



MINI-PISTON AIR ACTUATED MVE NEEDLE VALVE

Parker Autoclave Brand: **MVE/MV Mini-Needle Valve**

OPERATION AND MAINTENANCE MANUAL

Manual 02-1237ME | September 2025



Series Model: **Mini-Piston Air Actuated MVE/MV Needle Valve**

Part Number: _____

Date of Purchase: _____

TABLE OF CONTENTS

PAGE

1.0	Installation	3
2.0	Meaning of Safety Words	3
3.0	Spring Adjustment	3
4.0	Packing Adjustment	3
5.0	Packing Replacement	4
6.0	Stem and Operator Seal Replacement	4
7.0	Service	5
	Figure 1: Valve Cross Section (OHLP shown)	6
	Maintenance Notes	7
	Additional Resources	8

WARNING - USER RESPONSIBILITY

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

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise. The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met.

The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors. To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

Section 1.0

Installation

No adjustments are necessary prior to installation. All valves are factory adjusted and tested Tubing Catalog (Installation Section) for proper tubing connection installation. Note the minimum and maximum temperature limits of the connection style and materials listed in the valve fitting and tubing catalog.

The air supply connection on the operator is 1/8 NPT. The recommended value for air pressure at the maximum valve operating pressures is shown on the operator label. The maximum allowable working pressure of the OHLP operator is 100 psi. The maximum allowable working pressure of the OSLP operator is 150 psi.

Use the minimum required spring pre-compression to increase stem and seat life.

Applications which require extended cycle life should be considered on an individual basis.

Section 2.0

Meaning of Safety Words

A safety related message is identified by a safety alert symbol and a signal word to indicate the level of risk involved with a particular hazard. The definitions of the signal words are as follows:



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



CAUTION

For proper operation of air operated valves, the pressure inlet should always be below the seat.

If you are unsure of how to proceed, please contact Parker Autoclave Engineers Service Department at (814) 860-5700 or fax us at (814) 860-5811.

Parker Autoclave Engineers reserves the right to alter the specifications given in this publication in line with our policy of continuous improvement. All general terms and conditions of sale including limitations of our liability, apply to all products and services sold.

Section 3.0

Spring Adjustment

Relieve all pressure in the valve. Loosen the locknut and adjust the spring set screw (see figure 1) in accordance with the Specification Sheets. Tighten the locknut before pressurizing the valve.

Section 4.0

Packing Adjustment

When the valve packing starts to leak, follow the steps below to reseal the valve stem - refer to Figure 1.

1. Relieve all pressure in the valve body.
 2. Loosen the locknut and back the spring set screw all the way out.
 3. Apply pressure (approximately 10 psi) to the operator inlet (so the stem is unseated), then relieve air pressure to the operator.
 4. Loosen the packing gland locknut.
 5. While holding the valve body secure, use a torque wrench to tighten the packing gland to the value in the Installation Summary Chart. The operator housing will rotate with the packing gland.
- NOTE: Do not attempt to tighten the packing gland by grasping and turning the operator housing.**
6. Pressurize the valve and check for leaks.
 7. If the packing still leaks, relieve all pressure in the valve and repeat steps 5 and 6. If the packing does not seal after several attempts, disassemble and inspect the packing and stem seal area for damage. Replace packing and re-assemble (refer to section 5.0).
 8. Tighten the packing gland locknut.
 9. Adjust the Spring per Section 3.0.

Section 5.0

Packing Replacement

Refer to Figure 1.

If the packing requires replacement, follow the steps below.

1. Relieve all pressure in the valve body.
2. Loosen the locknut and back the spring set screw all the way out.
3. Apply air pressure (approximately 10 psi) to unseat the stem, then relieve air pressure to the operator.
4. Loosen the packing gland locknut.
5. Unscrew the packing gland with the operator from the valve body.
6. Remove the packing from the stem or the valve body.
7. Place a new piece of packing in the valve body.
8. Screw the packing gland into the valve body and torque it to the value specified in the Installation Summary Chart.
9. Tighten the packing gland locknut.
10. Adjust the operator spring per section 2.0.

Section 6.0

Stem and Operator Seal Replacement

Refer to Figure 1.

