

RUSKA 2407

Universal Test Station

Users Manual

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System Description

This manual covers (2) products, the RUSKA 2407-800 and RUSKA 2407-801.

- 2407-800 is the basic Universal Test Station.
- 2407-801 is the Universal Test Station with shutoff valve.

These stations are designed for the attachment of different types of DUTs (Devices Under Test). They work well for Dial Gauges, Transducers, or other pressure indicating devices in a calibration lab.

How to Contact Fluke

To order accessories, receive operating assistance, or get the location of the nearest Fluke distributor or Service Center, call:

- Technical Support USA: 1-800-99-FLUKE (1-800-993-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31-402-675-200
- China: +86-400-810-3435
- Japan: +81-3-3434-0181
- Singapore: +65-738-5655
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at www.fluke.com.

To register your product, visit <http://register.fluke.com>.

To view, print, or download the latest manual supplement, visit <http://us.fluke.com/usen/support/manuals>.

Safety Summary

The following are general safety precautions that are not related to any specific procedures and do not appear elsewhere in this publication. These are recommended precautions that personnel must understand and apply during equipment operation and maintenance to ensure safety and health and protection of property.

Compressed Liquid

Use of compressed liquids can create an environment of propelled foreign matter. Pressure system safety precautions apply to all ranges of pressure. Care must be taken during testing to ensure that all hydraulic connections are properly and tightly made prior to applying pressure. Personnel must wear eye protection to prevent injury.

Personal Protective Equipment

Wear eye protection approved for the materials and tools being used.

Symbols Used in this Manual

In this manual, a **Warning** identifies conditions and actions that pose a hazard to the user. A **Caution** identifies conditions and actions that may damage the Universal DUT Station.

Symbols used on the Universal DUT Tester and in this manual are explained in Table 1.

Table 1. Symbols

Symbol	Description
	AC (Alternating Current)
	Earth Ground
	Important Information: refer to manual
	Do not dispose of this product as unsorted municipal waste. Go to Fluke's website for recycling information.

System

Station Features:

- Fluid-tight connections without the use of tools
- Accommodates (9) thread sizes (additional adapters available)
- Stainless steel construction
- High Pressure rating
- Standard seals compatible with most mineral oils (alternate seal materials available)

