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| | <p style="text-align: center;">Service Instructions and Parts List</p> <p style="text-align: center;"><i>Zephyr</i> ARMY TYPE TROLLEY HOISTS</p> <p style="text-align: center;">Keep for Future Reference</p> | <p style="text-align: center;">IMPORTANT</p> |
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CAUTION:

THE EQUIPMENT ILLUSTRATED AND DESCRIBED IN THIS BULLETIN IS DESIGNED FOR MANUAL OPERATION ONLY AND IS NOT TO BE POWER DRIVEN, NOR IS IT SUITABLE FOR LIFTING PEOPLE.

This unit is a standard Zephyr spur geared hoist suspended on a special load bar, carried at each end by a precision bearing equipped two-wheel trolley. One-quarter through 2 Ton capacity.

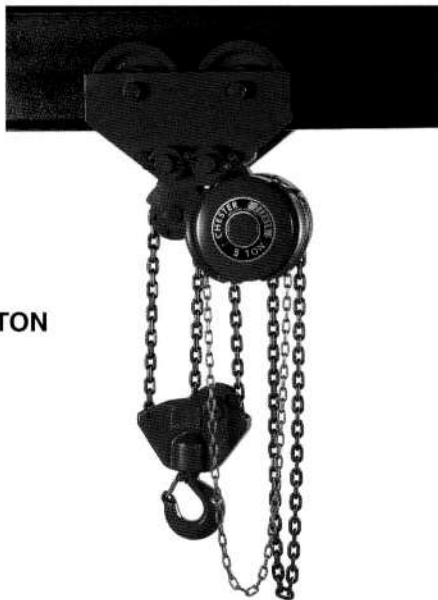
These trolley hoist units are adjustable to varying beam sizes and are interchangeable. If your present Army Trolley type hoist is equipped with plain trolleys, a geared unit may be substituted in place of one of the plain trolleys at any time.



1/4 to 2 TON

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3 to 10 TON

The Zephyr Army type trolley hoist — 3 through 10 Ton capacity — has all the features of the standard Zephyr spur geared hoist except that a Chester Precision Bearing I-Beam Trolley is incorporated in place of the standard load bar and two-wheel trolley arrangement. The precision trolley is *fixed* to the hoist and does not swivel as in the case of the 1/4 through 2 Ton units. Although the trolleys are fixed, they are still fully capable of negotiating relatively short curve radii (See Bulletin B). These units are available in both the plain and geared type trolley.

NOTE: All Army Trolley Hoists fabricated in accordance with ANSI B 30.16 and HMI 200.

When ordering parts always specify your hoist serial number.

INSTALLATION ON BEAM

The distance between the trolley wheel flanges (measured at the tread diameter) should be 1/8" to 3/16" greater than the beam flange width for proper running clearance. This clearance should be checked before operating the hoist under load.

Move adjusting spacers to inside or outside of plates as required. The hoist should be traversed the entire length of the beam to check for interference points, proper side clearances and the effectiveness of beam stops.

TROLLEY LUBRICATION

Wheel bearings are lubricated through ball check hydraulic fittings on the hub of each trolley wheel. On geared trolley units, a similar fitting is also furnished on the trolley block. See Part No. C-906-A. Three trough 10 Ton: Duo-Sealed Timken Tapered Roller Bearings. One-quarter through 2 Ton. Sealed Precision

Ball Bearings – no lubrication required.

Lubricate frequently and at regular intervals with NLGI Grade 2, complex lithium based grease with E.P. additive.

