

SHOP MANUAL



800

DRIVE PULLEY

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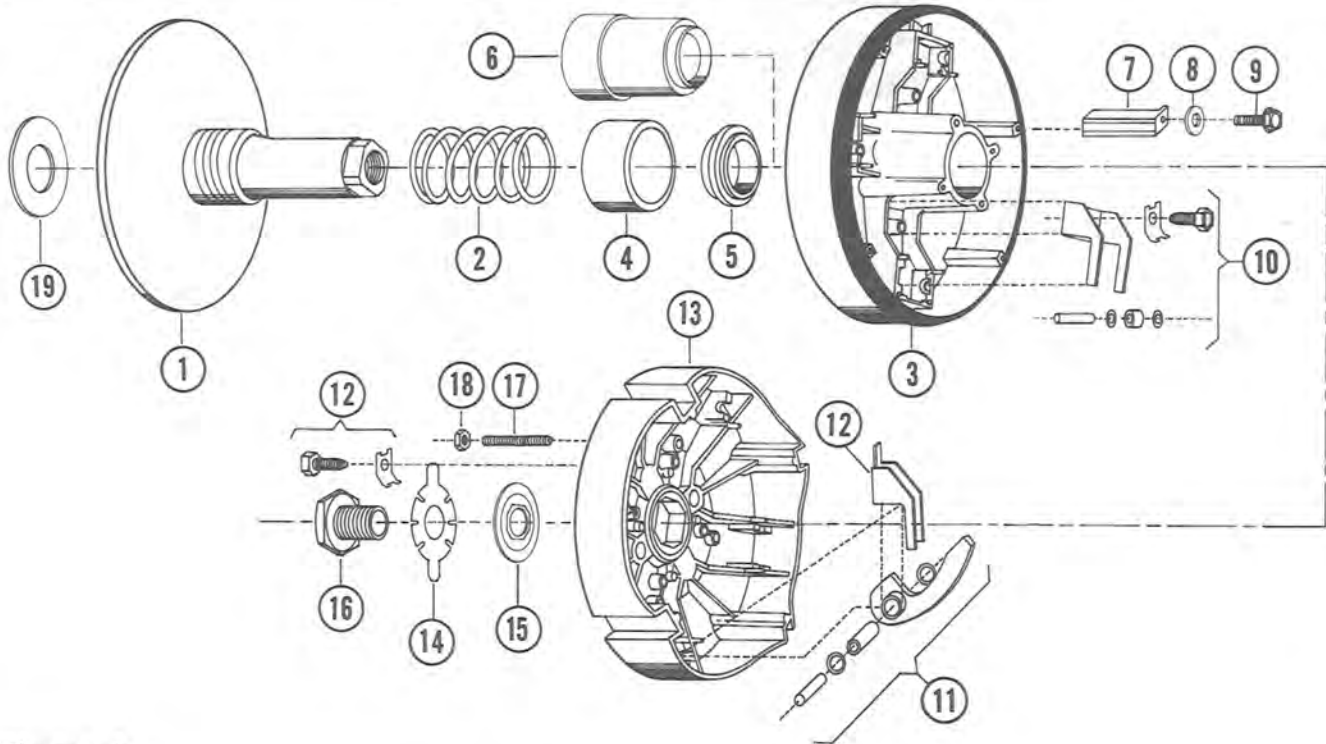


Figure 1.

- | | |
|---------------------------|-----------------------|
| 1. Face & Hub-Fixed | 11. Kit-Arm |
| 2. Spring | 12. Kit-Arm Clamp |
| 3. Face Asy-Movable | 13. Housing |
| 4. Bearing-Center (early) | 14. Lockplate (late) |
| 5. Bearing-Flange (early) | 15. Lockplate (early) |
| 6. Bearing-Center (late) | 16. Screw-Special |
| 7. Bearing-Slide | 17. Screw-Adjust |
| 8. Washer (early) | 18. Nut-Jam |
| 9. Screw | 19. Spacer (Rotax) |
| 10. Kit-Roller | |

DISMOUNT

Taper Bore Models - Proper dismount of 800 series drive pulleys must be executed as follows. Remove 1/2-20 crankshaft screw and lockwasher. Use the most appropriate of the two following methods for dismount:

1. First and second generation drives and most third generation drives have 9/16-18 threads inside special screw (Item 16, Fig. 1). In this case insert dismount tool (Part No. 601515) into special screw until contact with crankshaft is made. Continue driving dismount tool utilizing impact wrench until the tapered bore of the hub has been separated from taper of crankshaft (Fig. 2).

