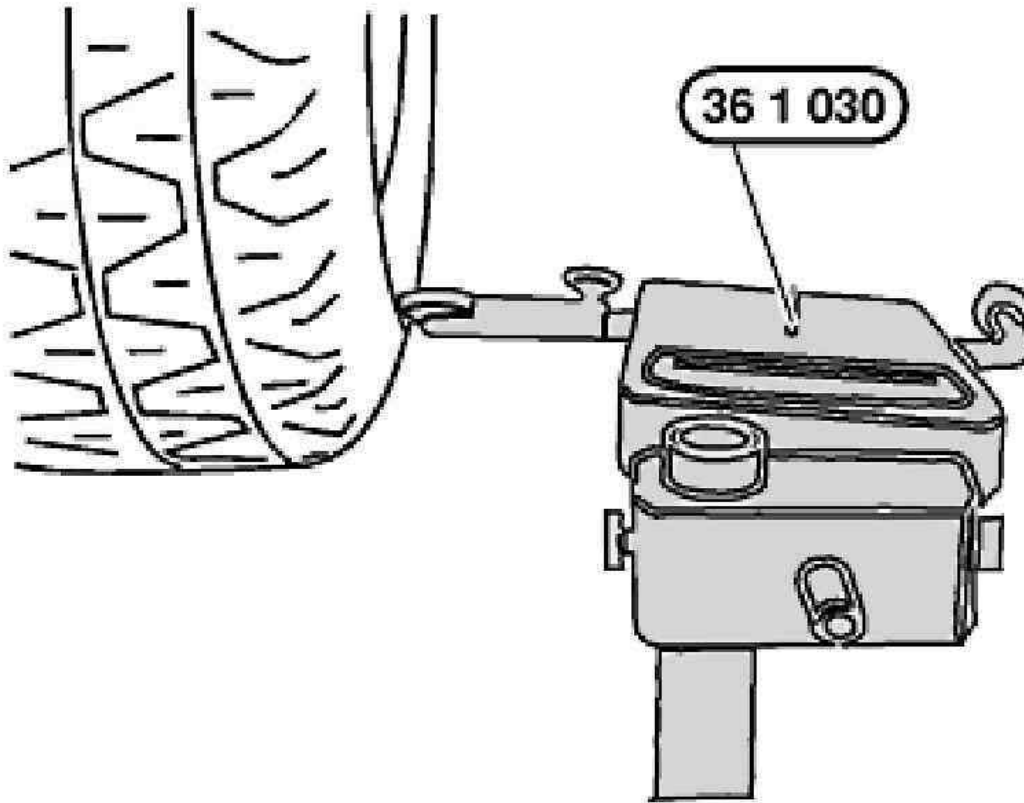
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Fig. 20: Positioning Special Tool 36 1 030 On Tire Tread
Courtesy of BMW OF NORTH AMERICA, INC.

Position special tool 36 1 030 on tire sidewall.

Turn wheel by hand and measure max. lateral tire runout.

NOTE: **Measuring device must be vertical to tire sidewall.**
 Never measure on printed text on tire!
 If necessary, check disk wheel (rim) for radial and face runout.



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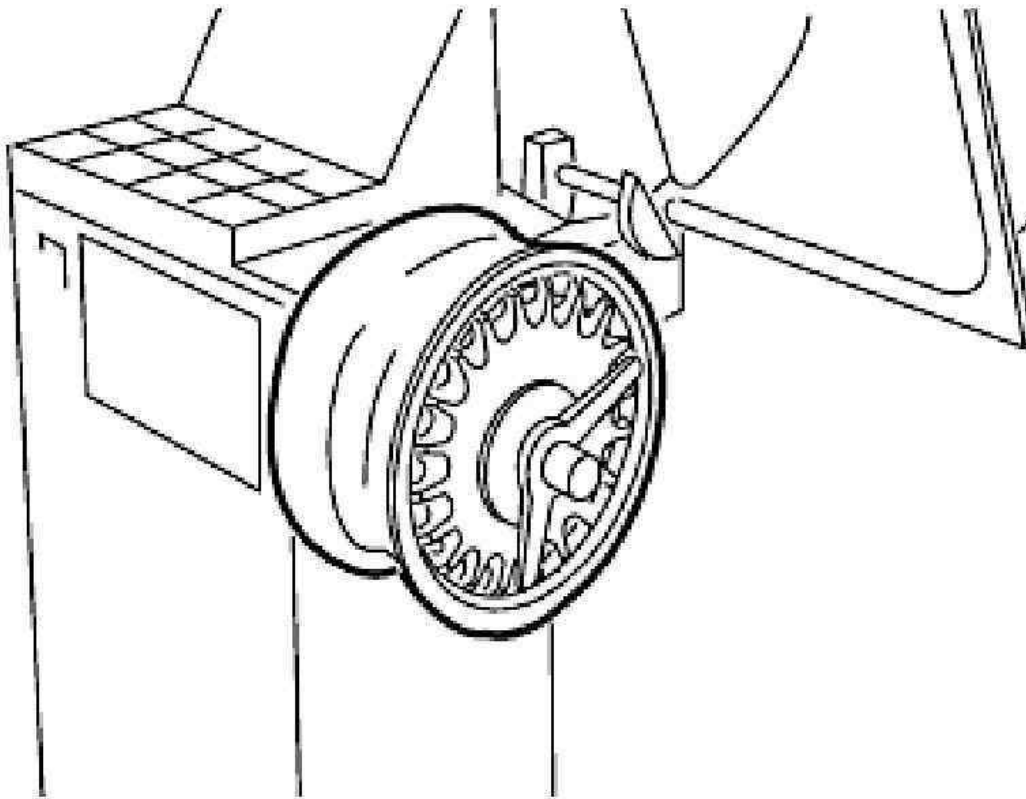
Fig. 21: Positioning Special Tool 36 1 030 On Tire Sidewall
Courtesy of BMW OF NORTH AMERICA, INC.

36 10 715 CHECKING RIM FOR FACE AND RADIAL RUNOUT

Necessary preliminary tasks:

- **Remove Wheel.**
- **Check Front Or Back Wheel For Face And Radial Runout.**
- Pull tire off rim.
- Remove fitted balance weights.
- Remove dirt from rim well and rim flange.

Mount disk wheel in balancing machine.

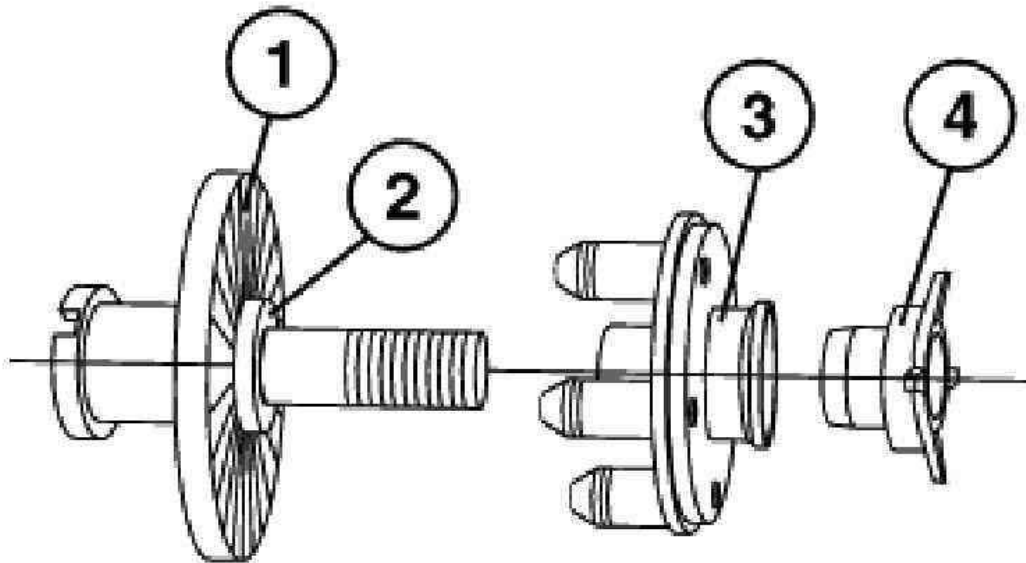


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Fig. 22: Mounting Disk Wheel In Balancing Machine
Courtesy of BMW OF NORTH AMERICA, INC.

Use suitable wheel centering element supplied with corresponding balancing machine.

