



## HTC-400 Complete Bench / Hydraulic Test Center

The Hydraulic Test Center (HTC) is a versatile machine designed to test heavy-duty, off-highway hydraulic components. The 400 hp (298 kW) HTC Complete Bench is for the dealer that services components from a predominately medium size machine mix such as large construction equipment (loaders, dozers, excavators). The Complete Bench offers full functionality to test all types of pumps and motors including: transmissions, hydraulic motors, hydraulic cylinders, valve blocks, torque converters, open and closed loop pumps.



HTC-400 Complete Bench shown here (image may vary).

### Pump and Motor Test Package Features

- Two (2) case drain flow circuits
- High pressure filtration with flow straightener
- Load sensing pump circuit
- Component cooling loop
- Energy recovery - reduces incoming power required for testing of pumps
- Continuous 6,000 psi (413 bar) auxiliary pump

### HTC Key Features

- Remote monitoring - the operator is removed from the test environment
- DynPro<sub>2</sub> data acquisition and control system
- Dynamometer mode allows testing of a motor as a motor (not a pump)
- Effortless contamination control to ISO 20/16/13 (per Cyclic Stabilization Test SAE ARP4205)
- No de-rating the test bench in 50 Hz countries

### Specifications

- 400 hp (298 kW) electric motor
- 365 gal. (1,380 l) component oil tank with additional 100 gal. (379 l) separate machine reservoir
- High capacity 20,000 lb (9,072 kg) work support with integral sump
- Rpm range: 0 - 3,400
- Peak torque: 1,255 lb-ft (1,700 Nm)
- Includes torque load cell
- Adjustable driveline height: 16 - 77 in. (41 - 196 cm)
- Four (4) PWM outputs and two (2) solenoid outputs for component control
- Two (2) variable flow supply circuits
- Reduced voltage soft-start motor starter
- Cooling tower cooling: 40 gpm (151 lpm) at 90°F (32°C), inlet water at 40 psi (3 bar) and 120°F (49°C) oil temperature (40% of installed hp capacity)

## Specifications (Continued)

### Heated Reservoir

- 20 hp (15 kW) heater in component reservoir

### Component Cooling Loop

- Allows testing of larger closed loop pumps
- 80 gpm to 425 psi (303 lpm to 30 bar)

### Positive Displacement Work Table Pump

- Predictable and reliable work table scavenging
- Work table size 144 x 76 in (366 x 193 cm)
- Volume capacity minimum 50 gal. (189 l); maximum 175 gal. (662 l)
- Load capacity 20,000 lb (9,072 kg)

### Hydraulic Oil

- Hydrocarbon (Buna compatible)
- ISO grade VG32 or VG46
- Minimum viscosity 66 SUS (12 mm<sup>2</sup>/s) through temperature range
- Maximum Temperature 180°F (82°C)
- Total oil volume required 550 gal. (2,100 l)

### DynPro<sub>2</sub> Data Acquisition & Control System

1-PC with 2 monitors

#### Inputs

- 24 analog input channels for pressures, temperatures, voltage, etc.
- 12 frequency inputs for flow and speed
- Dual LCD modules for displaying channel names, ranges, etc.

#### Outputs

- 4 PWM outputs 0-3,000 mA
- 2 solenoid outputs 12 VDC or 24 VDC to 3 amps
- 1 optical tachometer

#### Network

- Wireless router
- USB to PC (for Transmission Analyzer)
- Transmission Control Module (TCM) capable
- Ethernet

#### Internals of Machine

- All instruments available through the DynPro<sub>2</sub> interface (no mechanical gauges)
- Digital control of all prominent controls required for testing
- Manual controls of setup functions and less common controls three (3) for testing

## Specifications (Continued)

### Continuous Torque

Shaft	lb-ft (Nm)	RPM	Baseline RPM*
1	1,255 (1,700)	3,400	1,517

\*Torque begins to reduce.

