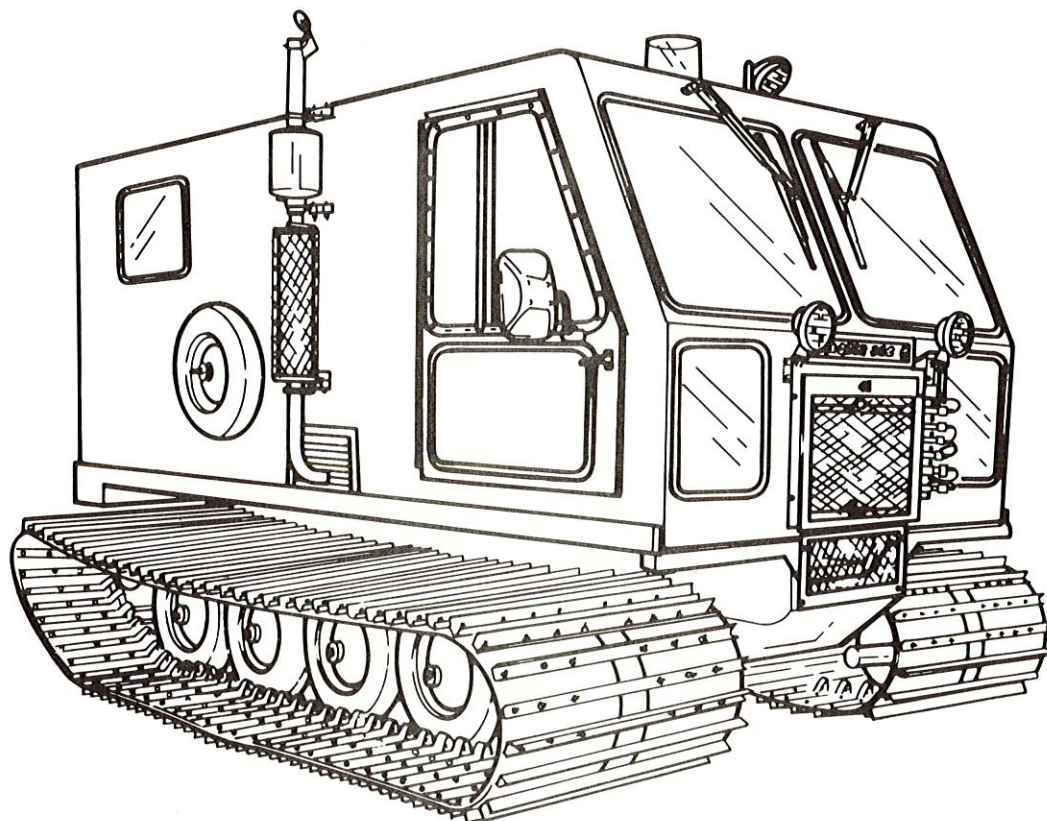




Operator's/Maintenance manual

SKIDOZER 252 G TURKEY



TECHNICAL PUBLICATIONS DEPARTMENT
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BOMBARDIER INC.
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Muskeg	BR-400
Muskeg (carrier)	TF-20
Muskeg (skidder)	TF-60
Muskeg (brush-cutter)	TF-110
Skidozer	TF-160
B-15 (skidder)	TF-240
B-15 (logger)	TF-300 TT
B-20 (transporter)	TF-305
B-10 (transporter)	TF-360
B-8 (transporter)	TF-600

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FOREWORD

The operator's manual has been prepared to acquaint the owner and/or operator(s) of an industrial tracked vehicle with the various controls and instruments, inspections, maintenance and safe driving instructions. Each is indispensable for the proper use of the product, and should be kept with the vehicle at all times.

This manual uses the following symbols:

◆ **WARNING:** Identifies an instruction which, if not followed, could cause personal injuries including possibility of death.

▼ **CAUTION:** Denotes an instruction which, if not followed, could severely damage vehicle components.

○ **NOTE:** Indicates supplementary information needed to fully complete an instruction.

Although the mere reading of such information does not eliminate the hazard, your understanding of the information will promote its correct use.

I N T R O D U C T I O N

This Manual has been prepared to give you a step by step procedure of operation and routine maintenance. Please take the time to read it and follow the instructions carefully.

This Manual does not concern itself with major repairs, which may be required over the life of the vehicle. For information on the removal and replacement of components, please contact your authorized Bombardier Industrial Distributor who is vitally interested in your complete satisfaction with the vehicle which you purchased. He has factory-trained service personnel available and maintains a stock of genuine replacement parts. Should you require advice or assistance, or encounter any problems concerning your vehicle, he will be pleased to help you.

The description contained in this Manual were in effect at the time that this book was approved for printing. Bombardier Inc. reserves the right to discontinue models at any time, or to change specifications without incurring obligations.

GENERAL INFORMATION

The Operator of a Skidozer must know the basic concept of the vehicle in order to operate it properly and avoid any abusive usage which would result in premature failure or costly maintenance.

As an over-the-snow vehicle, the Skidozer needs to be as light as possible; this is achieved by using a sheet metal frame adequately braced and supported by a strong tubular sub-frame to which the individual wheel suspensions are bolted. IT SHOULD NEVER BE CONSTRUED AS A BULLDOZER.

Steering is effected by means of a controlled differential; pulling on one steering lever slows down the drive axle gear of that side and speeds up the one on the other side. With this type of differential, there is traction on both tracks at all times even in turning.

Tracks with wedge-shaped 4" high aluminum crosslinks provide the best traction in all types of snow, and should be operated only on snow-covered surfaces; extensive use on other terrain will not only cause excessive wear and damage to the tracks, but will place undue strain on the drive mechanism, especially when making turns, due to the width of the tracks and high degree of traction. Use of a Skidozer equipped with such tracks on bare ground is considered abusive and therefore any damage caused by such use is not covered by warranty.

IDENTIFICATION:

Each Bombardier vehicle carries a data plate identifying the model and giving the serial number of the chassis, as well as the engine number.

On the Skidozer SV-252, it is on the right hand side of the engine cowling.

Always refer to the vehicle serial number when ordering parts or when corresponding on any matter pertaining to a specific vehicle or vehicles.

A WORD OF CAUTION

OFF-HIGHWAY OPERATION:

The very nature of off-highway operation of a vehicle is dangerous. Any terrain, which has not been specially prepared to carry vehicles, presents an inherent danger where angularity, substance and exact steepness are unpredictable. The terrain itself presents a continual element of danger, which must be accepted with pre-meditation by anyone venturing over it.

An operator who takes a vehicle off-highway should always exercise the utmost care in selecting the safest path and keeping close watch on terrain ahead of him. On no account should the vehicle be operated by anyone who is not fully conversant with the "Driving Instructions" applicable to the vehicle, nor should it be operated in steep terrain by anyone who has not become thoroughly familiar with the vehicle's performance on flat terrain.

DESIGN LIMITATIONS:

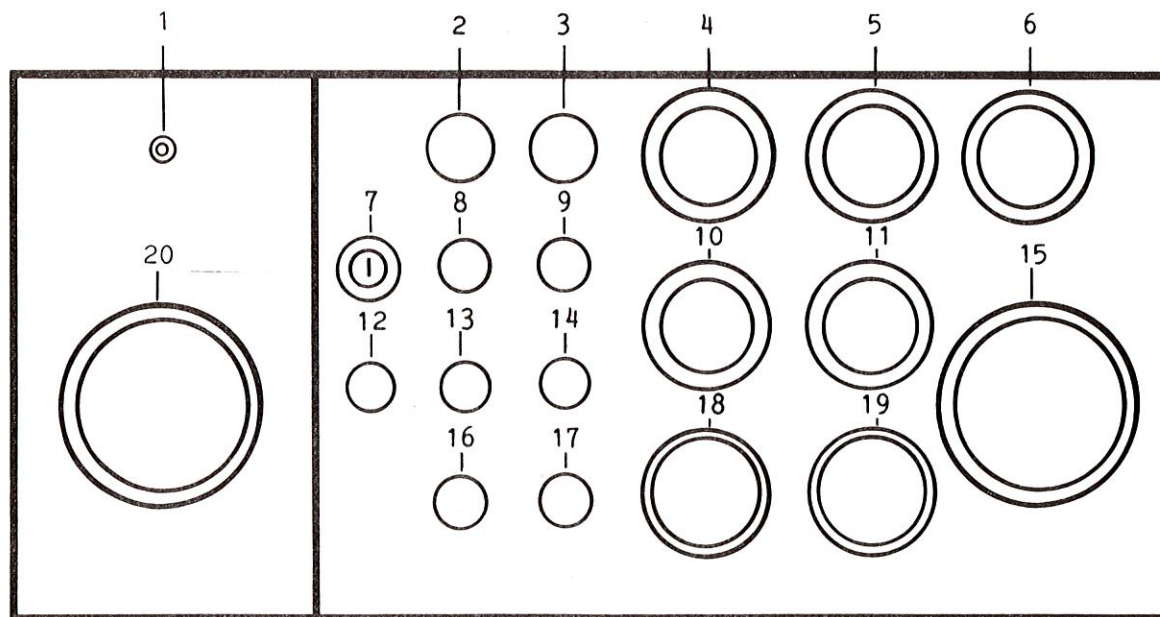
The Skidozer is designed primarily as an over-the-snow vehicle. The fundamental design concept is a compromise between ruggedness which call for strength and weight, and light-footedness to move over snow.

Whereas the Skidozer is exceptionally rugged for its class, it is still a light vehicle by definition and its operation must be restricted to its proper purpose, the grooming and packing of snow, or over-snow operation.

Its design objective is to push and pull snow-grooming equipment over most snow conditions; loads, personnel included, should not exceed 2,000 lbs.

Whereas Bombardier vehicles carry many types of equipment and loads, it must be understood that the addition of weight to any part of the vehicle changes its gravitational stability and modifies its performance. Do not make radical changes to the centre of gravity of the vehicle without written approval by a Bombardier engineer.

OPERATION INSTRUMENT PANEL



SKIDOOZER 252

- | | |
|---------------------------------------|------------------------------------|
| 1. Parking Brake Warning Light | 11. Ammeter |
| 2. L.H. Wiper Switch | 12. Rear Heater Switch L.H. |
| 3. R.H. Wiper Switch | 13. Defroster Switch |
| 4. Differential Oil Temperature Gauge | 14. Rear Heater Switch R.H. |
| 5. Fuel Gauge | 15. Tachometer |
| 6. Hour Meter | 16. Rear Wiper Switch |
| 7. Ignition Switch | 17. Flasher |
| 8. Headlamp Switch | 18. Transmission Temperature Gauge |
| 9. Reverse Light Switch | 19. Oil Pressure Gauge |
| 10. Engine Temperature Gauge | 20. Speedometer |

OPERATION

1- PARKING BRAKE WARNING LIGHT:

Will light up when parking brake is applied.

2-3- WIPER SWITCHES:

To operate the two speed windshield wipers, turn the switch knobs clockwise. The first position is "slow" speed. Turn completely to the right for "high" speed. The wiper on the driver's side can also be operated by pressing on the button on top of the left hand steering lever.

4- DIFFERENTIAL OIL TEMPERATURE GAUGE:

Indicates the temperature of the oil in the differential; maximum working temperature is 210°F.

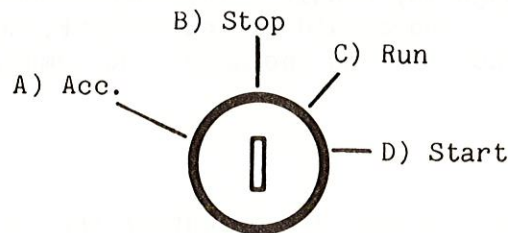
5- FUEL GAUGE:

Indicates the level of fuel in the tank.

6- HOUR METER:

Registers the number of hours the engine has been in operation. Service and Maintenance operations should be performed according to the number of hours registered on the hour meter and as detailed in the Service Schedule.

7- IGNITION SWITCH:



Four-way Switch

A) Accessories position
Supplies the main lighting system.

B) "Stop" position
Stops the engine and cuts off supply power to the vehicle.

OPERATION

C) "Run" position

Supplies the whole vehicle and the engine keeps on running at this position.

D) "Start" position

When the engine must be started, turn the key two (2) steps from the "stop" position and maintain this position. Once the engine has started, immediately bring the key back to "run" position.

▼ **CAUTION:** Never keep the key at "start" position once the engine is running because the starter motor could be damaged.

▼ **CAUTION:** Do not activate the starter more than thirty (30) seconds at a time so as to not cause overheating of the starter motor. If the engine does not start at first try, wait approximately one (1) minute before trying again. If it still does not start after four (4) tries, consult a mechanic.

8-9-12-13-14-16-17- SWITCHES:

The switches are pulled UP for the "ON" position and pushed DOWN for the "OFF" position.

10- ENGINE TEMPERATURE GAUGE:

This indicates the operating temperature of the engine's cooling system. The engine should not be operated in an overheated condition as extensive damage may result. The temperature gauge should be checked frequently and should it reach 220°F, the engine should immediately be stopped to find the cause and remedy the overheating condition.

11- AMMETER:

Indicates whether current is flowing into or out of the battery. The ammeter will show a high charging rate when the battery is low and in need of a charge. When it is full charge, it will show a low charging rate.

15- TACHOMETER:

Indicates the number of engine RPM.

OPERATION

18- TRANSMISSION TEMPERATURE GAUGE:

Registers the temperature of the oil in the automatic transmission. The temperature should never exceed 260°F.

19- OIL PRESSURE GAUGE:

Normal oil pressure at 2000 RPM is between 35 and 60 PSI and slightly less at idle speed. On a worn engine, oil pressure may drop considerably. A low oil pressure on a new engine indicates a malfunction and should be remedied immediately.

20- SPEEDOMETER:

Graduated in Miles and kilometers per hour; it indicates the speed of the vehicle. The accumulated mileage is indicated, in the center of the instrument, in miles and tenths of a mile.

ELECTRIC FAN:

The variable speed switch is on the base of the fan; turn clockwise to operate fan from "high" to "low" speed.

HORN BUTTON:

Located on top of the right hand steering lever.

DOMELIGHT:

Switch is on the base of the dome light.

PARKING BRAKE WARNING LIGHT:

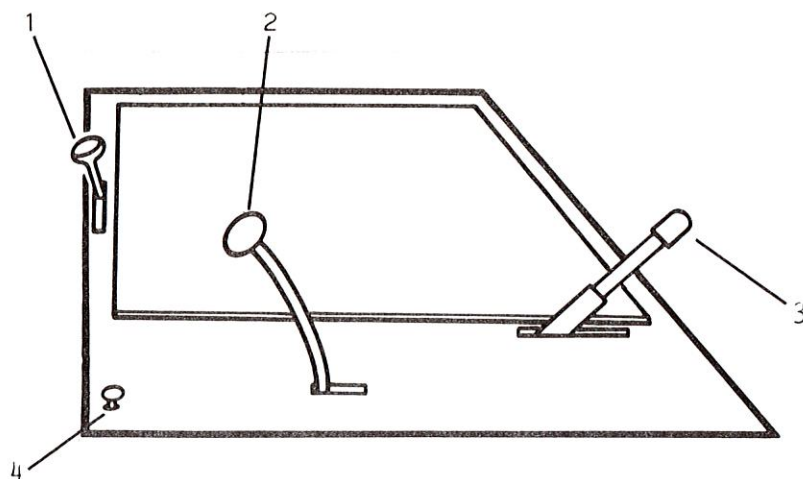
Located on the left hand side of the instrument panel.

PARKING BRAKE:

Parking brake lever is located on top of the engine cowl on the right hand side, towards the rear. Pull the lever to engage the parking brake, push to release. When the parking brake is engaged, the red warning light will light if the ignition switch is on.

OPERATION

- 1- Transmission gear shift lever
- 2- Two-speed gearbox shifter
- 3- Parking brake lever
- 4- Manual choke control



TWO-SPEED GEARBOX SHIFTING LEVER:

Located on top of the engine cowling on the left hand side, towards the rear. Pull this lever to the LEFT for the "HIGH" range and push to the RIGHT for the "LOW" range. When the lever is in the middle, the gearbox is completely disengaged. When the two-speed gearbox is in "neutral" there is no power transmitted to the differential. Never attempt to shift from one range to the other when the vehicle is in motion and with the engine running.

▼ **CAUTION:** It is very important that the vehicle and the engine be stopped and the transmission set to the "neutral" position before selecting "HIGH" or "LOW" range to avoid damage to the two-speed gearbox and/or the transmission.

STARTING THE ENGINE:

The automatic transmission selector lever must be placed at the "P" position before attempting to start the engine.

OPERATION

STARTING THE ENGINE (cont'd)

Press the accelerator pedal approximately 1/4 of the way down. Pull up on choke knob. Turn the ignition key to "start" position and release immediately when the engine starts, remove choke by pressing the knob down. Never use the starter for more than 30 seconds at any one attempt to start the engine.

SAFETY TIPS:

- Keep a first-aid kit and a fire-extinguisher in a conveniently located place in the cab.
- Never fill fuel tank when engine is running, near sparks or open flame, cigarette, etc.
- Fasten and adjust seat belt and shoulder harness.
- Adjust operator's seat for maximum comfort and in a position where all operating controls are within easy reach.
- Do not attempt to perform repairs on a vehicle in motion.
- Never leave engine running in an enclosed garage or shed.
- Do not remove radiator cap when engine is hot.
- Never leave Skidozer unattended for extended periods without being sure it is off the trail, and well marked by warning lights and/or signs.
- Always engage park brake before leaving operators seat.

DAILY CHECK LIST:

Preventive maintenance is most important and contributes to economical operating costs. A quick inspection of the Skidozer before driving away will help to discover any abnormal wear or faulty operation, and corrective measures can be taken before failure occurs.

OPERATION

DAILY CHECK LIST (cont'd)

The following inspection should be made daily:

A- BEFORE STARTING THE ENGINE, CHECK:

- 1) The crank case oil level
- 2) fan and alternator belts
- 3) coolant level in the radiator.

B- START THE ENGINE AND WHILE IT IS WARMING, CHECK:

- 1) All the gauges and instruments
- 2) undercarriage and remove any foreign body caught on or frozen to the suspension or running gear
- 3) condition and tension of the tracks
- 4) for broken or bent crosslinks and track-guards
- 5) loose or missing crosslink bolts
- 6) tires for abnormal wear or low pressure
- 7) alignment of the wheels
- 8) condition of drive sprockets; tightness of bolts
- 9) fuel or oil leaks
- 10) controls and levers for proper adjustment.

Make all necessary corrections before driving.

○ NOTE: This daily inspection is most important and it takes just about the time required for the engine to warm before it is put to work.

DRIVING INSTRUCTIONS

GEAR SHIFTING:

The Ford C-6 automatic transmission used in the 252G has 6 positions on the shift selector:

"P" Park position, use this position for STARTING the engine.

"R" Reverse.

"N" Neutral: engine will also start in this position.

"D" Normal drive position where the vehicle starts in low gear and automatically upshift to second and high gears as the speed increases. In this position, the transmission will also down-shift when the load increases sufficiently.

"2" Second gear MANUAL: there is no upshift or down-shift in this position.

"1" Low gear MANUAL: there is no upshift: this range is designed primarily for engine braking when coming down steep hills.

Normal operation of the SV 252, is in the "D" driving range; however, should there be conditions where the transmission will downshift and upshift frequently from drive to 2nd, then the "2" position should be used. Should frequent up and down shifting between 2nd and 1st occur while operating in "D", manually select "1" position to prevent transmission damage.

SELECTING THE APPROPRIATE WORKING SPEED:

The automatic transmission of Skidozer has 3 forward speeds and 1 reverse; the 2 speed gear box has a ratio of 1.96 to 1, offering two alternate gear ranges at equivalent engine revolutions. This provides the operator a choice of 6 forward speeds and 2 reverse speeds. With the 2 speed gear box in the high range, the transmission gear ratios are the following:

1.00, 1.47 and 2.46.

With the gear-box in low-range, these become:

1.96, 2.88 and 4.85.

The ratios in reverse are:

2.17 in high range, and 4.25 in low range.

DRIVING INSTRUCTIONS

This provides the operator with a choice of working speeds for all degrees of slopes and all snow conditions. Experience will tell the operator what speed to select, and what range to use. The sequence of power range in forward speeds is as follows:

High gear, high range	1.00 to 1
Second gear, high range	1.47 to 1
High gear, low range	1.96 to 1
First gear, high range	2.46 to 1
Second gear, low range	2.88 to 1
First gear, low range	4.85 to 1

○ NOTE: The vehicle must be stopped completely to shift 2 speed gear box from high to low range (or vice versa).

◆ WARNING: When the 2 speed gear box is in neutral, the Skidozer becomes free-wheeling. Make sure that the gear box is fully engaged, either in the low range or the high range, when working on slopes.

STEERING:

Steering of the Skidozer is effected by means of the steering levers, through the planerary-type controlled differential. Applying the brake on one drum of the differential slows the axle gear of that side, with a proportionate increase of the speed of the axle gear on the other side. One track running faster than the other makes the vehicle turn. With this type of differential, there is traction on both tracks, even when turning. Levers should be pulled sharply.

▼ CAUTION: Release steering levers completely when not in use for steering or braking. "Dragging" the bands will cause differential overheating and unnecessary wear of the bands.

DRIVING INSTRUCTIONS

STOPPING:

Stopping is effected by pulling on both steering levers simultaneously. Avoid sudden stops. Slow down the vehicle, using compression of the engine, whenever possible, and pull on both levers gradually and evenly.

◆ **WARNING:** The foot brake is an emergency brake only: Not a service brake. The foot brake should be used only in extreme cases where a sudden stop is an absolute necessity.

UPHILL DRIVING:

Select the gear box range and transmission speed that will give you the necessary power to climb the slope. Gear changing at a critical point in a slope may cause track-slippage and digging in; therefore, select the gear ratio that will provide the power to climb the slope without stalling. Should the tracks start to spin and dig in, back off and choose an alternate route.

DOWNHILL DRIVING:

On steep slopes, use the low gears of the transmission to have the compression of the engine act as a speed reducer. Using the low range of the gear box will increase the braking effect of the compression of the engine. The further reduce the speed, pull on both steering levers simultaneously.

DRIVING INSTRUCTIONS

○ NOTE: If caught in an avalanche situation, or if the Skidozer starts "tobogganning", accelerate slightly to move faster than the slide, in order to regain control.

SIDEHILL DRIVING:

Due to the configuration of the track crosslinks, driving side-hill could be a problem, even with sidehilling grousers. There is always the hazard of a side-slide, which in many cases is hard to control. A side-slide may be overcome by applying the uphill steering lever, and accelerating, to turn the vehicle uphill. DO NOT ATTEMPT TO TURN THE VEHICLE DOWNHILL WITH THE SLIDE.

DROP-OFFS:

Watch for drop-offs on steep slopes, especially if the snow is hard packed, as a result of a wind-blow or icy conditions. Make sure that the Skidozer can safely negotiate any drop-off before attempting the descent.

CROSSING OBSTACLES:

To cross a ditch or a gully, approach at an angle, instead of attaching it squarely. If the ditch or gully is not too wide, the corner of the Skidozer will reach the other side before the weight of the vehicle is balanced forward, and the crossing will be smooth.

PULLING EQUIPMENT:

Any equipment pulled behind the Skidozer should be well secured: check the lock of the pintle hook, and attach the safety chains. Some difficulty may be experienced in making turns when going up-hill, sharp turns in such conditions should be avoided whenever possible, as it is not always possible to back up without jackknifing the equipment.

PARKING:

Park on a flat surface, whenever possible, and apply the parking brake by pulling on the lever located on top of the engine cowling, rear right hand side. Shift transmission to park position.

PREVENTIVE MAINTENANCE

The inspection and checks listed below should be done WEEKLY and any correction found necessary should be made immediately to prevent failures.

○ NOTE: The vehicle must be on LEVEL ground when checking oil and fluid levels.

1- DIFFERENTIAL OIL LEVEL:

The dipstick is on the differential cover and may be reached through the opening on the rear floor plate. If the oil is below the level mark, fill to proper level and check for oil leaks around the differential and its cooling system.

2- AUTOMATIC TRANSMISSION OIL LEVEL:

Check the oil level while the engine is running and the oil is at normal operating temperature; with the shift lever at the "P" or "N" position. Follow the instructions stamped on the dipstick. The fluid level should be at the "F" mark or slightly below, but never above the "F" mark.

3- BATTERY ELECTROLYTE LEVEL:

If fluid is added during freezing weather, it should be added at the beginning of a working day to allow the water to mix with the electrolyte and prevent damage due to freezing.

4- TRACKS:

Check for loose bolts and tighten where necessary. Replace any broken track links or track guards. Check the belt overlapping joints.

5- SPROCKETS:

Check the bolts and tighten if necessary. Inspect the sprockets for wear. If the aluminium casting of the sprocket is visible at the bottom of the teeth; the sprockets must be removed and exchanged left to right and right to left.

6- SUSPENSION AND WHEELS:

Check the condition of the crank arms and wheel bearings. Replace or repair as required.

7- DRIVING CONTROLS:

Check the oil level in the master cylinders of the steering levers and foot brake. Replenish as required with the appropriate fluid.

T R A C K

INSTALLATION OF TRACKS:

- 1- Remove grease fitting in track adjuster cylinder.
- 2- Push the adjuster frame all the way in. (see note)
- 3- Jack up the Skidozer on LEVEL GROUND.

◆ **WARNING:** To prevent any movement of the vehicle, removal and installation should be performed on a flat and level surface.

- 4- Lay tracks under the wheels. Lift the rear section of the tracks over the sprocket.
- 5- Insert a block approximately 4" x 4" between the second and third crosslink from the opposite end of track.
- 6- Cautiously, lower the vehicle on the tracks.
- 7- Move vehicle forward until the front wheel is against the 4" x 4" block.
- 8- Lap belts and install the six tracks guards and three crosslinks.

○ **NOTE:** If necessary, back off mechanical adjuster nut.

