

DIESEL (CONTINUED)

Exhaust manifold:	
No. of sections.....	Three (cast iron)
Pistons, material.....	Aluminum alloy
Type.....	Zollner trunk type with Ni-resist insert for top ring groove
Length.....	5-41/64"
Piston rings, type.....	Concentric
Number of rings, compression.....	Three (top ring chrome-plated)
oil control.....	Two, chrome-plated
Wristpin, type.....	Full-floating
Diameter.....	1-5/8"
Length.....	4-7/32"
Finish.....	Ground and lapped
Retention.....	Snap rings
Finish of wristpin bosses.....	Carbide-bored
Connecting rods, type.....	Drop-forged I-beam
Cap angle.....	35°
Material.....	Chromium-molybdenum steel
Length, center to center.....	11-1/4"
Crankshaft.....	Counterbalanced with integral counterweights
Material.....	Drop-forged, medium carbon steel, tocco hardened
Weight.....	208 lbs.
Vibration damper.....	Viscous type
Crankcase, upper.....	Chromium-nickel alloy
lower.....	Steel stamping
Main bearings, material.....	Copper-lead, steel-back, with Babbitt overlay
Type.....	Thin-shell, precision machined
Finish.....	Ground-back, burnished bore
Number of main bearings.....	Seven
Diameter of main bearings.....	4"
Total length of main bearings....	10-29/64"
Projected area of main brgs.....	41-13/16 sq. in.
Connecting rod bearings:	
Material.....	Copper-lead, steel-back with Babbitt overlay
Type.....	Thin-shell, precision machined
Finish.....	Ground-back, burnished bore
Crankpins, diameter.....	3"
Length.....	2-1/4"
Total length of connecting rod bearings.....	11-7/16"
Projected area of connecting rod bearings.....	34-5/16 sq. in.
Camshaft, number of bearings.....	Seven
Timing drive.....	Helical gears of manganese steel, case hardened and generator ground

CLUTCH

Make..... Mack
Model..... CL28 with Mack Vibrasorb clutch
 plate
Type..... Single plate, dry
Outside diameter..... 14-7/8"
Inside diameter..... 8"
Area of engagement..... 253 sq. in.
Facing material..... Molded
Throw-out bearing..... Angular contact ball

FUEL

Tank, make..... Mack
Capacity..... 55 gallon
Location..... On R.H. side rail
Filler spout location..... Top of tank
Gauge location..... On instrument panel
Fuel Injection Pump, make..... American Bosch
Type..... "BB" with Mack Synchrovance unit
 for automatic timing
Drive..... Gear
Timing..... 27° B.T.D.C. port closing (flywheel-
 position)
Mounting..... Flange type
Transfer pump, type..... Plunger
Nozzles, type..... Four hole spray
Pressure..... 2300 lbs. per. sq. in.
Fuel injection lines, material... Low carbon, seamless steel tubing
Tensile strength..... 50,000 lbs. per sq. in.
Connections..... Integral swaged ends with rein-
 forcing sleeves
Fuel filter type..... Renewable cartridge
Mounting..... Bracket (on engine)
Fuel inlet line, material..... Aeroquip flexible hose
Connections..... Flared type
Governor, make..... American-Bosch
Type..... Mechanical with torque control
 feature
Mounting..... Rear of injection pump
Air cleaner, make..... Donaldson
Type..... Oil bath
Location..... L.H. side (to frame side rail)
Intake..... Outside air
Oil capacity..... 5-1/4 pints

EXHAUST

	<u>Standard</u>	<u>Optional</u>
Type.....	Underframe	Vertical at RH rear corner of cab
Muffler:		
Type.....	Offset flow	Straight-thru flow
Size, exhaust pipe at manifold.....	3-1/2" O.D.	3-1/2" O.D.

COOLING

Radiator, type.....	Continuous finned, flat tube
Frontal area, sq. in.....	560
Suspension.....	Rubber mounted
Thermostat:	
Location.....	In water outlet manifold at front of engine
By-pass.....	To water pump
Type.....	Bellows
Temperature to open.....	155°
Engine temperature indicator.....	On instrument panel
Water pump, type.....	Centrifugal
Material of impeller.....	Rust resistant cast iron
Material of shaft.....	Heat-treated bar stock (Parco-Lubrited)
Location.....	Front of engine
Drive.....	Belt
Delivery to cylinder block.....	Through header cored in block
Delivery to cylinder heads.....	From cylinder block through ports directed towards exhaust valve seats
Fan, material.....	Steel
Type.....	Asymmetrical
Diameter.....	21"
Number of blades.....	5
Drive.....	Two belts
* Water capacity of system.....	48 quarts (includes heater)

