

HA4500 Test Stand



HA4500

HA4500 Test Stand

The HA4500 Test Stand has been designed for the diesel specialists with requirements for testing the larger multicylinder and medium sized single cylinder fuel pumps.

The HA4500 Test Stand is based upon technology proven in HA3000, PGM and AVM2-PC test benches. The HA4500 is a cost effective, easy to use, and accurate test stand which will test a wide range of diesel fuel pumps.

Main Features

- High torque 35 kW DC drive motor.
- Speed range 30-3000 RPM.
- Direct drive system – DC motor is directly coupled to the flywheel.
- Electronic feedback system providing negligible speed drop between full load and no load positions of the injection pump.
- 12 line electronic fuel measuring system (spm) or open top graduate metering.
- Pump advance and rack measurement displayed digitally.
- Turbo boost pressure and phasing displayed digitally.
- Versatile test platform for multi cylinder or single cylinder applications.

Benefits

- Strong construction and proven easy to use ergonomic design.
- Compact size for easy installation.
- Able to test a wide range of injection pumps from small automotive up to large PE12ZWM multi-cylinder pumps and 22 mm plunger diameter single cylinder pumps with additional single cylinder cambox mounted on bed plate.
- World wide spares availability and customer support.
- Enhanced accuracy of pump testing coupled with efficient operation.
- Significant increase in speed of test with electronic metering option.