1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut



1. Basic flange
2. Wheel centering element
3. Type flange
4. Clamping nut

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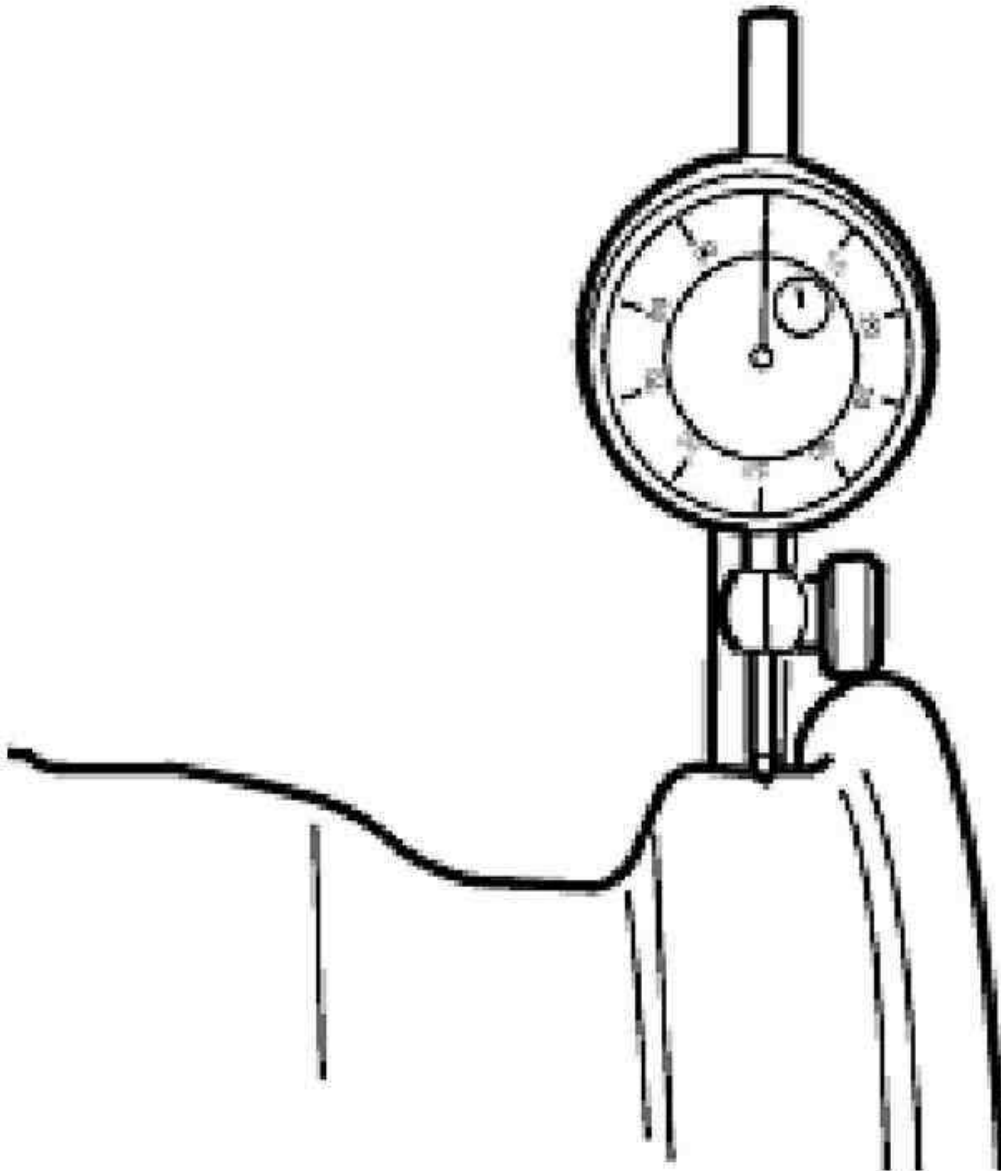
Fig. 23: Identifying Wheel Centering Element Supplied With Corresponding Balancing Machine
Courtesy of BMW OF NORTH AMERICA, INC.

Place dial gauge sensor on rim shoulder.

Turn wheel by hand and measure max. radial runout.

Carry out measurement on both rim shoulder sides.

NOTE: Dial gauge must be vertical to rim shoulder.



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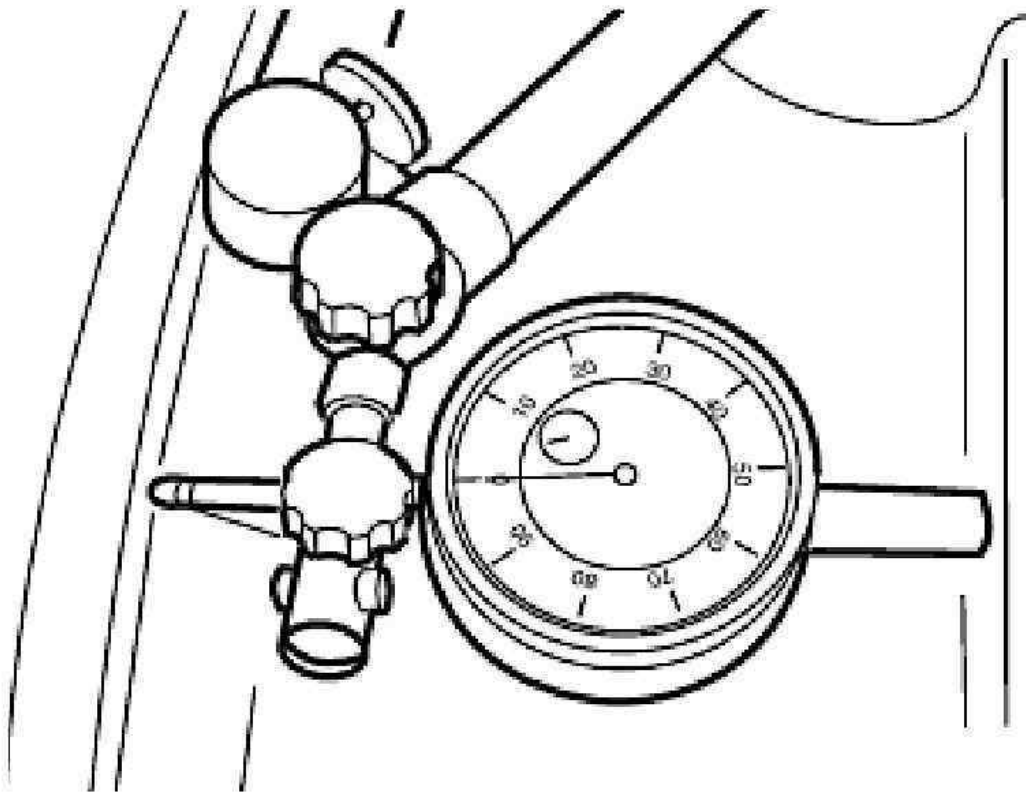
Fig. 24: Placing Dial Gauge Sensor On Rim Shoulder
Courtesy of BMW OF NORTH AMERICA, INC.

Position sensor on rim flange.

Turn wheel by hand and measure max. **Lateral Runout**.

Carry out measurement on both rim flanges.

NOTE: Dial gauge must be vertical to rim flange.



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Fig. 25: Positioning Sensor On Rim Flange
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Avoid transformation errors during subsequent installation tasks.

DISC WHEELS (RIMS)

36 11 000 INITIALIZING TIRE DEFECT INDICATOR (RPA)

NOTE: Checking the tire pressure is based on monitoring the speeds of the wheels in

relation to each other. A tire puncture is detected and signalled by way of a deviation in specific speed ratios.

The four tires mounted on the vehicle are monitored while the vehicle is moving.

Initialization must be carried out in each case immediately after tire pressures have been corrected, after tires/wheels have been replaced and after repairs to the air spring system.

IMPORTANT: The tire defect indicator does not function when the vehicle is driven with the compact spare wheel.

Refer to the relevant Owner's Manual for details of the initialization procedure.

TIRES

36 12 001 REPLACING A TIRE (RUN FLAT)

Special tools required:

- 36 1 091
- 36 1 092
- 36 1 093
- 36 1 094
- 36 1 095
- 36 1 098

Follow the fitting machine manufacturer's operating instructions.

It is absolutely essential to ensure that the equipment is in proper working condition and that there is no damage to the disk wheel and tire.

IMPORTANT: To avoid damaging the rim, use only the BMW-approved plastic-covered tire irons!
Use only BMW-approved tire mounting paste.

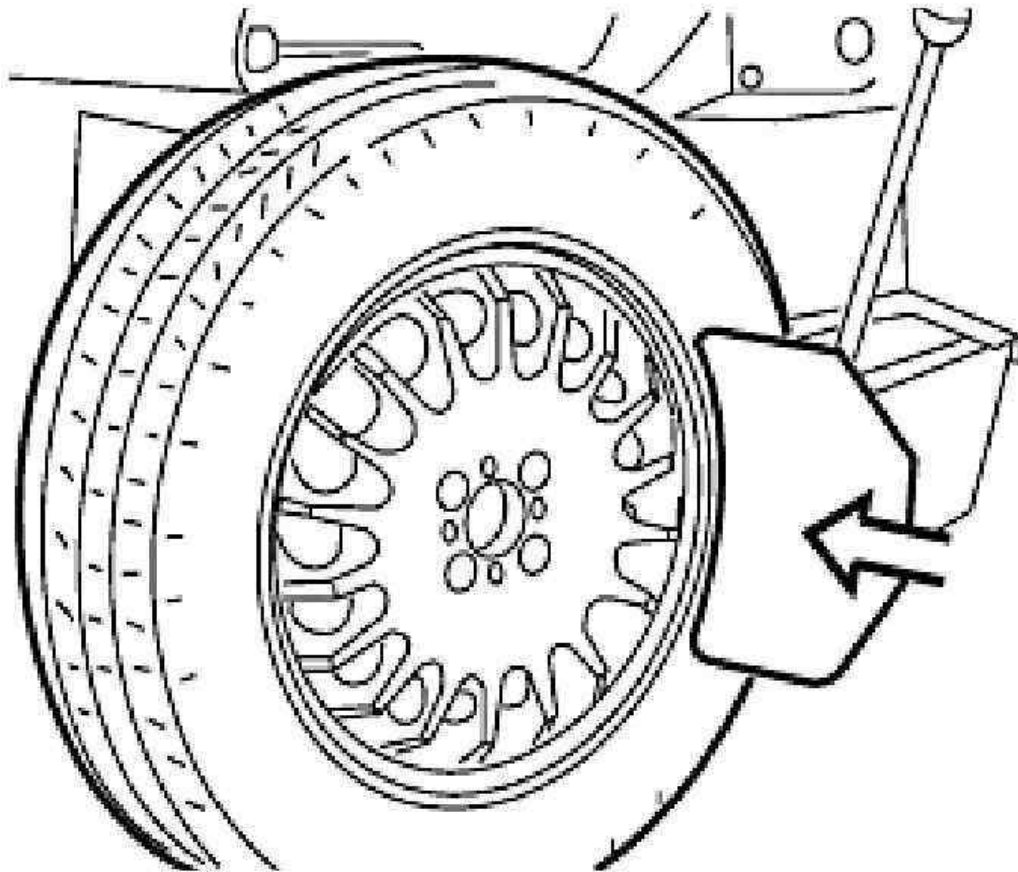
Tire Removal With A Fitting Machine:

IMPORTANT: Gap between unseating tool and rim flange must not exceed max. 2 cm. Do not position unseating tool in area of valve (damage to wheel pressure sensor). Turn wheel through 180° and position unseating tool on opposite side.

Pull off balance weights on rim and clean rim to remove large pieces of dirt.

Unscrew valve insert, release air.

If tire beads are stuck, first release the tire with the pressing-off horn at several points of the wheel before actually pressing off, applying tire mounting paste between the tire and the rim flange. Only then press off the tire completely.



