


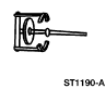

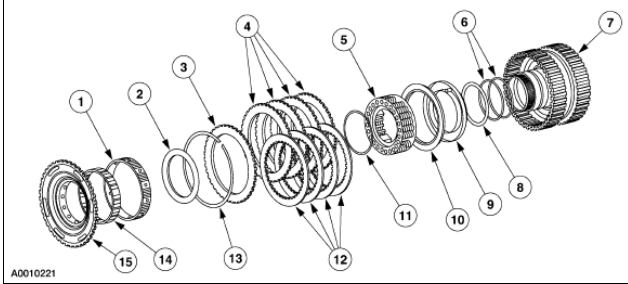


**Direct Clutch Cylinder**

Special Tool(s)

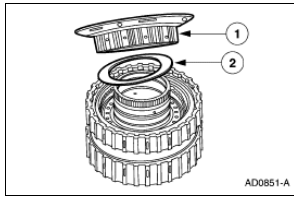
 ST1219-A	Remover, O-Ring Seal 100-010 (T71P-19703-C)
 ST1286-A	Dial Indicator Gauge with Holding Fixture 100-D002 (D78P-4201-B)
 ST1271-A	Feeler Gauge Set 303-D027 (D81L-4201-A) or equivalent
 ST1190-A	Compressor, Clutch Spring 307-015 (T65L-77515-A)
 ST1944-A	Protector, Piston Seal 307-168 (T86P-70234-A)



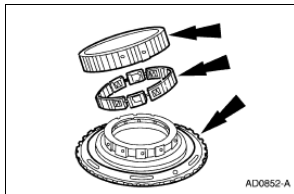
Item	Part Number	Description
1	7D171	Direct one-way clutch outer race assembly
2	7F369	No. 7 thrust washer
3	7B066	Pressure plate
4	7B442	Steel plates
5	7F235	Return spring assembly
6	7G102	O-rings (2 req'd)
7	7G120	Clutch cylinder
8	7F225	Inner piston seal
9	7A262	Piston and seal assembly
10	7G448	Apply ring
11	N803176-S	Return spring retaining ring
12	7B164	Friction plates
13	7D483	Direct clutch retaining ring
14	7A089	Direct one-way clutch assembly
15	7G156	Direct one-way clutch inner race and bushing assembly

## Disassembly

1. Remove the direct one-way clutch assembly.
  1. Remove the direct one-way clutch assembly.
  2. Remove the direct clutch cylinder thrust washer.



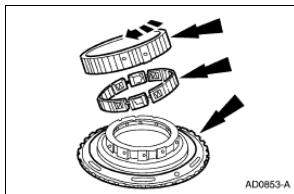
2. Disassemble, clean and inspect the direct one-way clutch, inner and outer races.



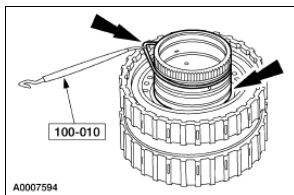
3. **⚠ CAUTION:** The circular depressions on the top of the nylon cage must be visible when installed on the inner race or the transaxle may be incorrectly assembled.

**NOTE:** Outer race must rotate clockwise.

Assemble the one-way clutch.



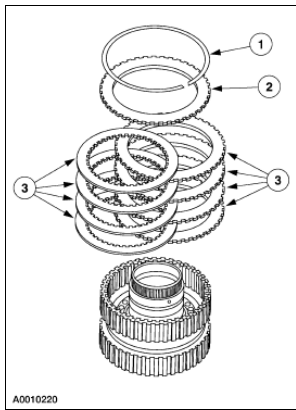
4. Using the special tool remove the intermediate and direct clutch hub seal.



5. **⚠ CAUTION:** Check for wear on inner splines of friction plates. Install new plates if worn.

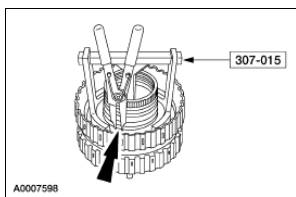
Remove the intermediate clutch pack.

