

Meriam's Accutube Flow Sensors

Meriam's Accutube Flow Sensors are lab-tested and field-proven flow elements perfect for gas, liquid or steam service. With thousands in use worldwide, the Accutube continues to be the right choice when ease of installation, cost effective operation and highly accurate performance is required.

The Accutube averaging Pitot tube is a head type device, which generates a differential pressure signal similar to the orifice, venturi, flow nozzle, and other head producing primary elements. It can be used for flow measurement only or with static pressure and temperature transmitters as the primary measurement source for a flow control loop. It has been proven that the Accutube's flow measurement accuracy is better than that of the orifice. The Accutube also generates considerable cost savings with its simple installation and wear-free, energy-efficient design, providing a viable alternative to traditional flow measurement devices.

Principal of Operation

The Accutube is an annular averaging Pitot device, which is simply inserted into a pipe or duct through a weld coupling and packing. Based on pipe or duct size, the Accutube is constructed so that strategically located sensing ports continually sample the impact and static pressures produced by the Accutube's obstruction of the flow stream profile. Within the probe, the impact pressures sensed by the upstream ports are continually averaged in an isolated plenum chamber. Similarly, the static pressures sensed by the downstream ports are averaged in a second isolated plenum. A readout device is then used to indicate the differential between the two-plenum chambers.

Meriam Accutubes are provided in a wide variety of models enabling you to select the probe diameter and mounting configuration compatible with your application needs. Meriam also has available special mounting hardware, valves and materials for use in high temperature and pressure applications and corrosive environments.

For convenience in selecting and sizing Accutubes for your applications, please refer to the data form found on page 25 in this catalog. Complete the form and submit it to the factory for detailed analysis and configuration. For further assistance on Accutube sizing and selection, feel free to contact Meriam Instrument or your local Meriam representative. You can request the "Accutube Selection and Sizing Data Sheet" if you need detailed steps on selection and sizing.

Accutube: Features

Accuracy

- True double averaging design
- +1% of rate accuracy
- +0.1% repeatability
- Tested and certified by independent flow labs

Confidence

- Testing by the Utah Research Laboratory-Utah State University, the University of Michigan and testing against NIST traceable Meriam flow elements confirm typical accuracy of $\pm 1\%$ of rate
- Material Certification and Certificate of Conformance per customer specification are available.
- Certified welding fabrication to ASME Code, Section IX Procedures.
- Dye penetrant and hydrostatic testing capability.
- Canadian registration number.

Convenience

- Applicable to gases, liquids, steam
- Simple installation and maintenance
- Four standard models and probe sizes: Insertion, Flanged, Wet tap with socket or gear drive retraction, Integral three-valve manifold, optional Bi-directional flow sensing

Efficiency

- Low permanent head loss saves energy and cost
- Multiple tube design offers superior strength and clog resistance
- Unaffected by wear
- No system shutdown with wet tap model
- Ideal for flow system upgrades and expansions
- Integral 3-Valve head option saves installation piping and transmitter mounting time.
- Gear Drive wet tap reduces insertion and retraction time

Accutube: Low-Cost Flow Measurement

The Accutube reduces initial costs through low purchase price and reduced installation cost.

The purchase price of an Accutube will almost always be less expensive than other head producing primary elements. Meriam's simple and effective Accutube design allows us to pass fabrication savings on to you. When mounting hardware is considered, the Accutube will always be low in cost. No flanges are required, just the simple mounting hardware included with the Accutube. Choose the integral 3-valve manifold Accutube head to reduce your transmitter mounting and piping costs.

The Accutube's installation costs are also low. On an 8-inch pipe, for example, installation of the Accutube's mounting thredolet requires only 4 linear inches of welding while orifice flanges for the same size pipe require 50 linear inches. Orifice flanges also require pipe cutting, weld preparation and weld cleanup. With the Accutube, simply weld on the thredolet, bore a hole, install the Accutube and tighten the packing gland. You're ready to go!

Operational savings continue with low-cost maintenance, wet tap flexibility and low permanent head loss.

The Accutube simplifies preventive maintenance with its clog-resistant and wear - free design. This combination brings downtime to a minimum and frees you to concentrate on the process itself.

If shutting down your process is too costly, then look to Meriam's Wet Tap Accutubes. These Accutubes can be inserted and retracted without process interruption, after being installed without process shutdown. This flexibility gives you the ability to spot check the process, inspect the Accutube and pig or flush the line without Accutube damage while eliminating the need for by-pass piping and valve systems. Choose from socket or gear drive retraction options to meet your needs.

Accutubes save you money by causing less permanent pressure loss. Permanent pressure loss (unrecoverable head loss) is the system energy lost due to the primary element's obstruction of the flow stream. This pressure drop is what your pump or fan has to overcome and is directly related to system operating costs. The Meriam Accutube is much less of a flow obstruction than other primary elements. Test results on the Accutube show typical unrecoverable head loss of 2 -10 % of the produced differential pressure. This means that there is much less permanent pressure loss, less work for the pump or fan to do and much lower operating costs. The difference in using Accutubes versus orifice plates can add up to hundreds of dollars per year in pump or fan horsepower per measurement point.

