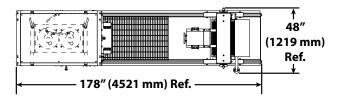
## Model 450E Transmission Test Stand



450E Transmission Test Stand shown

# Optional Air/Oil Cooler (For Converter Flow) 79 1/4" (2013 mm) 67" Ref. (1701 mm) Ref. to 15" (381 mm) Min. Ref.



### Overview

The model 450E Transmission Test system is used for continuous-duty transmission performance verification, quality assurance, endurance, and certification testing. This quiet, compact machine allows simple diagnostic testing to be conducted to evaluate performance and troubleshoot faults of in-line transmissions.

### Model 450E Features:

- A variable speed, high efficiency AC motor used to simulate the engine driving the transmission.
- Transmissions with SAE #1 flange mount directly to the 450E bell housing. Adapter rings are available for other SAE sizes.
- Designed to accommodate remote mounted transmissions using optional transmission drive, adapter and worktable extension kits.
- Splined input facilitates quick transmission coupling and alignment.
- Indexing allows for rotation of a mounted transmission so the operator can easily access the valve body during setup.
- The Eddy Load Unit connects to the transmissions output to apply a load simulating actual operating conditions.
- The Eddy Load Unit flange bolts to a standard drive shaft resulting in a simple, easily aligned connection.
- Ten pressure taps are available for monitoring pressures within the unit under test
- PowerNet TD Data Acquisition and Control System option is available for automated control and reporting.

The model 450E is designed for testing automatic or manual in-line transmissions used in commercial or military medium to heavy-duty vehicle applications.



