

sonnax[®] PERFORMANCE

faster

tougher

stronger



HD WORK SPORT

TRANSMISSION • CONVERTER • DRIVESHAFT

VOL. 2

sonnax® PERFORMANCE

faster tougher stronger

HD WORK/SPORT

Whether put to the test in a daily use workhorse or plow truck, or ensuring worry-free trips with a trailered truck pulling heavy loads, Sonnax components for heavy-duty gas and diesel trucks are the top choice for all high-quality builds.

TRANSMISSION

CHRYSLER

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ALLISON® 1000/2000/2400 Page 32

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WHERE TO BUY

Ready to order? Find out where to purchase genuine Sonnax products from an online listing of authorized distributors in the U.S. and beyond.

GET YOUR GEARHEAD ON • WWW.SONNAX.COM

CONTACT SONNAX

8:30 a.m. to 5 p.m. ET

(800) 843-2600 TOLL-FREE

+1 (802) 463-9722 INTERNATIONAL

info@sonnax.com

CHRYSLER 48RE

Parts shown also fit 46-47RH/RE and A727 unless otherwise noted.



Extreme Duty Intermediate Shaft

HD/HP UPGRADE
Part No. 22171B-HD
 Fits 48RE, 47RH/RE

Confidently Increase Torque & Load Capacity

This groundbreaking intermediate shaft handles the extreme operating conditions of high-horsepower street, competition and towing trucks. Industry trusted for class-leading durability, this patented, ultra-strong shaft won't let you down.

- 300M steel shaft maximizes strength & resistance to fracture
- Rolled splines increase durability
- Torsional shaft design dissipates peak stress
- Unique modifications to lubrication channel increase lube flow to gear train

Output Shafts

HD/HP UPGRADE

Other aftermarket shafts made from common high-strength materials often suffer from roller clutch race fretting. Only Sonnax delivers a meaningful enhancement by combining the right material for race-hardness and your choice of a stock- or large-diameter shaft.

Part No.	Spline Count	Shaft & Application
22173D-HD	23	Heavy Duty Shaft 47RE, 48RE 4WD models
22173D-01K	29	Extreme Duty Shaft & Gear 48RE '03-'06 4WD w/ NV271 or NV273 transfer cases
22173D-01	29	Extreme Duty Shaft 47RE, 48RE



23-Spline Heavy Duty

Toughest Direct Replacement Upgrade

- 25% Stronger than OE & significantly stronger than other aftermarket, 23-spline shafts
- Hobbed output spline eliminates undercut where OE shafts fail

29-Spline Extreme Duty

The Ultimate Protection Against Shaft Breakage

- Larger shaft diameter allows for increased cross-section to protect against breakage
- Available with New Venture 271/273 input gear
- 22173D-01 Can be used for 68RFE to 48RE conversions, where the transfer case input has 29 splines

THE LEGENDARY #1 DODGE PERFORMANCE SHAFT

One-piece design eliminates the weak connection between input shaft & direct (front) clutch hub.

Shafts are custom forged from a solid piece of ultra high-strength 300M steel.

Cutting-edge engineering guarantees unrivaled performance & durability.

EVERYDAY DRIVERS & LIGHT MOD TRUCKS

Heavy Duty Input Shaft

One-of-a-Kind Upgrade Originally Set the Standard for Durability

Although there are other aftermarket versions of this classic Sonnax design, no one else in the industry uses the same techniques or can manufacture the same high-quality shaft as Sonnax.

With over a decade of proven performance, this shaft remains one of the most popular upgrades for hardworking Dodge trucks.



HD/HP UPGRADE

Part No. 22121B-01
Fits 48RE, 47RH/RE

Smart-Tech® Input Shaft & Piston Kit

20% More Direct Clutch Torque Capacity,
No Modifications Required

Installing thinner clutches to increase capacity leads to heat build-up and flex, ultimately resulting in clutch failure. Only Sonnax delivers an easy-to-install system with a longer clutch hub and billet piston that accepts one extra, OE-thickness friction and steel. The result: an optimum combination of increased capacity and durability you won't find anywhere else.



HD/HP UPGRADE

Part No. 22121B-02K
Fits 48RE, 47RH/RE

Part No. 22119B-02K
Fits A727. Replaces '67-'89 shafts
with two sealing rings.

HEAVY MOD TRUCKS

Smart-Tech® Big Input Shaft Kit

HD/HP UPGRADE

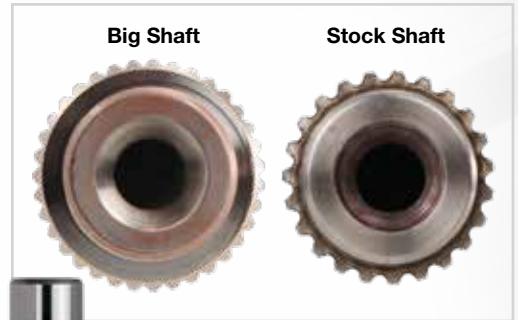
Part No. 22121B-08K Fits 48RE, 47RH/RE

THE END of Input Shaft Failure

- 35% Stronger than the best heavy-duty, 23-spline shafts
- Custom billet pump cover keeps OE oil flow paths & eliminates leakage for predictable, trouble-free converter control
- Longer hub & direct piston work together for 20% more clutch capacity, no modifications required

For drivers pushing the limits beyond 1,200HP, the ULTIMATE protection against spline twist and shaft breakage is here.

Designed in fit and function to work just like the OE, the Sonnax shaft is bigger and better in all the right places for unmatched durability. Pair with Sonnax extreme duty intermediate and output shafts for the most reliable components from end to end.



1-1/8" Dia.
35-Spline Shaft

⚠ Torque Converter Upgrade Required

Moving up to this big 35-spline shaft requires installation of a matching Sonnax performance converter kit. See page 54 for details or talk to a converter rebuilder about options.



Heavy Duty Forward (Rear) Clutch Retainer

HD/HP UPGRADE

Part No. 22554-HD Fits 48RE, 47RH/RE, 46RH/RE, A727

- High-strength 4140 billet steel prevents transmission failure from retainer cracks & wear
- Fits OE & aftermarket input shafts

2nd Gear Super Hold Servo Kit

Quicker Shifts, Fewer Leaks

- Delivers more holding force in 2nd, firmer 1-2 shifts & 2-3 shifts that become firmer under load
- 16% More apply area for more band holding power
- 15% Less leakage than other designs

The largest and most leak-free servo on the market, this Sonnax super hold servo reduces the need for aggressive lever ratios, excessively high line pressure and other radical modifications to achieve firmer shifts. The exclusive servo design features rubber and PTFE seals that enhance positive sealing and prevent case wear.



HD/HP UPGRADE

Part No. 22301B-01K

Replacement Seal Kit Part No. 22301B-SK

Accumulator Piston Kit

Eliminate Cross Leaks Between Circuits

- Rubber D-rings for superior sealing
- PTFE guide seal prevents case wear from piston contact
- Billet aluminum piston for improved durability

HD/HP UPGRADE

Part No. 22841-04K

Replacement Seal Kit

Part No. 22841-04SK



Reinforced Front Clutch Piston

CRITICAL SAFEGUARD

Part No. 22965A-01

Guard Against Direct Clutch Failure

Relying on a weak OE piston is like playing Russian roulette with your rebuild. When the piston cracks, the result is an unexpected clutch failure. Eliminate rework and liabilities by installing the redesigned, stronger Sonnax piston that includes extra webbing to reinforce otherwise weak areas.

Heavy Duty Kickdown Band Strut

HD/HP UPGRADE

Part No. 22825-01

Strongest Strut Ever Made for RH/RE Units

- Extra-thick cross-section for max toughness
- Solid, heat-treated steel will not bend or break like stamped struts



Reverse Servo Piston Plug Kit

Won't Break or Wear

- Hardened steel plug is more than 2X stronger than the OE plug
- Exclusive, leak-free design uses O-ring between plug & piston
- Replaces both extended & flat-tip styles



CRITICAL SAFEGUARD
Part No. 22912-01K

Front Servo Piston Cover Kit

Improve Direct Clutch Durability

- Added O-ring stops direct (front) clutch oil leaks that undermine 2-3 shift & direct clutch durability
- Billet aluminum piston resists wear



CRITICAL SAFEGUARD
Part No. 22827-01

CRITICAL SAFEGUARD

Rear Servo Piston Prevents Binding for Consistent Rear Band Apply

- Modified seal ridges prevent piston from sticking in case bore
- Billet aluminum won't crack like OE cast piston

Part No.	Application	OE Part No.	O.D.
22912C	47RE, 48RE '97-Later*	52118745	2.46"
22912B	47RE/RH '94-'96*	4531229	2.46"
22912	46RE/RH, A727	2801281	2.80"



*Match OE to Sonnax part using pistons shown here.

Use 22912C

Use 22912B



Piston Retainer Kit

CRITICAL SAFEGUARD

Part No. 22754N-01K

Fits 48RE, 47RH/RE, 46RH/RE

Maximize Gear Train Durability

- Prevents loss of lube oil between support & case
- High-quality aluminum alloy resists galling
- Improved oil delivery at bearing journals

Many OE supports do not seal well against the case, leading to reduced lube flow to the gear train and consumption of pump volume. This patented retainer kit features redesigned oil grooves to enhance journal lubrication and upgraded aluminum for better wear resistance.

Damaged reverse drums can be salvaged using the oversized version of this kit (Part No. 22754N-02K).



Lube Regulated PR Valves

CRITICAL SAFEGUARD

Part No. 22771A-10K Fits '62-'77
Part No. 22771A-02K Fits '78-Later

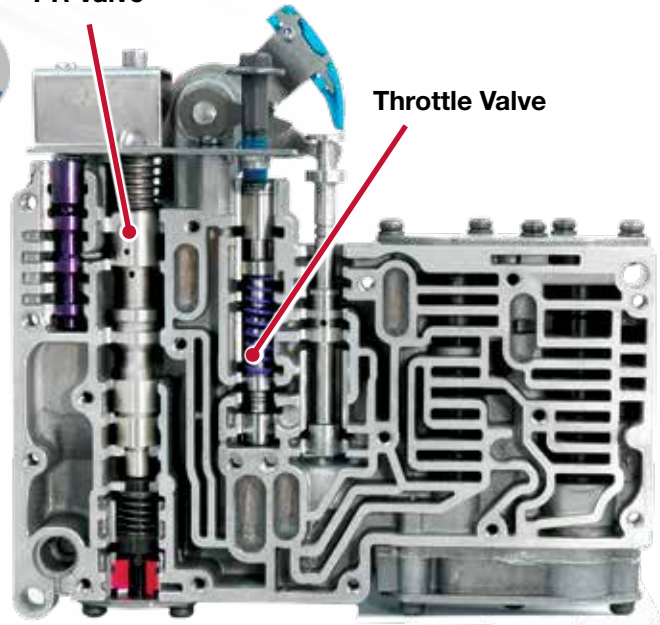


Enhance Converter Charge
& Prevent Drain Back Problems

- Improves converter feed/lube oil flow at critical low RPM & high load conditions
- Redesigned valve prevents fluid drain back & slow engagements
- Helps charge the converter in Park

TECH TIP: Under extreme pressure or temperature conditions, the converter/lube circuit can be restricted by the PR valve. The practice of drilling a hole between passages is an outdated technique that contributes to slow engagements or — if the hole is improperly drilled — excessive converter pressure and low line pressure.

Lube Regulated
PR Valve



Throttle Valve

Throttle Valve Kits

CRITICAL SAFEGUARD

Improve Line Pressure Response & Shift Timing

- Hardened steel plunger & valve increase durability, especially in 48REs
- Optional shims & TV spring for custom TV pressure adjustment & tuning
- Fit all Chrysler RWD models, including '05-later units with motorized linkage



Oversized
Throttle Valve Kit
22771-04K

Fully restores throttle control in bores with moderate to severe wear. Requires tool kit F-22771-TL and the VB-FIX reaming fixture.



Heavy Duty
Throttle Valve Kit
22771-HDK3

- Ideal for earlier, wide-open throttle shift points in new/lightly used valve bodies.
- Reduces gear hunting and the need to back off the throttle when shifting under heavy load.
- Optional balance spring improves throttle control if bore shows minimal wear.

Throttle
Valve Kit
22771-03K

Basic durability enhancement with an optional balance spring to help revive throttle control in bores with minimal wear.



Heavy Duty Planetary Thrust Washers

Zero Wear for ZERO Problems

CRITICAL SAFEGUARD

Upgraded PTFE coating vastly improves durability and will not generate break-in and wear debris like OE bimetal washers. Endplay stays where set and will not increase over time.

Part No.	Dimensions	Industry No.	OE No.
6-Tab Washers Fit 48RE			
22700FT-01	3.700" O.D. x 2.525" I.D.	D22238F	52854039AB
22700GT-01	3.700" O.D. x 2.250" I.D.	D22238G	52854076AB
4-Tab Washer Fits 46-47RH/RE			
22700ET-01	3.400" O.D. x 2.250" I.D.	22238B	4617888

SHIFT REPAIR KITS

Get the Job Done Right the First Time, Every Time



Zip Kit
 Restore Stock Shift Action
 Quick Rebuilds Targeting Hydraulic Wear
 No Reaming Required

Sure Cure Kit
 Restore Stock Shift Action
 Comprehensive Overhauls Targeting Chronic Transmission Failure Points
 Some Kits Require Reaming



Zip Kit® The First Step in Correcting Common Shift Problems

- Drop-in Zip Valve™ parts install quickly with no reaming or special tools required
- Uniquely designed parts address root causes of valve body complaints by sealing critical pressure circuits
- Detailed technical booklet included with in-depth rebuild & inspection tips for comprehensive valve body repair

REPAIR & PREVENT DAMAGE

Part No. 46-47RHE-ZIP Fits 46RH/RE, 47RH/RE
 Most components in this kit also will service 48RE. Only components marked with * will NOT fit 48RE.

- Line Pressure Plug & Sleeve Kit*
- 4-Spool Switch Valve
- Manual Valve
- Line-to-Lube Pressure Regulator Valve
- Throttle Valve Kit
- Boost Valve Spring Retainer
- 3-4 Accumulator Spring
- 4th Accumulator Piston Seals
- Checkballs (10)
- Turbine Shaft Seals (2)
- Output Pilot Bushing
- Intermediate Shaft Pilot & End Plug Kit
- Endplay Shims (2)*
- E-Ring

The Sure Cure®

Comprehensive Kit for Big Problems You Don't Want Back

- Restores shift quality & reduces comebacks
- Repairs biggest trouble areas to reduce comebacks
- Includes step-by-step instructions for comprehensive valve/pump body restoration

Part No. SC-48RE Fits 48RE

Part No. SC-46-47RHE-OS Fits 46RH/RE, 47RH/RE

Both kits require reaming with tool kits 22771-TL12, 22771A-TL13, F-22771A-TL7, F-22771-TL and the VB-FIX reaming fixture, all sold separately.

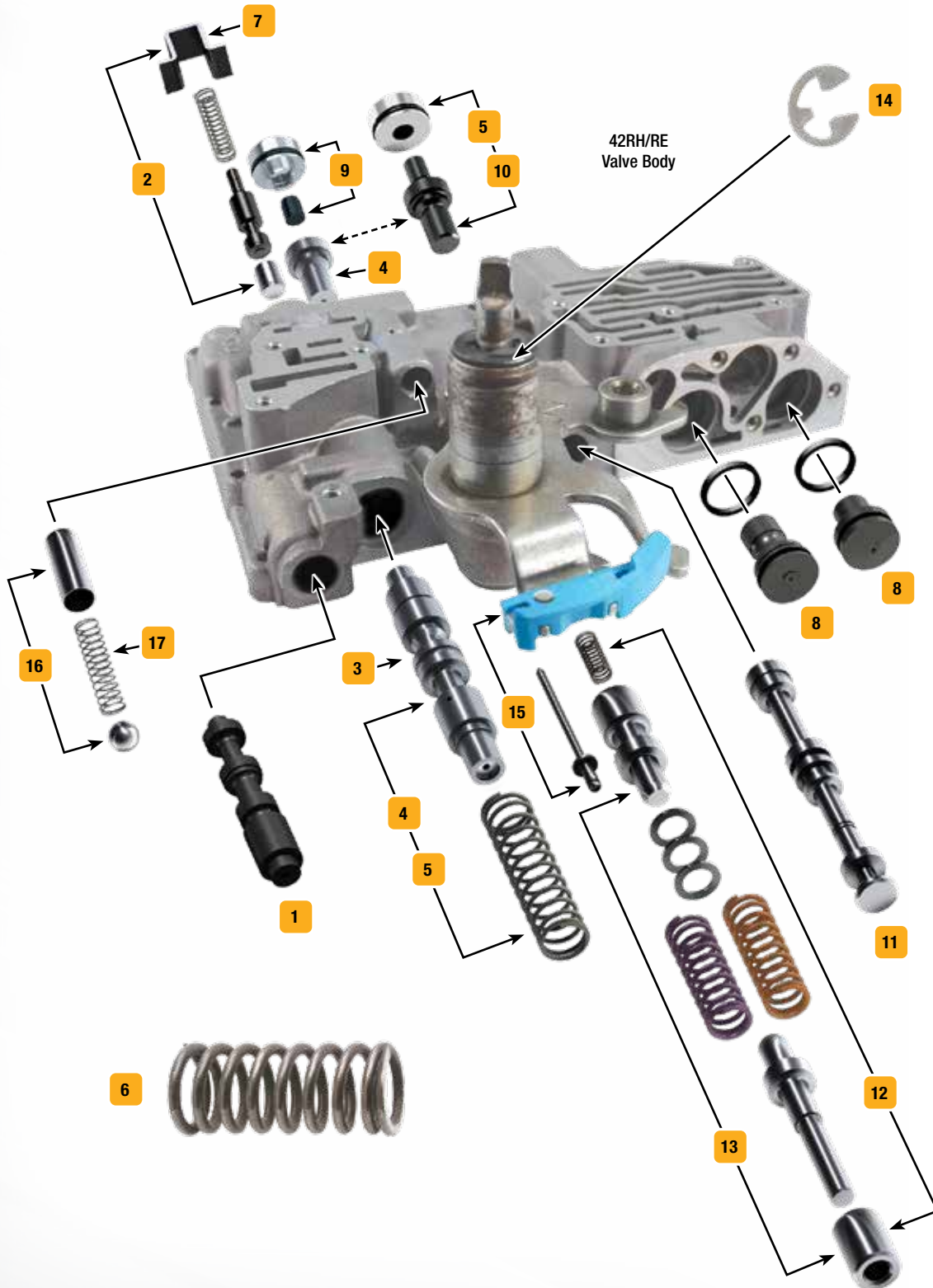
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|--|---|---|---|
| <ul style="list-style-type: none"> • Shift Linkage E-Clip • Manual Valve • 3-4 Accumulator Spring • Boost Valve Spring Retainer • Intermediate Plug & Pilot Kit • 6-Tab Thrust Washers (2) • Detent Ball & Sleeve Kit • Oversized Throttle Valve Kit | <ul style="list-style-type: none"> • Oversized Four-Spool Switch Valve • 4th Accumulator D-Ring & Seal • Checkball .188" Dia. • Output Pilot Bushing • Turbine Shaft Seals (2) • Oversized Lube Regulated Pressure Regulator Valve & Line/TV Pressure Plug Kit | <ul style="list-style-type: none"> • Turbine Shaft Seals (2) • Front Servo Piston Cover Kit • Kickdown Band Strut • Lube Regulated Pressure Regulator Valve • 4-Spool Switch Valve • Manual Valve • 3-4 Accumulator Spring • Throttle Valve Kit • 3-4 Accumulator Piston Seals | <ul style="list-style-type: none"> • Boost Valve Spring Retainer • Checkballs (10) • Intermediate Shaft Pilot & End Plug Kit • Output Pilot Bushing • Rear Planet End Play Shims (2) • Reverse Servo Piston Plug Kit • E-Ring • Detent Ball & Sleeve Kit • Line Pressure Plug & Sleeve Kit |
|--|---|---|---|

CHRYSLER 48RE

Parts shown also fit 46-47RH/RE
and A727 unless otherwise noted.



See kit components on page 7.



More Components

Parts listed below may also fit A727 and A904 units. See www.sonnax.com for details.