ELECTRICAL

Battery, make.....	Exide	or	Auto-Lite
Number required.....	Four		Four
Model.....	XF21		5H-170R
Voltage.....	6		6
Plates per cell.....	21		21
Amp. hr. at 20 hr. rate.....	168		170
Location.....	Two (2) each attached to R.H. and L.H. side rails behind cab		
Generator, make.....	Delco-Remy		
Voltage.....	12		
Capacity.....	50 Ampere		
Regulator, make.....	Delco-Remy		

ELECTRICAL (CONTINUED)

Starter, make..... Delco-Remy
Voltage..... 24
Lighting system, voltage..... 12
Lamps:
Headlamps..... Four
Parking Lamps..... Two
Combination tail and
stop lamp..... One (Standard); two (Optional)
Instrument panel lamps..... Five
Cab interior lamps..... One
Headlamp hi-beam indi-
cator lamp..... One

Air starting (Optional):-

Make..... Ingersoll-Rand
Model..... 10BM
Rating..... 10 horsepower
Actuation..... Manually controlled, quick
opening air valve (in cab)

TRANSMISSIONS

	<u>Standard</u>	<u>Optional</u>
Make.....	Mack	Mack
Gearset, Model.....	TRDL67	TRDL670
Type.....	Two lever, duplex, selective, constant mesh (with aluminum bell- housing, main and compound cases)	
Number of speeds:		
forward.....	Ten	
reverse.....	Two	
Direct drive in.....	Tenth	Eighth
Face of gears and type:		
Main transmission:		
Fifth (c/shaft drive gear - TRD67).....	1-7/16", Helical	
Fourth (c/shaft drive gear - TRD670).....	1-7/16", Helical	
Third.....	1-7/16", Helical	
Second.....	1-7/16", Helical	
First.....	1-5/16", Spur	
Reverse.....	1-3/16", Spur	
Compound transmission?		
High Range.....	1-37/64", Helical	
Low Range.....	2-1/8", Helical	
Bearings, main transmission:		
Main driving pinion.....	Radial, single-row, ball	
Spigot.....	Cylindrical roller, single-row	
Splineshaft, rear.....	Radial, single-row, ball	
Countershaft, front.....	Cylindrical roller, single-row	
rear.....	Tapered roller, single-row	

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* Was 9BM, 9HP - March 18, 1959

TRANSMISSIONS (CONTINUED)

Reverse idler..... Cylindrical roller, single-row, wide (2)
Compound transmission:
Spigot..... Cylindrical roller, single-row
Splineshaft, rear..... Radial, single-row, ball
Countershaft..... Tapered roller, single-row (2)
Main splineshaft:
Dia. over maximum spline..... 3-3/32"
Dia. @ root of min. spline.... 1-3/4"
Compound splineshaft:.
Dia. over spline..... 3-3/32"
Dia. @ root of spline..... 2-21/32"
Main countershaft, min. dia.... 2-5/16"
Compound countershaft, min.dia.. 3"
P.T.O. accommodation..... S.A.E. regular duty, deep type
openings on R.H. and L.H. sides
Lubrication..... Pump feed through rifle-drilled
passages in splineshaft, to free
running intermediate gears
Oil capacity..... 20 pints

RATIOS

Shift	<u>TRDL67</u>		<u>TRDL670</u>	
	High Range	Low Range	High Range	Low Range
Fifth	12.00	1.27	0.79	1.09
Fourth	1.63	2.06	1.00	1.39
Third	2.60	3.29	1.92	2.67
Second	4.35	5.51	3.64	5.06
First	8.05	10.20	6.74	9.37
Reverse	8.13	10.29	6.80	9.45

TRANSMISSIONS

(OPTIONAL)

Make..... Mack
Gearset, model..... TRDL675
Type..... Unishift, duplex, selective, con-
stant mesh (with aluminum bell-
housing and main cases)
Number of speeds:
forward..... Ten
reverse..... Two
Direct drive in..... Tenth Eighth
Face of gears and type:
Main transmission:
Fifth (c/shaft drive gear
TRD675)..... 1-7/16", Helical
Fourth (c/shaft drive gear
TRD6750)..... 1-7/16", Helical

TRANSMISSIONS

(OPTIONAL CONTINUED)

