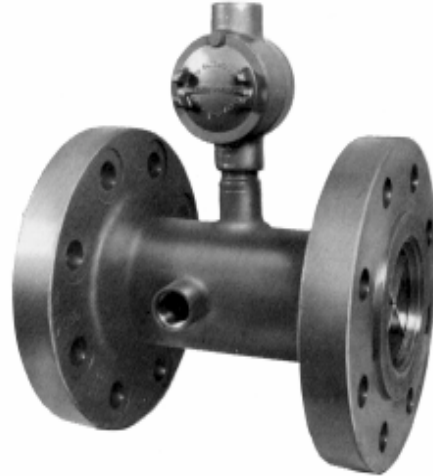


The Brooks Parity Turbine Meter Sizes 3" - 16"

High Performance Turbine Technology

DESCRIPTION

The Parity Turbine Flowmeter utilizes advanced turbine meter technology to assure higher flow rates, extended flow range and sustained performance capability. It is designed for use within the guidelines of API Standards Chapter 5.3, formerly Standard 2534 (The Measurement of Liquid Hydrocarbons by Turbine Meter Systems) and the test procedures of API Standards Chapter 4 (Prover Systems). Typical areas of operation include pipeline control, blending and loading rack applications.



DESIGN FEATURES

- Output linear with flow rate
- Rangeability of 10 to 1
- Explosion proof amplifier housing
- Superior accuracy and repeatability
- Compact design
- Carbide journal bearings - no lubrication required
- Variety of readout instrumentation instruments available

PERFORMANCE - Meter

Linearity: $\pm 0.15\%$
 Repeatability: $\pm 0.02\%$
 Output: -15 to 20 mVac at minimum flow
 2 to 3 Vac at maximum flow

K-FACTOR

Size	K-FACTOR PULSES	
	(BBL)	(M ³)
3"	2,000	12,580
4"	1,000	6,290
6"	1,000	6,290
8"	500	3,145
10"	500	3,145
12"	250	1,572
16"	100	629

NOTE: See Model Code for meter options configurations and accessories.

⚠ WARNING

Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

MATERIALS OF CONSTRUCTION

Body (All sizes): Steel, Standard
 Optional - Stainless Steel

Internal Components:

Sizes 3" and 4": Standard - Stainless Steel
 6" and larger: Stainless Steel and Aluminum

For all Stainless Steel (meter and internal), Consult Factory.

Bearings: Tungsten Carbide

RATINGS - Meter

Pressure: ANSI pressure/temperature rating corresponds to flanges used.

Temperature:

Standard: -20 to 180°F (-29 to 82°C)

Optional - (Consult factory)

High temperature Pick-off -30 to 400°F (-34 to 204°C),
 -350 to 400°F (-212 to 204°C) cryogenic service

PERFORMANCE - Pre-amplifier

Power Required: 6 to 28Vdc at 20mA maximum
 Input Sensitivity: 15 mV minimum
 Output Signal: 0 to 5V pulsating dc, TTL compatible
 or pulse amplitude = $V_s - 1.5V_{dc}$
 Transmission distance: 3000 ft. (Belden 8770
 or equivalent)
 Frequency Range: 4 Hz to 10 KHz

Temperature: $-30^{\circ}F$ to $185^{\circ}F$ ($-34^{\circ}C$ to $85^{\circ}C$)

PICK-OFF SPECIFICATIONS

Type: Reluctance
 Output: 15-20 mVac Peak to Peak @ minimum flow,
 2-3 Vac @ maximum flow

FLOW RANGE

Products having a specific gravity of 0.7 to 1.0 and a viscosity of 0.3 to 3.0 cst

Size	Standard Flow Range	Extended Flow Range	Standard Flow Range	Extended Flow Range	Pressure Loss	
	BBL/Hr	BBL/Hr	M ³ /Hr	M ³ /Hr	psi	kPa
3"	100 - 1,000	1,300	15.9 - 159	207	3	21
4"	185 - 1,850	2,300	29.4 - 294	366	3	21
6"	420 - 4,200	5,400	66.8 - 668	859	3	21
8"	850 - 8,500	9,500	135 - 1350	1,511	3	21
10"	1,200 - 12,000	15,000	190.9 - 1909	2,386	4	28
12"	1,800 - 18,000	22,000	286 - 2860	3,500	3	21
16"	2,800 - 28,000	35,000	445 - 4450	5,568	4	28

CONNECTIONS

Mechanical

Standard: 150, 300 and 600 lb. ANSI R. F. Flanges
 DIN PN16, PN25, PN40, PN64, PN100
 (See Flange Connections Table)

Optional: 900 lb. ANSI available

Electrical: Class I, Group D, Division 1 Explosion
 Proof conduit with terminal strip connections
 U/L - not available
 CENELEC EExd II C T6, EEx ib II C T4/T6
 (85° C max)

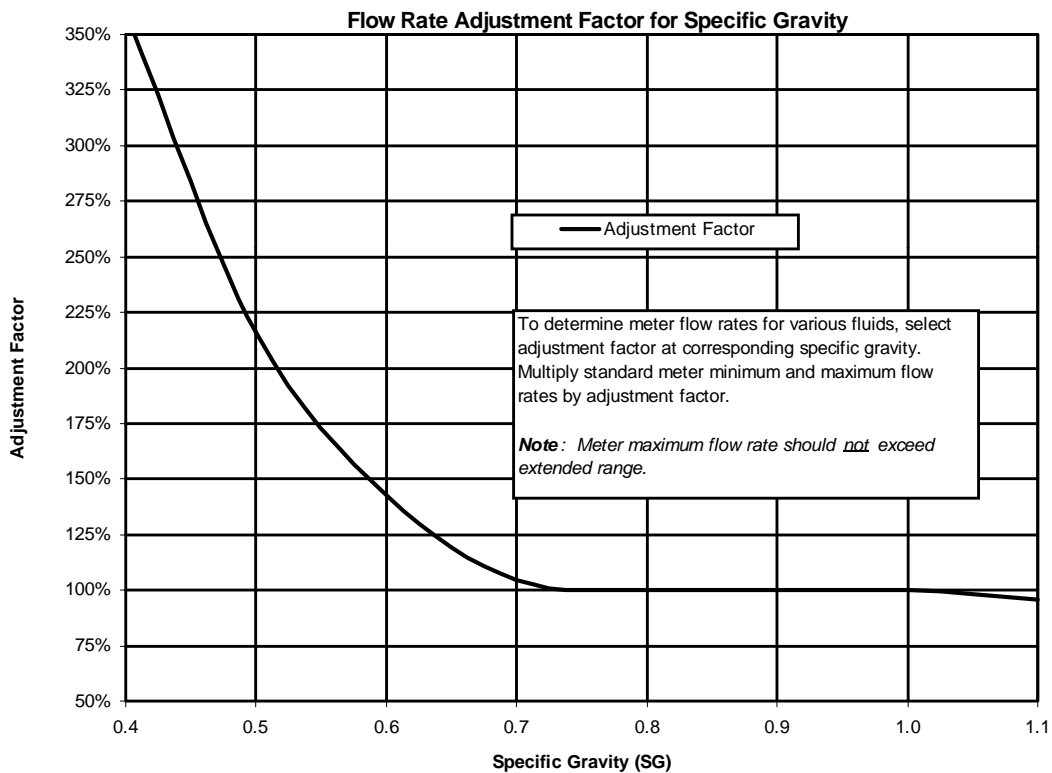
Weights & Measures:

CSA - LR 32408 (Pre-amp only)

CCA - AV-2264 (Consult factory for specific models)

Connecting Cable: Recommended Belden 8770,
 3 conductor shielded cable length is 3,000 feet
 (914 meters)

Rotor Shroud: Standard 6" and larger. Optional 4"
 (Recommended with viscosities above 40 SSU)



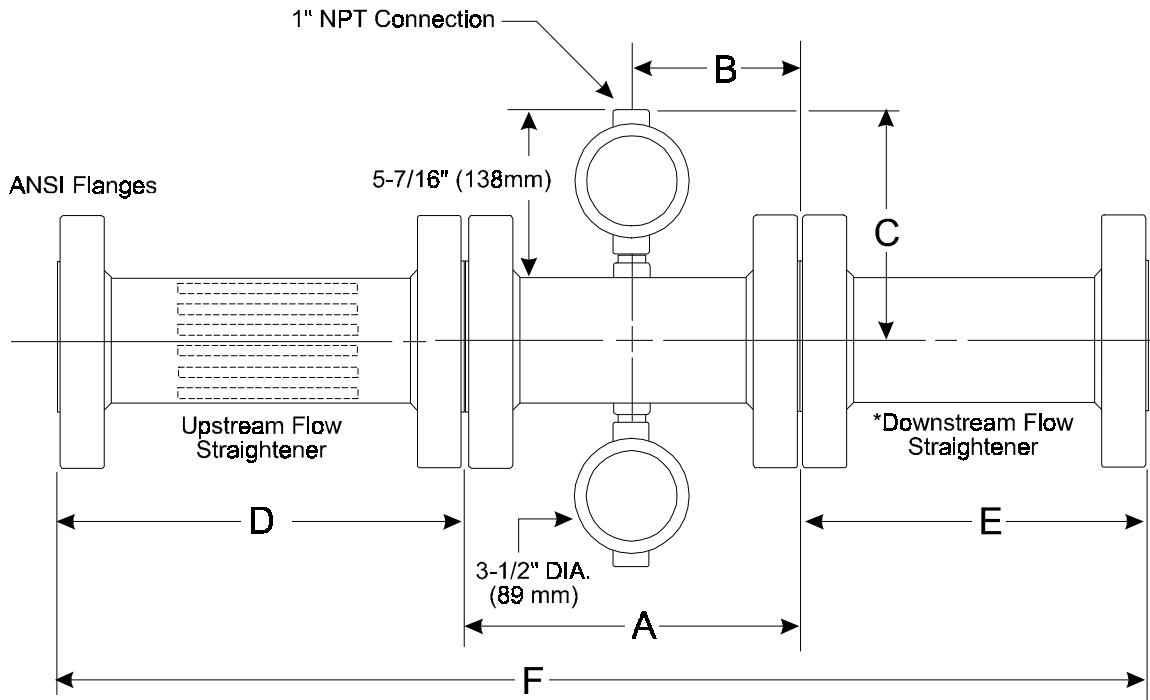
FLANGE CONNECTIONS

MODEL	ANSI Connections	MAXIMUM WORKING PRESSURE @ 100°F		DIN Connections	MAXIMUM WORKING PRESSURE
		Stainless Steel	Carbon Steel		
T03	3", 150 lb. ANSI	275 psi	285 psi	DN 80 PN 40	40 Bar
T03	3", 300 lb. ANSI	720 psi	740 psi	DN 80 PN 64	64 Bar
T03	3", 600 lb. ANSI	1,440 psi	1,480 psi	DN 80 PN 100	100 Bar
T04	4", 150 lb. ANSI	275 psi	285 psi	DN 100 PN 16	16 Bar
T04	4", 300 lb. ANSI	720 psi	740 psi	DN 100 PN 25	25 Bar
				DN 100 PN 40	40 Bar
T04	4", 600 lb. ANSI	1,440 psi	1,480 psi	DN 100 PN 64	64 Bar
				DN 100 PN 100	100 Bar
T06	6", 150 lb. ANSI	275 psi	285 psi	DN 150 PN 16	16 Bar
T06	6", 300 lb. ANSI	720 psi	740 psi	DN 150 PN 25	25 Bar
				DN 150 PN 40	40 Bar
T06	6", 600 lb. ANSI	1,440 psi	1,480 psi	DN 150 PN 64	64 Bar
				DN 150 PN 100	100 Bar
T08	8", 150 lb. ANSI	275 psi	285 psi	DN 200 PN 16	16 Bar
T08	8", 300 lb. ANSI	720 psi	740 psi	DN 200 PN 25	25 Bar
				DN 200 PN 40	40 Bar
T08	8", 600 lb. ANSI	1,440 psi	1,480 psi	DN 200 PN 64	64 Bar
				DN 200 PN 100	100 Bar
T010	10", 150 lb. ANSI	275 psi	285 psi	DN 250 PN 16	16 Bar
T010	10", 300 lb. ANSI	720 psi	740 psi	DN 250 PN 25	25 Bar
				DN 250 PN 40	40 Bar
T010	10", 600 lb. ANSI	1,440 psi	1,480 psi	DN 250 PN 64	64 Bar
				DN 250 PN 100	100 Bar
T012	12", 150 lb. ANSI	275 psi	285 psi	DN 300 PN 16	16 Bar
				DN 300 PN 25	25 Bar
T012	12", 300 lb. ANSI	720 psi	740 psi	DN 300 PN 40	40 Bar
				DN 300 PN 64	64 Bar
T012	12", 600 lb. ANSI	1,440 psi	1,480 psi	DN 300 PN 100	100 Bar
T016	16", 150 lb. ANSI	275 psi	285 psi	DN 400 PN 16	16 Bar
				DN 400 PN 25	25 Bar
T016	16", 300 lb. ANSI	720 psi	740 psi	DN 400 PN 40	40 Bar
				DN 400 PN 64	64 Bar
T016	16", 600 lb. ANSI	1,440 psi	1,480 psi	DN 400 PN 100	100 Bar

