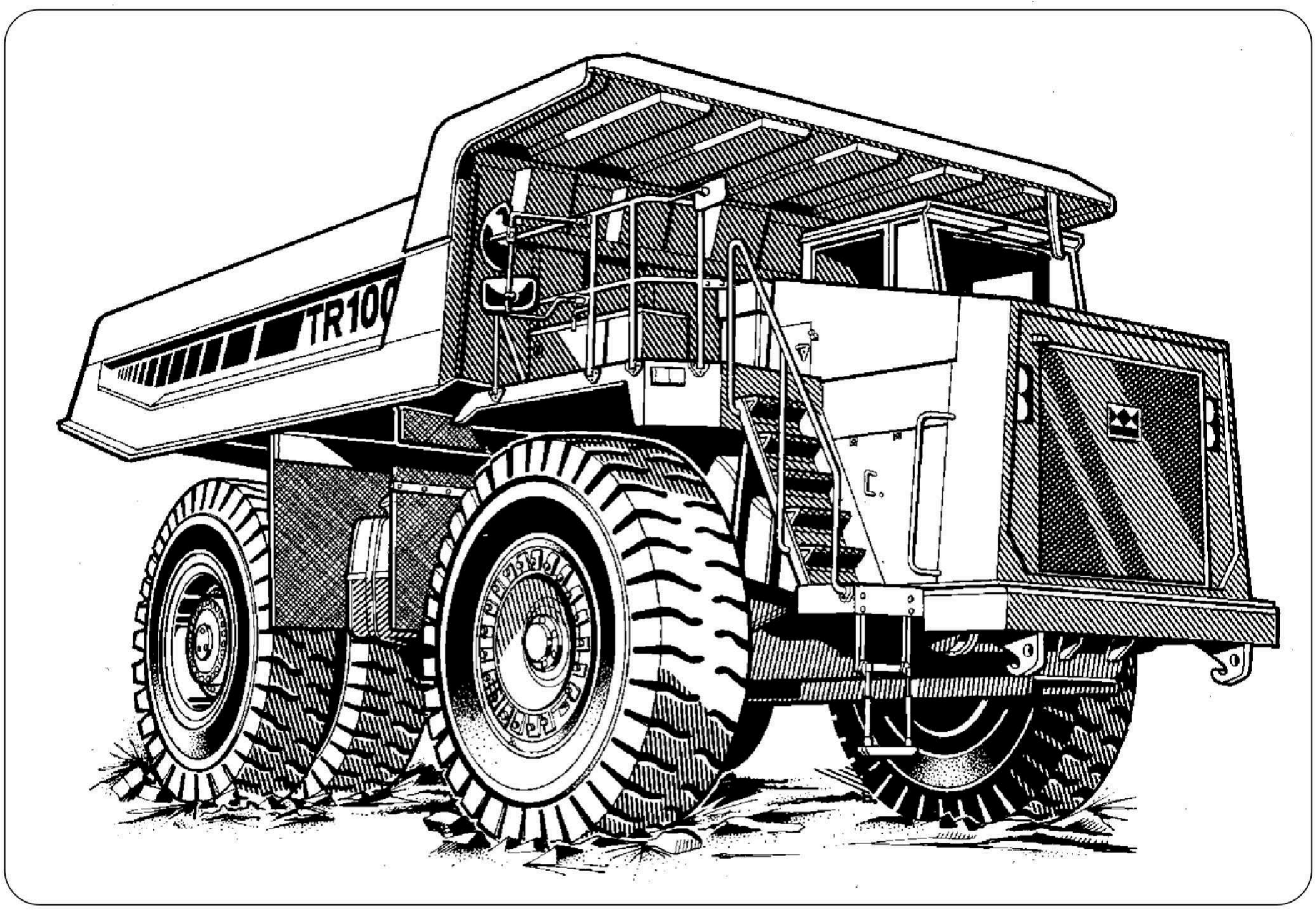
TEREX

TR100
Mining Truck
Maintenance Manual



TECHNICAL PUBLICATIONS DEPARTMENT
TEREX EQUIPMENT LIMITED,
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SM 1616 Rev 1 11-00