TRACK ADJUSTMENT:

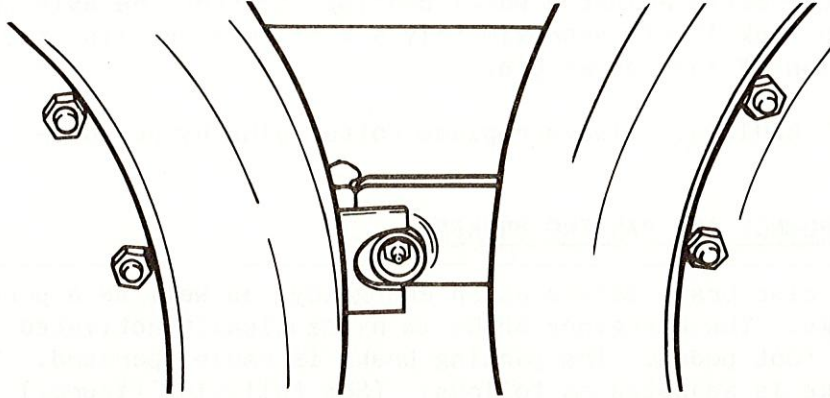
○ **NOTE:** All Tracks adjustment must be done gradually from side to side to allow adjuster frame to move evenly.

WITH NO LOAD ON THE VEHICLE:

- 1) Pre adjust tracks mechanically by tightening the track adjuster nut (normally 3½" (9 cm) from washer to end of rod.) NEVER exceed 5" (12.7 cm).

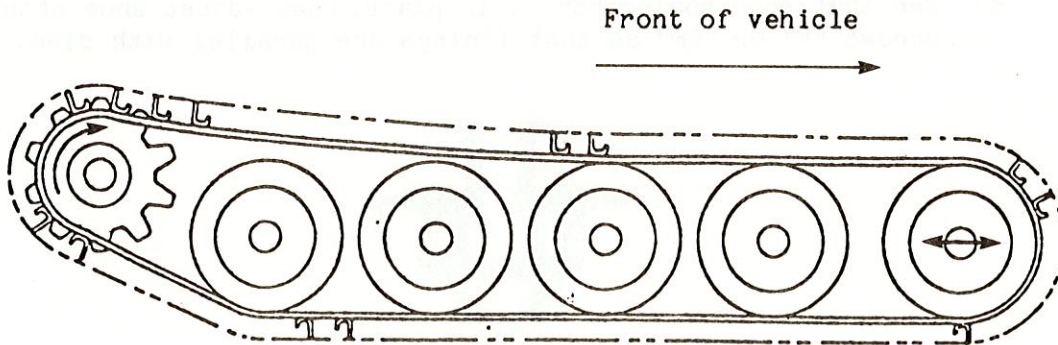
TRACK

- 2) Further adjustment is done by inserting grease in the track adjuster located between the front and second wheel.



NOTE: Track adjuster piston must not extend more than 3" (7.6 cm) beyond end of cylinder. When the mechanical and hydraulic adjustments reach their maximum, belts and sprockets must be replaced.

- 3) On level ground, the crosslinks should not touch the rear wheel and barely touch the second last wheel.



TRACK

WHEEL BEARINGS:

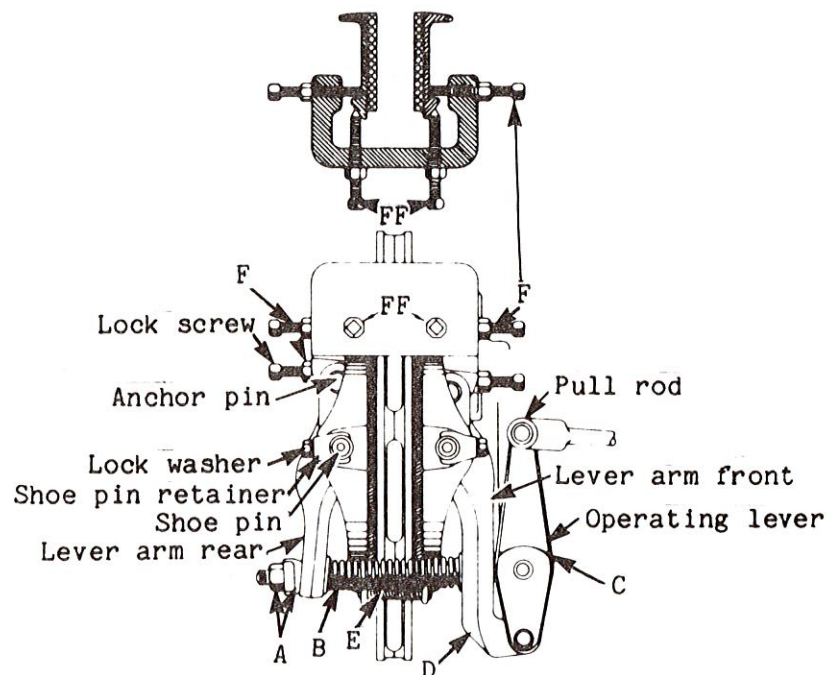
To correctly adjust a wheel bearing, tighten the axle nut firmly, then back it off approximately a $\frac{1}{4}$ of turn to allow the installation of the cotter pin.

▼ CAUTION: Always replace cotter pins by new ones.

EMERGENCY AND PARKING BRAKES:

The disc brake serves as an emergency, as well as a parking brake. The emergency brake is hydraulically-activated through the foot pedal. The parking brake is cable-operated. The disc brake is adjusted as follows: (See following figure.)

- 1) Disconnect pull rod from lever "C"
- 2) Tighten nut "A" so that spring "B" exerts enough pressure to bring lever "C" to stop solidly against lever arm "D".
- 3) Insert $\frac{1}{32}$ shim between front shoe lining and disc at center of shoe.
- 4) Further tighten nut "A" so that rear shoe lining is firm against disc but so that shim in front can still be removed. With a 2 lbs drag, remove shim.
- 5) See that shoe spring "E" is in place, then adjust shoe stop screws "F" or "FF" so that linings are parallel with disc.



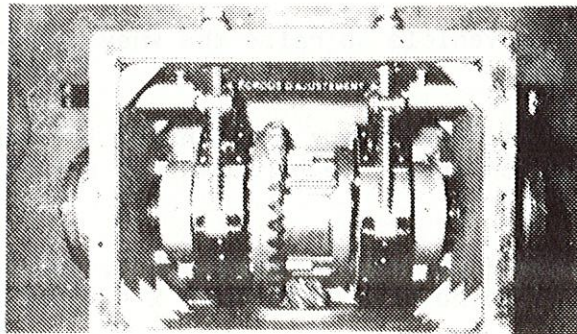
TRACK

○ NOTE: Some brakes have shoe stop screws at "F" and others at "FF". Adjustments is made with nut "A" and the only pressure shoe stop screws "F" or "FF" should exert against the shoe is to overcome the tension of shoe spring "E" in making the shoes parallel with the disc.

- 6) Be sure HAND LEVER is in full released position, then adjust pull rod to proper length and make final connections.

STEERING BRAKE BANDS:

On Skidozer 252 the adjusting mechanism of each band is located on the rear side of the differential housing. Remove the plugs, and with a 3/4" socket, tighten the adjusting nut to 20 ft-lbs. where most resistance is felt. (The adjusting nut is concave and rides on a convex surface which accounts for the high resistance every half turn).



MINOR REPAIRS

CHANGING A SPROCKETS:

To change a sprocket, the track has to be removed. It is then a matter of removing the nuts that hold the sprocket to the hub. The life of the sprockets can be extended if both sprockets are interchanged. After the teeth are worn on one side, put the right hand sprocket on the left hand side, and vice-versa.

CHANGING A TIRE:

To change a tire, the complete wheel has to be removed from the vehicle. Proceed as follows:

- 1) Loosen the track by bleeding the hydraulic track-adjuster.



WARNING: Surround the bleeding tool with a cloth when bleeding the tensioner to prevent grease splashes.

- 2) Jack up the vehicle to raise the wheel higher than the track-guard.



WARNING: To prevent any movement of the vehicle, removal and installation should be performed on a flat and level surface.

- 3) Spread both sides of the track apart, and hold them apart by means of a board or a piece of 2 x 4 about 27" long.
- 4) Remove the hub cap, the cotter pin and the spindle nut, and pull the wheel out.



NOTE: To remove the front wheel, the track has to be removed. To re-install the wheel, proceed in reverse order to the removal.



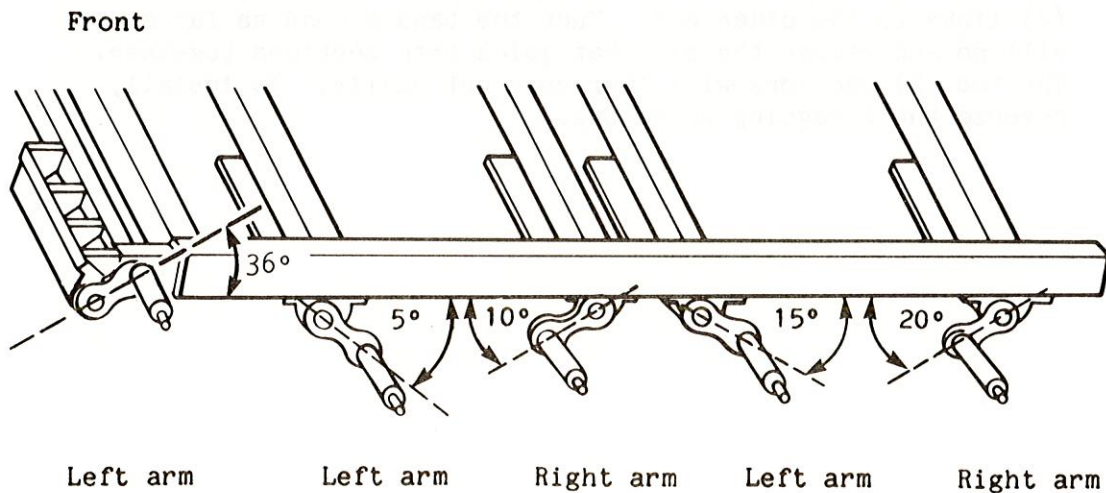
CAUTION: Care should be taken to protect the wheel seal and to prevent dirt from getting into the wheel bearings. If the wheel seal has to be replaced, note the seal must be installed with the lip to the outside. It prevents water and dirt from getting into the wheel hub, but allows the bearings to be lubricated with a grease gun without the hazard of damaging the seal; installed in this manner, the seal allows water and dirt that could have entered the hub to be pushed out by the grease that is pumped into the hub.

MINOR REPAIRS

CHANGING A CRANK ARM:

Remove the wheel as per instructions for changing a tire. Completely remove the bolt that tightens the crank arm to the Flexitor shaft. Pry the crank arm off the flexitor shaft. When re-installing the crank arm, make sure that it is installed at the correct angle, see following chart:

Crank Arm Position	Angle ABOVE Horizontal	Angle BELOW Horizontal
Front Wheel	36°	
Second Wheel		5°
Third Wheel		10°
Fourth Wheel		15°
Rear Wheel		20°



MINOR REPAIRS

CHANGING A CRANK ARM: (cont'd)

The best way to insure that the new crank arm is installed at the correct angle is to make a mark on the Flexitor shaft, where the slot of the crank arm is located. The slot in the new crank arm should be at that same location.

○ NOTE: There are R and L crank arm and this indication is stamped on each crank arm. Be sure to use the proper one when making a replacement.

CHANGING AN AXLE SHAFT:

Remove the axle hub cap which is bolted to the sprocket hub. Using 3/8" bolts of coarse thread, tighten them alternately until the hub comes off.

CHANGING STEERING BRAKE BANDS:

Remove the floor plate installed over the differential. Disconnect the steering cylinders. Remove differential cover. Remove the adjusting nut plug and the adjusting nut. Remove the pins that hold the yoke or binder to one end of the band, and the two (2) links to the other end. Turn the band around as far as it will go and remove the pin that joins both sections together. The two (2) sections will then come out easily. To install, reverse the foregoing procedure.

MINOR REPAIRS

Changing a fuse:

The fuse holder is inside the instrument panel; they are installed as follows:

Heater & dome light	●
Defrost	●
Flasher	●
Back-up light	●
Left hand wiper	●
Right hand wiper	●
Rear wiper	●
Brake & head lights	●
Fan	●

LUBRICATION

ENGINE:

Check the oil level daily and replenish if necessary. Change the oil at every 100 hours of operation. Change the filter at every oil change.

A deep sump has been added to the oil pan and the pick up tube of the oil pump has been modified to enable the engine to work at steep angles; the drain plug is on the bottom of the deep sump.

TRANSMISSION:

The transmission pan and oil pick up tube have been modified to protect the transmission on steep slopes. The oil should be changed every 600 hours. To facilitate draining, a plug is installed on the bottom of the pan. The torque converter also has to be drained. Remove the cover under the front of the transmission housing; turn the torque converter until the drain plug is at the bottom. Remove this plug and drain completely.

DIFFERENTIAL:

Check the level daily. The oil level gauge is on the differential cover. Change at every 200 hours or whenever the oil is contaminated. Change the filter of the differential oil-cooling system every 600 hours.

The drain plug for the differential is underneath the housing. The filler plug is on top of the differential cover.

2 SPEED GEAR BOX:

Change oil every 600 hours. The drain plug is located on the bottom centre of the gear box. The filler plug is located on top. Refill with 1.5 Imp. quarts or 1.7 U.S. quarts. Level plug is located on left rear side of gear box.

LUBRICATION

WHEEL BEARINGS:

Wheel bearings are lubricated through the grease fitting on the hub cap. Lubrication every week is recommended. The wheel seal is installed inside-out, compared to normal installation, so that dirt and water will be kept out of the wheel hubs; this also allows the grease to expel any water that may have entered the hub, and prevents the seals from being blown out through excess pressure.

SPROCKET HUB BEARINGS:

A grease fitting is located on the inside of the hub near flange. To facilitate lubrication, stop the vehicle when the grease fitting faces the front. A grease-gun with a flexible hose is required to lubricate this fitting. Lubricate weekly.

PROPELLOR SHAFT:

The universal joints, as well as the slip joints, of the two propeller shafts should be lubricated every 100 hours. The centre floor has to be removed in order to gain access to the propeller shaft from the top.

STEERING LEVERS, PINTLE HOOK, DISC BRAKE CALIPER:

Lubricate through grease fittings every 100 hours.

DOOR HINGES:

Oil every 100 hours.

LUBRICATION CHART and SCHEDULE

Lubrication Points	Change/Service Interval	Liquid Capacity	Recommended Lubricant Specifications
ENGINE incl. FILTER Ford 300 CID	Every 100 Hours	6.7 imp. qt 8 U.S. qt 7.6 litres	API Service CC/SE/SF MIL-L-46152 Below 0°C (32°F) SAE 5W30 Above 0°C (32°F) SAE 10W40 (Normal Use)
AUTOMATIC TRANSMISSION incl. TORQUE CONVERTER	Every 600 Hours	11.5 imp.qt 13.7 U.S.qt 13 litres	DEXRON II
DIFFERENTIAL (SV-252 G)	Every 200 Hours	16.7 imp.qt 20 U.S.qt 19 litres	
TWO-SPEED GEARBOX	Every 600 Hours	1.5 imp.qt 1.7 U.S.qt 1.7 litres	(ESSO GX75-80) MIL-L 2105 B OR EQUIVALENT

LUBRICATION CHART AND SCHEDULE

Lubrication Points	Change or service interval	Capacity	Recommended lubricant specifications
Master Cylinders (steering & Brake)	As required	1 imp.pt. 1.2 U.S.pt. .57 litres	EXTRA HEAVY DUTY BRAKE FLUID SAE 70R3
Wheel Bearings	Every 50 hours	10 fittings	GOOD QUALITY MULTI-PURPOSE GREASE WITH SUPERIOR SHEAR STABILITY which will remain fluid at very low temperatures
Sprocket Bearings	Every 50 hours	2 fittings	
U-Joints	Every 100 hours	6 fittings	
Steerings levers	Every 100 hours	2 fittings	
Pintle hook	Every 100 hours	3 fittings	
Brake caliper	Every 100 hours	4 fittings	

MAINTENANCE SCHEDULE

C-Check

L-Lubricate

I-Inspect (adjust or correct if necessary)

R-Replace

ITEM	Every 10 hours or daily	Every 50 hours or daily	Every 100 hours	Every 200 hours	Every 600 hours	Once a year
Engine Oil	C		R			
Transmission Oil		C			R	
U-Joints			L			
Sprockets Bearings		L				
Wheel Bearings	L					
Differential Oil	C			R		
Differential Oil Filter					R	
Master Cylinders		C				
Steering Levers			L			
2 Speed Gear Box Oil			C		R	
Radiator Coolant	C					R
Battery		C				
Brake Bands		I				
Air Filter						I
Fuel Filter						R
Hydraulic Oil		C				R
Tracks	C	I				
Tires	C	I				
Sprockets	C	I				
Suspensions	C	I				
Emergency Brake Caliper		I	L			
Pintle Hook			L			

COLD WEATHER OPERATION

A vehicle like the Skidozer is called upon to work in exceedingly cold temperatures. Certain basic precautions should be taken in order to protect the vehicle, and to prolong its useful life.

The Skidozer leaves the factory with anti-freeze solution in the cooling system for protection up to minus 40° F. Make certain that if colder temperatures are anticipated, additional anti-freeze is added for adequate protection.

The battery should be kept fully charged at all times and should never be allowed to run down.

The oil in the crank case should be of the recommended viscosity. Refer to the Operator's Manual supplied by the engine manufacturer.

A thermostat installed as original equipment is suitable for cold temperatures.

If the Skidozer is left outdoors, in extremely cold temperatures, special precautions should be taken when it is started after having been idle for quite sometime. The engine should be warmed at slightly faster than idle before putting it to work. This will give a chance to the oil in the crank case to warm for proper lubrication. Driving a cold engine at full throttle will cause excessive wear on all the moving parts, and will result in premature failure.

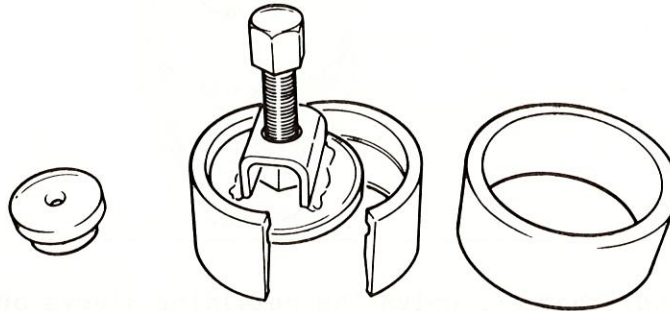
TROUBLE-SHOOTING

Trouble	Probable Cause	Suggested Remedy
Oil Leaks	1- Overfilled 2- Incorrect type of oil 3- Faulty gaskets or oil seals	Correct Change Replace
DIFFERENTIAL:		
Noisy	1- Scored crown and pinion gears 2- Bearings worn or pitted 3- Improper adjustment of crown and pinion	Replace Replace Adjust
Excessive Back Lash	1- Worn gears 2- Worn carrier bearings 3- Worn U-joints	Replace Replace Replace
Oil Leaks	1- Faulty gaskets or seals	Replace
PROPELLER SHAFT:		
Vibration or Noise	1- Joints not aligned 2- Bent 3- Out of balance 4- Worn bearings and cross	Correct Replace Correct or replace Replace
STEERING:		
Does not steer	1- Steering brake bands too loose 2- Fluid level too low in master cylinders 3- Faulty differential 4- Faulty slave cylinder 5- Air in system 6- Broken steering band 7- Worn out lining	Adjust Fill Repair Repair Bleed Replace Replace
Veers to one side	1- Uneven track-tension 2- Trailing levers at incorrect angle 3- Broken wheel bearing 4- Low tire pressure on 2 or 3 tires on same side 5- Faulty track belts 6- Bent sub-frame	Adjust tracks Correct Replace Correct Correct or replace Repair

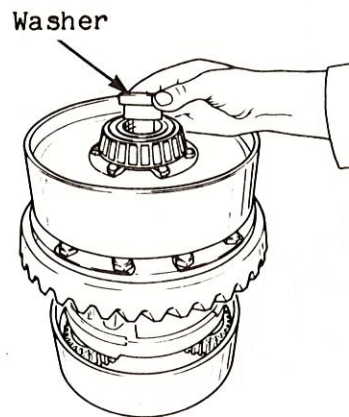
REPAIR

DIFFERENTIAL

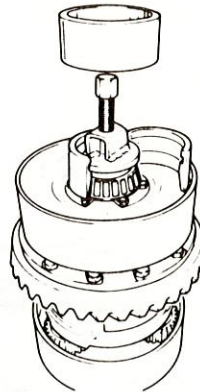
Disassembly



○ NOTE: A special puller (P/N 629 0009 00) is used to remove cone bearings from the differential.

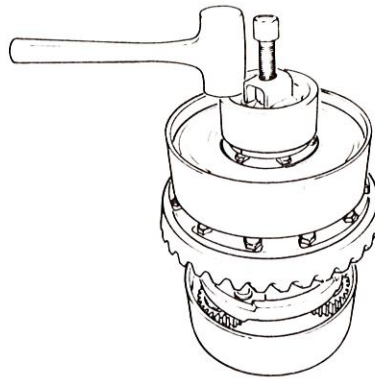


- Put the washer from the puller on the cone bearing.

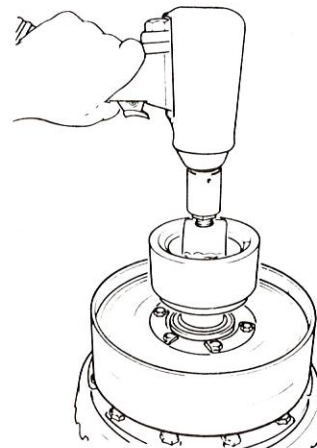
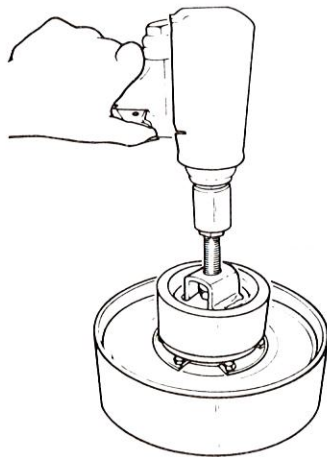


- Put the sides of the puller with the screw at the same time.
The puller must be secured on the cone bearing.

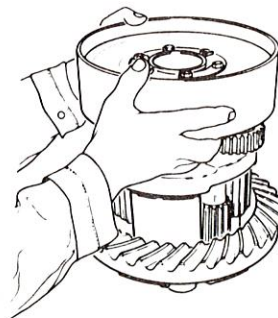
▼ CAUTION: Be careful not to secure the puller underneath the bearing cage no to damage it.



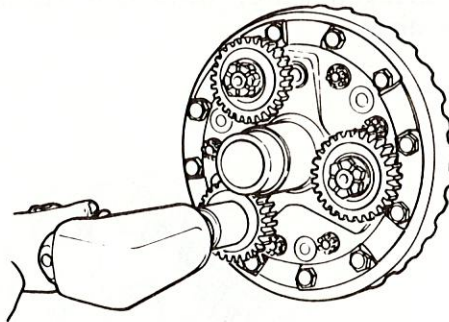
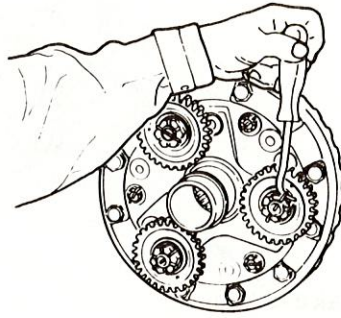
- Using a soft hammer, drive the retaining sleeve on puller sides.



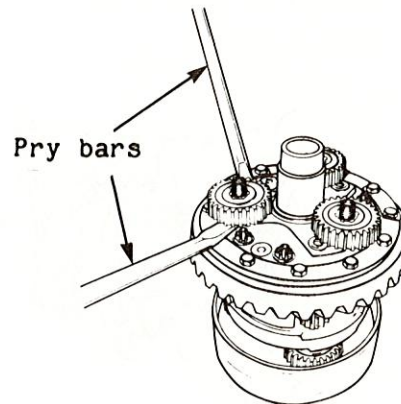
- Turn the puller screw clockwise to pull out the cone bearing.



- After having removed the cone bearing, pull out the brake drum.

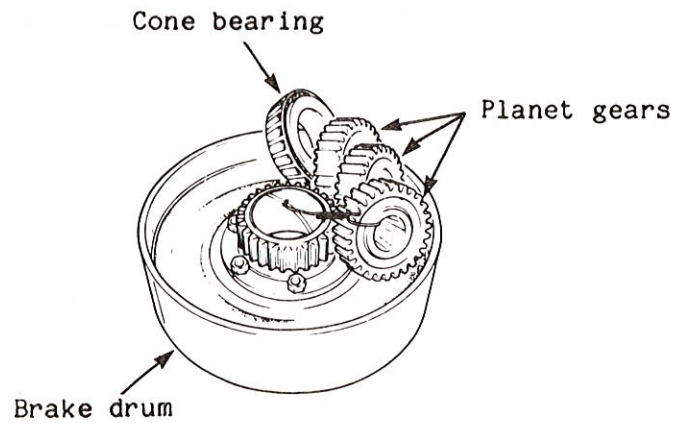


- Remove cotter pins in order to unscrew the nuts and to remove the washers from planet gears.

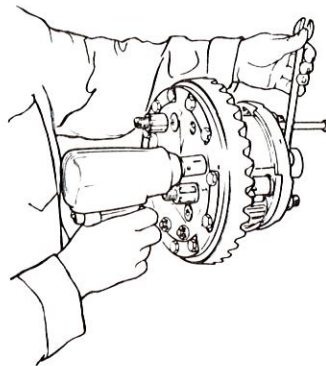
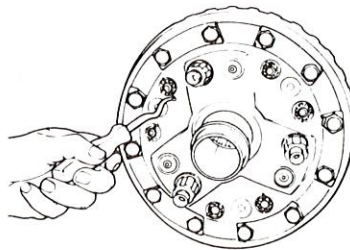


- Using two (2) pry bars, remove planet gears from the differential.

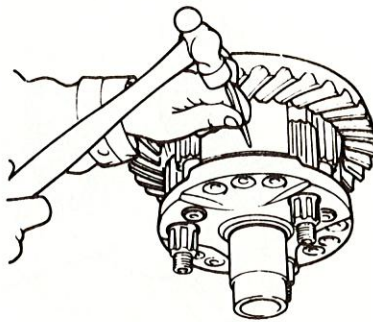
○ NOTE: Repeat the same procedure to remove the planet gears from the other end of the differential.



