TM 9-1811

TO 19-75AAA-28

WAR DEPARTMENT TECHNICAL MANUAL

ORDNANCE MAINTENANCE

POWER TRAIN, CHASSIS BODIES, AND EQUIPMENT FOR 4-TON 6 x 6 TRUCK

(DIAMOND T MODELS 968A, 969A, 970A, and 972)

WAR DEPARTMENT • *4 FEBRUARY 1944*

TECHNICAL MANUAL

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POWER TRAIN, CHASSIS, BODIES, AND EQUIPMENT FOR 4-TON 6 X 6 TRUCK (DIAMOND T MODELS 968A, 969A, 970A, AND 972)

CHANGES No. 1

WAR DEPARTMENT
WASHINGTON 25, D. C., 10 April 1945

TM 9–1811, 4 February 1944, is changed as follows:

CHAPTER 15 (Added)

SERVICEABILITY STANDARDS

169. POWER TRAIN.

a. Clutch.

	New part fits and tolerances
Adjustment:	
Length of sleeve travel	9/16 in.
Dimension "A" from face of flywheel ring to face of release sleeve with clutch engaged.	1⅛ in. + 1/16 in.—0 in.
Free pedal travel	1 to 1½ in.
Maximum limit pressure plate dished	0.015 in.
Fit of pressure plate lug in flywheel ring slot.	0.004 to 0.006 in. loose
Adjustment of shim thickness	0.016 in.

b. Transmission.

Mainshaft end:	
Diameter	2 in.
Number splines	10
Clutch shaft end:	
Diameter	1¾ in.
Number splines	10
Bell housing	SAE No. 2
P. T. O. opening	SAE large
Spline clearances:	
Mainshaft sliding gears	0.0015 to 0.005 in.
Mainshaft sliding clutch	0.0015 to 0.005 in.
Clutch shaft	0.0015 to 0.005 in.
Mainshaft out of true	0.005 in. max.

Shifting mechanism:	
Fork clearance in clutch or gear collar	0.005 to 0.020 in.
Poppet spring pressure at 15/16 in	40 to 45 lb.

c. Transfer.

Gear backlash:	
Helical	0.005 to 0.008 in.
Spur	0.005 to 0.010 in.
Bearing adjustment:	
Idler shaft	0.003 to 0.005 in. end play
Drive shaft	0.003 to 0.005 in. end play
Sliding gear to mainshaft clearance	0.001 to 0.004 in.

d. Front axle.

Bearing adjustments:	
Differential pinion bearings	0.0001 to 0.002 in.
Cross shaft bearings	0.0001 to 0.002 in.
Gears:	
Bevel gear to pinion backlash	0.005 to 0.010 in.
Gear runout	0.002 in. max.
Differential case runout	0.002 in. max.
Differential pinion clearance on spider	0.004 to 0.006 in.
Side gear clearance in case	0.005 to 0.009 in.
Clearances:	
Steering knuckle bushing	0.001 to 0.0012 in.
Tie rod end bushing	0.0015 to 0.003 in.
Axle shaft:	
Runout	0.031 in. max.
Side gear clearance on splines	0.002 to 0.005 in.

e. Rear axles.

Bearing adjustment:	
Differential pinion bearings	0.0001 to 0.002 in.
Cross shaft bearings	0.0001 to 0.002 in.
Gears:	
Bevel gear to pinion backlash	0.005 to 0.010 in.
Gear runout	0.002 in. max.
Differential case runout	0.002 in. max.
Differential pinion clearance on spider	0.004 to 0.006 in.
Side gear clearance in case	0.005 to 0.009 in.
Axle shaft:	
Runout	0.031 in. max.
Side gear clearance on spline	0.002 to 0.005 in.

170. BRAKES.

a. Vehicle brakes.

Brake adjustment:	
Clearance at toe end of shoe	0.010 to 0.015 in.
Clearance at heel end of shoe	0.015 in.
Front push rod travel	⅝ in. min; 1⅜ in. max.
Rear brake chambers	¾ in. min; 1¾ in. max.
Bushing clearances on anchor pins:	
Rear brake shoe bushings	0.004 to 0.008 in.
Front brake shoe bushings	0.002 to 0.007 in.
Brake shoe bushing reamers:	
Rear brake shoe bushing reamer	1.254 to 1.256 in.
Front brake shoe bushing reamer	1.495 to 1.497 in.

b. Parking brakes.

Clearance between brake shoes and disk	1/32 in.
Clearance between anchor pins and anchor pin bushings.	0.002 in.

171. COOLING SYSTEM.

Fan.

Bearing adjustment	Loose fit without end play.
Belt adjustment	1-in deflection

172. FRONT MOUNTED WINCH.

Winch.

End frame sleeve:	
Inside diameter	2.440 to 2.442 in.
Wear limit (max.)	2.450 in.
Gear case bushing:	
Inside diameter	2.440 to 2.442 in.
Wear limit (max.)	2.450 in.
Drum bushing (not used in current production):	
Inside diameter	2.442 to 2.448 in.
Wear limit (max.)	2.456 in.

