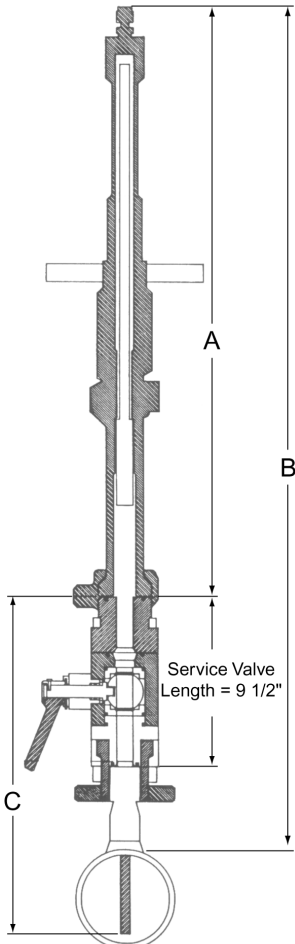


# Retrieval Tool

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



**Figure 1. Retrieval Tool / Service Valve Dimensional Schematic**

The Metal Samples retrieval tool and service valve can be used to insert or retrieve sensors from process systems operating under full pressure (up to 6000 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 systems. (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 <sup>3</sup>	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 17-4PH and a working pressure of 6000 psi. For severe corrosive environments, retrieval tools made from I825 can be supplied. MH™ is a trademark of Metal Samples.

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. The standard tool is suitable for operation between -15°F and 400°F (-26°C and 204°C). A low temperature version is available upon request for operation between -30°F and 250°F (-34°C and 121°C). *Optional seal materials for higher and lower temperature ratings are available. Please contact your Metal Samples sales representative for options.*

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 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 = 4 (HP adapter), 5 (MH adapter), 6 (HP adapter for low temperature)

### Retrieval Tool Accessories

<u>Part #</u>	<u>Description</u>
HA104005	Diverter Hose 10 Feet
HA104003	Hollow Plug Moisture Seal Plug
HA104004	Hollow Plug Overshot Adapter
HA102016	HP Thread Tap Assembly for Repair of Damaged Threads
HA102036	HP Thread Die Assembly
HA102038	HP Thread Chaser for Cleaning of Threads
HA102009	MH Thread Chaser Assembly for Cleaning of Threads
HA104001	Retriever Backpressure Kit - pneumatic
HA104002	Pipe Plug Retriever Adapter
HA104000	Retriever Backpressure Kit - hydraulic
SWS0017	Stainless Steel Wire Brush
HA104006	Surge Tube Assembly

