

Flowmeter with Encoder Assembly

Description

See Figure 1. The Nordson flowmeter is used in Pro-Flo and other high-pressure liquid flow applications where the process pressure is above 68.9 bar (1000 psi).

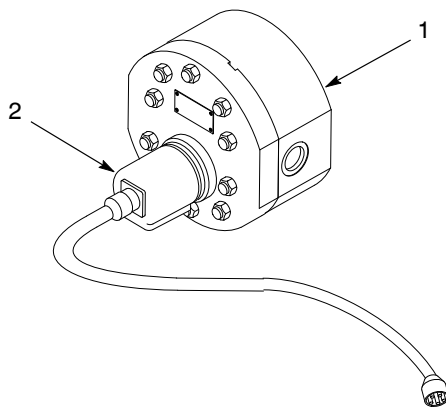


Figure 1 Typical Flowmeter and Encoder Assembly

- 1. Flowmeter
- 2. Encoder Assembly

See Figure 2. The positive displacement flowmeter uses two rotating impellers driven by flowing liquids to generate a pulsed output signal. Magnets imbedded in the impellers turn an electro-optic encoder which creates a signal for remote data collection and digital display.

The electro-optic encoder increases the standard resolution of the flowmeter for monitoring fluids with high viscosity and low flow rates.

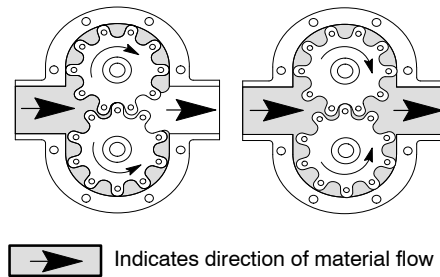


Figure 2 Flowmeter Operation

Parts

To order parts, call the Nordson customer service center or your local Nordson representative.

The following flowmeters are available:

Part	Description
1018017	Flowmeter, 1/4-in.
320834	Flowmeter, 3/8-in., nitrided
320829	Flowmeter, 3/8-in., high temperature, nitrided
1002557	Flowmeter, 1/2-in., nitrided
1003025	Flowmeter, 1/2-in., high temperature, nitrided

Encoder Assemblies

Refer to this table when ordering encoder assemblies:

Order this encoder assembly...	For use with this flowmeter (s)...
1018245: Encoder assembly, 1/4-in.	1018017: Flowmeter, 1/4-in.
220342: Encoder assembly	320834: Flowmeter, 3/8-in., nitrided 1002557: Flowmeter, 1/2-in., nitrided
331567: Encoder assembly, high temperature	320829 Flowmeter, 3/8-in., high temperature, nitrided 1003025 Flowmeter, 1/2-in., high temperature, nitrided

Service Kits

See Figure 3. Flowmeters have either pressed or screw-in shafts. Refer to the applicable kit list:

- *Pressed Shaft Flowmeters*
- *Screw-In Shaft Flowmeters*

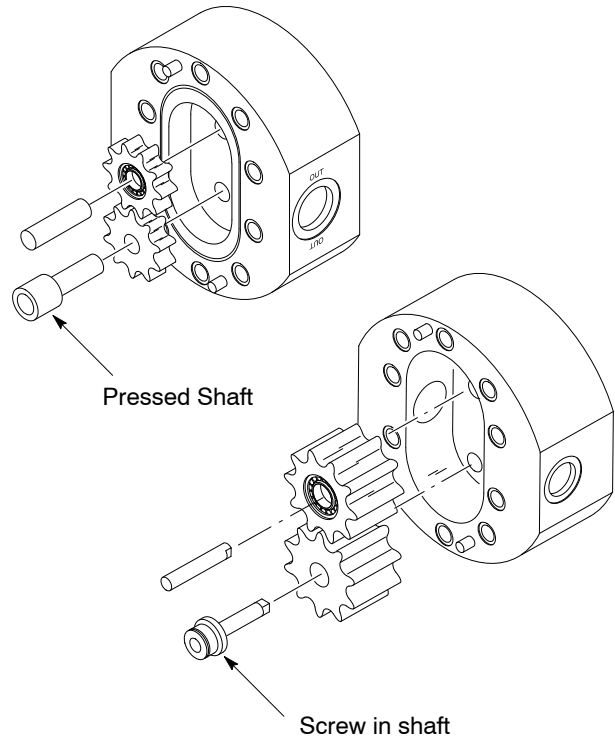


Figure 3 Flowmeter Shaft Types

Pressed Shaft Flowmeters

See Figure 4 and refer to the following parts lists.