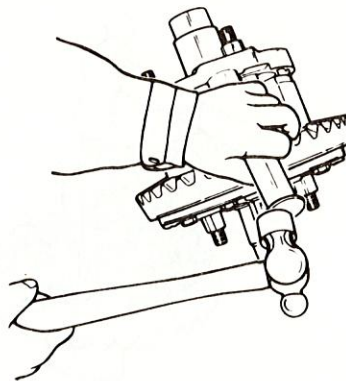
▼ CAUTION: Be sure to keep the planet gears of one side together. Using a wire, bind the planet gears to their respective brake drum.



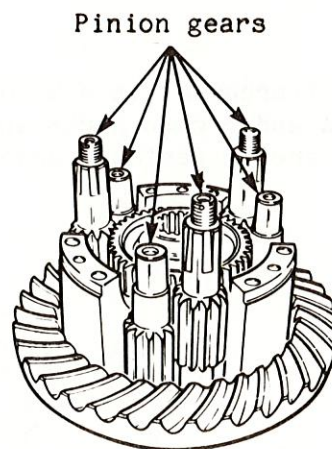
Remove cotter pins in order to remove the six (6) bolts and nuts holding the differential case.



- Using a punch, mark the differential cases according to their position.

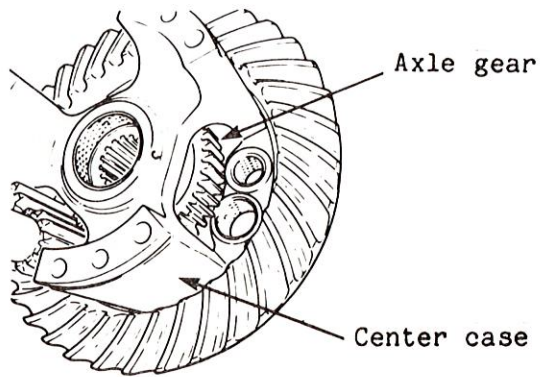


- Using a hammer and a soft punch, remove the side case (opposite side of the crown gear) from the differential.

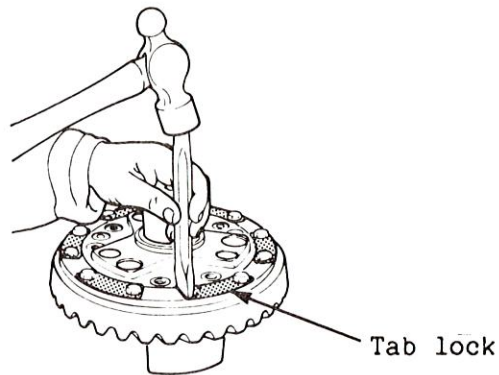


- Remove the six (6) pinion gears.

▼ CAUTION: All pinion gears set must be kept together and not mixed.



- Remove the center case and both axle gears.

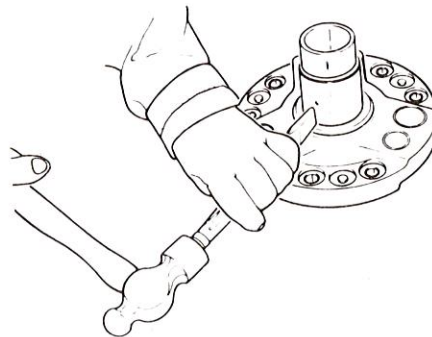


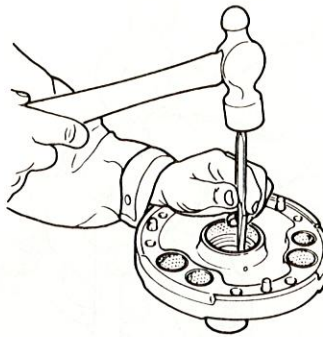
- Release tab locks and remove screws fixing the crown gear to the side case.

Repairing

▼ **CAUTION:** The differential is now completely disassembled. Replace the old and broken parts and clean the others. Make sure that all parts are in perfect condition before reassembling the differential.

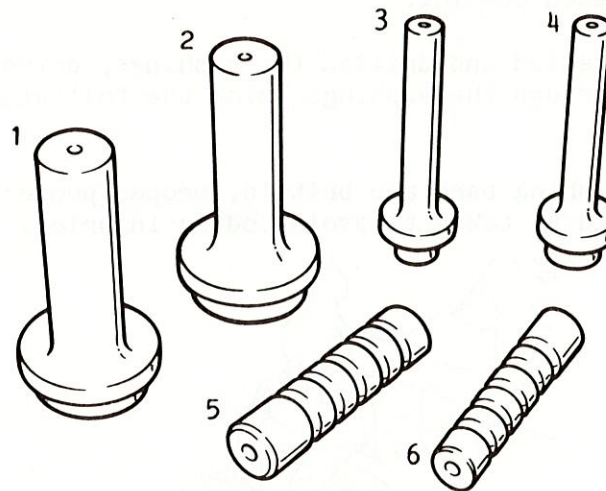
Bushing removal:





- To remove sleeves and/or bushings, cut them using a hammer and a cold-chisel.

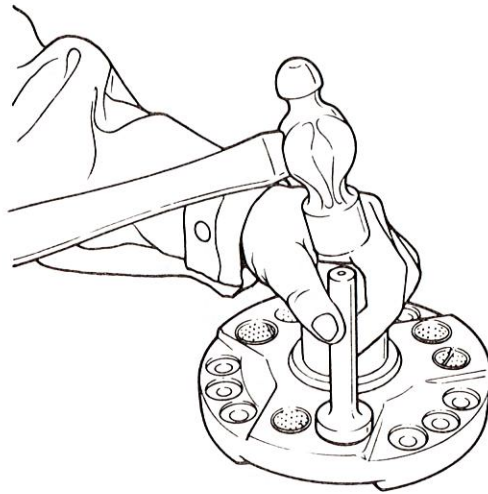
○ NOTE: Here are the required tools to install the bushings.



- | | |
|--|-------------------|
| 1- Brake drum gear bushing installer | (P/N 629 0018 00) |
| 2- Center and side case bushing installer | (P/N 629 0017 00) |
| 3- Pinion gear small bushing installer | (P/N 629 0019 00) |
| 4- Pinion gear large bushing installer | (P/N 629 0020 00) |
| 5- Pinion gear large bushing 1 1/4" burnishing bar | (P/N 629 0016 00) |
| 6- Pinion gear small bushing 1" burnishing bar | (P/N 629 0015 00) |

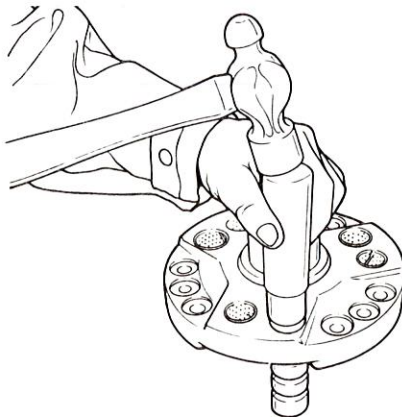
Bushing installation:

- Put the side case on a work bench.
- Start the bushing straight into the housing by hand.



- Insert the proper installer into the bushing. Using a hammer drive the bushing into the housing until the installer flange sits flush with the housing.
- Using the oil supply hole in the housing as a guide, drill a 4 mm (5/32") hole in each bushing.
- After having installed and drilled the bushings, drive the proper burnishing bar through the bushings using the following method.

◆ **WARNING:** Burnishing bars are brittle, proper protective measures should be taken to avoid bodily injuries.



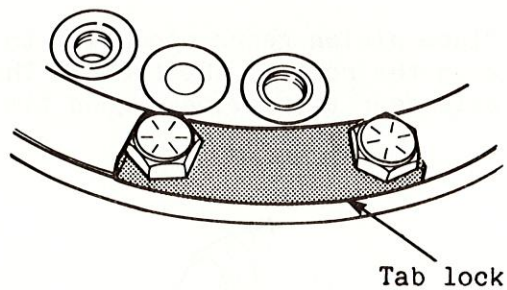
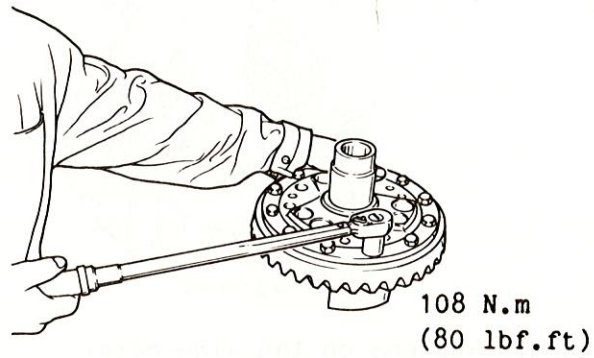
- Place the smaller diameter of the burnishing bar into the bushing. Then drive the burnishing bar through the bushing using a hammer and a soft punch.

▼ **CAUTION:** Burnishing bars must be used only on pinion gear bushings.

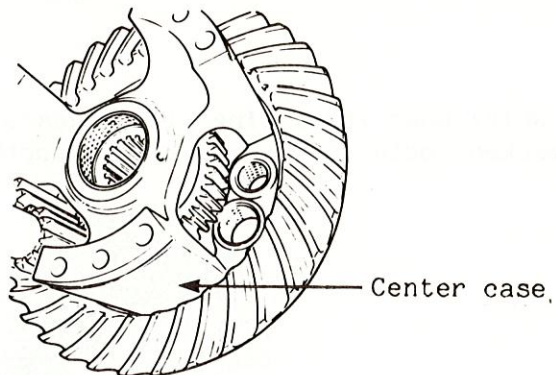
Assembly

- Install the crown gear to the side case using tab locks and screws.

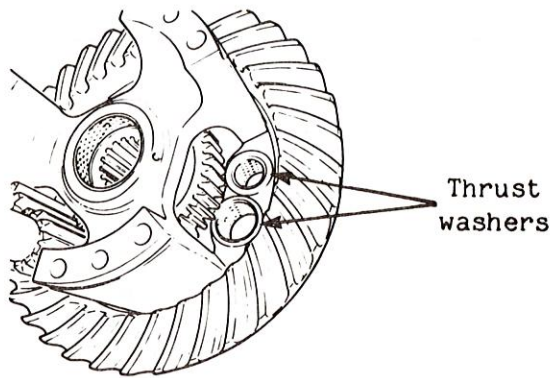
▼ CAUTION: Always use new tab-locks.



- Tighten screws to 108 N.m (80 lbf.ft) and secure them properly using new tab-locks.
- Oil all bushings on center and side cases and then place the axle gear in position.



- Place the differential center case carefully on the three (3) dowel pins and press it into position.

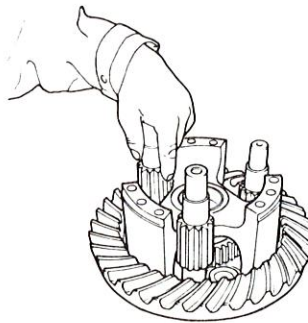


- Place thrust washers on the side case.

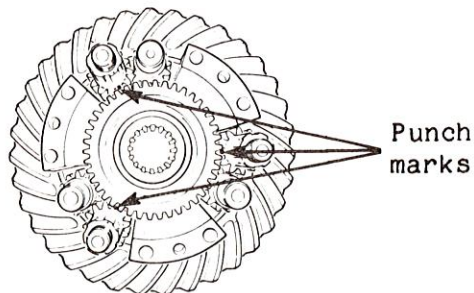
▼ CAUTION: The thrust washer chamfer must face the pinion gear.

- Install three (3) pinion gears.

▼ CAUTION: Place pinion gears according to the position of the punch mark on the root of the tooth. The marked tooth must engage in the axle gear to provide a good timing to the differential.



○ NOTE: When installing pinion gears, place a finger on the marked tooth to make sure this tooth will engage in the axle gear.

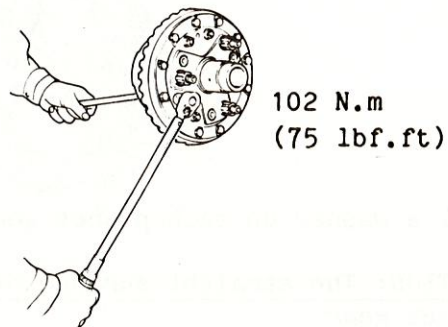


- Proceed in the same way with the remaining pinion gears and the other axle gear.

- Place thrust washers on the end of the pinion gears.

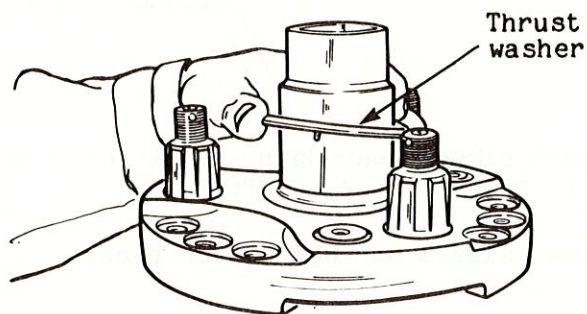
▼ CAUTION: The thrust washer chamfer must face the pinion gear.

- Drive dowel pins in the side case.

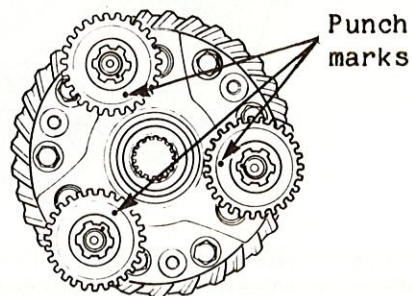


- Place the differential side case on top of the assembly and fix it using the six (6) bolts and nuts. Tighten to 102 N.m (75 lbf.ft) and lock in position using new cotter pins.

▼ CAUTION: Always use new cotter pins.

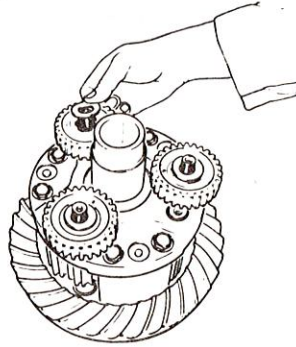


- Install thrust washers on side cases.



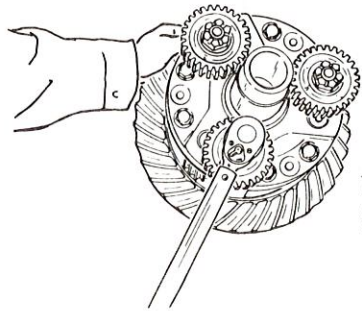
- Place a synchronized planet gear on the end of each pinion gear.

▼ CAUTION: Be sure to match punch marks of the planet gears with those of the pinion gears.



- Install a washer on each planet gear.

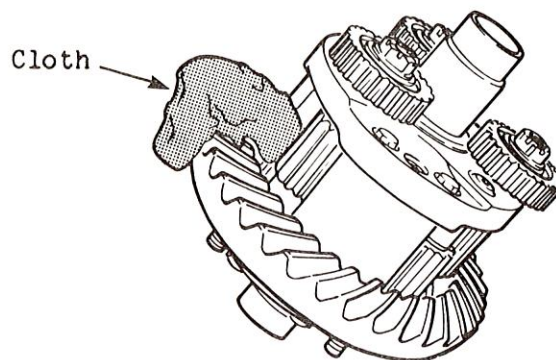
▼ CAUTION: The straight surface of the washer must face the planet gear.



135 N.m
(100 lbf.ft)

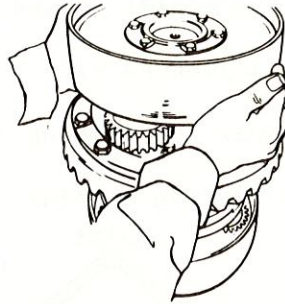
- Secure each planet gear using a nut and a new cotter pin.
Tighten to 136 N.m (100 lbf.ft).

▼ CAUTION: Always use new cotter pins.



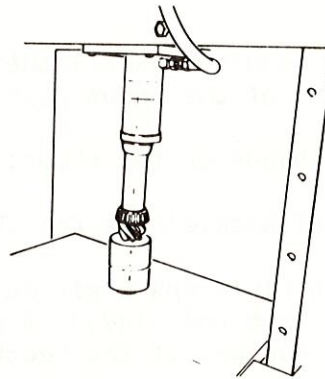
○ NOTE: To prevent the planet gear from turning when tightening the nut, place a clean cloth between teeth of two (2) pinion gears.

▼ CAUTION: The cloth must be very clean to prevent entry of dirt inside the differential.

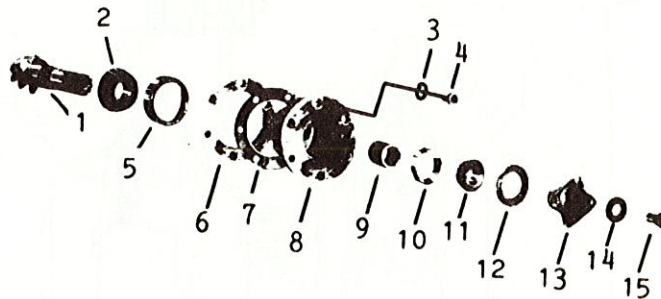


- Place a steering brake drum in position and verify if all turns well.
- Install the other steering brake drum in the same way on the other side of the assembly.
- Using a press, install the cone bearing on both sides of the assembly.

Installation of the pinion gear to the differential



- Using a press, install the cone bearing on the pinion gear.



- 1- Pinion gear
- 2- Cone bearing
- 3- Lock washer
- 4- Screw
- 5- Bearing cup (rear)
- 6- shim
- 7- Gasket
- 8- Housing

- 9- Sleeve
- 10- Bearing cup (front)
- 11- Cone bearing
- 12- Oil seal
- 13- Companion flange
- 14- Washer
- 15- Screw

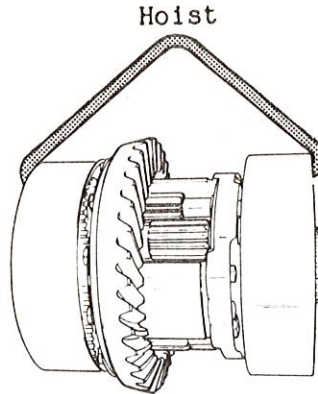
- See the figure to install the pinion gear to the differential.

Installation of the differential in the differential housing

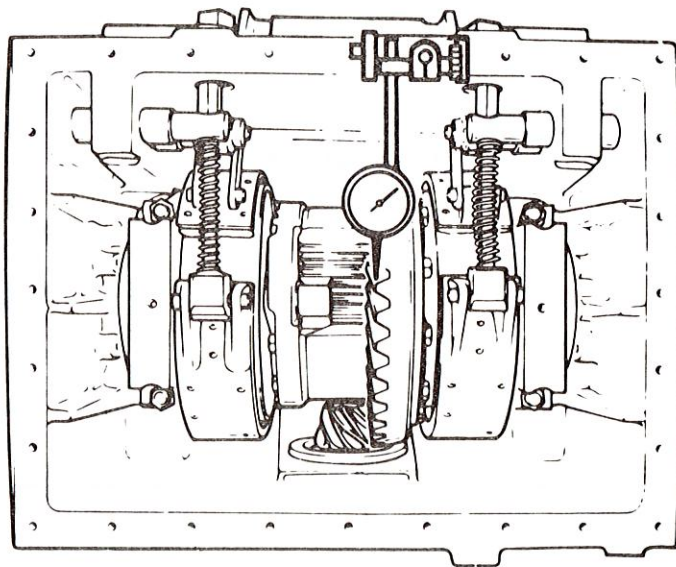
- Install both bearing adjusters with cup.

▼ CAUTION: Do not screw the bearing collar bolts too tight.

▼ CAUTION: Do not drive the bearing adjusters too deep.



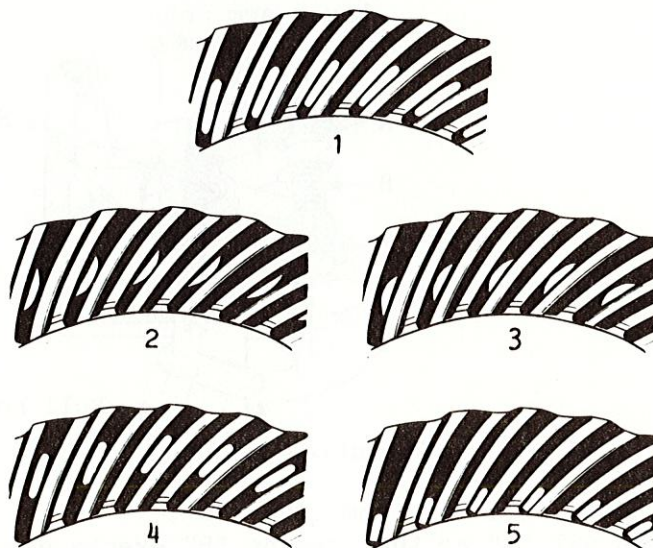
- Use a hoist to install the differential into the differential housing.
- Screw the bearing adjusters until the teeth of the pinion gear engage in the teeth of the crown gear.
- Install the brake bands on the steering brake drums.
- Adjust differential backlash as follows:
 - A) Paint blue layout fluid sparingly on both sides of the teeth of the crown gear. When the pinion is rotated, the fluid is squeezed away by contact of the teeth.



- B) Use a dial indicator to check the backlash to a tolerance of .18 mm (.007"). Should it not be correct, the bearing adjusters should be moved accordingly: 1/4 of a turn on the bearing adjusters will give approximately a variation of .03 mm (.001").
- C) Tighten the bearing adjusters to 27-34 N.m (20-25 lbf.ft) and lock the adjuster bearings in position on the outside with 41 gauge wire.
- D) Tighten the bearing collar bolts to 122-129 N.m (90-95 lbf.ft) and lock in position using tab-locks.

▼ CAUTION: Always use new tab-locks.

○ NOTE: Two adjustments affect crown gear and pinion tooth contact. They are pinion depth and backlash. Adding or removing shims would move the pinion toward the crown gear or away from it. Increasing or decreasing backlash could move the crown gear toward the pinion or away from it. So, when replacing a crown gear and a pinion, it should be noted that the original factory installed shim is of the correct thickness. If the original shim pack was lost or if the new carrier housing is being installed, substitute a nominal shim for the original and run a tooth pattern. The tooth pattern will indicate if the shim pack needs to be increased or decreased.

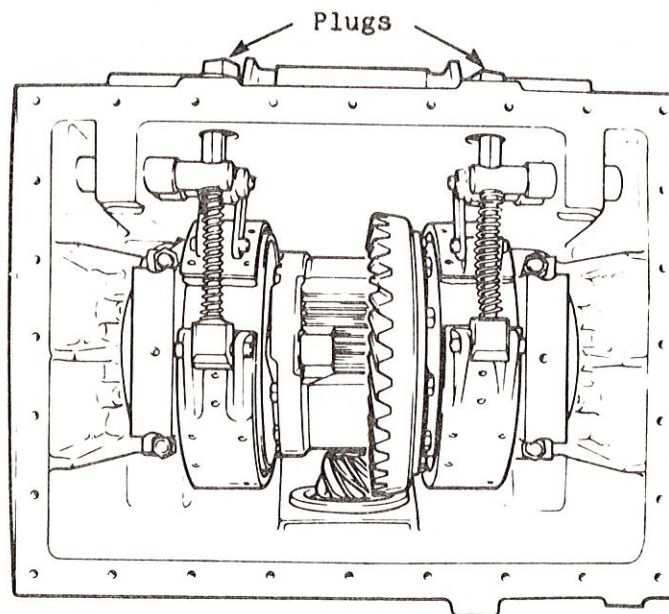


1. Correct tooth pattern
2. Low contact
3. High contact

4. Contact on the heel
5. Contact on the toe

Steering brake band adjustment

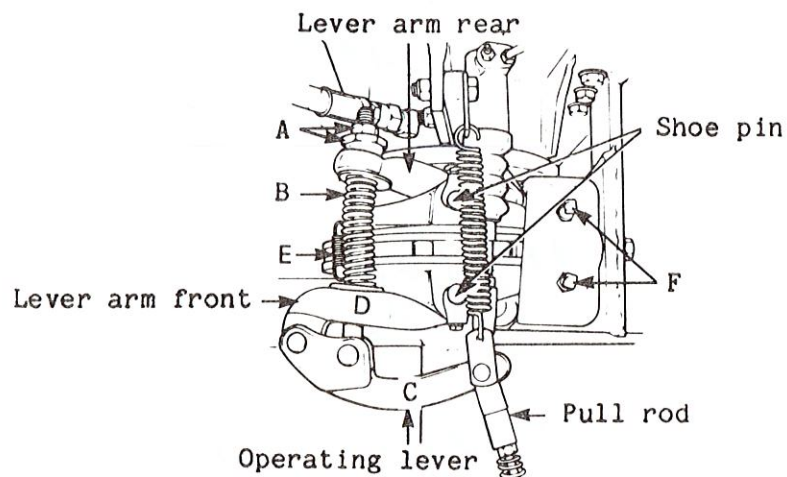
On this vehicle, the adjusting mechanism of each band is located on the rear side of the differential housing. Remove the plug, and with a 3/4" socket tight the toggle adjusting nut to 27 N.m (20 lbf.ft) maximum and back off one notch.



EMERGENCY AND PARKING BRAKES

The disc brake serves as an emergency as well as a parking brake. The emergency brake is hydraulically activated through the foot pedal. The parking brake is cable-operated.

This disc brake is adjusted as follows:



- 1) Disconnect pull rod from lever "C".
- 2) Tighten nut "A" so that spring "B" exerts enough pressure to bring lever "C" to stop solidly against lever arm "D".
- 3) Insert .8mm (1/32") shim between front shoe lining and disc at center of shoe.
- 4) Further tighten nut "A" so that rear shoe lining is firm against disc but so that shim in front can still be removed. Remove shim.
- 5) See that shoe spring "E" is in place, then adjust shoe stop screws "F" so that linings are parallel with disc.
- 6) Be sure hand lever is in full released position then adjust pull rod to proper length and make final connections.