# Transmission Test Stand - Model 450E

Specifications   Specifications	450E Transmission Test Stand Specifications				
450E-150					
150HP (112 kW) 450V/60 Hz - 225 Amps	Electric Motor (Prime Mover) Selections (other voltage options available on request) NOTE: Main Power Disconnect (provided by others) must use time-delay slow-blow fuses or a breaker with an	450E-150	125HP (93 kW) 380V/50 Hz - 225 Amps		
165HP (125 kW) 380V/50 Hz - 300 Amps			150HP (112 kW) 460V/60 Hz - 225 Amps		
200HP (147 kW) 460V/60 Hz - 300 Amps		450E-200	165HP (125 kW) 380V/50 Hz - 300 Amps		
A50E-300   A50E-300			200HP (147 kW) 460V/60 Hz - 300 Amps		
Max. Transmission   450E-150   442 Lb-ft. (610 N-m) up to 1,785 RPM		450F-300	250HP (185 kW) 380V/50 Hz - 400 Amps		
A50E-200   588 Lb-ft. (811 N-m) up to 1,785 RPM	adjustable over-current setting.				
450E-300   883 Lb-ft. (1,216 N-m) up to 1,763 RPM	Max. Transmission	450E-150	442 Lb-ft. (610 N-m) up to 1,785 RPM		
Direction   Clockwise & counter-clockwise (bi-directional)	Input Torque (continuous)	450E-200	588 Lb-ft. (811 N-m) up to 1,785 RPM		
Max Speed		450E-300	883 Lb-ft. (1,216 N-m) up to 1,785 RPM		
Water cooling comes standard. Customer must supply a clean water supply of min. 5 GPM (19 L/min) at 30 PSI (207 kPa) at maximum 85° F (30° C) to operate the test stand's heat exchanger at continuous load.    PNETTD	Direction	Clockwise	& counter-clockwise (bi-directional)		
Data Acquisition / Control (must select at least one)  PNET TD  PowerNet TD is a complete automated data acquisition and control package. See PowerNet TD specification sheet for details.  Gauge Panel Package Analog gauge package includes 13 pressure gauges to monitor unit under test and incorporates displays for input speed, output speed, input torque, output torque and converter flow.  For the greatest flexibility, order both PNET TD and the Gauge Panel Package. Together they allow control and monitoring from the control room as well as in the test cell.  Input Speed Indicator  4 digit, digital display of load-unit speed  Converter Flow Monitoring Circuit  Converter Flow Monitoring Circuit  Flow circuit includes a *22 Micron filter. Manual control for differential pressure adjust (backpressure). Heat exchanger with digital temperature controller.  Rotation / Indexing  Manual transmission rotation and indexing.  Continuous braking torque 525 Lb-ft. (712 N-m) Intermittent braking torque 525 Lb-ft. (712 N-m) (with air brake) 3,000 Lb-ft. (2,712 N-m) (with air brake) 3,000 Lb-ft. (2,712 N-m) (with air brake) 3,000 Lb-ft. (4,067 N-m) Maximum RPM: 3,000 Rotation: bi-directional (standard unit specifications listed above, optional larger load unit is available)  Worktable Sump / Fill  Standard worktable is 116" (295 cm) long x 40" (102 cm) wide and contains a 60 gallon (227 L) capacity sump w/ *11 Micron filter.  Pressure Taps  (10) pressure taps to monitor pressures of component under test (8) 600 PSI (4,137 kPa) and (2) 100 PSI (689 kPa)  Transmission Bell Housing Mount	Max Speed	4,000 RPM (bi-directional)			
package. See PowerNet TD specification sheet for details.   Gauge Panel Package   Analog gauge package includes 13 pressure gauges to monitor unit under test and incorporates displays for input speed, output speed, input torque, output torque and converter flow.   For the greatest flexibility, order both PNET TD and the Gauge Panel Package. Together they allow control and monitoring from the control room as well as in the test cell.   Input Speed Indicator	Transmission Oil Cooling	5 GPM (19 L/min) at 30 PSI (207 kPa) at maximum 85° F (30° C) to operate the test			
Panel Package   under test and incorporates displays for input speed, output speed, input torque, output torque, output torque and converter flow.	Data Acquisition / Control (must select at least one)	PNET TD			
Together they allow control and monitoring from the control room as well as in the test cell.  4 digit, digital display of motor speed  Converter Flow Monitoring Circuit  (1) 50 GPM (189 L/min) flow meter with digital display. Flow circuit includes a *22 Micron filter. Manual control for differential pressure adjust (backpressure). Heat exchanger with digital temperature controller.  Rotation / Indexing  Manual transmission rotation and indexing.  Eddy Load Unit (Air Cooled)  Continuous braking torque 525 Lb-ft. (712 N-m) (Intermittent braking torque 1,474 Lb-ft. (1,998 N-m) (with air brake) 3,000 Lb-ft. (2,712 N-m) (with air brake) 3,000 Lb-ft. (4,067 N-m) (with air brake) 3,000 Lb-ft. (4,067 N-m) (standard unit specifications listed above, optional larger load unit is available)  Worktable Sump / Fill  Standard worktable is 116" (295 cm) long x 40" (102 cm) wide and contains a 60 gallon (227 L) capacity sump w/ *11 Micron filter.  Pressure Taps  (10) pressure taps to monitor pressures of component under test (8) 600 PSI (4,137 kPa) and (2) 100 PSI (689 kPa)  Transmission Bell Housing Mount  SAE #1 Adapter ring (other adapters and remote mounting kits are available)		Panel	under test and incorporates displays for input speed, output speed, input		
Output Speed Indicator  4 digit, digital display of load-unit speed  (1) 50 GPM (189 L/min) flow meter with digital display. Flow circuit includes a *22 Micron filter. Manual control for differential pressure adjust (backpressure). Heat exchanger with digital temperature controller.  Rotation / Indexing  Manual transmission rotation and indexing.  Eddy Load Unit (Air Cooled)  Continuous braking torque 525 Lb-ft. (712 N-m) Intermittent braking torque 1,474 Lb-ft. (1,998 N-m) Max. stall torque (with stall bar) 2,000 Lb-ft. (2,712 N-m) (with air brake) 3,000 Lb-ft. (4,067 N-m) Maximum RPM: 3,000 Rotation: bi-directional (standard unit specifications listed above, optional larger load unit is available)  Worktable Sump / Fill  Standard worktable is 116" (295 cm) long x 40" (102 cm) wide and contains a 60 gallon (227 L) capacity sump w/ *11 Micron filter.  Pressure Taps  (10) pressure taps to monitor pressures of component under test (8) 600 PSI (4,137 kPa) and (2) 100 PSI (689 kPa)  Transmission Bell Housing Mount  SAE #1 Adapter ring (other adapters and remote mounting kits are available)		Together they allow control and monitoring from the control room as well as in the			
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Intermittent braking torque 1,474 Lb-ft. (1,998 N-m)  Max. stall torque (with stall bar) 2,000 Lb-ft. (2,712 N-m)  (with air brake) 3,000 Lb-ft. (4,067 N-m)  Maximum RPM: 3,000 Rotation: bi-directional (standard unit specifications listed above, optional larger load unit is available)  Worktable Sump / Fill  Standard worktable is 116" (295 cm) long x 40" (102 cm) wide and contains a 60 gallon (227 L) capacity sump w/ *11 Micron filter.  Pressure Taps  (10) pressure taps to monitor pressures of component under test (8) 600 PSI (4,137 kPa) and (2) 100 PSI (689 kPa)  Transmission Bell Housing Mount  SAE #1 Adapter ring (other adapters and remote mounting kits are available)	Rotation / Indexing	Manual transmission rotation and indexing.			
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(8) 600 PSI (4,137 kPa) and (2) 100 PSI (689 kPa)  Transmission Bell Housing Mount SAE #1 Adapter ring (other adapters and remote mounting kits are available)	Worktable Sump / Fill				
, , , , , , , , , , , , , , , , , , , ,	Pressure Taps				
Weight (with worktable) Approximately 6,000 Lbs. (2,722 kg)	Transmission Bell Housing Mount	SAE #1 Adapter ring (other adapters and remote mounting kits are available)			
	Weight (with worktable)	Approximately 6,000 Lbs. (2,722 kg)			