2.

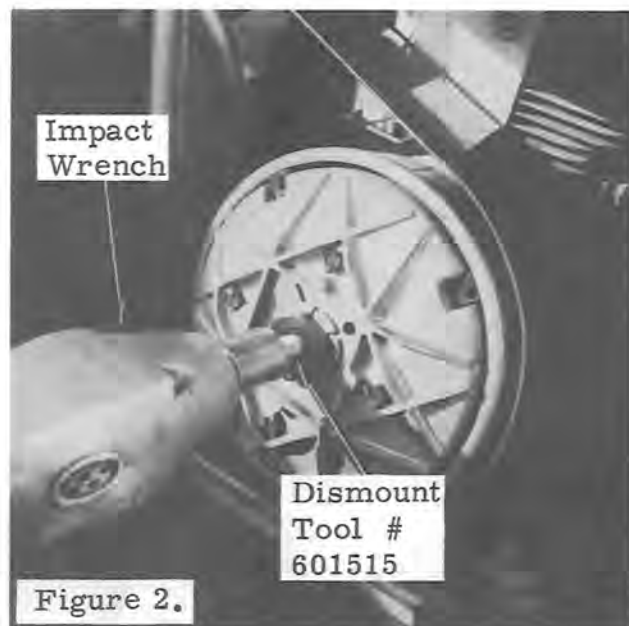
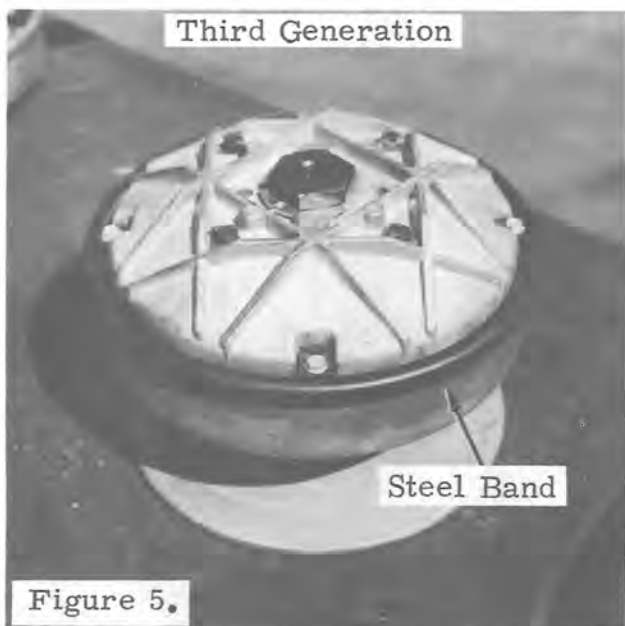
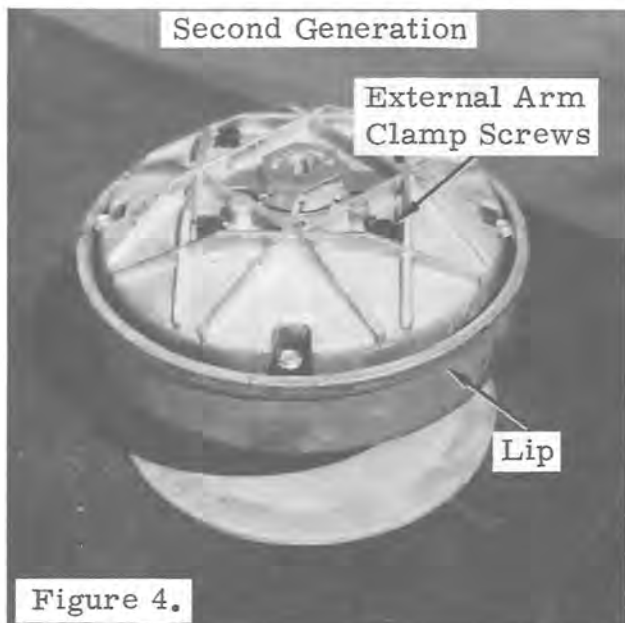
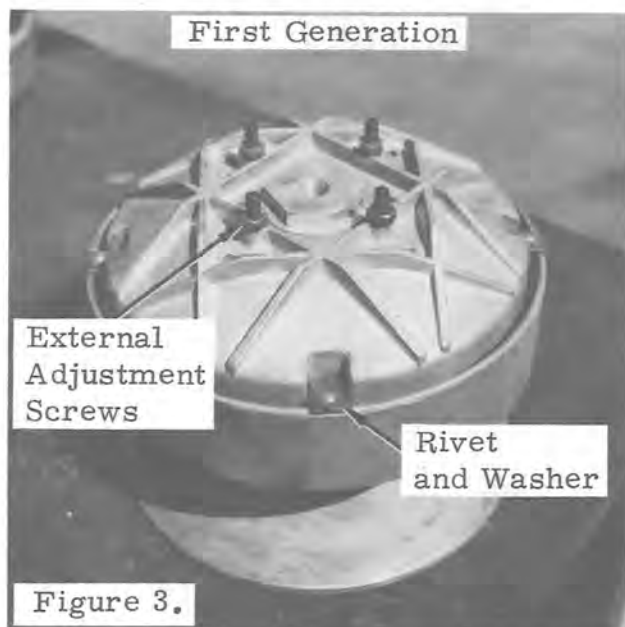


