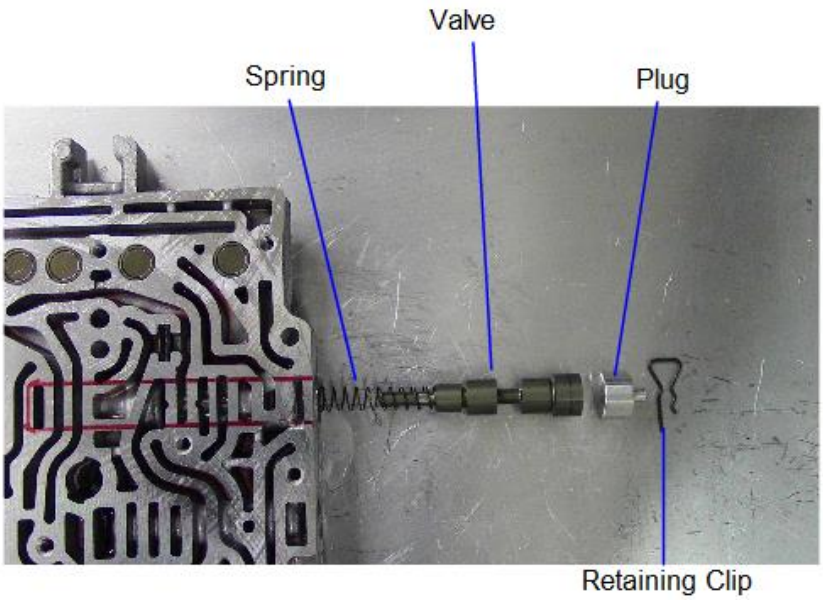
General Service Bulletin (GSB):	Automatic Transmission Main Control Inspection
GSB Overview:	This bulletin will assist technicians in determining inspection and analysis of hydraulic valves found in the Valve Body, Solenoid Body and Pump.
NOTE: This information is not intended to replace or supersede any warranty, parts and service policy, Work Shop Manual (WSM) procedures or technical training or wiring diagram information.	

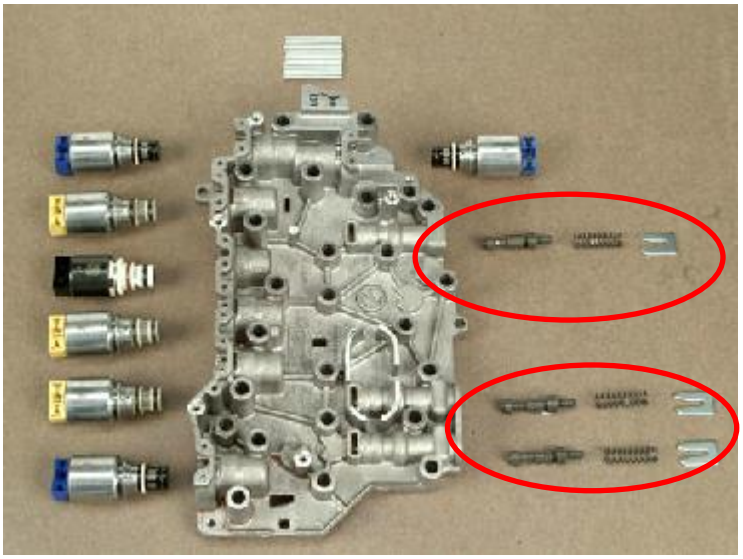
This General Service Bulletin provides tips for use when performing Main Control Valve Body/Solenoid Body and Transmission Fluid Pump inspection and overhaul procedures covered in the Workshop Manual (WSM). Warranty part return samples from dealers are included for reference.



Pump with Removable Valves

Automatic Transmission Main Control Inspection

Solenoid Latch Valves



Anodized Valves

Note: Have a dull, somewhat dark color. Anodized coating should not have bright, polished areas which would indicate the valve has worn through the anodized coating. Normal appearing valves will not show significant scratching in areas which contact the bore. Refer to Inspection Criteria in this document.

Nickel Plated Valves

Note: Nickel plated valves have a somewhat reflective or shiny appearance.

Visible scratching on nickel plated valves is normally cosmetic and **does not** indicate part replacement is required. Follow Inspection Criteria in this document.

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Inspection Criteria

Note: The presence of oil on parts during the inspection may cause inaccurate results.

