

MOOG

M040-104

Portable Valve Tester for Servo and Proportional Valves

The Moog Portable Valve Tester (M040-104) has been developed from practical field experience to provide an essential aid to commissioning, servicing and troubleshooting control systems that use Moog electrical feedback (EFB) valves of the 640, 650, 660 and 769 series and any mechanical feedback (MFB) servo valves with input currents up to 60 mA.

FEATURES

- > Suitable for Moog 640, 650, 660 EFB and 62, 630, 670, 72, 73, 77, 78 Series MFB valves.
- > Fully portable with rugged plastic carry case.
- > Power supply
 - Batteries (standard D size alkaline)
 - External 6 to 9V DC
 - “in line” (uses normal plant control power supply).
- > Analog meters for ease of tracking command and spool position signals.
- > Battery test function.
- > Wide range of control options for commissioning and testing:
 - “in-line” monitoring of normal valve control electronics;
 - commands for “ramp”, plus/minus command magnitude, automatic cycling, polarity switching, step-input/emergency shut-off switch.
- > Hinged front panel gives access for cable storage and battery replacement.



PORTABLE VALVE TESTER FOR SERVO AND PROPORTIONAL VALVES

APPLICATION

Commissioning

The tester is particularly useful during early stages of commissioning, prior to connection of electrical power and control. This means that the hydraulics can be fully tested at the earliest possible stage with the following checks:

- Tests hydraulic functions;
- Slow "inching" for critical adjustments;
- Preliminary speeds and ramp rates established for initial setting of the in-plant electronics;
- Machine can be progressed through its complete cycle under manual control;
- Emergency shut-off is available at all times via COMMAND ON/OFF switch (10). After the in-plant electronics have been installed and connected to the valve, the tester provides:
- "in-line" monitoring of in-plant electronics with emergency isolation available via Command COMMAND ON/OFF switch (10).
- Manual control via the tester can be used if "inching" or "resetting" of the cycle is needed due to failure part way through the automatic operation.

Maintenance Monitoring

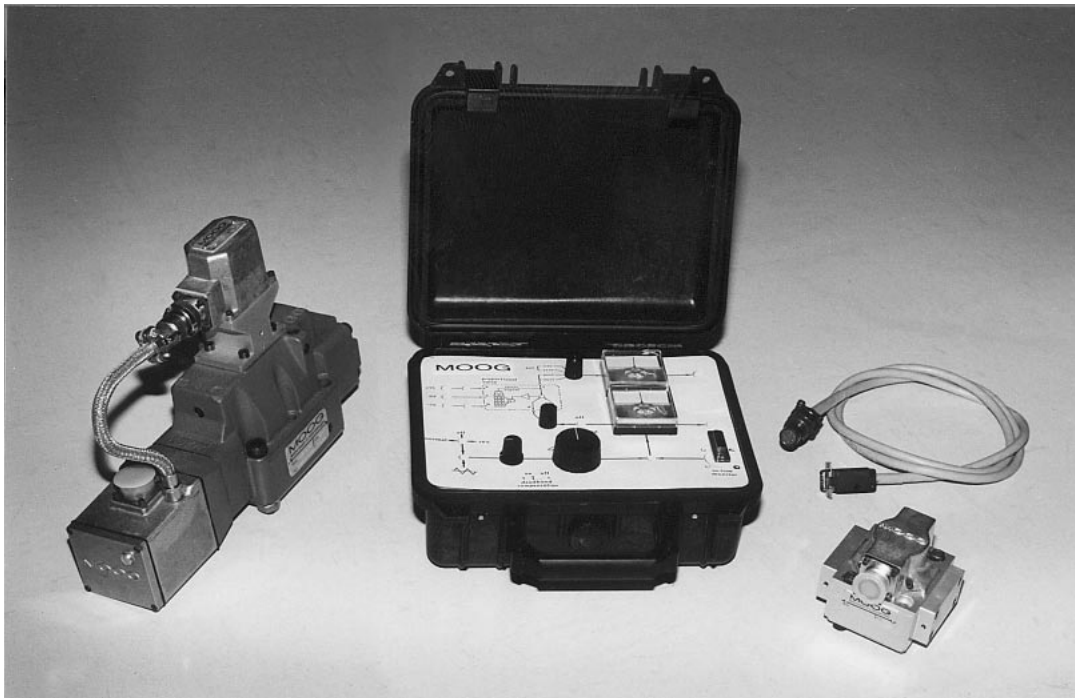
Routine maintenance of the valve requires only a periodic check that the valve is correctly following the command signals.

