

MF100BH (BASIC HYDRAULICS TRAINER) PARTS LIST CATALOG

OCTOBER 2025



10/23/2025

MF100BH (BASIC HYDRAULICS TRAINER) PARTS LIST

NOTE: Quantity required per side is ONE (1) unless otherwise noted.

WORKSTATION ASSEMBLY

FRAME ASSEMBLY

NOTE: *SINGLE station and DUAL station trainers use the same frame assembly (shown without trays and hose caddy)*

Includes:

- Four (4) wheel casters w/brakes
- Component storage compartment
- Writing station/tray
- Hose caddy(s)
- Electrical connections and boxes
- All-aluminum frame finished with satin black powder-coating

P/N: MF100BH-FA



WORKSTATION PANEL

(Includes all mounting hardware and handles)

P/N: MF100BH-02

SPECIFICATIONS -

Dimensions: 50.0" x 35.0"
(1270mm x 889mm)

Weight: 28 lbs (12.7 kg)



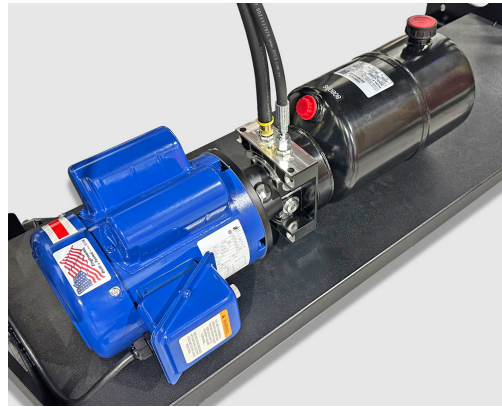
NOTE: Items shown in this catalog may be different to those actually offered. FPTI™ reserves the right to substitute items shown with items of similar or higher quality.

POWER SUPPLY

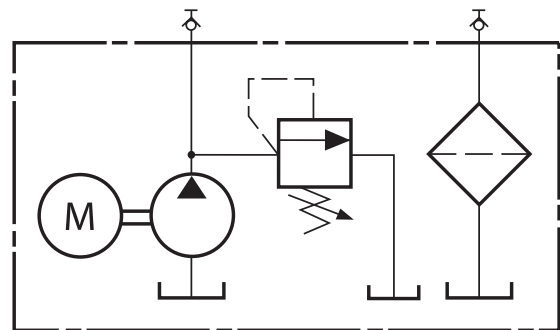
P/N: MF100BH-1B-2B-3H-4E-5A-6F

SPECIFICATIONS -

Electric motor:	1.0 HP 110/220V AC Single phase 3450 RPM 60 Hz TEFC
Pump:	Gear-type 1.0 GPM (3.785 Lpm)
Reservoir:	6.0 qt Steel construction Horizontal mount
Safety pressure relief valve:	Pre-set at 1000 PSI (69 bar)
Return line filter:	10 micron
Dimensions:	28" x 8" x 10" (711mm x 203mm x 254mm)
Weight:	40 lbs (18.14 kg)



ANSI/ISO SYMBOL:



MOST VALVES & COMPONENTS INCLUDE:

- FPTI™'s unique Quick-mount adaptor
- Specialized mounting plate for each valve
- Quick-disconnects
- ANSI/ISO symbol tags
- Electrical connections (where applicable)
- Toggle switches (where applicable)

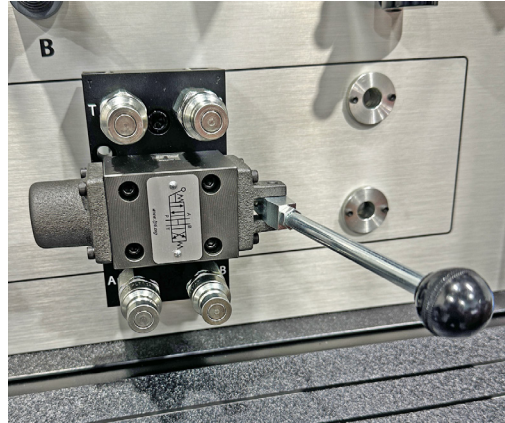
DIRECTIONAL CONTROL VALVES

OPEN-CENTER - HANDLEVER-OPERATED (3-position, 4-way)