### Electrical Supply (50 Hz or 60 Hz, 3-phase)

Amperage	Amps	Main Disconnect Sized Amp
400 VAC	593	800
460 VAC	516	700
575 VAC	413	600

Can be configured for most 3-phase AC electrical supplies.

### Pressurized Oil Supply

Qty.	gpm (lpm)	psi (bar)	Notes	Filtered
1	0 - 82 (0 - 310)	350 - 6,000 (24 - 414)	Variable pump	No
1	0 - 34 (0 - 129)	up to 870 (up to 60)	Two control strategies: control pressure, control flow	Yes
1	0 - 5.5 (0 - 20)	60 - 7,250 (4 - 500)	Operation above 5,000 psi (345 bar) by itself	No
1	0 - 5.5 (0 - 20)	75 - 5,000 (5 - 345)	Operates simultaneously 5,000 psi (345 bar) and below	Yes
3	0 - 3 (0 - 11)	0 to 1,100 (0 to 75)	Operates simultaneously 5,000 psi (345 bar) and below	Yes
1	0 - 12 (0 - 45)	up to 200 (up to 14)	Lube for bearings	Yes

## Pump and Motor Test Package

A built-in manifold provides the capability of testing closed loop hydraulic circuits without having to make time-consuming plumbing changes. This allows for testing both sides of a hydrostat transmission or closed looped pump simultaneously. This circuit also includes a high pressure filter and component cooling loop circuit. Another manifold allows the setting of margin pressure/standby pressure on load sensing pumps. The last feature in this package are 2 case drain flow meters.

### Diagnostic Flow Loops

Flow Loops	Qty.	gpm (lpm)	Notes
Rectifier flow loop with high pressure filtration	1	5 - 160 (19 - 606)	non-loadable, 6,000 psi (414 bar)
Flow Loop 1	1	5 - 210 (19 - 795)	non-loadable, 6,000 psi (414 bar)
Flow Loop 2	1	5 - 160 (19 - 606)	loadable, 6,000 psi (414 bar) includes margin valve
Flow Loop 3	1	5 - 210 (19 - 795)	loadable, 6,000 psi (414 bar)
Case Drain 1	1	0.5 - 5 (1.9 - 19)	non-loadable, 70 psi (5 bar)
Case Drain 2	1	2 - 20 (8 - 76)	non-loadable, 70 psi (5 bar)

The HTC Series of Hydraulic Test Centers offers improved features and benefits with an emphasis on safety, performance, ergonomics and sustainability.

## HTC Features and Benefits

### Improved Filtration and Maintenance

- Effortless contamination control to ISO 20/16/13 (per Cyclic Stabilization Test SAE ARP4205)
- Greater equipment longevity
- Component cleanliness verified for warranty
- All filter changes are done from the floor in just two (2) locations
- Only four (4) replacement filter elements
- Additional filtration for supply circuits

### Consistent Global Performance

- Same machine performance regardless of utility frequency
- No de-rating the test stand in 50 Hz countries

### Dynamometer Mode

- Allows testing of a motor as a motor (not a pump)

### Two (2) Variable Flow Supply Circuits

- Simplified plumbing for split flow transmissions

### Positive Displacement Work Table Pump

- Predictable and reliable work table scavenging

### DynPro<sub>2</sub> Data Acquisition and Control System

- Collect setup and testing information from one location
- Automated testing with pass/fail criteria
- Four (4) PWM outputs and two (2) solenoid outputs for component control

### Operator Safety and Ergonomics

- DynPro<sub>2</sub> removes the operator from the testing environment
- Functional decking and steps
- Built-in air tool supplies

### Driveline Improvements

- Driveline can be moved without power unit on
- Safer support for driveline with lead screws
- Standard driveline height 77 in (196 cm)
- Test tall transmission and drop box assemblies

### Component Cooling Loop

- Allows testing of larger closed loop pumps
- 80 gpm to 425 psi (303 lpm to 30 bar)

