

TCRS

BY SUPERFLOW

TORQUE CONVERTER REBUILDING SYSTEMS



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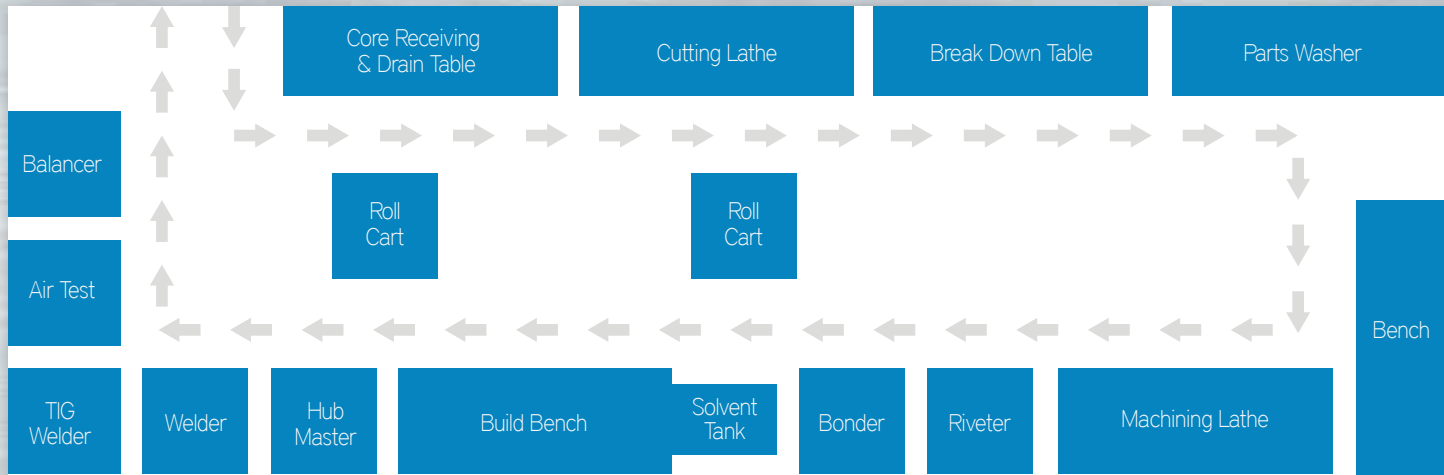
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SAVE MONEY, INCREASE QUALITY

Torque Converter Rebuilding Systems (TCRS®) from SuperFlow® are the choice of converter rebuilders world-wide 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 not only help you select the correct equipment for your rebuilding goals, but also consult on the floor plan and staffing needs to make money rebuilding your own converters. Every situation is different, but as a general rule, if you're purchasing six or more converters a day from an outside source an in-house converter rebuilding program from TCRS® will save you money.

TYPICAL SHOP FLOOR PLAN



CUT
Precision Engine Lathe



WASH
Conveyor Parts Washer



MACHINE
Precision Engine Lathe



BALANCE
Converter Balancer



WELD
Auto-Weld Aligner



BOND
Piston Bonder



LEAK TEST
Air Test Stand

TCRS® IS A COMPLETE PACKAGE

TCRS® will provide a complete "turn key" system including support equipment such as work benches and parts carts to satisfy the demands of the highest volume rebuilders. Or, you can consult a TCRS® representative to select a strategic set of equipment if your rebuild volumes do not require such an automated process.

SINGLE GUN AUTO-WELD ALIGNER

The most popular converter welder in the TCRS® lineup is the Single Gun Welder featuring a Miller 350 XMT power supply and a 74 series wire feeder. It automates the critical phase of precision alignment and seamless welding of remanufactured torque converters. This vertical welder includes air-operated 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.



Included single & dual gun tooling kit.

DUAL GUN 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 350 XMT 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 12 PLUS

The included TAC 12 Plus digital control panel lets you determine the number (4,6,8,12) and duration (approximately 570-1670 milliseconds) of each tack weld and also control both the auto-tack and auto-weld cycles. JOG control rotates the table without welding and LED displays show tack time, table speed and counts. The TAC 12 is available as a retrofit to existing single & dual gun welders.

