TCRS
TORQUE CONVERTER REBUILDING SYSTEMS

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Actual products may differ from images shown

Increase Quality

With a system that sets industry standards

Save Money

With a complete package solution

superflow.com
(262) 252-4301

Sussex, Wisconsin USA

Save Money and Increase Quality

Torque Converter Rebuilding Systems (TCRS®) from SuperFlow® are the choice of converter rebuilders worldwide for one reason: quality. The TCRS® system has been proven on more than 8-million torque converters and is in use at the big three automakers Ford®, General Motors® and Daimler Chrysler®. TCRS® sets the industry standard for precision alignment and is the only complete system available with all the tools to do the job right, with repeatability and precision within .001 of an inch. TCRS® representatives will help you select the correct equipment for your rebuilding goals. Every situation is different, but as a general rule, if you're purchasing ten or more converters a day from an outside source an in-house converter rebuilding program from TCRS® will save you money.

TCRS Components and Suggested Order of Operations

1. Bond - TCRS® Bonder

2. Weld - Auto-Weld Aligner

3. Balance - Converter Balancer

4. Leak Test - Air Test Stand

Single Gun Welder

Auto-Weld Aligner

The most popular converter welder in the TCRS® lineup is the Single Gun Welder featuring a Miller® Invision™ 352 MPa power supply and a 74 Series Mpa wire feeder. It automates the critical phase of precision alignment and seamless welding of remanufactured torque converters. This vertical welder includes pneumatic collets along with patented auto-tack and auto-weld functions for accurate and efficient converter welding. The single gun welder performs bowl build ups and can weld on impeller hubs and ring gears. Precision aligned fixtures and spindles ensure unmatched accuracy while TCRS®' proven manufacturing practices produce a rugged and reliable machine built for years of service.

TAC-12D Included

The included TAC-12D digital control panel lets you determine the number (4,6,8,12) and duration (50-3000 milliseconds) of each tack weld and also controls both the auto-tack and auto-weld cycles. JOG control rotates the table without welding and LCD display shows tack time, table speed and counts along with the ability to edit all control settings. The TAC-12D is available as a retrofit to existing single & dual gun welders.

Features:

- Miller® brand components, using the Invision™ 352 MPa power supply and 74 Series MPa wire feeder.
- Stress relieved and precision machined turntable with floating bronze ground and is fully adjustable on all axes for easy, precision alignment.
- Collet is assembled from tool steel and precision-ground. Precision machined DELRIN® hub bushing assures hub protection and repeatable performance. Air-operated collet; "buckable" for easy precision-alignment.
- All steel and precision-aligned fixture body
- Power-coated blue finish
- Tooling Kit included
- TAC-12D included

Specifications:

• Dimensions (H x W x D):	87 x 56 x 36 in (221 x 142 x 91 cm)
• Weight:	1,450 lb (458 kg)
• Electrical:	
» Turntable drive motor:	110v single phase, 50 / 60 Hz
» Welder power supply:	single phase or three phase, from 200v to 575v
• Air Requirements:	Standard air, 100 - 120 psi (690 - 828 kPa)
• Drive Motor:	1,087 lb-in (122.8 Nm) of torque with insulated coupler

Dual Gun Welder

Auto-Weld Aligner

Volume remanufacturing requires the highest level of throughput so TCRS® offers the dual gun welder for maximum productivity. It features two Miller® Invision™ 352 MPa power supplies and two 74 Series wire feeders for double the output rate of the single gun welder. Automatic torch indexing sets the welding torches in place, 180 degrees from each other, a time saving feature for high output converter shops. Like the single gun, the dual gun welder automates the critical phases of precision alignment and seamless welding of remanufactured torque converters. Air-operated collets along with patented auto-tack and auto-weld functions come standard and, like the single gun welder, it performs bowl build ups and can weld impeller hubs and ring gears. Like all TCRS® products, precision aligned fixtures and spindles ensure unmatched accuracy while proven manufacturing practices produce a rugged and reliable machine built for years of service.

TAC-12D Included

The included TAC-12D digital control panel lets you determine the number (4,6,8,12) and duration (50-3000 milliseconds) of each tack weld and also controls both the auto-tack and auto-weld cycles. JOG control rotates the table without welding and LCD display shows tack time, table speed and counts along with the ability to edit all control settings. The TAC-12D is available as a retrofit to existing single & dual gun welders.

