

# STAINLESS PRESSURE TANK

Products  
Guide

Stainless  
Tanks

Tank  
Accessories

Custom Made  
Tanks

Stirrer  
Units

 *Total Dispense System*  
**Unicontrols Co.,Ltd.**

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 **Unicontrols Co.,Ltd.**

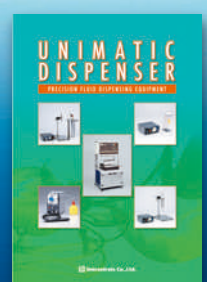
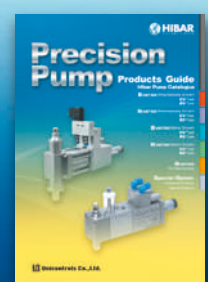


# World's leading Japan manufacturer in Stainless Tanks...

Established in 1976, Unicontrols Co.,Ltd. has been focusing on research and development of new products to keep up with the latest technology and trend.  
Realising the potential and demand for stainless steel tanks, we have provided a standard series of tanks with various capacity and designs kept in stock available upon order.  
We pride ourselves in providing high quality stainless steel tanks with the state-of-the-art equipment coupled with our know-how knowledge and expertise.  
Our tanks are in compliance with the rules & regulations established by Japanese Industrial Standards, and we have established a factory in China to manufacture tanks which are in compliance to China's rules & regulations.  
Moreover, we has obtained ISO 9001 certification in July 2014 with regards to the quality control for ISO (International Organization for Standardization) in the Niigata Factory which is the manufacturing location for stainless steel tanks.  
We will continue to seek improvements base on ISO principle and strive for the best to satisfy our customers.



Other catalogues available...



Hibar Dispensing Pumps    Fluid Dispensing Equipments  
Please contact us for the above catalogues.

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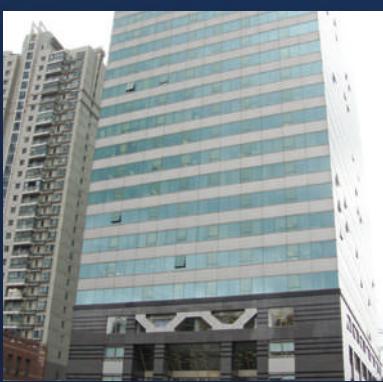
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Shanghai Subsidiary (Sales Office)



Taiwan Subsidiary (Sales Office)



Singapore Subsidiary (Sales Office)



Niigata Factory





# Tank Selection...

## Point 1 Standard Tank or Custom Made Tank

The first step to selecting a tank is identifying your requirements... Do you want to use standard tanks? Do you want to add tank accessories for the tank? or Customise the tank according to your requirements?

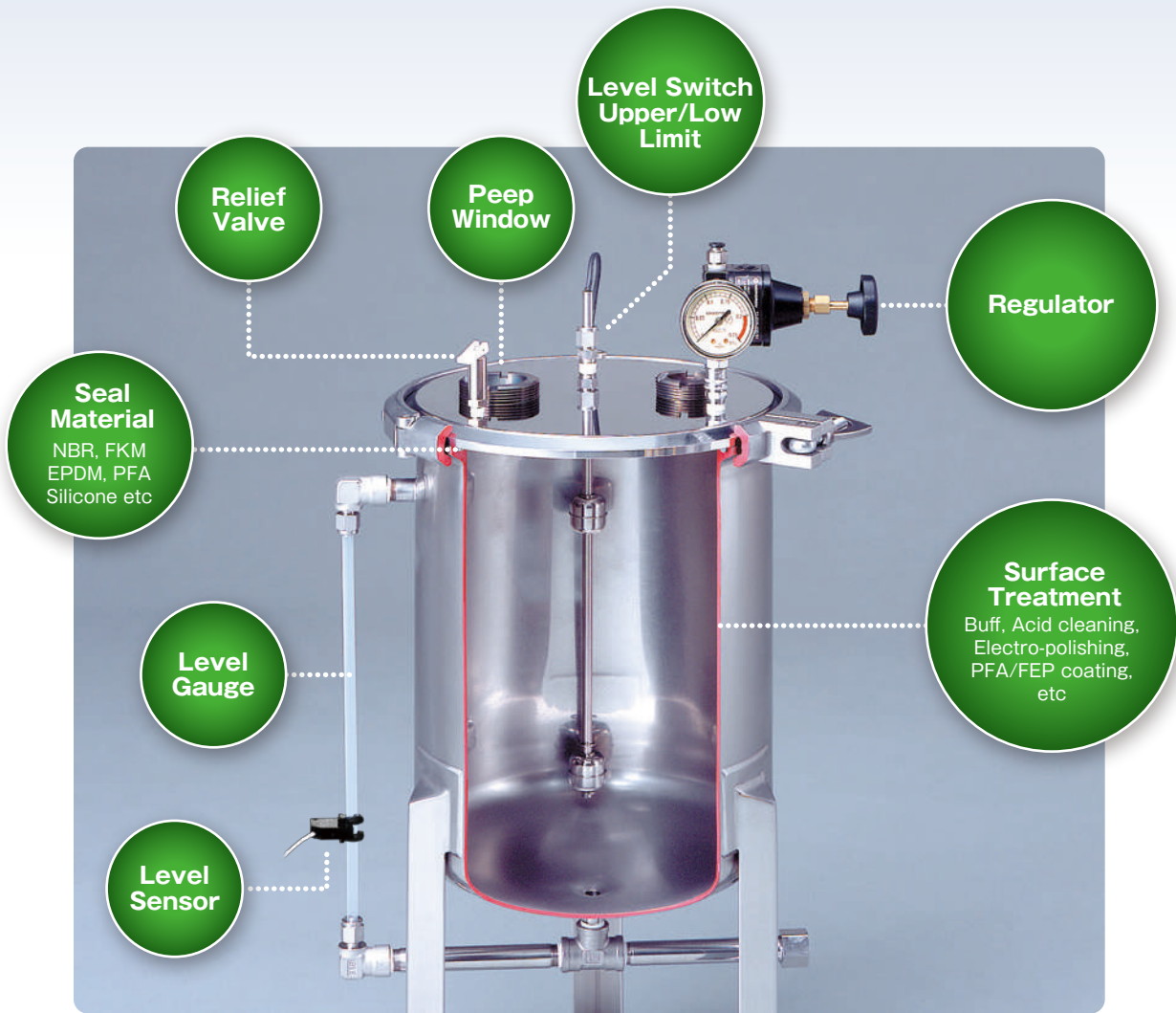
When selecting a tank, please consider **tank capacity, operating pressure and material characteristics.**  
Our standard tank capacity can hold up to 100 litres.  
Operating pressure is less than 0.49MPa(around 5kgf/cm²).  
There are tanks with operating pressure less than 0.2MPa depending on the type.

## Point 2 Inner Container or Direct Filling

Inner Container in which the container with the material is placed into the tank and used.(Easy to clean)  
Direct Filling in which the material is placed directly into the tank and used.  
(For oils, solvents etc whereby cleaning is not required)

## Point 3 Optional Processing / Tank Accessories

Besides the above, optional processing / tank accessories are available for selection on page 4.  
If you require a custom-made tank, please consult our sales department.



## Tank Accessories

Various tank accessories for our standard tanks are available.

## Optional Processing

We provide a variety of optional processing such as level gauge, level sensor, peep window, PFA/FEP coating, electro-polishing. However, optional processing cannot be done for some tank types. Thus, please refer to the Optional Processing list below.  
Please consult us if you require processing other than the ones indicated below.

### Optional Processing List

Specification (Model)	Applicable Tanks										
	TM	TM-B	TMC	TK	TSR	TML	TA	TB	TN	TG	TP
Level Gauge	●	●	●	●	●	●	▲	●	●	●	▲
Level Sensor	●	●	●	●	●	●	▲	●	●	●	▲
Low Level Switch (1S)	●	×	●	●	●	●	●	●	●	●	▲
Upper & Low Level Switch (2S)	●	×	●	●	●	●	●	●	●	●	×
Peep Window on Tank Cover	×	×	×	×	×	×	●	●	▲	▲	×
Peep Window on Tank Body	×	×	×	×	×	×	▲	▲	▲	×	×
Material Refilling Vent	▲	▲	▲	×	▲	●	●	●	●	●	▲
Addition of inlet/outlet port	▲	▲	▲	×	▲	●	●	●	●	●	●
Clamp Stand	×	×	×	×	×	×	●	●	×	×	×
Safety Cover	×	×	●	×	×	●	●	●	●	×	▲
Hinged Tank	×	×	×	×	×	×	●	●	×	×	×
PFA/FEP Coating	●	●	●	×	●	●	●	●	●	●	●
Electro-polishing	●	●	●	×	●	●	●	●	●	●	●

Remarks : ● = Applicable ▲ = Applicable with condition (Please consult sales department) × = Not Applicable  
Regarding PFA/FEP coating and electro-polishing, there are cases whereby optional parts cannot be combined, so please consult sales department.

## Tank Accessories

We offer wide variety of tank accessories such as regulator, ball valves, relief valves, O-Ring, tubes, tube fittings, level switch, level sensors, tank heaters, tube heaters.

### Relief Valve

The relief valve automatically starts releasing excess air when the pressure goes beyond the set level.  
There are 2 types of exhaust pressure settings, fixed type, and adjustable type.  
Fixed Type: There are 6 types with di erent body material, O-Ring and exhaust pressure settings.  
Adjustable Type: There are 2 types with adjustable exhaust pressure settings.  
TM, TK, TSR tanks are fitted with relief valve as standard equipment with exhaust air pressure setting of 0.59MPa.

# TM series top-port

## No.1 Best Seller in Japan... Lightweight & affordable TM tanks

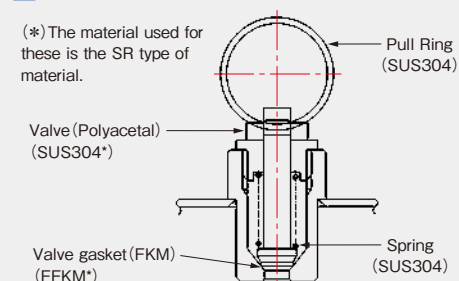


### Advantages

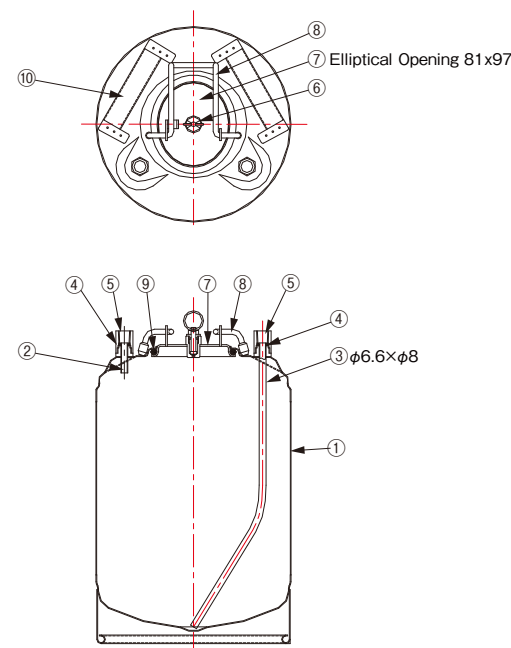
- Most suitable for pressure feeding of low viscosity materials.
- Lightweight, easy to handle and suitable for transportation.
- Safe structure which the cover cannot be opened when it is pressurised.
- Relief valve is part of the standard equipment. (Exhaust air pressure setting is 0.59MPa)
- Wide range of options to select from according to your requirements.
- Chemical resistant relief valve (SR) with optional level gauge (LG) and minimum level switch (1S) in stock.

### Relief Valve

(\*) The material used for these is the SR type of material.



### Structural Drawings



NO.	Name	Material
①	Tank Body	SUS304
②	Compressed Air Pipe	SUS304
③	Suction Pipe	SUS304
④	O-Ring	NBR
⑤	Hexagonal diameter socket (Rc1/4)	SUS304
⑥	Relief Valve	Polyacetal
⑦	Cover	SUS304
⑧	Lid Locking Handle	SUS304
⑨	O-Ring	NBR
⑩	Handle	SUS304

### Minimum level switch specification (1S)

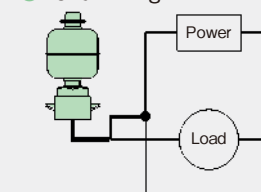
The minimum level switch gives a signal when the liquid level reaches the set position. There is also the option of flashing a warning light on receipt of this signal.

#### Contact Rating

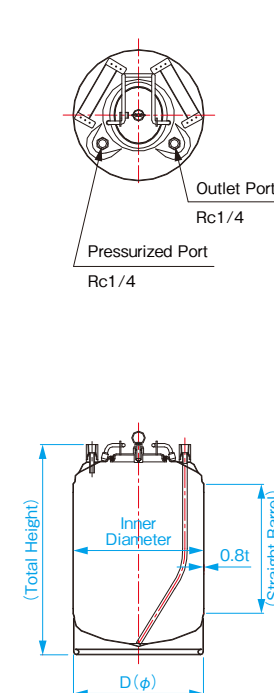
Operating Voltage	Maximum Current Load
200V (AC)	15mA
100V (AC)	30mA
24V (AC/DC)	100mA

Please avoid turning the lamp ON and OFF directly.