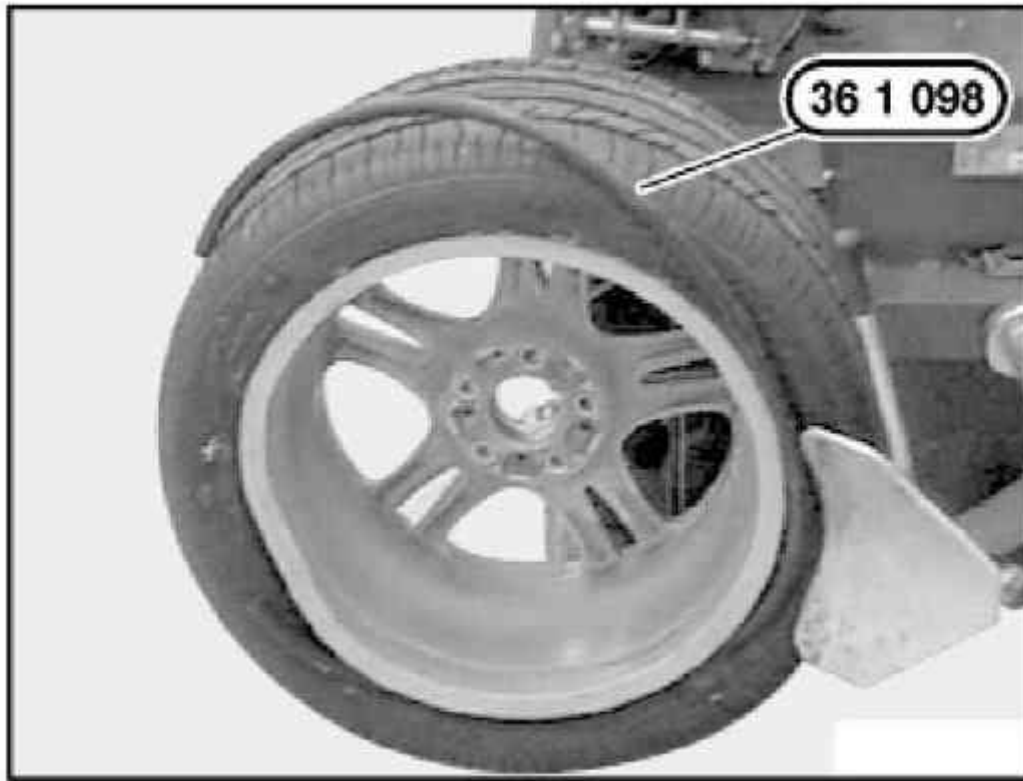
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Fig. 26: Pulling Off Balance Weights On Rim
Courtesy of BMW OF NORTH AMERICA, INC.

Force off inner side of wheel, inserting special tool 36 1 098 between rim flange and tire bead in so doing.

Force off outer side of wheel, applying a generous coating of tire mounting paste between rim flange and tire bead in so doing.

Grip wheel with outer side facing upwards on fitting machine.



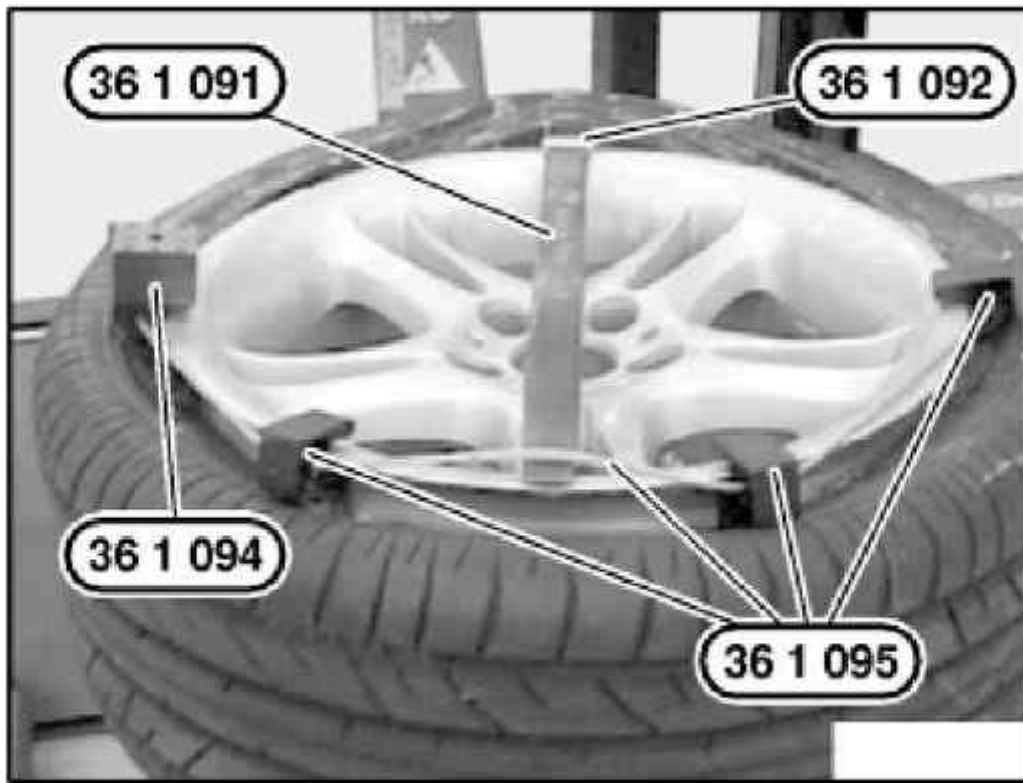
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Fig. 27: Inserting Special Tool 36 1 098 Between Rim Flange And Tire Bead
Courtesy of BMW OF NORTH AMERICA, INC.

Position special tool 36 1 094 and special tool 36 1 095 as shown on rim flange.

Fit special tools 36 1 091 / 36 1 092 between tire bead and rim flange, move into position shown and lever tire bead over rim flange.

Secure special tools 36 1 091 / 36 1 092 with connecting cable of special tool 36 1 095.



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Fig. 28: Fitting Special Tools 36 1 091 / 36 1 092 Between Tire Bead And Rim Flange
Courtesy of BMW OF NORTH AMERICA, INC.

Slide a second special tool 36 1 091 / 36 1 092 on right next to first special tool 36 1 091 / 36 1 092 between tire bead and rim flange.

Lever tire bead over rim flange.

Remove first special tool 36 1 091 / 36 1 092 and slide on right next to second special tool 36 1 091 / 36 1 092 between tire bead and rim flange and lever tire bead over rim flange.

Continue this procedure in clockwise direction until tire bead is resting fully over rim flange.



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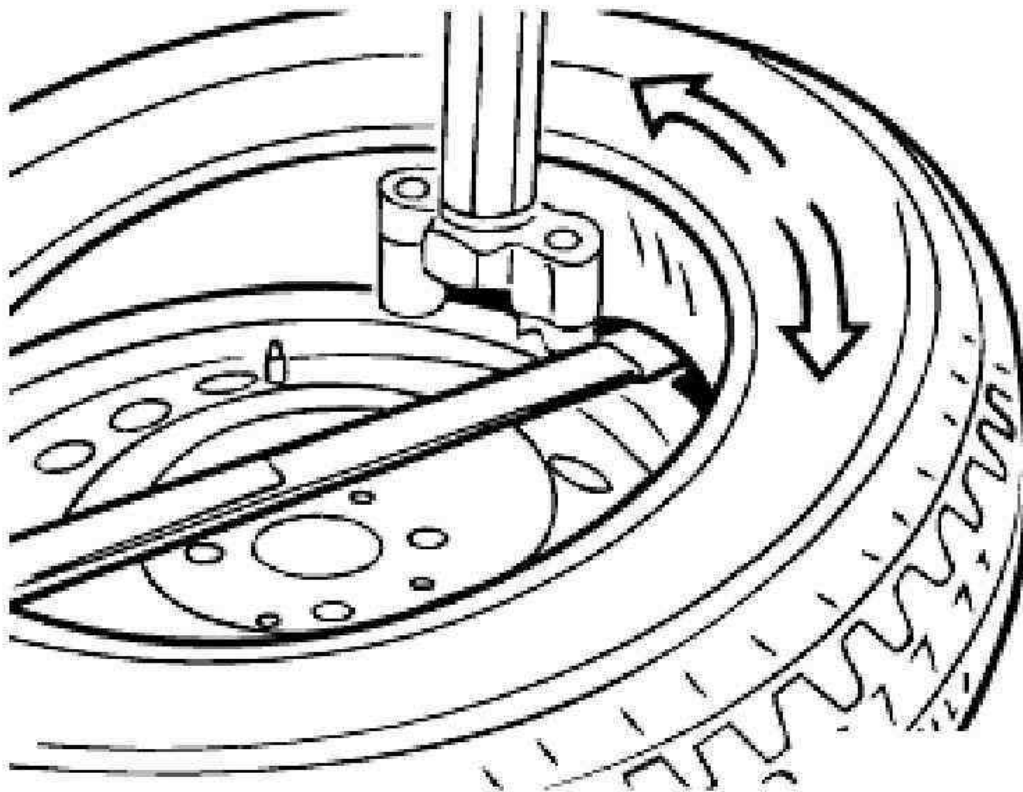
Fig. 29: Sliding Second Special Tool 36 1 091 / 36 1 092 On Right Next To First Special Tool 36 1 091 / 36 1 092

Courtesy of BMW OF NORTH AMERICA, INC.

Swivel or tilt fitting head into position and allow it to snap into place.

Lever lower bead with tire iron over mounting finger.

Run fitting machine forwards clockwise until tire is completely detached from rim.