The tester provides a simple means to confirm valve operation on a regular basis. Typically this could involve plotting command versus spool position with an external X-Y recorder for a permanent record of performance.

Troubleshooting

The following tests can be carried out:

- Valve operation fully independent of in-plant electronics;
- Monitoring of in-plant electronics during normal cycling;
- Valve command and spool position can be simultaneously monitored (EFB valves);
- Spool position can be checked using the SPOOL SIGNAL METER (5)



SPECIFICATIONS

Output:

- 0 to ± 10 V and 0 to ± 10 mA command for EFB valves.
- 0 to ± 10 mA and 0 to ± 60 mA for MFB valves.
- ± 15 V at ± 200 mA regulated supply.

Battery:

- Six 1.5 V D cell Duracell alkaline batteries, or equivalent.
- Battery life is approximately six hours.
- Note: use only alkaline cells.

Weight:

6.61 lbs.

Dimensions:

10.63 in. x 9.65 in. x 4.92 in.
(includes batteries)

Power:

Switched mode power supply powered by six D cell primary batteries or External 6 to 9VDC.

Accessories:

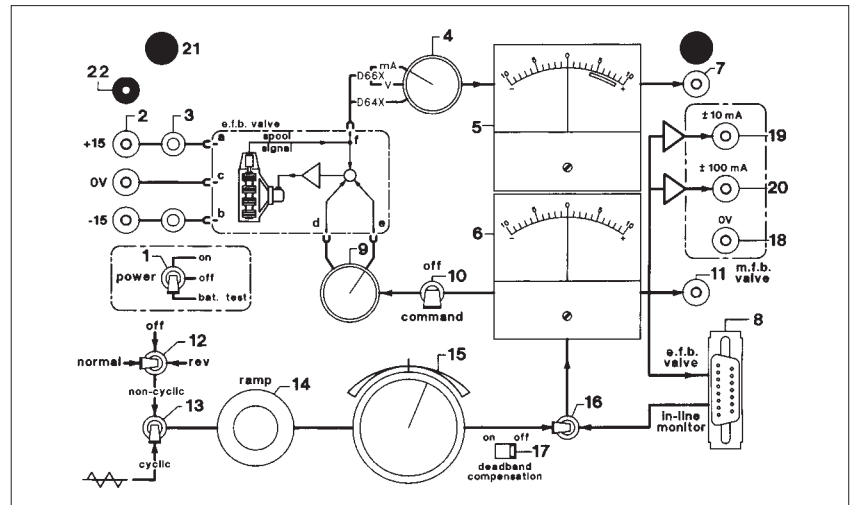
1 x Operator's Manual	B63326
MFB valve cable, 1.5 m	B63336
EFB valve cable, 6 pin, 1.5 m	BS63337

Optional Accessories:

5 to 6 pin adapter	
D129-015-A001	
EFB valve cable, 12 pin, 1.5 m	B63341
12 pin socket to 6 pin plug adapter	A48997-001
12 pin plug to 6 pin socket adapter	A48997-002
MFB in-line monitor cable, 1.5 m	B63873

PANEL DESCRIPTION

- ON/Battery test
 - Up, to turn Tester on.
 - Down, to test battery on meter 5.
- Power supply (± 15 V) test points.
- Power supply LED indicators.
- Range selection for meter 5.
 - Spool signal monitoring for D64X and current output selector for m.f.b. output points 19 and 20.
 - Spool voltage signal monitoring for D66X, D769.
 - Spool current signal monitoring for D66X.
- "Spool Signal/Auxiliary" meter for monitoring spool position signal, battery condition and in-line command for m.f.b. valves.
- Valve command signal meter.
- Test point for meter 5.
- Valve and in-line cable connection for e.f.b. valves. In-line connection for m.f.b. valves.
- Valve command selection for Pin "D" or "E".
- Command ON/OFF switch.
- Test point for meter 6.
- Command polarity selection switch.
- Manual/Cyclic command selection.
- Ramp potentiometer.
- Amplitude potentiometer.



- Selector switch for test box control or "in-line" monitoring.
- Deadband compensation; it can be used for valves with overlap to switch command quickly through deadband area.
- Zero volt output.
- ± 10 mA output for m.f.b. valves.
- ± 100 mA output for m.f.b. valves.
- Thumb screws for opening front panel to gain access to cables and batteries.
- External 6 to 9 volt DC supply connector.



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