C-6 Automatic Transmission

SECTION 17-10

APPLIES TO E-100 — E-350, F-100 — F-350, F-150 — F-350 (4x4), BRONCO

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DESCRIPTION

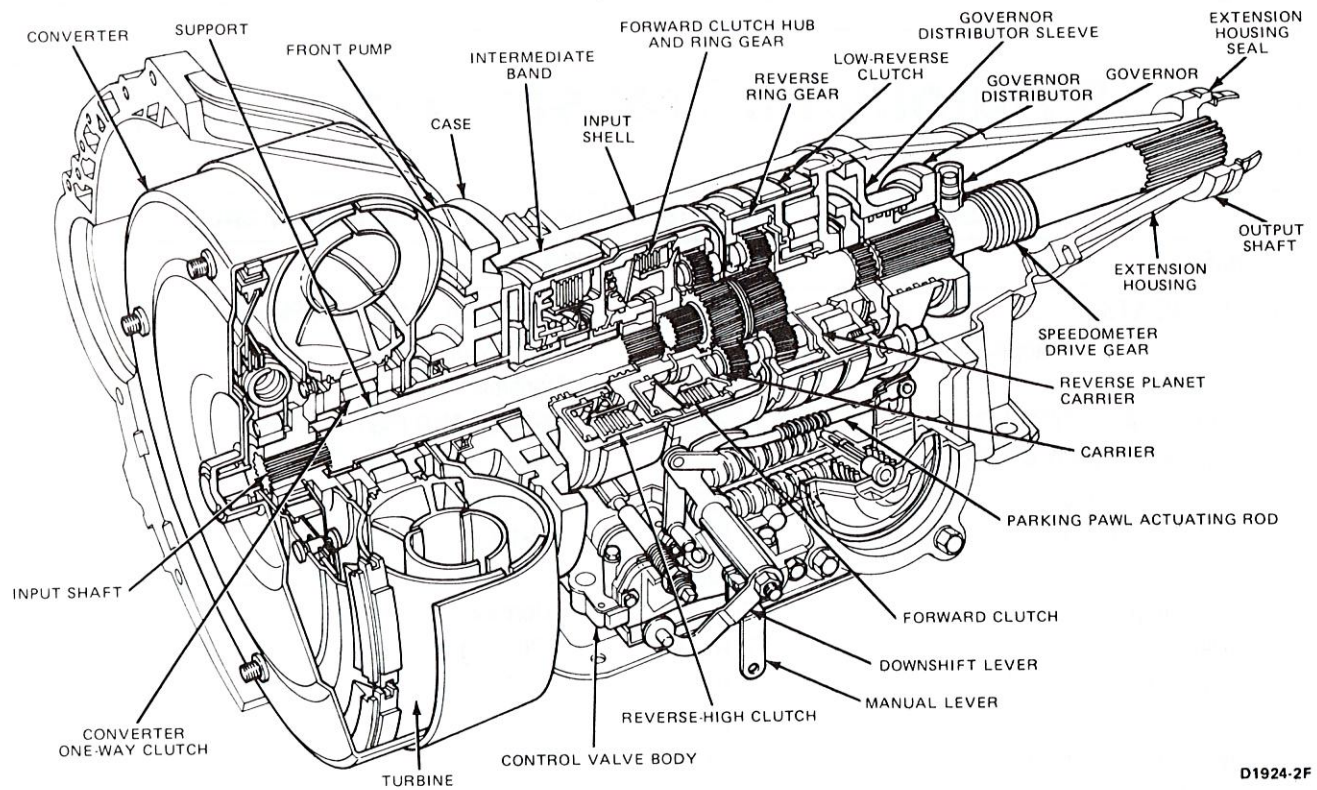
The C6 transmission is a three speed unit capable of providing automatic upshifts and downshifts through the three forward gear ratios. The transmission is also capable of providing manual selection of first and second gears.

Fig. 1 shows the location of the converter, front pump, clutches, gear train and most of the internal parts used in the C6 transmission. The identification tag (Fig. 2), attached to the intermediate servo (Fig. 5) lower front cover bolt, includes the model prefix, suffix and serial number. The first line on the tag shows the transmission model prefix and suffix. A number appearing after the suffix indicates that the internal parts in the transmission have been changed after initial production start-up. For example, a PGD-BN model

transmission that has been changed internally would read PGD-BN1. Both transmissions are basically the same, but some service parts in the PGN-BN transmission are slightly different than the PGD-BN1 transmission. **Therefore, it is important that the codes on the transmission identification tag be checked when ordering parts or making inquiries about the transmission.**

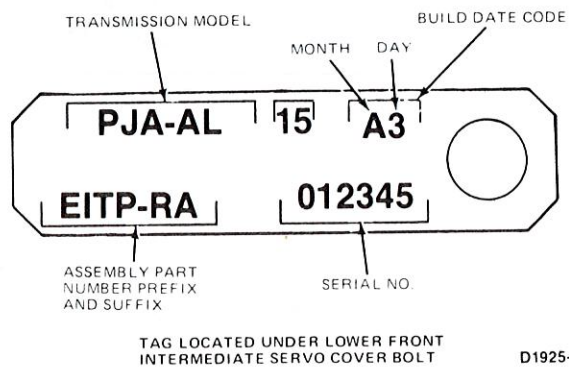
The hydraulic control system schematic is shown in Fig. 3. The converter housing and the fixed splines which engage the splined outside diameter of the low-reverse clutch steel plates, are both cast integrally into the case.

Only one (intermediate) band is used in the C6 transmission. This along with the forward clutch is used to obtain intermediate gear.



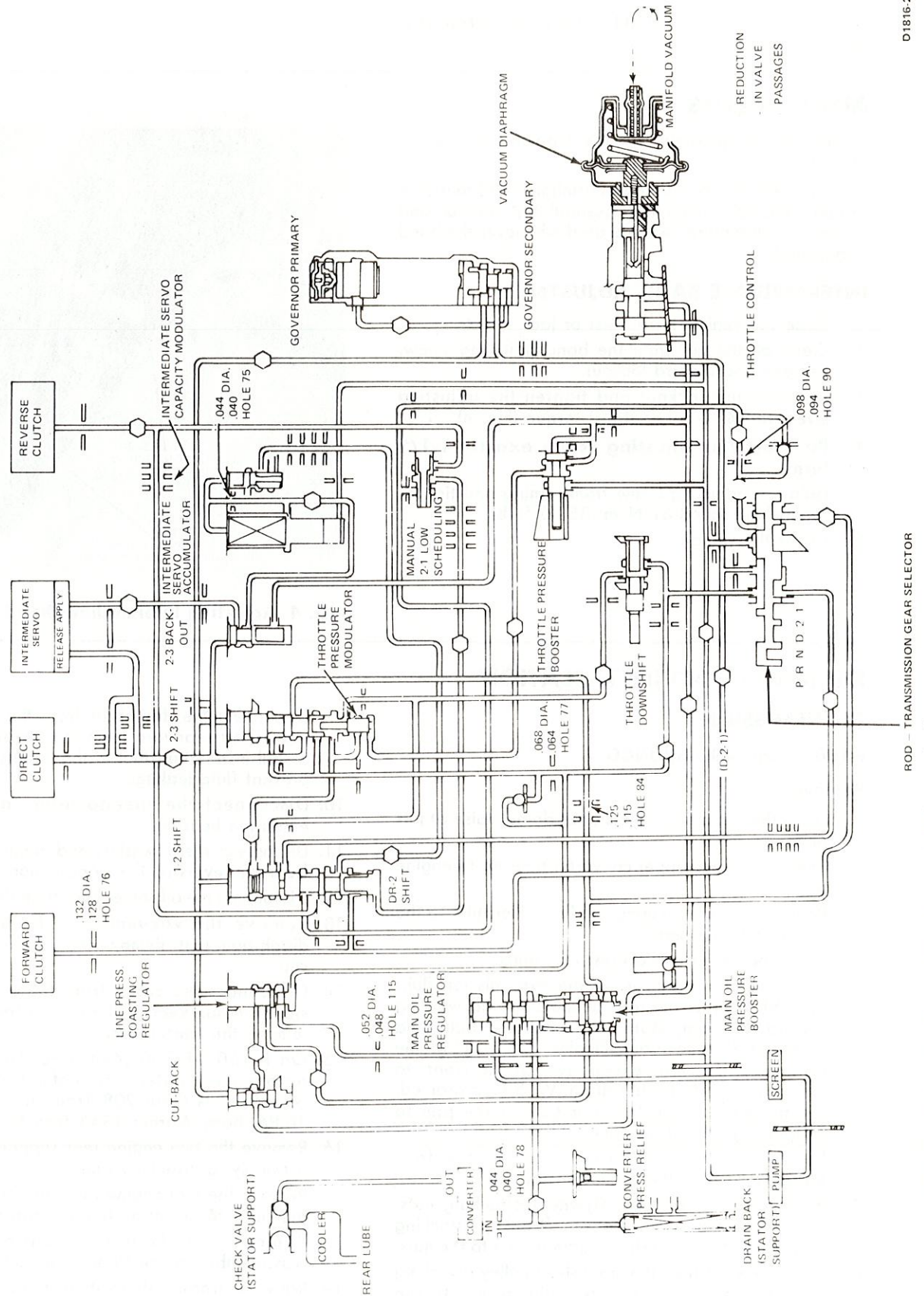
D1924-2F

FIG. 1 C-6 Automatic Transmission—Sectional



D1925-1M

FIG. 2 Identification Tag



ROD - TRANSMISSION GEAR SELECTOR

FIG. 3 Hydraulic Control System—C-6 Transmission

D1816-2K

DIAGNOSIS AND TESTING

Refer to Section 17-01, General Automatic Transmission Service.

ADJUSTMENTS

The only adjustment on the transmission is the intermediate band.

To prevent damage to the transmission and to assure proper band adjustment, it is essential that the tools and procedures described here are used whenever the band is adjusted.

INTERMEDIATE BAND ADJUSTMENT

1. Raise the vehicle on a hoist or jack stands.
2. Clean all the dirt from the band adjusting screw. Remove and discard locknut.
3. Install a new locknut and tighten the adjusting screw to 14 N·m (10 ft-lbs) torque (Fig. 4).
4. **Back off the adjusting screw exactly 1-1/2 turns.**
5. Hold the adjusting screw from turning and tighten the locknut to 48-61 N·m (35-40 ft-lbs).
6. Lower the vehicle.

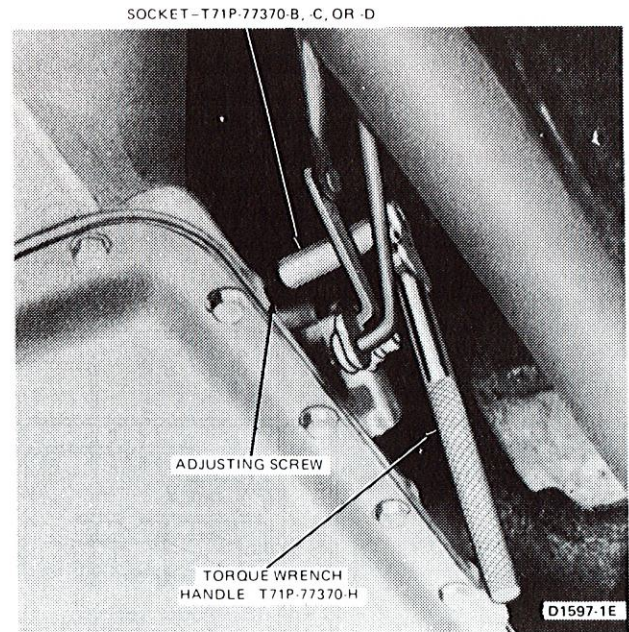


FIG. 4 Adjusting Intermediate Band

REMOVAL AND INSTALLATION

TRANSMISSION

F-150—F-350 AND BRONCO

Removal

1. Drive the vehicle on a hoist, but do not raise at this time.
2. Remove the two upper converter housing-to-engine bolts.
3. Remove the bolt securing the fluid filler tube to the engine cylinder head.
4. Raise the vehicle on a hoist or stands.
5. Place the drain pan under the transmission fluid pan. Starting at the rear of the pan and working toward the front, loosen the attaching bolts and allow the fluid to drain. Finally remove all of the pan attaching bolts except two at the front, to allow the fluid to further drain. With fluid drained, install two bolts on the rear side of the pan to temporarily hold it in place.
6. Remove the converter drain plug access cover from the lower end of the converter housing.
7. Remove the converter-to-flywheel attaching nuts. Place a wrench on the crankshaft pulley attaching bolt to turn the converter to gain access to the nuts.
8. With the wrench on the crankshaft pulley attaching bolt, turn the converter to gain access to the converter drain plug. Place a drain pan under the converter to catch the fluid and remove the plug. After the fluid has been drained, re-install the plug.
9. Disconnect the driveshaft from the rear axle and slide shaft rearward from the transmission. Install a seal installation tool in the extension housing to prevent fluid leakage.
10. Disconnect the speedometer cable from the extension housing.
11. Disconnect the downshift and manual linkage rods from the levers at the transmission.
12. Disconnect the oil cooler lines from the transmission.
13. Remove the vacuum hose from the vacuum diaphragm unit. Remove the vacuum line retaining clip.
14. Disconnect the cable from the terminal on the starter motor. Remove the three attaching bolts and remove the starter motor.
15. On F-150—F-350 (4x4) and Bronco vehicles, remove the transfer case. Refer to Section 16-82, New Process Gear 208 Transfer Case or Section 16-86, Borg Warner 1345 Transfer Case.
16. Remove the two engine rear support and insulator assembly-to-attaching bolts.
17. Remove the two engine rear support and insulator assembly-to-extension housing attaching bolts.
18. Remove the six bolts securing the No. 2 crossmember to the frame side rails.
19. Raise the transmission with a transmission jack and remove both crossmembers.
20. Secure the transmission to the jack with the safety chain.

21. Remove the remaining converter housing-to-engine attaching bolts.
22. Move the transmission away from the engine. Lower the jack and remove the converter and transmission assembly from under the vehicle.

Installation

1. Tighten the converter drain plug to 11-37 N·m (18-28 ft-lbs).
2. Position the converter on the transmission making sure the converter drive flats are fully engaged in the pump gear.
3. With the converter properly installed, place the transmission on the jack. Secure the transmission to the jack with the chain.
4. Rotate the converter until the studs and drain plug are in alignment with their holes in the flywheel.
5. Move the converter and transmission assembly forward into position, using care not to damage the flywheel and the converter pilot. **The converter must rest squarely against the flywheel. This indicates that the converter pilot is not binding in the engine crankshaft.**
6. Install and tighten the converter housing-to-engine attaching bolts to 55-67 N·m (40-50 ft-lbs).
7. Remove the transmission jack safety chain from around the transmission.
8. Position the No. 2 crossmember to the frame side rails. Install and tighten the attaching bolts to specifications as listed at the end of this Section.
9. Install transfer case on F-150—F-250 (4x4) and Bronco. Refer to Section 16-82, New Process Gear 208 Transfer Case or Section 16-86, Borg Warner 1345 Transfer Case.
10. Position the engine rear support and insulator assembly above the crossmember. Install the rear support and insulator assembly-to-extension housing mounting bolts and tighten the bolts to specifications as listed at the end of this Section.
11. Lower the transmission and remove the jack.
12. Secure the engine rear support and insulator assembly to the crossmember with the attaching bolts and tighten them to specifications as listed at the end of this Section.
13. Connect the vacuum line to the vacuum diaphragm making sure that the line is in the retaining clip.
14. Connect the oil cooler lines to the transmission.
15. Connect the downshift and manual linkage rods to their respective levers on the transmission. Refer to Section 17-02 Shift Control Linkage, Removal and Installation
16. Connect the speedometer cable to the extension housing.
17. Secure the starter motor in place with the attaching bolts. Connect the cable to the terminal on the starter.
18. Install a new O-ring on the lower end of the transmission filler tube and insert the tube in the case.
19. Secure the converter-to-flywheel attaching nuts and tighten them to 28-40 N·m (20-30 ft-lbs).
20. Install the converter housing access cover and secure it with the attaching bolts.
21. Connect the drive shaft.
22. Adjust the shift linkage as required. Refer to Section 17-02, Shift Control Linkage.
23. Lower the vehicle. Then install the two upper converter housing-to-engine bolts and tighten them to 55-67 N·m (40-50 ft-lbs).
24. Position the transmission fluid filler tube to the cylinder head and secure with the attaching bolt.
25. Make sure the drain pan is securely attached, and fill the transmission to the correct level with the specified fluid.

E-100—E-350

Removal

1. Working from inside the vehicle, remove the engine compartment cover.
2. Disconnect the neutral start switch wires at the plug connector.
3. If the vehicle is equipped with a V-8 engine, remove the flexhose from the air cleaner heat tube.
4. Remove the upper converter housing-to-engine attaching bolts (three bolts on 6-cylinder engine; four bolts on 8-cylinder engines).
5. Raise the vehicle on a hoist.
6. Place the drain pan under the transmission fluid pan. Starting at the rear of the pan and working toward the front, loosen the attaching bolts and allow the fluid to drain. Finally remove all of the pan attaching bolts except two at the front, to allow the fluid to further drain. With fluid drained, install two bolts on the rear side of the pan to temporarily hold it in place.
7. Remove the converter drain plug access cover from the lower end of the converter housing.
8. Remove the converter-to-flywheel attaching nuts. Place a wrench on the crankshaft pulley attaching bolt to turn the converter to gain access to the nuts.
9. With the wrench on the crankshaft pulley attaching bolt, turn the converter to gain access to the converter drain plug. Place a drain pan under the converter to catch the fluid. Then, remove the plug. With fluid drained, re-install the plug.
10. Disconnect the drive shaft.
11. Remove fluid filler tube.
12. Disconnect the starter cable at the starter. Remove the starter-to-converter housing attaching bolts and remove the starter.
13. Position the engine support bar (Tool T65E-6000-JO) to the frame and engine oil pan flanges.
14. Disconnect the cooler lines from the transmission. Disconnect the vacuum line from the vacuum diaphragm unit. Remove the vacuum line from the retaining clip at the transmission.
15. Remove the speedometer driven gear from the extension housing.
16. Disconnect the manual and downshift linkage rods from the transmission control levers.

17. Position a transmission jack to support the transmission. Install the safety chain to hold the transmission.
18. Remove the bolts and nuts securing the rear support and insulator assembly to the crossmember. Remove the six bolts retaining the crossmember to the side rails and remove the two support gussets. Raise the transmission with the jack and remove the crossmember.
19. Remove the bolt that retains the transmission filler tube to the cylinder block. Lift the filler tube and dipstick from the transmission.
20. Remove the remaining converter housing-to-engine attaching bolts. Lower the jack and remove the converter and transmission assembly from under the vehicle.
21. Remove the converter and mount the transmission in a holding fixture.

Installation

1. Tighten the converter drain plug to specification as listed at the end of this Section.
2. Position the converter on the transmission making sure the converter drive flats are fully engaged in the pump gear.
3. With the converter properly installed, place the transmission on the jack. Secure the transmission to the jack with the safety chain.
4. Rotate the converter until the studs and drain plug are in alignment with their holes in the flywheel.
5. Move the converter and transmission assembly forward into position, using care not to damage the flywheel and the converter pilot.

The converter must rest squarely against the flywheel. This indicates that the converter pilot is not binding in the engine crankshaft.

6. Install the lower converter housing-to-engine attaching bolts. Tighten the bolts to 55-67 N·m (40-50 ft-lbs). Install the converter-to-flywheel attaching nuts. Tighten the nuts to 28-40 N·m (20-30 ft-lbs).
7. Install the crossmember. Install the rear support and insulator assembly-to-crossmember attaching bolts and nuts. Tighten the bolts to specifications as listed at the end of this Section.
8. Remove the safety chain and remove the jack from under the vehicle. Remove the engine support bar.
9. Install a new O-ring on the lower end of the transmission filler tube and insert the tube and dipstick in the case.
10. Connect the vacuum line to the vacuum diaphragm making sure the line is secured in the retaining clip.
11. Connect the cooler lines to the transmission.
12. Install the speedometer driven gear into the extension housing. Tighten the attaching bolt to specifications as listed at the end of this Section.
13. Connect the transmission linkage rods to the transmission control levers. When making transmission control attachments new retaining ring and grommet should always be used (see Removal and Installation in Section 17-02, Shift Control Linkage). Note precautions necessary to prevent

grommet damage. Attach the shift rod to the steering column shift lever (refer to Fig. 2, Section 17-02, Shift Control Linkage). Align the flats of the adjusting stud with the flats of the rod slot and insert the stud through the rod. Assemble the adjusting stud nut and washer to a loose fit. Perform a linkage adjustment as outlined in Section 17-02, Shift Control Linkage.

14. Install the converter housing access cover and tighten the attaching bolts to 17-21 N·m (12-16 ft-lbs).
15. Position the starter into the converter housing and install the attaching bolts. Tighten the bolts to 55-67 N·m (40-50 ft-lbs). Install the starter cable.
16. Install the drive shaft.
17. Lower the vehicle.
18. Install the upper converter housing-to-engine attaching bolts. Tighten the bolts to specifications as listed at the end of this Section.
19. On V-8 engines, install the flex hose to the air cleaner heat tube. Install the bolt that retains the filler tube to the cylinder block.
20. Connect the neutral start switch wires at the plug connector.
21. Make sure the transmission fluid pan is securely attached, and fill the transmission to the proper level with the specified fluid.
22. Raise the vehicle and check for transmission fluid leakage. Lower the vehicle and adjust the downshift and manual linkage. Refer to Section 17-02, Shift Control Linkage.
23. Install the engine compartment cover.

CONTROL VALVE BODY

Refer to Figs. 12 and 22.

Removal

1. Raise the vehicle on a hoist or jack stands.
2. Place a drain pan under the transmission and loosen the bolts holding the transmission pan to drain the fluid from the transmission.
3. Remove the transmission pan attaching bolts from both sides and the rear to allow the fluid to drain further. Finally, remove the remainder of the attaching bolts. Remove the pan and gasket. Remove and discard the nylon shipping plug from the filler tube hole. This plug is used to retain transmission fluid within the transmission during shipment and should be discarded when the oil pan is removed.
4. Remove the valve body attaching bolts and remove the valve body from the case.

Installation

1. Position the valve body to the case making sure that the selector and downshift levers are engaged. Install and tighten the attaching bolts to 11-14 N·m (9.5-12.5 in-lbs).
2. Clean the transmission pan and gasket surfaces thoroughly.
3. Using a new pan gasket, install attaching bolts securing the pan to the transmission case. Tighten the attaching bolts to 10.5-17 N·m (8-12 ft-lbs).

4. Lower the vehicle and fill the transmission to the correct level with the specified fluid.

INTERMEDIATE SERVO

(Refer to Fig. 5.)

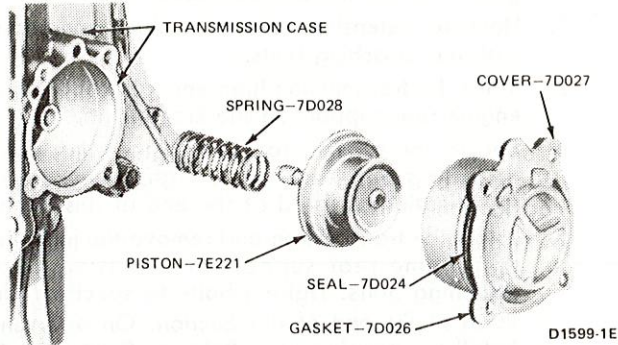


FIG. 5 Intermediate Servo Disassembled—Typical

Removal

1. Raise the vehicle on a hoist or stands.
2. Remove the bolts that secure the engine rear support is on the transmission extension rear support and insulator assembly to the crossmember.
3. Remove the two crossmember-to-frame attaching bolts, and the bolts attaching the gussets to the crossmember if so equipped.
4. Raise the transmission high enough to remove the weight from the crossmember and remove the crossmember.
5. Disconnect the muffler inlet pipe from the exhaust manifolds and allow the pipe to hang.
6. Place a drain pan under the servo. Remove the bolts that attach the servo cover to the transmission case.
7. Remove the cover, piston, spring and gasket from the case, screwing the band adjusting screw inward as the piston is removed. This places enough tension on the band to keep the struts properly engaged in the band end notches while the piston is removed.
8. Apply air pressure to the port in the servo cover to remove the piston and rod.
9. Replace the complete piston and rod assembly if the piston or piston sealing lips are damaged, (Fig. 5).
10. Remove the seal from the cover.

Installation

1. Dip the new seal in transmission fluid.
2. Install a new seal on the cover.
3. Coat new gasket with petroleum jelly, and position on the servo cover.
4. Dip the piston in transmission fluid and install it in the cover.
5. Position the servo spring on the piston rod.
6. Insert the servo piston and cover in the case and secure the cover to the case with the attaching bolts, taking care to back off the band adjusting

screw as the cover bolts are tightened. **Make sure that the service identification tag is in place.**

7. Connect the muffler inlet pipe to the exhaust manifolds.
8. Raise the transmission high enough to install the crossmember. Secure the crossmember to the rear support with the attaching bolts. Lower the transmission as required to install the crossmember to frame and gussets attaching bolts. Tighten the attaching bolts to specifications as listed at the end of this Section.
9. Remove the jack from the transmission. Adjust the band as detailed in the Adjustment portion of this Section.
10. Lower the vehicle and replenish the fluid as required. Refer to Section 17-01 General Automatic Transmission Service.