P/N: MF100BH-DCV-OC-LO-3/4

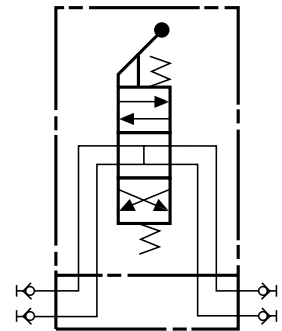
SPECIFICATIONS -

Type of actuation: Handlever-operated
Spool centering: Spring-centered
Valve size: D03
Mounting type: Sub-plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Open-center
- Handlever-operated
- 3-position
- 4-way
- Spring-centered
- Subplate-mounted
- Four (4) quick-disconnects

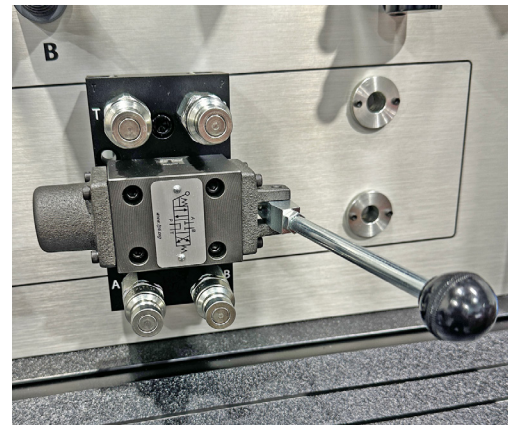


TANDEM-CENTER - HANDLEVER-OPERATED (3-position, 4-way)

P/N: MF100BH-DCV-TC-LO-3/4

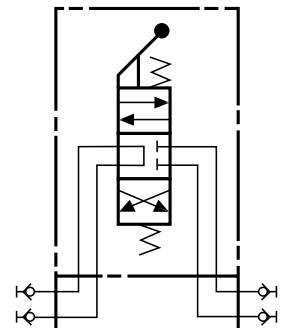
SPECIFICATIONS -

Type of actuation: Handlever-operated
Spool centering: Spring-centered
Valve size: D03
Mounting type: Sub-plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Tandem-center
- Handlever-operated
- 3-position
- 4-way
- Spring-centered
- Subplate-mounted
- Four (4) quick-disconnects



DIRECTIONAL CONTROL VALVES

TANDEM-CENTER - SOLENOID-OPERATED (3-position, 4-way)

P/N: MF100BH-DCV-TC-SO-3/4

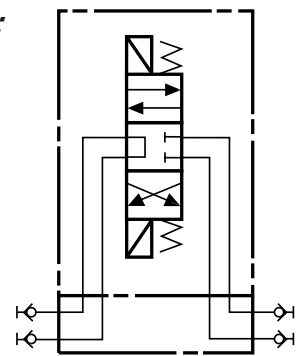
SPECIFICATIONS -

Type of actuation:	Solenoid-operated
Spool centering:	Spring-centered
Valve size:	D03
Voltage:	24VDC
Mounting type:	Sub-plate mounted
Connections:	Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Open-center
- Solenoid-operated
- 3-position
- 4-way
- Spring-centered
- Subplate-mounted
- Four (4) quick-disconnects



CLOSED-CENTER - SOLENOID-OPERATED (3-position, 4-way)

P/N: MF100BH-DCV-CC-SO-3/4

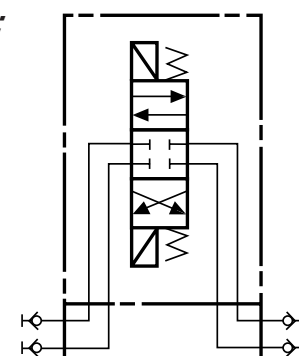
SPECIFICATIONS -

Type of actuation:	Solenoid-operated
Spool centering:	Spring-centered
Valve size:	D03
Voltage:	24VDC
Mounting type:	Sub-plate mounted
Connections:	Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Closed-center
- Solenoid-operated
- 3-position
- 4-way
- Spring-centered
- Subplate-mounted
- Four (4) quick-disconnects