#### Hand Wiring



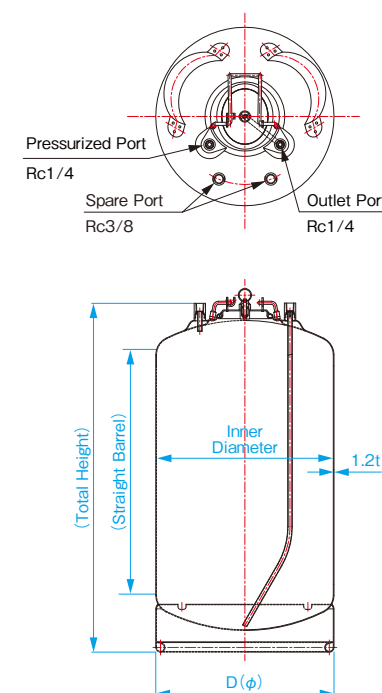
### TM5R/10R/18R/21R



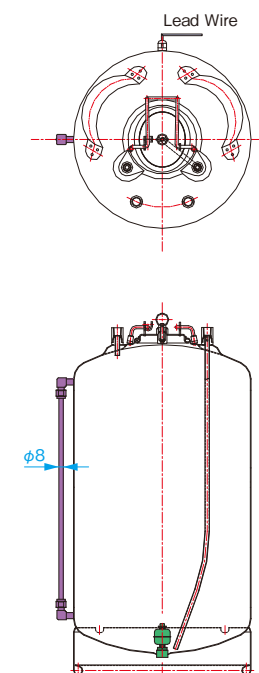
### TM5R/10R/18R/21R -LG-1S



### TM20R/39R



### TM20R/39R -LG-1S



\*TM5R cannot be used with optional LG Type

Level Gauge (FEP)  
Level Switch (SUS304)

\*The spare port is available for TM20R/39R but not for TM5R/10R/18R/21R. For detailed drawings, please contact our sales department.

Model	TM5R	TM10R	TM18R	TM21R	TM20R	TM39R
Material	SUS304					
Operating Pressure	Maximum 0.49MPa					
Lid Opening & Closing System	One-touch level lock type					
Sealing	O-Ring Seal Type (Standard NBR*)					
Relief Valve	Standard Equipment (Exhaust Pressure set at 0.59MPa)					
Finishing	Acid cleaning of inner surface and hairline of outer surface (Straight barrel)					
Capacity (ℓ)	5	10	18	20	24	39
Straight Barrel (mm)	87	239	424	474	262	435
Total Height (mm)	215	367	552	602	436	609
Inner Diameter (mm)	226				312	
D (mm)	228				315	
Thickness (mm)	0.8 (Straight Barrel)				1.2 (Straight Barrel)	
Weight (kg)	2.1	2.8	3.8	4.0	5.7	7.4


\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available. Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

# TM series bottom-port



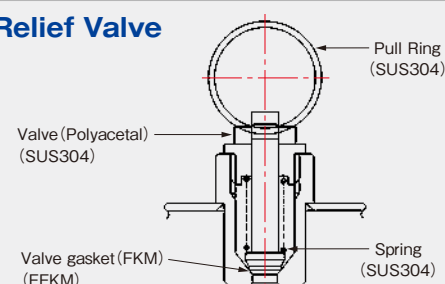
## Advantages

- Medium to high viscosity materials which are difficult to dispense using top port(top dispensing) can be dispensed by bottom dispensing with TM bottom-port series.
  - This series has level gauge(optional) which can check over wider surface level and almost entire volume as compared to TM top port series.
  - Relief valve has excellent chemical resistance, and FFKM is available as standard type.
  - If you are using level sensor, please select electrical capacitance type or photoelectrical type which can be installed on the level gauge.
- 
- A stainless steel cylindrical tank, likely a dispensing vessel, is shown. It has a bottom-dispensing port with a hose attached. A level gauge is mounted on the side of the tank, with a vertical tube extending upwards. The tank is connected to a piping system at the top.

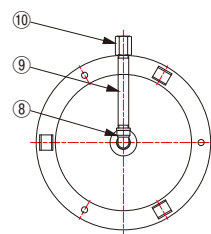
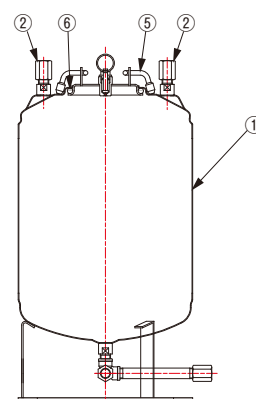
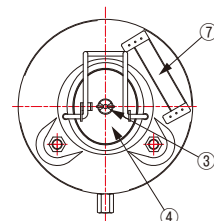


\* For detailed specifications,  
please consult us.

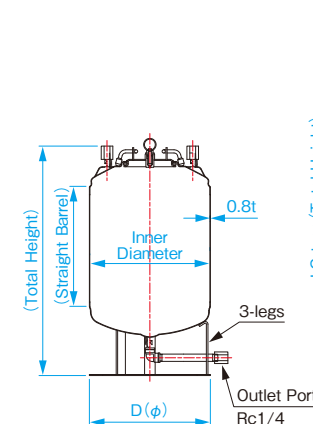
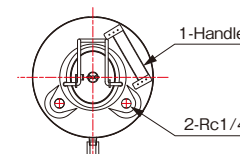
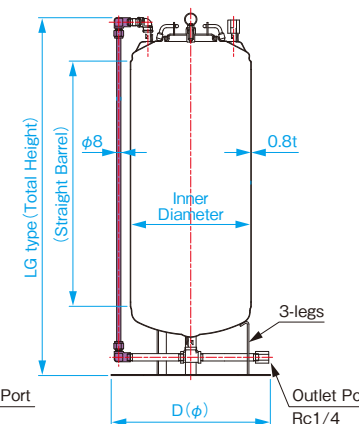
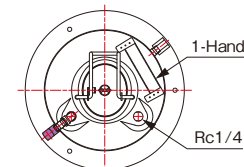
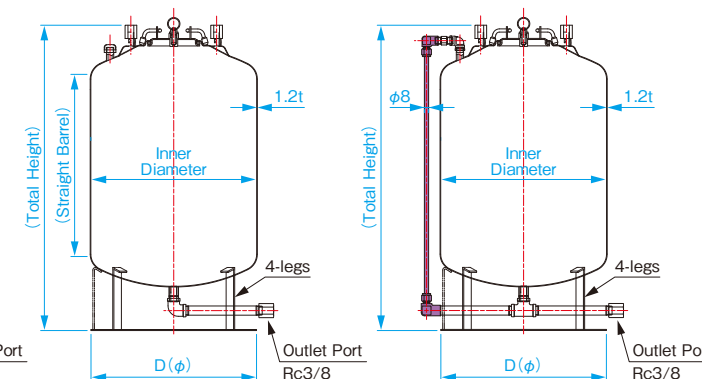
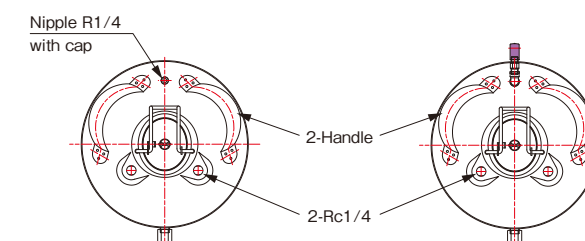
■ **Relief Valve**



## ■ Structural Drawings



NO.	Name	Material
①	Tank Body	SUS304
②	Hexagonal diameter socket(Rc1/4)	SUS304
③	Relief Valve	SUS304
④	Cover	SUS304
⑤	Lid Locking Handle	SUS304
⑥	O-Ring	NBR
⑦	Handle	SUS304
⑧	Elbow Coupler	SUS304
⑨	Long Nipple	SUS304
⑩	Hexagonal Socket	SUS304

**TM5B/10B****TM21B****TM30B/39B**

■ Level Gauge (FEP)

Model	TM5B	TM10B	TM21B	TM30B	TM39B
Material	SUS304				
Operating Pressure	Maximum 0.49MPa				
Lid Opening & Closing System	One-touch level lock type				
Sealing	O-Ring Seal Type(Standard NBR*)				
Relief Valve	Standard Equipment(Exhaust Pressure set at 0.59MPa)				
Finishing	Acid cleaning of inner surface and hairline of outer surface(Straight barrel)				
Capacity (ℓ)	5	10	20	30	39
Straight Barrel (mm)	87	239	474	340	435
Total Height (mm)	290	442	677	584	679
LG Type Total Height (mm)	292	444	679		
Inner Diameter (mm)	226			312	
D (mm)	228		300	312	
Thickness (mm)	0.8 (Straight Barrel)			1.2 (Straight Barrel)	
Weight (kg)	2.3	2.7	3.9	6.4	7.2

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available.  
Please select the one which is compatible with your material.

**For detailed drawings, please contact our sales department.**



# TM series Clamp type



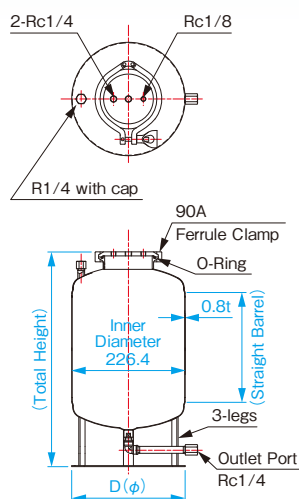
## Advantages

- This TM series is lightweight and economical as compared to TN series.
- This is the only series that can be used with stirrer unit as standard equipment.
- This series has level gauge(optional) which can check over wider surface level and almost entire volume as compared to TM top port series.

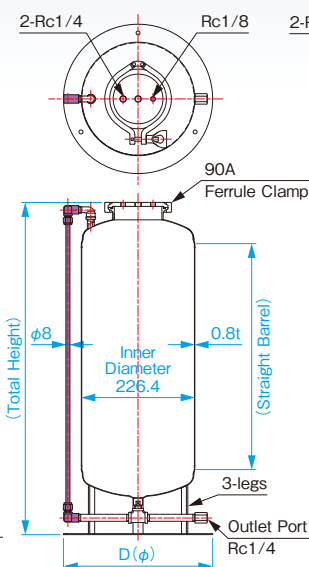
\* TMC series relief valve is optional.  
Please select the most suitable item in page 22.

TMC5/10

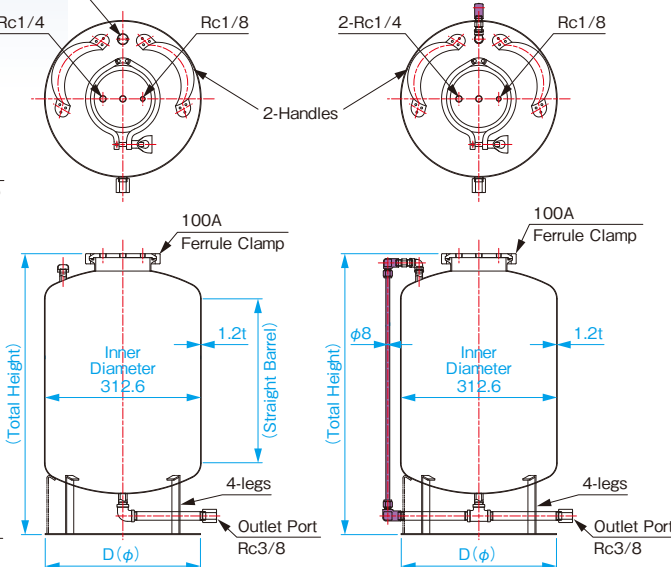
Level Gauge(FEP)



TMC21



TMC30/39



Model	TMC5	TMC10	TMC21	TMC30	TMC39
Material	SUS304				
Operating Pressure	Maximum 0.49MPa				
Lid Opening & Closing System	Ferrule Clamp Type				
Lid Size	90A opening ϕ95.6			100A opening ϕ108.3	
Outlet Port	Bottom port(Rc1/4)			Bottom port(Rc3/8)	
Pressurised Port	Rc1/4				
Sealing	O-Ring Seal Type(Standard NBR*)				
Relief Valve	Select from the options.				
Finishing	Acid cleaning of inner surface and hairline of outer surface(Straight barrel)				
Capacity (ℓ)	5	10	20	30	39
Straight Barrel(mm)	87	239	474	340	435
Total Height(mm)	277	429	664	568	663
D(mm)	228	228	300	312	312
Weight (kg)	3.2	4.1	5.3	7.7	8.7

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available.  
Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

# STIRRER UNIT for TMC series



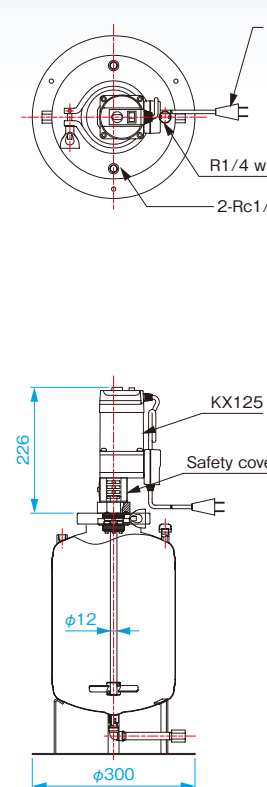
## Applications

- Used to mix and stir low to medium viscosity materials and prevent sedimentation.

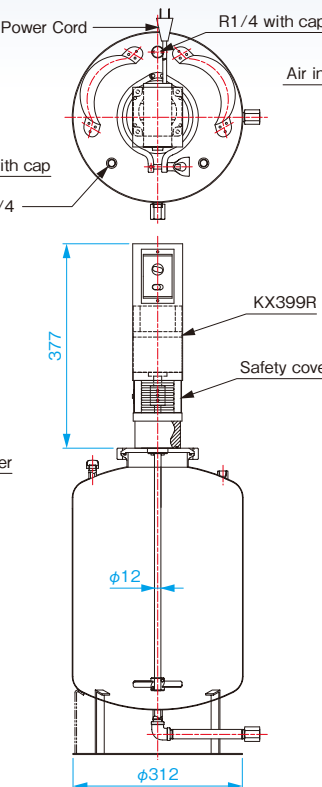
## Advantages

- 2 types of stirrer unit available - electric motor, pneumatic motor. Each type has 2 models.
- Motor of the stirrer unit is equipped with safety cover as standard attachment.
- Stirrer unit is installed directly onto the lid of the tank, hence it is easily attached or removed.
- Standard blades are 2 $\phi 90$  2-wing blades or 1 4-wing blade.

