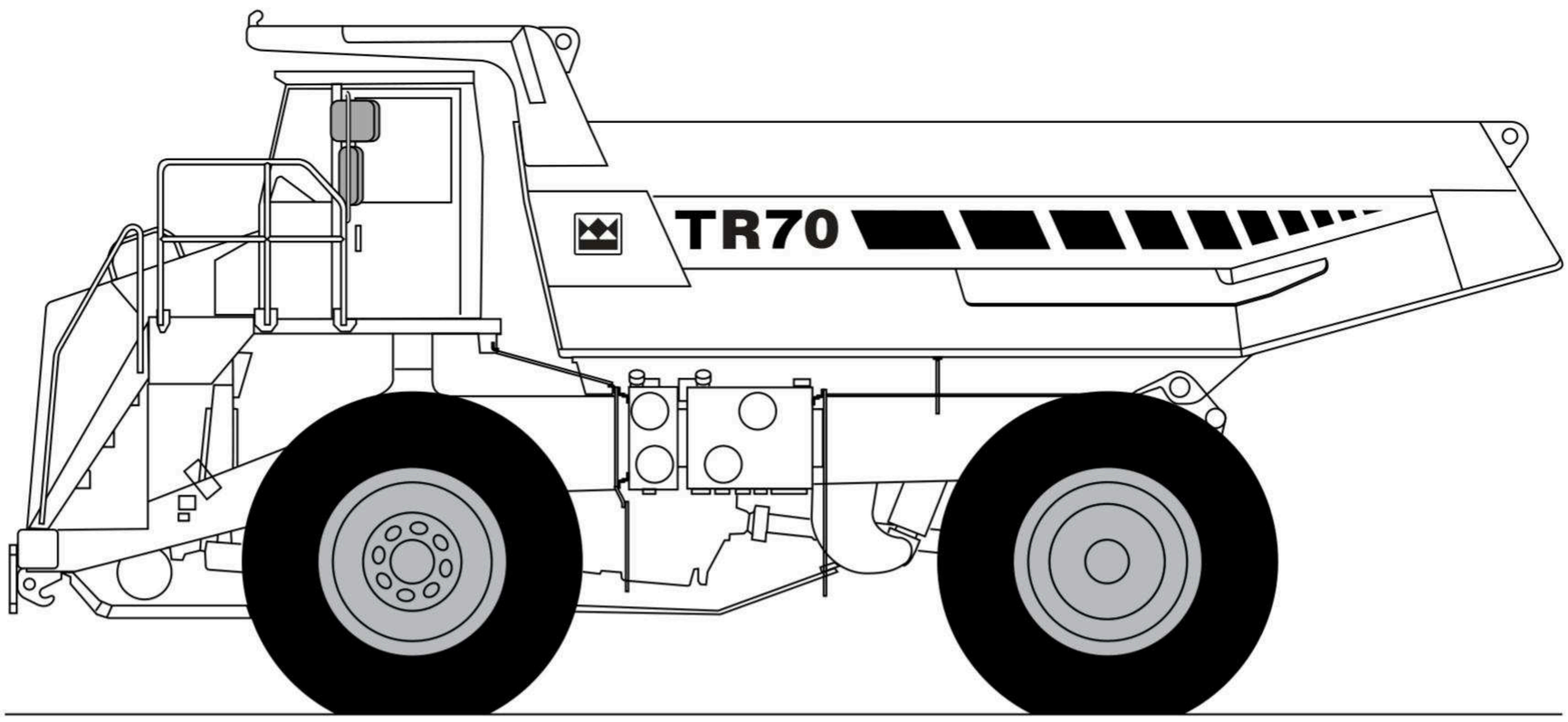
TEREX

TR70
Off-Highway Truck
Maintenance Manual



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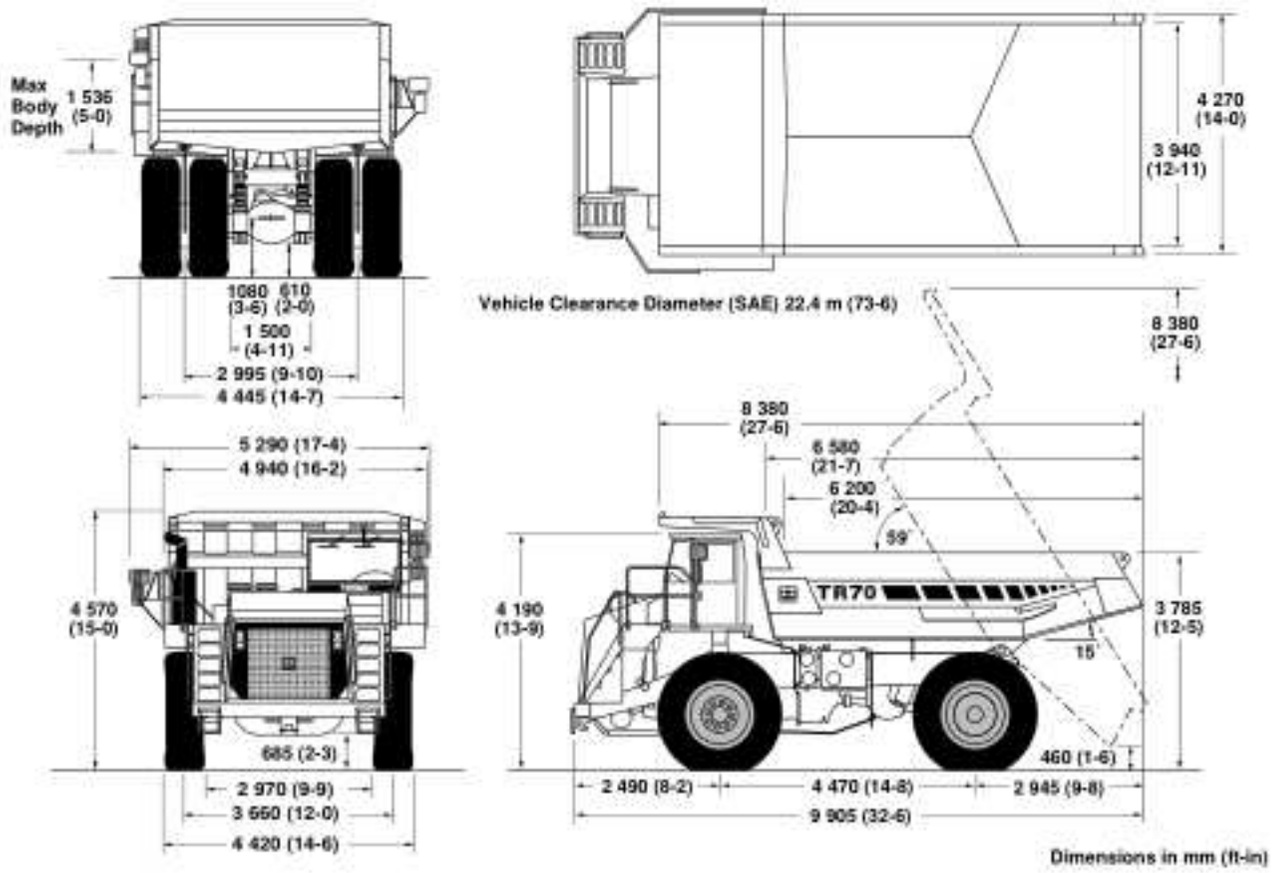


Fig. 1 - Machine Dimensions

ENGINE

Make/Model ..... Detroit Diesel 12V 2000
Type ..... 4 Cycle, Turbocharged/Aftercooled. Electronic Management
Gross Power @ 2 100 rev/min ..... 567 kW (760 hp, 770 PS)
Net Power @ 2 100 rev/min ..... 522 kW (700 hp, 710 PS)

Note: Power ratings to SAE J1995 Jun 95. Engine emission meets USA EPA/CARB MOH 40 CFR 89 and EU NRMM (non-road mobile machinery directive).

Maximum Torque ... 3 118 Nm (2 300 lbf ft) @ 1 200 rev/min
Number of Cylinders/Configuration ..... 12, V
Bore x Stroke ..... 130 x 150 mm (5.11 x 5.91 in)
Total Displacement ..... 24 litres (1 464 in³)
Starting ..... Electric
Maximum Speed, Full Load ..... 2 100 rev/min
Maximum Speed, No Load ..... 2 250 rev/min
Idle Speed ..... 750 rev/min
Safe Operating Angle ..... 30°/60% Grade

TRANSMISSION

Make/Model ..... Allison M6600AR automatic electronic control with soft shift feature. Remote mounted in the frame. Integral TC 682 torque converter and planetary gearing. Six speeds forward, two reverse. Automatic converter lockup action in all speed ranges. With body up, gear range is limited to 1st forward only. Downshift inhibitor. Intregal hydraulic retarder.