Figure 2.



2. Some third generation drive pulleys have special screws that are not threaded internally. In this case flatten lockplate (Item 14, Fig. 1) away from head of the special screw (Item 16, Fig. 1). Remove special screw with the aid of an impact wrench and a 1-3/8 inch socket (all threads in this clutch are standard right hand). Insert dismount tool (Part No. 601908) into 7/8-14 threads of hub bore and run in by hand until contact with crankshaft is made. Continue driving dismount tool, utilizing impact wrench, until the tapered bore of the hub has been separated from taper of crankshaft. Clutch assembly is now free to be removed from engine. Note: If an impact wrench is not readily available, the clutch may be held with a chain or strap wrench while removing and or installing special screw and dismount tool with standard wrenches or sockets.

DISMOUNT/DISASSEMBLY

Rotax Bore (Ski-Doo) - Clutch must be disassembled prior to removing fixed face and hub from crankshaft. Loosen special screw and back off approximately 1/4 inch. Install puller (Illustration, Fig. 6) into two 3/8-16 tapped holes provided in housing. Pull housing free of squared taper (Fig. 7). Remove puller, special screw, lockplate, housing, movable face and spring. Unscrew (counter clockwise) fixed face and hub assembly using a large wrench over the 1-1/8 inch tapered flats on out-board end of hub (Fig. 8). Impact may be required to break torque. Care must be exerted to see that flats on hub are not damaged.

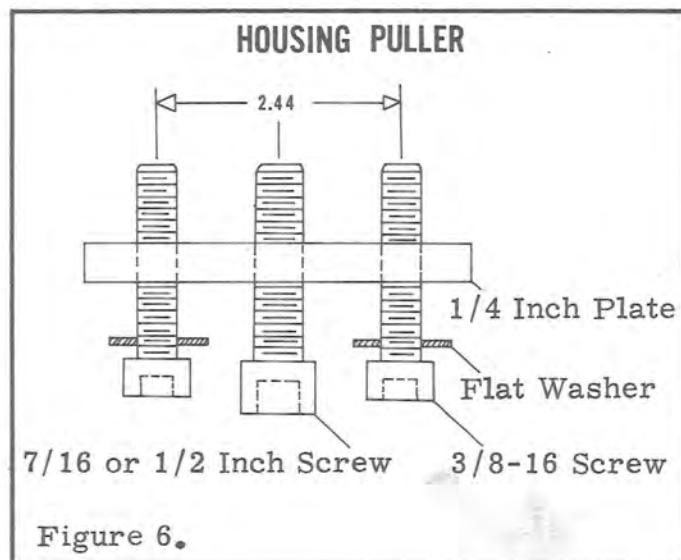




Figure 7.



