

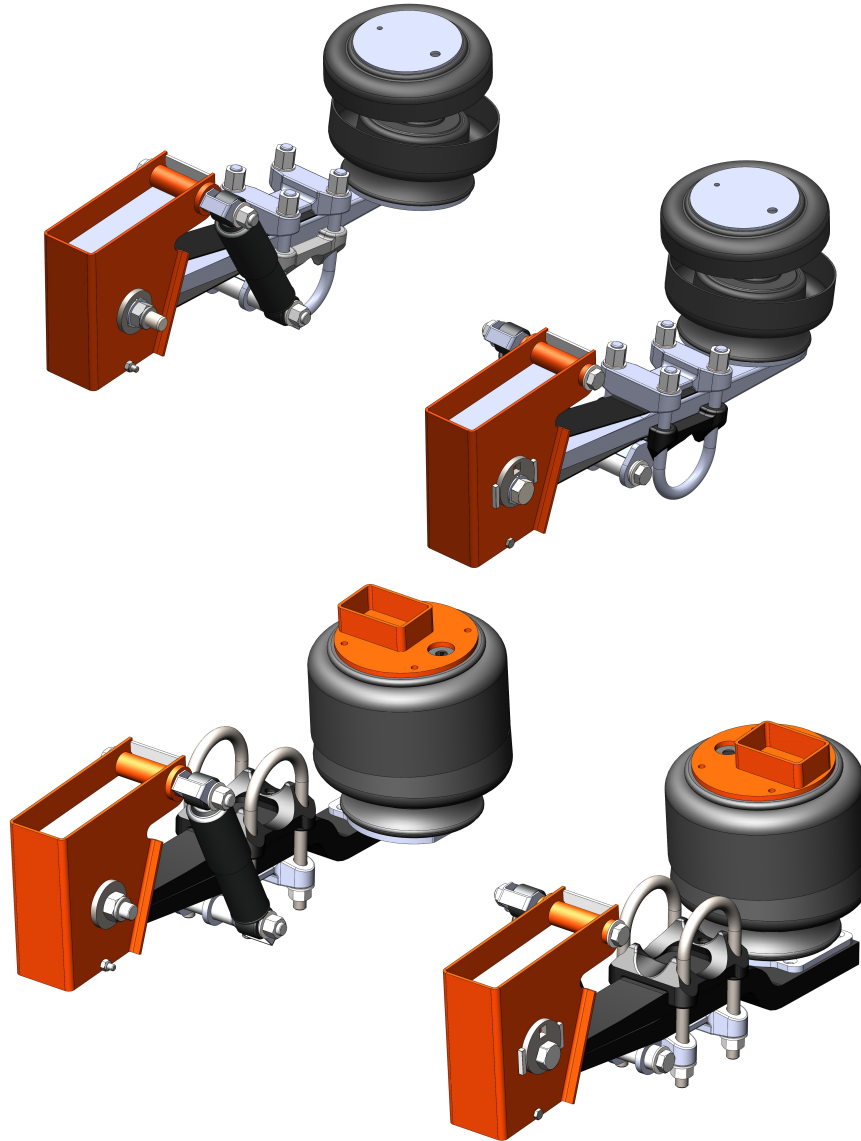


TMC Australia Pty Ltd

TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 & TL12 series

AIR SUSPENSION SERVICE MANUAL



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We Engineer Quality and Performance



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TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 & TL12 series Air Suspension Installation Instructions.

The TMC SL10 and TL12 series air suspension can be installed using normal workshop equipment, no specialised tools or equipment are required for the air suspensions installation.

The air suspension is supplied normally as an assembly with the front suspension hangers fitted to the trailing suspension arm, the suspension pivot bushes fully installed but not torqued, the trailing suspension arm seats fully welded to the trailer axle at the correct suspension centres. Contact TMC for the proper welding procedure if spring seats are supplied loose.

The order of assembly of the air suspension onto the trailer frame is not critical, but positioning the various suspension hangers and other air suspension brackets correctly is very important. A general arrangement layout drawing is supplied with every air suspension module, additional copies are available on request from TMC Australia.

Recommended Installation Procedure.

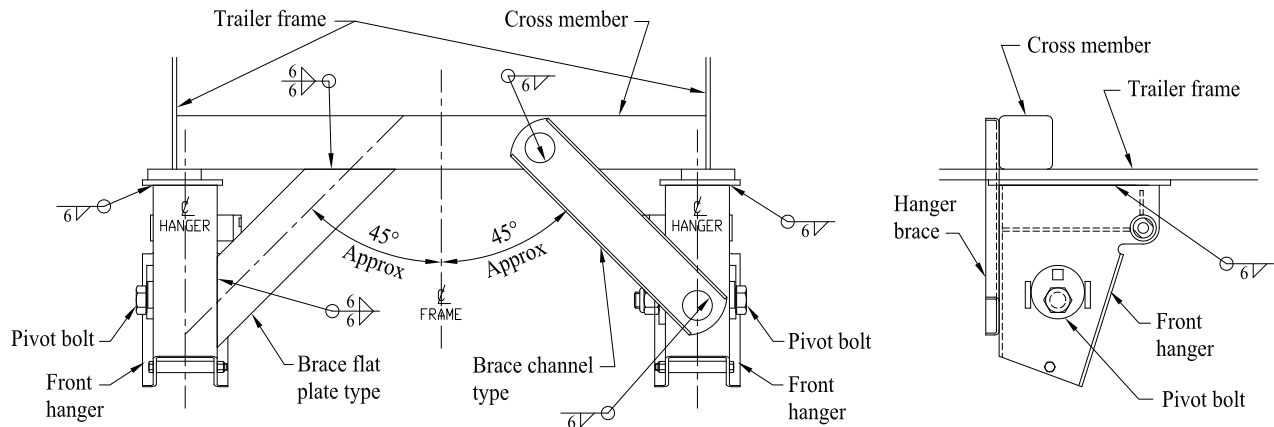
Position two of the front suspension hangers onto the trailer frame. It is important to check the air suspension general arrangement drawing for the suspension's correct dimensional layout to ensure that the axle required locations are correct. Ensure that the hangers are fitted square to the frame and located in line longitudinally and transversely. All dimensions longitudinal, transverse and diagonal are to be within 2mm maximum variation. Position the other front suspension hangers onto the trailer frame (in the case of tandem and tri axle suspension installations), ensuring that all the dimensions are held to within the 2mm maximum variation.

