FS

NITTOSEIKO
Taking new steps forward together

Flow Meter for Food

Food Meter

INSTRUCTION MANUAL

MNV17151 25.07

Please keep this instruction manual in a place where you can take it out and refer to it as soon as it is needed. Also, when reselling or transferring this product, please also attach this instruction manual to the product.
For inquiries about this flow meter and ordering parts, be sure to inform us of the model number and the serial number displayed on the name plate.

[General precautions for installation of flowmeter]

1. Flushing

Before installing the flowmeter, remove dust, foreign matters, welding slag, etc. due to piping work sufficiently.

2. Beware of excessive flow rates

In the early stage of operation, the pipeline air is discharged at a high speed. Since the flowmeter also works with air, open the valve slowly while watching the movement of the flowmeter to protect the rotor from being damaged by a high-speed operation.

* Piping procedure

1) Place of installation

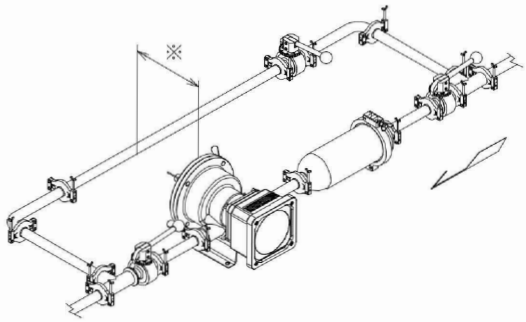
(a) Place without corrosive gas and dust.
(b) Place with little vibrations and pressure fluctuations.
(c) Place with low humidity and protected against rain or dewdrops.
(d) Place easy for inspection.

2) Piping procedure

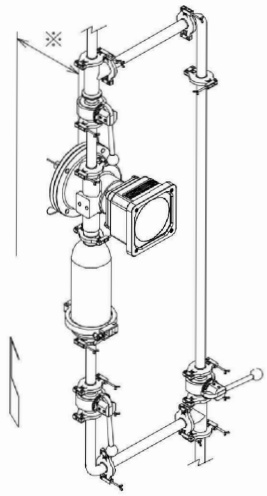
(a) Install in such a way that the flowmeter may not be subject to any piping stress.
(b) Install on the outlet side of the pump.
(c) Dispose the strainer on the upstrem side and fit the arrow mark given on the lateral face of the flowmeter to the direction of inflow of the fluid.
(d) Mount in the posture specified on the caution name plate.
(e) When using the flowmeter at a tank head, provide a head larger than the pressure loss of the flowmeter.

3) Example of piping installation

Horizontal piping
(Vertical installation)



Vertical piping



SIZE	※ mm
25	200
40	280
50	350
65	350
80	480

The mark * indicates a space necessary for disassembling and inspection.

4) Mounting of packing

When using a liquid packing for the piping installation, take care to prevent the liquid packing, etc. from getting into the pipe and flowing into the flowmeter.

