

Transmission Report

Volume 2, No. 2

July 2011

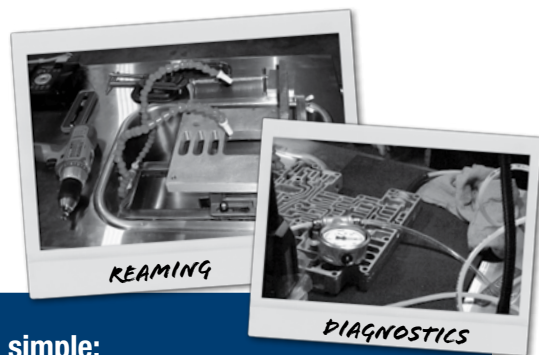
Hitting the Road with the Sonnax Roadshow

As a frequent exhibitor at trade shows and weekend seminars, Sonnax spends a lot of time talking with transmission specialists and shop owners. They often know about the Sonnax approach to testing and repairing valve bodies, but have lots of questions about how – exactly – it all works. They like the idea of fixing the root cause of transmission problems and taking their skills to the next level, but...

- How will I benefit from advanced valve body testing and repairs?
- Is it easy to set up in my shop, or do I need a lot of special equipment and space?
- Diagnostics and bore reaming sound like something I could do... can Sonnax show me how?

Come learn at the Sonnax Roadshow!

Sonnax has always provided customers with comprehensive instructions, technical articles, guides and robust tech support, but we wanted to do more, a LOT more! With help from our distributor partners, we developed the Sonnax Roadshow, a series of free seminars which present valve body diagnostic and reaming techniques to transmission rebuilders across the country. The training has proven so popular that the Roadshow is now part of the technical program at the ATRA Powertrain Expo in Las Vegas this fall. *continued on page 2...*



sonnax®
ROADSHOW
FREE SEMINAR Valve Body
Diagnostics & Reaming

See page 2 for a list
of upcoming Roadshow events or visit
www.sonnax.com for the latest schedule.

PLUS Dinner's on us (evening seminars only)
Technical Handouts
Free Testing Materials
\$25 VB-FIX Rebate

The Sonnax message is simple:

To fix that transmission right, you have to fix the valve body, and sometimes the only way to do that is to ream the bore.

Join us for an upcoming Roadshow seminar to learn:

- How to evaluate a valve body
- Advanced testing procedures
- The "magic" behind Sonnax repairs
- The ins and outs of reaming

A live reaming and testing station is set up at each seminar along with cameras and a projection screen to get you close to the action!



**Tough valve bodies
don't scare Sonnax...
...and they shouldn't
scare you!**

sonnax® ROADSHOW

FREE SEMINAR Valve Body
Diagnostics & Reaming

More Roadshow events are added all the time, so check www.sonnax.com or the Sonnax Facebook page for the latest schedule.

August 11 at 5:30-8:30 p.m.
Houston, Texas

Hosted by Transtar Industries, Inc.
Call (800) 456-7925 to register

September 1 at 5:30-8:30 p.m.
Norcross, Georgia

Hosted by Transtar Industries
Call (800) 241-8524 to register

September 22 at 5:30-8:30 p.m.
Memphis, Tennessee

Hosted by Transtar Industries
Call (800) 998-5025 to register

October 6 at 5:30-8:30 p.m.
Ontario, California

Hosted by DACCO Transmission Parts
Call (909) 230-7310 to register

October 30 at 9-10:30 a.m.
Las Vegas, Nevada

ATRA Powertrain Expo
No registration is required for this seminar,
only a trade show pass. Request a free pass
by e-mailing news@sonnax.com.



APRIL 7 ROADSHOW IN BOSSIER CITY, LA.

...continued from page 1

Steve Jaussaud, Sonnax vice president of sales, knew the time was right: “Properly repairing valve bodies has become increasingly complex, and we knew we needed to make personal contact with rebuilders and technicians. Because we sell our transmission parts through distributors, it was natural to partner with them to reach technicians.”

