

COSASCO®



User Manual
Hydraulic Access Fitting

Model 50H



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Important Instructions

Rohrback Cosasco Systems is committed to providing the safest and highest quality products, services, and training for the industries it serves. We are committed to ensuring that all users of our equipment work safely and efficiently. Fully anticipating the infinite variety of conditions that may be encountered in the field would be impossible, but we have designed this user manual to emphasize safe working practices and, as much as possible, to convey the full benefit of our knowledge and collective experience in the use of the COSASCO Hydraulic Access Fittings. This user manual is not meant to be a sole source of instruction and is intended only for an overview of COSASCO Hydraulic Access Fittings and installation of the carrier plug and protective cover on the Access Fitting on non-pressurized lines. A COSASCO HRSL Retriever and Service Valve must be used for the installation and removal of carrier plug from Access Fittings on pressurized lines. Because these tools are used in a broad range of environments and applications, it is important that the owner and operation personnel have been assessed, certified, and deemed competent in all safety, work management and additional risk assessment requirements in the application of this procedure.

WARNING: Installing, operating or maintaining a Rohrback Cosasco Systems high pressure HRSL retrieval tool improperly could lead to a leak, serious injury or worse, from a surge of pressure into the Retriever, damaging the internals of the retriever. Comply with all information on the product, in this work instruction, and in COSASCO System Safety Awareness Training that apply to the product. Do not allow untrained or inexperienced personnel to work with this product. Use COSASCO parts and work procedures specified in this work instruction.

Product Owners (Purchasers):

- Use the correct product for the environment and pressures present. If you are unsure, discuss your needs with your RCS representative.
- Inform, educate, and train all personnel in the proper installation, operation, and maintenance of this product.
- To ensure proper performance, only competent, field experienced and trained personnel should install, operate, repair and maintain this product.
- Save this user manual for future reference.

Product Operation Personnel:

- Read and understand all instructions and operating procedures for this product.
- Follow all warnings, cautions, and notices marked on, and supplied with, this product.
- Follow all instructions during the installation, operation, and maintenance of this product.
- To prevent personal injury, ensure that all components are in place prior to and during operation of the product.
- If you do not understand an instruction, or do not feel comfortable following the instructions, contact an RCS service technician for clarification or assistance.
- If this user manual is not the correct user manual for your RCS product, contact RCS at +1-562-949-0123 and RCS will provide you with the requested manual.
- Use only replacement parts specified by RCS. Unauthorized parts and procedures can affect this product's performance, safety, and invalidate the warranty. "Look-a-like" substitutions may result in improper operation and may result in serious injury or death.
- Save this user manual for future reference.

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Chapter 1

Safety Warnings

The Cosasco Hydraulic Access Assembly system has proven itself to be safe and reliable. However, when working with any high pressure system, safety must be a primary consideration.

WARNING: It is imperative that the following safety warnings are taken into important consideration before and during use of Retrieval Equipment. Safety warnings in this document are to ensure precautions are taken for all procedures where there are risks involved. Failure to follow these warnings could result in serious injury or worse.

1. Safe operation under pressure requires 2 experienced and competent operators.
2. Do not use retrieval equipment unless you have been trained and are competent in its safe operation.
3. If it has been longer than 90 days since your last operation, you should review the relevant Work Instruction and complete an operation on a pressurized test rig.
4. Make sure you have complied with all plant safety requirements and environmental regulations.
5. Identify the media, its pressure and temperature. Review material safety data information on the media prior to operation.
6. Insure you have all the required safety equipment for the given media, “i.e. hard hat, safety glasses, protective clothing, safety gloves, respirator, spill safety equipment, etc...”
7. Any actions which could vary system pressure such as surges caused by opening and closing of valves and chokes should be delayed until completion of retrieval operations.
8. Ensure you have enough clearance for safe operation. Note wind direction prior to starting operations involving hazardous products.
9. **WARNING:** Surface temperature may be hot. Contact may cause burn.
10. **WARNING:** Do not exceed equipment specified pressure rating. Over-pressurization can cause equipment to fail/burst posing a variety of safety hazards.
11. **WARNING:** Do not apply a load of more than 150 pounds, perpendicular to the Access Fitting thread axis, on any access fitting attachment to prevent breakage from bending stresses.
12. **WARNING:** Heavy Pressure Retaining Covers are available as an optional means of protecting Access Fitting external threads from damage and add an extra safety pressure layer in the event that a fitting may leak.