* Operating procedure

1) Precautions to take before the start of operation

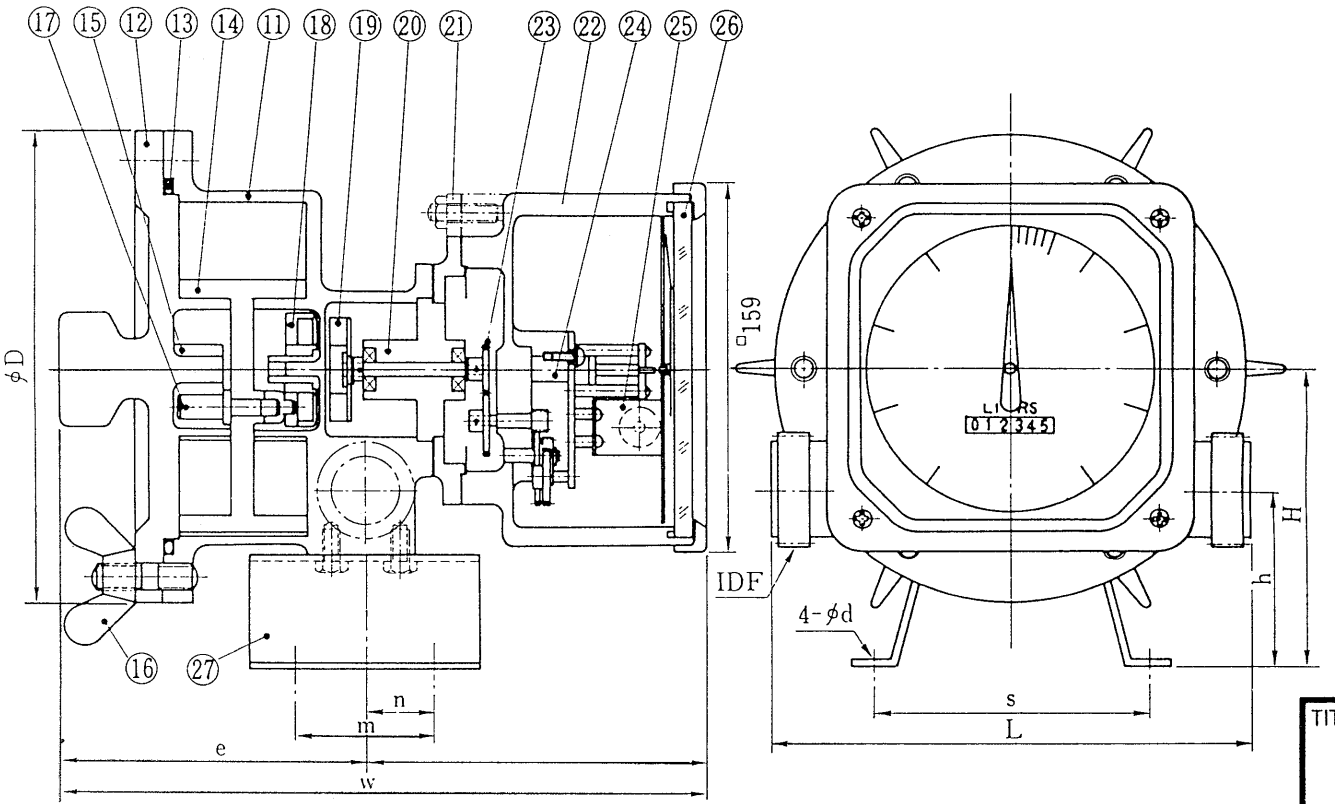
Be sure to pass the fluid in the bypass pipe first. After thus washing away the dust, scale, etc. from inside the piping, open the valve on the inflow side gradually, open the valve on the outflow side and then close the bypass valve.

2) Type of fluid, temperature and flow rate

Use with the specifications indicated on the name plate attached to the terminal box.

SIZE	L	H	h	W	e	f	D	s	m	n	d
25	190	90	51	263	96	167	140	70	60	30	9
40	210	130	77	307	135	172	204	96	90	37	12
50	270	195	115	346	169	177	262	160	120	42	12
65	270	195	115	346	169	177	262	160	120	42	12
80	340	215	130	417	239	178	328	240	130	26	18

mm



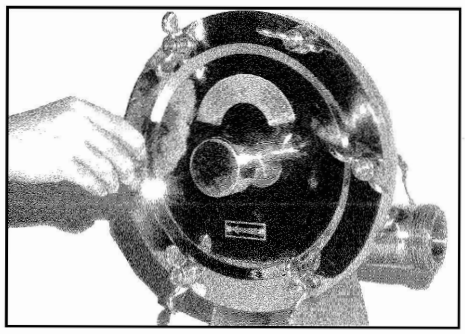
NO.	NAME	MATERIAL	Q'TY
27	Stand	SUS304	1
26	Counter Panel	Plastic	1
25	Numeral Wheels	Plastic	7
24	Reduction Gear Unit	C5191P	1
23	Spare Inter-changeable Gear	C5191P	2
22	Dial Case	A5052P	1
21	Connecting Spacer	A5052P	1
20	Magnet Bearing	C3604BD	1
19	Driven Magnet	Ferrite	1
18	Main Driving Magnet	Ferrite	1
17	Rotor Shaft	SUS304	1
16	Wing Nut	SUS304	4(6)
15	Bearing	Fluoro Resin	1
14	Rotor	Refer to spec.sheet	1
13	Body O-Ring	Refer to spec.sheet	1
12	Measuring Chamber Lid	Refer to spec.sheet	1
11	Body	Refer to spec.sheet	1

PARTS LIST

TITLE	FOOD METER			TYPE	AO	
⚠1			DWG.	H.KIMURA	SCALE	f
⚠2			CHK.		DATE	'91 2.4
⚠3			APP.			
Nitto	NITTO SEIKO CO.,LTD.		DWG. No.	AO-002E		

