



**SUBMITTAL
DATA
SHEET**

Job: _____

Model No. _____

Location _____

NUMBER

SD400-2.1A

Effective: September 30, 1981
Supersedes: SD400-4-2
dated 2/29/80

Circuit Setter

BALL VALVE CONSTRUCTION: Allows circuit setter to function reliably both as a balancing valve and bubble tight service valve, in closed hot or cold water systems.

FULLY ASSEMBLED: Shipped ready for installation.

INTERNAL SEATS: Teflon® seats prevent leakage and assures smooth, quiet, dependable operation.

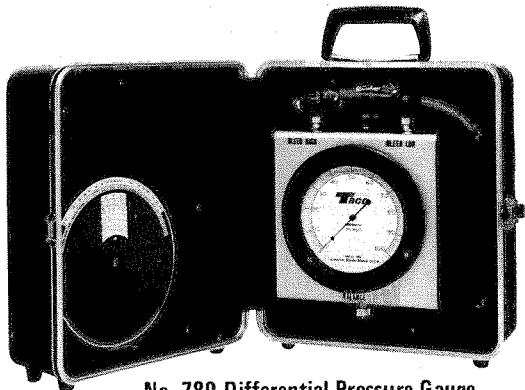
NEEDLE VALVE CONNECTIONS: Assures leakproof reliability and minimizes the possibility of hazardous spray back during the connection of the readout instrument.

PRECISION MACHINED ORIFICE: Insures reproducible accuracy.

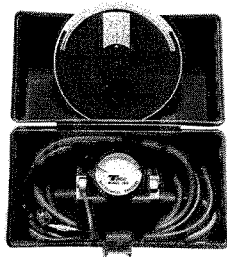
CALIBRATED NAMEPLATE: Easy to read; easy to make setting adjustments.

URETHANE PACKING: Suitable for use on heating and cooling systems, protects and insulates circuit setter.

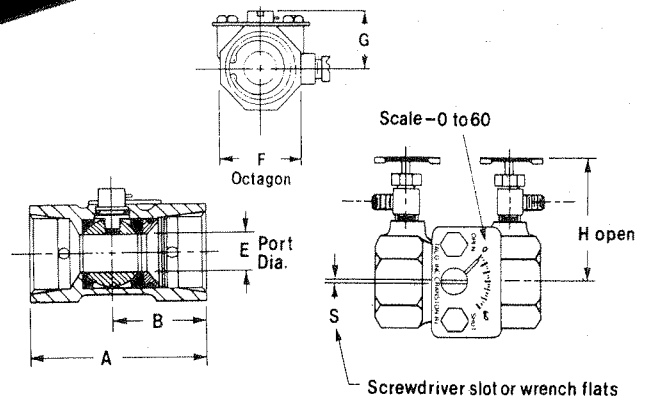
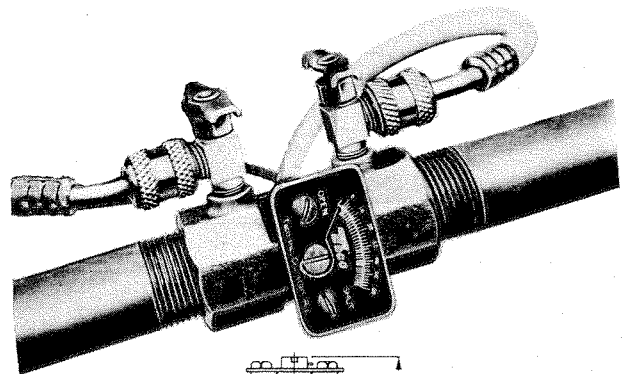
READOUT METER: Includes rugged carrying case and necessary hoses and valves.