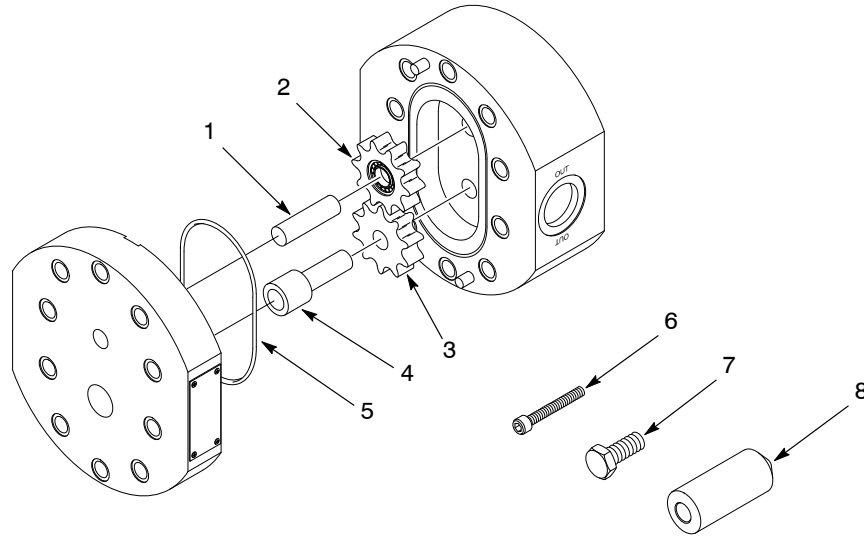


Figure 4 Typical Pressed Shaft Flowmeter

Refer to this table when ordering kits:

Pressed Shaft Flowmeter Kits	
To repair flowmeter...	Order kit...
320834: Flowmeter, 3/8-in., nitrided	320934: Kit, service, flowmeter, 3/8-in., nitrided
320829: Flowmeter 3/8-in., high resolution, heated, nitrided	1006097: Kit, service, flowmeter, 3/8-in., high resolution, heated, nitrided
1002557: Flowmeter, 1/2-in., high resolution, nitrided	1004440: Kit, service, flowmeter, 1/2-in., high resolution, nitrided
1003025: Flowmeter, 1/2-in., high resolution, heated, nitrided	1004442: Kit, service, flowmeter, 1/2-in., high resolution, heated, nitrided

Each kit contains the following parts:

Pressed Shaft Flowmeter Kits			
Item	Description	Quantity	Note
1	Shaft, idler	1	
2	Impeller, non-magnetic, idler	1	
3	Impeller, magnetic,	1	
4	Shaft	1	
5	O-ring, case	1	
6	Cap screw, socket head 1/4-20 x 1.25	1	A
7	Cap screw, hex head 5/8-18 x 1.5	1	A
8	Bushing, drive, aluminum	1	A

Note A: Use as a tool.

Screw-In Shaft Flowmeters

See Figure 5 and refer to the following parts lists.

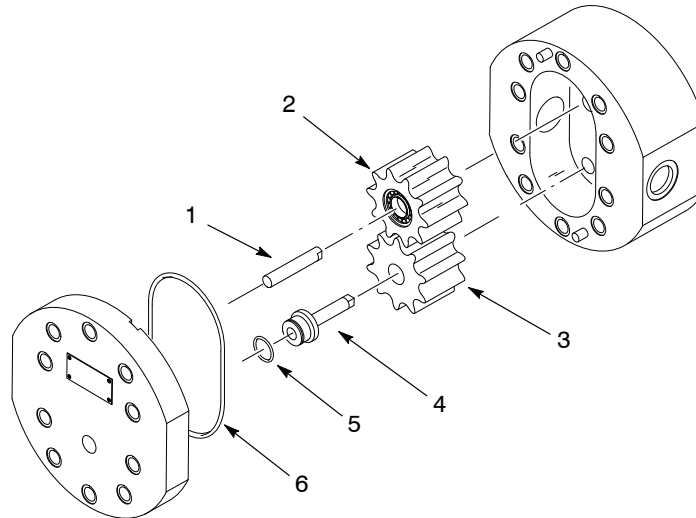


Figure 5 Typical Screw-In Shaft Flowmeter

Refer to this table when ordering kits:

Screw-In Shaft Flowmeter Kits	
To repair flowmeter...	Order kit...
1018017: Flowmeter, 1/4-in.	1019489: Kit, service, flowmeter, 1/4-in.

Each kit contains the following parts:

Screw-In Shaft Flowmeter Kits		
Item	Description	Quantity
1	Shaft, idler	1
2	Impeller, non-magnetic, idler	1
3	Impeller, magnetic	1
4	Shaft	1
5	O-ring, encoder shaft	1
6	O-ring, case	1

Specifications

This section describes the specifications and dimensions for the flowmeter and encoder assembly.