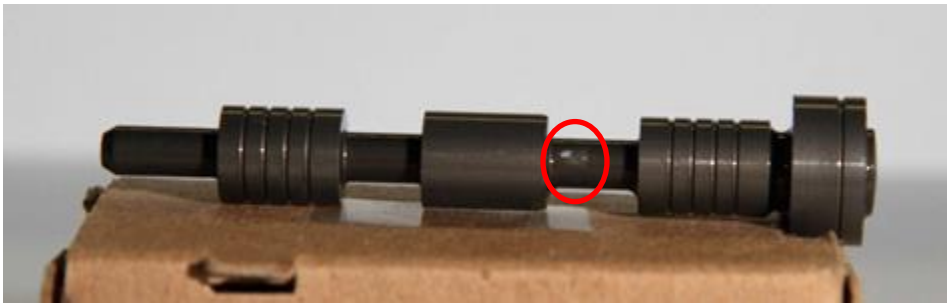
- Completely **disassemble, clean and dry** all parts prior to inspection following the Workshop Manual (WSM) procedure.
- Check balls should have no flat spots. (Roll check on flat surface.)
- Separator plates should have only slight witness marks from check balls.
- **Anodized Valves Only**: Inspect the valves for scratches and worn through coating on the face of the valve lands (surface that touches the bore).
    - A scratch is any measurable depth or raised area which runs across the **entire length** of the valve land.
    - **For anodized valves, a scratch or worn valve land requires part replacement.**
- Both anodized and nickel valves should be gravity checked. Place the clean, dry valve into the clean, dry bore and verify the valve moves freely under its own weight as the casting is turned over. **See first video at end of this document for demonstration.**
    - If any clean, dry valve does not move freely the casting assembly must be replaced.
- Check for broken or damaged springs. Springs are not serviced separately from valve/solenoid/pump body.
- If valve passes the gravity check, the final check is to re-assemble and check valve for free linear motion with a non-marring instrument. **See second video.**

Auto Trans Main Control Inspection

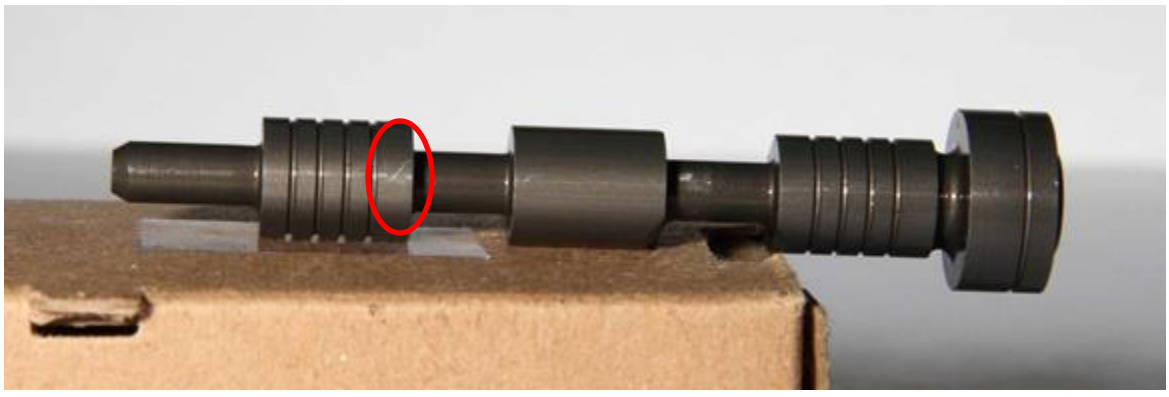
Note: Samples shown are from a 6F35 Transmission but inspection is the same for all transmissions.

Returned Part Samples

- **Part Description-** CBR1/C456 Regulator valve, area circled doesn't contact bore, scratching or blemish in the valley area doesn't affect operation
- **Tech Comment –** tech reported metal in fluid and shuttles scored so the main control was replaced
- **Engineering Analysis/Comments-** Photos of the returned part indicate minor surface blemishes that should not be considered as "scuffing" or "scoring". Marks found in the valley area are often normal and occur during manufacturing. Based on the visual inspection this part should have been cleaned and re-used. Part passed all engineering performance tests.

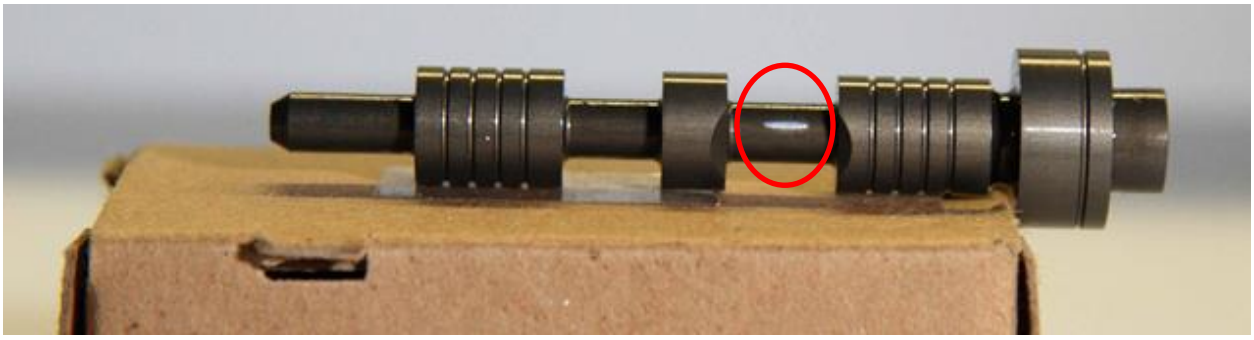


- **Part Description-** CBR1/C456 Regulator valve
- **Engineering Analysis/Comments-** Area circled shows a cosmetic concern which does not catch on a fingernail. This returned part passed engineering performance testing. Photos indicate minor surface blemishes in the valley area that should not be considered as "scuffing" or "scoring". This part should have been re-used.

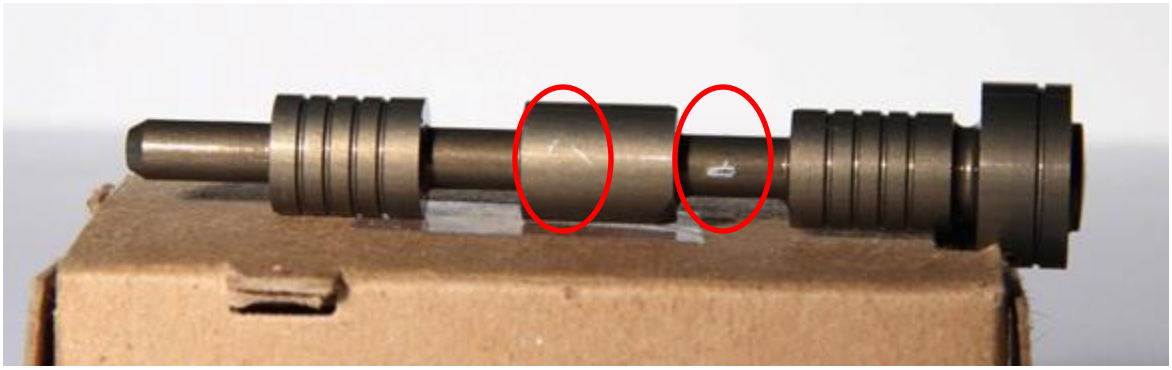


Auto Trans Main Control Inspection

- **Part Description-** C35R Regulator valve
- **Engineering Analysis/Comments-** This part passed all engineering performance tests. Photos indicate minor surface blemishes in the valley area. As in similar previous examples, these marks were likely created during manufacture. Blemishes in this area do not impact valve sealing and would not create a sticking condition. This valve would not require a valve body or solenoid body replacement.



- **Part Description-** Control Pressure Regulator valve
- **Engineering Analysis/Comments-** This part passed engineering performance tests. The photo indicates cosmetic issues only. Area in left circle is very light, not measurable or felt with a fingernail, and doesn't extend across entire length of surface so it would not result in a leak. Valley area in right circle is not a sealing surface. This valve should not have been replaced.



Auto Trans Main Control Inspection

- **Part Description-** Solenoid Regulator valve
- **Tech Comment –** Technician comments indicated an excessively worn regulator valve
- **Engineering Analysis/Comments-** This part is a nickel coated valve. Nickel coated valves will have visible scratching. This valve has an appearance typical of valves with nickel coating. Don't replace valve body based on nickel valve appearance. Follow inspection criteria in this document and follow procedures in the Workshop Manual to diagnose the concern.

Inspection Demonstration Videos

This video shows proper valve inspection and movement check, along with gravity test which shows a clean dry valve moving under its own weight.

http://www.fordservicecontent.com/Ford_Content/videos/AutoTransMainControlInspection.mp4

This video has some of the same checks, but demonstrates the use an acceptable tool to check valves for sticking after cleaning and assembly.

http://www.fordservicecontent.com/Ford_Content/videos/MainControlValveTest.mp4