# SOMMANCE PERFORMANCE

tougher stronger faster

TRANSMISSION PARTS

## SONNANCE PERFORMANCE

faster

tougher

stronger

## POWERGLIDE

## THE **LEADER**IN POWERGLIDE PERFORMANCE

Sonnax's innovative approach to design and manufacturing allows the venerable Powerglide transmission to thrive even as power and speeds steadily increase.

With top-of-the line, proven solutions for aluminum Powerglide transmissions at any level of racing, Sonnax is the gold standard for circle track and bracket vehicles as well as the fastest door slammers running.

To achieve a winning match of quality and performance, trust Sonnax to help you cross the finish line!

"When we put 2000+ horsepower through our Powerglide combination, we need 110% performance, 110% efficiency and no doubt in our minds when we stage our race vehicle at the starting line. Sonnax rises to that challenge."

Ryan & Tom Martino • Martino Motorsports World Champion Drag Racing Team

#### 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

#### THE <u>ORIGINAL</u> 10-CLUTCH DRUM SYSTEM

#### **10-Clutch Drum Kits**

#### Keep Your Clutches Alive All Season Long

The Sonnax 10-clutch system increases lockup surface for significantly more torque capacity than modified OE drums. Sonnax invented this powerhouse upgrade more than a decade ago, and its proven dependability makes it the most popular choice among racers.

- Patented drum, hub & piston system improves clutch capacity for maximum durability
  - High-strength drum with reduced rotating mass improves on-track acceleration
    - 6061 Forged piston will not crack like cast pistons
      - Forged chromoly clutch hub guarantees your power makes it to the wheels

#### **Smart-Tech® 10-Clutch Drum Kit**

#### More Apply Area than Any Drum on the Track

- 35% Larger piston maximizes both engaging & holding capacity of the 10-clutch system
- Unique components for customizable performance: reduce line pressure for greater efficiency or drop to seven frictions for less parasitic drag & improved heat dissipation while retaining 10-clutch capacity



Many 10-clutch components also available separately. See page 15.



**Drum, Hub & Piston Kits**Core Components of the
Original 10-Clutch System



All the Components You Need to Build the Original 10-Clutch System



Smart-Tech Kit

Core Components for a

10-Clutch w/ 35% More Apply

Part No.	28756-15K	28756-16K	28756-01K	28756-08K	28756-25K
Includes Pump-to-Drum Bearing*	No	Yes	No	Yes	Yes
Hub & Steel Details	No lightening holes in hub	No lightening holes in hub	12-Tooth steels without turbulator holes; Lightening holes in hub	24-Tooth steels with turbulator holes; No lightening holes in hub	No lightening holes in hub

<sup>\*</sup>Kits with bearings also include a shim for use in pumps that were previously machined.

#### **Direct Replacement Drum**

Machined with 12 additional lugs to reduce rotating mass, this high-quality, direct replacement drum comes with a piston bore and other features identical to OE. The drum is available individually and as part of the Sonnax Contender drum, hub and piston kit that accepts extra frictions for increased torque and holding power.

**High Clutch Drum** 

Contender Drum, Hub & Piston Kit

Part No. 28755-14K Part No. 28755-14K



"My car is BRUTAL at the launch. Switching to the Sonnax big shaft took care of ALL the input shaft problems. My transmission is perfect now, just the way I like it."

Ronnie Proctor • NHRA World/Division Champion

## 35% STRONGER THAN 1" SHAFTS

## **BIG SHAFT SYSTEM**

## The END of Input Shaft Failure

- TRACK-PROVEN to hold up to even the most extreme horsepower
- Upgrade a Sonnax gear set or build from scratch in the gear ratio of your choice
- Easy-to-install, custom components work together for reliable performance

The Sonnax big shaft system delivers 35% more strength than even the best 1" shafts — a massive upgrade that lets you unleash the full potential of the lightweight and efficient Powerglide transmission. No more worrying about spline twist or shaft breakage, no more holding back. At ANY power level, the big shaft will get you down the track all season long.

Sonnax offers the only big shaft upgrade with custom components designed to work together for optimal performance. To level up with this unique system, simply choose your transmission parts and then make the simple change to a 35-spline turbine hub.

#### How to Select the Right Components

Question 1: What Sonnax gear ratio do you want to run?

Question 2: Do you already have a Sonnax planetary assembly?

- If YES: Upgrade your existing assembly by ordering the big input shaft kit, stator tube kit and a rear sun gear kit (components #1, #2 and #3).
- If NO: Order all five big shaft system components in the gear ratio of your choice.

1	Big Input Shaft Kit	353532-01K
2	Big Shaft Stator Tube Kit	28154S-125
3	Big Shaft Rear Sun Gear Kit	
	1.58 Ratio	15832-RSK
	1.65 Ratio	16532-RSK
	1.69 Ratio	16932-RSK
	1.80 Ratio	18032-RSK
4	Extreme Planetary Assembly	Kit
	1.58 Ratio	28158G-NS
	1.65 Ratio	28165G-NS
	1.69 Ratio	28169G-NS
	1.80 Ratio	28180G-NS
5	Extreme Strength Output Sha	aft
	32-Spline, Long (1.58/1.65)	28924-32L
	27-Spline, Long (1.58/1.65)	28924-27L
	27-Spline, Short (1.58/1.65)	28924-27S
	32-Spline, Long (1.69/1.80)	28922-32L
	27-Spline, Long (1.69/1.80)	28922-27L
	27-Spline, Short (1.69/1.80)	28922-27\$

#### 1 Big Input Shaft Kit The CORE of the Big Shaft System



The only way to prevent twist and breakage from massive torque is to increase the input shaft diameter. The Sonnax big shaft strikes the perfect balance between strength and ease of installation with a 1-1/8" dia. and unique, high-strength spline that still fits through the front sun gear.

#### **Big Shaft Features**

- · Torsional, ringless design
- · Heat-treated, 300M steel with advanced processing
- 35 Splines (AOD-style) at converter

#### Clutch Hub Features

- 1.500" Tall hub for use with 10-clutch setups
- High-strength chromoly steel
- · Custom fit for the big shaft

#### **2** Big Shaft Stator Tube Kit

- Press-in tube with larger diameter
   & longer press serrations for max hold
- Tough, heat-treated, stock-size splines
- Includes dual rear support bushings
- · Pump requires machining

#### **3** Big Shaft Rear Sun Gear Kits

- Prepped to accept big input shaft's fine-tooth rear spline
- Use with new planetary assembly kits (system component #4)
   or to convert existing Sonnax assemblies to the big shaft system
- Custom, PTFE-coated thrust washer replaces the sun gear thrust bearing

#### **4** Extreme Planetary Assembly Kits

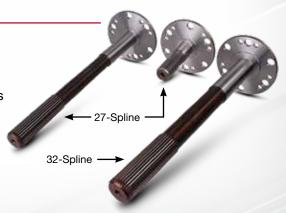
The same parts found in Sonnax extreme assemblies (see page 4), minus the output shaft, rear sun gear and washer that must be purchased separately when building a Sonnax big shaft system.