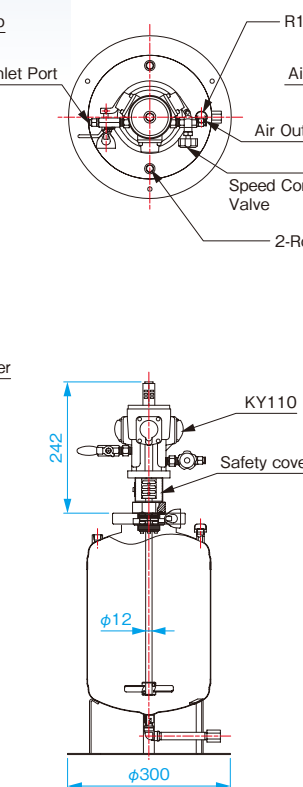
TMC10S-KX125



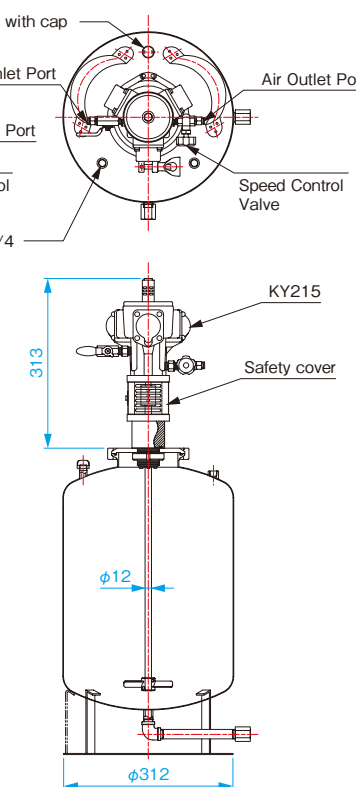
TMC30S-KX399R



TMC10S-KY110



TMC30S-KY215



## Electric motor specifications

Model	KX-125	KX-399R
Shaft	$\phi 12$	
Wattage (output)	25W	90W
Torque	0.18~0.65N·m	3.30N·m(constant)
Max. Rotating Speed	280rpm	222rpm
Min. Rotating Speed	18rpm	11rpm
Speed Control	Standard equipment	
Power	AC100V (50/60Hz)	
Safety Cover	Standard equipment	

## Air motor specifications

Model	KY-110	KY-215
Shaft	$\phi 12$	
Max. Operating Pressure	0.6MPa	
Max. Output	73.5W	125W
Torque	0.627N·m	1.37N·m
Max. Rotating Speed	1,100rpm(variable)	900rpm(variable)
Min. Rotating Speed	around 100rpm	100rpm
Air Consumption(at max torque)	200ℓ/min	260ℓ/min
Safety Cover	Standard equipment	

For detailed drawings, please contact our sales department.

# TK series

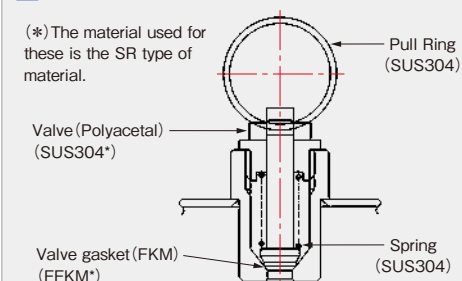


## Advantages

- Most suitable for pressure feeding low viscosity materials.
- Lightweight, easy to handle and suitable for transportation.
- Rubber protectors on the top & bottom of the tank, hence it can be stacked and stored. (Space saving)
- Safe structure which the cover cannot be opened when it is pressurised.
- Relief valve is part of the standard equipment. (Exhaust air pressure setting is 0.59MPa)
- Wide range of options to select from according to your requirements.
- Chemical resistant relief valve (SR) with optional level gauge (LG) and minimum level switch (1S) in stock.

## Relief Valve

(\*) The material used for these is the SR type of material.



## Minimum level switch specification (1S)

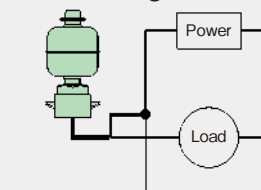
The minimum level switch gives a signal when the liquid level reaches the set position. There is also the option of flashing a warning light on receipt of this signal.

### Contact Rating

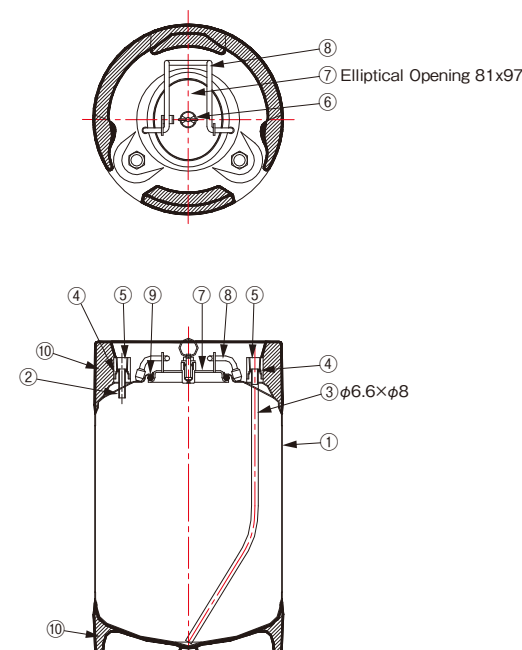
Operating Voltage	Maximum Current Load
200V (AC)	15mA
100V (AC)	30mA
24V (AC/DC)	100mA

Please avoid turning the lamp ON and OFF directly.

### Hand Wiring

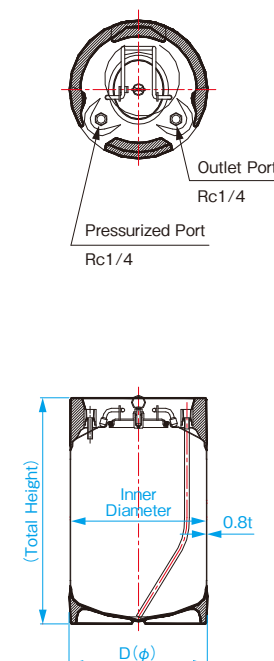


## Structural Drawings

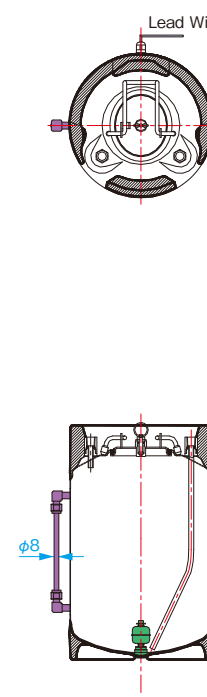


NO.	Name	Material
①	Tank Body	SUS304
②	Compressed Air Pipe	SUS304
③	Suction Pipe	SUS304
④	O-Ring	NBR
⑤	Hexagonal diameter socket (Rc1/4)	SUS304
⑥	Relief Valve	Polyacetal
⑦	Cover	SUS304
⑧	Lid Locking Handle	SUS304
⑨	O-Ring	NBR
⑩	Protector	EPDM+NR+SR

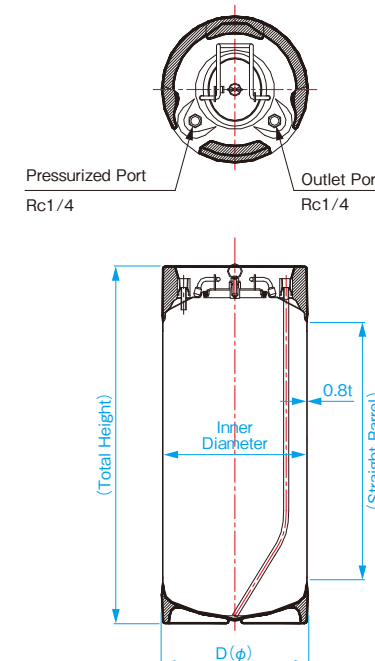
## TK10R



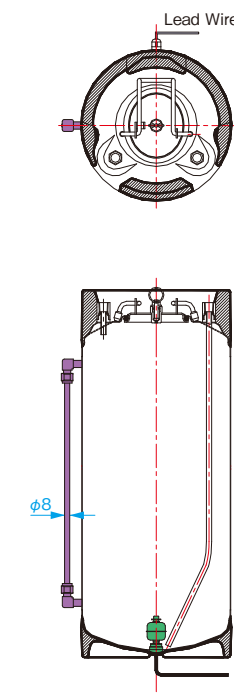
## TK10R-LG-1S



## TK18R



## TK18R-LG-1S



Level Gauge (FEP)  
Level Switch (SUS304)

Model	TK10R	TK18R
Material	SUS304	
Operating Pressure	Maximum 0.49MPa	
Lid Opening & Closing System	One-touch level lock type	
Sealing	O-Ring Seal Type (Standard NBR*)	
Relief Valve	Standard Equipment (Exhaust Pressure set at 0.59MPa)	
Finishing	Acid cleaning of inner surface and hairline of outer surface (Straight barrel)	
Capacity (ℓ)	10	18
Straight Barrel (mm)	239	424
Total Height (mm)	378	563
Inner Diameter (mm)	226	
D (mm)	230	
Thickness (mm)	0.8 (Straight Barrel)	
Weight (kg)	4.2	4.7

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available. Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

# TA series



TAB350

## Advantages

- This series is designed such that material which has been filled in inner container can be placed into tank to be used.
- Material is not filled directly into the tank, hence cleaning of the tank body is not required.
- Besides our inner container, you can use other containers available in the market.
- TAB350 is the large type which 18 litre drum or pail available in market, can be placed directly.
- Wide range of options which you can select according to your requirements.

\*For details on tank accessories, please refer to page 22.

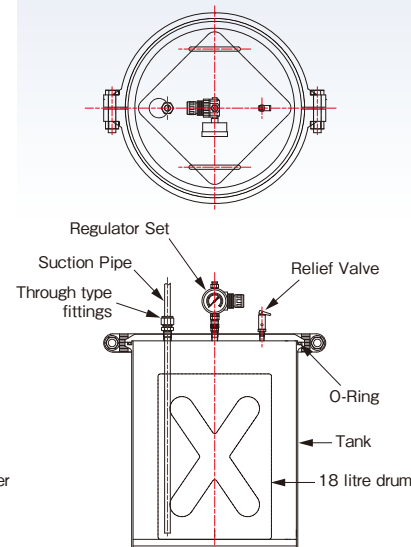
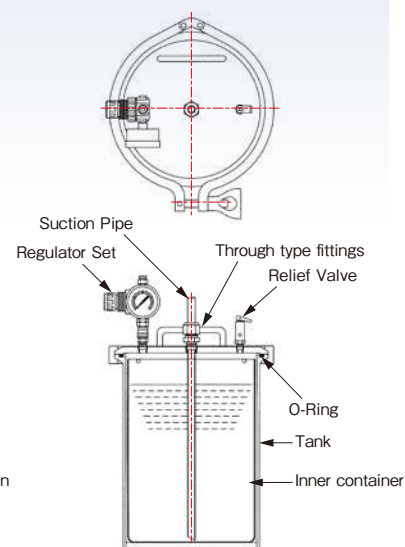
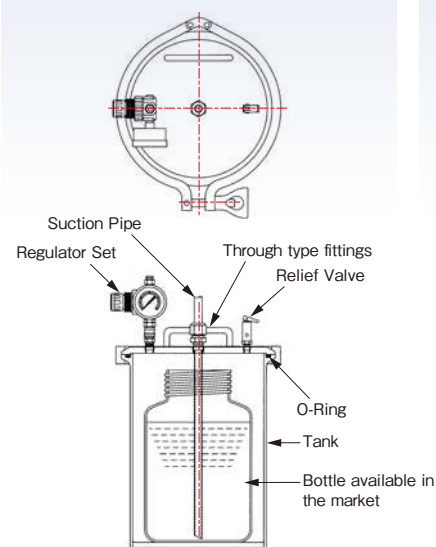
## Plastic containers available in the market



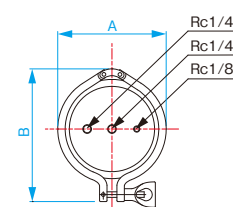
## Standard Inner Containers



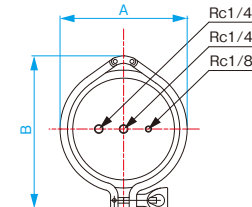
## 18 litre drum/Pail



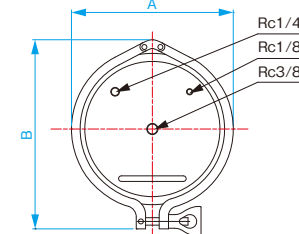
TA90N/100N/125N



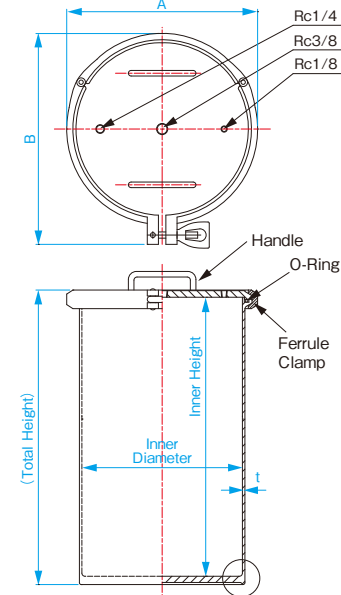
TA150



TA200/201

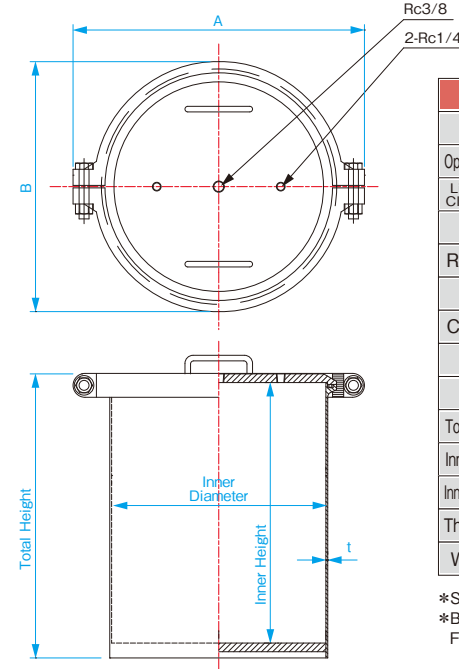


TA253/254



TA253 (Machined base)  
TA254 (Welded base)

TAB350



Model	TA90N	TA100N	TA125N	TA150	TA200	TA201	TA253	TA254	TAB350
Material	SUS304								
Operating Pressure	Maximum 0.49MPa								
Lid Opening & Closing System	Ferrule Clamp Type								
Sealing	O-Ring Seal Type (Standard NBR*)								
Relief Valve	Select from the option								
Finishing	Buff polishing for inner and outer surface								
Capacity (ℓ)	1.8	2.5	3.4	4.9	10.1	11.8	23.7	23.7	39.3
A (mm)	134	150	175	205	261	261	308	308	470
B (mm)	167	184	214	246	305	305	340	340	403
Total Height (mm)	270	285	270	275	325	375	475	485	458
Inner Height (mm)	252	267	250	250	300	350	450	450	420
Inner Diameter (mm)	97	110	133	158	208	208	259	259	345
Thickness (mm)	2				4				3
Weight (kg)	2.5	3.1	4.5	6.7	14.5	15.8	24.2	25.3	39.6

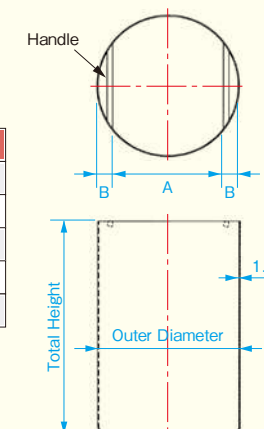
\*Shape of the base and size and position of tap of the cover varies depending on the model.  
\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available. Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

## Standard Inner Container Dimensions

Model	For TA90N	For TA100N	For TA125N	For TA150	For TA200	For TA201	For TA253/254
Capacity (ℓ)	1.3	1.8	2.6	4.0	8.4	10.0	20.0
A (mm)	56	69	93	118	168	168	219
B (mm)	17	17	17	17	17	17	17
Total Height (mm)	240	255	240	240	290	340	440
O.D (mm)	90	103	127	152	202	202	253

\* This inner container is optional.  
The standard tank does not come with inner container. The inner container is sold separately.

