

Retrieval Tool and Service Valve

for High Pressure (HP™ and MH™) Access Systems

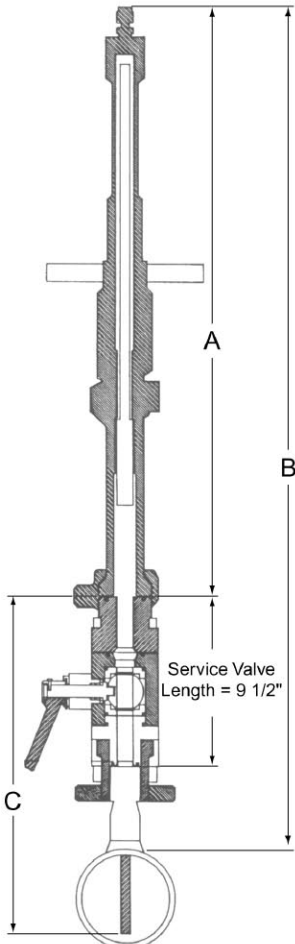


Figure 1. Retrieval Tool / Service Valve Dimensional Schematic

The Metal Samples Corrosion Monitoring Systems retrieval tool and service valve can be used to insert or retrieve sensors from process systems operating under full pressure (up to 3600 psi). An HP adapter supplied with a retrieval tool can be interchanged for an MH adapter, and vice versa, so that the tool can be used with both HP and MH high pressure access system. (Each tool is supplied with one adapter. The alternate adapter must be purchased separately). The tool also works with other conventional 2" access systems.

The retrieval tool and service valve system incorporates the following unique features:

- Side-wheel manipulation to allow safe operation.
- No telescoping parts.
- Positive indication of full insertion or retrieval of plug/sensor assembly to avoid operation errors.
- Compact design to allow retrieval in minimum clearance areas.
- Lightweight construction for single person operation.
- Full compatibility with systems manufactured by other suppliers.
- Quick-stab collet latch mechanism (MH system) for rapid operation.

Stroke required = 9.5" + Length of Plug + Attachment Length
 solid plug = 2.5"
 hollow plug = 3.75"

Letter	Description	Maximum Pipeline Size								
		4"	8"	12"	16"	20"	24"	30"	36"	40"
A	Retrieval Tool Overall Length - inches	39	47	55	63	71	79	91	103	111
B	Retrieval Tool and Service Valve Overall Length to Pipe OD (includes non-tee access fitting) - inches	54	62	70	78	86	94	106	118	126
C	Stroke Available - inches	18.5	22.5	26.5	30.5	34.5	38.5	44.5	50.5	54.5
	Retrieval Tool Weight - lbs.	47	52	57	62	67	72	83	92	97
	Case / Tool Kit Weight - lbs.	37	37	40	40	43	43	48	48	53
	Total Weight - lbs.	84	89	97	102	110	115	131	140	150
	Total Cubage - ft ³	2.4	2.4	2.9	2.9	3.5	3.5	4.3	4.3	4.8

Table 1. Dimensions from Schematic

All retrieval tools have a body material of 316 SS and a working pressure of 3600 psi. MH™ is a trademark of Metal Samples Corrosion Monitoring Systems

Retrieval Tool

The exploded view of the retrieval tool shown in Figure 3 illustrates some of the exclusive safety and convenience features available only from Metal Samples Corrosion Monitoring Systems. The retrieval tool is constructed to comply with NACE MR-0175(90) and is pressure tested at the factory to 6000 psi for a working pressure of 3600 psi. The standard tool is suitable for operation between 0°F and 450°F (-18°C and 232°C). For operation below this temperature range, a low temperature version is available on request. The retrieval tool is normally supplied as a kit complete with field service case, assembly accessories and one O-ring seal kit.

Tool size, or stroke, is determined by the combined maximum pipeline size and the maximum height of any access fitting assembly with which the tool will be used. The stroke is defined as the distance that the plug/sensor assembly must travel to permit the service valve to close.

Metal Samples Corrosion Monitoring Systems retrieval tool part numbers for various pipeline sizes are given below. If the required pipeline size falls between two size ranges, the larger tool should be selected.

Retrieval Tool Part Numbers

<u>Part #</u>	<u>Pipeline Size</u>
HA10004X	4"
HA10008X	8"
HA10012X	12"
HA10016X	16"
HA10020X	20"
HA10024X	24"
HA10030X	30"
HA10036X	36"
HA10040X	40"

X = 0 (HP™ adapter), 1 (MH™ adapter),
2 (HP™ adapter for low temperature)

