

HYDRAULIC TRAINER WORK BENCH (ECAML-HYDRAU-2000A)

WORKSTATION



This photo is only for a reference.

- a) This workbench is consists of the following elements:
- 1) 2-place workstation
 - 2) Vertical Panel for Hydraulic actuators assembly
 - 3) Set of Hydraulic compnent with quick coupling
 - 4) Set of Hydraulic hose with quick coupling
- b) The equipment shall have the following capabilities:
- 1) Analysis of the operation of the individual supplied components
 - 2) Q-p Characteristics of the hydraulic pump.
 - 3) Control of a single acting actuator
 - 4) Control of a double acting actuator
 - 5) Control of a hydraulic motor forward and reverse.
 - 6) Regenerative circuit
 - 7) Sequential cycle of two actuators
 - 8) Sequential cycle of one actuator and one hydraulic motor
 - 9) Actuator operation at different speeds
 - 10) Use of the hydraulic accumulator in emergencies.
- c) Theoretical experimental hand book with guide to the exercises shall be provided.
- d) Work bench shall be provided.

Technical

Hydraulic Trainer Workbench

- a) The Technical requirement of the Hydraulic Trainer workbench shall be as follow:
- i. Vertical mounting panel



Alumimun profile special mounting nuts are fixed on the panel in order to fit the hydraulic component as follows:

- aa. Single acting cylinder with adjustable load, dia.1= 20mm, dia.2 = 12mm, length = 200mm
 - bb. Double acting cylinder, dia.1 = 30mm, dia.2 = 16mm, Length = 150mm
 - cc. Membrane Accumulator, V = 1.4L, pre-loading of N₂ = 25 bar.
 - dd. Reversible Hydraulic Motor, 8.6 cc/rev
- ii Set of Hydraulic components
- aa. 1 set of Flowmeter
 - bb. 2 pcs of shut-off valves
 - cc. 1 pc of pressure relief valve and/or sequence valve
 - dd. 1pc 4/2 way bistable directional valve, lever control
 - ee. 1pc closed-center 4/3 way directional valve, lever control, 3 fixed positions
 - ff. 2 pcs non return valves
 - gg. 1pc pilot operated non return valve
 - hh. 2pcs one way flow control valve
 - ii. 1pc adjustable one-way throttle valve.
 - jj. 1 pc pressure reducing valve
- iii. Set of coupling and hoses
- aa. 4 pcs 0~150bar pressure gauge with quick coupling
 - bb. 10 lengths Flexible hoses with quick coupling
 - cc. All the described Hydraulic components are provided with quick coupling.

General Specification of this Hydarulic Training Kit:

Electrical Motor : 1HP Available on both 240VAC 1 phase







Pressure : max. 140 bar

Flow rate : 4 liter per minute






Oil Tank capacity : 8 liter

Testing Load : gradually to 2000 N










Description	Out Look	Unit Price
2 place workstation with Hydraulic Power Unit Attached <ul style="list-style-type: none"> ● Vertical panel mounting plate ● Horizontal positioning mounting plate ● Oil drip tray ● Logic module holder ● Component storage compartment. 		1
4/3 way center by-pass, Hydraulic Directional Control Valve <ul style="list-style-type: none"> ● Max. Pressure : 250kgf/cm² ● Max. Flow : 60l/min ● Operation : Manual operated ● Mounting : Sub-plate ● Connection : Quick coupling 		0
4/3 way center block, Hydraulic Directional Control Valve <ul style="list-style-type: none"> ● Max. Pressure : 250kgf/cm² ● Max. Flow : 60l/min ● Operation : Manual operated ● Mounting : Sub-plate ● Connection : Quick coupling 		1
4/3 way center cylinder port de-energies, Hydraulic Directional Control Valve <ul style="list-style-type: none"> ● Max. Pressure : 250kgf/cm² ● Max. Flow : 60l/min ● Operation : Manual operated ● Mounting : Sub-plate ● Connection : Quick coupling 		0
4/3 way center opened, Hydraulic Directional Control Valve <ul style="list-style-type: none"> ● Max. Pressure : 250kgf/cm² ● Max. Flow : 60l/min ● Operation : Manual operated ● Mounting : Sub-plate ● Connection : Quick coupling 		0
4/2 way P to A, B to T, Hydraulic Directional Control Valve <ul style="list-style-type: none"> ● Max. Pressure : 250kgf/cm² ● Max. Flow : 60l/min ● Operation : Manual operated ● Mounting : Sub-plate ● Connection : Quick coupling 		1