Features:

- Miller® brand components, using the Invision™ 352 MPa power supply and 74 Series MPA wire feeder.
- Stress relieved and precision machined turntable with floating bronze ground and is fully adjustable on all axes for easy, precision alignment.
- Collet is assembled from tool steel and precision-ground. Precision machined DELRIN® hub bushing assures hub protection and repeatable performance. Air-operated collet; "buckable" for easy precision-alignment.
- All steel and precision-aligned fixture body
- Power-coated blue finish
- Tooling Kit included
- TAC-12D included

Specifications:

• Dimensions (H x W x D):	100 x 60 x 65 in (254 x 153 x 165 cm)
• Weight:	1,925 lb (872 kg)
• Electrical:	
» Turntable drive motor:	110v single phase, 50 / 60 Hz
» Welder power supply:	single phase or three phase, from 200v to 575v
• Air Requirements:	Standard air, 100 - 120 psi (690 - 828 kPa)
• Drive Motor:	1,087 lb-in (122.8 Nm) of torque with insulated coupler

TCRS® Bonder

Bonding

The TCRS® Bonder has massive capacity to accommodate the increasingly larger clutch packs and front covers found in today's torque converters. Thanks to its standard 10" air cylinder, bonding the Allison 1000/2000 series lock-up clutches is not a problem for the TCRS® Bonder. It's fast too, with the ability to bond most lock-up clutches, up to 14" (36 cm) in diameter, including front covers every eight minutes or less on average. Simply place the lock-up clutch in the bonder and it heats, presses the lining and automatically releases. The easy-adjust timer and 2 temperature controls allows users to change bonding cycles quickly depending on the particular clutch they're working with. Optional kit of 28 aluminum bonder dies, not steel, allow you to heat faster, more evenly and eliminate hot or cold spots. Other dies are also available. A one piece ring heater maintains even heat. TCRS®' exacting specifications and quality manufacturing practices require high quality pneumatic components. An optional storage cart for the dies doubles as a stand for the bonder.

Features:

- Capacity to accommodate larger clutches and front covers
- Fast, < 8 min average time, to bond most lock-up clutches and front covers
- Easy-adjust timer and (4) Four temperature controls allows users to change bonding cycles quickly
- Powder-Coat blue finish
- Optional Aluminum bonder dies - heat faster and more evenly than steel
- Optional low pressure bonding option available
- Additional dies available
- Optional storage cart for dies, doubles as a stand for the piston bonder

Specifications:

• Dimensions (H x W x D):	35 x 26 x 19 in (89 x 66 x 48 cm)
• Weight:	600 lb (272 kg)
• Electrical:	220 VAC single phase 50/60 Hz, 25 amp solid state
• Air Ram Diameter:	10 in (25 cm)
• Air Requirements:	Standard air 100 - 120 psi (690 - 828 kPa)

Torque Converter Balancer

Balancing

The TCRS® Automatic Torque Converter Balancer provides extremely accurate, repeatable and fast balancing in as little as 45 seconds. Automatic weight indexing stops the converter where the correction weight is needed while the display gives the amount of weight in grams or ounces within 1/10 of a gram. The TCRS® unique bolt free mounting system means very fast cycle times while the optional runout compensation mode and optional hub polishing make the TCRS® balancer a versatile piece of equipment. The controls use SuperFlow's® proven microprocessor technologies, the same ones found on SuperFlow® chassis, engine and transmission dynamometers all over the world. Integrated self-calibration and misalignment compensation make the balancer extremely simple to operate. All system instructions and operator inputs are handled using the touch screen display and keypad. The TCRS® balancer accommodates virtually all torque converter models and sizes: foreign, domestic and high performance. Special tooling is available for applications like flywheels, clutches, etc. Standard US Customary tooling is included (approximately 80 pieces for Ford, GM and Daimler Chrysler). The TCRS® balancer has a maximum spindle torque of 263 lb-in (30 Nm) and a maximum speed of 480 rpm.