#### **5** Extreme Strength Output Shafts

Top-notch engineering and precision manufacturing guarantee unrivaled performance and reliability. These are the same shafts built into complete Sonnax extreme planetary assembly kits.

- Heat-treated 300M steel
- Torsional design with 27- or 32-count rolled splines
- · Bolt-on shaft allows for easy service
- Exclusively for use with Sonnax gear sets



#### PLANETARY ASSEMBLIES

## Optimized Performance Guarantees You Never Overpay or Underspec

Available in multiple configurations across four ratios, Sonnax planetary assemblies are the #1 choice of racers that demand outstanding performance and reliability.

These gear sets are a BIG step up from standard case-hardened and tempered varieties. High-quality materials combined with an advanced heat-treating process results in incredibly tough, wear-resistant gears.

Assembly components and gear sets also are available separately. See page 17.

The Sonnax website makes it easy to dial in options and select

the perfect Powerglide planetary

Visit www.sonnax.com/ powerglide-gear-sets to get started.

assembly or gear set.

**Premium**Track-Proven to 2,000 HP

## Best Quality & Value for Demanding Applications

Offered in 1.80 and 1.69 ratios, Premium assemblies set the industry standard for uncompromising durability in common racing Powerglides. "300 Passes on my Sonnax
1.80 gear set and no issues
and continues to be rock solid.
We use all Sonnax performance
parts in all of our HP transmission
builds. Thanks for great products!"

R. Merrill • Affordable Transmission

#### **Extreme**

**Track-Proven to 3,000 HP** 

## Highest Quality Planetaries in the World

From carrier and output shaft to gears and thrust washers, every Extreme assembly component is refined for ultimate durability in the most high-powered and demanding applications. The ring gears are even pre-drilled for the Sonnax stabilizer system to prevent vibration and broken Reverse friction plates.

	in common racing rowergines.	blokell lievelse illottoll plates.		
Sonnax Warranty	2 Years (Gears Only)	2 Years (Gears & Shaft)		
Gear Material	9310 Suns & Pinions	9310 Suns & Pinions		
Gear Process	Premium	Advanced		
Shaft Material	4340	300M		
Shaft Splines	Cut Spline	Rolled Spline		
Drum Flange	12-Tooth	24-Tooth		
Ring Gear	Standard	Maximum Duty		
	Premium Assembly Kit Part No.	Extreme Assembly Kit Part No.		
1.80 Ratio	Long Shaft 28180G-01	<b>Long Shaft</b> 28180G-06		
Highest quality gear set	Short Shaft 28180G-01S	Short Shaft 28180G-06SP		
available for replacing the OE 1.76 ratio.		Big Shaft System 28180G-NS		
	Long Shaft 28169G-01	Long Shaft 28169G-06		
1.69 Ratio	Short Shaft 28169G-01S	Short Shaft 28169G-06SP		
		Big Shaft System 28169G-NS		
		<b>Long Shaft</b> 28165G-06		
1.65 Ratio	Building a Big Shaft System?	Short Shaft 28165G-06SP		
	For all ratios, the assembly kits listed here require the output	Big Shaft System 28165G-NS		
4 50 D. II	shaft, rear sun gear and washer be purchased separately.	<b>Long Shaft</b> 28158G-06		
1.58 Ratio	See page 2 for details.	Short Shaft 28158G-06SP		
Exclusive Sonnax Ratio!		Big Shaft System 28158G-NS		



"I could not keep a planetary in my car more than a racing season.

Marco Abruzzi suggested I try a Sonnax planetary, and we listened to his advice.

So far it's lasted 2.5 seasons (65 races and 260 passes). It is still going strong.

I would absolutely, truly recommend the Sonnax planetary."

Ronnie Proctor • NHRA World/Division Champion

## 1.58 RATIO PLANETARY

#### EXCLUSIVELY FROM SONNAX



#### Control You Can Count On, Even at Extreme Horsepower

The Sonnax 1.58 delivers tunable control for Powerglides right at the start, when traction can make or break a race. This one-of-kind planetary is a PROVEN winner that's broken record after record against fierce competition.

Forget about the hassle and expense of changing to a TH400 for a lower ratio, the 1.58 in an efficient, lightweight Powerglide delivers the very best in performance and durability.

## COMPATIBLE WITH THE BIG SHAFT SYSTEM SEE PAGE 2

- Apply more power at the launch
- Stay in 1<sup>st</sup> Gear longer
- Less RPM drop on the shift
- Keep the front end down
- Reduce rear tire shake & pedaling
- Increase trans brake holding capacity

"The mere fact that we didn't have to invest a huge sum of money into building a transmission is one of the biggest benefits. The 1.58 gear set has far exceeded our expectations. It has given us the ability to keep the front end on the ground, consistent A-B passes. The confidence that we have gained with the reliability and consistency of the gear set is priceless."

Carmine Pechie • Pechie Racing

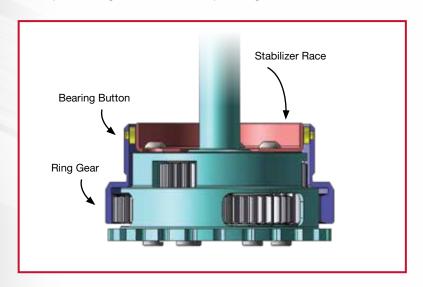
#### **Ring Gear Stabilizer Kits**

#### Reduce Vibration & Stop Clutch Breakage

- · Reduce high-speed vibration & drag
- Protect against broken reverse friction plates
- · Prevent stress on short pinion gear teeth
- Ring gear in all Sonnax Extreme planetary assemblies comes pre-drilled to accept a stabilizer kit

Vibration at high speeds and broken Reverse friction plates occur in Powerglides when the poorly supported planetary ring gear moves off the transmission center line, oscillating out of control.

Ring gear stabilizer kits install easily on Sonnax bolt-together carriers and stock 1.82 carriers. With proper support, the ring gear stays on-center, significantly reducing vibration and drag while preventing wear and short pinion gear stress.





For Sonnax 1.80 & 1.69 Carriers

Part No. 28510-S2

For Sonnax 1.65 & 1.58 Carriers

Part No. 28510-S3

For 1.82 Carriers (Circle Track)

Part No. 28510-S1



Output Shaft Support Kit Part No. 28080K

#### Extra Support for the Planetary

- . High-quality roller bearing for low friction & longer life
- Strong, 6061 billet aluminum dramatically reduces weight
- Essential upgrade for any level of racing transmission

An output shaft support kit is ideal for upgrading OE cast-iron supports and essential when building a unit from scratch. The durable, roller-bearing-style support in this Sonnax kit helps keep the planetary on-center, preventing wear.