Tack weld all the suspension hangers and brackets in position. It is important to recheck the positioning of all the suspension hangers and brackets to comply with the suspension's general arrangement drawing dimensions for the suspension and that they are held to within the 2mm maximum variation before final welding of any of the suspension hangers.

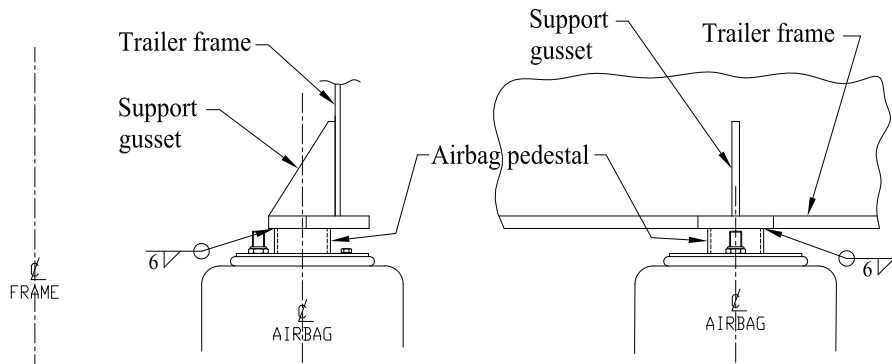
All welding between the suspension hangers and the trailer frame is to be done using either low hydrogen electrodes or an approved equivalent MIG process.

Fully weld all around the top of each suspension hanger in a 6mm continuous fillet weld.

After installation of all the air suspension hangers, it is recommended that the front hangers are fitted with either a channel, angle or flat plate type of cross bracing between the front suspension hanger and a chassis cross member. Fully weld around the ends of the cross bracing onto the front suspension hanger and onto the trailer's cross member. The air bag pedestals should also be supported by a full cross member brace. The airbag top support bracket may have to be cut or modified to be able to be attached to the trailer frame.



Typical Front Suspension Hanger Brace Arrangement



Mounting of Airbag Pedestal to Frame.

Final Assembly.

The suspension's airbags have to be installed onto the ends of the trailing suspension arm and onto the top airbag pedestal. The airbags can be fitted firstly to the top airbag pedestal using the $\frac{3}{4}$ " UNF nyloc nut and $\frac{3}{8}$ " UNC stud. The airbag can then be bolted onto the suspension trailing arm using the $\frac{1}{2}$ " UNC bolts. Ensure all the bolts and fasteners are correctly tightened as per the recommended torque settings.

If the orientation of the top and bottom bolts/fasteners on the airbag does not align with the bolt holes in the suspension's trailing arm and top airbag pedestal then the orientation can be changed by using the following procedure.

In the base of the airbag loosen the lock nut, it may be necessary to break the seal between the rubber airbag bellows and the airbag piston so that the airbag's base can be rotated to achieve alignment between the top and bottom attachment bolt holes. Once the two sets of bolt holes are correctly aligned with the air suspension's attachment areas, re-tighten the lock nut in the airbag piston. The airbag can then be installed into the air suspension.

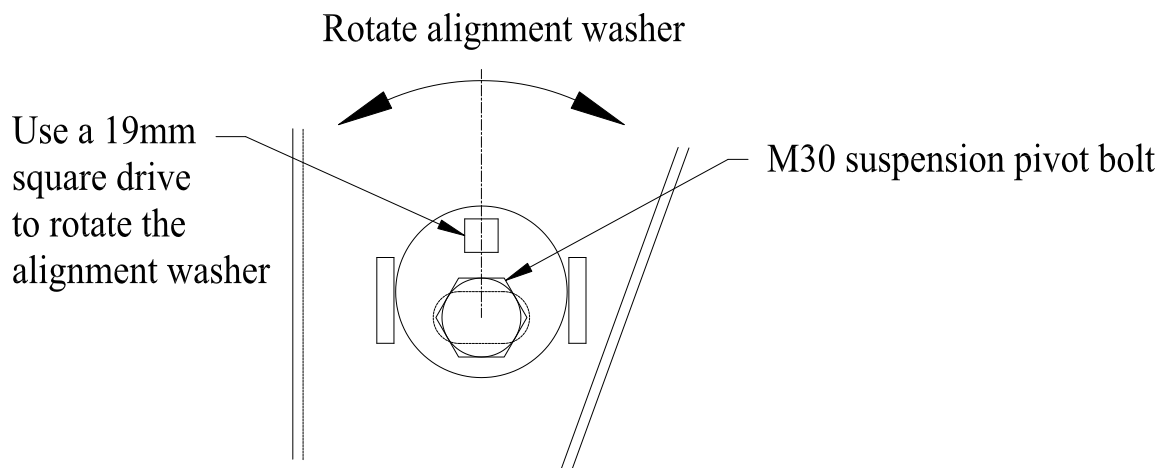
Axle Alignment and Adjustment Procedure.

Measure from the centre of the kingpin to a centre point on each end of the front trailer axle. Adjust the alignment as needed by rotating the collars on the front pivot bolt to achieve the correct alignment. The front pivot bolts must be loosened off so that the front pivot bolts can move backwards or forwards in the front suspension hangers when the alignment collars are rotated. It is recommended that the alignment collars are rotated equally on each side of the suspension forwards or backwards to achieve the correct axle alignment.

Then align the remaining axles off the front trailer axle by rotating the alignment collars as described above on each axle until the axle centres on both sides of the trailer are equal.

It is also possible to do the axle alignment using a laser or optical aligning device designed for axle alignment if available.