No. 789 Differential Pressure Gauge



No. 788 Differential Pressure Gauge



MODEL	SIZE	A	B	E	F	G	H	S	WEIGHT
790	1/2"	2-13/16"	1-1/2"	3/8"	1-1/8"	7/8"	2-11/16"	3/64"	3/4 lb.
791	3/4	3	1-9/16	1/2	1-5/16	15/16	2-3/4	3/64	1 lb.
792	1	3-1/2	1-13/16	5/8	1-5/8	1-3/16	2-13/16	3/64	1-1/2
793	1-1/4	4	2-1/16	13/16	2	1-3/8	3	3/64	2-1/2
794	1-1/2	4-3/16	2-3/16	15/16	2-5/16	1-5/8	3-1/8	3/8	4
795	2	4-3/4	2-7/16	1-1/4	2-3/4	1-13/16	3-3/8	3/8	5-1/4
796	2-1/2	5-5/8	2-15/16	1-1/2	3-1/8	2-1/8	3-9/16	3/8	7
797	3	7-1/4	3-3/4	1-13/16	4	2-7/16	4	3/8	8-1/2



**SUBMITTAL
DATA SHEET**

NUMBER
SD 400-2.1B

Effective: August 1, 1981
Supersedes: New

Taco 4" Circuit Setter

FEATURES

DESIGN AND CONSTRUCTION: Lubricated plug allows smooth, quiet, dependable operation.

NEEDLE VALVE CONNECTIONS: Assure leakproof connection of readout instruments.

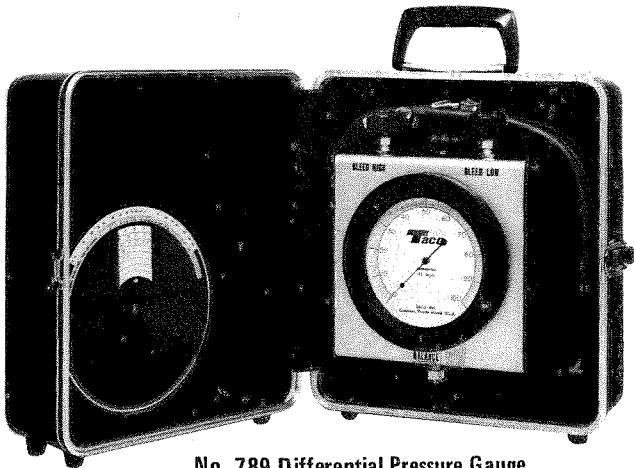
PRECISION MACHINED ORIFICE: Insures accuracy.

CALIBRATED NAMEPLATE: Easy to read; easy to make setting adjustments.

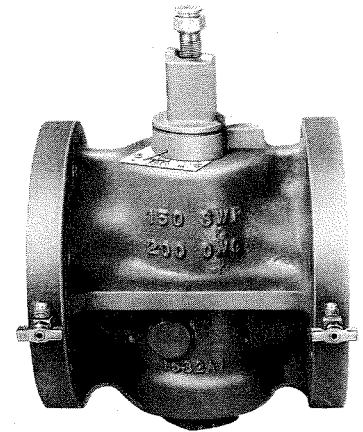
INTERNAL SEALS: Prevent leakage.

WRENCH OPERATED: For easy turning. (Customer supplies wrench)

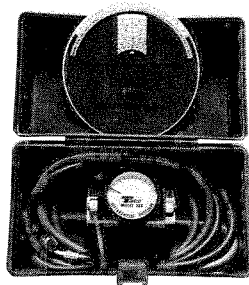
READOUT METER: Includes rugged carrying case and necessary hoses and valves.



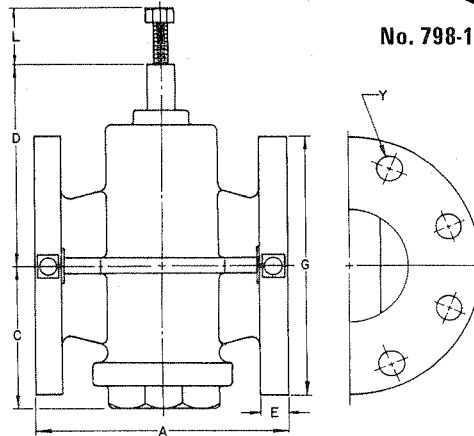
No. 789 Differential Pressure Gauge



No. 798-1 Circuit Setter



No. 788 Differential Pressure Gauge



MODEL	SIZE	A	C	D	E	G	L	Y	WEIGHT
798-1	4"	9"	4 29/32"	6 17/32"	15/16"	9"	2 1/2"	3/4"	61 1/2 lbs.