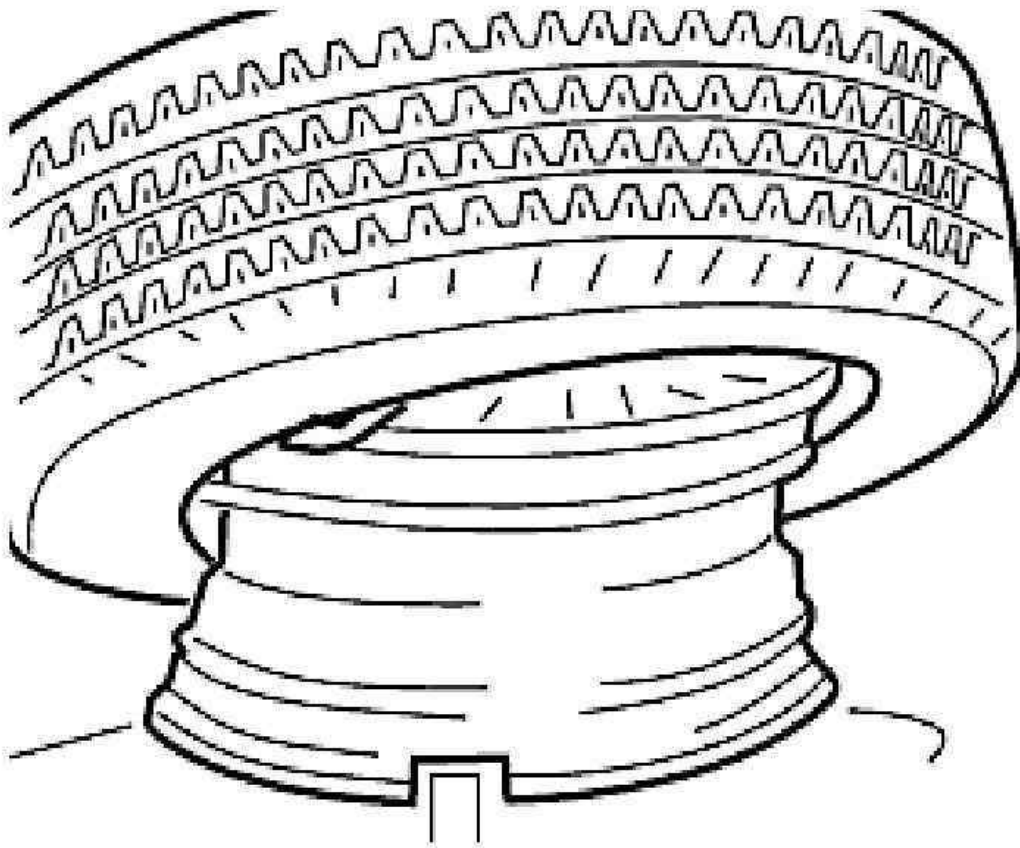
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Fig. 30: Swiveling Or Tilting Fitting Head Into Position
Courtesy of BMW OF NORTH AMERICA, INC.

Release lock and tilt or swivel fitting head back.

Unclamp and clean rim.

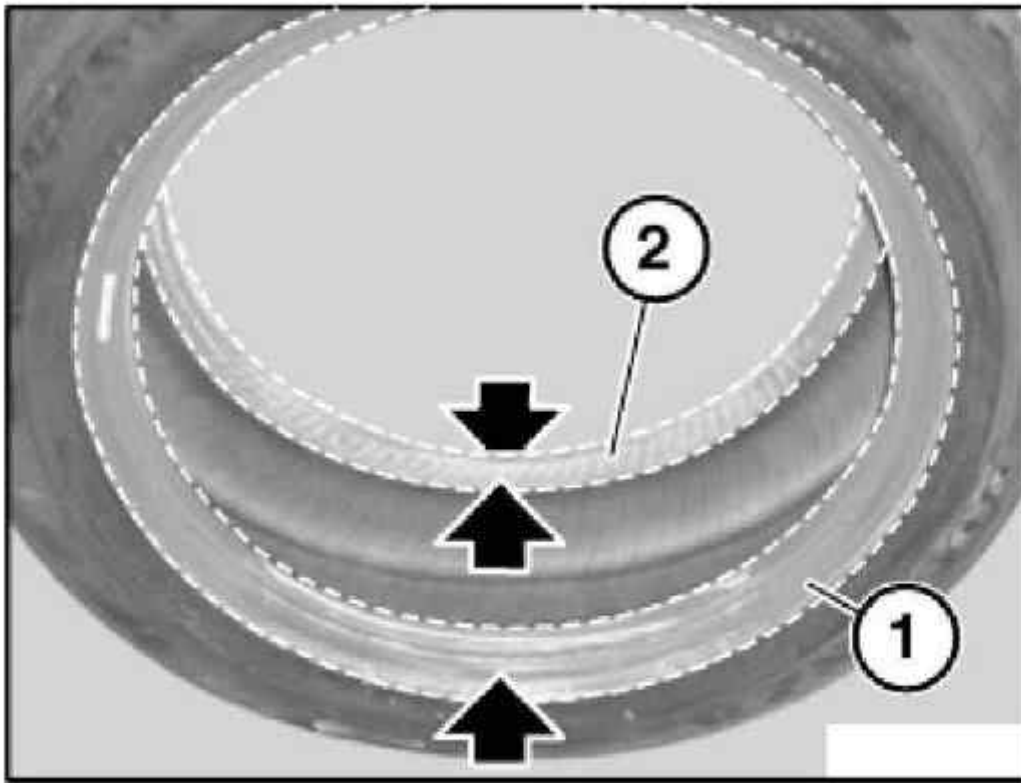
Replace valve.



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Fig. 31: Releasing Lock And Tilting Or Swiveling Fitting Head Back
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Coat wheel drop center, rim shoulders and rim flange with tire mounting paste.
Coat lower tire bead (1) on outside with plenty of tire mounting paste.
Coat upper tire bead (2) on inside and outside with plenty of tire mounting paste.



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Fig. 32: Coating Lower Tire Bead On Outside With Plenty Of Tire Mounting Paste
Courtesy of BMW OF NORTH AMERICA, INC.

Mounting Tires With A Mounting Machine:

Clamp rim on mounting machine.

Push tire with lower bead partially over rim flange.

Valve 10 cm to right of mounting head.

Swivel or tilt fitting head into position and lock into place.

Check fitting head setting, readjust and clamp down if necessary.

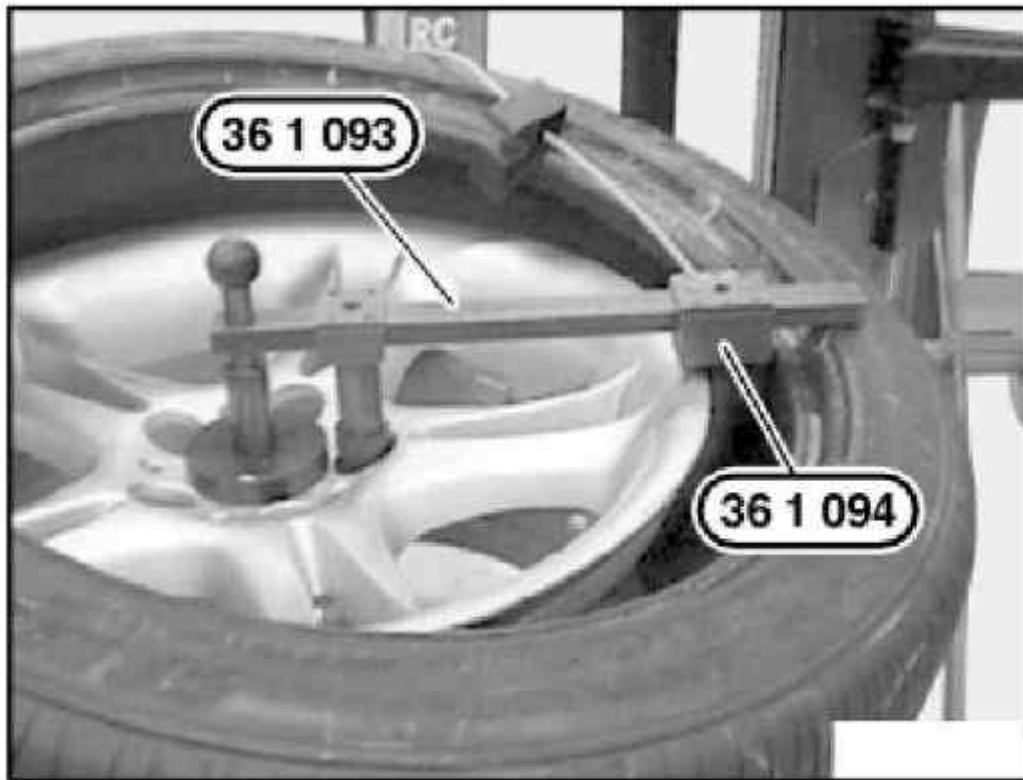
Press tire by hand under fitting head.

Make sure lower tire bead is correctly seated on fitting head.

Allow fitting machine to run forwards gradually in clockwise direction.

Lower tire bead will drop into well.

Position special tools 36 1 093 and 36 1 094 on rim.



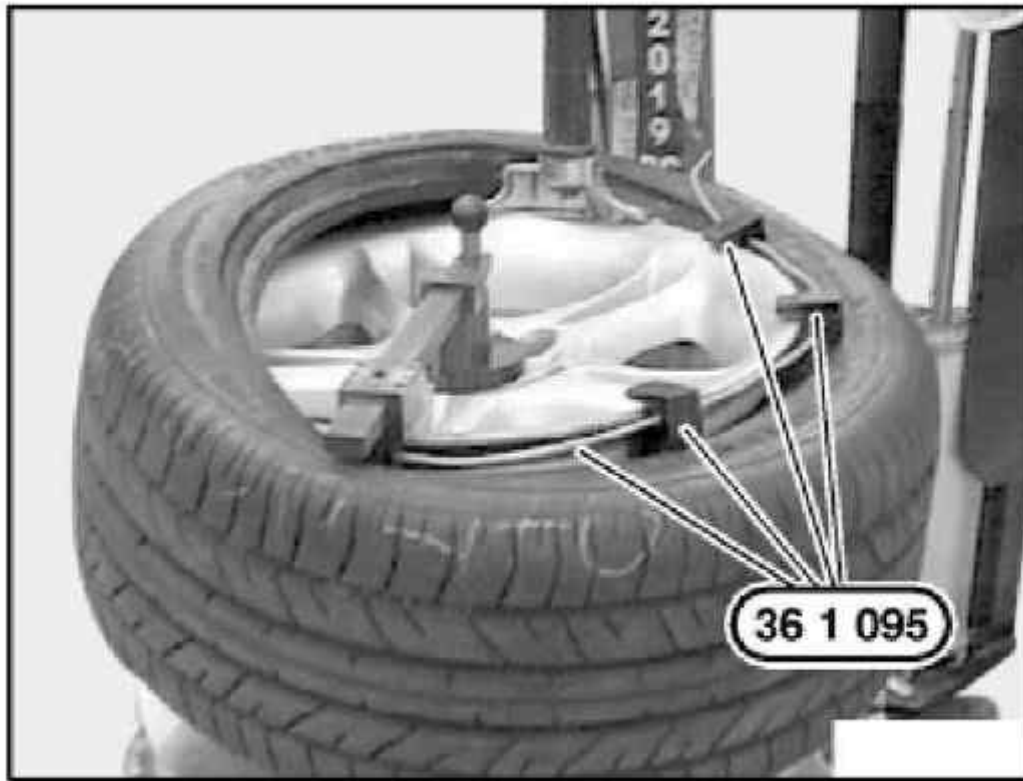
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Fig. 33: Positioning Special Tools 36 1 093 And 36 1 094 On Rim
Courtesy of BMW OF NORTH AMERICA, INC.