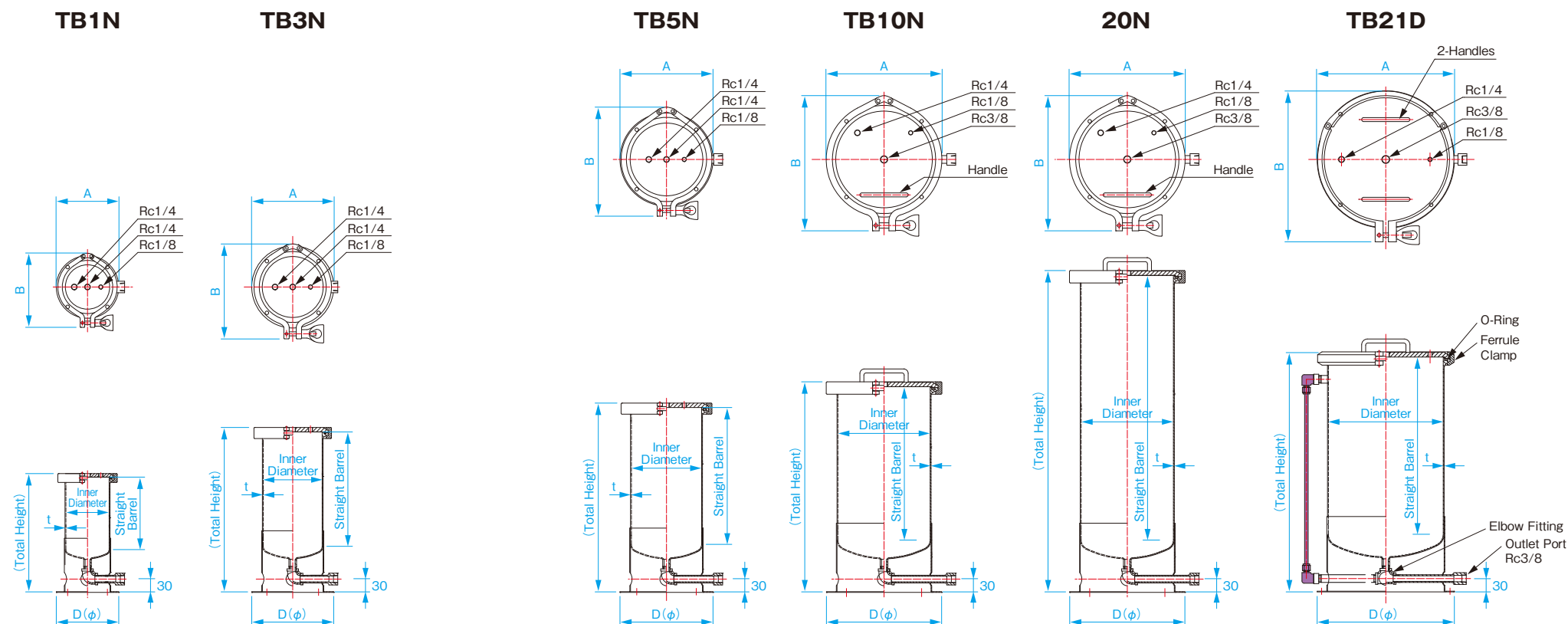




# TB series



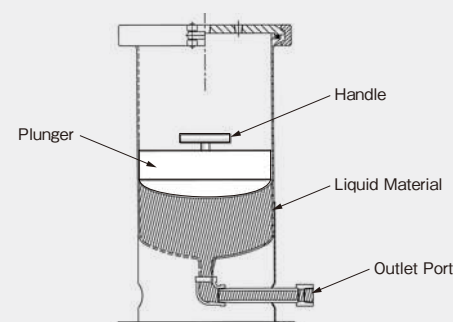
## Opening is wide hence maintenance is simple



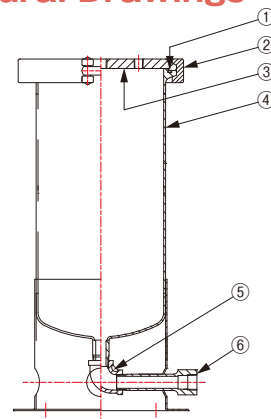
### Advantages

- Material is placed directly into the tank to be used. Opening is wide hence cleaning and maintenance is simple.
- Plunger is used for pressure feeding of high viscosity materials. Refer to page 21.
- TB21D with capacity 20 litres and reduced height is the latest addition to our standard tank series.

### Plunger installation example



### Structural Drawings



NO.	Name	Material
①	O-Ring	NBR
②	Clamp	SUS304
③	Cover	SUS304
④	Tank Body	SUS304
⑤	Elbow Coupler	SUS304
⑥	Outport Pipe	SUS304

Model	TB1N	TB3N	TB5N	TB10N	TB20N	TB21D
Material	SUS304					
Operating Pressure	Maximum 0.49MPa					
Lid Opening & Closing System	Ferrule Clamp Type					
Sealing	O-Ring Seal Type(NBR*)					
Relief Valve	Select from the option					
Finishing	Buff polishing on inner and outer surface					
Capacity (ℓ)	1	3	5	10	20	20
A (mm)	134	175	205	261	261	308
B (mm)	167	214	246	305	305	340
Straight Barrel (mm)	163	258	308	346	597	400
Total Height (mm)	268	372	427	474	725	540
Inner Diameter (mm)	97	133	158	208	208	259
D (mm)	141	185	210	260	260	310
Thickness (mm)	2					
Weight (kg)	2.8	5.4	7.4	12.0	14.8	17.0

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available. Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

# TN series



This is only series with large capacity

TN3B/5B

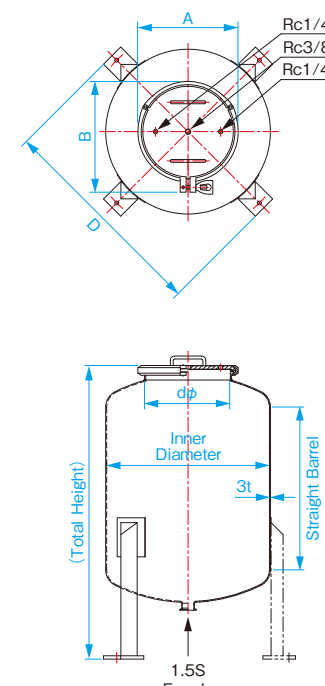
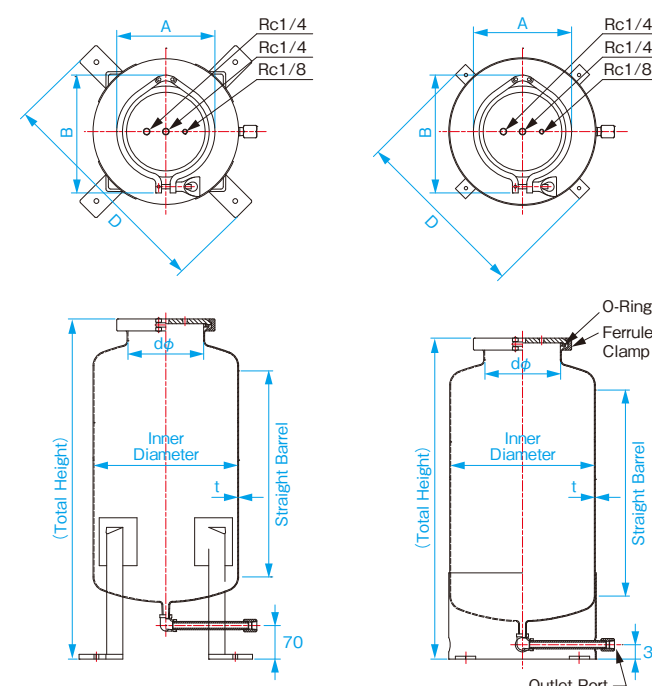
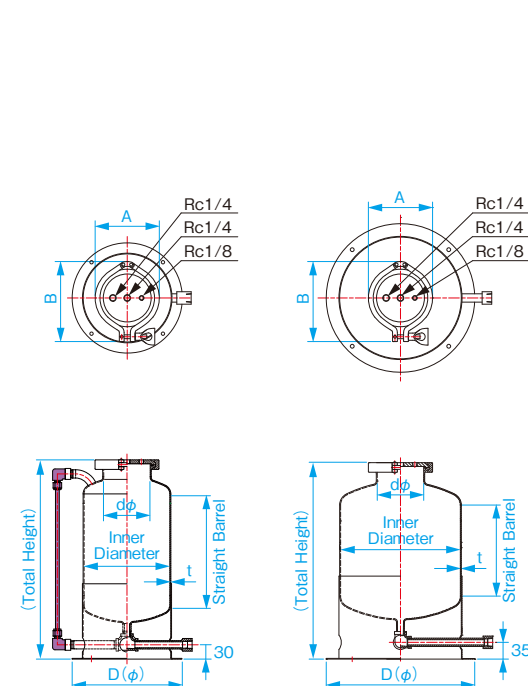
TN10B/20B

TN30A/  
39A/40A

TN30B/  
39B/40B

Large capacity

TN50A/100A

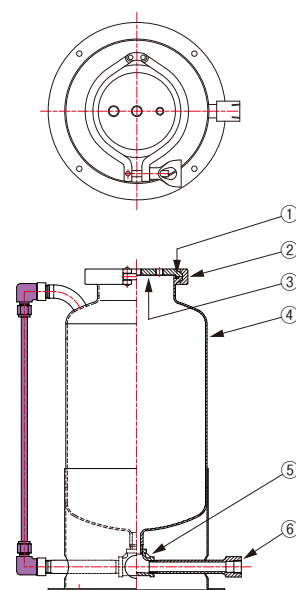


Level Gauge (FEP)

## Advantages

- Cost is reduced by making the lid smaller than diameter of tank body.
- 2 types of bottom for 30L and 40L: angular leg type and skirted type.
- This is the only series with capacity of 50L, 100L. Material outlet port uses 1.5S ferrule, thus pipe layout is simple.

## Structural Drawings



NO.	名称	材質
①	O-Ring	NBR
②	Clamp	SUS304
③	Cover	SUS304
④	Tank Body	SUS304
⑤	Cheese Coupler	SUS304
⑥	Outport Pipe	SUS304

Model	TN3B	TN5B	TN10B	TN20B	TN30A	TN30B	TN39A	TN39B	TN40A	TN40B	TN50A	TN100A
Material	SUS304											
Operating Pressure	Maximum 0.49MPa								Less than 0.2MPa			
Lid Opening & Closing System	Ferrule Clamp Type											
Sealing	O-Ring Seal Type (Standard NBR*)											
Relief Valve	Select from the option											
Finishing	Buff polishing on inner and outer surface											
Capacity (ℓ)	3	5	10	20	30		39		40		50	100
A (mm)	134				30		205				261	308
B (mm)	167				30		246				305	340
d (mm)	97				30		158				208	259
Straight Barrel (mm)	180	233	192	407	435		470		585		400	500
Total Height (mm)	348	411	410	625	710	670	744	704	860	820	761	900
LG Total Height (mm)	354	417										
Inner Diameter (mm)	158	180	250		300						400	500
D (mm)	210	230	310		462	366	462	366	462	366	(560)	(660)
Thickness (mm)	2											3
Weight (kg)	4.5	5.5	7.5	9.8	17.8	15.2	18.4	15.8	19.9	17.5	32	48

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available.

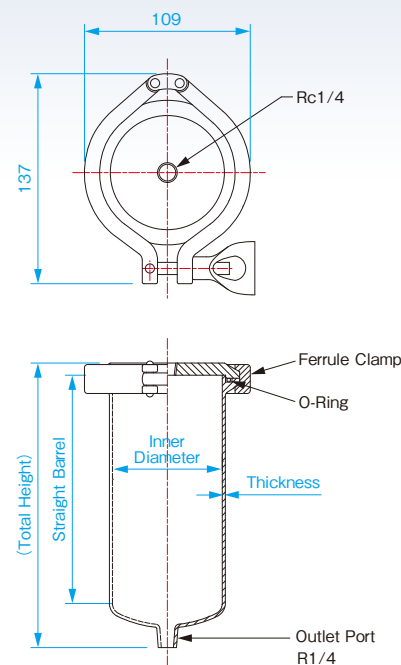
Please select the one which is compatible with your material.

