

AXILINE 97000 TRANSMISSION DYNAMOMETER

Digital for Ease & Accuracy

The Axiline 97000 is the perfect transmission dynamometer for most light to medium-duty front wheel drive, rear wheel drive, transverse, manual and CVT transmissions.



Overview

The Axiline 97000 features full digital control for highly accurate and repeatable testing. It adapts to most all domestic foreign front-wheel-drive, rear-wheel-drive, transverse, manual, and CVT transmissions. The 97000 tests transmission line pressure, shift point and response, downshift and converter lockup, stall speed and more all under simulated vehicle load conditions. The standard SuperShifter Pro operator console gives the operator full digital control of both the dyno and the transmission with potentiometers for load and speed. The console is conveniently mounted on swinging arms so the operator can spot oil and pressure leaks, check hydraulic and system controls, and make minor adjustments while the transmission is mounted on the tester. The 97000 can be upgraded with a WinDyn Data Acquisition system for powerful automated testing features and full post test data analysis, graphing and replay functions.

Now with ATP's Test Cube and SuperFlow's WinDyn data acquisition and control system you can control and fully test electronically shifted Mechatronic transmissions and valve bodies on any transmission dynamometer or valve body tester equipped with the WinDyn Test Cube option. Check out the options section for more information.

Axiline 97000 Standard Features

- High-output, electric-drive, 40 horsepower motor with advanced control strategies to accurately mimic transmission inputs from internal combustion engines
- Eddy current power absorption units for dynamic loaded testing to simulate real world driving conditions
- SuperShifter Pro Operator Console and Software for shift control and dyno control
- Jib crane & hoist for fast and simple transmission mounting and dismounting (holds up to 350 lbs.)
- Drip trays with removable shield
- Stall brake with foot activated control (optional digital control from console also available)
- Fill and drain pumps with hoses to fill and drain filtered ATF from the 97000's self-contained transmission fluid tank
- Electric shuttle motors with push button operation easily position absorbers and input drive for different transmission configurations
- Complete tooling kits with dowel pins for precision alignment, eliminating any chance of damaging pumps and pump bushings
- Steel pilot bushings for precise, no hassle transmission alignment
- Quick disconnect hose fittings for rapid test throughput

Precision Alignment Adapter

SuperFlow's precision alignment tooling guarantees that the transmission input shaft and torque converter hub will be properly aligned with the input drive motor on the dynamometer. This prevents conditions found on other dynamometers where misalignment of the transmission input causes pump failures and ruins pump bushings and converter hubs on new rebuilds during testing. The multi position turret holds the transmission master plate centered to the input drive. The flex plate bolts to the back of the torque converter using spool spacers to set converter depth and also drive the converter. The pilot bushing aligns the torque converter and flexplate to the input drive. The transmission is then mounted to the master using precision dowel pins for alignment. Once the transmission is mounted, the splined output

adapter is installed and the electric shuttle motors drive the load unit up to the output shaft. Detailed setup sheets show operators how to properly mount different transmissions.

Push Button Machine Controls

The SuperShifter Pro Operator Console includes several features to make operating the Axiline 97000 transmission dyno easy and safe. Two set point controllers allow for manual adjustment of input speed and output load. Input speed is set in RPM using the rotary knob. The knobs adjustment range can be set to fine, medium and coarse adjustment directly on the touch screen next to the knob. The load control knob can be set to control to either percentage of load from 0-100% or to output torque in lb.ft. on dynos equipped with output torque measurement. This knobs adjustment range can also be set for fine, medium or coarse adjustment.

Eight buttons provide complete control of common machine and transmission functions like; solenoid control on/off, upshift, downshift, TCC lockup, input motor forward, input motor reverse, brake on/off and table motion power. Button status is shown with the indicator light above each button. The red e-stop button is easy to access in case of emergency. Keyed system power can be used for lock out, tag out and is also popular with technical schools to disable the machine when instructors are not present.

The entire operator console is mounted to the side of the 97000 on a swinging arm so during operation the user can visually monitor the transmission for leaks. When not in use the console can be swung out of the way to change transmissions on the dyno.

SuperShifter Pro Control Console

The SuperShifter Pro operator console is included with the 97000 transmission tester. It gives users a simple digital interface to control both the dyno and the transmission they are testing along with 8 programmable buttons for machine controls and 2 rotary knobs for easy input RPM and output load adjustment. Five screens within SuperShifter Pro provide the necessary tools to fully develop, test or diagnose transmissions. Popular features of SuperShifter Pro include; individual control of up to 12 solenoids, built in resistance tests and manual shift tests to diagnose underperforming solenoids and other conditions that lead to harsh shifts. The easy-to-read digital displays for pressure switches, PRNDL, input RPM, left output, right output and gear ratio make it easy to understand how the transmission is performing. Input RPM can be selected manually or closed loop PID controlled to RPM. Output load can also be selected manually as a percentage of load or closed loop controlled to output torque. Electronic

pressure control solenoids and lockup solenoids can also be tested and controlled via the on screen interface. The console is mounted on swinging arms so it can be moved out of the way while changing transmissions.

