

SECTION 7

FRONT DRIVE HUBS

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GENERAL

Manual or automatic selective front drive hubs can be installed on all 1976-79 CJ, Cherokee and Truck models equipped with Model 20 transfer case.

Eight different front hub models are available. Hub models M195A, M197, M243, M245 and M246 are all manual-type units. Models M241, M75E and M31 are automatic units. Refer to the Front Hub Application

Chart for individual hub model usage.

Front hubs are to be installed on Jeep vehicles equipped with the Model 20 transfer case only. **Do not install front hubs on any Jeep vehicle equipped with the Quadra-Trac full-time four-wheel drive transfer case.**

Front Hub Application Chart

MANUAL HUBS		AUTOMATIC HUBS		
HUB MODEL	VEHICLE YEAR/MODEL	HUB MODEL	VEHICLE YEAR/MODEL	
M195A ①	1976-79 CJ-5 AND CJ-7	M31	1976-77 J-20 TRUCK (PRIOR TO OCT. 1976)	
M197A ①	1976 J-20 TRUCK (PRIOR TO OCT. 1976)		M75E	1976-79 CHEROKEE, J-10 TRUCK AND 1977-78 J-20 TRUCK (AFTER OCT. 1976)
M243 ②	1976-79 CJ-5 AND CJ-7	M241		1976-79 CJ-5 AND CJ-7
M245 ③	1976-78 CJ5 AND CJ-7			
M246	1976-79 CHEROKEE, J-10 TRUCK AND 1977-79 J-20 TRUCK (AFTER OCT. 1976)			

① BLACK PAINTED HUB

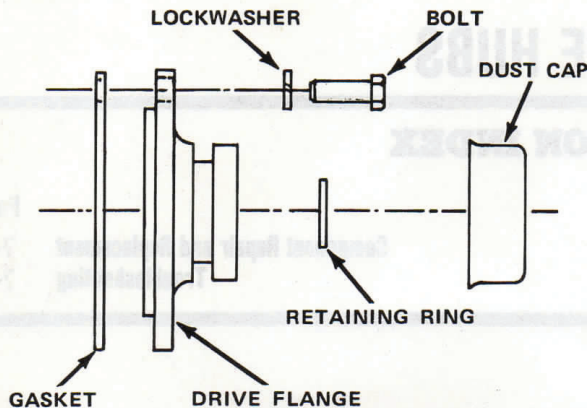
② POLISHED HUB

③ "JEEP" BRANDED HUB

INSTALLATION

M195A-M197 Manual Hub—CJ and J-20 Truck Models

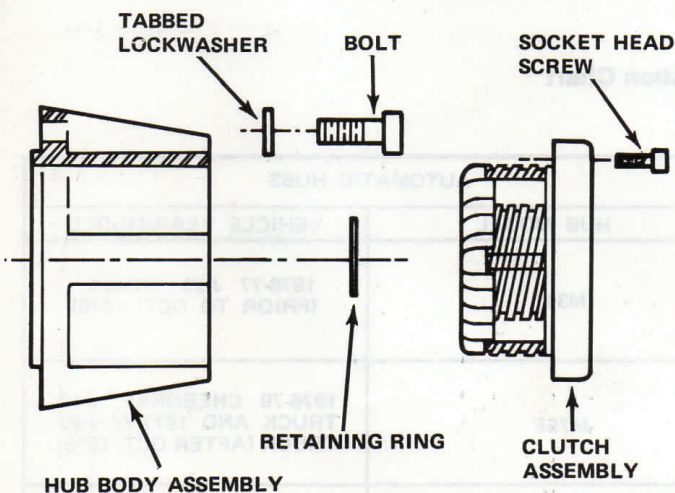
- (1) Remove dust cap (fig. 7-1).



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Fig. 7-1 Drive Flange—1976-79 CJ and 1976 J-20 Truck Models

- (2) Remove and discard drive flange retaining ring.
 (3) Remove drive flange attaching bolts and lockwashers. Retain bolts but discard lockwashers.
 (4) Remove drive flange and flange gasket. Use tool J-25133 to remove flange if necessary.
 (5) Remove socket head screws attaching hub clutch to hub body and separate clutch and body (fig. 7-2).



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Fig. 7-2 M195A-M197 Hub Body and Clutch Assemblies

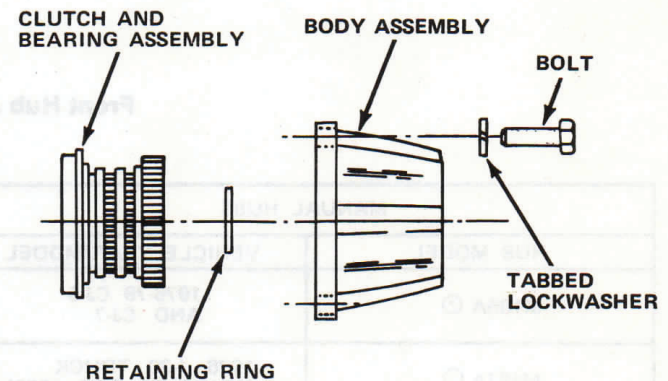
- (6) Position gasket and hub body on axle.
 (7) Install tabbed lockwashers on original drive flange bolts. Align bolt holes in hub body and axle and install bolts. Tighten bolts to 30 foot-pounds (41 N•m) torque. Bend lockwasher tabs over bolt heads after bolts are tightened.

- (8) Install new retaining ring on axle shaft.
 (9) Position gasket on hub clutch and position clutch on hub body.
 (10) Align screw holes in hub clutch and body and install socket head screws. Tighten screws to 48 inch-pounds (5 N•m) torque.
 (11) Raise vehicle front end. Turn both hub control dials to 4 x 2 position and rotate wheels. Wheels should rotate freely. If wheels drag, check hub installation. Also be sure control dials are fully engaged in position.
 (12) Lower vehicle.

M243-M245 Manual Hub—CJ Models

CAUTION: Do not turn the hub control dial until after the hub has been installed. The hub clutch nut and cup can be damaged severely if the dial is rotated while the hub is off the vehicle.

- (1) Remove dust cap (fig. 7-1).
 (2) Remove and retain drive flange retaining ring (fig. 7-1).
 (3) Remove and retain drive flange attaching bolts.
 (4) Remove drive flange. Use tool J-25133 to remove flange if necessary.
 (5) Remove drive flange gasket.
 (6) Remove clutch and bearing assembly from hub body (fig. 7-3)



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Fig. 7-3 M243-M245 Hub Body, Clutch and Bearing Assemblies

- (7) Install clutch and bearing assembly on axle shaft.
 (8) Install retaining ring on axle shaft.
 (9) Position gasket on hub body and install hub body on clutch and bearing assembly.
 (10) Install special tabbed lockwashers on original drive flange bolts (fig. 7-3).

