

HOFFER

Perfecting Measurement™



Турбинные расходомеры жидкости с отводом пара серии Steam Jacketed

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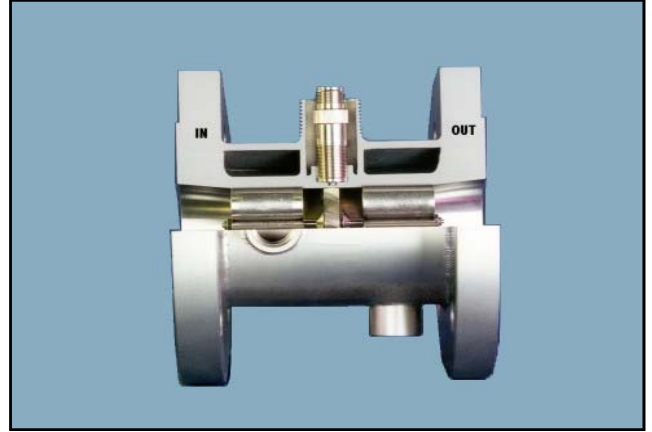
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TECHNICAL DATA SHEET

OUTSTANDING FEATURES

- ♦ Designed for use on products that require steam or hot water to remain in a liquid state.
- ♦ Sizes 1/4" through 3" available.
- ♦ Steam jacket pressure rated to 850 psig @ 650°F.
- ♦ Output is linear with flow rate.
- ♦ Multiple pickup coils optionally available.
- ♦ Rotor assembly is hydro-dynamically balanced and “floats” on fluid cushion to provide extended bearing life.
- ♦ Optional bi-directional flowmeters available.



GENERAL DESCRIPTION

The Hoffer HO Series “steam jacketed” turbine flowmeters provide extremely accurate flow rate measurement and dependable service for use on liquids that require steam or hot water to remain in a liquid state.

LIQUID SIZE SELECTOR CHART FOR STANDARD HO SERIES TURBINE FLOWMETERS

LIQUID SIZE SELECTOR CHART FOR STANDARD HO SERIES TURBINE FLOWMETERS								
FLOWMETER SIZE	MAGNETIC PICKUP COIL				MODULATED PICKUP COIL			
Diameter (inches)	Linear Range (US GPM)	Linear Range (LPM)	Repeatable Range (US GPM)	Repeatable Range (LPM)	Linear Range (US GPM)	Linear Range (LPM)	Repeatable Range (US GPM)	Repeatable Range (LPM)
1/4*	.35-3.5	1.3-13.2	.25-4.5	.95-17	.35-3.5	1.3-13.2	.0625-4.5	.24-17
3/8*	.75-7.5	2.8-28.4	.3-9	1.1-34	.75-7.5	2.8-28.4	.075-9	.28-34
1/2	1.25-9.5	4.7-36	.6-12	2.3-45	1.25-9.5	4.7-36	.12-12	.45-45
5/8	1.75-16	6.6-60.6	.9-20	3.4-75.7	1.75-16	6.6-60.6	.2-20	.75-75.7
3/4	2.5-29	9.5-110	1.5-35	5.7-132.5	2.5-29	9.5-110	.35-35	1.3-132.5
1	4-60	15-227	2-75	7.6-284	4-60	15-227	.75-75	2.8-284
1-1/4	6-93	23-352	3-115	11.4-435	6-93	23-352	1.15-115	4.35-435
1-1/2	8-130	30.3-492	5-175	19-662	8-130	30.3-492	1.75-175	6.6-662
2	15-225	56.8-852	11-275	42-1041	15-225	56.8-852	2.75-275	10.4-1041
2-1/2	25-400	95-1514	15-500	56.8-1893	25-400	95-1514	5-500	19-1893
3	40-650	151-2460	20-800	76-3028	40-650	151-2460	8-800	30.3-3028

NOTES: 1) Performance enhancement techniques are routinely applied to produce larger linear and usable flow ranges. Consult with the applications group at Hoffer with your requirements.

2) Larger sizes are available and quoted upon request.