# Transmission Test Stand - Model 450E

450E Transmission Test Stand Specifications (continued)		
Description	Specifications	
Drive Load Sensing Circuit (D.L.S.)	(D.L.S.) enables the operator to control the acceleration and deceleration rate of the unit under test to improve detection of shift events.	
Modulator Control	Modulator control simulates full or closed throttle condition. (requires 90 PSI of air pressure)	

	450E Transmission Test Center Options		
Air Transmission Oil Cooling	Utilizes an air-to-oil self contained cooling unit for transmission oil cooling.		
Short Worktable	Shorter length worktable - 96" (244 cm)		
Offset Worktable	Specially designed standard length worktable that has the ability to offset the Eddy Load Unit 7" (18 cm) off of worktable centerline.		
Worktable Extension	Extends worktable and adds 36" (91 cm) of length for mounting the Eddy Load Unit.		
Input Torque	Provides a rotary torque transducer and toque meter for high accuracy input torque measurement.		
Adapter Kit(s) (additional OEMs available)	Used in conjunction with test stand to mount and drive specific transmissions.  Allison: 1000/2000/2400 Series; MD 3000 ( B300, B400 ) - WTEC/Gen 4;  MD 3070PT/3700SP; HD 4000 ( B500 ) - WTEC/Gen 4; AT 500/MT 600/HT 700  Series; V730, V731 Series; Off-Highway 5000/6000 Series;  DP 8000/9000  GM: 3L80E; 4L80E Ford: Torqshift 5R110W Voith: DIWA .3/DIWA .5  ZF: Ecomat 2/4  Consult with your Power Test sales representative for more information.		
Power Rotation / Indexing	Incorporates a drive motor and controls for rotation and indexing of transmission.		
Large Eddy Load Unit (air cooled)	Continuous braking torque 669 Lb-ft. (907 N-m) Intermittent braking torque 1,879 Lb-ft. (2,548 N-m) Max. stall torque (with stall bar) 2,000 Lb-ft. (2,712 N-m) (with air brake) 3,000 Lb-ft. (4,067 N-m) Maximum RPM: 3,000 Rotation: bi-directional		
Air Brake Stall Kit	The manually inserted stall bar is replaced with an air actuated brake assembly installed on to Eddy Load Unit to stall transmission output.		
Motorized Vertical Eddy Adjustment	The manual system to adjust vertical positioning is replaced using a motorized, push button operated system.		
Soundproofing	Applies sound deadening mats to interior of the test stand's panels.		
Electronic Shift Console	Used in conjunction with test stand to control transmission. Consult with your Power Test sales representative for more information.		
Oil Preheat and Supply Cart (oil not included)	Cart provides 55 Gal. (208 L) supply of filtered, preheated oil for transmissions under test. Pumping rate is 3.3 GPM (12.5 L/min). Heating capacity is 7.5 kW.		
Spare Parts Kit	Recommended spare parts kit for 450E Transmission Test Stands.		
*Oil Filter Replacement Kit	Provides three (3) 22-micron replacement filters for converter flow loop and three (3) 11-micron replacement filters for sump/worktable.		

<sup>\*</sup> Filter ratings are based on a Beta 75 (98.7% Eff.) rating or better.

**☑** Note

Power Test can provide a custom designed system solution to meet your application needs. Consult with your Power Test representative for details.