RUSKA 2407-800 Test Station

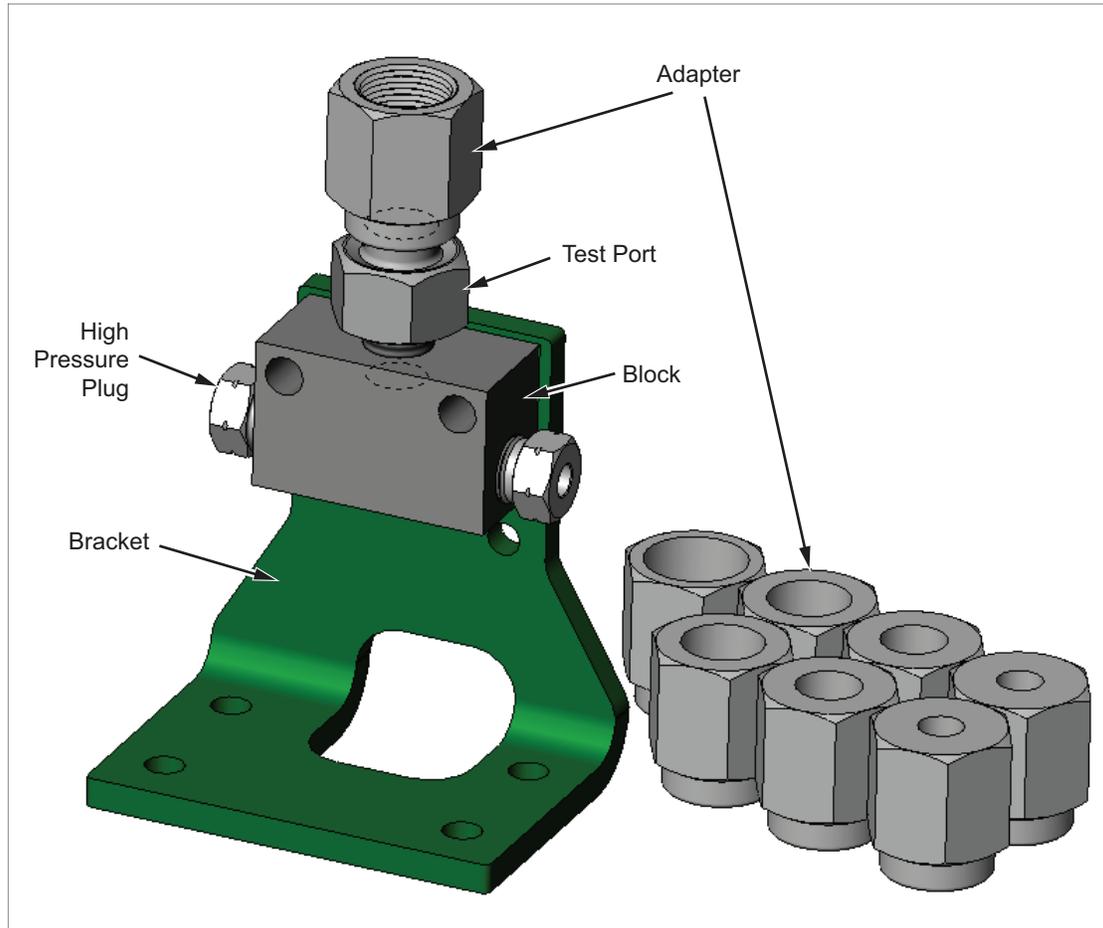


Figure 1. RUSKA 2407-800 Test Station

Includes:

- (4) Sizes NPT adapter
- (4) Sizes BSP adapters
- Test Port adapter (not shown)
- Seals (Nitrile (Buna-N))(not shown)
- Mounting Hardware (not shown)

Pressure connection:

1/4 inch High Pressure (NBS Style port)*

Also included:

*Adapter for pressure connection to 1/8NPT (not shown)

RUSKA 2407-801 Test Station with Valve

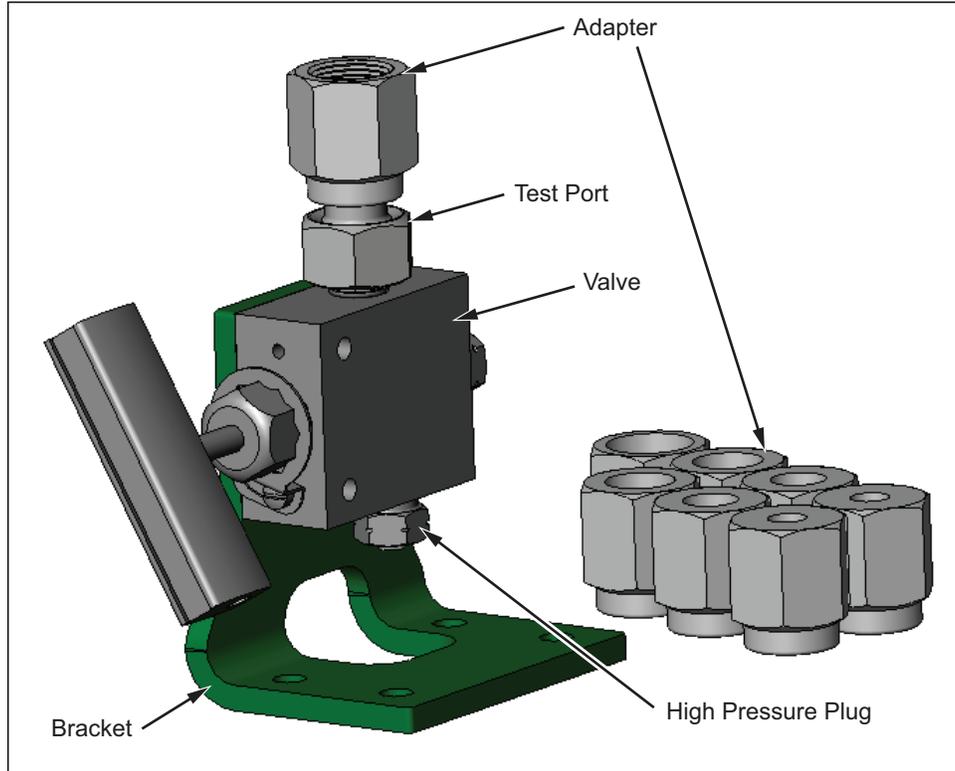


Figure 2. RUSKA 2407-801 Test Station

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Includes:

- (4) Sizes NPT adapter
- (4) Sizes BSP adapters
- Test Port adapter (not shown)
- Seals (Nitrile (Buna-N))(not shown)
- Mounting Hardware (not shown)

Pressure connection:

1/4 inch High Pressure (NBS Style port)*

Also included:

*Adapter for pressure connection to 1/8NPT (not shown)

Operating Fluid Compatibility

The standard system is designed for use with a wide range of fluids, the O-ring seals are Nitrile (Buna-N). The use of solvents, fuel oils, brake fluids or other, similar aggressive fluids can damage these seals. Alternate seal materials are available. See section, Repair Parts and Ancillary Equipment, for the alternative seal types available.

Pressure Rating

The Test Station and adapters are rated to 20,000 psi (1370 bar) when plumbed to the pressure source using high pressure tubing (1/4 O.D. coned & threaded tubing).

If the stand is connected to the pressure source using the supplied 1/8 NPT adapter (1-205) the pressure rating of the system is reduced to 15,000 psi (1000 bar) or the rating of the tubing with which it is connected, whichever is lower.

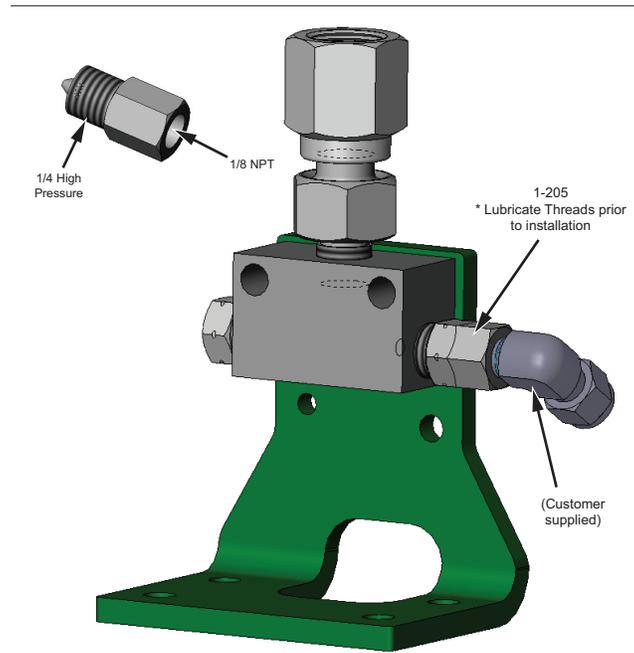


Figure 3. NPT Adapter Installation

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* Please note whenever assembling threaded stainless steel components, a small amount of lubrication is recommended on the threads.

Installation

Affix the test station to a sturdy bench or other suitable work surface. Use the included hardware (lag screws) or other appropriately sized hardware.

The Stations are designed to allow for the maximum in customer flexibility. The orientation of the block/valve may be changed on mounting bracket to accommodate various plumbing arrangements and mounting orientations.

Mounting Options

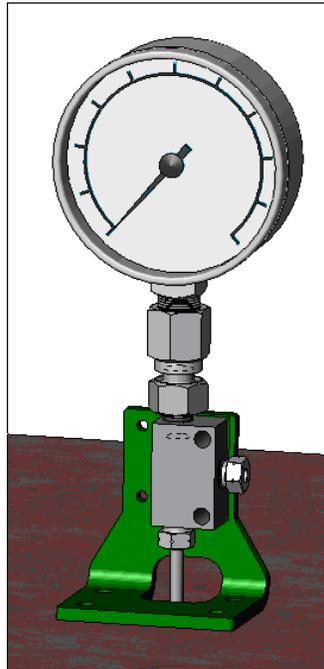


Figure 4. Mounting for Thru-Table

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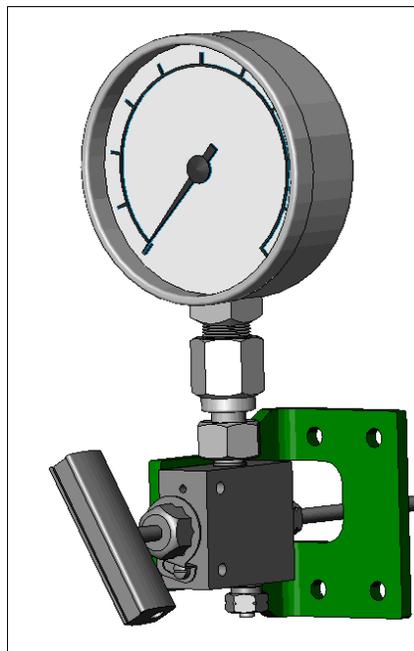


Figure 5. Wall Mounting

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Connect the Test Station to the pressure source using tubing that has sufficient rating for the application.