Important: After the axle alignment is completed tighten the front pivot bolt (M30).



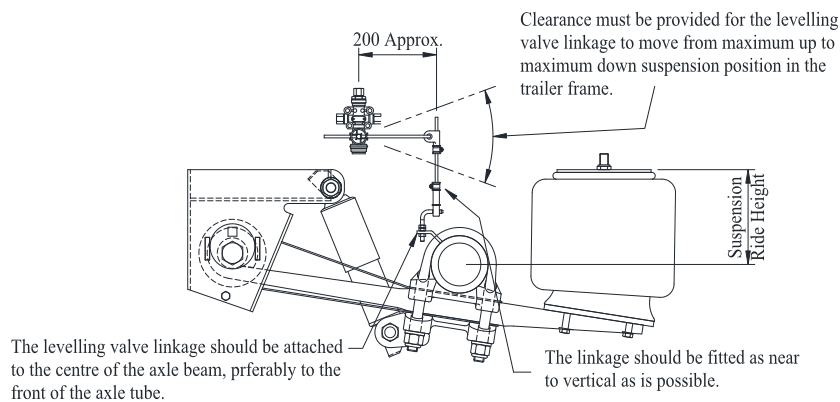
Important: Loosen the M30 suspension pivot bolt before attempting to align the suspension. Retighten all bolts after alignment is completed.

As TMC Australia Pty Ltd policy is one of continuous development we therefore reserve the right to change or modify the specifications without notification.

Levelling Valve Installation.

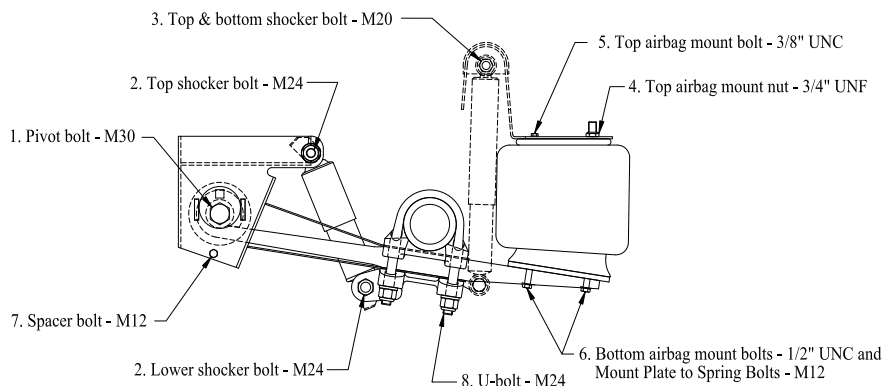
The suspension's levelling valve should be installed in the trailer frame in a protected position. Care must be taken to ensure that the levelling valves linkage can move from the air suspension maximum up position to the air suspension maximum down position without any interference from other frame parts or other suspension and brake components.

The levelling valve should be mounted on an adequate chassis bracket and the linkage attached to a bracket mounted centrally on the axle tube. The levelling valve should be fitted to the centre axle on tri axle installations and the rear axle on tandem axle installations.



Recommended Torque Settings.

- | | |
|-------------------------------------|---------------------------|
| 1. Pivot bolt: | - 1100 Nm. (M30) |
| 2. Top & Lower Shock Absorber bolt: | - 400 Nm. (M24) |
| 3. Top & Lower Shock Absorber bolt: | - 300 Nm. (M20) |
| 4. Top Airbag mount nyloc nut: | - 70 Nm. (3/4" UNF) |
| 5. Top airbag mount bolt: | - 35 Nm. (3/8" UNC / M12) |
| 6. M22 adapter & o-ring | - 70 Nm (M22) |
| 7. Bottom airbag mount bolts: | - 70 Nm. (1/2" UNC / M12) |
| Mount plate to spring bolts: | - 100 Nm (M12) |
| 8. Front hanger spacer bolts: | - 70 Nm. (M12) |
| 9. U-bolt | - 800Nm. (M24) |





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Recommended Service Schedule.

On Delivery and after 500 km.

Check all torque settings for all fasteners.

Every 25,000km or Quarterly.

Check all torque settings for all fasteners and inspect for visual damage and wear.
Repair and replace parts as necessary.

Every 100,000 km or Annually.

Check all torque settings for all fasteners and inspect for visual damage and wear.
Check all suspension bushings for wear and deterioration replace or repair as necessary.
Check all suspension hangers and trailing suspension arm for wear and deterioration, replace or repair as necessary.
Carry out a visual inspection of the suspension for wear and damage, repair or replace any worn or damaged parts as necessary.
Check the axle alignment and readjust as necessary. Axle alignment must be checked whenever severe kerb contact, accident damage or the trailing leaf spring pivot bush is replaced.

Note: TMC's range of "SL10" and "TL12" suspensions generally designed for operating on clean paved roads. Although use on grade or gravel roads is acceptable, for equipment that is regularly used "off-road" or "off-highway" TMC recommends that service intervals should be halved. In extremely severe operating conditions, weekly and in certain cases even daily inspections of the equipment may be required to ensure safe and correct operation of the suspension and axle combination.