The Sonnax Roadshow focuses on live instruction in cutting-edge valve body repair: diagnostics and bore reaming. While many rebuilders know the basics behind vacuum testing, they may never have received formal instruction and are unsure how to make these techniques work in their shop. Bore reaming – an innovative repair method used by the industry’s top transmission rebuilders, specialists and large valve body remanufacturers – also can be challenging without firsthand experience. These are topics the Roadshow is designed to address, making it a great way for anyone to truly advance their knowledge and skills.

At each Roadshow event, Sonnax introduces methods for identifying the root cause of transmission problems, plus repair techniques to completely restore and/or upgrade units. The Roadshow’s live testing and reaming station is the cornerstone of the seminar. Attendees see valve bodies tested and repaired right in front of them, plus get a bird’s-eye-view of the details thanks to a large overhead video screen zoomed in on the equipment. Attendees are welcome to test and ream units at the workstation themselves to get a feel for the process and receive further hands-on instruction.

Sonnax has been pleased to hear from a number of rebuilders who, thanks to the Roadshow's unique presentation format, quickly and easily put what they learned into action back home in their own shop.

The goal is to keep each Roadshow session small so that there is ample opportunity for informal interaction with Sonnax presenters. Questions and comments are encouraged at all times, not only because it's a chance learn from the rest of the group, but also because it lets Sonnax address specific topics of interest in more depth.

"This is always exciting because most are learning something new," said Sonnax Technical Specialist Gregg Nader. "Even if they are familiar with reaming, the vacuum test demonstration is new for most. Seeing this firsthand removes any mystery and makes it seem more manageable in a typical shop environment. I enjoy demonstrating procedures which help the attendees do a better job and make more money."

Roadshow presenters are drawn from the same team of experts who have made Sonnax products the industry's most trusted transmission solutions, people who understand and believe in a better, smarter approach to valve body repair and are excited to share their knowledge. Much of the Roadshow content was developed by Nader, who has presented several of the seminars around the country.

Sonnax distributors have been happy to team up and host Roadshow seminars at their own facilities or a nearby location. Tim Whitsett of DACCO wasn't sure what to expect, but "I was 100% confident that the Roadshow would be very professional and informative. To say that it was professional and informative would be a gross understatement. Steve [Jaussaud] and his team did a great job and the presentation was well received by participants. It was a great night and we were honored to be the first stop on the tour."

A big reason for the success of each Roadshow is the hard work Sonnax distributors put in to organize and host the event. It's a great opportunity for everyone to meet face to face, talk shop and learn something new.

2011 Roadshow seminars have been made possible with support from: DACCO Transmission Parts

Midwest Transmission Supply

Transmission Parts Supply

Transtar Industries

VTP South Transmission Parts

Thanks to all the hosts and attendees for turning out at the Sonnax Roadshow!

"I have been to a few of the Roadshows so far, and the best part is when a technician sees the value in something. These guys are in the trenches day in and day out and have to get by in the real day-to-day world of transmission diagnosis and repair."

~Steve Jaussaud, Sonnax V.P. of Sales

See you at the Roadshow!

Thanks to the tremendous reception for the Roadshow, the seminar will be part of the Oct. 30 technical program at ATRA Powertrain Expo in Las Vegas. Sonnax is looking forward to a fantastic turnout at ATRA and hopes to see both shop owners and technicians at the show. **Send an e-mail to news@sonnax.com to request a free ATRA trade show pass!** More information on the Roadshow can be found online at www.sonnax.com

Want to see the Roadshow roll into town? Contact your Sonnax distributor and ask about the event. We're planning a full lineup of seminars for 2012, so now is a great time to let a distributor know you're interested in attending the Sonnax Roadshow.

Visit Sonnax on Facebook

Find pictures, comments and a schedule of upcoming Roadshow events on our Facebook page. Your feedback helps us plan future events and gets you on the map for a Sonnax Roadshow!