* The linear flow ranges on 1/4" and 3/8" may be derated depending on bearing selection. Consult applications group for additional information.

PERFORMANCE SPECIFICATIONS

Overrange: 150% of maximum flow (intermittently).

Available Turn Down Range: 10:1 to 100:1.

Linearity: $\pm 0.5\%$ of reading ($\pm 0.25\%$ typical) over tabulated linear flow range.

End Fittings: Available in ANSI and DIN flanged styles.

Repeatability: $\pm 0.1\%$ ($\pm 0.05\%$ typical) over tabulated repeatable range.

Materials of Construction: All 316 stainless steel including jacket and steam fittings for long life (with exceptions noted below).

Pressure Drop Characteristics: 4 to 5 PSI at maximum linear flow rate at one CSTK.

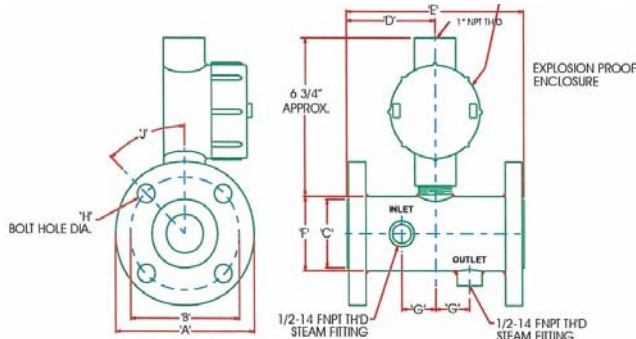
Rotor: 17.4 PH or optional Nickel 200, 430 stainless steel, and others available for media compatibility.

Available Temperature Range: -450°F to +450°F standard with magnetic coil. High temperature option to +850°F. Refer to various flowmeter configurations for pressure ratings, outline dimensions and available sizes.

Bearing Styles: 440C stainless steel/ceramic ball bearings, hard carbon composite, tungsten carbide sleeve, and others available for compatibility with flow media.

DIMENSIONAL INFORMATION

(steam jacketed meter shown with explosion-proof enclosure)



End Fitting (RF Flange) Size	Flowmeter Size	'A'	'B'	'C'	'D'	'E'	'F'	'G'	'H'	'J'
HO 1 1/2" 150 #	1/4"	5.00	3.88	1.38	2.50	5.00	2.37	.81	.62 (4 places)	45°
HO 1 1/2" 150 #	3/8"	5.00	3.88	1.38	2.50	5.00	2.37	.81	.62 (4 places)	45°
HO 1 1/2" 150 #	1/2"	5.00	3.88	1.38	2.50	5.00	2.37	.81	.62 (4 places)	45°
HO 1 1/2" 150 #	5/8"	5.00	3.88	1.69	2.75	5.50	2.37	1.06	.62 (4 places)	45°
HO 1 1/2" 150 #	3/4"	5.00	3.88	1.69	2.75	5.50	2.37	1.06	.62 (4 places)	45°
HO 2" 150 #	1"	6.00	4.75	3.62	2.75	5.50	2.87	1.06	.75 (4 places)	45°
HO 2" 150 #	1 1/4"	6.00	4.75	3.62	3.00	6.00	2.87	1.155	.75 (4 places)	45°
HO 2" 150 #	1 1/2"	6.00	4.75	3.62	3.00	6.00	2.87	1.155	.75 (4 places)	45°
HO 3" 150 #	2"	7.50	6.00	5.00	3.25	6.50	4.00	1.25	.75 (4 places)	45°
HO 3" 150 #	2 1/2"	7.50	6.00	5.00	3.50	7.00	4.00	1.31	.75 (4 places)	45°
HO 4" 150 #	3"	9.00	7.50	6.19	5.00	10.00	5.563	2.03	.75 (8 places)	22 1/2°

Note: Chart reflects 150# flanges. Other pressures are available up to 2500#.

