YOU CALLED?

In the time between the introduction of the Sonnax Transmission Specialties® Volume 5 catalog and the release of this new TS Volume 6, the Sonnax Technical Support staff has responded to over 16,000 calls. We are glad that so many of you realize we are here to help. If you have not yet called or e-mailed us with questions about Sonnax products, please remember that we are here and available to help you. While we are not a full line tech service for general transmission problems, we are specialists in Sonnax Transmission Specialty products. If your question relates to understanding how, when or why to use a Sonnax Transmission Specialties part, it is our mission to get you the information you need. You can e-mail us at TechSupport@sonnax.com or call us Monday through Friday, 8:30 a.m. to 5 p.m. Eastern time, at (800) 843-2600 (toll free) or (802) 463-9722.

In our last catalog, we included a list of questions and answers that are frequently called in to Sonnax Tech Support. Your comments made it clear that many of you found this useful. As we stated last time, "We're glad you asked." Here is a new collection of what many of you have been asking.

Question: I am installing the TCC Regulator & Isolator Kit **84754-01K** in a 4T60-E and the isolator valve seems to be sticking in the bore. Why?

Answer: The original OE isolator valve sometimes creates a slightly raised area in the bore. In most cases, the new Sonnax valve will resize the bore when installed. Some higher mileage valve bodies may require the bore to be resized with the shank end of a 27/64" drill bit or a tool that can be made using a Sonnax isolator valve attached to a piece of brake tubing. *(See Figure 1.)*

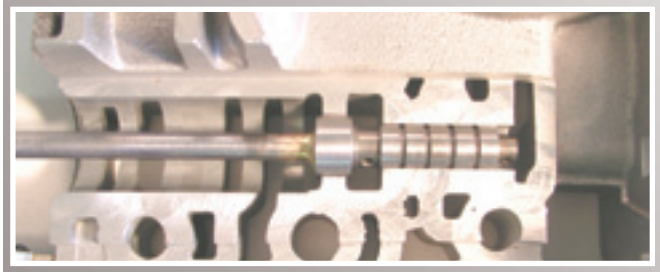

Figure 1
Sonnax ISO valve on a stick tool

Question: The Sonnax Transmission Specialties® Catalogs list a boost valve, **95200-03K**, that can only be used in a Type 2 TAAT valve body. How do I know if my valve body is a Type 1 or 2 and why can't I update aType 1?

Answer: The TAAT Type 1 valve body is best identified by looking for the additional circuit *(see Figure 2)*. Knowing the build date of the unit that is being worked on will also help determine the type. The Type 1 is applicable in units from 1991 up to April 1992, while the Type 2 valve body is in units built from May 1992 on. The Type 1 valve body had two separate valves inside the boost sleeve. The extra circuit received an additional boost signal off the manual valve when manual 2 was selected. The valve body porting and sleeve designs, along with the number of valves and boost signals being delivered, are not the same between the two types. The **95200-03K** will neither update nor work in a Type 1 valve body.