Accutube: Installation Requirements

Meriam Accutubes perform best when installed in the proper orientation with respect to piping configuration. The following diagrams and tables show correct installation orientation and straight-run requirements both upstream and downstream of the Accutube location.

Sensor Orientation

HORIZONTAL LINES

- Bottom Entry
- Side Entry
- Top Entry

VERTICAL LINES

Special 90° Rotated Accutube Head recommended for liquid and steam use.



Accutube: Series 10A and 11A

- Inline for ease of installation and low cost
- Gas, liquid and steam applications
- Line sizes from 1/2" - 3"
- Available in steel, stainless, brass, copper and PVC
- Pressure / temperature to: 1000 PSIG @ 750°F

MODEL NUMBER

1 0 A
1 1 A — — — — — F — — — — —

MODEL CODE

10A for Sch 40 Pipe and Type K Copper
11A for Sch 80 Pipe and PVC

BODY MATERIAL

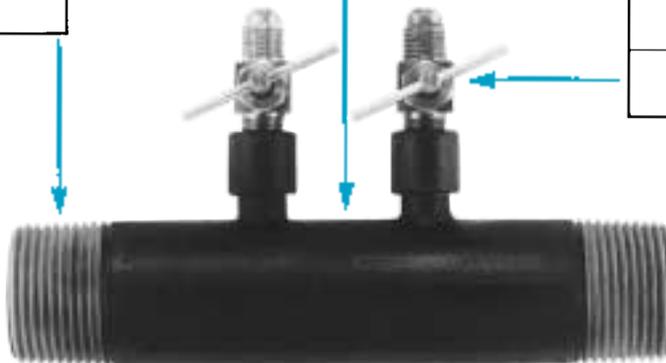
BODY MATERIAL	ORDER CODE	RATING
Brass	10	
Steel	02	250 PSIG @ 250°F Max.
Type K copper	14	
316SS	03	1000 PSIG @ 750°F Max.
PVC Threaded	30	
PVC plain end	31	120 PSIG @ 100°F Max.

LINE SIZE AND PROBE DIAMETER

LINE SIZE	ORDER CODE	PROBE DIAMETER
1/2"	0005 F	3/16"
3/4"	0007 F	3/16"
1"	0010 F	1/4"
1 1/4"	0012 F	1/4"
1 1/2"	0015 F	1/4"
2"	0020 F	1/4"
2 1/2"	0025 F	1/4"
3"	0030 F	1/4"

INSTRUMENT SHUTOFF VALVES

ORDER CODE	MATERIAL	DESCRIPTION
XX	—	No valves required Instr. connections are 1/8" FNPT except PVC 1/2" FNPT
00	Brass	1/8" MNPT x 1/4" SAE Flair rated for 150 PSIG @ 200°F Max.
03	316SS	1/8" MNPT x 1/8" MNPT 90° connection. Rated for 2000 PSI @ 450°F Max.
32	PVC	1/2" FNPT x 1/2" FNPT BALL type. Rated for 120 PSIG @ 100°F Max. Series 11A only



SERIES 10A inline sensors are supplied in threaded Schedule 40 pipe nipples (except for the type "K" Copper). The inline sensor is complete with factory-fitted probes and is supplied as a complete assembly providing for economical installation. Series 10A sensors are supplied with Steel, 316SS, Brass, and Type "K" copper. Available in line sizes 1/2" through 3".

Dimension Sheet: F/N 957-10 ALL: 420
Instruction Manual: F/N 957:440

SERIES 11A inline sensors are supplied in threaded Schedule 80 pipe nipples (except for the P.V.C. plain end type). The inline sensor is complete with factory-fitted probes and is supplied as a complete assembly providing for economical installation. Series 11A sensors are supplied with Steel, 316SS, Brass, and PVC. Available in line sizes 1/2" through 3".

Dimension Sheet: F/N 957-11 ALL: 420
Instruction Manual: F/N 957:440

Accutube: Series 20T and 21T

- Insertion type flow sensor
- Gas, liquid and steam applications
- Standard sizes up to 42-inch pipe
- Pressures to 1500 PSIG, temperatures to 800°F

MODEL NUMBER

2 0 T
2 1 T

MODEL CODE

20T — Single Mount
21T — Double Mount

LINE SIZE AND PROBE DIAMETER

LINE SIZE	ORDER CODE	
	3/8" DIA PROBE	3/4" DIA PROBE
1"	0010D	
1 1/4"	0012D	
1 1/2"	0015D	
2"	0020D	
2 1/2"	0025D	
3"	0030D	
3 1/2"	0035D	
4"	0040D	
5"	0050D	
6"	0060D	0060E
8"	0080D	0080E
10"	0100D	0100E
12"		0120E
14"		0140E
16"		0160E
18"		0180E
20"		0200E
22"		0220E
24"		0240E
26"		0260E
28"		0280E
30"		0300E
32"		0320E
34"		0340E
36"		0360E
42"		0420E

Above 42" use 22L, 23L or consult factory.



BODY MATERIAL

BODY MATERIAL	ORDER CODE
STD 316SS Probe with Brass Head	00
316SS Probe with 316SS Head	03

INSTRUMENT SHUTOFF VALVES

ORDER CODE	MATERIAL	DESCRIPTION
XX	—	No valves required Connections are 1/8" FNPT
00	Brass	1/8" MNPT x 1/4" SAE Flair rated for 150 PSIG @ 200°F Max.
02	Steel	1/8" FNPT x 1/8" FNPT 90° connection rated for 6000 PSI @ 500°F Max.
03	316SS	1/8" MNPT x 1/8" MNPT 90° connection rated for 2000 PSI @ 450°F Max.

MOUNTING HARDWARE

ORDER CODE	PACKING MATERIAL	MOUNTING MATERIAL	LINE SIZE	PRESSURE/TEMPERATURE RATINGS
01	Brass	C.I. Saddle Clamp C.I. Saddle Clamp Steel Strap Type Steel Strap Type	1"-5" 6"-10" 12"-18" 20"-30"	Brass Packing 1500 PSIG Max. @ 100°F 250 PSIG @ 400°F Max.
02	Brass	C.S. thredolet	All	
03	316SS	C.S. thredolet	All	3/8" Stainless Steel Packing 2500 PSIG Max. @ 100°F 2000 PSIG @ 800°F
04	316SS	316SS thredolet	All	
06	Brass	C.S. Duct Mount 06=Round	2"-24"	3/4" Stainless Steel Packing 3100 PSIG Max. @ 100°F 2000 PSIG @ 800°F Max.
07	Brass	07=SQ or Rect.	26"-42"	
S6	316SS	316SS Duct Mount S6=Round	2"-24" 26"-42"	3/4" Stainless Steel Packing 3100 PSIG Max. @ 100°F 2000 PSIG @ 800°F Max.
S7	316SS	S7 = SQ or Rect.	26"-42"	
08	Brass	PVC thredolet	1"-24" 26"-42"	

SERIES 20T—ACCUTUBE—SINGLE MOUNT. The Accutube Series 20T Standard Probe is constructed of stainless steel and brass. The Series 20T Probe has single-mounted support and installs through a single packing gland and thredolet. The Series 20T Accutube is factory-fitted with 1/8" FNPT connections and is shipped with mounting hardware complete. Series 20T Accutubes available for line sizes 1" through 30".

Series 20T, Dimension Sheet: F/N 957-20T: 420
Instruction Manual: 957:440

SERIES 21T ACCUTUBE—DOUBLE MOUNT. The Accutube Series 21T standard probe is constructed of stainless steel and brass and is double supported. This Accutube is provided complete with packing gland and two thredolets. The Series 21T Accutube is factory-fitted with 1/8" FNPT connections and is shipped with mounting hardware complete. Series 21T Accutubes are available for line sizes 3" through 42".

Series 21T, Dimension Sheet: F/N 957-21T: 420
Instruction Manual: 957:440

Accutube: Series 22L and 23L

- High pressure / temperature insertion type flow sensor
- Gas, liquid and steam applications

- Standard sizes up to 72-inch pipe
- Pressure / temperature limit: 1500 PSIG Max. @ 800°F Max.

MODEL NUMBER

2 2 L
2 3 L

MODEL CODE

22L — Single Mount
23L — Double Mount

LINE SIZE AND PROBE DIAMETER

LINE SIZE	ORDER CODE			
	22L SINGLE		23L DOUBLE	
	½" DIA PROBE	1" DIA PROBE	½" DIA PROBE	1" DIA PROBE
2"	0020A		0020A	
2½"	0025A		0025A	
3"	0030A		0030A	
3½"	0035A		0035A	
4"	0040A		0040A	
5"	0050A		0050A	
6"	0060A	0060B	0060A	0060B
8"	0080A	0080B	0080A	0080B
10"	0100A	0100B	0100A	0100B
12"		0120B		0120B
14"		0140B		0140B
16"		0160B		0160B
18"		0180B		0180B
20"		0200B		0200B
22"		0220B		0220B
24"		0240B		0240B
26"		0260B		0260B
28"		0280B		0280B
30"		0300B		0300B
32"		0320B		0320B
34"		0340B		0340B
36"		0360B		0360B
42"		0420B		0420B
48"				0480B
60"				0600B
72"				0720B

Above 72" consult factory.



BODY MATERIAL

BODY MATERIAL	ORDER CODE
316SS Head and Probe	03
For Special Material Consult Factory	SP

INSTRUMENT SHUTOFF VALVES

ORDER CODE	DESCRIPTION	PRESSURE/TEMPERATURE RATING
XX	No instrument valves	Probe connections are ½" MNPT
00	Bronze gate valves, ½" FNPT x ½" FNPT	300 PSI Steam Max. @ 550°F Max. 600 PSI liquid @ 200°F nonshock
02	Carbon steel block valve, ½" FNPT x ½" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
03	316SS block valve, ½" FNPT x ½" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
04	Carbon steel OS&Y valve ½" FNPT x ½" FNPT	2000 PSI Max. @ 100° F 235 psi @ 1000°F Max.
05	316SS OS&Y valve ½" FNPT x ½" FNPT	1920 PSI Max. @ 100°F 550 PSI @ 1200°F Max.
SP	As required	For temp or press above those listed

MOUNTING HARDWARE

ORDER CODE	PACKING MATERIAL	MOUNTING MATERIAL	LINE SIZE
01	316SS	C.I. Saddle Clamp	2"-5"
		C.I. Saddle Clamp	6"-10"
		Steel Strap Type	12"-18"
		Steel Strap Type	20"-30"
03	316SS	C.S. thredolet	All
04	316SS	316SS thredolet	All
06	316SS	C.S. Duct Mount	2"-24"
07		06=Round 07= Sq or Rect.	
S6	316SS	316SS Duct Mount	2"-24"
S7		S6 = Round S7 = Sq or Rect.	
08	316SS	PVC thredolet	1"-24" 26"-42"

SERIES 22L—ACCUTUBE—SINGLE MOUNT. The Accutube Series 22L Probe is constructed of 316LSS cast head and 316LSS probe. The Series 22L probe has single-mounted support and installs through a single packing gland and thredolet. The Series 22L Accutube is factory-fitted with ½" NPT connections and is shipped with mounting hardware complete. Series 22L Accutubes are available for line sizes 2" through 42".

Dimension Sheet: F/N 957-22L:420
Instruction Manual: F/N 957:440

SERIES 23L—ACCUTUBE—DOUBLE MOUNT. The Accutube Series 23L probe is constructed of 316LSS cast head and 316LSS probe and is double supported. The Accutube is provided complete with packing gland and two thredolets. The Series 23L Accutube is factory-fitted with ½" NPT connections and is shipped with mounting hardware complete. Series 23L Accutubes are available for line sizes 2" through 72"

Dimension Sheet: F/N 957-23L:420
Instruction Manual: F/N 957:440

Accutube: Series 24D and 25D

- Flange-mounted insertion type flow sensor
- Gas, liquid and steam applications
- Standard sizes up to 72-inch pipe
- Pressure / temperature rating set by flange

MODEL NUMBER

2 4 D
2 5 D — — — — — 0 3 — — — — — X X — — — — —

MODEL CODE

24D — Single Mount
25D — Double Mount

BODY MATERIAL

BODY MATERIAL	ORDER CODE
316SS Head with 316LSS Probe	03
For Special Material Consult Factory	SP

LINE SIZE AND PROBE DIAMETER

LINE	ORDER CODE					
	24D SINGLE			25D DOUBLE		
	1/2" DIA PROBE	1" DIA PROBE	2 3/8" DIA PROBE	1/2" DIA PROBE	1" DIA PROBE	2 3/8" DIA PROBE
2"	0020A			0020A		
2 1/2"	0025A			0025A		
3"	0030A			0030A		
3 1/2"	0035A			0035A		
4"	0040A			0040A		
5"	0050A			0050A		
6"	0060A	0060B		0060A	0060B	
8"	0080A	0080B		0080A	0080B	
10"	0100A	0100B		0100A	0100B	
12"		0120B			0120B	
14"		0140B	0140C		0140B	
16"		0160B	0160C		0160B	
18"		0180B	0180C		0180B	
20"		0200B	0200C		0200B	
22"		0220B	0220C		0220B	
24"		0240B	0240C		0240B	0240C
26"		0260B	0260C		0260B	0260C
28"		0280B	0280C		0280B	0280C
30"		0300B	0300C		0300B	0300C
32"		0320B	0320C		0320B	0320C
34"		0340B	0340C		0340B	0340C
36"		0360B	0360C		0360B	0360C
42"		0420B	0420C		0420B	0420C
48"			0480C		0480B	0480C
60"			0600C		0600B	0600C
72"			0720C		0720B	0720C

Above 72" Consult Factory.

INSTRUMENT SHUTOFF VALVES

ORDER CODE	DESCRIPTION	PRESSURE/TEMPERATURE RATING
XX	No instrument valves	Probe connections are 1/2" MNPT
00	Bronze gate valves, 1/2" FNPT x 1/2" FNPT	300 PSI Steam Max. @ 550°F Max. 600 PSI liquid @ 200°F nonshock
02	Carbon steel block valve, 1/2" FNPT x 1/2" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
03	316SS block valve, 1/2" FNPT x 1/2" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
04	Carbon steel OS&Y valve 1/2" FNPT x 1/2" FNPT	2000 PSI Max. @ 100° F 235 psi @ 1000°F Max.
05	316SS OS&Y valve 1/2" FNPT x 1/2" FNPT	1920 PSI Max. @ 100°F 550 PSI @ 1200°F Max.
SP	As required	For temp or press above those listed

MOUNTING COMPONENTS

ORDER CODE	*FLANGE RATING	MATERIAL-WELD NECK FLANGE WELDOLET, THREDOLET
1C	150#	Carbon steel
3C	300#	Carbon Steel
6C	600#	Carbon Steel
9C	900#	Carbon Steel
1S	150#	316 Stainless Steel
3S	300#	316 Stainless Steel
6S	600#	316 Stainless Steel
9S	900#	316 Stainless Steel

*When the mounting flange rating is changed to one of the options above, the probe flange and hardware is automatically changed too.