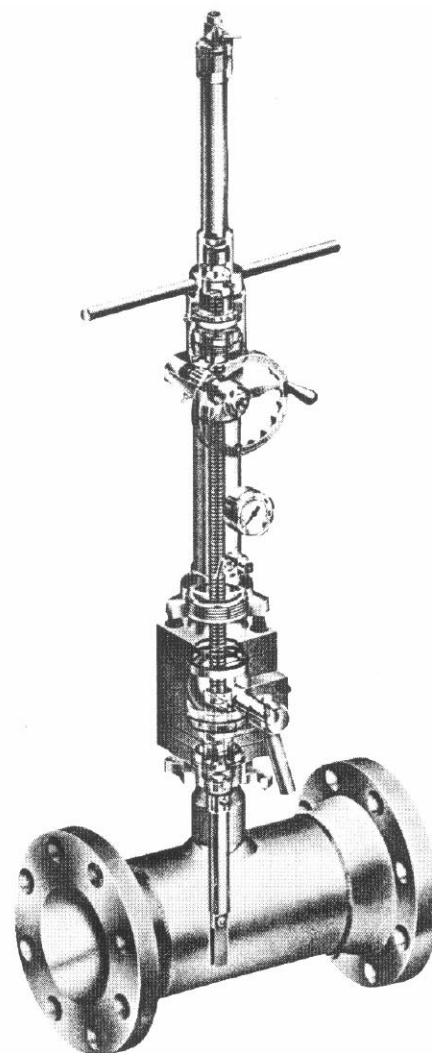


Figure 2. Retrieval Tool and Service Valve

Retrieval Tool Accessories

<u>Part #</u>	<u>Description</u>	<u>Part #</u>	<u>Description</u>
HA104005	Diverter Hose 10 Feet	HA104001	N2 Retriever Backpressure Kit
HA104003	Hollow Plug Moisture Seal Plug	HA104002	Pipe Plug Retriever Adapter
HA104004	Hollow Plug Overshot Adapter	HA104000	Retriever Backpressure Kit
HA102016	HP Thread Chaser Assembly	SWS0017	Stainless Steel Wire Brush
HA102036	HP Thread Die Assembly	HA104006	Surge Tube Assembly
HA102009	MH Thread Chaser Assembly		