Figure 8.

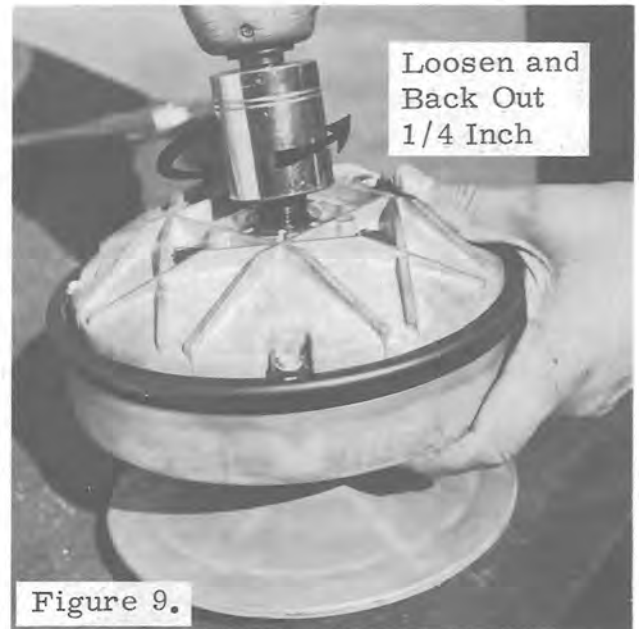


Figure 9.

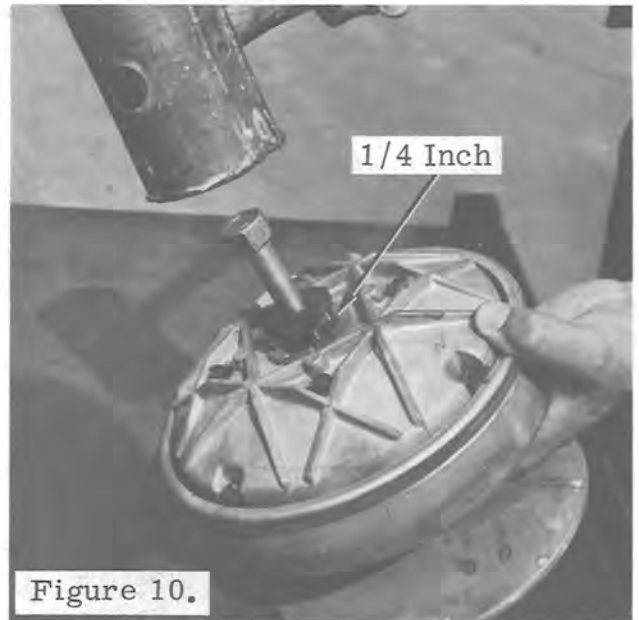


Figure 10.

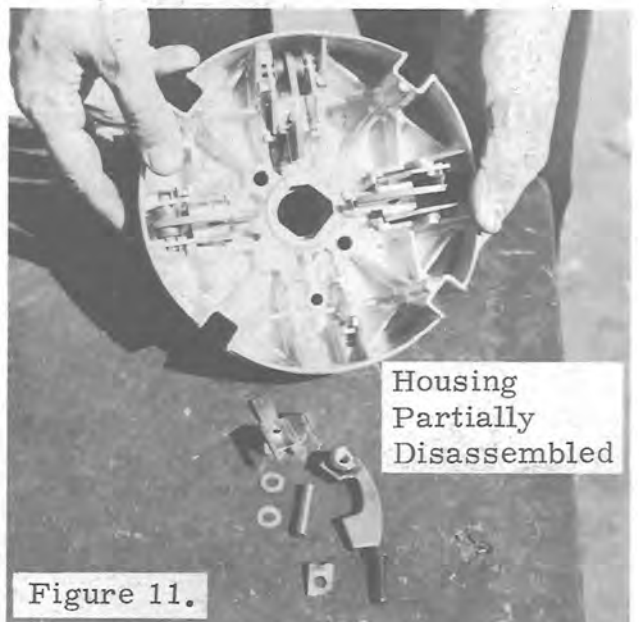


Figure 11.