SERIES 24D—ACCUTUBE—SINGLE MOUNT. The Accutube Series 24D Standard Probe is constructed of 316LSS probe and 316SS flange. The instrument flange is 1 1/4" 150# ANSI flange standard (2 3/8" probe has 2 1/2" 150# flange.) The Series 24D probe is single-mount supported and installs through a carbon steel mounting flange and weldolet. The Series 24D Accutube is factory-fitted with 1/2" FNPT connections and is shipped with mounting hardware complete. Series 24D Accutubes are available for line sizes 2" through 72"

Dimension Sheet: F/N 957-24D 1/2-1:420
F/N 957-24D 2 3/8:420
Instruction Manual: F/N 957:440

SERIES 25D—ACCUTUBE—DOUBLE MOUNT. The Accutube Series 25D standard probe is constructed of a 316LSS probe and a 316SS instrument flange. The instrument flange is 1 1/4" 150# ANSI flange standard (2 3/8" probe has 2 1/2" 150# flange). Series 25D probe is double mount-supported. This Accutube is provided complete with mounting flange and weldolet and a thredolet for double mounting. The Series 25D Accutube is factory fitted with 1/2" FNPT connections and is shipped with mounting hardware complete. Series 25D Accutubes are available for line sizes 2" through 72"

Dimension Sheet: F/N 957-25D 1/2-1:420
F/N 957-25D 2 3/8:420
Instruction Manual: F/N 957:440

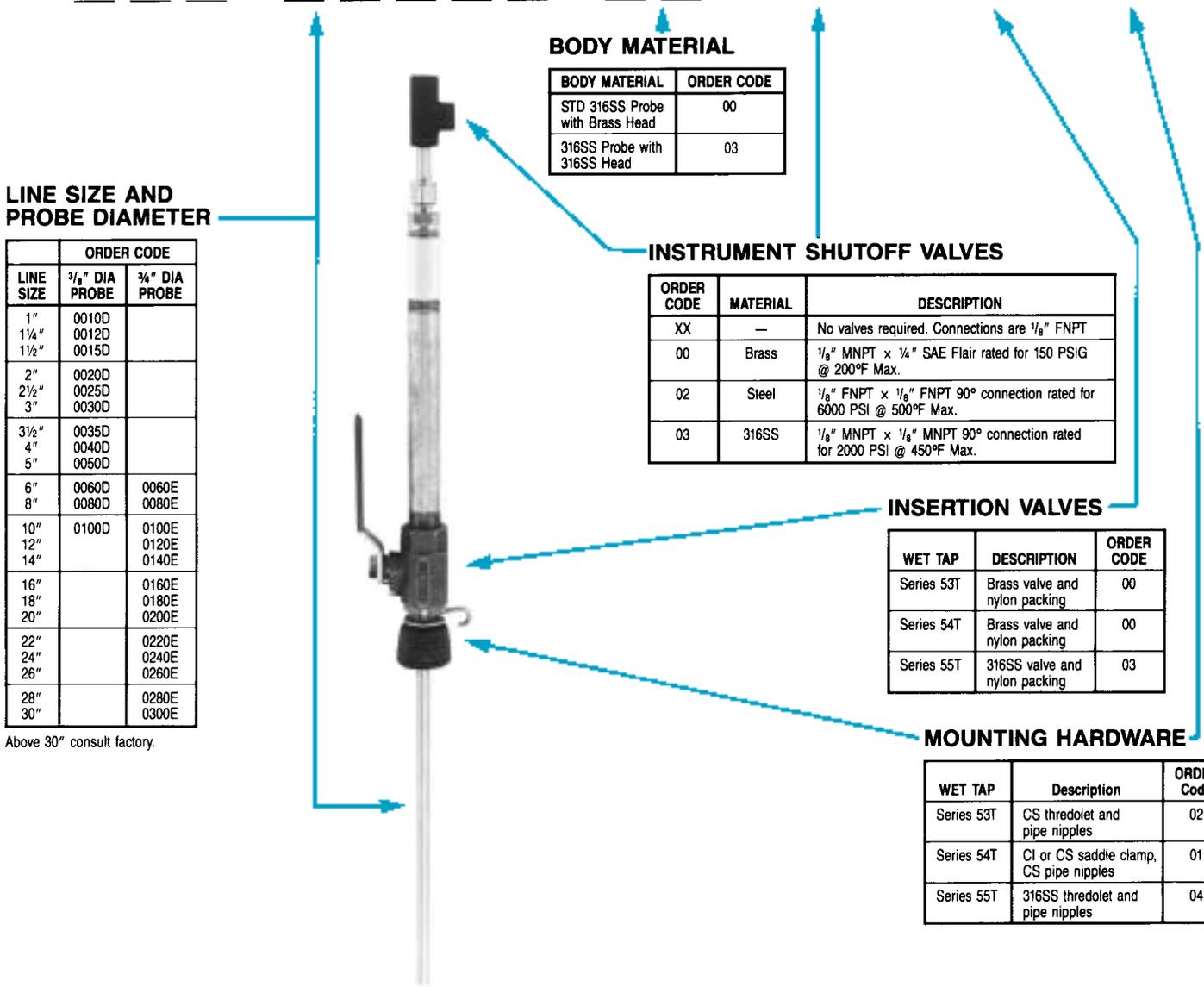
Accutube: Series 33T Low Pressure Wet Tap

- Insertion and removal without process shutdown
- Gas and liquid applications
- Standard sizes up to 30-inch pipe
- Operating pressure / temperature limit: 150 PSIG Max. @ 190°F max.
- Insertion / removal pressure / temperature limit: 100 PSIG @ 190°F