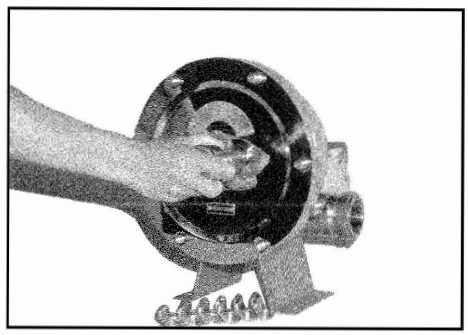
AS-010

* Maintenance and disassembling of flowmeter

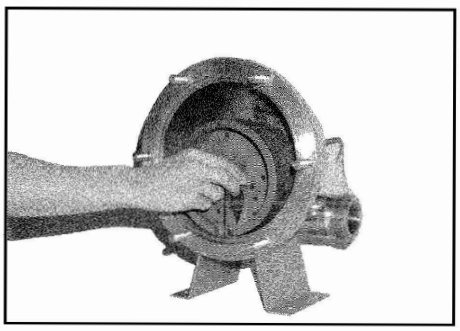


1) Release pressure from the flowmeter by either closing the valves on both sides of the flowmeter or turning off the pump.

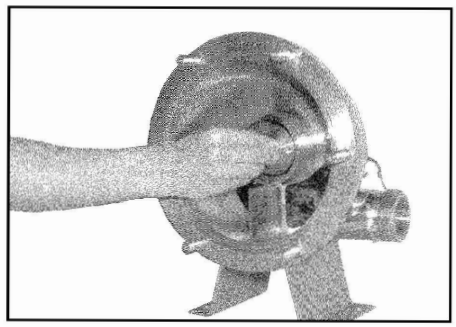
2) Loosen and remove the wing nut (16) on the lid of the flowmeter.



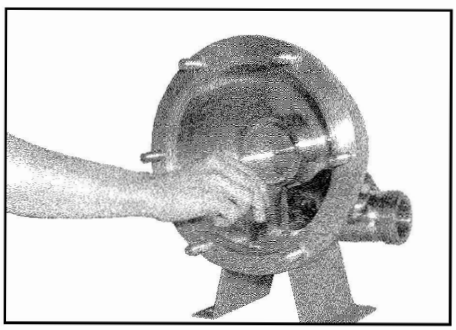
3) Hold the handle of the measuring chamber lid (12) and extract the measuring chamber lid slowly. In that case, take good care not to let drop the lid since it is rather heavy.



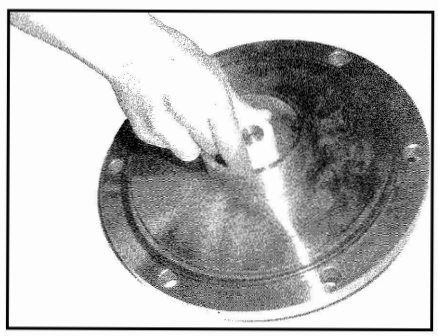
4) Extract the rotor (14). In that case, take good care not to let drop the rotor since it is a precision part.



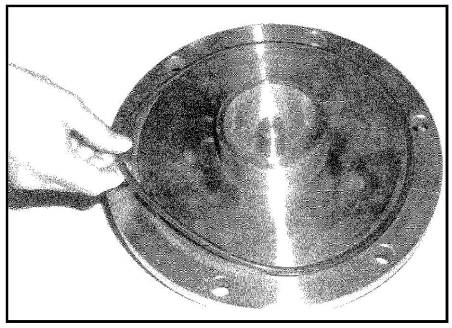
5) Extract the main driving magnet set (18).



6) Extract the partition wall.



7) Remove the bearing (15).



8) Take out the O ring (13) carefully from the measuring chamber lid (12) so that it may not be damaged.

All the parts of the liquid end unit are disassembled with the above operations.

[Cleaning]

Clean the flowmeter body (11) in this state. When sterilizing with hot water, etc., set the measuring chamber lid (12) and the O ring (13) again and feed the liquid. Sterilize the rotor (14), the main driving magnet set (18) and the bearing (15) with clorine water at 200 ppm or so.

[Caution]

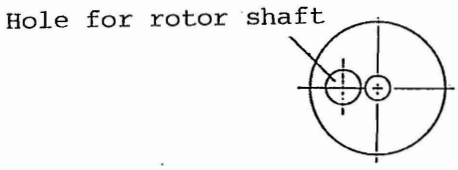
When using hot water, etc., clean at a temperature no higher than 100°C for no more than 30 minutes.

