

LUBRICATION ORDER

LO 9-2320-273-12

14 JANUARY 1983

Supersedes LO 9-2320-273-12, 22 September 1980

- TRUCK TRACTOR, LINE HAUL, 50,000 GVWR, 6x4, M915 (2320-01-028-4395)
- TRUCK TRACTOR, LIGHT EQUIPMENT TRANSPORTER (LET), 56,000 GVWR, 6x6, W/WINCH, M916 (2320-01-028-4396)
- TRUCK TRACTOR, MEDIUM EQUIPMENT TRANSPORTER (MET), 75,000 GVWR, 8x6, W/WINCH, M920 (2320-01-028-4397)
- TRUCK CHASSIS, 75,000 GVWR, 8x6, FOR 20 TON DUMP TRUCK, M917 (3805-01-028-4389)
- TRUCK CHASSIS, 56,000 GVWR, 6x6, FOR BITUMINOUS DISTRIBUTOR TRUCK, M918 (3895-01-028-4390)
- TRUCK CHASSIS, 75,000 GVWR, 8x6, FOR CONCRETE MOBILE

REFERENCE: TM 9-2320-273-10 AND TM 9-2320-273-20

Intervals and the related man-hour times are based on normal operation. The man-hour time specified is the time you need to do all the services prescribed for a particular interval. Change the interval if your lubricants are contaminated or if you are operating equipment under adverse conditions, including the longer-than-usual operation hours. You may extend the adequate preservation precautions. Clean fittings before lubricating.

Clean parts with solvent, drycleaning. Type II (SD-2) (P-D-680). Dry before lubricating. Dotted arrow points indicate lubrication on both sides of the equipment.

The lowest level of maintenance authorized to lubricate a point is indicated by one of the following symbols as appropriate: Operator/crew (C); Organizational Maintenance (O).

| KEY   |                            |                       |               |                     |
|---|----------------------------|-----------------------|---------------|---------------------|
| LUBRICANTS<br>(SEE NOTE 24)                         | REFILL CAPACITY<br>(APR.)  | EXPECTED TEMPERATURES |               |                     |
|   |                            | ABOVE +32°F           | +40°F TO -10° | 0°F TO 65°F         |
| OE/HDO - OIL ENGINE                                 | 11.5 GAL WITH BOTH FILTERS | OE/HDO 30             | OE/HDO 10     | OEA                 |
| OE/HDO AND OEA (ARCTIC GRADE) TRANSMISSION          | 22 QUARTS                  | OE/HDO 10             | OE/HDO 10     | OEA                 |
| GO LUBRICANT, MULTIPURPOSE TRANSFER CASE            | 5 QUARTS                   | GO 80/90              | GO 80/90      | GO 75               |
| GO LUBRICANT, MULTIPURPOSE DIFFERENTIALS            | SEE NOTE 7A                | GO 85/140             | GO 80/90      | GO 75 (+40°F LIMIT) |
| GO LUBRICANT, MULTIPURPOSE WINCH DRUM               | 5 QUARTS                   | GO 80/90              | GO 80/90      | GO 75               |
| OE/HDO - OIL AND OEA (ARCTIC GRADE) WINCH RESERVOIR | 42 GALLONS                 | OE/HDO 10             | OE/HDO 10     | OEA                 |
| DEXRON POWER STEERING                               | 2 QUARTS                   | ALL TEMPERATURES      |               |                     |
| GAA - GREASE AUTOMOTIVE & ARTILLERY                 | AS REQUIRED                |                       |               |                     |
| CWII-LUBR. CHAIN EXPOSED GEAR AND WIRE ROPE         | AS REQUIRED                |                       |               |                     |

FOR ARCTIC OPERATION REFER TO 9-9207

INTERVALS

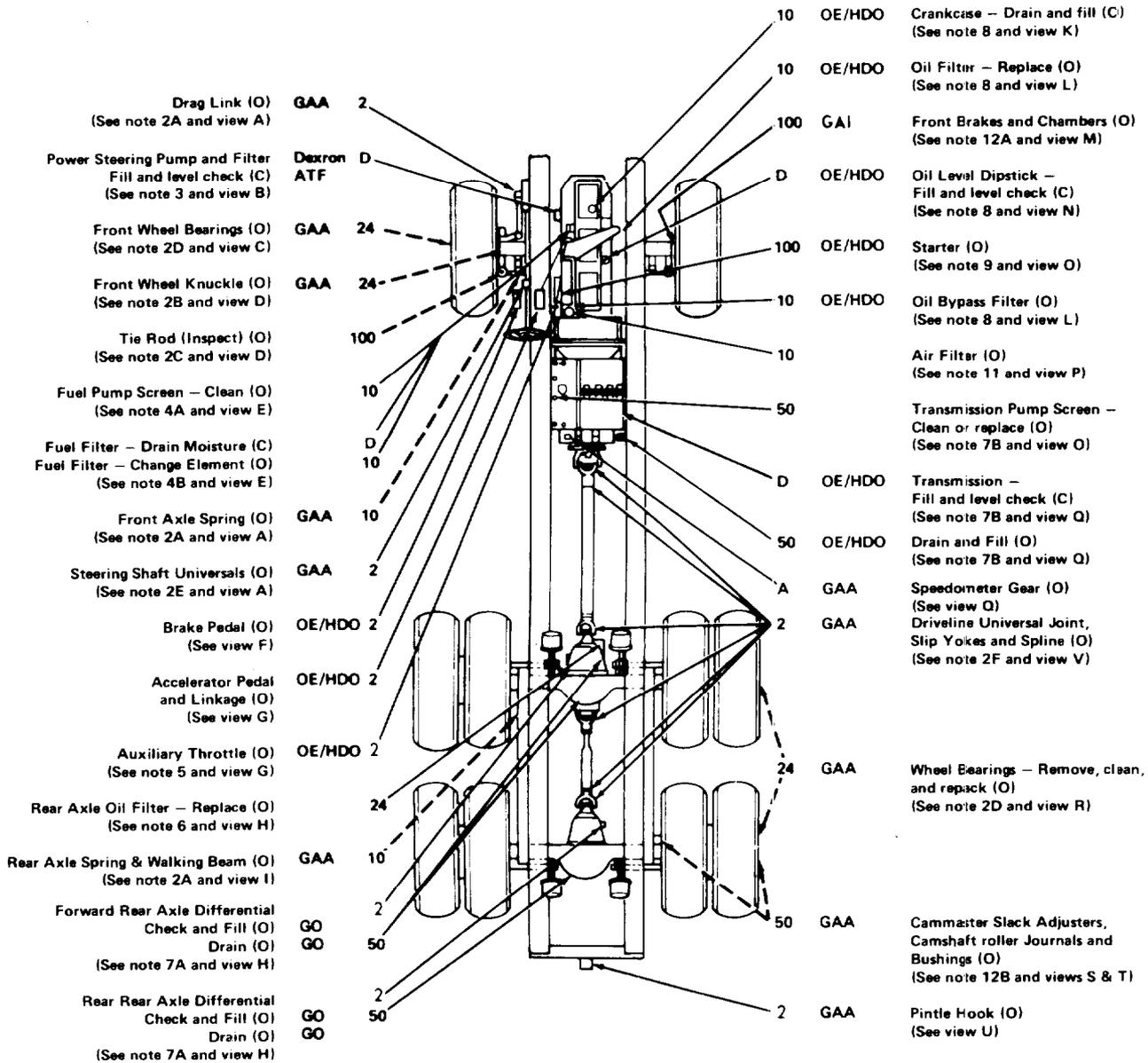
D - DAILY (OPERATOR)  
S - SEMIANNUALLY (6 MONTHS)  
A - ANNUALLY  
1 - 1,000 MILES  
2 - 2,000 MILES  
10 - 10,000 MILES  
24 - 24,000 MILES  
50 - 50,000 MILES  
100 - 100,000 MILES