Dimensions for Readout Meter and case on back page.

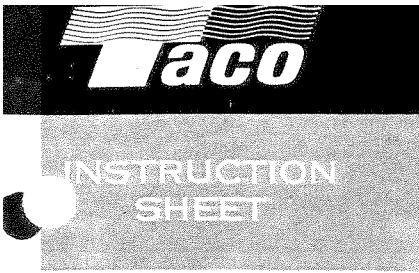
PRESSURE DROP — In open position

$$\left(\frac{Q^2}{CV} \right) = \text{Pressure drop in open position (ft. of water)}$$

Q = Design GPM

CV = 460

Note CV = Flow rate in GPM with 1psi pressure drop.



NUMBER
IS 400-4-3

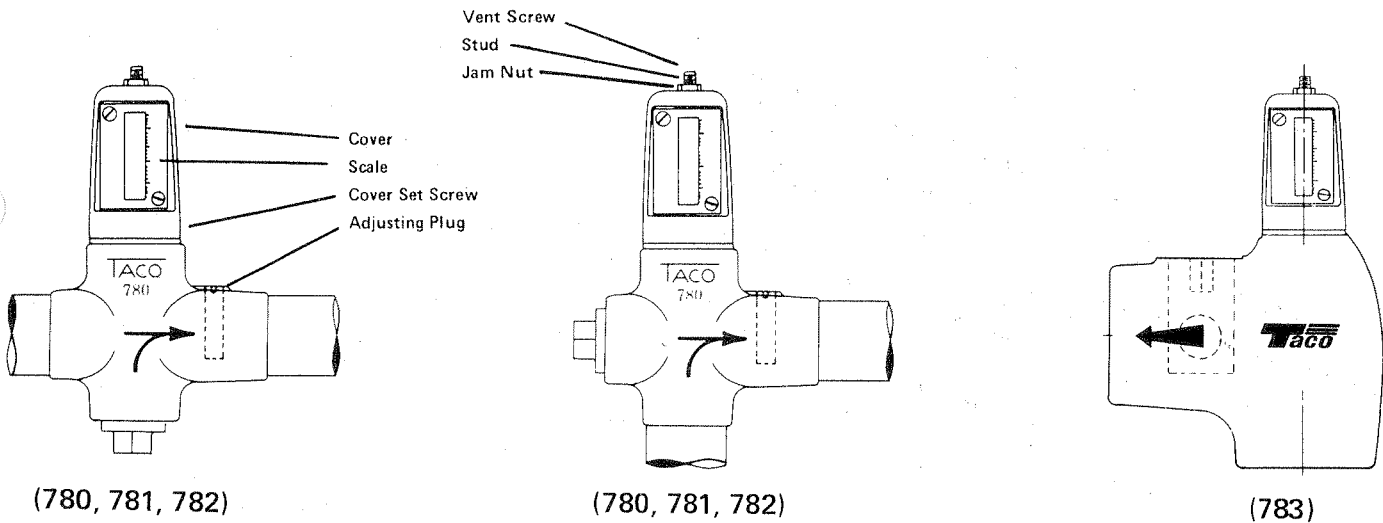
780 SERIES - MONITOR
INSTALLATION INSTRUCTIONS

Effective: November 1, 1970
Supersedes: New

REVISED: January 15, 1972

Plant ID. No. 001-363

1. Install Flowmeter so that top points vertically upward (installation within 10° of vertical is sufficient for proper operation).
2. Flow must be in the direction of the arrow on body.
3. Inlet pipe may be mounted in either the horizontal or the vertical position. (780, 781, 782 only)
4. Install pipe plug in the inlet port which is not used. (780, 781, 782 only)
5. Loosen, but do not remove, two set screws and rotate cover until scale is in a readable position and re-tighten.
6. Fill system.
7. Loosen small vent screw at top of cover until water fills the glass tube and re-tighten.
8. Set flow by inserting screwdriver in adjusting plug and rotating in either direction until desired flow is indicated on scale. Flow is indicated by lining up the top of the brass piston with the markings on the scale.