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Multiple Symptoms				
Comprehensive kit for big problems you don't want back.	The Sure Cure® Kit	SC-42RHE	42RH/RE only	
	The Sure Cure® Kit	SC-46-47RHE-OS	46-47RH/RE only, see details on page 7	22771-TL12, 22771A-TL13, F-22771-TL*, F-22771A-TL7*
	The Sure Cure® Kit	SC-48RE	48RE only, see details on page 7	22771-TL12, 22771A-TL13, F-22771A-TL7*, F-22771-TL*
The first step in correcting common shift problems	Zip Kit®	46-47RHE-ZIP	ZIP 46-47RH/RE only, see details on page 7	
TCC/Lockup Symptoms				
Lockup shudder, Overheated converter, Low cooler flow, Soft TCC apply	4-Spool Switch Valve	1 22771A-01	ZIP Replaces 4-spool valves only	
	Oversized 4-Spool Switch Valve	1 22771A-13	Replaces 4-spool valves only	22771A-TL13
TCC slip under load, No line rise during TCC apply in 4th, Overheated converter, No lockup	Oversized Lockup Boost Valve Kit	2 22771-19K	'90-Later with boost oil delivery tube	F-22771-TL19*
Pressure Problems				
Delayed engagement, Pressure regulator buzz, Converter drain back, Lube failures	Lube Regulated Pressure Regulator Valve	3 22771A-02K	ZIP OE valve must match '78-later design	
	Oversized Lube Regulated Pressure Regulator Valve Kit	4 22771A-07K	42-44-46-47RH/RE only, OE valve must match '78-later design	F-22771A-TL7*
	Oversized Lube Regulated Pressure Regulator Valve & Line/TV Pressure Plug Kit	5 22771A-16K	48RE only	F-22771A-TL7*
Pump seal leakage, Pump noise, Loss of prime, Low pump volume, Low cooler flow, TCC codes	Pump Bushing	12502-01	42RH/RE only, precision, 5/bag	
Shift/Engagement Concerns				
3-4 Soft	3-4 Accumulator Spring	6 12861-01	Matches OE 47RE diesel calibration	
Leakage of 4th & TCC oil pressure, Slipping gears	Boost Valve Spring Retainer	7 22990-01	5/Bag	
No Reverse, Soft Reverse	Extended Length Band Strut	22900-10	46-47/RE, 48RE only, .100" longer than OE	
2-3 Long slide, Direct clutch failure	Front Servo Piston Cover Kit	22827-01	46-47RH/RE, 48RE only, includes O-ring	
1-2 Shuttle, 2-3, 3-2 Oversensitive, Early upshifts	Governor Bore Plug Kit	8 22771-14K	ZIP	
1-2 Soft, Delayed engagement, Forward clutch failure, Low line rise	Intermediate Accumulator Sleeve Kit	22841-01K		
Reverse slip, Poor line pressure control, Poor Forward & Reverse engagement, Soft Reverse	Line Pressure Plug & Sleeve Kit	9 22229-01K	ZIP 42-44-46-47RH/RE only, .200" dia. plug	
	Line Pressure Plug & Sleeve Kit	9 22229-04K	ZIP 42-44-46-47RH/RE only, .264" dia. plug	
	Line Pressure Plug & Sleeve Kit	10 22771A-19K	48RE only	
Delayed engagement, No cooler flow in Park, Converter bushing failure	Manual Valve	11 22771-09	ZIP Use with '78-later pressure regulator valve only	
Early upshifts, Late upshifts, 2nd Gear starts	Primary Governor Valve	12802-01	ZIP 42-44-46-47RH '90-'03 only	
Delayed Forward, Delayed engagement, Burnt Forward clutch	Rear (Forward) Clutch Inner Lip Seal	3647-01	46-47RH/RE, 48RE only, Viton® seal, 5/bag	
Shift timing concerns, Throttle buzz, Poor kickdown, 2-3 Late, 3-2 Oversensitive	Throttle Valve Kit	12 22771-03K	ZIP Fits all Chrysler RWD models, including '05-later units with motorized linkage	
Reduces throttle sensitivity	Heavy Duty Throttle Valve Kit	12 22771-HDK3	ZIP Fits all Chrysler RWD models, including '05-later units with motorized linkage	
Shift timing concerns, Throttle buzz, Poor kickdown, 2-3 Late, 3-2 Oversensitive	Oversized Throttle Valve Kit	13 22771-04K	Fits all Chrysler RWD models, including '05-later units with motorized linkage	F-22771-TL*

* VB-FIX Required

‡ No longer in production. Check with your distributor for availability.

Continued on next page.

CHRYSLER 48RE

Parts shown also fit 46-47RH/RE and A727 unless otherwise noted.

Continued from previous page.

Symptoms/Part Type	Product Name	Part No.	Details	 Tooling
Component Damage/Failure				
Bearing noise, Bearing failure	Bearing & Plate Kit	12860-01K	42-46RH/RE, 48RE only, O.D. sun gear to planet	
	Bearing Kit	SBK-C16	'88-Later	
	Inner Overdrive Bearing	12738	OE Part No. 4461014	
Damaged case, Output & planet assembly wear, Output & planet assembly failure	Case Repair Bearing	22556-BRG	46-47RH/RE, 48RE only, 3/bag	
Oil leaks	Cooler Line Adapter	22000-01	For cases with .250" pipe fittings only	22000-01K
	Cooler Line Repair Kit	22000-01K	For cases with .250" pipe fittings only, includes tap & 5 adapters	
Lost or damaged component	E-Ring	14 10000-03K	.250" Manual shaft, 10/bag	
Poor lube oil control, Recontamination of new parts, Unable to clean shaft	Intermediate Plug & Pilot Kit	22171A-02K	42-44-46-47RH/RE only, 5/bag	
Lost or damaged component	Neutral Safety Back-Up Insulator Service Kit	15 22229-03	42-44-46-47RH/RE '70-'02 only with 3-terminal switch	
	Neutral Safety Back-up Insulator Service Kit	15 22229-07K	'01-Later only, with digital range sensor	
Late cases cannot be used for early applications	NSS Adapter Kit	22179-06K	42-44-46-47RE only, allows late-style, 5-wire neutral safety switch cases to be used in early-style, 3-wire vehicles	
OD roller clutch failure	Oversized O.D. Sprag Pilot Bushing	12509-01	42-44-46RH/RE, 47RE '88-later only, precision	
Bushing wear, Bushing failure	Output Pilot Bushing	12510-01	'90-Later, precision	
Lost or damaged component	Overdrive Sun Gear	12655C-1	46-47RH/RE, 48RE '95-later only, 15° helical cut	
Not enough OE washers to properly set end clearance	Overdrive Shim Kit	12783-01K		
Loss of lubrication oil to planetaries, Reverse drum, retainer & planet failure	Oversized Piston Retainer Kit	12962N-02K	42RH/RE only, improved oil flow & material	
	Piston Retainer Kit	22754N-01K	46-47RH/RE, 48RE only, improved oil flow & material	
	Oversized Piston Retainer Kit	22754N-02K	46-47RH/RE, 48RE only, improved oil flow & material	
Excess total transmission endplay	Rear Planet Endplay Shim	12780-Z	42-44RH/RE only, for 3- or 4-tanged washers, .010" thick, 10/bag	
Burnt bands, No Reverse, Rear servo piston sticking/breakage	Rear Servo Piston	22912A	42RH/RE only, 2.540" O.D., OE 2801271	
	Rear Servo Piston	22912	46RH/RE only, 2.80" O.D., OE 2801281	
	Rear Servo Piston	22912B	47RH/RE '94-'96 only, 2.460" O.D., OE 4531229	
	Rear Servo Piston	22912C	47-48RE '97-later only, 2.46" O.D., OE 52118745	
No Reverse, Burnt Reverse band, Reverse servo piston plug breakage	Reverse Servo Piston Plug Kit	22912-01K	Universal replacement for both extended & flat-tip plug styles	
Leaking manual shaft case seal	Shift Lever Case Bore Repair Sleeve	22179-02		56361-TL
Excess total transmission endplay	Rear Planet Endplay Shim	22700-Z	46-47RH/RE only, 3- or 4-tanged OE washers, .010" thick, 10/bag	
Manual lever binds in Park position, Damaged valve body casting, Linkage loose, No start	Valve Body Detent Ball & Sleeve Kit	16 22771-12K	Fits both short & long OE detent bore designs	22771-TL12
Manual lever binds, Linkage loose, No start	Valve Body Detent Spring	17 22771-36	Fits both short & long OE detent bore designs, 5/bag	
Tools		For use with		Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Tool Kit	22771-TL12	22771-12K, SC-48RE, SC-46-47RHE-OS	
	Tool Kit	22771A-TL13	22771A-13, SC-48RE, SC-46-47RHE-OS	
	Tool Kit	56361-TL	22179-02, 56361-01K	
	Tool Kit	F-22771A-TL7	22771A-16K, 22771A-07K, SC-48RE, SC-46-47RHE-OS	VB-FIX
	Tool Kit	F-22771-TL	SC-46-47RHE-OS, SC-48RE, 22771-04K, 32229-01K‡	VB-FIX
	Tool Kit	F-22771-TL19	22771-19K	VB-FIX

* VB-FIX Required

‡ No longer in production. Check with your distributor for availability.

46-47RH/RE Remanufactured Valve Bodies

Quality, Performance & Value You Can Trust

Each valve body is completely disassembled, cleaned, updated with top-quality Sonnax parts and fully tested with state-of-the-art equipment to match OE specification and performance.

46RE, 47RE	
'00-Later, small pump inlet, late sensor	CHR131
'00-Later, late sensor	CHR132
'99-Earlier, small pump inlet, early sensor	CHR129
'99-Earlier, early sensor	CHR130



46RH, 47RH	
Hydraulic with tube	CHR127
'90-Later, 1 solenoid	CHR124



48RE Part No. CHR135

Converted Valve Body

With Sonnax, You Never Have to Settle for a Worn-Out Valve Body

- 100% Tested to ensure pressure curves & timing match 48RE OE design
- Great for 46/47RE pressure & lockup upgrades
- Remanufactured & improved with Sonnax parts

Cores for Chrysler light-to-medium-duty trucks are scarce and often modified beyond repair. Patented innovation allows Sonnax to convert plentiful early-model RE Chrysler cores into premium-quality 48REs.

OE remanufactured valve bodies — while available — undergo only minimal restoration. The Sonnax 48RE provides far more value and durability. Each valve body is carefully refurbished in critical areas to restore proper function and prevent future wear.

Sonnax Components Installed:

- Manual Valve
- Oversized Throttle Valve Kit
- Valve Body Detent Ball & Sleeve Kit
- Oversized 4-Spool Switch Valve
- Oversized Lube Reg. PR Valve & Line/TV Pressure Plug Kit
- Patented Pressure Curve Components
- Patented Lockup Conversion Components
- 3-4 Accumulator Spring
- New Governor Pressure Solenoid & Sensor

Heavy Duty Overdrive Clutch Hub & Shaft

HD/HP UPGRADE

Part No. 72570-01 Fits 68RFE, 66RFE

Direct Replacement Upgrade Ideal for Any Power Level

- Cryogenically treated for improved durability
- Shot-peened lubrication cross holes reduce crack formation & increase load capacity
- Greater crack resistance than OE hub & shaft

Overdrive clutch hub and shaft failure is common in both completely stock units and heavy duty/performance applications. Failure always begins with small cracks at the lubrication cross holes that migrate through the rest of the shaft, eventually resulting in catastrophic gear train failure.

To guarantee maximum reliability in 66/68RFE units, Sonnax cryogenically treats an OE hub and shaft to make the base steel more stable. The lubrication cross holes are then shot-peened to greatly reduce crack formation and increase load capacity. The result is an easy, direct replacement upgrade for any vehicle.



Heavy Duty Input Shaft

HD/HP UPGRADE

Part No. 72670B-01 Fits 68RFE

Unrivaled Durability for High-Horsepower Gas & Diesel Trucks

- Suitable for any 68RFE high-horsepower street, towing or competition application
- Specially heat-treated & processed for maximum toughness & straightness
- Manufactured from 300M, ultra high-strength steel for maximum strength & resistance to fracture
- Includes checkball assembly & line-bored bushing

68RFE SMART-TECH® OVERDRIVE CLUTCH HOUSING KIT

Part No. 72960-16K Fits 68RFE

Maximize OD Clutch Capacity
& Squawk Resistance



HD/HP UPGRADE

68RFE Dodge trucks pulling heavy loads or with boosted power are at high risk for OD burnup due to the stock transmission's insufficient clutch capacity and fragile OE clutches.

The groundbreaking Smart-Tech OD housing guarantees an unrivaled combination of squawk resistance and maximum clutch capacity for any truck. It's the only top-of-the-line upgrade that eliminates clutch problems without relying on valve body/pump modifications or adding the expense of extra components.

SERVICE PARTS

Frictions & Steels Kit **Part No. 72960-11SVC**
Reaction Plate & Bolt-On Anchor Plate Kit **Part No. 72960-12SVC**

Kit Includes:

- OD/Reverse Housing
- Lip Seal
- Adapter Sleeve
- UD/OD Reaction Plate
- Steel Clutch Plates (5)
- Custom BorgWarner Friction Clutch Plates (6)
- Anchor Plate Shims (2)
- Bolt-On Anchor Plate
- Screws (12)
- Chisel

Note: Smart-Tech OD housing **72960-16K** replaces the original Sonnax **72960-06K**. The improved kit features clutches optimized for capacity and squawk resistance plus longer, flange-head plate screws for extra secure fit and optimal clamping force.

TECH VIDEOS Learn more about the Smart-Tech kit PLUS get great OD clutch assembly tips for reliable, consistent builds at www.sonnax.com.

Bolt-On Anchor Plate

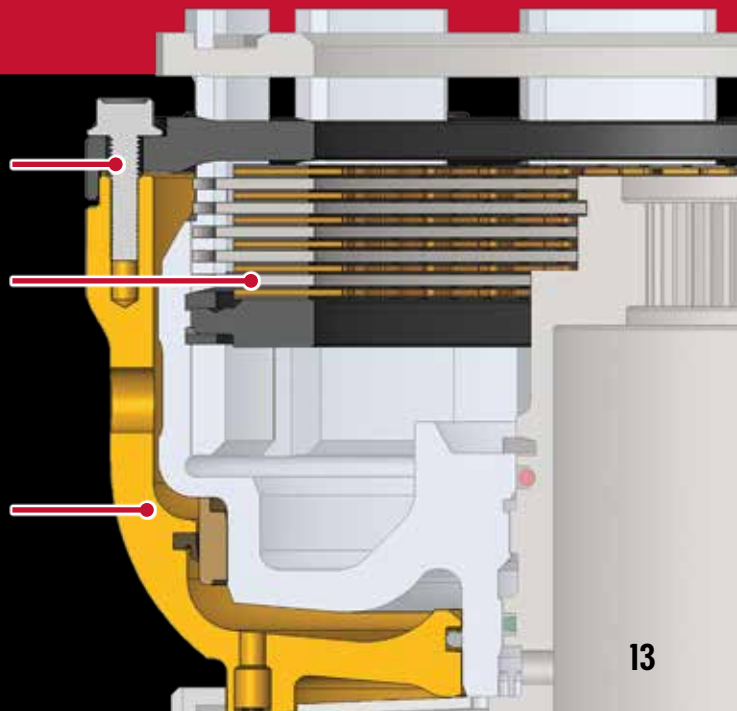
Eliminates clutch pack flexing and distortion that contributes to heat build-up.

2X Thicker Steels & Double-Sided Frictions

Six custom BorgWarner friction plates and five steel clutch plates give you 28% more steel mass to guard against burnup PLUS state-of-the-art squawk resistance.

Billet Aluminum Housing

Holds a physically larger clutch pack for 20% more clutch capacity and 16% more OD apply area.



Line Pressure Booster Kit

HD/HP UPGRADE

Part No. RFE-LB1

Raise Line Pressure — No Tuning Required

- Electronic harness plugs in quickly & easily on outside of transmission case
- Works just like a large-ratio boost valve for a progressive pressure increase of about 10–25 psi
- Optional spring installed in the valve body helps optimize performance

Thus unique booster kit is an ideal performance and durability upgrade for heavy-duty and modified vehicles, and even stock transmissions when a little extra pressure is desired.

Featuring an integrated chip (IC) circuit and a stronger pressure regulator spring, this unique kit delivers a progressive increase of 10 psi at lower pressure ranges and 25 psi increase at higher ranges. The results: smooth engagements and lower load on the pump at idle with improved clutch holding capacity and increased durability as the transmission is worked harder.



Note: This kit is not recommended for use with transmission tuning mods. If you are unsure of the vehicle's programming, use a scan tool to verify transmission line pressure meets stock levels (Drive at idle = 60 psi, Drive under heavy load = 160 psi). If desired line pressure values are greater than this, the system most likely has aftermarket tuning mods to the transmission pressure.

Accumulator Piston Kits



HD/HP UPGRADE

1 Piston Part No. 44894-01K 5 Pistons Part No. 44894-01MK
Replacement Seal Kit Part No. 44894-01SK

Prevent Bore Scuffing & Salvage Worn Bores

- Dual-guide seals prevent piston-to-bore scuffing
- Updated seal location allows use in scuffed bores
- Prevents transmission failure from broken plastic pistons



Accumulator Cover Plate Kit

HD/HP UPGRADE

Part No. 44892-01K

End Accumulator Plate Failure

- Stronger, thicker plate prevents flexing
- Three additional mounting holes & high torque-rated screws prevent transmission failure that results from plate or screws coming loose
- Tightly-toleranced tap (Part No. 44892-TL) recommended for installation provides higher torque yield threads than common shop taps



Universal RFE Remanufactured Valve Bodies

One SKU Does it All — Service ANY '99–'18 45/545RFE or
65/66/68RFE

Part No. CHR146 With Solenoid Block
Part No. CHR145 Without Solenoid Block



Uniquely designed to fit all '99–'18 listed Chrysler applications, regardless of OE checkball or solenoid configuration, this remanufactured valve body fixes chronic channel casting warpage, without the added expense of a billet plate.

- New, double-thick separator plate & gaskets provide the critical seal between cast surfaces
- Patented Sonnax accumulator cover plate is stronger than OE to prevent flexing & breaking
- Patented Sonnax valves & heavy-duty pistons restore hydraulic integrity of circuits to eliminate shift complaints & clutch distress
- Tested on state-of-the-art equipment to verify that pressures match OE specification

Seasoned casting resurfaced to SAE recommended flatness and surface finish eliminates warpage, burrs and cross-leaks.

Sonnax Resurfaced Channel Casting



OE Channel Casting



4C Retaining Ring & Shim Kit

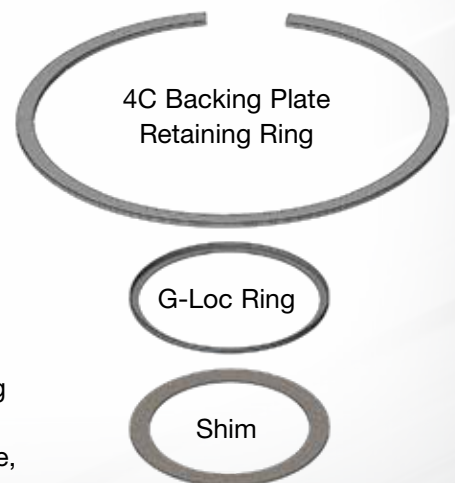
HD/HP UPGRADE

Part No. 72978-01K

Stop Pop-Off Failures & Tune 4C Performance

- Repair/prevent the 4C return spring retaining ring from popping off
- More options when setting clutch clearance
- Improves 4C to OD shift timing

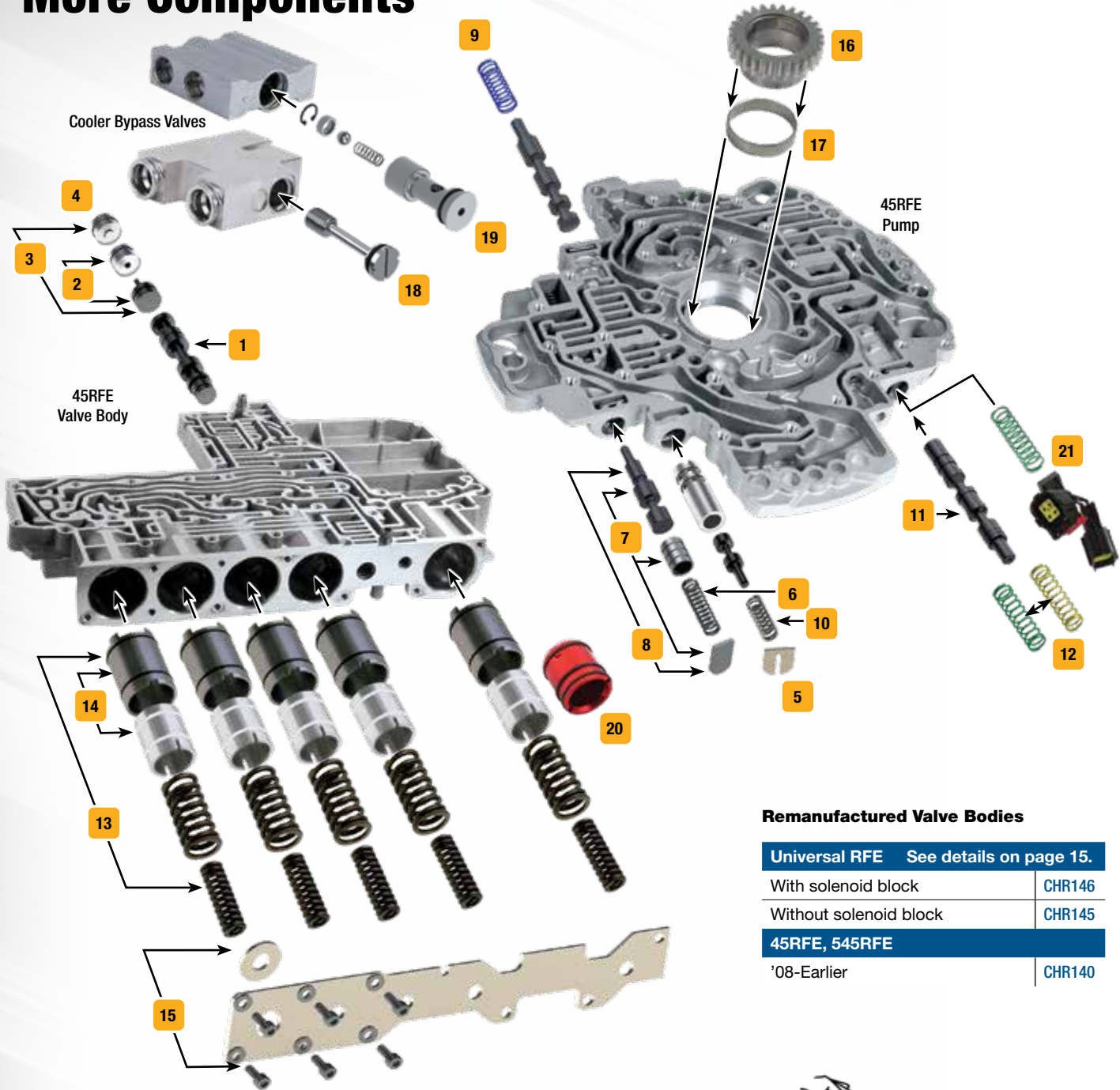
This unique kit contains three essential parts for a reliable build: a custom G-Loc ring to hold the return spring retaining ring in place, a .078" retaining ring to more easily set 4C clearance within spec and an optional shim to slightly tune the 4C clutch to release more quickly — ideal when aggressive, quicker-applying OD clutch packs are used.



CHRYSLER 68RFE

Parts shown also fit 65/66RFE and 45/545RFE unless otherwise noted.