TA 073619

# MODEL M915 THRU M920 LUBRICATION REQUIREMENTS

LUBRICANT - INTERVAL

INTERVAL - LUBRICANT

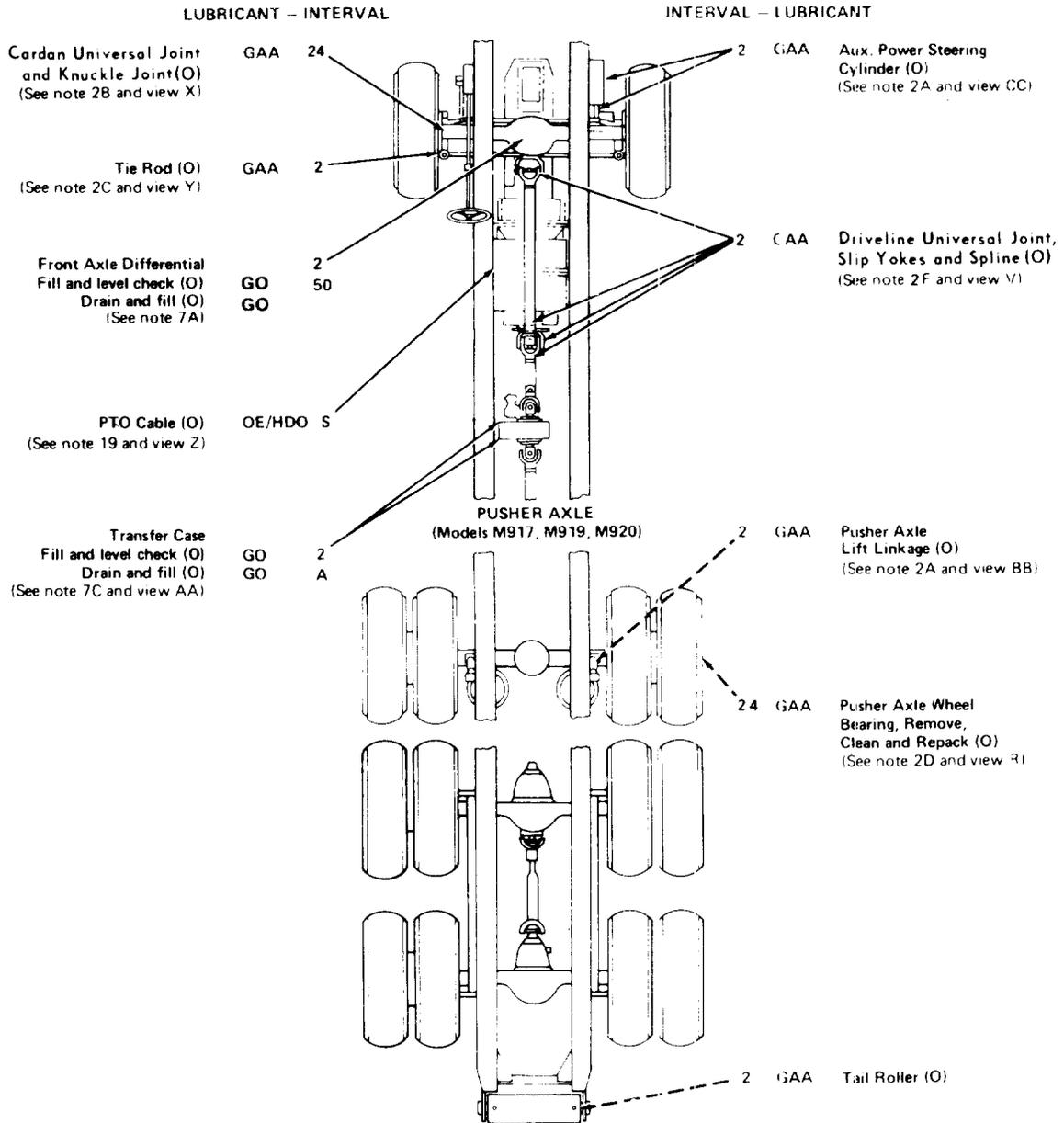


NOTE: Dotted arrow points indicate lubrication on both sides of vehicle.

TA 073621

# MODELS M916 THRU M920 LUBRICATION REQUIREMENTS

(SEE CARD 2 FOR INSTRUCTIONS ON COMMON COMPONENTS)



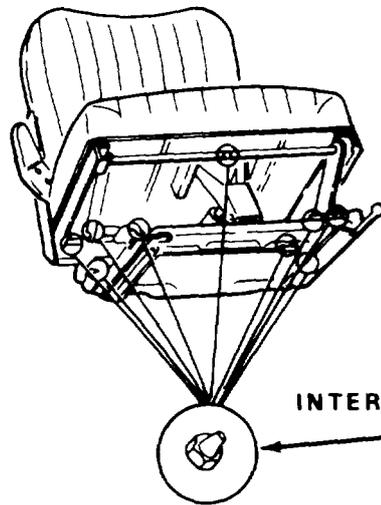
|      | TOTAL MAN-HOURS |   |     |      |      |        |        |
|------|-----------------|---|-----|------|------|--------|--------|
|      | D               | W | A   | 1000 | 2000 | 10,000 | 24,000 |
| M915 | 0.2             | - | 3.1 | 0.5  | 5.8  | 6.4    | 7.3    |
| M916 | 0.2             | - | 3.1 | 1.1  | 6.7  | 7.3    | 8.4    |
| M917 | 0.2             | - | 3.1 | -    | 7.3  | 7.9    | 9.0    |
| M918 | 0.2             | - | 3.1 | -    | 5.8  | 6.4    | 7.5    |
| M919 | 0.2             | - | 3.1 | -    | 7.3  | 7.9    | 9.0    |
| M920 | 0.2             | - | 3.1 | 1.1  | 7.9  | 8.5    | 9.6    |

**NOTE**

The above man-hours have been established on an individual basis and hence, are not applicable at maintenance facilities where production line methods are employed.

