

ROOTS TYPE POSITIVE DISPLACEMENT FLOW METER JA SERIES



JA (Standard type)



JAR (Zero Rest type)



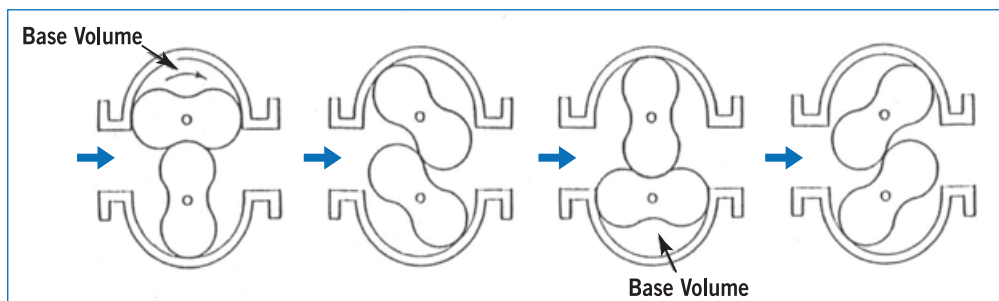
JAH (High Temperature type)



JAT (Pulse Transmitter type)

Principle

The flow meter was designed a special two rotary of Roots for measuring the volume of liquid fluid when the fluid running into the meter pushes two Roos. The driving roots drive a magnet coupling with a direct gear. Then the magnet coupling transmit to the totalizing counts with a gear too. It comes to measure the amount of the fluid which pass to the meter.



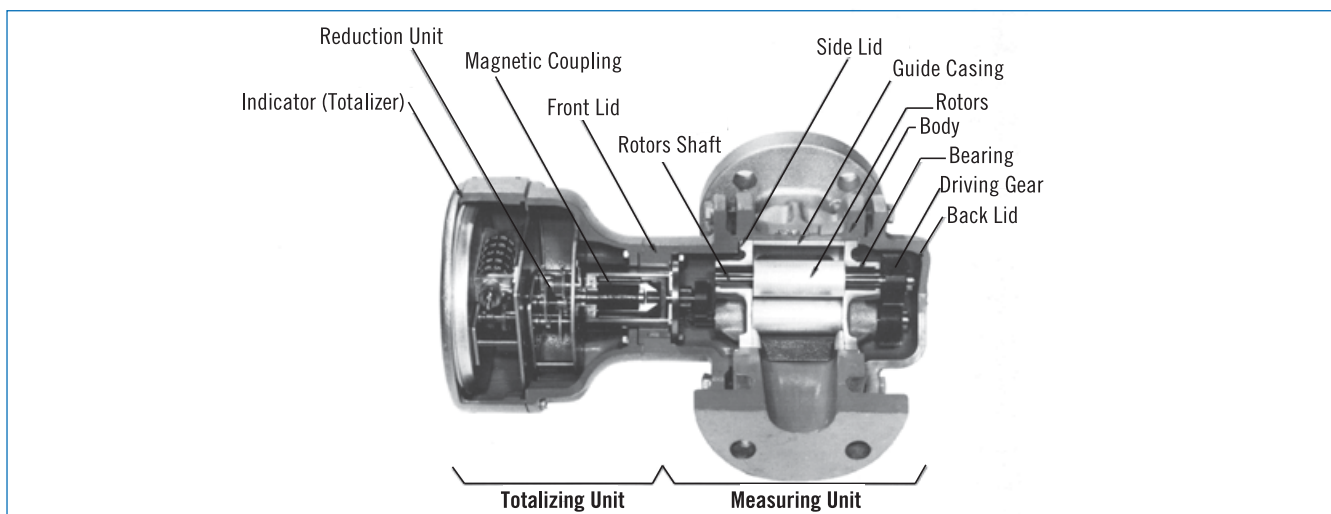
Technical Data

- **Petroleum and Petrochemical:** For process control
 - **Chemical:** Process control; shipment of products; intake of materials
 - **Pharmaceutical & Paint:** Mixing of various types; quality control; shipment of products
 - **Food & Fat:** Mixing of ingredients, tank-to tank transfer, shipment of products
 - **Stell making & Shipbuilding:** Measuring fuel consumption of burner, diesel engine fuel
- Maximum Working Pressure:** 10 kg/cm²
Maximum Working Temperature: 120°C (usual model); only JAH type up to 200°C
Material: Csat Iron, Carbon Steel, SS304, SS316 are available, please refer to the Material List
Totalizer Counter: 6 digital
Zero Rest Counter: 5 digital
Accuracy: ±0.5%
Signal Output (NPN): 100 cc/pulse; 1 liter/pulse; 10 liter/pulse available on request
 (If you select JAT pulse transmitter type, please refer to the following table for connection instructoin.)