### PERFORMANCE SLIP YOKES

## Quality & Engineering You Can Trust

A Sonnax slip yoke is NEVER the weak link in your driveline. Choose from bushing and roller bearing yokes for dozens of popular applications, every one optimized to drive power smoothly and reliably from transmission to driveshaft.

- Bushing- & roller-bearing style yokes cover all levels of performance
- Fully machined from forged 4340 chromoly billet steel for enhanced strength & durability
- Leak-free plug tested to 40 psi

"I run an aluminum driveshaft with [Sonnax] chromoly slip yokes in all three of my drag cars, along with Powerglide components. The power range for all three of the cars is from 600 to 1500 HP. No problems. Great product! I will always use Sonnax for all of my high performance needs!! Thank you for all the great work!"

J. Gerstel • Simmons Driveshaft Specialists

#### Did You Know?

Sonnax is America's #1 source for aluminum aftermarket driveshaft components, every piece made to exacting quality standards you can trust. Ask for Sonnax driveline components from your local driveshaft shop.



#### **Bushing Style**

#### Increase Strength & Durability Without the Premium Cost

Setting the industry standard for incredible performance AND value, Sonnax yokes deliver a winning combination you won't find anywhere else. It's the best way to optimize the driveline in high horsepower and torque capacity vehicles running on the street, drag strip or dirt oval track.

27-Spline, 1350 Series

Part No. T3-3-6081HP

Sonnax offers many more bushing-style yokes for Powerglide applications. Visit www.sonnax.com/slip-yokes for details.

#### Bushing- vs. Roller Bearing-Style Slip Yokes — When to Go Roller?

Slip yokes found in many common applications run on a bushing inside the transmission tail housing. High-horsepower builds often use a roller bearing instead, so upgrading to a roller bearing yoke is a must, not only for proper fitment, but to guarantee the barrel is hard enough to avoid damage from the bearings. Plus, once you've reached that power level, you want a rugged yoke designed to handle it, not a yoke that becomes a weak link in your driveline.

#### **Roller Bearing Style**

#### Rock-Solid Reliability for Extreme Racing

Proven INDESTRUCTIBLE in track and street runs plus torture testing in the lab, Sonnax roller bearing slip yokes guarantee you the titanic strength and durability to run even the most extreme horsepower.

- Through-hardened, tempered barrel
- Unique Sonnax design increases strength in critical areas
- · Use with single- or double-roller bearings

27-Spline, 1350 Series

Part No. T3-3-6081H

32-Spline, 1350 Series
Part No. T3-3-2431CBH



#### **COMPLETE SERVO KITS**

### Custom Engineered to Solve Old-School Problems

- · All-in-one kits make it easy to install a state-of-the-art servo system
- Precision components work together for predictable, reliable performance
- Improved sealing throughout reduces fluid loss
   & is optimized for low friction movement
- Low-profile designs ensure adequate clearance
- 6061 Anodized billet aluminum covers



#### Smart-Tech® Ratio-Style Servo Kit Part No. 28821-10K

## The ULTIMATE Servo for Even the Most Extreme Applications

With the innovative Smart-Tech servo, racers are finally freed from OE design flaws that cause band failure, broken shafts and staging issues.

Its patent-pending design completely eliminates the pin bias effect with an apply area equal to the original Powerglide, but a LARGER release area just like modern servos.

- Supported servo design eliminates piston binding
- Significantly lighter spring prevents staging issues
   & backing up when trans brake is applied
- Delivers more total net apply force than any stock-sized servo
- Allows greater tuning of high clutch apply to prevent tire spin & pedaling after the shift
- · Prevents input shaft failure due to tie-up on shift
- Eliminates need to calibrate servo return spring to line pressure or varying case depth

### TOP-QUALITY SERVO COMPONENTS

#### **Race-Calibrated Servo** Return Spring Kit Part No. 28133-HD

- Designed to compensate for the pin bias effect, the race-calibrated spring ensures optimum servo function in high gear for longer band life, cooler transmission and tunability of shift
- Specifically designed to work with line pressures from 200–275 psi
- Includes two .050" shims to aid in tuning at higher line pressures
- Spring is included in Sonnax supported servo master kit 28821-20K





#### Servos, Piston & Cover Kits See parts listing on page 19 for details.

- · High-strength aluminum pistons feature a rounded profile for better stress distribution
- · Choose from dual PTFE or O-ring seal styles
- Anodized or non-anodized cover options

#### **Supported Servo Master Kit**

#### Best All-Around Servo for Budget Builds Part No. 28821-20K

- OE apply area
- Unique cover design eliminates piston binding that causes unexplained band failure
- Spring calibrated to counteract pin bias effect up to 275 psi

#### Super Hold Servo Kit Part No. 28821-09K

#### Reduce Line Pressure & Free Up Horsepower

- 30% More apply area than OE servo
- Reduce line pressure by 20–30% for a competitive edge in class racing
- Spring calibrated to counteract pin bias effect up to 275 psi



FAQ: I have an extreme application, when would I choose the Sonnax Smart-Tech servo over the super hold servo?

Both servos are track-proven in today's high-power vehicles.

With its ratio-style release and supported pin design, the Smart-Tech servo is the best all-around upgrade that eliminates EVERY problem associated with the OE servo.

Racers looking to reduce line pressure for greater efficiency will most benefit from the super hold servo's 30% more apply area.

## STOP BAND FAILURE, BROKEN SHAFTS & STAGING ISSUES BY OVERCOMING THE POWERGLIDE SERVO PIN BIAS EFFECT

PIN BIAS refers to flaws in the outdated Powerglide servo design that are responsible for otherwise unexplained band failures, input shaft failures and staging issues. Overcoming the pin bias effect is CRITICAL for improving the reliability of this capable transmission. Only the Sonnax Smart-Tech servo can do it, making this "ratio-style" servo the ultimate choice for running Powerglides in ever more extreme applications.

Burnt bands, broken parts and inconsistent operation have plagued the Powerglide for years, leading many to give up on this transmission and seek other options.

If the servo release spring is too light in a racing Powerglide, the band doesn't release properly and drags on the drum. When band drag occurs, it robs power and slows the car, while burning the band and overheating the transmission. A dragging band also will cause a tie-up on the shift as the high clutch applies before the band is fully released, resulting in shafts that break or twist during the shift to high gear.

Changing to a stronger servo spring to improve servo release only aggravates staging issues. A stronger spring causes the servo to momentarily release as the trans brake is applied, resulting in unintended Reverse.

The root of the problem is the primitive Powerglide servo design with an equal seal diameter for both apply and release sides. The release area excludes the .3 sq. in. area of the pin bore diameter, which means the apply area is larger and the release area is smaller, exactly the OPPOSITE of modern servos that are NOT susceptible to pin bias issues.

Not only does the Powerglide servo have zero hydraulic release force, but due to the pin bias effect, there is ALWAYS some apply force for the spring to overcome. This residual pin bias/servo apply force varies with line pressure, therefore any change in pressure affects the spring action and servo release. If the spring is too weak, the band drags, if it's too strong, net apply force is reduced and — while staging — the servo can release. Modern servo designs with their larger release area benefit from a hydraulically powered release where spring action is not as critical.