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TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 series Air Suspension Spare Parts Listing

(Lay Forward Shock Absorber)

Item	Part Number	Description
1	626104-602	Air spring (1R12-602)
2	626108	Levelling valve assembly
3	627140	Shock absorber
4	626912	Pivot bush
5	627108SB	Pivot bolt c/w nut and washer
6	626123	Hanger alignment washer
7	626126	Hanger pivot washer
8	628110-185 L&R	Front hanger assembly 210, 235 & 380 ride height
	628112-225 L&R	Front hanger assembly 250 & 420 ride height
	628112-265 L&R	Front hanger assembly 290 & 460 ride height
	628112-305 L&R	Front hanger assembly 330 & 500 ride height
9	626134/365-3	Catch strap (Yellow)
10	626527SB	Top shocker bolt M24 x 270 c/w coneloc nut and washer
11	626528SB	Bottom shocker bolt M24 x 250 c/w coneloc nut and washer
12	626501/01 & /02	Catch strap clip M24 (one pc. 01 & 02 per shock)
13	9HB1/2UNC1.25	Airbag bolt bottom ½"UNC x 1.25" long
	9HB1/2UNC2.00	Airbag bolt bottom ½"UNC x 2.00" long (235 RH only)
	9HB1/2UNC2.25	Airbag bolt bottom ½"UNC x 2.25" long
	9HB1/2UNC2.75	Airbag bolt bottom ½"UNC x 2.75" long
	9HB1/2UNC3.00	Airbag bolt bottom ½"UNC x 3.00" long (235 RH only)
	9HB1/2UNC3.50	Airbag bolt bottom ½"UNC x 3.50" long (235 RH only)
14	9HB3/8UNC1.00	Airbag top bolt 3/8" UNC x 1" long
15	9LNT3/4UNF	Airbag top mounting nut ¾" UNF nyloc
16	Refer TMC	Top airbag mount
17	9HBM12175150	Hex bolt M12 x 150
18	9LNM12	Nyloc nut M12
19	627127	Spacer tube
20	627116-12	Airbag bottom plate
21	626183-20	Bottom airbag spacer (235 RH only)
22	627117	U-bolt M24 c/w nut and washer
23	627100SB	Single leaf spring (High mount) c/w pivot bush
	627101SB	Single leaf spring (Low mount) c/w pivot bush
24	627104SB	Wrapper plate (High mount) assembly
	627105SB	Wrapper plate (Low mount) assembly
25	9HBM16150070	Spring centre bolt (M16 x 70 long)
26	627110	Axle seat
27	627141	Clamp plate with lugs (Low mount)
28	627142	Axle seat with lugs (High mount)
29	627112	Clamp plate
30	628107	Wear plate