HUBMASTER AUTO-WELDER

One of the most important steps in the remanufacturing process is aligning the hub. The Hubmaster's precision tooling makes alignment simple and fast (less than one minute) to ensure new hubs are installed with perfect concentricity. It includes a Miller 304 power supply and 70 series wire feeder to ensure consistent, hassle free welding. Air operated torch indexing facilitates high output production. Auto-tack and auto-weld features affix new hubs quickly and accurately allowing

the operator to prep the next unit to be welded. The hubmaster welds all impellers in one position and like the single and dual gun welders, bowl build-up capabilities saves money on critical cores. TCRS® quality means the unit includes precision components like Timken heavy-duty bearings, fully adjustable 6-jaw turntable and a hard chromed precision spindle alignment shaft all designed to provide years of service.

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Included tooling kit.

TORQUE CONVERTER BALANCER

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. 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 domestic tooling is included (approximately 80 pieces for Ford, GM and Daimler Chrysler). The TCRS® balancer has a maximum spindle torque of 263 in-lbs (30N-m) and a maximum speed of 480 rpm.



Included tooling kit.

PISTON BONDER

The TCRS® piston bonder has massive capacity to accommodate the increasingly larger pistons and front covers found in today's torque converters. Thanks to its standard 10" air cylinder, bonding the Allison 1000/2000 series lock-up pistons is not problem for the TCRS® Piston Bonder. It's fast too, with the ability

to bond most lock-up pistons, up to 14" (36 cm) in diameter, including front covers every eight minutes or less on average. Simply place the lock-up piston in the bonder and it heats, presses the clutch lining and automatically releases. The easy-adjust timer and 4 temperature controls allows users to change bonding cycles quickly depending on the particular piston they're working with. Aluminum bonder dies, not steel, allow you to heat faster, more evenly and eliminate hot or cold spots (28 in kit). 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 piston bonder.



Optional aluminum bonder die kit heat faster and more evenly than steel.

AIR TEST STAND (ATS-100)



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 or adding balance weights easy.



Included grommet kit.

VICTOR 1860 LATHE

The Victor 1860 is the first step in the TCRS system, used to cut open the converter. It is equipped with an 18 in. (45.7 cm) swing over bed, variable speed spindle with 2.375 in. (6 cm) spindle bore and D1-6 Camlock spindle nose. The oversized steady rest, precision ground gears and bedways, and full Meehanite casting bed ensure easy use and years of precise operation. A 7.5 HP (5.6 kW) motor delivers full power at all 12 speeds.



VICTOR 1640 / 1660 LATHE

The Victor 1640 or 1660 handle all of the internal machining work required to rebuild torque converters. They come equipped with a 16 in. (41 cm) swing-over bed, variable speed spindle with 2.128 in. (5.4 cm) spindle bore and D-1 Camlock spindle nose. Steady rest, chuck cover, full length splash guard and halogen work light are all standard. A 7.5 hp (5.6 kW) 3-phase motor delivers all the power needed. The Victor 1640 & 1660 easily adapt from converter machining to transmission parts work and they are extremely accurate for precision machine work.

LATHE OPTIONS

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.



DIGITAL READ OUT

The DRO features all of the essential functions for milling, boring, turning, grinding, and general machining operations.



AIR RAM ASSEMBLY

The air ram assembly holds the converter halves together while its cut open. It's available with Morris taper or straight shaft mounts.



6 JAW CHUCK



CONVEYOR PARTS WASHER

The conveyor parts washer provides a fast, economical solution for high volume parts cleaning and degreasing using a variable speed belt and 60 psi pump output for optimal cleaning. Optional heavy-duty draining work tables are also available to help you manage the mess without interrupting the workflow from the cutting lathe to the wash process. Heavy-duty 12 gauge steel construction provides years of service. With 190 gallons

(719 liter) water capacity and 44 spray nozzles for 360 degree coverage, the parts washer cleans the most heavily used converters quickly. The stainless steel oil skimmer helps keep the cleaning solution fresh for many cycles and the low fluid shut off provides a fail safe to prevent damaging the pumps. Optional rinse sections and drying blowers take any post wash mess out of the equation.



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, bowl runout and the overall converter height on any automotive unit. Interchangeable hardened and ground steel pilot bushings make adaptation simple.

*Tooling is sold separately.



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.