The pin bias-related issues have persisted for decades and only become worse as line pressure and power levels have increased. Converting the Powerglide servo from an improper apply/release ratio to a modern proper apply/release ratio was never thought possible.

Sonnax is the first to fully understand and overcome the pin bias by developing an innovative new "ratio-style" servo for the aftermarket. This unique, dual-piston servo features an apply area equal to the original Powerglide design, but a LARGER release area just like modern servos with hydraulically powered release.

#### Stop struggling with the old Powerglide servo design!

The Sonnax Smart-Tech servo advances the Powerglide transmission to new levels that back up extreme horsepower with never-before-seen reliability. If you've upgraded other components and are still struggling with servo-related problems, the Smart-Tech servo is a key piece to solving this puzzle. See page 8 for part details.

#### **OE POWERGLIDE SERVO**

Inherently flawed, spring-powered design suffers from an improper apply/release ratio and crippling pin bias issues.

#### **MODERN SERVO**

(C4, C6, 4L60)

Efficient hydraulic design with proper apply/release ratio avoids all pin bias problems.



#### **SMART-TECH® SERVO**

Unique hydraulic design converts the Powerglide servo to the proper apply/release ratio, eliminating the pin bias effect. See page 8 for details.



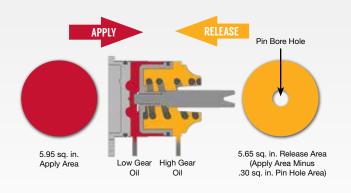


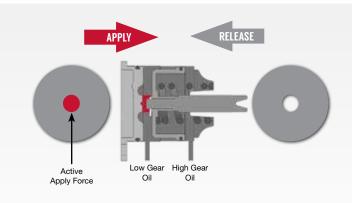
Visit www.sonnax.com/powerglide-pin-bias to watch a tech video that dramatically shows how the OE Powerglide servo performs at high pressures when fitted with OE and aftermarket springs.

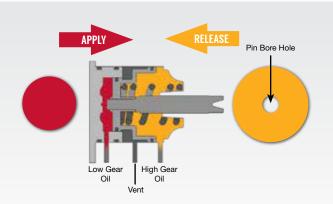
#### **FULL REACTION AREAS**

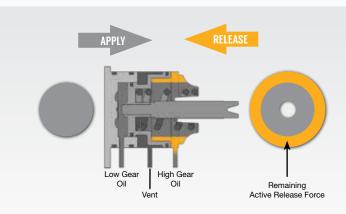
#### REMAINING REACTION AREAS

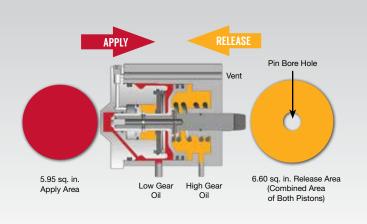
AFTER APPLY & RELEASE AREAS CANCEL ONE ANOTHER OUT

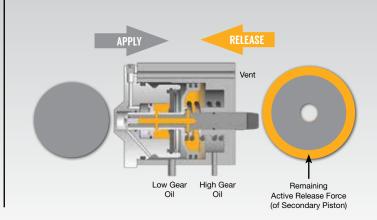












Proper servo function is critical for many areas of the Powerglide transmission, especially at high pressures. Band failure, broken shafts and staging issues can be traced directly back to flaws in the OE servo design.

The diagrams above illustrate why the OE servo is incapable of full release in high gear and a more modern servo like the Sonnax Smart-Tech is the only way to fully avoid that crippling limitation.

#### **Oil Pan Kit**

#### Lightest Pan on the Track

- · Integrated baffle & reinforced pan rail
- Two quarts extra fluid capacity
- Wedge-shaped design for more ground clearance
- Includes drain plug & additional bung for temperature sensor
- Leak-free, seamless construction

#### Part No. 28801-S

- Oil pan (.125" thick aluminum)
- 1/2" NPT male to 1/8" NPT female reducing bushing
- 1/8" NPT pipe plug
- 1/2"-20 Magnetic drain plug
- Nylon sealing washer

#### **Filter Extension Kits**

To ensure fluid is picked up under hard acceleration, a special extension must be used with Sonnax oil pan kit 28801-S to position the filter rearward under the baffle and deeper into the oil.

Each extension kit includes all the necessary mounting hardware and gaskets.

**Standard Powerglide Filter & Valve Body** 

Part No. 28801-S09K

Chrysler TorqueFlite® Filter & Hipster Valve Body

Part No. 28801-S11K



## LINKAGE ESSENTIALS

The #1 Choice for Rugged, Reliable Performance

## Heavy Duty Band Adjustment Screw Kit Part No. 28612-01K

- Tougher, hardened alloy steel will not bend or break under high pressure
- · For use with OE or aftermarket cases

#### **Shift Lever Kits**

- · O-Ring on shaft added to prevent leakage
- · Sturdy, solid steel construction

Bolt-Together Kit Part No. 28431-05K

One-Piece Kit Part No. 28431-06

Position up or down. Works with most common competition shifters.



#### PUMP PROTECTION



#### **Stator Support Tubes**

#### Optimized for Extreme Racing Applications

Sonnax offers two styles of stator tube upgrades, both with race-ready features such as roller-burnished seal bores, induction-hardened splines and knurls, and an improved knurl design for a tighter press fit.

Designed exclusively for .998" dia. ringless shafts, 28154S-07K takes stator support to the next level with a larger tube diameter for increased strength, a larger diameter knurl to prevent spinout and longer serrations for greater holding power.

#### Stator Tube Kit Part No. 28154S-07K

For .998" dia. ringless shafts. Includes two bushings and requires the pump to be machined.

#### Stator Support Tube Part No. 28154S

Upgrade for the stock stator shaft, accepts front bushing if required.

See page 2 if you need a stator support for the Sonnax big input shaft system.

#### **Pump Gear Sets**

Top-Quality Gears to Enhance Any Build



#### Standard Gear Set Part No. 28201

Direct replacement set meets OE pump gear specifications.

#### Oversized Gear Set Part No. 28201-0SK

Allows the pump housing to be refurbished (requires machining). Outer gear O.D. is .030" larger and the gear set is .015" thicker than OE.

#### **Pump Bushings**

#### Long-Lasting Pump Performance

PTFE-Lined Part No. 34034T-01

Highly wear-resistant PTFE lining prevents bushing wear and resulting pump damage.



Wear-resistant bronze lining has 3X the melting point of babbit bushings to withstand the extreme peak temperatures of high-powered, turbocharged racing applications.



## REVERSE CLUTCH UPGRADES More parts on pages 15-16

#### Optimize Transbrake Release Time & Reverse Clutch Durability

#### **Heavy Duty Retainer** Part No. 28709

High-strength, roll-tempered steel retainer prevents loss of intended load when using extra-stiff reverse clutch springs like Sonnax 28320A.