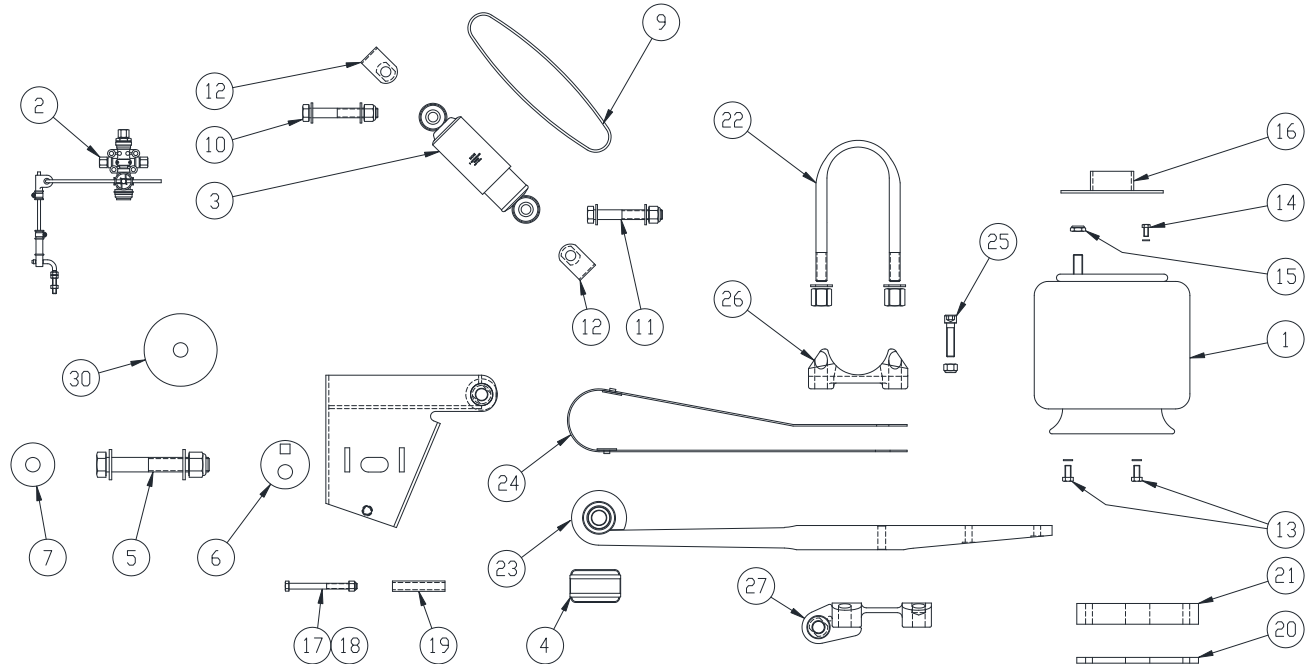


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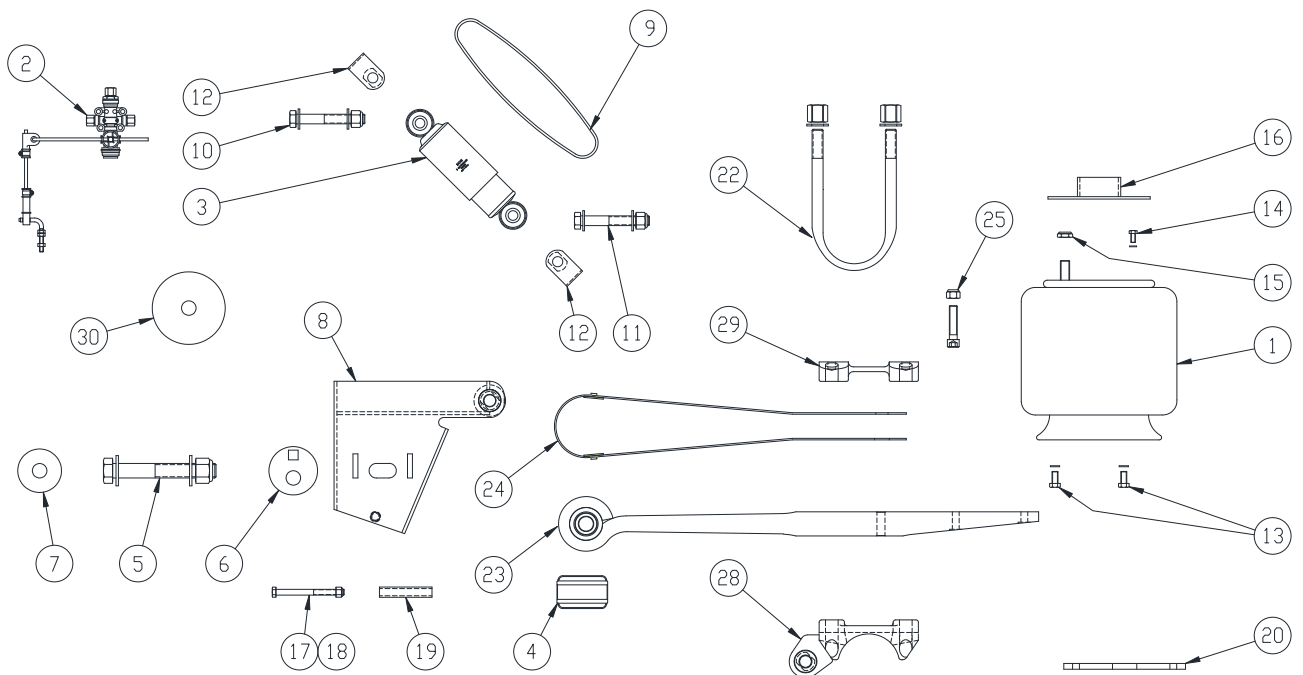
TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 series Air Suspension Spare Parts Listing (Lay Forward).

SL10 LOW MOUNT - LAID FORWARD SHOCK ABSORBER



SL10 HIGH MOUNT - LAID FORWARD SHOCK ABSORBER





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TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 series Air Suspension Spare Parts Listing (Vertical Shock Absorber).

Item	Part Number	Description
1	626104-602	Air spring (1R12-602)
2	626108	Levelling valve assembly
3	626110	Shock absorber
4	626912	Pivot bush
5	627108SB	Pivot bolt c/w nut and washer
6	626123	Hanger alignment washer
7	626126	Hanger pivot washer
8	628130-185 L&R	Front hanger assembly 210 & 380 ride height
	628130-225 L&R	Front hanger assembly 250 & 420 ride height
	628130-265 L&R	Front hanger assembly 290 & 460 ride height
	628130-305 L&R	Front hanger assembly 330 & 500 ride height
9	626134/615	Catch strap (Blue)
10	626161SB	Top & bottom shocker bolt M20 c/w nyloc nut & washer
13	9HB1/2UNC1.25	Airbag bolt bottom ½"UNC x 1.25" long
	9HB1/2UNC2.25	Airbag bolt bottom ½"UNC x 2.25" long
	9HB1/2UNC2.75	Airbag bolt bottom ½"UNC x 2.75" long
14	9HB3/8UNC1.00	Airbag top bolt 3/8" UNC x 1" long
15	9LNT3/4UNF	Airbag top mounting nut ¾" UNF nyloc
16	Refer TMC	Top airbag mount
17	9HBM12175150	Hex bolt M12 x 150
18	9LNM12	Nyloc nut M12
19	627127	Spacer tube
20	627116-12	Airbag bottom plate
22	627117	U-bolt M24 c/w nut and washer
23	627100SB	Single leaf spring (High mount) c/w pivot bush
	627101SB	Single leaf spring (Low mount) c/w pivot bush
24	627104SB	Wrapper plate (High mount) assembly
	627105SB	Wrapper plate (Low mount) assembly
25	9HBM16150070	Spring centre bolt (M16 x 70 long)
26	627110	Axle seat
27	627112	Clamp plate
28	628107	Wear plate

Note: Lower shock mount included with axle assembly only. Contact TMC Australia.