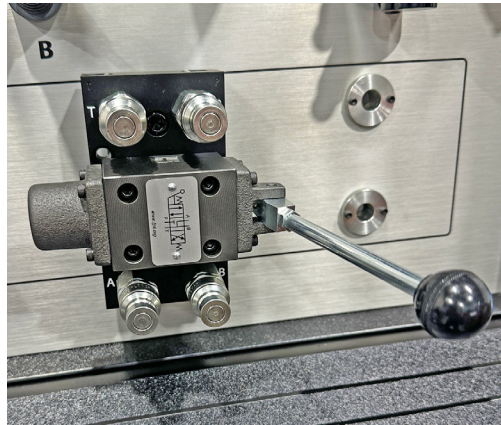
DIRECTIONAL CONTROL VALVES

FLOAT-CENTER - HANDLEVER-OPERATED (3-position, 4-way)

P/N: MF100BH-DCV-FC-LO-3/4

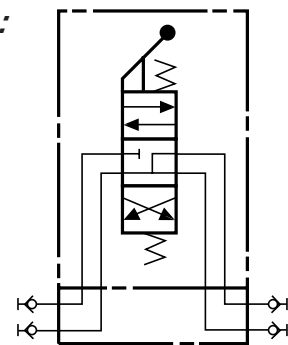
SPECIFICATIONS -

Type of actuation: Handlever-operated
Spool centering: Spring-centered
Valve size: D03
Mounting type: Sub-plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Float-center
- Handlever-operated
- 3-position
- 4-way
- Spring-centered
- Subplate-mounted
- Four (4) quick-disconnects

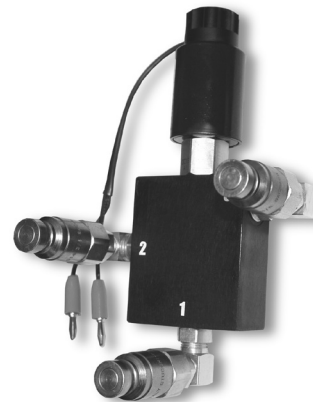


SOLENOID-OPERATED NORMALLY OPEN (2-position, 3-way)

P/N: MF100BH-DCV-NO-SSO-2/3

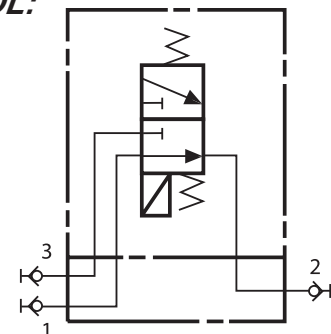
SPECIFICATIONS -

Type of actuation: Single solenoid-operated
Spool centering: Spring-return
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Normally open
- Single solenoid-operated
- 2-position
- 3-way
- Spring-return
- Three (3) quick-disconnects



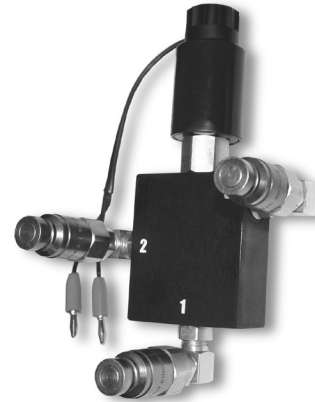
DIRECTIONAL CONTROL VALVES

NORMALLY CLOSED (2-position, 3-way)

P/N: MF100BH-DCV-NC-SSO-2/3

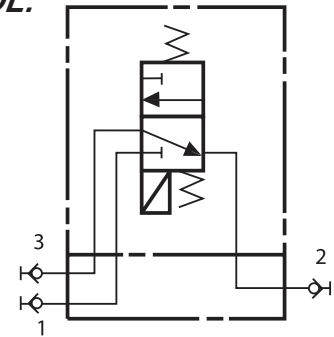
SPECIFICATIONS -

Type of actuation: Single solenoid-operated
Spool centering: Spring-return
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Normally closed
- Single solenoid-operated
- 2-position
- 3-way
- Spring-return
- Three (3) quick-disconnects



