AXILINE VBT 8000

BY SUPERFLOW

DIGITAL VALVE BODY TESTER

Shown with optional WinDyn Data Acquisition and Control Package

WWW.SUPERFLOW.COM 1.888.442.5546

AXILINE · DTS · HICKLIN · SUPERFLOW · TCRS

OVER 50 YEARS OF EXCELLENCE

What started with the DynaDrome, by Delta Dynamics, circa 1958 has evolved into the most respected brand in light and medium duty transmission testing today: Axiline®, from SuperFlow®. Axiline's® roots date to the industries beginnings, and we are still here today because of one thing, focus. From the engine to the transmission, from the driveshaft to the axles, and throughout the entire drive train rebuilding and testing process we never lose sight of our commitment to improve the bottom line of our customers. This allows us to continually offer the latest, most efficient transmission testing products in the industry. It also doesn't hurt to back these products with the most respected customer service department in the industry. We strive to find innovative methods to increase customer capabilities and pioneer new technologies. Today, with more than 20 U.S. and foreign patents registered, SuperFlow® is still leading the way in the art and science of transmission testing and rebuilding. From start to finish no other company can provide a turn-key solution backed by more than 50 years of transmission testing excellence.

SUPERFLOW'S® MANY INDUSTRY FIRSTS

WE WERE THE FIRST
To use electric drives on transmission dynos

WE WERE THE FIRST
To install eddy current load units on transmission dynos

WE WERE THE FIRST
With data acquisition and control

WE WERE THE FIRST
to introduce a valve body tester and solenoid tester in one unit: The Axiline® VBT 8000

WORLDWIDE RECOGNITION

The SuperFlow® brands of transmission test equipment (Axiline® & Hicklin®) are is installed at over 1000 customer sites in 52 countries around the world. Our customers know that our track record of excellence and our broad knowledge of transmission testing is evidenced by our expertise and skill in delivering world class test equipment. We've designed machines for the US Military and leading automotive manufacturers to ensure that the transmissions they manufacture or rebuild meet their exacting standards.

Our experience over the last 50 years has granted us the opportunity to work closely with the most respected companies in the transmission business to develop a line of products that deliver unmatched results. From handheld diagnostic testers and shifters to full blown transmission dynamometers with advanced data acquisition systems, SuperFlow® has the products you need to get the job done. Come see why thousands of companies worldwide have already chosen SuperFlow® for all of their transmission testing needs.

SUPERFLOW®: TRUSTED BY THE BEST

BOSCH · CAT · WELLER · WyoTech · Certified Transmission · EATON · Universal Technical Institute · Detroit Diesel · Lincoln Technical Institute · Jatco · Jasper Engines & Transmissions · Morrisville State College

AXILINE® VBT 8000 - THE INDUSTRY STANDARD

The innovative Axiline® VBT 8000 by SuperFlow® sets the standard for testing today's advanced valve bodies. Its revolutionary design and industry leading software and data acquisition packages also give it the ability to test individual solenoids or solenoid packs, an industry first. By simulating the toughest driving conditions using the same regulated pressure and heated oil as seen under normal operating conditions, the Axiline® VBT 8000 accurately and efficiently confirms your rebuild. It also allows you to fine tune the valve body to your specifications by adjusting the duty cycles and frequency ranges of each individual solenoid. This ensures fewer come backs and reduced testing time once the valve body is installed in the transmission, saving you time and money. Equipped with either the standard SuperShifter Pro® software system or the advanced WinDyn® Data Acquisition and Control system the VBT 8000 meets the demands and budgets of the single bay transmission repair shop and high-volume OEM contractors alike. The available adapter plates (116 in total) give the VBT 8000 a staggering 45 more applications that its closest competitor, plus, we're constantly designing new plates to meet current demand. Additionally, Answermatic and Hydratest plates can be used on the VBT 8000. Its compact size (nearly half that of some competing models) and easy portability coupled with Axiline's® legendary reputation for transmission testing excellence has made the Axiline® VBT 8000 the only choice among professional transmission rebuilders all over the world.