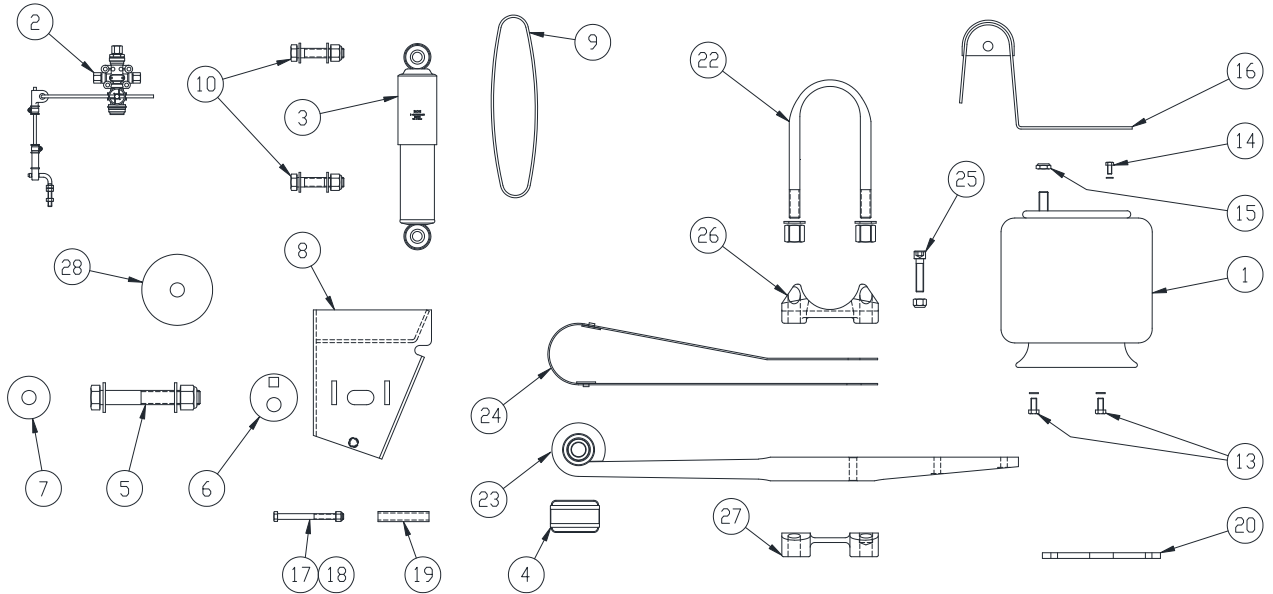


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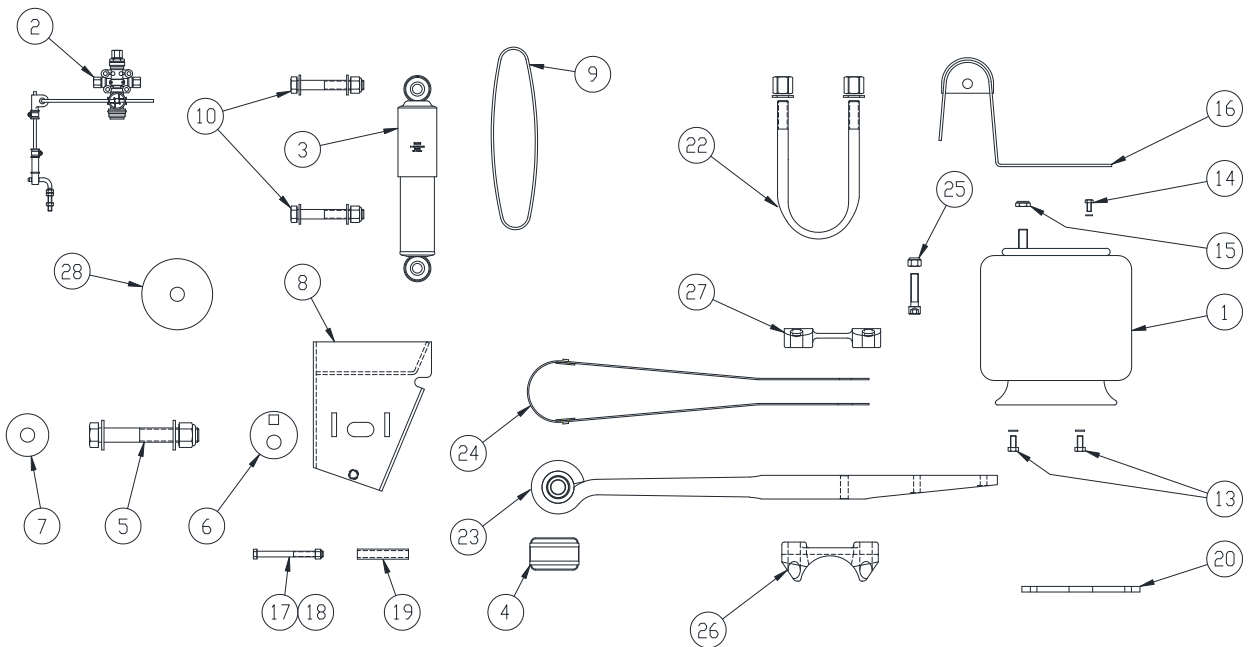
TMC SL10 & TL12 series Air Suspension Service Manual

TMC SL10 series Air Suspension Spare Parts Listing (Vertical Shocker)

SL10 LOW MOUNT - VERTICAL SHOCK ABSORBER



SL10 HIGH MOUNT - VERTICAL SHOCK ABSORBER





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TMC SL10 & TL12 series Air Suspension Service Manual

TMC TL12 series Air Suspension Spare Parts Listing (Lay Forward Shock Absorber)

Item	Part Number	Description
1	626908	Air spring (1R14-716)
2	626108	Levelling valve assembly
3	627140	Shock absorber
4	626912	Pivot bush
5	627108SB	Pivot bolt c/w nut and washer
6	626123	Hanger alignment washer
7	626126	Hanger pivot washer
8	628110-185 L&R	Front hanger assembly 200 & 380 ride height
	628112-225 L&R	Front hanger assembly 240 & 420 ride height
	628112-265 L&R	Front hanger assembly 280 & 460 ride height
	628112-295 L&R	Front hanger assembly 490 ride height
	628112-325 L&R	Front hanger assembly 520 ride height
9	626134/400-3	Catch strap (Red)
10	626527SB	Top shocker bolt M24 x 270 c/w coneloc nut and washer
11	626528SB	Bottom shocker bolt M24 x 250 c/w coneloc nut and washer
12	626501/01 & /02	Catch strap clip
13	9HBM12175080	Airbag bolt bottom M12 Hex bolt x 80 long
	9HBM12175040	Airbag bolt bottom M12 Hex bolt x 40 long
	9CSM12175080	Airbag bolt bottom M12 Countersunk bolt x 80 long
14	625235	M22 x 1/4" NPT adapter w/ o-ring
16	Refer TMC	Top airbag mount
17	9HBM12175150	Hex bolt M12 x 150
18	9LNM12	Nyloc nut M12
19	627127	Spacer tube
20	628120	Airbag bottom plate
21	628107	Wear plate
22	628104SB	U-bolt M24 c/w nut and washer
23	628100-01SB	Twin leaf spring (High mount) c/w pivot bush
	628100-02SB	Twin leaf spring (Low mount) c/w pivot bush
26	627110	Axle seat
27	628141	Clamp plate with lugs (Low mount)
28	628142	Axle seat with lugs (High mount)
29	627112	Clamp plate