Screen Display

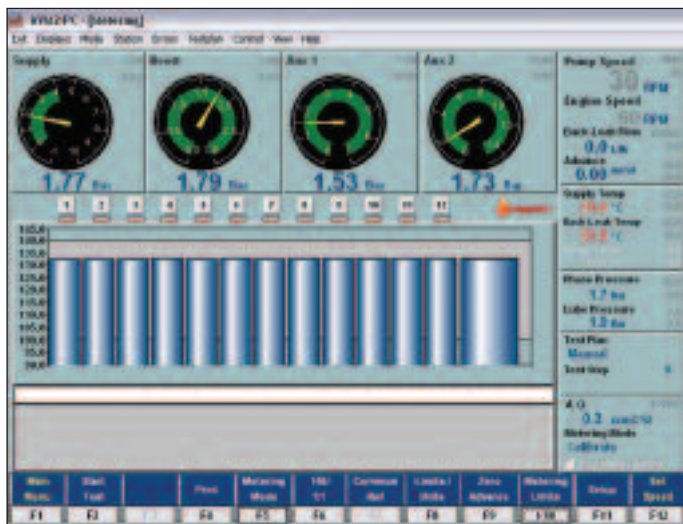


Figure 1 HA4500 metering screen display

TECHNICAL SPECIFICATION

Drive System	
Drive Motor	D.C Thyristor controlled, 35KW (47 HP).
Speed Range	30 – 3000 RPM.
Power/Torque	35 kW Motor. Speed (rpm) 0 500 1000 2460 Power (kw) 0 17 35 35 Torque (Nm) 330 330 330 130
Speed Control	Closed loop speed control system with integral control giving zero steady state droop. Speed selection via a pc, with analogue speed trim adjustment of 10% for governor testing. Acceleration rate of 400 RPM per second. Ability to store/ select 6 commonly used speeds. Nudge function to orientate drive to aid pump mounting.
Flywheel	Inertia – 5.3 kgm ² (126 lbft ²). Air operated brake for emergency stopping.
Stiffness	Anti-backlash coupling 600 mm ² /stroke ISO rating rating or solid oldham drive coupling (optional). Suitable for 75, 90 and 120 mm drive couplings. Adaptors available for most drives.
Calibration System	
12 line electronic metering system (spm) or open top graduate.	
Instrumentation	
Tachometer	Digital display, resolution 1 rpm speed, stability ± 1 rpm.
Fuel Supply	Gauge. 1 bar to 7 bar, 30 in Hg to 60 psi (8 bar option available).
Auxiliary 1	0 to 7 bar/0 to 100 Psi.
Auxiliary 2	0 to 11 bar/0 to 160 Psi.
Pressure Phasing	0 to 45 bar/0 to 650 Psi.
Lube Oil	0 to 7 bar/0 to 100 Psi.
Fuel Supply Temperature	Digital display.
Back Leakage	Flow meter, calibrated from 100-1200 cc3/min on ISO4113 test oil at 40°C.
Boost Pressure (optional)	0-3 bar.
Advance (optional)	Range +/-10 mm, Resolution 0.1 mm.
Rack (optional)	Range 30 mm, Resolution 1.0 mm.
Injector Mount	
Quick release injector mount to accommodate up to 12 off ISO4010, ISO orifice plate and 'T' size injectors as well as other common types.	
Phasing	
Low pressure spill and high pressure spill phasing as standard. Optional electronic phasing (0.1° resolution display).	
Hydraulic System	
Test Oil Supply and Controls	Electric motor directly driving a pump providing 1400 l/hr up to 7 bar (7-60 psi).
Pressure Phase Supply	0 to 45 bar / 0-650 psi.
Tank	100 litre capacity/22 imperial gallons.
Temperature Control	Display resolution of 0.1 temperature reading accuracy +/-0.2°C. System temperature controlling to +/-2°C. The default setting is 40°C but 25-65°C can also be set as an alternative.
Lube Oil Supply	250 l/hr at 50Hz and 300 l/hr at 60Hz. Pressure 0-7 bar/0 to 100 psi. Tank 14 litre capacity/3 imperial gallons.
External Calibrator (optional)	An external calibrator HB219 which has a 1000 cc capacity can be fitted externally for measuring output from larger single cylinder pumps.
Shot Count	Variable between 1 and 9999 with the ability to store/select 8 commonly used shots, e.g. 50, 100, 150, 200, 300, 400, 500 and 1000 (applicable to the external single cylinder calibrator HB219).
Cambox & Accessories (optional)	A cambox kit is available for testing single cylinder pumps of C & CC up to 22 mm lift. The cambox has an integral flywheel giving additional inertia of 1 kgm ² . A module loading trolley AC79 to facilitate assembly and storage is also available.
Auxiliaries:	Two D.C Supply outputs of 0-24V at 3 amps, which can be parallel, connected to give 6 amps. Multipin 110V connector (for external single cylinder calibrator (HB219). Real time clock display. Socket for advance and rack transducer.
Installation	
Electrical supply	35 kw drive 3 Phase 380 – 440V 120 Amps 50Hz. 3 Phase 420 – 480V 120 Amps 60Hz.
Compressed Air	6 bar (90 psi) Min: 8 bar (120 psi) Max.
Water	8 lt. (1.7 imp gallons)/ min; 20°C Max temperature, pressure from 1-5 bar pressure.

Additional Accessories

Optional Kits

- 12 cylinder electronic phasing
- Digital advance (Kit No. HB369)
- Digital rack (Kit No. HB370)
- Turbo boost (Kit No. HB371)
- In line pump fitting kit (HF125)
- Rotary pump fitting kit (HF126)
- Combined rotary and in line pump kit (HF137)
- Test Injectors (sold singly)
- Fitted with ISO 4010 Nozzle (AI29)
- Fitted with BDN8S2P Nozzle (AI30)
- Fitted with T size Nozzle (AI32)

Optional Extras

- Universal cambox (HF644)
- Cambox trolley (AC79)

Ordering

The HA4500 Test Stand is supplied with anti backlash drive coupling, pressure phasing and lube oil supply.

Shipping

Gross Weight: 2036 kgs.

Net Weight: 1365 kgs.

Case size: 245 x 138 x 223 cms.

Contact your local **Hartridge™** distributor
for more detailed information or visit

www.hartridge.com



The Hartridge Building
Network 421
Radclive Road
Buckingham MK18 4FD
United Kingdom

Tel: +44 (0)1280 825600

Fax: +44 (0)1280 825601

Email: sales@hartridge.com

www.hartridge.com

Continuous development is taking place. **Hartridge™** reserves the right to alter the design and/or specification without prior notice.

© **Hartridge™** 2005

HA4500 (EN) 07/05