MODEL NUMBER DESIGNATION

Model HO (A) X (B) - (C) - (D) - (E) - (F/G/H) - (I) - SJ - (J)

End Fitting Size

Flowmeter Size

Minimum Operating Flow (In GPM)

Maximum Operating Flow (In GPM)

Bearing Type

- (BP) Self-Lubricating, Ceramic Hybrid Ball Bearing Sizes 1/4" thru 1".
 (CB) Self-Lubricating, Ceramic Hybrid Ball Bearing Sizes 1 1/4" thru 3".
 (T) Tungsten Carbide Sleeve Bearing Sizes 1 1/4" thru 12".
 (C) Hard Carbon Composite Sleeve Bearing.

Pickup Coils

- (1M) One Magnetic Coil.
 (2M) Two Magnetic Coils.
 (1MC3PA) One RF Coil (Not recommended in 4" and larger).
 (2MC3PA) Two RF Coils.
 (1MC2PAHT) One High Temp 6" Pigtail RF coil.
 (2MC2PAHT) Two High Temp 6" Pigtail RF coils.
 (1HTM) High Temperature Magnetic Coil (+450 to +850°F).
 (2HTM) Two High Temperature Magnetic Coils.
 (1ISM) Intrinsically Safe Mag Coil.
 (2ISM) Two Intrinsically Safe Mag Coils.
 (RP) Redi-Pulse Coil (See Redi-Pulse Technical Data Sheet RP-XXX).
 (IRP) Intrinsically Safe Redi-Pulse Coil (See I.S. Redi-Pulse Technical Data Sheet (IRP-XXX)).
 (P) Pigtail or Flying Leads, Add-P and the Length of leads after any coil except the high temperature coils.

Coil Spacing, Mechanical Degrees Apart (Factory assigned)

Note: Required spacing when meter has two pickup coils.

Riser and Explosion-Proof Coil Enclosures

- (X) 1" MNPT Riser, welded to body, required for all type of enclosures.
 (X-ATEX) 3/4" Male NPT Coil Riser-ATEX Exd Compliant.
 (XE2) 1" MNPT Riser with E2 enclosure. (See chart)*
 (X-ATEX)E2 3/4" MNPT Riser with E2 enclosure. (See chart)*
 (X8S) 8" Long S/S 1" MNPT riser. (For fluid temperatures below -40°F (-40°C) or above +140°F +60°C).
 (X8S-ATEX) 8" Long S/S 3/4" MNPT riser. (For fluid temperatures below -40°F (-40°C) or above +140°F +60°C).

*E2 EXPLOSION-PROOF/FLAME-PROOF ENCLOSURE WITH 3/4" FNPT MOUNT AND 3/4" CABLE ENTRY RATINGS:

FM: CLASS I, DIV. 1, GR. ABCD, CLASS II/III,
 CSA: DIV. 1, GR. EFG, TYPE 4X
 CLASS I, DIV. 1, GR. ABCD, CLASS II, DIV. 1, GR.
 EFG, CLASS III, TYPE 4X EX d IIC, CLASS I, ZONE 1,
 IP 66
 ATEX: EX II 2GD Ex d tD IIC, IP66/68
 IEC: EX D IIC IP68

End Fitting Types

- (F) Raised Face Flanges per ANSI. (See chart)**
 (DN/PN/CS/SS) DN=Metric Size, PN=Flange Pressure Rating (in DIN Std.) and Select Material.

Steam Jacket

- (SJ) Steam Jacket.

Special Features

- (CE) CE Mark required for Europe.
 (PED-CE) PED-CE Mark required for Europe.
 (SEP-CE) Sound engineering practice.
 (SP) Any special features that are not covered in the model number, use -SP and a written description.

**Pressure Rating/
Flange Material

Include "F", number indicating pressure rating, and flange material. (i.e., -F1SS-)

Select one:

- (1) 150# Flanges
 (3) 300# Flanges
 (6) 600# Flanges
 (9) 900# Flanges
 (15) 1500# Flanges
 (25) 2500# Flanges

Select one:

- (SS) Stainless Steel
 (CS) Carbon Steel

Note: 316/316L SS Flanges are standard.



HOFFER FLOW CONTROLS, INC.

The quality system covering the design, manufacture and testing of our products is certified to International Standard ISO 9001.



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