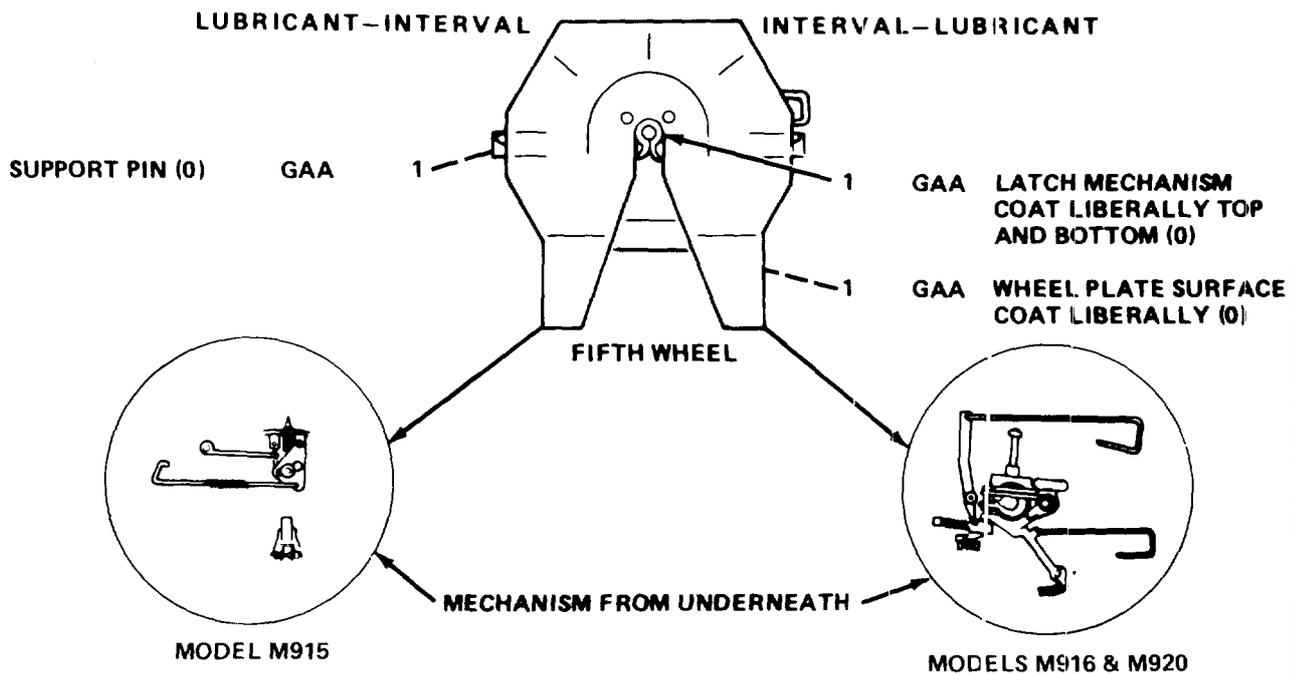
TA 073620

## DRIVER'S SEAT (ALL MODELS)



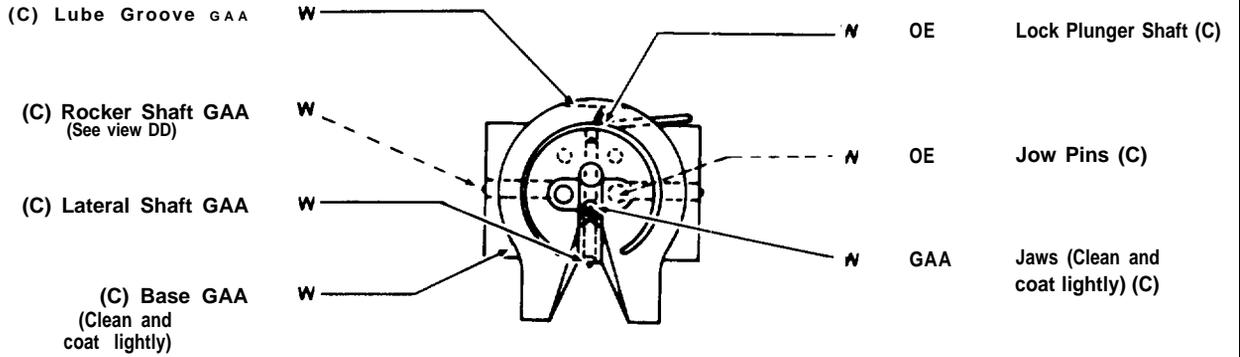
INTERVAL-LUBRICANT  
10 GAA DRIVER'S SEAT (0)

## FIFTH WHEEL (M915)

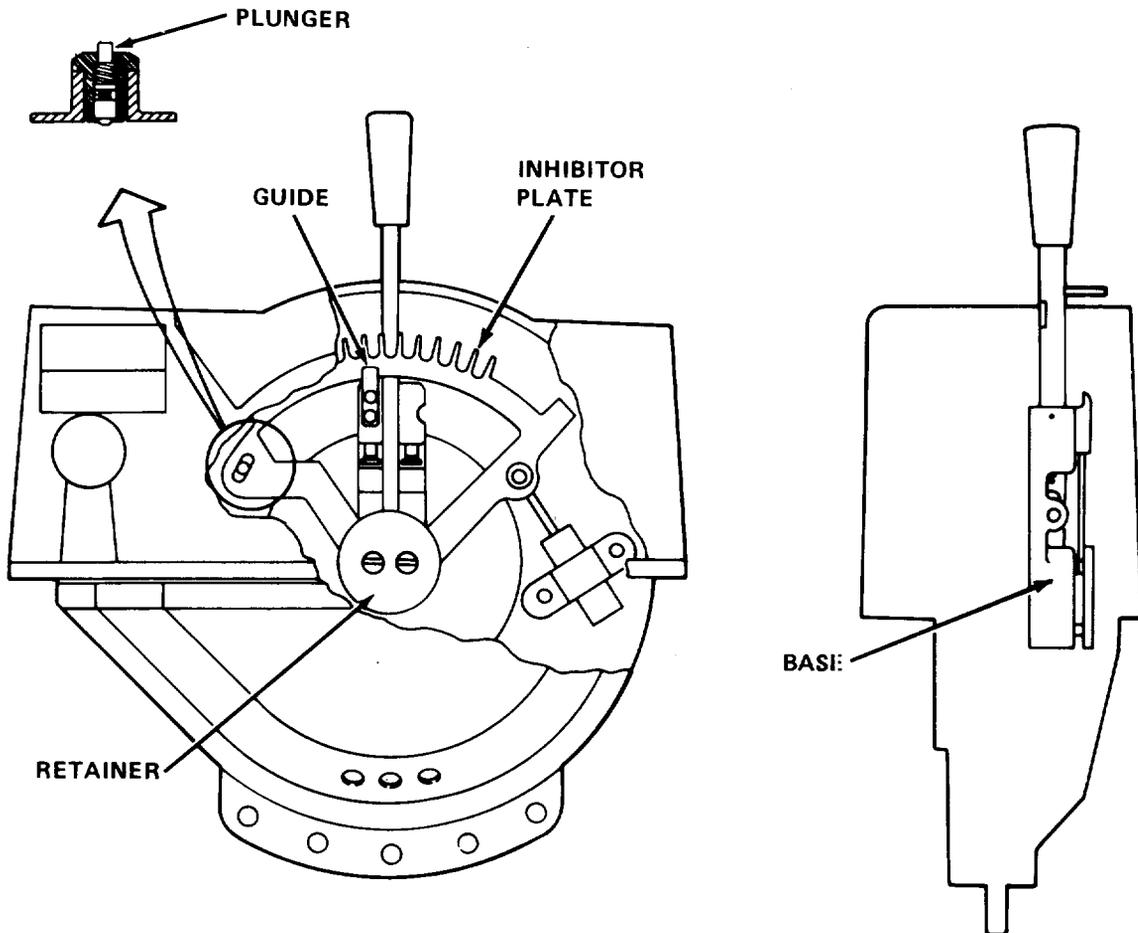


TA 073622

# FIFTH WHEEL (M916 AND M920)

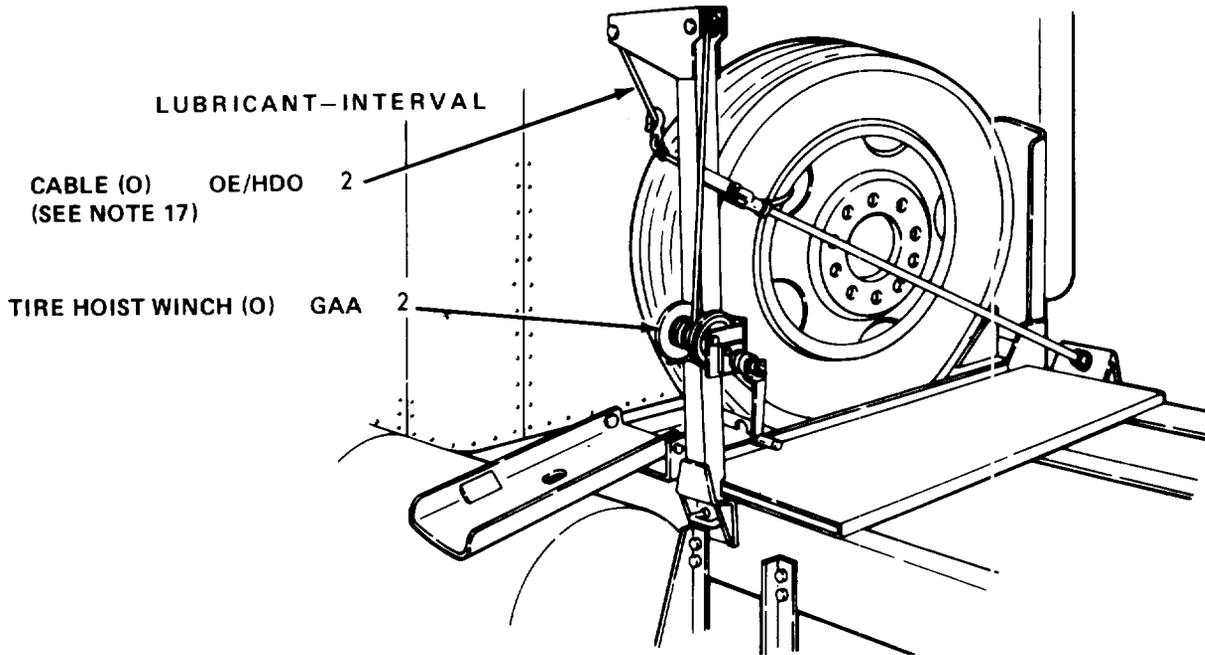


# RATIO SELECTOR (SEE NOTE 20)



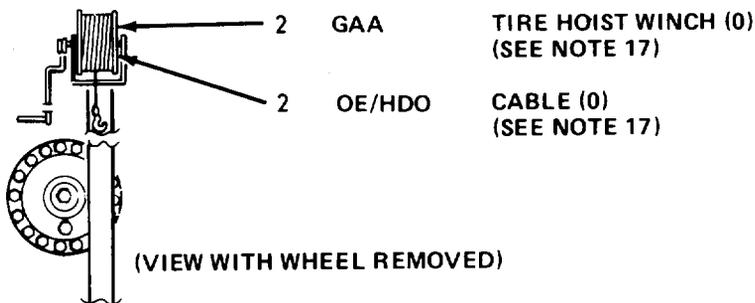
TA 073623

## TIRE HOIST (MODEL M915)



## TIRE HOIST (MODEL M916)

INTERVAL-LUBRICANT



## HYDRAULIC WINCH (MODELS M916 AND M920)

LUBRICANT-INTERVAL

FILTER REPLACE (O)  
(SEE NOTE 15)