DISASSEMBLY

Taper Bore Model - Removal of Movable Face and Housing Assemblies from Fixed Face and Hub - There are two methods of disassembly:

1. Those units that have internally threaded special screws, flatten lockplate (Item 14 Fig. 1) away from special screw (Item 16 Fig. 1). Utilizing an impact wrench, back out special screw (very early units were 1-1/2 inch hex, all others 1-3/8 inch hex) approximately 1/4 inch. Reinsert 9/16-18 dismount tool at least one inch into special screw. With clutch supported in one hand under movable face, strike top of dismount tool sharply with rawhide, brass or lead hammer (Fig. 10) until housing and movable face recoil from tapered square of fixed face and hub. Remove dismount tool, special screw, lockplate, housing, movable face and spring from fixed face and hub.

2. Those units that do not have internally threaded special screws, install dismount tool (Part No. 601908) into 7/8-14 hub (at least 15 threads), support clutch under movable face with one hand while striking top of tool with rawhide, brass or lead hammer until housing and movable face recoil from tapered square of fixed face and hub. Remove dismount tool, housing, movable face and spring from fixed face and hub.



Figure 12.



Figure 13.

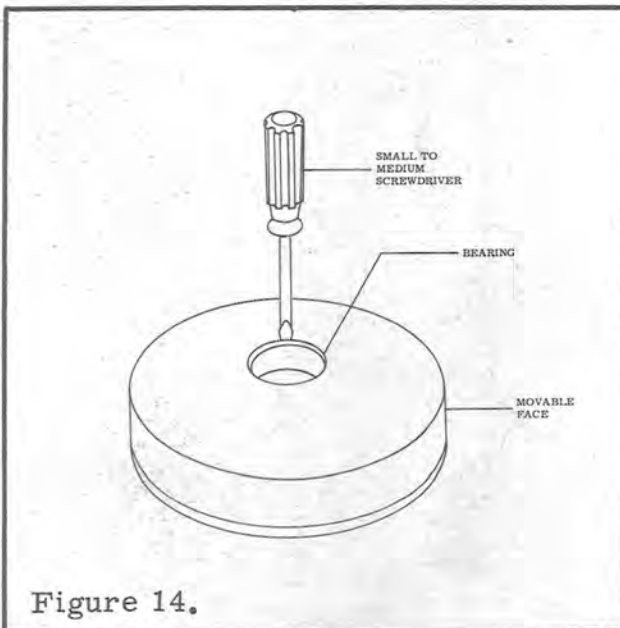


Figure 14.

Housing - With exterior side of housing up, bend the lockplate tabs away from the (4) 1/4-20 clamp screws. Remove the screws with a 3/8 inch hex socket. The housing, screws, lockplates, clamps, actuator arms, pivot pins and thrust washers are now loose parts. Early housings (first generation) had the clamp screws installed from the inside of the housing, disassemble appropriately. Caution: All small parts should be kept in a container to prevent loss.

First generation drives have (4) external engagement speed adjustment screws (1/4-20x1-3/4 in. allen set screw) as shown in Fig. 3. These four screws are retained by 1/4-20 jam nut, loosen nuts, remove screws and nuts. Note: The reinstallation of these adjustment screws is critical, see reassembly section for instructions.