#### Heavy Duty Springs Part No. 28320A (17/Bag)

- Custom engineered to deliver the most consistent, reliable transbrake release rate of any spring on the market
- High tensile spring wire slows loss from fatigue

#### **Heavy Duty Piston Kit Part No. 28761-01K**

- 6061-T6 Billet aluminum withstands racing pressures
- Customizable for any application

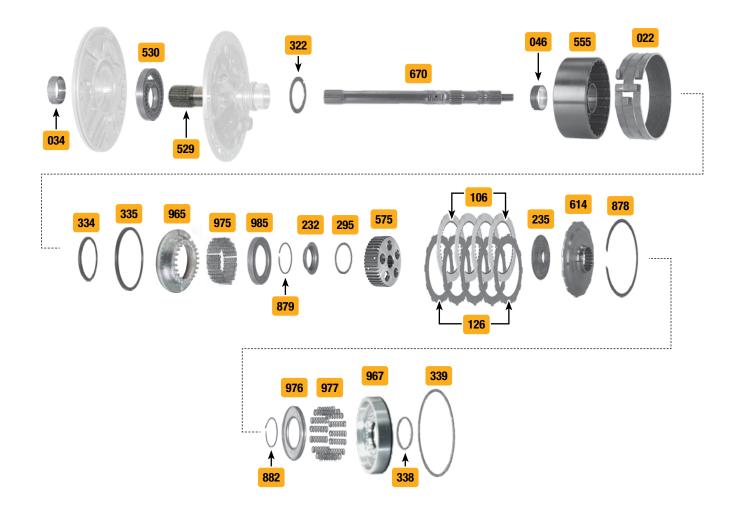


## **sonnax**

## TRANSMISSION COMPONENTS

Installing Sonnax parts designed to work together is the BEST and SAFEST way to build a transmission. From rare components to high-end upgrades, the parts on pages 14–19 will help you get racing units into top condition.

Part Type	ID No.	Part Name	Part No.	Details
		Stator Support Bushing	35007A	Front, thin wall, 1.004" I.D., precision
	034	Pump Bushing	34034T-01	Drop-in replacement, precision, PTFE-lined
	034	Pump Bushing	34234B-01	Drop-in replacement, precision, bronze-lined
		Front Pump Bolt	28136	8/Bag
		Front Pump Stud Kit	28711-03K	7 Nuts & 7 studs
	530	Pump Gear Set	28201	Direct replacement
Pump/Stator	330	Oversized Pump Gear Set	28201-0SK	Oversized gear set allows pump to be refurbished
		Stator Support Tube	28154S	High-strength, accepts front bushing if required
	529	Stator Tube Kit	28154S-07K	For .998" dia. ringless shafts, includes two bushings, requires machining
		Big Shaft Stator Tube Kit	28154S-125	Requires machining
	670	Big Input Shaft Kit	353532-01K	35-Spline, requires converting to a 35-spline turbine hub



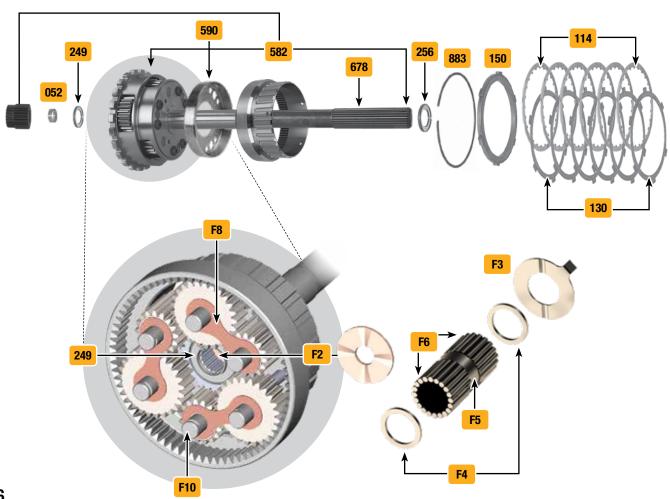
#### FIND PARTS & TECH RESOURCES AT WWW.SONNAX.COM

Part Type	ID No.	Part Name	Part No.	Details
		High Clutch Drum Thrust Washer	28406B	.061" Thick, bi-metal
	322	High Clutch Drum Thrust Washer	28406C	.078" Thick, high load capacity, extra lubrication
		Thrust Bearing	56241	.106" Thick, requires pump/drum modification
	046	High Clutch Drum Bushing	28005	Direct replacement, precision
	040	Bushing	77005T	Precision, PTFE-lined
		10-Clutch Drum	28756-01	
		10-Clutch Drum Kit with Bearing	28756-08	
		High Clutch Drum	28755	Replaces OE part no. 3844252, accepts 12- or 24-lug steel plates
		Smart-Tech® 10-Clutch Drum Kit	28756-25K	35% More apply, includes related parts
	555	10-Clutch Drum Kit	28756-01K	Includes related parts & clutch pack
		10-Clutch Drum Kit with Bearing	28756-08K	Includes related parts & clutch pack
		10-Clutch Drum, Hub & Piston Kit	28756-15K	
		10-Clutch Drum, Hub & Piston Kit with Bearing	28756-16K	
		Contender Clutch Drum, Hub & Piston Kit	28755-14K	High-strength drum, piston & hub hold 7 or 8 frictions accepts 12- or 24-lug steel plates
		High Clutch Drum Small Parts Kit	28755-SPK	Includes #046, 334, 335, 975, 985, 879, 235 & 878
	334	High Clutch Piston Inner Lip Seal	28755-07	
High Clutch	335	High Clutch Piston Outer Lip Seal	28765-02	
	965	10-Clutch Piston	28765-05	Forged, for 10-clutch drum
	300	High Clutch Piston	28765-09	Prepped for 8 or 9 frictions, for standard drum
	975	High Clutch Drum Return Spring	28320	Improved performance & durability, 24/bag
	985	High Clutch Drum Spring Retainer	28755-02	
	879	High Clutch Drum Spring Retainer Retaining Ring	28755-03	5/Bag
	232	High Clutch Hub Wear Plate	28755-06	Small, 5/bag
	235	High Clutch Hub Wear Plate	28755-05	Large, 5/bag
		High Clutch Hub	28304	With lightening holes, for standard drum
	575	High Clutch Hub	28304-SP	Without lightening holes, for standard drum
	070	10-Clutch Hub	28304-01	With lightening holes, for 10-clutch drum
		10-Clutch Hub	28304-02	Without lightening holes, for 10-clutch drum
	295	High Clutch Hub Shim	28304-30	Fits between high clutch hub & small wear plate, 3/bag
		High Clutch Drum Flange	28712-12	12-Tooth, fits 1.80 & 1.65 ratios
	614	High Clutch Drum Flange	28712-24	24-Tooth, fits 1.80 & 1.65 ratios
		High Clutch Drum Flange	28714-12	12-Tooth, fits 1.69 & 1.58 ratios
		High Clutch Drum Flange	28714-24	24-Tooth, fits 1.69 & 1.58 ratios
	878	High Clutch Drum Flange Retaining Ring	28755-04	Large, 5/bag
		Clutch Friction	104120-03	High clutch, .060" thick, high-energy material
	106	High Clutch Friction	S019740	.098" Thick, red material
Frictions/Steels		High Clutch Friction High Clutch Steel	S019740A S019701AK	.061" Thick, red material 12-Tooth, .060" thick, without turbulator holes,
11101101107 010010	126	High Clutch Steel	S019701K	Kolene® material 12-Tooth, .070" thick, without turbulator holes, Kolene® material
		High Clutch Steel	S019715HK-150	24-Tooth for use only with Sonnax 24-lug drums, .060" thick, with turbulator holes, Kolene® material
		Extra Wide Band	S019961	Red material
Band	022	Extra Wide Band	S019961K	Kevlar® material
	882	Reverse Spring Retaining Ring	28123	
	976	Heavy Duty Reverse Clutch Spring Retainer	28709	No-flex design
Reverse Clutch	977	Heavy Duty Reverse Clutch Return Spring	28320A	17/Bag
	967	Heavy Duty Reverse Clutch Piston Kit	28761-01K	
	338/339	Reverse Clutch Piston Seal Kit	28761-01SK	Fits OE & aftermarket pistons