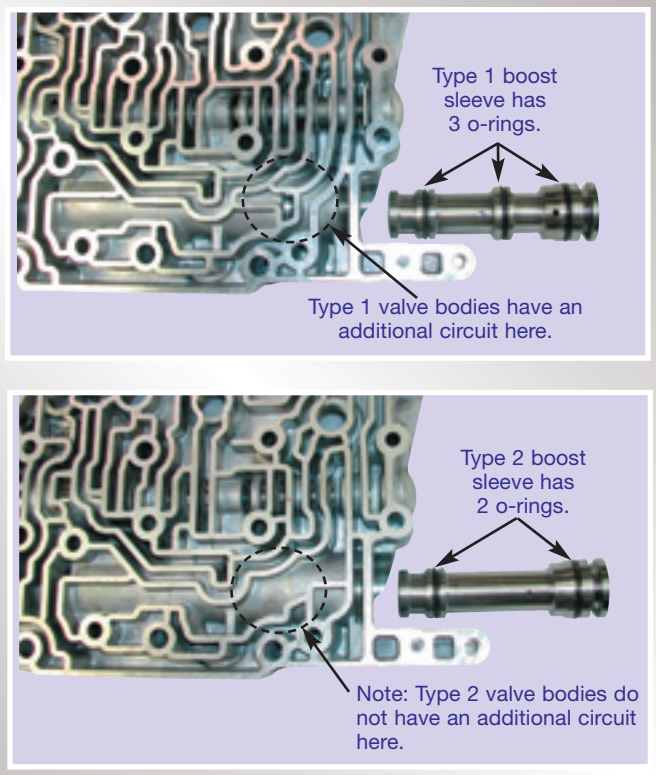

Figure 2
Saturn TAAT Valve Bodies

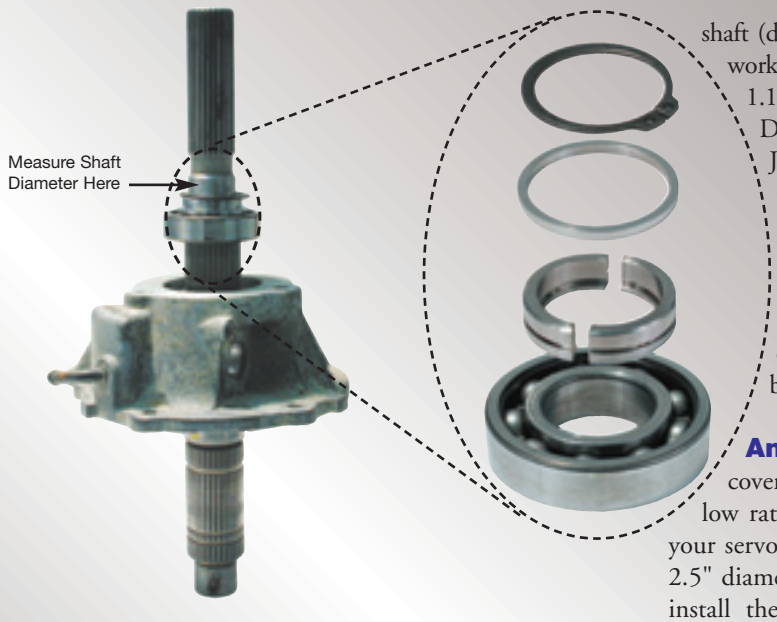

Figure 3
Measure point on shafts

Question: I have purchased the Sonnax upgraded New Process 230 Series Output Shaft Retaining Ring **100420-01K**, but it doesn't fit. Am I doing something wrong?

Answer: The NP 231/233 came with two shaft diameters. The Dodge, Jeep and some GM applications have the smaller size. Many of the later GM V-6 S-10s and Blazers have the larger shaft. Most transmission shops will recognize and be able to tell the difference between GM large and small shaft diameters by looking at the drive shaft yoke.

A quick reference for GM applications is to measure the yoke shaft OD. If you have a small GM yoke diameter (1.5"), use **100420-01K**. The large GM yoke diameter measures 1.885" and for this you must use the **100420-02K**.

The most positive method to identify which part number you need is to measure the shaft where the bearing presses on, although this requires removal of the extension housing. *(See Figure 3.)* This measurement is consistent from GM to Dodge to Jeep, etc., whereas corresponding yoke diameters are not the same from GM to Dodge to Jeep. The dimensions listed below give the shaft diameter where the bearing presses on.

Sonnax part **100420-02K** fits all units with a 1.375" diameter shaft (diameter where rear bearing fits onto shaft). This will work in all New Process models 241, 242, 243 and 249. These are common to GM and Chrysler full-size trucks. It will also fit NP233 (with 1.375" diameter shaft). It replaces GM p/ns 12470554 and 15580304, and Dodge p/n 6025755.
Sonnax part **100420-01K** fits all units with a 1.180"diameter shaft (diameter where rear bearing fits onto shaft). This will work in all New Process models 207, 231 and NP233 (with 1.180" diameter shaft). It replaces GM p/n 14071710, Dodge p/ns 4338951 and 4446478, and Jeep p/n J8134488.