Chapter 2

Introduction

When the hydraulic method of retrieval is preferred, the COSASCO Hydraulic Access System offers several advantages over other hydraulic access fittings, including a corrosion resistant locking pin system and a HRSL retrieval tool that can be used for both mechanical and hydraulic 2" system access fittings. The hydraulic access fitting locking pins are protected with pressure retaining seal nuts that prevent moisture and debris from entering the locking pin cavity. They also act as a second level of pressure containment for enhanced protection.

The COSASCO Hydraulic Access Fitting Assembly consists of four main components:

- Access Fitting Body
- Hollow / Solid Plug
- Locking Pins and Moisture Seal Nuts
- Pressure Retaining Protective Cover

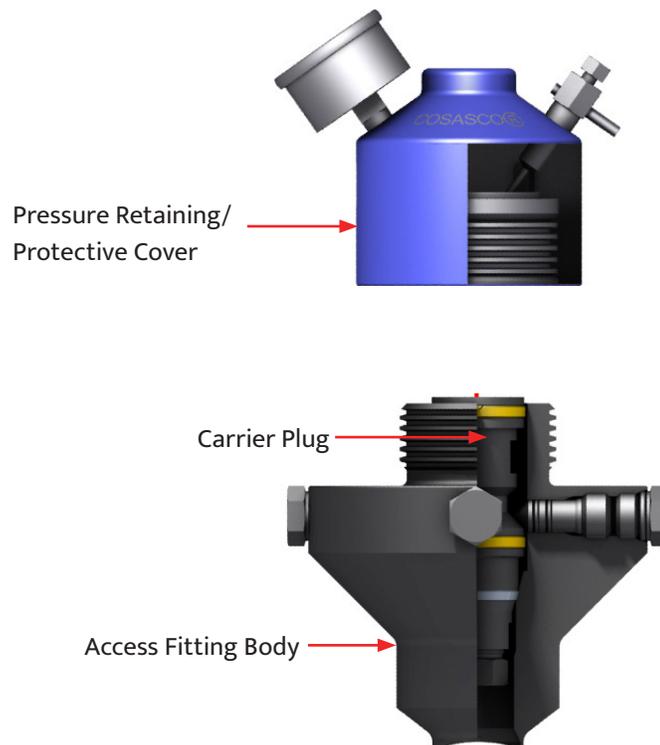


Figure 1 Hydraulic Access Fitting Assembly components

For “Access Under Pressure”, a COSASCO HRSL Retriever and RCS 6000 PSI Service Valve are required. One HRSL Retriever and 6000 PSI Service Valve may be used to maintain a number of Access Fitting Assemblies.

Chapter 3

Hydraulic Access Fitting Body

3.1 Hydraulic Access Fitting Body Types

The COSASCO Hydraulic Access Fitting Body is available in several standard mounting configurations:



Figure 2 Standard mounting configurations for the Cosasco Hydraulic Access Fitting Body

1. **Flarweld** The model 50H Flarweld Hydraulic Access Fitting body is designed to be welded directly to the pipe or vessel. The fitting incorporates a radius to match the curvature of the pipe or vessel, with a maximum 1/16" weld gap. It also incorporates a thick body to provide adequate branch reinforcement area to help strengthen the weld joint. It is the most popular type of mounting configuration.
2. **Flanged** Flanged fittings are available in several standard configurations:
 - a. Model 56H – 2" ANSI RJ (Ring Joint)
 - b. Model 57H – 2" ANSI RF (Raised Face)

All configurations of Access Fitting Bodies are available in two types:

1. **Non-Tee Type** Non-Tee fittings are used for all corrosion monitoring devices which do not require injection or sampling of the process fluid, such as coupon holders, Microcor probes, hydrogen probes, etc.
2. **Tee Type** Tee fittings incorporate a 1/4", 1/2", 3/4", or 1" NPT threaded outlet on the side of the fitting body. This type of fitting is used with an injection/sampling nut for product injection or process fluid sampling. They are also used with sand monitoring probes (old style). Access Fitting bodies are available in a wide variety of materials. Typically, the Access Fitting body material will be chosen to be compatible with the pipe or vessel material.