NORMALLY OPEN (2-position, 2-way)

P/N: MF100BH-DCV-NO-SSO-2/2

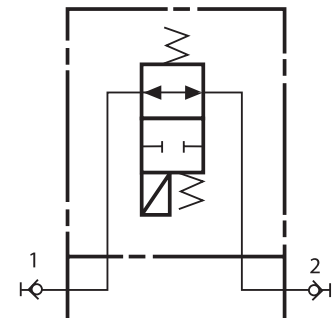
SPECIFICATIONS -

Type of actuation: Single solenoid-operated
Spool centering: Spring-return
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Normally open
- Single solenoid-operated
- 2-position
- 2-way
- Spring-return
- Two (2) quick-disconnects



DIRECTIONAL CONTROL VALVES

NORMALLY CLOSED (2-position, 2-way)

P/N: MF100BH-DCV-NC-SSO-2/2

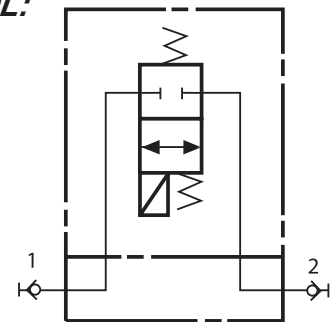
SPECIFICATIONS -

Type of actuation: Single solenoid-operated
Spool centering: Spring-return
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

- Normally closed
- Single solenoid-operated
- 2-position
- 2-way
- Spring-return
- Two (2) quick-disconnects



MOBILE DIRECTIONAL CONTROL VALVE

P/N: MF100BH-MDCV

SPECIFICATIONS -

Type of actuation: Hand-lever operated
Spool centering: Spring-return
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.

(PHOTO UNAVAILABLE)

ANSI/ISO SYMBOL:

- Closed-center
- Hand-lever operated
- Spring-return
- Four (4) quick-disconnects

PRESSURE CONTROL VALVES

DIRECT-OPERATED RELIEF VALVE

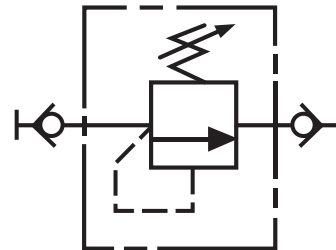
P/N: MF100BH-DORV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI (13.8 bar - 69 bar)
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



PILOT-OPERATED RELIEF VALVE

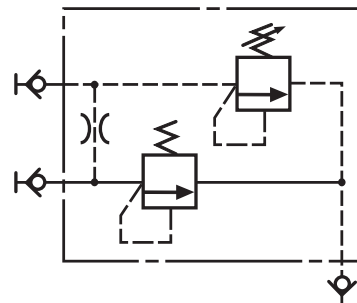
P/N: MF100BH-PORV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI (13.8 bar - 69 bar)
Adjustment type: Knob
Standard option: Remote pilot
Mounting type: Plate mounted
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



PRESSURE CONTROL VALVES

SEQUENCE VALVE

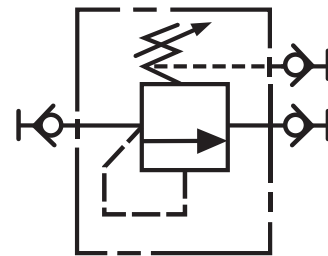
P/N: MF100BH-SV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI (13.8 bar - 69 bar)
Adjustment type: Knob
Mounting type: Plate mounted
Safety feature: Safety valve to de-energize if connector is removed while valve is under pressure.
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