Correction curves for Ethylene Glycol are on back of this sheet.

Note: If piston reads full scale and rotating the adjusting plug has no effect, follow the following procedure.

1. Rotate adjusting plug so that screwdriver slot is at right angle to direction of flow.
2. Remove jam nut from top of cover.
3. Rotate exposed threaded stud until bottom of stud hits the top of the brass piston allowing it to drop down.
4. Return threaded stud to its normal position.
5. Put back jam nut and tighten.

Taco Heaters of Canada, Ltd.
3090 Lenworth Drive
Cooksville, Ontario

TACO, INC. 1160 Cranston Street, Cranston, Rhode Island 02920

Printed In U.S.A

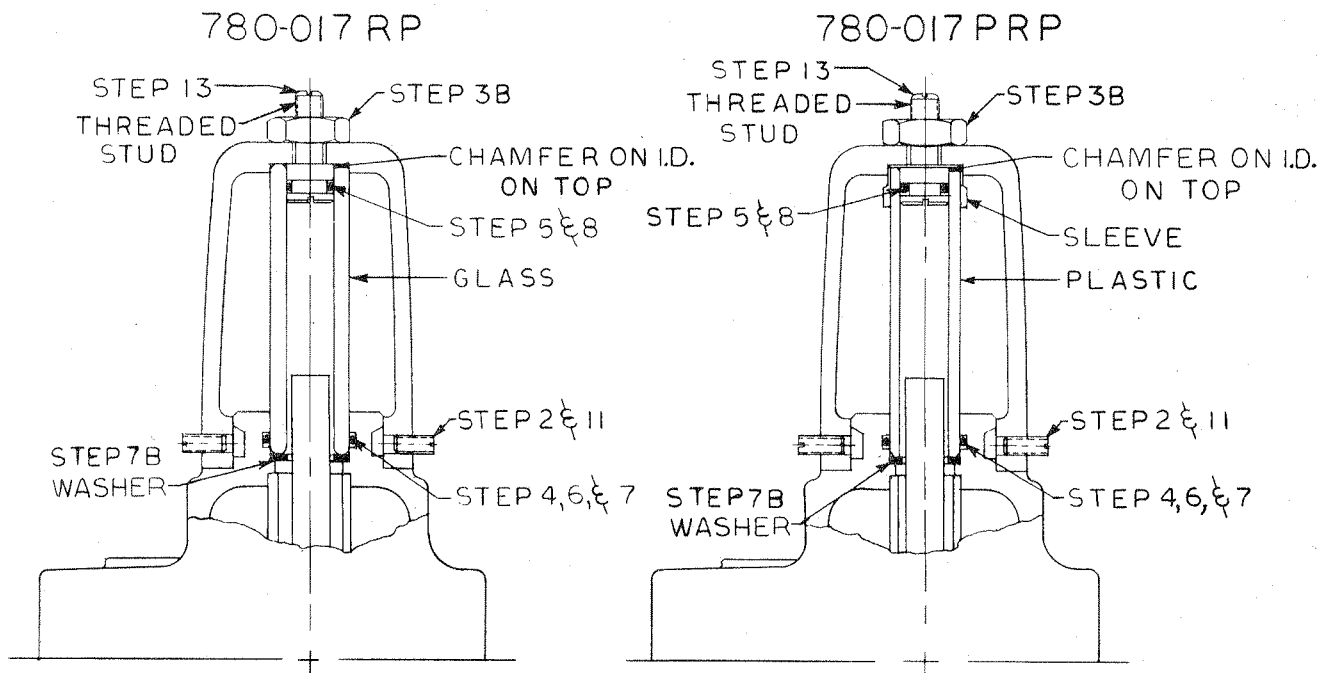
	INSTRUCTION SHEET
	NUMBER IS400-4-3A

Effective: October 31, 1975
Supersedes: NEW

TACO MONITOR FLOWMETER

MODELS 780, 781, 782, 783,

SIGHT GLASS REPLACEMENT



TO REMOVE SIGHT GLASS:

- STEP 1 Isolate monitor or reduce system pressure to zero.
 - STEP 2 Loosen the two set screws, on the bottom of the sight glass cover, until the cover can be twisted off.
 - STEP 3 A) Remove sight glass by using a twisting and pulling motion at the same time.
B) If the sight glass has come out with the cover, remove the jam nut on top of the cover and screw the threaded stud down until it is free of the cover. The threaded stud can now be removed from the sight glass by a twisting and pulling motion.
- Note: The threaded stud will have to be removed in either case to remove the old O-ring and install a new O-ring.
- STEP 4 Take a straightened paper clip or piece of wire and pry out the old O-ring from the sight glass bore of the valve body.