3.2 Attaching the Access Fitting Body

COSASCO Access Fitting Bodies which have a welded end connection (flarweld), welding must be performed in accordance with local and plant codes. Guidelines for preparing Welding Procedures are available in Cosasco manual P/N 740074, “Trepanning, Positioning & Welding Manual”.

ANSI flange fittings are manufactured in accordance with ANSI B16.5 – Specification for Flanges and Flanged Fittings. Flange gaskets and stud-and-nut sets are not provided with the Access Fitting body, and must be chosen to be compatible with the process fluids and conditions. The suggested sequence for tightening flange bolts is shown below. To provide even sealing pressure on the flange gasket, the bolts should be hand tightened according to the sequence until the flange faces are in contact with the gasket. Then firmly tighten the bolts in the same sequence.

Note: “Hot Flow” of gasket material may occur under operating conditions, resulting in loss of bolt pressure. Bolts should be retightened after operating temperature has been reached.

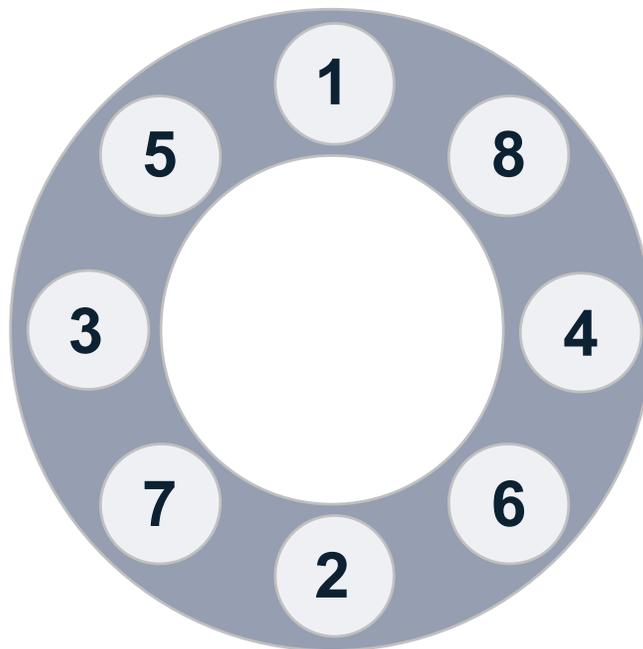


Figure 3 Suggested sequence for tightening flange bolts

Chapter 4

Access Fitting Plug

4.1 Solid and Hollow Plugs

The Access Fitting plug is the retrievable “carrier” which holds the device (coupon holder, probe, chemical injection nut, etc.) which may be installed into the Hydraulic Access Fitting. There are two types of plugs:

1. **Solid Plug** This plug has a solid bore, and is used to hold devices which do not require external connections, such as coupon holders. They are always used in conjunction with devices which interface to a side-tee access fitting, such as injection or sampling systems

