

COMPLAINT

SECONDARY COMPLAINTS

Low line pressure

• High line pressure • Harsh shifts • Lack of cooler flow • Blued converters

CAUSE

The constant oscillation of the pressure regulator valve results in bore wear, which allows valuable oil leakage and improper functioning of the valve.

CORRECTION

The oversized pressure regulator valve eliminates oil leakage and restores proper function to the valve.

Oversized Pressure Regulator Valve Kit

NEW PRODUCT!

74846-06K

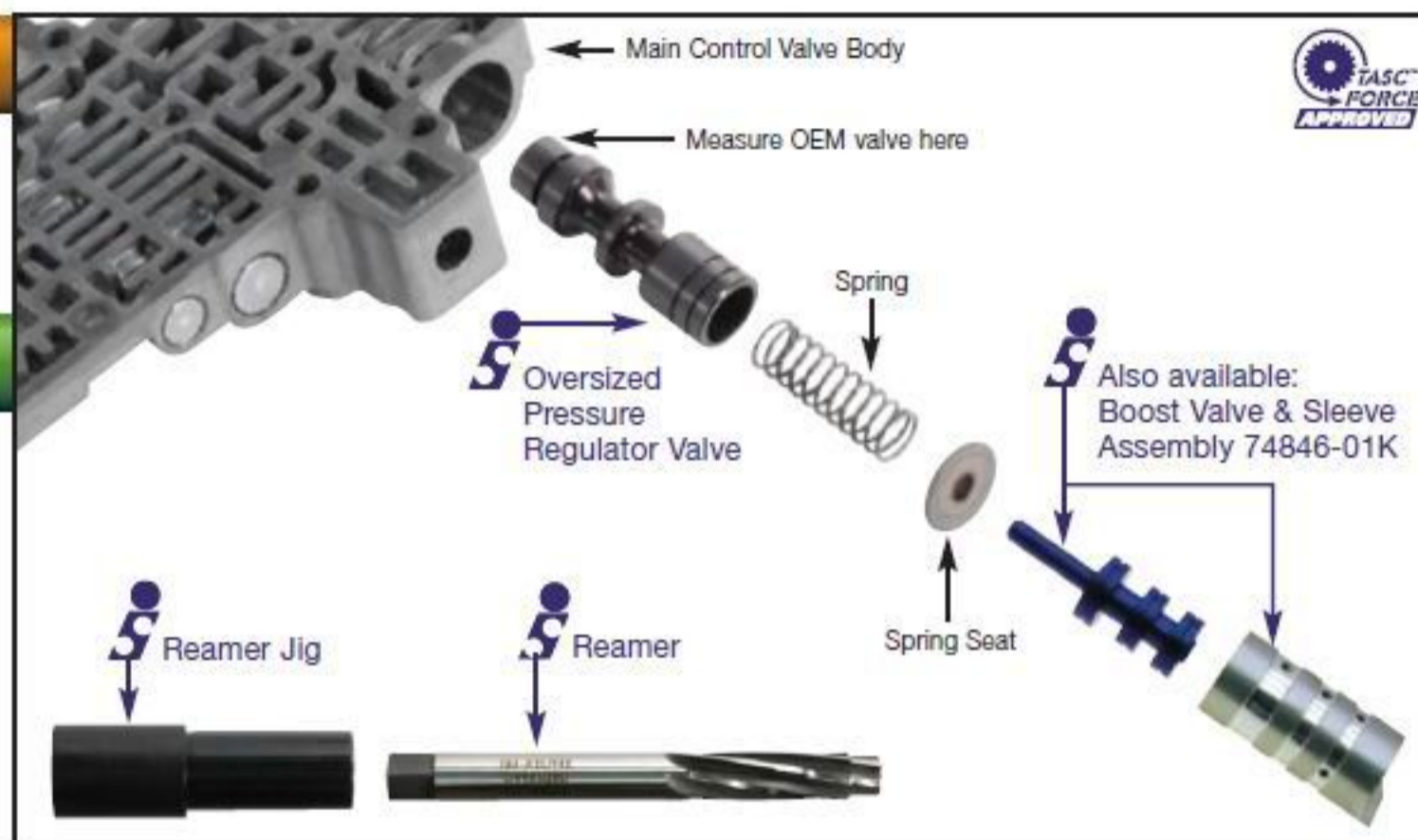
1 Oversized Pressure Regulator Valve



74846-TL6

1 Reamer
1 Reamer Jig

Note: Always measure the OEM valve before reaming. The inboard smallest diameter must be .505" for this reamer and replacement valve.



