

# AXILINE 66K TRANSMISSION DYNAMOMETER

*The Axiline 66K is a modular transmission dynamometer designed to test light and medium-duty front wheel drive, rear wheel drive and all-wheel drive transmissions including the Allison 1000 / 2000 and those light-duty transmissions that require higher input torques.*

## Overview



The SF-66K handles most foreign and domestic front-wheel drive, rear-wheel and all-wheel drive transmissions, including the Allison 1000/2000. Its rotating head stock can adapt to front wheel drive transverse transmissions, including Honda® and Mitsubishi®, and longitudinal transmissions such as the Chrysler® 42LE. The rotating head stock also makes it easy to switch between different test configurations. The four available motor sizes (40 hp, 60 hp, 75 hp, 100 hp) ensure the correct power for the job. The included auto-stall feature provides a quick yet complete test.

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.

## Input Drive & Transmission Support

The supports used for both input drive and transmission will pivot to accommodate longitudinal and transverse transmissions. The SF-66K is powered with an electric motor for clean, quiet operation and precise control. There are four motor options available in 40, 60, 75 and 100 hp sizes. And, it tests in either rotational direction, to accommodate all types of inline T-drive, or transaxles transmissions.

## Power Absorption Units

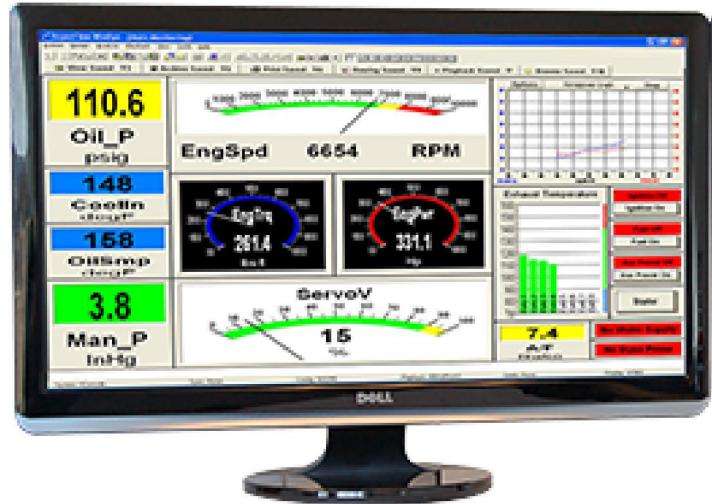
The SF-66K power absorption units (PAUs) apply load to the output shaft(s) of the transmission to simulate road conditions such as hills, air resistance and towed weight. The standard air-cooled eddy current PAU is virtually maintenance-free and extremely reliable. Unlike hydrostatic load units, there's no oil, water or filter to maintain, and just one moving part. The PAU allows you to perform true full-throttle, load-induced downshifts. It can load test transmissions all the way to first gear and maintain them, even when the drive system is set at full throttle. The optional trunnion-mounted eddy current absorber dynamically measures the output torque of the transmission. It's also equipped with an air-actuated brake rotor and caliper to test stall force. All PAU configurations can be adjusted vertically and side-to-side to accept a wide range of test transmissions.



## Data Acquisition

### WinDyn Control and Data Acquisition System

SuperFlow's WinDyn® Software is the most feature rich system available for dynamometers today. We've included all the tools you need to make a SuperFlow® dynamometer a successful piece of your business. WinDyn® is preconfigured with industry standard tests to get you up and running quickly. But, we didn't stop there. We've also developed powerful configuration and test editors that offer you complete, customized control of the dynamometer, the test cell and the tests you're running.



WinDyn's® available 76 measured channels and 35 calculated channels let you measure and analyze data to make your products better. Our advanced electronics sample data at rates between 1,000 and 2,500 Hz depending on the channel and display it at 100 lines per second so you're sure to see the entire picture. The built in data analysis tools let you see data in a way that makes sense, and like the rest of WinDyn®, data analysis is completely user-configurable should you choose. Start Testing Quickly WinDyn® comes preconfigured with standard tests to get you testing quickly. Pre-defined test groups automatically configure the dynamometer for standard testing. Simply select the one that matches your current needs and you're ready to run.

### Test Groups

A test group is a WinDyn® file that completely configures the dynamometer for testing. By using test groups you ensure that all tests are run in the same way, regardless of the operator. Test groups configure the following:

- All channels being monitored (measured, calculations, constants and interpolations)
- Screen group of up to ten real-time data monitoring screens
- Safety limits (if desired) to protect your engine
- Test profiles (acceleration, step, steady state, break-in, life cycle, track simulation, custom)
- Sensor calibrations
- Relay controls for test cell functions (lights, pumps, fans, ignition, etc.)

- PID control parameters
- Test specifications (starting and ending speeds, engine specs, test notes, etc.)

### **Completely Customizable**

In addition to the standard ready to run configuration supplied from the factory, you can customize WinDyn®. Write custom test profiles, design custom screen groups, add a company logo to data plots, setup print preferences for graphs and tabular data, add additional sensors or integrate emissions equipment quickly and easily. The best part about WinDyn® is its versatility: it comes fully loaded and ready to run all the standard tests you need, plus gives you the power to configure tests any way you prefer. Learn more about our advanced editors.