\*For TN40A/40B/50A/100A with capacity 40L or more, since operating pressure is below 0.2MPa (below 0.19MPa), it is not applicable to 2nd class regulation for tanks.

For detailed drawings, please contact our sales department.



# TP series



Model	TP300	TP500	TP700
Material	SUS304		
Operating Pressure	Maximum 0.49MPa		
Lid Opening & Closing System	Ferrule Clamp Type		
Sealing	O-Ring Seal Type(Standard NBR*)		
Relief Valve	Select from the option		
Finishing	Buff polishing on inner and outer surface		
Capacity (ℓ)	0.3	0.5	0.7
Straight Barrel (mm)	88	150	200
Total Height (mm)	132	194	244
Inner Diameter (mm)	72		
Thickness (mm)	2		
Weight (kg)	1.3	1.5	1.7

\*Besides NBR, other O-Ring material such as Silicone, FEP/Silicone double O-ring, FFKM, Kalrez®, EPDM, FKM are available.  
Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

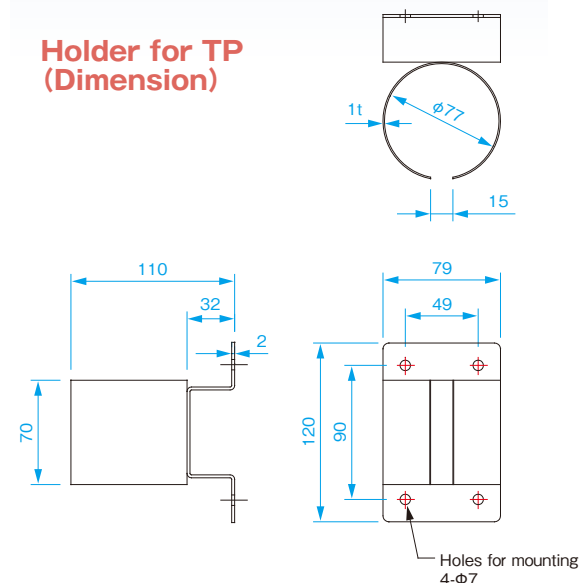
## Advantages

- Small capacity tanks which can be mounted using tank holder to machines.
- Suitable for dispensing low volume.

## Holder for TP



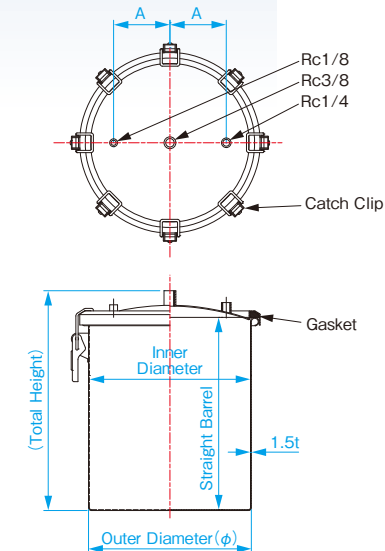
## Holder for TP (Dimension)



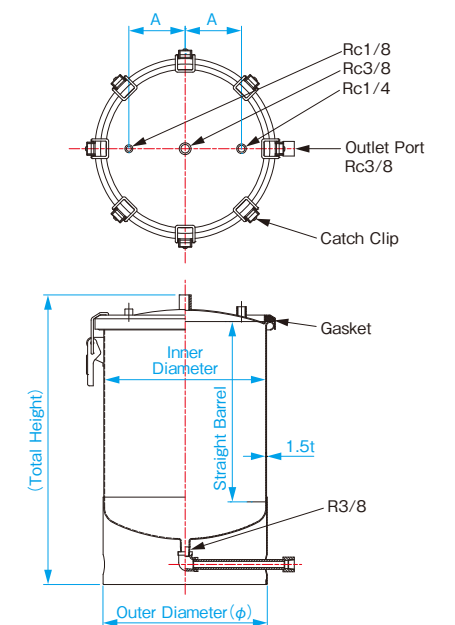
# TG series



## TG10T/20T/36T 50T/150T/300T



## TG10B/20B/36B 50B/150B/300B



## Advantages

- Catch clip type which is easy to close the lid tightly.
- Can be used as airtight container.
- 2 types are available - Top port (T type), Bottom port (B type)
- B type can be used with low pressure of less than 0.05MPa.

Model	TG10T	TG20T	TG36T	TG50T	TG150T	TG300T	TG10B	TG20B	TG36B	TG50B	TG150B	TG300B
Capacity(ℓ)	10	20	36	50	150	300	10	20	36	50	150	300
Material	SUS304											
	Top-port type						Bottom-port type					
Operating Pressure	NO PRESSURE						Less than 0.05MPa					
Lid Opening & Closing System	Catch Clip Type											
Sealing	Gasket Seal (Standard NBR*)											
Finishing	Buff polishing on inner and outer surface											
No. Of Clips	6	8	8	10	12	12	6	8	8	10	12	16
Straight Barrel (mm)	300	340	410	450	750	1000	280	320	400	400	700	900
Total Height (mm)	346	391	476	524	864	1129	452	509	616	638	999	1247
A (mm)	70	100	120	150	180	200	70	100	120	150	180	200
Inner Diameter (mm)	224	286	346	419	517	635	224	286	346	419	517	635
Outer Diameter (mm)	227	289	349	422	520	638	227	289	349	422	520	638
Thickness (mm)	1.5											
Weight (kg)	3.9	6.6	9.0	12.5	24.0	36.0	5.5	7.6	11.5	16.3	28.0	42.0

\*Besides NBR, other O-Ring material such as Silicone, EPDM, FKM are available.  
Please select the one which is compatible with your material.

For detailed drawings, please contact our sales department.

# OPTION MANUFACTURE & PARTS

## Optional Processing & Tank Accessories

### PFA/FEP Coating



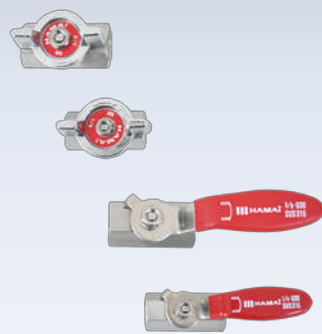
#### Application

Corrosion resistance and suitable for materials that can come into contact with stainless steel. It has excellent anti-adhesiveness and is easy to clean.

#### Remarks

Comes with pinhole inspection certificate for above 300μm coating thickness.

### Ball Valves



#### Application

Used with tank as a set and the valve can be opened or closed manually. User can select based on pipe size and the attached position. Lever handle can be opened or closed easily using small force. Since butterfly valve is space saving, it can be easily attached to the narrow space in the pipe.

### Standard・Precision Regulators



#### Application

Used to adjust the air pressure that is supplied to the tank. 2 types are available, standard, and precision type with low and high pressure respectively.

### Relief Valves

#### Application

The relief valve automatically starts releasing excess air when pressure goes beyond the set level. It can be used to force exhaust by manually operating the exhaust level or pull the pull ring.

Model	Standard popping pressure*	Forced Exhaust	Main Material
TRR100	0.18~0.20MPa	Not Possible	SUS316/Fluorocarbon
TRR200	0.45~0.50MPa	Not Possible	SUS316/Fluorocarbon
TRV-S107	0.64~0.70MPa	Possible	SUS316/FFKM
TRV-B107	0.64~0.70MPa	Possible	Brass Nickel Plating/FFKM
TR207V	0.67~0.73MPa	Possible	SUS316/FFKM
TR207P	0.67~0.73MPa	Possible	SUS316/FFKM
TR203V	0.27~0.33MPa	Possible	SUS316/FFKM
TR203P	0.27~0.33MPa	Possible	SUS316/FFKM

\*The popping pressure might be varied because of aging of O-ring or spring, or usage environment.

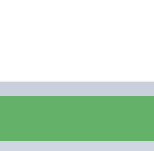
#### TRR series



#### TRV series



#### TR207 series



#### TR203 series



### Fitting

#### Application

It is used to supply the fluid from the tank. 3 types are available, namely straight, elbow and through type. We offer 54 types depending on tube or screw diameter size.

Tube OD	Size/Shape	Stainless Steel Type	PTFE Type
φ3	M6	—	JT23-M6V
φ3	R1/8 Straight	—	JT23-01S
φ3	R1/4 Straight	—	JT23-02S
φ3	R1/8 Elbow	—	JT23-01E
φ3	R1/8 Through	—	JT23-01T
φ3	R1/4 Through	—	JT23-02T
φ6	M6	—	JT46-M6V
φ6	R1/8 Straight	JS46-01S	JT46-01S
φ6	R1/4 Straight	JS46-02S	JT46-02S
φ6	R3/8 Straight	JS46-03S	JT46-03S
φ6	R1/8 Elbow	JS46-01E	JT46-01E
φ6	R1/4 Elbow	JS46-02E	—
φ6	R3/8 Elbow	JS46-03E	—
φ6	R1/8 Through	JS46-01TF	JT46-01T
φ6	R1/4 Through	JS46-02TF	JT46-02T
φ6	R3/8 Through	JS46-03TF	JT46-03T
φ8	R1/8 Straight	JS68-01S	JT68-01S
φ8	R1/4 Straight	JS68-02S	JT68-02S
φ8	R3/8 Straight	JS68-03S	JT68-03S
φ8	R1/8 Elbow	JS68-01E	—
φ8	R1/4 Elbow	JS68-02E	—
φ8	R3/8 Elbow	JS68-03E	—
φ8	R1/4 Through	JS68-02TF	JT68-02T
φ8	R3/8 Through	JS68-03TF	JT68-03T
φ10	R1/8 Straight	JS810-01S	JT810-01S
φ10	R1/4 Straight	JS810-02S	JT810-02S
φ10	R3/8 Straight	JS810-03S	JT810-03S
φ10	R1/8 Elbow	JS810-01E	—
φ10	R1/4 Elbow	JS810-02E	—
φ10	R3/8 Elbow	JS810-03E	—
φ10	R3/8 Through	JS810-03TF	JT810-03T
φ12	R1/4 Straight	JS1012-02S	JT1012-02S
φ12	R3/8 Straight	JS1012-03S	JT1012-03S
φ12	R1/4 Elbow	JS1012-02E	—
φ12	R3/8 Elbow	JS1012-03E	—
φ12	R3/8 Through	JS1012-03TF	—

\*Material for Stainless Steel fittings is SUS316.

\*If you have other request besides the above mentioned standard products, please contact sales department.

### Plunger



#### Application

It is inserted into the tank and used when grease and high viscosity materials is supplied. Standard material is polyacetal.

### O-Ring



#### Application

Used to seal the tank. Standard is NBR, and options available are FKM, Silicone, EPDM, FFKM, Kalrez®, FEP/Silicone double o-ring. Please select the suitable one depending on the fluid materials.

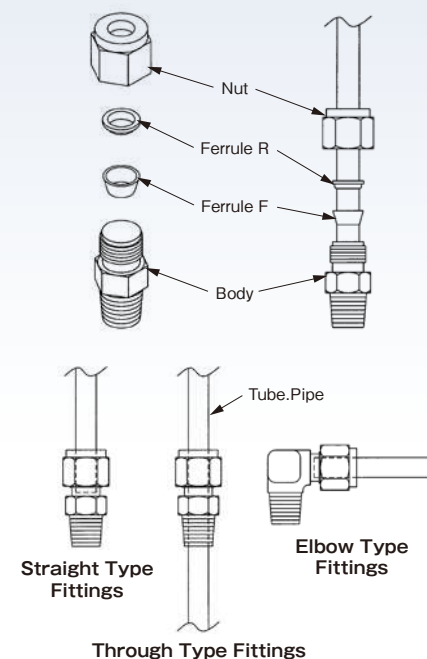
### Tubes



#### Application

Used for pressure feeding materials from tank to valve or other machines. Materials available are FEP and Black FEP. Tube's outer diameter is φ3, φ6, φ8, φ10 or φ12.

#### Tube Fittings



\*Kalrez® is a trademark or registered of E.I.Du Pont and affiliated companies.

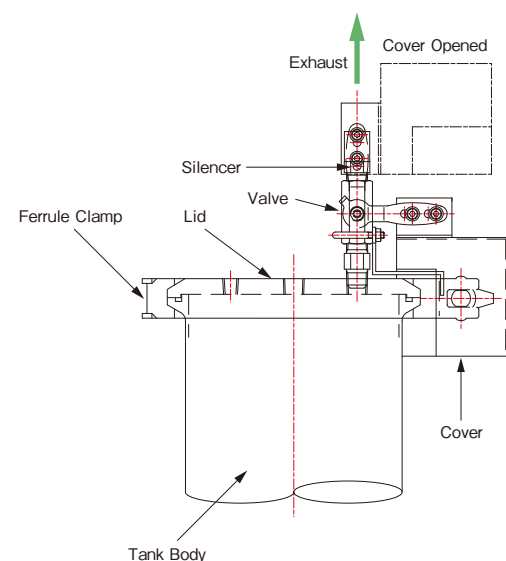


# OPTION

## Safety Measure Cover



### ■ Structural Drawings



### Summary

- When ferrule clamp type tank is opened and closed, the safety measure cover ensures the safety and forcefully exhausts the tank's inner pressurized air through the valve when you try to remove the clamp under tremendous pressure.
- The safety measure cover can be attached as an option to the standard type of ferrule clamp type tanks.
- Please refer to the chart on the right for applicable tanks.

### Features

- If the person forgets to release the remaining pressurised air inside the tank, and opens the cover, this action forces the pressurised air inside the tank to release safely.
- It is applicable for tanks with clamp size of between 90A to 250A.

### Applicable for below Tanks

Applicable for all ferrule clamp type tanks. Please refer to the models as follows.