SHIPPING WEIGHT & VOLUME (Approximate)

Meter Size	150 lbs.				300 lbs.				600 lbs.			
	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.
3"	60	27.2	1.13	0.032	65	29.5	1.25	0.035	85	38.6	1.25	0.035
4"	60	27.2	1.53	0.043	80	36.3	1.78	0.05	110	49.9	1.93	0.055
6"	90	40.1	2.3	0.065	135	61.2	2.81	0.08	245	111.1	3.17	0.09
8"	140	63.5	3.52	0.10	215	97.5	3.94	0.112	320	145.2	4.62	0.131
10"	235	106.6	5.5	0.156	320	145.5	6.39	0.181	560	254	7.33	0.208
12"	385	174.6	6.42	0.182	510	231.3	9.32	0.264	750	340.2	10.11	0.286
16"	745	337.9	15.17	0.43	990	449.1	15.75	0.446	1,370	621.4	18.33	0.52

DIMENSIONS - (For Certified Dimension Prints - Consult Factory)



Second pickoff optional.
 *Down stream flow straightener optional.

Size	A		B		C		D		E		F	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
3"	10	254	5	127	7 3/4	197	30	762	15	381	55	1,397
4"	12	305	5	152	8 1/4	209	40	1,016	20	508	72	1,829
6"	14	356	7	178	9 5/16	236	60	1,524	30	762	104	2,642
8"	16	406	8	203	10 5/16	262	80	2,032	40	1,016	136	3,454
10"	20	508	10	254	11 3/8	289	100	2,540	50	1,270	170	4,318
12"	24	610	12	305	12 3/8	314	120	3,048	60	1,524	204	5,182
16"	32	813	16	406	14	356	160	4,064	80	2,032	272	6,909



Daniel Division Headquarters, Houston, Texas, USA, Telephone: (713) 467-6000, Fax: (713) 827-4360
 Daniel, Brooks Petroleum Operations, Statesboro, Georgia, USA, Telephone (912) 489-0200, Fax (912) 489-0430

OFFICES AND REPRESENTATIVES WORLDWIDE

www.danielind.com

Brooks Marc VI Turb-Meter™

Aircraft Refueler

DESCRIPTION

The Marc VI Turbo-Meter™ is specifically designed for aircraft fuel measurement as used on high capacity refueler trucks and carts. It combines the reliability typical to positive displacement measurement with the compact design, high performance and wide flow ranges found in turbine technology.

The lightweight, compact construction of the Marc VI provides flexibility in applications and makes mounting in mobile carts quick and easy.

Direct drive mechanical counters and accessories eliminate the requirement for electronic devices when used on heavy-duty mobile refueler units.

DESIGN FEATURES

- Light Weight – Less than 1/10th the weight of positive displacement meters with the same capacity rating
- Compact Design
- Mechanical Registration
- Integral Flow Straightener
- No straight pipe required upstream or downstream of the meter
- Reverse flow through meter for defueling
- Metallurgy compatible with new fuel requirements

OPTIONAL EQUIPMENT

- Rate of Flow Generator
- Impulse Contactor
- High Frequency Pulse Generator
- Large Dial Register and Ticket Printer
- Dual Counter Adaptor for separate registration and printing of domestic and bonded fuel delivery



⚠ WARNING

Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

MATERIALS OF CONSTRUCTION

Housing: Anodized Aluminum
Internal Components
Bearing Housing, Rotor Hub and Gear Bracket: Anodized Aluminum
All other internal components: Stainless Steel

SPECIFICATIONS

Connections: 6" Victaulic
Capacity: 125 to 1250 gpm (473 to 4731 lpm)
Working Pressure: 150 psi (1034 kPa)
Meter Output: 10 gallons/revolution

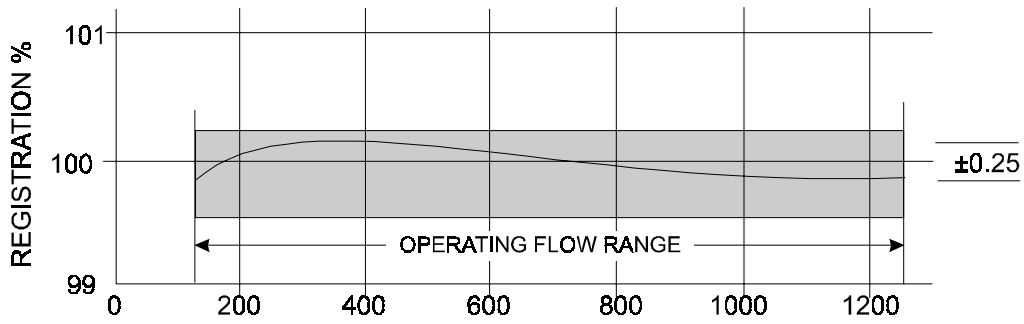
PERFORMANCE

Accuracy: $\pm 0.15\%$ from 20 to 100% of rated capacity
 $\pm 0.25\%$ from 10 to 100% of rated capacity
Repeatability: $\pm 0.015\%$ at any given flow rate within recommended range

NOTE: See Model Code for meter options configurations and accessories.