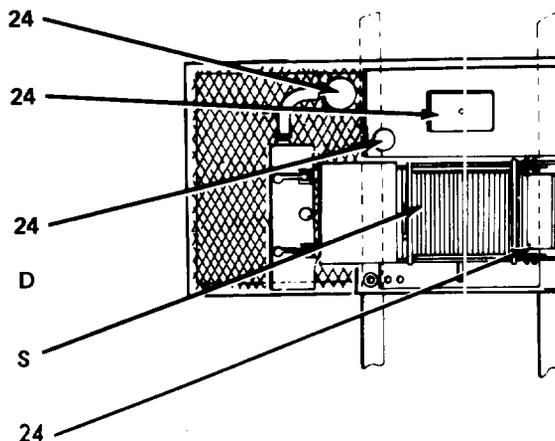
INLET STRAINER-  
CLEAN OR REPLACE (O)  
(AT BASE OF RESERVOIR)

RESERVOIR-DRAIN AND FILL (O) OE/  
(DRAIN LOCATED BELOW TANK) HDO

CHECK LEVEL(C)  
(SEE NOTE 1)

CABLE CLEAN AND OIL (O) CWII  
(SEE NOTE 16)

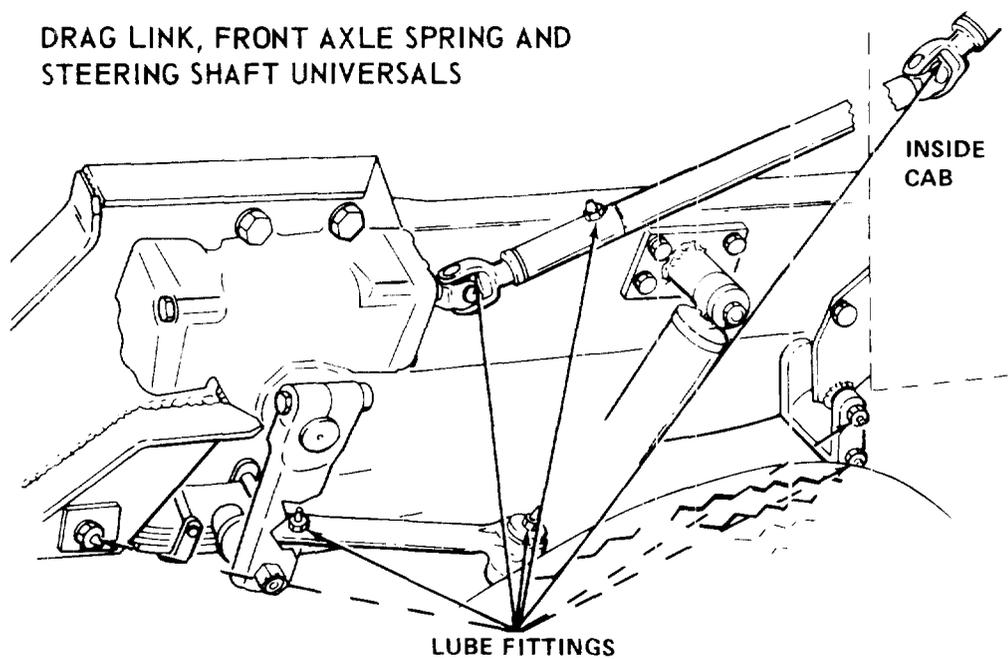
HYDRAULIC WINCH DRUM  
DRAIN AND FILL (O) GO