(11) Align bolt holes and install bolts. Tighten bolts alternately and evenly to 30 foot-pounds (41 N•m) torque. Bend lockwasher tabs over bolt heads after bolts are tightened.

(12) Raise vehicle front end.

(13) Turn both hub control dials to 4 x 2 position and rotate wheels. Wheels should rotate freely. If wheels drag, check hub installation. Also be sure control dials are fully engaged in position.

(14) Lower vehicle.

M246 Manual Hub—Cherokee and Truck Models

(1) Remove dust cap (fig. 7-4).

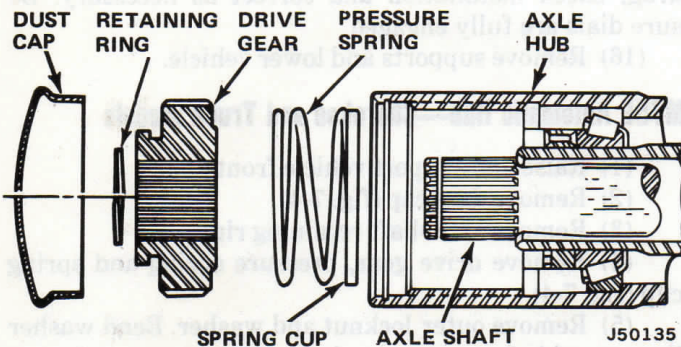


Fig. 7-4 Drive Gear—1976-79 Cherokee, J-10 Truck and 1977-79 J-20 Truck Models

(2) Remove drive gear retaining ring.

(3) Remove drive gear, pressure spring and spring cup (fig. 7-4).

(4) Remove socket head screws that attach clutch assembly to body assembly and separate clutch from body (fig. 7-5).

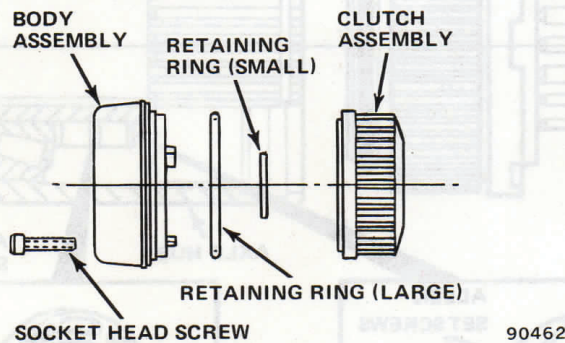


Fig. 7-5 M246 Hub Body and Clutch Assemblies

(5) Install clutch assembly on axle shaft.

(6) Install large retaining ring in axle hub and install small retaining ring on axle shaft (fig. 7-5).

(7) Position body assembly on clutch assembly. Align screw holes in clutch and body assemblies and install socket head screws. Tighten screws to 30 inch-pounds (3 N•m) torque.

(8) Raise vehicle front end.

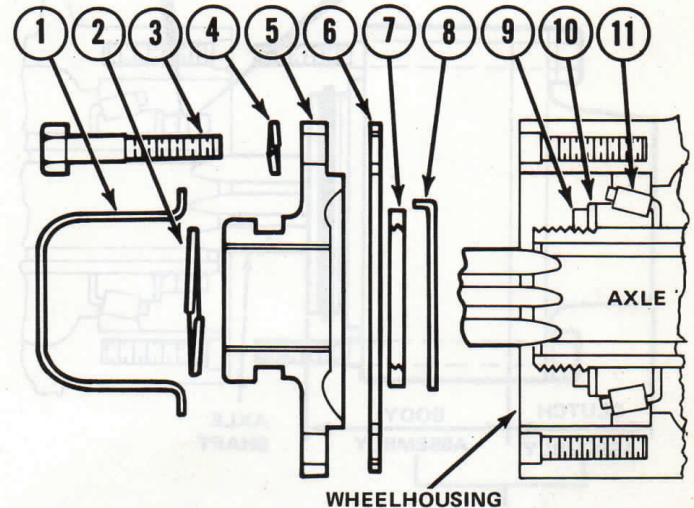
(9) Turn both control dials to 4 x 2 position and rotate wheels. Wheels must rotate freely. If wheels drag, check installation. Also be sure control dials are fully engaged in position.

(10) Lower vehicle.

M31-M241 Automatic Hub—CJ and J-20 Truck Models

(1) Raise and support vehicle front end.

(2) Remove drive flange dust cap (fig. 7-6).



- | | |
|-------------------|----------------------|
| 1. DUST CAP | 7. OUTER LOCKNUT |
| 2. RETAINING RING | 8. OUTER LOCKWASHER |
| 3. BOLT | 9. INNER LOCKNUT |
| 4. LOCKWASHER | 10. INNER LOCKWASHER |
| 5. DRIVE FLANGE | 11. WHEEL BEARING |
| 6. GASKET | |

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Fig. 7-6 Drive Flange—1976-79 CJ and 1976-77 J-20 Truck

(3) Remove drive flange retaining ring.

(4) Remove drive flange attaching bolts.

(5) Remove drive flange. Use tool J-25133 to remove flange if necessary.

(6) Remove outer locknut and washer. Straighten lip of washer, remove outer locknut using tool J-25103, and remove washer.

CAUTION: Do not loosen or remove the inner locknut.

(7) Install special lockwasher on axle shaft (fig. 7-7).

(8) Install drag shoe nut on axle shaft. Tighten nut using punch and tighten three setscrews in nut firmly. At least one setscrew must enter special outer lockwasher. Check setscrew depth to be sure at least one is seated 3/32 inch deeper than others.

(9) Separate hub body assembly from clutch assembly (fig. 7-7).

(10) Position gasket on hub body and install hub body on axle shaft and over drag shoe nut.