Movable Face - With belt surface of movable face down, remove the (4) slide bearing screws or grind off aluminum rivets as used in very early first generation drives (Fig. 3). Lift out slide bearings as in Fig.13, using small allen wrench as a lever. Bend lockplates away from heads of 1/4-20 screws that secure roller clamps and remove the four screws, lockplates, clamps, rollers and thrust washers. All 800 series drives produced prior to December, 1972 had a two piece center bearing (Items 4 & 5, Fig. 1). To remove the two piece bearing, place movable face on a wooden table, belt face up. Drive a small to medium flat blade screw driver between outer nylon bearing and casting (Fig.14). Continue to drive with hammer or similar object until bearing splits, then remove. Turn movable face over and tap down on remaining bearing until it falls free. One piece (cup) bearing (Item 6, Fig. 1) can usually be removed by pushing on small end of bearing with thumbs, if tight, tap with wooden dowel.

DISASSEMBLY

Rotax Bore (Ski-Doo) - Clutch has been disassembled prior to dismount (see page 3).

INSPECTION

General - A component part should be replaced if any of the following conditions appear:

1. Cracked or Broken.
2. Excess Wear.
3. Damaged Threads.
4. Bent or obviously mis-shaped from abuse.

Fixed Face and Hub - Over .060 inch grooves in belt face must be considered excess wear, replace.

Movable Face - Over .060 inch grooves in belt face must be considered excess wear, replace.

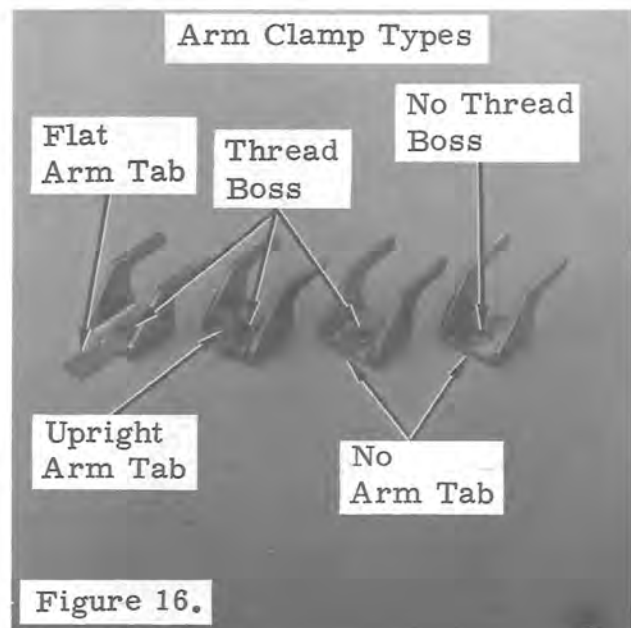
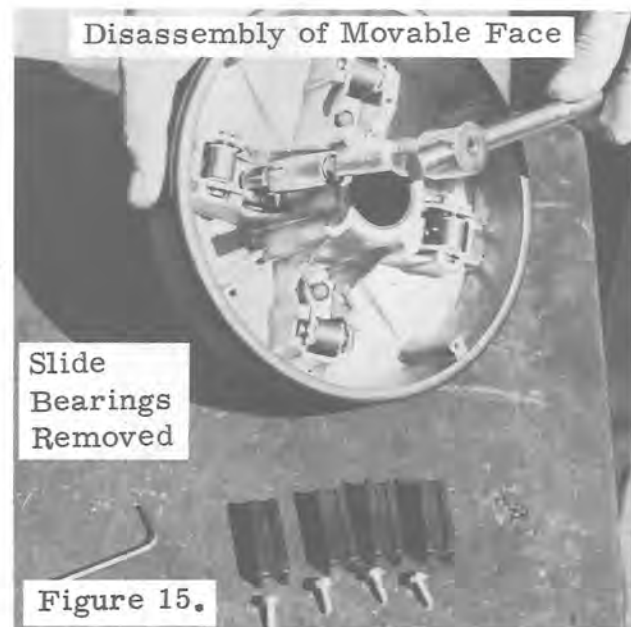
Center Bearing - If a .015 inch diameter wire can be inserted between center bearing and hub of fixed face, center bearing should be replaced. Two piece bearings (Items 4 & 5, Fig. 1) should always be replaced with the fully interchangeable one piece bearing (Item 6, Fig. 1).