More Components



Remanufactured Valve Bodies

Universal RFE	See details on page 15.
With solenoid block	CHR146
Without solenoid block	CHR145
45RFE, 545RFE	
'08-Earlier	CHR140

Symptoms/Part Type

Product Name

Part No.

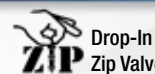
Details



Tooling

TCC/Lockup Symptoms

4th Clutch burned, Bind-up, Codes 841, 868, 871, 988, 1775, 1776, Failsafe mode	Oversized Solenoid Switch Valve	1 92835-21	45RFE, 545RFE, 68RFE only, fits bores containing OE switch valve with .420" dia. large spool	F-92835-TL*
Codes 841, 868, 871, 988, 1775, 1776, OD clutch burned, Failsafe mode, Bind-up	Solenoid Switch Valve Plug Kit	2 92835-02K	ZIP Fits bores containing OE switch valve with .420" dia. large spool	
	Solenoid Switch Valve Plug Kit	2 92835-39K	ZIP Fits bores containing OE switch valve with .453" dia. large spool with I.D. groove	
Low/Reverse switch code, 2nd Gear starts, Erratic TCC apply, No lockup	Oversized Solenoid Switch Valve Plug Kit	3 92835-22K	Fits bores containing OE switch valve with .453" dia. large spool	92835-RM22
	Oversized Solenoid Switch Valve Plug Kit	3 92835-18K	45RFE, 545RFE, 68RFE only, fits bores containing OE switch valve with .420" dia. large spool	92835-RM, F-92835-TL18*



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
TCC/Lockup Symptoms				
Codes 841, 868, 871, 988, 1775, 1776, OD clutch burned, Failsafe mode, Bind-up	Oversized Solenoid Switch Valve & Plug Kit	4 92835-32K	Fits bores containing OE switch valve with .420" dia. large spool	F-92835-TL32*, 92835-BST †
	Oversized Solenoid Switch Valve & Plug Kit	4 92835-31K	Fits bores containing OE switch valve with .453" dia. large spool	F-92835-TL31*
Delayed engagement, Loss of power, Engine stall, Low TCC release pressure, Low cooler flow	TC Limit Valve Kit	5 44912-03K		F-44912-TL*
Harsh TCC apply, TCC apply & release concerns	TCC Accumulator Spring	6 44912-01	5/Bag	
Converter concerns, Lockup concerns	Oversized TCC Regulator & Accumulator Valve Kit	7 44912-12K		F-44912-TL12*
	TCC Regulator Valve Kit	8 44912-11K	ZIP	
No lockup, Engine stall, TCC slip, Overheating, TCC codes, Loss of fuel economy	Oversized TCC Switch Valve Kit	9 44912-08K		F-44912-TL8*
Broken spring, Engine stall on engagement, Delayed engagement, Loss of power	Torque Converter Limit Spring	10 44912-02	Fits OE aluminum valves in early-style units, not for use with 44912-03K, 5/bag	
Pressure Problems				
Low cooler flow at idle, Restricted converter/lube flow, Engine stall at idle	Lube Regulated Pressure Regulator Valve	11 44912-17K	ZIP	
Harsh shifts, Erratic line pressure, Broken parts due to excessive line pressure	Oversized Pressure Regulator Valve Kit	12 44912-10K	Selective springs	F-44912-TL10*
Erratic line pressure, High line pressure, Pressure control out-of-range codes	RFE Transducer Connector	RFE-RC1		
Shift/Engagement Concerns				
Slide shifts, High CVIs, 1-2 Shudder, Coastdown clunk	Accumulator Piston & Sleeve Kit	13 92834-05K	ZIP 45RFE, 545RFE only, fits 5 locations, restores OE shift quality	
	Accumulator Piston & Sleeve Kit	14 92834-03K	ZIP 45RFE, 545RFE only, fits 5 locations, firmer shift than OE	
	Replacement Seal Kit	92834-03SK	For 92834-03K & 92834-05K, 10/bag	
Shift Concerns	Remanufactured Solenoid Block	44836A	All years, late-style, white connector	
	Remanufactured Solenoid Block	44836B	545RFE, 68RFE '09-later only, 65RFE, 66RFE all years, gray connector	
Code 841, 846, 871, 876, 988	Solenoid Spacer & Service Kit	44836-02K	OE filter screen fits all 65RFE, 66RFE, 68RFE & '04-later 45RFE, 545RFE	
Component Damage/Failure				
Damaged accumulator plate	Accumulator Cover Plate Kit	15 44892-01K		44892-TL
Bearing noise, Bearing failure	Bearing Kit	SBK-C17	45RFE, 545RFE '99-later only	
	Bearing Kit	SBK-C18	65RFE, 66RFE, 68RFE '07-later only	
Pump gear wear or fracture, Noise concerns	Center Pump Gear	16 72530B-02	68RFE only	
	Center Pump Gear Bushing	17 72530B-03	68RFE only, precision	
Ensures fluid always circulates through the cooler and keeps temps down	Thermal Bypass Eliminator	18 72760-01K	For use in OE part number 68186711AB	
	Thermal Bypass Eliminator	19 72760-02K	For use in OE part number 55111005AC	
High Performance/Heavy Duty Upgrades – See pages 12-15 for more HP/HD components.				
Billet aluminum piston with dual support seals prevents breakage & salvages worn bores	Accumulator Piston Kit	20 44894-01K	ZIP Includes 1 piston	
	Accumulator Piston Kit	20 44894-01MK	ZIP Includes 5 pistons	
Classic, large-ratio boost valve performance for crisp, clean shifts without harshness	Line Pressure Booster Kit	21 RFE-LB1	Fits gas or diesel units, can be installed with or without spring in most RFE units	
Tools				
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Thread Tap	44892-TL	44892-01K	
	Bore Sizing Tool	92835-BST	92835-32K	
	Bore Sizing Tool	92835-BST2	92835-18K	
	Reamer	92835-RM	92835-18K	
	Reamer	92835-RM22	92835-22K	
	Tool Kit	F-44912-TL	44912-03K	VB-FIX
	Tool Kit	F-44912-TL8	44912-08K	VB-FIX
	Tool Kit	F-44912-TL10	44912-10K, 44912-15K ‡	VB-FIX
	Tool Kit	F-44912-TL12	44912-12K	VB-FIX
	Tool Kit	F-92835-TL	92835-21	VB-FIX
	Tool Kit	F-92835-TL18	92835-18K	VB-FIX
	Tool Kit	F-92835-TL31	92835-31K	VB-FIX
	Tool Kit	F-92835-TL32	92835-32K	VB-FIX

* VB-FIX Required

† Recommended Tool

‡ No longer in production. Check with your distributor for availability.



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
TCC/Lockup Symptoms				
Low cooler flow, Overheated fluid, Low converter pressure, TCC slip/slip codes	Oversized Cooler & Converter Relief Valve	1 122740-10K	Selective springs	122740-TL10
TCC codes, Converter shudder, Overheated fluid, bushings & converter, Low SLT pressure	Secondary Pressure Regulator Plunger Valve Kit	2 122740-03K	ZIP AS66RC only, .255" dia. plunger valve	
	Secondary Pressure Regulator Plunger Valve Kit	2 122740-05K	ZIP AS69RC only, .321" dia. plunger valve	
Pressure Problems				
1-2 Flare, 5-6 Flare, B1 Clutches burned, Low line pressure, Delayed engagement	B1/B2 Apply Control Plunger Valve Kit	3 122740-01K	ZIP Fits either of 2 locations	
High line pressure, Low line pressure, Poor shift quality, Burnt clutches	Oversized Pressure Regulator Valve Kit	4 122740-07K		F-122740-TL7*
Harsh shifts, Delayed shifts, Erratic SLT pressure, Low/Erratic line pressure	Oversized SLT Piston Kit	5 122740-17K		F-122740-TL17*
Shift/Engagement Concerns				
Flare shifts, Harsh shifts, Slipping gears, Burnt clutches	B1, B2, K1, K2, K3 Accumulator Piston Kit	6 122740-13K	ZIP Fits any of 5 locations	
Tools		For use with		Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Tool Kit	122740-TL10	122740-10K	
	Tool Kit	F-122740-TL7	122740-07K	VB-FIX
	Tool Kit	F-122740-TL17	122740-17K	VB-FIX

* VB-FIX Required

Heavy Duty K2 Clutch Hub

CRITICAL SAFEGUARD Part No.122572-01 Fits AS69RC

Hardened Hub Splines Prevent Repeat 4-5-6 Failure

- Superior, one-piece design crafted from forged steel for increased strength
- Unique heat treatment builds in unbeatable durability
- Added oil control lip enhances lube characteristics

Dodge trucks equipped with AS69RC transmissions commonly have problems with slipping/flaring in 4th, 5th and 6th Gears and may lose these ranges altogether. Ratio codes may also be triggered.

These issues can often be traced to a damaged K2 hub. The OE, two-piece hub is made from soft, stamped steel that allows the clutch pack to dig into the hub splines, ultimately hanging the clutches up and burning them. Replacement OE hubs are available, but often begin to fail again in as few as 15,000 miles.

The upgraded Sonnax hub features a one-piece design crafted from forged steel that is expertly heat-treated for unbeatable durability.



Heavy Duty K2 Clutch Hub

CRITICAL SAFEGUARD

Part No. 99572-01

Hardened Hub Splines Prevent Repeat 4-5-6 Failure

- One-piece hub is crafted from forged steel for increased strength
- Unique heat treatment builds in unbeatable durability
- Added oil control lip provides improved K2 clutch cooling



The soft, stamped steel OE clutch hub allows the clutch pack to dig and notch into the hub splines, ultimately hanging up the clutches, causing them to drag, overheat and burn. OE hubs begin to fail in as few as 15,000 miles.

The Sonnax K2 clutch hub — stronger, thicker and expertly heat-treated — prevents the wear and notching that causes K2 failure. It's an unbeatable value for any rebuild.

Manual Shaft Kits

CRITICAL SAFEGUARD

Unbeatable Protection from Corrosion & Breakage

- Direct replacement shafts feature added corrosion protection to prevent rust at threads
- Upgraded, stronger material for added durability over OE



Part No. 99740-08K Fits Mitsubishi & Isuzu



Part No. 99740-07K Fits Dodge

More Components

Symptoms/Part Type	Product Name	Part No.	Details
TCC/Lockup Symptoms			
Downshift clunk, Flare shifts, Harsh shifts, Shift concerns	Clutch Control Plunger Valve Kit	99740-01K	Dodge only, fits either of two locations
	Clutch Control Valve Spring	99740B-01	Mitsubishi & Isuzu only
Component Damage/Failure			
Bearing noise, Bearing failure	Front Stator Bearing	99520-03	
Bearing noise, 1-2, 2-3, 4-5 Flares	Rear Stator Bearing	99520-04	1.585" Dia. input shafts only

High Capacity K2 Clutch Piston Kit

HD/HP UPGRADE

Part No. 99582-01K



Drop-In Kit Increases Clutch Count for 20% More K2 Capacity

- Increases K2 clutch capacity by 20%
- Adds one additional friction & steel for increased capacity & heat dissipation
- Thinner backing plate is reinforced for improved stiffness & reduced flex
- No drum or piston machining required

AS68RC transmissions often suffer failure of the K2 clutch assembly due to limited capacity.

The Sonnax K2 clutch piston kit combines a thinner billet aluminum K2 piston with a thinner-yet-stiffer backing plate that together allow for one extra OE-thickness friction and steel, increasing the number of frictions from five to six. This improves the K2 clutch capacity by 20% for more torque capacity in 4th, 5th and 6th Gears while also significantly increasing steel mass in clutch pack for improved heat dissipation and resistance to burning. A backing plate retaining ring allows clutch clearance adjustment.

Backing Plate Kit Also Sold Separately

K2 Clutch Backing Plate Kit

CRITICAL SAFEGUARD

Part No. 99582-02K

Note: Use of backing plate kit 99582-02K requires machining the OE piston to fully accommodate an extra OE friction and steel plate. See www.sonnax.com for details.

Heavy Duty Stator Shaft Kit

CRITICAL SAFEGUARD

Part No. 99520-05K Fits Dodge

Salvage the Pump & Improve Durability

- 15% More torque capacity than OE shaft
- Longer & deeper serrations at the press-fit area plus Sonnax roll pins improve holding power
- High-quality bearings pre-installed in both ends

A common failure point in Dodge trucks with AS68RC transmissions is a stator shaft that has spun in the pump cover. This can be due to over-torque, but it happens more frequently when the input shaft breaks and destroys the stator shaft.

With no replacement shaft available from the OEM, the only choice traditionally was to buy a new pump and matched valve body — a very expensive proposition. The improved Sonnax shaft makes it easy to complete repairs for a fraction of the cost while adding extra protection against future failures.

Note: Machining of the stator pocket of pump cover is necessary and the Sonnax stator shaft must be used in conjunction with OE input shaft 68284099AA (not included). See instructions at www.sonnax.com for details.



FORD 4R100, 5R110W

4R100 Parts shown also fit E40D unless otherwise noted.



4R100

HD/HP UPGRADE

Part No. HP-4R100-01

PERFORMANCE PACK

No Complaints from Overly Harsh Shifts,
Still Tunable to Any Level

- Firmer shifts under load without sacrificing low-speed drivability
- Pressure increases progressively for improved clutch holding & increased durability as vehicle is pushed harder
- Improved pump components minimize leaks & maintain pressure, TCC performance & lube
- Durable parts target commonly worn areas in the transmission & prevent future damage

A Sonnax Performance Pack is a must-have for any heavy-duty vehicle. All components work together for maximum performance and durability by recalibrating pressures and shift accumulation. It's the ULTIMATE way to get an impressive transmission that responds to throttle and increased load with quick, firm shifts.

Note: Sonnax bore-sizing tool [36948-12](#) and bushing installation tool [T36008A](#) are recommended when using this Performance Pack. Both are sold separately.

Don't need a complete valve body overhaul? Clean up your shifts with a line pressure booster kit.

Large-ratio boost valve assembly changes the rate of line pressure increase in response to driving conditions.



PR spring is about 10% stronger than OE and more conservative in impact than other aftermarket springs.

Line Pressure

HD/HP UPGRADE

Part No. 4R100-LB1 Fits 4R100, E40D



Booster Kit The Fast, Easy Way to Clean Up Shifts

- Classic large-ratio boost valve delivers crisp, clean shifts without low-speed harshness
- Drop-in Zip Valve™ parts install quickly & easily
- Ideal for heavy-duty & modified vehicles as well as hard-working daily drivers
- Improved shift feel & durability reduce comebacks & complaints



■ Heavy Duty/Performance Upgrade
 ■ Critical Safeguard
 ■ Repair

Many Performance Pack components also sold separately. See pages 25–26.

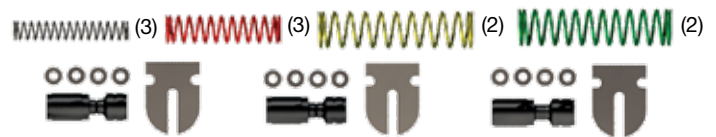
- Heavy Duty Low/Reverse Modulator Sleeve Kit
- Line Pressure Modulator Plunger Valve Kit
- High Radius Relief Valve



- Line Pressure Booster Kit
- Line-to-Lube PR Valve
- Front Lube/Drainback Valve Kit
- TCC Control Plunger Valve Kit



- Performance-Rated Accumulator Springs (10)
- 1-2, 2-3 & 3-4 Accumulator Control Valve Kits



- Intermediate & Direct Clutch Feed Seal Kit
- Sure Lock Overdrive Spiral Snap Ring
- Rear Planet Endplay Shims (2)
- One-Piece Rear Case Bushing
- Center Support Gasket



Heavy Duty Input Shaft

HD/HP UPGRADE
Part No. 36670-HD
 Fits 4R100, 5R110W

Better Material & Processing Deliver the Best All-Around Shaft

- Manufactured from 300M ultra high-strength steel for maximum strength & resistance to fracture
- Suitable for any high-horsepower street, towing or competition application
- Rolled splines for increased durability
- Specially heat-treated & processed for maximum toughness & straightness



FORD 4R100, 5R110W

4R100 Parts shown also fit E40D unless otherwise noted.



Remanufactured Valve Bodies

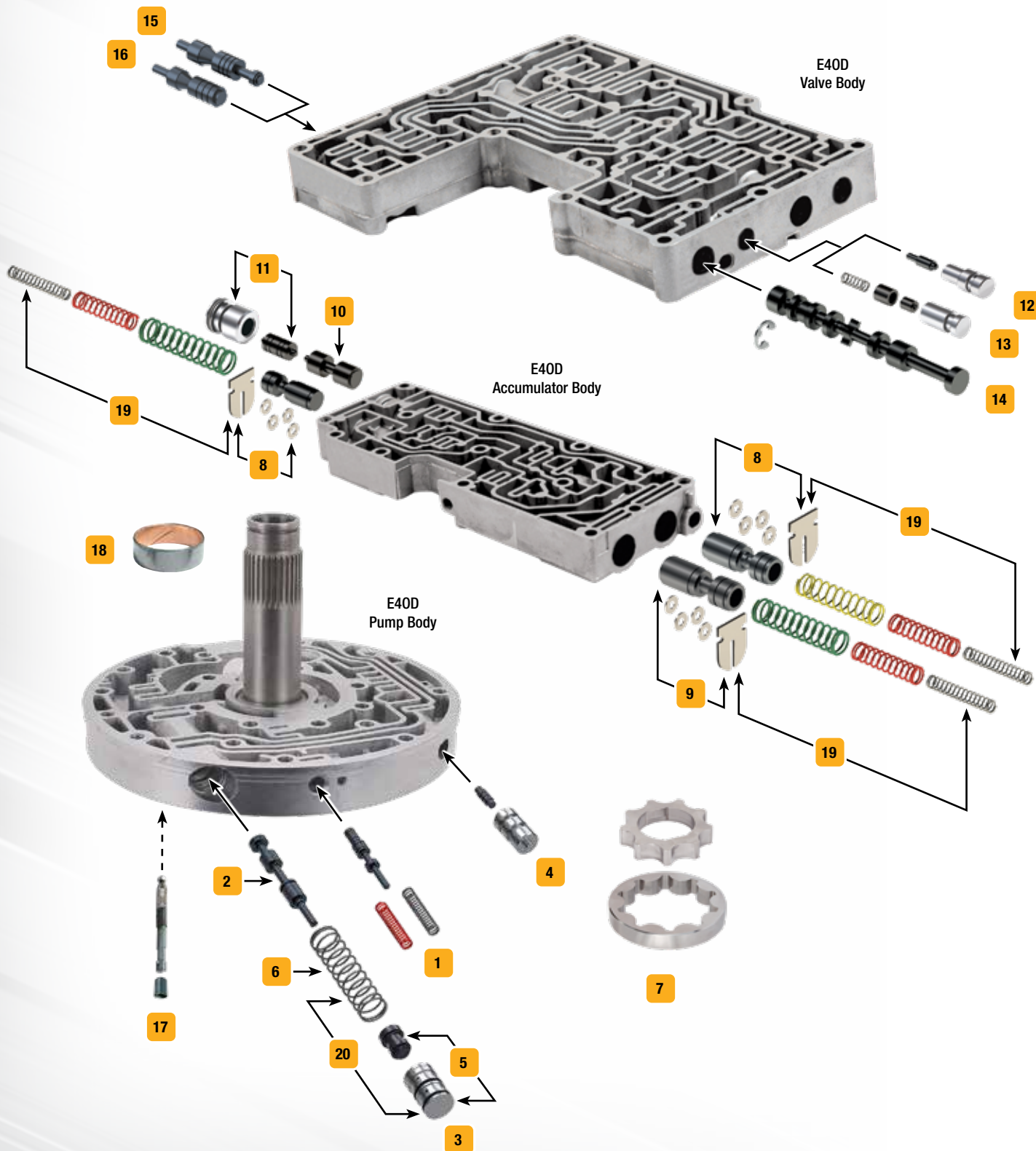
4R100

Without PTO, F6 casting number	F043
With PTO, F8 casting number <i>Return & Rebuild Only</i>	F044

E40D

'89, E9 main body casting number	F041
'90-'95, F0 or F1 main body casting number	F040
'96-'98, F6 main body casting number	F042

See Zip Kit components at www.sonnax.com.
See Performance Pack components on page 23.