ZEPHYR ARMY TYPE HOIST PARTS

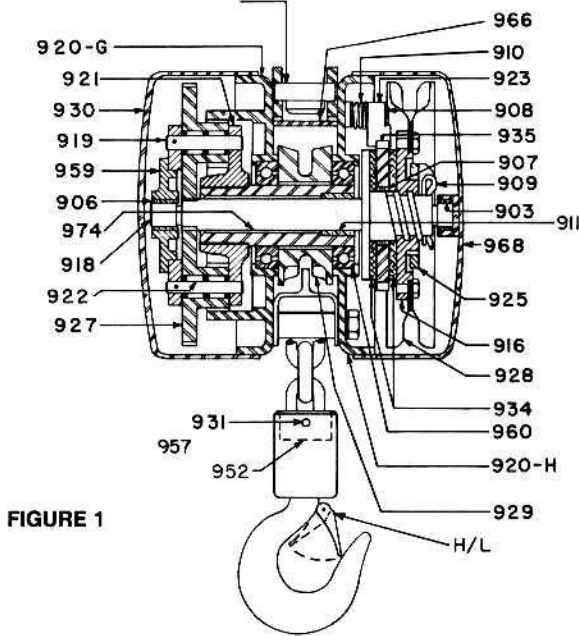
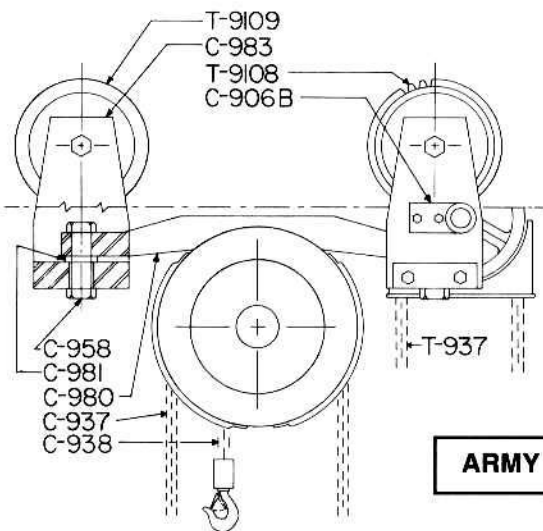
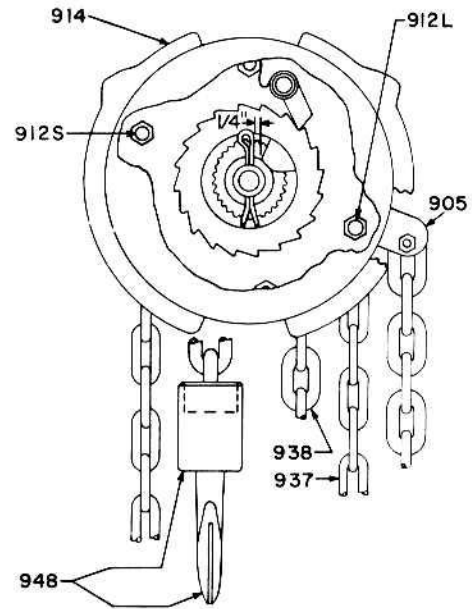


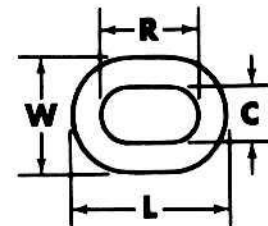
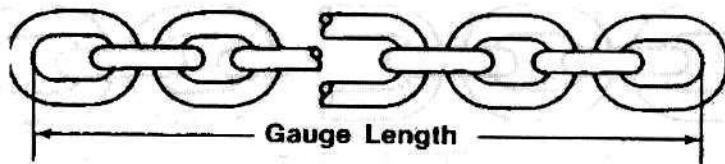
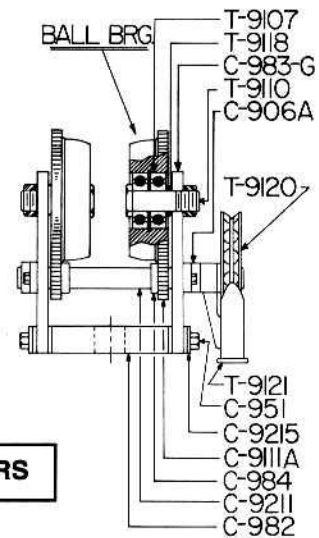
FIGURE 1

1/4 to 10 TON



1/4 to 2 TON

ARMY TROLLEY PARTS NUMBERS



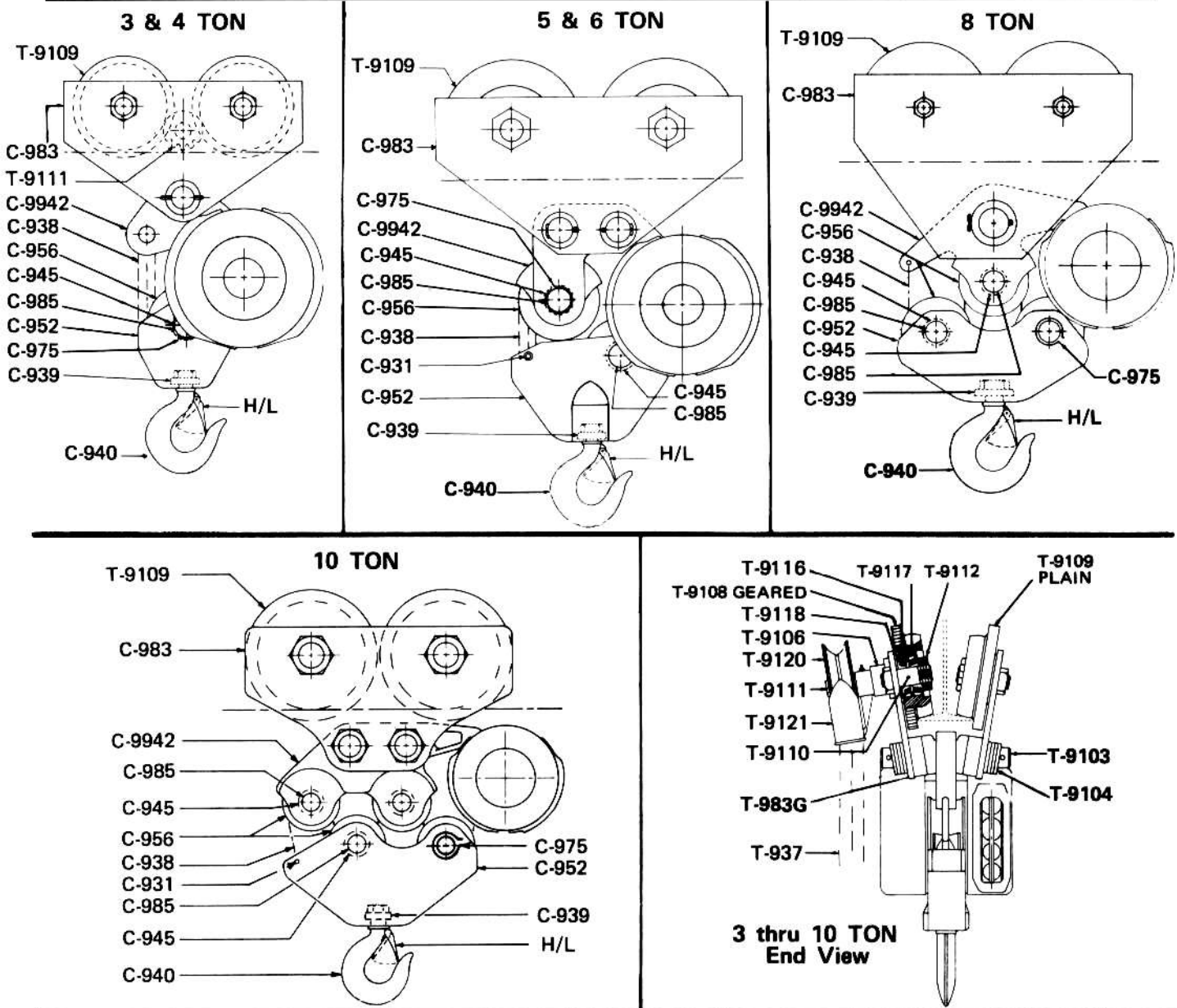
| Use and Description | Chain Size | C | W | R | L | Gauge Length | Net Weight |
|--|------------|------|-------|--------|--------|-------------------|----------------|
| HAND CHAIN | | | | | | | |
| All Capacities | 1/4" | .347 | .878 | 1.048 | 1.056" | 19 links: 20.064" | .43 lbs., ft. |
| LOAD CHAINS | | | | | | | |
| 1/4 - 1/2 ton | 9/32" | .313 | .876 | .797" | 1.357 | 25 links: 19.925" | .73 lbs., ft. |
| 1 ton (Alloy) | 9/32" | .313 | .876 | .797" | 1.357 | 25 links: 19.925" | .73 lbs., ft. |
| 1 1/2, 2, 3, 4, 5, 6, 8, 10 thru 25 ton. | 3/8" | .466 | 1.206 | 1.155" | 1.897 | 13 links: 15.015" | 1.28 lbs., ft. |

HOIST PARTS

QUANTITIES PER CAPACITY IN TONS

| Reference No. | Description | 1/4 & 1/2 | 1 | 1 1/2 | 2 | 3 | 4 | 5 & 6 | 8 | 10 |
|-------------------------------|--|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 903 | Bronze Bushing in Handwheel Cover | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 905 | Load Chain Guide/Stripper | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 906 | Bronze Bushing for 959 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 907 | Bushing 935 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 908 | Pawl Snap Ring | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 909 | Cotter Pin 135-.31-2.00 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 910 | Pawl Spring | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 911 | Bronze Bushing for 974 | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 912L | Large Separator Stud | - | - | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 912S | Small Separator Stud | - | - | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| 914 | Hand Chain Guide | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 916 | Handwheel Threaded Insert | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 918 | Spindle | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 919 | Gear & Pinion Shaft | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| C920G | Internal Gear Frame | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C920H | Handwheel Side Frame | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 921 | Pinion Cage | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 922 | Needle Bearings for Gear & Pinion | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 923A | Pawl | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 925 | Adjustable Check Washer | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 927 | Gear & Pinion | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 928 | Handwheel | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 929 | Load Sheave | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 930 | Gear Cover | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 931 | Drive Pin | 1 | 1 | 1 | 1 | - | - | - | - | 1 |
| 934 | Brake Disc, Per/Pair | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 935 | Ratchet with 907 Bushing | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 937 | Hand Chain | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 938 | Load Chain | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 939 | Thrust Bearing | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| 940 | Bottom Hook | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| H/L | Hook Latch | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 945 | Idler Sheave Bearing B2620 | - | - | - | - | 1 | 1 | 2 | 3 | 4 |
| C948 | Bottom Hook Assembly | 1 | 1 | 1 | 1 | - | - | - | - | - |
| | Thru Bolt & Nut | 4 | 4 | 4 | 4 | - | - | - | - | - |
| 952 | Bottom Block, Crosshead or Plug | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 956 | Top or Bottom Idler Sheave | - | - | - | - | 1 | 1 | 2 | 3 | 4 |
| 957 | Top Yoke or Load Bar Pin | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 958 | Swivel Bolt | 2 | 2 | 2 | 2 | - | - | - | - | - |
| 959 | Pinion Cage Bearing Block | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 960 | Load Sheave Shaft Bearing | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 966 | Load Sheave Shield | 1 | 1 | - | - | 1 | 1 | 1 | 1 | 1 |
| 968 | Handwheel Cover with 903 Bushing | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 974 | Load Shaft, Splined | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 975 | Snap Ring for 985 Sheave Axle | - | - | - | - | 2 | 2 | 4 | 6 | 8 |
| 980 | Load Bar | 1 | 1 | 1 | 1 | - | - | - | - | - |
| 981 | Flanged Bushing | 2 | 2 | 2 | 2 | - | - | - | - | - |
| 982 | Cross Piece | 2 | 2 | 2 | 2 | - | - | - | - | - |
| 983 | Plain Trolley Side Plate, Geared Unit Qty. - () | 4 (2) | 4 (2) | 4 (2) | 4 (2) | (1) | (1) | (1) | (1) | (1) |
| 983G | Geared Trolley Side Plate | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 |
| 984 | Locking Collar | 2 | 2 | 2 | 2 | - | - | - | - | - |
| 985 | Top or Bottom Sheave Axle | - | - | - | - | 1 | 1 | 2 | 3 | 4 |
| 906A | Handwheel Shaft Support (Long) | 1 | 1 | 1 | 1 | - | - | - | - | - |
| 906B | Handwheel Shaft Support (Short) | 1 | 1 | 1 | 1 | - | - | - | - | - |
| 9103 | Equalizing Pin(s) | - | - | - | - | 1 | 1 | 2 | 1 | 2 |
| 9104 | Adjusting Washer | - | - | - | - | 22 | 27 | 32 | 24 | 52 |
| 9106 | Handwheel Shaft Support (Long) | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| 9107 | Ball Bearing | 8 | 8 | 8 | 8 | - | - | - | - | - |
| 9108 | Geared Trolley Wheel | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 9109 | Plain Trolley Wheel, Geared Unit Qty. - () | 4 (2) | 4 (2) | 4 (2) | 4 (2) | 4 (2) | 4 (2) | 4 (2) | 4 (2) | 4 (2) |
| 9110 | Axel | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 9111 | Pinion Gear & Shaft | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| 9111A | Pinion Gear Only | 2 | 2 | 2 | 2 | - | - | - | - | - |
| 9112 | Adjustable Bearing Nut | - | - | - | - | 4 | 4 | 4 | 4 | 4 |
| 9116 | Timken Bearing Cone | - | - | - | - | 8 | 8 | 8 | 8 | 8 |
| 9117 | Timken Bearing Cup | - | - | - | - | 8 | 8 | 8 | 8 | 8 |
| 9118 | Bearing Spacer C23855 C23854 | 20 | 20 | 12 | 12 | 4 | 4 | 4 | 4 | 4 |
| 9120 | Trolley Handwheel | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9121 | Trolley Handwheel Swinging Guard | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9211 | Pinion Shaft | 1 | 1 | 1 | 1 | - | - | - | - | - |
| 9215 | Side Plate Spacers | 28 | 28 | 38 | 38 | - | - | - | - | - |
| 9942 | Top Connecting Yoke | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| SPECIAL FASTENERS (NOT SHOWN) | | | | | | | | | | |
| 999 | Gear (930) & Handwheel (968) Cover Screw | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 44-.25-.50 with Washer 3-.25 | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

PART PRICES ON REQUEST - CONTACT FACTORY.



INSPECTING THE HOIST

Following procedure is recommended for a thorough inspection of the hoist. Parts can be identified by referring to Fig. 1, page 2.

1. Inspect bottom hook. Determine if hook may have been stretched. Check bolt attaching bottom yoke to chain, tighten securely.

2. Inspect load chain for wear. Check all inter-link points. Measure gauge length of chain at several points, and compare with dimensions shown in chain chart on Page 2. Increased length will indicate that the chain has been overloaded and stretched, or that excessive wear is taking place.

3. Inspect pockets of load sheave for evidence of wear. Check engagement with load chain for proper action.

4. Try out the brake, and check if it is holding load at all positions, by operating the hoist with and without load.

5. Remove handwheel cover and handwheel, and check the action of the load brake pawl. Determine that it engages properly with the ratchet. Inspect pawl spring and ratchet for wear. Check the distance between pin No. 909 and check washer No. 925, against the minimum required distance of $\frac{1}{4}$ inch.

6. Remove spindle and examine pinion teeth, brake washers No. 934, and ratchet for excessive wear.

7. Remove gear cover and inspect all gearing. Check for broken teeth and for excessive wear in the internal gear No. 920-G and the combination gear and pinion No. 927.