**TA** 90N, 100N, 125N, 150, 200, 201, 253, 254

**TB** 1N, 3N, 5N, 10N, 20N, 21D

**TN** 3B, 5B, 10B, 20B, 30A, 30B, 39A, 39B, 40A, 40B, 50A, 100A

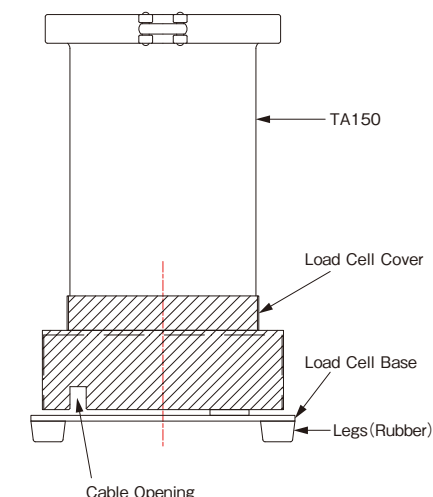
# OPTION

## Loadcell System (Weighing Machine)



### ■ Structural Drawings

#### Loadcell Cover for TA150



### Summary

- The weighing system is used to weigh and measure the remaining amount of material in the tank. The weighing system can also be used for materials which is difficult to be measured using float switch or level gauge.
- The size of the weighing system depends on the capacity of the tank, thus please consult the sales team for more information.
- The amplifier box is also available.
- Loadcell cover is available for all sizes of T A tanks. Please consult us if you require other types of tanks.

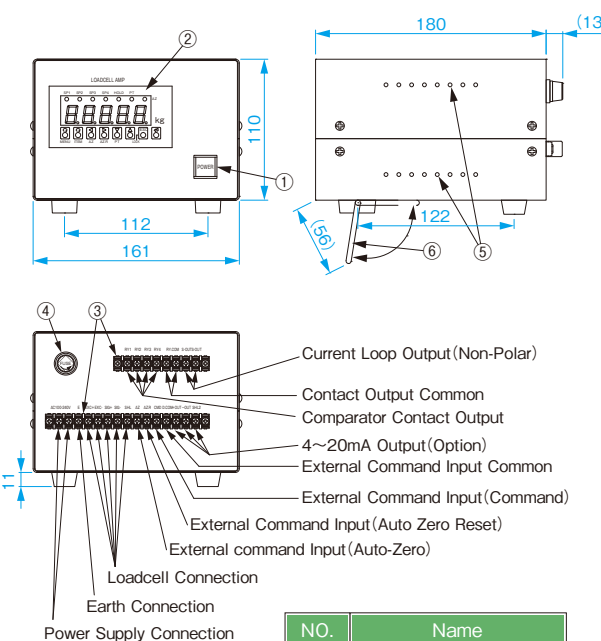
### Specifications of Loadcell

- Standard capacity of loadcell are 10kgf, 15kgf, 20kgf, 30kgf, 50kgf, 75kgf, 100kgf.

### Main Specifications of Loadcell Amplifier

1. Display Resolution: 1.0mV/V Input, Max1/9,999
2. Measurement Display: LED7segment 4 digits
3. Operation Display: 7 LED
4. Display Range:  $\pm 9999$  (Zero Suppression)
5. Decimal Point: Can be Set (None, 0.0, 0.00, 0.000)
6. Unit: Kg

### Loadcell Amplifier Outer Appearance Drawings



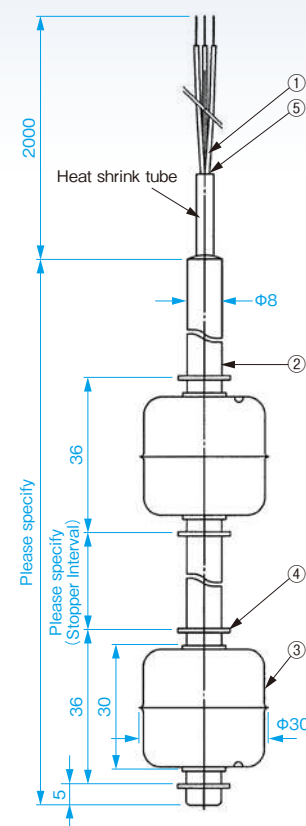
NO.	Name
①	Power Supply SW Indicator
②	Loadcell Amplifier
③	Terminal
④	Power Fuse
⑤	Ventilation Holes
⑥	Stand

# OPTION

## Level Switch (Float Switch)



### Drawing



NO.	Name	Material
①	Lead Wire	PFA/FEP Covered
②	Stem	SUS304
③	Float	SUS304
④	Stopper	SUS304
⑤	Filler	Epoxy

### Specifications

Material Used	Gravity	MIN .0.7
	Viscosity	MAX 0.2Pa·S
Conditions Used	Pressure	MAX 0.70MPa
	Temp	MAX 100°C

### Installation parts specification

Switch Specifications	229
Max switching voltage	AC, DC 240V
Max switching current	AC, DC 0.5A
Contact resistance	below 500mΩ
Accuracy	±3mm

### Method of placing order

1	Type of material
2	Gravity
3	Viscosity
4	Operating pressure
5	Operating temperature
6	Working position
7	Movement method rise ON, drop ON

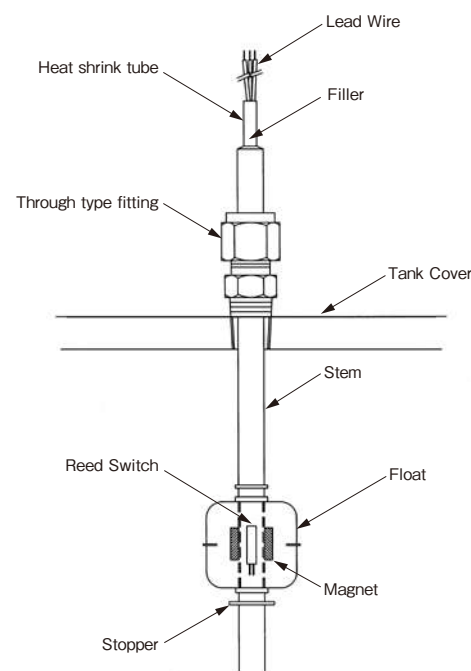
\*All level switches are made-to-order.  
Please provide us information other than those mentioned above.

### Features

- This reed switch is a high with standing pressure switch(DC600V Min.) that can even be used with AC200V without any problem.
- Since this is a lead switch, it is not affected by moisture, gas, dust or dirt etc.
- The float can be increased up to 4 points to detect several levels.
- It can also be coated with PFA/FEP coating which has excellent chemical resistance.

### Mechanism Structure

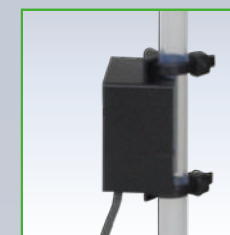
It is operated by the magnetic force of magnet incorporated inside the float in the inner stem that is from the stem part and float part.



# OPTION

## Level Sensor Electrostatic/Photoelectric

### Electrostatic



### Photoelectric



### Applications

The level sensor is used to check the remaing materials in the tank to ensure there is always sufficient materials in the tank and prevent the run out of materials by using the signal.

### Features

- 2 types of level sensors, electrostatic capacitance and photos tatic capacitance are available.
- Since both types can be used with the tube of fluid level sens or as a set, it does not come into contact with the fluid. Hence, it does not get dirty or break down easily.
- Since the sensor can be fixed firmly with the top and bottom "grip", it can be attached onto the predetermined position of th e tube.
- It can be set at several places as long as it is within the range of the tube length.
- The attached position can be repositioned easily.

### Electrostatic sensor specification

Accuracy of detection	0.6~5.0mm
Supply Voltage	DC12~24V
Electric Current Consumption	Below 12mA
Operation mode	An output transistor is on at the time of the surface detection
Output Form	NPN transistor opening collector
Control Output	Switching capacity below 100mA Residual voltage below 1V
Connecting Method	Only cable(Unprocessed cable tip) (Cable Length 2m)

### Photoelectric sensor specification

Accuracy of detection	Below 1mm
Supply Voltage	DC12~24V
Electric Current Consumption	Below 25mA
Operation mode	Light on/Dark on reshuffling
Output Form	NPN transistor opening collector
Control Output	Switching capacity below 100mA Residual voltage below 1V
Connecting Method	Only cable(Unprocessed cable tip) (Cable Length 2m)



# OPTION

## Tank Heater Jacket type



### Applications

The Tank Heater is wrapped around the tank body for heat retaining or tank heating. It can be used with DT1000 temperature controller as a set.

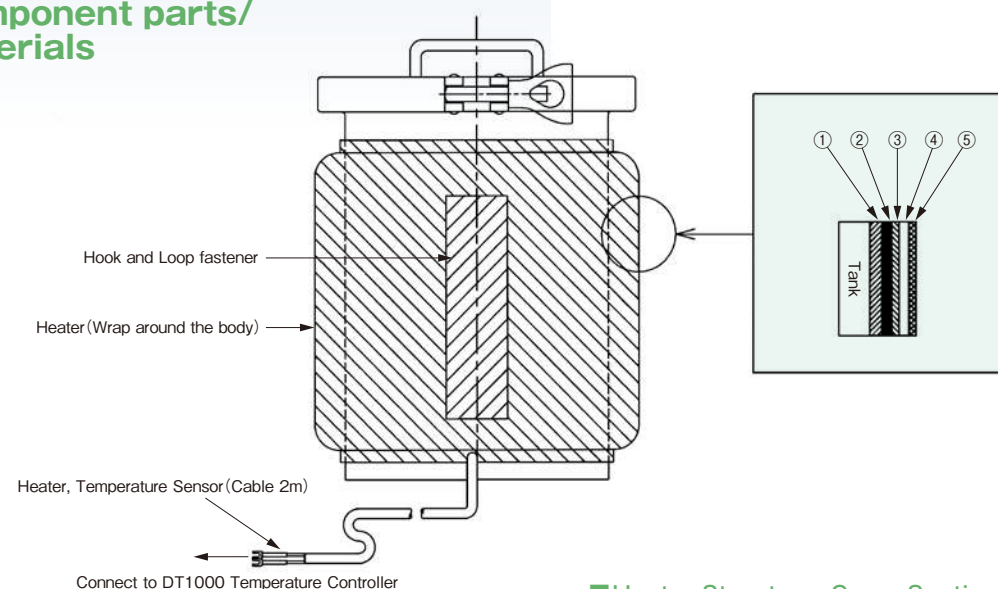
### Features

- It has high thermal efficiency with its heater and heat retaining material.
- The jacket heater is attached using the hook and loop fastener, thus operation is simple.

### Remarks

Depending on the shape of the tank, an anti-slip fixture may be installed on it.

### Component parts/ Materials



### Specifications

Power Supply	AC100V
Temperature Setting Range	Room Temperature~99°C
Sensor	PT100Ω (Standard)

### Heater Structure: Cross Sectional View

NO.	Name	Material
①	Internal Material	Silicone coated glass cloth
②	Insulation Layer	Silicone coated PRA fibre
③	Heater	Nichrome wire
④	Insulation Material	Heat resistant aramid felt
⑤	External Material	Silicone coated glass cloth

# OPTION

## Tank Heater Silicone type



### Applications

The Tank Heater is wrapped around the tank body for heat retaining or tank heating. It can be used with DT1000 temperature controller as a set.

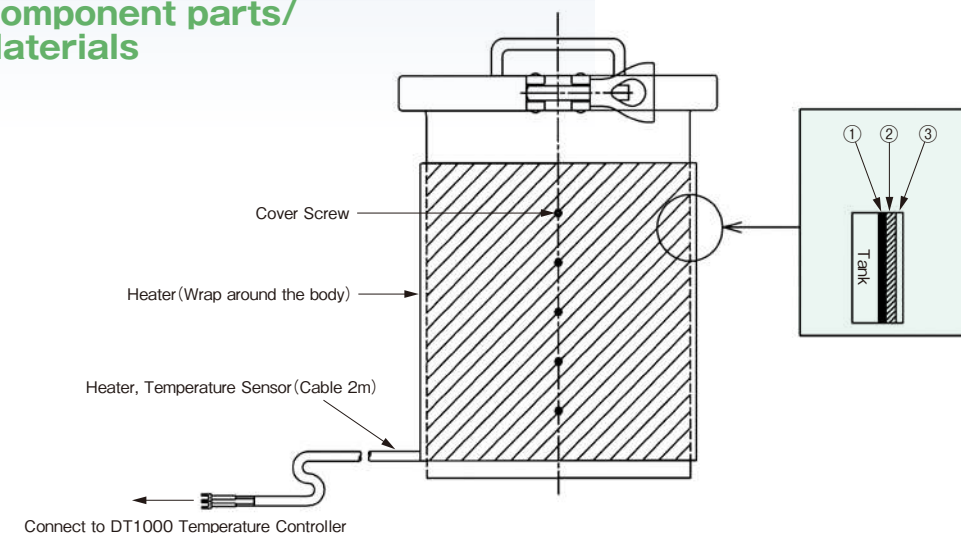
### Features

- Silicone rubber heater is wrapped around the tank body. Glass cloth and silicone rubber are used for further heat retaining.
- Heater capacity is based on heat retention and heating requirements.

### Remarks

Shape and wattage of the heater will vary depending on the shape and capacity of the tank body and heat regulation required, thus please consult the sales department.

### Component parts/ Materials



### Specifications

Power supply	AC100V
Temperature Setting Range	Room Temperature~99°C
Sensor	PT100Ω (Standard)

### Heater Structure: Cross Sectional View

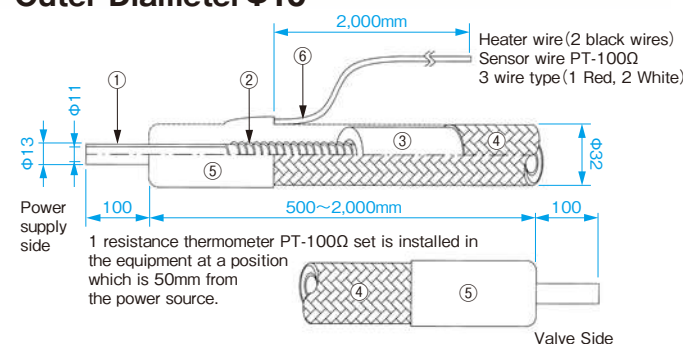
NO.	Name	Material
①	Heater	Silicone Rubber
②	Insulation Material	Glass Cloth
③	External Material	Silicone Rubber

# OPTION

## Tube Heater



Type that uses tube with Outer Diameter  $\Phi 10$



NO.	Part Name	Material	Remarks
①	Tube Insulation Layer	PFA	
②	Heat Producing Layer	Nikel Chromium	Resistant Fiber Double Insulation Processed
③	Heat Retention Layer	Heat Resistant Sponge	Independent Air Bubble Type
④	Exterior Layer	Polyester	Braided
⑤	Terminal Cap	Ethylene Propylene Rubber	Colour: Black
⑥	Lead Cover	Santoprene	Tube Colour: Grey

### Applications

- This is a heater which helps the tube retain heat. It is used as a set with temperature controller DT1000.