More 4R100 Components



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Multiple Symptoms				
The first step in correcting common shift problems	Zip Kit®	E40D-4R100-ZIP	ZIP	36948-12 †
TCC/Lockup Symptoms				
Internal converter damage, Excess converter pressure	Oversized Converter Clutch Regulator Valve Kit	1 36424-11K	F1, F5, F8 & E9 Pump castings	F-36424-TL11C*
TCC slip, Soft TCC apply, Code 1783, Code 1741, 1744, Overheating, Low cooler flow	Cooler Bypass Valve Kit	36605-02K	ZIP '97-Later with either style outboard fitting	
Code 62, 628, 1744, Engine stall on engagement in Reverse, High line pressure	Line-To-Lube Pressure Regulator Valve	2 36424-04K	ZIP F1, F5, F8 & E9 Pump castings	
	Oversized Line-to-Lube Pressure Regulator Valve Kit	3 36424-16K	F1, F5, F8 & E9 Pump castings	F-36424-TL16C*
Lockup shudder, TCC cycling	TCC Control Plunger Valve Kit	4 36424-08K	ZIP 4R100 PWM only	
Pressure Problems				
Soft shifts, Delayed Reverse, Low line rise	Boost Valve Kit	5 36424-03K	ZIP Factory style	
	Boost Valve Kit	5 36424-01K	ZIP O-Ring style	
Soft shifts, Poor shift quality, Low base line pressure	Elevated Pressure Main Pressure Regulator Spring	6 36424-10	20/Bag	
Code 62, 628, 1744, Low line pressure, Excess pump noise, Damaged pump gears	Pump Gear Set	7 36438A-03	'95-Later with F5 & F8 pump casting	
	Oversized Pump Gear Set	7 36438AX-01K	'95-Later F5 & F8 pump casting	
Shift/Engagement Concerns				
Soft shifts, No 2nd, No 3rd, Premature clutch failure	1-2 & 2-3 Accumulator Control Valve Kit	8 36948-13K	ZIP Fits either of 2 locations	36948-12 †
No 4th, Soft shifts, Premature clutch failure	3-4 Accumulator Control Valve Kit	9 36948-09K	ZIP	36948-12 †
1-2 Harsh, Harsh shifts, Soft shifts	Oversized Accumulator Pressure Control Valve	10 36948-19		36948-TL‡
Burnt Forward clutch	Forward Clutch Piston	36434A		
Intermittent harsh shifts, 1-2 Soft, 2-3 Soft, Low line rise, Low EPC pressure	Line Pressure Modulator Plunger Valve Kit	11 36948-03K	ZIP 6- & Small 8-cylinder, .331" dia.	
	Line Pressure Modulator Plunger Valve Kit	11 36948-05K	ZIP Large 8-cylinder, .372" dia.	
	Line Pressure Modulator Plunger Valve Kit	11 96948-01K	ZIP Heavy duty/high performance, .427" dia.	
No engine braking in D1, Burnt Low/Reverse clutch, Low/Reverse clutch distress	Low/Reverse Modulator Plunger Valve Kit	12 36947-06K	ZIP '96-Later, uses lower OE ratio	
No engine braking in D1, Breakaway of Low/Reverse clutch, Burnt Low/Reverse clutch	Heavy Duty Low/Reverse Modulator Sleeve Kit	13 36947-09K	ZIP '96-Later, uses higher OE ratio	
Delayed Reverse, Reverse slip, Low/Reverse clutch failure	Oversized Manual Valve Kit	14 36947-13K		F-36947-TL13*
2nd Gear starts, 3rd Gear starts, TCC cycling, TCC slip	Oversized Solenoid Regulator Valve	15 36948-22	E40D '95-earlier only, 3-spool valve	F-36948-TL22*
	Oversized Solenoid Regulator Valve	16 36947-14	'96-Later, 2-spool valve	F-36947-TL14*
Shift concerns	Remanufactured Solenoid Block	36424A	E40D '89-'94 only, 12-pin connector	
	Remanufactured Solenoid Block	36424B	E40D '95-'98 & 4R100 non-PWM '98-later only, 9-pin connector	
	Remanufactured Solenoid Block	36424D	4R100 '98-later with PWM TCC only, 9-pin connector	
Component Damage/Failure				
Bearing noise, Bearing failure	Ball Bearing	96423-01	'95-Later, center support	
	Bearing Kit	SBK-F5	E40D '89-'96 only	
Forward clutch failure, Low lube oil flow	Center Support Gasket	36743G	Printed silicone bead, 5/bag	
Excess wear of center support & case lugs at contact points	Center Support Ring	36743-02		
Cross leaks, Second clutch feed passage leaks at case & center support	Center Support Shim	36743-01	.204" Thick, 10/bag	
OD planetary failure	Front Lube/Drainback Valve Kit	17 36425-01K	Melt-proof aluminum	

* VB-FIX Required

† Recommended Tool

Continued on next page.

‡ No longer in production. Check with your distributor for availability.

High Capacity Direct Clutch Apply Piston Kit

HD/HP UPGRADE

Part No. 36965-01K Fits 5R110W

25% More Clutch Capacity + Max Heat Dissipation

- Use with stock thickness clutches & steels plus one additional friction plate to increase both holding & engaging capacity
- Thicker apply & backing plate design outperforms OE & thinner aftermarket plates
- Increased heat dissipation improves durability in high energy shifts



CRITICAL SAFEGUARD

Backing Plate Also Sold Separately Part No. 36965-03

4R100 Components listing continued from previous page.

Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Component Damage/Failure	Intermediate & Direct Clutch Feed Seal Kit	36424-24K	ZIP	
Burnt intermediate clutches, Intermediate clutch failure, Direct clutch failure, 2-3 Slip	Low Sprag Inner Race	36429E	E4OD only, late-style, 1.013" thick	
	Low Sprag Race & Bearing Kit	36429E-K	E4OD only, late-style	
Lost or damaged component				
Leaking front seal, Pump noise, Excess converter hub-to-bushing clearance, Low pump volume	Pump Bushing	18 36002-01	Finish-in-Place	
Premature wear & bushing failure, Inadequate lubrication	Rear Case Bushing	36008D	'95-Later, late-style with 3 grooves to front, 1 groove to back, precision, 4/bag	
Damaged case, Spun-out bushings	Oversized Rear Case Bushing	36008C	'95-Later, late-style with 3 grooves to front, 1 groove to back, precision, 4/bag	T36605-04‡, T36008A, T36605-03‡
Premature wear & bushing failure, Inadequate lubrication	Rear Case Bushing	36008B	E4OD '89-'94 only, early-style with 3 grooves to front, no grooves to back, precision, 4/bag	T36008A
Bearing noise, 1-2, 2-3, 4-5 Flares	Rear Sun Gear Bearing & Race Assembly	96423	E4OD only	
OD loss (E4OD), OD piston retaining ring popout, Catastrophic failure (4R100)	Sure Lock Spiral Snap Ring	36744-01		
Driveline clunk, Reduced seal ring life, Rear component driveline wear	Unit Endplay Shim	36402-Z	Reverse planet, 4 I.D. slots, .010" thick, 10/bag	
High Performance/Heavy Duty Upgrades — See pages 22-23 for more HP/HD components.				
Significantly firmer shifts at any gear	Line Pressure Modulator Plunger Valve Kit	11 96948-05K	ZIP Extreme heavy duty, .500" dia.	
Aggressive shifts	Performance Rated Accumulator Spring Kit	19 36948-18K	Tri-cumulator springs	36948-12 †
Classic, large-ratio boost valve for crisp, clean shifts without harshness	Line Pressure Booster Kit	20 4R100-LB1		
Tools			For use with	Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Bore Sizing Tool	36948-12	SC-4R100HD‡, SC-E4OD‡, 36948-09K, HP-4R100-01, E4OD-4R100-ZIP, 36948-18K, 36948-13K	
	Bushing Installation Tool	T36008A	SC-4R100HD‡, SC-E4OD‡, 36008B, 36008C, HP-4R100-01	
	Tool Kit	F-36424-TL11C	36424-11K	VB-FIX
	Tool Kit	F-36424-TL16C	36424-16K	VB-FIX
	Tool Kit	F-36947-TL13	36947-13K	VB-FIX
	Tool Kit	F-36947-TL14	36947-14	VB-FIX
Tool Kit	F-36948-TL22	36948-22	VB-FIX	

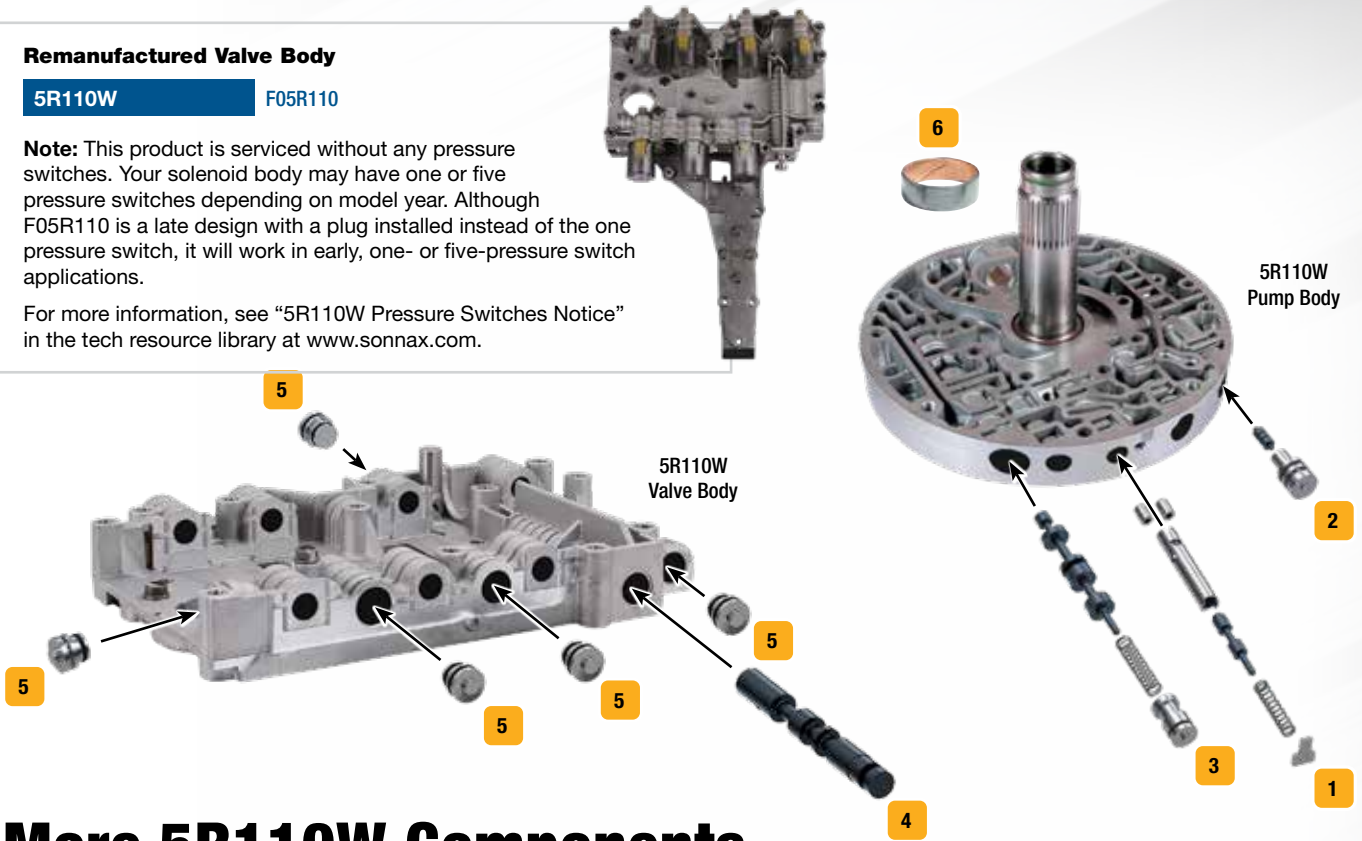


Remanufactured Valve Body

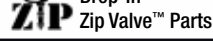
5R110W F05R110

Note: This product is serviced without any pressure switches. Your solenoid body may have one or five pressure switches depending on model year. Although F05R110 is a late design with a plug installed instead of the one pressure switch, it will work in early, one- or five-pressure switch applications.

For more information, see "5R110W Pressure Switches Notice" in the tech resource library at www.sonnax.com.



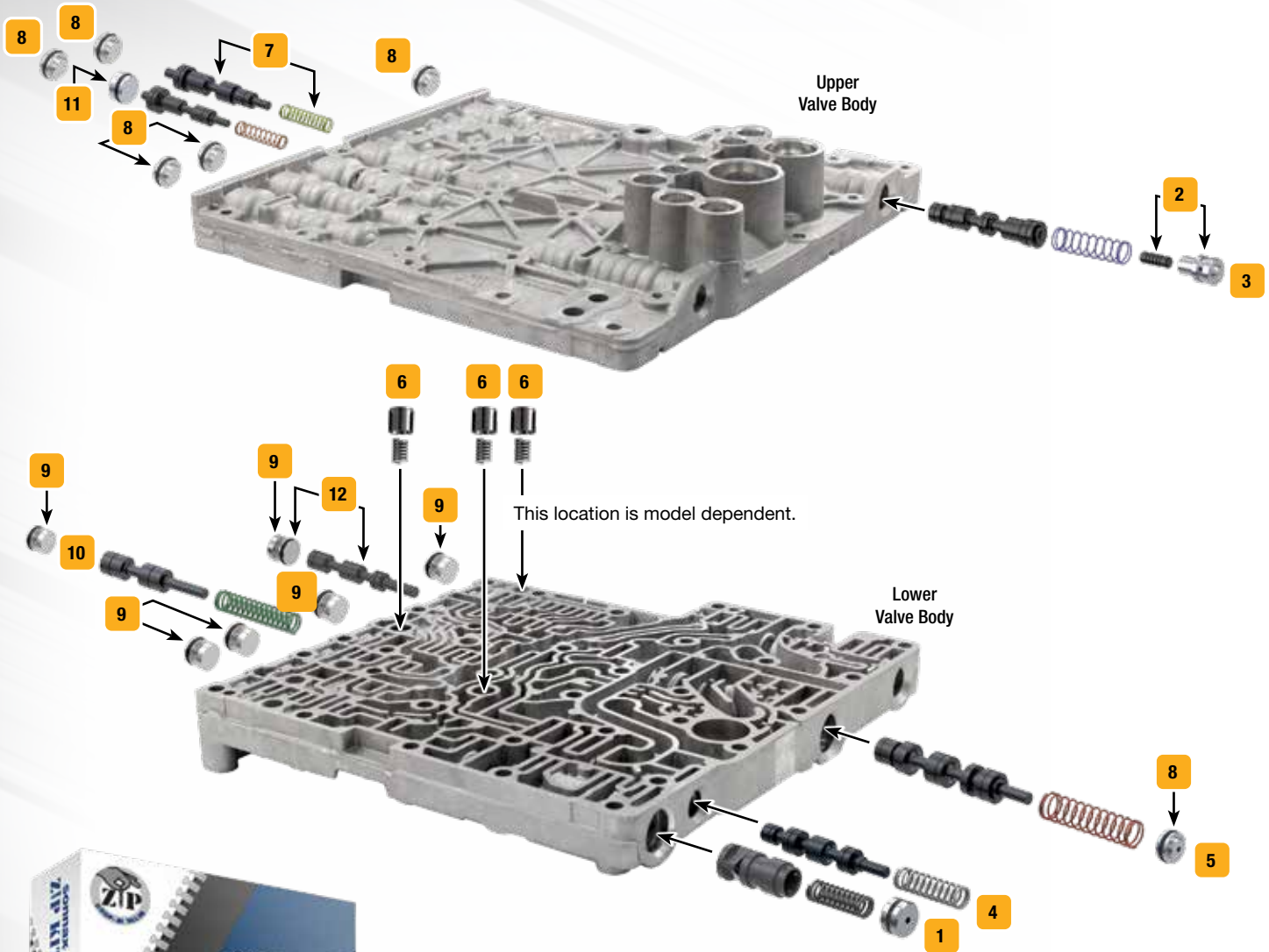
More 5R110W Components

Symptoms/Part Type	Product Name	Part No.	Details	 Tooling
TCC/Lockup Symptoms				
Harsh TCC apply, Soft TCC apply, TCC codes, TCC slip, TCC lining failure	Converter Pressure Limit Valve Kit	1 36940-06K	ZIP '05-Later, replaces OE valves with 298" or .312" dia. balance spool only	
Overheating, Excess TCC slip, TCC cycling, TCC slip, Code 1783, Code P0741	TCC Control Plunger Valve Kit	2 36940-01K	ZIP	
Pressure Problems				
Code 1744, 1783, Low line pressure & TCC concerns	Oversized Pressure Regulator Valve Kit	3 36940-03K		F-36940-TL3**, F-36940-TL3C**, F-36940-RM3C**
Shift/Engagement Concerns				
Delayed Drive, Delayed Reverse, Low line pressure	Manual Valve	4 36940-22	ZIP Replaces OE valves with or without holes in long spool	
Damaged valve body casting, Low line pressure, Delayed Drive, Delayed Reverse	Oversized Manual Valve	4 36940-11	Replaces OE valves with or without holes in long spool	F-36940-TL11*
Loss of shift solenoid control pressure, Shift concerns	Pressure Switch O-Ringed End Plug Kit	5 36940-17K	ZIP Includes 1 end plug	
Component Damage/Failure				
Bearing noise, Bearing failure	Bearing Kit	SBK-F8	Fits '03-later with exception of Forward carrier/Forward ring gear bearing that fits '05-later only	
Damaged case, Retaining ring pops out of groove, No Reverse, No Manual 1st, Reverse slip	Low/Reverse Retaining Ring	36885	Increased width & tension	
Leaking front seal, Pump noise, Excess converter hub-to-bushing clearance, Low pump volume	Pump Bushing	6 36002-01	Finish-in-place	
Tools		For use with		Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Carbide Reamer	F-36940-RM3C	36940-03K	VB-FIX
	Tool Kit	F-36940-TL3	36940-03K	VB-FIX
	Tool Kit	F-36940-TL3C	36940-03K	VB-FIX
	Tool Kit	F-36940-TL11	36940-11	VB-FIX

* VB-FIX Required

** VB-FIX & VB-06 Required

FORD 6R140



Kit Includes:

- TCC Apply Boost Valve Kit
- O-Ringed End Plug Kit
- Internal O-Ringed End Plug Kit
- Accumulator Pistons (3)
- Converter Limit Valve, Sleeve & Spring
- Accumulator Springs (3)
- Bypass Blocker Valve (For '17-Later Only)

Zip Kit®

REPAIR & PREVENT DAMAGE

Part No. 6R140-ZIP



The First Step in Correcting Common Shift Problems

- Drop-in Zip Valve™ parts install quickly with no reaming or special tools required
- Uniquely designed parts address root causes of valve body complaints by sealing critical pressure circuits
- Detailed technical booklet included with in-depth rebuild & inspection tips for comprehensive valve body repair

It's easy to restore — and maintain — shift quality with Zip Kits. Uniquely designed Sonnax parts target the root cause of valve body complaints and stop critical circuit pressure losses in the most common problem areas of the transmission. Symptoms of these problems can include:

- Delayed engagement
- Excess heat
- Flare shifts & bind-ups
- Harsh engagement
- Harsh shifts
- Slipping gears
- TCC apply & release concerns
- Soft shifts


6R140 Remanufactured Valve Body

- Bores, checkballs, seals, casting...every critical area is reviewed, refreshed and repaired, plus a new bonded separator plate installed
- All new solenoids installed, along with new solenoid strategy code to match solenoid bands
- Top-quality Sonnax components optimize function and prevent future wear
- State-of-the-art testing verifies main line, solenoid feed, clutch and torque converter pressures match new OE specs



Part No. F06R140
Fits '11-'17 units
with cooler bypass valve.

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

Symptoms/Part Type	Product Name	Part No.	Details	 Tooling
TCC/Lockup Symptoms				
Excess TCC slip, TCC codes, TCC apply & release concerns, Lube failures, Reduced clutch life	Oversized Converter Limit Valve Kit	1 126740-19K	'11-'16	F-126740-TL19*
TCC codes/slip/cycling, No lockup, Overheated fluid, Low cooler & lube pressure	TCC Apply Boost Valve Kit	2 126740-03K	ZIP	
	Oversized TCC Apply Regulator & Boost Valve Kit	3 126740-15K		F-126740-TL15*
Engine stall, TCC codes, No TCC release, Overheated fluid, Low TCC release pressure	Oversized TCC Charge Limit Valve Kit	4 126740-01K		F-126740-TL*
Pressure Problems				
Poor shift quality, TCC apply & release concerns, Erratic line pressure, Burnt clutches	Oversized Line Pressure Control Valve Kit	5 126740-08K		F-126740-TL8*
Shift/Engagement Concerns				
Downshift clunk, Firm shifts, Erratic EDS solenoid control and/or EDS codes	Accumulator Piston Kit	6 95740-15K	ZIP Includes 7 pistons & springs	
Delayed Reverse, 2-3/4-5 Flare, Ratio codes, 3rd/5th Slip, Direct clutch burned	Oversized Direct Clutch Regulator Valve Kit	7 126740-11K		F-126740-TL11*
Flare shifts, Harsh shifts, Soft shifts, Pressure loss, Burnt clutches	O-Ringed End Plug Kit	8 126740-09K	ZIP Includes 6 end plugs	
	Internal O-Ringed End Plug Kit	9 126740-05K	ZIP Includes 6 end plugs	
Shift quality is not load sensitive, Delayed engagement, Gear ratio & solenoid codes	Oversized Forward Clutch Latch Valve Kit	10 126740-06K		F-126740-TL6*
Delayed Forward, No Forward, Gear ratio & solenoid codes, Failsafe mode, Slipping gears	Oversized Forward Clutch Regulator Valve Kit	11 126740-13K		F-126740-TL13*
Delayed Reverse, Flare shifts, Harsh shifts, Delayed Forward	Oversized Solenoid Feed Pressure Regulator Valve Kit	12 126740-24K		F-126740-TL6*
Shift concerns, Line pressure instability	Solenoid (NH)	126421-NHJ	Replaces band #1 OE BC3Z-7G383J, for LPC, 3-5-R ("B") or 4-5-6 ("E") locations	
	Solenoid (NH)	126422-NHK	Replaces band #2, OE BC3Z-7G383K, for LPC, 3-5-R ("B") or 4-5-6 ("E") locations	
	Solenoid (NH)	126425-NHN	Replaces band #5 OE BC3Z-7G383N, LPC, 3-5-R ("B") or 4-5-6 ("E") locations	
Shift concerns, TCC apply & release concerns	Solenoid (NL)	126425-NLV	Replaces band #5 OE BC3Z-7G383V, for TCC, 1-2-3-4 ("A"), 2-6 ("C") or 1-R ("D") locations	
Component Damage/Failure				
Pump noise, Bearing failure, Loss of lube oil	Converter Hub Support Pump Bearing	126202	With seal	
Manual lever binds, Missing, corroded or broken shift selector shield	Shift Selector Shield Kit	126760-01K	Non-PTO equipped, replaces OE BC3Z-7B229-B, 4C3Z-7H181-AA	
Tools		For use with		Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Tool Kit	F-126740-TL	126740-01K	VB-FIX
	Tool Kit	F-126740-TL6	126740-06K, 126740-24‡, 126740-24K	VB-FIX
	Tool Kit	F-126740-TL8	126740-08K	VB-FIX
	Tool Kit	F-126740-TL11	126740-11K	VB-FIX
	Tool Kit	F-126740-TL13	126740-13K	VB-FIX
	Tool Kit	F-126740-TL15	126740-15K	VB-FIX
	Tool Kit	F-126740-TL19	126740-19K	VB-FIX

* VB-FIX Required

‡ No longer in production. Check with your distributor for availability.

