

TURBINE FLOWMETERS BY
HOFFER

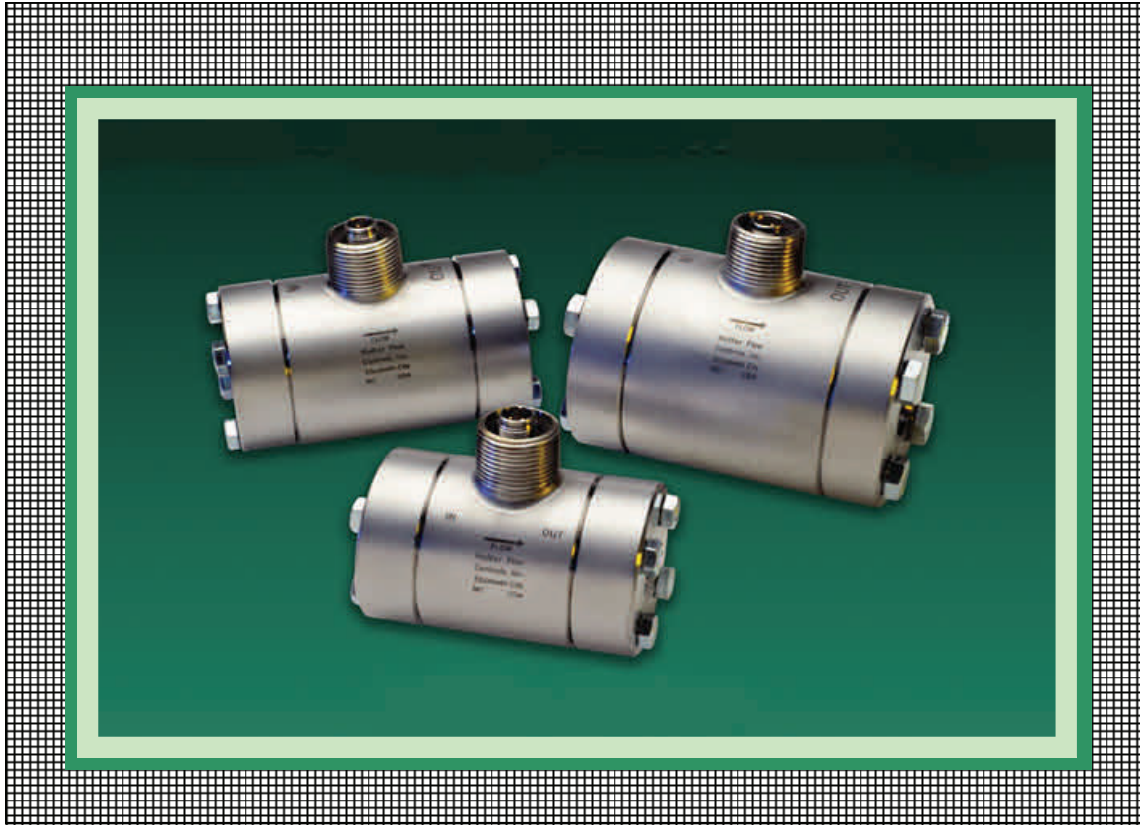
Perfecting Measurement™



HHP Series
Turbine Flowmeters

Product Bulletin HO-HHP-100J

TECHNICAL DATA SHEET



HHP SERIES
Hoffer High Pressure Turbine Flowmeters

OUTSTANDING FEATURES

- Low cost.
- Outstanding accuracy.
- Provides wide flow ranges (10:1 to 100:1 turndown ranges available).
- One piece 316/316L S/S Construction for most pressures.
- For use with unique Hoffer high pressure 316/316L or carbon steel mating flange kits, supplied complete with SAE J429 Grade 8 high yield strength bolts and "O" rings.
- Operate over a wide range of temperatures.
- Sizes 1/4" through 2". Pressure ratings of 3,000, 6,000, 8,000, and 10,000 psi available for most sizes.
- Larger sizes and pressures available upon request. Contact factory.