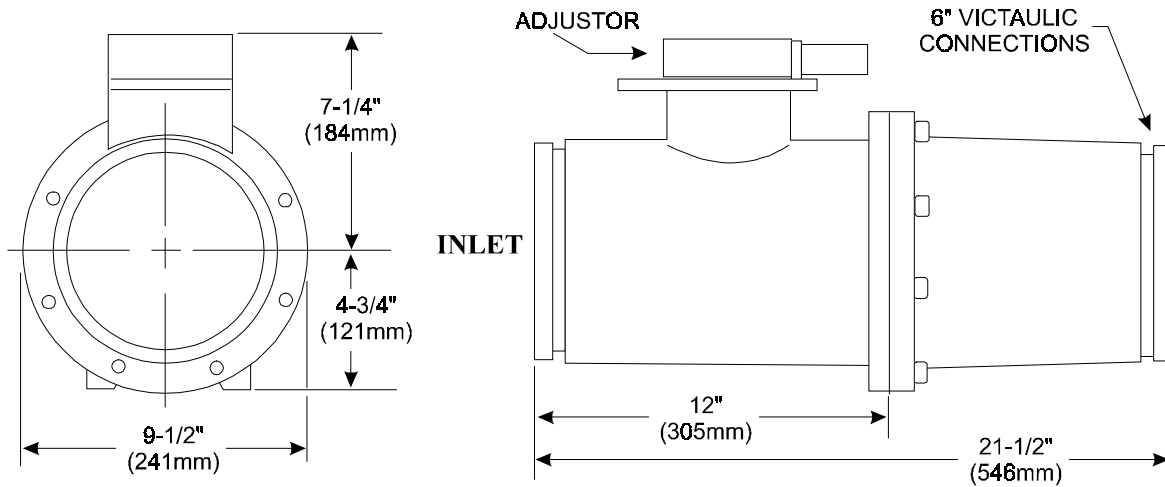
DANIEL

Typical Accuracy Curve



DIMENSIONS - (For Certified Dimension Prints - Consult Factory)

Approximate Shipping Weight: 40 lbs. (18 kg.)



Daniel Division Headquarters, Houston, Texas, USA, Telephone: (713) 467-6000, Fax: (713) 827-4360
 Daniel, Brooks Petroleum Operations, Statesboro, Georgia, USA, Telephone (912) 489-0200, Fax (912) 489-0430

OFFICES AND REPRESENTATIVES WORLDWIDE

www.danielind.com

Fractional Parity Turbine Meter Sizes 1/2"-2 1/2"

High Performance Turbine Technology

DESCRIPTION

The Brooks Fractional Parity Turbine Flowmeter line exemplifies all the proven and known advanced techniques in the Art of Measurement by the Turbine Principle. The meter's clean lines and simple configuration of components assure higher flow rates, extended flow range and sustained performance capability. The Parity Turbine Flowmeter is designed for use within the guidelines of API Standard; Chapter 5.3, formerly Standard 2534, (The Measurement of Liquid Hydrocarbons by Turbine Meter Systems), and the test procedures of API Standard; Chapter 4, (Prover Systems).



DESIGN FEATURES

- Output linear with flow rate
- Rangeability of 10 to 1
- Explosion proof amplifier housing
- Superior accuracy and repeatability
- Compact design
- Tungsten Carbide Bearing - no lubrication required
- Variety of readout instruments available

PERFORMANCE - Meter

Linearity: $\pm 0.25\%$ (3/4" and 2 1/2" meters); $\pm 0.5\%$ (1/2" meters) of flow rate, on viscosity between 0.3 and 3.0 Centistokes
Repeatability: 0.04% total
Flow Range: 10 to 1

K-FACTOR

Size	K-FACTOR PULSES	
	(Gal.)	(Liter)
1/2"	13,400	3,540
3/4"	4,200	1,110
1"	900	238
1 1/2"	400	106
2"	180	47.6
2 1/2"	100	26.4

NOTE: See Model Code for meter options configurations and accessories.

WARNING

Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

MATERIALS OF CONSTRUCTION

Housing: 304 Stainless Steel
Rotor Support: 316 Stainless Steel
Rotor: Standard; 17-4 PH Stainless Steel
Bearings: Tungsten Carbide
Shaft: Tungsten Carbide
Thrust Washer: Tungsten Carbide

RATINGS

Pressure: ANSI Pressure - Temperature rating corresponding to flanges used.

Temperature:

Standard: -30° to 180°F (-34°C to 82°C)

High Temperature Pick-off: -30° to +400°F (-18°C to 316°C)

1/2" only: -10°F to 250°F (-20°C to 120°C)

3/4" - 2-1/2": -350 to 400°F (-212 to 204°C) cryogenic service

Performance (Pre-amplifier; 3/4" to 2 1/2")

Power Required: 6 to 28Vdc at 20mA maximum
 Input Sensitivity: 15 mV minimum
 Output Signal: 0 to 5V pulsating dc, TTL compatible
 or pulse amplitude = $V_s - 1.5V_{dc}$
 Transmission distance: 3000ft. (Belden 8770
 or equivalent)
 Frequency Range: 4 Hz to 10 KHz

Temperature: -30°F to 185°F (-34°C to 85°C)

Performance (RF Sensor; 1/2" meter only)

Power Required: 10 to 18Vdc at 15mA maximum
 Output Signal: Open Drain with 3.3K ohm internal pull-
 up to $V_s - 1V_{dc}$
 Vol: 0.4Vdc max at $I_{ol} = 20mA$
 Voh: 0.95 ($V_s - 1V_{dc}$) min
 Frequency Range: 4 Hz to 3 KHz

Temperature: -13°F to 240°F (-25°C to 115°C)

FLOW RANGE

Products having a specific gravity of 0.7 to 1.0 and a viscosity of 0.3 to 3.0 cst

Size	Standard Flow Range GPM	Extended Flow Range GPM	Standard Flow Range LPM	Extended Flow Range LPM	Pressure Loss	
					psi	kPa
1/2"	0.7 - 7.0	7.0	2.65 - 26.5	26.5	8	55
3/4"	2.0 - 20.0	25.0	7.57 - 75.7	94.6	9	62
1"	7.0 - 70.0	88.0	26.5 - 265	333	14	97
1 1/2"	15.0 - 150.0	188.0	56.8 - 568	712	9	62
2"	30.0 - 300.0	375.0	113.6 - 1136	1419	7	48
2 1/2"	50.0 - 500.0	625.0	189.3 - 1893	2366	10	69

PICK-OFF SPECIFICATIONS - 3/4" to 2 1/2"

Type: Reluctance
 Output: 15 to 20 mVac at minimum flow; 2 to 3 Vac at
 maximum flow

CONNECTIONS

Mechanical: Flowmeters from 1/2" to 2 1/2" sizes are
 available with ANSI B16.5 R.F. Flanges.

Standard: 150 lb. - 600 lb.
 3/4" - 2 1/2" - DIN PN64, PN100
 1/2" - DIN PN64, PN100

(See Flange Connections Table)

Optional: 900 lb.