“R” Ratio Servo Piston Kit

HD/HP UPGRADE

Part No. K36528R Fits Mid '68-Later

Classic “R” Ratio Apply Size
with No-Leak Pin Design

- Largest apply area
- No-leak pin design prevents high clutch/release oil leaks
- Includes two return springs for tuning of shift

Note: A replacement seal kit (K36528R-SK) is available that includes a cover gasket and all O-rings needed to refresh the servo piston.



Servo Apply Levers

HD/HP UPGRADE

Recalibrate Cores or Hardworking Units for Additional Band Capacity

- High-quality, forged 6061-T6 aluminum resists distortion & cracking
- Replace hard-to-find OE levers

Changing to a lever with the band apply strut channel closer to the pin center will increase band apply force and holding power while firming up the 1-2 shift. Combine levers with different sized servos to correspond with specific application needs.



Part No. 36916E
“E” Ratio (1.85)
C6AZ-7330-D



Part No. 36916F
“F” Ratio (2.30)
C6AZ-7330-E



Part No. 36916FF
“FF” Ratio (2.82:1)

STOCK RATIOS Combine an “R” ratio servo with an “E” ratio lever for mild performance applications or an “F” ratio lever for more extreme applications.

CUSTOM RATIO Due to this aggressive lever ratio, Sonnax does not recommend use with “H” or “R” code servos.



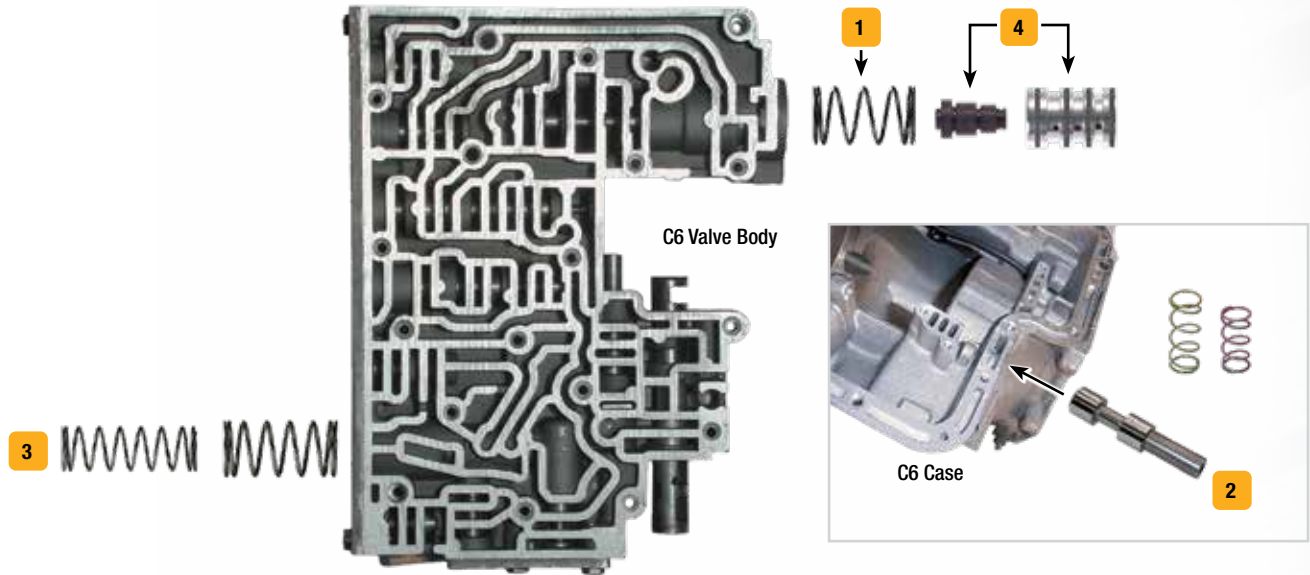
Extra Wide Band

HD/HP UPGRADE

Part No. S026968 Fits '66-Later

2 1/4" Wide with Heavy-Duty Lining
to Guarantee Maximum Holding Power

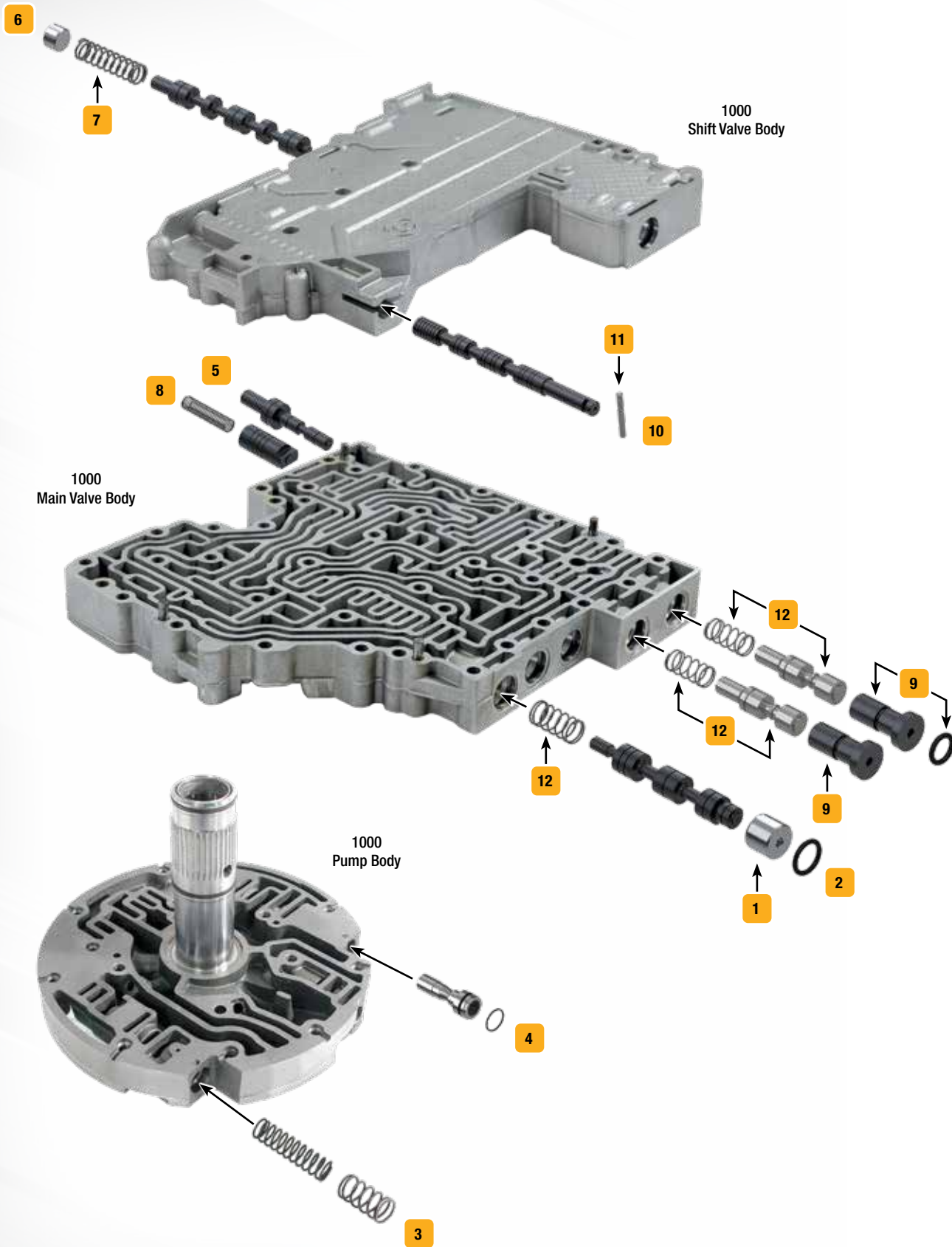
More Components



Symptoms/Part Type	Product Name	Part No.	Details	ZIP Drop-In Zip Valve™ Parts	Tooling
Pressure Problems					
Soft shifts, Poor shift quality, Low base line pressure, High line pressure	Elevated Pressure Main Pressure Regulator Spring	1 36946-13	Calibrated to OE gas line pressure, fits gas/diesel, 20/bag		
No kickdown, Stacked shifts, Poor line pressure control, High line pressure in Reverse	Oversized Modulator Valve Kit	2 36833-01K	Includes springs for gas, diesel & gas/diesel conversions		36833-TL
Shift/Engagement Concerns					
1-2 Quality poor, Burnt intermediate band	1-2 Accumulator Valve Spring Kit	3 36946-05K	5 Inner springs, 5 outer springs		
Soft shifts, Poor shift quality, Reverse shudder, Direct clutch failure, Low line rise	Boost Valve Kit	4 36941-01K	ZIP '76-Earlier, clicker-style units		
	Boost Valve Kit	4 36946-04K	ZIP Gas ratio, factory style		
	Boost Valve Kit	4 36946-01K	ZIP Gas ratio, O-ring style		
	Boost Valve Kit	4 36946-03K	ZIP Diesel ratio, factory style		
	Boost Valve Kit	4 36946-02K	ZIP Diesel ratio, O-ring style		
Component Damage/Failure					
Lost or damaged component	Low Sprag Inner Race	36429E	Late-style, 1.013" thick		
	Low Sprag Race & Bearing Kit	36429E-K	Late-style, 1.013" thick, includes OE bearing		
	Oil Pan	36950-01	25% Thicker than OE		
Leaking front seal, Pump noise, Excess converter hub-to-bushing clearance, Low pump volume	Pump Bushing	36002-01	Finish-in-place		
Premature wear & bushing failure, Inadequate lubrication	Rear Case Bushing	36008B	'89-'94, early-style, 3 grooves to front, no grooves to back, precision, 4/bag		T36008A †
Bearing noise, 1-2, 2-3, 4-5 Flares	Rear Sun Gear Bearing & Race Assembly	96423			
Tools					
	Tool Kit	36833-TL	36833-01K		
	Bushing Installation Tool	T36008A	HP-4R100-01, 36008C, 36008D, 36008B, SC-E40D, SC-4R100HD		

† Recommended Tool

ALLISON® 1000/2000/2400





Symptoms/Part Type	Product Name	Part No.	Details	Tooling
TCC/Lockup Symptoms				
Overheating, Code P0741, TCC surge	F-Trim Valve End Sleeve	1 37000-03	ZIP '00-'05	
Overheated transmission, Code P0741, RPM surge, TCC apply & release concerns	Oversized F-Trim Valve Kit	2 37000-30K	'00-'05	F-37000-TL30*
Overheating, Broken spring, Delayed engagement	Lube Regulator & Converter Relief Spring Kit	3 37000-01K	'03-Earlier, 6-solenoid units	
Shift/Engagement Concerns				
C1 Clutch hub wear, Lack of C1 clutch control, Harsh/Delayed bump on Forward	C-1 Valve & Seal Kit	4 37000-05K	ZIP February '04-earlier	
Shift concerns, Loss of shift solenoid control pressure	Oversized Control Main Relief Valve	5 37000-19	'00-'15	F-37000-TL19*
Code P0872, Code P1711, Pressure switch stuck on, Failsafe mode, 3rd Gear starts	Oversized E-Shift Valve Kit	6 37000-15K	'00-'09	F-37000-TL15*
	E-Shift Valve Spring	7 37000-02	'00-'09	37000-02BST †
Flare shifts, Long shifts, Delayed shifts	Exhaust Backfill Valve Kit	8 37000-17K	ZIP '00-'15	
Shift concerns associated with circuit pressure loss	Oversized Gain Valve Kit	9 37000-24K	'00-'09	F-37000-TL24*
Low line pressure, Delayed Drive/Reverse	Oversized Manual Valve Kit	10 37000-28K	'00-'15	F-37000-TL28*
Delayed Drive, Low line pressure, 1-2, 2-3, 4-5 Flares	Manual Valve Selector Pin	11 37000-29K	'00-'15, 5/bag	
Premature clutch wear, Inability to alter clutch apply pressure curve	Trim Valve & Spring Kit	12 37000-12K	'00-'09, F-trim spring fits '00-'05 only	37000-TL12
Tools		For use with		Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Bore Sizing Tool	37000-02BST	37000-02	
	Tool Kit	37000-TL12	37000-12K	
	Tool Kit	F-37000-TL15	37000-15K	VB-FIX
	Tool Kit	F-37000-TL19	37000-19	VB-FIX
	Tool Kit	F-37000-TL24	37000-24K	VB-FIX
	Tool Kit	F-37000-TL28	37000-28K	VB-FIX
	Tool Kit	F-37000-TL30	37000-30K	VB-FIX
	Vacuum Test Plate Kit	37000-VTP		
	Vacuum Test Plate Kit Seal	37000-VTP-SS	37000-VTP	
	Vacuum Test Plate Kit Seal	37000-VTP-MS	37000-VTP	

* VB-FIX Required

† Recommended Tool

Trim Valve & Spring Kit

HD/HP UPGRADE

Part No. 37000-12K

See fitment/installation details in above chart.



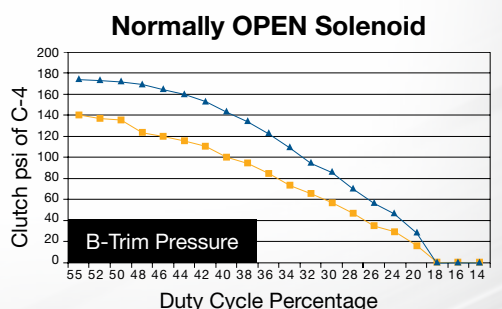
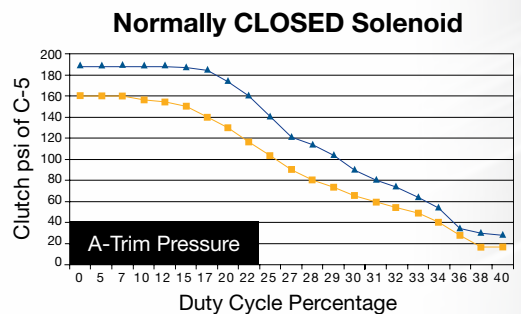
Predictable Pressure Control & Pressure Increase

- Unique Sonnax recalibrated valve ratio is the **only** way to predictably affect clutch pressures & apply rates
- 15% More clutch pressure & clamping force than OE
- Firmer & shorter shifts, including TCC engagement
- Improved engine braking on deceleration

The OE valve and spring configuration has a very conservative pressure curve. It simply cannot provide the rise in clutch apply pressure needed in heavy-duty Allison applications. Other aftermarket solutions that rely only on spring changes can have erratic pressure control.

Only Sonnax pairs recalibrated springs and redesigned valve ratios that deliver more aggressive pressure control and are specifically calibrated to provide predictable, responsive clutch pressure.

Higher duty cycle = increased apply pressure.



FORWARD CLUTCH HUBS & MAIN SHAFTS

HEAVY DUTY

Clutch Hub

CRITICAL SAFEGUARD

Part No. 34322-01

THE #1 Aftermarket Hub for 4L80-E, TH400

- Ideal for daily drivers, work trucks & mild performance applications
- Forged 1045 steel hub is an ideal upgrade over OE hubs
- Thicker cross-section for increased strength

Main Shaft

HD/HP UPGRADE

Part No. 34672-01

Performance, Durability & Value

- 300M steel shaft recommended for applications up to 1,000HP
- Advanced torsional design, plus spline & cross hole refinements for added strength
- Direct OE shaft replacement & can be used to replace late 4L80-E solid shafts



Forward Clutch Hub

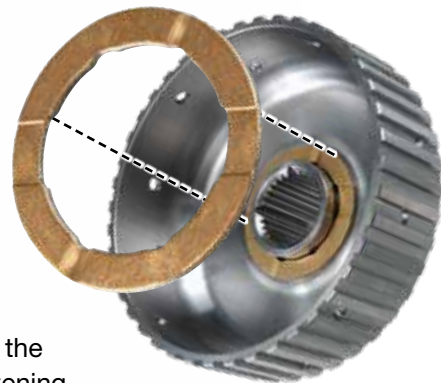
Front Washer A MUST for Every Build

CRITICAL SAFEGUARD

Part No. 34298-078 5/Bag

- .078" thick steel washer is .015" thicker than OE
- Installs between the forward drum & forward clutch hub to reduce front unit endplay

This unique Sonnax washer is .015" thicker than OE and installs between the forward clutch hub and drum to quickly and easily snug up endplay. Tightening endplay at this location does not alter endplay path through the unit as can happen when shimming between the forward clutch hub and direct drum.



TECH TIP: Tech support hotlines have been burning up for years with phone calls about rapid gear train failure in the TH400, 4L80-E and 4L85-E after routine rebuild or repair. There are a variety of issues that cause this and widespread confusion surrounding gear train setup, which isn't helped by a lack of OE reference information. Understanding some basic checks to perform will give you an advantage when setting build procedures. **Learn more by reading "Playing with Transmissions: Setting Total Endplay to Prevent TH400 Gear Train Failure" in the tech resource section at www.sonnax.com.**

Never overpay or underspec for the performance level you need with the right combination of Sonnax hubs and shafts. Both heavy duty and extreme duty versions are top-quality parts you can trust to add outstanding reliability to any build.

EXTREME DUTY

Clutch Hub

HD/HP UPGRADE

Part No. 34322-02K

Bearing & Hardened Splines, No Machining Required

- Forged 4140 steel, nitrited & case-hardened splines eliminate spline wear in extreme applications
- Case-hardening at bearing surface cut back to make further mods easier
- .025" Thicker than OE to slightly tighten endplay



Main Shaft

HD/HP UPGRADE

Part No. 34672-05

Most Durable 1" Shaft Available

- Aermet shaft recommended for 1,000+ HP applications
- Exceptionally tough high-strength Aermet steel alloy with proprietary heat treatment stands up to the most extreme horsepower & abuse
- Full spline engagement prevents the rear internal gear, journal-end from twisting off



Note: Requires use of thrust bearing between forward clutch hub and direct drum. See instructions at www.sonnax.com for details.



Extreme Duty Input Shaft



HD/HP UPGRADE

Part No. 34670-02 Fits 4L80-E, 4L85-E

- Heat-treated Aermet steel outperforms all other shaft materials in strength & toughness
- Hobbed O.D. carrier spline eliminates deep undercut where other shafts fail
- Advanced torsional design with spline, seal ring groove & cross-hole refinements for additional strength

Toughest Input Shaft for 1,000+ HP Applications

The input shaft is a major weak point in these otherwise very capable units, where both OE and aftermarket shafts commonly fail under added power. The extreme duty Sonnax input shaft guarantees unrivaled performance when drivers want to go all out on the street or strip without worrying about transmission failure.

4L80-E SMART-TECH® OVERRUN CLUTCH VALVE KIT

CRITICAL SAFEGUARD

Part No. 34200-40K Fits '97-Later 4L80-E, 4L85-E

OUTSMART Overdrive Roller Clutch Failure

- Improves OD roller clutch holding power in D4 & Reverse ranges
- Extends the life of workhorse transmissions while preventing warranty claims & comebacks
- Installs quickly onto the valve body — no transmission removal needed!
Watch the step-by-step video at www.sonnax.com/34200-40K-install
- Pairs perfectly with the Sonnax Performance Pack for the **ULTIMATE** in transmission durability

Chronic OD roller clutch failure is due to insufficient holding capacity of the OD roller clutch. The 4L80-E OD roller clutch faces a tough challenge: it alone delivers ALL the power in 1st, 2nd and 3rd Gears. The only way to radically increase OD roller clutch holding capacity is to bring on the overrun clutch in OD 1st-3rd Gears.

LEARN MORE about gear function by reading "Outsmarting 4L80-E Overdrive Roller Clutch Failure" in the tech resources section at www.sonnax.com.

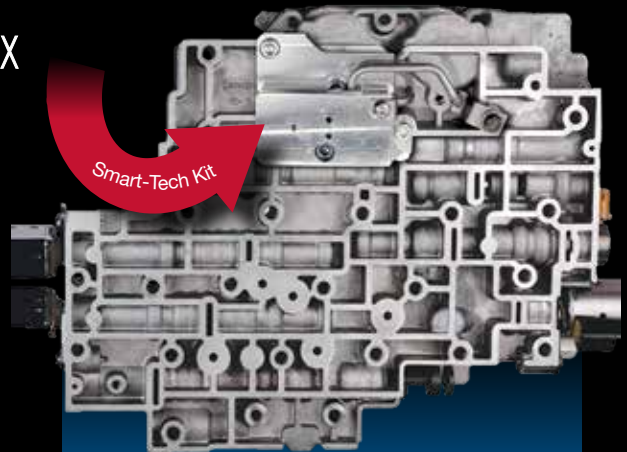
Thanks to the Smart-Tech kit, this is easy to do. Via an external manifold that bolts to the valve body, the kit hydraulically applies the overrun clutch as soon as the engine is started. The overrun clutch can now share the load the OD roller clutch otherwise struggles with on its own. Components install easily onto the valve body to help keep trucks working hard all year round.

Heavy Duty Remanufactured Valve Bodies

Overdrive Clutch Protection Right Out of the Box

- Smart-Tech® overrun clutch valve kit is pre-installed for unrivaled OD clutch durability
- All-new solenoids (EPC, Shift A & B, PWM TCC) & new pressure switch assembly correct shift complaints
- Chronic wear points addressed by reaming & installing top-quality Sonnax parts
- 3rd & Reverse checkball sleeves are also replaced, as the OE wear over time

Designed with the workhorse vehicle in mind, these unique valve bodies correct the issue of insufficient holding power by the overdrive roller clutch, the underlying cause of chronic overdrive roller clutch failure in 4L80-E units.



4L80-E, 4L85-E

'97-'03

GM033

'04-Later

GM030

4L80-E PERFORMANCE PACK

HD/HP UPGRADE

Part No. **HP-4L80E-01** Fits 4L80-E, 4L85-E

The Most Complete Upgrade Kit for Top-Quality Transmission Builds

- Recalibrated shift accumulation, with tunability for great, heavy-duty shifts
- Improved pump components minimize leaks, plus maintain pressure & lube under demanding use
- The only way to eliminate TCC PWM function without over-pressurizing the converter
- Includes internal parts for setup & to prevent common failures

This comprehensive kit makes it easy to upgrade work/sport vehicles for maximum performance and durability. Innovative components work together to precisely recalibrate pressures and shift accumulation, delivering firmer shifts under load without sacrificing low-speed drivability. To target common wear areas in the transmission, the kit includes many improved parts to repair damage, prevent future wear and improve reliability.