Make sure upper tire bead is correctly seated on fitting head.

Allow fitting machine to run forwards gradually in clockwise direction.

In so doing, position special tool 36 1 095 on rim flange.



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Fig. 34: Positioning Special Tool 36 1 095 On Rim Flange
Courtesy of BMW OF NORTH AMERICA, INC.

Allow fitting machine to continue running in clockwise direction.

Upper tire bead jumps into the rim drop center.



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Fig. 35: Allowing Fitting Machine To Continue Running In Clockwise Direction
Courtesy of BMW OF NORTH AMERICA, INC.

After completing fitting, first release clamping claws.

Inflate with air (without valve insert).

Increase pressure up to 3.3 bar (330 kPa) in stages (jumping pressure).

If the tire bead does not slip fully past the rim edge all round, do not under any circumstance increase the pressure.

Release air, force off tire bead again.

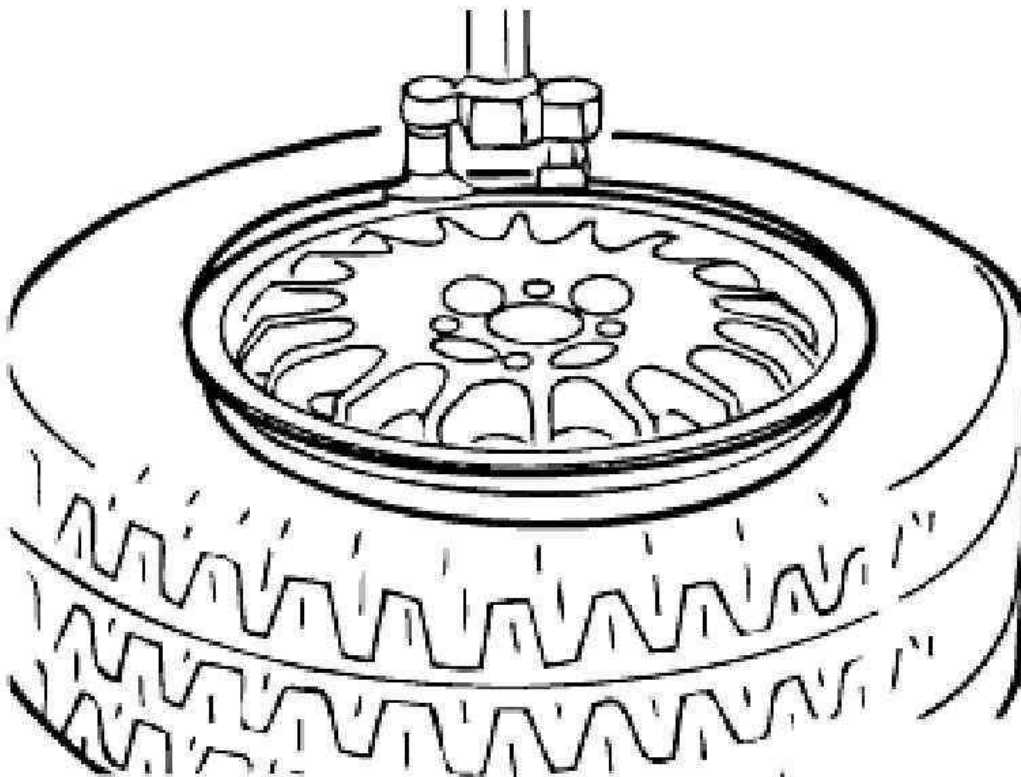
Coat rim flange with tire mounting paste again.

Inflate tire again up to 3.3 bar.

When tire beads are resting perfectly on rim shoulders, increase inflation pressure to max. 4.0 bar to "settle" tire.

Screw in valve insert and correct tire pressure.

After completion of work, balance wheels.

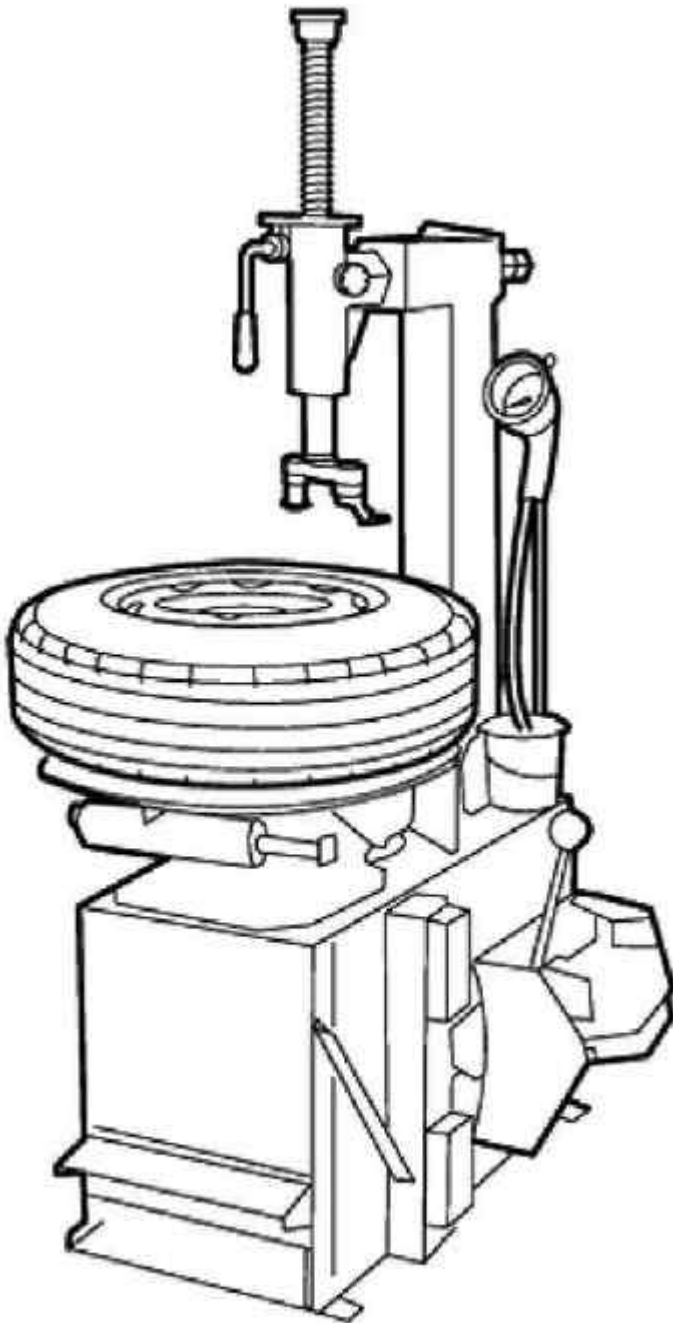


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Fig. 36: Releasing Clamping Claws

Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Advise the customer to avoid heavy acceleration in the initial period.
The mounting paste can cause the tire to turn on the rim and give rise to imbalance.



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Fig. 37: Replacing Tire

Courtesy of BMW OF NORTH AMERICA, INC.

Refer to operating manual of the relevant fitting equipment manufacturer for details on how to fit the tire

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correctly.

However, it is essential to make sure that the equipment is in proper working condition and there is no damage to the disk wheel or the tire.

NOTE: Comply with approved tires, tire sizes and optional extra.

Follow instructions on initializing Run Flat Indicator (RPA). See owner's manual.

Models With M-Mobility System

If the tire was filled with the M-Mobility system after a puncture, it will be necessary before removal to drill an approx. 25 mm dia. hole in the sidewall of the tire. Allow sealing compound to flow out through this bore and dispose of compound in compliance with environmental regulations. Clean disk wheel after removing tire.

Tire removal with a fitting machine:

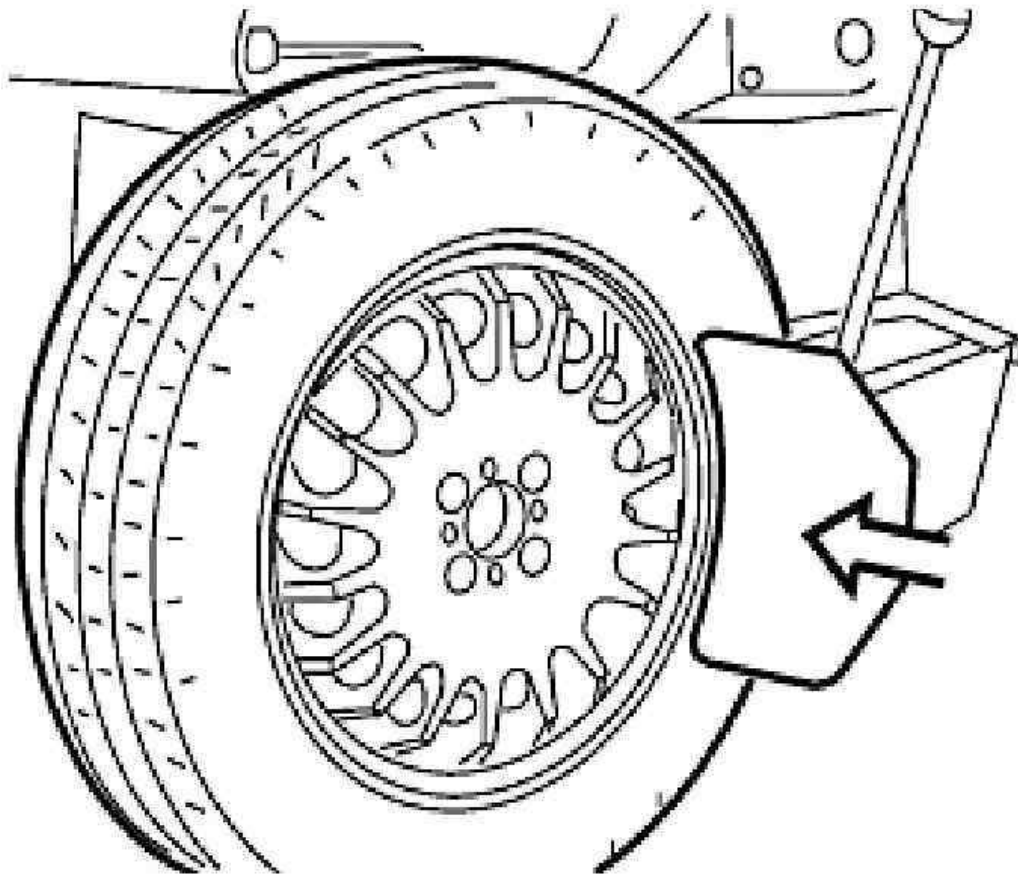
Unscrew valve insert, discharge air, force off tire bead from rim flange with pressing-off horn of device on outside and inside.