Roller Assemblies/Pivot Pins - If roller assembly does not turn on pivot pin, the roller bearing is egg shaped causing excessive wobble or there is a groove of .015 inch or greater on O.D. of any roller, a new roller kit should be installed.

Clamps-Roller and Arm - Any clamp not adequately securing a pivot pin should be replaced.

Arm Assemblies, Pivot Pins - If actuator arm assembly is tight on pivot pin, the arm bushing is egg shaped causing excessive arm tip lateral movement or surface of actuator arm has areas worn to .040 inch below normal working surface, a new arm kit should be installed.

Note: The general inspection procedure is applicable to all parts. Only those requiring some definition of excess wear have been detailed. Where worn or damaged parts are not replaced performance and durability will suffer.



REASSEMBLY

Movable Face - Insert center bearing into bore of movable face. As noted in inspection section, two piece bearings should not be re-used, replace with one piece bearing. Fully seat bearing by tapping in place with wooden dowel or similar tool. Install roller assemblies on pivot pins with a thrust washer on each side of roller. Lay the roller and pin assemblies into respective nests in movable face. The clamp, lockplate and thread forming screw may now be installed. Torque the four 1/4-20 x 1/2 screws to 8 to 10 ft. lbs. and bend lockplate against screw head. If a new movable face is being used the casting will not be pre-threaded, if desired the four holes may be pre-threaded using the thread forming screws provided.

Very early first generation drives that have had the aluminum rivets ground off for slide bearing removal must be modified prior to reassembly, as follows:

1. File remains of rivet flush to movable face casting.
2. Install new slide bearings into position. Center punch centrally, thru hole in slide bearing.
3. Drill a perpendicular hole 11/16 inch deep with a #28 or 9/64 inch drill.
4. Install the four 8-32 self threading screws and torque to 20-30 inch lbs.

Housing - Install arm assemblies on pivot pins with a thrust washer on each side of arm. Lay the arm and pin assemblies into respective nests in housing. The clamp, lockplate and thread forming screw may now be installed. The screw and lockplate are installed from the outside of housing on second and third generation drives into the pivot pin clamps. If a new arm kit is being installed the pivot pin clamps will not be pre-threaded. Prior to assembly operation, the clamps may be pre-threaded with the 1/4-20x1/2 inch thread forming screws provided. First generation drives have the screws installed through the pivot pin clamps into the housing casting. If a new housing is being installed, the casting may be pre-threaded with the thread form-

screws provided. Torque the screws to 8 to 10 ft. lbs., and bend lockplate against screw head. First generation drives have four externally adjustable engagement speed screws as shown in Fig. 3, they are to be adjusted as follows: Install the four screws into the housing until they just touch the actuator arms when the arms are in the fully relaxed position against the interior top of housing. Install and tighten locknut without disturbing the pre-set screws. This adjustment allows maximum possible engagement speed. A decrease of approximately 500 RPM in engagement speed can be achieved for every complete clockwise turn of all four screws. Note: It is critical that all four screws be in equal adjustment and securely fastened (8-10 ft. lbs.).

Clutch - With fixed face and hub laying face down, install spring over hub. Slide movable face into housing (arms in the down position) noting that the register marks on each are aligned (Fig. 17). Slide the housing and movable face onto hub. With odd corner of octagonal housing bore lined up with mating end of fixed face and hub, compress the spring by pressing on housing with both hands (Fig. 18). Install lockplate and special screw. Torque special screw to 100 ft. lbs. and bend lockplate against head of special screw.

REASSEMBLY

Rotax Bore (Ski-Doo)-Reverse Dismount/Disassembly Procedure (Page 3).



Figure 18.

REMOUNT

Clutch Assembly - Properly install clutch onto taper of crankshaft. Install appropriate 1/2-20 screw and lockwasher and torque to 58 ft. lbs.

MODIFICATION

Engagement Speed - Engagement speed (RPM) can be increased in 3 ways:

1. Increase spring rate.
2. Decrease tip weight of arm.
3. Move arm c.g. (Center of Gravity) further away from direction of actuation.

