

NM/NL Series Metering Valve



WORKING PRESSURES AND TEMPERATURES

Elastomer	Working Pressure	Temperature Range
Buna-N	1000 psig @ 70 °F 6.9 MPa @ 21 °C	-10 °F to 250 °F -23 °C to 121 °C
EPR		-40 °F to 250 °F -40 °C to 121 °C
Neoprene		-40 °F to 250 °F -40 °C to 121 °C
Fluorocarbon		-10 °F to 400 °F -23 °C to 204 °C

Always consult your authorized Parker representative if questions arise.



Figure 1: NM/NL Series Metering Valve with Knurled Handle Cross Sectional View

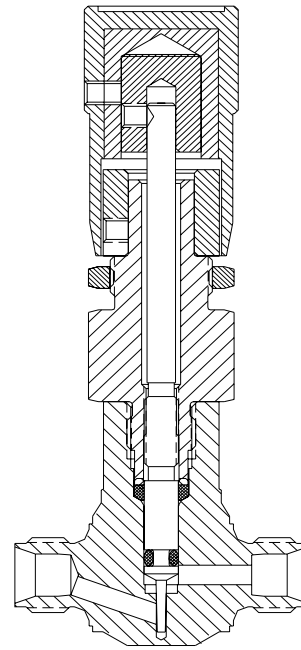


Figure 2: NM/NL Series Metering Valve with Vernier Handle Cross Sectional View

DISASSEMBLY

WARNING: MAKE CERTAIN THE SYSTEM IN WHICH THE VALVE IS INSTALLED IS DRAINED AND/OR EXHAUSTED OF ALL PRESSURE BEFORE STARTING VALVE REMOVAL OR DISASSEMBLY. FAILURE TO DO SO CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

1. Verify that the Metering Valve Maintenance Kit being used is appropriate for the Valve's size, Handle and service requirements. Always contact your authorized Parker representative if any questions arise.
2. Turn the Valve to its complete open position.
3. Remove the Handle by loosening the Set Screw with a 1/16 inch allen wrench. If necessary, loosen the Lock Screw with a 0.035 inch allen wrench.
4. Remove the Bonnet from the Valve Body by turning counter-clockwise with an 11/16 inch hex wrench.
5. Remove the Stem from the Bonnet by rotating it until the two separate.
6. The Seal Ring within the Valve Body and O-Ring on the Stem can be removed by using a pick or some similar device.

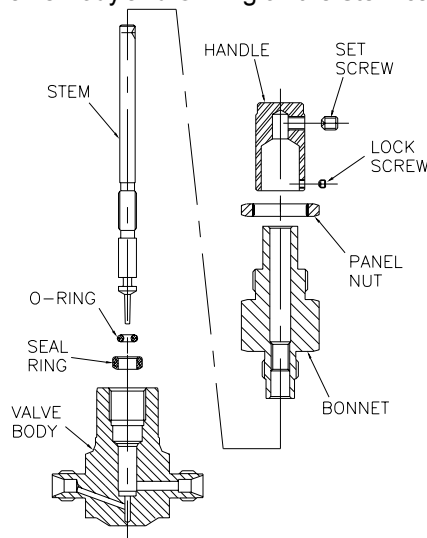


Figure 3: NM/NL Series Metering Valve with Knurled Handle Exploded View

REASSEMBLY

1. Make certain all parts are free of dirt or other contamination before starting reassembly of the Valve.
2. Place an appropriate amount of lubricant as consistent with the valve's service requirements on the Seal Ring and O-Ring.
3. Insure lubricant remains on the Stem threads and on the diameter between the threads and o-ring groove. .
4. Place the O-Ring onto the Stem from the needle end of the stem.
5. Engage the knob end of the Stem into the short end of the Bonnet and rotate until back-stopped.

Note: Insure care not to bend the needle portion of the stem.

6. Engage the Bonnet into the Valve Body and torque to 15 in-lbs using a 1/16 inch hex wrench.
7. Attach the valve to a gaseous pressure source, run the outlet into a liquid test jar and close the valve until leakage reaches approximately five bubbles per second.

NOTE: Rotation beyond this could damage the valve. This valve is not a shut-off valve and contact between the stem and valve seat could damage either or both components.

8. Install the Handle onto the Stem. The Handle should bottom on the Bonnet. Position the Handle so the Set Screw is aligned with the flat on the Stem. Tighten the Handle to 20 in-lbs using a 1/16 inch allen wrench.

RETROFIT INSTRUCTIONS KNURLED HANDLE TO VERNIER HANDLE

The Vernier Handle Assembly Kit consist of a Graduated Collar, Stem Adapter, Set Screws, and the Vernier Handle.