AXILINE® VBT 8000 FEATURES

- Tests electronic and hydraulic valve bodies and solenoids
- 1,000 psi at 8gpm available test pressure
- PID Control loops control tests to system Pressure or Flow
- SuperShifter Pro software system standard for advanced testing capabilities
- Fully digital display
- Articulating operator station adjusts for different users – also slides well out of the way during valve body install
- Clear, hinged lid with easy access panels ensure operator can visually monitor testing process
- Uses the same regulated pressure and heated oil found under normal operating conditions
- Exposes problems caused by small cracks, imperfections and excessive valve wear
- Removable sides for easy access and maintenance
- Automated solenoid resistance tests and auto-cycle feature to ramp solenoids to user defined duty cycles
- Compact, portable design saves valuable floor space
- Over 116 adapter plates available – new plates developed frequently

SPECIFICATIONS

TANK CONSTRUCTION	Stainless Steel
TANK CAPACITY	Max: 17.5 gal (66 liters) Usable: 8.8 gal (33 liters)
DIMENSIONS	52" L x 60" H x 66" W (132 cm x 152 cm x 168 cm)
WEIGHT	Dry: 600 lbs. (272 kg) Wet: 700 lbs. (318 kg)
MOTOR	7.5 hp (5.6 kW)
PUMP	8 GPM (30.3 LPM)
MAX SYSTEM PRESSURE	1,000 psi (6895 kPa)
FILTRATION	129 micron suction filter, 10 micron pressure side filter
HEATER	3 kW
POWER REQUIREMENTS	Option 1: 480 volt 3-phase, 20 amps Option 2: 240 volt 3-phase, 35 amps Option 3: 380 volt 3-phase, 25 amps Option 4*: 220 volt 1-phase, 50 amps *Option 4 requires 5 HP motor

BUILT TO LAST

The Axiline VBT 8000 was built to provide years of service under the toughest conditions. The fully welded powder coated frame protects the 7.5 HP, 8GPM pump that give the VBT 8000 a pressure capacity of 1,000 PSI at 8 GPM ensuring you can fully test the largest valve bodies. The stainless steel tank won't rust and the fully enclosed, heated oil reservoir has a sight gauge for monitoring fluid levels in the system. On/off and e-stop are located within arms reach in front of the operators console. Quick access panels make for easy maintenance.

PRECISION MACHINED PLATES

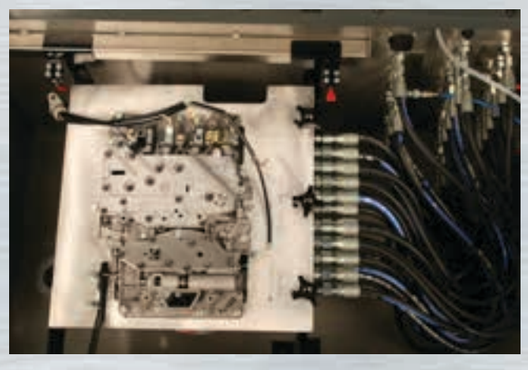
SuperFlow offers 116 precision machined valve body plates to ensure you can test modern late model valve bodies. Development is ongoing to release new applications to keep our customers at the forefront of valve body and transmission remanufacturing. If our plate list on pages 10-11 does not show the plate you are looking for, give us a call at 888.442.5546, we may already be developing what you are looking for and if not we will add it to our development list.

BUILT IN SAFETY FEATURES

The Axiline VBT8000 tank is topped with a clear lexan cover so the operator can see what is happending in the cabinet while testing. A gas shock holds the lid open so your hands are free to work on the valve body. An interrupt switch automatically turns the oil supply off to the valve body whenever the lid is open preventing operators from being sprayed with hot oil. Sliding access panels in the lid allow for access to the cabinet when the lid is closed.

ROOM TO WORK

The large test cabinet provides plenty of room to install plates and connect the TCM harness. Once the plate and valve body are installed, SuperShifter PRO's auto cycle feature allows users to set each solenoids duty cycle and time then it ramps each solenoid to their preset duty cycle in the number of seconds defined in the cycle. During the auto cycle system pressure and flow are displayed in the gauges on screen.



