

COSASCO®

COSASCO® ACCESS FITTING

User Manual



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Revision History Record

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ALL	B	02/25/11	Added RBS/RBSA & RSL manual #	RP	ENG	MB
ALL	C	07/20/11	Added/Deleted Heavy Covers	RP	ENG	SS
ALL	D	08/15/12	Added Safety Information	VA	ENG	SS
ALL	E	04/11/13	Added Disclaimer Notes	VA	ENG	ML
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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 Access Fittings. This user manual is not meant to be a sole source of instruction and is intended only for an overview of COSASCO Access Fittings and installation of the carrier plug and protective cover on the Access Fitting on **non-pressurized** lines. A COSASCO 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.

<p>WARNING</p> 	<p>Installing, operating or maintaining a Rohrback Cosasco Systems high pressure retrieval tool improperly could lead to serious injury or death from a surge of pressure into the retriever during retrieval (Pistoning). Comply with all information on the product, in this user manual, 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 user manual.</p>
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**BE SURE ALL PERSONNEL READ AND FOLLOW THE INSTRUCTIONS
IN THIS USER MANUAL AND ALL PRODUCT WARNINGS.**

Product Owners (Purchasers):

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

Product Operation Personnel:

1. Read and understand all instructions and operating procedures for this product.
2. Follow all warnings, cautions, and notices marked on, and supplied with, this product.
3. Follow all instructions during the installation, operation, and maintenance of this product.
4. To prevent personal injury, ensure that all components are in place prior to and during operation of the product.
5. If you do not understand an instruction, or do not feel comfortable following the instructions, contact an RCS service technician for clarification or assistance.
6. 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.
7. 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.
8. Save this user manual for future reference.

Disclaimer

This disclaimer relates to the use of this manual by non-RCS persons and entities.

Any person or organization utilizing this manual, for any purpose, does so at their own risk. Rohrback Cosasco Systems, Inc., its affiliates and employees assume no liability arising from the use of, or reliance on the information provided in any RCS manual.

Information provided in this manual should not be considered as all-encompassing or suitable for all situations, conditions or environments. Each individual and the organization he or she represents are responsible for implementing their own program of training and safety awareness in connection with this manual.

Application of information furnished by this manual does not guarantee that the information furnished will meet applicable USA (including OSHA), United Kingdom, or any other country's health or safety standards or requirements or, that by implementing any of the programs you or your company will comply with such rules and regulations. Always seek the advice of your legal, medical or other advisors before using this information.

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SAFETY WARNINGS

CHAPTER 1

The Cosasco Access assembly system has been in use for over 30 years, and has proven itself to be safe and reliable. However, when working with any high pressure system, safety must be a primary

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 death.

consideration.

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. Ensure 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.