See Model "800" modification instructions for details. Modification instructions are a separate printing and not included in this shop manual.

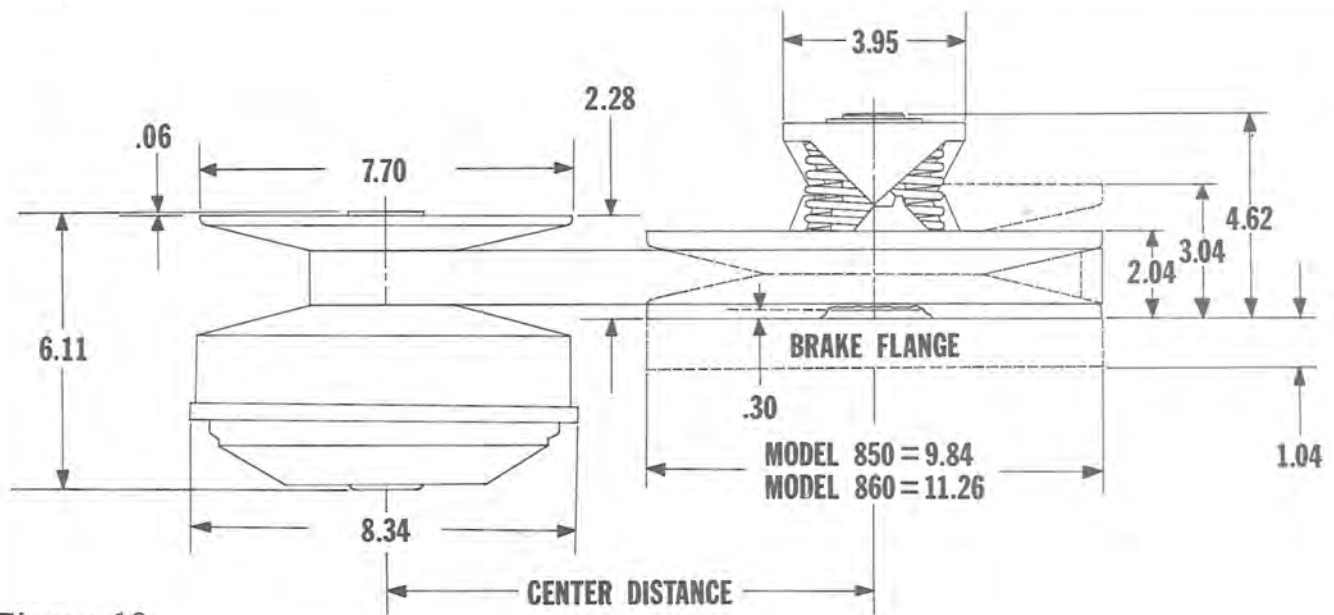
BELT ALIGNMENT

Proper belt alignment of the "800" with Salsbury 850 860 or 910 driven pulley can be obtained from figure 19.

TORQUE SPECIFICATIONS

<u>Area</u>	<u>Threads</u>	<u>Torque To</u>
Clutch to Crankshaft	1/2-20 Screw	58 ft. lbs.
Housing to Hub	7/8-14 Special Screw	100 ft. lbs.
Arm Clamp to Housing	1/4-20 Screw	8-10 ft. lbs.
Roller Clamp to Mov. Face	1/4-20 Screw	8-10 ft. lbs.
Slide Brg. to Mov. Face	8-32 Screw	20-30 in. lbs.
Adjustment Screw to Housing	1/4-20 Screw/Nut	8-10 ft. lbs.

INSTALLATION DIMENSIONS



- ALWAYS USE LOCKPLATES, REPLACE WHEN WORN.
- ALWAYS DOUBLE CHECK TORQUE ON FASTENERS WHEN REASSEMBLING.
- NEVER OPERATE A DRIVE PULLEY WITH BELT REMOVED.
- NEVER OPERATE A TORQUE CONVERTER WITHOUT A SUITABLE SAFETY SHIELD.

NOTES:

