TURBINE FLOWMETERS BY

HOFFER

The Turbine Flowmeter Company

NEW 5-year warranty Best Turbine in the Industry

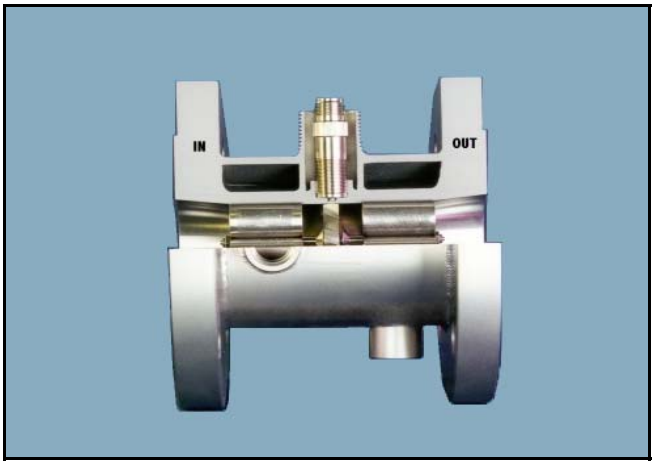
HO Series "Flanged Steam Jacketed" Turbine Flowmeters for Liquid Service

Product Bulletin HO-SJ-001D

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 hydrodynamically 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

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).

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

Repeatability: ±0.1% (±0.05% typical) over tabulated repeatable range.

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

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.

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

End Fittings: Available in ANSI and DIN flanged styles.

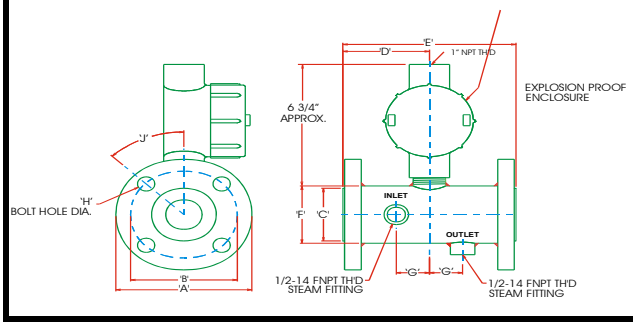
Materials of Construction: All 316 stainless steel including jacket and steam fittings for long life (with exceptions noted below).

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

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#	1¼"	6.00	4.75	3.62	3.00	6.00	2.87	1.155	.75 (4 places)	45°
HO 2" 150#	1½"	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#	2½"	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)	22½°

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

(CB)	Self-Lubricating, Ceramic Hybrid Ball Bearing.
(T)	Tungsten Carbide Sleeve Bearing.
(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).
_(_____)	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.

Coil Enclosure Options

(X)	1" MNPT riser, welded to body. Required for all types of enclosures.
(X3/0)	1" riser with enclosure and without signal conditioner.
(X3H/0)	1" riser with enclosure and dome cover for Style 1 signal conditioner.
(X3B/0)	Same as (X3/0) with BASEEFA, FM and CENELEC-EExd approvals.
(X4H/0)	1" riser with dome cover for ACC22 and ACC96.
(3B/0)	1" riser with dome cover for Style 1 signal conditioners to meet Group B.
(3B/0-ATEX)	1" riser with dome cover for Style 1 signal conditioners to meet Group B & meets ATEX.
(4/0)	1" riser with flat cover for Style 2 signal conditioners to meet Groups C & D.
(4B/0)	1" riser with dome cover for Style 2 signal conditioners to meet Group B.
(X8S)	Add 8S after X riser for a 8" long S/S riser for hot and cold media applications.

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.
(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

Select one:

(SS)	Stainless Steel
(CS)	Carbon Steel

Note: 316 SS flanges are standard, add –304 at end of model # if 304 flanges are required.

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