The Test Station has two ports available for connection to the pressure source. One of these will have a plug installed. Move the plug as necessary to accommodate your plumbing configuration.

Multiple Stations may be “ganged together” for applications requiring multiple test ports.

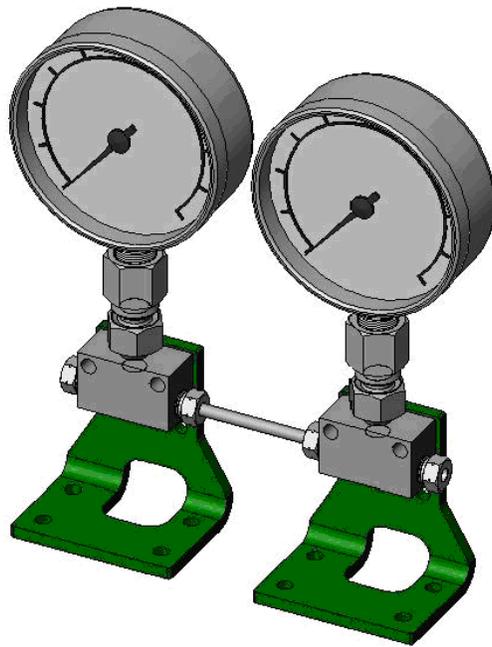


Figure 6. Gauges Ganged Together

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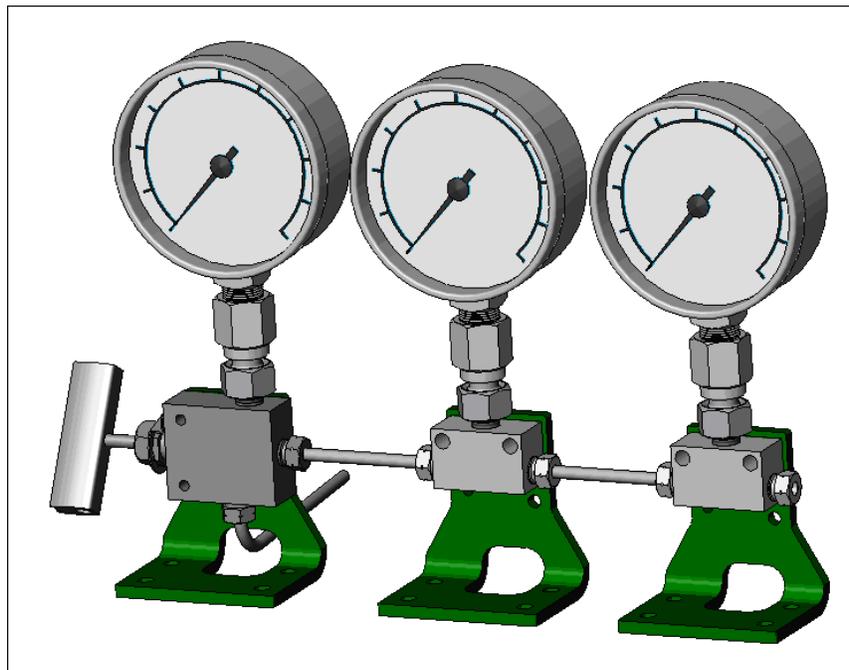


Figure 7. Gauges Ganged Together with a Valve

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Operation

Fit the device under test (DUT) to the test port using the method described below:

⚠ Caution

Ensure that all devices are internally clean and free from contamination before connecting to the Station.

Particle contamination can damage the sensitive measurement components of the system

⚠ Caution

DO NOT use Teflon/PTFE tape on these connections, as this will prevent correct sealing. The Gauge Adapter sealing system is designed for hand-tight sealing up to 20,000 psi / 1,400 bar—wrenches or similar tools are not required — over tightening can cause damage to threads or sealing faces.

Before connection, ensure that there is an O-ring fitted to the test port.

Check that the sealing face of the device to be fitted is clean and undamaged, as scratches or dents can form leak-paths.