#### TRANSMISSION COMPONENTS LISTING

Chart continued from previous page.

Part Type	ID No.	Part Name	Part No.	Details
	883	Reverse Clutch Retaining Ring	28124	
	150	Reverse Clutch Pressure Plate	28131	
	150	Reverse Clutch Pressure Plate	28131-1PP	For Sonnax 1.58 & 1.65 ratio planetaries
		Reverse Clutch Apply Plate	28131-2AP	For Sonnax 1.58 & 1.65 ratio planetaries
	114	Reverse Clutch Friction	S032744	OE style, .098" thick, red material, 2/bag
	114	Reverse Clutch Friction	28131-FRK	For Sonnax 1.58 & 1.65 ratio planetaries, 7/bag
Reverse Clutch	130	Reverse Clutch Steel	S019703K	.070" Thick, Kolene® material, 2/bag
	130	Replacement Reverse Clutch Steels	28131-STK	For Sonnax 1.58 & 1.65 ratio planetaries, 8/bag
		Ring Gear Anti-Wear Washer Kit	28510-AW	Prevents metal-to-metal contact between ring gear & reverse clutch pack pressure plate
	590	Ring Gear Stabilizer Kit	28510-S1	For 1.82 carriers (circle track)
		Ring Gear Stabilizer Kit	28510-S2	For Sonnax 1.69 & 1.80 ratio bolt-together carriers
		Ring Gear Stabilizer Kit	28510-S3	For Sonnax 1.58 & 1.65 ratio bolt-together carriers
		Bearing Button	28510-2K	For Sonnax 28510-S1, 28510-S3 & 28510-S3, 5/bag
		Sun Gear Thrust Bearing	28321	Koyo®, designed for drag racing applications
	256	Carrier-to-Case Thrust Bearing	28438-01K	No modifications required
		Planetary Rebuild Kit	28922-01K	For 1.76-style planetary
		Heavy Duty Planetary Rebuild Kit	28922-01HDK	For 1.76-style planetary
Planetary Parts		Planetary Carrier Assembly Bolt	28922-11K	Button head, 3/8-16 x 1.00", 6/bag
	052	Sun Gear Bushing	8436	Wedding band, precision
		Rear Sun Gear Thrust Washer	38208-03	PTFE-coated
	F2	Rear Sun Gear Thrust Washer	38208	Bronze
		Rear Sun Gear Bearing Kit	38208-01K	



#### FIND PARTS & TECH RESOURCES AT WWW.SONNAX.COM

Part Type	ID No.	Part Name	Part No.	Details
		Tabbed Thrust Washer	8415B	For 1.76-style planetary
	F3	Heavy Duty Tabbed Thrust Washer	8415B-HD	For 1.76-style planetary, PTFE-lined
	l Lo	Planetary Thrust Washer Kit	8415BK	For 1.76-style planetary
		Heavy Duty Planetary Thrust Washer Kit	8415BK-HD	For 1.76-style planetary, PTFE-lined
	F4	Roller Spacer Kit	K28414	For 1.76-style planetary
	F5	Thick Roller Spacer	28414	For 1.76-style planetary
Planetary Parts	F6	Needle Roller Bearing	28413	For 1.76-style planetary, 185/bag
	F8	Figure-8 Thrust Washer	8415	For 1.76-style planetary
		Heavy Duty Figure-8 Thrust Washer	8415-HD	For 1.76-style planetary, PTFE-lined
	l Lo	Front Thrust Washer	8415A	For 1.82-style planetary
		Figure-8 Thrust Washer	8415AK	For 1.82-style planetary
	F10	Pinion Pin Kit	28435-01K	For 1.76-style planetary, includes 6 pins, 3 screws & retainer

#### **BUILD YOUR IDEAL PLANETARY ASSEMBLY ONLINE**

With so many options, it can be hard to find the right gear set. The Sonnax website makes it easy to identify the parts you need by choosing features such as ratio, shaft length, performance level and flange tooth count. Visit www.sonnax.com/powerglide-gear-sets to get started.

