

ZF5HP19 (Captive Clutch), ZF5HP24

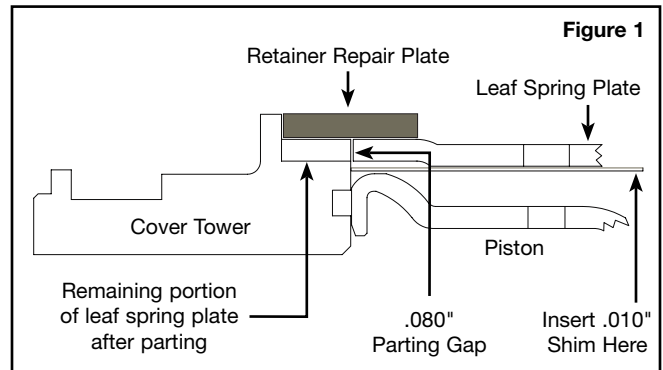
Repair Plate

Part No.

FS-WS-1

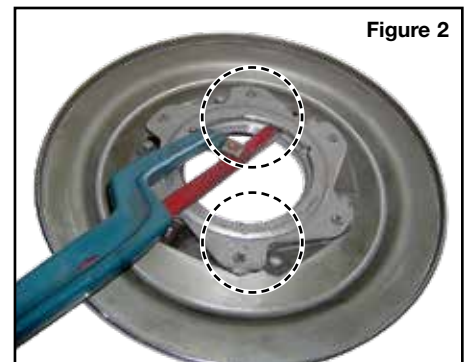


The OE clutch release clearance is about .010", and must be maintained as closely as possible. To get the correct clutch release clearance, insert pieces of .010" brass shim stock into each of the 6 spring cavities between the piston and leaf spring plate. Note that any material may be used for shim stock, but brass is the best choice because weld will not stick to it (**Figure 1**).



1. Set Up & Inspection Before Welding

- a. Use a regular carbide parting tool (.080") to cut away weld between the leaf spring plate and the cover tower. The I.D. of your cut should be 2.890".
- b. Inspect for and remove any burr(s) created on the underside of the leaf spring plate during the removal process. A machinist's deburring tool or a tool similar what is shown (**Figure 2**) can be used for the cleanup. The burr will restrict piston movement and must be removed.



1. Set Up & Inspection Before Welding (continued)

- c. Prior to welding, put all components in place and insert the shim stock into spring cavities. Press on leaf spring plate, ensuring no gap is present between the O.D. of the retainer repair plate and the leaf spring plate (Figure 3).

If there is a gap, you may remove a like amount of material from the cover tower shelf where the retainer repair ring rests to correct this condition (Figure 4). This gap may be the result of machining the reaction surface of the cover and/or the piston. When the leaf spring plate is compressed down to the shim and secured by welding, it will be in the correct position so that when the shim stock is removed, the piston will have the desired clutch release travel of .010".

NOTE: When you begin welding, remember to press on the leaf spring plate and NOT on the retainer repair plate. If you press on the retainer repair plate and it bottoms on the cover tower before the leaf spring plate contacts the shim stock, you will have too much clutch release clearance.

2. Welding

CAUTION: The six I.D. points of Sonnax FS-WS-1 retainer repair plate are used to center the retainer repair plate on the cover tower. No welding is to be done in these areas (Figure 5) because of its close proximity to the thin side wall of the top of the tower. All welds to the I.D. of the retainer repair plate should be restricted to the side walls of the 6 cavities of the retainer repair plate and should be as close to the tower as possible (Figure 5). The welding of the O.D. of the retainer repair plate to the leaf spring plate can be done with 3 small Tig welds, alternating sides.

- a. Place six .010" brass shims in the spring cavities between the piston and the leaf spring plate (Figure 6). Ensure the shim stock reaches all the way in and butts against the tower. Press down on at least 3 places on the leaf spring plate, not on the repair plate.
- b. Weld the O.D. of the repair plate to the leaf spring plate in 3 positions, spaced equally around the ring. Ensure the repair plate remains flat down on the leaf spring plate while welding (Figure 7).
- c. Weld the repair plate to the tower shelf at both ends of all six pockets around the inside of the repair plate. Do not weld where the centering points of the ring touch the tower (Figure 8).
- d. Finish welding (Figure 9).

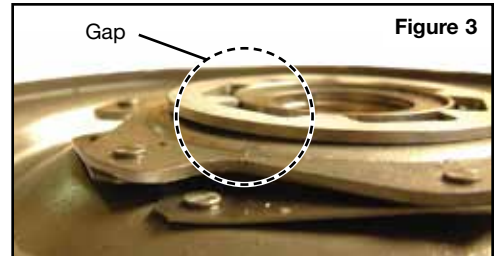


Figure 3

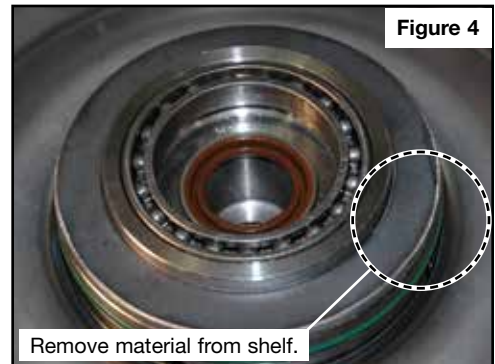


Figure 4

Remove material from shelf.

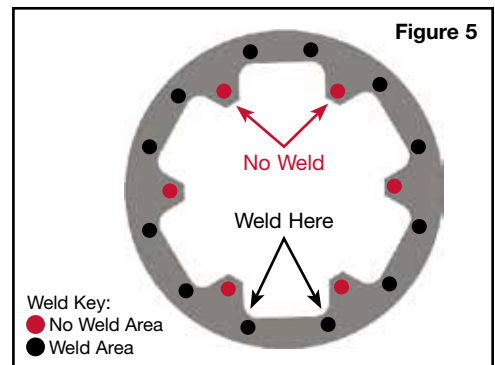


Figure 5

Weld Key:
 ● No Weld Area
 ● Weld Area



Figure 7



Figure 8

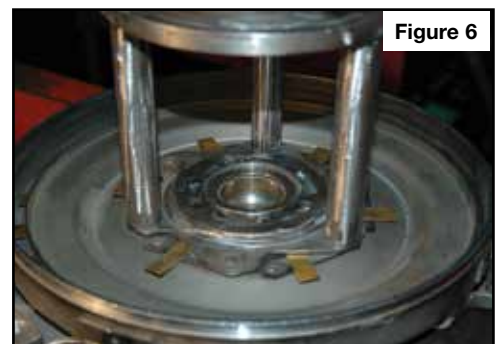


Figure 6



Figure 9