### **Test Profiles**

Test profiles are a series of commands that automatically perform a test. WinDyn comes loaded with standard test profiles including acceleration, step, steady state and break-in, but the Test Profile Editor gives you the ability to write any custom test you can imagine.

Here are some examples of what WinDyn users are already doing-

Automated one-touch tests that control every detail for example-

- powering on pumps and fans
- powering ignition
- turning on fuel
- checking critical parameters like oil pressure and water temperature before
- beginning a test sequence
- ending the test
- stopping the engine
- Cyclic durability tests to check engine belt life
- Reverse acceleration to simulate tractor pulling
- Transmission durability tests on chassis dynamometers
- Slope simulation
- Track lap simulation for the Pikes Peak Hill Climb, Charlotte Motor Speedway and others
- Pass/Fail tests for air filters and catalytic converters on the SF-1020SB
- Automated chassis dynamometer tests with throttle actuators
- 300 hour diesel engine durability tests
- Urban drive cycle tests
- Emissions tests



### **Configuration Editor**

The configuration editor gives you the power to create the custom test environment you desire.

This powerful Windows® based editor allows you to define-

- Channel Definition (name, units, format, filtering, formulas, etc.)
- Control Channels (close-loop controllers for load, throttle, flow, etc.)
- Display Channels (in any language)
- Once you're happy with your custom configuration, it's saved so the dynamometer can quickly be configured to your specifications before every test.

### **Safety Limits Editor**

Safety limits prevent problematic situations like low oil pressure or overheating from damaging your engine or vehicle. They are completely user-configurable by channel (exhaust temp, oil pressure, water temp, etc.), by critical value and by resulting action. You can even setup a multi stage rev limiter. Limits are constantly monitored and if triggered the post mortem feature kicks in to provide a snap shot of data before and after the limit was triggered to assist you in determining what happened to the engine.

### **Test Data Perfected**

WinDyn® is packed with data analysis tools that make analyzing your engine or vehicles performance easy. For each test you can view up to 10 user-defined pages in tabular format, graphical format or side-by-side. Additionally, up to 10 saved tests can be overlaid on a graph enabling you to make informed decisions quickly. Like all other WinDyn® features, all the data viewing capabilities are customizable. The test group defines which data is on each of the ten pages and on each page's graphs. You can change this at any time, even after the test is completed.

Want to see an area of a graph in more detail? Drag a box around the area you want to see and WinDyn® immediately zooms and re-scales that portion of the graph for easy comparison. Plots are easily enhanced with your company logo before printing. They can also be exported as a bitmap or JPG for emailing to customers or posting to your website. If WinDyn's® data analysis tools aren't enough for you, export your test data to Microsoft Excel® for custom post-test analysis.

### Customer Data Packs

Your customers are why you're in business. With WinDyn's® Customer Data Pack feature you can instantly create a file with their test data and the WinDyn® data viewer so they can take their results home. This data viewer includes all the same analysis tools as WinDyn® so your customers will be assured of their results.

### SuperFlow Explorer

Managing data files is crucial to finding your data efficiently. The SuperFlow® Explorer, located under the tools menu, allows you to quickly navigate to the correct data, view it, plot it or print it with the click of the mouse. It can browse all folders, networks and the desktop and also create, rename, copy, move delete and manage all system folders.

### Test Playback

WinDyn® allows you to replay stored tests with all meters and screens active just as they were during the original test. You can print any or all WinDyn® screens and data to most Windows® supported printers.

## 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)
Weight	Input Drive: 2,700 lbs. (1,225 kg) Inline PAU: 4,300 lbs. (1,950 kg) Transaxle PAU: 4,200 lbs. (1,905 kg)
Dimensions	Inline: 154" x 48" (391 cm x 122 cm) Cross Slide: 195" x 70" (495 cm x 178 cm) T-Drive: 183" x 96" (465 cm x 244 cm), 500 HP (1,864 kW)

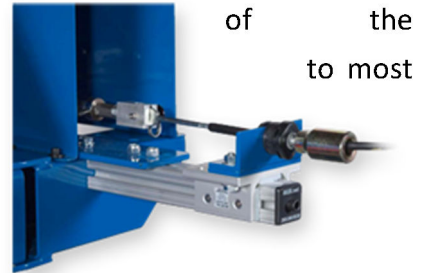
## Product Options

### 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 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.

### AWD Load Unit

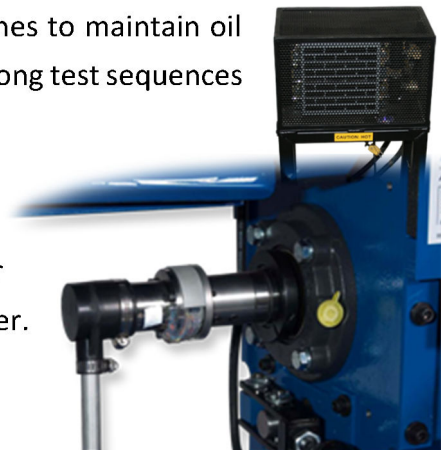
The AWD Third Load Unit equips the 97000 to test most AWD transmissions. The floor mounted unit is equipped with an eddy current absorber and an operator interface with load percentage adjustment, digital RPM display, load power on/off switch and emergency stop. With a separate potentiometer, it can 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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