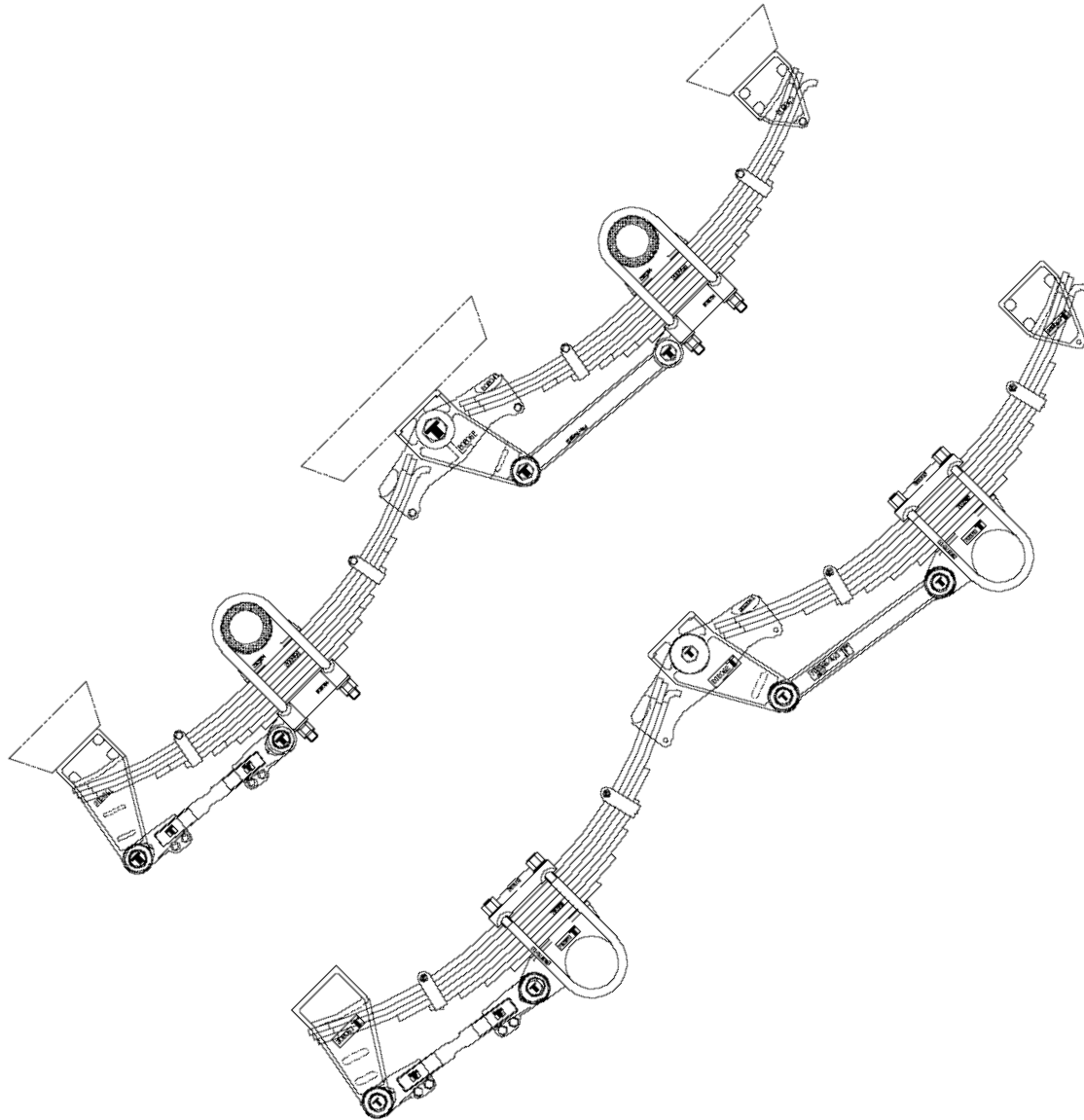




TMC Axle Mfg. Sdn. Bhd.
TMC 20 Mechanical Suspension Service Manual

TMC 20 SPRING SUSPENSION SERVICE MANUAL



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Engineered To Move

RECOMMENDED SERVICE SCHEDULE.

First Service 500 km or on Delivery:

Check all torque settings and re torque.

Every 10,000km or every 2 Months (Whichever Comes First):

Check all torque settings and inspect for visual damage and wear.

Repair and replace parts as necessary.

