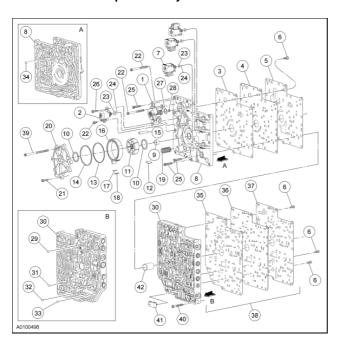
66	7N155	Cooler bypass spring
67	7A099	Main control valve body

Main Control Pump Assembly

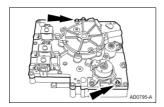


Item	Part Number	Description
1	7H144	EPC solenoid valve
2	7G133	TCC solenoid
3	7G331	Separator plate-to-pump body gasket
4	7A142	Separator plate
5	7A136	Pump assembly-to-valve body gasket
6	N803737-S	Bolts
7	7G484	No. 3 shift solenoid
8	7A104	Pump body
9	7G184	Pump bearing and seal assembly
10	7G287	Ring pump vane support
11	7A146	Pump rotor
12	7G286	Pump vane (7 required)
13	7G282	Pump bore ring side support
14	7G281	Pump bore ring side seal
15	N803499-S	Bore ring retaining pin
16	7R194	Pump body bore ring
17	7G284	Pump bore ring radial seal support
18	7G283	Pump bore ring radial seal
19	7G285	Pump bore ring spring
20	7G187	Pump cover and sleeve assembly
21	N605892-S1	Bolt (2 required)
22	N605772-S1000	Bolts

23	7Z484	O-ring seal (inner)
24	7Z484	O-ring seal (outer)
25	N803727-S	Bolts
26	N803727-S	Bolt
27	7Z144	O-ring seal
28	7Z144	O-ring seal
29	7E195	Check ball (B4)
30	7A100	Main control valve body
31	7E195	Check ball (B2)
32	7E195	Check ball (B3)
33	7E195	Check ball (B1)
34	7E195	Check ball
35	7A008	Valve body separator plate
36	7D100	Valve body-to-separator plate gasket
37	7C155	Valve body to chain cover gasket
38	7Z490	Valve body plate (bonded gasket)
39	N807073-S1100	Bolt (pump cover to chain cover)
40	N606022-S1000	Bolt (pump body to chain cover)
41	7H141	Transmission fluid temperature (TFT) sensor
42	7G318	Valve body sleeve

Disassembly

- 1. Remove the pump assembly.
 - Remove the bolts.
 - Remove the pump.



2. **NOTE:** The valve body separator plate has a bonded gasket.

Remove the bolts and the separator plate.

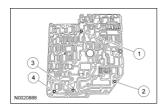


3. **NOTE:** Be sure to note the location of the check balls.

Remove the check balls.

Item Check Ball Identification

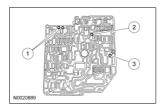
1	B4
2	B1
3	В3
4	B2



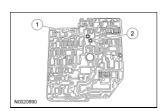
4. **NOTE:** The relief valve springs are not interchangeable.

Tag and mark the location of the relief valve springs.

- 1. Remove the modulator check valve and springs.
- 2. Remove the modulator check valve and drain back spring.
- 3. Remove the manual low relief valve and cooler bypass spring.



- 5. Remove and discard the filters.
 - 1. Remove the solenoid regulator filter.
 - 2. Remove the torque converter clutch filter.



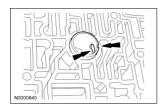
6. ACAUTION: Most valves are aluminum and cannot be removed using a magnet. Remove the valves by tapping the valve body on the palm of the hand to slide the valves out of the bores. It may be necessary to remove the valves and springs using a pick. If it is necessary to use a pick, use extreme caution to prevent damaging the valves or valve bores. If necessary, disassemble parts of the main control valve body in small groups. Take special care when handling the main control components, since they are the most precise and delicate parts of the transaxle. Neatly arrange the parts as they are removed to avoid mixing similar pieces.

CAUTION: Do not stone or polish any valves. If the valves do not move freely, install a new assembly.

Remove the individual valves and springs by removing the retaining clips and bore plugs. See the main control valve body assembly illustration for valve and spring locations. Clean valves, springs and main control valve body.

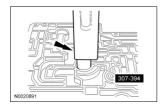
7. Inspect the valve body sleeve for wear or damage.

- Verify that the hole in the valve body sleeve aligns with the hole in the circuit passage.
- Verify that the edge of the sleeve is 5.5 mm (0.21 in) above the valve body surface.