EXTENSION HOUSING BEARING OR BUSHING AND REAR SEAL

E-100—E-350, F-100—F-350 and Bronco

Removal

1. Raise the vehicle and disconnect the drive shaft at the transmission.
2. When only the rear seal needs replacing, carefully remove it with a tapered chisel or the tools shown in Fig. 6. Remove the bushing as shown in Fig. 7. **Use the bushing remover carefully so that the spline seal is not damaged.**

Installation

1. When installing a new bushing use the special tool shown in Fig. 8.

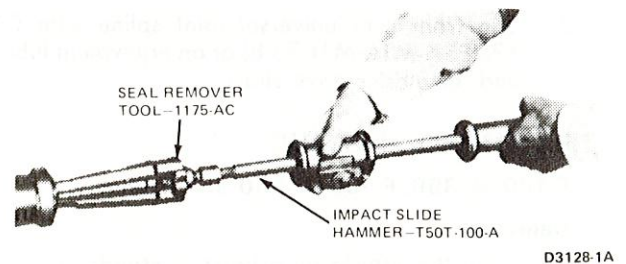


FIG. 6 Removing Extension Housing Seal

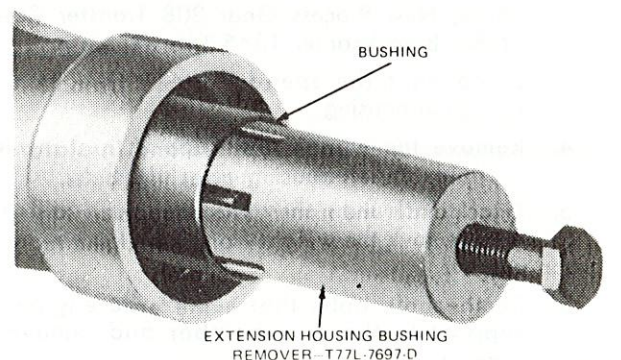
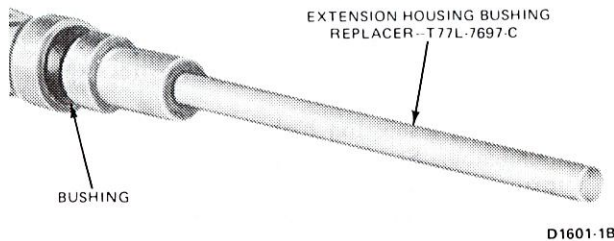
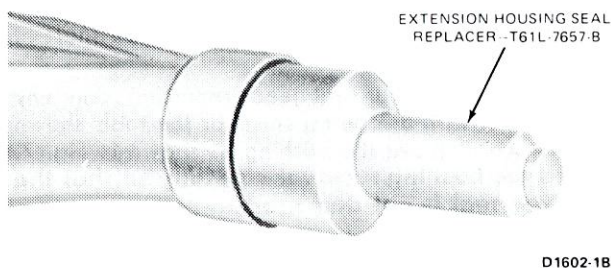


FIG. 7 Removing Extension Housing Bushing

**FIG. 8 Installing Extension Housing Bushing**

2. Before installing a new seal, inspect the sealing surface of the universal joint yoke for scores. If scores are found, replace the yoke.
3. Inspect the counterbore of the housing for burrs. Remove burrs with crocus cloth.
4. Install the seal into the housing with the tool shown in Fig. 9. The seal should be firmly seated in the bore. Coat the inside diameter of the end of the seal with C1AZ-19590-B (ESA-M1C75-B) or an equivalent lubricant.

**FIG. 9 Installing Extension Housing Seal**

5. Coat the front universal joint spline with C1AZ-19590-B (ESA-M1C75-B) or an equivalent lubricant and install the drive shaft.

EXTENSION HOUSING

E-100—E-350, F-100—F-350 and Bronco

Removal

1. Raise the vehicle on a hoist or stands.
2. Disconnect the drive shaft from the rear axle flange and remove it from the transmission. On 4x4 vehicles, remove the transfer case. Refer to Section 16-82, New Process Gear 208 Transfer Case or 16-86, Borg Warner 1345 Transfer Case.
3. Disconnect the speedometer cable from the extension housing.
4. Remove the engine rear support and insulator assembly-to-extension housing attaching bolts.
5. Place a jack under the transmission and raise it just enough to remove the weight from the engine rear support.
6. Remove the bolts that secure the engine rear support to the crossmember and remove the support.
7. Place a drain pan under the rear of the transmission case.

8. Lower the transmission and remove the extension housing attaching bolts. Slide the extension housing off the output shaft and allow the fluid to drain.

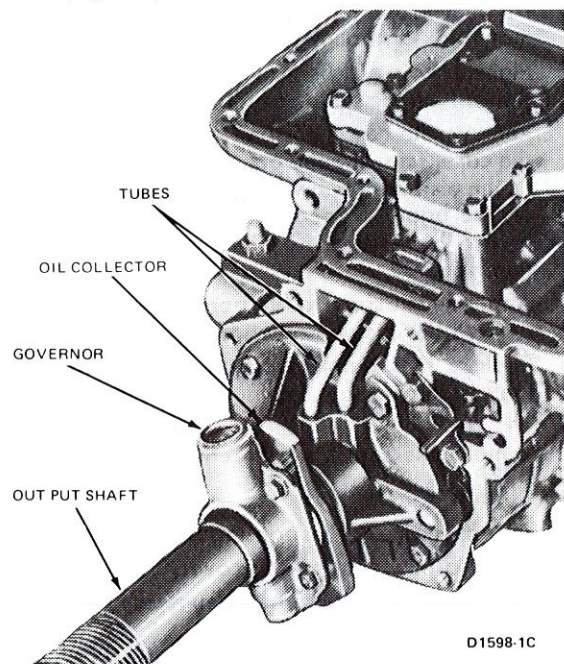
Installation

1. Clean the mounting surface on the transmission case and on the extension housing. Position a new gasket on the transmission case.
2. Hold the extension housing in place and secure it with the attaching bolts.
3. Raise the transmission high enough to position the engine rear support on the crossmember.
4. Secure the support to the crossmember with the attaching bolts and nuts. Tighten the bolts to specification as listed at the end of this Section.
5. Lower the transmission and remove the jack. Install the engine rear support-to-extension housing attaching bolts. Tighten bolts to specification as listed at the end of this Section. On 4x4 vehicles, install the transfer case. Refer to Section 16-82 or 16-86.
6. Secure the speedometer cable to the extension housing with the attaching bolt.
7. Install the drive shaft and lower the vehicle to the floor.
8. Fill the transmission to the correct level with the specified fluid.

GOVERNOR

Removal

1. Remove the extension housing as outlined in this section of the manual.
2. Remove the governor-to-oil-collector attaching bolts (Fig. 10).

**FIG. 10 Governor Installed**

3. Remove the governor from the flange.
4. Refer to the Disassembly and Assembly section of this Section for Governor repair operations.

Installation

1. Secure the governor (Fig. 10) to the oil collector flange with the attaching bolts. Tighten the bolts to 10.5-13.5 N·m (90-120 in.-lbs).
2. Re-install the extension housing as outlined in this Section.

DISASSEMBLY AND ASSEMBLY**TRANSMISSION**

Refer to Fig. 35.

Before removing any of the subassemblies, thoroughly clean the outside of the transmission to prevent dirt from entering the mechanical parts.

During the repair of the subassemblies, certain general instructions which apply to all units of the transmission must be followed. Following these instructions will avoid unnecessary repetition.

Handle all transmission parts carefully to avoid nicking or burring the bearing or mating surfaces. Lubricate all internal parts of the transmission with clean automatic transmission fluid before assembly.

Do not use any other lubricants except on gaskets and thrust washers. These may be coated with petroleum jelly to facilitate assembly. Always use new gaskets and seals when assembling a transmission. Refer to Section 17-01, General Automatic Transmission Service for Cleaning and Inspection Procedures.

Tighten all bolts and screws to the recommended torque as outlined in specifications at end of this Section.

Disassembly

1. Remove the converter, and mount the transmission in holding fixture T64L-6001-A, (Fig. 11).

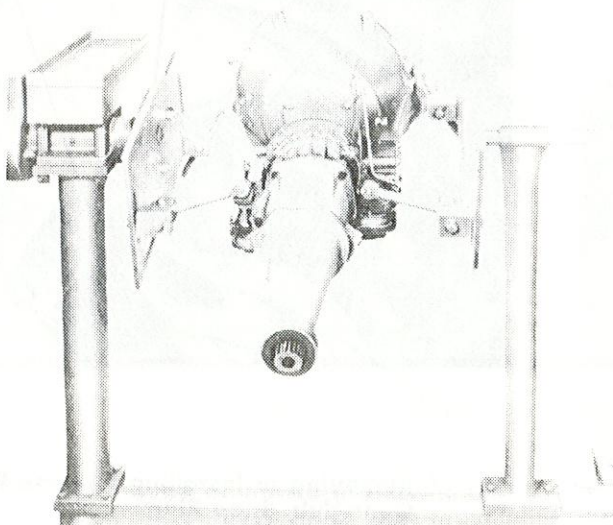


FIG. 11 Transmission Mounted in Holding Fixture

2. Remove the 17 fluid pan attaching bolts. Remove the pan and gasket.
3. Remove the eight valve body attaching bolts. Lift the valve body (Fig. 12) from the transmission case.

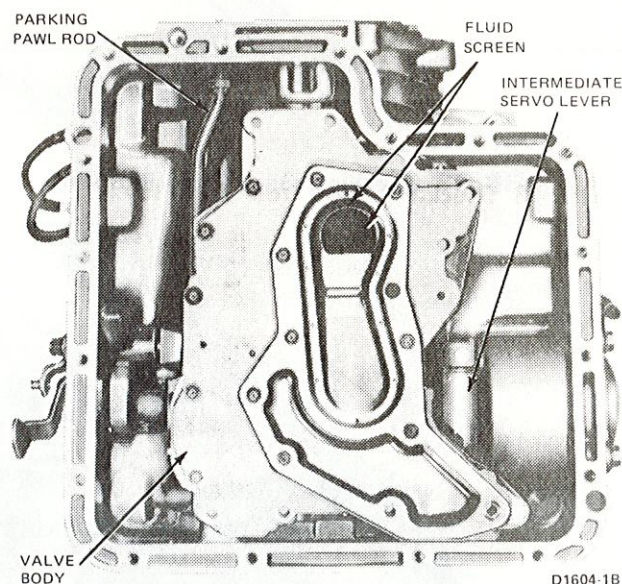


FIG. 12 Transmission With Pan Removed

4. Attach a dial indicator to the front pump as shown in Fig. 13. Install Tool T61L-7657-B in the extension housing to center the output shaft.
5. Pry the gear train to the rear of the case and at the same time, press the input shaft inward until it bottoms, (Fig. 13). Set the dial indicator to read zero.
6. Pry the gear train forward, (Fig. 13), and note the amount of gear train end play on the dial indicator. Record the end play to facilitate assembling the transmission. Remove the dial indicator from the pump and the tool from the extension housing.
7. Remove the vacuum diaphragm, rod and the primary throttle valve from the bore in the rear of the case. Slip the input shaft out of the front pump.
8. Remove the front pump attaching bolts. Pry the gear train forward as shown in Fig. 14 to remove the pump.
9. Loosen the band adjustment screw and remove the two struts.
10. Rotate the band 90 degrees counterclockwise to align the ends with the slot in the case (Fig. 15). Slide the band off the reverse-high clutch drum.
11. Remove the forward part of the gear train as an assembly as shown in Fig. 16.

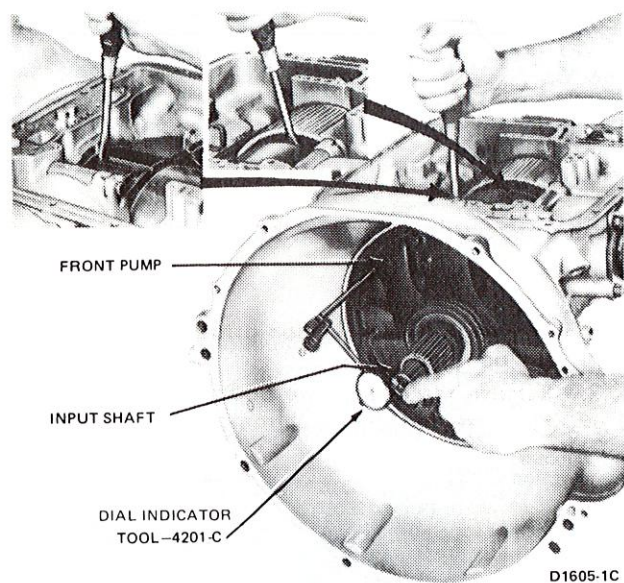


FIG. 13 Checking Gear Train End Play

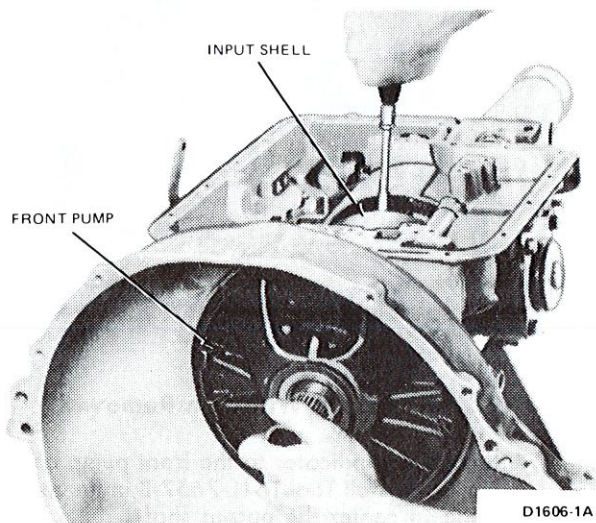


FIG. 14 Removing Front Pump

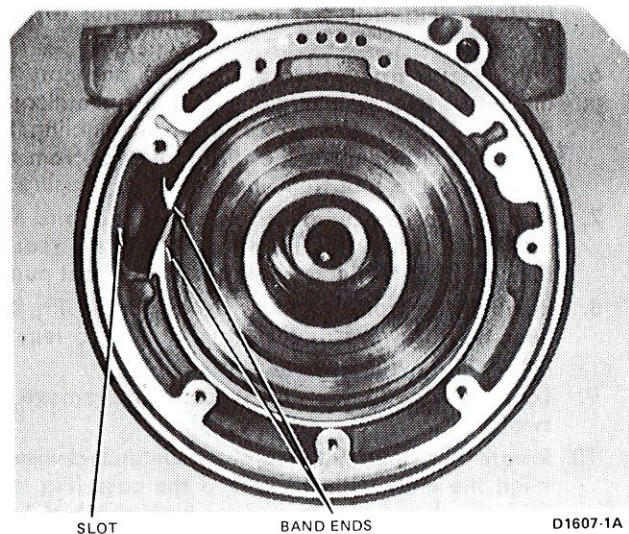


FIG. 15 Removing or Installing Band

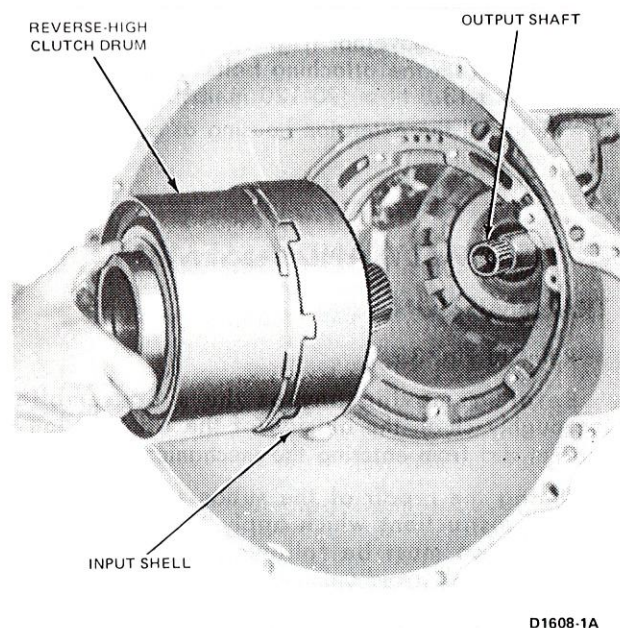


FIG. 16 Removing or Installing Forward Part of Gear Train

12. Remove the bolts that attach the servo cover to the transmission case.
13. Remove the cover, piston, spring and gasket from the case.
14. Remove the large snap ring that secures the reverse planet carrier in the low-reverse clutch hub. Lift the thrust washers and planet carrier from the drum.
15. Remove the snap ring, (Fig. 17), that secures the reverse ring gear and hub on the output shaft. Slide the ring gear and hub off the shaft. Remove the thrust washer.

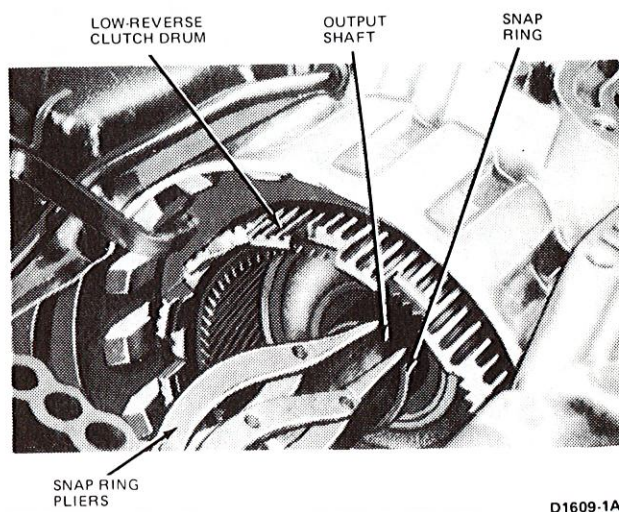


FIG. 17 Removing or Installing Reverse Ring Gear Hub, Snap Ring

16. Rotate the low-reverse clutch hub in a clockwise direction and at the same time, withdraw it from the case.

17. Remove the reverse clutch snap ring from the case, then remove the clutch discs, plates and pressure plate from the case.
18. Remove the extension housing attaching bolts and vent tube from the case. Remove the extension housing and gasket.
19. Slide the output shaft (with governor and oil collector) assembly from the transmission case.
20. Remove the distributor sleeve attaching bolts and remove the sleeve, parking pawl gear and the thrust washer.

If the thrust washer is staked in place, use a sharp chisel and cut off the metal from behind the thrust washer. Be sure to clean the rear of the case with air pressure or a suitable solvent to remove any metal particles.

21. Compress the reverse clutch piston release spring with Tool T65L-77515-A (Fig. 18). Remove the snap ring. Remove the tool and the springs and retainer assembly.

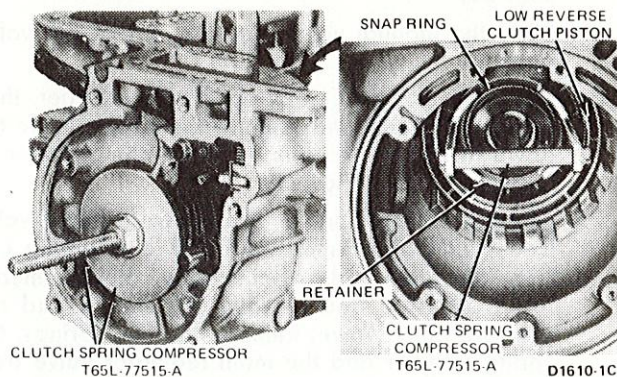


FIG. 18 Compressing Reverse Clutch Springs

22. Remove the one-way clutch inner race attaching bolts from the rear of the case. Remove the inner race from inside of the case.
23. Remove the low-reverse clutch piston from the case as shown in Fig. 19.

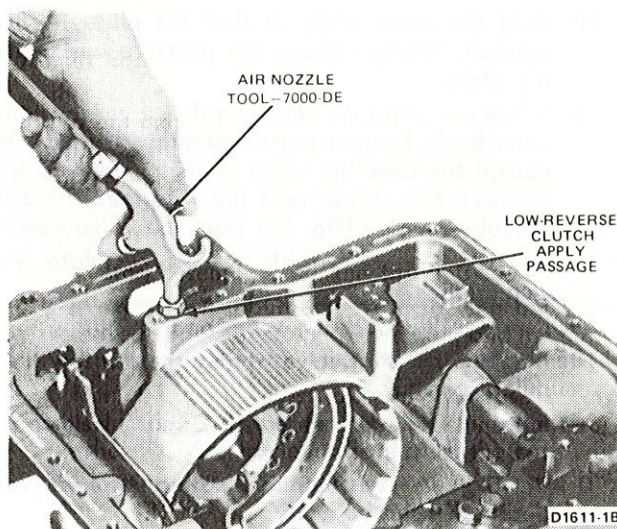


FIG. 19 Removing Low-Reverse Clutch Piston

Assembly

1. Place the transmission case in a holding fixture.
2. Tap the low-reverse piston into place in the case with a clean rubber hammer.
3. Hold the one-way clutch inner race in position and install the attaching bolts. Tighten bolts to 25-33 N·m (18-25 ft-lbs).
4. Install the low-reverse clutch return spring and retainer assembly in the clutch piston.
5. Position the retainer snap ring in place on the one-way clutch inner race.
6. Install the compressing tool shown in Fig. 18 and compress the springs just enough to install the low-reverse clutch piston snap ring.
7. Install the snap ring, then remove the compressing tool.
8. Place the transmission case on the bench with the front end facing downward.
9. Position the parking gear thrust washer and the gear on the case (Fig. 28). **Do not re-stake the thrust washer.**
10. Position the collector and tubes in place on the rear of the case. Install the attaching bolts and tighten to 17-21 N·m (12-16 ft-lbs).
11. Install the output shaft, and governor as an assembly.
12. Place a new gasket on the rear of the transmission case. Position the extension housing on the case and install the attaching bolts. Tighten the attaching bolts to 34-47 N·m (25-35 ft-lbs). Install the vent tube.
13. Place the transmission case in the holding fixture.
14. Coat two new gaskets with petroleum jelly and position them on the servo cover.
15. Position the servo spring on the piston rod.
16. Insert the servo piston rod in the case. Install the servo cover with the attaching bolts, making sure that the identification tag is in place. Tighten the attaching bolts to 19-27 N·m (14-20 ft-lbs).
17. Align the low-reverse clutch hub and one-way clutch with the inner race at the rear of the case. Rotate the low-reverse clutch hub clockwise while applying pressure to seat it on the inner race.
18. Install the low-reverse clutch plates, starting with the wave plate next to the piston and following with steel and friction plates alternately. Retain them with petroleum jelly. Five (5) steel and five (5) friction plates are required for all models. If new composition plates are being used, soak them in clean transmission fluid, (ESP-M2C138 CJ, Dexron II, Series D, or equivalent), for fifteen minutes before installation. Install the pressure plate and the snap ring. Test the operation of the low-reverse clutch by applying air pressure at the clutch pressure apply hole in the case.
19. Install the reverse planet ring gear thrust washer and the ring gear and hub assembly. Insert the snap ring in the groove in the output shaft.
20. Assemble the front and rear thrust washers onto the reverse planet assembly; retain with petroleum jelly. Insert the assembly into the ring gear and install the snap ring.

21. Set the reverse-high clutch on the bench, with the front end facing down. Install the thrust washer on the rear end of the reverse-high clutch assembly. Retain the thrust washer with petroleum jelly and insert the splined end of forward clutch into the open end of the reverse-high clutch with splines engaging the direct clutch friction plates (Fig. 37).
22. Install the thrust washers and retain them with petroleum jelly, on the front end of the forward planet ring gear and hub. Insert the ring gear into the forward clutch.
23. Install the thrust washer on the front end of the forward planet assembly. Retain the washer with petroleum jelly and insert the assembly into the ring gear. Install the input shell and sun gear assembly.
24. Install the reverse-high clutch, forward clutch, forward planet assembly and drive input shell, and sun gear as an assembly into the transmission case.
25. Insert the intermediate band into the case around the reverse-high clutch cylinder. Install the struts and tighten the band adjusting screw sufficiently to retain the band.
26. Place a selective thickness bronze thrust washer on the rear shoulder of the stator support and retain it with petroleum jelly. If the end play was not within specification when checked prior to disassembly, replace the washer with one of proper thickness. Refer to specifications at the end of this Section for selective thrust washer thicknesses.

Using two 5/16-inch bolts three inches long, make two alignment studs. Cut the heads from the bolts and grind a taper on the cut end. Temporarily install the two studs opposite each other in the mounting holes of the case. Slide a new gasket onto the studs. Position pump on case, being careful not to damage the large seal on the outside diameter of the pump housing, (removing the aligning studs).

Install six of the seven mounting bolts and tighten to 22-40 N·m (16-30 ft-lbs).

27. Adjust the intermediate band as detailed under Adjustments and install the input shaft with the long splined end inserted into the forward clutch assembly.
28. Install Tool 4201-C at the seventh pump mounting bolt (Fig. 13) and check the transmission end play as in steps 4, 5 and 6 of Disassembly. (See specifications at the end of this Section.) Remove the tool.

Install the seventh pump mounting bolt and tighten to 22-40 N·m (16-30 ft-lbs).

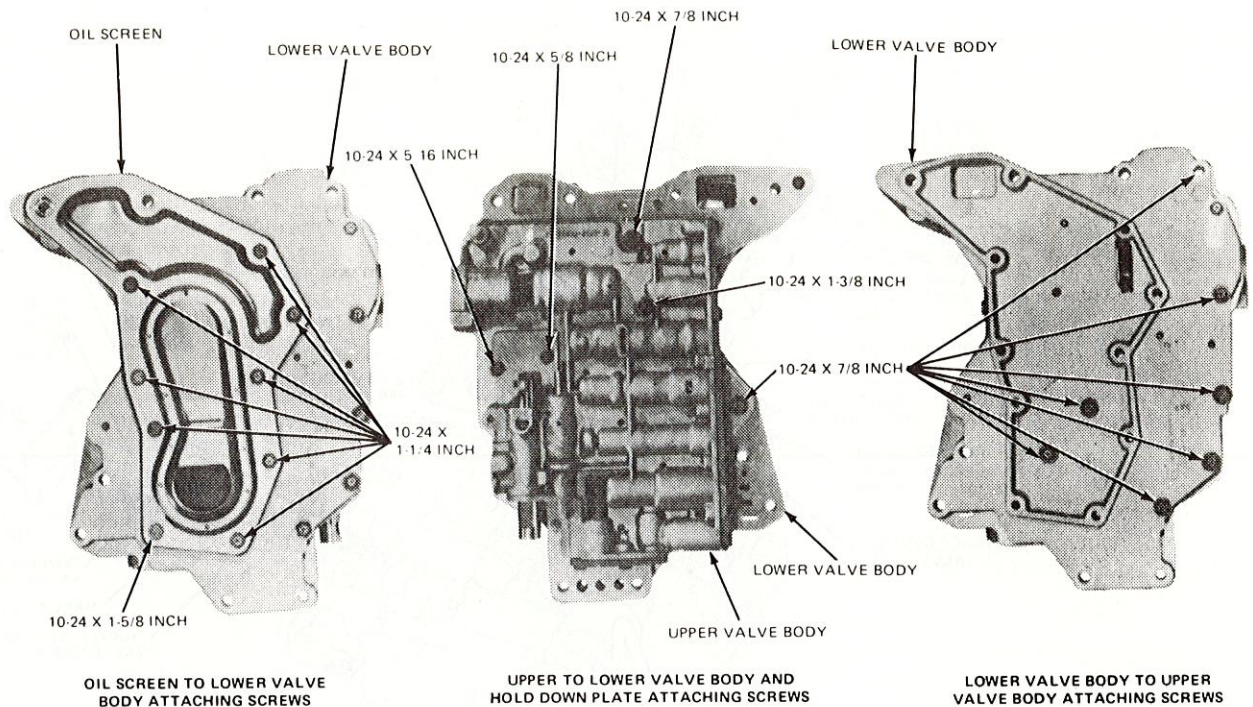
29. Install the main control on the case, making sure that the levers engage the valves properly and tighten the attaching bolts to 11-14 N·m (9-12 in.-lbs). Install the primary throttle valve, rod, and the vacuum diaphragm in the case. Tighten the diaphragm attaching bolt to 17-21 N·m (12-16 ft-lbs).
30. Install a new pan gasket and the pan. Tighten the bolts to 10.5-17 N·m (8-12 ft-lbs).
31. Install the converter assembly.
32. Install the transmission in the vehicle as detailed under Removal and Installation.