Question: The **77701-076** Servo Release Check Valve instructions tell me to install the valve as is with 8462553 or 8462554 Servos, but to enlarge the A orifice to .120"-.125" if I have the 8642093 (Vette) or other performance servo. What if my servo number does not match any of these numbers?

Answer: The standard orifice drilled in the valve will cover the oil volume requirements of a variety of both low ratio and medium ratio 2nd gear servos. To identify your servo, measure the small piston diameter. If you have a 2.5" diameter (low ratio) or a 2.3" diameter (medium ratio), install the valve without modification. Performance (high ratio) servos require the larger flow capacity. Enlarge the hole if your piston diameter is 1.7" or smaller, but don't be too aggressive enlarging the orifice. Going beyond .120"-.125" can cause a flare, bump on your 2-3 shift.

Question: Can I use the Sonnax **22771-09** manual valve and **22771A-02K** lube-regulated pressure regulator valve in a non-lockup Chrysler RWD unit?

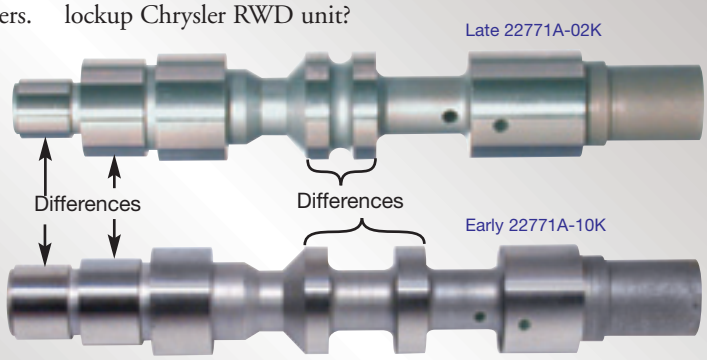

Figure 4
Early vs. late PR valves

Answer: To answer this question you need to look at your original pressure regulator valve. The PR valve design must match the design of the Sonnax PR valve to use either the Sonnax PR or manual valve. Look at the inboard end of the pressure regulator valve (the end that goes into the valve body first). *(See Figure 4.)* The diameter of the last three spools should get progressively smaller toward the end. Some earlier units will have a larger end spool. If your original valve spool design matches the Sonnax valve **(22771A-02K)**, you can install either the Sonnax PR or the manual valve **(22771-09)**. If you have the early design valve, the **(22771A-10K)** PR valve can be used, but not the **(22771-09)** manual valve.

Question: I've been using the **96206-03K** Bypass Clutch Control kits in AX4N units but this time I had harsh shifts and early harsh TCC apply after installing the kit. Can the kit cause the harshness?

Answer: The AX4N bypass clutch control plunger valves were manufactured with more than one ratio available. Although the small spools are both .415", the large spool can be either .486" or .496" *(see Figure 5)*. The Sonnax Bypass Clutch Control Sleeve & Plunger Kit **96206-03K** will fit AX4Ns with the .486" spool diameter. Sonnax now has available **96206-13K**, which will work in the units that have the larger .496" plunger valve. The 3.0L 24 valve is one application known to require the larger valve but other applications have also been found. The best way to determine which size is required is to measure the large spool diameter. A quick way to verify if the Sonnax **96206-03K** will work is by trying to install the OE plunger valve into the Sonnax sleeve. If it does not fit, you will need to use the **-13K**. If you have not verified by measuring, always try the fit test before installing the kit. Installing the wrong size kit will result in a variety of TCC apply or release complaints along with other possible issues, including a harsh shift complaint.