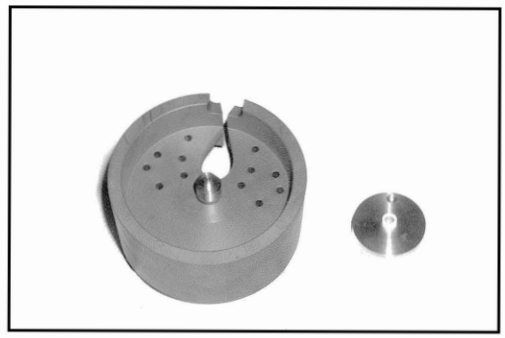
[Assembling]

Assemble in the order opposite to that of disassembling.

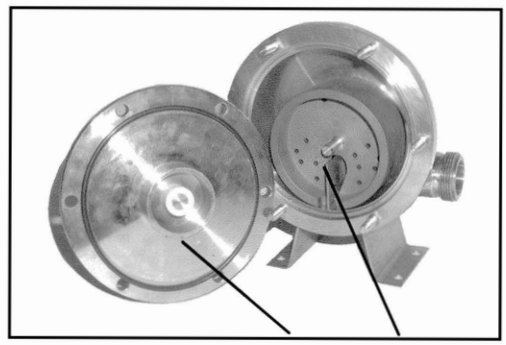
Cautions:

1. Set the tip of the rotor shaft (17) correctly in the hole of the main driving magnet (18) as shown in the drawing on the right.





2. When setting the measuring chamber lid (12), fit the partition wall groove of the measuring chamber lid to the partition wall as shown in the drawing on the right.



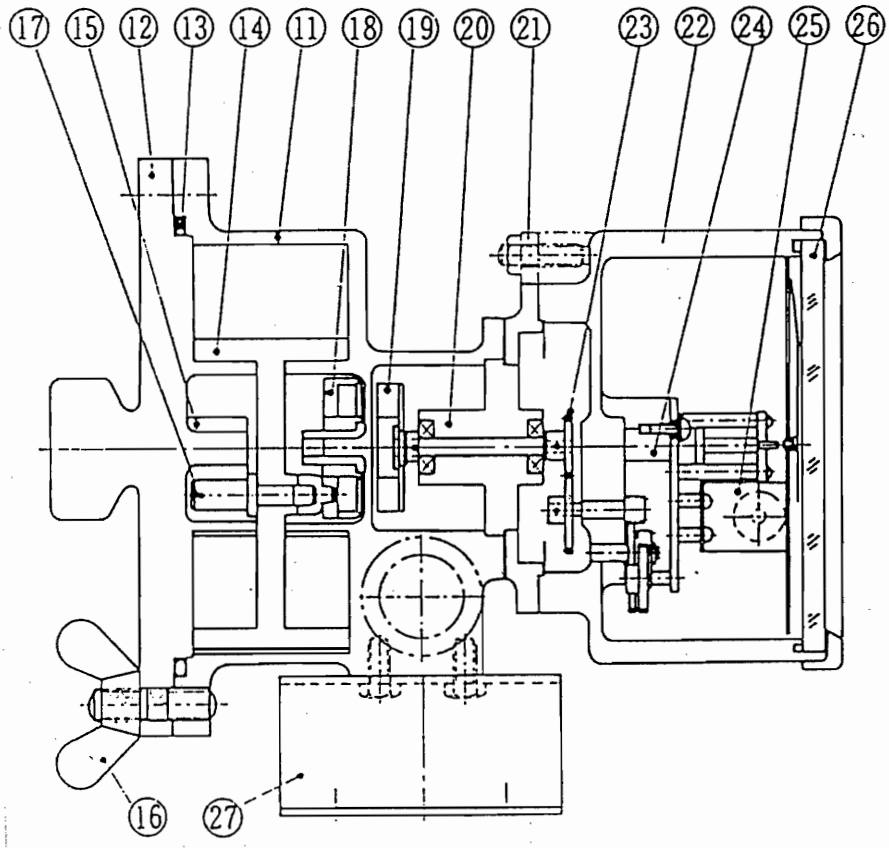
3. Tighten well the wing nut (16).

4. Take good care to absolutely avoid penetration of foreign matters, etc. into the flowmeter at the time of disassembling and assembling.