PRESSURE REDUCING VALVE

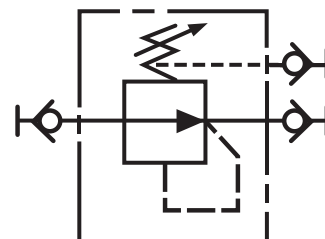
P/N: MF100BH-PRV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI (13.8 bar - 69 bar)
Adjustment type: Knob
Standard option: Remote pilot
Mounting type: Plate mounted
Safety feature: Safety valve to de-energize if connector is removed while valve is under pressure.
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



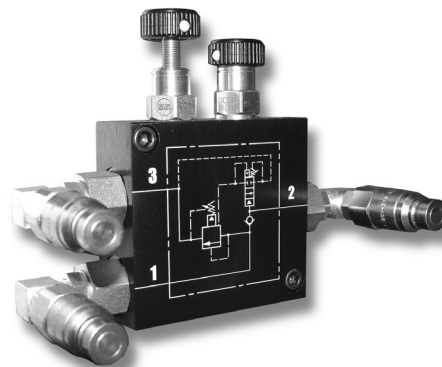
PRESSURE CONTROL VALVES

DIFFERENTIAL PRESSURE UNLOADING VALVE

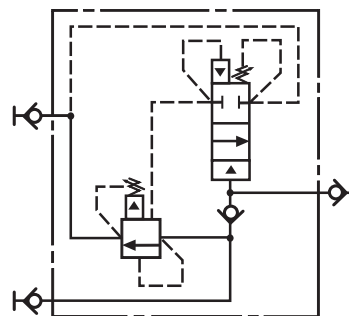
P/N: MF100BH-DPUV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI
 (13.8 bar - 69 bar)
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:

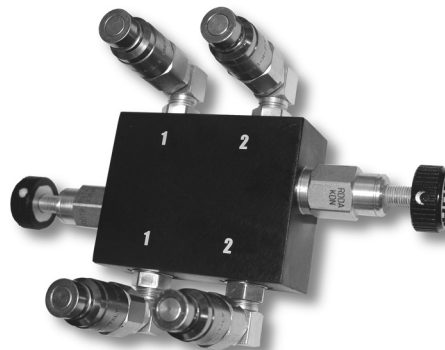


CROSS-PORT RELIEF VALVE

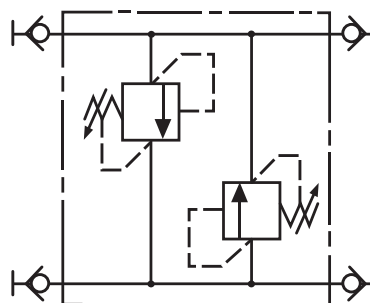
P/N: MF100BH-CPRV

SPECIFICATIONS -

Construction: Cartridge
Adjustment range: 200 PSI to 1000 PSI
 (13.8 bar - 69 bar)
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



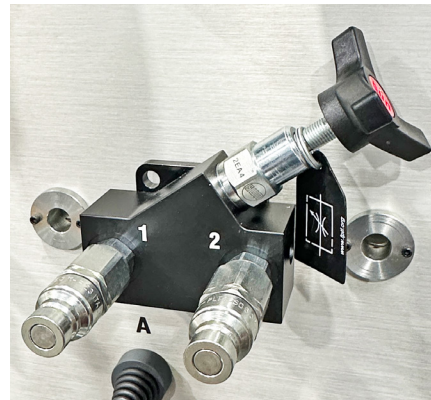
FLOW CONTROL VALVES

NEEDLE VALVE

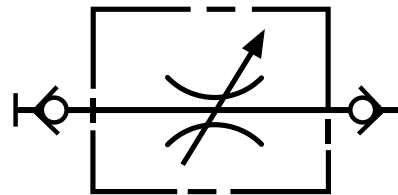
P/N: MF100BH-NV

SPECIFICATIONS -

Construction: Cartridge
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



FLOW CONTROL VALVE

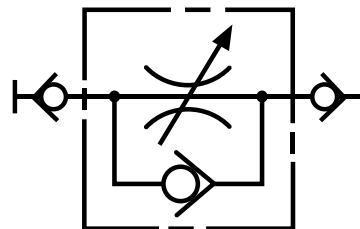
P/N: MF100BH-FCV

SPECIFICATIONS -

Construction: Cartridge
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



FLOW CONTROL VALVES

PRESSURE-COMPENSATED FLOW CONTROL VALVE (*Restrictor-Type*)