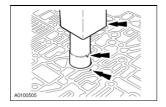
- 8. **A** CAUTION: All the valves must be removed from the valve body during replacement of the sleeve to prevent possible damage.
 - **CAUTION:** The machined passage surfaces of the valve body that contact the press supports should be protected during sleeve replacement.
 - **A** CAUTION: Do not press with excessive force when installing a new sleeve.

If a new sleeve is required, use the special tool and a suitable press to push the sleeve from the valve body.

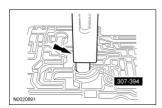


Assembly

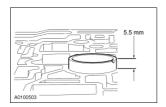
1. If removed, position a new valve body sleeve with the notch and the hole in the sleeve with the valve body passage hole aligned.



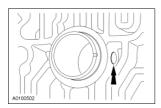
2. Using the special tool and a suitable press, install the new sleeve in the valve body.



3. Verify that the valve body sleeve extends 5.5 mm (0.21 in) above the valve body surface.



4. Verify that the holes in the valve body sleeve align with the passage hole in the valve body.

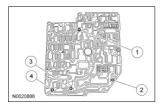


5. **A CAUTION:** Do not stone or polish any of the valves. If the valves do not move freely during assembly, replacement of the valve body is necessary.

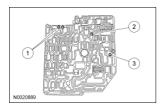
Install the valves and springs.

6. Install the check balls.

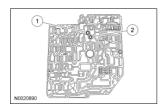
Item	Check Ball Identification
1	B4
2	B1
3	В3
4	B2



- 7. Install the relief valves and springs.
 - 1. Install the modulator check valve and springs.
 - 2. Install the manual low relief valve and drain back spring.
 - 3. Install the manual low relief valve and cooler bypass spring.



- 8. Install new filters.
 - 1. Install a new solenoid regulator filter.
 - 2. Install a new torque converter clutch filter.

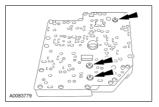


9. ACAUTION: Verify correct alignment of the relief and check valves to the separator plate before tightening the bolts. If the relief and check valves are incorrectly installed, the transaxle will not operate correctly.

NOTE: The new gaskets are bonded to the separator plate.

Install new valve body separator plate with bonded gasket and bolts.

• Tighten to 11 Nm (8 lb-ft).



SECTION 307-01: Automatic Transaxle/Transmission

2007 Freestar/Monterey Workshop Manual

Procedure revision date: 04/27/2006

DISASSEMBLY AND ASSEMBLY OF SUBASSEMBLIES

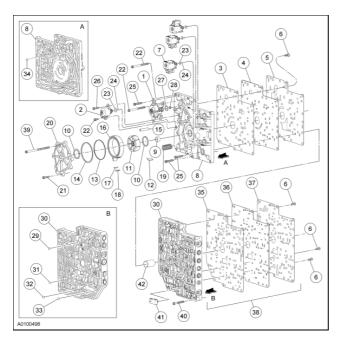
Pump Assembly

Printable View (1022 KB)

Special Tool(s)

ST1938-A	Remover, Pump Bearing/Fluid Seal 307-394
T92P-77000-EH	Installer, Pump Bearing/Fluid Seal 307-393
ST1047-A	

Main Control Pump Assembly

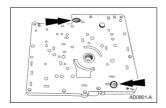


Item	Part Number	Description
1	7H144	EPC solenoid valve
2	7G133	TCC solenoid
3	7G331	Separator plate-to-pump body gasket
4	7A142	Separator plate
5	7A136	Pump assembly-to-valve body gasket
6	N803737-S	Bolts
7	7G484	No. 3 shift solenoid
8	7A104	Pump body
9	7G184	Pump bearing and seal assembly
10	7G287	Ring pump vane support