ALLISON GOVERNOR OPTION

Allison governor control option is available for the Allison AT, MT & HT valve bodies for independent RPM control of the governor speed. The VBT 8000 feeds the governor transmission fliud allowing it synchronize the shift points on the valve body.

HYDROMATIC GOVERNOR OPTION

The governor control option shown here with the red and blue knobs adds to the versatility of the VBT 8000 allowing it to still test older Turbo Hydromatic transmissions.

SUPERSHIFTER PRO® CONTROL SYSTEM

SuperShifter Pro® control system is included with the base package on the VBT 8000. It gives users a simple digital interface to control both the VBT 8000 and the valve body they are testing. Four screens (detailed on the next page) within SuperShifter PRO provide the necessary tools to fully develop, test or diagnose valve bodies. Popular features of SuperShifter PRO include; idividual control of up to 12 solenoids, built in resistance tests that are automatically loaded based on the valve body installed in the machine and manual shift tests to diagnose under performing soleniods and other conditions that lead to harsh shifts. Each screen offers user selectable duty cycles and includes the auto cycle feature to ramp solenoids through the duty cycle. The easy-to-read digital displays for system pressure, flow, TOT and tank temp make understanding what is happening easy. Closed loop PID control of the pump to either pressure or flow make the tests extremely repeatable and accurate. Setpoint control of the fluid temp also ensures consistency from one day to the next and operator to operator.

SUPERSHIFTER PRO® FEATURES

- Individual control of up to 12 solenoids
- Tests most valve bodies from modern, late-model transmissions
- Transmission lookup tool that searches by make and model
- Built-in solenoid current & resistance tests with user programmable pass/fail criteria
- Real-time digital displays for
  - -pressure switch status (when available)
  - -system pressure to valve body
  - -oil tank temperature
  - -TOT (when available)
  - -flow to valve body
- Continuously displays all critical parameters
- Modulated duty cycle and frequency range
- Edits shift files for customized testing
- Computer controlled with fully digital displays
- Learn and save mode to edit solenoid control
- Auto Shift (time delay)
- PWM programming screen with delay
- Hot & cold solenoid pass/fail testing
- PID setpoint control of pressure or flow
- Pump, heater, governor RPM and machine on/off controls
- Continuing software updates
- Automated test with test recall for future use
- Current measurement at 16-bit resolution

Standard Axiline VBT 8000 shown with included SuperShifter PRO control system.

Data Screen displays up all pressures, temperatures, flows and speed sensors from the valve body. Individual control of solenoid duty cycle from this screen shows pressure change in one clutch at a time. Along the left hand side of all SuperShifter PRO windows are the controls for the system pump, tank heater and governor drive along with the gear selector and auto cycle control. Built in shift tests allow the user to manually command the gear while modifying duty cycles to study the effect on system pressure and flow.

The test profile screen allows users to select and run automated valve body tests on machines equipped with the optional WinDyn Data Acquisition & Control System. Automated tests generate pass / fail test reports based on users parameters for the test unit. Tests that trigger fail conditions mid test will ask the operator to retry, abort or ignore the test so failures near the threshold don't require the entire test to be rerun.

Solenoid Test Screen provides automated hot and cold solenoid pass fail testing of each solenoid's resitance. Two parameter sets can be stored in the same test file so the operator only has to select a cold test or hot test and the machine will generate pass/fail results based on the correct parameters. The results include solenoid name, its pass/fail result, and its resistance. Test parameters are click-to-edit so setup is quick. Parameters can be modified for single use or memorized for future use on the same type of solenoid.

Manual Solenoid Control Screen provides manual control of individual solenoids during shifting or R&D. The simple click-to-edit frequency ranges provide fast adjustment of solenoid response. Sliders can be pre-set and applied at once to manually simulated a gear shift or adjusted real time individually to highlight individual solenoids affect on flow.