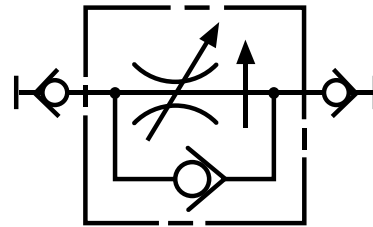
P/N: MF100BH-PC-FCV-R

SPECIFICATIONS -

Construction: Cartridge
Valve type: Spool
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



PRESSURE-COMPENSATED FLOW CONTROL VALVE (*Bypass-Type*)

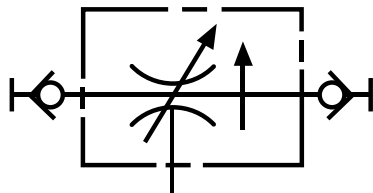
P/N: MF100BH-PC-FCV-B

SPECIFICATIONS -

Construction: Cartridge
Valve type: Spool
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



FLOW CONTROL VALVES

SHUTTLE VALVE

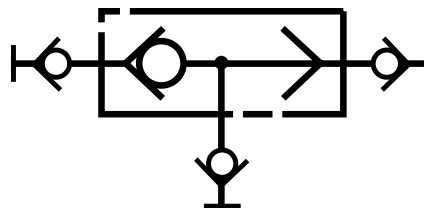
P/N: MF100BH-SHV

SPECIFICATIONS -

Construction: Cartridge
Valve type: Spool
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.

(PHOTO UNAVAILABLE)

ANSI/ISO SYMBOL:

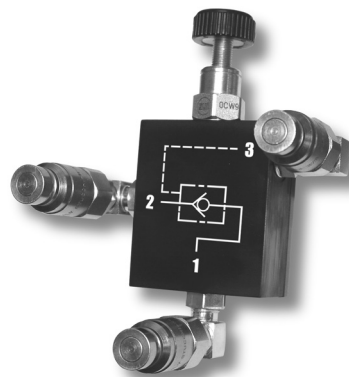


PILOT-OPERATED CHECK VALVE (Pilot-to-Open)

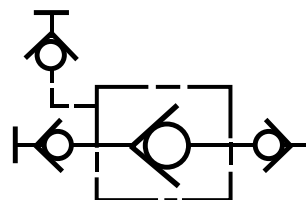
P/N: MF100BH-POCV

SPECIFICATIONS -

Construction: Cartridge
Valve type: Spool
Adjustment type: Knob
Mounting type: Plate mounted
Connections: Three (3) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



FLOW CONTROL VALVES

CHECK VALVE

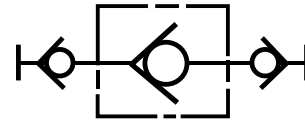
P/N: MF100BH-CV

SPECIFICATIONS -

Construction: Cartridge
Adjustment type: Not adjustable
Mounting type: Plate mounted
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



ACTUATORS

HYDRAULIC CYLINDER

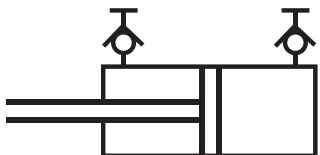
Double-acting, single rod

P/N: MF100BH-DAC-S12

SPECIFICATIONS -

Bore: 1.5" (38mm)
Stroke: 12" (305mm)
Safety Feature: Moving parts covered with transparent cover. Safety valve to de-energize if connector is removed while cylinder is under pressure.
Standard Option: Pressure gauge ports
Mounting: Plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.