1. Relieve all pressure in the valve body.
2. Loosen the locknut and back the spring set screw all the way out.
3. Apply air pressure (approximately 10 psi) to the operator inlet (so the stem is unseated), then relieve air pressure to the operator.
4. Loosen the packing gland locknut.
5. Unscrew the packing gland with the air operator from the valve body.
6. Remove the snap ring from the top cover. Remove the top cover and spring housing from the operator. Remove the spring and spring suppressor.

7. Remove the stem and piston by pushing the stem through the bottom of the packing gland. Applying air pressure to the NPT connection may aid in removing the piston. Replace the piston O-ring.



CAUTION

When applying air to the operator to remove the piston, care should be taken not to use more than 1-2 psi of air pressure. If piston does not come out, check for a jammed or stuck piston.

8. Remove the stem from the piston by loosening the hex nut and then unscrewing the stem.
9. Loosen the packing gland set screw. Unscrew the packing gland from the housing. Replace the stem O-ring and housing O-ring in the packing gland.
10. Screw the packing gland into the housing and tighten the packing gland set screw.
11. Thread the hex nut all the way on the stem. Screw the stem into the piston, then tighten the hex nut.
12. Push the assembled stem and piston into the housing/packing gland assembly.
13. Place the spring in the counterbored part of the piston and place the spring suppressor on top of the spring. Replace the top cover and the snap ring.
14. To avoid damaging the stem, apply air pressure (approximately 10 psi) to move the piston up, then relieve pressure to the operator.
15. Screw the packing gland into the valve body and torque to the value specified in the Installation Summary Chart. Tighten the packing gland locknut.
16. Adjust the spring in accordance with Section 3.0.

Section 7.0

Service

For Service, contact the Parker Autoclave Engineers' Representative in your area or FAX Parker Autoclave Engineers' Support Services at 1-814-838-5811.

Installation Summary Chart - OHLP and OSLP Operators

Valve Series	Packing Gland Hex Size		Packing Gland Torque		Tube Gland Hex Size		Tube Gland Torque	Spring Pre-Compression	
	in	mm	in-lbs	N-m	in	mm		in	mm
MV100X	1.00	25.4	175	240	.393	10.0	Note 1	.19	4.8
MV200X	1.00	25.4	175	240	.393	10.0	Note 1	.19	4.8
MVE100X	1.00	25.4	175	240	.38	9.5	Note 1	.19	4.8
MVE200X	1.00	25.4	175	240	.38	9.5	Note 1	.19	4.8

NOTES:

1. Tighten the gland until the sleeve grips the tubing, then 1-1/4 turns.
2. Torque may vary +/- 10%. Add 15% to the above values for Graphite Yarn.