MODEL NUMBER

3 3 T — — — — —

— — — — — 0 0 — — — — —



BODY MATERIAL

BODY MATERIAL	ORDER CODE
STD 316SS Probe with Brass Head	00
316SS Probe with 316SS Head	03

LINE SIZE AND PROBE DIAMETER

LINE SIZE	ORDER CODE	
	3/8" DIA PROBE	3/4" DIA PROBE
1"	0010D	
1 1/4"	0012D	
1 1/2"	0015D	
2"	0020D	
2 1/2"	0025D	
3"	0030D	
3 1/2"	0035D	
4"	0040D	
5"	0050D	
6"	0060D	0060E
8"	0080D	0080E
10"	0100D	0100E
12"		0120E
14"		0140E
16"		0160E
18"		0180E
20"		0200E
22"		0220E
24"		0240E
26"		0260E
28"		0280E
30"		0300E

Above 30" consult factory.

INSTRUMENT SHUTOFF VALVES

ORDER CODE	MATERIAL	DESCRIPTION
XX	—	No valves required. Connections are 1/8" FNPT
00	Brass	1/8" MNPT x 1/4" SAE Flair rated for 150 PSIG @ 200°F Max.
02	Steel	1/8" FNPT x 1/8" FNPT 90° connection rated for 6000 PSI @ 500°F Max.
03	316SS	1/8" MNPT x 1/8" MNPT 90° connection rated for 2000 PSI @ 450°F Max.

INSERTION VALVES

WET TAP	DESCRIPTION	ORDER CODE
Series 53T	Brass valve and nylon packing	00
Series 54T	Brass valve and nylon packing	00
Series 55T	316SS valve and nylon packing	03

MOUNTING HARDWARE

WET TAP	Description	ORDER Code
Series 53T	CS thredolet and pipe nipples	02
Series 54T	Cl or CS saddle clamp, CS pipe nipples	01
Series 55T	316SS thredolet and pipe nipples	04

SERIES 33T ACCUTUBE PROBE AND WET TAP MOUNTING ASSEMBLIES. Use of the 33T allows insertion and removal without process shutdown. The 33T probe consists of standard brass head and 316SS probe and installs through a wet tap assembly. The wet tap assembly consists of a packing gland, pipe nipple,

insertion valve and thredolet or pipe saddle clamp. The 33T has 1/8" FNPT connections and is shipped with wet tap assembly and safety chain.

Dimension Sheet: F/N 957-33T 3/8:420
 F/N 957-33T 3/4:420
 Instruction Manual: F/N 957:440

Accutube: Series 37L High Pressure Wet Tap

- Insertion and removal without process shutdown – Socket Drive or Gear Drive
- Gas, liquid and steam applications
- Standard sizes up to 72-inch pipe
- Operating pressure / temperature to: 1000 PSIG @ 800°F Max.

MODEL NUMBER

3 7 L _ _ _ _ _

_ _ _ 0 3 _ _ _



BODY MATERIAL

BODY MATERIAL	ORDER
316SS Head and Probe	03
For Special Material Consult Factory	SP

SD	Socket Drive
GD	Gear Drive

LINE SIZE AND PROBE DIAMETER

LINE SIZE	ORDER CODE		
	½" DIA PROBE	1" DIA PROBE	2 3/8" DIA PROBE
2"	0020A		
2½"	0025A		
3"	0030A		
3½"	0035A		
4"	0040A		
5"	0050A		
6"	0060A	0060B	
8"	0080A	0080B	0140C
10"	0100A	0100B	0160C
12"		0120B	
14"		0140B	0140C
16"		0160B	0160C
18"		0180B	0180C
20"		0200B	0200C
22"		0220B	0220C
24"		0240B	0240C
26"		0260B	0260C
28"		0280B	0280C
30"		0300B	0300C
32"		0320B	0320C
34"		0340B	0340C
36"		0360B	0360C
42"		0420B	0420C
48"			0480C
60"			0600C
72"			0720C

Above 72" consult factory.

OPTIONAL INSTRUMENT SHUTOFF VALVES

ORDER CODE	DESCRIPTION	PRESSURE/TEMPERATURE RATING
XX	No instrument valves	Probe connections are ½" MNPT
00	Bronze gate valves, ½" FNPT x ½" FNPT	300 PSI Steam Max. @ 550°F Max. 600 PSI liquid @ 200°F nonshock
02	Carbon steel block valve, ½" FNPT x ½" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
03	316SS block valve, ½" FNPT x ½" FNPT	6000 PSI Max. @ 200°F 4000 PSI @ 500°F Max.
04	Carbon steel OS&Y valve, ½" FNPT x ½" FNPT	2000 PSI Max. @ 100° F 235 PSI @ 1000°F Max.
05	316SS OS&Y valve, ½" FNPT x ½" FNPT	1920 PSI Max. @ 100°F 550 PSI @ 1200°F Max.
SP	As required	For temp or press above those listed consult factory