General Specifications

Item	Specification
Operating Pressure	275.7 bar (4000 psi) maximum
Turndown Ratio	120:1 (based on maximum rated flow)
Reference Accuracy	±0.5% of rate over upper 80% of full span, typical NOTE: Each meter is individually calibrated on a ballistic calibrator in the flow lab using liquid that duplicates the specific application.
Linearity	±0.5% of rate over upper 80% of full span, typical up to ±0.1% of rate over full turndown range with enhanced technical conditioning

Electro-Optic Encoder

Item	Specification
Pulses per Revolution	1000
Supply Voltage	7.5–24 Vdc
Current Requirements	TTL: 200 mA max, 150 mA typ CMOS: 150 mA max, 125 mA typ
Output	7.5–24 Vdc square wave pulse, standard
Output ICs	7406 with pull-up resistor
Connector	MS3102R14S-5P
Environmental Temperature	0–70 °C (32–158 °F) 121 °C (250 °F) rating for bearing style impellers 70 °C (158 °F) rating for encoder without standoff

Flowmeter

Nominal Size in.	Maximum Flow Rate l/min (gal/min)	Standard Connection	Recommended Mesh Size	Bolt Torque N•m (ft-lb)	Weight kg (lb)
1/4	11.4 (3.0)	5/8 in. SAE 10	100	21.7 (16.0)	4.3 (9.5)
3/8	22.7 (6.0)	5/8 in. SAE 10	80	40.6 (30.0)	11.3 (25.0)
1/2	45.4 (12.0)	5/8 in. SAE 10	80	40.6 (30.0)	10.0 (22.0)
1	94.6 (25.0)	1 in. SAE 16	60	67.8 (50.0)	20.4 (45.0)
1 1/2	189.3 (50.0)	1 1/2 in. NPT	60	94.9 (70.0)	24.9 (55.0)

Dimensions

See Figure 6.

Nominal Size	A mm (in.)	B mm (in.)	C mm (in.)	D mm (in.)
1/4-in.	101.60 (4.00)	25.40 (1.00)	47.00 (1.85)	107.95 (4.25)
3/8-in.	137.16 (5.40)	25.40 (1.00)	61.72 (2.43)	152.40 (6.00)
1/2-in.	137.16 (5.40)	25.40 (1.00)	61.72 (2.43)	152.40 (6.00)
1-in.	177.80 (7.00)	25.40 (1.00)	96.52 (3.30)	190.50 (7.50)
1 1/2-in.	203.20 (8.00)	28.60 (1.13)	99.30 (3.91)	215.90 (8.50)

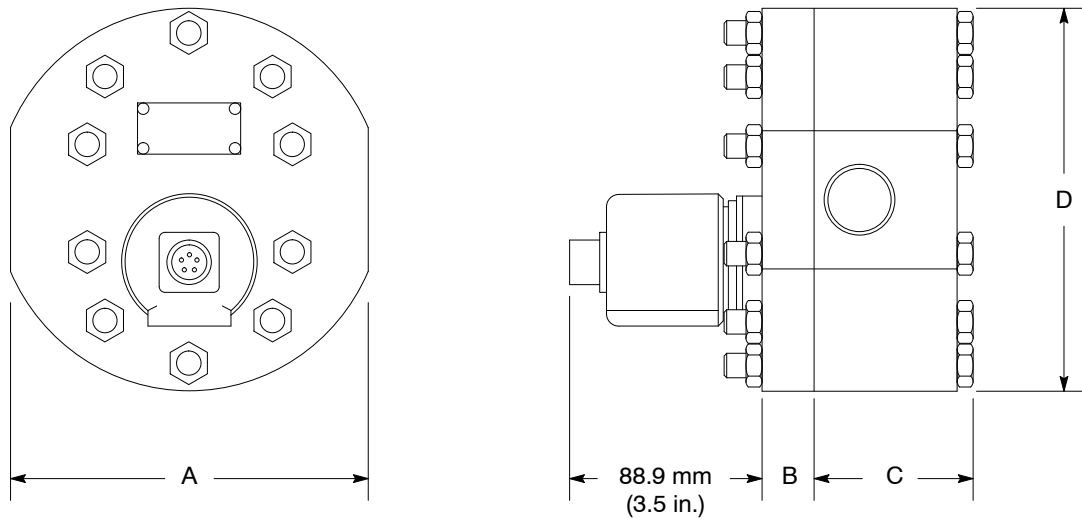


Figure 6 Flowmeter Dimensions

Note: Dimensions for the electro-optic encoder assembly are included within the figure.

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