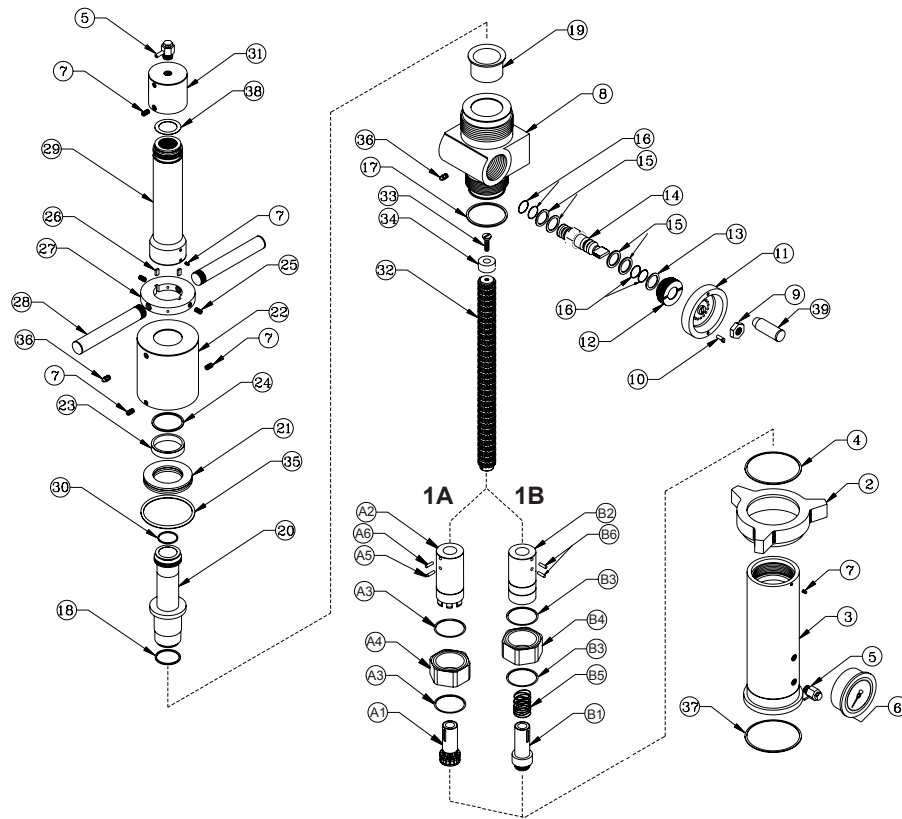


Figure 3. Retrieval Tool Exploded View

ITEM	QTY	DESCRIPTION	PART #	MATERIAL	ITEM	QTY	DESCRIPTION	PART #	MATERIAL
1A	1	MH™ Adapter Assy	PS5554158	As Listed	15	4	Thrust Washer	PR6270158	316 SS
A1	1	Collet Latch	PR6297110	17-4PH	16	4	O-Ring	PR6271834	Viton®
A2	1	MH™ Spanner	PR6296158	316 SS	17	1	O-Ring	PR6263834	Viton®
A3	2	Spirol Ring	PR6243158	316 SS	18	1	Omniseal	PR6251	Fluorocarbon
A4	1	Adapter Guide	PR6244158	316 SS	19	1	Flange Bearing	PR6239	P/M Bronze
A5	1	Set Screw	09141E2520CP1000	SS	20	1	Drive Tube	PR6272159	316 SS
A6	1	Spirol Pin	PR6247141	SS	21	1	Thrust Bearing	PR6273207	AISI 52100
1B	1	HP™ Adapter Assy	PS5552158	As Listed	22	1	Bearing Cap	PR6274159	316 SS
B1	1	Landing Screw	PR6242159	316 SS	23	1	Sleeve Bearing	PR6275	P/M Bronze
B2	1	HP™ Adapter Body	PR6246158	316 SS	24	1	O-Ring	PR6293834	Viton®
B3	2	Spirol Ring	PR6243158	316 SS	25	2	Set Screw	09141E3716CP0500	SS
B4	1	Adapter Guide	PR6244158	316 SS	26	2	Key	PR6276377	AISI 1018
B5	1	Spring	PR6245599	IN 600	27	1	Drive Ring	PR6277158	316 SS
B6	2	Spirol Pin	PR6247141	SS	28	2	Handle	PR6278158	316 SS
2	1	Hammer Union	PR6290C25	A350 LF2	29	1	Upper Tube	PR6279158XX**	316 SS
3	1	Lower Tube	PR6264158XX*	316 SS	30	1	O-Ring	PR6280834	Viton®
4	1	Spirol Ring	PR6265138	SS	31	1	End Cap	PR6281158	316 SS
5	2	Bleed Valve	PR6359158	316 SS	32	1	Spline Rack	PR6282110XXXX***	17-4PH
6	1	Pressure Gage	PR7020158	316 SS	33	1	Flat Head Screw	09141E3716FH0500	SS
7	5	Set Screw	09158E3716CP0375	SS	34	1	End Stop	PR6283158	316 SS
8	1	Gear Box Assy	PS5551	Cast 316L SS	35	1	O-Ring	PR6284834	Viton®
9	1	Hand Wheel Nut †	09141E7510JN0000	304 SS	36	2	Grease Fitting	PR6427139	303 SS
10	1	Lock Pin †	PR6291139	SS	37	1	O-Ring	PR6285834	Viton®
11	1	Handwheel Body †	PR6289338	Aluminum	38	1	O-Ring	PR6286834	Viton®
12	1	Shaft Retainer	PR6267707	NIT60	39	1	Handwheel Handle †	PR6288338	Aluminum
13	1	O-Ring	PR6268834	Viton®					
14	1	Gear Shaft	PR6269110	17-4PH					

Table 2. Retrieval Tool Parts

* XX is 10" greater than the Retrieval Tool length; i.e. XX = 26 if Retrieval Tool length is 16".

** XX is 11" greater than the Retrieval Tool length; i.e. XX = 15 if Retrieval Tool length is 4".

*** XXXX is 18.56" greater than the Retrieval Tool length; i.e. XXXX = 3456 if Retrieval Tool length is 16".

If replacement parts are required, use the part numbers listed above and specify length where necessary. Viton® is the standard O-ring material, however other materials are available. Consult your Metal Samples Corrosion Monitoring Systems representative for the options available with non-standard materials. (Viton® is a registered trademark of DuPont Dow Elastomers.)

† Item is included as part of the Handwheel Assembly - Part # PS5556338.

Service Valve

Three ball-type service valves are available for use with Metal Samples Corrosion Monitoring Systems retrieval tools: standard, low and high temperature. The female threads on this valve are industry-standard ACME threads and may be used with any Metal Samples Corrosion Monitoring Systems high pressure access fitting as well as any other 2" access fitting. The valves have a bleed valve located on the non-process side of the ball. This bleed valve may be used to drain the retrieval tool, sample process, or be used as a path for back-pressuring. All valves are NACE MR-0175 compliant for use in sour service, factory pressure tested for a working pressure of 3600 psi* W.O.G., and meet API6FA and API607 fire safe requirements.



Figure 4. Service Valve

The service valve is a portable valve that is used in conjunction with a retrieval tool. The service valve is threaded onto an access fitting in preparation for retrieving a plug. Next, the retrieval tool is attached to the service valve. System pressure is then equalized in the retrieval tool by unseating the plug. Occasionally deposit buildup in access fitting bodies does not allow for pressure equalization through the plug. If this occurs, the retrieval tool can be back pressured by use of a back-pressure kit (P/N - HA104000). Once pressure equalization has occurred, the plug is removed and the valve is shut. Finally, the retrieval tool is removed from the valve allowing access to the plug and its accessory. A Blanking Cap/Plug Assembly (P/N - PS5612) may be installed on the valve as an additional safety measure, if required.

Service valves are supplied with a durable lightweight field service case, extension bar, tool kit, and one O-ring seal kit. Additional accessory items are listed below.

Model

HA101250 (Standard Temperature Valve)	200°F to 0°F (93°C to -18°C)
HA101251 (Low Temperature Valve)	200°F to -50°F (93°C to -46°C)
HA101252 (High Temperature Valve)	450°F to 0°F (232°C to -18°C)

Physical Data

Valve Weight: 45 lbs. Case Weight: 25 lbs. Total Weight: 70 lbs.

Case Dimensions: 12 3/4" x 13 3/4" x 20 1/4"

Metal Samples Corrosion Monitoring Systems

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