



*Non contractual photo*

SERVICE : NECESSARY SERVICES : 3 X  
400V + N + T  
DIMENSIONS : 2120 X 700 X 1700

WEIGHT : SINGLE SIDED 110KG, DOUBLE  
SIDED 140KG

## REFERENCE : SH MILLENIUM

The SH.Millennium hydraulic simulator has been designed to meet the growing need for "à la carte" teaching to quickly change the configuration of the simulator to make it accessible to all levels of training.

SH.Millennium is evolutionary, because it can be completed by other types of hydraulic units, by traditional or proportional hydraulic modules, by electronic control cards loop

The structure of the SH.Millennium home can be configured either single-sided, allowing the connection of hydraulic modules at the back or front, or double-sided, allowing a double workstation

The hydraulic units dedicated to the SH.Millennium simulator are available with fixed displacement pumps, either with the single pump unit for single-sided operation or with the double-pump unit for double-sided operation.

We offer as an indication, various basic configurations that can obviously evolve or be chosen according to the needs.

### Technical specifications :

#### SIMPLE FACE BENCH

- Hydraulic elements on one side
- only 1 TP in operation
- Hydraulic connections -> back side
- Electrical connections -> front panel
- 2 possible configurations

Study of **CONVENTIONAL** hydraulics  
Study of **PROPORTIONAL** hydraulics  
**DOUBLE-SIDED BENCH**

- Hydraulic elements on 2 sides
- 3 possible configurations:
- 2 TP running at the same time
- Requires a double central
- Hydraulic and electrical connections on the front panel
- 3 possible configurations

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#### MODULE BANK :

**A MODULATED BANK** is offered as an option.  
In aluminum profile mounted on wheels with brakes, it allows the

storage of components waiting for use.

**CONVENTIONAL HYDRAULICS  
MIL-BS - BASIC HYDRAULIC CONFIGURATION WITH MANUAL  
CONTROL**

**MIL-CBS fixed single displacement hydraulic power unit mounted  
on wheels comprising :**

- 1 tank equipped with visual level, 1 return filter, 1 fill and drain plug,
- 1 gear pump, manometer
- 1 motor starter box with magnetothermal protection, start button, emergency stop,
- 1 set of connection accessories and a hose support,
- 1 barrel of ISO VG32 hydraulic oil.

**Reception structure mounted on wheels with the following  
modules :**

- 1 E15M electric stage with 3 pushbuttons, 3 rotary knobs and 4 relays,
- 1 module M 1 - 4 manometers,
- 1 module M 2 - direct acting pressure limiter,
- 1 module M 3-1 - manually operated 4/2 valve,
- 1 module M 4.1 - tap,
- 1 module M 6.3 - 3 check valves,
- 1 module M 10 - 4/3 distributor with manual control,
- 1 module M 11 - double piloted flap,
- 1 module M 12 - double flow limiter,
- 1 module M 14 - flow regulator,
- 1 module M 15 - pressure reducer,
- 1 module M 16 - sequence valve,
- 1 module M 18-1 - accumulator,
- 1 module M 23 - hydraulic motor,
- 1 module M 24 - hydraulic cylinder,
- 1 module M 47 - piston flowmeter

**Lots of complementary components**

**Set of electrohydraulic mil-el components including :**

- 1 module M3 - 4/4-way distributor, monostable, electrically operated \*
- 1 module M7 - 4/3 closed center, electrically controlled \* distributor
- 1 module M8 - 4/3 center Y distributor, electrically controlled \*
- 1 module M9 - distributor 4/3 center open, electrically controlled \*
- 1 module M 19 - pressure switch \*

**Advanced mil-av hydraulic components package including :**

- 1 module M 80 - vertical cylinder with suspended load and load protection hood,
- 1 module M 82 - graduated test tube,
- 1 module M 17- pressure drop,
- 1 module M 33 - contactor-circuit-breaker,

- 1 module M 42 - double balancing valve.