TA 073624

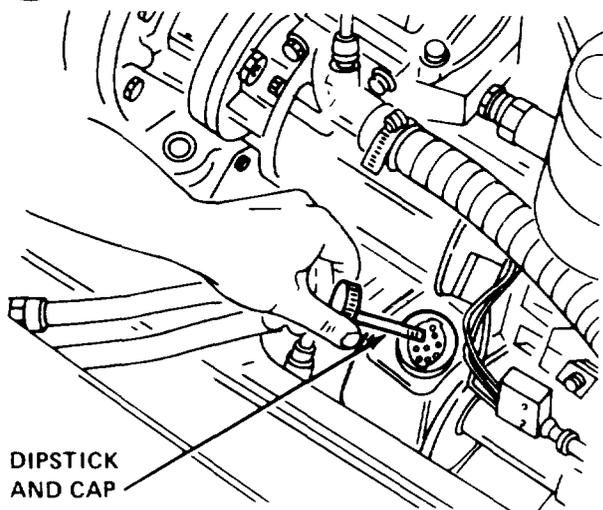
A

**DRAG LINK, FRONT AXLE SPRING AND STEERING SHAFT UNIVERSALS**



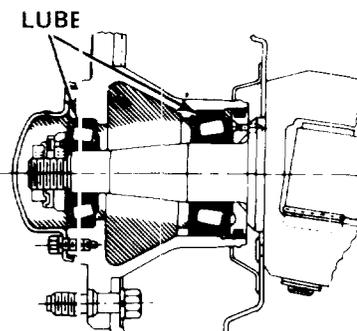
B

**POWER STEERING RESERVOIR**



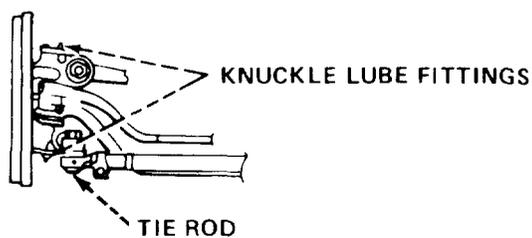
C

**M915 NON-DRIVE AXLE HUB ASSEMBLY**



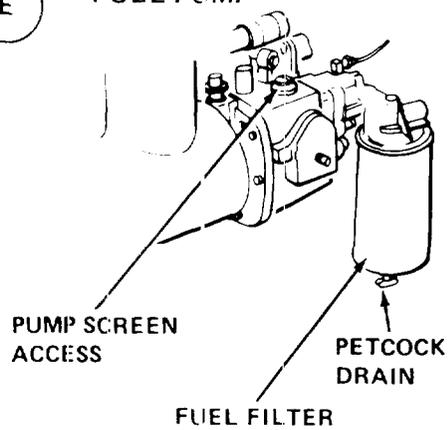
D

**M915 FRONT WHEEL KNUCKLE AND TIE ROD**



E

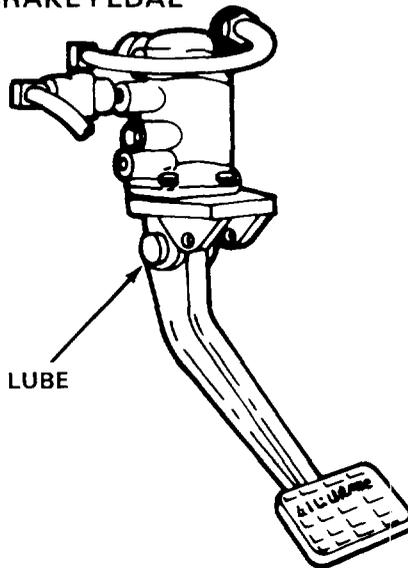
**FUEL PUMP**



TA 073625

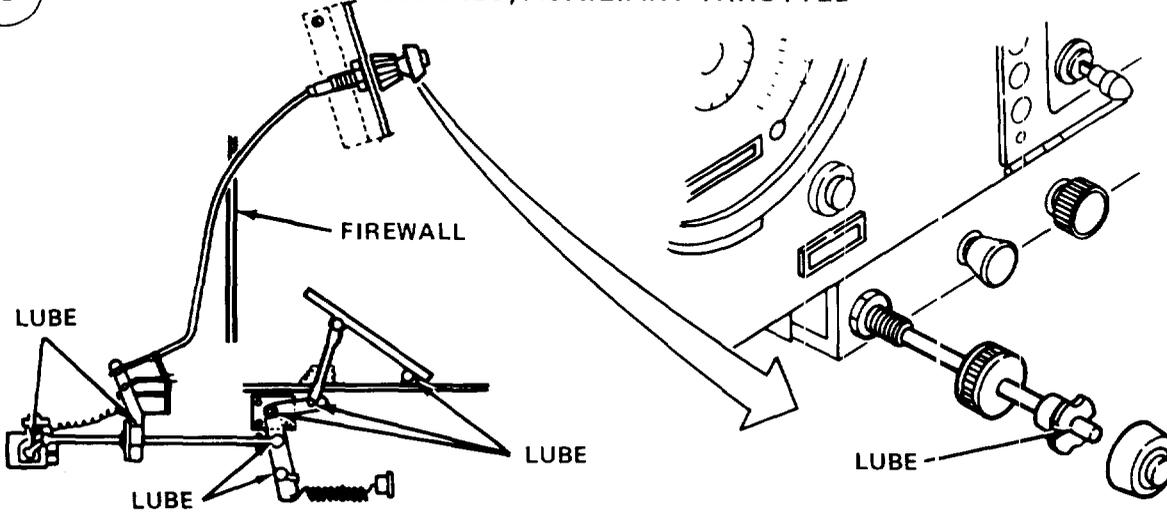
F

BRAKE PEDAL



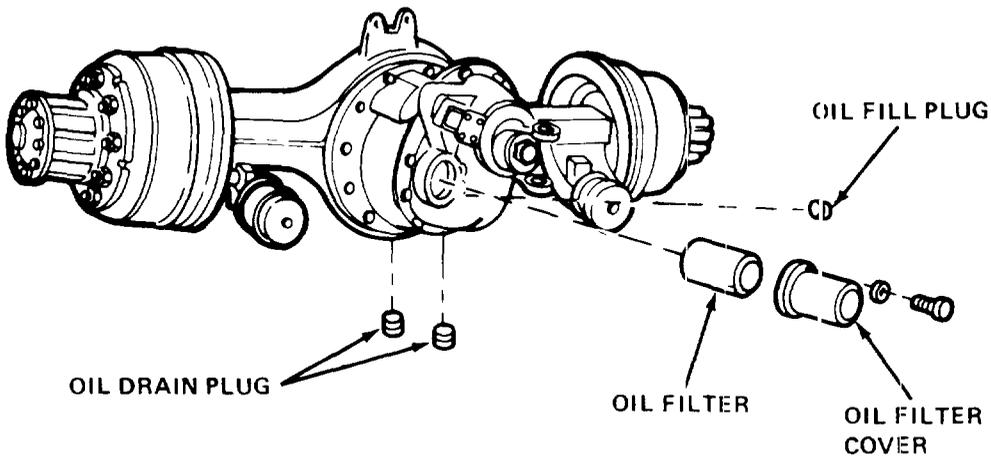
G

ACCELERATOR PEDAL AND LINKAGE, AUXILIARY THROTTLE



H

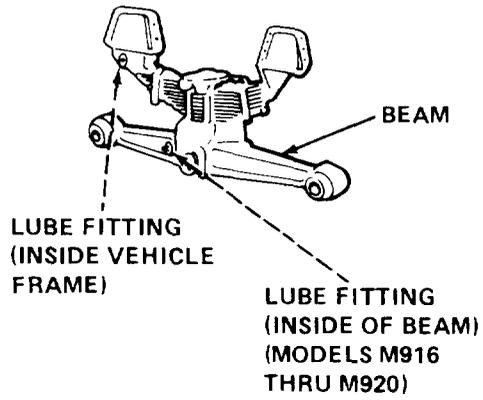
M915 FORWARD REAR AXLE (M916/M920 DOES NOT HAVE FILTER)



TA 073626

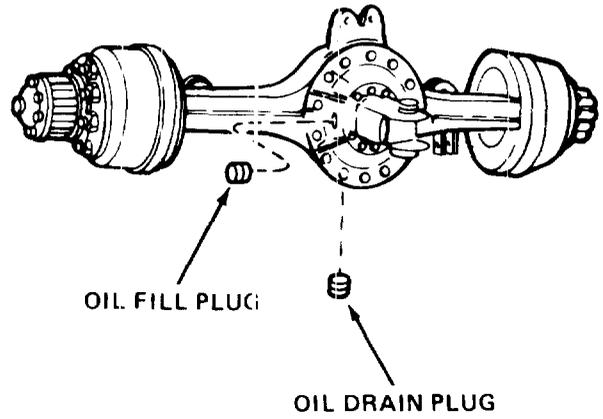
I

REAR AXLE SPRING AND WALKING BEAM



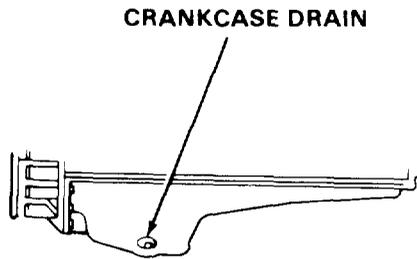
J

REAR REAR AXLE



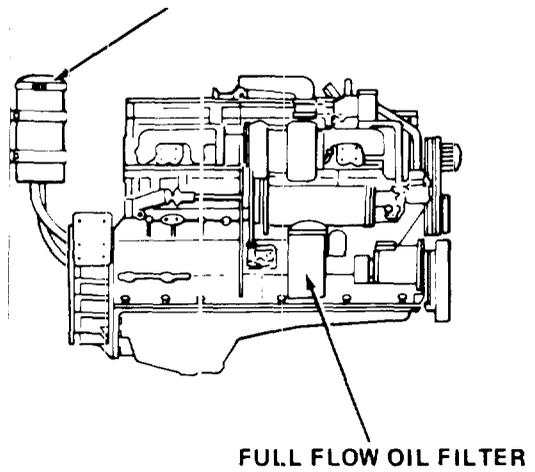
K

(ENGINE RIGHT SIDE)