<p>4/3 way center by-pass, Hydraulic Directional Control Valve</p> <ul style="list-style-type: none"> • Max. Pressure : 250kgf/cm² • Max. Flow : 60l/min • Operation : Solenoid operated • Mounting : Sub-plate • Connection : Quick coupling 		0
<p>5/3 way center block, Hydraulic Directional Control Valve</p> <ul style="list-style-type: none"> • Max. Pressure : 250kgf/cm² • Max. Flow : 60l/min • Operation : Solenoid operated • Mounting : Sub-plate • Connection : Quick coupling 		0
<p>5/3 way center cylinder port de-energies, Hydraulic Directional Control Valve</p> <ul style="list-style-type: none"> • Max. Pressure : 250kgf/cm² • Max. Flow : 60l/min • Operation : Solenoid operated • Mounting : Sub-plate • Connection : Quick coupling 		0
<p>5/3 way center opened, Hydraulic Directional Control Valve</p> <ul style="list-style-type: none"> • Max. Pressure : 250kgf/cm² • Max. Flow : 60l/min • Operation : Solenoid operated • Mounting : Sub-plate • Connection : Quick coupling 		0
<p>5/2 way P to A, B to T, Hydraulic Directional Control Valve</p> <ul style="list-style-type: none"> • Max. Pressure : 250kgf/cm² • Max. Flow : 60l/min • Operation : Solenoid operated • Mounting : Sub-plate • Connection : Quick coupling 		0









<p>Pressure relief and/or sequence valve</p> <ul style="list-style-type: none"> • Max. Flow : 12 l/min • Max. Pressure : 250 bar • Pressure Adjusting Range : 35 ~ 140 bar • Operation : Hydraulic Pilot • Mounting : Sub-plate • Connection : Quick Coupling 		1
<p>Pressure compensated Flow control Valve</p> <ul style="list-style-type: none"> • Max. Working Pressure : 70 bar • Adjusting Flow : 0.01 ~ 8 l/min • Free Flow : 20 l/min • Operation : Mechanically Cam / One way • Mounting : Sub-plate / Thread • Connection : Quick Coupling 		1
<p>Bourdon Type Pressure Gauge with Glycerin Bath</p> <ul style="list-style-type: none"> • Gauging Range : 10 ~ 250 bar • Reading area : 31 cm² • Mounting Type : Threaded • Connection : Quick Coupling • Casing : Nickel Plated 		4
<p>Hydraulic Pressure Reducing Valve</p> <ul style="list-style-type: none"> • Max. Flow Rate : 40 l/min • Max. Working Pressure : 210 kgf/cm² • Pressure adjusting Range : 35 ~ 140 bar • Mounting : Sub-plate • Connection : Quick Coupling 		1
<p>Hydraulic Pilot Operated Pressure Relief Valve</p> <ul style="list-style-type: none"> • Max. Flow : 100 l/min • Max. Working Pressure : 250 kgf/cm² • Pressure Adjusting Range : 35 ~ 140 bar • Mounting : Sub-plate • Connection : Quick Coupling 		0
<p>Hydraulic De-Lockable Check Valve</p> <ul style="list-style-type: none"> • Max. Flow : 50 l/min • Max. Working Pressure : 210 kgf/cm² • Cracking Pressure : 0.35 bar • Mounting : Sub-plate • Connection : Quick Coupling 		1
<p>Port Converter (Male to Female)</p>		2



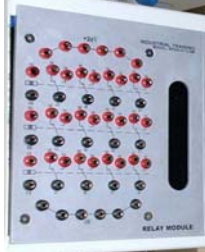
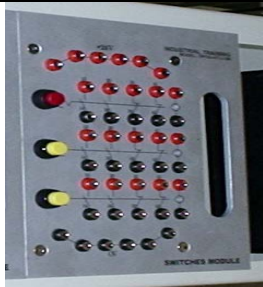




