

## Remanufactured Valve Body

Fits '11-'17 units with Cooler Bypass Valve

### Part No.

## F06R140



**WARNING:** The PCM MUST be updated using the new solenoid strategy code attached to this remanufactured valve body. Failure to update will result in erratic transmission operation and damage.



## Valve Body Installation Tips

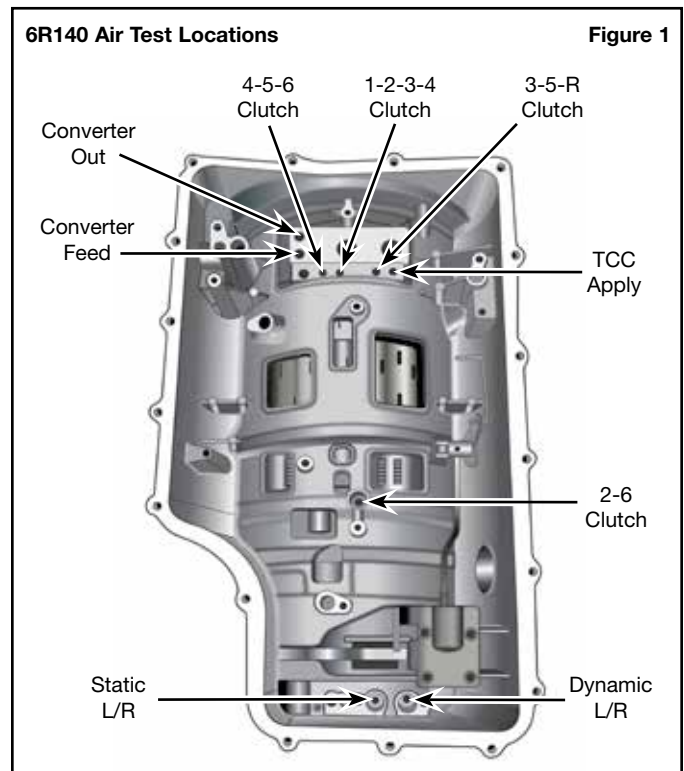
### 1. Air Check

While valve body is out, air-check indicated clutch apply circuits (**Figure 1**) using low, regulated air pressure. This will help you discover any issues prior to installing the remanufactured valve body.

### 2. Install Valve Body into Case

- Install feed tubes\* into valve body:
  - 4WD uses three tubes
  - 2WD uses four tubes (*extra tube used to lube slip yoke in extension housing*)
- Install four pump feed seals\* into valve body (**Figure 2**).
- Install five clutch feed seals\* into case (**Figure 3**).
- Install three short bolts for feed tubes (**Figure 4**) into case and tighten to 97 in-lb. Assemble valve body onto case and install 3 long valve body-to-case bolts into locations shown (**Figure 5**) and torque to 97 in-lb.
- Install manual valve rod into manual valve and transmission range sensor.
- Install harness and TFT sensor\*.
- Install filter and torque three bolts to 97 in-lb (**Figure 6**).
- Install pan and torque 19 bolts in a criss-cross pattern to 80 in-lb (**Figure 7**).

\*Note: Feed tubes, pump feed seals, clutch feed seals, harness and TFT sensor are not included.

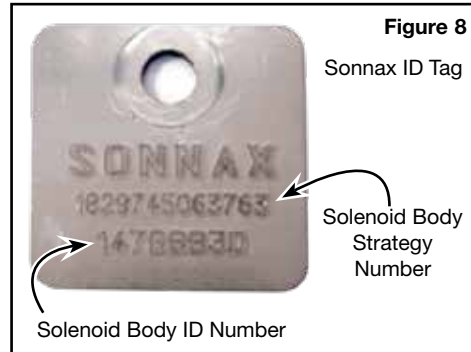


### 3. Fluid Fill

- a. Ensure vehicle is on level ground.
- b. Add between 10.2–12 qts. of Mercon LV following valve body replacement.
- c. Start engine and shift through all gear ranges to check engagements and allow fluid to enter all hydraulic circuits.
- d. Using a capable scan tool, check transmission oil temperature. Fluid level should be adjusted at normal operating temperature (180-200°F) using transmission oil dip stick.