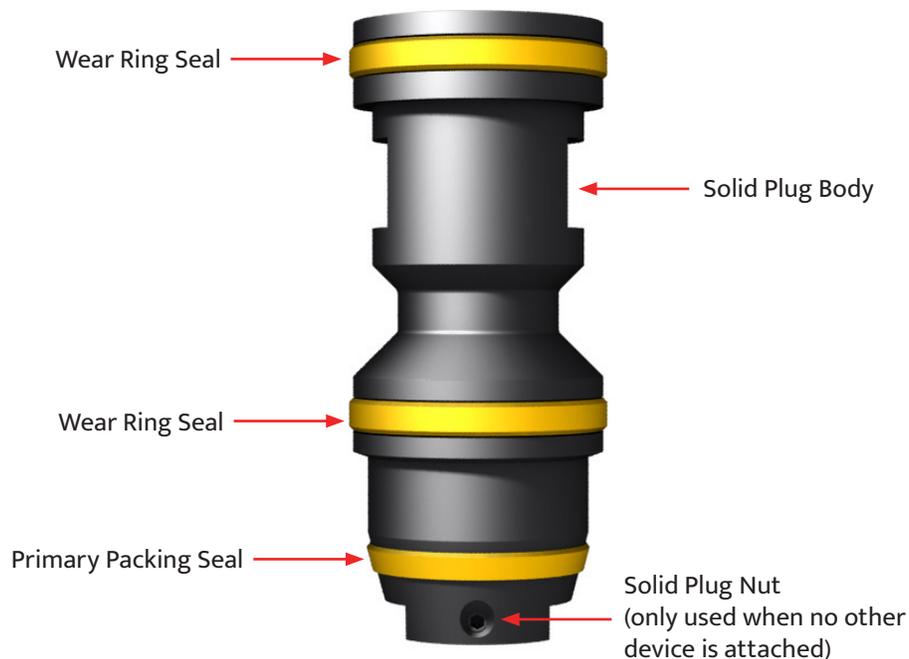


Figure 4 Solid Access Fitting Plug

- Hollow Plug** This plug has a hollow bore through the plug, and is used to hold devices which require an external connection, such as corrosion monitoring probes and hydrogen monitoring probes.

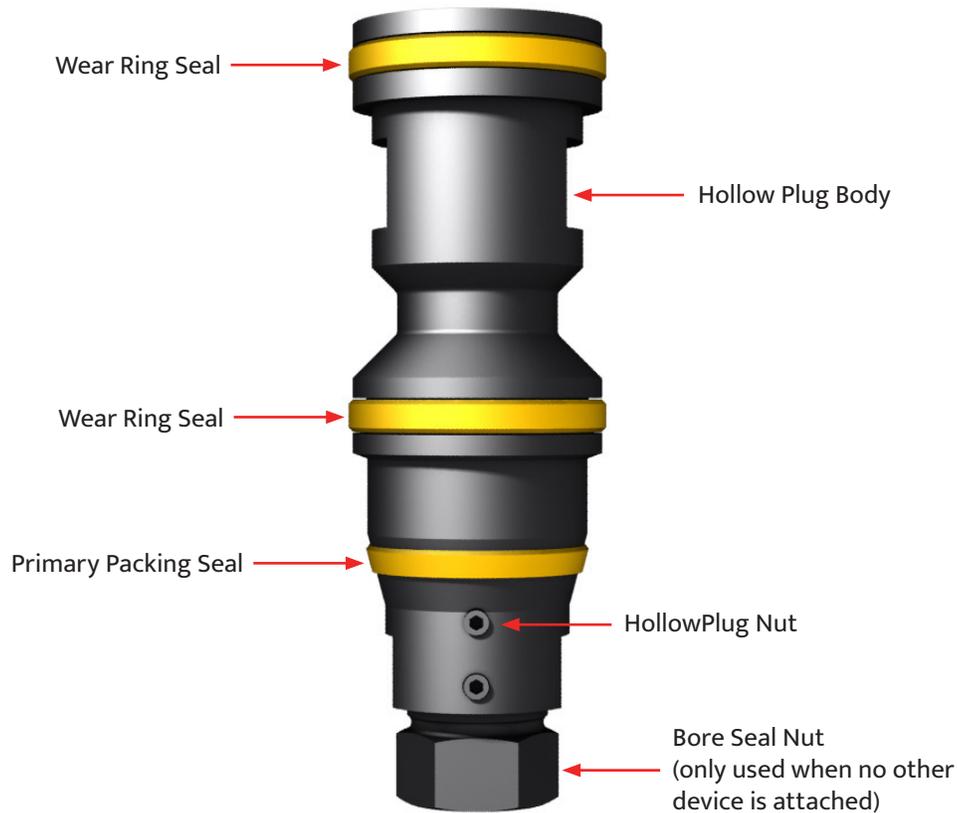


Figure 5 Solid Access Fitting Plug

4.2 Installing the Plug

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Inspect the carrier plug for any damage. If there is significant damage it will be necessary to use a new carrier plug. Fit a new primary packing, and where necessary replace the 2 x guide rings on the plug. The guide ring ends should not meet when installed on the plug. Note – Devices fitted to a solid plug have a reverse thread and devices fitted to a hollow plug nut have a reverse thread.