T-Joint Connection		3
<p>Industrial Standard Hydraulic Cylinder come with</p> <ul style="list-style-type: none"> • Model : RP-HT-HC-20-200-CWB-SFTC-88-E • Gradual load mounting • Safety cover • Max. Working pressure : 140 bar • Bore size : 20 mm dia. • Stroke : 200 mm • Cylinder Mounting structure • Connection : Quick Coupling 		1
<p>Industrial Standard Hydraulic Cylinder come with</p> <ul style="list-style-type: none"> • Model : RP-HT-HC-30-150-CWB-SFTC-88-E • Gradual load mounting • Safety cover • Max. Working pressure : 140 bar • Bore size : 30 mm dia. • Stroke : 150 mm • Cylinder Mounting structure • Connection : Quick Coupling 		1
<p>Industrial Standard Hydraulic Motor come with</p> <ul style="list-style-type: none"> • Model : RP-HT-OMM-100-CFB-SFTC-88-E • Bi-directional hydraulic orbit motor • Operating pressure : 140 bar • Maximum pressure : 225 bar • Maximum rotary load : 650 rpm • Maximum pressure in return line : 160 bar • Displacement volume : 98.9 cm cube 		1
<p>Flexible Hydraulic Hose come with Quick Coupling lenth (0.8 meter)</p> <ul style="list-style-type: none"> • Model : RP-HT-HH-STH-14PT-CWF-800-11-E • Operating Pressure : 60 bar • Maximum Pressure : 120 bar • Temperature range : -40 ~ + 125 degree Celsius 		4

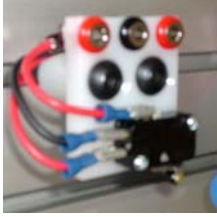


<ul style="list-style-type: none"> Bending Radius : 100 mm 		
<p>Flexible Hydraulic Hose come with Quick Coupling lenth (0.6 meter)</p> <ul style="list-style-type: none"> Model : RP-HT-HH-STH-14PT-CWF-600-11-E Operating Pressure : 60 bar Maximum Pressure : 120 bar Temperature range : -40 ~ + 125 degree Celsius Bending Radius : 100 mm 		6
<p>Shut off valve</p> <ul style="list-style-type: none"> Model : RP-HT-AL-02-68-E Manually Actuated Operating pressure : 120 bar Max. Pressure : 210 bar 		2
<p>Gradual load</p> <ul style="list-style-type: none"> Model : RP-HT-SL-GDL2000N-300MM-E Gradual load : 0~2000N 		1
<p>One way flow Control valve</p> <ul style="list-style-type: none"> Model : RP-HT-PT-02-58-E Adjustable by rotary knob Max. Operating pressure : 120 bar Max. Pressure : 210 bar Nominal flow rate : 20 l/min 		2
<p>Flow meter set</p> <ul style="list-style-type: none"> Model : RP-HT-FM-10PT Measuring range: 0~ 200l/min 		1
<p>Hydraulic accumulator c/w safety valve and pressure gauge</p> <ul style="list-style-type: none"> Model : RP-HT-ACC-50-1SV-1PG-2FC-78-E Glycerin bath-type damped for protection against pressure peeks Indication range : 0~100 bar Nominal diameter : 63mm Operation static pressure : 0~120 bar Operation dynamic pressure : 0~95 bar 		1
<p>Pressure port manifold</p> <ul style="list-style-type: none"> Model : RP-HT-PPM-1-3-50-E 1 inlet point 3 outlet point Maximum pressure : 200 bar 		1



<p>Tank port manifold</p> <ul style="list-style-type: none"> ● Model : RP-HT-TPM-3-1-50-E ● 3 inlet point ● 1 outlet point <p>Maximum pressure : 200 bar</p>		1
<p>Counter Module</p> <p>Model: RPGS-HT-2-CM</p> <ul style="list-style-type: none"> ● 6 outlets of +24v ● 6 outlets of 0v ● 24vDC digital counter 		0
<p>Relay Module</p> <p>Model: RPGS-HT-2-RM</p> <ul style="list-style-type: none"> ● 12 sets of SPDT contact ● 6 outlets of +24V ● 6 outlets of 0V 		0
<p>Switches Module</p> <p>Model: RPGS-HT-2-SM</p> <ul style="list-style-type: none"> ● 2 spring return switches ● 1 position detent switches ● 6 NO contact ● 6 NC contact ● 6 outlets of +24v ● 6 outlets of 0v 		0
<p>Timer Module</p> <p>Model: RPGS-HT-2-TM</p> <ul style="list-style-type: none"> ● 2 second's timer ● 4 SPDT contact ● 6 outlets of +24v ● 6 outlets of 0v 		0
<p>24V DC power supply</p> <p>Model: RPGS-HT-2-HC-24E6A</p> <ul style="list-style-type: none"> ● 1 outlet of +24V ● 1 outlet of 0V 		0



<p>Limit Switches Model: RPGS-HT-2-RLLS</p> <ul style="list-style-type: none">● Roller Lever Limit Switch● SPDT contact● 24VDC		0
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ECAML