AXILINE® VBT 8000 PLATE LIST

Ford

- ATX
- FIOD/AOD
- C6
- AXOD '87 UP
- A4LD
- C3
- E4OD
- AXOD-E
- AOD-E
- F4EAT / F4E-III
- C4
- CD4E
- 4R44E/4R55E
- AX4N
- CTX
- AX4S '98 & UP
- 5R55N
- 5R55W, 5R55S
- 4F27E
- 5R110W
- AS68RC
- 4F50N
- 4F20-E VILLAGER

GM

- 125-C/3T40
- 200-4R
- 440-T4/4T60
- 700-R4/4L60
- 325 4L
- 200C
- 400
- 180
- 4T60-E
- 4L80-E
- 350
- 4L60-E
- POWER GLIDE
- 4L30-E
- TAAT SATURN
- 4T80-E
- 4T40-E
- 4T65-E
- Saturn CVT
- 5L40E
- 6T40/45
- 4F50N
- 6L80
- 6T70/75

CHRYSLER

- 404/413/470
- 904/727/A-500/A-518
- A-604/40TE
- A617
- A-606/42LE
- AS68RC
- 45RFE
- 62TE

AISIN AW CO., LTD.

- AW 55-50SN
- 50/40
- 60/40
- 371
- AW 14/20 AW 50-42LE

AISIN

- 450-43LE
- AS68RC

BorgWarner

- BW 65/66

Jatco

- RL3F01A
- JATCO O/D (N4A-EL)
- RL4F02A/RE4F02A
- JF403E
- JF404E
- 506E

NISSAN

- RE4R03A/01A
- RL4F03A
- RE4F04 A/V QUEST

Allison Transmission

- 654CR
- LTC 1000/2000
- VR 731RH
- 3000 Series
- AT/MT/HT
- WT/MD/HD
- Military
- Off-Road
- 4000 Series

mazda

- 4EAT SERIES (G4A-EL)
- 4F50N

TOYOTA

- A-40 SERIES
- A-340E
- A-130/140
- A-540
- U140/240/241
- U340/341

RENAULT

- Renault DPO
- MB / MJ
- 4141
- AR4

BMW

- 4L30-E (BMW)

Mercedes-Benz

- 722.3
- 722.4
- 720.5
- 722.5
- 722.6
- 722.7

MITSUBISHI

- KM 170 SERIES
- ALPHA A4AF1 SCOUPE
- RL402A
- F4A 41/51

VW

- VW 010
- PASSAT 096
- 09G/K/M
- VW 01M
- 09D
- TF81SC
- TF80SC

ZF

- ZF 4HP-22EH
- ZF 4HP-14/18
- ZF 4HP20
- ZF 4HP24
- ZF5HP-18
- ZF4HP-18
- ZF5HP-30
- ZF 5HP19-FL Audi
- ZF 5HP24
- ZF 6HP26