Note

The thread on the test port, and the lower part of the gauge adapters is LEFT-HANDED. The following procedure details the correct method for mounting devices using these adapters:



Figure 8. Screw on Gauge Adapter

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1. Screw the appropriate gauge adapter fully on to the instrument to be tested.



Figure 9. Screw Assembly Down

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2. Screw assembly down COUNTER-CLOCKWISE on to test port.



Figure 10. Do Not Over Tighten

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Note

Hand-tight is sufficient; ensure that the bottom face contacts the O-ring on the test port.

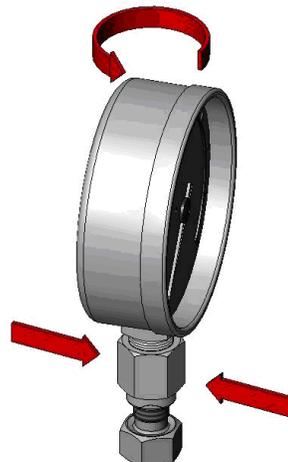


Figure 11. Adjust the Position

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3. To adjust the position to face forward, hold the gauge adapter and turn the instrument COUNTER-CLOCKWISE, so that it faces forward.

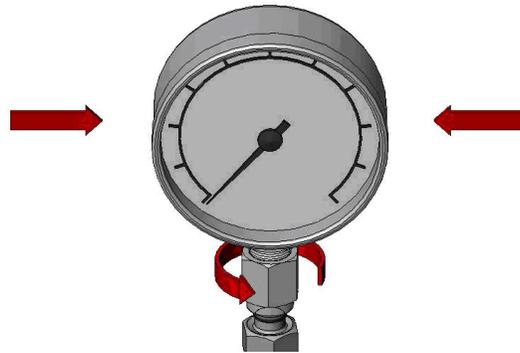


Figure 12. Turn the Gauge

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4. Hold the instrument steady, whilst turning the gauge adapter COUNTER-CLOCKWISE until it pulls down onto the O-ring.



Figure 13. Do Not Over Tighten

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Test Port Insert

For devices with 1/8 BSP or NPT mounting threads, the diameter of the thread is very close to the effective sealing diameter of the O-ring fitted to the test port,.

This can make it difficult to achieve a good seal. When mounting these devices, use the test port insert as shown in Figure 14.

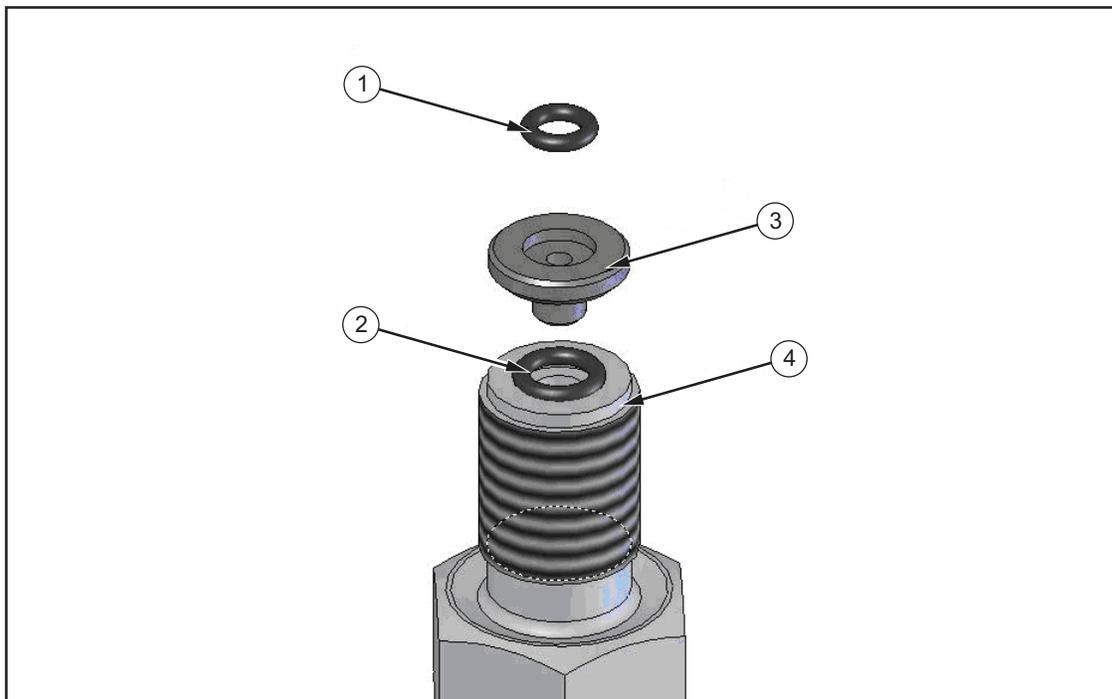


Figure 14. Test Port Insert

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Table 2. Test Port Insert - Parts List