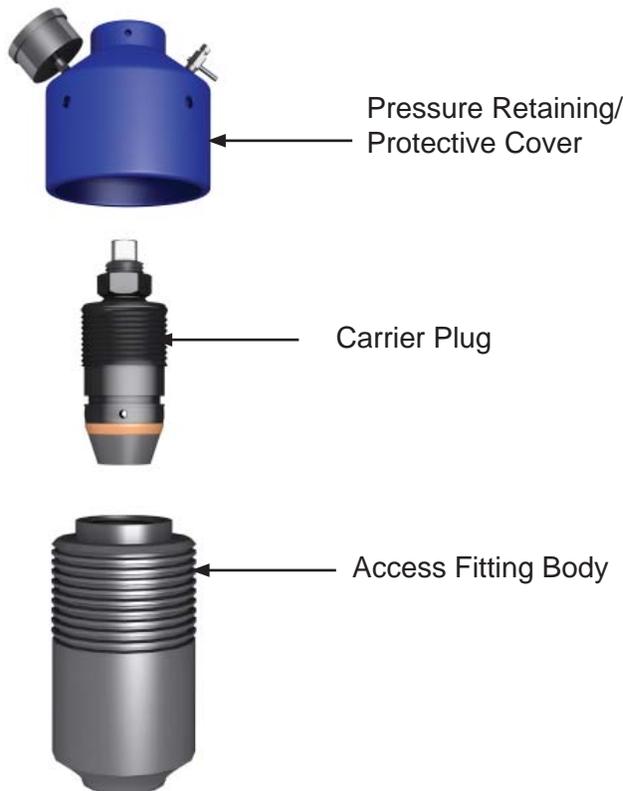
INTRODUCTION

CHAPTER 2

The COSASCO Access Fitting Assembly is the key to the concept of “Access under pressure – any time, any place”. When used with a COSASCO Retriever and Service Valve, the Access Fitting Assembly permits safe, easy insertion and retrieval of corrosion and erosion monitoring systems as well as preventive maintenance devices for injecting inhibitors or for sampling, while under full operating pressure.

The COSASCO Access Fitting Assembly consists of three main components:

1. Pressure Retaining/Protective Cover
2. Carrier Plug
3. Access Fitting Body



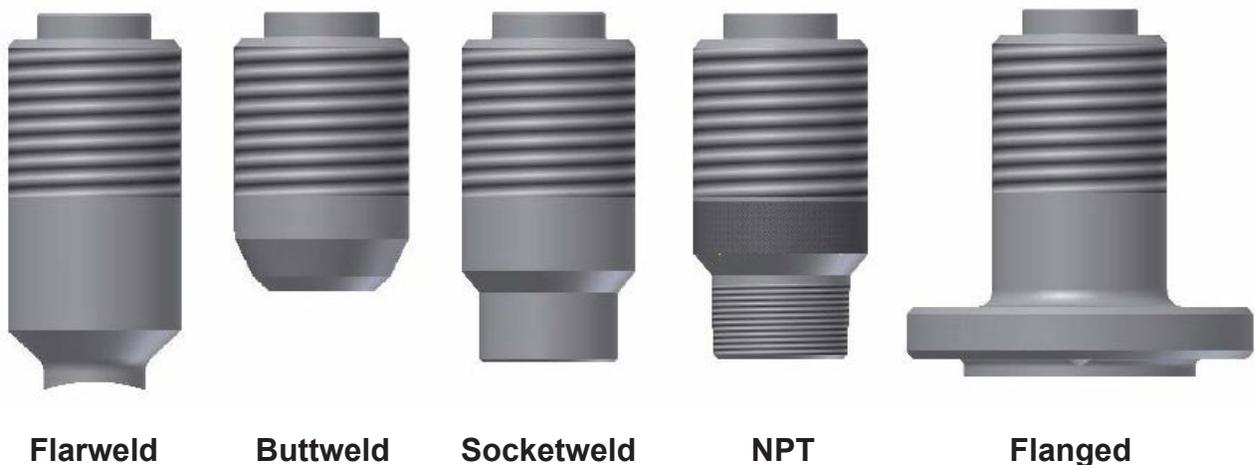
For “Access Under Pressure”, a COSASCO Retriever and Service Valve are required. One Retriever and Service Valve may be used to maintain a number of Access Fitting Assemblies.