ANSI/ISO SYMBOL:



HYDRAULIC CYLINDER

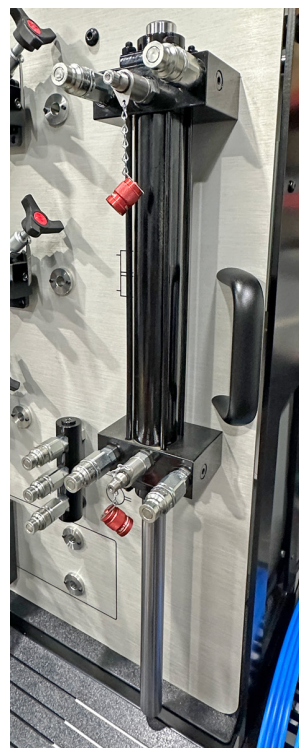
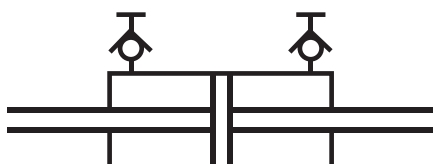
Double-acting, double rod

P/N: MF100BH-DAC-D12

SPECIFICATIONS -

Bore: 1.5" (38mm)
Stroke: 12" (305mm)
Safety Feature: Moving parts covered with transparent cover. Safety valve to de-energize if connector is removed while cylinder is under pressure.
Standard Option: Pressure gauge ports
Mounting: Plate mounted
Connections: Four (4) zero-leak, flat-faced, quick-connect/disconnect fittings.

ANSI/ISO SYMBOL:



ACTUATORS

HYDRAULIC MOTOR

Gear Type

P/N: MF100BH-HM-GEA

SPECIFICATIONS -

Displacement: .17 cu.in./rev
(2.8cm/rev)

Drain type: External

Safety feature: Moving parts covered with transparent cover.

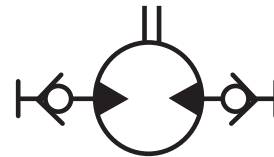
Standard option: Spinner on shaft

Mounting type: Plate mounted

Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



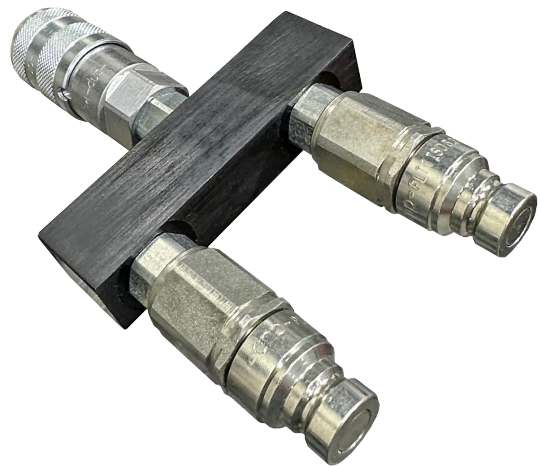
COMPONENTS

T-CONNECTOR ASSEMBLY

P/N: MFTS-002-TA

SPECIFICATIONS -

Connections: Two (2) male and one (1) female zero-leak, flat-faced, quick-connect/disconnect fittings attached to an aluminum manifold. For use in attaching extra components or hoses to the simulator when/where necessary.



COMPONENTS

ISOLATOR VALVE

Ball Valve

P/N: MF100BH-BV

SPECIFICATIONS -

Mounting type:

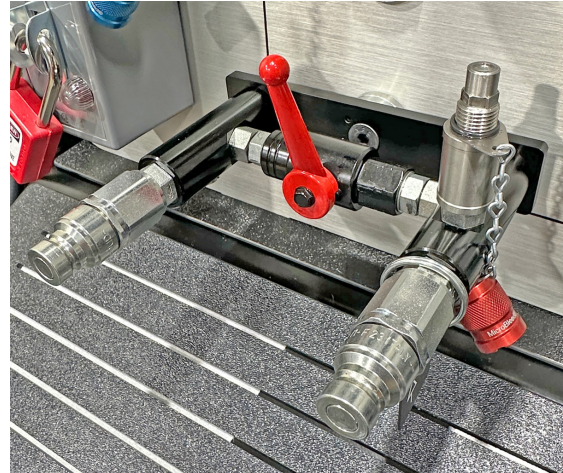
Plate mounted

Connections:

Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings

Safety feature:

Safety valve to de-energize if connector is removed while valve is under pressure.