Sonnax Part Summary

Vehicles with an F4A-EL, FA4A-EL, F4EAT or F4E-III transmission often have low line pressure, high line pressure, harsh shifts, lack of cooler flow, and/or blued converters. Many times these problems can be caused by a worn valve body bore at the pressure regulator valve. If line balance or cutback feed pressure is allowed to leak, the valve can't regulate line pressure, so pressures remain high. TV balance pressure reduces line pressure in 2nd, 3rd and 4th gears, so leaks at these spool diameters can cause harsh shifts. If the bore is worn at the line pressure passage, valuable line pressure may exhaust to sump. Sonnax has developed an oversized pressure regulator valve 74846-06K for these applications. By reaming the valve body bore with Sonnax reamer kit 74846-TL6, this valve restores the hydraulic integrity of the circuits and prevents leakage.

Features & Benefits

- Valve calibrated for optimal line pressure.
- Valve provides higher line pressure at idle.
- Salvages expensive, hard-to-find valve bodies.

Note: Be sure to check the pressure modifier valve bore for wear on the F4A-EL, FA4A-EL and F4E-III units as well. Wear at this bore can result in erratic shift quality and high/low line and EPC pressures. Sonnax offers an oversized pressure modifier valve, 74846-07K, which can be used to refurbish bore wear at this location. Refer to the chart on the following page for appropriate part numbers and applications.

MADZA F4A-EL, FA4A-EL, F4E-III

COMPLAINT

SECONDARY COMPLAINTS

Erratic shift quality, soft 1-2 shift, 3rd clutch failure

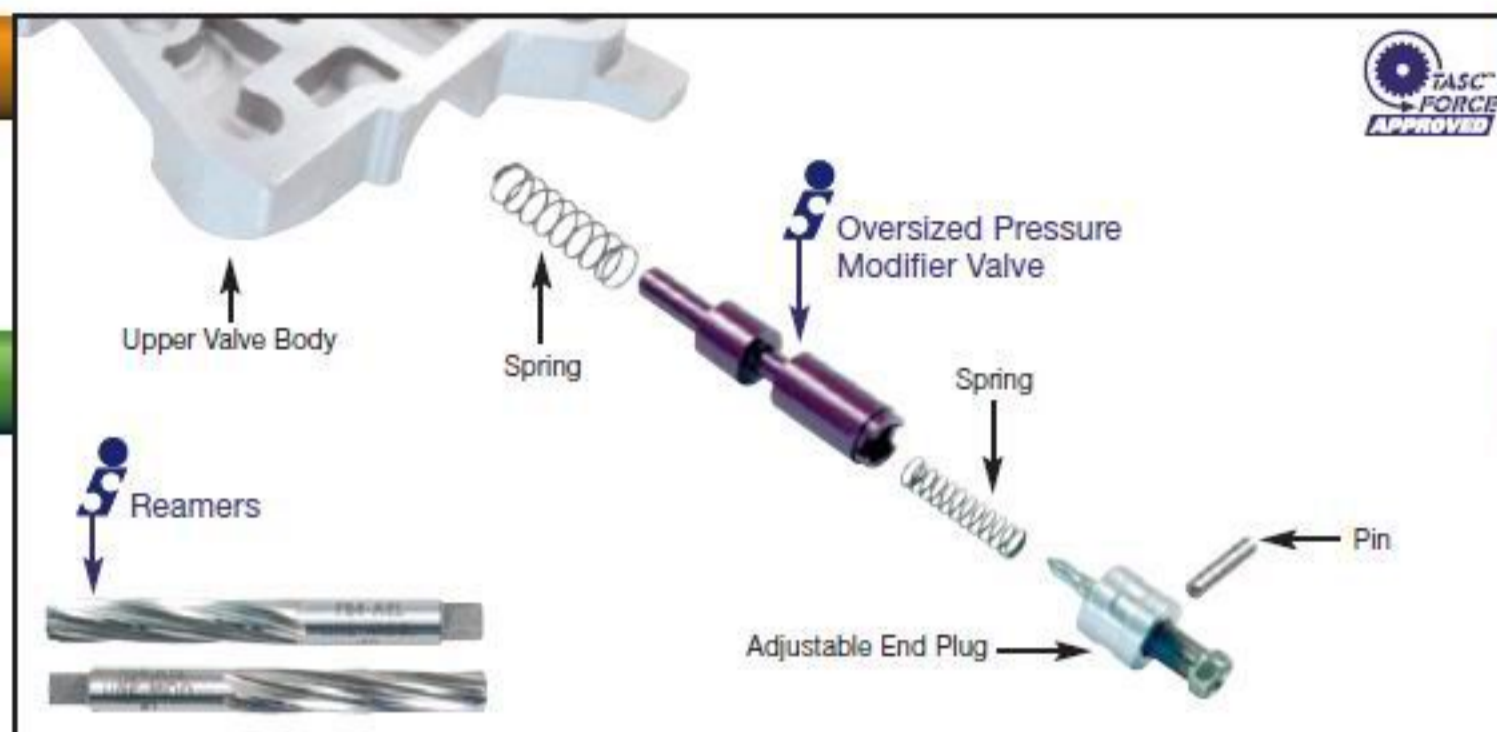
• Delayed reverse • Overall line pressure rise is too slow • High/low line pressure • High/low EPC pressure