Third.....	1-7/16", Helical
Second.....	1-7/16", Helical
First.....	1-5/16", Spur
Reverse.....	1-3/16", Spur
Compound transmission:	
High Range.....	1-31/64", Helical
Low Range.....	1-47/64", Helical
Bearings, main transmission:	
Main driving pinion.....	Radial, single-row, ball
Spigot.....	Cylindrical roller, single-row
Splineshaft, rear.....	Radial, single-row, ball
Countershaft, front.....	Cylindrical roller, single-row
rear.....	Tapered roller, single-row
Reverse idler.....	Cylindrical roller, single-row wide, (2)
Compound transmission:	
Spigot.....	Cylindrical roller, single-row
Splineshaft, rear.....	Radial, single-row, ball
Countershaft.....	Tapered roller, single-row (2)
Main splineshaft:	
Dia. over maximum spline.....	2-5/8"
Dia. @ root of min. spline....	1-3/4"
Compound splineshaft:	
Dia. over spline.....	3-3/32"
Dia. @ root of spline.....	2-21/32"
Main countershaft, min. diameter	2-5/16"
Compound countershaft, min. dia.	3"
P.T.O. accommodation.....	SAE regular duty, deep type openings on RH and LH sides
Lubrication.....	Pump feed through rifle-drilled passages in splineshaft, to free running intermediate gear
Oil capacity.....	24 pints

RATIOS

	<u>TRDL675</u>		<u>TRDL6750</u>	
<u>Shift</u>	<u>High Range</u>	<u>Low Range</u>	<u>High Range</u>	<u>Low Range</u>
Fifth	1.00	1.28	0.79	1.08
Fourth	1.63	2.09	1.00	1.37
Third	2.60	3.34	1.92	2.63
Second	4.35	5.59	3.64	4.98
First	8.05	10.34	6.74	9.22
Reverse	8.13	10.44	6.80	9.30

TRANSMISSIONS

(OPTIONAL)

Make.....	Mack	Mack
Gearset, model.....	TRDL72	TRDL720
Type.....	Two-lever, duplex, selective constant mesh (with aluminum bell-housing and main case)	
Number of speeds:		
forward.....	Ten	
reverse.....	Two	
Direct drive in.....	Tenth	Eighth
Face of gears and type:		
Main transmission:		
Fifth (c/shaft drive gear)...	1-9/16", Helical	1-5/8", Helical
Fourth (c/shaft drive gear)...	1-5/8", Helical	1-9/16", Helical
Third.....	1-5/8", Helical	
Second.....	1-5/8", Helical	
First.....	1-5/8", Helical	
Reverse.....	1-5/16", Spur	
Compound transmission:		
High Range.....	1-25/32", Helical	
Low Range.....	1-7/8", Helical	
Bearings:		
Main transmission:		
Main drive pinion.....	Radial single-row ball	
Spigot.....	Cylindrical roller, single-row	
Splineshaft, rear.....	Tapered roller, double-row	
Countershaft, front.....	Cylindrical roller, single-row	
rear.....	Tapered roller, single-row	
Reverse idler.....	Cylindrical roller, single-row (2)	
Compound transmission:		
Spigot.....	Cylindrical roller, single-row	
Splineshaft, rear.....	Tapered roller, double-row	
Countershaft.....	Tapered roller, single-row (2)	
Main splineshaft:		
Dia. over max. spline.....	3"	
Dia. @ root of spline, min.....	2"	
Compound splineshaft:		
Dia. over spline.....	3-3/32"	
Dia. @ root of spline.....	2-21/32"	
Main countershaft:		
Minimum dia.....	2-3/8"	
Compound countershaft:		
Minimum dia.....	3"	
P.T.O. accommodation.....	S.A.E. regular duty type, special depth openings on R.H. and L.H. sides	
Lubrication.....	Pump feed through rifle-drilled passages in splineshaft to free running intermediate gears.	
Oil capacity.....	28 pints	

TRANSMISSIONS

(OPTIONAL)
(CONTINUED)

RATIOS

Shift	TRDL72		TRDL720	
	High Range	Low Range	High Range	Low Range
Fifth	1.00	1.28	0.78	1.04
Fourth	1.62	2.08	1.00	1.33
Third	2.60	3.34	1.75	2.34
Second	4.32	5.53	3.12	4.16
First	7.53	9.65	5.45	7.25
Reverse	7.53	9.65	5.45	7.25

TRANSMISSIONS

(OPTIONAL)