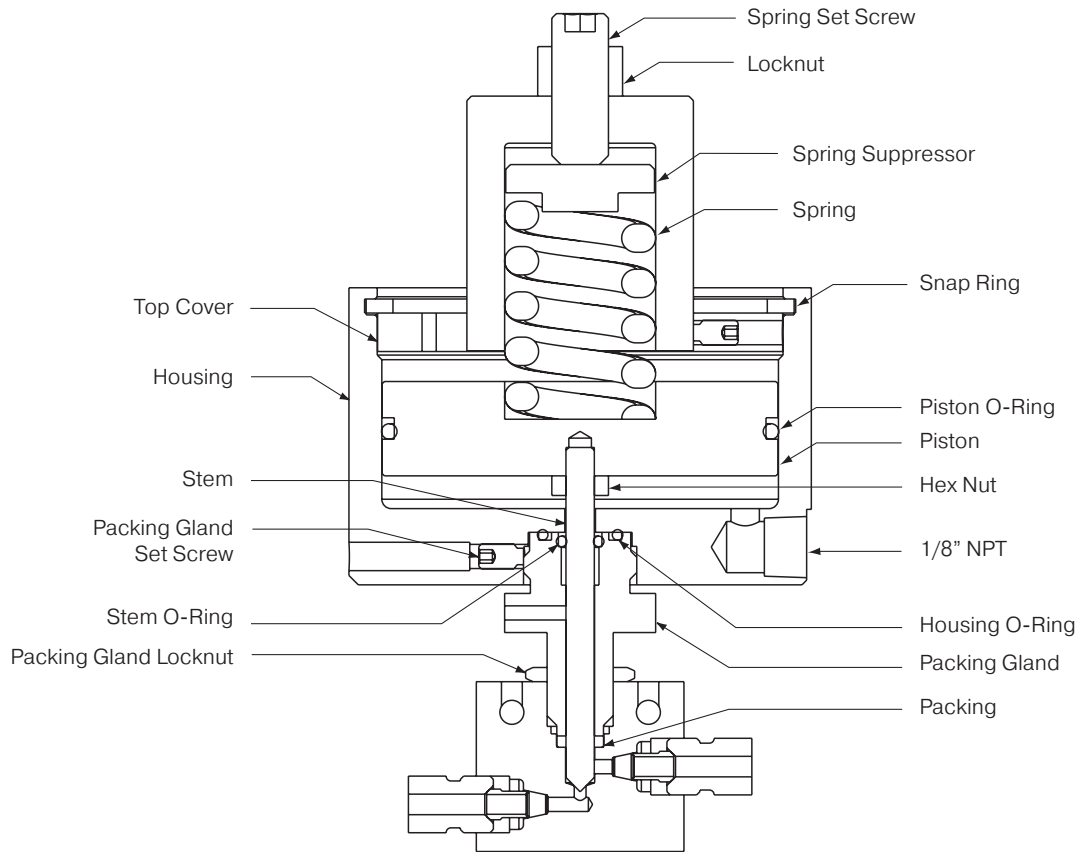
Replacement Parts - OHLP Operator

Item	Part Number	Description	Quantity
1	101F-1925	Stem	1
2	P-0825	Packing (PTFE Glass)	1
3	P-9413	Stem O-Ring	1
4	90357	Piston O-Ring	1
5	90278	Housing O-Ring	1

Replacement Parts - OSLP Operator

Item	Part Number	Description	Quantity
1	101F-1925	Stem	1
2	P-0825	Packing (PTFE Glass)	1
3	P-9413	Stem O-Ring	1
4	50795	Piston O-Ring	1
5	90278	Housing O-Ring	1

Figure 1
Valve Cross Section (OHLP shown)



Specification Sheet - Series MVE/MV Valves

Valve Series	Operator Duty		System Pressure: KSI (Mpa)						Maximum Pressure Psi (Bar)	Flow Coefficient Cv*
MVE1 MV1 MVE2 MV2			1-6 (6.89-41.37)	8 (55.15)	10 (68.95)	12 (82.74)	14 (96.53)	15 (103.41)	15,000 (1034)	MVE1/MV1 (0.05) MVE2/MV2 (0.11)
	Heavy-Light Duty (OHLP)	Air Pressure Psi (bar)	60 (4.08)	65 (4.42)	75 (5.10)	85 (5.78)	90 (6.12)	100 (6.80)		
		Spring Compress. in (mm)	0.073 (1.85)	0.094 (2.39)	0.125 (3.18)	0.147 (3.73)	0.172 (4.37)	0.188 (4.78)		
		Stem Travel in (mm)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)		
	Special Heavy-Light Duty (OSLP)	Air Pressure Psi (bar)	90 (6.12)	100 (6.80)	115 (7.92)	130 (8.96)	140 (9.65)	150 (10.34)		
		Spring Compress. in (mm)	0.073 (1.85)	0.094 (2.39)	0.125 (3.18)	0.147 (3.73)	0.172 (4.37)	0.188 (4.78)		
		Stem Travel in (mm)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)	0.094 (2.39)		

NOTE:

*Cv data is for 2-way straight valves. For angle pattern, add approximately 50% to the Cv value

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Operation and Maintenance Manual - Mini-Piston Air Actuated MVE/MVE Needle Valve | 02-1237ME 09/25

Additional Resources...

		
Questions? Contact us!	Download Autoclave Literature HUB	Download IPD Literature HUB

Parker Hannifin Corporation
Instrumentation Products Division

Autoclave Engineers Operation
8325 Hessinger Drive
Erie, PA 16509
phone 814 860 5700
fax 814 860 5811
autoclave.com | parker.com/ipd

02-1237ME September 2025

Mini-Piston Air Actuated MVE/MVE Needle Valve
Operation and Maintenance Manual

© 2025 Parker Hannifin Corporation