Required Tools

1/32 inch Hex Wrench (for the Knurled Handle Lock Set Screw)

1/16 inch Hex Wrench (for the Vernier Handle, Graduated Collar, and Stem Adapter Set Screws)

1. If tightened, use a 1/32 inch hex wrench and loosen the Knurled Handle lock screw. Use a 1/16 inch hex wrench and loosen the Knurled Handle set screw. Remove the Knurled Handle from the valve assembly. If the valve is to be panel mounted, mount the valve prior to assembly of the Vernier Handle. Refer to IN-239 for panel mounting procedures.
2. Place the Graduated Collar onto the Packing Nut and butt it against the top of the Packing Nut threads. Orient the graduations for viewing ease and tighten the collar's set screw.
3. Place the Stem Adapter onto the valve stem, aligning the Stem Adapter's set screw with the Valve Stem flat or drill point, and tighten the set screw. Using the Stem Adapter as a valve handle, close the valve. Correct positioning of the Stem Adapter is important as the Stem Adapter provides a positive stop to to prevent potential damage.
4. Position the Vernier Handle onto the Stem Adapter and align the zero reading on the Graduated Collar with the zero reading on the Vernier Handle. Tighten the set screw and the retrofit is complete.

VALVE CONNECTOR MAKE-UP INSTRUCTIONS

MALE AND FEMALE PIPE PORTS

Wrench flats are provided on the Valve Body. It is recommended a smooth-jawed wrench or vise be used to grip the Valve Body.

1. On the male threaded part of the connection, apply a high quality pipe joint compound or PTFE tape made for this purpose. When PTFE tape is used, it is recommended two full turns of tape be applied. PTFE tape should not be overhanging or covering the first thread
2. Engage the Valve and the other component part together, until hand-tight.
3. With a proper wrench, holding both the Valve and the component part, continue to tighten to achieve a leak-tight joint.

ULTRASEAL CONNECTIONS

1. Insert the proper O-Ring into the UltraSeal fitting's O-Ring groove. Position the UltraSeal gland sealing face against the O-Ring, and then advance the Nut to a finger-tight position.
2. A positive seal is obtained by advancing the Nut no less than 1/4 turn from the finger-tight position. Proper UltraSeal make-up is achieved when a sharp rise in required application torque occurs, which indicates proper seal face contact and O-Ring seal compression into the UltraSeal groove.

VACUSEAL CONNECTIONS

1. A positive seal is obtained by advancing the Nut 1/8 turn from the finger-tight position.
2. A new gasket should be installed upon each fitting re-make to insure system pressure integrity.

TUBE FITTING CONNECTIONS

1. Insert the tube into the Valve port until the tube bottoms out in the Valve Body. Care should be exercised to insure the tube is properly aligned with the Valve Body and port.
2. Normal make-up for US Customary port sizes 1 thru 3 (1/16 thru 3/16 inch) and SI port sizes 2 thru 4 (2 thru 4 mm) is 3/4 turn from finger tight. Normal make-up for US Customary port sizes 4 thru 16 (1/4 thru 1 inch) and SI port sizes 5 thru 25 (5 thru 25 mm) is 1 1/4 turn from finger tight. For larger port sizes consult Parker Ferrule Presetting Tool Instructions.

PLEASE FOLLOW THE ABOVE DIRECTIONS FOR COUNTING THE NUMBER OF TURNS FOR PROPER FITTING MAKE-UP. DO NOT MAKE-UP TUBE FITTINGS BY TORQUE OR "FEEL". VARIABLES SUCH AS TUBING AND FITTING TOLERANCES, TUBE WALL THICKNESS, AND THE LUBRICITY OF NUT LUBRICANTS CAN RESULT IN AN IMPROPERLY ASSEMBLED TUBE FITTING CONNECTION.

A -Two ferrule A-LOK®
compression port



Z -Single ferrule CPI™
compression port



F -ANSI/ASME B1.20.1
Internal pipe threads



V -VacuSeal face
seal port



Q -UltraSeal face
seal port



M -ANSI/ASME B1.20.1
External pipe threads



WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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ALL PARKER VALVES MUST PASS A RIGID OPERATIONAL AND LEAKAGE TEST BEFORE LEAVING THE FACTORY. IT IS RECOMMENDED AFTER ANY REASSEMBLY, THE VALVE SHOULD BE TESTED BY THE USER FOR OPERATION AND LEAKAGE. IF THESE INSTRUCTIONS ARE NOT FULLY COMPLIED WITH, THE REPAIRED PRODUCT MAY FAIL AND CAUSE DAMAGE TO PROPERTY OR INJURY TO PERSONS. PARKER HANNIFIN CANNOT ASSUME RESPONSIBILITY FOR PERFORMANCE OF A CUSTOMER SERVICED VALVE.