Make.....	Mack	Mack
Gearset, model.....	TRDL725	TRDL7250
Type.....	Unishift, duplex, selective, constant mesh (with aluminum bell-housing, main and compound cases)	
Number of speeds:		
Forward.....		Ten
Reverse.....		Two
Direct drive in.....	Tenth	Eighth
Face of gears and type:		
Main transmission:		
Fifth (c/shaft drive gear)....	1-9/16", Helical	1-5/8", Helical
Fourth (c/shaft drive gear)...	1-5/8", Helical	1-9/16", Helical
Third.....	1-5/8", Helical	
Second.....	1-5/8", Helical	
First.....	1-5/8", Helical	
Reverse.....	1-5/16", Spur	
Compound transmission:		
High Range.....	1-25/32", Helical	
Low Range.....	1-7/8", Spur	
Bearings:		
Main transmission:		
Main drive pinion.....	Radial single-row ball	
Spigot.....	Cylindrical roller, single-row	
Splineshaft, rear.....	Tapered roller, double-row	
Countershaft, front.....	Cylindrical roller, single-row	
rear.....	Tapered roller, single-row	
Reverse idler.....	Cylindrical roller, single-row (2)	
Compound transmission:		
Spigot.....	Cylindrical roller, single-row	

TRANSMISSIONS

(OPTIONAL)

(CONTINUED)

Splineshaft, rear.....	Tapered roller, double-row
Countershaft.....	Tapered roller, single-row (2)
Main splineshaft:	
Dia. over max. spline.....	3"
Dia. @ root of min. spline.....	2"
Compound splineshaft:	
Dia. over max. spline.....	3-3/32"
Dia. @ root of min. spline.....	2-21/32"
Main countershaft:	
Minimum diameter.....	2-3/8"
P.T.O. Accommodation.....	S.A.E. regular duty type, special depth openings on R.H. and L.H. sides.
Lubrication.....	Splash to gear faces. Pressure feed by vane type pump operating in an eccentric race in the main drive pinion cover, through drilled spline-shaft to bushings of free-running gears.
Oil capacity.....	30 pints

RATIOS

TRDL725

TRDL7250

Shift	High Range	Low Range	High Range	Low Range
Fifth	1.00	1.28	0.78	1.04
Fourth	1.62	2.08	1.00	1.33
Third	2.60	3.34	1.75	2.34
Second	4.32	5.53	3.12	4.16
First	7.53	9.65	5.45	7.25
Reverse	7.53	9.65	5.45	7.25

TRANSMISSION

(OPTIONAL)

Make..... Mack
 Gearset, model..... TRTL72
 Type..... Two lever, Triplex (with aluminum bellhousing main and compound cases)

Number of speeds:
 Forward..... Fifteen
 Reverse..... Three
 Direct drive in..... Fourteenth

Face of gears and type:
 Main transmission:
 Fifth..... 1-9/16", Helical
 Fourth..... 1-5/8", Helical
 Third..... 1-5/8", Helical
 Second..... 1-5/8", Helical
 First..... 1-5/8", Helical
 Reverse..... 1-5/16", Spur
 Compound transmission:
 High Range..... 1-25/32", Helical
 Low Range..... 1-7/8", Helical

Bearings:
 Main transmission:
 Main drive pinion..... Radial, single-row, ball
 Spigot..... Cylindrical roller, single-row
 Splineshaft, rear..... Tapered roller, double-row
 Countershaft, front..... Cylindrical roller, single-row
 rear..... Tapered roller, single-row
 Reverse idler..... Cylindrical roller, single-row
 Compound transmission:
 Spigot..... Cylindrical roller, single-row
 Splineshaft, rear..... Tapered roller, double-row
 Countershaft, front..... Tapered roller, single-row
 rear..... Tapered roller, single-row

Main splineshaft:
 Dia. over max. spline..... 3"
 Dia. @ root of min. spline..... 2"

Compound splineshaft:
 Dia. over max. spline..... 3"
 Dia. @ root of min. spline..... 2-1/4"

Main countershaft:
 Minimum diameter..... 2-3/4"

Compound countershaft:
 Minimum diameter..... 2-17/32"

P.T.O. accommodation..... S.A.E. regular type, special depth openings on R.H. and L.H. sides

TRANSMISSIONS

(OPTIONAL)

(CONTINUED)

RATIOS

TRTL72

Shift	High Split	Direct	Low Split
Fifth	0.85	1.00	1.18
Fourth	1.38	1.62	1.92
Third	2.22	2.60	3.07
Second	3.69	4.32	5.09
First	6.42	7.53	8.88
Reverse	6.42	7.53	8.88

TRANSMISSIONS

(OPTIONAL)

(FOR USE ONLY WITH RA2DT518 OR RA2DT519 TWO-SPEED AXLES)

Make..... Mack
Gearset, model..... TR720
*Type..... Selective, constant mesh

Number of speeds:
forward..... Five
reverse..... One
*Direct drive in..... Fourth

