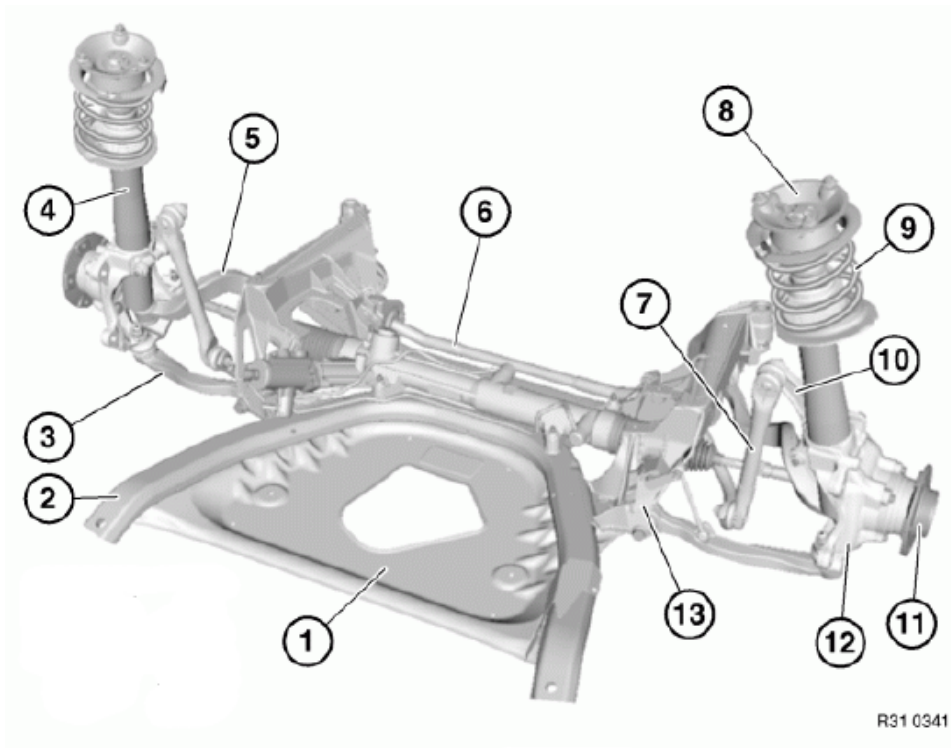


2010 BMW M6

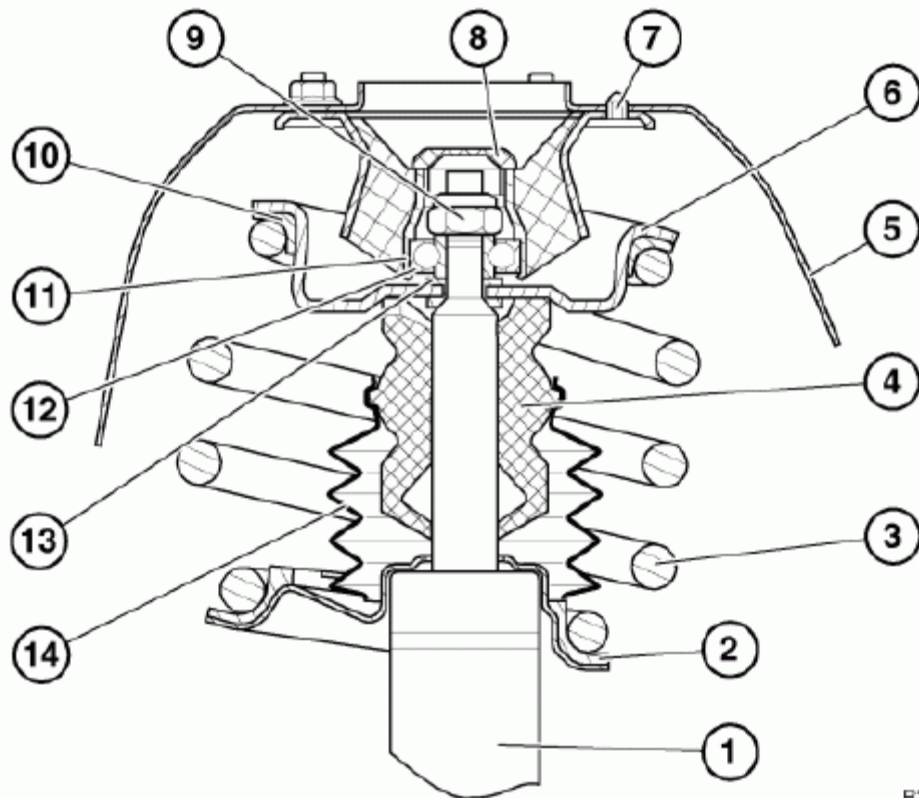
SUSPENSION Front Suspension - 650i, M6



- | | | | |
|---|----------------------------------|----|----------------------------|
| 1 | Reinforcement plate | 9 | Coil spring |
| 2 | Front axle support | 10 | Stabilizer link holder |
| 3 | Control arm | 11 | Wheel bearing/drive flange |
| 4 | Spring strut shock absorber | 12 | Swivel bearing |
| 5 | Tension strut | 13 | Ride level sensor |
| 6 | Stabilizer/stabilizer suspension | | |
| 7 | Stabilizer link | | |
| 8 | Thrust bearing | | |