Speeds With 24.00 R 35 Tyres						
Forward						
Gear	1	2	3	4	5	6
Ratio	4.00	2.68	2.01	1.35	1.00	0.67
km/h	9.5	14.2	18.9	28.2	38.1	57.0
mile/h	5.9	8.8	11.8	17.5	23.7	35.5
Reverse						
Gear	1	2				
Ratio	5.12	3.46				
km/h	7.4	11.0				
mile/h	4.6	6.8				

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MECHANICAL TROUBLESHOOTING CHART

CONDITION	REASON	REMEDY
T - Low engine speed at converter stall	Low engine output torque	Tune engine and check output
	Converter element interference	Check for noise at stall; overhaul converter if necessary
	Transmission oil not up to operating temperature	Warm up transmission to 82 - 103° C (180 - 220° F)
U - Low converter-out pressure	Low oil level	Add oil to proper level
	Oil line leakage (oil cooler or filter)	Check for leaks, correct as required
	Plugged oil strainer	Clean oil strainer
	Defective oil pump	Rebuild/replace oil pump assembly
	High oil temperature	Refer to condition 'A'
	Foaming oil	Refer to condition 'B'
V - Low main pressure	Low oil level	Add oil to proper level
	Leaks in hydraulic system	Check all external points for leaks; check each range for localizing internal leaks
	Failure in pressure regulator	Overhaul valve assembly
	Worn input oil pump assembly	Rebuild/replace pump assembly
	Clogged oil strainer	Clean oil strainer
	Air leaks at suction side of input pump	Check input pump, correct as required
W - Downshift of transmission is permitted during lockup operation		Refer to Electronic Troubleshooting
X - Shift quadrant not illuminated	Failed light bulb	Replace the light bulb
Y - Reverse signal not energized		Refer to Electronic Troubleshooting

SPECIAL TORQUE SPECIFICATIONS

FIG. NO.	ITEM NO.	ITEM NAME	TORQUE	
			Nm	lbf ft
1	3	Bolt	156	115
1	6	Bolt	278	205
1	10	Bolt	156	115
1	32	Bolt	130 - 156	96 - 115
1	38	Nut	950 - 1 355	700 - 1 000

* * * *

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The ring gear assembly must be installed onto carrier housing (19) so that cups (26) and cones (27) are properly pre-loaded; correct backlash exists between ring gear (29) and pinion gear (15), and satisfactory tooth pattern is established between ring gear and pinion gear.

These conditions can be obtained by using the following procedures:

1. Mount ring gear (29) and differential assembly on carrier housing (19). Make sure that side bearing cups (26) are properly positioned on side bearing cones (27). Install bearing caps (22) over cups (26) and cones (27), then secure bearing caps to the carrier housing with four dowel bushings (20) and bolts (21). Secure bolts snugly, but do not tighten them to torque specifications at this time.

Note: Each bearing cap (22) is mated to carrier housing (19), therefore, they must be returned to their original positions by aligning the identification marks made during disassembly.

2. Install a dial indicator to check the back side of ring gear (29) for true running. Rotate the assembly with an easy motion and note the back face runout. The runout is not to exceed 0.08 mm (0.003 in) with the dial indicator position as shown in Fig. 8.

3. Using a micrometer, take a measurement diagonally across bearing cap (22) lock pads and record it for reference later.

4. Install bearing adjusters (25) in their respective bearing caps (22).

5. Place a dial indicator in the position shown in Fig. 9, to check ring gear backlash. Tighten bearing adjuster (25) on the ring gear side until the backlash between ring gear (29) and pinion gear (15) reads 0.000 on the dial indicator.

6. Tighten the opposite bearing adjuster (25) until another measurement across bearing cap (22) lock pads indicates a 0.05 - 0.13 mm (0.002 - 0.005 in) expansion when compared to the measurement recorded in Step 3.

7. At this point the backlash tolerance between ring gear (29) and pinion gear (15) should be 0.30 - 0.46 mm (0.012 - 0.018 in) on gear sets with a 3.73:1 gear ratio. If this tolerance has not been obtained at this point, it can be accomplished without changing the bearing preload by backing off one adjuster a certain number

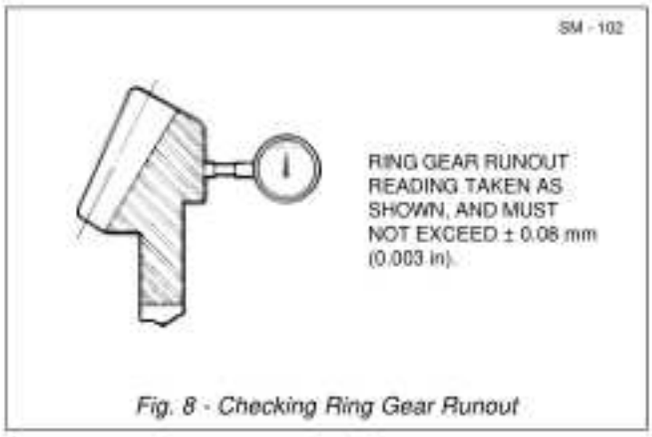


Fig. 8 - Checking Ring Gear Runout

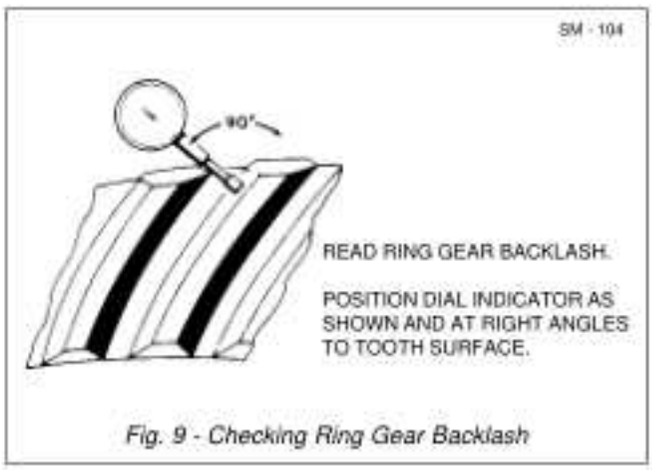


Fig. 9 - Checking Ring Gear Backlash

of notches and tightening up the opposite adjuster an equal number of notches.

8. When a satisfactory backlash tolerance has been established, check the gear tooth pattern as described under the heading 'Adjustments'.

9. If gear tooth pattern is not correct, some correction can be made by systematically loosening and tightening the bearing adjusters (25), as previously described, but in every instance re-check the backlash tolerance. If a favourable gear tooth pattern cannot be established within the backlash tolerance, it will be necessary to alter, add or remove, shims (18) between bearing cup (17) and carrier housing (19) and alter shims (11) by the same amount.

10. When altering these shims as described in 'Pinion Cage Group', disregard all procedures given for comparing the micrometer (measured) dimension and etched dimension on pinion gear (15) tail shaft end.

11. The procedures for keeping differential side bearing preload, backlash and favourable gear tooth pattern within specifications is strictly a 'try, check, and try again' method.

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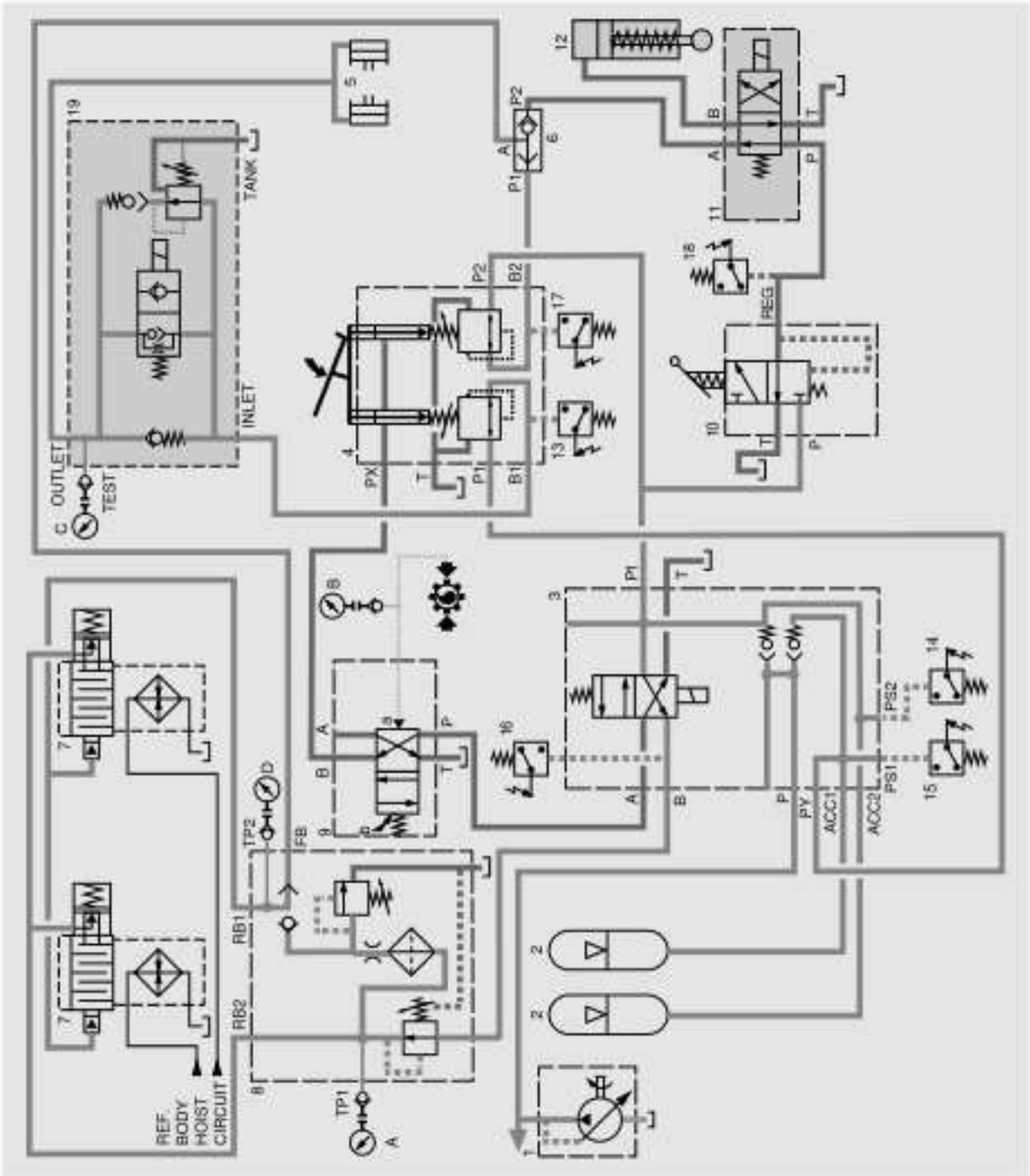


Fig. 4 - Braking System Schematic - Engine Running, Service Brake Applied

COMPONENTS

1 - Steering Pump
2 - Accumulators
3 - Brake Manifold Valve
4 - Treadle Valve
5 - Front Brake Calipers
6 - Shuttle Valve
7 - Oil Cooled Disc Brakes
8 - Monoblock Brake Valve
9 - Directional Control Valve
10 - Retarder Control Valve
11 - Directional Control Valve
12 - Transmission Retarder Cylinder
13 - Stop Light Pressure Switch
14 - Rear Brake Accumulator Pressure Switch
15 - Front Brake Accumulator Pressure Switch
16 - Parking Brake Pressure Switch
17 - Lockup Drop Out Pressure Switch
18 - Retarder Light Pressure Switch
*19 - Pressure Reducing Valve

* - Optional Components

PRESSURE TEST POINTS

A - Park Brake Pressure
B - Transmission Pressure
C - Front Service Brake Pressure
D - Rear Service Brake Pressure, Residual Brake Pressure and Retarder Pressure.

COLOUR CODES

Red - Pressurized Oil
Blue - Exhaust or Return Oil
Green - Intake Oil
Orange - Pilot Pressure
Yellow - Static Oil

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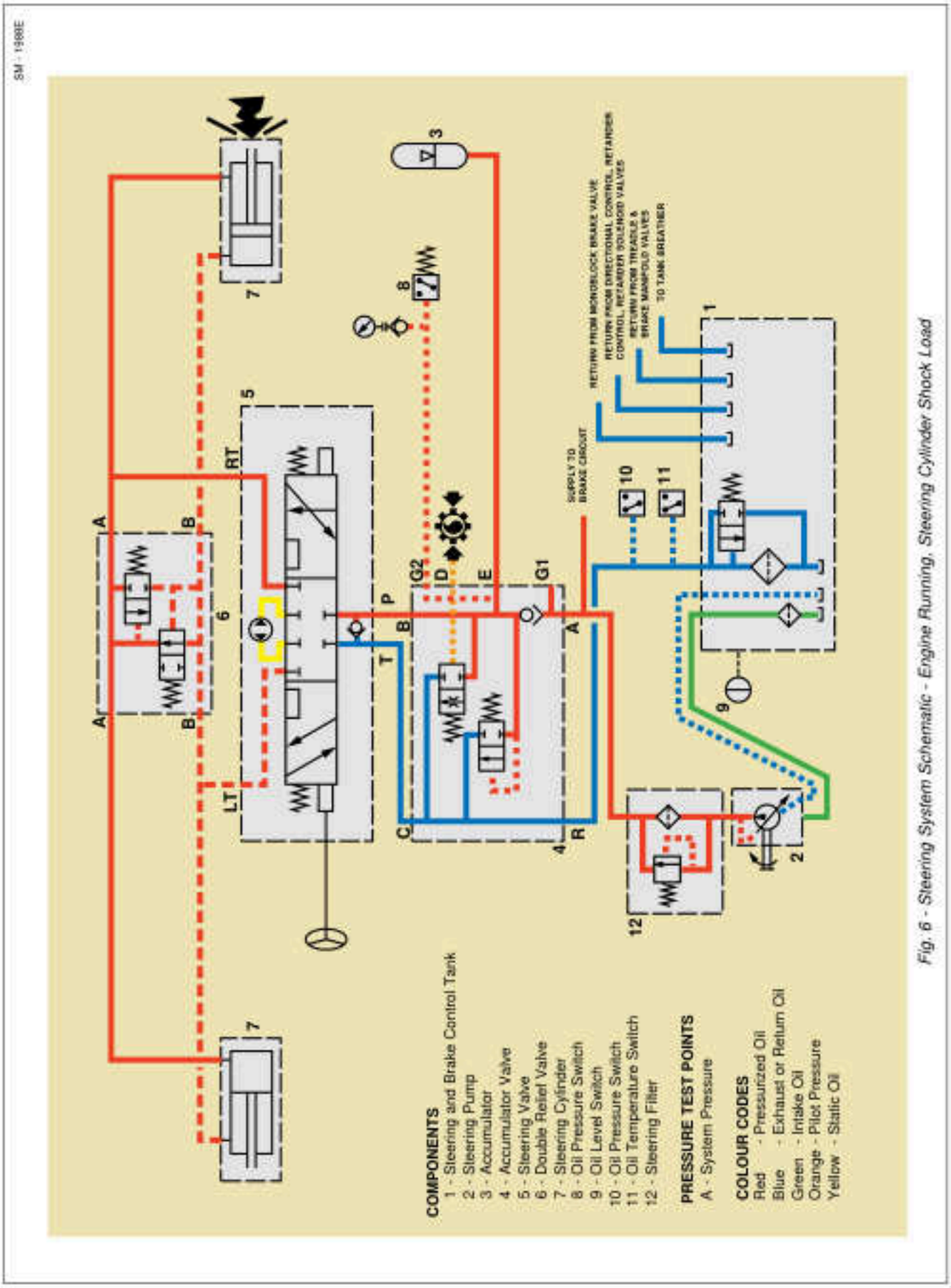


Fig. 6 - Steering System Schematic - Engine Running, Steering Cylinder Shock Load

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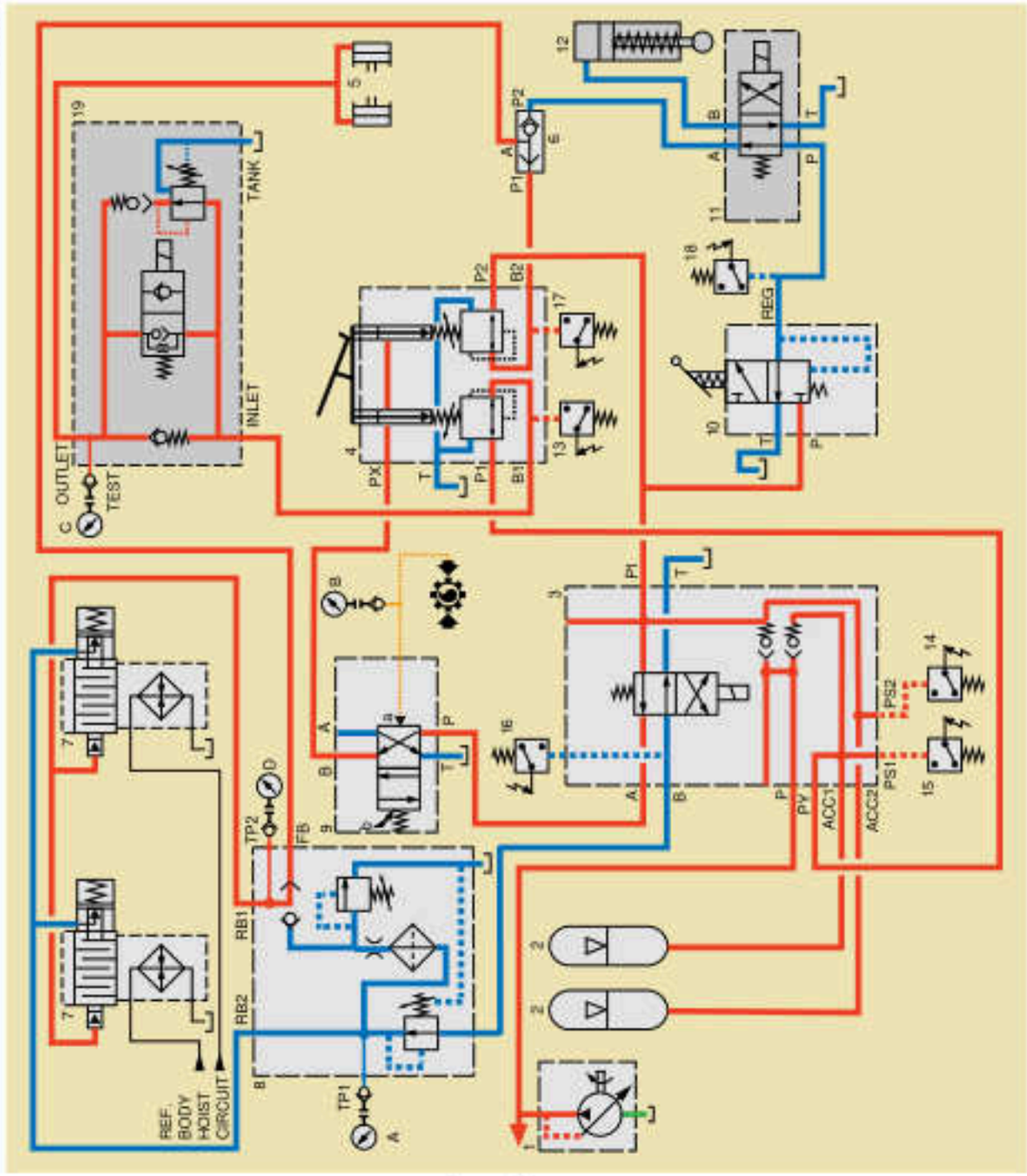


Fig. 5 - Braking System Schematic - Engine Running, Park/Emergency Brake Applied

COMPONENTS

1 - Steering Pump
2 - Accumulators
3 - Brake Manifold Valve
4 - Treadle Valve
5 - Front Brake Callipers
6 - Shuttle Valve
7 - Oil Cooled Disc Brakes
8 - Monoblock Brake Valve
9 - Directional Control Valve
10 - Retarder Control Valve
11 - Directional Control Valve
12 - Transmission Retarder Cylinder
13 - Stop Light Pressure Switch
14 - Rear Brake Accumulator Pressure Switch
15 - Front Brake Accumulator Pressure Switch
16 - Parking Brake Pressure Switch
17 - Lockup Drop Out Pressure Switch
18 - Retarder Light Pressure Switch
*19 - Pressure Reducing Valve

* - Optional Components

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