CAUSE

Electronic control of the pressure modifier valve wears the bore, resulting in loss of valuable EPC oil. If the valve sticks or bore is worn, EPC control is lost.

CORRECTION

This oversized pressure modifier valve allows the worn valve body to be reamed to restore hydraulic integrity of the circuit. The valve has been manufactured from hard-anodized aluminum to prevent future valve body wear.



Oversized Pressure Modifier Valve

NEW PRODUCT!

74846-07K

1 Oversized Pressure Modifier Valve



74846-TL7

2 Reamers

Note: Fits '97-up units with adjustable end plug only.

Sonnax Part Summary

The constant oscillation of the pressure modifier valve wears the balance spool bore, preventing the valve from stroking to regulate EPC pressure. Loss of valuable EPC oil leads to erratic shift quality, poor line pressure and high or low EPC pressure. The Sonnax oversized pressure modifier valve 74846-07K allows the worn valve body to be reamed to restore hydraulic integrity of the circuit.

Features & Benefits

- Sonnax valve is manufactured from hard-anodized aluminum to prevent valve body wear.
- The spring seat depth has been shortened to compensate for the oversized valve, so the OEM spring may be reused.
- Restores proper pressure for improved shift quality.
- Salvages expensive, hard-to-find valve bodies.

YEAR	MAKE	UNITS	VEHICLES	CASE	REG. VALVE	BOOST SLEEVE	LINE MOD.	NOTES
'00-Up	FORD	4F27E(FN)	Focus		NA	NA	NA	This is a 4F27E Ford, a different unit. The case is not split in half as the -F- case is; the driveline components come out one end. None of the F parts apply.
'97-'03	FORD	FA4A-EL, F4E-III, FB	Escort, Tracer	Small, Single Pan	74846-06	74846-01K	74846-07	5-solenoid, includes EPC. Adjustable line mod. screw on opposite end of EPC, with or w/o tube. FB definition comes from VB casting. Not an OE reference, but from aftermarket info.
'91-'96	FORD	F4EAT	Escort, Tracer	Small, Single	74846-06	74846-01K	NA	4-solenoid, TV cable, with or without tube.
'91-'97	FORD	F3A - 3 Speed	Tracer, Aspire		NA	NA	NA	Not same unit as F4EAT. F3A is 3-speed used in 1.6L. Does not have accumulator piston covers visible at the front top as the 4-speed unit.
'99-Up	KIA	FA4A-EL, F4E-III	Rio, Spectra, Sephia	Small, Single Pan	NA	NA	NA	5-solenoid w/special Kia EPC & gaskets. VB casting has K, not FB, like Ford or Mazda. Opposite end of bore from EPC does not have an adjuster like the FB Ford casting. With or without a tube. PR valve, boost sleeve, spring are not same as Ford/ Mazda.
'97-'98	KIA	F4A-EL	Sephia	Small, Single Pan	NA	NA	NA	4-solenoid, hydraulic TV cable, with or without tube. PR valve, boost sleeve, spring are not same as Ford/ Mazda.
'99-Up	MAZDA	FN-J39A	Protégé		NA	NA	NA	Is a 4F27E Ford, a different unit. Case is not split in half as the F unit. No F parts apply.
'95-'98	MAZDA	F4A-EL, FB4	Protégé	Small, Single Pan	74846-06	74846-01K	74846-07	5-solenoid w/EPC adjust. Line mod. screw opposite end of EPC. Has an FB cast into it. FB isn't OE ref. but aftermarket. FB is casting ID. Line mod-07 has 2 spools .392" OD.
'90-'95	MAZDA	F4A-EL	Protégé, MX3	Small, Single	74846-06	74846-01K	NA	4-solenoid, TV cable, with or w/out tube. 74846-06 has 2 spool dia., smallest is .515".
'93-'02	FORD MAZDA	GF4-EL	MX6 w/2.5, Millenia, GT Probe	Big Case, Dual Pan	74846-05	74846-01K	74846-04	7-solenoid full electronic EPC. No TV cable. PR valve is 2.422" long, smallest spool is .357" OD. Has 3 spool diameters. Line mod has 3 spools.
'86-'92	FORD MAZDA	G4A-EL, G4A-FEL	626, 323, Probe, Capri	Big Case, Dual Pan	74846-05	71846-01K	NA	2- or 4-solenoid - not governor, with TV cable, turbo or non-turbo, E cam wheel. Same PR valve as above.
'86-'87	FORD MAZDA	G4A-HL	323, 626	Big Case, Dual Pan	NA	71846-01K	NA	1 solenoid with governor, with TV cable, H cam wheel. PR valve is steel and 2.660" long.