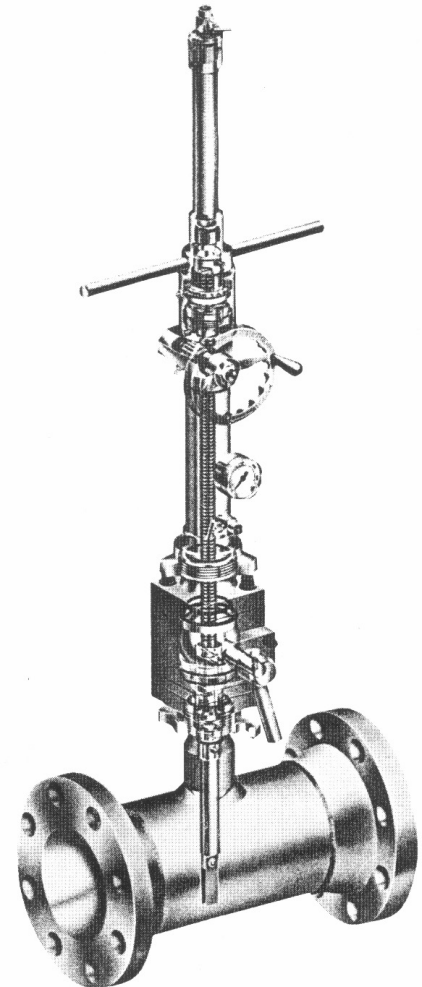


Figure 2. Retrieval Tool and Service Valve

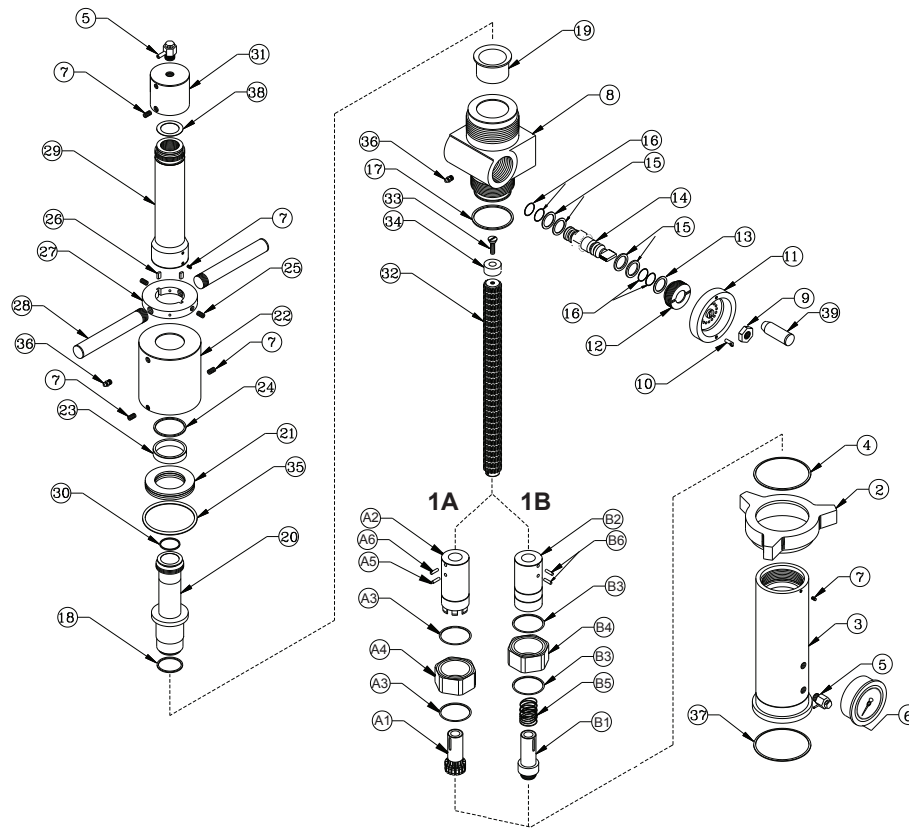


Figure 3. Retrieval Tool Exploded View

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	PR7430834	Viton®
A2	1	MH™ Spanner	PR6296158	316 SS	17	1	O-Ring	PR7433834	Viton®
A3	2	Spirol Ring	PR6243138	302 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	PR6272G86	17-4PH HH1150
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	PR6274G86	17-4PH HH1150
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	PR7432834	Viton®
B3	2	Spirol Ring	PR6243138	302 SS	25	2	Set Screw	09141E3716CP0500	SS
B4	1	Adapter Guide	PR6244158	316 SS	26	2	Key	PR6276141	304 SS
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	PR6279G86XX**	17-4PH HH1150
3	1	Lower Tube	PR6264G86XX*	17-4PH HH1150	30	1	O-Ring	PR6280834D90	Viton®
4	1	Spirol Ring	PR6265138	SS	31	1	End Cap	PR6281G86	17-4PH HH1150
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	PR7429834	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	PR7439834	Viton®
11	1	Handwheel Body †	PR6289338	Aluminum	38	1	O-Ring	PR7428834	Viton®
12	1	Shaft Retainer	PR6267G86	17-4PH HH1150	39	1	Handwheel Handle †	PR6288A69	Aluminum
13	1	O-Ring	PR7431834	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 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.