INSERTION VALVES

ORDER CODE	½" (A) DIAMETER	1" (B) DIAMETER	2 3/8" (C) DIAMETER
02	Carbon steel ball valve 1000 PSI @ 175°F Max. 75 PSI @ 400°F Max.		Carbon steel flanged 275 PSI Max. @ 445°F 200 PSI @ 500°F Max.
03	316SS ball valve 800 PSI Max. @ 225°F 75 PSI @ 400°F Max.		316SS flanged ball valve 275 PSI Max. @ 445°F 200 PSI @ 500°F Max.
04	Carbon steel OS&Y valve 2000 PSI Max. @ 100°F 1015 PSI @ 800°F Max.		C.S. OS&Y Valve 285 PSI Max. @ 100°F 140 PSI @ 800°F Max.
05	316SS OS&Y Valve 1600 PSI Max. @ 100°F 875 PSI @ 800°F Max.		316 OS&Y Valve 235 PSI Max. @ 100°F 140 PSI @ 800°F Max.
SP	As required. For press or temp above those listed, consult factory		As required. For press or temp above those listed, consult factory

MOUNTING HARDWARE AND PACKINGS

ORDER CODE	DESCRIPTION
03	Carbon steel mounting hardware throdolet and trim with 316SS packing housing and Grafoil packing
04	All 316SS mounting hardware, throdolet and trim with 316SS packing housing and Grafoil packing
SP	For materials other than those listed, consult factory

SERIES 37L—ACCUTUBE. The Series 37L Accutube probe and Wet-Tap assembly provides the ability to access the pipe without service interruption. This Accutube assembly is supplied complete with two or more threaded jacking screws to allow insertion, withdrawal, and / or retention of the probe under full system pressure.

The Series 37L Accutube and Wet-Tap Assembly is available for line sizes 2" through 72" and may be used in systems up to 1000 PSIG at 800°F Max.

Dimension Sheet: F/N 957-37L:0.5:420
 F/N 957-37L:1.0:420
 F/N 957-37L: 2.375:420
 Instruction Manual: F/N 957:440

Accutube: Series 40H thru 43H

- High pressure / temperature insertion type flow sensor with integral 3-valve head for direct mount transmitters
- Integral RTD option with series 42H & 43H
- Gas, liquid and steam applications
- Standard sizes up to 72-inch pipe
- Pressure / temperature limit: 1500 PSIG maximum @ 800° F maximum

MODEL NUMBER

4 H - - - - - 0 3 - - - - - X X - - - - -

MODEL CODE

40H — Single Mount
41H — Double Mount
42H — Single Mount w/RTD
43H — Double Mount w/RTD

LINE SIZE AND PROBE DIAMETER

	ORDER CODE	
	40H / 42H SINGLE	41H / 43H DOUBLE
LINE SIZE	1" DIA PROBE	1" DIA PROBE
6"	0060B	0060B
8"	0080B	0080B
10"	0100B	0100B
12"	0120B	0120B
14"	0140B	0140B
16"	0160B	0160B
18"	0180B	0180B
20"	0200B	0200B
22"	0220B	0220B
24"	0240B	0240B
26"	0260B	0260B
28"	0280B	0280B
30"	0300B	0300B
32"	0320B	0320B
34"	0340B	0340B
36"	0360B	0360B
42"	0420B	0420B
48"		0480B
60"		0600B
72"		0720B

Above 72" consult factory



BODY MATERIAL

BODY MATERIAL	CODE
316LSS Head & Probe	03
For Special Material Consult Factory	SP

INSTRUMENT VALVES

INTEGRAL 3-VALVE INSTRUMENT HEAD		
ORDER CODE	DESCRIPTION	PRESSURE/TEMPERATURE RATING
03	316LSS instrument valves for bolt-on transmitter	1500 PSIG @ 800° F
SP	For special materials consult factory	Consult factory

MOUNTING HARDWARE

ORDER CODE	PACKING MATERIAL	MOUNTING MATERIAL	LINE SIZE
01	316SS	C.I. Saddle Clamp Steel Strap Type Steel Strap Type	6" - 10" 12" - 18" 20" - 30"
03	316SS	C.S. Thredolet	ALL
04	316SS	316SS Thredolet	ALL
06 07	316SS	C.S. Duct Mount 06 = Round 07 = Sq. or Rect.	6" - 24" 26" - 42"
S6 S7	316SS	S.S. Duct Mount S6 = Round S7 = Sq. or Rect.	6" - 24" 26" - 42"

SERIES 40H / 42H ACCUTUBE — SINGLE MOUNT

These accutubes have a probe constructed of 316LSS, with a 316LSS integral 3-valve head. Both have a single-mount support and are installed through a compression fitting and thredolet (included). The 40H and 42H are designed to mount a 2 1/8" center-to-center DP transmitter using o-rings. 1/4" FNPT connections are also included in the design. The 42H model incorporates an integral RTD for temperature measurements. Series 40H & 42H Accutubes are available for sizes 6" through 42".

40H Dimensions Sheet: F/N 957-40H:420
42H Dimensions Sheet: F/N 957-42H:420
Instruction Manual: F/N 957:440

SERIES 41H / 43H ACCUTUBE — DOUBLE MOUNT

These accutubes have a probe constructed of 316LSS, with a 316LSS integral 3-valve head. Both are double supported, and come with compression fitting, opposite side support and two thredolets. The 41H and 43H are designed to mount a 2 1/8" center-to-center DP transmitter using o-rings. 1/4" FNPT connections are also included in the design. The 43H model incorporates an integral RTD for temperature measurements. Series 41H & 43H Accutubes are available for sizes 6" through 72".