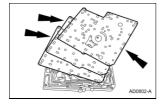
12 7G286 Pump vane (7 required) 13 7G282 Pump bore ring side support 14 7G281 Pump bore ring side seal 15 N803499-S Bore ring retaining pin 16 7R194 Pump body bore ring 17 7G284 Pump bore ring radial seal support 18 7G283 Pump bore ring spring 19 7G285 Pump bore ring spring 20 7G187 Pump cover and sleeve assembly 21 N605892-S1 Bolt (2 required) 22 N605772-S1000 Bolts 23 7Z484 O-ring seal (inner) 24 7Z484 O-ring seal (outer) 25 N803727-S Bolts 26 N803727-S Bolt 27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B1) 34 7E195	11	7A146	Dump rotor
13 7G282 Pump bore ring side support 14 7G281 Pump bore ring side seal 15 N803499-S Bore ring retaining pin 16 7R194 Pump body bore ring 17 7G284 Pump bore ring radial seal support 18 7G283 Pump bore ring spring 19 7G285 Pump bore ring spring 20 7G187 Pump cover and sleeve assembly 21 N605892-S1 Bolt (2 required) 22 N605772-S1000 Bolts 23 7Z484 O-ring seal (inner) 24 7Z484 O-ring seal (outer) 25 N803727-S Bolts 26 N803727-S Bolt 27 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 <t< td=""><td></td><td></td><td>Pump rotor</td></t<>			Pump rotor
14			-
N803499-S Bore ring retaining pin			
Pump body bore ring			
Pump bore ring radial seal support	15	N803499-S	Bore ring retaining pin
Pump bore ring radial seal	16	7R194	Pump body bore ring
Pump bore ring spring	17	7G284	Pump bore ring radial seal support
Pump cover and sleeve assembly	18	7G283	Pump bore ring radial seal
N605892-S1 Bolt (2 required)	19	7G285	Pump bore ring spring
N605772-S1000 Bolts	20	7G187	Pump cover and sleeve assembly
23 7Z484 O-ring seal (inner) 24 7Z484 O-ring seal (outer) 25 N803727-S Bolts 26 N803727-S Bolt 27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	21	N605892-S1	Bolt (2 required)
24 7Z484 O-ring seal (outer) 25 N803727-S Bolts 26 N803727-S Bolt 27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	22	N605772-S1000	Bolts
25 N803727-S Bolts 26 N803727-S Bolt 27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	23	7Z484	O-ring seal (inner)
26 N803727-S Bolt 27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	24	7Z484	O-ring seal (outer)
27 7Z144 O-ring seal 28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	25	N803727-S	Bolts
28 7Z144 O-ring seal 29 7E195 Check ball (B4) 30 7A100 Main control valve body 31 7E195 Check ball (B2) 32 7E195 Check ball (B3) 33 7E195 Check ball (B1) 34 7E195 Check ball 35 7D100 Valve body-to-separator plate gasket 36 7A008 Valve body separator plate 37 7C155 Valve body-to-chain cover gasket 38 7Z490 Valve body plate (bonded gasket) 39 N807073-S1100 Bolt (pump cover to chain cover) 40 N606022-S1000 Bolt (pump body to chain cover) 41 7H141 Transmission fluid temperature (TFT) sensor	26	N803727-S	Bolt
7E195 Check ball (B4) 7A100 Main control valve body 7E195 Check ball (B2) 7E195 Check ball (B3) 7E195 Check ball (B1) 7E195 Check ball (B1) 7E195 Check ball (B1) 7E195 Check ball 7E195 Check ball (B1) 7E195 Check ball (B2) 7E195 Check ball (B1)	27	7Z144	O-ring seal
7A100 Main control valve body TE195 Check ball (B2) TE195 Check ball (B3) TE195 Check ball (B1) Check ball (B1) TE195 Check ball (B1) TE195 Check ball TE195 Check ball Valve body-to-separator plate gasket Valve body separator plate TC155 Valve body-to-chain cover gasket Valve body plate (bonded gasket) N807073-S1100 Bolt (pump cover to chain cover) M606022-S1000 Bolt (pump body to chain cover) Transmission fluid temperature (TFT) sensor	28	7Z144	O-ring seal
7E195 Check ball (B2) 7E195 Check ball (B3) 7E195 Check ball (B1) 7E195 Check ball (B1) 7E195 Check ball 7E195 Check ball (B1) 7E195 Check b	29	7E195	Check ball (B4)
7E195 Check ball (B3) 7E195 Check ball (B1) 7E195 Check ball 7E195 Check ball 7E195 Check ball 7D100 Valve body-to-separator plate gasket 7A008 Valve body separator plate 7C155 Valve body-to-chain cover gasket 7Z490 Valve body plate (bonded gasket) N807073-S1100 Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) 7H141 Transmission fluid temperature (TFT) sensor	30	7A100	Main control valve body
7E195 Check ball (B1) 7E195 Check ball 7E195 Check ball 7D100 Valve body-to-separator plate gasket 7A008 Valve body separator plate 7C155 Valve body-to-chain cover gasket 7Z490 Valve body plate (bonded gasket) N807073-S1100 Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) 7H141 Transmission fluid temperature (TFT) sensor	31	7E195	Check ball (B2)
7E195 Check ball 7D100 Valve body-to-separator plate gasket 7A008 Valve body separator plate 7C155 Valve body-to-chain cover gasket 7Z490 Valve body plate (bonded gasket) 8 N807073-S1100 Bolt (pump cover to chain cover) 9 N606022-S1000 Bolt (pump body to chain cover) 1 Transmission fluid temperature (TFT) sensor	32	7E195	Check ball (B3)
7D100 Valve body-to-separator plate gasket 7A008 Valve body separator plate 7C155 Valve body-to-chain cover gasket 7Z490 Valve body plate (bonded gasket) 8Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) 7H141 Transmission fluid temperature (TFT) sensor	33	7E195	Check ball (B1)
7A008 Valve body separator plate 7C155 Valve body-to-chain cover gasket 7Z490 Valve body plate (bonded gasket) 8 N807073-S1100 Bolt (pump cover to chain cover) 9 N606022-S1000 Bolt (pump body to chain cover) 9 Transmission fluid temperature (TFT) sensor	34	7E195	Check ball
7C155 Valve body-to-chain cover gasket Valve body plate (bonded gasket) N807073-S1100 Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) Transmission fluid temperature (TFT) sensor	35	7D100	Valve body-to-separator plate gasket
7Z490 Valve body plate (bonded gasket) N807073-S1100 Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) Transmission fluid temperature (TFT) sensor	36	7A008	Valve body separator plate
N807073-S1100 Bolt (pump cover to chain cover) N606022-S1000 Bolt (pump body to chain cover) Transmission fluid temperature (TFT) sensor	37	7C155	Valve body-to-chain cover gasket
40 N606022-S1000 Bolt (pump body to chain cover) 41 Transmission fluid temperature (TFT) sensor	38	7Z490	Valve body plate (bonded gasket)
Transmission fluid temperature (TFT) sensor	39	N807073-S1100	Bolt (pump cover to chain cover)
	40	N606022-S1000	Bolt (pump body to chain cover)
42 7G318 Main control valve body sleeve	41	7H141	Transmission fluid temperature (TFT) sensor
	42	7G318	Main control valve body sleeve