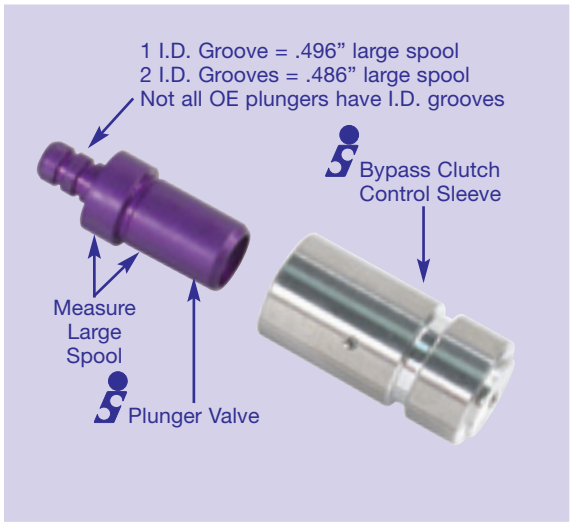

Figure 5
AX4N Boost Valve

Question: Can I use the 41TE **92835-03K** Converter Regulator Valve Kit with a No. 33 plate?

Answer: **The 92835-03K** is not compatible with the No. 33 plate design. Installing the kit with a No. 33 plate and body can lead to complaints of no TCC or engine stumble caused by the TCC dragging. In an attempt to improve lockup, Chrysler has made changes to the plate design over the years: plate No. 99 is the most recent design. You can update a 33 plate with a 46, 82, 96 or 99 plate and body. The plate and body must be used together and cannot be mixed.

Question: Why can a 741 code reappear after installing the Sonnax regulator and converter valves in a CD4E?

Answer: If you get a repeat code 741 after installing the Sonnax **73840-BK** and **-RK** valves, the best way to narrow down the cause is to check your CT (converter turbine) pressure. The CT pressure during lockup is an indicator of the clamping force that holds the torque converter piston to the front cover. CT is the middle pressure tap in the bank of three at the front of the transmission. Monitor the CT pressure when the unit goes into lockup. CT pressure during lockup should rise to 85 to 100 psi and hold steady. The key here is to see that CT pressure both rises and holds steady when lockup is applied. If the pressure rises normally when lockup is commanded but bleeds off slowly as you drive, then suspect the converter. If pressure does not rise to the desired range, recheck apply and release circuits, pump, sealing rings and bushings. Each area is capable of reducing your apply pressure. A good way to help provide adequate pressure increase on apply is to perform the separator plate modifications outlined in the Sonnax valve installation instructions. These modifications are highly recommended and will increase the CT pressure when the unit goes into lockup.

Question: I just purchased a **77754-TL** for 4L80-E & 4L60-E AFL valve installation and it is missing the stop collar and the drill looks different.

Answer: To make it easier to use, Sonnax has revised the **77754-TL** tool kit. The later kits include a three-fluted core drill in place of the standard two-fluted drill. A core drill is designed to enlarge existing holes without grabbing and binding in the bore. This core drill does not require a stop collar because its blunt tip will stop when the bit reaches the bottom of the bore. The previous 2-fluted design bit will still function just fine, but it is our belief that the core drill is even easier to use.

Question: I installed the **22771-01K** Throttle Valve Kit. Why aren't my shift points where I expected?

Answer: Keep in mind that like many other units, the shift timing concerns on the Chrysler RWD units may be TV and/or governor pressure-related. The actual timing of the shifts is a result of the balance between the two pressures. If one is weaker than desired, the other will become the dominant factor. If you have a leak in the governor circuit and the TV is operating properly, TV influence will win out and the unit will upshift later than intended. On the other hand, if you have a leak in the TV circuit and the governor system is operating properly, governor pressure will dominate and the unit will upshift early.

The best approach is to make sure you have good function in each circuit before going any further. Diagnose and repair any

issues you find, and then fine-tune your timing in the TV circuit, if needed. First, rule out the governor circuit as a potential problem. If the governor circuit is functioning properly and there are no leaks, then focus your attention on the TV circuit.

If neither circuit is leaking, giving the other the advantage, fine adjustments can be made to the TV pressure. When installing the Sonnax TV kit, always start with the OE spring, then modify with shims if needed. If the balance end of the bore has some wear, the OE spring and the small balance spring included in the kit can be used together. When tuning with shims, you will find that it is hard to determine the exact effect the shims will have on the unit you are working on. Units respond differently, depending on the amount of valve body wear, spring condition, governor circuit integrity, etc. In general, adding two shims to the OE spring will increase TV pressure by about 14 psi, compared to using the spring alone. Increasing TV pressure will cause the unit to shift later.

In some cases you may need to reduce TV influence. The Sonnax (purple) spring was designed to allow builders to reduce TV pressure, which might be done, for example, to overcome an oversensitive 2-3, 3-2 condition. It is important to remember that the small balance spring included in the kit should not be used with the Sonnax (purple) spring. The effect of shims being used with the purple spring will also vary with other factors but in general, using the Sonnax purple spring and two shims will reduce the TV pressure by 14 psi compared to the original spring used without shims. Reducing TV pressure will cause the unit to upshift earlier.

Question: I love the results I get with the **SC-4R100HD** Sure Cure Kit. I need to build an E4OD that will get some hard use. Can I use the 4R100 kit in an E4OD?

Answer: If a heavy-duty service E4OD is what you're after, absolutely. There are three important items that come in the 4R100 HD Sure Cure that are not included in the standard E4OD kit. The **36424-04K** line-to-lube pressure regulator valve is a great addition to an E4OD rebuild, heavy duty or not. The distinctly HD part of the 4R100 kit comes from the larger (.427" diameter) line pressure modulator valve (**96948-01K**) and the heavier accumulator springs (**36948-18K**). This combination increases shift firmness across the board. Individual shift firmness can still be tailored even further with the accumulator control valves, which are included in either kit. Using the 4R100HD Sure Cure in an E4OD will leave you with an unused TCC control sleeve, which is not used in an E4OD but it will give you the heavy-duty results and the kit should cost less than buying the individual components.

Question: Do you have a Sure Cure Kit for the Chrysler 42LE/A606?

Answer: Yes. Use the **SC-41TE** Sure Cure kit for the 42LE. Other than shims, the parts in the kit apply to either unit.

Question: The isolator valve in my **77754-04K** kit is too small for the bore. I looked at the valve body before I reamed and it was not marked SERV. What's the problem?

Answer: The problem we've been hearing is that although most of the serviced valve bodies are marked with the SERV notation, some are not. This means the bore had already been oversized, the valve will be too small, and your **77754-R2** reamer was not properly piloted while you were reaming out for the regulator valve sleeve. The best way to avoid this situation is to quickly measure the existing isolator valve before you ream. If the valve measures .441", grab your **-R2** and go ahead. If the valve measures .473" you will need to go in with your **77754-SERV** reamer first, then follow with the **77754-RM5** and install the **77754-ISO** sleeve, along with your 03K or 04K kit.

Question: Can't I use the **77767K** 4th Gear Super Hold Servo with my aftermarket performance 2nd gear servo? I am having trouble making it fit.

Answer: Most 2nd gear servos will not give you any fit issues. Look at the recess area on the back side of your 2nd gear servo. The recess must have enough clearance to allow the steel washer included in the Super Hold kit to slide down the pin and contact the clip. *(See Figure 6.)* Minor grinding may be needed in some cases.

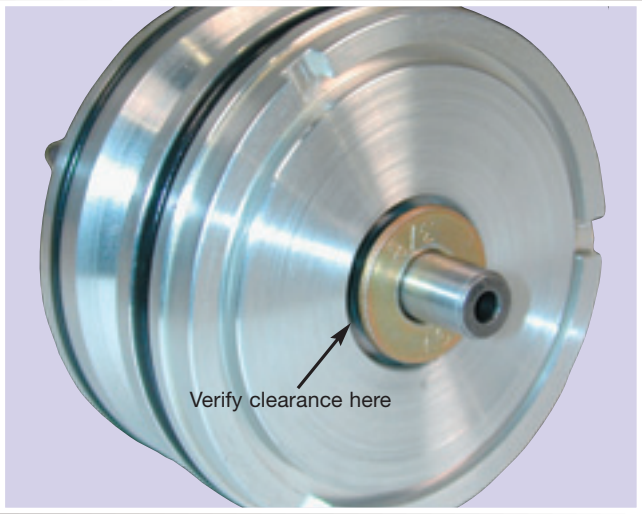

Figure 6
Aftermarket 2nd gear piston assembly