## Optional Accessories and Services

### Accessories

- Air-Cooled Eddy Current Load Stand
- Camera System
- CE Marked
- Contamination Monitoring
- E-Stop Button Kit
- Fault Beacon Light with Siren
- Instrumentation Package
- Monitor Mounting Bracket
- Oil Mist Collector
- Port for Work Table
- Tooling and Adapters for Component Testing
- Surface Pro Tablet
- Workstation
- Work Table (for operator)

### Services

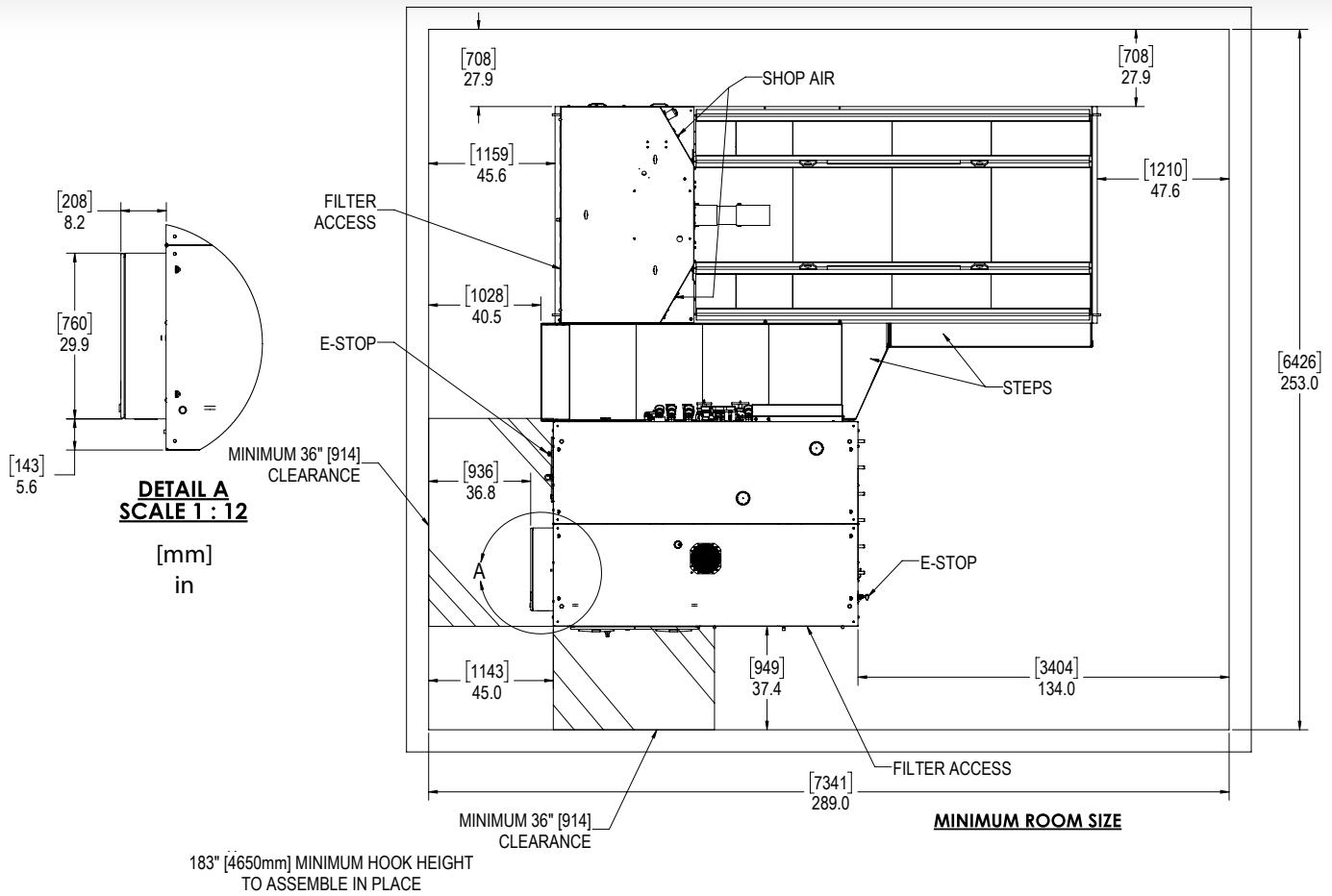
- Design, Project and Construction Management
- Onsite Support
- Rebuild and Remanufacturing
- Shop Level Drawings Review