Valve Body

TCC Pressure Limiter, Valve, Spring & Plug



AFL Filter End Plug & O-Ring Kit



Accumulator Valve Springs (2) & Adjustable End Plug



Twist Drills



Checkballs



1-2, 2-3 & 3-4 Accumulator Piston Springs



Direct Clutch Dual Feed Steel Cup Plug & Aluminum Plugs (3) 2 Extra



Pump

Line Pressure Booster Kit



Lube Regulated PR Valve



Servo

Reverse Servo Spacer Kit



Internal

Heavy Duty Direct Piston Return Springs



Heavy Duty Case Bushing & Bearing Kit



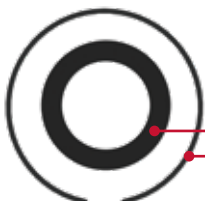
Case Saver Retainer



Direct Housing Support Ring & Seal



Forward Clutch Hub Front Washer



Heavy Duty Intermediate Piston Spring Retainer Plate & Heavy Duty Intermediate Clutch Retaining Ring

Many Performance Pack components also sold separately. See pages 41-43.

Heavy Duty Case Bushing Kit

HD/HP UPGRADE
Part No. 34006-SPB

No-Walk Bushing with Thrust Bearing Maximizes Durability

Case-bushing walkout and thrust washer wear are common issues in the TH400 and 4L80-E. This kit combines the tried-and-true no-walk case bushing with a high-quality thrust bearing and selective shims that update this area for maximum durability in all applications.

Bushing Also Sold Separately

CRITICAL SAFEGUARD Part No. 34006-SP



Case Saver Retainer

HD/HP UPGRADE

Part No. 34762-10 Fits TH400, 4L80-E '98-Earlier
Part No. 34762-20 Fits 4L80-E '99-Later

Protect Case Lugs & Keep the Intermediate Band

- The **ONLY** way to prevent lug blow out while retaining the intermediate band
- Salvages cases with one or two blown lugs
- Use with or without intermediate band

There have been a variety of case saver designs over the years, however all require eliminating the intermediate band as is often done in drag racing trans-brake applications. Only the Sonnax case saver retainer supports the intermediate clutch retaining ring, yet is thin enough to allow the intermediate band to be installed, allowing case lug protection in all applications.



Reverse Servo Spacer Kit

CRITICAL SAFEGUARD Part No. 34528-01K Fits 4L80-E, 4L85-E

Prevent Reverse Piston Breakage

- Increased contact area reduces pressure between apply pin & piston by 60%
- Belleville spring washer reduces shock on piston
- No machining necessary, drop-in components
- Eliminates the need to retrofit early-design reverse servo pistons into late units



SHIFT REPAIR KITS

Get the Job Done Right the First Time, Every Time



Line Pressure Booster Kit
 Improve Shift Feel & Durability
 HP/HD or Commercial Vehicles
 No Reaming Required

Sure Cure Kit
 Restore Stock Shift Action
 Comprehensive Overhauls Targeting Chronic Transmission Failure Points
 Some Kits Require Reaming



Line Pressure Booster Kit



HD/HP UPGRADE

Part No. 4L80E-LB1 Fits 4L80-E, 4L85-E
Part No. 400-LB1 Fits TH400

The Fast, Easy Way to Clean Up Shifts

- Classic large-ratio boost valve delivers crisp, clean shifts without low-speed harshness
- Drop-in Zip Valve™ parts install quickly & easily
- Ideal for heavy-duty & modified vehicles as well as hard-working daily drivers
- Improved shift feel & durability reduce comebacks & complaints



The Sure Cure®

REPAIR & PREVENT DAMAGE

Comprehensive Kit for Big Problems You Don't Want Back

- Restores shift quality & reduces comebacks
- Repairs biggest trouble areas to reduce comebacks
- Includes step-by-step instructions for comprehensive valve/pump body restoration

Part No. SC-4L80E Fits 4L80-E, 4L85-E
 Requires reaming with tool kit **77754-TL**, sold separately.

- Stator Support Bushing
- O-Ringed End Plugs: Small (2), Medium (2), Large (1)
- Boost Valve Kit
- Actuator Feed Limit Valve Kit
- TCC Regulator Valve Kit
- 1-2 Shift Valve Spring
- 2-3 Shift Valve Spring
- Case Bushing
- Endplay Shim
- Endplay Washer
- Checkballs (8)

Lube Regulated Pressure Regulator Valve

CRITICAL SAFEGUARD

Part No. 34200-14K Fits 4L80-E, 4L85-E



Prevent Overheating & Engine Surge at Idle

- Allows regulated flow to the converter charge/lube circuit at vehicle idle
- Prevents converter or pump drainback
- Improves converter release pressure
- Prevents engine surge at idle

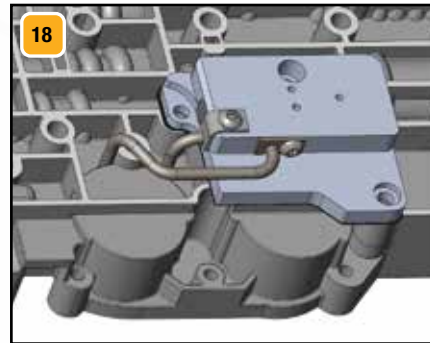


GM 4L80-E

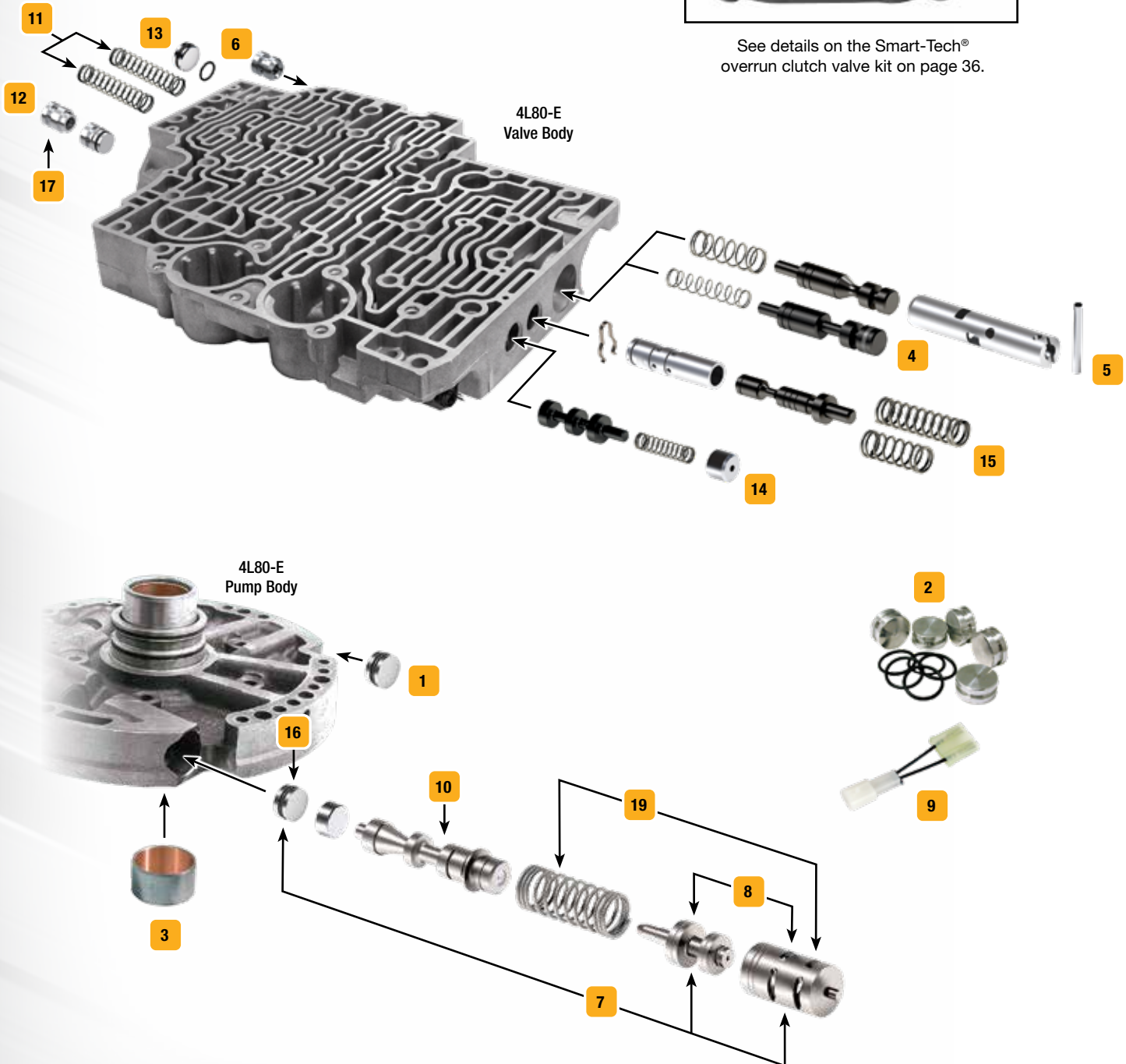
Parts shown also fit 4L85-E and TH400 unless otherwise noted.



See Sure Cure components on page 39.
See Performance Pack components on page 37.



See details on the Smart-Tech® overrun clutch valve kit on page 36.



More Components



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Multiple Symptoms				
Comprehensive kit for big problems you don't want back	The Sure Cure® Kit	SC-4L80E	4L80-E, 4L85-E only, see details on page 39	77754-TL
TCC/Lockup Symptoms				
No converter apply, Burnt converter	O-Ringed End Plug Kit	1 34994-13	ZIP 4L80-E, 4L85-E only, TCC valve bore, .497" dia., includes 5 end plugs	
No converter apply, 1-2, 2-3, 4-5 Flares	O-Ringed End Plug Kit	2 34994-14K	ZIP 4L80-E, 4L85-E only, TCC valve bore, .668" dia., includes 5 end plugs	
TCC slip codes, No lockup, Overheated fluid, No Overdrive	Stator Support Bushing	3 34016-W	4L80-E, 4L85-E only, wider than OE, precision, 4/bag	
TCC codes, TCC apply & release concerns, Converter shudder, Burnt converter	TCC Regulator Valve Kit	4 34994-01K	ZIP 4L80-E, 4L85-E only	
	Oversized TCC Regulator Valve Kit	5 34994-18K	4L80-E, 4L85-E only	F-34994-TL18*
Pressure Problems				
Burnt Reverse band, Delayed Reverse, No Reverse, No engine braking in manual low	#7 Low/Reverse Checkball Seat	6 34200-52	ZIP 4L80-E, 4L85-E '95-later only, 5/bag	
	Boost Valve Kit	7 34200-01K	ZIP 4L80-E, 4L85-E only, O-ring style	
	Boost Valve Kit	7 34200-03K	ZIP 4L80-E, 4L85-E only, factory style	
Uncontrollable line rise, High line pressure, Broken parts, Broken clutch piston	Boost Valve Kit	8 34200-10K	ZIP 4L80-E, 4L85-E only, with encapsulated relief valve, O-ring style	
	EPC Solenoid Harness Adapter	9 34435-01K	4L80-E, 4L85-E only, for use with early-style ('92-'02) EPC solenoid in late-style ('03-later) units	
Line pressure instability	EPC Solenoid Harness Adapter	9 34435-01K	4L80-E, 4L85-E only, for use with early-style ('92-'02) EPC solenoid in late-style ('03-later) units	
Engine surge at idle, Low cooler flow, Low TCC release pressure	Lube Regulated Pressure Regulator Valve	10 34200-14K	ZIP 4L80-E, 4L85-E only	
High & uncontrollable line pressure, Delayed converter charge, Poor Reverse engagement	Pressure Regulator Valve Kit	34910-03K	ZIP TH400 '71-later only	
Shift/Engagement Concerns				
Repeated Solenoid B code 86, Repeated Solenoid B code 87, 2nd Gear starts, No 4th, No 3rd	1-2 & 2-3 Shift Valve Spring Kit	11 34994-02K	4L80-E, 4L85-E only	
3rd Slip, 4th Slip, Gear ratio codes, Direct clutch burned, Reverse slip	3rd & Reverse Checkball Sleeve Kit	12 34200-47K	ZIP 4L80-E, 4L85-E '95-later only	
Damaged accumulator bore, Poor shift quality, Loss of accumulator control	4th Accumulator Repair Kit	34805-01K	4L80-E, 4L85-E only	
Broken AFL filters, 2nd Gear starts, Leaking AFL end plug, Code 68, 85, 86, 87, No upshifts	AFL Filter End Plug & O-Ring Kit	13 34994-17K	ZIP 4L80-E, 4L85-E only	
Soft shift & low accumulator pressure, High line pressure in Drive	Oversized Accumulator Control Valve Kit	14 34994-22K	4L80-E, 4L85-E only, upgrades '91-'96 units to '97 calibration	F-34994-TL22*
Wrong gear starts, Clutch failure, Solenoid performance codes, No 4th, Band failure	Actuator Feed Limit Valve Kit	15 34200-16K	4L80-E, 4L85-E only	77754-TL
	Boost Valve Kit	34910-01K	ZIP TH400 only, O-ring style	
Low line rise, 1-2 Soft, 2-3 Soft, Delayed Reverse, Reverse shudder	Boost Valve Kit	34910-05K	ZIP TH400 only, factory style	
	O-Ringed End Plug Kit	16 34200-05K	ZIP 4L80-E, 4L85-E only, fits TCC & PR bores, includes 5 end plugs	
Pressure loss, TCC apply concerns, Burnt clutches, Harsh shifts, Soft shifts	Governor	400	TH400 only, 2nd design	
	Governor Gear Kit	402	TH400 only	
	Pressure Switch Manifold	24222077	4L80-E, 4L85-E '91-later only, OE 24222077	
Reverse slip, Gear ratio codes, 3rd Slip, 4th Slip, Direct clutch burned, No Reverse	Reverse Checkball Sleeve	17 34200-38	ZIP 4L80-E, 4L85-E '95-later only, 4/bag	
Broken Low/Reverse servo piston, No Reverse	Reverse Servo Spacer Kit	34528-01K	4L80-E, 4L85-E '96-later only	

* VB-FIX Required

† Recommended Tool

Continued on next page.

‡ No longer in production. Check with your distributor for availability.

Continued from previous page.



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Component Damage/Failure				
Bearing noise, Bearing failure	Bearing Kit	SBK-G10	'76-'97	
	Bearing Kit	SBK-G20	4L80-E, 4L85-E '91-later only	
Direct clutch failure, Delayed 3rd, Delayed Reverse, Code 87, 730, 756, 1811, No 3rd, No 4th	Direct Drum Sleeve Kit	34838-01K		34838-TL ††
Excess front endplay	Forward Clutch Hub Front Washer	34298-078	.078" Thick, 5/bag	
Excess front endplay, Forward clutch sealing ring failure	Forward Clutch Hub Washer (Rear)	34301-078	.078" Thick, 5/bag	
	Forward Clutch Hub Washer (Rear)	34301-094	.094" Thick, 5/bag	
Lost or damaged component	Forward & Direct Clutch Inner Snap Ring	34577-01	TH400, 4L80-E only, OE 8623105, 5/bag	
Excess front endplay, Excess rear endplay, Burnt Forward clutch	Front/Rear Unit Endplay Shim	34500-Z	.010" Thick, 10/bag	
Lost or damaged component	Manual Shift Shaft Kit	38511-03K	4L80-E only, short version, retrofits detent levers to early '91-'94 units	
	Manual Shift Shaft Kit	38511-01K	4L80-E '91-'94 only without external NSS, short version	
	Manual Shift Shaft Kit	38511-04K	4L80-E, 4L85-E '95-later only with external NSS, long version	
	Manual Shift Shaft Kit	38511-05K	TH400 only	
OD roller clutch failure, No Forward, Overrun clutch distress	Smart-Tech® Overrun Clutch Valve Kit 18	34200-40K	4L80-E, 4L85-E '97-later only	
Lost or damaged component	Pan Bolt	35801-01	TH400 only, 100/bag	
	Pinion Washer	34875-03	TH400, 4L80-E only, 8/bag	
	Pinion Batwing Washer	34880-03	4L80-E, 4L85-E '99-later only, 8/bag	
	Pinion Pin	34875-01	TH400, 4L80-E only, 4/bag	
	Pinion Roller	34880-02	4L80-E, 4L85-E '99-later only, 72/bag	
	Pinion Roller	34875-05	4L80-E only, 80/bag	
	Pinion Thrust Washer	34875-04	TH400, 4L80-E '98-earlier only, 8/bag	
	Planetary Rebuild Kit	34875RK	TH400, 4L80-E '98-earlier only	
	Planetary Rebuild Kit	34880RK	4L80-E, 4L85-E '99-later only	
Excess rear endplay	Rear Unit Endplay Shim	34006-05	.005" Thick, 10/bag	
	Retaining Clip	34989-01	4L80-E, 4L85-E only, 10/bag	
Wear grooves in the Forward drum ID bore, Delayed engagement, Burnt Forward clutch	Oversized Seal Rings	34716-01	4L80-E, 4L85-E only, 2/bag	34716-TL ††
Early cases without shifter bracket bosses cannot be used in '96-'97 vehicles	Shift Cable Mount Bracket	34913-01	4L80-E, 4L85-E only, adapts early cases for '96-later use	
Connector pushed into pan area, Retention tabs break off wiring harness connector	Wiring Harness Connector Bracket	34998-01K	4L80-E, 4L85-E, late-style, gray connector only	

High Performance/Heavy Duty Upgrades — See pages 34–39 for more HP/HD components.

Valve Body

Stress relieved & shot peened for increased durability	2-3 Accumulator Spring	34931-01		
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Pump

High-temperature bronze lining withstands extreme peak temperatures	Pump Bushing	34234B-01	TH400 only, precision, OE 29511860	
Lost or damaged component	Front Pump Bolt	28136	TH400 only, 8/bag	
Classic, large-ratio boost valve for crisp, clean shifts without harshness	Line Pressure Booster Kit	400-LB1	ZIP TH400 Only	
	Line Pressure Booster Kit	19 4L80E-LB1	ZIP 4L80-E, 4L85-E only	
Superior wear resistance & fit	Pump Bushing	34034T-01	TH400 only, precision, PTFE-lined, OE 29511860	
Material & design upgrades for added strength	Stator Support Shaft	34910S-01	TH400 only, heat-treated chromoly	

Linkage

Prevents leakage from TH400 cases	Shift Lever Kit	38512-01K	TH400 only, includes lever for aftermarket shifters	
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* VB-FIX Required

† Recommended Tool

‡ No longer in production. Check with your distributor for availability.



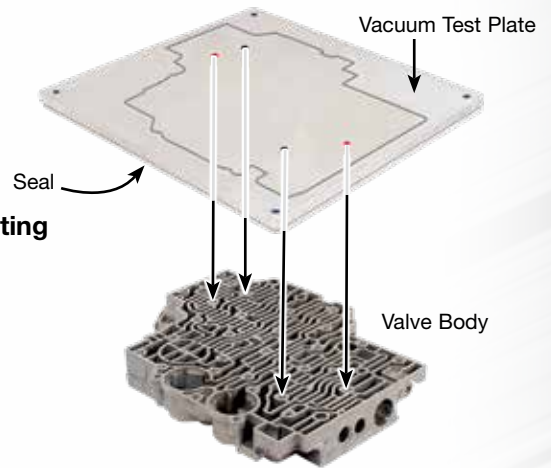
Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Internal				
Prevents snap rings from detaching at high RPM	Heavy Duty Forward/Direct Spring Retainer	34554-12	TH400 only, .052" thick with 5 retaining notches, OE 8679934, 5/bag	
Retrofits into existing applications	High RPM Checkball Capsule	57510-01	TH400 only, 5/bag	
Tools			For use with	Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Tool Kit	77754-TL	SC-4L60E, 34200-16K, 77754-09K, SC-4L80E	
	Tool Kit	F-34200-TL36	34200-36K†	VB-FIX
	Tool Kit	F-34994-TL18	34994-18K	VB-FIX
	Tool Kit	F-34994-TL22	34994-22K	VB-FIX

Vacuum Test Plate Kit

Test Plate Kit [Part No. 34994-VTP](#) Replacement Seal [Part No. 34994-VTP-S](#)

Find Valve Body Problems 2X Faster

- Clear test plate & silicone pad seal casting for quick, easy testing with Sonnax vacuum test stand kit [Part No. VACTEST-01K](#)
- Open ports at key areas identify recommended test locations
- Easy-to-follow instruction booklet identifies ports, valves, symptoms of wear & the right Sonnax parts for repair



4L80-E, 4L85-E Remanufactured Valve Bodies

Quality, Performance & Value You Can Trust

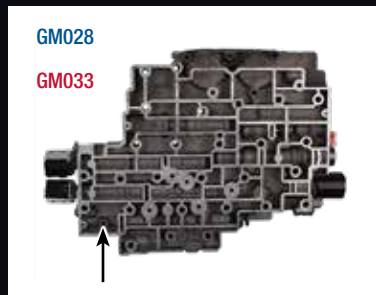
- Completely refurbished with genuine Sonnax parts
- Heavy-duty valve bodies include built-in overrun clutch protection
- Hydraulically & electronically tested, ready to bolt up
- Limited Lifetime Warranty



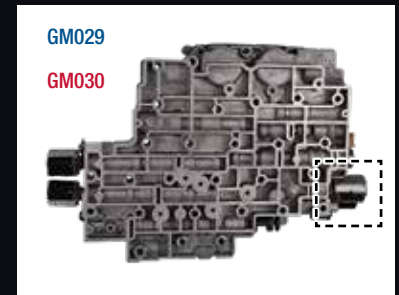
The screw in the temperature sensor is only used in '91 units. All later years use the temperature sensor located in the internal wiring harness.

◀ Look for two small holes on the upper right side of the valve body. The holes DO NOT appear on '97-later units.