COMPLAINT**Low line pressure**

SECONDARY COMPLAINTS

• High line pressure • Harsh shifts • Lack of cooler flow • Blued converters

CAUSE

The constant oscillation of the pressure regulator valve results in bore wear, which allows leakage of valuable oil and improper functioning of the valve.

CORRECTION

The Sonnax oversized pressure regulator valve eliminates leakage of both balance oil and line pressure that can occur when the valve body becomes worn.

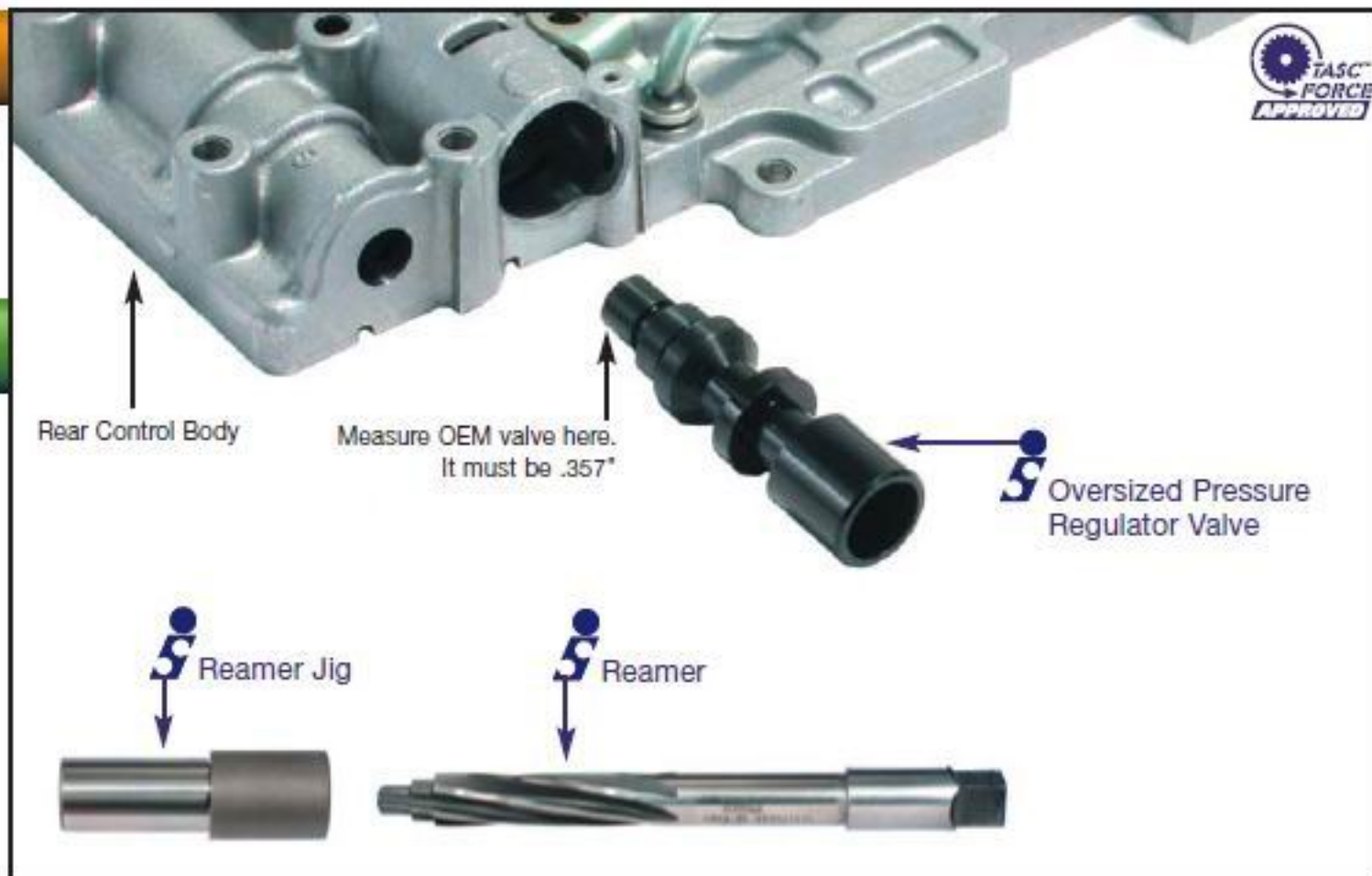
Oversized Pressure Regulator Valve**74846-05**