For a solid plug, screw the coupon holder or chemical injection nut down on to the primary packing seal and tighten using a suitable spanner, then tighten the set screw using a hex key.

For a probe such as ER, screw the hollow plug nut on to the carrier plug until it contacts the primary packing, ensuring that the old probe seal is not present in the plug nut, and then tighten using a suitable spanner. Ensuring that a probe seal is present on the shaft of the new probe, screw the probe in to the hollow plug nut anticlockwise (reverse thread) until the probe seal makes contact with the carrier plug and tighten firmly using a suitable spanner, then tighten the set screws using a hex key.

If inserting the plug under pressure with the use of the HRSL Retriever and 6000 PSI Service Valve, refer to the Work Instruction supplied with the Retriever and/or Service Valve.

If inserting the plug manually, gently push the plug assembly into the Access Fitting body. Once the carrier plug is seated, tighten all four access fitting locking pins. Once contact is achieved the pins must be tightened evenly but not excessively. Note: Working the locking pins opposites at all times will ensure the plug is seated correctly.

Chapter 5

Pressure Retaining / Protective Covers

5.1 Overview

Pressure Retaining and Protective covers thread onto the external thread on the Access Fitting body. The Pressure Retaining Cover acts as a secondary process containment and includes Bleed Valve and Pressure Gauge. The Protective Covers protect the external thread and external seal area on the Access Fitting body from damage. Several configurations are available:

(-1) P/N 740106	Hydraulic Heavy Duty Cover without Hole
	A non-pressure retaining steel cover for use with devices that do not require routine access to the plug assembly (such as coupon holders).
(-2) P/N 740107	Hydraulic Heavy Duty Cover with Hole
	A non-pressure retaining steel cover with an access hole on the top for use with devices that require routine access to the plug assembly (such as corrosion monitoring probes).
(-10) P/N740101	Pressure Retaining Hydraulic Cover with Bleed Valve & Pressure Gauge
	A pressure retaining steel cover with an integral bleed valve and pressure gauge rated for a maximum pressure of 10,000 PSI. The bleed valve must always be opened prior to removing the cover. If pressure cannot be bled, the cover must be left in place and the fitting repaired with the line depressurized.

<p>(-11) P/N740103</p>	<p>Pressure Retaining Hydraulic Cover with Bleed Valve, Pressure Gauge and 1/2" NPT Center Hole for Standard Probe Adapter</p>
	<p>A pressure retaining steel cover with an integral bleed valve and pressure gauge rated for a maximum pressure of 2500 PSI. This cover has a 1/2" NPT in the top of the cover to accommodate a standard (2500 PSI) pressure retaining Probe.</p>
<p>P/N 740105</p>	<p>Pressure Retaining Hydraulic Cover With Bleed Valve, Pressure Gauge and Center Hole for High Pressure Probe Adapter. Must use High Pressure (10,000 PSI) Probe Adapter with this Cover.</p>
	<p>A pressure retaining steel cover with an integral bleed valve and pressure gauge rated for a maximum pressure of 10,000 PSI. This cover has center hole in the top of the cover to accommodate a high pressure (10,000 PSI) retaining Probe Adapter. The bleed valve must always be opened prior to removing the cover. If pressure cannot be bled, the cover must be left in place and the fitting repaired with the line depressurized.</p>

5.2 Cover Installation and Removal

All hydraulic pressure retaining and heavy duty covers are supplied with an internal o-ring. Make certain that the o-ring is fitted into the internal groove. Make certain the flat area (sealing surface) above the external threads on the access fitting body is clean and dry. Lubricate the threads with an appropriate grease, and thread the cover onto the fitting. Non-pressure retaining covers can be installed hand-tight. Pressure retaining covers should be tightened with a spanner wrench.

If pressure retaining covers are used, be sure all pressure is bled from the cover before removal. If it is not possible to bleed pressure, the cover should not be removed until the line is depressurized. To remove the cover, simply unthread the cover from the fitting, using a spanner wrench to loosen the cover, if required.