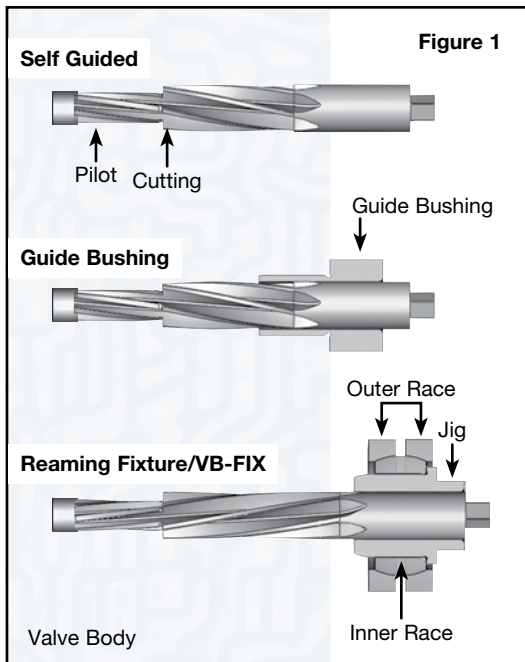
JUNE 9 ROADSHOW IN OMAHA, NEBR.

The Ins & Outs of Reaming

When it comes to reaming valve bodies, there are always questions about how to approach things the “right” way. Keep in mind that reaming a valve body bore to allow installation of an oversized valve or sleeve is a precision operation and must be viewed with the mindset of a machinist. Properly maintained equipment, correct setup and the right cutting fluids are all critical in achieving success.

A primary factor in successful reaming is how effectively the reamer is piloted. Though often overlooked, it is critical that the reamer follow the centerline that was established by the original machining process.

There are currently three ways to establish and maintain proper reamer alignment:



Self-Guided Reamers This type of reamer will have a properly sized “nose” that will help guide and center the reamer in the bore. Though simple, they are nonetheless effective in certain applications. Unfortunately, there are limitations with this type of reamer depending on the bore design and depth. The most obvious: this reamer cannot ream to the bottom of the bore.

Guide Bushing This reaming method accomplishes the centering function by using a reamer jig, inserted in the bore to provide a path and support for the reamer. The jig ensures the reamer will start its cutting operation straight and true. Again, limitations exist with this design. Excessive wear and factory machining processes can cause concentricity issues, however.

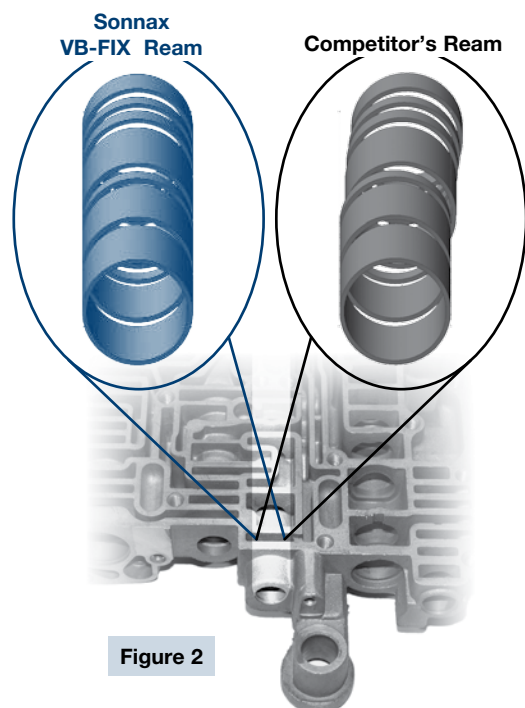
Reaming Fixtures Finally, some situations require a fixture for proper alignment such as the Sonnax VB-FIX. The fixture allows the piloting operation to be performed externally by using a guide pin and an adjustable collar to establish centerline and a reamer guide to hold the reamer in alignment.

The VB-FIX Reaming Advantage

Mounting a traditional guide fixture to a gasket or end-plate surface provides no guarantee that valve bores will be parallel or perpendicular to machined surfaces on the valve body. Just one tenth of one degree (.1°) misalignment will cause a reamer to be off-center five thousandths of an inch (.005") over the length of a 3" long valve bore. This approach leads to inconsistent and poor quality reaming.