Electrical: All signal and power connections are
 terminated at screw terminals located in the sensor/
 preamp housing.

NEC Class 1 Group D, Division 1

U/L - not available

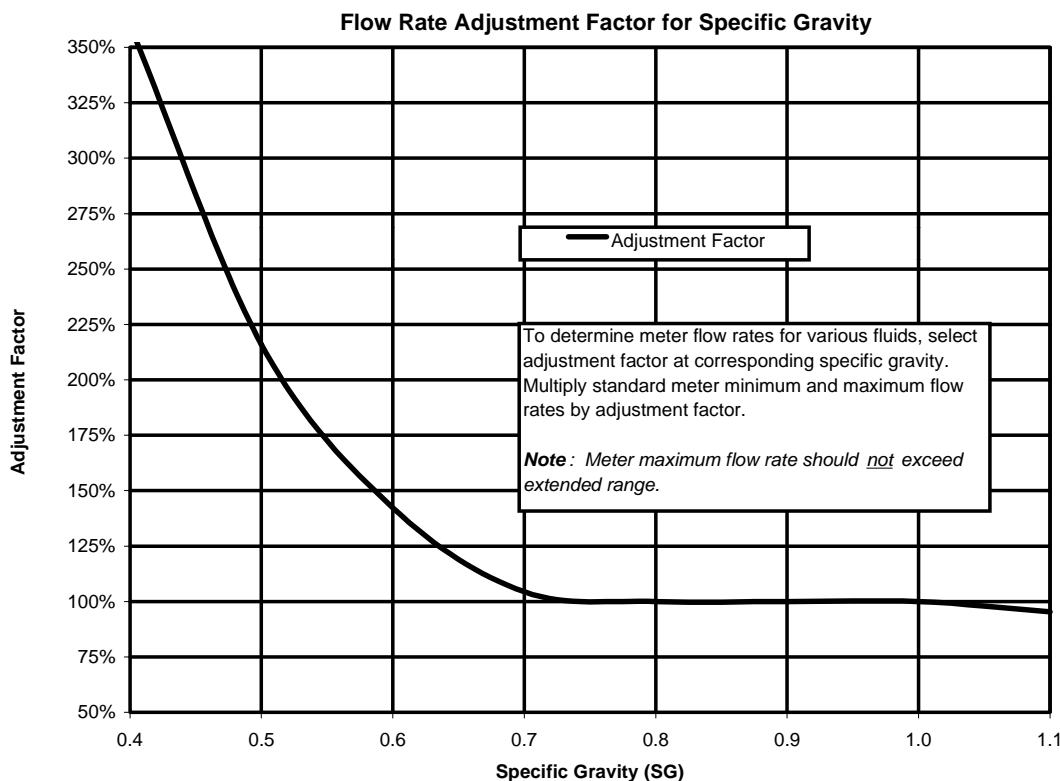
CENELEC EExd II CT6, EEx ib II C T4/T6 (85° max)

(Note: 3/4" - 2 1/2" only)

Weights & Measures:

CSA - LR 32408 (Pre-amp only)

CCA - AV-2264 (Consult factory for specific models)



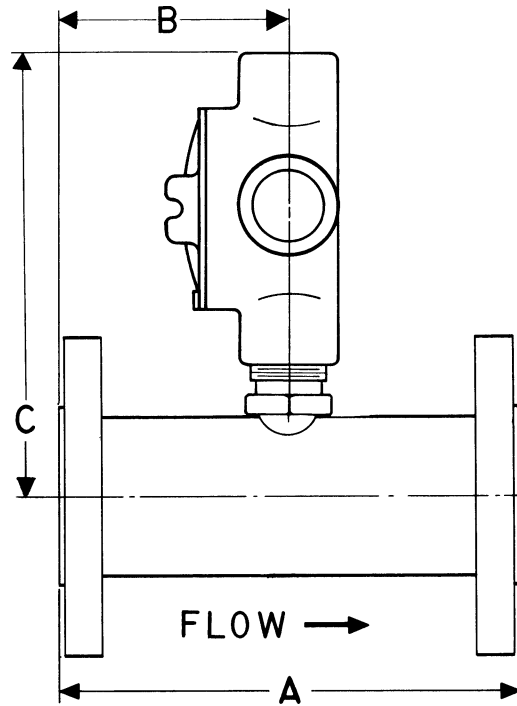
FLANGE CONNECTIONS

MODEL	ANSI Connections	MAXIMUM WORKING PRESSURE @ 100°F		DIN Connections	MAXIMUM WORKING PRESSURE
		Stainless Steel	Carbon Steel		
T81	1/2", 150 lb. ANSI	275 psi	285 psi	DN 15 PN 40	40 Bar
T81	1/2", 300 lb. ANSI	720 psi	740 psi	DN 15 PN 64	64 Bar
T81	1/2", 600 lb. ANSI	1,440 psi	1,480 psi	DN 15 PN 100	100 Bar
T87	3/4", 150 lb. ANSI	275 psi	285 psi	DN 20 PN 16	16 Bar
T87	3/4", 300 lb. ANSI	720 psi	740 psi	DN 20 PN 40	40 Bar
				DN 20 PN 64	64 Bar
T87	3/4", 600 lb. ANSI	1,440 psi	1,480 psi	DN 20 PN 100	100 Bar
T01	1", 150 lb. ANSI	275 psi	285 psi	DN 25 PN 16	16 Bar
T01	1", 300 lb. ANSI	720 psi	740 psi	DN 25 PN 40	40 Bar
				DN 25 PN 64	64 Bar
T01	1", 600 lb. ANSI	1,440 psi	1,480 psi	DN 25 PN 100	100 Bar
T15	1 1/2", 150 lb. ANSI	275 psi	285 psi	DN 40 PN 16	16 Bar
				DN 40 PN 25	25 Bar
T15	1 1/2", 300 lb. ANSI	720 psi	740 psi	DN 40 PN 40	40 Bar
				DN 40 PN 64	64 Bar
T15	1 1/2", 600 lb. ANSI	1,440 psi	1,480 psi	DN 40 PN 100	100 Bar
T02	2", 150 lb. ANSI	275 psi	285 psi	DN 50 PN 16	16 Bar
				DN 50 PN 25	25 Bar
T02	2", 300 lb. ANSI	720 psi	740 psi	DN 50 PN 40	40 Bar
				DN 50 PN 64	64 Bar
T02	2", 600 lb. ANSI	1,440 psi	1,480 psi	DN 50 PN 100	100 Bar
T25	2 1/2", 150 lb. ANSI	275 psi	285 psi	DN 65 PN 16	16 Bar
				DN 65 PN 25	25 Bar
T25	2 1/2", 300 lb. ANSI	720 psi	740 psi	DN 65 PN 40	40 Bar
				DN 65 PN 64	64 Bar
T25	2 1/2", 600 lb. ANSI	1,440 psi	1,480 psi	DN 65 PN 100	100 Bar