### Features

- When pressure feeding the liquid which has been heat retention in the tank to the valve, dispensing is possible at a constant temperature by further heat retaining of the intermediate tubing.
- 4 types of PFA tubes with outer diameters  $\Phi 6$ ,  $\Phi 8$ ,  $\Phi 10$  and  $\Phi 12$  can be used for the liquid feeding tube.

### NOTE

- \* This tube heater is meant for heat retention and not for heating.
- \* The maximum heater length is 2m.
- If you require it to be longer, please consult us.
- \* The maximum tube diameter is  $\Phi 12$ .
- If you require a thicker tube, please consult us.

### Specifications

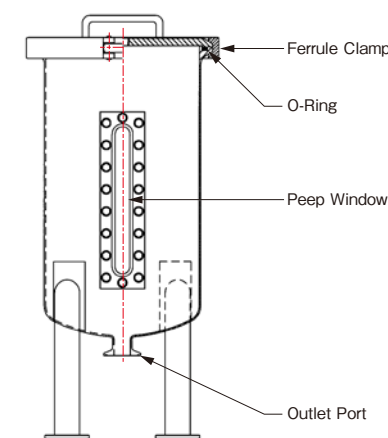
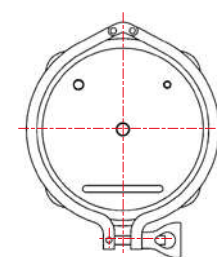
Power Supply	AC100V, About 100W
Electrical Capacitance	About 110W ( $\pm 10\%$ )
Operating Temperature	40°C heat retention (MAX60°C)
Operating Pressure	MAX0.5MPa
Temperature Sensor	Resistance thermometer PT-100Q
Lead Wire Length	2m

# OPTION

## Side Peep Window



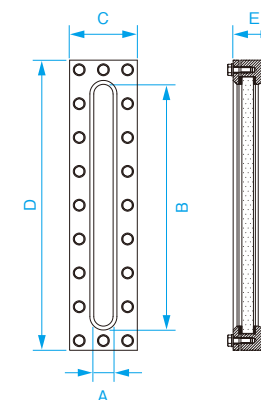
Installation example



### Features

- You can check the condition of inside the tank and the remaining amount of liquid from the side.
- Comparing to sight glass at lid, it's easier to know the condition of inside the tank.
- The material of the glass conforms to JIS B 8286 which is the sight glass standard of pressure vessel.
- As standard, three types of different sizes are available. Please consult us if you require other sizes.

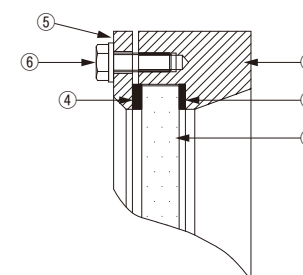
\* Neither can be used for Class 2 pressure vessels and small size vessels.



### Dimension (Unit: mm)

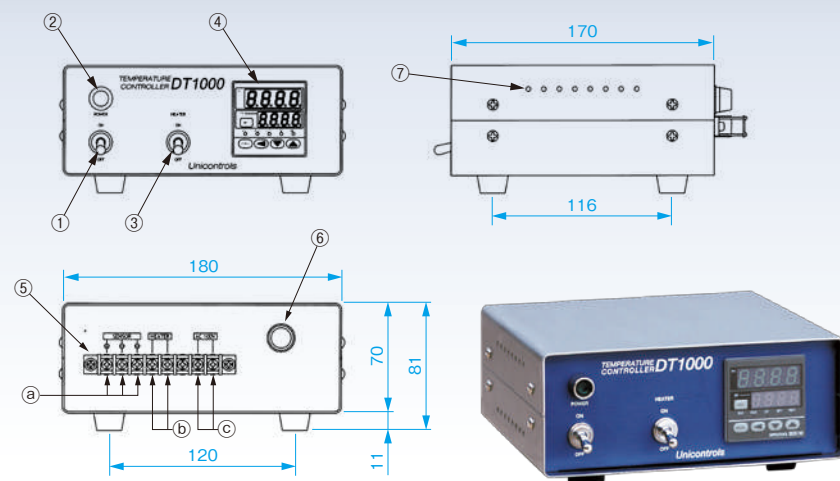
Model	Visible part		Outer dimension		
	A	B	C	D	E
S type	15	115	45	145	(35)
M type	15	155	50	190	(38)
R type	20	250	70	300	(44)

\* E dimension changes when gasket is tightened.



## Temperature Controller (DT1000)

NO.	Name
①	Power Switch
②	Power Display Light
③	Heater Power Switch
④	Digital Indication Controller
⑤	Terminal Block
⑥	Power Fuse
⑦	Vents
a	Platinum Temperature Sensor Connection
b	Heater Connection
c	Power Cable Connection



NO.	Name	Material
①	Body Part	SUS304*1
②	Inner Gasket	Required to follow the material of tank o-ring.
③	Glass Plate	Tempered Glass*2
④	Outside Gasket	PTFE
⑤	Pressing Plate	SUS304
⑥	Bolt-Washer	SUS304 Equivalent

\*1 As option, SUS316 material is available.  
\*2 As custom order, Low expanding Borosilicate tempered glass is also available.



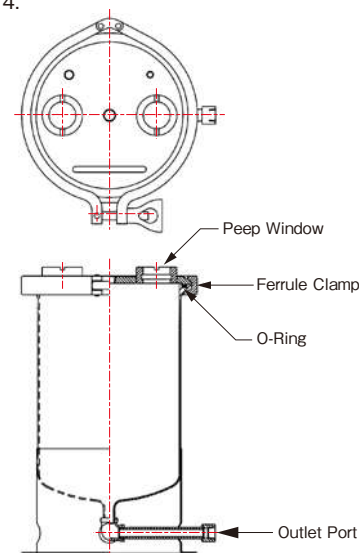
# OPTION

## Peep Window

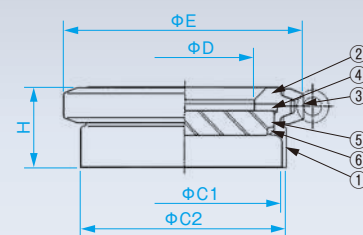
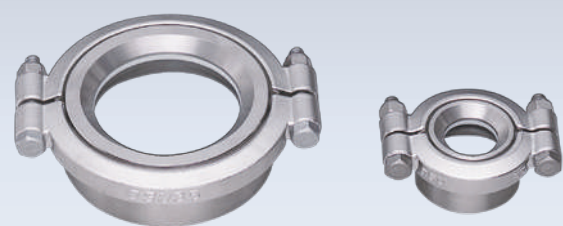


### Applications

- 2 peep windows are required for visual inspection and lighting in order to check the materials in the tank.
- \* There are certain types that are not available depending on the lid diameter and shape, so please refer to optional list on page 4.



### Peep Window Clamp Type USO series



- Because of clamp type, it can be easily cleaned and replaced if the glass is dirty or damaged.
- The sizes of glass (visible part) are  $\phi 26 \sim \phi 110$ . (7 types)
- Glass material is standard tempered glass (maximum operating temperature:  $80^{\circ}\text{C}$ ).
- As custom order, Low expanding borosilicate tempered glass (maximum operating temperature:  $260^{\circ}\text{C}$ ) is also available. For heat resistance application, it's available to use highly heat resistant O-ring together with low expanded borosilicate tempered glass.

NO.	Name	Material
①	Nozzle	316L
②	Holder Ring	SUS304
③	Handle Band	SCS13
④	Cushion Ring	PTFE
⑤	Glass Plate	Tempered Glass*1
⑥	O-Ring	FKM(Standard): $140^{\circ}\text{C}$ Kalrez®*2: $150^{\circ}\text{C}$ EPDM: $140^{\circ}\text{C}$ Silicone: $100^{\circ}\text{C}$ PTFE: $90^{\circ}\text{C}$ (The usable temperature difference : within $70^{\circ}\text{C}$ )

\*1 Borosilicate is available as custom order.

\*2 Kalrez® is a trademark or registered of E.I.Du Pont and affiliated companies.

#### Dimension(Unit : mm)

Model	C1	C2	D	E	H
USO1.5S	34.0	38.1	26.0	62.5	33.0
USO2.0S	47.8	50.8	26.0	62.5	33.0
USO2.5S	59.5	63.5	36.0	76.0	33.0
USO3.0S	71.0	76.3	56.0	103.0	39.0
USO3.5S	85.1	89.1	56.0	103.0	39.0
USO4.0S	97.7	101.6	70.0	118.5	39.0
USO4.5S	108.3	114.3	80.0	131.5	44.0
USO5.5S	133.8	139.8	90.0	142.5	44.0
USO6.5S	159.2	165.2	110.0	173.0	59.0

- \* Maximum operating temperature of the sight glass is the maximum operating temperature of O-ring. (See right)
- (The usable temperature difference : within  $70^{\circ}\text{C}$ )
- \* Neither can be used for Class 2 pressure vessels and small size vessels.

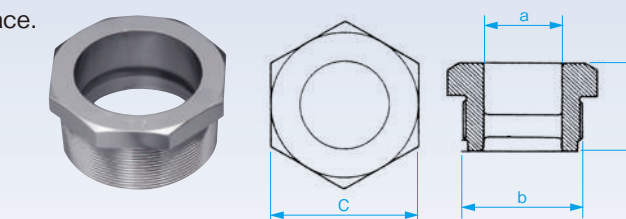
### Peep Window Screw Type USK series

\* Neither can be used for Class 2 pressure vessels and small size vessels.

#### Straight Screw Type

- Since the dedicated socket is used for installation, it can also be mounted on a curved surface.
- It can be used from vacuum to pressurization ( $1.76$  to  $1.96$ ).
- Adhesive is not used. (Glass and metal ring are welded.)

\* Please consult us about the Sealing material.



\* USKG-1Q, 2 is hexagonal  
USKG-3, 4 is octagonal shape

#### Dimension(Unit : mm)

Model	a	b(Screw Standard)	c	d	Durable Pressure(MPa)	Material	Maximum Operating Temperature( $^{\circ}\text{C}$ )
USKG-1Q	25	G1-1/4	46	31	Vacuum~1.96	SUS304	230
USKG-2	40	G2	65	43	Vacuum~1.96	SUS304	180
USKG-3	70	G3	95	50	Vacuum~1.76	SUS304	100
USKG-4	90	G4	115	58	Vacuum~1.76	SUS304	80

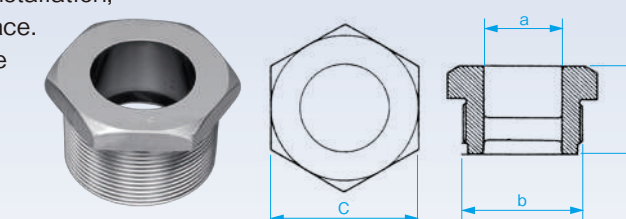
\* Maximum operating temperature will drop if the operating pressure becomes higher than  $1.2$  MPa for 1Q and the other types exceed  $1.0$  MPa.

\* As option, SUS316 material is available.

#### Taper Screw Type

- Since the dedicated socket is used for installation, it can also be mounted on a curved surface.
- It can be used from atmospheric pressure to pressurization ( $1.76$  to  $1.96$ ).
- Adhesive is not used. (Glass and metal ring are welded.)

\* Please consult us about the Sealing material.



\* USKR-1Q, 2 is hexagonal  
USKR-3, 4 is octagonal shape

#### Dimension(Unit : mm)

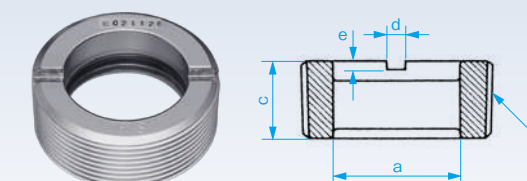
Model	a	b(Screw Standard)	c	d	Durable Pressure(MPa)	Material	Maximum Operating Temperature( $^{\circ}\text{C}$ )
USKR-1Q	25	R1-1/4	46	31	Atmospheric~1.96	SUS304	230
USKR-2	40	R2	65	43	Atmospheric~1.96	SUS304	180
USKR-3	70	R3	95	50	Atmospheric~1.76	SUS304	100
USKR-4	90	R4	115	58	Atmospheric~1.76	SUS304	80

\* Maximum operating temperature will drop if the operating pressure becomes higher than  $1.2$  MPa for 1Q and the other types exceed  $1.0$  MPa.

\* As option, SUS316 material is available.

- It is a space-saving type because it screws directly into the lid.
- It can be used from atmospheric pressure to pressurization (to  $1.96$ ).
- Adhesive is not used. (Glass and metal ring are welded.)

\* If larger size are required, please contact us.



#### Dimension(Unit : mm)

Model	a	b(Screw Standard)	c	d	e	Durable Pressure(MPa)	Material	Maximum Operating Temperature( $^{\circ}\text{C}$ )
USKX-1Q	25	R1-1/4	19	6	2.5	Atmospheric~1.96	SUS304	230
USKX-2	40	R2	24	6	4	Atmospheric~1.96	SUS304	180

\* Maximum operating temperature will drop if the operating pressure becomes higher than  $1.2$  MPa for 1Q and the other types exceed  $1.0$  MPa.

\* As option, SUS316 material is available.