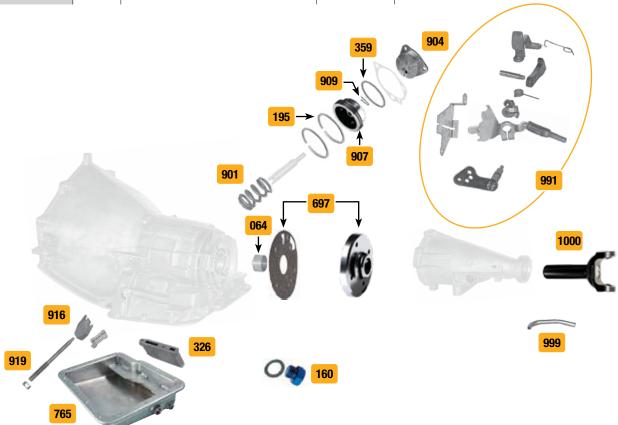
Part Type	ID No.	Part Name	Part No.	Details
	582	Extreme Planetary Assembly Kit	28158G-06	24-Tooth drum flange, long shaft
1.58 Ratio	362	Extreme Planetary Assembly Kit	28158G-06SP	24-Tooth drum flange, short shaft
Planetary		Extreme Planetary Assembly Kit	28158G-NS	24-Tooth drum flange, base kit for big shaft system*
r lanctary		Extreme Gear Set	158S3-24K	24-Tooth drum flange
		Big Shaft Rear Sun Gear Kit	15832-RSK	Adapts Extreme 1.58 gear sets to big shaft system*
	582	Extreme Planetary Assembly Kit	28165G-06	24-Tooth, OE-length shaft
4 OF D-4:-	362	Extreme Planetary Assembly Kit	28165G-06SP	24-Tooth, short-length shaft
1.65 Ratio Planetary		Extreme Planetary Assembly Kit	28165G-NS	24-Tooth drum flange, base kit for big shaft system*
rialicial y		Extreme Gear Set	165S3-24K	24-Tooth drum flange
		Big Shaft Rear Sun Gear Kit	16532-RSK	Adapts Extreme 1.65 gear sets to big shaft system*
		Premium Planetary Assembly Kit	28169G-01	12-Tooth drum flange, long shaft
	500	Premium Planetary Assembly Kit	28169G-01S	12-Tooth drum flange, short shaft
	582	Extreme Planetary Assembly Kit	28169G-06	24-Tooth drum flange, long shaft
1.69 Ratio		Extreme Planetary Assembly Kit	28169G-06SP	24-Tooth drum flange, short shaft
Planetary		Extreme Planetary Assembly Kit	28169G-NS	24-Tooth drum flange, base kit for big shaft system*
		Extreme Gear Set	169S3-24K	24-Tooth drum flange
		Premium Gear Set	169S-K	12-Tooth drum flange
		Big Shaft Rear Sun Gear Kit	16932-RSK	Adapts Extreme 1.69 gear sets to big shaft system*
		Premium Planetary Assembly Kit	28180G-01	12-Tooth drum flange, long shaft
	500	Premium Planetary Assembly Kit	28180G-01S	12-Tooth drum flange, short shaft
	582	Extreme Planetary Assembly Kit	28180G-06	24-Tooth drum flange, long shaft
1.80 Ratio		Extreme Planetary Assembly Kit	28180G-06SP	24-Tooth drum flange, short shaft
Planetary		Extreme Planetary Assembly Kit	28180G-NS	24-Tooth drum flange, base kit for big shaft system*
		Extreme Gear Set	180S3-24K	24-Tooth drum flange
		Premium Gear Set	180S-K	12-Tooth drum flange
		Big Shaft Rear Sun Gear Kit	18032-RSK	Adapts Extreme 1.80 gear sets to big shaft system*
		Extreme Strength Output Shaft	28924-32L	32-Spline, long, for Sonnax 1.58 & 1.65 gear sets
		Extreme Strength Output Shaft	28924-27L	27-Spline, long, for Sonnax 1.58 & 1.65 gear sets
Outnut Chaft	670	Extreme Strength Output Shaft	28924-27S	27-Spline, short, for Sonnax 1.58 & 1.65 gear sets
Output Shaft	678	Extreme Strength Output Shaft	28922-32L	32-Spline, long, for Sonnax 1.69 & 1.80 gear sets
		Extreme Strength Output Shaft	28922-27L	27-Spline, long, for Sonnax 1.69 & 1.80 gear sets
		Extreme Strength Output Shaft	28922-27S	27-Spline, short, for Sonnax 1.69 & 1.80 gear sets

<sup>\*</sup>Additional components must be purchased separately when building a big shaft system. See page 2 for details.

#### TRANSMISSION COMPONENTS LISTING

Chart continued from previous page.

Part Type	е	ID No.	Part Name	Part No.	Details
		765	Oil Pan Kit	28801-S	Stamped aluminum w/ wedge profile, requires filter extension kit
Pan & Filte			Filter Extension Kit	28801-S09K	For 28801-S, standard Powerglide filter & valve body
raii & riile	ŧr	326	Filter Extension Kit	28801-S11K	For 28801-S, Chrysler TorqueFlite® filter & Hipster valve body
			Oil Pan Stud Kit	28711-01K	14 Nuts & studs



#### SONNAX PERFORMANCE GOES BEYOND THE TRANSMISSION

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

#### 8" & 10" Performance Converter Kits

#### Engineered to Deliver Builds that Last

- Improve acceleration & durability with confidence
- Increases fluid flow to keep converters running cooler
- Designed for ease of assembly

#### **Mechanical Diodes** Highest Quality on the Market!

- High strength greatly increases reliability, especially in applications with high torque, vibration or high overrunning speeds
- Unlike other aftermarket diodes, Sonnax diodes always fully engage, eliminating torsional windup, minimizing engagement impact and prolonging component life



#### FIND PARTS & TECH RESOURCES AT WWW.SONNAX.COM

Part Type	ID No.	Part Name	Part No.	Details
	195	Servo Piston Seal	18608T	PTFE, fits OE & aftermarket servos
	195	Replacement Seal Kit	28821-TK	For Sonnax PTFE sealing ring-style servo kits
	901	Race-Calibrated Servo Return Spring Kit	28133-HD	Counteracts pin bias effect up to 275 psi
		Servo Piston Return Spring	28133	For low-pressure applications
		Servo Piston	28821-02	Dual-seal design, use with PTFE or metal seals
	907	Servo Piston Kit	28821-02K	Dual-seal design, PTFE sealing ring style
		Servo Piston Kit	28821-01K	Dual-seal design, O-ring style
	909	Servo Pin Clip	28132	
	999	Servo Apply Tube	28117	
		Smart-Tech® Ratio-Style Servo Kit	28821-10K	Eliminates pin bias effect, band dragging & staging issue
		Replacement Seal Kit	28821-10SK	For 28821-10K
		Supported Servo Master Kit	28821-20K	Additional support prevents piston binding, includes race-calibrated spring
Servo		Super Hold Servo Kit	28821-09K	30% More apply area, counteracts pin bias effect up to 275 psi
	904/907	Replacement Seal Kit	28821-09SK	For 28821-09K
		Supported Servo Pin & Cover Kit	28821-19K	Eliminates piston binding that causes unexplained band failure, low-drag O-ring prevents bore leaks
		Servo Piston & Cover Kit	28821-05K	Dual-seal design, PTFE sealing ring style, purple anodized
		Servo Piston & Cover Kit	28821-08K	Dual-seal design, PTFE sealing ring style, non-anodized
	359	Replacement Seal Kit	28821-0K	For Sonnax O-ring style servo kits
	904	Servo Cover Kit	28821-03K	Purple anodized
		Servo Cover Kit	28821-06K	Non-anodized
	916	Band Anchor Strut	28108	
		Band Apply Strut	28107	
	919	Band Adjustment Screw Jam Nut	28127	
	0.0	Heavy Duty Band Adjustment Screw Kit	28612-01K	Includes jam nut
	160	Modulator Plug Kit	28738-01K	Includes 3543L gasket
Case	100	Modulator Plug Gasket	3543L-5	For 28738-01K, 5/bag
	064	Case Bushing	28002	Precision
Support	697	Output Shaft Support Kit	28080K	High-strength billet aluminum, includes roller bearing
Lever/Linkage	991	Shift Lever Kit	28431-05K	Bolt-together, anti-leak
		Shift Lever Kit	28431-06	One-piece, anti-leak
		Shift Detent Lever	28119	
		Shift Detent Lever Spring	28861-03	
		Park & Gear Selector Lever Guide Plate	28130	
		Park Actuator Assembly	28111	
		Park Pawl Actuator Retaining Clip	28121	E-Clip for 3/16" shaft, 5/bag
	204	Shift Detent Lever Retaining Clip	28122	E-Clip for 5/16" shaft, 5/bag
Park Mechanism	991	Park Reaction Bracket	28110	
		Park Pawl	28109	
		Park Pawl Shaft	28115	
		Park Pawl Shaft Retaining Clip	28120	C-Clip for 5/16" shaft, 5/bag
		Park Pawl Torsion Spring	28113	
		Rooster Comb Park & Gear Selector Lever Kit	28862	
		Shift Detent Spring Retainer	28116	
		Slip Yoke	T3-3-6081HP	Bushing style, 1350 U-joint series, 27-spline*
Driveshaft	1000	Slip Yoke	T3-3-6081H	Roller bearing style, 1350 U-joint series, 27-spline
		Slip Yoke	T3-3-2431CBH	Roller bearing style, 1350 U-joint series, 32-spline