1 Oversized Pressure Regulator Valve

**74846-TL5**

1 Reamer Jig
1 Reamer

Note: Measure OEM valve small diameter before reaming. OEM must be .357"

**Sonnax Part Summary**

Vehicles with a G4A-EL, G4A-HL or GF4A-EL transmission may have problems with low line pressure, high line pressure, harsh shifts, lack of cooler flow, and/or blued converters. Many times these complaints can be traced back to a worn valve body bore at the pressure regulator valve. If line balance or cutback feed pressure is allowed to leak, the valve can't regulate line pressure, so pressures remain high. TV balance pressure reduces line pressure in second, third and fourth gears, so leaks at these spool diameters can cause harsh shifts. If the bore is worn at the line pressure passage, valuable line pressure may exhaust to sump. Sonnax has developed an oversized pressure regulator valve 74846-05 for these applications.

Features & Benefits

- The spring seat on the valve has been modified to compensate for the oversized valve and also provides higher line pressure at idle.
- Used in conjunction with Sonnax reamer kit 74846-TL5 to ream the valve body bore, this valve restores the hydraulic integrity of the circuits and prevents leakage.

Note: Be sure to check the pressure modifier valve bore for wear on the GF4A-EL unit as well. Wear at this bore can result in erratic shift quality and high/low line and EPC pressures. Sonnax offers an oversized pressure modifier valve, 74846-04, which can be used to refurbish bore wear at this location.

COMPLAINT

SECONDARY COMPLAINTS

Erratic shift quality

- High/low line pressure
- High/low EPC pressure

CAUSE

The constant oscillation of the steel pressure modifier valve wears the bore, resulting in loss of valuable EPC oil.

CORRECTION

Reaming the pressure modifier valve bore provides a precision fit for the new Sonnax oversized valve to seal oil at the balance end to correct high line pressure.