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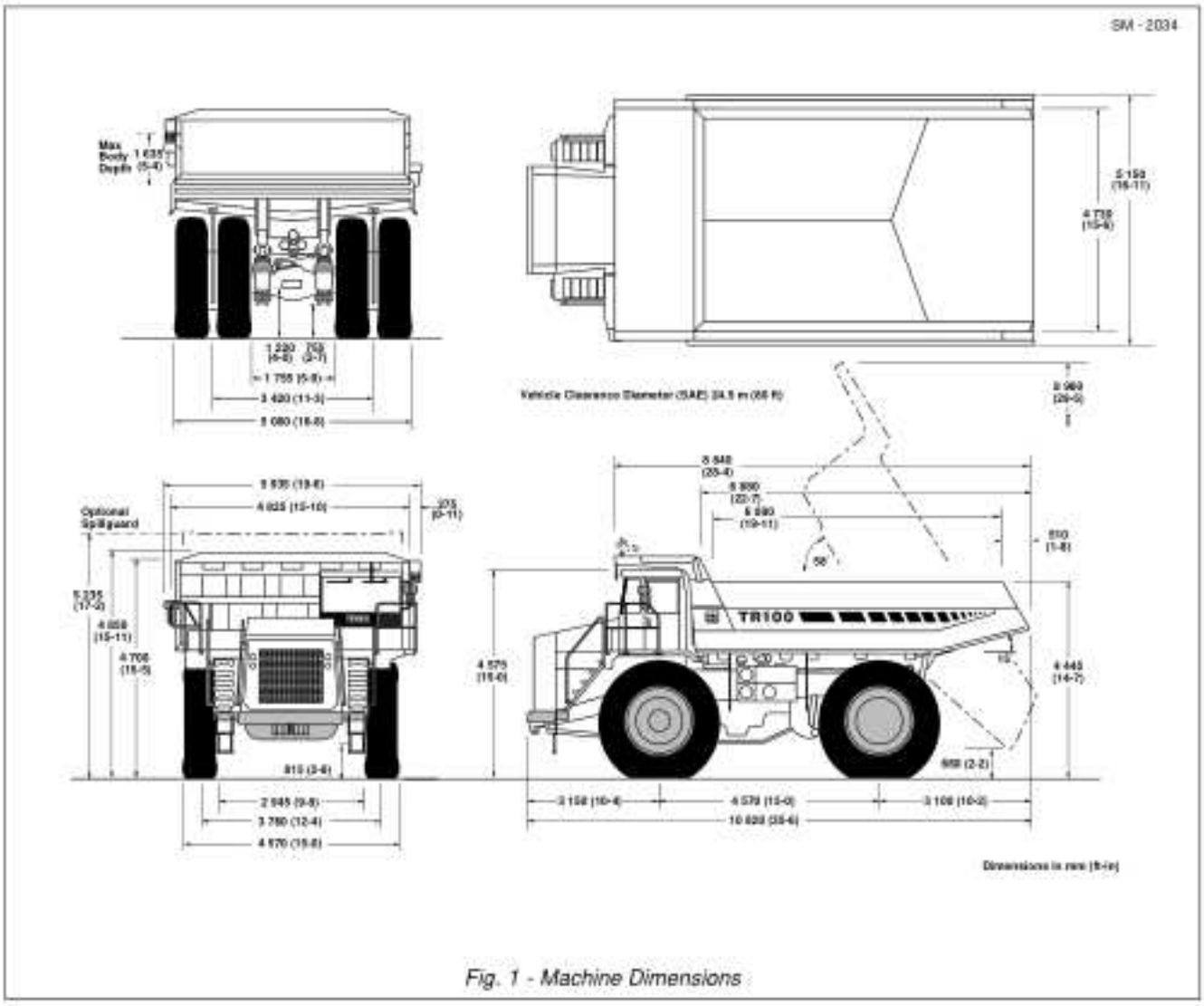


Fig. 1 - Machine Dimensions

ENGINE

Make/Model ..... Cummins KTA-38-C1050
Type ..... 4 Cycle, Turbocharged/Aftercooled
Gross Power
at 2 100 rev/min ..... 783 kW (1 050 hp, 1 094 PS)
Net Power at 2 100 rev/min ..... 727 kW (975 hp, 988 PS)

Note: Power ratings to SAE J1995 June 1990. Net Power is after deductions for fan and alternator. Engine requires no derating up to 3 050 m (10 000 ft) altitude.

