We're Glad You Asked

By the Technical Support Team: Roy Bartlett, Rick Willson and Frank Biolsi

Sonnax has always realized the importance of providing useful and accurate information to our customers. Backed by engineers, research and development specialists and members the Sonnax TASC Force™, our knowledgeable sales staff has always been available to answer questions in support of our products. With the increasing volume of questions and their increasingly technical nature, it became obvious that specialized personnel, whose primary mission is to answer those questions, should be the next step.

The Sonnax Technical Support Department was created to address this need. We are not a general Tech Line and we still encourage anyone in today's transmission repair industry to make use of the Technical Information/ Diagnostics Resources mentioned on page 119. Our goal is to provide technical support and information on Sonnax Products. If you question an application, don't understand an instruction, or can't find something you need in our ads or catalog, we are here to help. If your question relates to Sonnax Transmission Specialties or Transmission Replacement Parts, we will do whatever it takes to get you an answer. The toll free number and in state number for Vermont callers, along with our Fax number, are listed on the back of all our catalogs and on the bottom of all ads and literature. Simply ask for or fax to the attention of Tech Support, or e-mail us at *TechSupport@sonnax.com*.

Many of you have already taken advantage of our services. Here are some of the more common questions and the answers we have provided.

With the large number of 4L60 and 4L60-E units in the field and the likelihood of their requiring repairs to correct Torque Converter Clutch application problems, it is not surprising that calls on this subject are among the most frequent. Although there are many areas that can affect TCC operation, the TCC Isolator and Regulator valve kits 77754-03K and 77754-04K are often part of the cure. Here are the most common questions relating to these two part kits:

Q **"What is the difference between the 77754-03K and 77754-04K?" Or "Which kit should I use?**

A The difference is the resulting rates of apply as determined by design differences in the regulator valve. The **77754-04K** was designed to establish an apply rate equal to the original design. The **-04K** can be used on any 4L60-E and it must be used on all 1998 and later units and any 1997 unit with the EC³ system.

The **77754-03K** provides an increased rate of apply which is ideal for 1996 and earlier as well as 1997 non-EC³ controlled units. The increased rate of apply makes this design unsuitable for the sensitive computer strategy used in the EC³ system.

Q **"The Isolator & Regulator valve line up I took out of the unit looks different than the last one I replaced, can I still use your kit?"**

A There are at least five different original valve line-up designs found in units from 1991 to current 4L60-E transmissions. Yes, you can use the Sonnax Isolator and Regulator Valve Kits to replace any of these designs, but be careful about the sixth style found in GM Remanufactured valve bodies.

Q **"The isolator valve in the Sonnax kit is too small for the bore in this 4L60-E valve body. What can I do?"**

A There are many units in the field, which have already had a GM remanufactured valve body installed but may again appear in your shop with TCC related problems. The isolator and regulator bore on these units has already been bored oversize and comes fitted with a larger, sixth design valve line up. These units can be serviced with Sonnax **77754-03K** and **77754-04K** kits, but will require the use of two new reamers instead of the one ordinarily used and will also require the installation of a **77754-ISO** sleeve to accept the Isolator valve included in either kit.

For more information on all these 4L60 and 4L60-E TCC related questions be sure to check out articles *"1870 DTC, TCC, AFL, PWM, EC³, etc."*, on page 76, and *"EC³ and PWM Converter Clutch Solutions"*, on page 90 and the product information for part numbers 77754-03K, -04K, -ISO found on page 75.

Q **"Sonnax makes many different products for RWD Chrysler applications. With the different names and generations of these units, and with the parts and designs they often have in common, how can I tell if a certain part will fit the unit I am working on?"**

A Whether you call it an A500 or a 42RH or you prefer to say A618 rather than 47RH, there are many Sonnax products available to fix problems frequently associated with Chrysler RWD units. The tricky part is that some will work across the board and others will not. Try this chart for a quick guide to understanding the application of products currently available.

CHRYSLER RWD APPLICATION CHART

Pg.	Sonnax Part No.	Description	A500 42RH	42RE	904	A518 46RH	46RE	727	A618 47RH	47RE
193	**12780-Z**	Rear Planet Endplay Shims	✔	✔	✔					
189	**12962N-01K, -02K**	Upgraded Piston Retainer	✔	✔						
192	**12229-01K**	Regulator Valve & Press Plug Kit			✔					
192	**22229-01K**	Regulator Valve & Press Plug Kit	✔	✔		✔	✔	1*	✔	✔
192	**22912**	Rear Servo Piston				✔	✔	✔		
192	**22912A**	Rear Servo Piston	✔	✔	✔					
192	**22912B**	Rear Servo Piston							2*	2*
190	**22771-01K**	Throttle Valve Kit	✔	✔	✔	✔	✔	✔	✔	✔
191	**22771A-01**	4 Spool Switch Valve	✔	✔		✔	✔		✔	✔
193	**22700-Z**	Rear Planet Endplay Shims				✔	✔	✔	✔	✔
194	**22556-BRG**	Case Repair Bearing				✔	✔	✔	✔	✔
189	**22754N-01K, -02K**	Upgraded Piston Retainer				✔	✔		✔	✔
192	**22900-10**	Lengthened Band Strut (.100")				✔	✔	✔	✔	✔
192	**22900-15**	Lengthened Band Strut (.150")				✔	✔	✔	✔	✔
188	**12861-01**	3-4 Accumulator Spring	✔	✔		✔	✔		✔	✔
188	**12783-01K**	Overdrive Set Up Shim Kit	✔	✔		✔	✔		✔	✔
184	**22771-09**	Manual Valve	✔	✔	3*	✔	✔	3*	✔	✔
184	**22771A-02K**	Lube Regulated PR Valve	✔	✔	3*	✔	✔	3*	✔	✔
193	**22841-01K**	Intermediate Accumulator Repair Kit	✔	✔	✔	✔	✔	✔	✔	✔
190	**22171A-02K**	Intermediate Shaft Pilot & Endplug Kit	✔	✔		✔	✔		✔	✔
194	**22827-01**	Front Servo Piston Cover & O-ring				✔	✔	4*	✔	✔
194	**22005A-01K**	Stator Support Shaft Bushing							✔	✔
186	**22179-02**	Manual Shaft Case Repair Bushing	✔	✔	✔	✔	✔	✔	✔	✔
186	**12510-01**	Overdrive Output Shaft Pilot Bushing	✔	✔		✔	✔		✔	✔

✔ = Applicable to the unit(s) in the column heading. Check the TS5 page referenced, for details.

1* = 22229-01K Fits 727 units with boost tubes only, appx. '94 & later, match pressure plug size.

2* = 22912B Fits '94 & later with split band.

3* = 22771-09 Manual Valve and 22771A-02K PR Valve are designed for '78 and later RWD units with lock up converters. Always verify that the existing PR Valve has a reduced diameter on its inner most

Q "I saw the 4T65-E TCC Regulated Apply Valve kit 84754-34K. Why does it say Machining Required when the instructions call for a drill and a reamer? Can't I do it in my shop?"

A No. It's a question of being able to drill a parallel-sided hole with a uniform diameter, perfectly centered in the bore and maintaining that path all the way down. Once that is done you have to be able to locate and follow that centerline again, reaming off less than .008" of material uniformly around the circumference throughout the entire depth of the bore. Without having tight tolerance drill and reamer guides, hand operation or even a good drill press can't come close to the accuracy required. Securing the valve body in a rigid mill and performing both the drilling and the reaming operations on the mill, is the only way to ensure the accuracy needed. NOTE: Here's some good news, Sonnax tools will soon be available to allow you to ream this bore yourself. See page 58.

Q "I use the 56600B series of parts for Low Sprag repairs on the A4LD. How about the 4R44E, 4R55E and 5R55E, can I use them on those units also?"

A This one is not as cut and dry as some questions. Let's take them one at a time:

4R44E: There are two different style rear drum set-ups found in these units. If you have a drum with the thrust bearing set up, none of the **56600B** parts apply. If you have a drum with the thrust washer set up, you can use the entire **56600B-01K** to convert to the larger 4.0 Liter race or use the **56250-01K** Kit for end caps and thrust washer with the **56600** race for 2.8, 2.9 and 3.0 Liter engines.

4R55E: **Yes,** the **56600B-01K** kit or any of its individual parts may be used.

5R55E: In this case, the **56600B** race can be used to replace a damaged race but it must be installed directly against the case without our thrust washer behind it. Installing the thrust washer will result in stack height problems and insufficient endplay during assembly. None of the other parts in the series apply to the 5R55E.

Q "Which TCC Apply Valve do I need to purchase for my 4T60/4T60-E valve body?"

A The apply valves for the 4T60 & E are split in to two applications, up to '96 or '97 and later. Both styles are offered in a standard size (direct replacement) or an oversize (reaming required). It is best to determine the valve needed by measuring the one removed from the unit being serviced. It is not uncommon to find units that do not follow the date application rules. Remove the valve from the unit, then measure the largest spool diameter or use a 15mm wrench as a go no/go gauge. The up to '96 application will measure 14.23mm or will fit into the open end of a 15mm wrench. Use 84754-22K (std) or 84754-16K (oversize). The '97 and later application will measure 15.86 or will not fit into the open end of a 15mm wrench. Use 84754-98K (std) or 84754-97K (oversize). Sonnax offers an oversized version of either style apply valve for bores with considerable wear in the lands where the smaller spools ride. Be sure to inspect the smaller lands before installing a standard size valve. If you are uncertain of the bore condition, the oversize valve would be your best option when ordering ahead. It is important to remember to order the reamer and correct jig when using the oversized valve. Both oversize valves use the reamer from the 84754-TL tool kit but the drill jigs are different. When installing the 84754-16K, use the reamer and jig from the 84754-TL kit. When installing the 84754-97K, you will need Drill Jig 84754-DJ2 to be used with the original reamer.

Q "I have purchased the AFL valve (77754-09K) and tool kit (77754-TL) for the 4L60-E. Why does the tool kit have more parts than the instructions direct me to use?"

A The 77754-TL tool kit is used to install either the 4L60-E or the 4L80-E AFL valve kits.

4L60-E: For servicing a 4L60-E use the reamer (77754-RM) and jig (4L60-E AFL) to guide the reamer. The .052" drill bit is used to enlarge the AFL balance orifice.

4L80-E: For servicing a 4L80-E use the large drill and drill guide (unmarked) and drill collar (with set screw) to pre-size the bore to the correct depth, prior to reaming. Follow with reamer (77754-RM) and the jig (4L80-E AFL) to guide the reamer. The .052" drill bit is used to enlarge the AFL balance orifice.

Q "I tore the Teflon® seal on the TCC apply valve when installing into a 4L60-E pump. Can I buy the seals separately?"

A Yes, special seals and o-rings for many Sonnax valves and sleeves are available separately (25 per package) so you can freshen them up on a previously installed part or replace one that is cut or torn.

See page 141 of the volume 4 spring 2001 or page 215 of this catalog for a listing of valve kits and their o-ring or seal package part numbers. Sonnax also offers an o-ring master kit (OR-MK) that includes o-rings and seals to cover many of the more common parts from the Sonnax product line.

Q "Now that I can service worn Isolator bores or Factory Serviced 4L60-E valve bodies, which tools to use?"

A You have three choices for reaming a 4L60-E valve body to install TCC Isolator and Regulator valve kits.

OPTION 1:
If the valve body has ***Not*** been Serviced (GM Remanufactured) and does ***Not*** have a worn out isolator bore:

Use: 77754-R2 Reamer
Install: Either 77754-03K or 77754-04K

OPTION 2:
If the valve body has ***Not*** been Serviced (GM Remanufactured) but ***Does*** have a worn out isolator bore:

Use: 77754-R2 Reamer First
(to cut regulator sleeve pocket)
Then: 77754-RM5 Reamer Next
(to cut ISO sleeve pocket)
Install: 77754-ISO & either 77754-03K or 77754-04K

OPTION 3:
If the valve body ***Has*** been Serviced (GM Remanufactured):

Use: 77754-SERV Reamer First
(to cut regulator sleeve pocket)
Then: 77754-RM5 Reamer
(to cut ISO sleeve pocket)
Install: 77754-ISO & either 77754-03K or 77754-04K

For more information on these tools and kits, see page 75.

For a quick guide to identifying all Sonnax Reamers, Jigs and associated parts see the Reamer and Drill ID Chart on page 177.

Q "I removed the OEM capsule from my 4L60 case because I thought the Sonnax servo release check valve (77701-076) was a replacement for it. Can I return the unit to service with just the Sonnax check valve?"

A No, the Sonnax check valve is designed to use with the OEM capsule. The Sonnax check valve has a separate function than the OEM capsule. Its function is to properly meter servo release oil while still providing sufficient exhaust for a smooth 3-2 down shift. The OEM capsule function is to exhaust 3rd accumulator oil from the 2-4 servo to prevent residual fluid pressure from building. It also will exhaust any air in the circuit during a 2-3 shift. A leaking capsule should be replaced with a new capsule, OEM part number 8634400. When replacing the capsule, be sure that it is sealed between the capsule and case.

Occasionally, the case is worn or damaged so that an OEM capsule will not seal. If necessary these cases can be salvaged by installing a cup plug in the case. Be aware the use of the cup plug may cause a soft 2-3 shift on the first shift, as air may cushion the shift. Installing a capsule is always the better alternative.

Q "I would like to install the 4L80-E No Walk Out Case Bushing (34006-SP) but the bushing partially blocks the lube hole. Will this create a problem?"

A In some 1991 to 1996 models the output shaft lube holes may be partially restricted by the new bushing *(see Figure 1)*. The lube hole feeds lube oil into the center of the output shaft and forward into the planetaries and rear section of the transmission. Using a die grinder, chamfer the lube holes in the shaft, as pictured *(see Figure 2)*. Do ***not*** modify bushing.

Figure 1

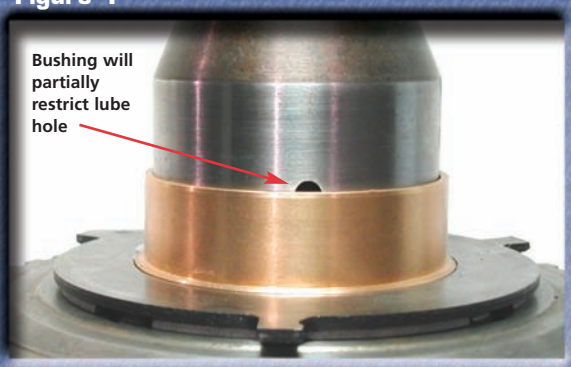

Figure 2