Oversized Pressure Modifier Valve

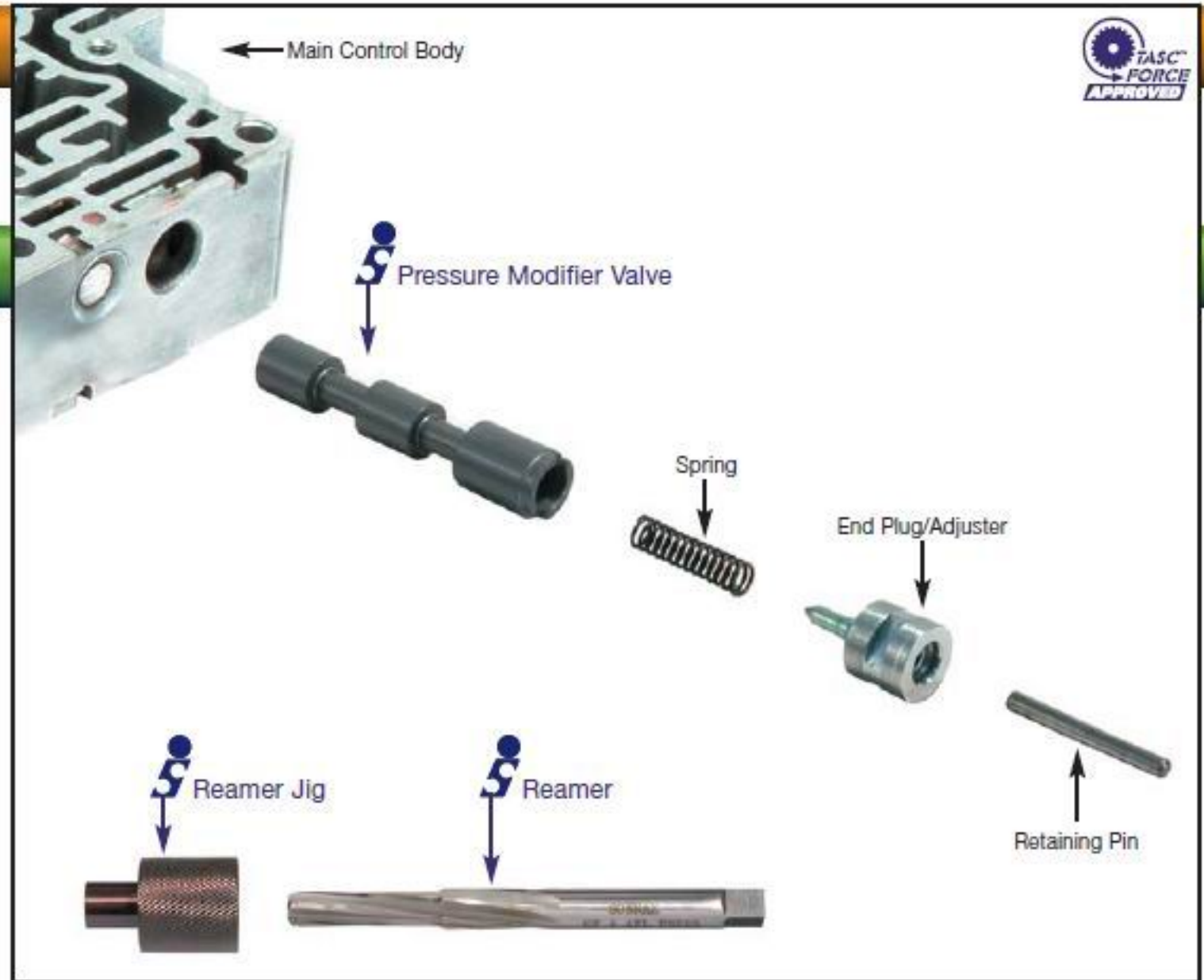
74846-04

1 Oversized Pressure Modifier Valve



74846-TL4

1 Reamer
1 Reamer Jig



Sonnax Part Summary

When the balance spool bore in G4FA-EL units wears, the valve won't stroke to regulate EPC pressure. If the middle spool bore wears, line pressure will be allowed to exhaust. The Sonnax oversized pressure modifier valve 74846-04 allows the worn valve body to be reamed to restore hydraulic integrity to the circuit.

Features & Benefits

- Valve is manufactured from hard-anodized aluminum for better wear resistance.
- The spring seat depth has been shortened to compensate for the oversized valve, so the OEM spring can be reused.

COMPLAINT

Low line rise and pressure

SECONDARY COMPLAINTS

- Low reverse boost and shudder • Delayed reverse • Poor 1-2 shift

Boost Valve Kits

G4A-EL
71846-01K w/ TV Cable

GF4A-EL, F4A-EL, F4EAT, F4E-III
74846-01K w/ Electronic Transmission

- Each kit includes the following
- 1 Boost Valve and Sleeve
 - 1 Boost Plug 71846-01K Only

Note: 74846-01K should not be used in KIA applications.

CAUSE Worn boost valve sleeves allow EPC, TV boost or reverse pressures to cross leak into exhaust.

CORRECTION These replacement boost valve kits are hardened and anodized to prevent wear and are tightly toleranced to restore the hydraulic integrity of the circuits.

Oversized Pressure Regulator Valve 74846-06K

Spring

Spring Retainer

Boost Valve & Sleeve 74846-01K

Boost Valve & Sleeve 71846-01K

Boost Plug 71846-01K

TASC FORCE APPROVED

MAZDA GF4A-EL & F4A-EL

MAZDA G4A-EL, G4A-HL & G4EAT

COMPLAINT 2-3 shift flare, low pump output

COMPLAINT 2-3 shift flare, low line pressure

Compression Spring
Stiffer, oversized, avoids bore hang-up problems & increases pump output

Discharge Valve
Restriction removed from valve to increase pump output

TASC FORCE APPROVED

Pump Rebuild Kit

K74878
1 Discharge Valve
1 Compression Spring

Note: Fits 1-pan style unit and 2-pan, 7-solenoid style units with gear pumps.