ACCESS FITTING BODY

CHAPTER 3

3.1 Access Fitting Body Types

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

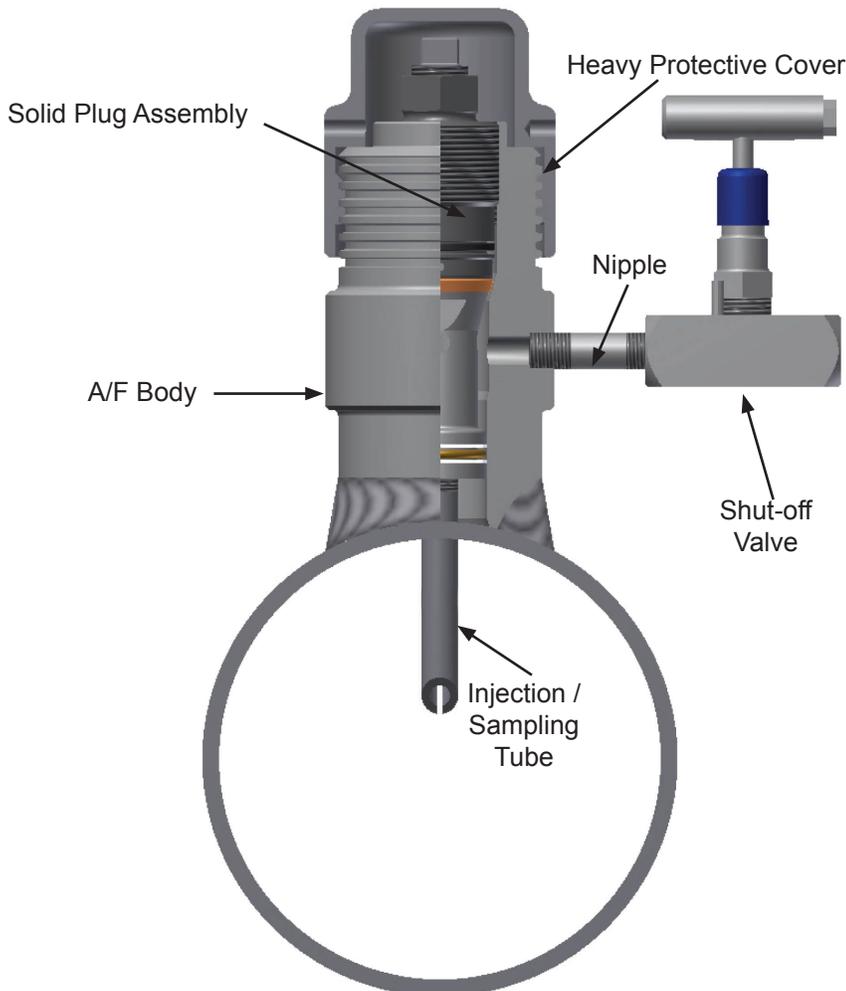


1. Flarweld – The model 50 Flarweld Access Fitting body is designed to be welded directly to the pipe or vessel. The fitting incorporates a radius to match the curvature of the pipe or vessel, with a maximum 1/16" weld gap. It also incorporates a thick body to provide adequate branch reinforcement area to help strengthen the weld joint. It is the most popular type of mounting configuration.
2. Butt weld – The model 52 Butt weld (aka. Butt weldolet) fitting is designed to be butt welded directly to a 2" schedule 160 pipe end. Possible configurations include welding to an industry standard "Weldolet" fitting, which has been welded to a pipe or vessel, or welding to a 2" schedule 160 butt weld 'Tee'.
3. Socket weld – The model 53 Socket weld fitting is designed to be socket welded directly to a 2" socket end. Possible configurations include welding to an industry standard "Soclolet" fitting, which has been welded to a pipe or vessel, or welding to a 2" schedule 160 socket weld 'Tee'.

4. NPT – The model 54 NPT fitting can be threaded into a 2" female NPT fitting.
Please note that NPT connections are not recommended for sour gas service.
5. Flanged – Flanged fittings are available in several standard configurations:
 - a. Model 56 – 2" ANSI RJ (Ring Joint)
 - b. Model 57 – 2" ANSI RF (Raised Face)
 - c. Model 58 – 2-1/16" API

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). The illustration below depicts a typical injection system arrangement through a Tee Type access fitting assembly.



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. For severe service locations, Rohrback Cosasco Systems offers a patented type CR “Corrosion Resistant” option on all Access Fitting bodies. This option provides internal threads and seal areas of Hastelloy C276, while the Access Fitting body remains a material compatible to the pipe or vessel.

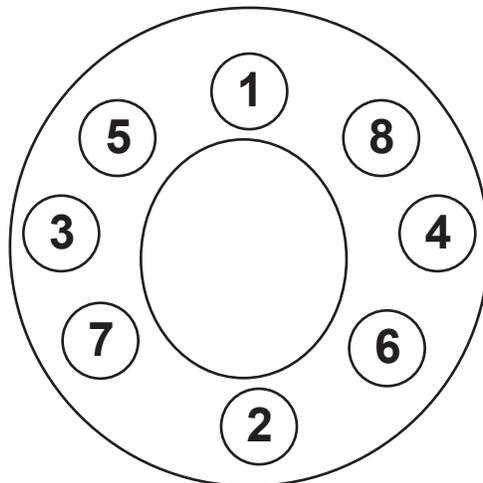
3.2 Attaching the Access Fitting Body

COSASCO Access Fitting Bodies which have a welded end connection, (flarweld, butt weld, or socket weld), 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”.