(11) Install two hub attaching bolts in opposite holes of hub body. Tighten bolts to depth of 4-5 threads to align hub body on drag shoe nut. Push body assembly

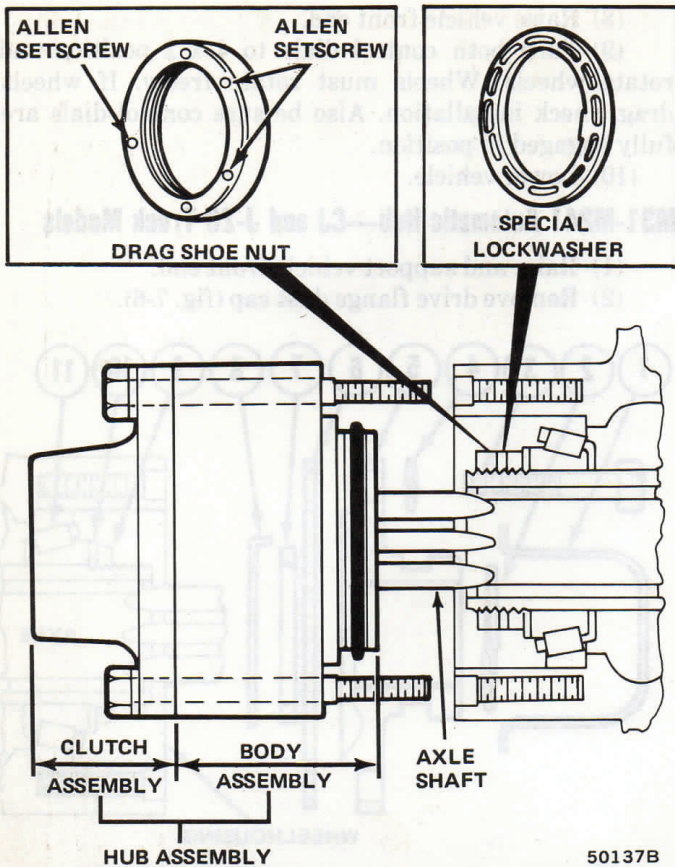


Fig. 7-7 M-31-M241 Hub Assembly

onto nut and into position on axle. Remove bolts used to align hub.

(12) Install new retaining ring on axle shaft. Do not use original retaining ring. Use part from kit only (fig. 7-7).

(13) Align bolt holes in hub body and axle. Install hub gasket on clutch assembly and install clutch assembly on hub body.

(14) Install special tabbed lockwashers on hub attaching bolts and install bolts. Tighten bolts alternately and evenly to 39 foot-pounds (41 N•m) torque. Bend lockwasher tabs over bolt heads after tightening bolts.

(15) Turn both hub control dials to Auto position and rotate wheels. Wheels should rotate freely. If wheels drag, check installation and correct as necessary. Be sure dials are fully engaged.

(16) Remove supports and lower vehicle.

M75E Automatic Hub—Cherokee and Truck Models

- (1) Raise and support vehicle front end.
- (2) Remove dust cap (fig. 7-4).
- (3) Remove axle shaft retaining ring.
- (4) Remove drive gear, pressure spring and spring cup (fig. 7-4).

(5) Remove outer locknut and washer. Bend washer lip upward before removing locknut.

CAUTION: Do not loosen or remove the inner locknut.

(6) Install special lockwasher on axle shaft (fig. 7-8).

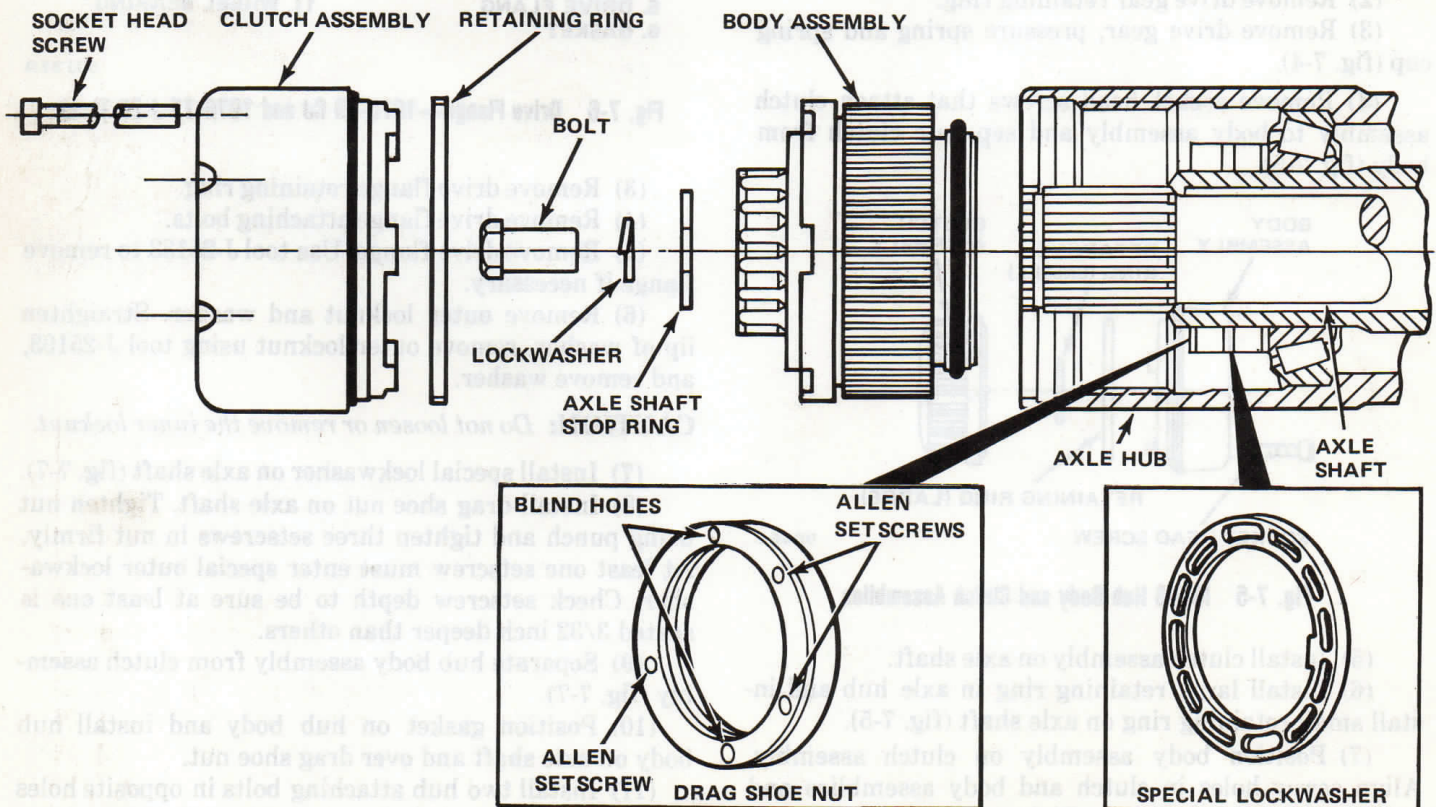


Fig. 7-8 M75 Hub Clutch and Body Assemblies

(7) Install drag shoe nut on axle shaft. Use U-shaped tool supplied in kit to tighten drag shoe nut.