 - STEP 5 Remove the O-ring from the threaded stud in the sight glass cover. The stud can be removed as in Step 3B.
 - STEP 6 Make sure the sight glass bore in the valve body is clean and free of any rust or glass chips.

TO RE-ASSEMBLE:

- STEP 7 A) Install large O-ring in O-ring groove in bore of valve body.
B) Install rubber washer in bottom of sight glass bore of body.
- STEP 8 Install small O-ring in O-ring groove of threaded stud.

For systems operating in a pH 8 and below, the 780-017 RP glass sight glass can be used. For systems operating above pH 8, the 780-017 PRP polysulfone sight glass should be used.



NUMBER
IS 400-4

FLOW METER
PIPE FITTINGS & ACCESSORIES

EFFECTIVE: APRIL 30, 1968

Supersedes: IS 400-4 dated March 1, 1966

Plant I.D. No. 001-335

**INSTRUCTIONS FOR INSTALLING
TACO FLOW METER PIPE FITTINGS**

Product Nos. 735 thru 741 (For use with Meter No. 731)

Product Nos. 742 thru 746 (For use with Meter No. 732)

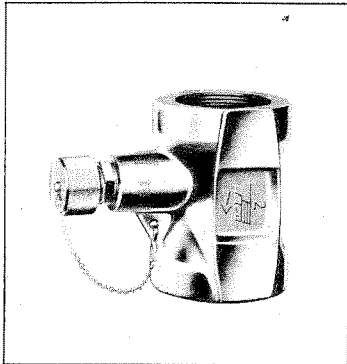


Fig. 1 — Nos. 735-741 (3/4" - 3")

The 3/4" thru 3" (Nos 735-741) fittings are made to thread onto schedule 40 steel pipe. By using copper to NPT adapters, these models may also be used with Type L copper tube (see Fig. 1)

The 4" thru 10" (Nos. 742-746) fittings are made to slip between a pair of properly spaced ASA 150 Lb. steel pipe flanges, or a pair of class 125 cast iron pipe flanges. These fittings are furnished with nuts, bolts and gaskets but not the flanges. (See Figs. 2 & 3). Use schedule 40 steel pipe.