SuperShifter Pro Features

- Precise control of input speed and output load
- Individual control of up to 12 solenoids
- Tests most modern late-model transmissions
- Transmission lookup tool that searched by make and model
- Built-in solenoid current and resistance tests
- Real-time digital displays for:
 - PRNDL (when available)
 - RPM
 - pressure switches (when available)
 - TOT (when equipped)
 - gear ratio
 - clutch pressures
 - machine pressure
- Continuously monitors all critical parameters
- Modulated duty cycle and frequency range
- Edits shift files for customized testing
- Computer controlled
- Learn and save mode to expedite solenoid testing
- Auto shift (time delay)
- PWM programming screen with delay
- Hot and cold solenoid pass fail testing
- Eddy current load unit control
- Pump and machine on off control
- Motor direction control
- PID setpoint control on input speed
- Continuing software updates
- Current measurement at 16-bit resolution



Data Acquisition

SuperShifter Pro Control Console

The SuperShifter Pro[®] operator console gives users a simple interface to control both the dyno and the transmission they are testing. Eight programmable buttons control dyno functions and two rotary knobs for input RPM and output load adjustment make manually controlling the transmission simple. Five screens within the SuperShifter PRO software provide the necessary tools to fully develop, test or diagnose transmissions. Popular features of SuperShifter PRO include; individual control of up to 12 solenoids, built in resistance tests and manual shift tests to diagnose underperforming solenoids and other conditions that lead to harsh shifts.

The on screen display for pressure switches, RPNDL, input RPM, left output, right output and gear ratio are easy to read and make it simple to quickly understand how the transmission is performing. Input RPM can be selected manually or closed loop PID controlled to RPM. Output load can also be selected manually as % of load or closed loop PID controlled to output torque. Electronic pressure control solenoids and lockup solenoids can also be tested and controlled via the on screen interface. The console is mounted on swinging arms so it can be moved out of the way while changing transmissions.

Product Specifications

Power Requirements	220/240 V 3-phase, 50-60 Hz or 460/480 V, 50-60 Hz & 110/120V Single Phase (380 V available upon request)
Air Requirements	1/2" lines (12.8 mm), 100 psi (689.5 kPa) minimum
Weight	4,000 lbs. (1,814 kg)
Dimensions	75 in. X 178 in. X 98 in. (191 cm X 452 cm X 248 cm) *includes jib crane
Type	Direct-drive AC motor
Power	40 HP (30 kW)
Constant Power	1,750 to 3,600 RPM
Constant Torque	0 to 1,750 RPM
Maximum Speed	3,600 RPM
Type	Air cooled, bi-directional
Inertia	23.3 lb-ft ² (98 kgm ²)
Maximum Speed	5,500 RPM
Peak Torque	1,000 RPM, Cold: 495 lb-ft (671 N-M) 1,000 RPM, Hot: 227 lb-ft (308 N-m) 5,000 RPM, Cold: 385 lb-ft (522 N-m) 5,000 RPM, Hot: 129 lb-ft (175 N-m)

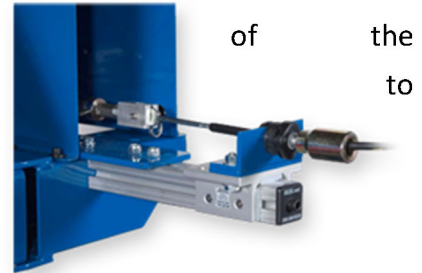
Product Options

Adapter Plates

Choice of 15 precision alignment adapter packages.

Auto Shift

The linear shift actuator controls the manual detent position transmission. Since it uses a cable, the Auto shift can connect most every transmission. It can be fitted with torque measurement, up to 50 lb-ft.



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Auto Stall

The eddy current brakes on the 97000 are outfitted with hydraulic disc brakes to test stall speed. Auto Stall automates this process by replacing the foot operated stall pedal with an electronic actuator.

hydraulic disc brakes

AWD Load Unit

The AWD Third Load Unit equips the 97000 to test most AWD transmissions. The floor mounted unit is equipped with an eddy current absorber and an operator interface with load percentage adjustment, digital RPM display, load power on/off switch and emergency stop. With a separate potentiometer, it can also set the same load percentage or be modified to check the differential. An adjustable side-to-side and up/down table shuttle moves 10" (25cm) side-to-side from center and 3 1/2" (8.9 cm) up/down from center.

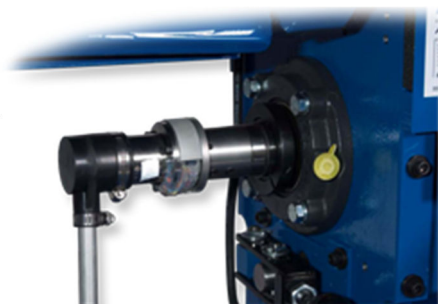


Inline Cooler

The inline oil cooler connects to the transmission cooler lines to maintain oil temperature during extended test sequences. It is ideal for long test sequences or endurance testing.

Input Torque

This custom input shaft is instrumented with a torque transducer to measure torque directly before the converter for highly accurate readings. 60 pulse per revolution encoder. 450 lb-ft rating.



WinDyn CAN Control

SuperFlow's innovative WinDyn CAN Control (WCC) system adds optional Mechatronic control to the VBT 8000. WCC simulates the vehicle's CAN network so the TCM can make shift decisions like it would in the vehicle rather than following along to a replay of driving data. What this means is the mechatronic will react to the input torque and throttle position set by the operator or automated test sequence and vary the shift points accordingly. This is a much more complete way to test the transmission and it will ensure your comeback rate drops quickly.

Output Torque

Optional load cell to measure static or dynamic torque.



Call or email Promand today to discuss your application and dyno test requirements in detail.

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