CONTROL VALVE BODY

Disassembly

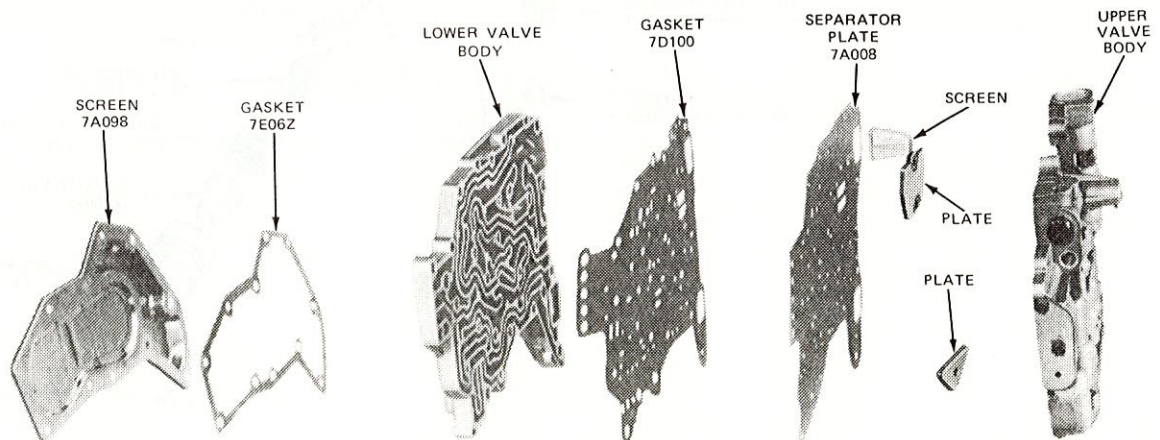
The valve body-to-screen gasket should not be cleaned in a degreaser solvent or any type of detergent solution when disassembling the main control. To clean the gasket, wipe it off with a lint-free cloth.

1. Remove the nine screws that attach the screen to the lower valve body (Fig. 20) and remove screen and gasket (Fig. 21).
2. Remove the five upper-to-lower valve body and hold-down plate attaching screws. Remove the seven attaching screws from the underside of the lower valve body (Fig. 20).
3. Separate the bodies and remove the separator plate and gasket. **Be careful not to lose the check valves and springs.** Remove and clean the separator plate screen if necessary (Fig. 21).
4. Remove the manual valve plunger retaining pin from the upper valve body and remove the plunger (Fig. 22).
5. Slide the manual valve (Fig. 22) out of the valve body.
6. Cover the downshift valve port with a finger, then working from the underside of the body remove the downshift valve retainer. Remove the spring and downshift valve (Fig. 22).
7. Apply hand pressure on the pressure boost valve sleeve end and remove the sleeve retaining clip from the under side of the body. Slowly release hand pressure and remove the sleeve and the pressure boost valve. Remove the two springs, the spring retainer and the main regulator valve from the bore.
8. Apply pressure on the throttle boost valve retaining plate and remove the two attaching screws. Slowly release the pressure and remove plate, throttle pressure boost valve and spring, and the manual low 2-1 scheduling valve and spring from the body (Fig. 22).
9. Apply pressure on the remaining valve retaining plate and remove the eight attaching screws.
10. Hold the valve body so that the plate is facing upward. Slowly release the pressure and remove the plate.
11. When removing the various valves from the control valve body, keep all ports covered with your fingers except the bore the valve is being removed from. Remove the spring and the intermediate servo modulator valve (Fig. 22) from the valve body.
12. Remove the intermediate servo accumulator valve and springs.
13. Remove the 2-3 back-out valve and spring.
14. Remove the 2-3 shift valve, spring and the throttle modulator valve.
15. Remove the 1-2 shift valve, DR-2 shift valve and the spring from the valve body.
16. Remove the line pressure coasting regulator valve, (Fig. 22) from the body.
17. Remove the cutback control valve to complete the disassembly of the control valve.



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FIG. 20 Control Valve Body and Screen Attaching Screws

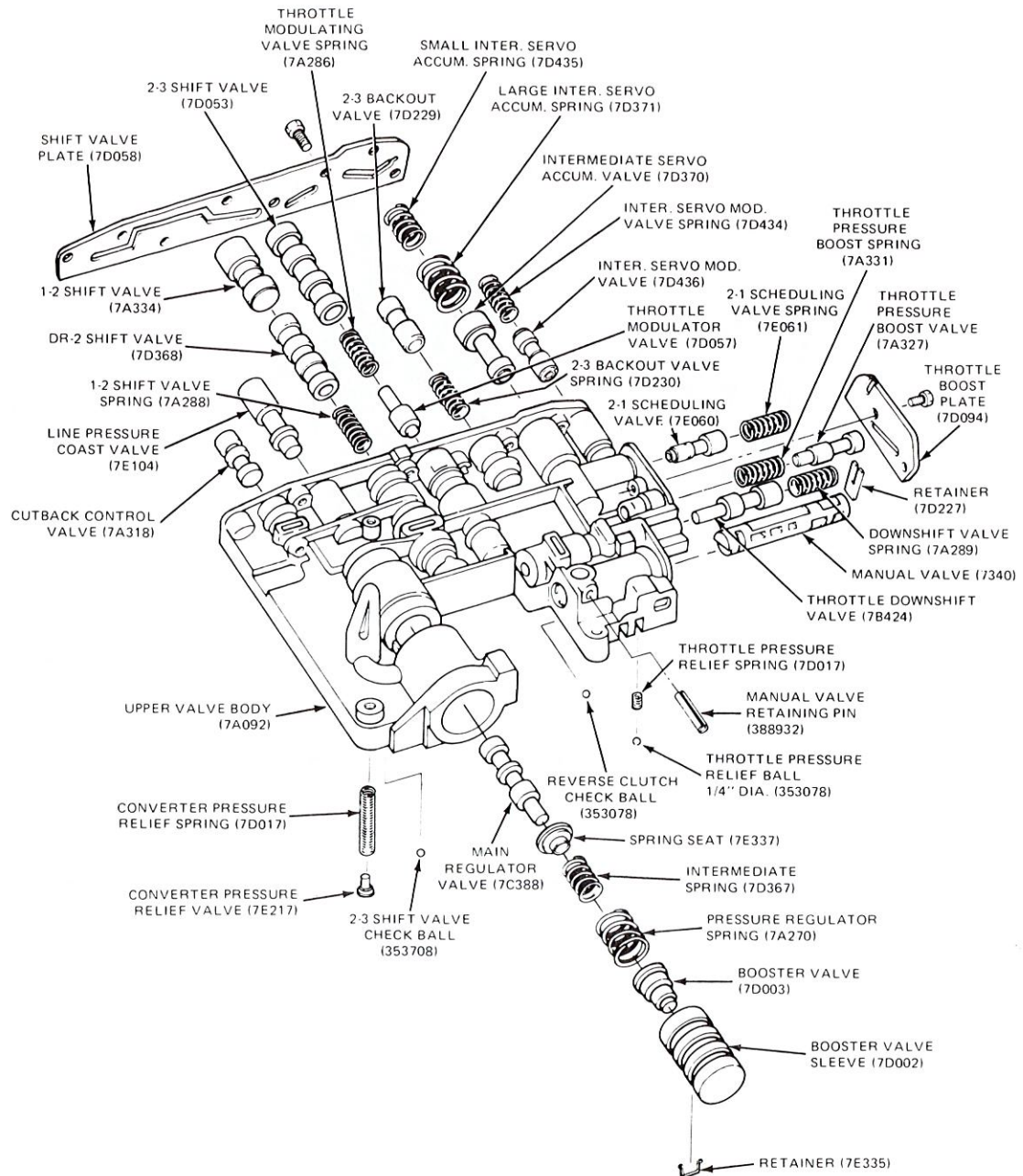


D1616-2C

FIG. 21 Upper and Lower Valve Bodies Disassembled

Assembly

1. Place the downshift valve and spring in the valve body. Compress the spring and install the retainer from the underside of the body (Fig. 23).
2. Place the valve body on a clean surface with the passage side facing up. Place the converter relief valve spring in its bore (Fig. 23). Coat the converter pressure relief valve with petroleum jelly and place it on top of the spring. Place the 2-3 shift valve check ball in its cavity. Place the throttle pressure relief valve spring in its bore (Fig. 23). Coat the throttle pressure relief valve check ball with petroleum jelly and place it on top of the spring.
3. Install the separator screen in the separator plate if it was previously removed. **Be sure the screen tabs are flush with the separator plate surface.** Carefully position the separator plate and new gasket on the lower valve body. Place the two hold-down plates on the separator plate and install the attaching screws finger tight.
4. Place the lower body and plate assembly on the upper valve body (Fig. 20) and install the attaching screws finger tight.
5. Install the oil screen screws loosely, without the screen, to properly align the upper and lower valve bodies, gasket and separator plate.



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FIG. 22 Upper Valve Body Disassembled

6. Tighten the two bolts that are covered by the screen to 5.0-6.2 N·m (40-55 in.-lbs).
7. Remove the oil screen attaching screws and place the gasket and oil screen in position on the lower valve body. Re-install the screen attaching screws (Fig. 20).
8. Tighten all the valve body and screen attaching screws to 5.0-6.2 N·m (40-55 in.-lbs).

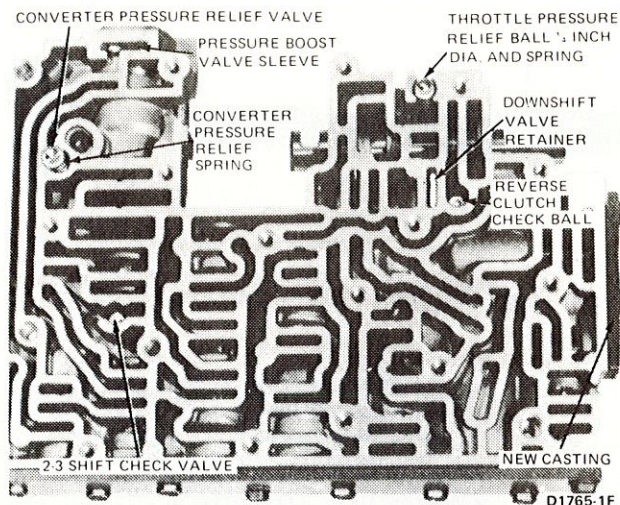


FIG. 23 Converter Pressure Relief Valve, Throttle Pressure Relief Valve, and 2-3 Shift Check Valve Locations

9. Place the cutback control valve (Fig. 22) and the line pressure coasting regulator valve in the valve body.
10. Place the one spring, DR-2 shift valve and the 1-2 shift valve in the body.
11. Place the throttle modulator valve and spring and the 2-3 shift valve in the valve body.
12. Place the spring and the 2-3 backout valve in the valve body.
13. Place the two springs and the intermediate servo accumulator valve in the valve body.
14. Place the intermediate servo modulator valve and spring in the body.
15. Carefully place the valve retaining plate on the body and secure it with the eight attaching screws. Tighten the screws to 2.5-5.0 N·m (20-45 in.-lbs).
16. Place the throttle pressure boost valve and spring in the valve body. Place the manual low 2-1 scheduling valve and spring in the valve body and install the retaining plate. Tighten the attaching screws to 2.5-5.0 N·m (20-45 in.-lbs).
17. Place the spring retainer on the stem of the main regulator valve so that the retainer flange is next to the valve shoulder. Place the main regulator valve, spring retainer, two springs, pressure boost valve and sleeve in the bore. Apply hand pressure on the end of the pressure boost valve sleeve and install the spring clip retainer in the groove on the under side of the body so that the clip is inserted into the end groove in the sleeve. Be sure that the pressure boost valve sleeve is free in its bore.
18. Place the manual valve in the valve body and install the plunger and the retaining pin in the body.

INTERMEDIATE SERVO

(Refer to Fig. 5.)

Disassembly

1. Apply air pressure to the port in the servo cover to remove the piston and rod.

2. Replace the complete piston and rod assembly if the piston or piston sealing lips are unserviceable or damaged.
3. Remove the seals from the cover.

Assembly

1. Dip the new seals in transmission fluid.
2. Install new seals on the cover.
3. Dip the piston in transmission fluid and install it in the cover.

GOVERNOR

Disassembly

1. Remove the governor attaching bolts and remove the governor.
2. Remove the snap ring that secures the governor oil collector body on the output shaft (Fig. 24) and slide it off the front of the shaft.
3. Remove the seal rings from the oil collector body,

Assembly

1. Carefully install new seal rings on the oil collector body.
2. Working from the front end of the output shaft, slide the governor oil collector body into place on the shaft. Install the snap ring to secure it. Make sure that the snap ring is seated in the groove.
3. Position the governor on the oil collector body (Fig. 24) and secure with the attaching screws. Tighten screws to 10.5-13.5 N·m (90-120 in.-lbs).

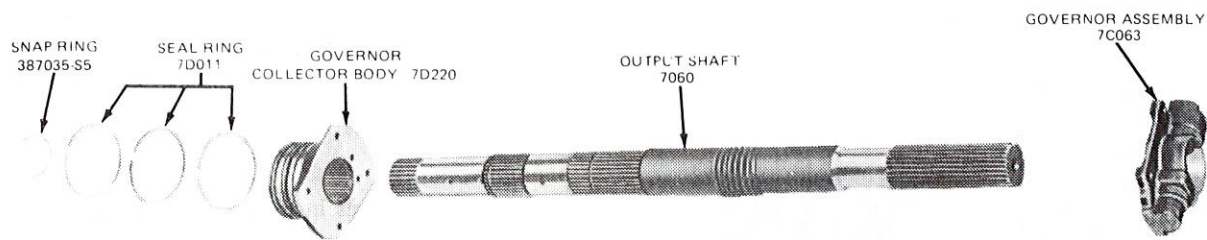
DOWNSHIFT AND MANUAL LINKAGE

Disassembly

1. Remove the nut and lockwasher that secures the outer downshift lever to the transmission and remove the lever.
2. Slide the inner downshift lever assembly out from the inside of the case (Fig. 25). Remove the seal from the recess in the manual lever shaft.
3. On E-100—E-350, remove the two bolts retaining the backup lamp switch, and remove the switch, (Fig. 26).
4. Remove the C-ring securing the parking pawl actuating rod to the manual lever. Remove the rod from the case.
5. Remove the nut securing the inner manual lever to the shaft. Remove the inner lever from the shaft. Slide the outer lever and shaft from the case.
6. Remove the seal from the case with Tools T59L-100-B, Slide Hammer and T58L-101-A, Puller Attachment.

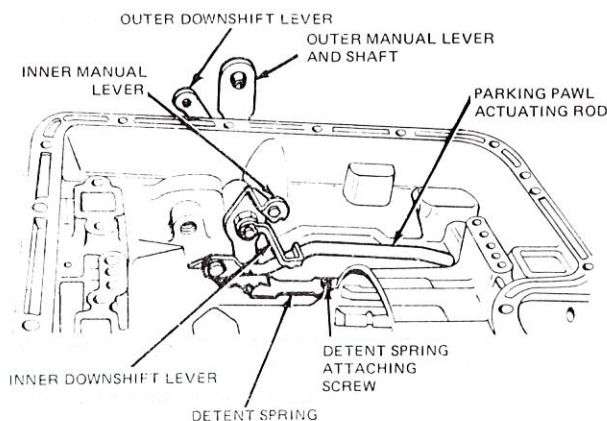
Assembly

1. Dip the new seal in transmission fluid and install it in the case as shown in Fig. 27.
2. Slide the outer manual lever and shaft in the transmission case.
3. Position the inner lever on the shaft, making sure the leaf spring roller is positioned in the inner manual lever detent. Install the attaching nut. Tighten the nut to 41-54 N·m (30-40 ft.-lbs). Install



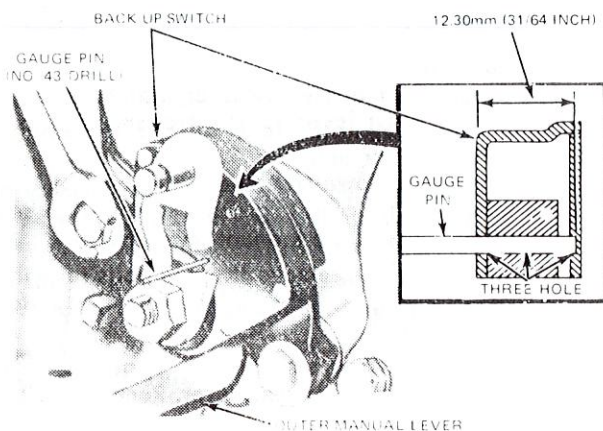
D1623-2D

FIG. 24 Output Shaft Disassembled



D2330-1B

FIG. 25 Downshift and Manual Linkage

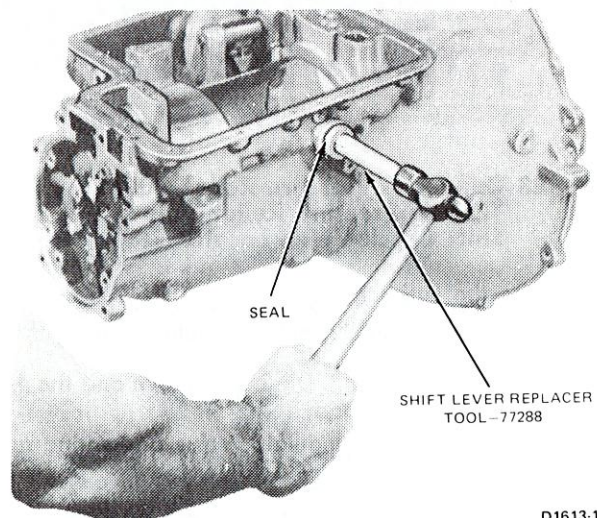


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FIG. 26 Downshift Linkage

the parking pawl actuating rod and secure it to the inner manual lever with a C-ring.

4. On E-100—E-350 slide the backup lamp switch on the outer lever shaft and install the bolts in the case.
5. With the transmission manual lever in neutral, rotate the switch and install the gauge pin (No. 43 drill) into the gauge pin hole (Fig. 26). Tighten the bolts to 6.5-8.0 N·m (55-75 in.-lbs).
6. Install a new downshift lever seal in the recess of the outer lever shaft. Slide the downshift lever and shaft into position.



D1613-1B

FIG. 27 Installing Manual Lever Seal

7. Place the outer downshift lever on the shaft and secure it with a lockwasher and nut. Tighten nut to 17-21 N·m (12-16 ft-lbs).

PARKING PAWL LINKAGE

Disassembly

1. Remove the bolts securing the parking pawl guide plate to the case (Fig. 28). Remove the plate.
2. Remove the spring, parking pawl and shaft from the case.
3. Working from the pan mounting surface, drill a 1/8 inch diameter hole through the center of the cupped plug. Pull the plug from the case with a wire hook.
4. Unhook the end of the spring from the park plate slot to relieve the tension.
5. Thread a 1/4-20 inch or 8-32 x 1-1/4 inch screw (Fig. 29) into the park plate shaft. Pull the shaft from the case with the screw. Remove the spring and park plate.

Assembly

1. Position the spring and park plate in the case and install the shaft. Place the end of the spring into the slot of the park plate.
2. Install a new cupped plug to retain the shaft.
3. Install the parking pawl shaft in the case. Slip the parking pawl and spring into place on the shaft.

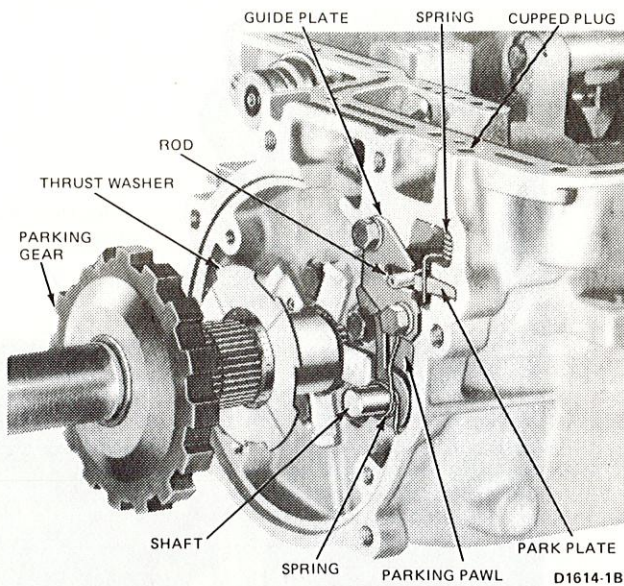


FIG. 28 Parking Pawl Mechanism

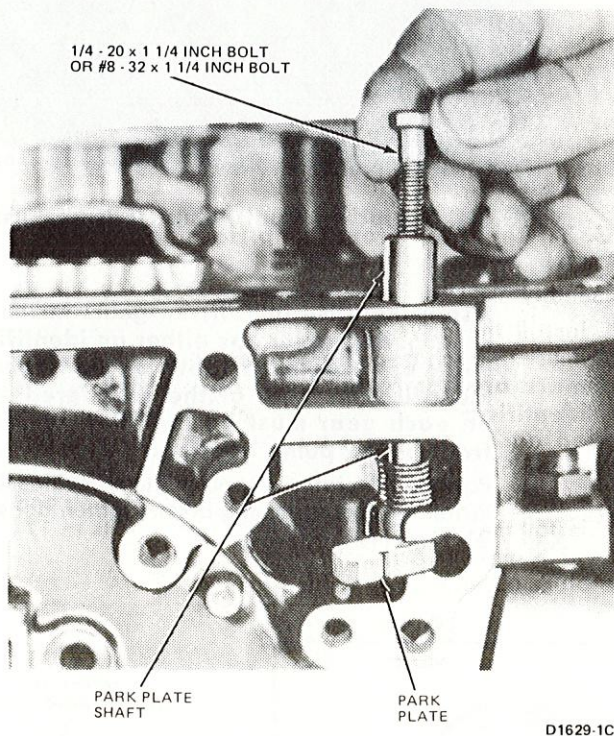


FIG. 29 Removing Park Plate

- Position the guide plate on the case, making sure that the actuating rod is seated in the slot of the plate. Secure the plate with two bolts and lockwashers. Tighten bolts to 17-21 N·m (12-16 ft-lbs).

SERVO APPLY LEVER

Disassembly

- Working from inside of the transmission case, carefully drive on the servo apply lever shaft to remove the cup plug. The shaft (Fig. 30) can be withdrawn from the case by hand.

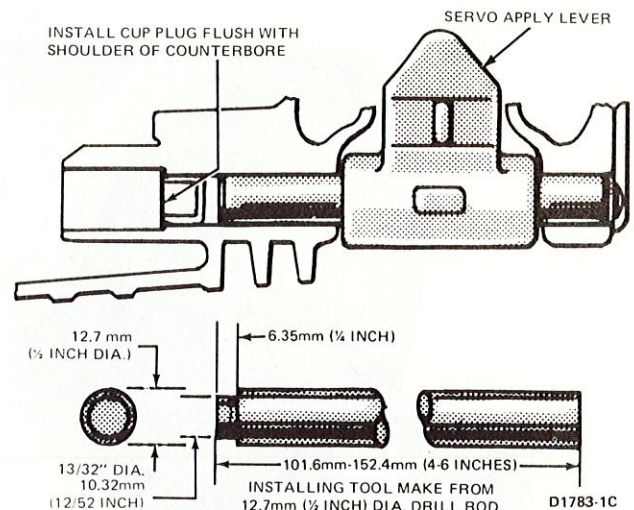


FIG. 30 Servo Apply Lever Installation

Assembly

- Hold the servo apply lever in position and install the new shaft.
- Using the fabricated tool shown in Fig. 30, drive the cup plug into position in the case. Be sure the plug is flush with the shoulder of the counterbore. The cup plug may be coated with Loctite, Part No. E0AZ-19554-A or equivalent, before installation.

FRONT PUMP

The front seal can be replaced after the pump has been installed on the transmission (Figs. 31 and 32).

Disassembly

- Remove the two seal rings and the selective thrust washer (Fig. 33).
- Remove the large square-cut seal from the outside diameter of the pump housing.