The size indicated on each fitting must match the pipe size. To achieve the best accuracy of the Taco Flow Meter, there must be uninterrupted straight pipe before and after each fitting as shown in the following table: —

TABLE 1

Pipe Size	Minimum Uninterrupted Straight Pipe	
	Before Fitting	After Fitting
3/4"	12"	4"
1"	15"	5"
1 1/4"	19"	7"
1 1/2"	23"	8"
2"	30"	10"
2 1/2"	38"	13"
3"	45"	15"
4"	60"	20"
5"	75"	25"
6"	90"	30"
8"	120"	40"
10"	150"	50"

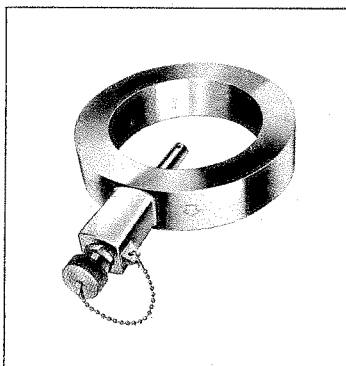
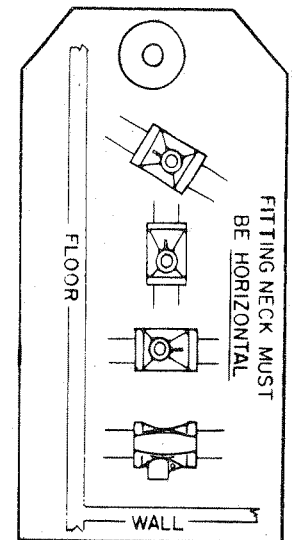


Fig. 2 — Nos. 742-746 (4" - 10")

The pipe-line where the fitting is being installed may run horizontally, vertically, or at an angle. The flow can be in any direction; up, down, right or left, but each fitting must be installed so that the flow passes thru it in the direction indicated by the arrow on the casting. The only additional requirement for fitting position is the valve on the side of the fitting must be horizontal. See Fig. 4.

For example: In a vertical pipe line, the valve will automatically be horizontal — in a horizontal pipe line the valve must extend out from one side of the line to be horizontal — in an angular pipe line, the fitting must be rotated to one of two positions where the valve will extend horizontally from the side of the line.

The valve in the fitting may occasionally leak a few drops of water. To contain this water and to keep dirt out of the valve, always screw the cap onto the valve when it is not being used. Tighten the cap only by hand.

If the Flow Meter is to be left in the fitting for any length of time, it is recommended that a strainer with opening no larger than 1/16" be installed.

NOTE

In all cases provide at least 12" between pipe fitting and ceiling for inserting meter.

It is also recommended that valves be installed at both ends of the uninterrupted runs of pipe. The one downstream for adjusting flow, the other as a shut off, if required.

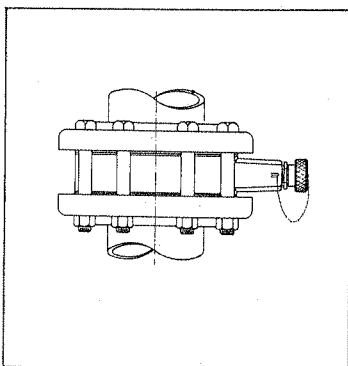


Fig. 3 — Nos. 742-746 shown between Flanges. Fittings are furnished with bolts, nuts and gaskets but not the flanges.

Taco Heaters of Canada, Ltd.
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INSTRUCTION BOOKLET
WITH
WATER CORRECTION CHARTS