Fig. 3: Identifying Front Axle Components
Courtesy of BMW OF NORTH AMERICA, INC.

31 ... LAYOUT OF SPRING STRUT SHOCK ABSORBER



R31 0140

- | | | | |
|---|-----------------------------|----|--------------------|
| 1 | Spring strut shock absorber | 10 | Upper spring pad |
| 2 | Lower spring pad | 11 | Thrust bearing |
| 3 | Coil spring | 12 | Dust sleeve |
| 4 | Auxiliary spring | 13 | Thrust washer/shim |
| 5 | Wheel arch | 14 | Rubber gaiter |
| 6 | Upper spring plate | | |
| 7 | Centering pin | | |
| 8 | Grease cap | | |
| 9 | Nut | | |

Fig. 4: Identifying Spring Strut Shock Absorber Components
 Courtesy of BMW OF NORTH AMERICA, INC.

31 00 ... FRONT AXLE + STEERING: WHEEL/CHASSIS ALIGNMENT CHECK MUST BE CARRIED OUT AFTER THE FOLLOWING WORK

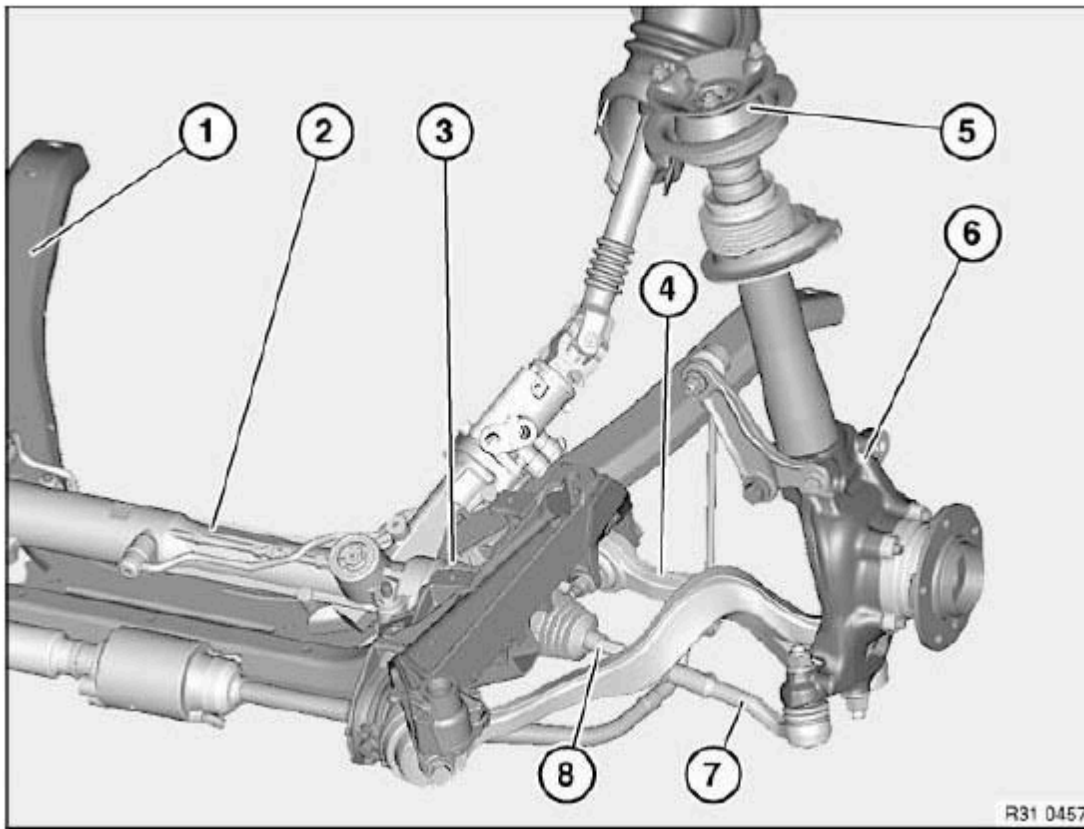


Fig. 5: Identifying Front Axle Components
Courtesy of BMW OF NORTH AMERICA, INC.