SHIPPING WEIGHT AND VOLUME (Approximate)

Meter	150 lbs.				300 lbs.				600 lbs.			
	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.
1/2"	6	2.72	0.31	0.008	8	3.63	0.36	0.01	10	4.54	0.36	0.01
3/4"	7	3.18	0.33	0.009	9	4.08	0.39	0.011	11	4.99	0.39	0.011
1"	9	4.08	0.45	0.013	11	4.99	0.53	0.015	14	6.35	0.53	0.015
1 1/2"	14	6.35	0.58	0.02	19	8.62	0.71	0.02	24	8.62	0.71	0.02
2"	19	8.62	0.71	0.02	23	10.43	0.8	0.022	28	12.7	0.8	0.022
2 1/2"	25	11.34	0.86	0.024	30	13.61	1.02	0.028	38	17.24	1.02	0.028

DIMENSIONS - (For Certified Dimension Prints - Consult Factory)



Meter Size	ANSI R.F. FLANGES					
	A		B		C	
	Inches	mm	Inches	mm	Inches	mm
1/2"	5 1/2	140	2 3/4	70	7	178
3/4"	5 1/2	140	2 3/4	70	8	203
1"	8	203	3	76	8 7/16	214
1 1/2"	9	229	3 1/2	89	8 11/16	221
2"	9	229	3 3/4	95	9 3/32	231
2 1/2"	9	229	4 1/2	114	9 9/16	243

DANIEL

Daniel Division Headquarters, Houston, Texas, USA, Telephone: (713) 467-6000, Fax: (713) 827-4360
 Daniel, Brooks Petroleum Operations, Statesboro, Georgia, USA, Telephone (912) 489-0200, Fax (912) 489-0430

OFFICES AND REPRESENTATIVES WORLDWIDE

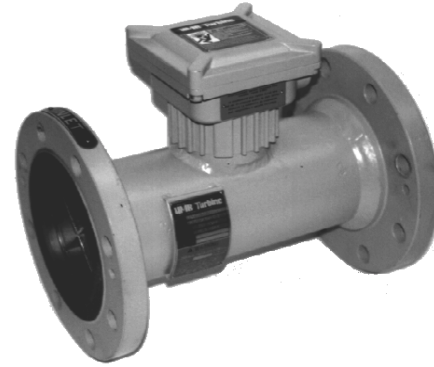
www.danielind.com

The Brooks UMB Turbine Meter Sizes 3"-16"

High Performance Turbine Technology with Dual Output Capabilities in a Single Housing

DESCRIPTION

The Brooks UMB Turbine Flowmeter is a volumetric flow metering and transmitting device used extensively in the petroleum industry for the accurate measurement of liquid hydrocarbon and other process fluids. The meter's simple configuration assures higher flow rates, extended flow range and sustained performance capability. It is designed for use within the guidelines of API Standards, Chapter 5.3, formerly Standard 2534 (The Measurement of Liquid Hydrocarbons by Turbine Meter Systems) and the test procedures of API Standards, Chapter 4 (Prover Systems).



DESIGN FEATURES

- Output linear with flowrate
- Rangeability of 10 to 1
- Bidirectional flow option available
- Horizontal or vertical installation
- Superior accuracy and repeatability
- High frequency pulse resolution
- Uniform pulse signal output
- Improved serviceability allows easy access to pickoffs and reduces installation costs
- Simple, easy to maintain, field mountable pickoffs require no interruption of conduit lines
- Explosion proof/weather proof housing

PERFORMANCE - Meter

Linearity: $\pm 0.15\%$
Repeatability: $\pm 0.02\%$

K-FACTOR

Size	K-FACTOR PULSES	
	(BBL)	(M ³)
3"	2,000	12,580
4"	1,000	6,290
6"	1,000	6,290
8"	500	3,145
10"	500	3,145
12"	250	1,572
16"	100	629

NOTE: See Model Code for meter options configurations and accessories.

⚠ WARNING

Do not operate this instrument in excess of the specifications listed. Failure to heed this warning could result in serious injury and/or damage to the equipment.

MATERIALS OF CONSTRUCTION

Meter Body (All sizes): Steel, Standard
Optional: Steel flanges / Stainless Steel flowtube, All Stainless Steel

Internal Components:

Standard: Sizes 3" and 4": Stainless Steel
Sizes 6" and larger: Stainless Steel and Aluminum
Optional: All Stainless Steel. Consult factory for other materials.

Bearings: Tungsten Carbide

UMB Housing: Aluminum

Rotor Shroud: Standard 6" and larger (3 & 4" optional when metering products with viscosities of 10 cst and above.)

RATINGS

Pressure: ANSI pressure/temperature rating corresponding to flanges used.

Temperature: -30 to 180°F (-40 to 82°C)

Optional: -30 to 400°F (-40 to 204°C)

PERFORMANCE - Pre-amplifier

Inputs: Supply voltage: 20 Vdc \pm 50%

Signal Type: Sine Wave

Signal Amplitude: 40 mV p-p minimum

Outputs: Powered Pulse Output

Type: Square Wave

Frequency Range: 0 to 5 kHz @ Amplitude: 0 to 5V

Loading: 1 kOhm internal pull-up

Variable Voltage Output

Type: Square Wave

Frequency Range: 0 to 5 kHz @ Amplitude: 0 to

Supply Voltage

Loading: 1 kOhm internal pull-up

Open Collector Output

Type: Square Wave

Frequency Range: 0 to 5 kHz

Max. Voltage: 30 Vdc

Max. Current: 125 mA

Max. Power: 0.5 Watts

PICK-OFF SPECIFICATIONS

Type: Reluctance

Resistance: 302 ohms \pm 26%

Inductance: 65 mH

Output: 40mV p-p min. @ min. flow with pre-amp load

CONNECTIONS

Mechanical: Standard - 150, 300, and 600 lb. ANSI R.F. flanges

DIN PN16, PN25, PN40, PN64, PN100

(See Flange Connections Table)

Optional: 900, 1,500 and 2,500 lb. ANSI available

Electrical: Class I, Division 1, Groups C & D, NEMA 4X UL, cUL and CENELEC EEx d II B T6

Transmission Distance:

Without Pre-amp: 20 ft. (6.1 meters)

With Pre-amp: 3,000 ft. (914 meters)

Belden 88442 or equivalent up to 20 ft.