NUMBER
IS-400-4-1

GUZZINTA FLOWMETERS

EFFECTIVE: JUNE 15, 1973
SUPERSEDES: IS 400-4-1
dtd. 9/30/72

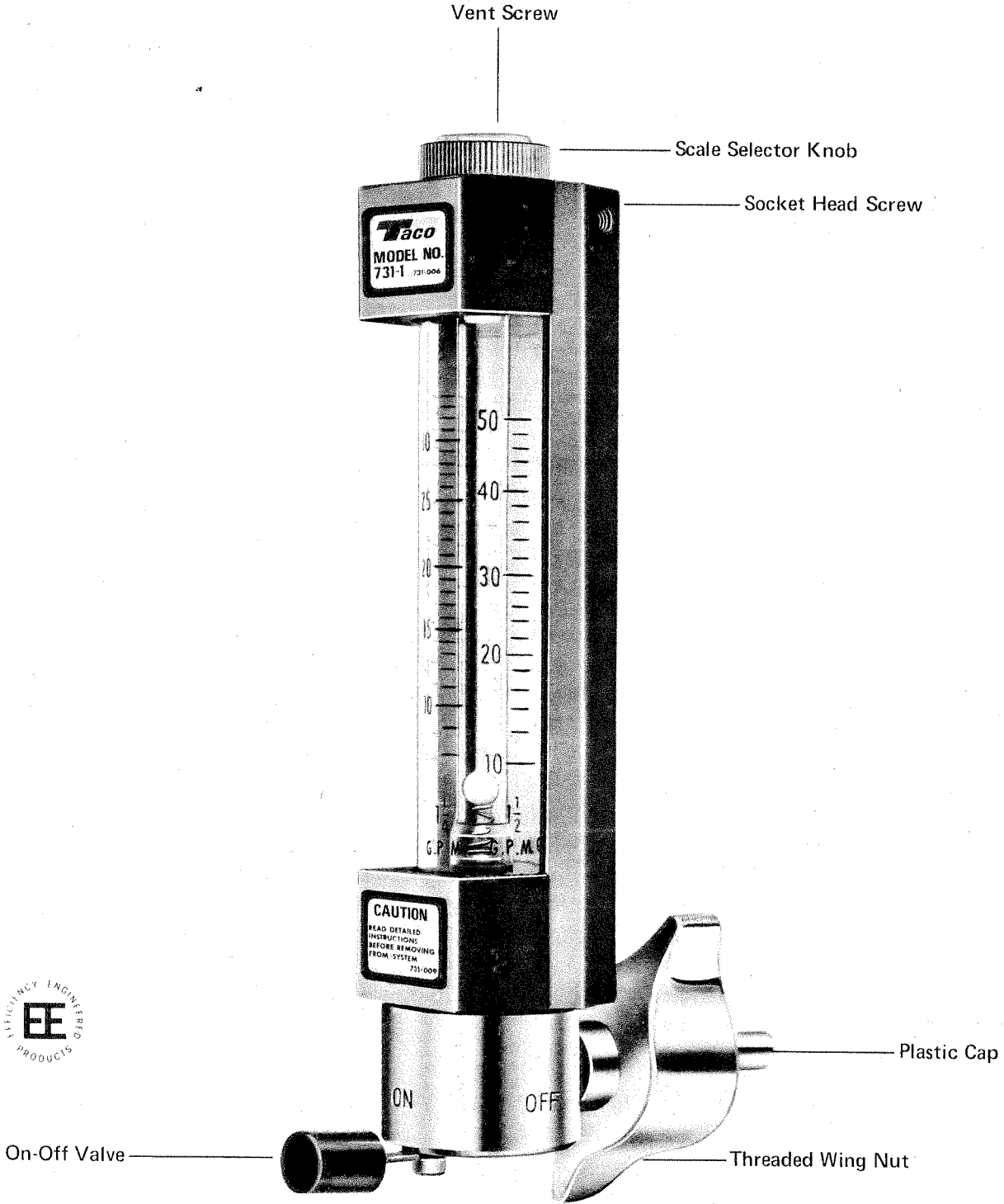


FIG. 1



TACO HEATERS OF CANADA, LTD.
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printed in U.S.A.

INSTRUCTIONS FOR TACO GUZZINTA FLOW METERS

MODELS 729 THRU 732

GENERAL INFORMATION

The Guzzinta is a direct-reading flow meter used with Taco flow meter fittings to determine flow rates of water through a range of pipe sizes. Two types of Guzzintas are manufactured:

Nos. 729 & 730 / direct-reading at 60°F / identified by RED scale markings

Nos. 731 & 732 / direct-reading at 200°F / identified by BLUE scale markings

The following table indicates the pipe sizes in which each model is to be used:

Model No.	Pipe Size
729 & 731	¾", 1", 1¼", 1½", 2", 2½", & 3"
730 & 732	4", 5", 6", 8", & 10"

The temperature correction charts in the booklet are used with 1¼" thru 10" pipe sizes. Tables are supplied at the end of the booklet for ¾" and 1" pipe sizes.