Disassembly

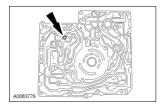
1. Remove the bolts.



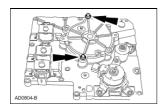
2. Remove the valve body separator plates and gaskets.



3. Remove the B8 check ball and note the location.



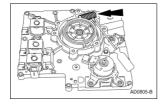
4. Remove the bolts and the pump cover.



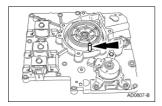
5. **A** WARNING: Use extreme caution when removing spring to prevent personal injury.

CAUTION: Place a piece of cardboard or a suitable material under a screwdriver to prevent damage to the housing gasket surface.

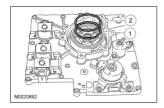
Remove the bore ring spring.



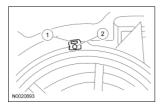
6. Remove the pump bore ring pin.



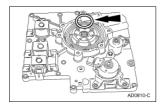
- 7. Remove the metal bore ring and support seal.
 - 1. Remove the bore ring side seal (metal).
 - 2. Remove the support seal (O-ring).



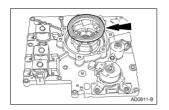
- 8. Remove the pump bore ring radial seal and support.
 - 1. Remove the pump bore ring radial seal (orange rectangular).
 - 2. Remove the pump bore ring radial seal support (black round).



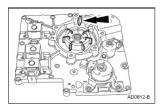
9. Remove the top pump vane support ring.



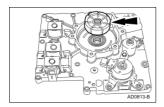
10. Remove the outer pump bore ring.



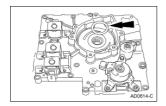
11. Remove the vanes.



12. Remove the rotor.

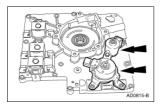


13. Remove the bottom pump vane support ring.



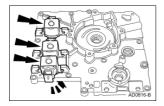
- 14. Remove the EPC, TCC solenoids and seals.
 - Remove the bolts.

• Remove the EPC and TCC solenoids.



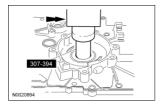
15. **NOTE:** The shift solenoids are interchangeable. Take note of the shift solenoid connector orientation.

Remove the shift solenoids by pressing locking tab with a screwdriver and rotating them.



- 16. Inspect the fluid pump body bearing for wear or damage.
- 17. **A** CAUTION: The machined passage surfaces of the pump body must be protected when removing the damaged bearing.
 - **A** CAUTION: Do not press with excessive force when removing the damaged bearing.

If required, use the special tool and a suitable press to remove the bearing assembly.

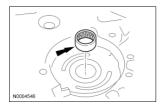


Assembly

- 1. **A** CAUTION: The machined passage surfaces of the pump body must be protected when installing a new bearing.
 - **A** CAUTION: Do not press with excessive force when installing a new bearing.

NOTE: The bearing is correctly installed with its seal facing down.

Position the bearing for installation.



- 2. If removed, use the special tool and a suitable press, install the fluid pump body bearing.
 - Install the bearing so the edge of the bearing is flush with the pump bore surface.