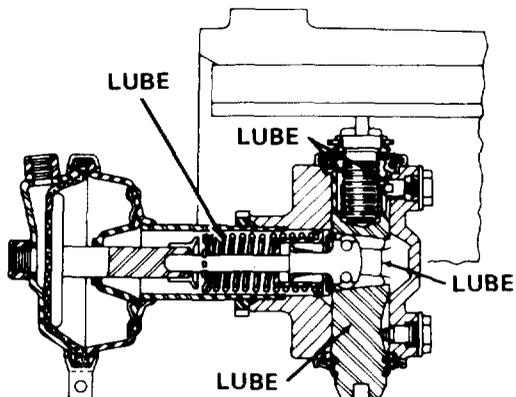
L

BYPASS OIL FILTER



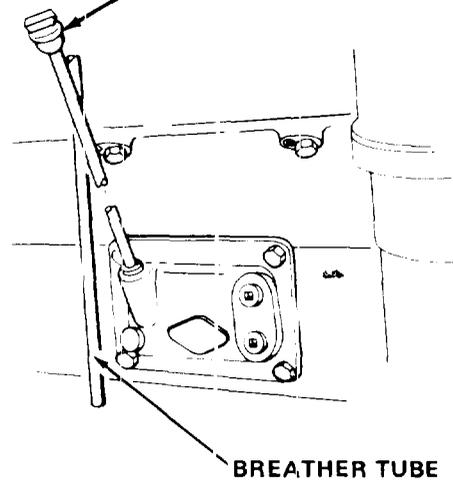
M

FRONT BRAKES AND CHAMBERS



N

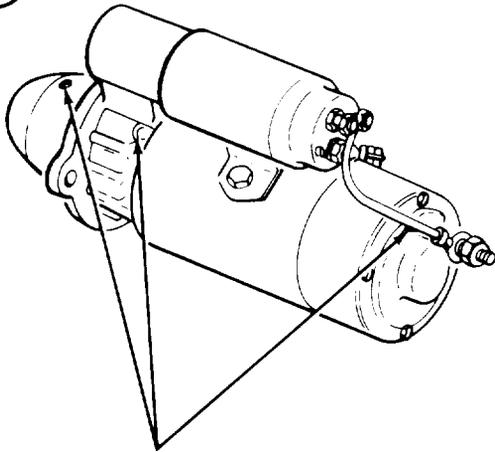
OIL LEVEL DIPSTICK



TA 073627

O

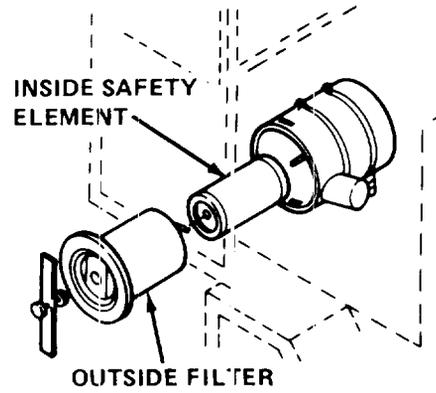
STARTER



SOCKET HEAD SCREWS

P

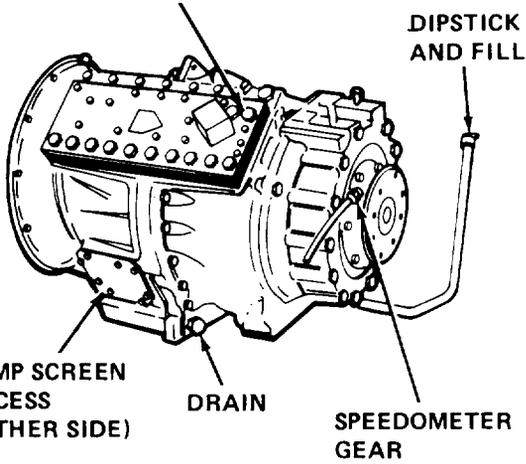
AIR FILTER



Q

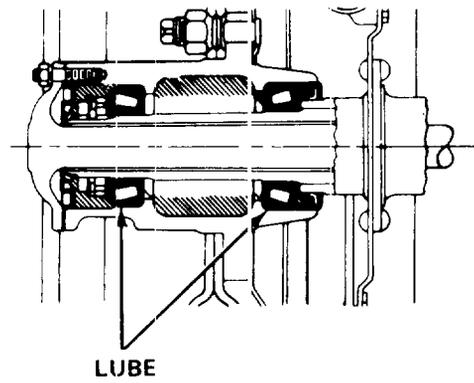
TRANSMISSION

REPLACEABLE BREATHER



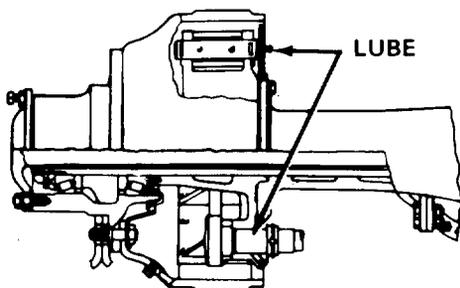
R

DRIVE & PUSHER AXLE HUB ASSEMBLY



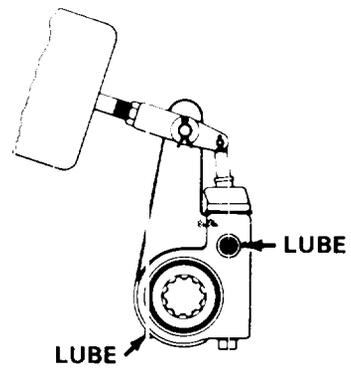
S

CAM MASTER CAMSHAFT ROLLER JOURNALS, BUSHINGS AND ANCHOR PINS



T

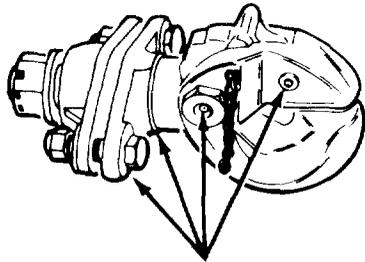
AUTOMATIC SLACK ADJUSTERS



TA 073628

U

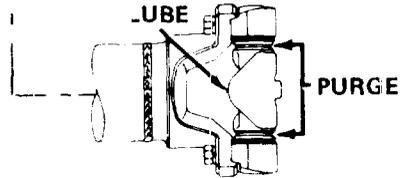
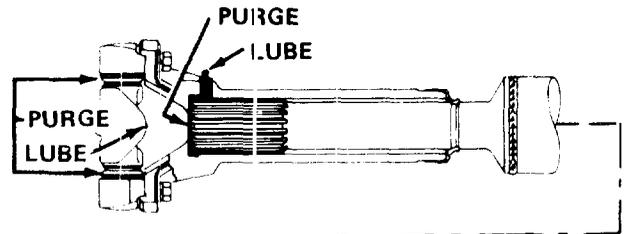
PINTLE HOOK



LUBE FITTINGS  
(2 FITTINGS UNDERNEATH)

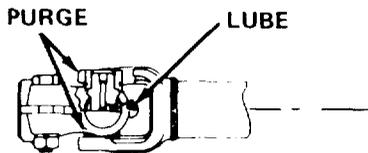
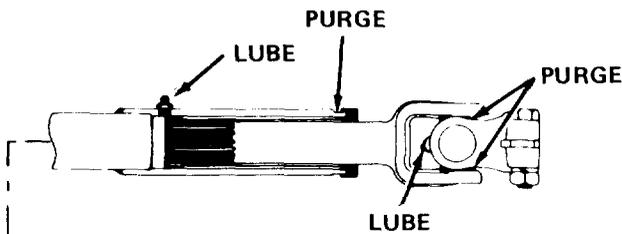
V

DRIVE LINE UNIVERSAL JOINT, SLIP YOKES AND SPLINES



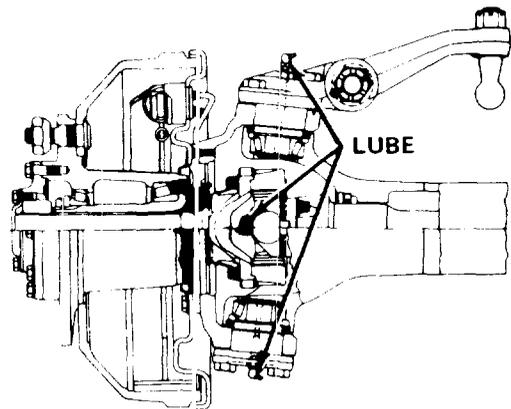
W

STEERING SHAFT UNIVERSAL JOINTS



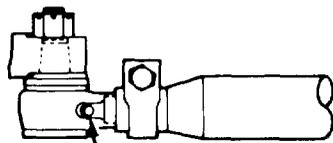
X

M916 THRU M920 CARDAN UNIVERSAL JOINT AND KNUCKLES



Y

M916/M920 TIE ROD

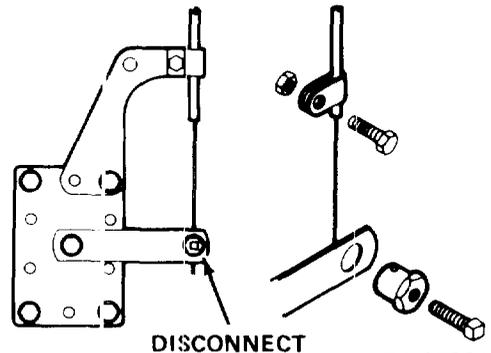


LUBE

Z

M916/M920 PTO CABLE

PULL UP AFTER  
DISCONNECT AND  
APPLY OIL.



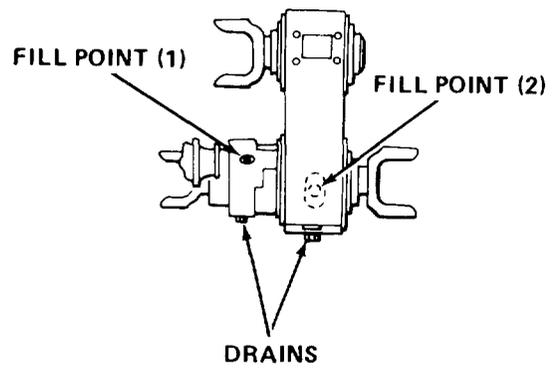
DISCONNECT

TA 073629

AA

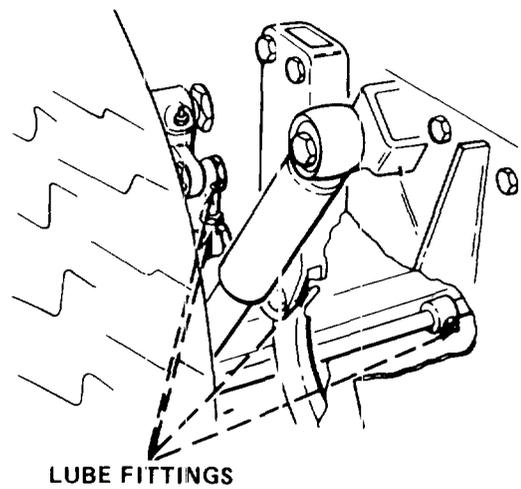
**TRANSFER CASE**

(See note 7c)