Pressure Drop: 3 psi (20.7 kPa) at maximum flow rate (based on gasoline - meter only).

Weights & Measures:

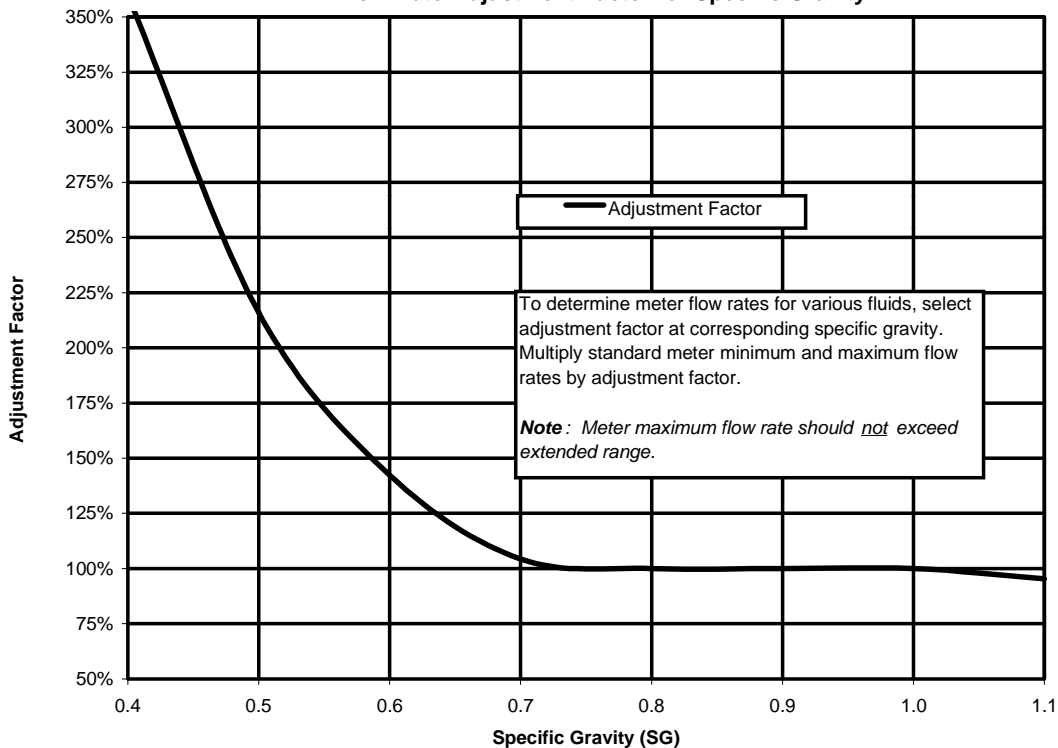
CCA - AV-2264 (Consult factory for specific models)

FLOW RANGE

Products having a specific gravity of 0.7 to 1.0 and a viscosity of 0.3 to 3.0 cst

Size	Standard Flow Range BBL/Hr	Extended Flow Range* BBL/Hr	Standard Flow Range M ³ /Hr	Extended Flow Range M ³ /Hr	Pressure Loss	
					psi	kPa
3"	100 - 1,000	1,300	15.9 - 158	206	3	21
4"	185 - 1,850	2,300	29.4 - 294	365	3	21
6"	420 - 4,200	5,400	66.8 - 667	858	3	21
8"	850 - 8,500	9,500	135 - 1,350	1,510	3	21
10"	1,200 - 12,000	15,000	190 - 1,907	2,384	4	28
12"	1,800 - 18,000	22,000	286 - 2,861	3,497	3	21
16"	2,800 - 28,000	35,000	445 - 4,451	5,564	4	28
18"	4,000 - 40,000	46,000	635 - 6,359	7,313	3	21