The Taco Guzzinta Flow Meter can be used in systems containing water between 40°F and 275°F. The maximum pressure in systems up to 200°F is 175 PSI. The following table lists maximum pressures between 200°F and 275°F:

200°F	175 PSI	240°F	140 PSI
220°F	152 PSI	275°F	132 PSI

The Taco Guzzinta Flow Meters contain precision components made of quartz and glass. They should be handled with the same care given to pressure gauges, thermometers, and other precision instruments. To provide maximum protection for your Guzzinta, we recommend that it be cleaned when removed from the system and stored in its case. Whenever the Guzzinta is installed in a flow meter fitting, the ON-OFF valve should be in the off position. It should be turned to the on position only when a reading is being taken.

USING THE GUZZINTA

The following procedure is used when taking flow readings with the Taco Guzzinta:

- [1] SCALE SELECTION
- [2] METER ORIENTATION
- [3] INSERTING THE GUZZINTA
- [4] USE OF THE ON-OFF VALVE
- [5] READING THE METER
- [6] TEMPERATURE CORRECTION
- [7] REMOVING THE GUZZINTA
- [8] USE IN DIRTY SYSTEMS

[1] SCALE SELECTION

The range of the Guzzinta scales are shown in the following table:

Pipe Size	No. 729 Direct Reading at 60°F	No. 730 Direct Reading at 60°F	No. 731 Direct Reading at 200°F & Above	No. 732 Direct Reading at 200°F & Above
¾"	1.3 - 5		1.5-6	
1"	3.5 - 14		4-17	
1¼"	5-30		8-34	
1½"	8-46		10-54	
2"	15-80		20-95	
2½"	20-130		30-150	
3"	30-190		40-220	
4"		40-400		80-480
5"		100-600		100-740
6"		100-1000		180-1200
8"		200-1700		350-2000
10"		300-2500		500-3000

The Guzzinta should be checked before inserting it into a fitting to be sure that the scale corresponding to the pipe size being measured is visible at the front of the meter. If the desired scale is not visible, take the allen wrench packed in the carrying case and loosen the socket head screw two turns (see figure 1). Then turn the scale selector knob until the desired scale comes into view. Retighten the socket head screw once the scale has been selected. If the scale selector knob is difficult to turn, insert a screwdriver into the slot of the vent screw located on top of the scale selector knob (see figure 1). By turning the screwdriver clockwise, the scales can be easily turned. Users of this instrument have reported that they have minimized changing of the scales by reading three different scales at the same setting. This is done by taking a flow reading while looking at the meter at a slight angle. An example would be having the 2" scale oriented so that it is seen while looking directly at the meter. By looking at the meter at a slight angle from the left and the right, the 1½" and 2½" scales can be used without turning the scale. This technique can save considerable time, and is easy to master.

[2] METER ORIENTATION

The normal orientation of the Guzzinta is shown in figure 1. The meter body can be rotated 90° to the left or right when the need arises. This is sometimes necessary when a flow measurement is made in an overhead line and it is impossible to position a stepladder so that the meter can be faced head-on. To rotate the meter body, use the allen wrench packed with the meter to loosen the socket head set screw which secures the meter body to the base. The screw is located at the rear of the body behind the wing nut. Loosen the set screw just enough so that the body can be rotated to the desired position and tighten the set screw securely.

[3] INSERTING THE METER

CAUTION: GLOVES MUST BE WORN WHEN THE METER IS USED WITH SYSTEMS HAVING A WATER TEMPERATURE OVER 125°F. This is due to parts of the meter rapidly reaching system temperature.

The Guzzinta Flow Meter is inserted into a fitting in the following manner: