

SA-77

Liquid Accumulator

- ◆ Flow Meter Not Required
- ◆ Environmentally Friendly
- ◆ Anti-Spill Interlock
- ◆ Two Moving Parts
- ◆ Extremely Low Maintenance Cost
- ◆ Single and Multi-Stroke Versions Available



The Premium Liquid Sampler

Meeting the needs of Industry

One Sample at a Time

Oil and Gas; Water Treatment; Waste Treatment and More

Ph: 1-800-667-7993

SA-77 Liquid Sampler: Drawings and Parts List

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Specifications:

Materials: All wetted parts are 316 SST, Delrin, Aflas

Operating Pressure: Standard Max: 750 psi (5171 kPag)

High Pressure Option: 1440 psi (9928 kPag) Add "HP" suffix on ordering #

Receivers: 1.8 L HDPE or 1.8 L Glass, 500mL and 5L HDPE available

Operating Temperature: Standard Max: 200 F (93 C)

High Temp Option: 350 F (175 C) Add "HT" suffix on ordering #

Operating Signals: Pneumatically Powered (Electric option available)

Single Stroke: Level Control Output: 3-15 psi or 6-30 psi

Multi Stroke: Fixed Supply of 25-50 psi or Level Controller Output 30 psi

Mounting: 2" Pipe or Wall Mount

Dimensions: 9.25" x 8.00" approximately (without receiver)

Sample Size: 0.65 - 5.75 cc per cycle

Weight: 15lbs (Single Stroke); or 17lbs (Multi-Stroke) shipping weight.

Single Stroke

1 sample per umpulse of control circuit air



SA-77SxxGx

Multi-Stroke

Multiple samples per impulse of control air



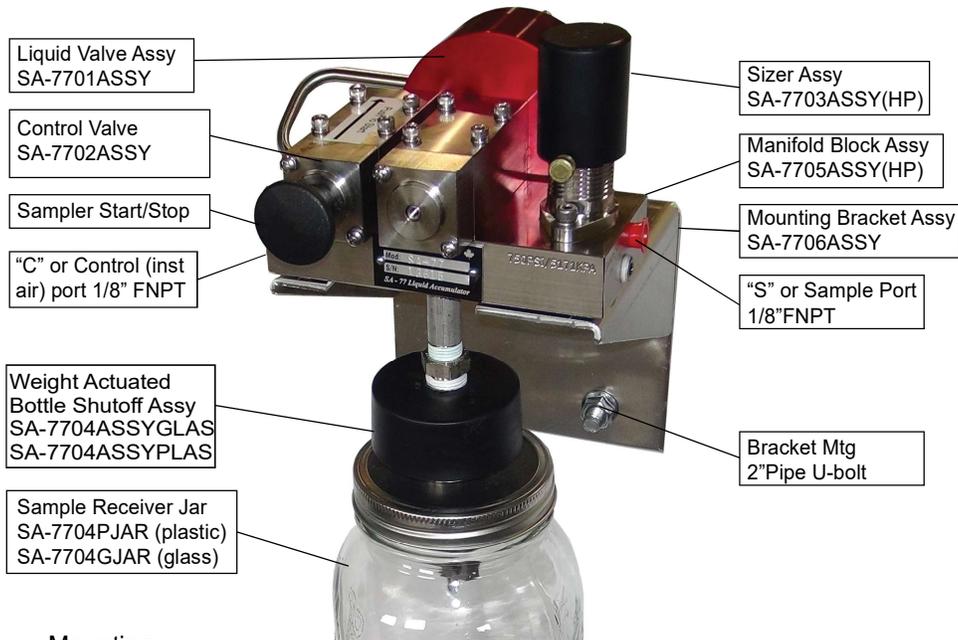
SA-77MxxPx

Throughout this book the terms "sampler" and "accumulator" are used interchangeably.

SA-77 Liquid Sampler

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Installation & Component Identification



Mounting

- ◆ Using the 2 pipe clamps (supplied) mount on a 2" vertical or horizontal pipe. Or use lag screws (not supplied) to mount to wall. Sampler must be mounted vertical and plumb to allow free movement of receiver bottle.

Supply or Signal Connection (left side of the Manifold Assy SA-7705ASSY)

- ◆ For the Single-Stroke model connect an intermittent air supply to port "C" on the left side of SA-7705ASSY. (eg: output from separator level controller.)
- ◆ For Multi-stroke models connect a clean instrument air supply of 30+ psig to the 1/8" FNPT port on manifold block SA-7705ASSY marked "C" or "Control". (Supply can come from level controller output on some installations where long dump cycles occur and multiple samples per dump cycle are appropriate.)

Process or 'Sample In' Connection (on the right side of the Manifold Assy SA-7705ASSY)

- ◆ For both models tube your connection for the process to to the 1/8" FNPT port on the sampler manifold SA-7705ASSY marked "S" or "Sample In". Sample lines should be kept as short as possible to prevent inline stratification.

SA-77 Liquid Sampler: Sample probes and Installation
Ph: 1-800-667-7993

Sample Probes and Installation for best representative sampling

- ◆ If sampling from horizontal pipe, probe weld-o-lets should be placed on the side of the pipe at center, so the probe quill sits in the horizontal plane.
- ◆ Mounting the probe in vertical piping with flow going upwards is preferred.
- ◆ Always install probe or quill between line meter and level control or back-pressure valve to ensure a well mixed sample from full pipe.
- ◆ Sampler should be mounted as close as possible to the sample point, keeping sample tubing line as level and as short as possible.
- ◆ Installing a low cracking pressure check valve in the sample line immediately downstream of the probe will aid in sample handling. When the sample line has a slope in it this check valve will prevent sample stratification which allows oil or water to rise or fall back into the liquid leg causing a non-representative sample.
- ◆ Use of full port valves in the sample line is preferred. Do not use needle valves.
- ◆ Use 1/4" tubing to keep sample line volume low.

Common Probe Types

	Bore Through			Female (npt) / Male (npt)			Floco™	
Process Conn Size (MNPT)	1/2"	1/2"	1"	1/4"	1/2"	1/2"	To fit Floco side plate (ring face seal)	
Female (inner) Size	1/4"	3/8"	3/8"	1/4"	1/4"	1/2"		
Quill Diameter	1/4"	3/8"	3/8"	5/16"	3/8"	1/2"	1/4"	1/4"
Quill (U) Length	6" OR LESS (FIELD TRIM supplied beveled 1 end)			11" OR LESS (FIELD TRIM supplied sq end)			2" (meter size)	3" (meter size)
Part Number	SA-77070402	SA-77070402A	SA-77070403	SA-77070202	SA-77070404C	SA-770704022	SA-77070102	SA-77070103

SA-77 Liquid Sampler

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Operation:

Run / Stop (See General Overview Drawing this page and page 3) - Control Valve

- ◆ To start the sampler push the knob in on Control Valve SA7702assy. To stop the Sampler, pull the knob out. Note: when the sampler's accumulator jar is full, pressure from the sample inlet line will build at the back of control valve spool to push the knob out and stop the sampler's operation.

Sample Size Adjustment

- ◆ The sampler's sample size per cycle can be adjust to from 1 to a maximum of 10cc (mL) per cycle stroke by adjust the sample sizer cap (SA-7703-assy) up or down. The sample volume to per cycle is indicated on the side of the sizer.

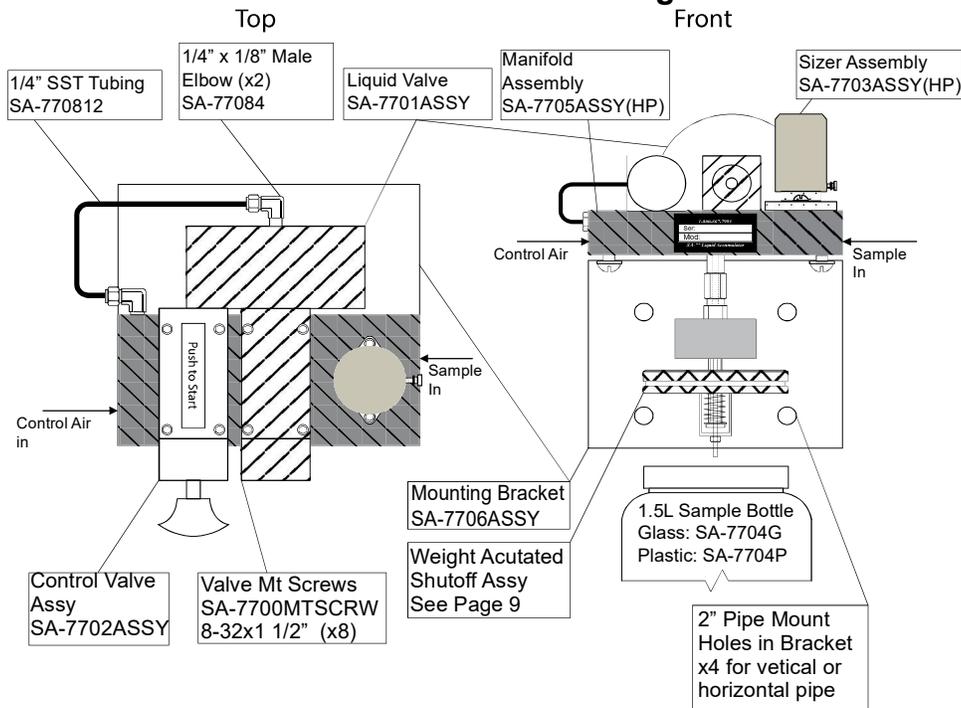
Cycle Time Adjustment (Multi-stroke samplers only)

- ◆ To adjust the cycle rate (cycles per minute) adjust the dial on the Ossillator Assembly (SA-7708). Adjust clockwise to increase sample cycle rate.

Bottle Shutoff Adjustment (Refer to parts drawings page 9)

- ◆ Loosen Locknut (Item 8) and adjust the Valve Stem (item 9) in relation to cage housing (item 5) until proper shut-off occurs. Valve stem is slotted at top. With more stem extending below the locknut, less volume of sample is required to shut off the sampler.
(New samplers are factory set using water to shut off at 60% full for all bottle sizes and types.)

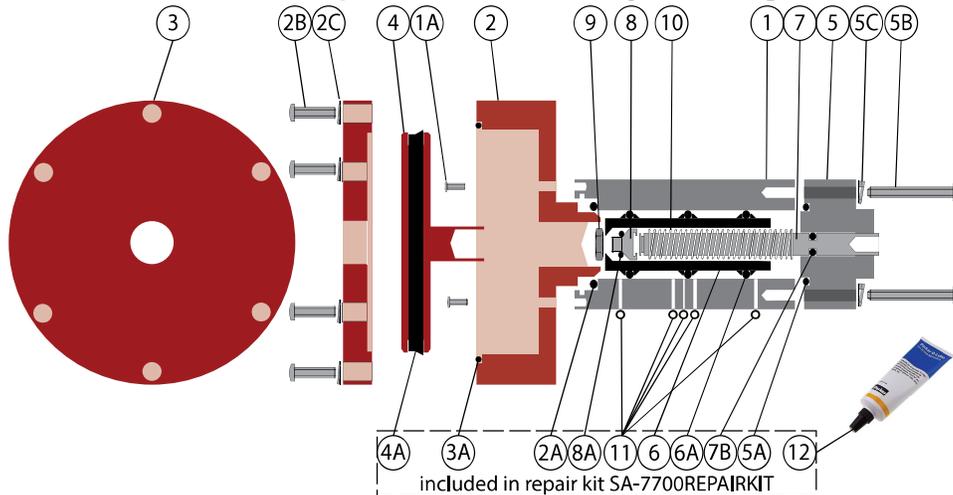
General Overview Drawing



SA-77 Liquid Valve Assembly Part Number: SA-7701ASSY

Item	Description	Material	Part No.	Qty.
1	Valve Block -Liquid Valve (Heavy Oil option)	SST	SA-77011	1
1A	Screw 6-32 x 3/8"	SST	SA-77021	2
2	Liquid Valve Piston Chamber	Anodized Al.	SA-77012	1
2A	0-ring Piston Chamber to Body	Aflas	SA-77012A	1
2B	Screw 8-32 x 3/4"	SST	SA-77012B	6
2C	# 8 Lock Washer	SST	SA-77012C	6
3	Liquid Valve Piston Cover	Anodized Al.	SA-77013	1
3A	0-ring-Liquid Valve Piston Cover	Aflas	SA-77013A	1
4	Liquid Valve Actuator Piston	Anodized Al.	SA-77014	1
4A	Liquid Valve Piston U-cup	Viton	SA-77014A	1
5	End Block	SST	SA-77005	1
5A	End Block Seal 0-ring	Aflas	SA-77005A	1
5B	End Block Mtg. Screw 6-32 x 1"	SST	SA-77005B	2
5C	End Block Mtg. Lock Washer	SST	SA-77005C	2
6	Valve Spool	Delrin	SA-77006	1
6A	0-ring Seal, Spool Assembly	SST	SA-77006SST	3
7	Valve Spindle	Aflas	SA-77006A	1
7B	Seal for Valve Spindle, O-ring	SST	SA-77007	1
8	Spindle Retainer	Aflas	SA-77007B	1
8A	Spindle Retainer Lock Nut	SST	SA-77008	1
9	Seal for Retainer, O-ring	Aflas	SA-77008A	1
10	Liquid Valve Return Spring	SST	SA-77009	1
11	Liquid Valve Manifold/Valve oring	Spring Metal	SA-770110	1
12	Manifold/Valve oring	Aflas	SA-7705008/AFLAS	4
	Oring Grease 2g		SA-77ORINGGREASEPK	

Liquid Valve Assembly Drawing



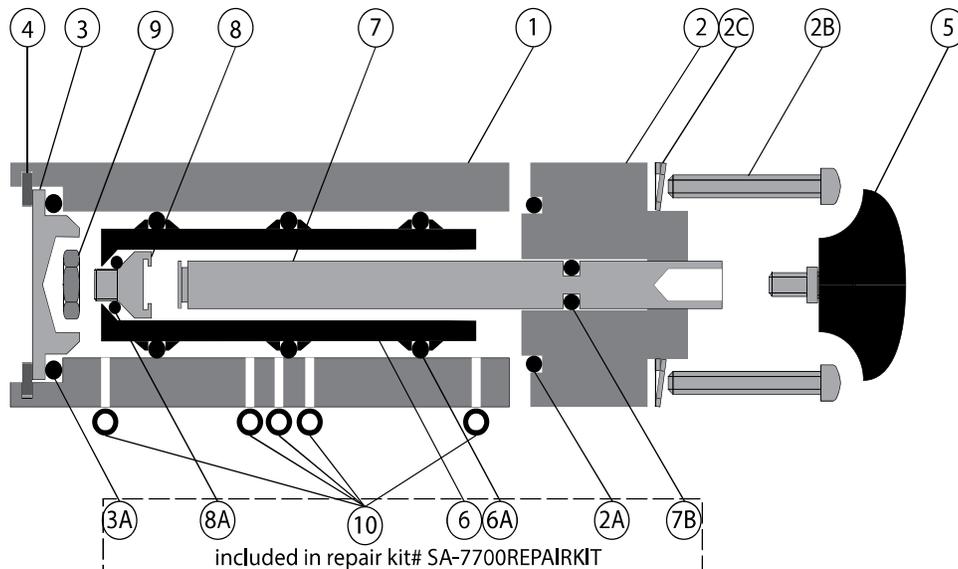
SA-77 Liquid Sampler: Drawings and Parts List

Ph: 1-800-667-7993

SA-77 Control Valve Assembly Part Number: SA-7702ASSY

<u>Item</u>	<u>Description</u>	<u>Material</u>	<u>Part No</u>	<u>Qty</u>
1	Valve Block (Control or Start/Stop)	SST	SA-77021	1
2	End Block - 316 Sst	SST	SA-77005	1
2A	End Block Seal	Aflas	SA-77005A	1
2B	End Block Mtg.Screw 6-32x1"	SST	SA-77005B	2
2C	End Block Mtg. Lock Washer	SST	SA-77005C	2
3	End Plug	SST	SA-77023	1
3A	End Plug Seal	Aflas	SA-77023A	1
4	Snap Ring For End Plug	SST	SA-77024	1
5	Knob, Start/Stop 117-32	Polyethylene	SA-77025	1
6	Valve Spool - Delrin	Delrin	SA-77006	1
6A	O-Ring Seal, Spool Assy	Aflas	SA-77006A	3
7	Valve Spindle	SST	SA-77007	1
7B	Seal For Valve Spindle	Aflas	SA-77007B	1
8	Spindle Retainer	SST	SA-77008	1
8A	Seal For Retainer	Aflas	SA-77008A	1
9	Spindle Retainer Nut	SST	SA-77009	1
10	Manifold/Valve oring	Aflas	SA-7705008/AFLAS	4
	Label Push To Start (Not Shown)	Vinyl Sticker	SA-77027	1

Control Valve Assembly Drawing



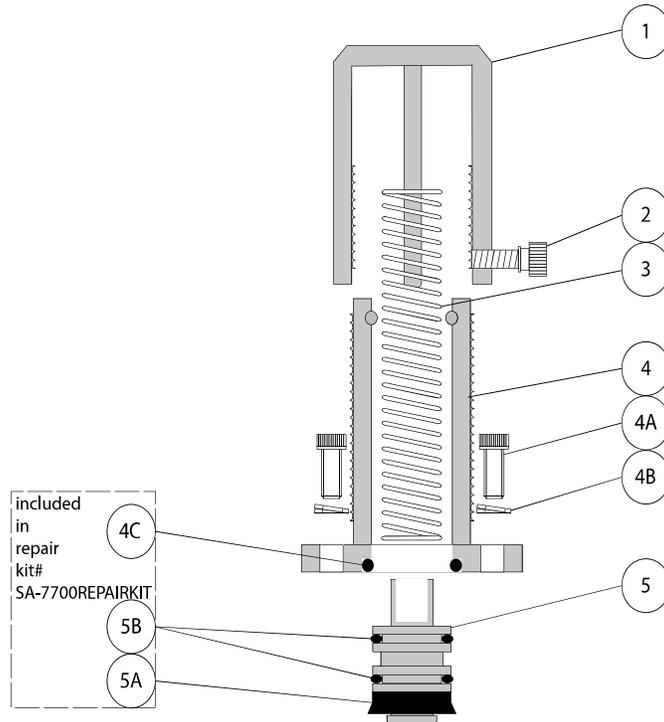
SA-77 Liquid Sampler: Drawings and Parts List

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SA-77 Sizer Assembly Part Number: SA-7703ASSY

<u>Item</u>	<u>Description</u>	<u>Material</u>	<u>Part No.</u>	<u>QTY.</u>
1	Sizer Adjusting Cap	SST	SA-77031	1
2	Sizer Cap Thumb Screw	Brass	SA-77032	1
3	Sizer Piston Spring	SST	SA-77033	1
4	Sizer Body	SST	SA-77034	1
	Sizer Body (for HP samplers)	SST	SA-77034HP	
4A	Sizer Mtg Screw Hex Socket	SST	SA-77034A	2
	Sizer Mtg Screw (for HP samplers)	SST	SA-77034AHP	2
4B	Sizer Mtg Lockwasher	SST	SA-77034C	2
	Sizer Mtg Lockwasher (HP)	SST	SA-77034CHP	
4C	Sizer Mounting Seal Oring	Aflas	SA-77034B	1
5	Sizer Piston	SST	SA-77035HD	1
5A	Sizer Piston U-Cup Seal	Aflas	SA-77035A	1
5B	Sizer Piston O-ring	Aflas	SA-77035HDA	2

Sizer Assembly Drawing

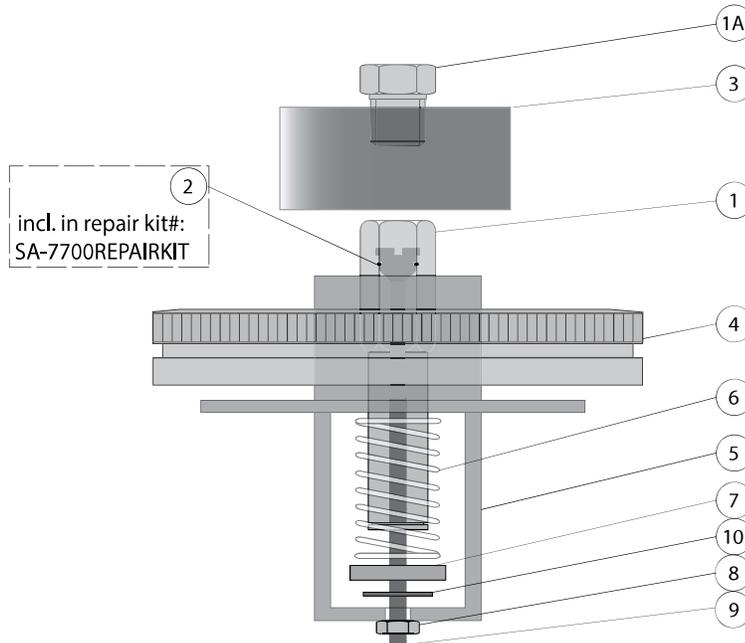


SA-77 Liquid Sampler
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Weight Actuated Shutoff Assy

<u>Item</u>	<u>Description</u>	<u>Material</u>	<u>Part #</u>	<u>Qty</u>
1	Valve Body	SST	SA-77041	1
1A	Valve Body Bushing	SST	SA-77041A	1
2	Stem Seal O-ring	Aflas	SA-77043A	1
3	Rain Cap Guard	Poly	SA-77042	1
4	Receiver Lid/Retainer Plas Bottle	Anod. Alum.	SA-77044	1
	Receiver Lid/Retainer Glas Bottle	Plated Steel	SA-77044GLASS	x
5	Cage Housing	SST	SA-77045	1
6	Spring	SST	SA-77046	1
7	Support Bushing	SST	SA-77047	1
8	Adjusting Lock Nut	SST	SA-77048	1
9	Valve Stem	SST	SA-77043	1
10	Retaining Ring (c-clip)	SST	SA-77049	1

Plastic Sample Receiver Jar	Polyehylene	SA-7704PJAR	Not Shown
Glass Sample Receiver Jar	Glass	SA-7704GJAR	Not Shown

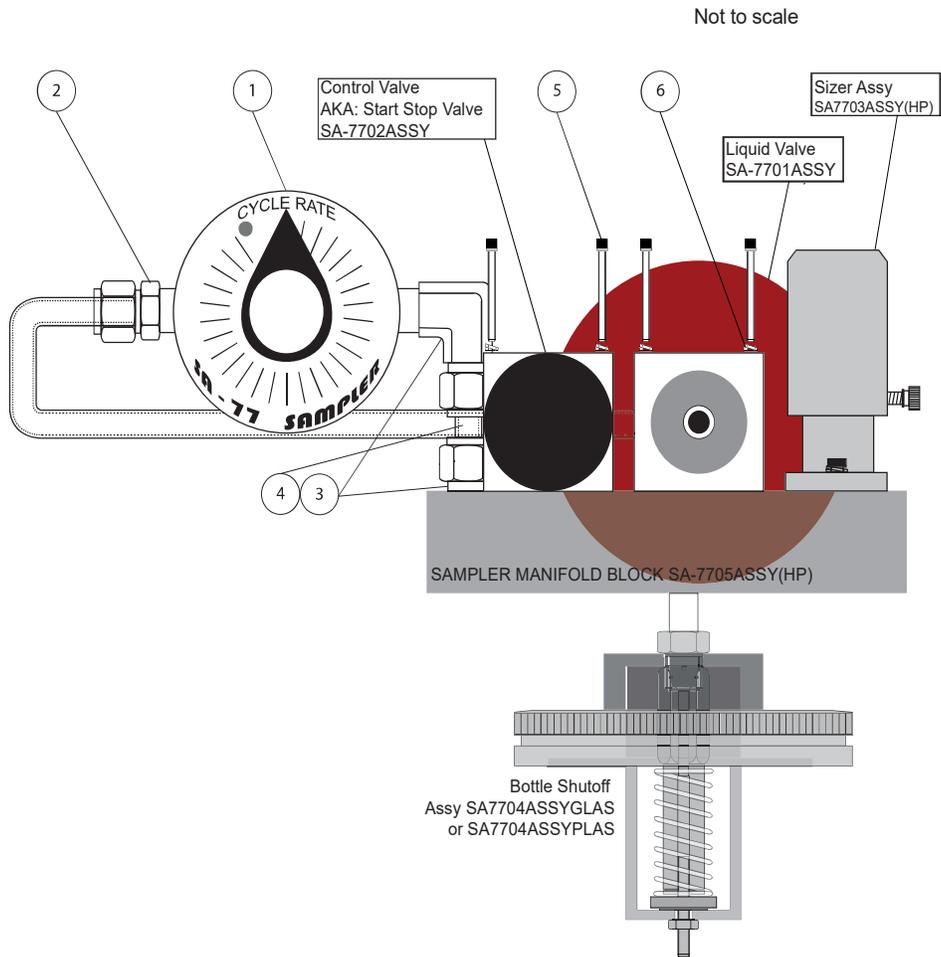
Weight Actuated Shutoff Drawing



SA-77 Oscillator Assembly Series 2

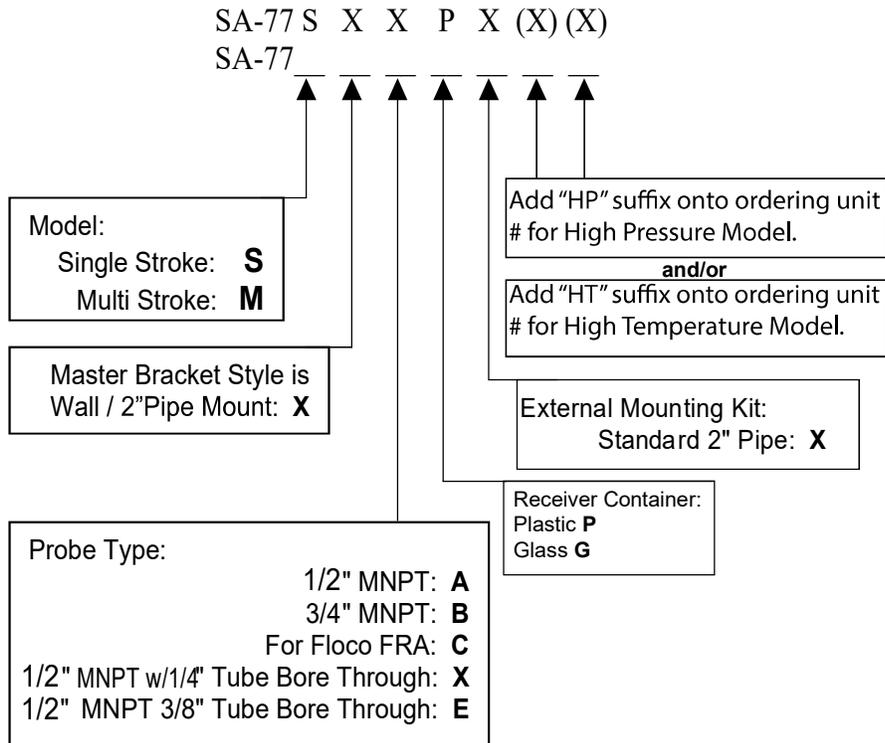
Part Number: SA-7708ASSYSER2

Item	Description	Material	Part #	Qty
1	Ossilator Timer Relay	SST	SA-7708ASYSER2RAW	
2	Male Connector 1/4" x 1/8"	SST	SS-400-1-2	1
3	Male Elbow 1/4" x 1/8"	SST	SA-77084	3*
*2 are re-used and 1 is included in kit				
4	1/4" Port Connector	SST	SA-770704PORTCON1	
5	Screw, Hex Head, Valve to Manifold 8-32 x 1-1/2"	SST	SA-7700MTSSCRW	8
6	Lockwasher #8	SST	SA-77012C	8



Ordering Information

Example: SA-77SXAPX



Distributed by:

Peterson
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Website: www.petersoninst.com
e: peterson@petersoninst.com

**SA-77 Liquid Accumulator - the Premium Sampler
at a substantially less than premium price.**



Single Stroke Sampler
w/ Glass Receiver



Truck Unloading
(TOL) Sampler



EHP Electric Sampler
w/ Inter-locking
sample control and
double redundant
safety shutoff



ELP Double Redundant
Sampling Shutoff

The SA-77 line of liquid samplers provide an accurate, safe and cost effective alternative to hand 'grab' samples for liquid hydrocarbon compositional analysis. It makes continuous proportional sampling 'practical and possible' as well as economical at any site.

Automated proportional sampling is safer for personnel than 'grab' sampling and with its self contained "dual shutoff system" the SA-77 will potentially eliminate environmental concerns through possible mishap at sample points. As well, Sampling Best Practices and Published Directives advocate continuous proportional sampling wherever possible as the only method to obtain truly representative samples for analysis from group, single or test lines.

The SA-77 sampler can be used to obtain proportional to flow or proportional to time (or both) sampling in facilities with pressure ratings up to 1440psig (600 ANSI). Multiple versions are available to meet your application requirements for temperature, entrained hazardous gases, process viscosity or cycle/sample rate. All variations are ABSA approved with CRNs for all provinces in Canada available on request. All variations comply with ASME B31.3 piping standards.

Common applications or installations include: oil production sites, test sites and custody transfer sites. Oil pipeline collection sites and truck, train or ship loading and unloading sites. Oil processing and upgrading sites. Water and wastewater handling and processing sites. And food and beverage processing and production.

All models except those with the 5.0L HDPE bottles can be mounted into the externally ventable housing pt#: SA77VENT-CABINETFG optionally legs and handle can be mounted, for portability as shown.



SA-77VENTCABINETFG
- add-on cabinet legs & handle for
portability and controlled venting.