Every 50,000 km or Annually (Whichever Comes First):

Check all torque settings and inspect for visual damage and wear.

Check all suspension bushings for wear and deterioration replace or repair as necessary.

Check all leaf springs and U bolts 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 realign as necessary. Axle alignment must be checked when ever serve kerb contact, accident damage or the torque arm bushes are replaced.

Note: These are the minimum recommended service requirements for the suspension, dependant on service conditions more frequent service and maintenance schedules may be required for correct operation of the suspension equipment.

TORQUE ARMS and TORQUE ARM BUSHES – ASSEMBLY.

During servicing work the dismantling and re assembly of the adjustable torque arms may be necessary when replacing parts. The following is the recommended procedure. Assemble the adjustable torque arm to the same length as the matching fixed length torque arms. It is recommended that the fixed length torque arms are fitted on the near side (kerb) of the trailer and the adjustable torque arms are fitted on the off side of the trailer.

Fit the end of the torque arm into the suspension hanger or axle seat casting, insert the tapered rubber (or poly) torque arm bushes in from either side. Fit the torque arm pin through the rubber bushes (or poly), fit the torque arm washer and lock nut onto the end of the torque arm pin. Check that the torque arms are located centrally in the end of the hanger or axle seat and tighten the torque arm pin nut.

Assembly torque.

Torque arm pins:	1”UNF & M24 nut	180/220 Nm. (Rubber bush).
	1”UNF & M24 nut	250/300 Nm. (Poly bush).

Assembly Notes:

1. On two and three axle suspensions the middle and rear torque arms are equal or longer than the torque arm fitted to the front axle.
2. On all underslung suspensions the adjustable torque arms are to be fitted with the clamp bolts to the bottom as shown on the assembly drawings.
3. On installation lubricate the rubber torque arm bushes with a soapy solution, do not use liquid detergent or rubber grease.
4. On installation lubricate the poly torque arm bushes with rubber grease only.

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 as needed the adjustable torque arms length to get the two dimensions equal.

Then align the remaining axles off the front trailer axle by adjusting the length of the adjustable torque arm(s) until the axle centres on both sides of the trailer are equal.

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

After the axle alignment is completed and re checked, tighten the adjustable torque arm clamp bolts.

Assembly torque.

Torque arm clamp bolts: ½”UNF nut - 130/140 Nm.
 M14 nut - 140/150 Nm.

EQUALISER and EQUALISER BUSHES – ASSEMBLY.

Fit the equaliser casting into the suspension hanger casting, insert the tapered rubber (or poly) equaliser bushes in from either side. Fit the equaliser shaft through the rubber bushes (or poly), fit the equaliser shaft washer and lock nut onto the end of the equaliser shaft. Check that the equaliser casting is located centrally in the hanger casting and tighten the equaliser shaft nut.

Assembly torque.

Equaliser shaft: 1”UNF & M24 nut - 290/350 Nm. (Rubber bush).
 1”UNF & M24 nut - 400/450 Nm. (Poly bush).

After or during when service work or repairs are being done on the suspension or any of its components a visual inspection of the suspension should be carried out to ensure that all components are correctly located and fitted. The incorrect fitment and installation of any components will greatly reduce the service life of the suspension and its components.

GENERAL WELDING and REPAIR NOTES.

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. If a suspension hanger must be replaced during repair or service work, weld as follows.

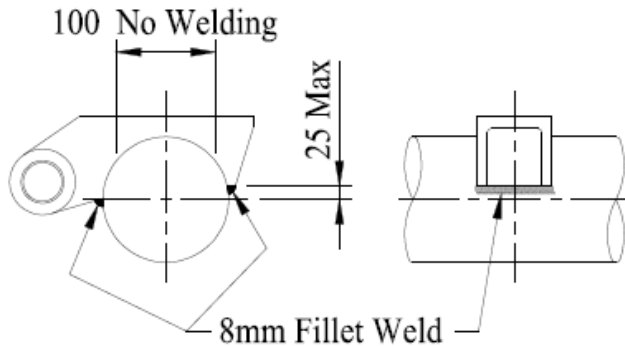
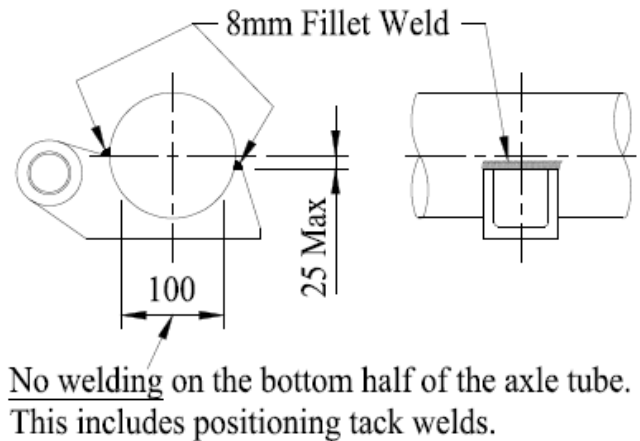
Weld all around the top of each suspension hanger in 10mm continuous fillet weld.

After installation of the suspension hanger it is recommended that either the pipe or channel type cross bracing which was fitted is replaced and re welded to the new hanger. Fully weld around the ends of the cross bracing to each suspension hanger.

When replacing axle seats be sure to re weld the axle seat as follows.

Weld each axle seat in position using 8mm continuous fillet weld.

Do not weld circumferentially around the axle and restrict all welding to within 25mm of the axles front and rear horizontal centre line. If in doubt consult the axle manufacture for welding and axle seat installation recommendations.

OVERSLUNG SUSPENSION**UNDERSLUNG SUSPENSION****TORQUE SETTINGS CHART****U Bolts:**

- 500/540 Nm. (7/8" UNF & M22)
- 750/800 Nm. (M24)
- 750/800 Nm. (1" UNF)

Equaliser Shaft Locknut:

- 290/350 Nm. (1" UNF & M24) with rubber bushes.
- 400/450 Nm. (1" UNF & M24) with poly bushes.
- 290/350 Nm. (M30) with steel equaliser bushes.

Torque Arm Pin Locknut:

- 180/200 Nm. (1" UNF & M24) with rubber bushes.
- 250/300 Nm. (1" UNF & M24) with poly bushes.

Adjustable Torque Arm Eye Bolts:

- 130/140 Nm. (1/2" UNF Grade 8)
- 140/150 Nm. (M14 Grade 8)

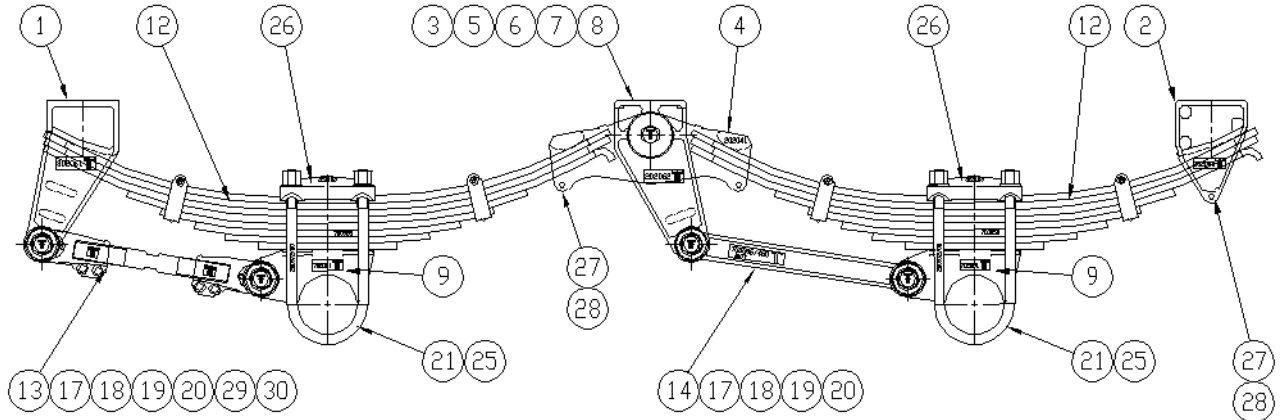
Equaliser Drop Out Bolts:

- 75/85 Nm. (1/2" UNF Grade 5)
- 65/75 Nm. (M12 Grade 8.8)

(Note: 1 Nm = 0.74 ftlbs approximately)