(8) Tighten all three setscrews in drag shoe nut firmly (fig. 7-8). At least one setscrew must enter special lockwasher. Verify this by checking setscrew depth. At least one setscrew should be seated approximately 3/32 inch deeper than others.

(9) Remove socket head screws attaching clutch assembly to body assembly and separate components (fig. 7-8).

(10) Install body assembly on axle shaft and into hub. Push firmly on body assembly to seat it on drag shoe nut.

NOTE: *The body must be pushed firmly to expand the body friction shoes over the drag shoe nut.*

(11) Install special bolt, lockwasher and stop ring on axle shaft (fig. 7-8). Tighten bolt to 48 foot-pounds (65 N•m) torque.

(12) Install special retaining ring in hub (fig 7-8). Install ring so thick edge of ring faces wheel bearings.

(13) Install clutch assembly in hub. Align screw holes in clutch and body assemblies and install socket head screws. Tighten screws to 55 inch-pounds (6 N•m) torque.

(14) Turn both hub control dials to Free position and rotate wheels. Wheels should rotate freely. If wheels drag, check hub installation. Also be sure control dials are fully engaged in Free position.

(15) Lower vehicle.

TROUBLESHOOTING

Selective drive front hubs should provide efficient and satisfactory operation when used and maintained properly. However, if a problem should occur, refer to the following diagnosis and repair procedures.

Control Dials Hard to Turn or Will Not Engage Completely

If the control dials become hard to turn or will not engage completely, the problem is usually due to a lack of lubricant, or dirt, water or foreign material in the hub cavity or in the dials themselves. In these cases, repair involves removing, cleaning and lubricating the hubs. However, in some cases, this condition may simply be the result of driveline torque load on the hub clutch. This situation is remedied by raising the vehicle front end and turning the front wheels forward or reverse to relieve the load.

If the problem is the result of internal damage to the hub body or clutch, the damaged component will have to be replaced to restore proper operation. Refer to the Component Repair and Replacement section for service procedures.

Noisy Operation

Chatter, clicking, grating, or similar type noises from the hubs may be the result of dirt, water or foreign material in the hub. This condition can be caused by a lack of hub maintenance, loose attaching bolts or screws, or damaged hub gaskets. Noise can become especially prevalent after fording streams or after operation in sandy areas. Service correction involves cleaning and lubricating the hubs.

However, if inspection indicates the problem is the result of damaged internal components, the damaged components will have to be replaced to restore proper operation. Refer to the Component Repair and Replacement section for service procedures.

Lubricant Leaks

Generally, lubricant leaks are caused by loose hub attaching bolts or screws, damaged hub gaskets or a damaged hub body or clutch assembly. Leakage may also be caused by over lubricating during service or normal maintenance operations. In each case, the hub should be removed, inspected and repaired as necessary.

Hub Internal Damage

Axle or hub clutch or hub body component damage may be the result of improper hub usage or maintenance. The vehicle should never be moved unless the hub control dials are fully engaged. In addition, on vehicles equipped with manual hubs, the vehicle should not be operated with the transfer case in low range and the hubs in the 4 x 2 position. This places high torque loads on the rear axle.

If the hubs are not maintained properly, full engagement of the control dials may not occur. This can lead to accelerated wear or damage to hub internal components. If the vehicle is driven through water deep enough to cover the hubs or in sandy, dusty areas, the hubs should be cleaned and lubricated thoroughly.

COMPONENT REPAIR AND REPLACEMENT

Selective drive front hubs are either completely serviceable or are serviced as assemblies only.

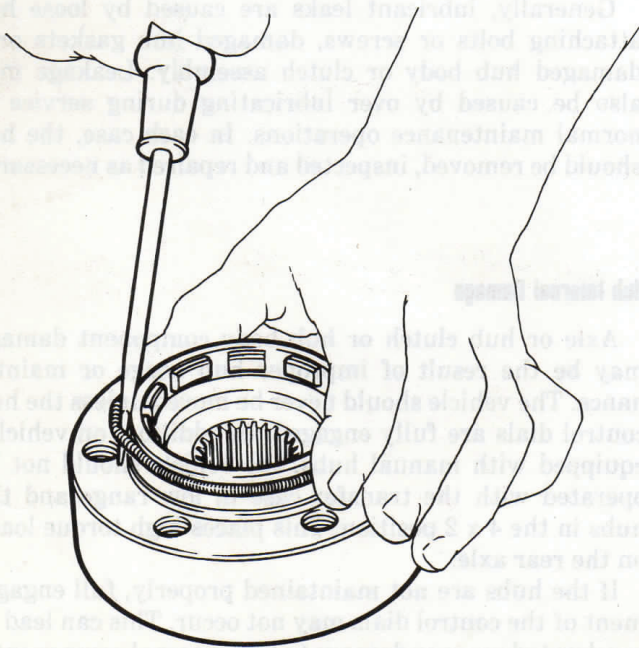
Hub models M31, M75, M195 and M197 are all serviceable. These hub models can be completely disassembled for cleaning and lubrication or replacement of individual components.

Hub models M241, M243, M245 and M246 are not completely serviceable. These hub models are serviced as either a complete assembly or subassembly such as the hub body or clutch assembly only. Do not attempt to disassemble these hub models.

Hub Service Procedures

Friction Shoe and Drag Shoe Nut Replacement— Models M31-M75-M241

- (1) Remove hub body.
- (2) Remove retaining ring or retaining bolt and remove hub clutch assembly.
- (3) Remove drag shoe nut from axle shaft.
- (4) Remove garter spring that retains friction shoes in cage (fig. 7-9).