ANSI/ISO SYMBOL:



HYDRO-PNEUMATIC ACCUMULATOR

Bladder Type with Safety Bleed-off Valve

P/N: MF100BH-ACC-1.0

SPECIFICATIONS -

Size:

One (1) quart (0.95 liters)

Gas precharge pressure:

Max. 350 PSI (24 bar)

Safety feature:

Safety valve to de-energize if connector is removed while accumulator is under pressure.

Mounting type:

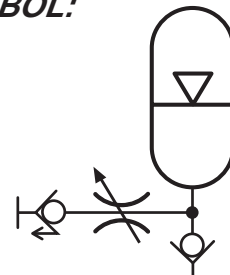
Plate mounted

Connections:

Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



COMPONENTS

PRESSURE GAUGE

1500 PSI (103.45bar)

P/N: MF100BH-1500-P1-WG

P/N: MF100BH-1500-P2-WG

P/N: MF100BH-1500-P3-WG

SPECIFICATIONS -

Gauge type: Bourdon Tube,
Glycerine-filled

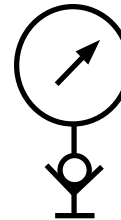
Size: 2.5" (64mm) dia. face

Case material: Stainless steel

Connections: One (1) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



FLOW METER

2.0 GPM (7.57 LPM)

P/N: MF100BH-FM-2.0

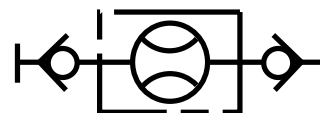
SPECIFICATIONS -

Flow rate: 2.0 GPM (7.57 LPM)

Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings.



ANSI/ISO SYMBOL:



COMPONENTS

HYDRAULIC HOSE

26" (660mm) Length

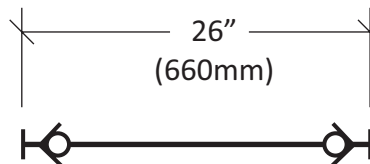
P/N: MF100BH-HA-26

SPECIFICATIONS -

Hose type: SAE100R1
Size: 1/4" (6.35mm)
Hose end fittings: #6 SAE O-ring
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings (one on each end of hose).
Quantity: Six (6) recommended.



ANSI/ISO SYMBOL:



HYDRAULIC HOSE

46" (1170mm) Length

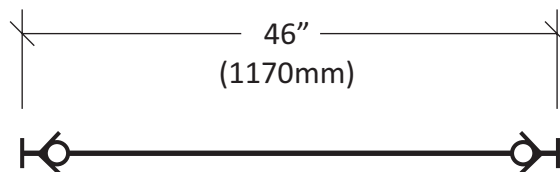
P/N: MF100BH-HA-46

SPECIFICATIONS -

Hose type: SAE100R1
Size: 1/4" (6.35mm)
Hose end fittings: #6 SAE O-ring
Connections: Two (2) zero-leak, flat-faced, quick-connect/disconnect fittings (one on each end of hose).
Quantity: Ten (10) recommended.



ANSI/ISO SYMBOL:



TRAINING LITERATURE and MATERIALS

Student Workbook

*Includes Student Trainer Activities
(one per student recommended)*

P/N: MF100BH-100B

Instructor Answer Book

(one per instructor recommended)

P/N: MF100BH-TAi

Classroom CD-Rom Module (Powerpoint™ format)

(One complete CD-Rom package required)

P/N: MF100BH-PP

Titles Included on CD-Rom:

- How To Work Safely with Hydraulics
- Basic Hydraulic Laws and Principles
- Pressure Control Valves
- Hydraulic Pumps
- Check Valves, Actuators and Accumulators
- Hydraulic Reservoirs and Coolers
- Directional Control Valves
- Flow Control Valves
- Proactive Maintenance and Filtration
- Trainer Activities
- Introduction to Closed-Loop Oil Systems

OPTIONAL

The Lethal Strike -

Procedures for Properly Managing Injection Injuries DVD

P/N: HC-FPSI-001DVD

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