Signal	Cable Wire	Max. Transfer Distance	Function / Color
Pulse NPN	3 Wires ø0.75mm x 3C	60M	+24/+12 VDC power input.... / Brown Out Signal..... / Black 0V (GND)..... / Blue



Constructoin Diaphragm



Material List of Measuring Unit



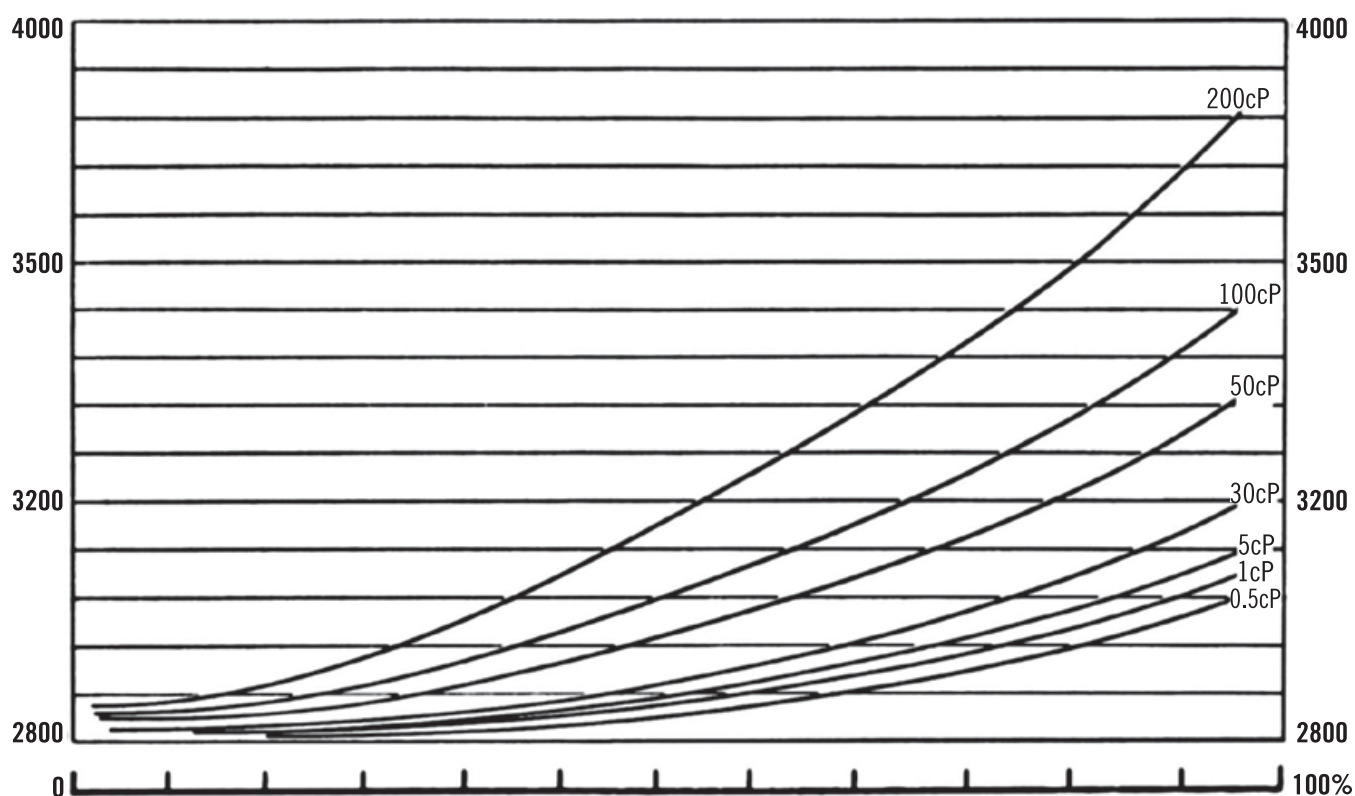
Selection 1: Body Material

Option Item	Body Material
1	Cast Iron
2	Carbon Steel
3	SS304
4	SS316

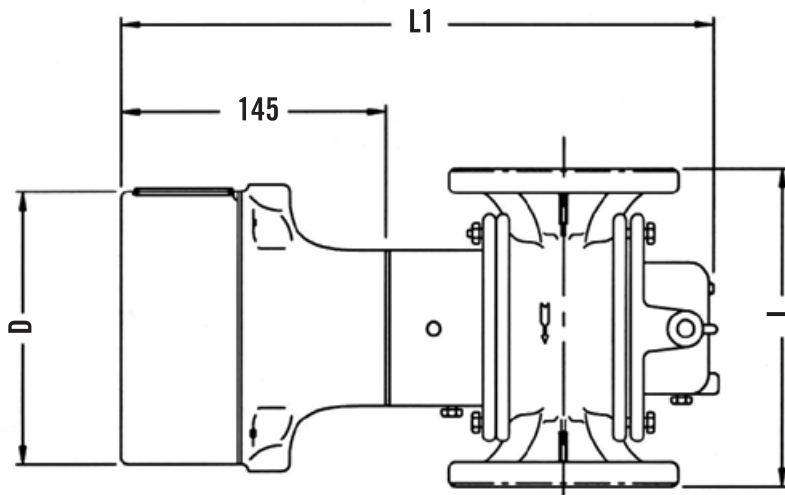
Selection 2: Inner Material

Option Item	Inner Housing	Roots	Roots Shaft	Driving Gear	Other
A	Bronze	Aluminum	S.S	SS304	SS304
B	Bronze	Bronze	S.S	SS304	SS304
C	SS304	SS304	SS304	SS304	SS304
D	SS316	SS316	SS316	SS316	SS316

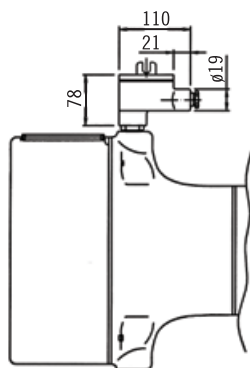
Pressure Loss Curves



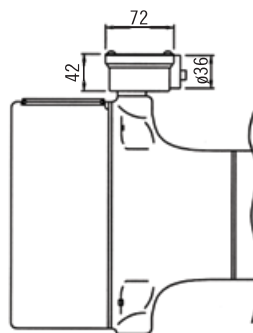
Dimensions



Standard Type
(For JA / JAR Series)



Explosion Proof Type
(For JAT Series)



Weather Proof Type
(For JAT Series)

Dimensions for Standard Flow Range-mm

Size	D	L	L1 (Note. 1)
1"JA-25A	180	200	325
1½"JA-40A	180	200	325
2"JA-50A	180	250	375
3"JA-80A	180	325	430

Dimensions for High Flow Range-mm