1. Remove the snap ring.
2. Remove the clutch pressure plate.
3. Remove the clutch pack.

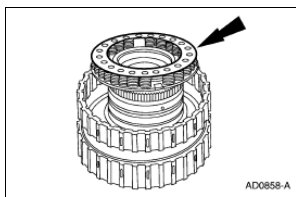


6. **⚠ CAUTION:** Do not allow the special tool to bottom out on the piston.

Using the special tool, compress the clutch spring and remove the snap ring.

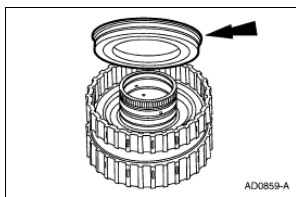


7. Remove the direct clutch return spring.

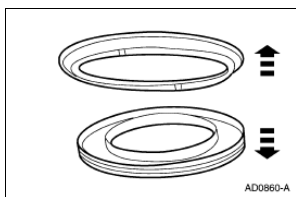


8. **NOTE:** The seal is part of the piston and is serviced as an assembly. Make sure that the check ball in the piston moves freely.

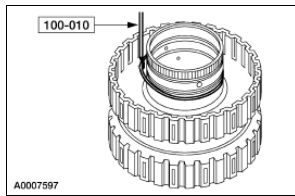
Remove the piston and seal assembly.



9. Separate the piston and seal assembly from the apply ring.



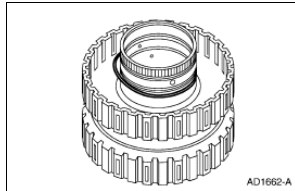
10. Using the special tool remove the inner piston seal.



### Assembly

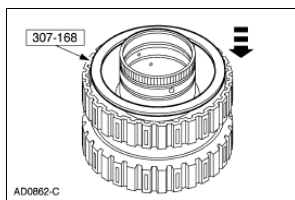
1. **NOTE:** The lip on the seal must face toward the bottom of the clutch cylinder.

Install the inner piston seal.

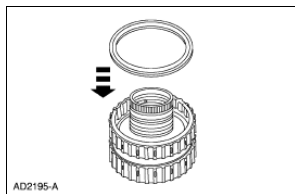


2. **NOTE:** Make sure that the check ball is in place on the clutch piston. Lightly coat all the seals with petroleum jelly prior to installation.

Using the special tool, install the direct clutch piston and seal assembly making sure that it is fully seated.

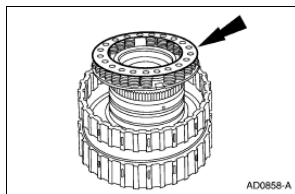


3. Install the apply ring. Make sure that it is fully seated on the clutch piston.



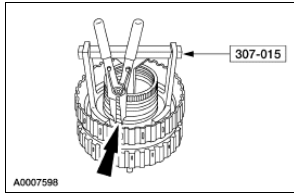
4. **NOTE:** The notch on the direct clutch return spring must line up with the check ball on the direct clutch piston.

Install the direct clutch return spring.



5. **⚠ CAUTION:** Do not allow the special tool to bottom out on the piston.

Using the special tool, compress the clutch spring and install the snap ring.

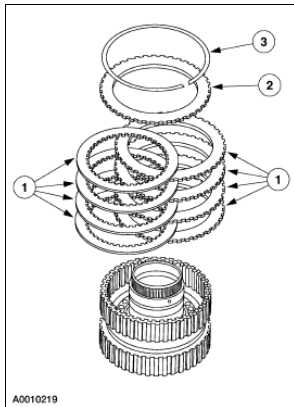


6. **⚠ CAUTION:** Check for wear on the inner splines of the friction plates. Install new plates if worn.