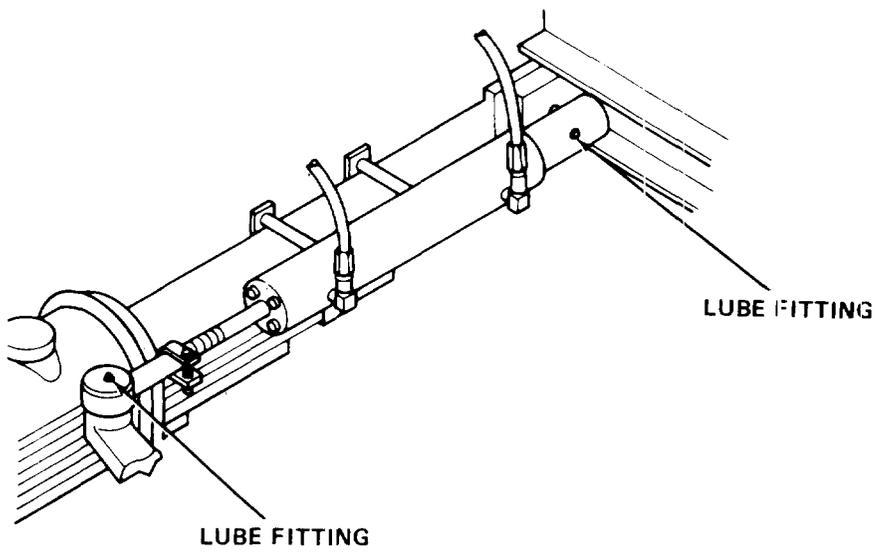


BB

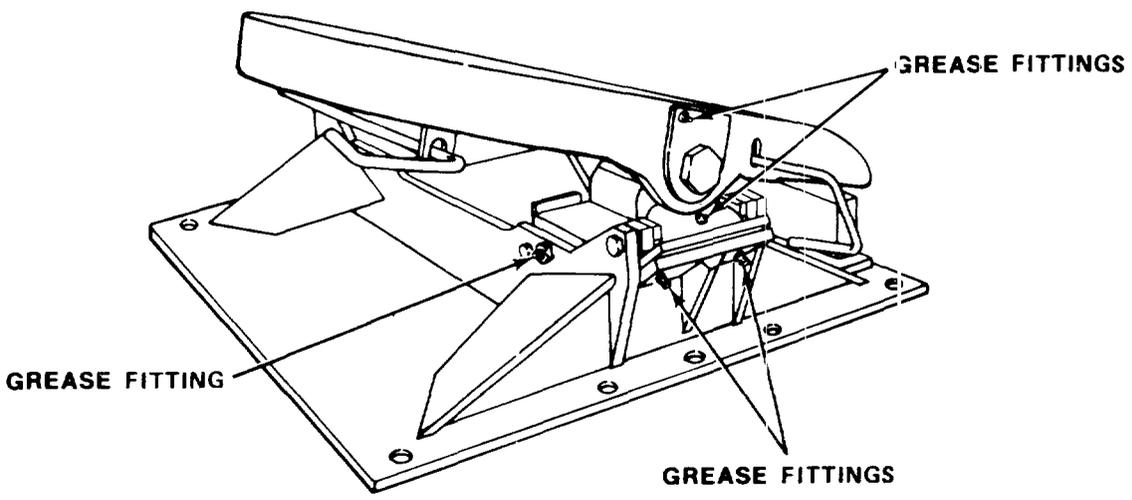
**MODELS M917, M919, M920  
PUSHER AXLE**



CC



DD



TA 073630

## NOTES

### 1. INTERVALS

This LO complies with the new DA Program to extend intervals to conserve lubricants. This instruction applies only to vehicles in normal operation. Lubricate more frequently to compensate for abnormal or extreme conditions, such as high or low temperatures, immersion in water or exposure to sand or dust. Intervals for change of filters (fuel, oil, air, etc.) are unchanged. Lubricants which have become contaminated will be changed regardless of scheduled intervals. Intervals for items under warranty will not be changed from those recommended by the manufacturer until after the warranty has expired. Points requiring lubrication at 1000 or 2000 miles on vehicles not accumulating that amount in a six month period will be lubricated at time of semiannual Preventive Maintenance Checks and Service (PMCS). Points requiring lubrication at 10,000, 24,000 or 50,000 miles, not accumulating that amount in a twelve month period will be lubricated annually. When practicable, lubrication services will be made to coincide with the vehicle organizational PMCS. For this purpose a 10% tolerance (variation) in specified lubrication point mileage is permissible.

### 2. GREASE POINTS

(a) Pressure gun should be held on fittings until new grease appears. This will assure that all the old contaminated grease has been forced out. Take weight off suspension walking beam during lubrication to insure uniform application of grease into the trunnion bushing.

(b) Front Wheel Knuckle and Cardan Universal Joints.

(1) M915 Sealed Knuckle Pins - Apply grease to Knuckle Tube Fittings shown in view D. It is not necessary to exceed 4000 psi (280 kg/cm<sup>2</sup>).

(2) M916 thru M920 Cardan Universal Joint - Lubricate at three points whenever seals are replaced, when brakes are relined, or at 24,000 miles.

(c) Tie Rod.

(1) M915 - Tie Rod end is permanently lubricated and requires inspection at 100,000 mile intervals or 24 months.

(2) M916 thru M920 - Lubricate every 2000 miles.

(d) Wheel Bearings (all including pusher axle).

Every 24,000 miles or annually, remove, clean, dry and repack bearings. Before installing wheel bearings onto spindle, coat bearing journals with a film of grease to defer fretting (corrosion).

(e) Steering Shaft Universals.

Lubricate every 2000 miles or semiannually in the following manner:

(1) Check for looseness.

(2) Apply grease.

(3) Observe lube purging from all seals until new grease comes out.

(4) If grease does not purge, manipulate the universal joint until purging occurs.

(5) If the above is not successful, remove cup or joint and check old grease. If rusty, gritty or burnt, replace the universal joint.

(f) Drive Line Universal Joints, Slip Yokes and Splines.

Lubricate every 2000 miles or semiannually as follows:

(1) Check for looseness or sideplay.

(2) Apply grease until purging takes place at the air hole in the end of the slip yoke.

### 3. POWER STEERING PUMP AND FILTER

Check daily with fluid HOT and engine running. Filter should be changed when contamination is suspected or when system has been repaired.

### 4. FUEL PUMP SCREEN AND FUEL FILTER

**WARNING:** Compressed air used for cleaning purposes will not exceed 30 psi. Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.).

(a) Screen - Clean by soaking in a carbon dissolving agent, followed by flushing in a sonic cleaner unit; or clean the screen in fuel oil and dry with compressed air. Visually inspect screen for holes or embedded metal particles in mesh. Discard if damaged or worn and replace with new part.

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NOTES CONTINUED

(b) Fuel Filter – Spin-on type, change at 10,000 mile intervals. Open petcock and drain fuel into a suitable container. Remove element with a filter wrench and transfer petcock from old filter to new.

**5. AUXILIARY THROTTLE** (All Models in cab, M916 and M920 on Hydraulic Winch)

Oil the body of the assembly and place a drop of oil under the plunger cap. Do not oil control wire. The wire case has teflon paste in it for wire lubrication.

**6. FORWARD REAR AXLE OIL FILTER (M915 only)**

(a) Initially the filter should be changed at the same time as the oil (1000 to 3000 miles). After that change the filter at 24,000 mile intervals or annually.

(b) To change the filter, remove the two cap-screws securing the filter cover. Remove the oil filter cover and filter from the helical gear cover. Use a suitable filter strap wrench.

**NOTE:** There may be approximately one pint of lubricant remaining within the filter. Be careful not to spill it when removing the filter.

**CAUTION:** If filter is tightened more than one turn after contacting gasket, damage to the filter might result.

(c) To reinstall, coat face of gasket on new oil filter with specified drive unit lubricant. Install oil filter over the adapter and tighten one full turn after gasket contacts base. Do not overtighten. It may be necessary to use a filter strap wrench.

**7. GEAR CASES**

(a) Axle Differentials (M916/M920 Front Driving and all Rear).

(1) Initial Operation – After the initial 1000 to 3000 miles of operation, drain the differentials while the assembly is still warm from operation. Inspect the magnetic drain plug for signs of excessive metal particle buildup and notify direct support maintenance if this condition exists. Clean plugs and replace when lubricant has stopped draining. Axles must not be flushed with any solvent such as kerosene.

(2) Checking Level - Check at 2000 mile intervals and maintain level to within 1/2 inch of fill plug opening when housing is cold.