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Fig. 7-9 Friction Shoe Garter Spring Replacement

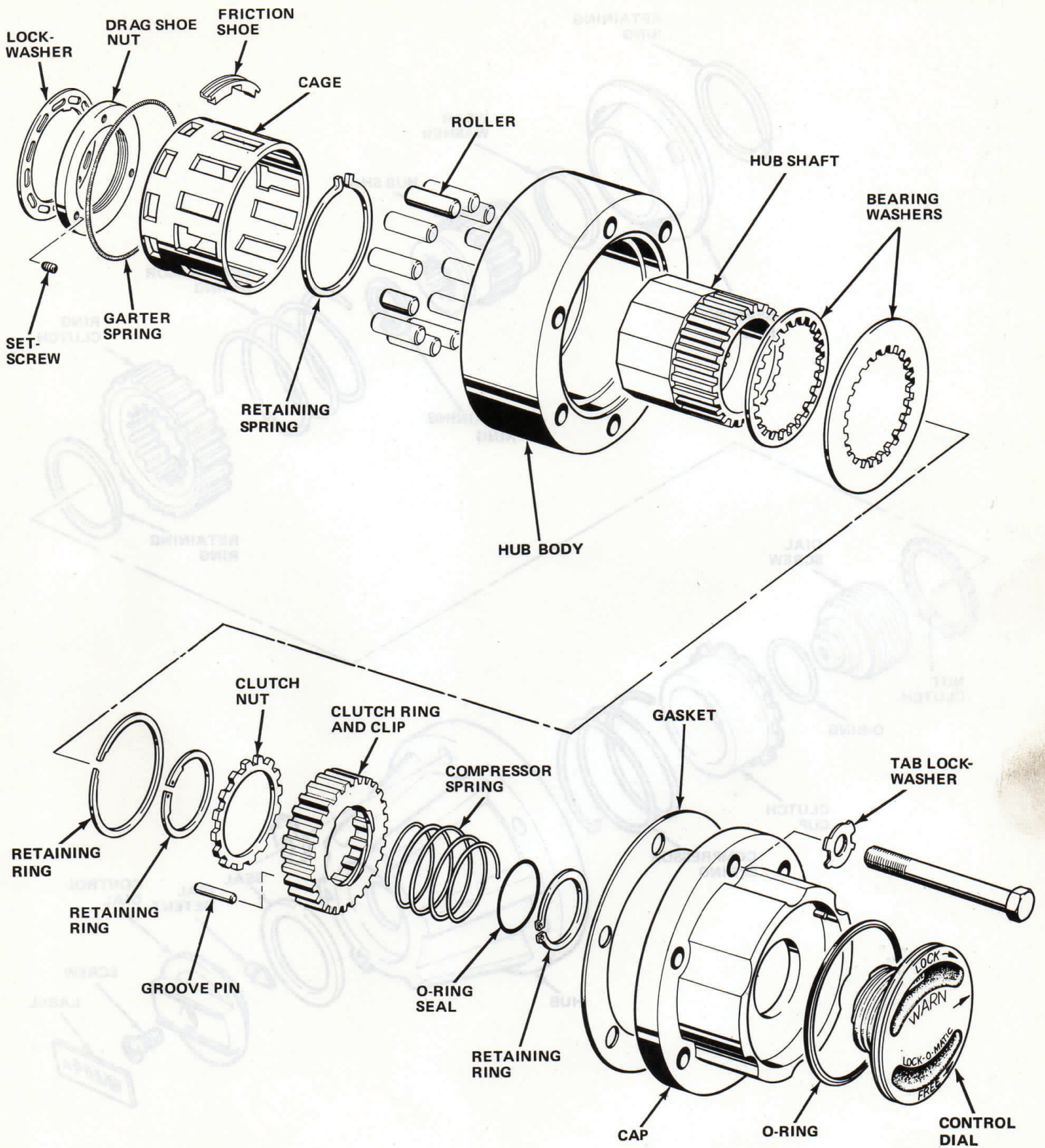
- (5) Remove friction shoes from cage.
- (6) Install replacement shoes in cage and install garter spring.
- (7) Install replacement drag shoe nut on axle shaft. Tighten nut securely.
- (8) Install hub clutch assembly.
- (9) Install retaining ring or retaining bolt in axle shaft.
- (10) Install hub body and attaching bolts or socket head screws.

Hub Clutch or Body Replacement—Models M241-M243-M245-M246

- (1) Remove hub attaching bolts or socket head screws (figs. 7-10, 7-11 and 7-12).
- (2) Remove hub body assembly.
- (3) Remove retaining ring or retaining bolt from axle shaft and remove hub clutch assembly.
- (4) Install replacement clutch assembly and gasket (if required) on axle shaft. Lubricate assembly before installation.
- (5) Install retaining ring or retaining bolt on axle shaft.
- (6) Install replacement hub body and gasket (if required).
- (7) Install hub attaching bolts or socket head screws.

Hub Overhaul—Models M195A-M197

- (1) Remove socket head screws from clutch cover and remove cover (fig. 7-13).
- (2) Remove retaining ring from axle shaft.
- (3) Remove hub body attaching bolts and remove body and clutch assembly from axle.
- (4) Disassemble hub clutch, body and cover components (fig. 7-13).
- (5) Clean and inspect all hub components. Replace any components that are worn or damaged.
- (6) Lubricate hub components lightly with chassis lubricant.
- (7) Assemble hub clutch, body and cover components.
- (8) Install gasket on hub body and install body and clutch on axle.
- (9) Install retaining ring on axle shaft.
- (10) Install hub body bolts.
- (11) Install clutch cover on body and install socket head screws.