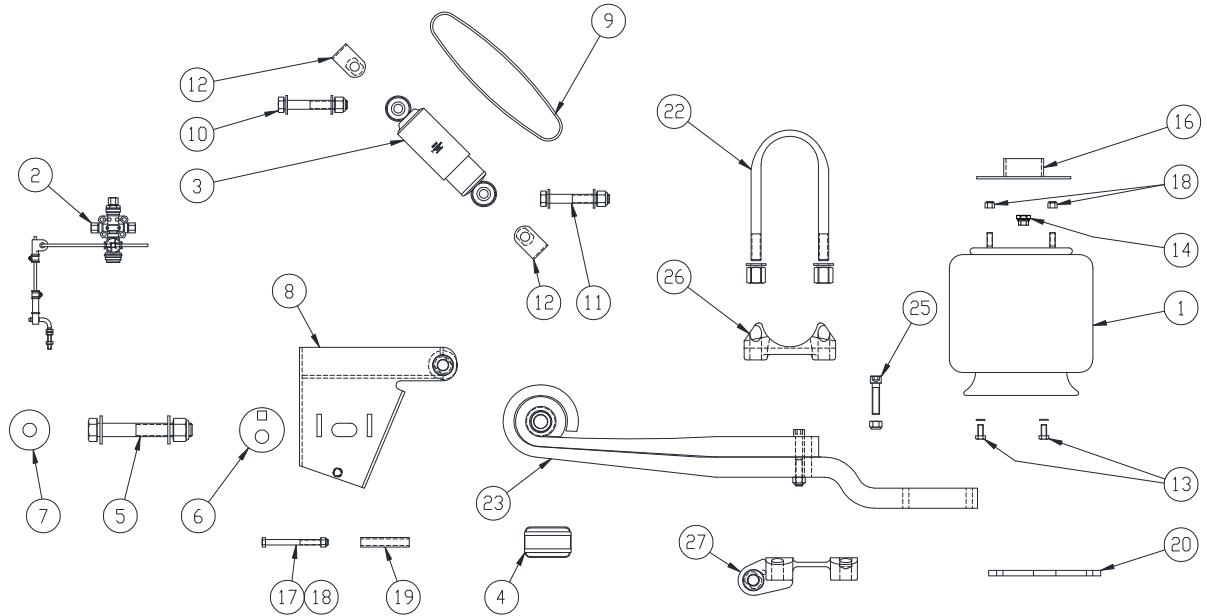


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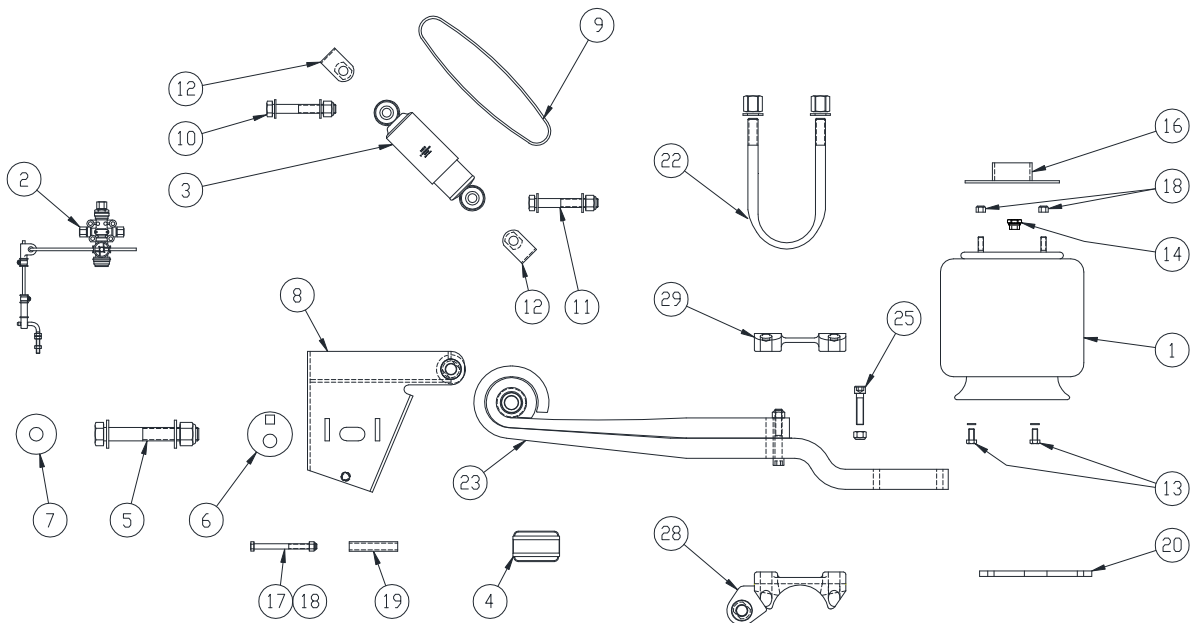
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TMC TL12 series Air Suspension Spare Parts Listing (Lay Forward).

TL12 LOW MOUNT - LAID FORWARD SHOCK ABSORBER



TL12 HIGH MOUNT - LAID FORWARD SHOCK ABSORBER





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TMC SL10 & TL12 series Air Suspension Service Manual

TMC TL12 series Air Suspension Spare Parts Listing (Vertical Shock Absorber).

Item	Part Number	Description
1	626908	Air spring (1R14-716)
2	626108	Levelling valve assembly
3	626110	Shock absorber
4	626912	Pivot bush
5	627108SB	Pivot bolt c/w nut and washer
6	626123	Hanger alignment washer
7	626126	Hanger pivot washer
8	628130-185 L&R	Front hanger assembly 200 & 380 ride height
	628130-225 L&R	Front hanger assembly 240 & 420 ride height
	628130-265 L&R	Front hanger assembly 280 & 460 ride height
	628130-295 L&R	Front hanger assembly 310 & 490 ride height
	628130-325 L&R	Front hanger assembly 500 ride height
9	626134/615	Catch strap (Blue)
10	626161SB	Top & bottom shocker bolt M20 c/w nyloc nut & washer
13	9HBM12175080	Airbag bolt bottom M12 Hex bolt x 80 long
	9HBM12175040	Airbag bolt bottom M12 Hex bolt x 40 long
	9CSM12175080	Airbag bolt bottom M12 Countersunk bolt x 80 long
14	625235	M22 x 1/4" NPT adapter w/ o-ring
16	Refer TMC	Top airbag mount
17	9HBM12175150	Hex bolt M12 x 150
18	9LNM12	Nyloc nut M12
19	627127	Spacer tube
20	628120	Airbag bottom plate
21	628107	Wear plate
22	628104SB	U-bolt M24 c/w nut and washer
23	628100-01SB	Twin leaf spring (High mount) c/w pivot bush
	628100-02SB	Twin leaf spring (Low mount) c/w pivot bush
26	627110	Axle seat
27	627112	Clamp plate

Note: Lower shock mount included with axle assembly only. Contact TMC Australia.