Spool Valve
Non-restrictive

Spring
Designed to avoid hang-up and raise exhaust volume/psi of pump

Pump Vane Expander
Preloads vanes into slide, increasing output at low RPM

TASC FORCE APPROVED

Pump Rebuild Kit

71912-01K
1 Spool Valve
1 Spool Valve Spring
1 Pump Vane Expander

71912-02
1 Pump Vane Expander

COMPLAINT

Difficulty setting endplay

Front Support Pump Shims

71400-15

5 Shims

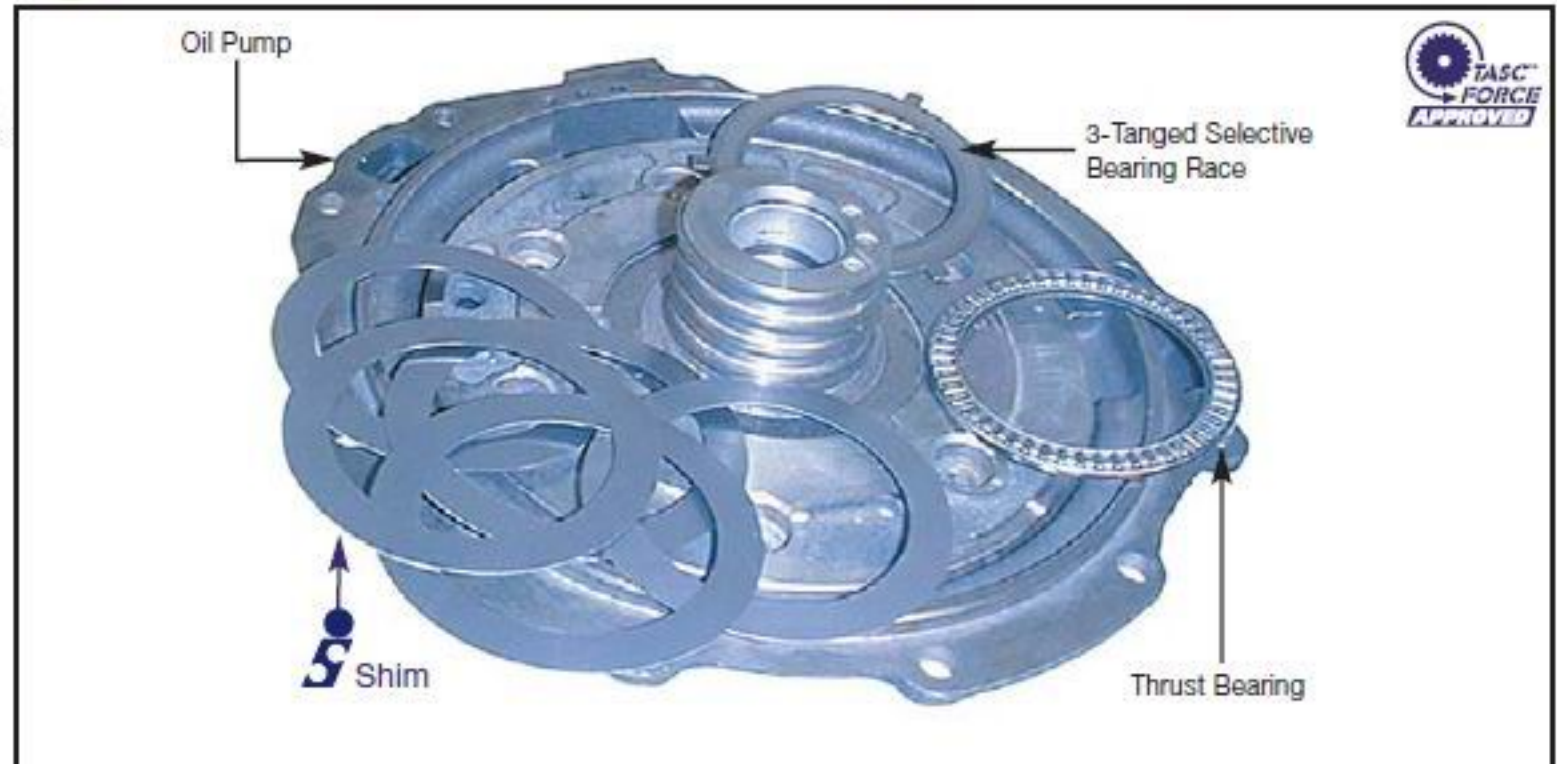
.015" thick

CAUSE

Commonly used sizes of the OEM selective 3-tanged washer are not readily available.

CORRECTION

This shim kit contains 5 shims that are .015" thick to help set endplay and eliminate the need to carry quantities of all bearing race size variations.



MAZDA F4A-EL, G4A-EL

COMPLAINT

Difficult and time-consuming to air check for drum leakage

SECONDARY COMPLAINTS

- Burned clutches
- Slips or no 2-3 shifts

3-4 Drum Test Tool Kit

71828-TL

G4A-EL

74828-TL

F4A-EL

Each kit includes the following:

- 1 Drum Test Tool
- 1 Test Tool Cap
- 1 Test Tool Cap Screw
- 2 O-Rings

CAUSE

The only way to check for leaks is while the drum is in the case.

CORRECTION

This drum test tool allows bench checking for drum leaks without having to disassemble and reassemble the transmission for leak testing.