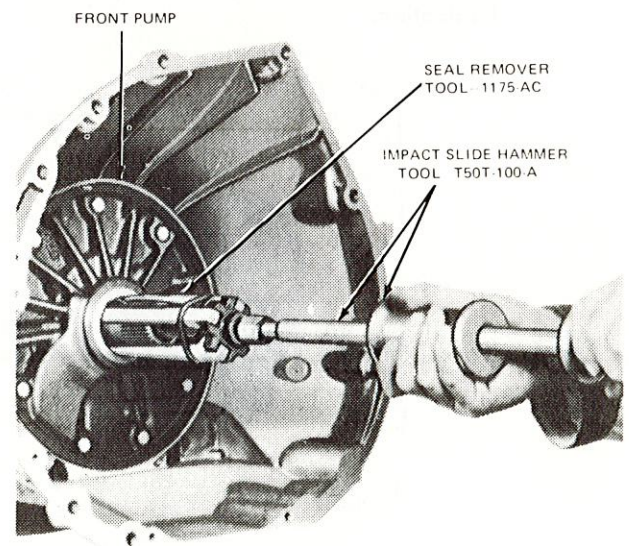


FIG. 31 Removing Front Pump Seal

D1636-1E

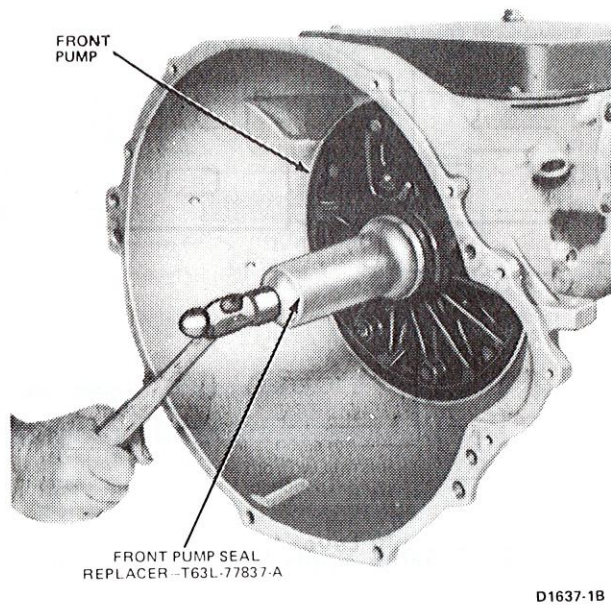


FIG. 32 Installing Front Pump Seal

3. Remove the five bolts that secure the stator support to the pump housing. Lift the support from the housing.
4. Remove the drive and the driven gear from the housing.
5. If the pump housing bushing is worn or damaged, replace it using the handle and tool shown in Fig. 34.

Place the new bushing in position, making sure the half moon slot in the bushing is on top and in line with the oil lube hole near the seal bore. Press the bushing in 1.52-2.03mm (0.060-0.080 inch) below the front face of the bushing bore. Use Tool T66L-7003-B9 and handle to seat the bushing properly. After assembly, the half moon slot must be in past the lube hole to provide proper lubrication.

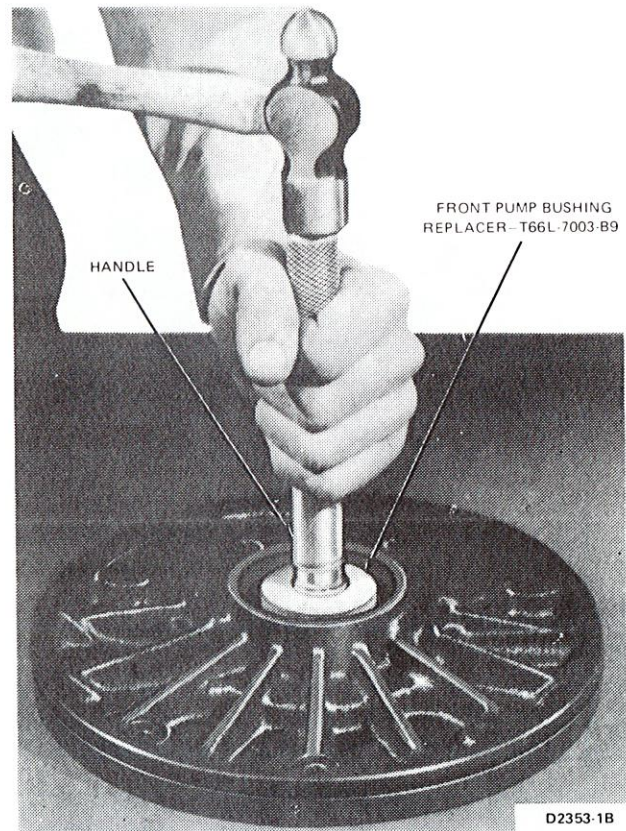


FIG. 34 Replacing Front Pump Housing Bushing

Assembly

1. Install the drive and driven gears in the pump housing. **Each gear has either an identification mark or chamfered teeth on one face. The identification mark or the chamfered surface on each gear must be installed toward the front of the pump housing.**
2. Position the stator support in the pump housing and install the five attaching bolts. Tighten bolts to 17-21 N·m (12-16 ft-lbs).

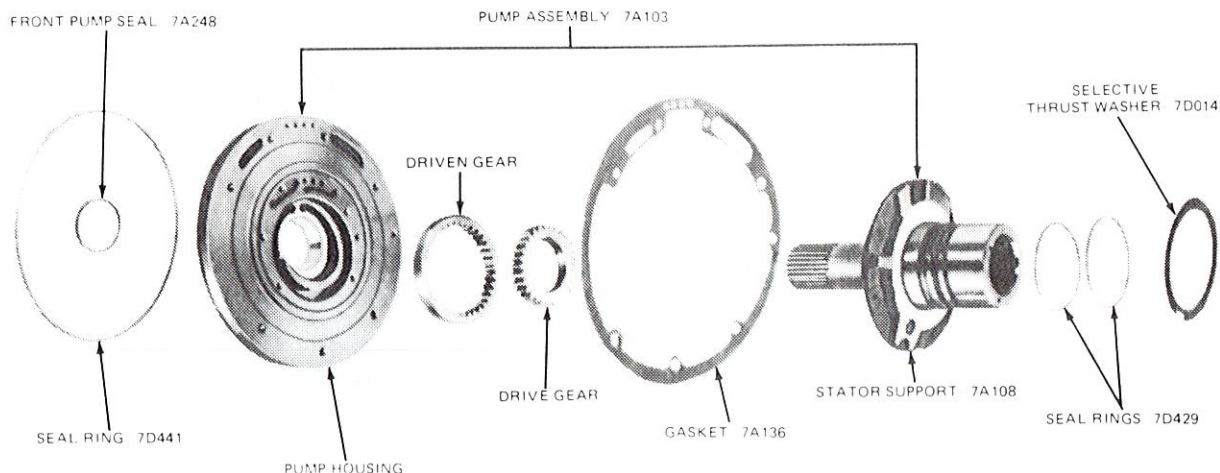


FIG. 33 Front Pump Disassembled

D3137-2A

3. Carefully install two new seal rings on the stator support. Make sure that the ends of the rings are engaged to lock them in place. Install a new square-cut seal on the outside diameter of the pump housing.
4. Install the selective thrust washer. **Make sure that the correct thickness selective washer is being used to obtain the specified end play.** Refer to Specifications at end of this Section.
5. Place the pump on the converter, making sure that the drive gear engages the converter hub. Rotate the pump to make sure that the gears rotate freely.

REVERSE-HIGH CLUTCH

Disassembly

1. Separate the drive train as shown in Fig. 35. Remove the pressure plate snap ring as shown in Fig. 36.
2. Remove the pressure plate and the drive and driven (internal and external spline) clutch plates (Fig. 37).
3. Install Clutch Spring Compressor, Tool T65L-77515-A (Fig. 38) on the reverse-high clutch drum. Make sure that the legs clear the snap ring enough to remove it. Remove both snap rings and remove the tool.
4. Remove the spring retainer and the piston return springs.
5. Apply air pressure to the piston apply hole in the clutch hub (Fig. 39) and remove the piston.
6. Remove the piston outer seal from the piston and the inner seal from the clutch drum (Fig. 37).
7. Remove the front and rear bushings from the clutch drum if they are worn or damaged. To remove the front bushing, use a cape chisel and cut along the bushing seam until the chisel breaks through the bushing wall. Pry the loose ends of the bushing up with an awl and remove the bushing. To remove the rear bushing, use the tool shown in Fig. 40, and press the bushing from the drum.

Assembly

1. If the clutch drum bushings were removed, position the drum in a press and press new bushings into the drum with the tools shown in Figs. 40 and 41.
2. Dip the new seals in transmission fluid and install one on the drum and one on the piston.
3. Install the piston in the clutch drum.
4. Position the piston return springs in the piston sockets (Fig. 42). Place the spring retainer on the springs.
5. Install Clutch Spring Compressor, Tool T65L-77515-A (Fig. 38) and compress the springs. Make certain that the spring retainer is centered while compressing the springs. Install the snap ring. **Before releasing the pressure on the tool, make certain that the snap ring is positioned inside of the four snap ring guides on the spring retainer.**
6. Clutch plate usage varies with each model, refer to the specifications at end of this Section for the number of plates required. Dip the clutch plates in clean transmission fluid. Install the clutch plates

alternately starting with a steel drive (internal) plate (Fig. 37). When new composition clutch plates are used, soak the plates in automatic transmission fluid, (Spec. ESP-M2C138 CJ), for 15 minutes before they are assembled.

7. After all clutch plates have been installed, position the pressure plate in the clutch drum. Install the pressure plate (selective) snap ring.
8. With a feeler gauge, check the clearance between the pressure plate and snap ring (Fig. 43).
9. The pressure plate should be held downward as the clearance is checked. The clearance should be 0.558-0.914mm (0.022-0.036 inch). If the clearance is not within specifications, selective thickness snap rings are available in the following thicknesses: 1.42-1.52mm (0.056-0.060 inch), 1.65-1.75mm (0.065-0.069 inch), 1.87-1.98mm (0.074-0.078 inch), 2.10-2.20mm (0.083-0.087 inch), 2.33-2.43mm (0.092-0.096 inch), 2.79-2.89mm (0.110-0.114 inch) and 3.25-3.35mm (0.128-0.132 inch). Install the correct size snap ring and re-check the clearance.

FORWARD CLUTCH

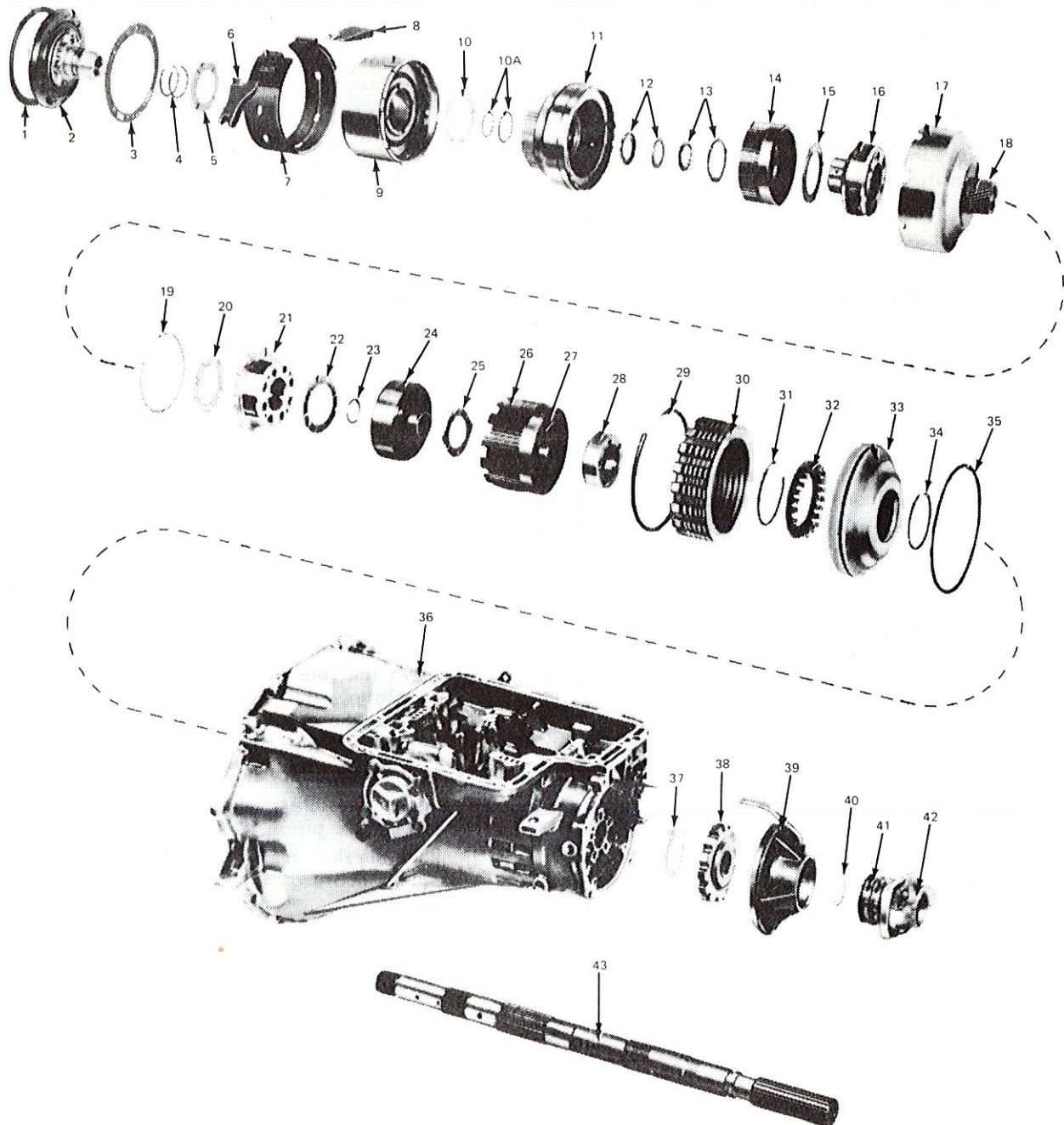
Disassembly

1. Remove the clutch pressure plate snap ring (Fig. 44).
2. Remove the rear pressure plate, the drive and driven plates, wave plate, and the forward pressure plate from the clutch hub (Fig. 45).
3. Remove the snap ring (Fig. 46) that secures the disc spring in the clutch cylinder. Remove the disc spring.
4. Apply air pressure to the clutch cylinder (Fig. 47) to remove the piston.
5. Remove the seal from the piston and the seal from the clutch hub (Fig. 45).

Assembly

1. Dip two new seals in transmission fluid. Install the smaller seal on the clutch hub and the lip seal on the clutch piston.
2. Install the clutch piston and lip seal with Lip Seal Protector, T77L-77548-A, (Fig. 48).
3. Position the installation tool into the forward clutch cylinder, so that the bore of the tool is aligned with the piston bore in the cylinder. Press the piston into the cylinder until it bottoms in the bore. Remove the installation tool.
4. Make sure that the steel pressure ring is in the groove on the piston. **Position the disc spring in the cylinder with the dished face downward.** Install the spring as shown in Fig. 46 so that the pressure ring and spring are in contact. Secure the disc with the retaining snap ring.
5. Install the forward pressure plate with the flat side up and the beveled side downward. Dip the clutch plates in clean transmission fluid (Specification ESP-M2C 138-CJ or equivalent). Next, install the wave plate, then a steel plate and a composition driven plate. Install the remaining plates in this sequence (Fig. 45).

Refer to the Specification at end of this Section for the number of plates required. The last plate



- | | | | |
|---------------------------------|---------------------------------|-------------------------------|---------------------------------|
| 1. FRONT PUMP SEAL RING - 7D441 | 11. FORWARD CLUTCH ASSEMBLY | 22. NUMBER 8 THRUST WASHER | 32. LOW-REVERSE PISTON RETURN |
| 2. FRONT PUMP - 7A103 | 12. NUMBER 3 THRUST WASHER | 23. REVERSE RING GEAR AND HUB | SPRING AND RETAINER - 7D406 |
| 3. GASKET - 7A136 | 13. NUMBER 4 THRUST WASHER | RETAINING RING | 33. LOW-REVERSE PISTON - 7D402 |
| 4. SEAL RINGS | 14. FORWARD PLANET RING AND HUB | 24. REVERSE RING GEAR - 7A153 | 34. INNER SEAL |
| 5. NUMBER 1 THRUST WASHER | ASSEMBLY - 7D392 | AND HUB - 7D164 | 35. OUTER SEAL |
| (SELECTIVE) | 15. NUMBER 5 THRUST WASHER | 25. NUMBER 9 THRUST WASHER | 36. CASE - 7005 |
| 6. STRUT INTERMEDIATE | 16. FORWARD PLANET ASSEMBLY | 26. LOW-REVERSE CLUTCH HUB | 37. NUMBER 10 THRUST WASHER |
| BRAKE BAND - 7D029 | - 7A398 | - 7B067 | 38. PARKING GEAR - 7A233 |
| 7. INTERMEDIATE BRAKE BAND | 17. INPUT SHELL - 7D064 AND SUN | 27. ONE-WAY CLUTCH - 7A089 | 39. GOVERNOR DISTRIBUTOR SLEEVE |
| ASSEMBLY - 7D029 | GEAR ASSEMBLY - 7D063 | - 7D171 | - 7C232 |
| 8. STRUT INTERMEDIATE BRAKE | 18. NUMBER 6 THRUST WASHER | 28. ONE-WAY CLUTCH INNER RACE | 40. SNAP RING |
| BAND ANCHOR - 7D430 | 19. SNAP RING | - 7D171 | 41. GOVERNOR COLLECTOR - 7D220 |
| 9. REVERSE - HIGH CLUTCH | 20. NUMBER 7 THRUST WASHER | 29. SNAP RING | 42. GOVERNOR - 7C063 |
| ASSEMBLY | 21. REVERSE PLANET ASSEMBLY | 30. LOW-REVERSE CLUTCH | 43. OUTPUT SHAFT - 7060 |
| 10. NUMBER 2 THRUST WASHER | 7D006 | 31. SNAP RING | |
| 10a. FORWARD CLUTCH SEAL RINGS | | | |

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FIG. 35 Drive Train Disassembled—Typical

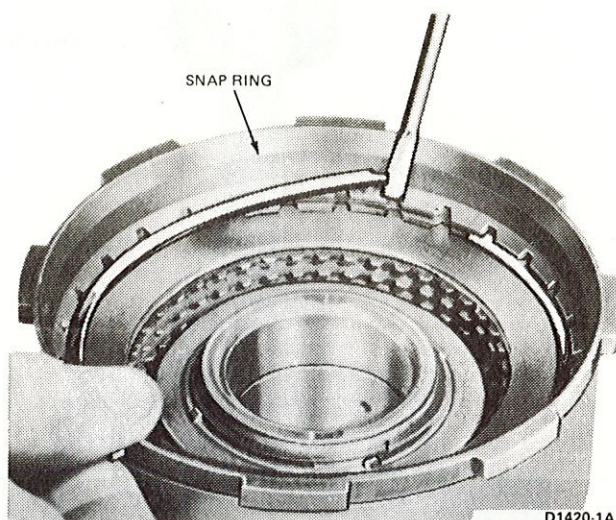


FIG. 36 Removing or Installing Reverse-High Clutch Pressure Plate Snap Ring

installed will be the rear pressure plate. Install the snap ring and make certain that it seats fully in the groove. When new composition clutch plates are used, soak the plates in automatic transmission fluid for 15 minutes before they are assembled.

6. With a feeler gauge, check the clearance between the snap ring and the pressure plate (Fig. 49). Downward pressure on the plate should be maintained when making this check. Clearance should be 0.533-1.168mm (0.021-0.046 inch).
7. If the clearance is not within specifications, selective snap rings are available in the following thicknesses: 1.42-1.52mm (0.056-0.060 inch), 1.65-1.75mm (0.065-0.069 inch), 1.87-1.98mm (0.074-0.078 inch), 2.10-2.20mm (0.083-0.087 inch), 2.33-2.43mm (0.092-0.096 inch), 2.79-2.89mm (0.110-0.114 inch) and 3.25-3.35mm (0.128-0.132 inch). Insert the correct size snap ring and recheck the clearance.

INPUT SHELL AND SUN GEAR

Disassembly

1. Remove the external snap ring from the sun gear as shown in Fig. 50.

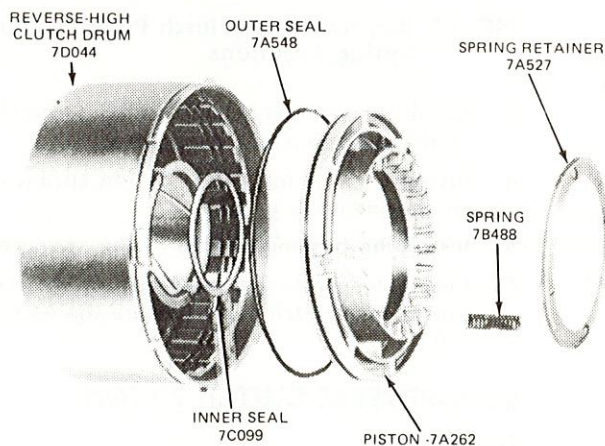


FIG. 37 Reverse-High Clutch Disassembled

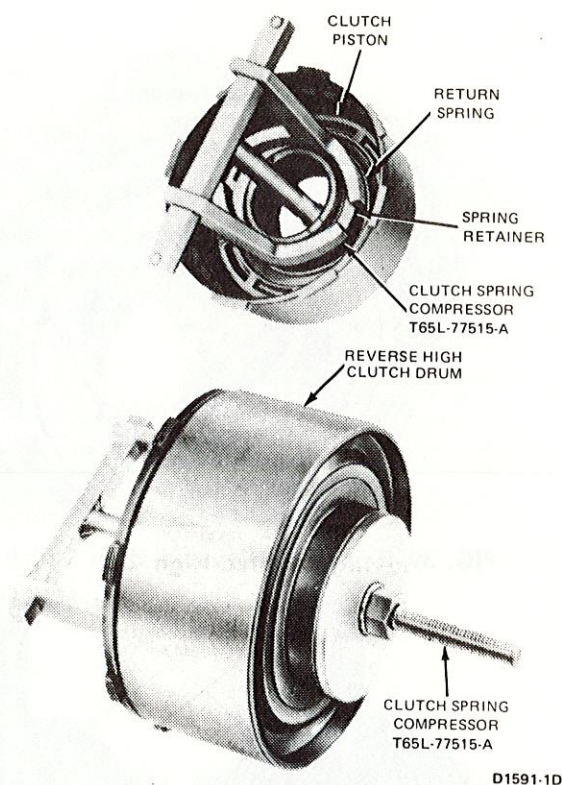
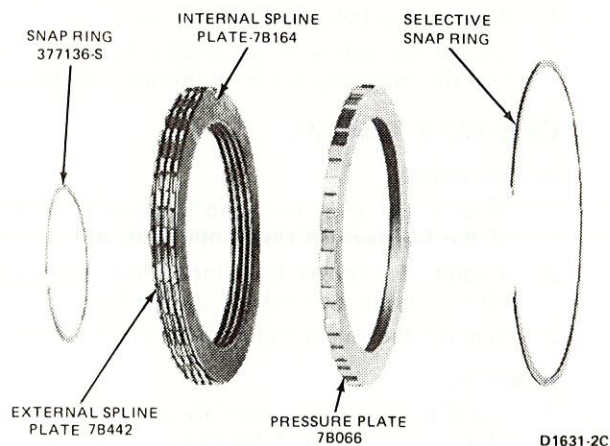


FIG. 38 Removing or Installing Reverse-High Clutch Piston Snap Ring

2. Remove the thrust washer from the input shell and sun gear (Fig. 51).
3. Working from inside the input shell remove the sun gear. Remove the snap ring from the gear.

Assembly

1. Install the forward snap ring on the forward end (short end) of the sun gear (Fig. 51). Working from inside the input shell, slide the sun gear and snap ring into place making sure that the longer end is at the rear (Fig. 51).
2. Place the No. 6 thrust washer on the sun gear and install the rear snap ring.



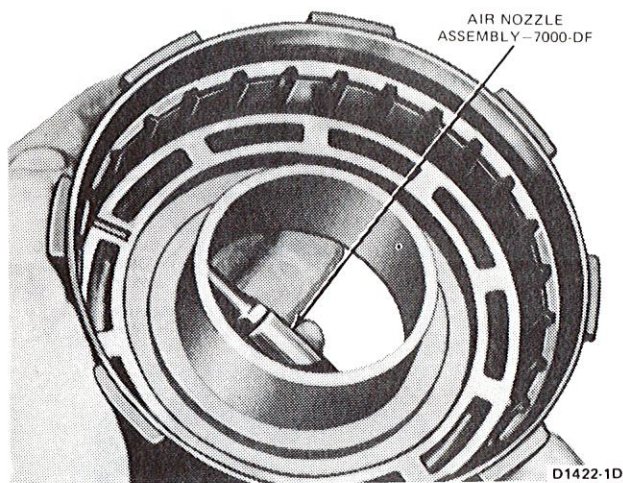


FIG. 39 Removing Reverse-High Clutch Piston

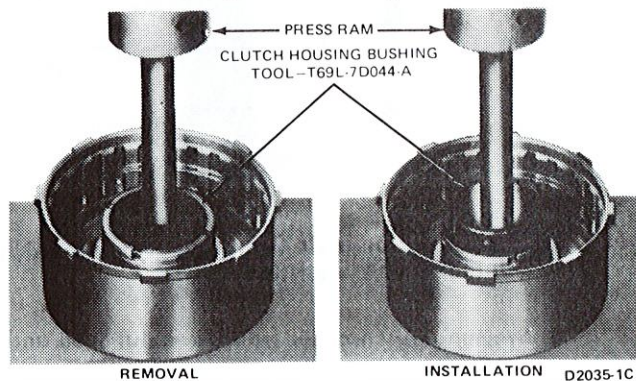


FIG. 40 Replacing Reverse-High Clutch Rear Bushing

OUTPUT SHAFT HUB AND RING GEAR

Disassembly

1. Remove the hub snap ring (Fig. 52) from the ring gear.
2. Lift the hub from the ring gear.

Assembly

1. Position the hub in the ring gear.
2. Secure the hub with the snap ring. Make certain that the snap ring is fully engaged with the groove.

ONE-WAY CLUTCH

Disassembly

1. Remove the snap ring and bushing from the rear of the low-reverse clutch hub (Fig. 53).
2. Remove the rollers from the spring assembly and lift the spring assembly from the hub.
3. Remove the remaining snap ring from the hub.

Assembly

1. Install a snap ring in the forward snap ring groove of the low-reverse clutch hub.
2. Place the low-reverse clutch hub on the bench with the forward end down (Fig. 54).