A wheel/chassis alignment check must be carried out after the following work:

- Release of following screw/bolt connections:
 - Steering gear to front axle carrier
 - Control arm to front axle carrier
 - Support bearing to body (if centering pin is missing)
 - Tie rod end to tie rod
- Replacement of following parts:
 1. Front axle carrier
 2. Steering gear
 3. Gaiter (if the tie rod end has to be screwed off)
 4. Control arm
 5. Support bearing (if centering pin is missing)
 6. Swivel bearing
 7. Tie rod end
 8. Tie rod

31 00 ... INFORMATION ON REPLACING SHOCK ABSORBERS**Facts:**

When a shock absorber is faulty on one side (leaking, noises, limit values exceeded on the shock tester), often both shock absorbers on the axle in question are replaced.

Consequence:

This is not necessary for technical reasons and causes the manufacturer not to recognize the unnecessarily removed shock absorbers as damaged parts. Unnecessarily high costs for the customer can be avoided by replacing the shock absorber on one side only.

Procedure:

Shock absorbers may be replaced on one side only until they have completed 50 000 km service.

Exception: On all M-models, when a limit value is exceeded on one side, it is still necessary always to replace both shock absorbers on the relevant axle.

31 00 ... INSTRUCTIONS (CHASSIS COMPONENTS MADE OF ALUMINUM)

Due to the chemical and corrosion characteristics of aluminum, always comply with the following points when handling aluminum components:

- Do not bring into contact with battery acid!
- Do not clean with wire brushes made of brass or iron! Always use wire brushes with stainless steel bristles!
- Do not expose to flying sparks when grinding/separating! Cover components!
- Do not strike with steel welding splashes! Cover components!
- Do not expose to temperatures $> 80\text{ }^{\circ}\text{C}$, even for brief periods! Temperatures in paint facilities do not have the same impact

31 00 ... INSTRUCTIONS (DAMAGE TO SUSPENSION)

Substandard roadholding, atypical noises, tires worn on one side, camber and toe-in values which deviate from nominal value and mis-shaped components are all indicators of damage to the suspension caused by road traffic accidents or similar impacts.

To repair vehicle correctly, depending on condition of vehicle, perform the following troubleshooting procedure:

You must also follow the rules and guidelines for accident-related repairs to the steering gear.

Troubleshooting

2010 BMW M6

SUSPENSION Front Suspension - 650i, M6

TROUBLESHOOTING CHART

Vehicle condition	Possible cause	Remedy
1 Camber inside/toe-in outside the nominal value, adjustment of track alignment possible	<ul style="list-style-type: none"> a. Screw connection not OK b. Tie rod or journal of tie rod end is deformed c. One or both tension struts is/are deformed d. Control arm deformed 	<ul style="list-style-type: none"> a. Check screw connections: <ul style="list-style-type: none"> Tie rod end to swivel bearing Tie rod to power steering gear Power steering gear to front axle carrier b. Replace tie rod, tension strut and swivel bearing <p>IMPORTANT: If the journal of the tie rod end is deformed, the power steering gear must also be replaced</p> <ul style="list-style-type: none"> c. Replace tension strut and swivel bearing d. Replace control arm, tension strut and swivel bearing
2 Camber inside/toe-in outside the nominal value, adjustment of track alignment possible	Powerful forces acting on steering/front axle components	<ul style="list-style-type: none"> Replace tie rods Replace swivel bearing Replace power steering gear Replace tension strut Replace control arms
3 Camber/toe-in outside the nominal value, adjustment of track alignment not possible	Powerful forces acting on front axle with distortion of: <ul style="list-style-type: none"> a. Screw connections b. Front axle support c. See Pt. 1b) to d) d. Spring strut/piston rod 	<ul style="list-style-type: none"> a. Check screw connections, replace the relevant part if necessary b. Replace front axle carrier c. See Pt. 1b) to d) d. Replace spring strut

31 00 ... NOTES ON REPAIRING THREADS

IMPORTANT: Install Helicoil thread inserts so that they are flush with the original thread.

NOTE: Damaged threads in engine carrier may be repaired with Helicoil thread inserts. Comply with the procedure described in the example.



Fig. 6: Identifying Damaged Threads
Courtesy of BMW OF NORTH AMERICA, INC.

Procedure:

1. Create a clean core hole; if necessary, drill out screw remnants



Fig. 7: Drilling Out Screw Remnants
Courtesy of BMW OF NORTH AMERICA, INC.

2. Create locating thread for Helicoil thread insert