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Fig. 7-10 M241 Hub Assembly

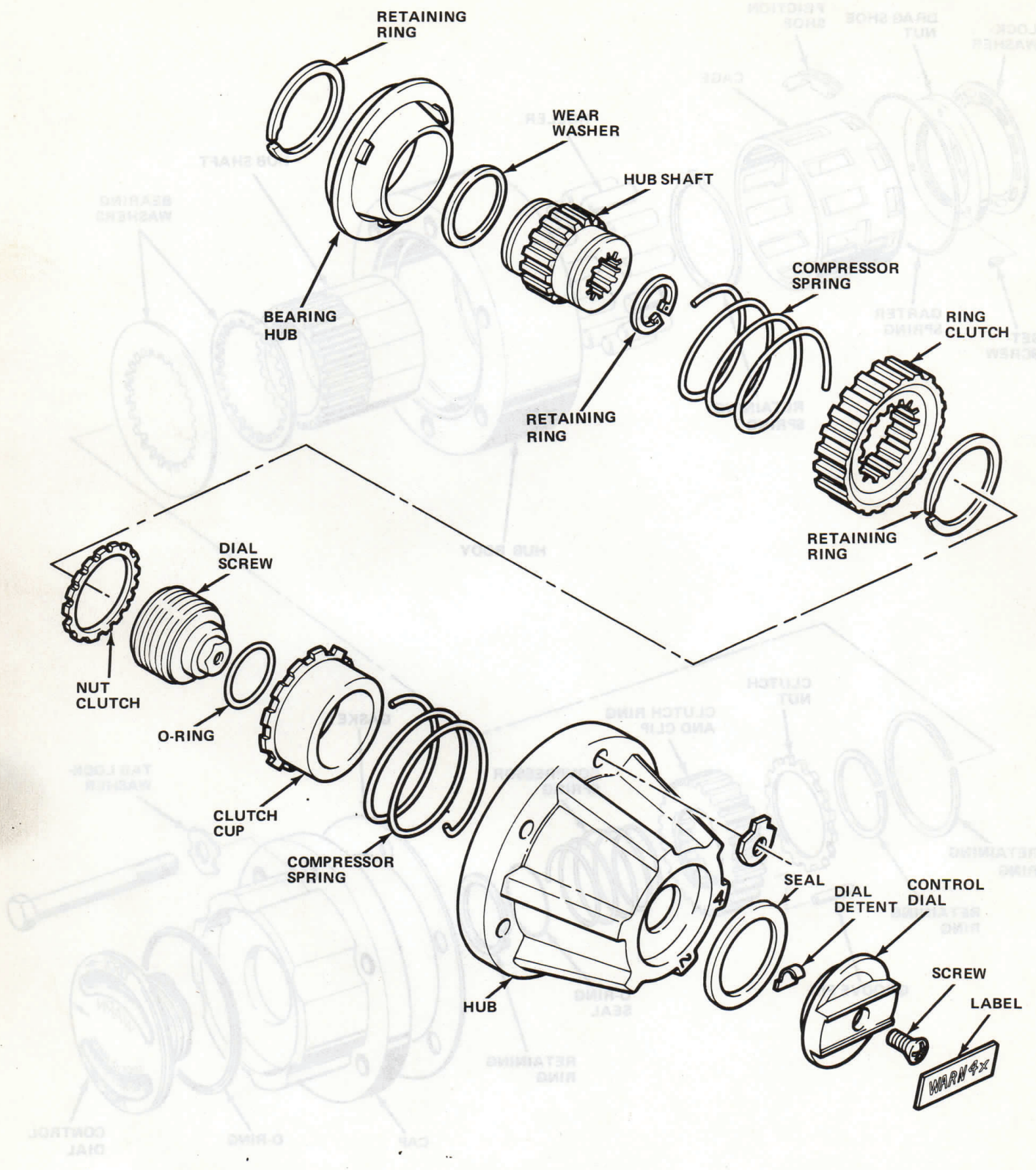
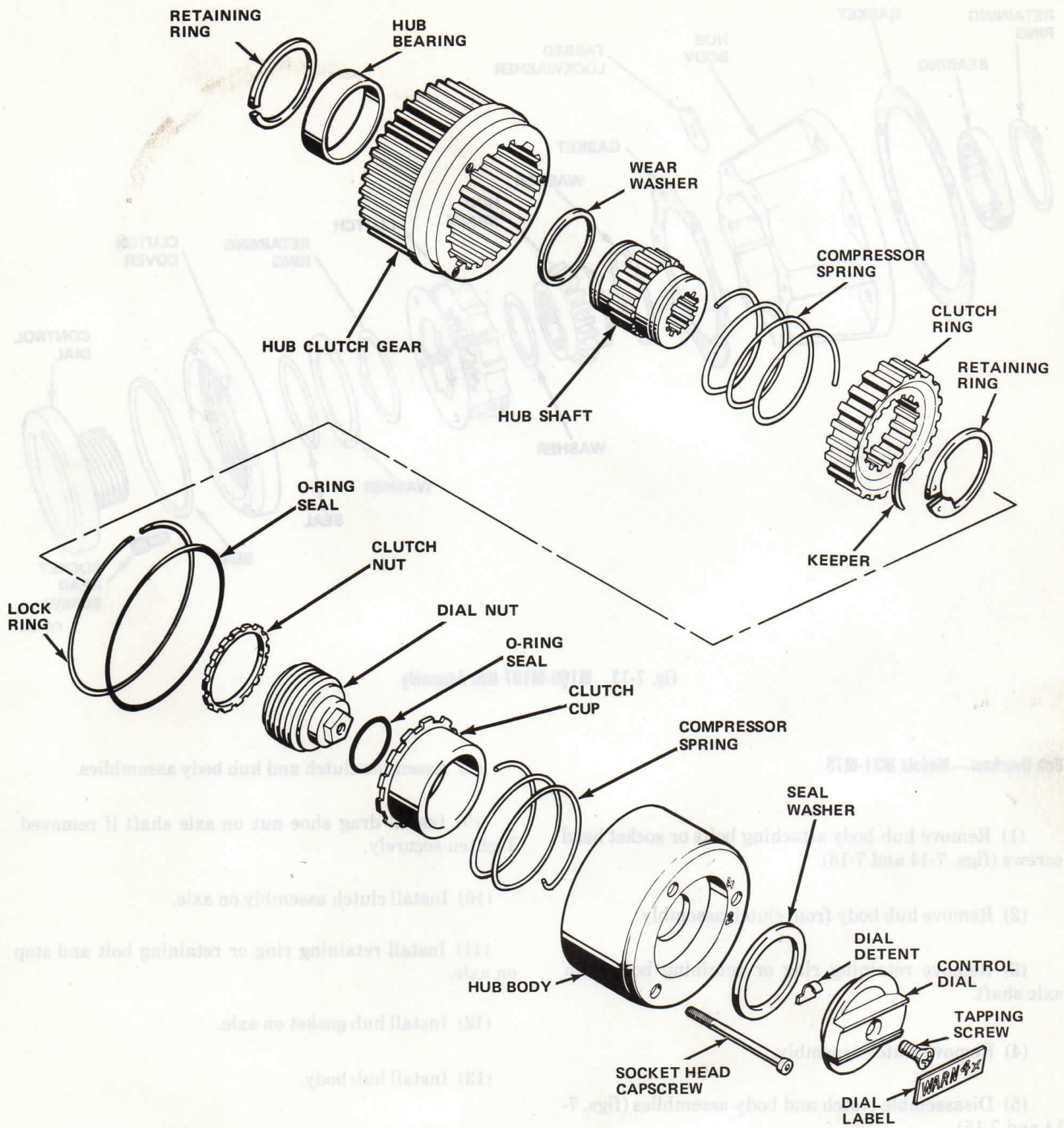