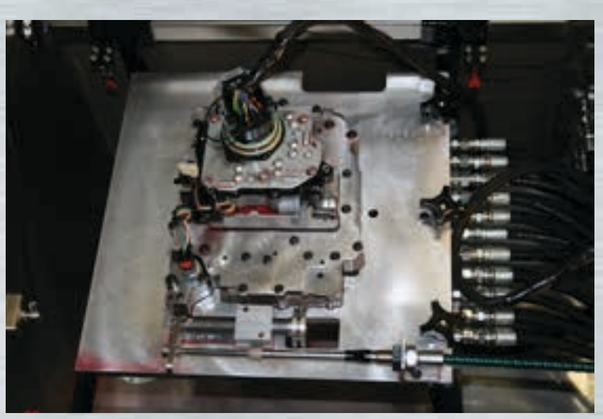
SUZUKI

- FORSA/SWIFT

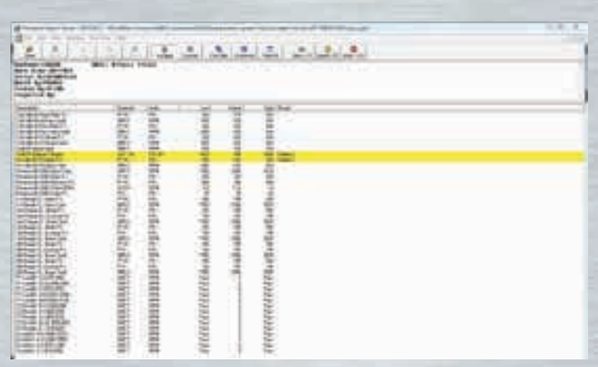
OPTIONAL FEATURES

- WinDyn® Data Acquisition and Control System
- WinDyn CANCube for full control and test capabilities of many Mechatronic Valve Bodies
- Profiler (solenoid calibration)
- Vaccum pull device
- Allison governor control
- Hydraulic governor control
- Auto shift actuator
- Hydraulic clamping for bolt free valve body installation in high volume test environments

Machines equipped with WinDyn include second 32in. LED monitor and full data acquisition and analysis features for automated testing and reporting.



Auto shift option includes linear actuator and software controls for automatic shifting of valve body via the test profile on WinDyn equipped machines.



WinDyn's Pro Report feature lets operators quickly tell what parameter failed during the test, see its value and see the low and high value that was supposed to be met. User defined ranges determine the color indicator on the line that failed. This report can be saved, printed or sent to a network database.

WINDYN® DATA ACQUISITION & CONTROL SYSTEM (OPTIONAL)

WinDyn® is a complete Data Acquisition and Control System available for all SuperFlow® Transmission Dynamometers and Valve Body Testers. Upgrading the VBT 8000 to WinDyn® provides users with unmatched capabilities for automated testing, live data monitoring and customizable post test reporting. Live onscreen digital displays can be customized on up to 10 screens for screen displays dedicated to different valve bodies. Screen features include; digital meters, panel meters, live traces and bar graphs so your live test data is presented in a way that makes sense to you. All of WinDyn's digital displays include custom color ranges for visual alarms to represent high and low temperatures, pressures or other conditions the operator needs to be aware of right away. Post test analysis is fully customizable also with customizable graphs of test data and automated test data print outs to pack and ship with each valve body so your customers know the unit was fully tested. Shift lag and shift time can be monitored and recorded to see how solenoid duty cycles and frequencies affect shift performance. Pro Report feature checks test data against preset high and low values and triggers a notification for the operator while the test is running. The operator can then choose to retry, abort or ignore based on the failure so if it isn't a harmful failure the test to that point isn't wasted. After the test Pro Report highlights any parameters that failed so operators an quickly diagnose problems or move on to the next unit.

WINDYN® FEATURES & CAPABILITIES (OPTIONAL)

- Individual control of up to 12 solenoids
- Transmission lookup tool that searches by make and model
- Built-in solenoid current & resistance tests
- Real-time digital displays for
  - -PRNDL
  - -Governor RPM
  - -pressure switches (when available)
  - -TOT (when equipped)
  - -machine pressure
- Continuous monitoring of all critical parameters
- Modulated duty cycle and frequency range
- Edits shift files for customized testing
- Learn and save mode to expedite solenoid testing
- Auto Shift (time delay)
- PWM programming screen with delay
- Hot & cold solenoid pass/fail testing
- Machine and pump on/off control
- Printable test reports with operator ID and Date/Time stamp
- Powerful post test data analysis tools including play backs, bar and X-Y graphs, and strip charts
- File management system for convenient test data management
- Programmable machine control
- Automated testing
- Programmable pass/fail testing for high test throughput
- Network ready
- PID Loop enabled for pressure control and flow rate
- Current measurement at 16-bit resolution

WinDyn CAN Control Option - WCC

SuperFlow's WinDyn data acquisition system offers an optional WinDyn CAN Control (WCC) feature to fully test and control electronically shifted valve bodies on any transmission dynamometer or valve body tester equipped with a WinDyn system. Here is how it works: WinDyn provides control of the transmission dynamometer, simulates vehicle inputs needed for the TCM to operate and shift, and runs the test sequence defined by the operator for the machine to perform a complete test cycle with the transmission shifting as it would in a vehicle. TCM data is received via a CAN network and recorded in WinDyn for full data acquisition, graphing, analysis and test script control all from the WinDyn computer and operator station.