4L80-E, 4L85-E	
'92-'96, Temp. sensor in wire harness	GM027
'97-'03	GM028
'04-Later	GM029



In '97-'03 units, the lube hole is at the location indicated.



'04-Later units have a late-style EPC solenoid, identifiable by its silver canister.

HEAVY-DUTY VALVE BODIES	
4L80-E, 4L85-E	See details on page 36.
'97-'03	GM033
'04-Later	GM030



PERFORMANCE BUILD GUIDE

Use this chart to get maximum results out of your 6L80/90 series rebuild and find the parts you need to enhance different areas of the transmission.

Area of Enhancement	Product	Part No.	Stock Vehicle		Stock/Heavy-Duty Commercial Vehicle		Bolt-On Performance & Mild Tuning	Extensive Engine-Tuning Mods and/or Power Adder
			LEVEL 1	LEVEL 2	LEVEL 2	LEVEL 3		
4-5-6 CLUTCH	Heavy Duty Clutch Apply Piston Kit	104960-01K	✓ OE Clutch Configuration					
	Heavy Duty Clutch Hub & Intermediate Shaft	104680-36	✓ 6L80		✓ 6L80			
		104690-36	✓ 6L90		✓ 6L90			
	High Capacity Clutch Apply Piston Kit	104960-10K				✓ No Wave Plate, Add One OE-style Friction		
	Extreme Duty Clutch Hub & Intermediate Shaft	104680-45						✓ 6L80
		104690-45						✓ 6L90
	High Capacity Clutch Apply Piston Kit	104960-20K						✓ No Wave Plate, Powerglide-style Frictions
	Friction (Powerglide Style)	104120-03						✓
Steel (.078")	104120-01						✓	
Steel (.090")	104120-02						✓	
3-5-R CLUTCH	High Capacity Apply Ring	104548-01				✓ 6L80	No Wave Plate, Add One OE-Style Friction	✓ 6L80
1-2-3-4 CLUTCH	Heavy Duty Piston	104984-01		✓		✓		✓
LINE PRESSURE	Line Pressure Booster Kit	6L80-LB1		✓		✓		✓
	Pump Slide Spring	104534-HD				✓		✓

4-5-6 Clutch Apply Piston Kits

HD/HP UPGRADE Fit 6L80, 6L90

To reduce 4-5-6 clutch failure, these popular upgrades feature a stiffer, heavy-duty backing plate that outperforms all OE and aftermarket components to guard against heat build-up. Piston is also available separately under Part No. 104140A-01. A modified OE clutch apply piston and piston dam are then used with a custom apply ring to further improve durability.

Heavy Duty Kit Improved Apply for Increased Durability Items A B1 C D

Part No. 104960-01K Use with OE Waved Plate, OE-style (36-Tooth) Frictions & OE Steels

High Capacity Kit 17% More Clutch Capacity Items A B2 C D

A toothed apply plate eliminates waved plate to allow one more friction, with your choice of using OE-style (36-tooth) clutches or — for extreme applications — 45-tooth clutches that offer a wider apply surface for enhanced performance.

Part No. 104960-10K Use with OE-style (36-Tooth) Frictions & OE Steels

Part No. 104960-20K Use with Powerglide-style (45-Tooth) Frictions, Sonnax Steels & 45-Tooth Clutch Hub



4-5-6 CLUTCH HUBS & INTERMEDIATE SHAFTS



HD/HP UPGRADE

High-strength, 300M steel forging is heat-treated & shot-peened for maximum durability.

Unique hub design **DOUBLES** oil flow to the clutch pack for greatly improved resistance to heat & longer clutch life.



Rugged, one-piece design eliminates weak connection where two-piece hub/shaft assemblies fail.

HEAVY DUTY

Increase Durability Without Sacrificing Drivability

An essential upgrade for any vehicle pushing stock components to the limit, a heavy duty Sonnax hub/shaft delivers outstanding protection against shaft breakage and clutch failure.

- Unlike aftermarket, two-piece shafts that increase the risk of noise by eliminating the OE dampener, **this Sonnax upgrade CAN be used with the dampener**
- Use with OE-style, 36-tooth frictions and OE steels



Part No. 104680-36
Fits 6L80

Part No. 104690-36
Fits 6L90

EXTREME DUTY

Maximize Durability & Clutch Capacity

The ideal upgrade for performance vehicles, an extreme duty Sonnax hub/shaft guarantees maximum protection against breakage plus optimum clutch durability with Powerglide-style, 45-tooth frictions.

- Eliminates OE dampener
- Use with Powerglide-style, 45-tooth frictions and Sonnax high capacity piston kit **104960-20K**. For best performance, use with Sonnax steels and BorgWarner high-energy frictions.



Part No. 104680-45
Fits 6L80

Part No. 104690-45
Fits 6L90



45-Tooth BorgWarner Friction Part No. 104120-03
Fits 6L80, 6L90, Powerglide

High-energy material with grooves for added cooling and dispersing oil. These Powerglide-style frictions must be used with wide aftermarket steels.



Wider Steel Fits 6L80, 6L90
.078" Thick Part No. 104120-01
.090" Thick Part No. 104120-02

High-quality, Powerglide-style, Linder processed steels feature a wider friction surface for increased durability.



High Capacity 3-5-R Apply Ring

HD/HP UPGRADE

Part No. 104548-01 Fits 6L80

25% More Clutch Capacity

Shorter apply ring eliminates OE waved plate to allow one additional friction.



Heavy Duty 1-2-3-4 Piston

CRITICAL SAFEGUARD

Part No. 104984-01 Fits 6L80, 6L90

Crack-Proof Billet Piston

Guarantees Outstanding Performance

- 6061 Billet aluminum piston is significantly stronger than any version of the cast aluminum OE piston
- Unique design refinements add additional strength to prevent breakage & deliver maximum durability
- Universal design replaces early & late OE versions*

*Fits '06-'07 units that use OE part number 24224146 and '07-later units that use OE part number 24266364 or 24238700.



Pump Slide Spring

HD/HP UPGRADE

Part No. 104534-HD Fits 6L80, 6L90

Maintains Maximum Line Pressure at Maximum RPM

- Stiffer spring holds the pump slide in a maximum-volume position at high RPMs
- Maintains line pressure to prevent clutch failure

Bushing Upgrades

See part listing on page 50.

CRITICAL SAFEGUARD

Restore Critical Clearances & Combat Untimely Wear

6L80 series OE bushings are made of sub-optimal material highly prone to premature wear — a root cause of many transmission problems and comebacks. Sonnax offers a large selection of precision bushings with improved material to restore normal operation, enhance wear resistance and extend transmission reliability. See all the options on page 50.



SHIFT REPAIR KITS

Get the Job Done Right the First Time, Every Time



Zip Kit
 Restore Stock Shift Action
 Quick Rebuilds Targeting Hydraulic Wear
 No Reaming Required

Line Pressure Booster Kit
 Improve Shift Feel & Durability
 HP/HD or Commercial Vehicles
 No Reaming Required



Zip Kit®

REPAIR & PREVENT DAMAGE

Part No. 6L45-6L90-ZIP



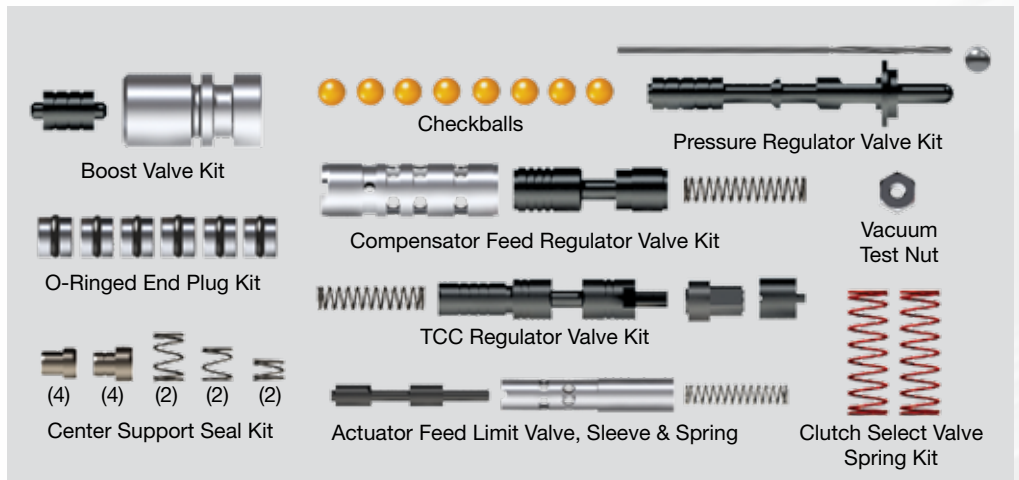
The First Step in Correcting Common Shift Problems

It's easy to restore and maintain shift quality with Zip Kits.

Uniquely designed Sonnax parts target the root cause of valve body complaints and stop critical circuit pressure losses in the most common problem areas of the transmission. Symptoms of these problems can include:

- Burnt clutches
- Delayed engagement
- 3-4 Bump
- Inadequate lubrication
- Low pressure
- Slips & flares
- Soft shifts
- TCC apply & release concerns
- TCC codes

- **Drop-in Zip Valve™ parts install quickly with no reaming or special tools required**
- **Uniquely designed parts address root causes of valve body complaints by sealing critical pressure circuits**
- **Detailed technical booklet included with in-depth rebuild & inspection tips for comprehensive valve body repair**



Line Pressure Booster Kit

HD/HP UPGRADES

Part No. 6L80-LB1



The Fast, Easy Way to Clean Up Shifts

- **Classic large-ratio boost valve delivers crisp, clean shifts without low-speed harshness**
- **Drop-in Zip Valve™ parts install quickly & easily**
- **Ideal for heavy-duty & modified vehicles as well as hard-working daily drivers**
- **Improved shift feel & durability reduce comebacks & complaints**

GM 6L80/90

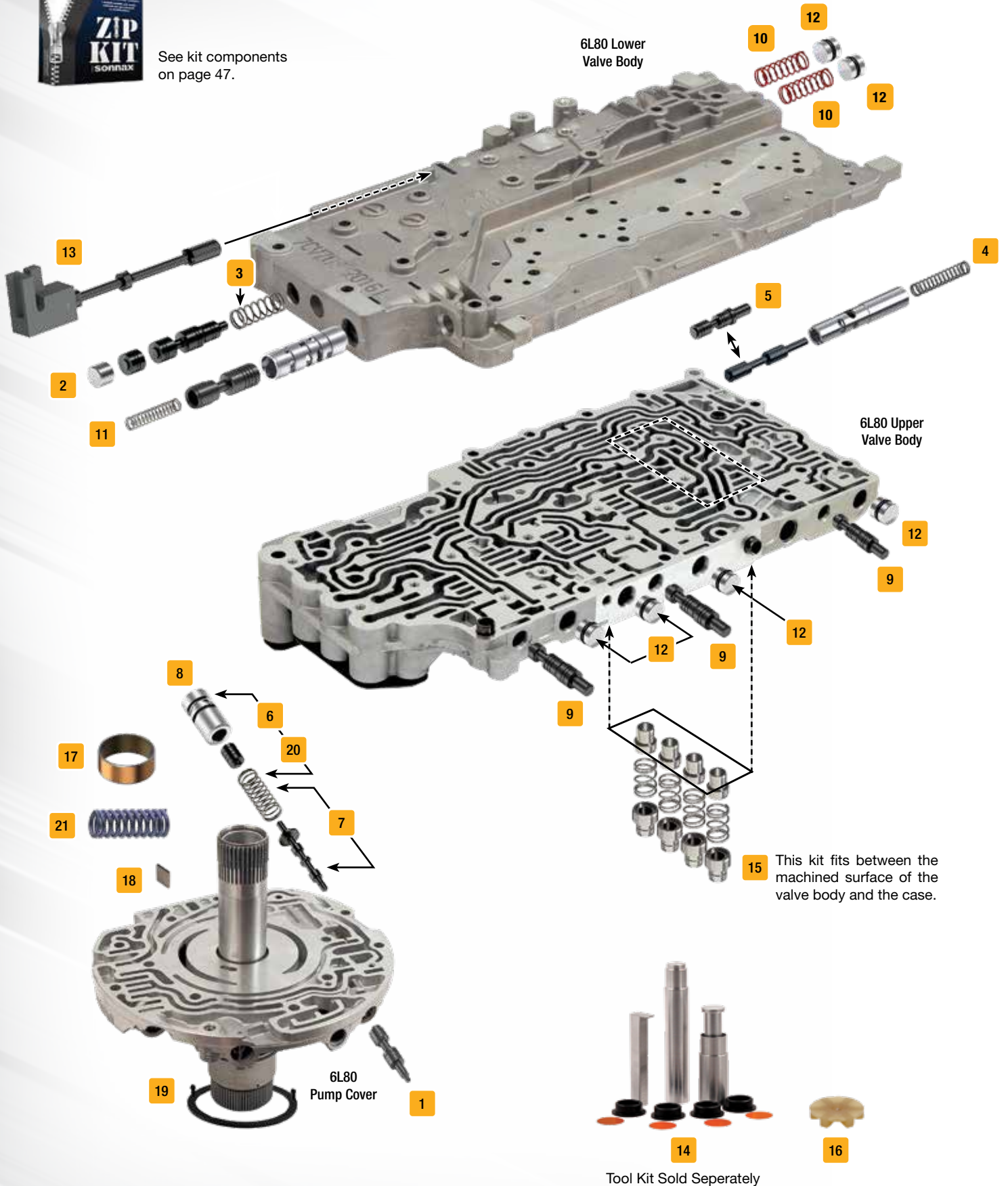
Parts shown also fit 6L45 and 6L50 unless otherwise noted.



Proper identification of these valve bodies is critical. See ID guide on page 51 or www.sonnax.com.



See kit components on page 47.



More Components



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
Multiple Symptoms				
The first step in correcting common shift problems	Zip Kit®	6L45-6L90-ZIP	ZIP See details on page 47	
TCC/Lockup Symptoms				
High TCC slip RPM, Code P0218, P0741, Overheated converter, Inadequate lubrication	Oversized Converter Feed Limit Valve	1 104520-11		F-104520-TL11C**
Overheated fluid, Failsafe mode, Harsh shifts/TCC apply, Loss of fuel economy	TCC Regulator Valve Kit	2 104740-46K	ZIP	
Code P0741, P0742, High TCC slip RPM, Overheated fluid, Failsafe mode, Harsh shifts	Oversized TCC Regulator Valve Kit	2 104740-07K		F-104740-TL7*
Vibration, Shudder condition	TCC Regulator Valve Spring	3 104740-45K	5/Bag	
Pressure Problems				
Solenoid performance codes, Clutch failure, Wrong gear starts, Harsh shifts, Soft shifts	Actuator Feed Limit Valve Kit	4 104740-47K	ZIP	
	Oversized Actuator Feed Limit Valve	5 104740-12		F-104740-TL12*
Low line rise in Drive, Soft shifts, Burnt clutches	Boost Valve Kit	6 104520-12K	ZIP	
Erratic line pressure, Low/High pressure, Clutch slippage, Harsh shifts	Pressure Regulator Valve Kit	7 104520-14K	ZIP	
	Oversized Pressure Regulator & Boost Valve Kit	8 104520-07K		F-104520-TL7C**
Shift/Engagement Concerns				
Shift quality is not load sensitive, Clutch pressure solenoid codes, Burnt clutches	Oversized Clutch Boost Valve	9 104740-01	Fits any of 3 locations	F-104740-TL*
Code P0751, 1-2-3-4 Clutch burned, 3-5-Reverse clutch burned, Cruise control disabled	Clutch Select Valve Spring Kit	10 104740-02K	Mid '10-earlier, includes 2 springs	
Harsh shifts, Downshift clunk, 3-4 Bump, Bump shifts, Flare shifts, Bind-up, Burnt clutches	Compensator Feed Regulator Valve Kit	11 104740-09K	ZIP	
Shift concerns, Burnt clutches	O-Ringed End Plug Kit	12 104740-23K	ZIP Includes 6 end plugs	
No Forward, No Reverse, Gear ratio codes	Manual Valve Assembly	13 104740-24K	ZIP 6L45 BMW only	
Pressure switch/switch/pressure out-of-range codes, Slips, flares & bind-ups	Pressure Switch Rebuild Kit	14 124740-70K	Services 10 valve bodies	124740-TL70

* VB-FIX Required

** VB-FIX & VB-06 Required

Continued on next page.

6L80 Series Remanufactured Valve Bodies

Quality, Performance & Value You Can Trust

- Bores, checkballs, seals, casting...every critical area is reviewed, refreshed and repaired
- Top-quality Sonnax components optimize function and prevent future wear
- State-of-the-art testing verifies AFL, clutch, TC and compensator feed pressures match new OE specs

6L45	
BMW early-design separator plate *	BMW6L45E
GM '10-later *†	GM6L45L
6L45, 6L50	
GM '06-'09 *†	GM6L45E
6L50	
GM '10-later *†	GM6L50L
6L80	
GM '06-'09 *†	GM6L80E
GM '10-later *†	GM6L80L
6L90	
GM '06-'09 *†	GM6L90E
GM '10-later *†	GM6L90L

*TCM/TEHCM/Conductor plate not included.
†Read about electrostatic discharge at www.sonnax.com before servicing valve body.



Proper identification of this valve body is critical. See ID guide on page 51 or www.sonnax.com.



Continued from previous page.

Symptoms/Part Type	Product Name	Part No.	Details	Drop-In Zip Valve™ Parts	Tooling
Component Damage/Failure					
Premature wear & bushing failure	1-2-3-4/3-5-R Drum Bushing	104030-03	Precision, 5/bag		
	2-6/3-5-R Hub Front Bushing	104030-02	Precision, 5/bag		
	2-6/3-5-R Hub Rear Bushing	104030-01	6L45, 6L50 only, precision, 5/bag		
	2-6/3-5-R Hub Rear Bushing	104030A-01	6L80, 6L90 only, precision, 5/bag		
	4-5-6 Clutch Drum Bushing	104030-05	Precision, 5/bag		
Bearing noise, Bearing failure	Bearing Kit	SBK-G45	6L45, 6L50 only, includes 7 bearings		
	Bearing Kit	SBK-G80	6L80, 6L90 only, includes 7 bearings		
Premature wear & bushing failure, Code P0741, TCC apply & release concerns, Clutch failure, Harsh shifts, Gear ratio & solenoid codes	Bushing Kit	104030-01K	6L45, 6L50 only, precision, includes 11 bushings		
	Bushing Kit	104030A-01K	6L80, 6L90 only, precision, includes 11 bushings		
Premature wear & bushing failure	Case Bushing	104030A-04	6L80, 6L90 only, precision, 5/bag		
Burnt clutches, Loss of lube oil, Overheating & reduced lube feed	Center Support Seal Kit	15 104740-14K	ZIP		
Premature wear & bushing failure	Extension Housing Bushing	104066A	6L80 only, RWD models, precision, 5/bag		
	Extension Housing Bushing	104066B	6L90 only, RWD models, precision, 5/bag		
	Front Center Support Bushing	104030-06A	6L45 only, precision, 5/bag		
	Front Center Support Bushing	104030-06	6L50, 6L80, 6L90 only, precision, 5/bag		
Lube failures, Planetary failure, Loss of lubrication oil to planetaries	Output Planetary Lube Dam	104584LP	6L80, 6L90 only		
Premature wear & bushing failure	Output Shaft Bushing	104030-08	6L45, 6L50 only, precision, 5/bag		
	Output Shaft Bushing	104030A-08	6L80, 6L90 only, precision, 5/bag		
Lost or damaged component	Pressure Switch Plastic Piston	16 124740-72K	Includes 20 pistons		
Premature wear & bushing failure, Excess converter hub-to-bushing clearance, Pump noise	Pump Bushing	17 104034A	6L50, 6L80, 6L90 only, precision, PTFE-impregnated		
Lost or damaged component	Pump Vane	18 76742			
Premature wear & bushing failure	Rear Center Support Bushing	104030-07	6L45, 6L50 only, precision, 5/bag		
	Rear Center Support Bushing	104030A-07	6L80, 6L90 only, precision, 5/bag		
Excess endplay	Selective Pump Thrust Washer	19 33452A	3/Bag		
Premature wear & bushing failure, Code P0741, TCC apply & release concerns	Stator Support Bushing Kit	104036BK	6L45, 6L50 only, precision		
	Stator Support Bushing Kit	104036AK	6L80, 6L90 only, precision		
High Performance/Heavy Duty Upgrades – See pages 44–47 for more HP/HD components.					
Pump					
Classic, large-ratio boost valve for crisp, clean shifts without harshness	Line Pressure Booster Kit	20 6L80-LB1	ZIP		
Keeps pump in high-volume position at high RPM	Pump Slide Spring	21 104534-HD	6L80, 6L90 only		
Tools			For use with	Requires	
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Tool Kit	F-104740-TL	104740-01	VB-FIX	
	Tool Kit	F-104740-TL7	104740-07K	VB-FIX	
	Tool Kit	F-104520-TL7C	104520-07K	VB-FIX	
	Tool Kit	F-104520-TL11C	104520-11	VB-FIX	
	Tool Kit	F-104740-TL12	104740-12, 124740-01	VB-FIX	
	Vacuum Test Plate Kit	104740-VTP		VACTEST-01K	
	Vacuum Test Plate Kit Seal	104740-VTP-SL	104740-VTP		
	Vacuum Test Plate Kit Seal	104740-VTP-SU	104740-VTP		