NPT type Access Fittings are manufactured in accordance with ANSI/ASME B1.20.1 -Specification for Taper Pipe Threads. As with any taper pipe thread, the joint must be made up wrench tight, using a suitable sealant. The pipe sealant must be compatible with the process fluid and conditions.

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.



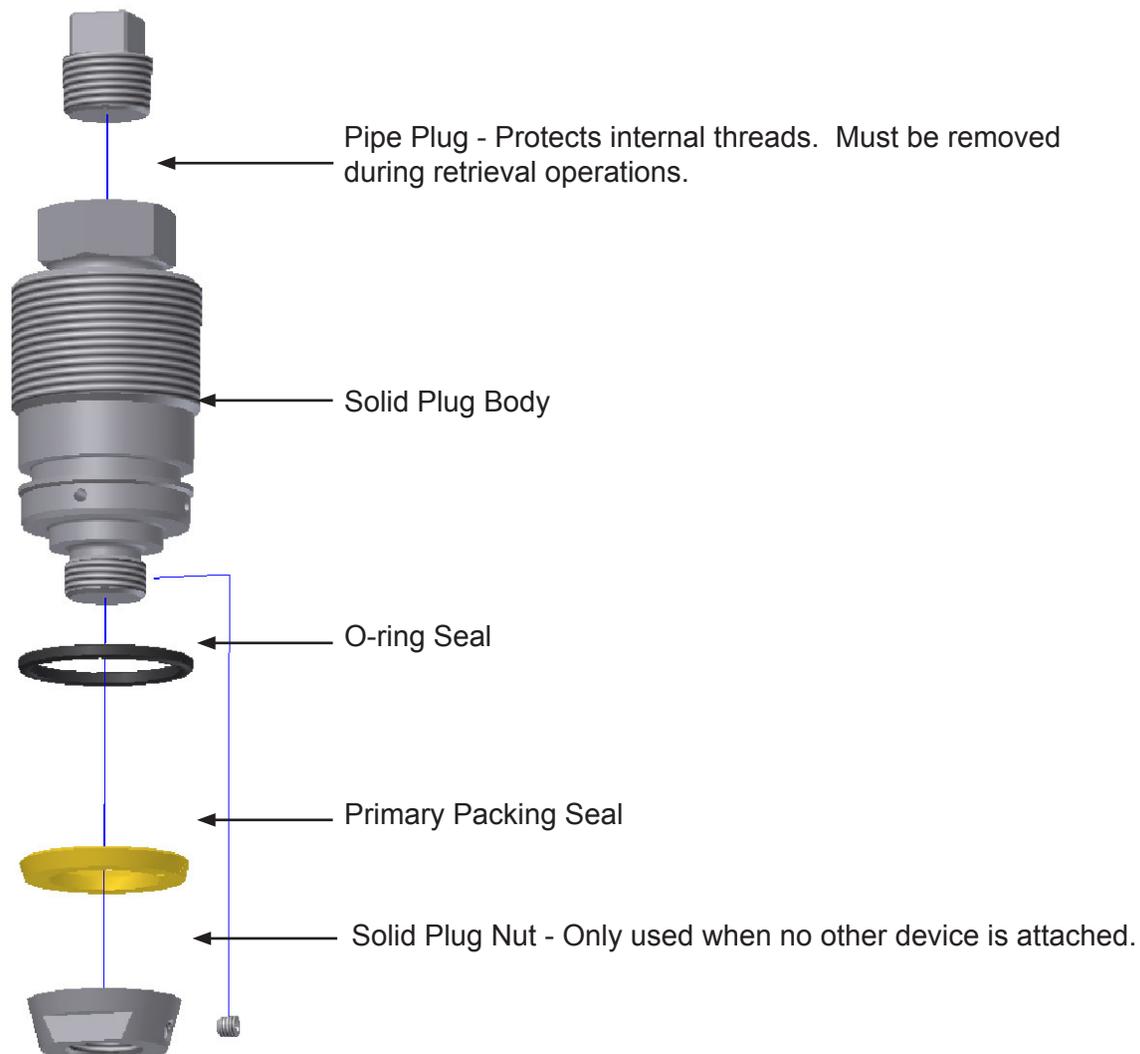