If tire beads are stuck, first release the tire with the pressing off horn at several points of the wheel before actually pressing off, apply tire mounting paste between tire and rim flange and press off the tires completely.

Pull off balance weights on rim and clean rim to remove large pieces of dirt.

Clamp wheel on mounting machine.

Narrow rim shoulder always faces upwards.



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Fig. 38: Removing Tire With Fitting Machine
Courtesy of BMW OF NORTH AMERICA, INC.

IMPORTANT: Vehicles with RDC:

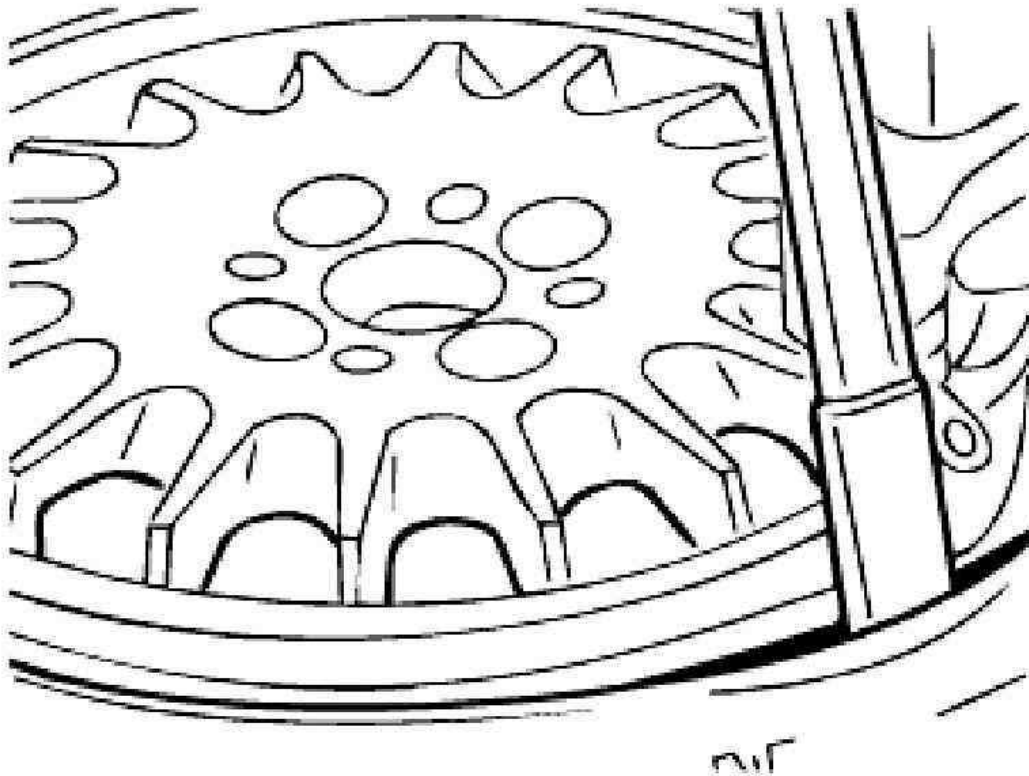
To prevent the pressing-off horn from damaging the RDC wheel electronics, do not rest the pressing-off horn on both rim sides in the area of the valve.

Swing or fold mounting pillar into position and let it engage.

Adjust mounting head, pressing it on the rim edge fully, and turn down the lever for the clamp; normally the distance of the mounting head will set in automatically.

The valve should be approx. 15 cm to the right of the assembly head (so as to prevent the tire iron from damaging the wheel electronics).

Raise tire bead with tire iron over mounting finger.



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Fig. 39: Swinging Or Folding Mounting Pillar Into Position
Courtesy of BMW OF NORTH AMERICA, INC.

NOTE: On aluminum rims, it is best to use a tire iron coated (either fully or partially) with shrink-on plastic tubing to prevent damage.

Let fitting machine run back a short distance (counterclockwise); tire bead will slip fully onto mounting finger.

Then let fitting machine run forward in stages (clockwise).

In so doing, always check whether the lower bead is fully resting in the well and allow the tire time to move.

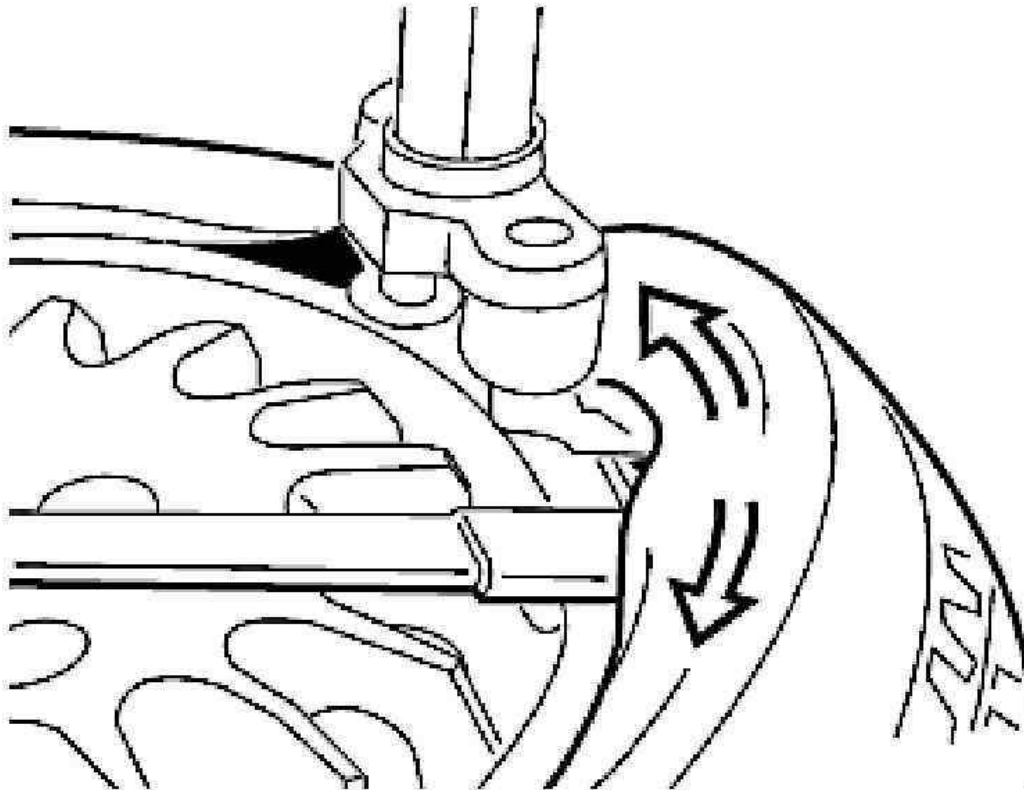
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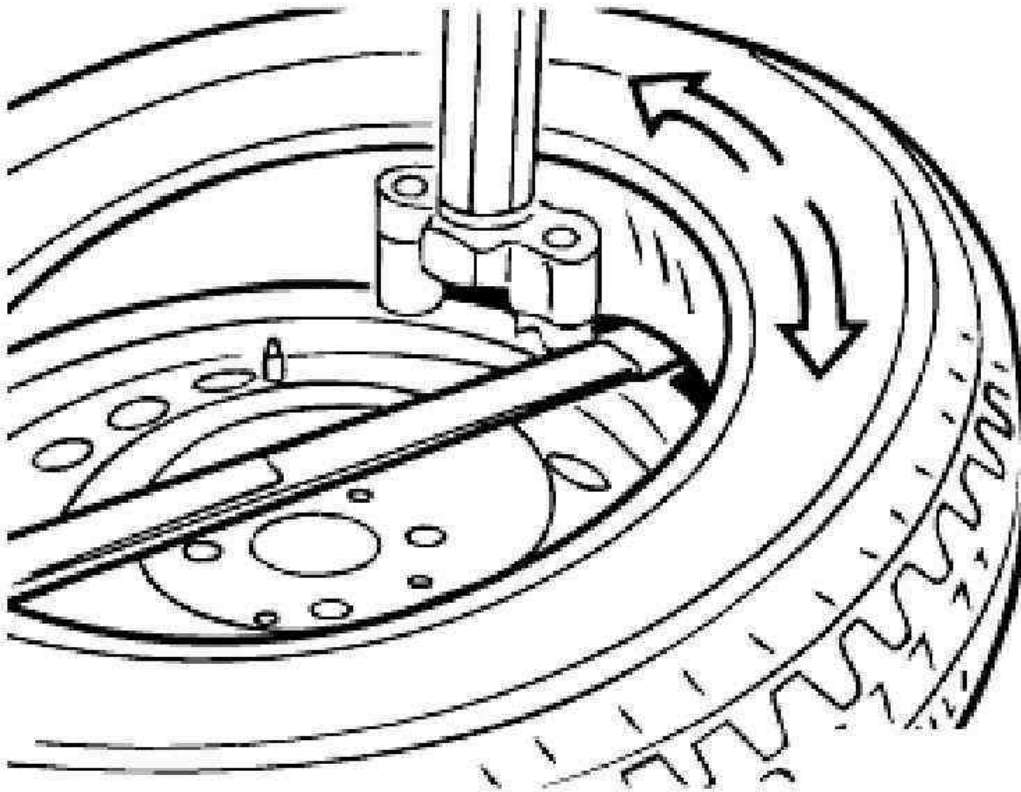
Fig. 40: Fitting Machine Run Forward In Stages (Clockwise)
Courtesy of BMW OF NORTH AMERICA, INC.

If the bead clamps, stop the machine and let it run back slightly.

If the upper bead is pulled off the rim, also lift the bottom bead over the mounting finger with the tire iron.

Let machine run back a short distance again and then forward (clockwise) briefly until there is complete separation of the tire from the rim.

IMPORTANT: Vehicles with RDC: Tire bead must not press onto wheel electronics.



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Fig. 41: Lifting Bottom Bead Over Mounting Finger With Tire Iron
Courtesy of BMW OF NORTH AMERICA, INC.

Release lock and tilt back or swing away mounting pillar.

Unclamp and clean rim.

Replace valve.

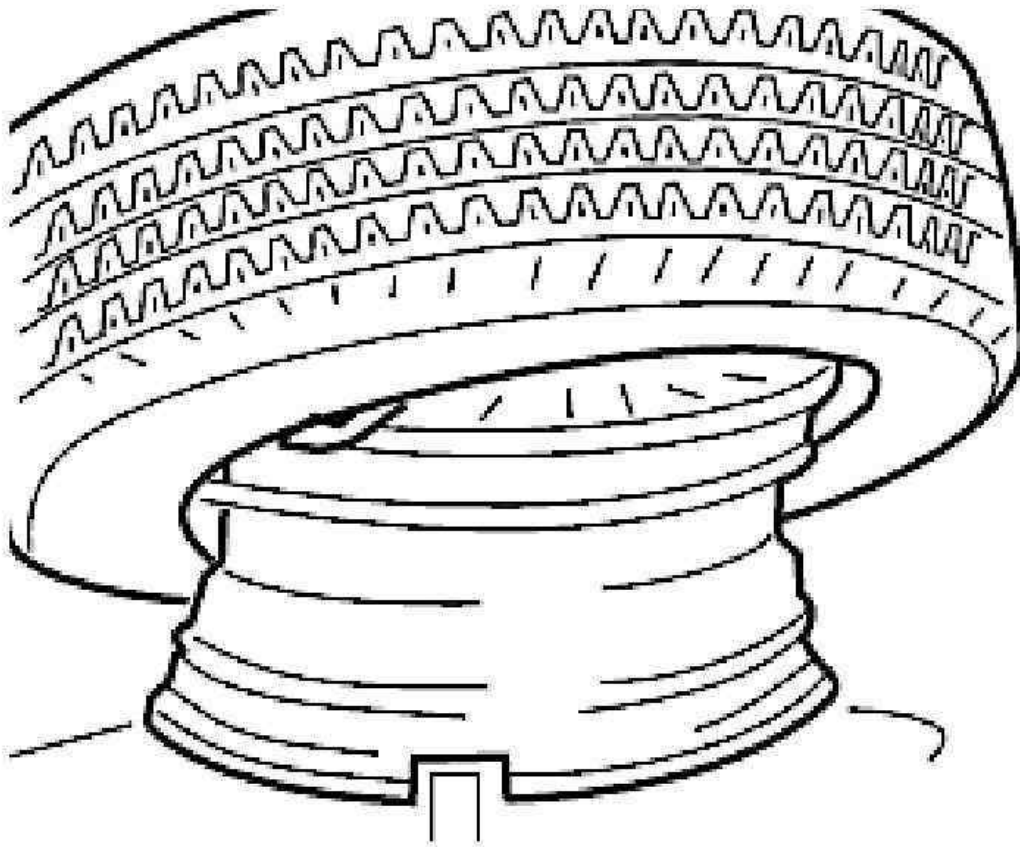
Coat rim flange and tire beads with mounting paste.

IMPORTANT: Vehicles with RDC:

When the wheel electronics are installed, the rim must not be cleaned with high-pressure cleaning equipment.

Visually inspect wheel electronics for external damage and check for tight fit; do not retighten screw and union nut. If one of the valve parts is loose, replace the entire valve.

Keep wheel electronics free of tire mounting paste.



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Fig. 42: Releasing Lock And Tilting Back Or Swinging Away Mounting Pillar
Courtesy of BMW OF NORTH AMERICA, INC.

Clamp rim on fitting machine, valve must be located at 180° to mounting head.

Slide on tire with lower bead partially over rim flange.

Swing or tilt mounting pillar into position and lock.

Check adjustment of mounting finger, readjusting if necessary, and clamp.

Press tire under mounting finger by hand.

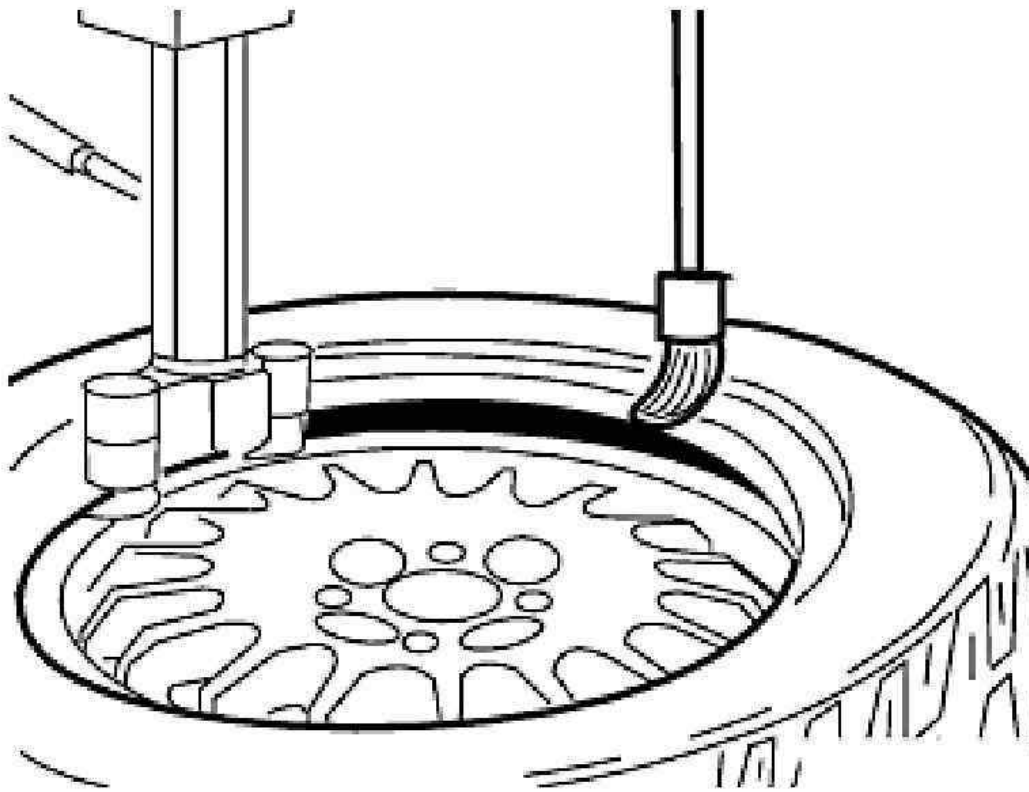
Tire bead should seat in rollers next to mounting finger.

Let fitting machine run forward (clockwise) a short distance.

Lower tire bead will drop into well.

IMPORTANT: Vehicles with RDC:

Fit lower tire bead so that no pressure forces are exerted on wheel electronics.



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Fig. 43: Swinging Or Tilting Mounting Pillar Into Position
Courtesy of BMW OF NORTH AMERICA, INC.

Turn wheel again into fitting position so that valve is at 180° to mounting head.

Press upper tire bead under mounting finger. Tire bead should seat in rollers next to mounting finger.

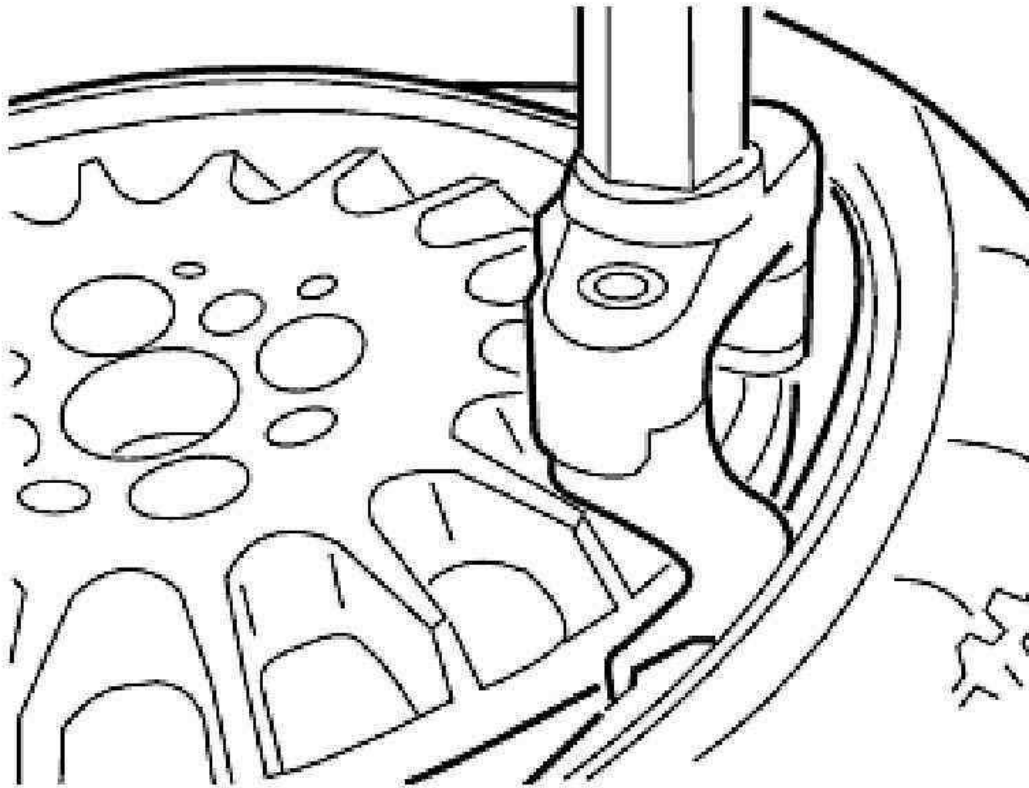
IMPORTANT: Do not pinch or damage bead.

Operate fitting machine forwards (clockwise) little by little; while doing so, make sure the lower tire bead

remains in the well.

IMPORTANT: Vehicles with RDC:

Fit upper tire bead so that no pressure forces are exerted on wheel electronics.



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Fig. 44: Turning Wheel Again Into Fitting Position

Courtesy of BMW OF NORTH AMERICA, INC.

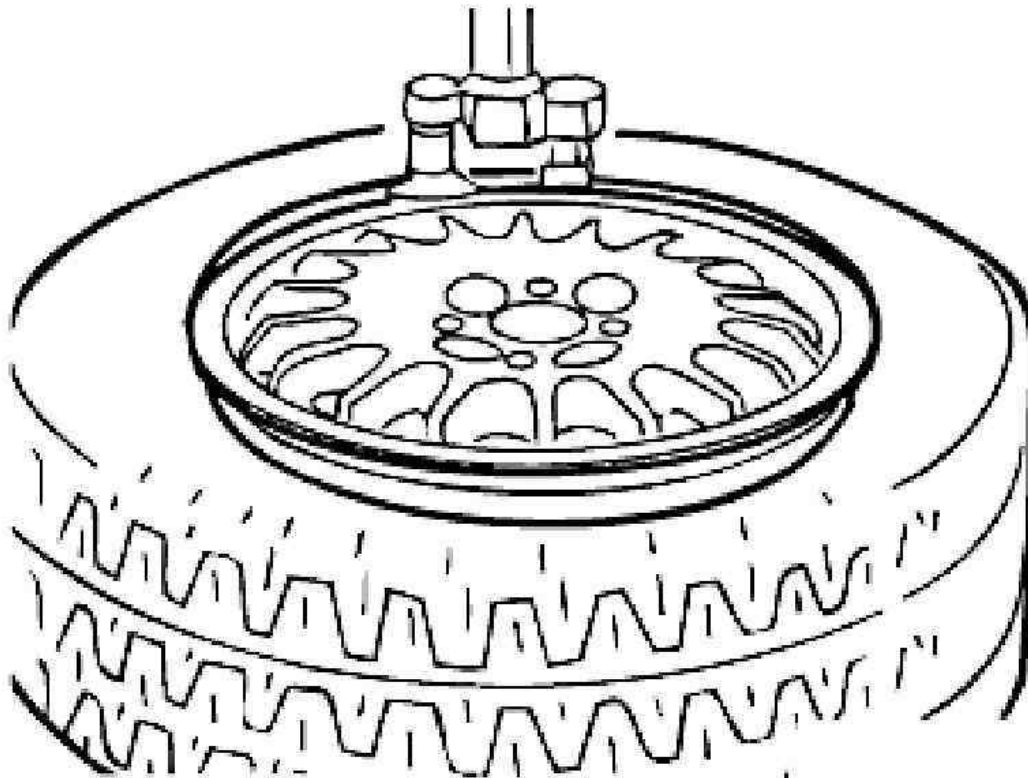
After mounting, first release clamps and then inflate tire (without valve).

Increase pressure up to 3.3 bar (330 kPa) in steps (jumping pressure).

If the tire bead does not slip on all round at the rim edge, do not increase pressure further but rather drain off air.

Press off tire bead again, coat rim flange again with tire mounting paste, and pump up again to 3.3 bar. When the beads are resting properly on the rim shoulders, increase inflation pressure to max. 4.0 bar to "settle" the tire.

Screw in valve insert and correct tire pressure.



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Fig. 45: Releasing Clamps And Inflating Tire (Without Valve)
Courtesy of BMW OF NORTH AMERICA, INC.

MOUNTING

36 13 SUBSEQUENT INSTALLATION OF WHEEL-BOLT LOCK

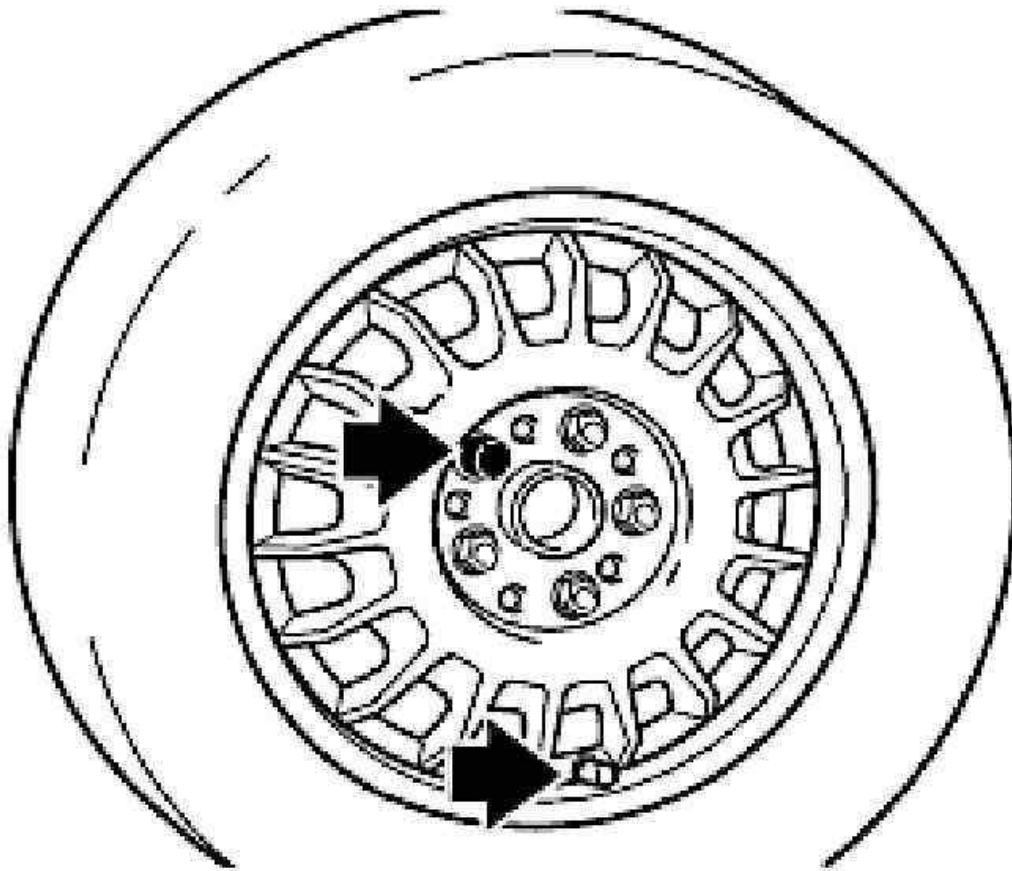
Loosen wheel bolts.

Raise car so that wheel can be turned freely.

Release wheel studs to such an extent that the wheel can move freely on the wheel hub.

Turn wheel so that valve is face down.

Remove top wheel stud and insert wheel stud lock.

**G03297860****Fig. 46: Loosening Wheel Bolts****Courtesy of BMW OF NORTH AMERICA, INC.**

Possible play in wheel center and wheel weight could cause imbalance.

This imbalance is reduced to a minimum by installing the somewhat heavier wheel-bolt lock in the top wheel-bolt position.

In this position - wheel stud lock at top, valve at bottom - tighten wheel studs hand-tight in diagonal sequence.

Lower car and tighten wheel bolts crosswise.

For tightening torque, see 36 10 1AZ in **WHEEL AND TIRES - TIGHTENING TORQUES** .

If this sequence of fitting the wheel stud lock is followed by a customer complaint about wheel imbalance, it will be necessary to finish-balance the wheels.

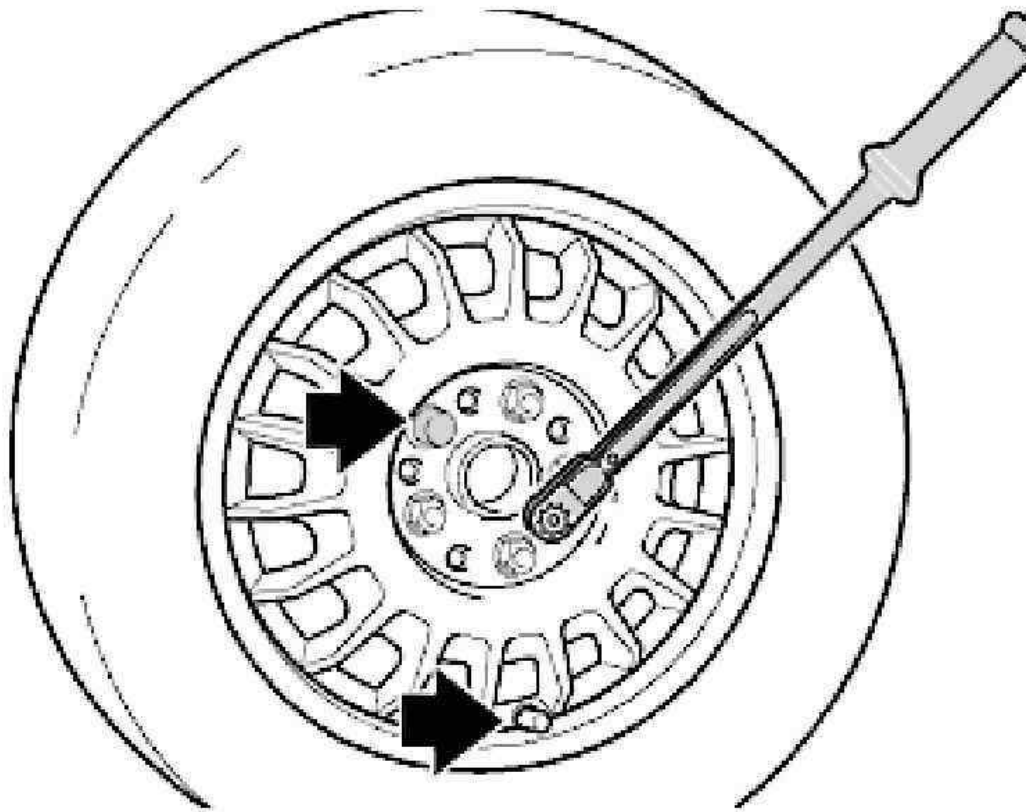
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Fig. 47: Tightening Wheel Bolts

Courtesy of BMW OF NORTH AMERICA, INC.