COMPLAINT

Stator support sleeve wears at bushing journal interface

CAUSE

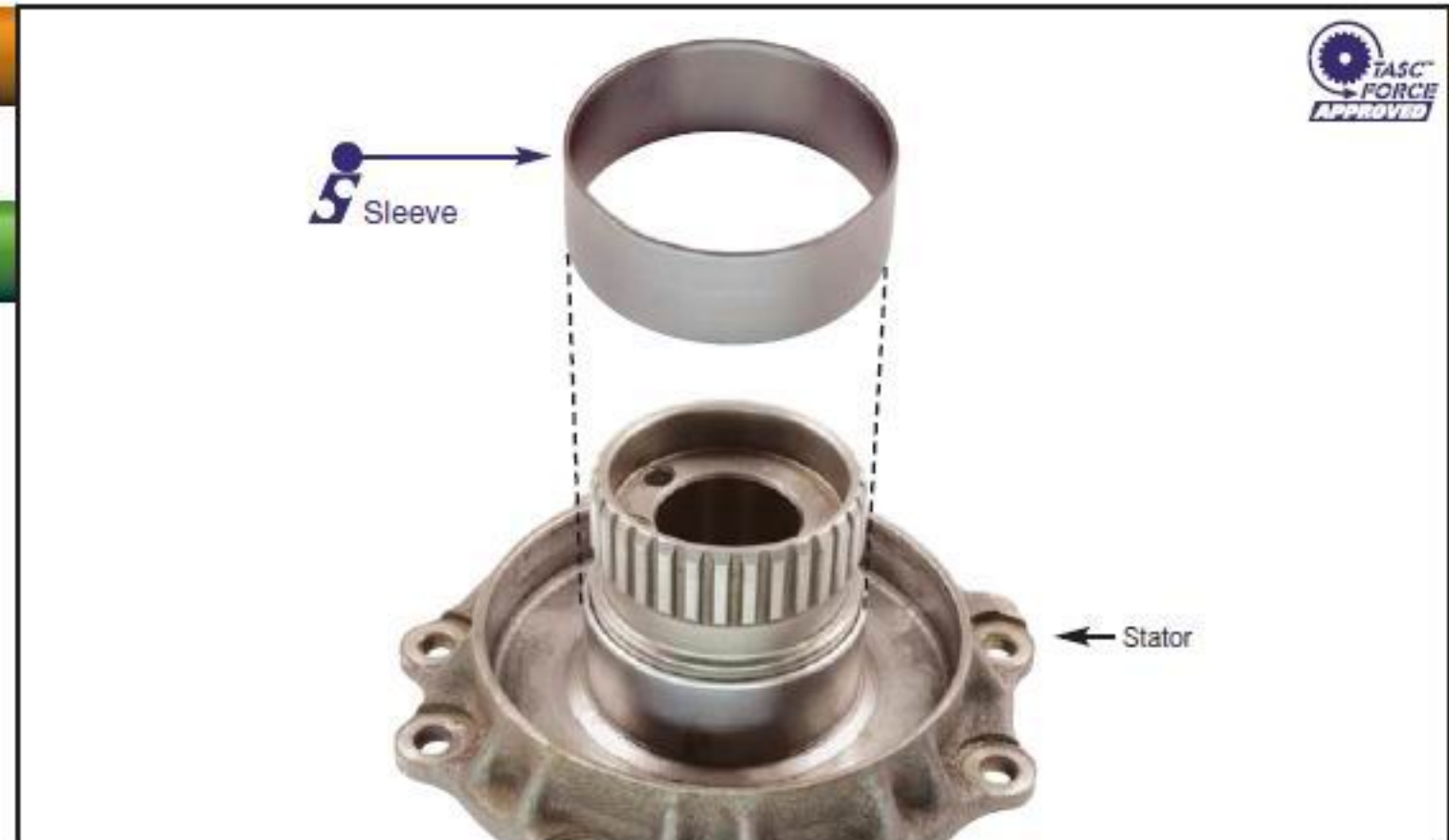
The cast-iron surface is not durable.

CORRECTION

This steel sleeve can be pressed onto a machined-down stator support bushing journal and will fit all variations.

Stator Support Sleeve**NEW PRODUCT!****71812-01**

1 Stator Support Sleeve

**Sonnax Part Summary**

The converter bushing journal in Mazda/Ford F4EAT, G4A-HL, -EL and -FEL units is often excessively worn. A worn bushing journal contributes to converter seal leaks, vibration, converter drainback and loss of converter oil. There are many variations in bolt pattern and other stator features in these units that make it difficult to locate the correct replacement stator support, but the converter bushing journals are the same diameter. The Sonnax stator support sleeve 71812-01 allows any stator with a 2.084" diameter converter bushing journal to be repaired by machining the original journal down to accept the press-on steel sleeve.

Features & Benefits

- Allows salvage of stators with worn converter bushing journals.
- Steel sleeve is harder and more durable than original cast-iron surface.
- Allows original support to be repaired and prevents having to find a replacement with correct bolt pattern.