ACCESS FITTING PLUG

CHAPTER 4

4.1 Solid and Hollow Plugs

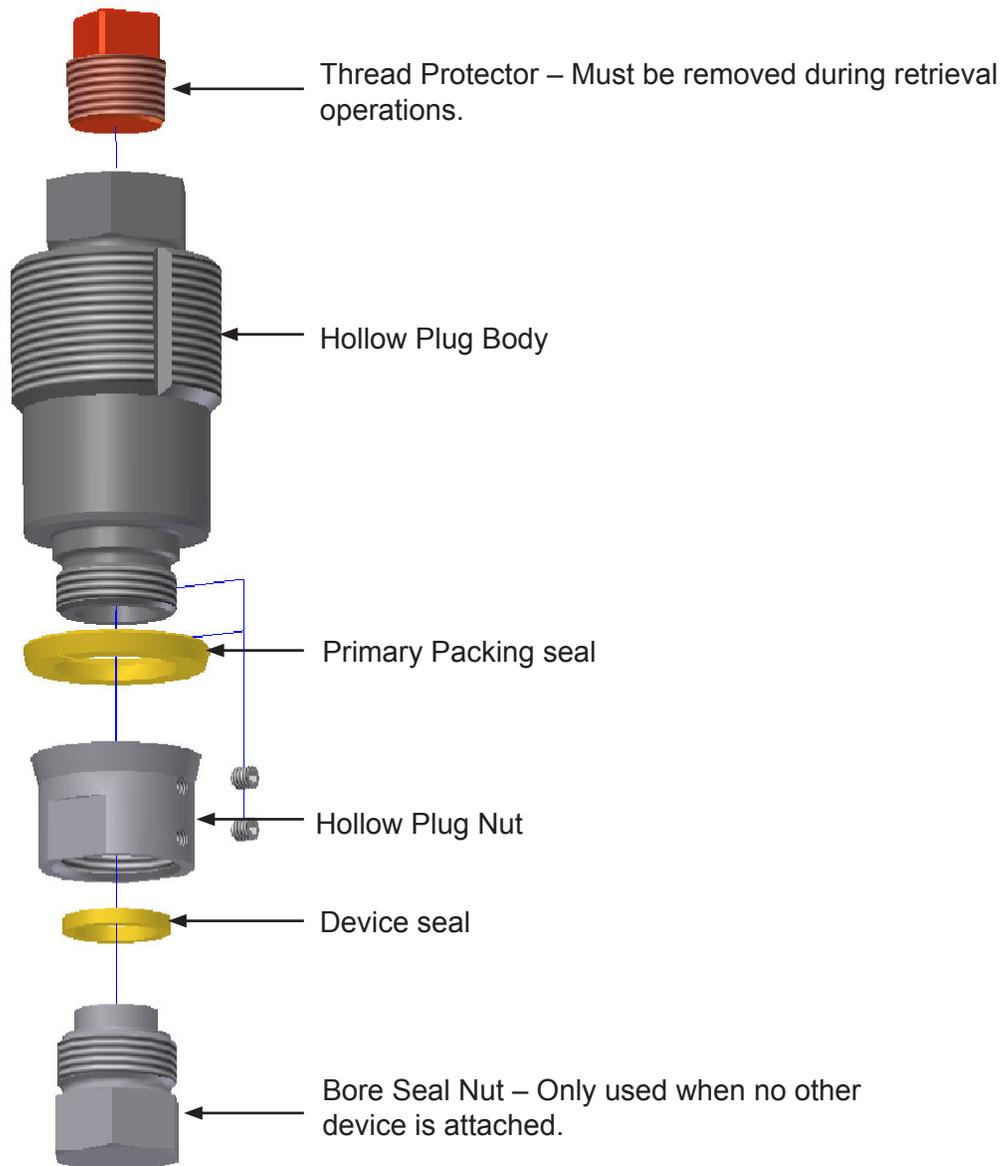
The Access Fitting plug is the retrievable “carrier” which holds the device (coupon holder, probe, chemical injection nut, etc.) which may be installed into the Access Fitting. There are two types of plugs:

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.