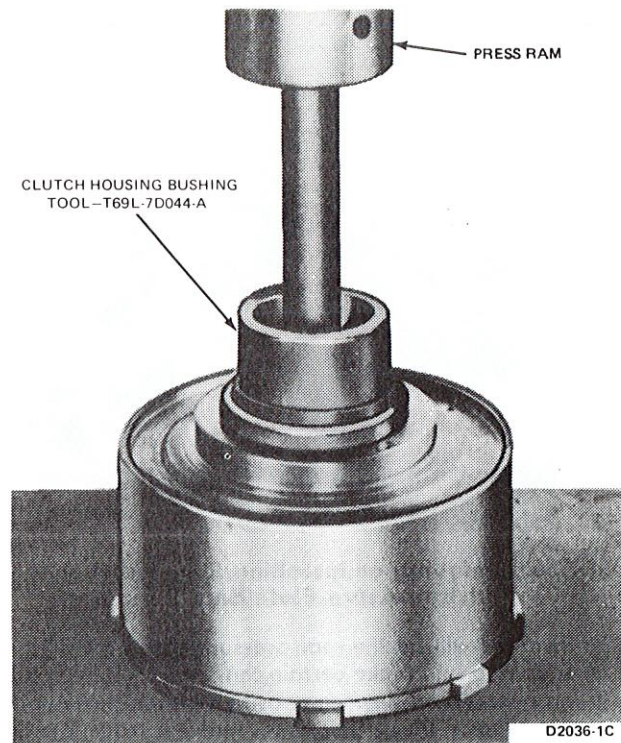


FIG. 41 Installing Reverse-High Clutch Front Bushing

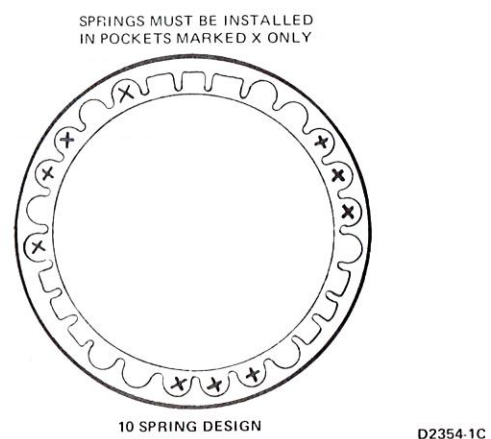


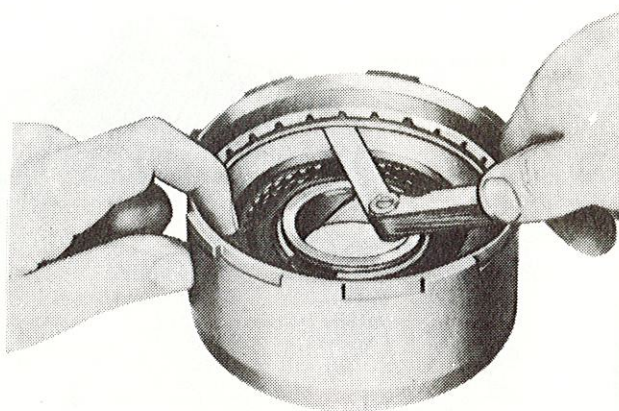
FIG. 42 Reverse-High Clutch Piston Return Spring Locations

3. Install the one-way clutch spring assembly on top of the snap ring.
4. Install a roller into each of the spring assembly compartments (Fig. 53).
5. Install the bushing on top of the spring assembly.
6. Install the remaining snap ring at the rear of the low-reverse clutch hub to secure the assembly (Fig. 53).

LOW-REVERSE CLUTCH PISTON

Disassembly

1. Remove the inner and the outer seal from the low-reverse clutch piston (Fig. 35).



D1898-1A

FIG. 43 Checking Reverse-High Clutch Snap Ring Clearance

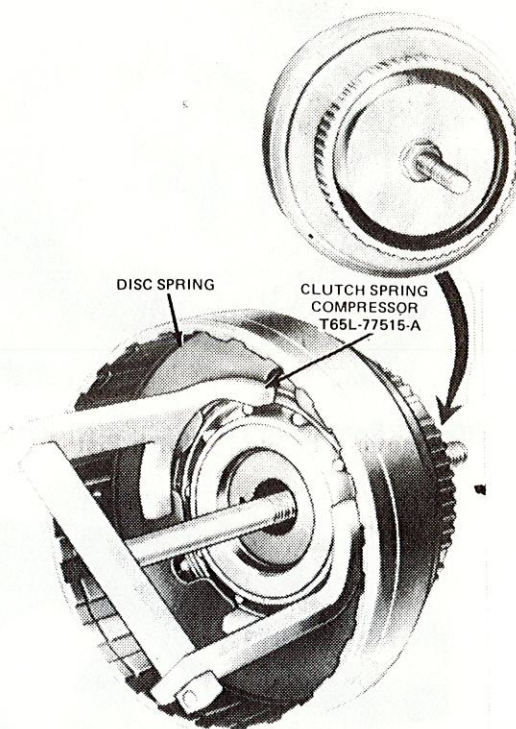


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FIG. 44 Removing Forward Clutch Pressure Plate Snap Ring

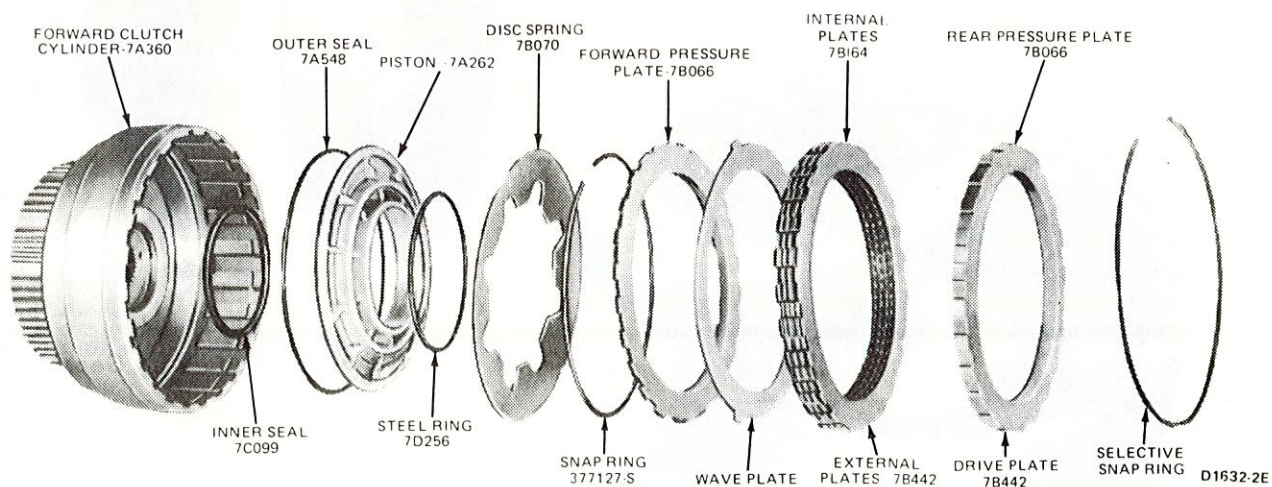
Assembly

1. Dip the two new seals in clean transmission fluid.
2. Install the seals on the piston.



D1635-1B

FIG. 46 Removing or Installing Disc Spring



D1632-2E

FIG. 45 Forward Clutch Disassembled

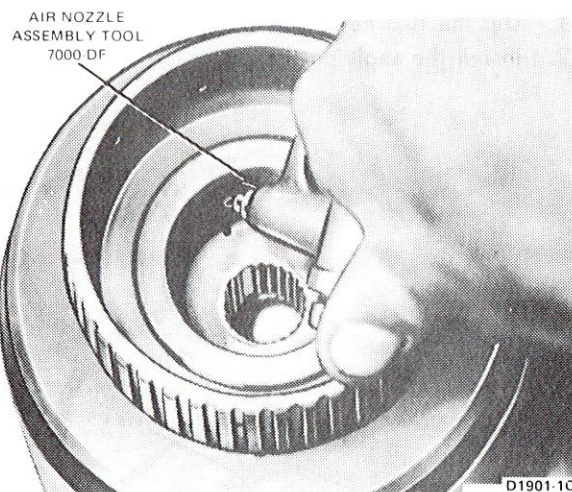


FIG. 47 Removing Forward Clutch Piston

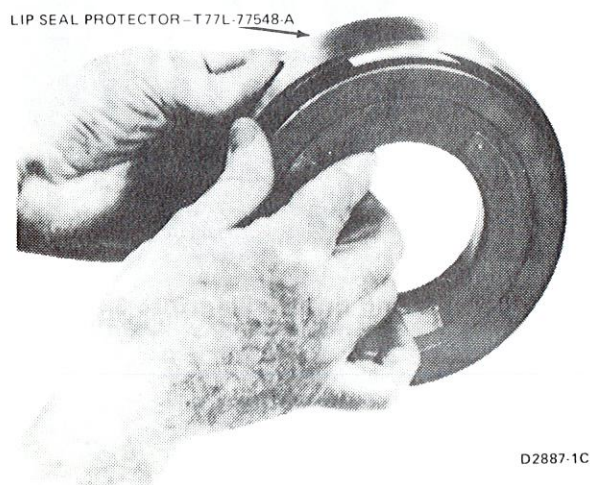


FIG. 48 Installing Forward Clutch Piston and Lip Seal

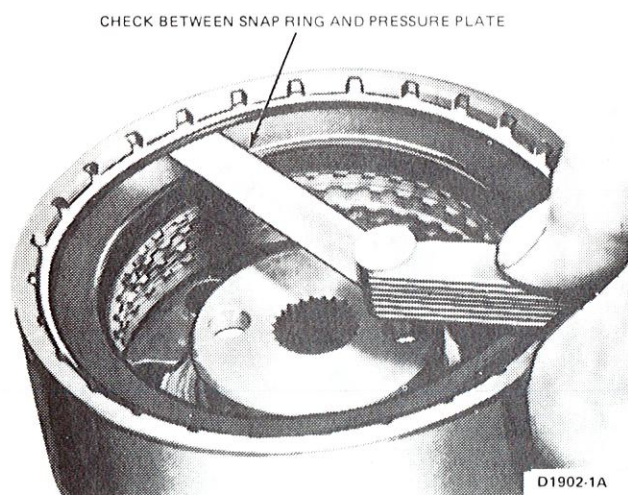


FIG. 49 Checking Forward Clutch Clearance

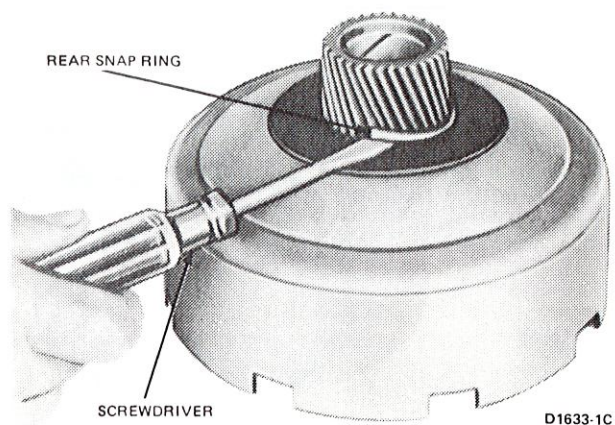


FIG. 50 Removing Sun Gear Snap Ring

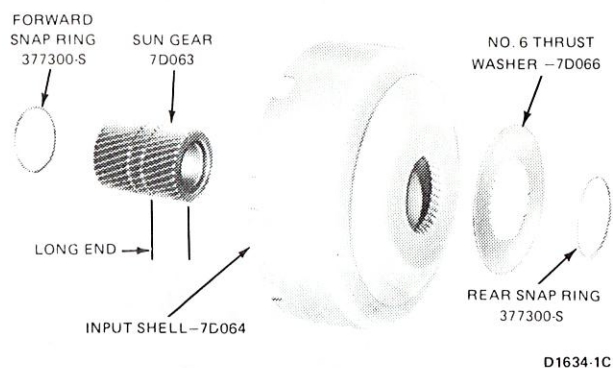


FIG. 51 Input Shell and Sun Gear Disassembled

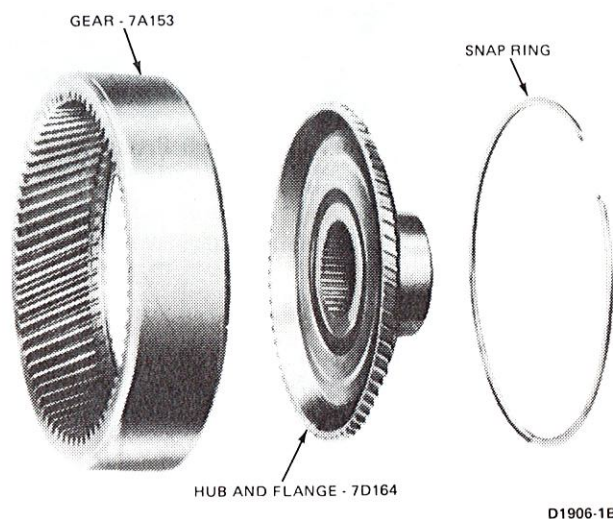
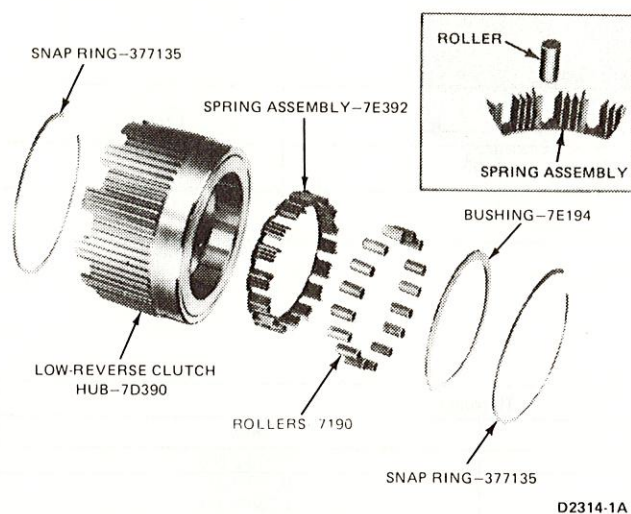
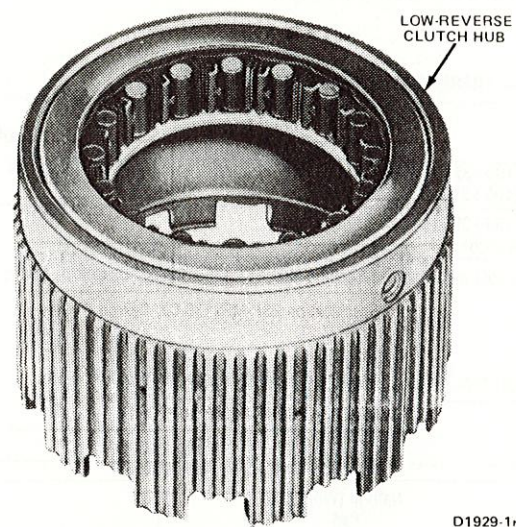


FIG. 52 Output Shaft Hub and Ring Gear

**FIG. 53 One-Way Clutch Disassembled****FIG. 54 One-Way Clutch Installed**

SPECIFICATIONS

C6 — TRANSMISSION REFILL CAPACITY

Vehicle	U.S. Quarts	Capacity Imperial Quarts	Liters
F100-F350 (4 x 2), E100-E350	11-3/4	9-3/4	11.1
F150-F350 (4 x 4), Bronco	13-1/2	11-1/4	12.7

Use fluid meeting Ford Specification ESP-M2C138-CJ, Dexron II, Series D or equivalent.

SELECTIVE THRUST WASHERS (FRONT PUMP SUPPORT)

Identification Color	Thickness	
	MM	Inch
Blue	1.42-1.52	0.056-0.060
Natural (White)	1.85-1.95	0.073-0.077
Red	2.23-2.33	0.088-0.092

TRANSMISSION CLUTCH PLATE USAGE

Transmission Model	Steel	Friction	Clearance	
			MM	Inch
Forward Clutch				
PGD, PJA, PJD	4 ①	4	0.533-1.168	0.021-0.046
High Clutch				
PGD, PJA, PJD	3	3	0.558-0.914	0.022-0.036
Reverse Clutch				
PJA, PJD	5 ②	5	—	—
PGD	4 ②	4	—	—

① Plus a waved plate (7E457) next to inner pressure plate.

② Plus a waved plate next to the piston.

CLUTCH SNAP RINGS

Part Number	Thickness		Forward	High
	MM	Inch		
377434	1.52-1.42	0.060-0.056	X	X
377126	1.75-1.62	0.069-0.064		X
377127	1.98-1.87	0.078-0.074	X	X
377128	2.20-2.10	0.087-0.083		X
377444	2.43-2.33	0.096-0.092	X	X
386841	2.89-2.79	0.114-0.110	X	
386842	3.35-3.25	0.132-0.128	X	

CHECKS AND ADJUSTMENTS

Operation	Specification
Transmission End Play	0.203-1.117mm. (0.008-0.044 inch) (Selective Thrust Washers Available)
Torque Converter End Play	New or rebuilt 0.533 mm. (0.021 inch) max. Used 1.016 mm. (0.040 inch) max. ①
Intermediate Band Adjustment	Remove and discard locknut. Install new locknut. Adjust screw to 14 N-m (10 ft-lbs) torque, then back off 1-1/2 turns. Hold screw and tighten locknut to 54 N-m (40 ft-lbs)
Forward Clutch Pressure Plate-to-Snap Ring Clearance	0.533-1.168 mm. (0.021-0.046 inch)

Selective Snap Ring Thickness	1.42-1.52 mm. (0.056-0.060 inch) 1.62-1.75 mm. (0.064-0.069 inch) 1.87-1.98 mm. (0.074-0.078 inch) 2.10-2.20 mm. (0.083-0.087 inch) 2.33-2.43 mm. (0.092-0.096 inch) 2.79-2.89 mm. (0.110-0.114 inch) 3.25-3.35 mm. (0.128-0.132 inch)
Reverse-High Clutch Pressure Plate-to-Snap Ring Clearance	0.558-0.914 mm. (0.022-0.036 inch)
Selective Snap Ring Thickness	1.42-1.52 mm. (0.056-0.060 inch) 1.62-1.75 mm. (0.064-0.069 inch) 1.87-1.98 mm. (0.074-0.078 inch) 2.10-2.20 mm. (0.083-0.087 inch) 2.33-2.43 mm. (0.092-0.096 inch) 2.79-2.89 mm. (0.110-0.114 inch) 3.25-3.35 mm. (0.128-0.132 inch)

① To check end play, exert force on checking tool to compress turbine to cover thrust washer wear plate. Set indicator at zero.

CD2845-2C

STALL SPEED SPECIFICATION — C6 TRANSMISSION

Vehicle	Engine	Trans. Type	Converter		Stall Speed	
			Size	ID	Min.	Max.
F-100/150/250, E-100/150/250	4.9L (300 CID)	C6	12"	99	1630	1850
F-350/E-350	4.9L (300 CID)	C6	12"	99	1550	1750
F-100/150 (49S/Canada)	5.0L (302 CID)	C6	12"	99	1525	1735
F-150 (50S)/F-250 (49S)	5.0L (302 CID)	C6	12"	99	1590	1800
E-100/150/250						
F-150/250	5.8L (351 CID)	C6	12"	100	1550	1800
F-250 (Calif)/F-250/350,	5.8L (351 CID)	C6	12"	100	1570	1820
F-100/Bronco/E-100/150						
E-250/350	5.8L (351 CID)	C6	12"	100	1510	1750
F-250/350/E-250/350	6.6L (400 CID)	C6	12"	100	1610	1890
E-250/350	7.5L (460 CID)	C6	12"	91	1590	1930

CD4669-2A

TORQUE LIMITS

Item	(ft-lbs)	N•m	Item	(ft-lbs)	N•m
Converter to Flywheel	20-30	28-40	Pressure Gauge Tap	9-15	12.5-20
Front Pump to Trans. Case	16-30	22-40	Band Adj. Screw Locknut to Case	35-45	48-61
Overrunning Clutch Race to Case	18-25	25-33	Cooler Tube Connector Lock	20-35	28-47
Oil Pan to Case	12-16	17-21	Converter Drain Plug	8-28	11-37
Stator Support to Pump	12-16	17-21	Manual Valve Inner Lever to Shaft	30-40	41-54
Converter Cover to Converter Housing	12-16	17-21	Downshift Lever to Shaft	12-16	17-21
Guide Plate to Case	12-16	17-21	Filler Tube to Engine	20-25	28-33
Intermediate Servo Cover to Case	14-20	19-27	Transmission to Engine	40-50	55-67
Diaphragm Assy. to Case	12-16	17-21	Rear Engine Support to Transmission	55-65	75-88
Distributor Sleeve to Case	12-16	17-21	Extension Housing to Bearing Retainer Stud	35-50	48-67
Extension Assy. to Trans. Case	25-35	34-47	Bearing Retainer to Extension Assy.	35-45	48-61
Rear Cover Plate to Converter Housing	20-30	28-40	Plug Case — Throttle Pressure	6-12	8.5-16
Plug — Case TRS Switch Port	6-12	8.5-16	5/16" Fitting — Cooler Line Connector to		
Plug — Case Front Pump or Line Pressure	6-12	8.5-16	Case — Front and Rear (Case Fitting)	18-23	25-32
Yoke to Output Shaft (4 x 4)	100-150	136-203	5/16" Tube Nut — Cooler Line to Trans. Case Fitting	12-18	17-24
	(in-lb)	N•m		(in-lb)	N•m
End Plates to Body	20-45	2.5-5	Converter Hsg. Cover to Converter Hsg.	30-60	3.5-6.5
Inner Downshift Lever Stop	20-45	2.5-5	Control Assy. to Case	95-125	11-14
Reinforcement Plate to Body	20-45	2.5-5	Gov. Body to Collector Body	90-120	10.5-13.5
Screen and Lower to Upper Valve Body	40-55	5-6.2	Oil Tube Connector	60-120	7-13.5
Shift Valve Plate to Upper Body	20-45	2.5-5	Detent Spring to Case	80-120	9.5-13.5
Upper to Lower Body	40-55	5-6.2	Rear Engine Support to Frame	40-60	5-6.5
Reinforcing Right Side Plate to Lower Body	20-45	2.5-5	Neutral Switch to Case	55-75	6.5-8

CD2184-2N

SPECIAL TOOLS

Number	Description
T50T-100-A	Impact Slide Hammer
T59L-100-B	Impact Slide Hammer
T58L-101-A	Puller Attachment
T57L-500-B	Bench Mounted Holding Fixture
T00L-1175-AC	Seal Remover
T00L-4201-C	Dial Indicator With Bracketry
T00L-7000-DD	Rubber Tip For Air Nozzle
T00L-7000-DE	Air Nozzle Assembly
T66L-7003-B9	Front Pump Bushing Replacer
T67P-7341-A	Shift Linkage Insulator Tool
T61L-7657-B	Extension Housing Seal Replacer
T77L-7697-C	Extension Housing Bushing Replacer
T77L-7697-D	Extension Housing Bushing Remover
T76L-7902-C	Converter Clutch Torquing Tool
T80L-7902-A	End Play Checking Tool
T77L-7902-A	Converter Clutch Holding Tool
T73P-77060-A	Output Shaft Retainer Pliers
T00L-77288	Shift Lever Seal Replacer
T71P-77370-A	Band Adjustment Torque Wrench Set
T65L-77515-A	Clutch Spring Compressor
T77L-77548-A	Lip Seal Protector
T63L-77837-A	Front Pump Seal Replacer
T69L-7D044-A	Clutch Housing Bushing Tool

CD3139-2B

PRECAUTIONS FOR STORAGE

If the Skidozer is to remain idle for a prolonged period of time, certain precautions have to be taken so that it will not deteriorate during this idle period. The following storage procedure is recommended:

- Clean the machine thoroughly.
- Thoroughly inspect and do all the necessary repairs.
- Lubricate all points mentioned in the lubrications schedule.
- Prepare the engine according to the instructions found in the Maintenance and Operator's Manual prepared by the engine Manufacturer.
- Check the oil in the differential; if it is contaminated, drain and refill with new oil.
- Check the oil in the transmission, hydraulic system and the 2 speed gear box. If it is contaminated, or if it is close to change period, drain and refill with new oil.
- Lift and block the vehicle off the ground to take the weight off the suspension.
- Remove the battery.
- Battery should be put on a trickle charge, or checked and charged monthly.

GENERAL SPECIFICATION

DIMENSIONS

SV-252

Overall length	167	In.	4.24 M
Overall width	93	In.	2.36 M
Overall Height	100	In.	2.54 M
Ground Clearance	12	In.	30 CM
Curb weight less accessories	8100	Lbs.	3674 KG

OPERATIONAL:

Maximum speed	21.5 MPH at 3600 RPM	34.6 Km/hr
Gradeability	-Uphill	60%
	-Sidehill	35%

ENGINE:

GASOLINE:

Make	Ford
Model	300 cu.in.
No. of cylinders	6
Horsepower	124 HP at 3600 RPM

TRANSMISSION:

Type	Automatic
Model	Ford C-6
Ratio: 1st.	2.46 to 1
2nd.	1.47 to 1
3rd.	1 to 1
Reverse	2.17 to 1

2 SPEED GEAR BOX:

Type	Bombardier
Model	N/A
Ratio	1.96 to 1 low
	1 to 1 high

GENERAL SPECIFICATION

DIFFERENTIAL

SV-252

Type
Ratio

Planetary-controlled
5.83 to 1

DRIVE SPROCKETS:

Polyurethane covered
aluminium core

BRAKES: Service
 Parking

Disc brake on drive line
Locking device on drive
line

ELECTRICAL:
Battery capacity cold cranking
capacity at -17.8°C (0°F)
Alternator capacity

12 Volts

560 AMP reserve of 140 min.
60 amps

WHEELS:

Type

1 piece disc wheel
& hub.

TIRE:

10 Front solid rubber.

TRACKS:

Width
Type

29" 73.7 cm
Fabric reinforced rubber belts with
steel crosslinks

CAPACITIES:

	IMP.	U.S.	LITRES
Cooling system.....:	17.8 qts	21.4 qts	20.3 L
Fuel tank.....:	31.9 gals	38.2 gals	145.0 L
Crankcase.....:	6.66 qts	8. qts	7.57 L
Transmission Automatic:	11.5 qts	13.7 qts	13. L
2 Speed Gear Box.....:	1.5 qts	1.7 qts	1.7 L
Differential.....:	16.65 qts	20. qts	19. L