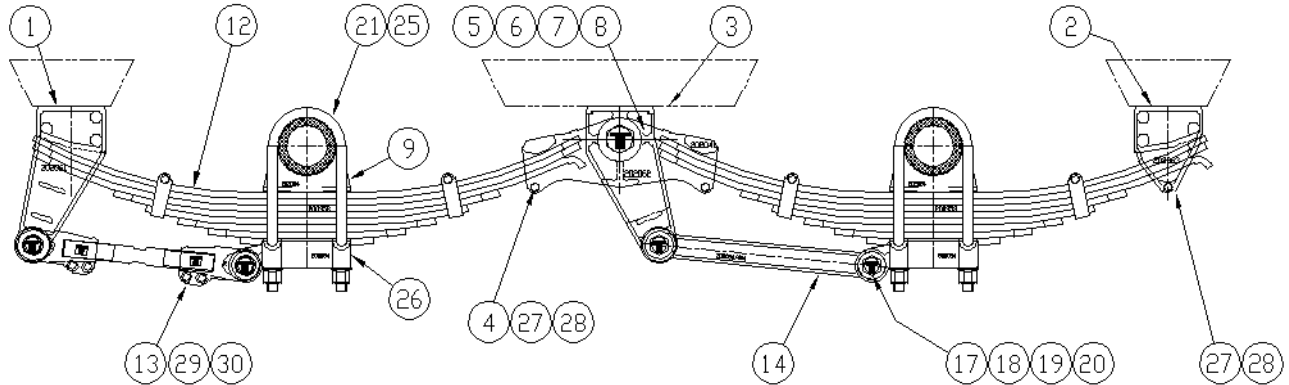
As TMC's policy is one of continuous development we therefore reserve the right to change or modify the specifications without notification.

TMC 20 Overslung Mechanical Suspension Spare Parts Listing:



Item	Part No.	Description	Item	Part No.	Description
1.	302061	Front hanger	13.	702065/380	Adj Torque Arm assy. – 380
2.	302063	Rear hanger		702065/460	Adj Torque Arm assy. – 460
3.	202062	Equaliser hanger		702065/545	Adj Torque Arm assy. – 545
	322062	Equaliser hanger – steel bush	14.	702066/380	Fixed torque arm – 380mm
4.	202041	Equaliser 1220/1360 spacing		702066/460	Fixed torque arm – 460mm
	202042	Equaliser 1528 spacing		702066/545	Fixed torque arm – 545mm
	322041	Equaliser 1360 spacing steel	17.	202071	Torque arm pin assembly
	322042	Equaliser 1528 spacing steel	18.	202073N	Nut – torque arm
5.	202043	Equaliser shaft assembly	19.	202072	Washer – torque arm
	322106	Equaliser shaft assembly - Steel	20.	202073	Torque arm bush – rubber
6.	202043N	Nut – equaliser		202073P	Torque arm bush - poly
	322106N	Nut – steel equaliser bush	21.	200972/335	U bolt – 127 dia x 335
7.	202044	Washer – equaliser		200972/00	U bolt – 127 dia x 355
	322109	Washer – steel equaliser bush		200972/01	U bolt – 127 dia x 380
8.	202045	Equaliser bush - rubber		200972/02	U bolt – 127 dia x 405
	202045P	Equaliser bush – poly		200972/03	U bolt – 127 dia x 430
	322107	Equaliser bush – steel		200972/04	U bolt – 127 dia x 455
9.	702050	Axle seat 127 dia x 25 high		200975/10	U bolt – 152 sq x 390
	702051	Axle seat 127 dia x 50 high		200975/11	U bolt – 152 sq x 415
	702052	Axle seat 127 dia x 75 high		200975/12	U bolt – 152 sq x 440
	702053	Axle seat 127 dia x 100 high		200975/13	U bolt – 152 sq x 465
	202055	Axle seat Bogie x 70 high		200974/00	U bolt – 152 dia x 375
	202056	Axle seat Bogie x 120 high		200974/01	U bolt – 152 dia x 400
	702057	Axle seat 152 sq x 40 high		200974/02	U bolt – 152 dia x 425
	702058	Axle seat 152 sq x 65 high		200974/03	U bolt – 152 dia x 450
	702059	Axle seat 152 sq x 90 high	25.	200912N	Nut – U bolt
	702151	Axle seat 152 dia x 40 high	26.	323103	Spring top plate 127 axle
	702152	Axle seat 152 dia x 65 high		323109	Spring top plate 152 axle
	702153	Axle seat 152 dia x 90 high	27.	9HB12150120	Hex bolt M12 x 120 long
12.	700958	8 leaf spring - 75x14	28.	9LNM12	Nyloc nut M12
	700959	9 leaf spring - 75x14	29.	9HB14150060	Hex bolt M14 x 60 long
	700959/16	9 leaf spring - 75x16	30.	9LNM14	Nyloc nut M14
	200958S	8 leaf spring - 75x14 Short		322108	Seal – steel equaliser bush