HOFFER HIGH PRESSURE TURBINE SERIES FOR LIQUID (SIZES 1/4" THRU 2" WITH FOUR PRESSURE RATINGS OF 3,000 PSIG, 6,000 PSIG, 8,000 PSIG AND 10,000 PSIG)

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

Available Temperature Range: -40°F to +350°F Standard. Temperature ratings are dependent on o-ring materials used. Consult factory for extended temperature range applications.

Bearing Styles: Ceramic hybrid ball bearings, sleeve bearings in tungsten carbide and hard carbon composite are available.

Materials: 316 stainless steel standard. Consult with applications group for corrosive applications. Broad material list available.

LIQUID SIZE SELECTOR CHART FOR HHP SERIES TURBINE FLOWMETERS

FLOWMETER SIZE Diameter (Inches)	MAGNETIC PICKUP COIL				MODULATED PICKUP COIL			
	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)
HHP 1/2 X 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
HHP 1/2 X 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
HHP 1/2 X 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
HHP 3/4 X 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
HHP 3/4 X 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
HHP 1 X 1	4-60	15-227	2-75	7.6-284	4-60	15-227	.75-75	2.8-284
HHP 1 1/4 X 1 1/4	6-93	23-352	3-115	11.4-435	6-93	23-352	1.15-115	4.35-435
HHP 1 1/2 X 1 1/2	8-130	30.3-492	5-175	19-662	8-130	30.3-492	1.75-175	6.6-662
HHP 2 X 2	15-225	56.8-852	11-275	42-1041	15-225	56.8-852	2.75-275	10.4-1041

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

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

GAS APPLICATIONS FOR HHP SERIES TURBINE FLOWMETERS Consult factory for gas applications/sizing.



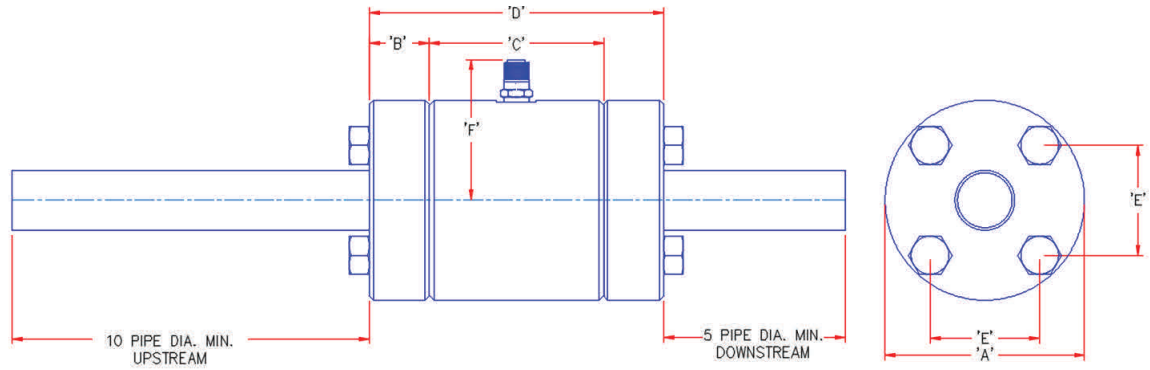
TYPICAL HHP SERIES APPLICATIONS:

- SUBSEA
- HYDRAULICS

OTHER HIGH PRESSURE METERS OFFERED BY HOFFER:

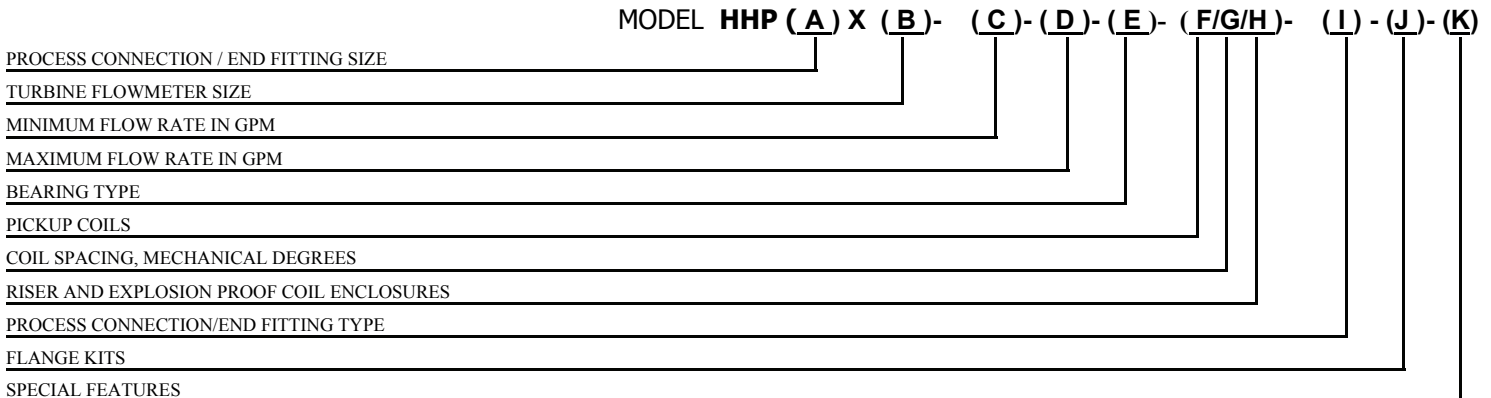
- WING NUT SERIES
- INSERTION AH SERIES

DIMENSIONAL INFORMATION



Dimensional and Bolt Information for the HHP Series									
FLOWMETER SIZE	'A'	'B'	'C'	'D'	'E'	'F'	O'RING	BOLTS	BOLT TORQUE
									FT-LB +/-12%
HHP 1/2 X 1/4, 1/2 X 3/8, 1/2 X 1/2									
3000	3.00	1.00	3.50	5.50	1.437	2.65	-212	3/8-16 X 1.75	23 FT-LB
6000	3.00	1.00	3.50	5.50	1.437	2.65	-212	3/8-16 X 1.75	23 FT-LB
8000	4.25	1.75	3.50	7.00	2.25	3.28	-212	1/2-13 X 2.75	59 FT-LB
10000	4.25	1.75	3.50	7.00	2.25	3.28	-212	1/2-13 X 2.75	59 FT-LB
HHP 3/4 X 5/8 AND 3/4 X 3/4									
3000	3.00	1.00	3.50	5.50	1.438	2.65	-214	3/8-16 x 1.75	23 FT-LB
6000	3.20	1.00	3.50	5.50	1.75	2.75	-214	3/8-16 x 1.75	23 FT-LB
8000	4.00	1.38	3.50	6.25	2.12	3.15	-214	1/2-13 x 2.50	59 FT-LB
10000	5.00	1.75	3.50	7.00	2.50	3.65	-214	5/8-11 x 3.00	119 FT-LB
HHP 1 X 1									
3000	4.00	1.00	3.50	5.50	2.00	3.15	-219	1/2-13 x 2.00	59 FT-LB
6000	4.00	1.00	3.50	5.50	2.00	3.15	-219	1/2-13 x 2.00	59 FT-LB
8000	4.50	1.38	3.50	6.25	2.30	3.40	-219	5/8-11 x 2.50	119 FT-LB
10000	5.20	2.00	3.50	7.50	2.75	3.75	-219	3/4-10 x 3.50	214 FT-LB
HHP 1-1/4 X 1-1/4									
3000	4.00	1.00	3.87	5.87	2.00	3.15	-222	1/2-13 X 2.00	59 FT-LB
6000	5.20	1.25	3.87	6.37	2.75	3.75	-222	5/8-11 X 2.50	119 FT-LB
8000	5.20	1.62	3.87	7.11	2.65	3.75	-222	5/8-11 X 2.75	119 FT-LB
10000	6.50	2.25	3.87	8.37	3.50	4.40	-222	7/8-9 X 4	347 FT-LB
HHP 1-1/2 X 1-1/2									
3000	5.00	1.25	4.38	6.88	2.75	3.65	-223	5/8-11 X 2.50	119 FT-LB
6000	5.00	1.50	4.38	7.38	2.75	3.65	-223	5/8-11 X 2.50	119 FT-LB
8000	6.20	1.88	4.38	8.14	3.40	4.25	-223	3/4-10 X 3.50	214 FT-LB
HHP 2 X 2									
3000	5.00	1.25	4.75	7.25	2.75	3.65	-226	5/8-11 X 2.25	119 FT-LB
6000	6.20	1.75	4.75	8.25	3.50	4.25	-226	3/4-10 X 3.00	214 FT-LB