### Solenoid Strategy Update

The PCM needs to be updated using the new solenoid body strategy data file and solenoid body ID as found on Sonnax ID tag (Figure 8). Failure to update PCM can result in drivability concerns or erratic transmission operation. This can be done either with Ford hardware or a J2534 pass thru device. Ford supplies a list of compatible J2534 devices as well as licensing information here: <https://www.motorcraftservice.com>.



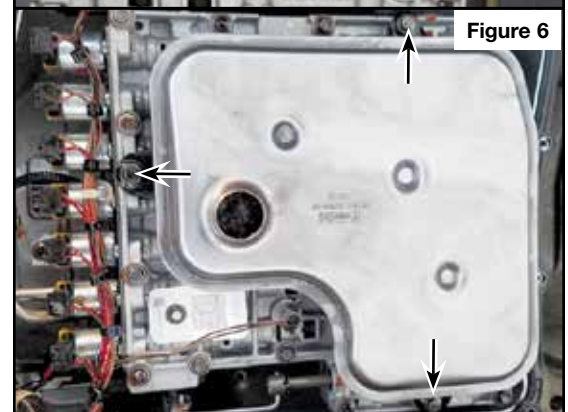
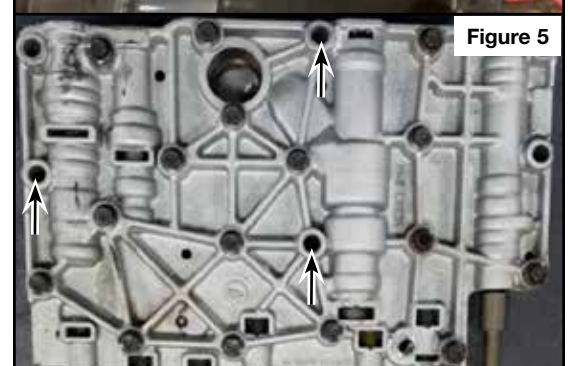
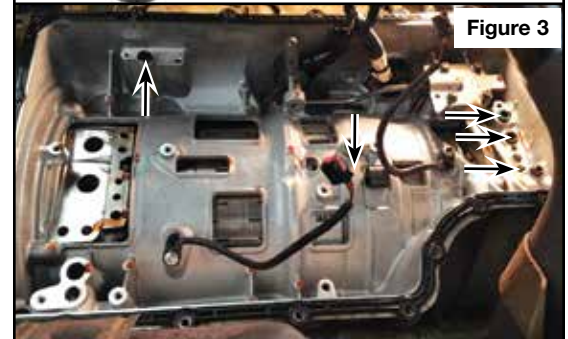
The FJDS software used to update the solenoid strategy is similar when used with most devices, but due to the wide variety of J2534 pass thru devices, hardware questions should be directed to the device manufacturer. Refer to Sonnax webinar: Ford 6R140, 6R80, 6F35, 6F50/55 Solenoid Strategies in the tech resources area on [www.sonnax.com](http://www.sonnax.com) for a walk through on updating the solenoid strategy.