Flow Rate Adjustment Factor for Specific Gravity



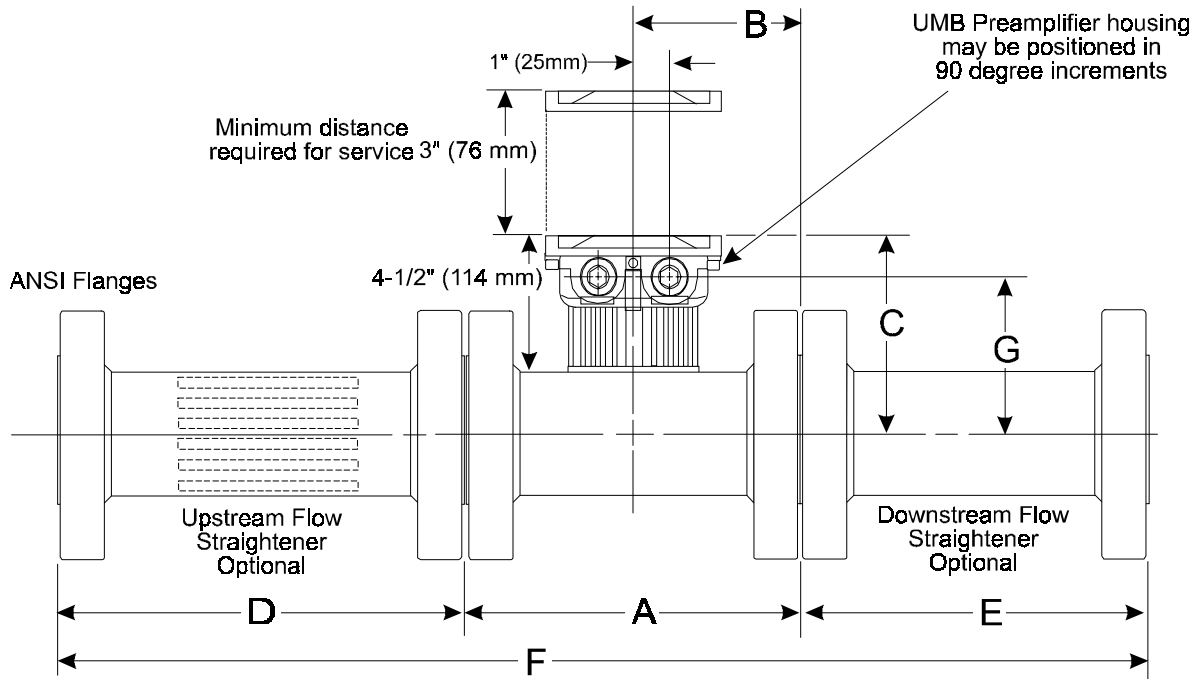
FLANGE CONNECTIONS

MODEL	ANSI Connections	MAXIMUM WORKING PRESSURE @ 100°F		DIN Connections	MAXIMUM WORKING PRESSURE
		Stainless Steel	Carbon Steel		
T03	3", 150 lb. ANSI	275 psi	285 psi	DN 80 PN 40	40 Bar
T03	3", 300 lb. ANSI	720 psi	740 psi	DN 80 PN 64	64 Bar
T03	3", 600 lb. ANSI	1,440 psi	1,480 psi	DN 80 PN 100	100 Bar
T04	4", 150 lb. ANSI	275 psi	285 psi	DN 100 PN 16	16 Bar
T04	4", 300 lb. ANSI	720 psi	740 psi	DN 100 PN 40	40 Bar
T04	4", 600 lb. ANSI	1,440 psi	1,480 psi	DN 100 PN 64	64 Bar
T04	4", 600 lb. ANSI	1,440 psi	1,480 psi	DN 100 PN 100	100 Bar
T06	6", 150 lb. ANSI	275 psi	285 psi	DN 150 PN 16	16 Bar
T06	6", 300 lb. ANSI	720 psi	740 psi	DN 150 PN 40	40 Bar
T06	6", 600 lb. ANSI	1,440 psi	1,480 psi	DN 150 PN 64	64 Bar
T06	6", 600 lb. ANSI	1,440 psi	1,480 psi	DN 150 PN 100	100 Bar
T08	8", 150 lb. ANSI	275 psi	285 psi	DN 200 PN 16	16 Bar
T08	8", 300 lb. ANSI	720 psi	740 psi	DN 200 PN 25	25 Bar
T08	8", 600 lb. ANSI	1,440 psi	1,480 psi	DN 200 PN 40	40 Bar
T08	8", 600 lb. ANSI	1,440 psi	1,480 psi	DN 200 PN 64	64 Bar
T08	8", 600 lb. ANSI	1,440 psi	1,480 psi	DN 200 PN 100	100 Bar
T010	10", 150 lb. ANSI	275 psi	285 psi	DN 250 PN 16	16 Bar
T010	10", 300 lb. ANSI	720 psi	740 psi	DN 250 PN 25	25 Bar
T010	10", 600 lb. ANSI	1,440 psi	1,480 psi	DN 250 PN 40	40 Bar
T010	10", 600 lb. ANSI	1,440 psi	1,480 psi	DN 250 PN 64	64 Bar
T010	10", 600 lb. ANSI	1,440 psi	1,480 psi	DN 250 PN 100	100 Bar
T012	12", 150 lb. ANSI	275 psi	285 psi	DN 300 PN 16	16 Bar
T012	12", 300 lb. ANSI	720 psi	740 psi	DN 300 PN 25	25 Bar
T012	12", 600 lb. ANSI	1,440 psi	1,480 psi	DN 300 PN 40	40 Bar
T012	12", 600 lb. ANSI	1,440 psi	1,480 psi	DN 300 PN 64	64 Bar
T012	12", 600 lb. ANSI	1,440 psi	1,480 psi	C/F	C/F
T016	16", 150 lb. ANSI	275 psi	285 psi	DN 400 PN 16	16 Bar
T016	16", 300 lb. ANSI	720 psi	740 psi	DN 400 PN 25	25 Bar
T016	16", 600 lb. ANSI	1,440 psi	1,480 psi	DN 400 PN 40	40 Bar
T016	16", 600 lb. ANSI	1,440 psi	1,480 psi	DN 400 PN 64	64 Bar
T016	16", 600 lb. ANSI	1,440 psi	1,480 psi	C/F	C/F

SHIPPING WEIGHT AND VOLUME (Approximate)

Size	150 lb. ANSI				300 lb. ANSI				600 lb. ANSI			
	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.	lbs.	Kg.	Cu. Ft.	Cu. Mtr.
3"	60	27.2	1.13	0.032	65	29.5	1.25	0.035	85	38.6	1.25	0.035
4"	60	27.2	1.53	0.043	80	36.3	1.78	0.05	110	49.9	1.93	0.055
6"	90	40.1	2.3	0.065	135	61.2	2.81	0.08	245	111.1	3.17	0.09
8"	140	63.5	3.52	0.1	215	97.5	3.94	0.112	320	145.2	4.62	0.131
10"	235	106.6	5.5	0.156	320	145.2	6.39	0.181	560	254	7.33	0.208
12"	385	174.6	6.42	0.182	510	231.3	9.32	0.264	750	340.2	10.11	0.286
16"	745	337.9	15.17	0.43	990	449.1	15.75	0.446	1370	621.4	18.33	0.52

DIMENSIONS - (For Certified Dimension Prints - Consult Factory)



Size	A		B		C		D		E		F		G	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
3"	10	254	5	127	7 3/4	197	30	762	15	381	55	1,397	6 1/2	165
4"	12	305	6	152	8 1/4	209	40	1,016	20	508	72	1,829	7	178
6"	14	356	7	178	9 5/16	236	60	1,524	30	762	104	2,642	8 1/16	205
8"	16	406	8	203	10 5/16	262	80	2,032	40	1,016	136	3,454	9 1/16	231
10"	20	508	10	254	11 3/8	289	100	2,540	50	1,270	170	4,318	10 1/8	258
12"	24	610	12	305	12 3/8	314	120	3,048	60	1,524	204	5,182	11 1/8	283
16"	32	813	16	406	14	356	160	4,064	80	2,032	272	6,909	12 3/4	324



Daniel Division Headquarters, Houston, Texas, USA, Telephone: (713) 467-6000, Fax: (713) 827-4360
 Daniel, Brooks Petroleum Operations, Statesboro, Georgia, USA, Telephone (912) 489-0200, Fax (912) 489-0430

OFFICES AND REPRESENTATIVES WORLDWIDE

www.danielind.com