Fig. 7-11 M243-M245 Hub Assemblies



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Fig. 7-12 M246 Hub Assembly

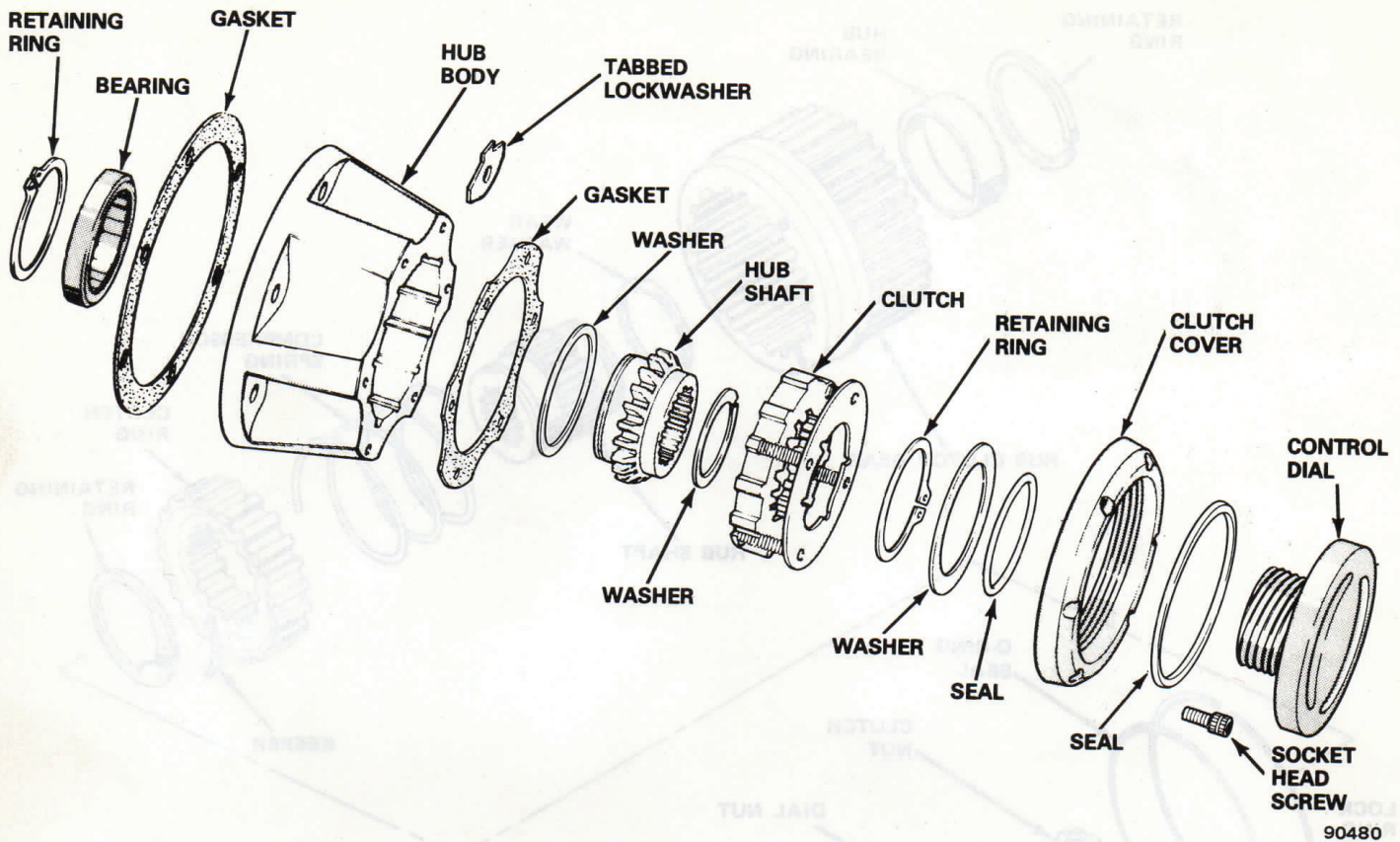


Fig. 7-13 M195-M197 Hub Assembly

Hub Overhaul—Models M31-M75

- (1) Remove hub body attaching bolts or socket head screws (figs. 7-14 and 7-15).
- (2) Remove hub body from clutch assembly.
- (3) Remove retaining ring or retaining bolt from axle shaft.
- (4) Remove clutch assembly.
- (5) Disassemble clutch and body assemblies (figs. 7-14 and 7-15).
- (6) Clean and inspect all components. Replace any component that is worn or damaged.
- (7) Lubricate all hub components lightly with chassis lubricant.
- (8) Assemble clutch and hub body assemblies.
- (9) Install drag shoe nut on axle shaft if removed. Tighten securely.
- (10) Install clutch assembly on axle.
- (11) Install retaining ring or retaining bolt and stop on axle.
- (12) Install hub gasket on axle.
- (13) Install hub body.
- (14) Install hub bolts or socket head screws.
- (15) Set hub control dials to Free position.
- (16) Raise front end and rotate front wheels. Wheels should rotate freely without bind. If wheels bind, check hub installation or assembly and correct as necessary.