**NOTE:** When a safe level of lubricant within a gear housing is indicated at the time of schedule lubrication, the lubricant retaining seal is considered functional, even though the seal may indicate questionable leakage. Frequent observation of seal as a potential problem area is recommended. When seepage or leakage of lubricant adversely affects the proper function of parts within the area (e.g., brakes), the retaining seal must be replaced.

(3) The following list of capacities should be used as a guide only. Do not overfill.

Model M915 Rear Tandem.

Fill forward rear with 40 pints: rear rear with 36 pints. Change filter at each oil change.

Model M916 thru M920 Rear Tandem.

Fill forward rear with 34 pints. rear rear with 28 pints.

Model M916 thru W920 Front Driving.

Fill with 27 pints.

(b) Transmission.

Level should be checked, with engine off, but two minutes after engine is shut off, daily, hot or cold. Drain oil, change breather and clean screen every 50,000 miles or 12 months. Refer to TM 9-2320-273-20 for procedure. Fill through dipstick opening with 22 quarts. Maintain oil level between ADD and Full marks on dipstick. Do not overfill. Change case breather if required. Refer to TM 92320-273-20 for procedure.

(c) Transfer Case (Models M916 thru M920).

Drain oil hot annually. Refer to TM 9-2320-273-20 for procedure. Fill at point (1), view AA with 2 quarts to establish oil in clutch housing sump. Complete filling at point (2) with 3 quarts. Maintain oil level within 1/2 inch of point (2) fill port. Do not overfill.

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NOTES CONTINUED

8 CRANKCASE

- (a) Check oil level daily. Change oil hot, full flow Bypass filter elements at 10,000 mile, or 6 month interval based on which occurs first. To check engine oil level, wait at least one minute after stopping to allow oil to drain into crankcase. Safe operating level is between ADD and FULL mark on dipstick Engine capacity is 11.5 gallons with both filters.
- (b) Check and clean crankcase breather and attaching hoses whenever oil is changed.

9. STARTER

Remove Starter every 100,000 miles for lubrication (Refer to TM 9-2320-273-20). Remove three socket head screws (See View O) and add three to five drops of S.A.E 30 oil to each reservoir and lubricate drive and drive spline. Clean with solvent, then apply a thin coat of grease (GAA) so the pinion will move freely.

10. ALTERNATOR

Inspect unit at 100,000 mile intervals. No lubrication required. Bearings are sealed for life.

11. AIR FILTER

- (a) Service when red shows in window of restriction indicator (See TM 9-2320-273-10 for location and function of indicator) or 2000 miles whichever occurs first. Outside element can be washed up to five times or blown clean with air only an indefinite number of times. This outside element is costly and should be reused. Handle and clean carefully. Inside safety filter should not be washed nor blown clean and should be replaced every 10,000 miles.

**WARNING:** Compressed air used for cleaning purposes will not exceed 30 psi. Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.).

- (b) Clean the outside element by tapping the element, reverse flow cleaning with compressed air, or washing in water with mild non-sudsing detergent.

12. BRAKES

- (a) Front Stopmaster Wedge Brakes & Chambers

(1) On-Highway (M915 and M916/920 as applicable). Change grease whenever seals are replaced, or when brakes are relined, or at 100,000 miles.

(2) off-Highway (M916/M920 as applicable) Change grease every twelve months (maximum), whenever seals are replaced, or when brakes are relined. At each inspection look for contaminated or hardened grease or for lack of grease.

- (b) Cam Master Brakes (Rear Tandems and Pusher Axle).

(1) Points to be lubricated include manual slack adjusters, camshaft roller journals and camshaft bushings.

(2) On-Highway (M915 and M916/M1920 as applicable). Change lubricant for all components every 50,000 miles or every 12 months.

(3) Off - Highway (M916/M920 as applicable). For all components, change grease every 12 months (maximum) whenever seals are replaced or when brakes are relined. At each inspection look for contaminated or hardened grease or the lack of grease.

13. PINTLE HOOK (W915, M916, M917, & M920)

Lubricate all fittings every 2000 miles with GAA. Clean and lube other parts with an authorized solvent and OE/HDO quarterly.

14. FIFTH WHEEL (M915, M916, & M920)

Every 2000 miles or more often as required. Apply GAA to top plate and latch. Quarterly clean and lube moving parts on underside with authorized solvent and OE/HDO and grease top plate and latch.

NOTES CONTINUED

15. WINCH (M916 & M920)

(a) Hydraulic Reservoir - Check level prior to operating winch. Change every 24,000 miles or every two years. Also change any time the oil becomes contaminated with water (milky appearance) or metallic particles due to circuit component failure. Remove and clean or replace inlet strainer and also replace return filter element in conjunction with fluid change. If oil is found not contaminated during required interval inspection because winch was not used, retain oil. However, replace filter.

16. WINCH CABLE (M916 & M920)

Unwind entire cable. clean and oil semiannually. Soak cable, by means of a brush, with new OE/HDO. Wipe off excess and coat with CW before rewinding cable on drum.

17. TIRE HOIST WINCH (M915 & M916)

The following steps should be performed on a quarterly basis;

**WARNING:** Do not get oil or grease on the fiber brake face or slippage resulting in personnel injury could result.

- (a) All gears should have a film of grease at all times.
- (b) The two bushings at both ends of the drum shaft, the ratchet pawl, threads on the pinion shaft and the steel handle disk should be wet with oil at all times.
- (c) Lightly oil the cable to prevent rust.
- (d) Lightly oil the threads on the bolt which attaches the tire to the support (M916 only).

18. DRIVER'S SEAT

Apply chassis grease (GAA) to lube fittings and lubriplate on weight adjuster and slide rails at 10,000 mile intervals.

19. PTO CABLE (M916/M920)

To oil, disconnect wire at PTO (refer to TM 9-2320-273-20) and pull up on knob located on cab console until wire invisible. Apply OE/HDO, which will run down wire thru the case, and re-connect wire.

20. RATIO SELECTOR

The surfaces between the inhibitor plate and the retainer, base, guide and plunger are to be lubricated with WD40, CRC5-56, or equivalent any time sticking becomes evident. Refer to TM 9-2320-273-20.

21. OIL CAN POINTS

Every 2000 miles, lubricate doors, hood, and side panel hinges, lock and latches with OE.

22. DO NOT LUBRICATE

Spring leaves, alternator, starter wiring, and shock absorbers.

23. TEMPERATURE RISE

If ambient temperature rises to +70°F for no more than 1 week, use of OE/HDO 10 is permissible. If ambient temperature rises to +32°F for no more than 1 week, use of OEA is permissible.

24. MILITARY SYMBOLS FOR LUBRICANTS

The following references are lubrication symbols used within this Lubrication Order to the appropriate specification:

|        |   |
|--------|---|
| HDO/OE | Lubricating Oil, Internal Combustion Engine Tactical Service, MIL-L-2104C |
| OEA    | Lubricating Oil, Internal Combustion Engine (Arctic) MIL-L-46167          |
| GO     | Lubricating Oil, Gear, Multipurpose, MIL-L-2105C                          |
| GAA    | Grease, Automotive and Artillery, MIL-G-10924C                            |
| GAI    | Grease, Aircraft and Instrument Gear and Actuator Screw, MI-G-23827       |
| ATF    | Fluid, Transmission (Dexron)  |
| CW II  | Lubricant, Exposed Gear and Wire Rope, VV-L-751D                          |

NOTES CONTINUED

25. REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028, (Recommended Changes to Publication and Blank Forms) to: U.S. Army Tank-Automotive Materiel Readiness Command, ATTN: DRSTA-MB, Warren, Michigan 48090. A reply will be furnished to you.

Copy of this Lubrication Order will remain with the vehicle at all times. Instructions contained herein are mandatory and supersede all conflicting lubrication orders dated prior to the date of this publication order.

BY ORDER OF THE SECRETARY OF THE ARMY:

**E. C. MEYER**  
*General, United States Army*  
*Chief of Staff*

OFFICIAL:

**ROBERT M. JOYCE**  
*Major General, United States Army*  
*The Adjutant General*

Distribution:

To be distributed in accordance with DA Form 12-38, Lubrication Order Requirements for Truck Tractor, Line Haul, 6X4, M915; Truck Tractor, Light Equipment Transporter, 6x6, M916; Truck Tractor, Medium Equipment Transporter, 8X6, M920; Truck Chassis 20-Ton Dump, 8X6, M917, Truck chassis, Bitum Distrib 6X6, M918; Truck Chassis Concrete Mobile, 8X6, M919.

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