TMC 20 Underslung Mechanical Suspension Spare Parts Listing:



Item	Part No.	Description	Item	Part No.	Description
1.	302061	Front hanger	13.	702065/460	Adj Torque Arm assy. – 460
2.	302063	Rear hanger		702065/545	Adj Torque Arm assy. – 545
3.	202062	Equaliser hanger	14.	702066/460	Fixed torque arm – 460mm
	322062	Equaliser hanger – steel bush		702066/545	Fixed torque arm – 545mm
4.	202041	Equaliser 1220/1360 spacing	17.	202071	Torque arm pin assembly
	202042	Equaliser 1528 spacing	18.	202073N	Nut – torque arm
	322041	Equaliser 1360 spacing steel	19.	202072	Washer – torque arm
	322042	Equaliser 1528 spacing steel	20.	202073	Torque arm bush – rubber
5.	202043	Equaliser shaft assembly		202073P	Torque arm bush - poly
	322106	Equaliser shaft assembly - Steel	21.	200972/01	U bolt – 127 dia x 335
6.	202043N	Nut – equaliser		200972/02	U bolt – 127 dia x 405
	322106N	Nut – steel equaliser bush	25.	200912N	Nut – U bolt
7.	202044	Washer – equaliser	26.	505054	Clamp plate 127 axle
	322109	Washer – steel equaliser bush	27.	9HB12150120	Hex bolt M12 x 120 long
8.	202045	Equaliser bush - rubber	28.	9LNM12	Nyloc nut M12
	202045P	Equaliser bush – poly	29.	9HB14150060	Hex bolt M14 x 60 long
	322107	Equaliser bush – steel	30.	9LNM14	Nyloc nut M14
9.	202054	Axle seat 127 dia x 35 high		322108	Seal – steel equaliser bush
12.	700958	8 leaf spring - 75x14			
	700959	9 leaf spring - 75x14			
	700959/16	9 leaf spring - 75x16			

Suspension Part Number (Code) Explanation

The first two digits depict the suspension kit type.

- i.e. - 75 is for a mechanical spring standard overslung suspension kit.
- 76 is for a mechanical spring standard underslung suspension kit.

The third digit is to indicate the numbers of axles in the suspension.

- i.e. - 1 = Single axle kit.
- 2 = Tandem axle kit.
- 3 = Tri axle kit.
- 4 = Quad axle kit.

The fourth digit is to indicate the axle spacing of the suspension.

- i.e. - 0 = 0mm axle spacing for single axle configuration.
- 1 = 1220mm axle spacing.
- 2 = 1300mm axle spacing.
- 3 = 1360mm axle spacing.
- 4 = 1528mm axle spacing.
- 5 = 1800mm axle spacing.

The fifth digit is to indicate the spring type used.

- i.e. - 1 = standard 8 leaf (75x14) spring.
- 2 = standard 9 leaf (75x14) spring.
- 3 = standard 10 leaf (75x14) spring.
- 4 = heavy duty 8 leaf (75x16) spring.
- 5 = heavy duty 9 leaf (75x16) spring.
- 6 = heavy duty 10 leaf (75x16) spring.

The sixth digit is to indicate the type of axle used.

- i.e. - 1 = 127mm (5") round axle
- 2 = 127mm (5") square axle
- 3 = 152mm (6") round axle
- 4 = 152mm (6") square axle

The seventh to ninth alphabet describes the axle seat used.

- i.e. - V = Very low height seat, 25mm height 127mm (5") axle.
- L = Low height seat, 50mm height 127mm (5") axle app or
40mm height 152mm (6") axle.
- M = Medium height seat, 75mm height 127mm (5") axle app or
65mm height 152mm (6") axle.
- H = High height seat, 100mm height 127mm (5") axle app or
90mm height 152mm (6") axle.

The tenth to eleventh describes the bushes used.

- i.e. - P = Polyamide torque arm bush and equaliser bush
- R = Polyamide equaliser bush
- S = Steel equalizer bush
- T = Polyamide torque arm bush

Example: 753321LMH

This is the kit number (**75**) for a mechanical suspension kit, standard overslung, (**3**) tri axle, (**3**) 1360mm axle spacing, (**2**) standard 9 leaf spring 14mm leaves, (**1**) 127mm (5") round axle with (**LMH**) low - 50mm, medium - 75mm, and high - 100mm, axle seats.