SINGLE & DUAL GUN WELDER

DIMENSIONS	36"D x 56"W x 87"H (91 x 142 x 221 cm)
WEIGHT	1450 lbs (458 kg)
ELECTRICAL	Turntable drive motor requires 110v single phase, 50 or 60 hz. Welder power supply runs on single phase or three phase, from 200 v to 575 v.
FINISH	Powder-Coated Blue
AIR REQUIREMENTS	Standard air, 100 - 120 psi (690 - 828 kPa)
FIXTURE BODY	All steel and precision-aligned
TURNTABLE	Stress relieved and precision CNC machined. Two HD Timken® tapered bearings with floating bronze ground. Fully adjustable on all axes for easy, precision alignment
COLLET CLOSER	Assembled from tool steel and precision-ground. Precision machined DELRIN® hub bushing assure hub protection and repeatable performance. Air-operated collet; "buckable" for easy precision-alignment.
DRIVE MOTOR	950 lbs (431 kg) of torque with insulated coupler
WELDER	Miller® brand components, using the XMT 350 power supply and heavy-duty "dual roller" 74 Series wire feeder.

CONVEYOR PARTS WASHER

DIMENSIONS	87" L x 60" W x 55" H (221 x 152 x 140 cm)
WEIGHT	1,500 lbs (680 kg)
CONVEYOR OPENING	15" H x 16" W (38 x 41 cm)
PUMP MOTOR	5 HP (3.7 kW)
POWER SOURCE	240 / 440 Volt 3Ph
HEAT SOURCE	18 kW w/thermostat
SEAL-LESS PUMP/MOTOR OUTPUT	60 psi - 65 gpm
WORK LOAD	500 lbs (227 kg)
SOLUTION CAPACITY	190 gallons (719 liters)

TORQUE CONVERTER BALANCER

DIMENSIONS	28" D x 21" W x 45" H (71 x 53 x 114 cm)
WEIGHT	300 lbs (136 kg)
FINISH	Powder Coated Blue
ELECTRICAL	220/120 VAC 50/60 hz 8 amps max
ACCURACY	Display to +/- 1 gram in fine mode Display to +/- 5 in standard mode
TOOLING	Collet locking system with interchangeable one-piece, precision-ground splined shafts. Pilot Bushings and Delrin Hub Bushings. American tooling included

PISTON BONDER

DIMENSIONS	19" D x 26" W x 35" H (48 x 66 x 89 cm)
WEIGHT	600 lbs (272 kg)
ELECTRICAL	220 V single phase 50/60 Hz, 25 amp Solid State.
FINISH	Powder Coated Blue
AIR RAM	10" diameter (25 cm)
AIR REQUIREMENTS	Standard shop air 100 - 120 psi (690 - 828 kPa)

HUB RUNOUT TESTER

DIMENSIONS	18" D x 20" H (46 x 51 cm)
WEIGHT	90 lbs (41 kg)
FACEPLATE	14.5" Diameter (37 cm)
	Precision bronze bearing assembly Two precision dial indicators Hand spin

END PLAY GUAGE

DIMENSIONS	18" Base, 12" Handle (45.7 cm x 30.5 cm)
WEIGHT	60 lbs (27.2 kg)
FINISH	Powder coat finish
	Dial indicator included

HUBMASTER AUTO-WELDER

DIMENSIONS	36" D x 60" W x 58" H (91 x 152 x 147 cm)
WEIGHT	1,100 lbs (499 kg)
FINISH	Powder Coated Blue
ELECTRICAL	110 v, 50/60 Hz required; welder power supply requires single or three phase, from 200 v to 575 v.
AIR REQUIREMENTS	Standard shop air 100 - 120 psi (690 - 828 kPa)
TOOLING COLLETS	Precision Ground Steel
DRIVE MOTOR	950 lbs (431 kg) of torque with insulated coupler

AIR TEST STAND

DIMENSIONS	30" D x 28" W x 70" H (76 x 71 x 178 cm)
WEIGHT	160 lbs (73 kg)
FINISH	Powder-Coated Blue
AIR REQUIREMENTS	Standard Shop Air, 100 - 120 psi (690 - 828 kPa)

SUPERFLOW® DYNAMOMETERS & FLOWBENCHES

TCRS - TORQUE CONVERTER REBUILDING SYSTEMS

SuperFlow® is a global market leader specializing in high-performance automotive testing and rebuilding equipment. Since the early 1970's SuperFlow® products have been used daily by professional engine builders, the military, technical schools, professional race teams, speed shops, transmission rebuilders, universities, and leading automotive manufacturers to produce powerful


and efficient vehicles. Our commitment to providing the best products and service at a great value has given us the opportunity to work with some of the most notable companies in the automotive industry. Come see why thousands of businesses have already chosen SuperFlow® for all of their testing needs.


CALL 1.888.442.5546 for more information on the Torque Converter Rebuilding Systems by SuperFlow®.


Or visit us at superflow.com





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 Transmission Shifters

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