<sup>\*</sup>Sonnax offers many bushing-style slip yokes for Powerglide applications. Visit www.sonnax.com/slip-yokes for complete listing.

## LEVEL UP WITH SONNAX

#### 5 KEY TRANSMISSION AREAS TO UPGRADE IN THE POWERGLIDE

The options for taking a Powerglide transmission to the next tier of performance can be overwhelming for the average builder. The charts below identify the five major part groups for which Sonnax offers upgrade options. Strong, durable components for every build level guarantee racers never underspec or overpay for unmatched transmission performance.

#### **Input Shaft & Stator**

The input shaft area is one of the most highly stressed parts of the transmission. Delivering modern power levels through the transmission is no easy task. Having the right shaft and stator support for your power level is the key to avoiding spline twist and shaft breakage at the track.

#### Servo

A servo that applies and releases as expected is the key to a reliable transmission. Old-school servos fall far short leading to frustrating problems like band failures, broken shafts and staging issues. Complete servo kits from Sonnax use innovative engineering to solve these long-standing problems.

#### **Drum**

Mixing parts from various sources can lead to hidden apply problems. A Sonnax drum kit is the best way to make sure the drum, piston and hub work together for trouble-free operation.

#### **Planetary & Output Shaft**

Stock planetary gears are time bombs waiting to fail in a racing transmission. When picking a replacement, "one size fits all" is a recipe for disappointment. With four ratios plus Premium and Extreme performance options, Sonnax planetary assembly kits are the #1 choice for outstanding performance and reliability at any level. Each kit includes a custom, high-strength output shaft designed to prevent twisting and breakage.

#### **Slip Yoke**

Once the internals are upgraded to handle big power, don't let an OE-style slip yoke be the weak link. An upgraded yoke engineered to handle increased power and torque is the best way to avoid a twisted yoke or an outright driveshaft failure. Sonnax slip yokes deliver track-proven performance and are available for 27- or 32-spline output shafts with bushing or bearing support.

#### MORE CRITICAL COMPONENTS TO EXTEND DURABILITY

You've got the big upgrades specced out, now it's time to ensure other key components are in top shape to help the transmission run efficiently all season long. These Sonnax parts are highly recommended in every Powerglide build.

Part Name Part No.		Details	
Pump Bushing 34034T-01 Drop-in replacement, precision, PTFE-lined		Drop-in replacement, precision, PTFE-lined	
Oil Pan Kit	28801-S	Stamped aluminum w/ wedge profile, requires filter extension kit	
Filter Extension Kit 28801-SOUK		For 28801-S, standard Powerglide filter & valve body Chrysler filter to Hipster kit also available, see page 12	

	Improved Durability for Budget Builds	Superior Durability with Reasonable Cost	Maximum Durability, Cost is a Secondary Concern
Usage	Quarter Mile	Quarter/Eighth Mile, Mud	Quarter/Eighth Mile, Mud, Monster
Power	Up to 1,500 HP	Up to 2,000 HP	Up to 3,000 HP
	Stator Support Tube 28154S Use with 1" Input Shaft	Ringless Stator Tube Kit 28154S-07K Use with 1" Input Shaft	1-1/8" Big Input Shaft Kit 353532-01K Big Input Shaft Stator Tube 28154S-125
sonnax	Race-Calibrated Servo Return Spring Kit 28133-HD Servo Piston & Cover Kit 28821-05K	Supported Servo Master Kit 28821-20K	Smart-Tech® Ratio-Style Servo Kit 28821-10K
	Contender Drum Kit 28755-14K Friction (Red) S019740A	10-Clutch Drum Kit 28756-08K Friction (Red) S019740A	Smart-Tech® 10-Clutch Drum Kit 28756-25K  Friction (High Energy) 104120-03
	1.80 Premium Planetary Assembly Kit 28180G-01	1.69 Premium Planetary Assembly Kit 28169G-01	1.58 Extreme Planetary Assembly Kit 28158G-NS 27-Spline, Long Extreme Strength Output Shaft 28924-27L Ring Gear Stabilizer Kit 28510-S3
Y	27-Spline, Bushing-Style Slip Yoke T3-3-6081HP	27-Spline, Roller Bearing-Style Slip Yoke T3-3-6081H	32-Spline, Roller Bearing-Style Slip Yoke T3-3-2431CBH

Part Name	Part No.	Details
Band Adjustment Screw Kit	28612-01K	Includes jam nut
Shift Lever Kit	28431-05K	Bolt-together, anti-leak kit works with all common competition shifters One-piece kit also available, see page 12
Output Shaft Support Kit	28080K	High-strength billet aluminum, includes roller bearing
High Clutch Drum Small Parts Kit	28755-SPK	Spring retainer, springs, retaining rings, wear plates, lip seals & PTFE bushing
High Clutch Steel	S019701AK	12-Tooth, .060" thick, without turbulator holes, Kolene® material Other options available, see page 15
Extra Wide Band	S019961	Red material, Kevlar® lining also available, see page 15
Heavy Duty Reverse Clutch Return Spring	28320A	17/Bag
Heavy Duty Reverse Clutch Spring Retainer	28709	No-flex design

# Run BIG POWER all season long with a TRANSMISSION built for track time, not downtime.

A transmission built to handle modern power levels is CRITICAL when you can't risk downtime.

The trusted choice of today's top performance specialists, Sonnax upgrades help vehicles pushed to the limit by huge horsepower and massive torque work harder and last longer than ever before.

POWERGLIDE | TH400 | 4L80-E | 4L60/E | 6L80/90 | 4R70W | 48RE & MORE



faster

tougher

stronger

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