41H Dimensions Sheet: F/N 957-41H:420
43H Dimensions Sheet: F/N 957-43H:420
Instruction Manual: F/N 957:440

Accutube: Series 70H & 72H(with RTD)

- High pressure / temperature wet tap flow sensor with integral 3-valve head for direct mount DP or Multi-variable transmitters
- Series 72H includes integral RTD

- Gas, liquid and steam applications
- Standard sizes up to 42-inch pipe
- Pressure / temperature limit: 1000 PSIG maximum @ 800° F maximum

MODEL NUMBER

7 H - - 0 3 - - X X - -

MODEL CODE

70H — Single Mount
72H — Single Mount w/RTD

LINE SIZE AND PROBE DIAMETER

	ORDER CODE	
	70H SINGLE	72H SINGLE
LINE SIZE	1" DIA PROBE	1" DIA PROBE
6"	0060B	0060B
8"	0080B	0080B
10"	0100B	0100B
12"	0120B	0120B
14"	0140B	0140B
16"	0160B	0160B
18"	0180B	0180B
20"	0200B	0200B
22"	0220B	0220B
24"	0240B	0240B
26"	0260B	0260B
28"	0280B	0280B
30"	0300B	0300B
32"	0320B	0320B
34"	0340B	0340B
36"	0360B	0360B
42"	0420B	0420B

Above 42" consult factory



BODY MATERIAL

BODY MATERIAL	CODE
316LSS Head & Probe	03
For Special Material Consult Factory	SP

INSERTION STYLE

SD	Socket Drive
GD	Gear Drive

INSTRUMENT VALVES

INTEGRAL 3-VALVE INSTRUMENT HEAD		
ORDER CODE	DESCRIPTION	PRESSURE/TEMPERATURE RATING
03	316LSS instrument valves for bolt-on transmitter	1000 PSIG @ 800° F
SP	For special materials consult factory	Consult factory

INSERTION VALVES

ORDER CODE	DESCRIPTION
02	Carbon Steel ball valve 1000 PSI Max. @ 175°F 75 PSI @ 400°F Max.
03	316SS ball valve 800 PSI Max. @ 225°F 75 PSI @ 400°F Max.
04	Carbon Steel OS&Y valve 2000 PSI Max. @ 100°F 1015 PSI @ 800°F Max.
05	316SS OS&Y valve 1600 PSI Max. @ 100°F 875 PSI @ 800°F Max.
SP	Special pressure, temperature or process connections - consult factory for details

MOUNTING HARDWARE AND PACKING

ORDER CODE	DESCRIPTION
03	Carbon Steel mounting hardware, thredolet and trim with 316SS packing housing and Grafoil packing
04	All 316SS mounting hardware, thredolet and trim with 316SS packing housing and Grafoil packing
SP	For materials other than those listed, consult factory

SERIES 70H & 72H ACCUTUBE — WET TAP

These Wet Tap style Accutubes provide the ability to access a pipe without service interruption. The integral 3-valve manifold head enables direct mounting of any DP or Multivariable transmitter having 2 1/8" center-to-center dimensions. The model 72H incorporates an integral RTD for temperature measurements. The RTD can be serviced without process shutdown or removal of the transmitter. The probe and head are constructed of 316LSS. Gear Drive or Socket Drive mechanisms are available. The 70H & 72H Accutubes are available for sizes 6" through 42". Consult factory for larger pipe diameters or optional process connections.

70H Dimensions Sheet: F/N 957-70H:420

72H Dimensions Sheet: F/N 957-72H:420

Accutube Sizing Worksheet

COMPANY:		MULTIPORT AVERAGING		SPEC. NO.		
PROJECT:		PITOT TUBE FLOW ELEMENT		SHEET NO. OF		
CLIENT:				JOB NO.		
Specification Description		Individual Requirement		Individual Requirement		
1	Item No.	Tag No.				
2	P&ID No.					
4	Service					
5	Pipe Material					
6	Pipe Size	Sch. No.				
Element						
7	Sensor Type		AVERAGING PITOT		AVERAGING PITOT	
8	Sensor Material					
9	Packing Material					
10	Type					
11	Instrument Valve		Connection & Size			
12	Material					
Option						
13	Mounting Hardware		Connection Type			
14			Connection Size			
15			Material			
16	Opposite Side Support		Required?			
17	Insert / Retract		Required?			
18			Rod Material			
19	Isolating Valve		Connection Type			
20			Connection Size			
21			Material			
Service Condition						
22	Fluid	Phase(vap.,liq, gas)				
23	Flow Unit					
24	Flow Range					
25	Differential Pressure, Units=					
26	Flow Rate	Max.	Nor.			
27	Temp., Units=	Max.	Nor.			
28	Press., Units=	Max.	Nor.			
29	SpGr / Mol. Wt.	Viscosity @ OP (cP)				
30	Supercompressibility	Cp/Cv				
31	Density @ Base	Density @ Op.				
32	Manufacturer		Meriam Instrument		Meriam Instrument	
33	Model No.					
Note:						
				Project No	Spec. No.	REG. No.
Rev. No.	Date	Spec'd By	Checked by			