Size	D	L	L1 (Note. 1)
1½"JA-40A	180	250	375
2"JA-50A	180	325	430

Note. 1

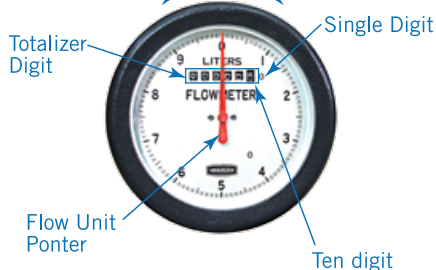
Length "L1" has to add 85mm for JAH (high temperature) type.



High Temperature type
(For JAH Series)

Function

Indicating diameter can be rotated for 90°, 180° and 360°



Standard Type
Totalizer Digit & Flow Unit Pointer

– For the single-digit indication:

When the flow meter starts using, the flow unit pointer will be running clockwise from "0", if the flow unit pointer has pointed to 3, it means the flow rate is 3 Liter.

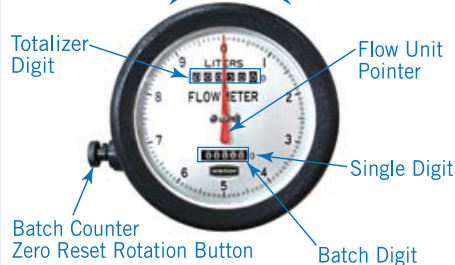
– For the ten-digit indication:

If the flow unit pointer has passed the scale "0,1,2.. 9 to 0" by running clockwise in a circle, the ten-digit will be shown 1, and it means the flow rate is 10 Liter.

– For the rest indication:

the rest may be deduced by analogy.

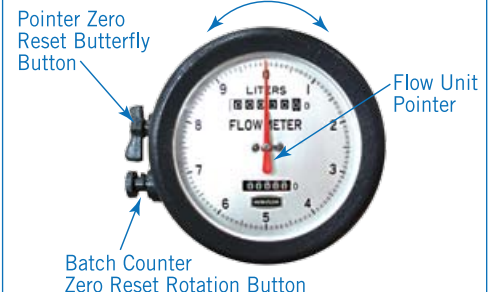
Indicating diameter can be rotated for 90°, 180° and 360°



Zero Reset Type
With Batch Counter

- Totalizer digit cannot be reset to zero.
- Batch digit can be reset to zero.