### Resetting Adaptive Tables and Keep Alive Memory (KAM)

- a. Using a capable scan tool, clear the adaptive tables and reset the transmission KAM.
- b. Bring the transmission to normal operating temperature (between 180-200°F)
- c. With the engine running and brakes applied, move the shift lever in the following order pausing between each position for four seconds. Start in Neutral, N-R-N-D-R-D-N. Repeat this pattern twice. If any engagement has poor feel, repeat this step.
- d. Drive the vehicle and accelerate at moderate throttle so each shift occurs around (2,000 RPM for gas, 1,500 RPM for diesel) on the tachometer up to 65 mph. Brake moderately to a stop. Repeat this pattern twice.
- e. Drive the vehicle and accelerate at moderate throttle so each shift occurs around (3,000 RPM for gas, 2,250 RPM for diesel) on the tachometer up to 65 mph. Brake moderately to a stop. Repeat this pattern twice.
- f. With the engine running and brakes applied, move the shift lever in the following order pausing between each position for four seconds. Start in Neutral, N-R-N-D-R-D-N. Repeat this pattern twice.

### Transmission Diagnostic Tips

This remanufactured valve body has been through a rigorous inspection and rebuild process, then a comprehensive, functional hydraulic and electronic test to ensure it meets OE performance and quality. It is designed to eliminate many pressure, shift, and converter-related complaints, but will not correct complaints that stem from other areas of the transmission.



#### Transmission Diagnostic Tips (continued)

The following are common areas of failure or root causes for symptoms that could be attributed to valve body issues that should also be examined or addressed during your transmission build. Clutch and solenoid apply charts (Figures 9 & 10) are provided for additional aid in diagnosing problems.

- Fluid leak from front of transmission: Reusable pan gasket material degraded and leaking from bolts into bell housing
- Pump noise and loss of lube pressure: Failed converter hub support pump bearing
- P1702 range sensor intermittent code: Failed internal mode switch
- Low cooler flow in PTO units: Low coolant or sticking thermostat in secondary cooling system can cause an overheat condition. Overheating can cause steel sleeve to spin in pump and block converter out passage.
- No Movement: Input shaft broken out of forward/OD clutch drum

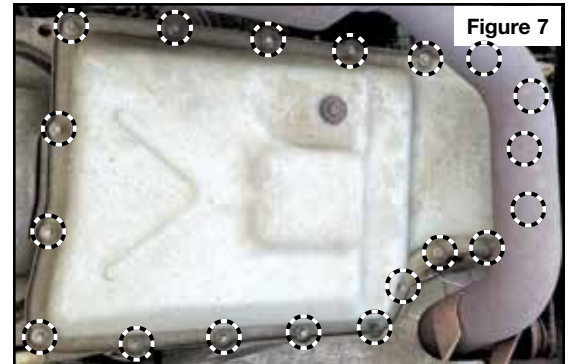


Figure 7

#### Clutch Apply Chart

Figure 9

GEAR	Forward 1-2-3-4	Direct 3-5-R	Intermediate 2-6	Low/Reverse 1, R	Overdrive 4-5-6	Low-OWC
Park				X		
Reverse		X		X		
Neutral				X		
D - 1st	X			X*		X
D - 2nd	X		X			O/R
D - 3rd	X	X				O/R
D - 4th	X				X	O/R
D - 5th		X			X	O/R
D - 6th			X		X	O/R
Manual 1st	X			X		X

\*Holding until vehicle reaches 5 mph; O/R = Overrunning

#### Solenoid Apply Chart

Figure 10

Commanded GEAR	SSA NL 1-2-3-4	SSB NH 3-5-R	SSC NL 2-6	SSD NL 1, R	SSE NH 4-5-6	TCC NL
Park	Off	On	Off	On	On	Off
Reverse	Off	Off	Off	On	On	Off
Neutral	Off	On	Off	On	On	Off
D - 1st	On	On	Off	Off*	On	On/Off**
D - 2nd	On	On	On	Off	On	On/Off**
D - 3rd	On	Off	Off	Off	On	On/Off**
D - 4th	On	On	Off	Off	Off	On/Off
D - 5th	Off	Off	Off	Off	Off	On/Off
D - 6th	Off	On	On	Off	Off	On/Off
Manual 1st	On	On	Off	On	On	Off

\*Solenoid will change state when vehicle travels above 5 mph.

\*\*Can be commanded ON early depending on transmission fluid temperature.