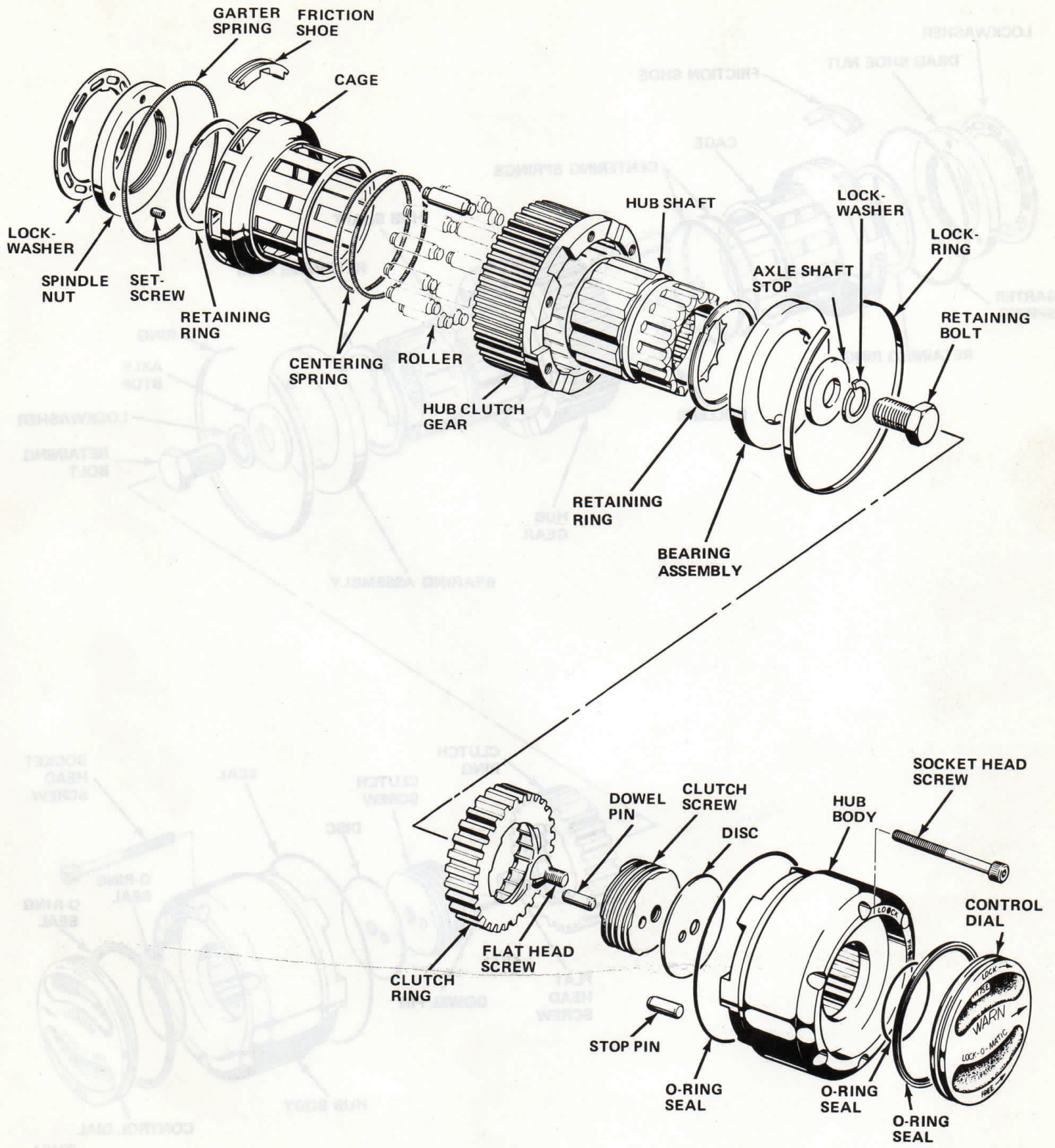


Fig. 7-14 M75 Hub Assembly

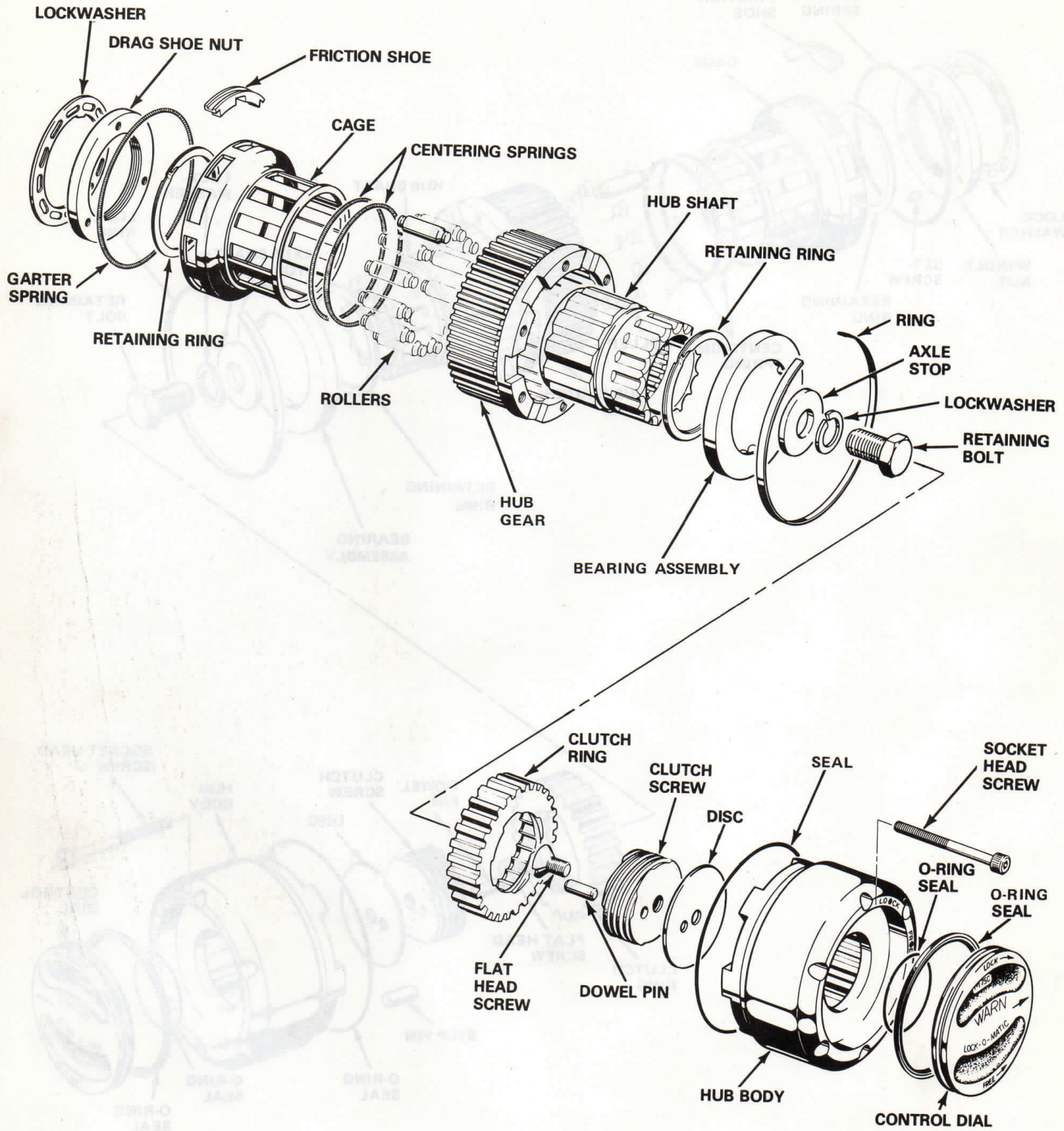


Fig. 7-15 M31 Hub Assembly

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