#### **Set of mobile hydraulic mil-mo components including :**

- 1 module M 35 - manually operated 3-way valve
- 1 module M 36 - 2-element hydraulic control valve,
- 1 module M 37 - hydraulic manipulator 4directions,
- 1 module M 38 - hydraulic steering device,
- 1 module M 83 - proportional distributor Danfoss PVG32,
- 1 module M 84 - 2-way electric manipulator \*

#### **Hydraulic accessories including :**

- 1 batch of hydraulic hoses of different lengths equipped with clean couplers
- 1 set of capillaries for minimum sockets, 1 set of equipped tees, 1 pressure test module

#### **PROPORTIONAL HYDRAULICS**

#### **PROPORTIONAL MIL- PRBO - HYDRAULIC CONFIGURATION IN OPEN LOOP :**

MIL-CBS Single Displacement Fixed Hydraulic Plant mounted on wheels comprising: (Equipment for single-sided bench)

- 1 tank equipped with visual level, 1 return filter, 1 fill and drain plug,
- 1 gear pump.
- 1 three-phase electric motor 0.75kW,
- 1 manometer,
- 1 bypass valve,
- 1 motor starter box with magnetothermal protection, start button, emergency stop,
- 1 set of connection accessories and a hose support,
- 1 barrel of ISO VG32 hydraulic oil.
- Mass: 75 kg.

#### **Reception structure mounted on wheels with the following modules :**

- 1 module M1 - 4 manometers
- 1 module M2P - controlled pressure limiter
- 1 module M3 - 4/2 power distributor
- 1 module M7 - 4/3 distributor with electric control
- 1 module M23 - hydraulic motor,
- 1 module M24 - hydraulic cylinder
- 1 module M28 - proportional flow controller
- 1 module M29 - proportional pressure regulator
- 1 module M32 - proportional proportional distributor
- 1 module M34A - analog turbine flowmeter with digital display
- 1 E15M electrical board with 3 pushbuttons, 3 rotary knobs and 4 relays

**Lots of complementary components for a proportional hydraulic configuration specific module servo :**

- 1 module M14 - flow regulator
- 1 module M50 - circuit selector
- 1 module M53 - proportional proportion 4/3 distributor
- 1 module M54 - proportional flow controller
- 1 module M55 - proportional pressure regulator
- 1 module M59 - servomotor with mechanical brake
- 1 module M74 - servo-actuator + counter-actuator

**The servo-specific modules require an E30 electrical stage comprising :**

- 1 configurable digital controller in open loop or in closed loop with the PID algorithm, and parameterization software E30R
- 1 E2S potentiometer,
- 1 E3S switches,
- 1 relay E4S,
- 1 ammeter to one channel E1M.

**HYDRAULIC POWER PLANTS**

**MIL-CBS Single Displacement Fixed Hydraulic Plant mounted on wheels comprising : (Equipment for single-sided bench)**

- 1 tank equipped with visual level, 1 return filter, 1 fill and drain plug,
- 1 gear pump, pressure gauge.
- 1 bypass valve,
- 1 motor starter box with magneto-thermal protection, start button, emergency stop,
- 1 set of connection accessories and a hose support,
- 1 barrel of ISO VG32 hydraulic oil.
- Mass: 75 kg.

**MIL-CBD fixed double displacement hydraulic power unit mounted on wheels comprising: (equipment for double-sided bench):**

- 1 tank equipped with visual level, 1 return filter, 1 fill and drain plug,
- 2 gear pumps.
- 2 manometers,
- 2 bypass valves,
- 2 motor starters with magnetothermic protection, 1 start button, 1 emergency stop.
- 2 sets of connection accessories and a hose rack,
- 1 barrel of ISO VG32 hydraulic oil.
- Mass: 144 kg.

**MIL-CPR Single-Displacement Hydraulic Single-Displacement Hydraulic Power Plant Comprising : (Equipment for single-sided bench)**

- 1 tank equipped with visual level, 1 filter back, 1 filler and drain plug,
- 1 variable displacement piston pump with LS control, flow rate 10l / min, pressure 80bar,
- 1 three-phase electric motor 2,2kW,

- 1 high pressure filter,
- 1 manometer,
- 1 vannedeby-pass,
- 1 motor starter box with thermomagnetic protection, 1 start button, 1 emergency stop. 1 set of connection accessories and a hose support.
- 1 was ISO VG32 hydraulic oil.

**MIL-CMIXTE dual-mounted dual-mounted hydraulic power unit mounted on castors including: (Equipment for double-sided bench)**

- 1 tank equipped with visual level, 1 return filter, 1 fill and drain plug,
- 1 gear pump.
- 1 variable displacement piston pump with LS control.
- 2 manometers,
- 2 bypass valves,
- 2 motor starters with magnetothermic protection, 1 start button, 1 emergency stop.
- 2 sets of connection accessories and a hose rack,
- 1 barrel of ISO VG32 hydraulic oil.
- Mass: 144 kg.