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2. 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.



4.2 Installing & Orienting the Plug

WARNING



A COSASCO Retriever and Service Valve must be used if line is under pressure. Installing, operating or maintaining a Rohrback Cosasco Systems high pressure retrieval tool improperly could lead to serious injury or death from a surge of pressure into the Retriever during retrieval (causing pistoning). Comply with all information on the product, in the relevant work instruction, and in COSASCO System Safety Awareness Training that apply to the product. Do not allow untrained or inexperienced personnel to work with these products. Use COSASCO parts and work procedures specified in the work instruction.

1. Remove the plug from the Access Fitting body. Loosen the Allen head set screw and remove the nut. The solid plug nut and the hollow plug bore seal nut are both *left hand* threads, to help prevent the device from coming loose during retrieval operations. Connect the corrosion monitoring or preventing device to the plug assembly (with left-hand threads). See specific work instructions for each monitoring/preventing device. After initial packing contact, compress the packing by tightening the device up to 1/4 turn more. Please note that the Primary Packing seal is not compressed by the tightening of the nut, as the nut is tightened against the plug body. It is normal for the Primary packing seal to remain loose after the nut is tightened. Securely lock into place by tightening the anti-vibration Allen head set screw.



If the corrosion monitoring or preventing device requires orienting with the product flow, “reference” or “index” the plug assembly by filing a notch across the top of the hex (see right). The notch should be filed so that the device can be aligned with the product flow. Apply an appropriate grease to the full length of the plug assembly threads. **DO NOT** apply grease to the monitoring or preventing device.

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

If inserting the plug manually, gently thread the plug assembly into the Access Fitting body. Do not use excessive force and be sure that the threads engage properly to prevent cross-threading. If cross-threading does occur, it will be necessary to use the Access Fitting Body Tap Assembly, Part Number 125111.

The reference mark as previously mentioned must now be aligned to product flow direction. Turn the plug assembly hex clockwise until the mark does align to the flow direction. If the plug assembly was installed as described, sufficient room for travel to allow orienting will be available. **CAUTION: DO NOT TURN THE PLUG ASSEMBLY HEX COUNTERCLOCKWISE TO ACHIEVE ORIENTATION!**

WARNING

DO NOT TURN THE PLUG ASSEMBLY HEX COUNTERCLOCKWISE TO ACHIEVE ORIENTATION! This will unseat the primary packing seal from the internal sealing face of the access fitting and leakage will occur!

Make sure the fitting is clean and dry, and install the thread protecting pipe plug into the top of the plug. Liberally grease the 1/4" stainless steel pipe plug and install into the solid plug hand tight. Hollow plug assemblies use a red plastic pipe plug, therefore greasing is unnecessary.

PRESSURE RETAINING/ PROTECTIVE COVERS

CHAPTER 5

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 122734 Heavy Protective 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 122732 Heavy Protective 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).



(-5) P/N 206436 Polycarbonate Cover without Hole

- A non-pressure retaining polycarbonate cover for use with devices that do not require routine access to the plug assembly (such as coupon holders). This is a lighter duty alternative to the standard steel cover.



(-6) P/N 206435 Polycarbonate Cover with Hole

- A non-pressure retaining polycarbonate 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). This is a lighter duty alternative to the standard steel cover.



(-10) P/N 740090 Pressure Retaining 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.



(-11) P/N 740093 Pressure Retaining Cover With Bleed Valve, Pressure Gauge and ½" NPT Center Hole for Standard Probe Adapter

- 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 ½" NPT in the top of the cover to accommodate a standard (2500 PSI) pressure 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.



(-12) P/N 740095 Pressure Retaining 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.

- 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.



5.2 Cover Installation & Removal

All pressure retaining and protective 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.

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