* Cause of troubles and countermeasures

Symptom	Cause		Countermeasure
The totalizing counter makes no indication. (The flowmeter does not work.)	Is the flow rate proper?	Is the bypass valve closed?	Check the piping system.
		Is there a rise of inlet pressure?	
		Is the strainer not clogged?	
The actual quantity is larger than the indicated value. ((-) instrumental error)	Does the indicator turn in itself? (Turn the gear by hand.)	Is there no blocking of bearing?	Remove and disassemble the indicator for inspection.
		Is there no wear or corrosion?	
		Is there no loose screw?	
	Does the gear just over the body turn if you feed a fluid? (Remove the dial unit.)	Is there no blocking or crystallization?	Disassemble and inspect the measuring unit.
		Is there no dust, scale or rust?	
		Is there no melting or cracking of the rotor?	
The actual quantity is smaller than the indicated value. ((+) instrumental error)	Is there no penetration of air?	Is there no air at the start or at the end of the measurement?	Check the piping system.
		Is there no production of air?	
	Is the measuring method proper?	$\frac{I - Q}{I} \times 100(\%)$ I: Indicated value Q: Actual quantity	Check the name plate on the flowmeter.
		Are measured liquid, temperature and mounting posture conformable to the specifications?	

Structural drawing



11	Body
12	Measuring chamber lid
13	Body O-ring
14	Rotor
15	Bearing
16	Wing nut
17	Rotor shaft
18	Main driving magnet
19	Driven magnet
20	Magnet bearing
21	Connecting spacer
22	Dial case
23	Spare interchangeable gear
24	Reduction gear unit
25	Numeral wheels
26	Counter panel
27	Stand

Note) This drawing indicates the structure of the AO type.
The measuring unit is common to all types.

Period and scope of warranty

The warranty period of the supplied instrument shall be one year after delivery. However, if the supplier attends the installation, test run and adjustment works, the warranty period shall be one year after the end of those works.

In case any trouble is produced during the warranty period for a cause attributable to the supplier's responsibility, its repair and supply of replacement parts will be provided free of charge. However, in case any of the following items applies, the handling of the trouble will be exclused from the scope of application of this warranty:

(a) Trouble due to improper handling or use by the user.

(b) Trouble resulting from somewhere other than the instrument.

(c) Trouble due to modification or repair made by someone other than the supplier.

(d) Remarkably worn parts.

(e) Case of natural disaster.

For any inquiry about this flowmeter or placing of a parts order, please be sure to specify the type and the equipment No. indicated on the name plate.

Product warranty

The products and specifications described in this document are subject to change (including specification change and production termination) without notice for product improvement. When you consider using or ordering the product described in this document, please contact us as appropriate to confirm that the information described in this document is the latest.

This product is manufactured and inspected under the appropriate quality control as an industrial instrument, and delivered. However, failure may occur due to an unexpected cause. When this product is used for process control that may cause serious problems in terms of safety, safety can be achieved by duplicating the control system, such as adding equipment that performs the same function in addition to this product. Acceptance inspection will be conducted promptly for the purchased product, and with regard to the handling before or during the acceptance inspection of this product, please give due consideration to management and maintenance.

Warranty period

The warranty period for this product is one year after delivery.

The warranty period shall start from the date of the form (delivery note, installation commission confirmation, receipt).

Scope of warranty

If a failure or defect is found in our product during this warranty period due to our responsibility, we will provide replacement products, or replace or repair the defect part free of charge.

However, if any failure or damage falls under any of the following articles, this warranty does not apply.

1. **When it originates in the specification and the standard specified you, your handling method, etc.**
2. **In the case where the change in structure, performance, specifications, etc which carried out after purchase or delivery, and in which we are not involved.**
3. **When it is due to a phenomenon that cannot be foreseen by the technology that has been put into practical use on or before the time of purchase or contract.**
4. **When used out of range of conditions and environment described in catalogs and specifications.**
5. **In case where this product is used incorporated into your device and the damage could be avoided by the device function which should have in general concept.**
6. **Due to natural disasters or force majeure**
7. **Consumables such as batteries and relays, and optional items such as cables.**

In addition, the warranty mentioned here is limited to the warranty of the product purchased or delivered, and the damage caused by the failure of this product or damage is excluded.

NITTOSEIKO CO.,LTD.

Control System Division Global Sales Section
Website: https://global.nittoseiko.com/

【Website】 【Inquiry Form】