Item	Description	Part Number
1	SMALL O RING	Nitrile (Buna-N) material is standard, Viton and EP also available, See Repair Parts and Ancillary Equipment
2	LARGE O RING	
3	TEST PORT INSERT	See Repair Parts and Ancillary Equipment
4	TEST PORT	See Repair Parts and Ancillary Equipment

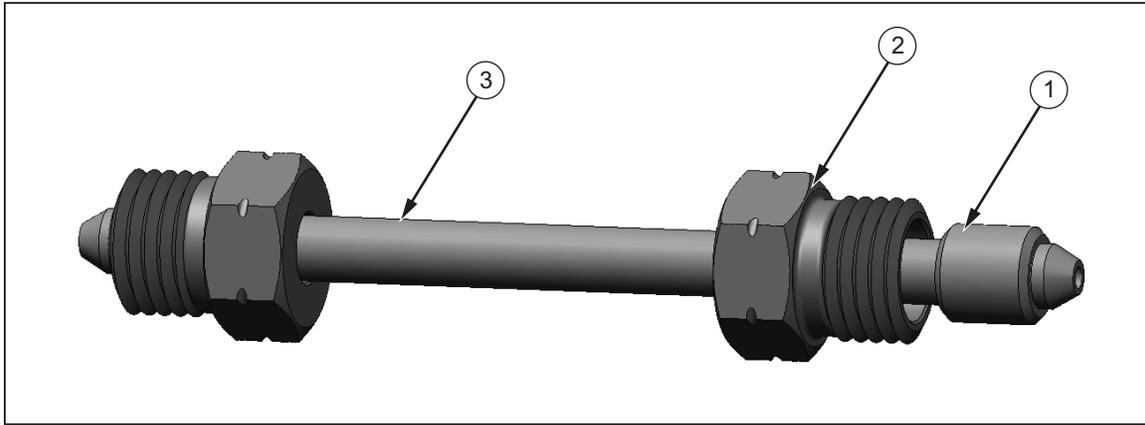
Maintenance, Repair Parts, and Ancillary Equipment

This device will require little or no maintenance other than the periodic replacement of O-rings.

Lines for Pressure Connection

Table 3. Lines for Pressure Connection

Item	Description	Part	
1	Collar	24-895	
2	Gland Nut	24-894	
3	Stock Length High Pressure Lines, 25" O.D. Stainless, Ends Coned & Threaded (See above for Collars and Gland Nuts)		
	Overall Length		
	Inches	cm	Part Number
	3.5	8.9	2128-40-035
	4.0	10.2	2128-40-40
	4.5	11.4	2128-40-450
	6.5	16.5	2128-40-065
	8.0	20.3	2128-40-80
	10	25.4	2128-40-100
	12	30.5	2128-40-120
	18	45.7	2128-40-180
	24	61.0	2128-40-240
	48	122.0	2128-40-480
	60	152.4	2128-40-600



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Figure 15. High Pressure Line

Seal Kits

Table 4. Seal Kits / Test Port Insert - Parts List

Seal Kits / Test Port Insert	Part Number
Each kit includes: (10) Small O-rings, + (10) Large O-rings + (1) Test Port Insert	
Kit with Nitrile (Buna-N) material	PPA9237
Kit with Viton material	PPA9237-V
Kit with Ethylene-Propylene material	PPA9237-EP
Test Port Insert	(See Seal Kits)

Replacement Parts

Table 5. Adapter Sets / Test Port - Parts List

Adapter Sets / Test Port	Part Number
(1) each 1/8, 1/4, 3/8 & 1/2 BSP	5541
(1) each 1/8, 1/4, 3/8 & 1/2 NPT	5542
(1) each 1/8 BSP, 1/4 BSP, M14*1.5 & M20*1.5	5540
Test Port	P104040