HHP TURBINE FLOWMETER MODEL NUMBERING SYSTEM



NOTE: WHEN ORDERING, THE CUSTOMER'S PROCESS PIPE SCHEDULE AND SIZE NEEDS TO BE INDICATED.

PROCESS CONNECTION/END FITTING SIZE & TURBINE FLOWMETER SIZE

HHP 1/2 X 1/4 HHP 1/2 X 3/8 HHP 1/2 X 1/2 HHP 3/4 X 5/8 HHP 3/4 X 3/4 HHP 1 X 1	THE FLANGES FOR THESE SIZES WITH 3000#, 6000#, 8000#, & 10,000# PRESSURES ARE PART OF A ONE PIECE HOUSING CONSTRUCTION .
HHP 1 1/2 X 1 1/2*	*THE FLANGES FOR THE 1 1/2" SIZE WITH 3000#, 6000#, & 8000# PRESSURES ARE PART OF A ONE PIECE HOUSING CONSTRUCTION. THE FLANGES FOR THE 1 1/2" SIZE WITH 10,000# PRESSURE ARE WELDED TO THE HOUSING BODY.
HHP 2 X 2**	**THE FLANGES FOR THE 2" SIZE WITH 3000# & 6000# PRESSURES ARE PART OF A ONE PIECE HOUSING CONSTRUCTION. THE FLANGES FOR THE 2" SIZE WITH 8000# & 10,000# PRESSURES ARE WELDED TO THE HOUSING BODY.

MINIMUM FLOW AND MAXIMUM FLOW RATE IN GPM

MODEL HHP()X()-(C)-(D)-()-(/ /)-()-()-()

NOTE: FOR EXTENDED RANGES REFER TO SIZE SELECTOR CHARTS.

TURBINE SIZE	(C) MINIMUM FLOW	TO	(D) MAXIMUM FLOW
1/4"	.35 GPM		3.5 GPM
3/8"	.75 GPM		7.5 GPM
1/2"	1.25 GPM		9.5 GPM
5/8"	1.75 GPM		16 GPM
3/4"	2.5 GPM		29 GPM
1"	4 GPM		60 GPM
1 1/4"	6 GPM		93 GPM
1 1/2"	8 GPM		130 GPM
2"	15 GPM		225 GPM

BEARING TYPE

MODEL HHP()X()-()-()-(E)-(/ /)-()-()-()

OPTION (E)

1/4" THRU 5/8" TURBINE SIZES

- (BP) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
- (C) HARD CARBON COMPOSITE SLEEVE BEARING
- (T) TUNGSTEN CARBIDE SLEEVE BEARING

3/4" THRU 1" TURBINE SIZES

- (BP) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
- (C) HARD CARBON COMPOSITE SLEEVE BEARING
- (T) TUNGSTEN CARBIDE SLEEVE BEARING

1 1/4" THRU 1 1/2" TURBINE SIZES

- (CB) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
- (C) HARD CARBON COMPOSITE SLEEVE BEARING
- (T) TUNGSTEN CARBIDE SLEEVE BEARING

2" TURBINE SIZE

- (CB) CERAMIC HYBRID BALL BEARING, SELF LUBRICATING
- (C) HARD CARBON COMPOSITE SLEEVE BEARING
- (T) TUNGSTEN CARBIDE SLEEVE BEARING

OPTIONAL ACCESSORIES



HIT-4U
Rate Indicator / Totalizer
(Refer to the HIT-4U Technical Data Sheet)



Nova-Flow Computer
(Refer to Technical Data Sheet NF-102)

FLANGE KITS

MODEL HHP()X()-()-()-()-(/ /)-()-(J)-()

OPTION (J)

NOTE: ALL SIZES MUST USE THE HOFFER FLANGE KITS WHICH ARE UNIQUE TO THE HOUSING BODY. ALL SIZES CAN BE EITHER CARBON STEEL OR 316 S/S.

EACH KIT CONSISTS OF:

2 EA. SOCKET WELD FLANGES , 2 EA. VITON ‘O’ RINGS, 1 SET BOLTS AND WASHERS (REFER TO DIMENSIONAL INFORMATION)

OPTION (J)	
1/2"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
1/2"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
1/2"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
1/2"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
1/2"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
1/2"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S
1/2"-FK10,000-SS	10,000# MATING FLANGE HHP KIT 316 S/S
1/2"-FK10,000-CS	10,000# MATING FLANGE HHP KIT C/S
3/4"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
3/4"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
3/4"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
3/4"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
3/4"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
3/4"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S
3/4"-FK10,000-SS	10,000# MATING FLANGE HHP KIT 316 S/S
3/4"-FK10,000-CS	10,000# MATING FLANGE HHP KIT C/S
1"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
1"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
1"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
1"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
1"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
1"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S
1"-FK10,000-SS	10,000# MATING FLANGE HHP KIT 316 S/S
1"-FK10,000-CS	10,000# MATING FLANGE HHP KIT C/S
1 1/4"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
1 1/4"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
1 1/4"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
1 1/4"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
1 1/4"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
1 1/4"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S
1 1/4"-FK10,000-SS	10,000# MATING FLANGE HHP KIT 316 S/S
1 1/4"-FK10,000-CS	10,000# MATING FLANGE HHP KIT C/S


OPTION (J)	
1 1/2"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
1 1/2"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
1 1/2"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
1 1/2"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
1 1/2"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
1 1/2"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S
1 1/2"-FK10,000-SS	10,000# MATING FLANGE HHP KIT 316 S/S
1 1/2"-FK10,000-CS	10,000# MATING FLANGE HHP KIT C/S
2"-FK3000-SS	3,000# MATING FLANGE HHP KIT 316 S/S
2"-FK3000-CS	3,000# MATING FLANGE HHP KIT C/S
2"-FK6000-SS	6,000# MATING FLANGE HHP KIT 316 S/S
2"-FK6000-CS	6,000# MATING FLANGE HHP KIT C/S
2"-FK8000-SS	8,000# MATING FLANGE HHP KIT 316 S/S
2"-FK8000-CS	8,000# MATING FLANGE HHP KIT C/S

SPECIAL FEATURES

MODEL HHP()X()-()-()-()-(/ /)-()-()-(K)

OPTIONS (K)

- (CE) CE MARK - REQUIRED FOR EUROPE
- (PED-CE) PED MARK - REQUIRED FOR EUROPE
- (SEP-CE) SOUND ENGINEERING PRACTICE
- (SP) ANY SPECIAL FEATURES THAT ARE NOT COVERED IN THE MODEL NUMBER, USE A WRITTEN DESCRIPTION OF THE -SP
- (BW) MONEL 400 INTERNALS/SUPER DUPLEX ROTOR
- (X) NO SPECIAL FEATURES



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The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.



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