Maximum Torque ..... 4 631 Nm (3 415 lbf ft) at 1 300 rev/min
Number of Cylinders/Configuration 12V
Bore x Stroke ..... 159 x 159 mm (6.25 x 6.25 in)
Total Displacement ..... 37.7 litres (2 300 in³)
Starting ..... Electric
Maximum Speed, Full Load ..... 2 100 rev/min
Maximum Speed, No Load ..... 2 400 rev/min
Idle Speed ..... 750 rev/min
Safe Operating Angle ..... 30°/60% Grade

TRANSMISSION

Make/Model ..... Allison DP-8963 CEC
Automatic electronic control with soft shift feature. Remote mounted in the frame with integral TC 890 torque converter and planetary gearing. Six speeds forward, one reverse. Automatic converter lockup action in all speed ranges. Downshift inhibitor. Hydraulic retarder.

Speeds With Standard Planetary						
Forward						
Gear	1	2	3	4	5	6
Ratio	4.24	2.32	1.69	1.31	1.00	0.73
km/h	8.2	15.0	20.6	26.5	34.8	47.6
mile/h	5.1	9.3	12.8	16.5	21.6	29.6
Reverse						
Ratio	5.75					
km/h	6.0					
mile/h	3.8					

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ELECTRICAL TROUBLESHOOTING - No Codes		
CONDITION	REASON	REMEDY
Transmission stays in Neutral (will not shift), or will not make a selected shift	Disconnected or dirty connectors	Check and clean harness connectors
	Faulty wiring harness	Check and repair harness
	Transmission output shaft speed sensor not functioning properly	Refer to Code 22 troubleshooting procedure
	Faulty F solenoid or circuitry	Refer to Code 62 troubleshooting procedure
	Faulty A, B or C solenoids or circuitry	Refer to Codes 41 - 45 troubleshooting procedures
	Internal hydraulic problem in transmission	Refer to Transmission Service Manual
	Faulty ECU	Replace ECU
	Faulty parking brake interlock switch or circuitry	Check wiring. Replace microswitch if necessary
	Faulty body up interlock switch or circuitry	Check wiring. Replace microswitch if necessary
Transmission will not shift into Reverse, but will shift into forward range	Faulty hoist interlock pressure switch or circuitry	Check wiring. Replace pressure switch if necessary
Vehicle will not start	Dead batteries	Charge batteries, replace if necessary
	Voltage to shift selector is too low	Refer to Code 23 troubleshooting procedure
	Faulty start circuit	Repair circuit
	Faulty Relay 6	Replace Relay 6
	Faulty neutral start circuit	Repair circuit
	Faulty shift selector	Refer to Code 23 troubleshooting procedure
Transmission does not shift properly (e.g. rough shifts, shifts at wrong speeds)	Faulty throttle position sensor or circuitry	Refer to Code 21 troubleshooting procedure
	Faulty transmission output shaft speed sensor or circuitry	Refer to Code 22 troubleshooting procedure
	Wrong PROM installed	Check PROM part number. Replace if necessary
	Intermittent shorts or open circuits in wiring	Check wiring and repair if necessary
	Crossed wires in harness	Check harness and repair
	Faulty temperature sensor circuitry	Refer to Code 22 troubleshooting procedure

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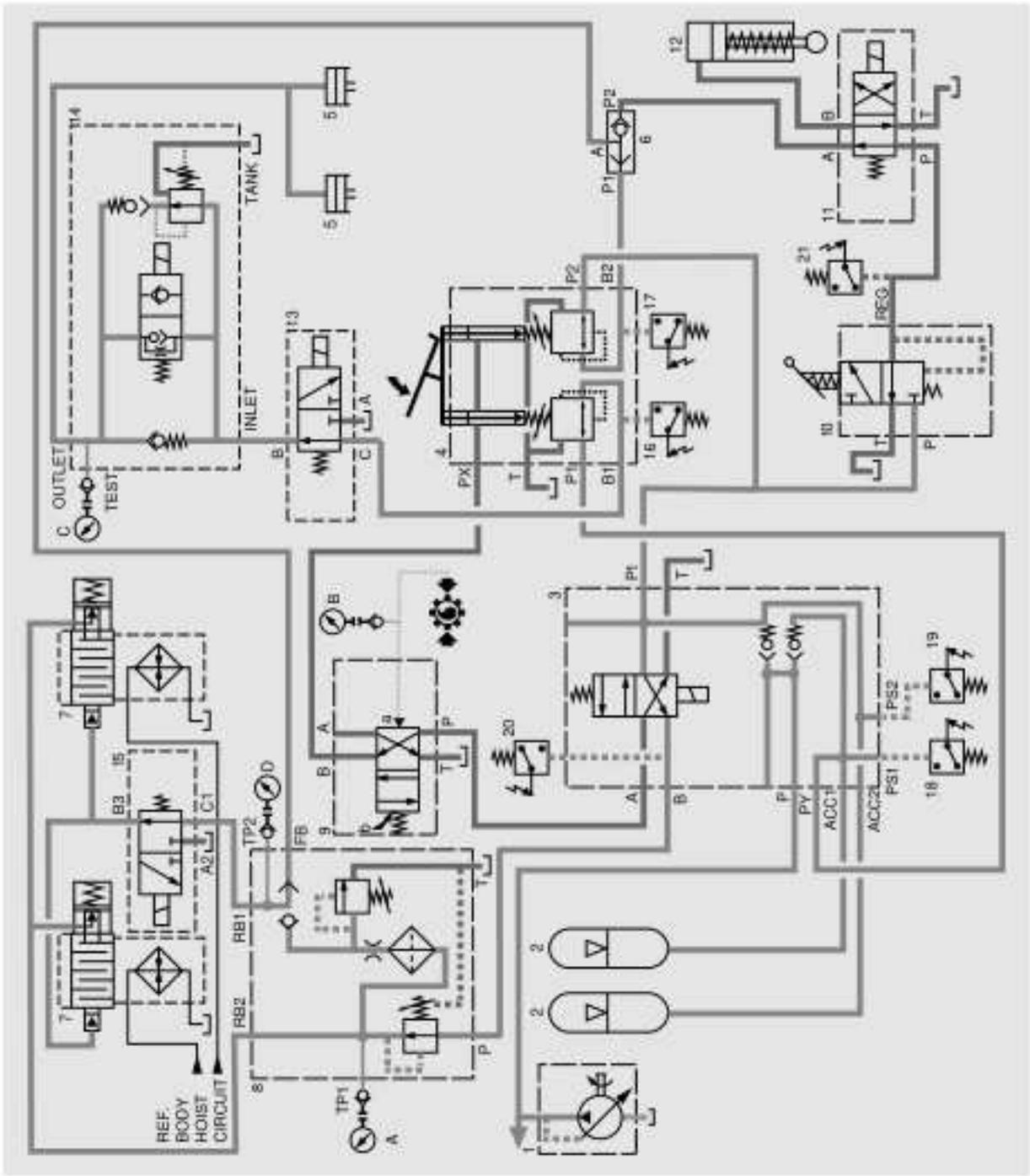


Fig. 4 - Braking System Schematic - Engine Running, Service Brake Applied

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 - Parking Brake Valve
14 - Front Brake Pressure Reducing Valve
15 - Brake Dump Valve
16 - Stop Light Pressure Switch
17 - CEC Lockup Drop Out Pressure Switch
18 - Front Brake Accumulator Pressure Switch
19 - Rear Brake Accumulator Pressure Switch
20 - Parking Brake Pressure Switch
21 - Retarder Light Pressure Switch

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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INTRODUCTION

Contained in this section are recommended service tools and equipment required for maintenance, overhaul and troubleshooting. In certain instances, both Metric and Imperial equivalents of the same tools are listed. These tools are available from your dealer.

Note: The Company reserves the right to make changes in the design or construction of tools and equipment without obligation to incorporate such changes in tools and equipment previously sold.

Note: A tool may be of one piece construction or consist of a number of parts.

General

*15269784 - Multi-Gauge - Pressure range of 30 in of vacuum to 5 000 lbf/in²
15269785 - Non-contact Infrared Thermometer
15268968 - Strap Type Filter Wrench
15268969 - Socket Type Filter Wrench
15268970 - Universal Belt Tension Gauge
15269858 - Digital Tachometer
15269859 - Multimeter
15269813 - Water Manometer
15269802 - Dial Indicator Gauge - Metric
15269803 - Dial Indicator Gauge - Imperial
15269804 - Magnetic Base for Dial Indicator Gauge
15269805 - Micrometer - 0 to 25 mm
15269806 - Micrometer - 0 to 1 in
15269807 - Micrometer - 400 to 500 mm
15269808 - Micrometer - 16 to 20 in
15269809 - Internal Micrometer - 50 to 210 mm
15269810 - Internal Micrometer - 2 to 8 in
15269860 - 92 Piece Heavy Equipment Tool Kit
15269861 - Torque Wrench - 3/8 in drive, 20 - 100 Nm (15 - 80 lbf ft) range
15269862 - Torque Wrench - 1/2 in drive, 60 - 330 Nm (45 - 250 lbf ft) range
15269863 - Torque Wrench - 3/8 in drive, 4 - 20 Nm (40 - 180 lbf in) range
15269864 - Torque Wrench - 3/4 in drive, 300 - 1 000 Nm (200 - 750 lbf ft) range
15269865 - Torque Wrench - 3/4 in drive, 700 - 1 500 Nm (500 - 1 000 lbf ft) range
15269866 - Torque Multiplier - 1/2 in to 1 in drive, 25:1 Ratio, 3 000 Nm (2 200 lbf ft) range

* - The following items should be added to the multi-gauge to enable the gauge to be used on diagnostic test points:
15018226 - Diagnostic Coupling
00118748 - Connector (2 off)
15004085 - Hose Assembly (-4 HP, 84 in long)

Engine

The following tools are recommended for Engine Maintenance Procedures and should be used in conjunction with procedures outlined in the engine manufacturers service manual.

Engine Disassembly

15269956 - Standard Puller
15270972 - Main Bearing Cap Puller
15270440 - Water Tube Driver
15270973 - Rebuild Stand (2)
15270448 - Connecting Rod Guide Pins (2)
15270974 - Engine Lifting Fixture
15270975 - Engine Rollover Stand (Moveable)
15269969 - Universal Cylinder Liner Puller
15270976 - Universal Injector Puller

Engine Assembly

15269957 - Torque Wrench Adaptor
15270977 - Seal and Wear Ring Driver
15270437 - Piston Ring Expander
15270439 - Oil Seal Puller
15270440 - Water Tube Driver
15270444 - Pipe Sealant Tube
15270973 - Rebuild Stand (2)
15270448 - Connecting Rod Guide Pins (2)
15270974 - Engine Lifting Fixture
15270450 - Piston Ring Compressor
15270452 - Liner Installation Tool
15270454 - Injection Timing Tool
15270979 - Rocker Lever Actuator
15270980 - Oil Seal Driver/Puller
15270975 - Engine Rollover Stand (Moveable)
15270469 - Gauge, Block
15269975 - Assembly Pulley Installation Tool
15270981 - Inch Pound Torque Wrench
15270485 - Silicone Adhesive Sealant RTV
15270982 - Set, Cylinder Liner Clamp
15270983 - Injector and Valve Adjustment Kit

Transmission

CEC Electronic Diagnostic

15268971 - PRO-LINK Diagnostic Data Reader (DDR)
15268973 - CEC I and II Cartridge For DDR
15268975 - DDR and CEC I and II Cartridge Assembly
15269231 - CEC Off-Highway Diagnostic Service Kit
15270344 - LPS NoFlash Electro Contact Cleaner
15269038 - Portable Printer for use with DDR, complete with 110 V AC Adaptor
15269039 - Portable Printer for use with DDR, complete with 220 V AC Adaptor

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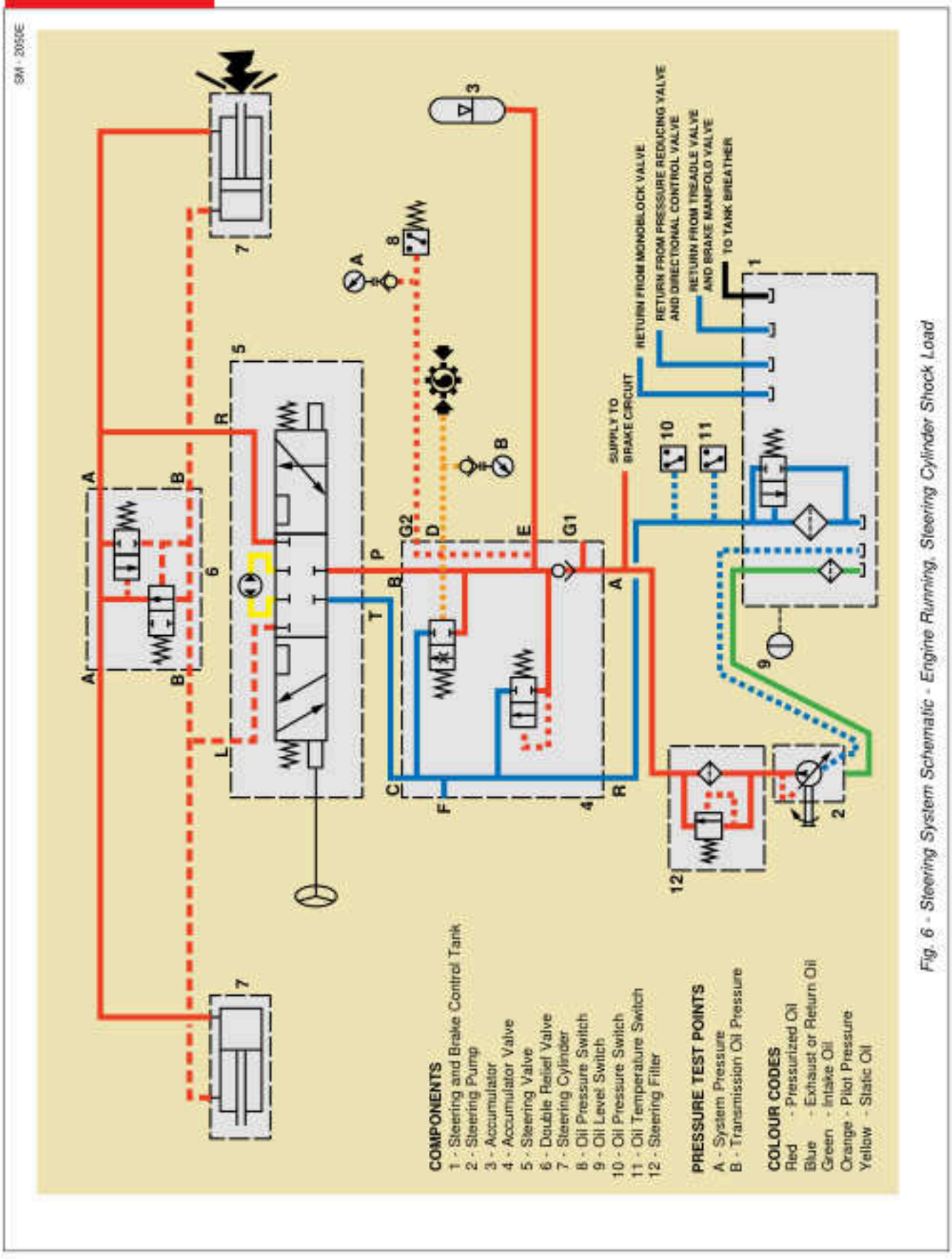


Fig. 6 - Steering System Schematic - Engine Running, Steering Cylinder Shock Load

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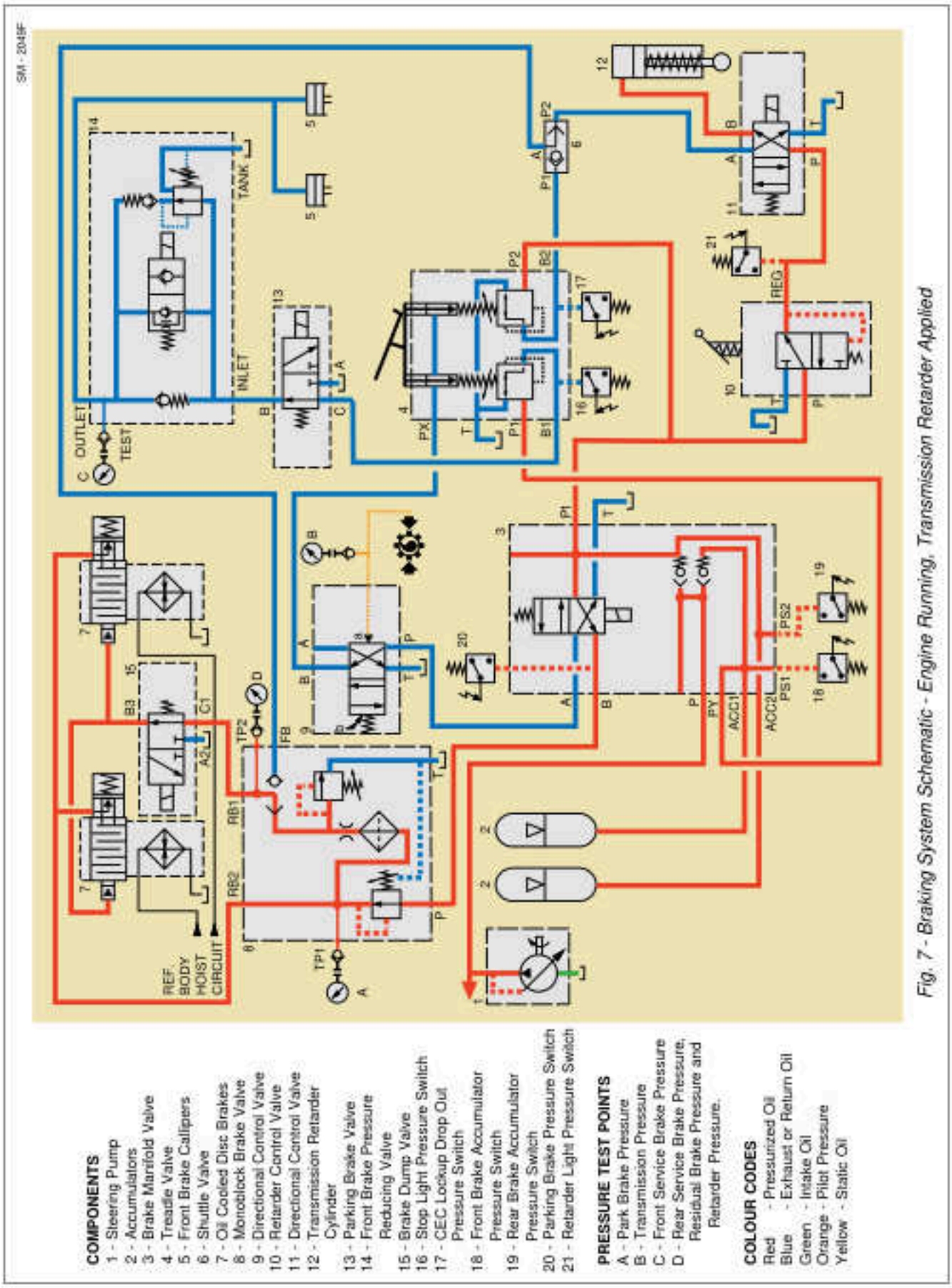


Fig. 7 - Braking System Schematic - Engine Running, Transmission Retarder Applied

COMPONENTS

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2 - Accumulators
3 - Brake Manifold Valve
4 - Treadle Valve
5 - Front Brake Calipers
6 - Shuttle Valve
7 - Oil Cooled Disc Brakes
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