Face of gears and type:
Fifth..... 1-5/8", Helical
Fourth..... 1-9/16", Helical
Third..... 1-5/8", Helical
Second..... 1-5/8", Helical
First..... 1-5/8", Helical
Reverse..... 1-5/16", Spur

Bearings:
Main drive pinion..... Radial, single-row, ball
Spigot..... Cylindrical roller, single-row
Splineshaft, rear..... Radial, single-row, ball
Countershaft, front..... Cylindrical roller, single-row
rear..... Tapered roller, double-row
Reverse idler..... Cylindrical roller, single-row (2)

Splineshaft:
Dia. over max. spline..... 3"
Dia. at root of min. spline.... 2"

Countershaft:
Minimum dia..... 2-3/8"

P.T.O. accommodation..... S.A.E. regular duty, special depth
type openings on R.H. and L.H. sides

Lubrication..... Pump feed through rifle-drilled
passages in splineshaft, to free
running intermediate gears

Oil capacity..... 22 Pints

RATIOS

<u>Shift</u>	<u>TR720</u>
Fifth	0.78
Fourth	1.00
Third	1.75
Second	3.12
First	5.45
Reverse	5.45

PROPELLER SHAFTS

Location..... Rear
Make, type..... Spicer, 1700 Series (Ycke)
Tube dia., O.D..... 3-1/2"
Wall thickness..... 0.156"

FRONT AXLE

(STANDARD)

Make..... Mack
Model..... FA511
Type..... Reversed Elliott, drop forged I-beam
Size of beam at center:-
 Height..... 3-11/16"
 Flange width..... 2-3/4"
 Web thickness..... 1/2"
Steering knuckle thrust..... Adjustable button
Spindle diameter:
 Inner bearing..... 2-1/8"
 Outer bearing..... 1-1/2"
Wheel bearings:
 Inner..... Tapered roller, single-row (2)
 Outer..... Tapered roller, single-row (2)
Steering knuckle pin:
 Type..... Tapered
 Diameter, top..... 1-1/4"
 bottom..... 1-1/2"
Bushings length, upper..... 2-1/16"
 lower..... 2-1/8"
Side rake..... 8°

(OPTIONAL)

Make..... Mack
*Model..... FA512
Type..... Reversed Elliott, drop-forged I-beam
Size of beam at center:
 Height..... 3-11/16"
 Flange width..... 2-3/4"
 Web thickness..... 1/2"
Steering knuckle thrust..... Adjustable button
Spindle diameter:
 Inner bearing..... 2-1/4"
 Outer bearing..... 1-5/8"
Wheel bearings:
 Inner..... Tapered roller, single-row (2)
 Outer..... Tapered roller, single-row (2)
Steering knuckle pin:
 Type..... Tapered

#FA512 has aluminum brake chamber brackets, spiders and shoes

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FRONT AXLE

(OPTIONAL CONTINUED)

Diameter, top..... 1-1/4"
 bottom..... 1-1/2"
Bushing length, upper..... 2-5/32"
 lower..... 2-3/16"
Side rake..... 8°

REAR AXLE

(SINGLE REDUCTION)

(STANDARD)

Make..... Mack
Model..... RAS507 (with aluminum brake
 chamber brackets, spiders and shoes)
Housing construction..... One-piece, formed from tubular
 stock, heat-treated, pressed steel
 cover welded to banjo.
Spindle dia., inner brg..... 3-5/8"
 outer brg..... 3-3/8"
Carrier:
 Make..... Mack
 Model..... CRS84
 Type..... Hypoid, single reduction
 Ratios..... 4.25, 4.63, 5.14, 5.57, 6.17, 6.83
 Housing material..... Malleable iron
 Differential, type..... Three-pinion, open
Driving gears:
 Face width, bevel pinion..... 2-3/4" (4.25, 4.63, 5.14, 5.57 ratios)
 2-49/64" (6.17 and 6.83 ratios)
 Face width, ring gear..... 2-1/4" (5.57, 6.17 ratios)
 2-17/64" (5.14, 6.83 ratios)
 2-19/64" (4.25, 4.63 ratios)
Bearings:
 Bevel pinion..... Tapered roller, single-row (2)
 Spigot..... Cylindrical roller, single-row
 Differential..... Tapered roller, single-row (2)
 Rear wheels, inner..... Tapered roller, single-row (2)
 outer..... Tapered roller, single-row (2)
Axle shafts:
 Type..... Integral flange
 Material..... Chromium-molybdenum steel, heat-
 treated
 Diameter, minimum..... 2"
 Over splines..... 2-3/8"
 Root of splines..... 2-3/32"
 Splines at inner end..... Seventeen
 Type..... Involute
Oil Capacity..... 28 pints