*As a safety precaution, Taylor Dynamometer recommends a torsional analysis to uncover any potential torsional problems that exist for each application. This analysis will identify any torsional issues (frequencies) that should be fixed prior to operation. Excessive linear vibration may also create problems that must be mitigated for continued operation. It is the customer's responsibility to ensure that these vibration issues are addressed upon application. Equipment failures attributed to linear or torsional vibration are not warrantable.*

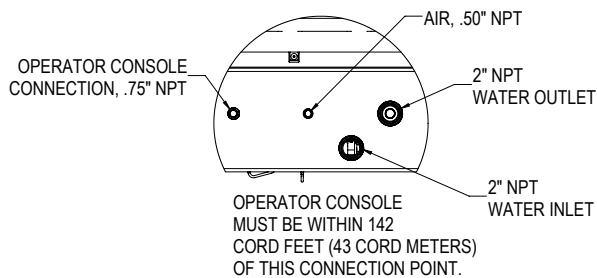
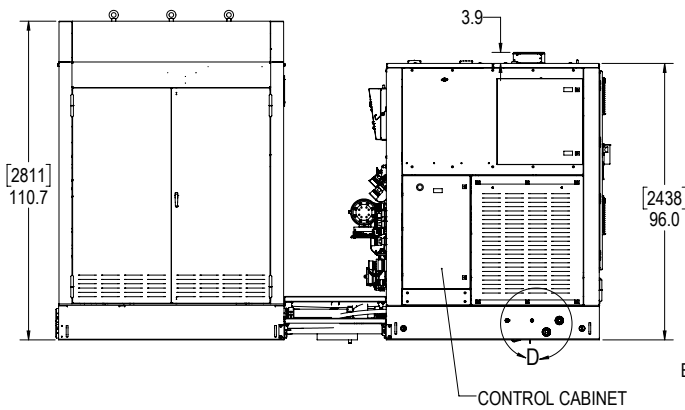
*For overhung loads, such as a belt or gear drive, please contact Taylor Dynamometer to ensure that the system will meet the required performance needs.*



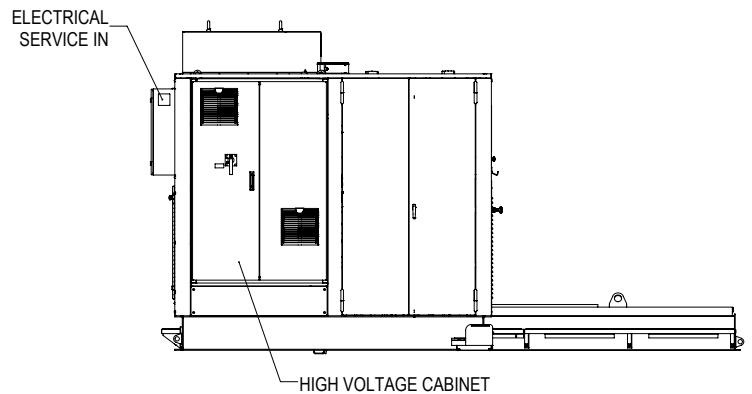
DynPro<sub>2</sub> Sensor Box with Instrumentation Package Accessory



Shipping Weight (approximate): 35,000 lb (15,875 kg)  
Operator's Station or Control Room (not shown) is recommended to be outside of the test cell.



**DETAIL D**  
SCALE 1 : 8



**Everything you need to succeed**