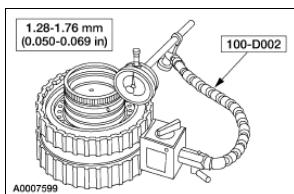
**NOTE:** The clutch pressure plate must be installed with the chamfer edge facing up.

Install the intermediate clutch pack.

1. Install the intermediate clutch pack.
2. Install the clutch pressure plate.
3. Install the snap ring.



7. Using the special tool, measure the clearance between the retaining ring and the clutch cylinder lip.



8. If the clearance is not within specification, selective retaining rings are available. Check the clearance after installing the correct selective retaining ring.

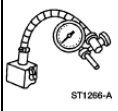
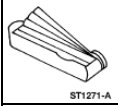
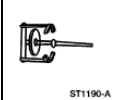
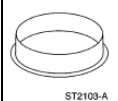
Selective Retaining Ring

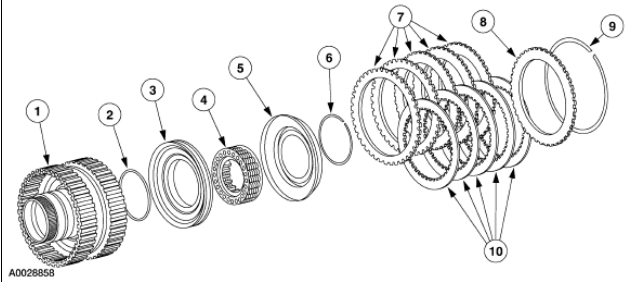
mm	inch
1.37-1.47	0.054-0.058
1.65-1.75	0.065-0.069
1.93-2.03	0.076-0.080
2.21-2.31	0.087-0.091
2.49-2.59	0.098-0.102
2.77-2.87	0.109-0.113



**Intermediate Clutch Cylinder**

Special Tool(s)

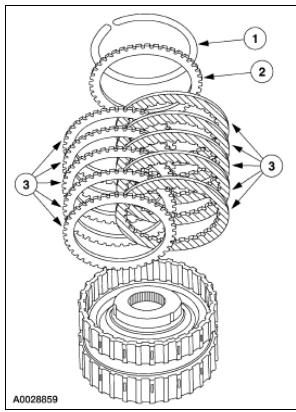
 ST1266-A	Dial Indicator Gauge with Holding Fixture 100-D002 (D78P-4201-B)
 ST1271-A	Feeler Gauge Set 303-D027 (D81L-4201-A) or equivalent
 ST1190-A	Compressor, Clutch Spring 307-015 (T65L-77515-A)
 ST2103-A	Protector, Piston Seal 307-319 (T94P-77001-LH)



Item	Part Number	Description
1	7G121	Direct and intermediate clutch cylinder
2	7G240	Intermediate clutch piston inner seal
3	7E005	Intermediate clutch piston and seal assembly
4	7G297	Intermediate clutch support and spring
5	7H185	Intermediate clutch return piston and seal assembly
6	N803175-S	Retaining ring
7	7B164	Intermediate clutch plate-externally splined (steel)
8	7B455	Intermediate clutch pressure plate
9	7G367	Intermediate clutch pressure plate retainer snap ring
10	7E314	Intermediate clutch plate-internally splined (friction)

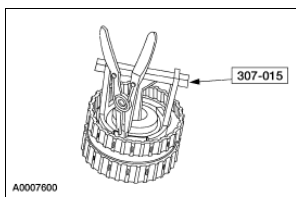
**Disassembly**

1. Remove the intermediate clutch pack.
  1. Remove the snap ring.
  2. Remove the pressure plate.
  3. Remove the clutch pack.



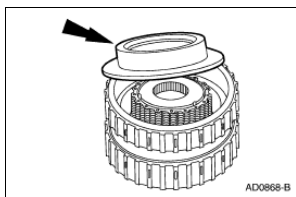
2. **⚠ CAUTION:** Do not fully compress the intermediate clutch spring retainer.

Using the special tool, compress the intermediate clutch return spring and remove the snap ring.

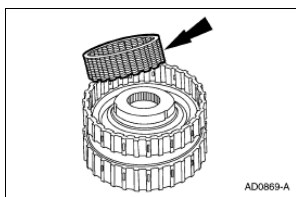


3. **NOTE:** The seal is part of the piston and is repaired as an assembly.

Remove the intermediate clutch balance piston assembly.

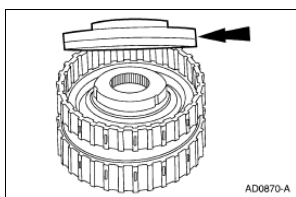


4. Remove the intermediate clutch return spring.



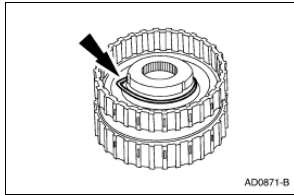
5. **NOTE:** The seal is part of the piston and is repaired as an assembly.

Remove the intermediate clutch piston.



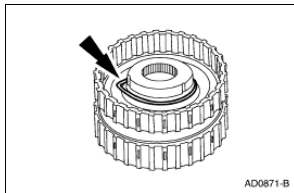
6. Remove the intermediate clutch piston inner seal.





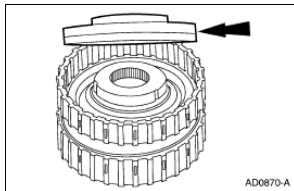
### Assembly

1. Clean and inspect the intermediate clutch cylinder. Install the intermediate clutch piston inner seal.

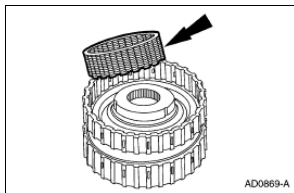


2. **NOTE:** Lightly coat all the seals and surfaces with petroleum jelly.

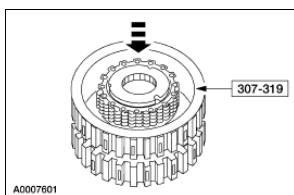
Install the intermediate clutch piston.



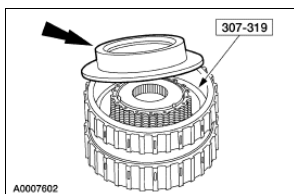
3. Install the intermediate clutch support and spring.



4. Install the special tool.

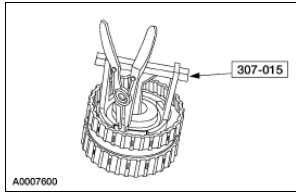


5. Using the special tool, install the intermediate clutch balance piston and seal assembly.

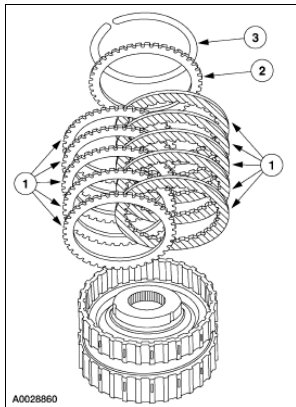


6. **⚠ CAUTION:** Do not fully compress the intermediate clutch spring retainer.

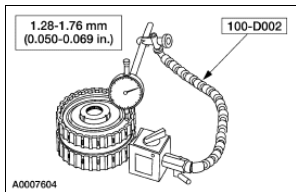
Using the special tool, compress the intermediate clutch return spring and install the snap ring.



7. Install the intermediate clutch pack.
  1. Install the clutch pack.
  2. Install the pressure plate.
  3. Install the snap ring.



8. Using the special tool, measure the clearance between the retaining ring and the clutch cylinder lip.



9. If the clearance is not within specification, selective retaining rings are available. Check the clearance after installing the correct selective retaining ring.

#### Selective Retaining Ring

mm	inch
1.37-1.47	0.054-0.058
1.65-1.75	0.065-0.069
1.93-2.03	0.076-0.080
2.21-2.31	0.087-0.091
2.49-2.59	0.098-0.102
2.77-2.87	0.109-0.113

