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TRANSMISSION PARTS

Instructions

AW 55-50SN, AW 55-51SN, AF23/33, RE5F22A

Remanufactured Linear Solenoid Kit

Part No. 59947-68K

- SLS Solenoid, Green
- SLT Solenoid, Blue
- SLU Solenoid, Black

NOTE: Early/Short

Also Available

Remanufactured Linear Solenoid Kits

59947-69K	Early/Long
59947-70K	Late/Long

CAUTION: Ensure correct style (early/short, early/long or late) of SLS/SLT solenoid based on connector direction and bracket design (**Figure 1**).

NOTE: These rebuilt soilenoids are 100% tested and calibrated to OE specifications. Readjustment should not be required if the valve body leakage has been addressed and a relearn process completed.

1. Installation

a. Remove mounting bolts and brackets.

b. Remove solenoids.

c. Install Sonnax solenoids. Verify correct connector direction on SLS and SLT solenoids.

d. Ensure proper orientation of OE bracket. Bolt to 62 in-lbs.

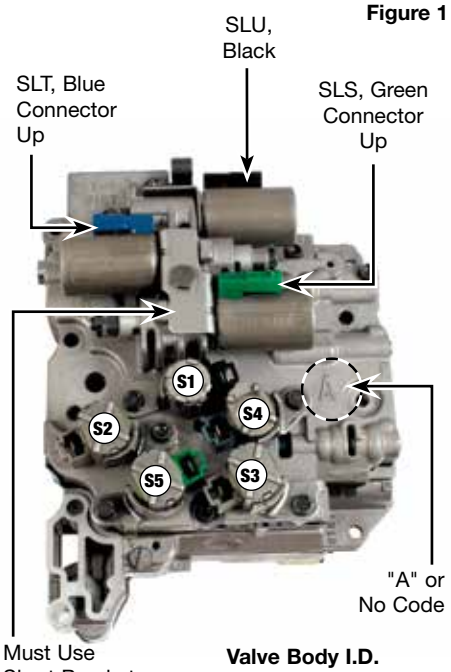
2. Relearn Process

A relearn process is REQUIRED, to prevent shift feel complaints. Refer to OE information on specific relearn process.

3. Final Testing

Many wear areas are common in these valve bodies and solenoids alone will often not fix the complaints. The best practice is to vacuum test the valve body bores and

Figure 1



Valve Body I.D. Early/Short Linear Solenoid Set

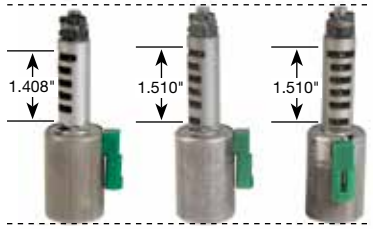
Figure 2

Wide Bracket: Early/Long Late/Long

Short Bracket: Early/Short

Figure 3

SLS Solenoid Identification



make repairs as required prior to completing the valve body. See Sonnax website for details on vacuum testing and our vacuum test guides by applications.

Sonnax has a full line of valve body solutions for this and other applications. Please see our website for further details and to view our valve body layouts for related complaints and solutions.

Solenoid Identification & Function

Figure 4

Solenoid	Connector	Wire(s) Color	Flow	Resistance	Function
SLU	Black	Green, Brown	N.C.	5.0–5.6 ohms at 68°F	TCC apply, Reverse, 1-2, 2-3 Up/Down shift
SLT	Blue	Green, Gray	N.O.		Line rise, Engagements, Converter Pressure
SLS	Green	Blue, Red	N.O.		Clutch Pressure, Shift Quality
S1	Black	White	N.O.	13.5–15.5 ohms at 68°F	1st, 1-2 Shift, Reverse
S2	Black, Gray	Black	N.O. - GM N.C. - Volvo		2nd, 3rd-4-5 Shift
S3	Gray	Yellow	N.C.		Reverse, 3-4 Shift FWD-Engagement
S4	Blue, Green	Purple, Red	N.O.		3, 4, 5, 2-3 Shift
S5	Green, Red, Gray	Blue, Black-'02 Volvo	N.C.		Reverse Engagement

Linear Solenoid Strategy

Figure 5

Gear	SLU	SLT	SLS
Park/Drive		X	
Park/Reverse		X	X
1-2, 2-1	X		
2-3	X	X	
3-2	X		X
3-4, 4-3	TC		X
4-5, 5-4	TC		X
TCC	X		
All Upshifts & Downshifts		X	X

Key: X = Greatest effect of this solenoid on shift indicated.
TC = Drivability effect on converter clutch.

Solenoid Adjustments

Figure 6

Solenoid	Adjust Inward (CW)	Adjust Outward (CCW)
SLT **Line Rise Solenoid** **Blue Connector**	**Increase** SLT pressure if: • Neutral-to-Drive delay • Long shifts • Low cooler flow	**Decrease** SLT pressure if: • Long 2-3 shift due to clutch overlap (2-3 Bind-up) • 3-2 Coastdown bump • Harsh forward engagement • Harsh TCC apply • Loss of lube or cooler flow
SLS **Shift Pressure Solenoid** **Green Connector**	**Increase** SLS pressure if: • Soft upshifts • Low speed 2-3 flare • Slight RPM flare on 3-4, 4-5 shifts	**Decrease** SLS pressure if: • Harsh reverse • Harsh 1-2 shift • Harsh 2-3 shift with end bump • Loss of TCC apply • High C1 clutch pressure • 3-2 Shift flare/bang
SLU **Lockup Solenoid** **Black Connector**	**Decrease** SLU pressure if: • Soft shifts • Early TCC apply • No TCC lockup	**Increase** SLU pressure if: • Hard 1-2, 2-1 shift • Firm/Late TCC apply

Valve Related Complaints

Figure 7

OE Valve	Complaints
Solenoid Modulator Valve	• Loss of 3rd, 4th, 5th gear • Low line pressure • 2-3 flare upshifts • No TCC apply • Delayed forward
Neutral Relay Valve	• No neutral control • Slips in reverse • No drive
Solenoid Relay Plunger Assembly	• No TCC apply • Harsh shifts • Engagement engine stall • Shift concerns • B5 clutch distress • 2-3 Shift flare
B4 Release Valve	• 2-3, 3-2 Shift concerns • 2-3 Flare • Harsh 3-2 coast downshift • 3-2 Neutral • 2-3 Neutral
Pressure Regulator Valve	• Harsh/Soft shifts • Late shifts • Converter apply/release issues • Delayed engagements • Reverse slips
Boost Valve Assembly	• Harsh/Soft shifts • Late shifts • Converter apply/release issues • Delayed engagements • Reverse slips
Lock-Up Relay Valve Assembly	• Converter codes • Inadequate lube • TCC apply/release issues
Secondary Regulator Valve	• Overheated fluids • Poor shift quality • Overheated converters • High/Low SLT pressure • TCC slippage
SLT Accumulator	• Delayed forward • Flare 2-3 upshift • Erratic SLT pressure • Low line pressure • Harsh shifts
Shift Pressure Control Assembly	• Harsh 2-3, 3-4, 4-5 shift • No 5th gear • Burnt B1, B2, or C2 clutch • Low/High reverse pressure
Lock-Up Control Valve & Assembly	• TCC apply/release issues • Converter codes • Burned converter
End Plugs	• 2-3 Shift flare • Low SLT pressure • TCC slip, fluid overheated • Delayed forward • Poor shift quality