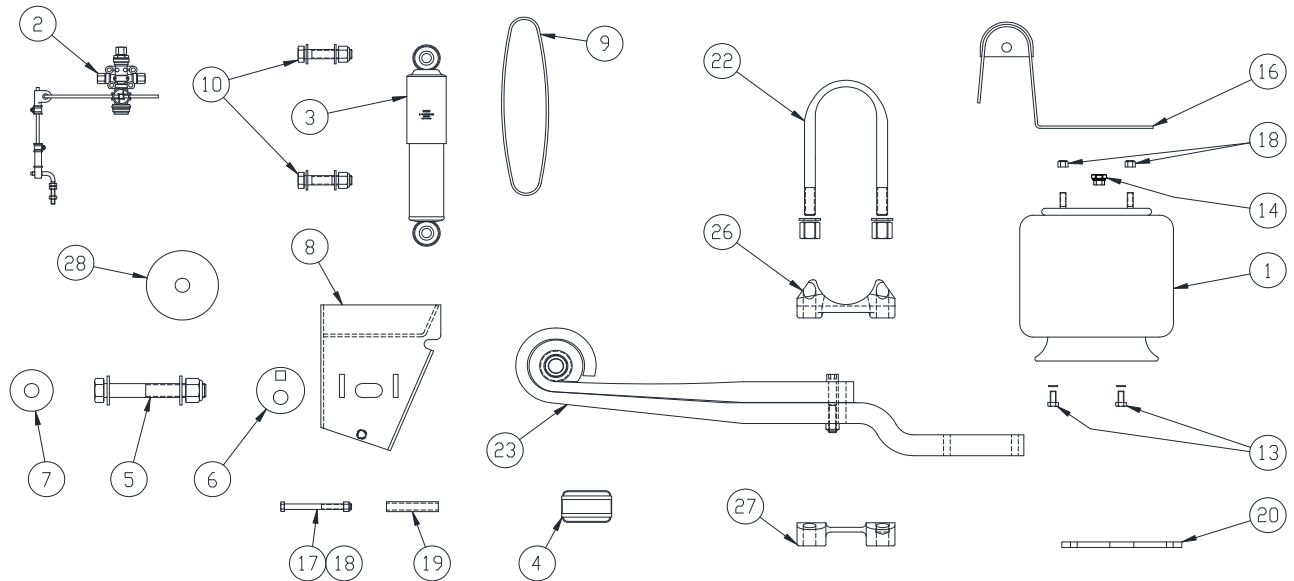


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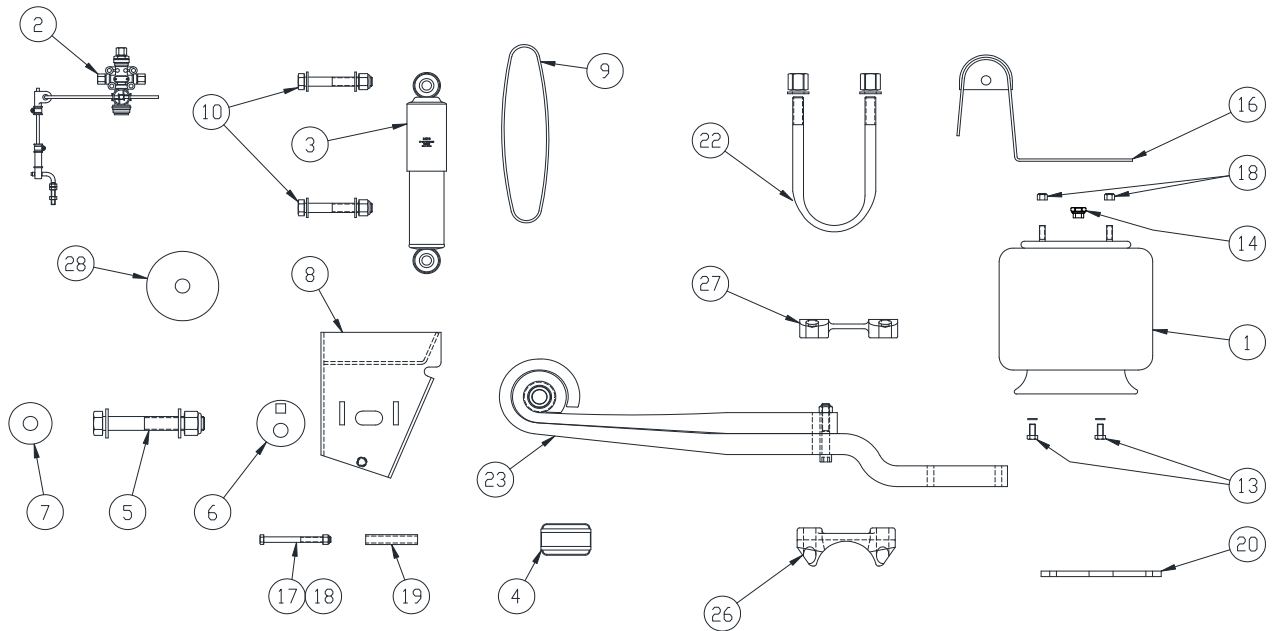
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TMC TL12 series Air Suspension Spare Parts Listing (Vertical Shock).

TL12 LOW MOUNT - VERTICAL SHOCK ABSORBER



TL12 HIGH MOUNT - VERTICAL SHOCK ABSORBER



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