Indicating diameter can be rotated for 90°, 180° and 360°



Zero Reset Type
With Batch Counter & Pointer

- Pointer zero reset & Batch counter zero reset (only for zero reset JAR type)

When the pointer pass or stays on the scale of 1, the first number of batch will be shown 1, and it means the flow rate is 1 Liter. But, if the flow rate < 1 Liter, the first number of batch digit remains at 0 location. The maximum flow rate will be 99999 Liter < 100 m³.

Flow Range Table (L/H- liter per hour)

			Water		Chemicals	Petrochemicals			
Type number	Diameter (mm)	viscosity terms	80℃ less normal temp. water	80~120℃ high temp. water	Concentrated sulfuric acid, nitric acid	Plasticizer 50cp	Tar 500cp	Polyester 2000cp	
JA	25	Normal	Intermittent	800~ 3,500	800~ 3,000	800~ 3,000	800~3,500	800~4,000	800~4,000
			Continuous	800~ 2,500	800~ 2,000	800~ 2,500	800~3,000	800~3,000	800~3,000
			Maximum	5,500	4,000	4,000	4,000	4,500	4,500
JA	40	Normal	Intermittent	1,000~ 5,000	1,000~ 4,000	1,000~ 6,000	1,000~ 6,000	1,000~ 6,000	1,000~ 5,000
			Continuous	1,000~ 4,000	1,000~ 3,000	1,000~ 5,000	1,000~ 5,000	1,000~ 5,000	1,000~ 4,000
			Maximum	6,000	5,000	7,000	7,000	7,000	5,500
JA	50	Normal	Intermittent	1,500~ 9,000	2,000~ 8,000	1,000~ 6,000	1,000~ 12,000	1,000~ 12,000	1,000~ 10,000
			Continuous	1,500~ 7,000	2,000~ 6,000	1,000~ 5,000	1,000~ 10,000	1,000~ 10,000	1,000~ 7,500
			Maximum	10,000	9,000	7,500	15,000	15,000	120,000
JA	80	Normal	Intermittent	3,500~ 25,000	5,000~ 21,000	3,500~ 21,000	3,000~ 22,000	3,000~ 22,000	3,000~ 20,000
			Continuous	3,500~ 20,000	5,000~ 18,000	3,500~18 ,000	3,000~ 20,000	3,000~ 20,000	3,000~ 18,000
			Maximum	30,000	25,000	25,000	25,000	25,000	22,000

				Petroleum							
Name of applicable fluid (reference)				L.P.G.	Gasoline	Kerosene	Light oil A-heavy oil (high temp)	A-heavy oil	C-heavy y oil	C-heavy oil	High viscosity fluid
Type number	Diameter (mm)	viscosity terms		0.1 C P~	0.5~	2	5~	10~	150~	500~	2000~
JA	25	Normal	Intermittent	1,000~ 3,500	600~ 5,000	500~ 5,000	500~ 6,000	500~ 6,000	500~ 6,000	500~ 5,000	500~ 4,500
			Continuous	1,000~ 3,000	600~ 4,000	500~ 4,000	500~ 5,000	500~ 5,000	500~ 5,000	500~ 4,000	500~ 3,500
		Maximum		5,000	6,500	6,500	7,000	7,000	7,000	7,000	6,000
JA	40	Normal	Intermittent	1,000~ 4,500	1,000~ 5,500	800~ 6,000	500~ 6,000	500~ 7,000	500~ 7,000	500~ 6,000	500~ 5,500
			Continuous	1,000~ 3,500	1,000~ 4,000	800~ 5,000	500~ 5,000	500~ 6,000	500~ 6,000	500~ 5,000	500~ 4,500
		Maximum		6,000	6,000	7,000	7,000	8,000	8,000	8,000	7,000
JA	50	Normal	Intermittent	2,000~ 10,000	2,000~ 10,000	1,500~ 12,000	800~ 12,000	800~ 12,000	1,000~ 12,000	1,000~ 12,000	1,000~ 10,000
			Continuous	1,000~ 8,000	2,000~ 8,500	1,500~ 10,000	800~ 10,000	800~ 10,000	1,000~ 10,000	1,000~ 10,000	1,000~ 9,000
		Maximum		12,000	12,000	13,000	13,000	13,000	12,000	12,000	12,000
JA	80	Normal	Intermittent	3,500~ 20,000	3,000~ 20,000	3,000~ 22,000	3,000~ 23,000	3,000~ 23,000	3,000~ 23,000	3,000~ 20,000	3,000~ 19,000
			Continuous	3,500~ 17,000	3,000~ 17,000	3,000~ 19,000	3,000~ 20,000	3,000~ 20,000	3,000~ 20,000	3,000~ 19,000	3,000~ 17,000
		Maximum		22,000	22,000	25,000	27,000	27,000	27,000	27,000	25,000

Note: If the size is bigger than 80mm, please consult the factory.

Ordering Information

[illegible]