Features:

- Automatic weight indexing
- Unique bolt free mounting system
- Integrated self-calibration and misalignment compensation
- Inputs handled via touch screen display and keypad
- Accommodates virtually all torque converter models and sizes
- Powder-Coat blue finish
- US Customary Tooling Kit included - Collet locking system with interchangeable one-piece, precision-ground splined shafts. Pilot Bushings and Delrin Hub Bushings
- Special tooling is available

Specifications:

• Dimensions (H x W x D):	45 x 21 x 28 in (114 x 53 x 71 cm)
• Weight:	300 lb (136 kg)
• Electrical:	220/120 VAC 50/60 Hz 8 amps maximum
• Accuracy:	
» Fine Mode:	Display to +/- 1 grams
» Standard Mode:	Display to +/- 5 grams
• Maximum Spindle Torque:	263 lb-in (30 Nm)
• Maximum Speed:	480 rpm

ATS-100
Air Test Stand

The TCRS® Air Test Stand locates leaks in seconds by pressurizing the converter with air and immersing it in water. This process is capable of detecting minor imperfections including pinhole leaks. It works on all torque converter models from the Allison 1000 to a Volkswagen®/Audi® converter and virtually any size hub with the nine included rubber grommets. The air-operated hand lever, regulators and seal make the TCRS® Air Test Stand extremely fast. It's designed for convenience with the ability to raise the water level to any height on the converter and also lock the converter at 45 or 90 degrees making leak repair easy.

Specifications:

- Dimensions (H x W x D): 70 x 28 x 30 in (178 x 71 x 76 cm)
- Weight: 160 lb (73 kg)
- Air Requirements: Standard air 100 - 120 psi (690 - 828 kPa)

Features:

- Detects minor imperfections including pinhole leaks
- Works on all torque converter models and virtually any size hub
- (9) Nine - rubber grommets included
- Air-operated hand lever, regulators and seal
- Ability to raise the water level to any height on the converter
- Ability to lock the converter at 45 or 90 degrees assisting in leak repair or adding balance weights
- Powder-Coat blue finish

End Play Gauge

Check converters before they're installed in the transmission or vehicle. Even if you purchase converters from a distributor, the end play gauge confirms their rebuild prior to putting it in your transmission. Prevent your reputation from hanging on the reputation of your converter rebuilder. The End Play Gauge is affordable; it pays for itself by preventing one comeback. Check internal clearances of most torque converters, foreign and domestic, from the VW® to the E40D to the V10 Dodge®. Designed for ease of use, the end play gauge simply requires you set the converter on the fixture, zero the dial indicator and press the handle to read the clearance.

Specifications:

- Dimensions:
  - » Base: 18 in (46 cm)
  - » Handle: 12 in (30.5 cm)
- Weight: 60 lb (27.2 kg)
- Finish: Powder coat finish
- Dial Indicator: Included

Hub Run-Out Tester

Don't let bad run out ruin your converter rebuild. Check converters before they are installed in the transmission and reduce comebacks. The Hub Runout Tester is easy to operate and checks pilot-to-hub runout and bowl runout on any automotive unit. Interchangeable pilot bushings make adaptation simple.

**Tooling is sold separately*

Specifications:

- Dimensions (H x D): 20 x 18 in (51 x 46 cm)
- Weight: 90 lb (41 kg)
- Faceplate: 14.5 in (37 cm) dia.
  - » Precision bronze bearing assembly
  - » Two precision dial indicators
  - » Hand spin

Optional Lathe Equipment

Faceplate

The face plate attaches directly to the spindle of the lathe to assist in opening the converters, for machining one side of the converter or into the 6 Jaw Chuck.

Arm Ram Assembly

The air ram assembly holds the converter halves together while it's cut open. It's available with Morris taper or straight shaft mounts. (5) Five different adapters to fit your lathe tail stock.

TCRS® by SuperFlow® is part of Power Test, LLC, an industry leader in the design, manufacture and sales of dynamometers, specialized test systems, and related data acquisition and control systems. Power Test, LLC, offers a portfolio of brands that have long been the standard bearer for quality in the testing industry. As your equipment testing partner for innovative products and comprehensive lifecycle services and support, we are dedicated to delivering an exceptional experience by offering specialized solutions to Make Your Testing Easy.

TEST WITH THE BEST™

Chassis Dynos	**Flowbenches**	**DriveShaft Rebuilding Equipment**
Engine Dynos	**Solenoid Testers**	**Torque Converter Rebuilding Systems**
Transmission Dynos	**Valve Body Testers**	**Transmission Testers**

Sussex, Wisconsin USA
(262) 252-4301 superflow.com

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