WINDYN® CAN CONTROL

TCM Outputs to WinDyn

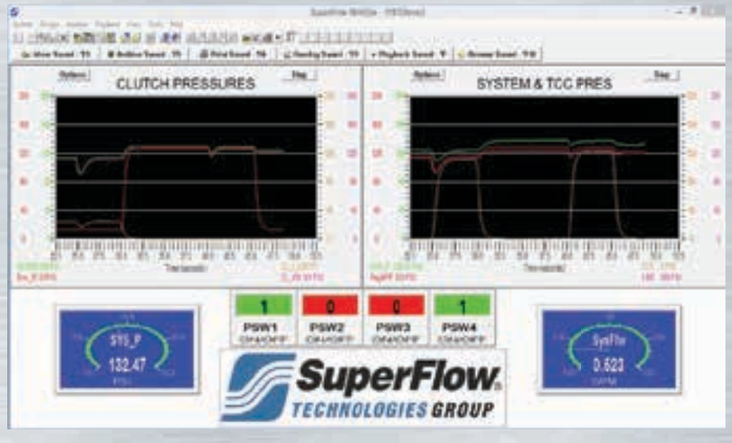
Monitor the following transmission characteristics directly in WinDyn when available for full data acquisition and analysis features

- Shift selector position
- Commanded gear
- Actual gear
- Sump temperature
- Commanded clutch pressures *
- Commanded solenoid currents *
- Adapted pressure offset *
- Shift times *
- Pressure switch states *
- Diagnostic codes if active or stored *

Note: valve body characteristics listed vary depending on data available from the transmission manufacturer's programming of the TCM.
* = optional features
Ask us about adding the Mechatronic Control Option to your existing valve body tester or transmission dyno, even if it was made by another manufacturer.

Available Mechatronic Applications

- DSG
  - DQ200
  - DQ250
- ZF
  - 6HP 19 - BMW 2005 - 2011
  - 6HP 21 - BMW 2007 - present
  - 6HP 26 - Land Rover 2005 to present (non electronic shift)
- BMW
  - 6L45
- General Motors
  - 6L50
  - 6L80
  - 6L90
  - 6T40
  - 6T45
- General Motors / Ford
  - 6T70



This WinDyn data playback shows a live run of a 5R55N/S on the VBT 8000. With WinDyn running an automated test, the operator was looking at the following items.

1. Left graph shows the CAN stream of the individual clutch pressures coming on and off over time
2. Right graph shows the CAN stream of the transmission system pressure and TCC pressure over time
3. Pressure switch indicators in the center of the screen show pressure switch status of on or off
4. Dial meter in bottom left shows the PID controlled pressure being sent to the valve body and plate
5. Dial meter in bottom right shows the PID flow in GPM going to the valve body and plate.

SUPERFLOW® DYNAMOMETERS & FLOWBENCHES

AXILINE® VBT 8000 VALVE BODY TESTER

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 Axiline® VBT 8000 Valve Body Tester.

Or visit us at superflow.com

SuperFlow DYNAMOMETERS & FLOWBENCHES

axiline® PRECISION PRODUCTS BY SuperFlow

TEST WITH THE BEST

- Chassis Dynos
- Engine Dynos
- Transmission Dynos
- Flowbenches
- Solenoid Testers
- Valve Body Testers
- Torque Converter Rebuilding Systems
- Transmission Shifters

Manufactured in Colorado Springs, CO and Des Moines, IA U.S.A. Offices Worldwide; Des Moines, IA, Colorado Springs, CO, Pulle, Belgium
For Europe sales & service please call +32-3-4846511 or email info@superflow.be

Equipment configuration is subject to change at anytime without notice and may not match what is shown in this brochure.

AxilineVBT8000_2016_V1 - Oct2016