173. STEERING GEAR.

Cam thrust bearings	1- to 2-lb pull on rim of wheel.
Backlash of studs in cam groove	Very slight drag over tightest spot.

Stud roller bearing nuts	5 to 10 inch-pounds torque.
Wheel tube bearings	Spring tension of ball type.
Clearance between lever shaft and bushings	0.0005 to 0.003 in.

174. AIR COMPRESSOR UNIT.

a. De vilbiss compressor.

Cylinder:	
Bore	2.000 + 0.0005 — 0.0000 in.
Bore for rehoning worn cylinder	2.005 + 0.0005 — 0.0000 in.
Piston:	
Clearance between skirt and cylinder	0.002 to 0.003 in.
Skirt diameter	1.9975 ± 0.0005 in.
Piston oversize	0.005 in.
Wrist pin hole diameter	0.7503 ± 0.0002 —0.0000 in.
Diameter for reaming worn wrist pin hole	0.7553 + 0.0002 —0.0000 in.
Wrist pin diameter	0.7500 ± 0.0001 in.
Wrist pin oversize	0.005 in.
Wrist pin clearance in piston	0.0002 to 0.0006 in.
Connecting rod:	
Bearing clearance on crankshaft	0.0010 to 0.0025 in.
Bearing end clearance on crankshaft	0.003 to 0.007 in.
Wrist pin hole diameter	0.7503 ± 0.0001 in.
Diameter for reaming worn wrist pin hole	0.7553 + 0.0002 —0.0000 in.
Wrist pin clearance in connecting rod	0.0001 to 0.0005 in.

b. Kellogg compressor.

Cylinder bore	2.2500 to 2.2505 in.
Piston:	
Skirt clearance in cylinder barrel	0.0017 to 0.0032 in.
Skirt diameter	2.2473 to 2.2483 in.
Wrist pin hole diameter	0.4997 to 0.4999 in.
Connecting rod:	
Wrist pin hole diameter	0.624 to 0.625 in.
Crankshaft bushing hole diameter	0.999 to 1.000 in.

Wrist pin:	
Diameter	0.5002 to 0.5003 in.
Clearance in piston	0.0003 to 0.0006 in.
Wrist pin bushing outside diameter	0.624 to 0.625 in.
Wrist pin bushing inside diameter	0.489 to 0.491 in.
Crankshaft:	
Diameter	0.8748 to 0.8750 in.
Bearing and clearance	0.002 to 0.004 in.
Crankshaft bushing outside diameter	0.999 to 1.000 in.
Crankshaft bushing inside diameter	0.863 to 0.865 in.

c. Briggs and Stratton engine.

Cylinder:	
Bore	1.9990 to 2.000 in.
Bore for rehoning worn cylinder (0.010 oversize).	2.0090 to 2.010 in.
Bore for rehoning worn cylinder (0.030 oversize).	2.0290 to 2.030 in.
Piston:	
Clearance between skirt and cylinder	0.0025 to 0.0045 in.
Skirt diameter	1.993 to 1.994 in.
Piston oversize	0.010 to 0.030 in.
Wrist pin hole diameter	0.49000 to 0.49025 in.
Diameter for reaming worn wrist pin hole	0.49500 to 0.49525 in.
Wrist pin diameter	0.48975 to 0.49000 in.
Wrist pin oversize	0.49475 to 0.49500 in.
Wrist pin clearance in piston	0.00000 to 0.00050 in.
Connecting rod:	
Bearing clearance on crankshaft	0.001 to 0.002.
Bearing end clearance on crankshaft	0.002 to 0.008.
Wrist pin hole diameter	0.49050 to 0.49075.
Diameter for reaming worn wrist pin hole	0.49550 to 0.49575.
Wrist pin clearance in connecting rod	0.0005 to 0.001.

[AG 300.7(20 Feb 45)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL
Chief of Staff

OFFICIAL:
J. A. ULIO
Major General
The Adjutant General

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Refer to FM 21–6 for explanation of distribution formula.

AGO 123C

U. S. GOVERNMENT PRINTING OFFICE: 1948

WAR DEPARTMENT TECHNICAL MANUAL

**TM 9-1811*

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POWER TRAIN, CHASSIS, BODIES, AND EQUIPMENT FOR 4-TON 6 x 6 TRUCK

(DIAMOND T MODELS 968A, 969A, 970A, and 972)

WAR DEPARTMENT
4 February 1944

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*This manual includes pertinent maintenance information from TM 10-1297, TM 10-1335, TM 10-1517, TM 10-1533, and TM 10-1607, and, together with TM 9-811 and TM 9-1832A, supersedes these manuals.

WAR DEPARTMENT
Washington 25, D. C., 4 February 1944

TM 9-1811, Ordnance Maintenance: Power Train, chassis, bodies, and equipment for 4-ton 6 x 6 truck (Diamond T Models 968A, 969A, 970A, and 972), is published for the information and guidance of all concerned.

[A. G. 300.7 (17 Aug. 43)]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

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(For explanation of symbols, see FM 21-6.)