* VB-FIX Required

** VB-FIX & VB-06 Required

6L80 SERIES VALVE BODY CASTING IDENTIFICATION

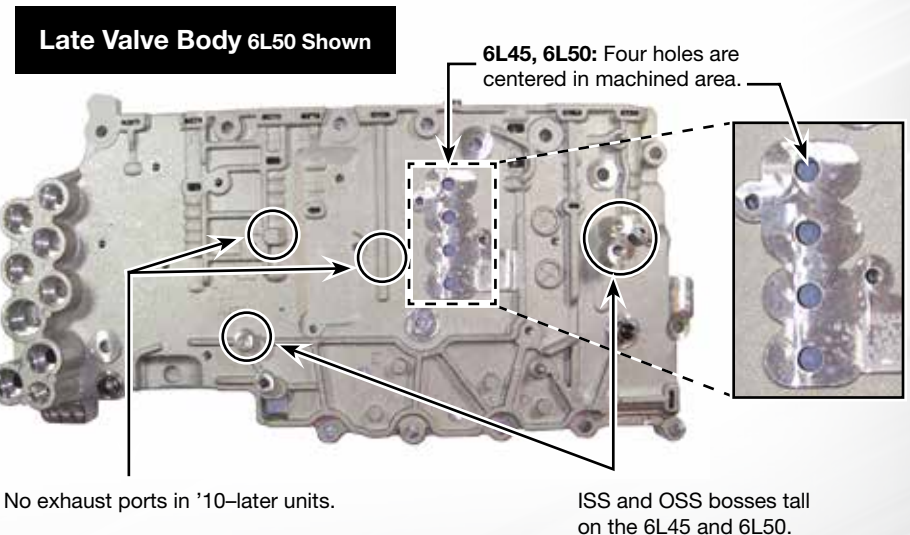
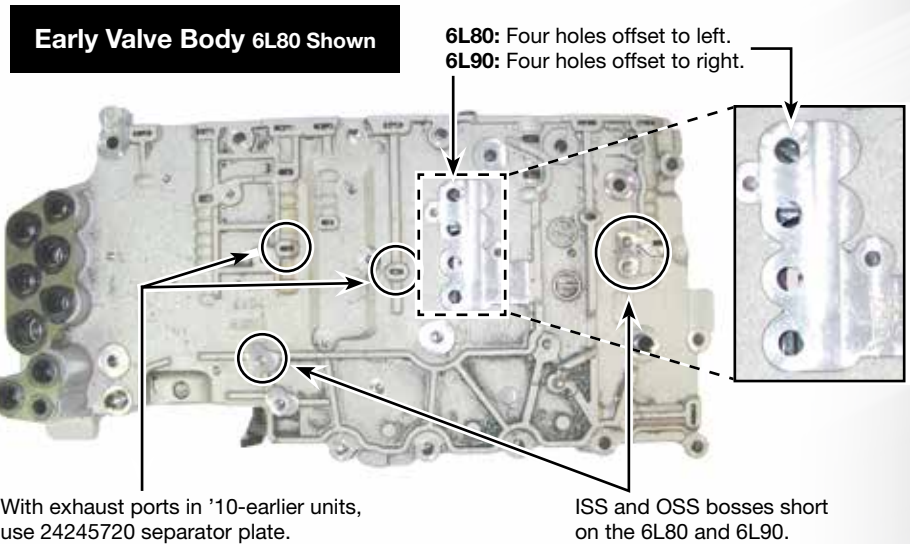
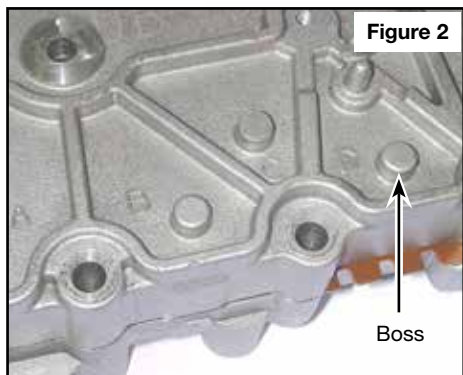
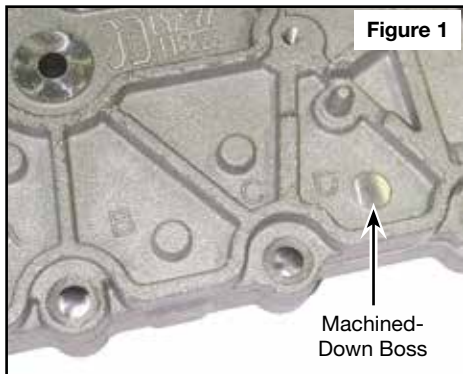
Look for the machined-down boss on the upper valve body (Figure 1). Generally, if the “A” boss is machined down, this indicates an MYA/6L45 unit as shown in chart below). This identification system is not foolproof, because on some valve bodies none of the bosses are machined down (Figure 2). Also see other early vs. late and 6L45/50 vs. 6L80/90 application differences (Figure 3).

Application		Upper Casting No.		Center Support Feed Holes	Lower Casting No.	
		'10-Earlier	'10-Later		'10-Earlier	'10-Later
GM	6L45	9405	7114	Centered	9581	0945
	6L50	9405	7117	Centered	9581	0945
	6L80	9404	0955	Offset Front	9581	0945
	6L90	9404	0955	Offset Rear	9581	0945
BMW	6L45	1590	—	Centered	9581 or 6351	—

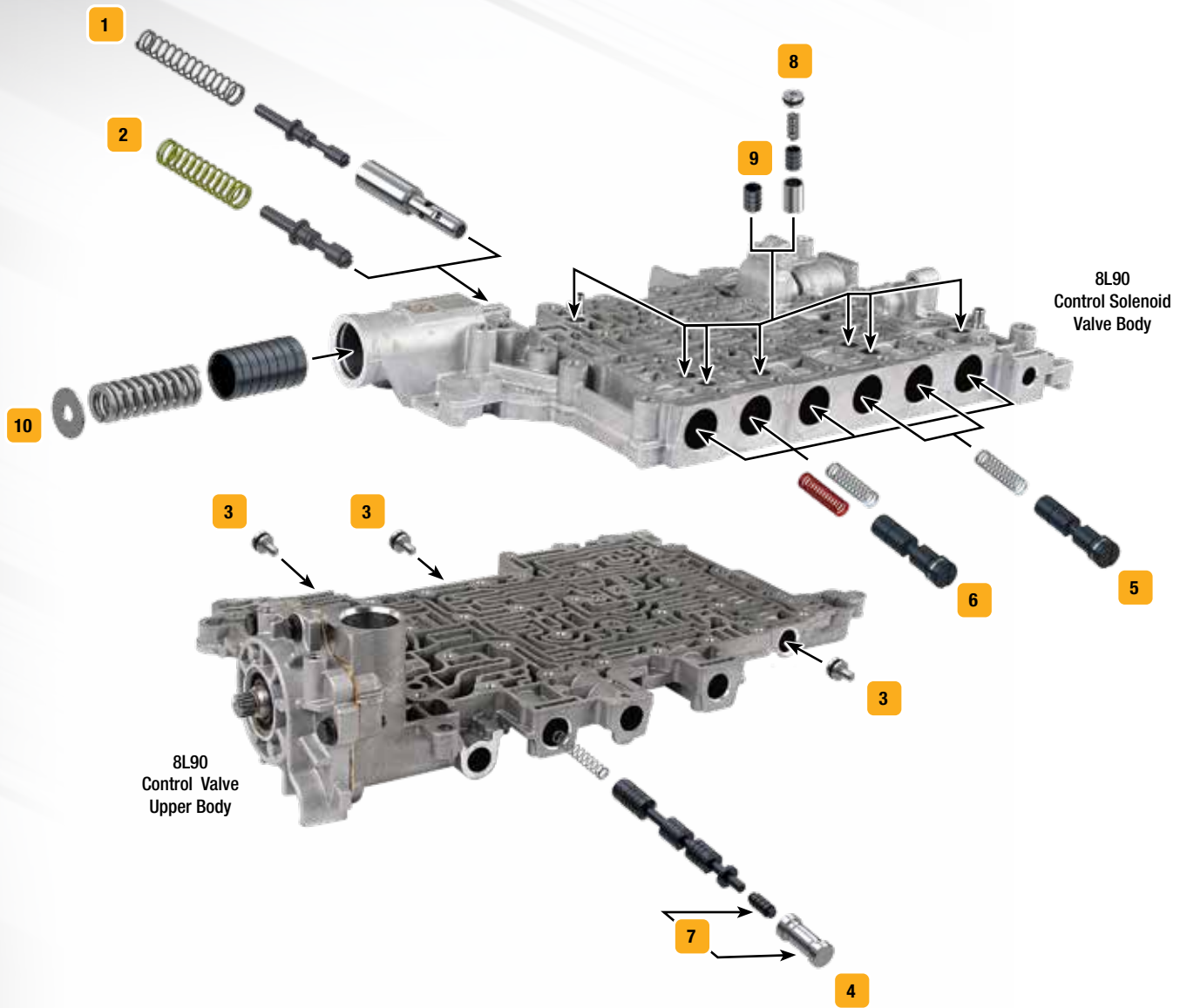
Figure 3

Machined-Down Boss on Upper Valve Body	Indicates Valve Body Unit*
“A” Boss ID	MYA/6L45
“B” Boss ID	MYB/6L50
“C” Boss ID	MYC/6L80
“D” Boss ID	MYD/6L90

*General rule to follow, but may not always be true. Sometimes no bosses are machined.



GM 8L45/90



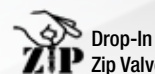
Zip Kit®

REPAIR & PREVENT DAMAGE

The First Step in Correcting Common Shift Problems

- Drop-in Zip Valve™ parts install quickly with no reaming or special tools required
- Uniquely designed parts address root causes of valve body complaints by sealing critical pressure circuits
- Detailed technical booklet included with in-depth rebuild & inspection tips for comprehensive valve body repair

Two Zip Kit Options are available for repairing chronic wear areas in 8L45/90 valve bodies: one kit for targeting shift complaints, the other for TCC problems. Use one Zip Kit or both for a job — it's a simple, cost-effective way to install drop-in repair parts you can trust.



Symptoms/Part Type	Product Name	Part No.	Details	Tooling
TCC/Lockup Symptoms				
Code P0218, Code P0741, High TCC slip RPM, Overheated converter, Inadequate lubrication	Converter Feed Limit Valve Kit	1 154740-19K	ZIP OE vacuum testing at the inboard spool requires 154740-TL22	154740-TL22 †
Excess converter pressure, High TCC slip RPM, Code P0218, Code P0741, Overheated converter	Oversized Converter Feed Limit Valve Kit	2 154740-22K	OE vacuum testing at the inboard spool requires 154740-TL22	F-154740-TL22*, 154740-TL22 †
Pressure Problems				
Gear ratio & solenoid codes, Lube failures, Poor lube oil control, Converter concerns	O-Ringed End Plug Kit	3 154740-17K	ZIP Includes 3 end plugs	
Low line pressure, Burnt clutches, Harsh shifts, Low cooler flow, Loss of lube oil	Pressure Regulator & Shuttle Valve Kit	4 154740-02K	ZIP	
Burnt clutches, Pressure loss, Poor shift quality	S1/S5 Clutch Control Valve Kit	5 154740-13K	ZIP Fits either of 2 locations	154740-TL11 †, 154740-BST13 †
Burnt clutches, Pressure loss, Poor shift quality, Burnt converter	S2/S3/S4/TCC Clutch Control Valve Kit	6 154740-11K	ZIP Fits any of 4 locations	154740-BST13 †, 154740-BST11 †
High line pressure, Harsh shifts, Low cooler flow, Loss of lube oil	Shuttle Valve Kit	7 154740-09K	ZIP	
Poor shift quality, Low line pressure, No converter apply, Burnt clutches, Soft shifts	Signal Accumulator Piston Kit	8 154740-06K	ZIP Includes 4 piston sets, fits any of 7 locations	
	Oversized Signal Accumulator Piston Kit	9 154740-01K	Includes 7 pistons	154740-TL
Shift/Engagement Concerns				
Clutch slippage, Burnt clutches, Flare shifts, Ratio codes	1-3-5-6-7 Accumulator Piston Kit	10 154740-15K	ZIP	
Tools			For use with	Requires
Sonnax F-Tool kits designed to service a specific bore require the VB-FIX, a self-aligning valve body reaming fixture. See www.sonnax.com for details.	Bore Sizing Tool	154740-BST11	154740-11K	
	Bore Sizing Tool	154740-BST13	154740-13K	
	Clutch Control Valve Vacuum Test Tool	154740-TL11	154740-11K, 154740-13K	VACTEST-01K
	Converter Feed Limit Valve Vacuum Test Tool	154740-TL22	154740-19K, 154740-22K	VACTEST-01K
	Tool Kit	F-154740-TL22	154740-22K	VB-FIX
	Tool Kit	154740-TL	154740-01K	

* VB-FIX Required

† Recommended Tool



Shift Zip Kit®

Part No. 8L45-8L90-SHIFT-ZIP

Kit includes:

- 5 S1/S5 Clutch Control Valve Kit
- 6 S2/S3/S4/TCC Clutch Control Valve Kit
- 10 1-3-5-6-7 Accumulator Piston Kit
- 7 Signal Accumulator Piston Kit



Ideal for addressing these symptoms:

- Poor shift quality
- Burnt clutches
- Flare shifts
- Soft shifts
- Clutch slippage
- Low line pressure
- Ratio codes



TCC Zip Kit®

Part No. 8L45-8L90-TCC-ZIP

Kit includes:

- 3 O-Ringed End Plug Kit
- 1 Converter Feed Limit Valve Kit
- 4 Pressure Regulator & Shuttle Valve Kit
- 6 S2/S3/S4/TCC Clutch Control Valve Kit



Ideal for addressing these symptoms:

- TCC apply & release concerns
- Overheated transmission & converter
- Loss of cooler flow
- Loss of lube oil
- Burnt converter
- High TCC slip RPM
- Code P0218, P0741

TORQUE CONVERTER

GO BEYOND THE TRANSMISSION WITH SONNAX

On the road and on the track, Sonnax is the world's #1 full-line supplier of the quality converter components essential for long-lasting, trouble-free performance.

WHERE TO BUY Talk to your local converter shop or performance specialist about rebuilding with Sonnax components. Contact Sonnax anytime for comprehensive assistance with Sonnax products.

PERFORMANCE CONVERTER KITS

ENGINEERED TO DELIVER BUILDS THAT LAST

A performance torque converter is highly specialized based on the performance characteristics of the specific vehicle. Unlike many labor-intensive aftermarket kits, Sonnax kits ensure fast, easy assembly with predictable tuning adjustments.

From the weekend enthusiast to the hardcore competitor, Sonnax has you covered!

- **Widest variety of kits available**
- **Designed for ease of assembly**
- **Improve acceleration & durability with confidence**

SMALL/LARGE DIAMETER • SINGLE-PLATE/MULTI-PLATE/NON-LOCKUP • DAMPERED/DAMPERLESS

Ask your converter rebuilder or performance specialist about performance converter kits for these transmissions.

Allison®

- 1000/2000/2400
- LCT 1000

Chrysler

- A618, 47RH/RE, 48RE
- 68RFE
- 727
- A904

Ford

- 5R110W
- C4, C6
- AOD, AODE, 4R70W

GM

- 350, 400, Powerglide
- 200-4R, 4L60, 4L60-E, 4L65-E, 4L75-E
- 4L80-E, 4L85-E
- 6L80, 6L90

48RE Big Shaft System

The END of Input Shaft Failure

For drivers pushing the limits beyond 1,200HP, the ULTIMATE protection against spline twist and shaft breakage is here. The Sonnax combination of a 35-spline input shaft and 35-spline, multi-plate converter guarantees unmatched durability. Ask a converter shop or performance specialist about installation requirements.

Smart-Tech® Big Input Shaft Kit

Part No. 22121B-08K Fits 48RE, 47RH/RE Learn more on page 3.


Performance Converter Kit

Damperless Part No. BW-RK-4 Dampered Part No. BW-RK-5

Turbine Hub Part No. BW-HTCM-20HS Converts Existing Converters to 35-spline



ONLY SONNAX LETS YOU FULLY UNLEASH DIESEL POWER ON THE ROAD AND ON THE TRACK



Sonnax multi-plate converter kits are powerhouse upgrades for diesel truck owners that demand unmatched performance, consistency and durability from their vehicles.

Select Sonnax kits for upgrading Chrysler, Ford and Allison units come in both dampered and damperless configurations to give you the ultimate flexibility when customizing heavy-duty trucks for work or sport.



MAKE THE RIGHT CHOICE

WHEN UPGRADING BIG POWER TRUCKS

Dampered Converter = Stock Shift Action

Damperless Converter = Aggressive Engagement & Lockup

The popular practice of “chipping” diesel engines creates lots of additional horsepower and torque that easily can overpower any stock converter. Upgrading to an aftermarket multi-plate is the only solution, but damperless converters used in extreme applications are hard on both drivers and the drivetrain.

That’s why Sonnax developed dampered multi-plates, the ONLY way to radically improve holding capacity without compromising the driving experience. They’re built from the same top-quality components as Sonnax damperless multi-plates, the only difference is the piston.

SONNAX IS THE EXCLUSIVE SUPPLIER OF HIGH-CAPACITY, DAMPERED MULTI-PLATE CONVERTER KITS

“I’ve had really good luck with the Sonnax dampered multi-plate.

With a solid damper, we were breaking two to three input shafts a week. Since we switched to the Sonnax kit and heavy duty shaft, we haven’t broken a shaft once.”

J. Garmon Garmon’s Diesel Performance

DRIVELINE

GO BEYOND THE TRANSMISSION WITH SONNAX

Once you've increased engine and transmission performance, get the power down to the ground with premium-quality Sonnax driveline components.

WHERE TO BUY

Ask for Sonnax aluminum components from your local driveshaft shop. Contact a Sonnax product specialist for help with driveshaft component selection.



5" Aluminum Weld Yokes & Tubing

From light-duty gas to the most powerful modified heavy-duty diesel trucks, Sonnax 5" aluminum driveline components are a simple and trouble-free next step for getting power down to the ground. Tubing and weld yokes combine for shaft lengths of up to 86".

Enhanced Strength & Durability

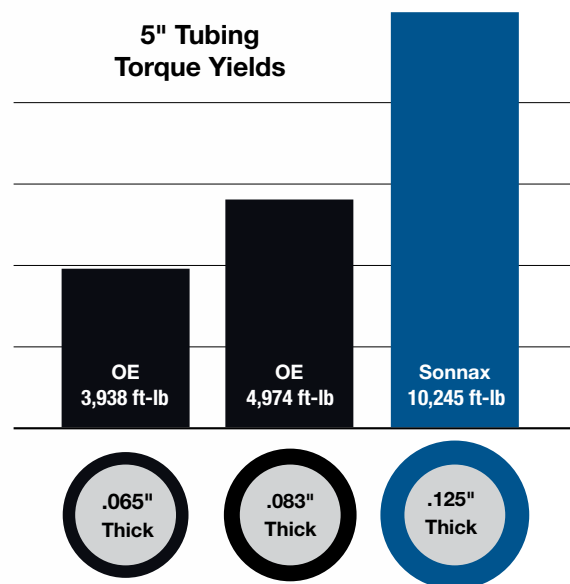
Sonnax components are made from 6061 T6, an aircraft-grade aluminum stronger and lighter than OE.

Improved Torque Yield

Tubing features a .125" thick wall for torque yields of up to 10,245 ft-lb (5" tubing), almost 2X stronger than thinner OE .083" and .065" thick tubing.

Precision-Machined Quality

Yokes and tubing are manufactured to exacting specifications for long-lasting, trouble-free performance.



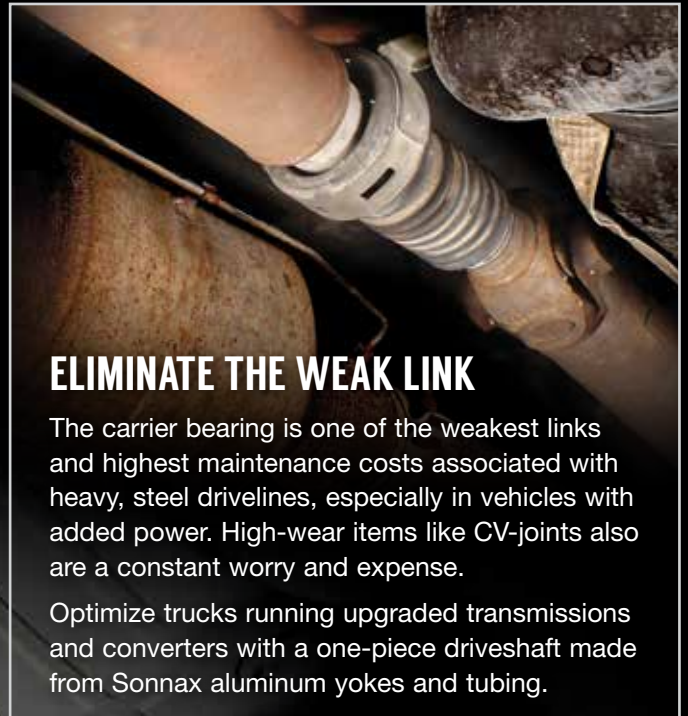
**SONNAX IS AMERICA'S #1 SOURCE FOR ALUMINUM DRIVESHAFT COMPONENTS
& AFFORDABLE, HIGH-QUALITY PERFORMANCE STEEL SLIP YOKES**

LEARN MORE AT WWW.SONNAX.COM

"We exclusively use Sonnax aluminum weld yokes and tubes for our 5" high performance truck driveshafts. They're high quality, easy to assemble and work well with our welding methods to create the quality finished product our customers are looking for." B. Crownover • Driveshaft Specialist

TWO-PIECE TO ONE-PIECE DRIVESHAFT CONVERSION

- Improve strength & durability
- Customize driveshaft length
- Reduce maintenance costs & increase serviceability
- Eliminate takeoff shudder



ELIMINATE THE WEAK LINK

The carrier bearing is one of the weakest links and highest maintenance costs associated with heavy, steel drivelines, especially in vehicles with added power. High-wear items like CV-joints also are a constant worry and expense.

Optimize trucks running upgraded transmissions and converters with a one-piece driveshaft made from Sonnax aluminum yokes and tubing.

▲ FROM THIS

◀ TO THIS!

sonnax® PERFORMANCE

faster

tougher

stronger

GET YOUR GEARHEAD ON
WWW.SONNAX.COM

HD Work/Sport Transmission, Converter, Driveline Product Guide Vol. 2

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Berkshire Hathaway
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CAT-HP-HDWKSPT2