The Sonnax VB-FIX is the only reaming fixture which produces consistent, reliable results and minimizes the potential for reaming errors. The heart of the VB-FIX system is its patented, three-axis adjustability that ensures reamers are precisely aligned with the valve bore.

As you can see in **Figure 2**, the bore trace of a Chrysler TV bore reamed with the VB-FIX system shows perfectly straight, properly aligned bore lands. By comparison, with a competitor’s system, the deeper you ream, the further out of alignment you become.



More articles on valve body reaming appear in the Sonnax online Technical Library. Visit www.sonnax.com to view these and other resources.

The VB-FIX reaming fixture utilizes special Sonnax “F-Tool” reamers which can be identified by part numbers that start with F-, such as F-22771-TL. Sonnax engineers look at the technical characteristics of each bore when deciding whether to use the VB-FIX system to service a specific bore and choose the guide system that gives the best results at the lowest cost. In some cases, both F-Tool and regular Sonnax reamers are available for a particular bore.

The VB-FIX is very adaptable to any production level. Some shops have adapted it to production machines with air power clamps to speed up the process. Others have multiple fixtures, each one set up and ready for a specific bore. On a smaller scale, you can still do one bore at a time and simply mount the VB-FIX to a common bench vise (Figure 3).

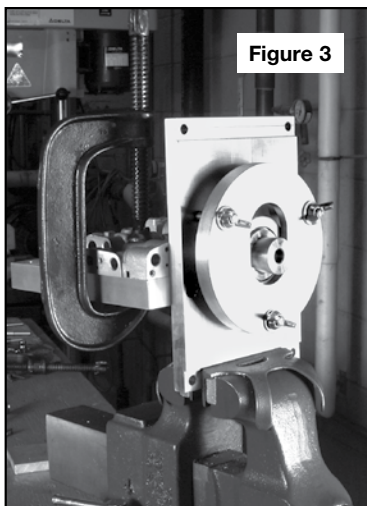
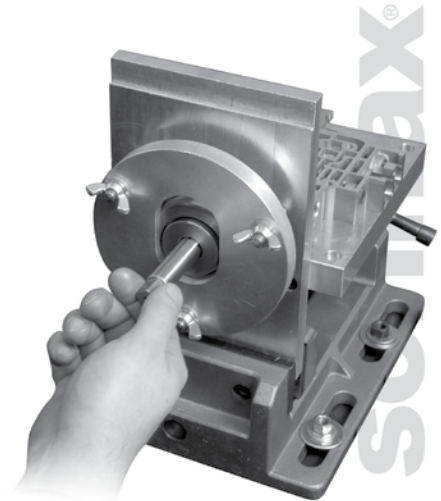


Figure 3

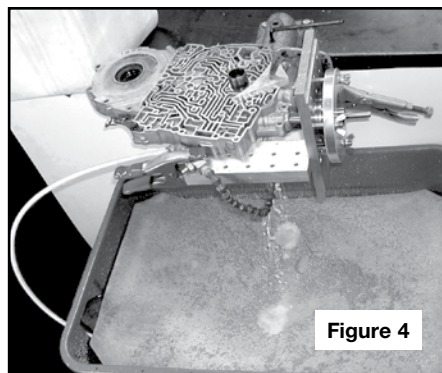


Figure 4

Many transmission shops set up inexpensive reaming stations with items already on hand: a 20-gallon parts washer, submersible pump, flexible nozzle, filter and bench-mounted 360° swivel head vice (Figure 4).

The VB-FIX is designed to be quick and user-friendly, but for first use, allow a little extra time to assemble the fixture and review the procedures. In addition to cutting fluid and tools to turn the reamer, there are a few things you will want to have the first time you use the VB-FIX:

- A bench vise to hold the VB-FIX
- The reamer kit for the bore you want to fix
- Small C-clamps to secure the valve body to the fixture
- Cauls to protect the valve body from clamp damage

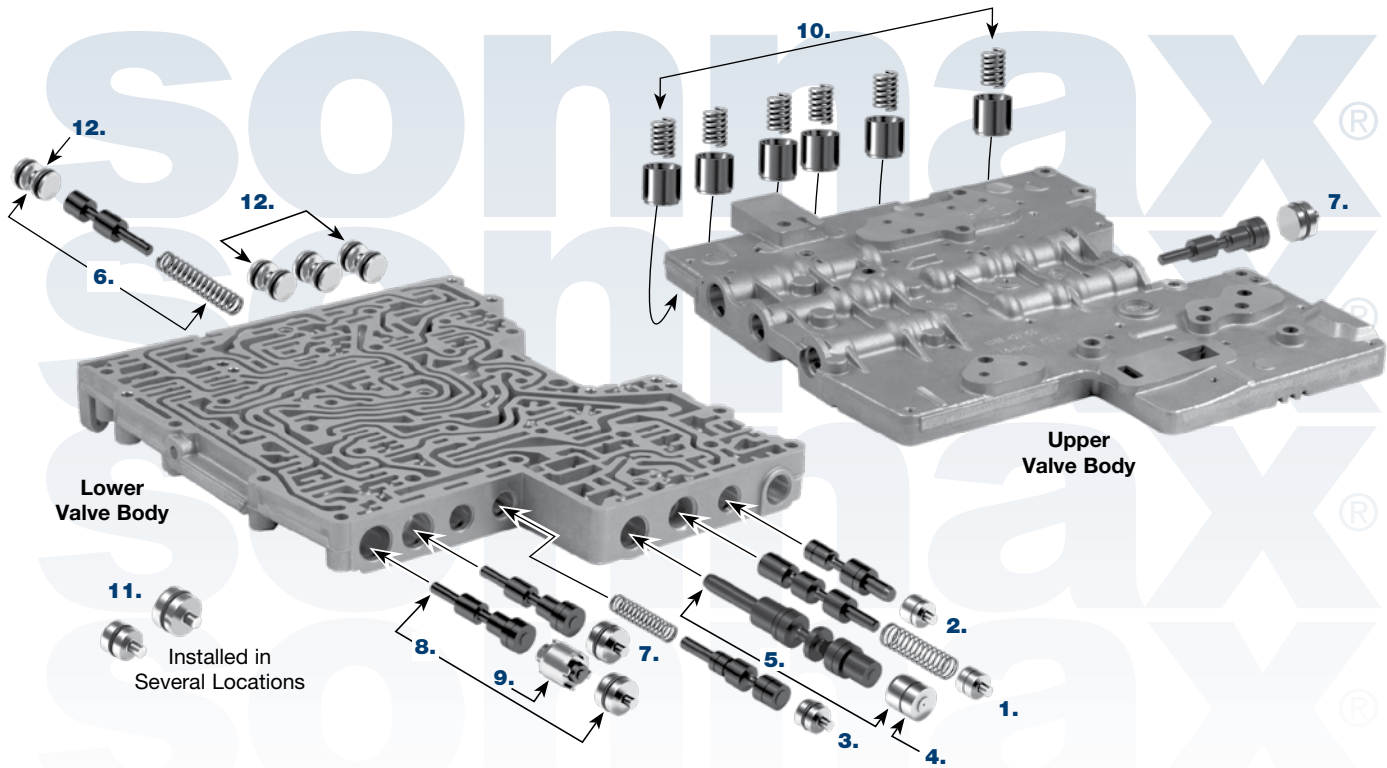
Detailed reaming information comes with all Sonnax parts requiring the VB-FIX. Our friendly technical support team is happy to provide additional assistance should you need it, and as always, technical information is available at www.sonnax.com.

Part No. VB-FIX Patent No. 7,220,085

- Base Plate
- Clamp Mounting Plate
- Clamp Plate
- Outer Races (2)
- Inner Race
- Studs, Washers & Wing Nuts (3 each)
- Socket Cap Screws (4)

More than 120 VB-FIX “F-Tool” reamers are available for use with the following units:

Aisin AW		Jatco	
55-50SN	TF-80SC	JF506E	
55-51SN	TF-81SC	JF010E/JF011E	
TF-60SN	TR-60SN	RE5R05A	
Chrysler		Mercedes	
41TE	68RFE	722.6	
42LE	A404	Mitsubishi	
42RLE	A413	F4A/F5A	
42/46/47RH/RE	A470	Renault/Citröen	
48RE	A670	DPO	
45RFE	A727	AL-4	
545RFE	A904	Toyota	
Ford		U140E/F	U240/41E
4F27E	FNR5	U150E	U250E
5R110W	4F50N	U151E/F	
5R55N/W/S	AXODE	Volkswagen/Audi	
AODE	AX4S	096	01M 09G
4R70/75W	CD4E	097	01N 09K
AX4N	E40D	098	01P 09M
6R60	4R100		09D
General Motors		ZF	
4L60-E	4T45-E	ZF5HP19	
4L65-E	4T65-E	ZF5HP24	
4L70-E	4T80-E	ZF6HP19/26/32	
4L80-E	5L40-E		
4T40-E	5L50-E		



12 Solutions for ZF6HP19/26/32 The parts shown here also fit Ford 6R60.

Problem	Solution	Tool Required	Part No.
<ul style="list-style-type: none"> Excessive TCC slip, RPM & related codes Harsh lockup apply & release 	1 Oversized Converter Release Regulator Valve Kit	F-95740-TL5 & VB-FIX	95740-05K
<ul style="list-style-type: none"> Low converter pressure Lube failure 	2 Oversized Lubrication Control Valve Kit	F-95740-TL11 & VB-FIX	95740-11K
<ul style="list-style-type: none"> Converter overheat Low TCC release pressure 	3 Oversized Bypass Clutch Control Valve Kit	F-95740-TL13 & VB-FIX	95740-13K
<ul style="list-style-type: none"> Harsh or erratic line pressure Broken parts 	4 Pressure Regulator Sleeve		95740-03
<ul style="list-style-type: none"> Delayed or no reverse Poor shift quality 	5 Oversized Pressure Regulator Valve Kit	F-95740-TL & VB-FIX	95740-01K
<ul style="list-style-type: none"> Gear ratio or solenoid codes Wrong gear starts 	6 Oversized Solenoid Pressure Regulator Valve Kit	F-95740-TL17 & VB-FIX	95740-17K
<ul style="list-style-type: none"> Flare upshifts or downshift bind-ups Excessive clutch overlap & clutch distress Pressure control out of range codes 	7 Oversized Clutch D1 or E Control Valve Kit (2 Locations)	F-95740-TL8 & VB-FIX	95740-08K
	8 Oversized Clutch A Control Valve Kit	F-95740-TL8 & VB-FIX	95740-09K
<ul style="list-style-type: none"> Delayed/Harsh forward engagement Flare/Neutral on 5-4 downshift 	9 Clutch A Control Boost Valve & Sleeve Kit		95740-21K
<ul style="list-style-type: none"> Firm up/downshift and/or engagement Erratic EDS solenoid control 	10 Valve Body Accumulator Piston & Spring Kit		95740-15K
<ul style="list-style-type: none"> Soft/Inconsistent shift feel 	11 O-Ringed End Plug Kit		95740-19K
	12 O-Ringed Internal End Plug Kit		95740-25K

More HOT NEW PARTS from Sonnax!

Problem	Solution	Tool Required	Part No.
ZF5HP24			
<ul style="list-style-type: none"> • Delayed/no reverse • B clutch breakage • Poor shift quality • Erratic or high/low line pressure 	Oversized Pressure Regulator Valve Kit	F-139740-TL & VB-FIX	139740-01K
Aisin AW TF-60SN, VW 09G			
<ul style="list-style-type: none"> • Reduced line pressure • Delayed drive/reverse engagement 	Oversized Manual Valve	F-15741-TL41 & VB-FIX	15741-41
Ford 5R110W			
<ul style="list-style-type: none"> • Reduced line pressure • Delayed drive/reverse engagement 	Oversized Manual Valve	F-36940-TL11 & VB-FIX	36940-11
GM 5L40-E, 5L50-E			
<ul style="list-style-type: none"> • 3-2-1 Coastdown bump • Harsh/No engine braking in 1st, 2nd or 3rd • Burned low/reverse clutch 	Low Pressure Control Valve	F-55211-TL17 & VB-FIX	55211-17K
<ul style="list-style-type: none"> • Incorrect TCC apply & release • No lockup • Falling out of lockup hot • Insufficient lube 	TCC Control Valve	F-55211-TL22 & VB-FIX	55211-21
<ul style="list-style-type: none"> • 1-2 Bind-up, 3-4 Shift flare • 4-5 Shift complaints • Clutch distress 	TCC Control & Enable Valve Kit	F-55211-TL22 & VB-FIX	55211-22K
	3-4, 4-5 & Safety Mode Valve Kit	F-55211-TL14 & VB-FIX	55211-14K
Aisin AW 55-550SN These parts also fit AW55-51SN, AF 23/33 and RE5F22A units.			
<ul style="list-style-type: none"> • Incorrect valve body calibration • Missing B5 control spring • Harsh/flare 2-3 upshift or 3-2 downshift 	B5 Control Spring 5/Bag		59947-33
<ul style="list-style-type: none"> • Low line pressure • Delayed forward engagement 	Oversized Solenoid Modulator Valve	F-59947-TL34 & VB-FIX	59947-34K
<ul style="list-style-type: none"> • Delayed forward engagement • Increased throttle required for engagement 	Oversized Neutral Relay Valve Kit	F-59947-TL34 & VB-FIX	59947-35KG
GM 4T65-E			
<ul style="list-style-type: none"> • 2-3 Shift complaints • Soft shifts • Poor line rise 	2-3 Accumulator Valve Kit		84754-53K
<ul style="list-style-type: none"> • 3-4 Shift complaints • Soft shifts • Poor line rise 	Oversized 3-4 Accumulator Valve Kit Fits GM units.	F-84754-TL55 & VB-FIX	84754-55K
	Oversized 3-4 Accumulator Valve Kit Fits Volvo units.		84754-58K
<ul style="list-style-type: none"> • 1-2 Shift complaints • Soft shifts • Poor line rise 	Oversized 1-2 Accumulator Valve	F-84754-TL57 & VB-FIX	84754-57K
Chrysler 41TE & 42RLE VLP This part is for VLP units only.			
<ul style="list-style-type: none"> • Erratic/No TCC • 2nd Gear starts • Low/Reverse switch code • Worn switch valve plug bore 	Oversized Solenoid Switch Valve Plug Kit	92835-RM22	92835-22K

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Featured in this issue:

The Sonnax Roadshow

The Ins & Outs of Reaming

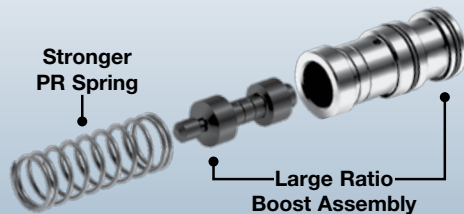
New Fixes: ZF6HP19/26/32 & More

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Part No.
 4L60E-LB1

Why settle for OLD-SCHOOL technology when there's Sonnax SMART technology?

Sonnax line pressure booster kits are the smart way to increase pressure:

- Achieve shorter shifts and increased torque capacity without creating low-speed harshness.
- Progressive pressure increase as driving conditions become more demanding.
- Improved band and clutch holding capacity for increased durability.
- Simple and affordable drop-in solutions with no special tools or reaming required!

Sonnax Line Pressure Booster Kits for:

E40D, 4R100	A0DE, 4R70W, 4R75W	Electronic
400	350	4T65-E
4L60-E, 4L65-E, 4L70-E	45/545RFE	
4L80-E, 4L85-E	4L60 (700-R4), 200-4R	68RFE