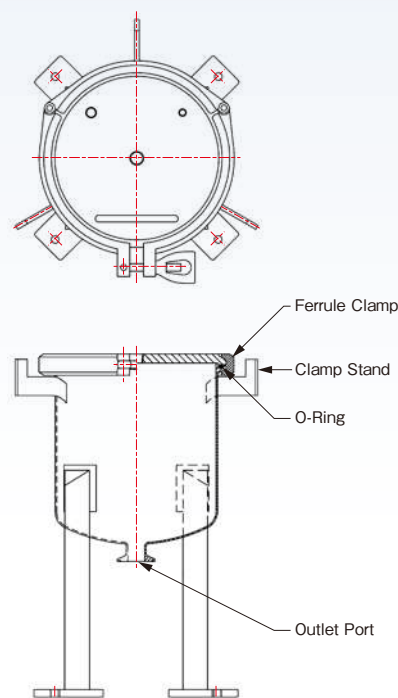
# OPTION MANUFACTURE

## Tank with Clamp Stand



### Features

- This clamp stand type tank is very convenient with its stand as support when the clamp is removed and placed onto it.
- There are some tanks which clamp stand cannot be welded onto it, so please refer to option list on page 4.

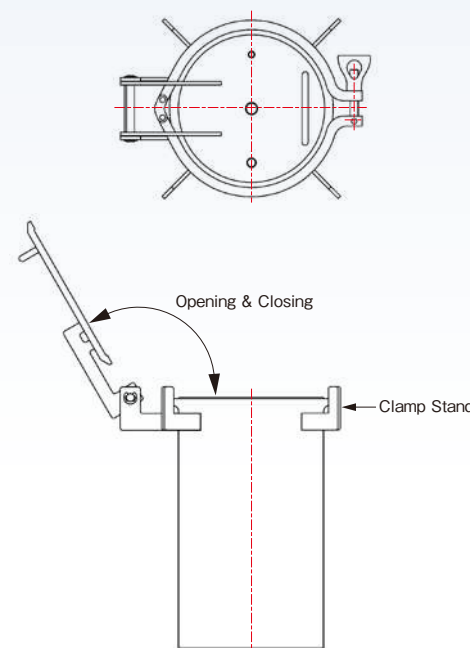


## Hinged Type Tank



### Features

- The lid is attached to the tank body with hinge, so the tank can be opened or closed easily. Furthermore, it is also excellent in terms of safety.
- There are some tanks which hinge cannot be welded onto it, so please refer to option list on page 4.



## Laser Marking

Sanitary Stainless Tank  
Model: TS18R  
Lot No. 90518  
 Unicontrols Co., Ltd.

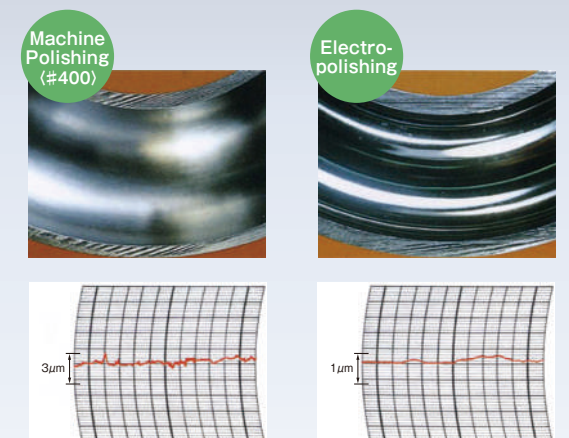


Laser marking is a process that causes part of the surface to change by irradiation of the laser, and through melting and evaporation, marking such as letters and symbols are imprinted directly on to the workpiece.

### Features

- The prints are permanent and won't fade away.
- Since it is not using solvent, it will not cause environmental problem.
- CAD can be used to draw high definition pattern.
- Not only can the letters and symbols be seen visually, 2D bar code read by CCD and QR code markings can also be imprinted.

## Electro-polishing



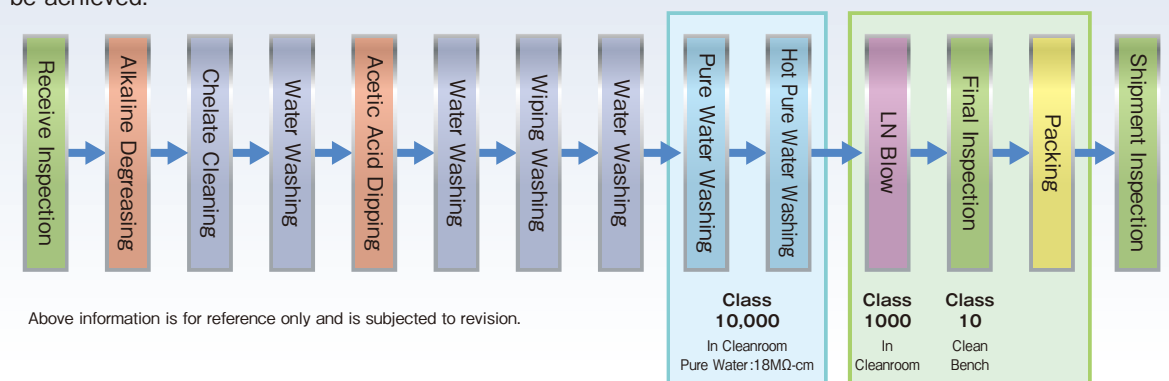
### Features

- Electropolishing is different from physical polishing eg: buff polishing, as it can achieve clean polished surface without leaving any polished materials eg: residue.
- The surface can be achieved with high quality glossy finish.
- Oxidation scale on the welded part is removed, and surface becomes smooth.
- Chrome concentration of the material improves by electropolishing, and corrosion resistance is increased to form a strong passivation film.

## Precision Cleaning

Precision cleaning removes fine particles, ion, oil etc that are required pharmaceutical industry, food industry and advanced technology industry.

By combining with electropolishing, surface roughness can be made more smooth and purified products can be achieved.



Above information is for reference only and is subjected to revision.



# CUSTOM-MADE TANKS

Flange Type Bolt Nut Tank



**Applications**

- Tank that can with stand high pressure (above 0.49MPa).
- Manufacturing of this 2nd class pressure vessel test acquisition tank is possible.

**NOTE**

- Plate thickness, Bot Nut Dimension and its quantity depends on Maximum Pressure, Normal Operating Pressure and diameter lid.
- ※ Please consult us for more details.

Flange Type U Groove Bolt Nut Tank



**Applications**

- Tank that can with stand high pressure (above 0.49MPa).
- Manufacturing of this 2nd class pressure vessel test acquisition tank is possible.
- Since the tank lid is U groove, the bolt nut can be attached or removed easily.

**NOTE**

- Plate thickness, Bot Nut Dimension and its quantity depends on Maximum Pressure, Normal Operating Pressure and diameter lid.
- ※ Please consult us for more details.

Flange Type U Groove Swing Bolt Tank



**Applications**

- Tank that can with stand high pressure (above 0.49MPa).
- Manufacturing of this 2nd class pressure vessel test acquisition tank is possible.
- Since groove is U groove, and bolt attached to the tank is swing type, it is easy to open and close the tank lid.

**NOTE**

- Plate thickness, Bot Nut Dimension and its quantity depends on Maximum Pressure, Normal Operating Pressure and diameter lid.
- ※ Please consult us for more details.

Jacket Type Tank



**Applications**

- The Jacket which is set on the external tank, is used for controlling the temperature of materials inside the tank, and is also used to circulate warm water and cooling water.

Non Pressure Tank with Adjustors



Stirrer Tank with Stand



High Grade Sanitary Jacket Tank



Sanitary Tank with Clamp Stand



# CUSTOM-MADE TANKS



## Classifications of regulations for the containers

\*This chart is for reference purpose only . Please clarify with the respective authorities regarding the tank regulations.

Applicable Regulations	Labour Safety Hygiene Act		
Applicable Classifications	First Class Pressure Vessel	Small Pressure Vessel	Second Class Pressure Vessel
Conditions on usage and conditions on design	Those that falls under any of the following, and is more than a small pressure vessel.	A first class pressure vessel, which falls under any of the following.	Among the container which holds the gas at above 0.2MPa pressure (except 1st class pressure vessel), those that falls under any of the following.
	<p>(1) Accepts vapours and other heating medium, generating steam in the container for heating the solid or liquid, that the pressure in the container exceeds the atmospheric pressure.</p> <p>(2) Due to chemical reaction in the container, and other nuclear reaction, vapour is generated in the container, that pressure in the container exceeds atmospheric pressure.</p> <p>(3) Due to separation of the liquid components in the container, the liquid is heated, and vapour is generated in the container, such that pressure in the container exceeds atmospheric pressure.</p> <p>(4) Besides the above, container that holds the liquid at temperature above the boiling point at atmospheric pressure.</p>	<p>(1) Inner capacity is below 0.2 m<sup>3</sup>, and pressure used is less than 0.1MPa.</p> <p>(2) Inner diameter of tank body is below 500mm, length is below 1000mm, and pressure used is less than 0.1MPa.</p> <p>(3) Multiplication of Max. Used Pressure P(MPa) and inner capacity V(m<sup>3</sup>) is more than 0.004 and less than 0.02. (0.004 &lt; PV ≤0.02)</p>	<p>(1) Inner capacity is above 40ℓ.</p> <p>(2) Inner diameter of tank body is above 200mm, and length is above 1000mm.</p>
Examination and Inspection	It is required by Labour Bureau to inspect every stage of the installation, manufacturing and manufacturing approval. Additionally, it is an obligation to register with the Performance Inspection Agency to conduct the performance test once a year.	It is an mandatory to conduct voluntary inspection once annually for individual test during manufacturing or import. It is an obligation to register individual test with respective agencies.	It is an mandatory to conduct voluntary inspection once annually for individual test during manufacturing or import. It is an obligation to register individual test with respective agencies.
Export Inspection	If you want to export the above container abroad, it has to comply to the regulations of the particular country. Example:Applicable regulations differs depending on countries' regulations such as ASME , JIS standard etc. Especially China which has their own tank regulations known as "Standard Pressure Vessel Safety Inspection Procedure".		



# CUSTOM MADE SYSTEMS

Unicontrols designs and manufactures the system to run constant flow feeding, pressure feeding and spraying after the process of measuring, mixing, stirring, degassing, heating and cooling, filtering of the fluids.

## Example: System Assembly



### System Components

- Stirring Tank
- Stirring & Temperature Control Tank
- Jacket Type Tank
- Hot Water Circulation Device
- Electronic Scale
- Filter Housing
- System Controller
- Wagon

## Examples of System Built

### Pharmaceutical Pump System



This pump system is suitable for filling medicine. Since the construction has no seal such as check valve in the pump head, it is easy to disassemble and wash. High filling accuracy of less than  $\pm 1\%$ . (Please refer to Hibar catalogue for more details)

### Ink Filling System



This ink filling system is a colour printer and is used to fill various types of ink (4~8 colours) into the cartridge simultaneously. The type of colour, filling volume and filling quantity shall be discussed. The injection of the ink is by the Hibar Pump, thus high precision filling accuracy can be achieved.

### Other Systems

2 liquid component mixing & pressure feeding system

Vacuum degassing dispensing system

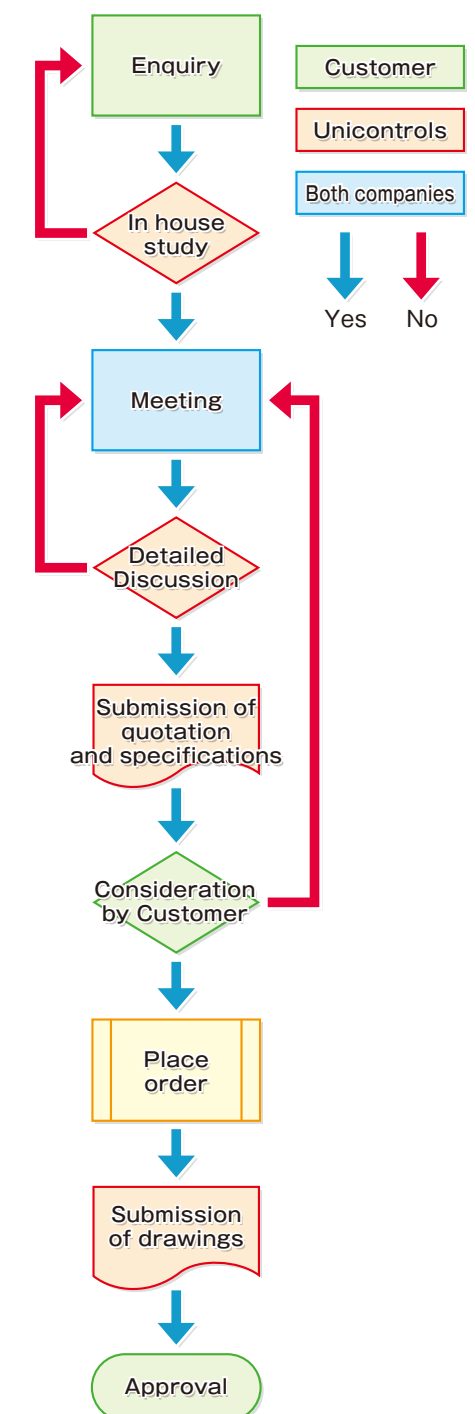
Solvent circulation system

Pure water circulation system

Continuous degassed vacuum pumping system

Dilution mixed coating system

## Process Flow of Custom Made System



- The process flow chart of custom made system starts with enquiry from customer as shown above.
- Specialist group is in charge of custom made system.

# Points on Selection of Stirrer Unit



We have a wide range of model and blade designs available so that you can select an appropriate system based on the material characteristics and application. Each unit is also available in an E-Type model with removable shaft.

## ●Application

This unit is used for mixing and stirring liquids from 1ℓ to 40ℓ to prevent sedimentation.

## Example of installation of motorised stirrer unit



## Example of installation of magnetic stirrer unit



## ■Selection Point I What is the material you are using ?

Selection of motor, shape of stirrer blade and whether to include a baffle plate is decided based on differences in material characteristics, viscosity, specific gravity etc.

## ■Selection Point II What is your required capacity ?

The motor torque is selected based on material capacity.

## ■Selection Point III Is explosion-proof required ?

If explosion-proof is required, select an air motor.

## ■Selection Point IV Other conditions ?

The shaft and blade coating and blade position are selected based on the material.

\*For detailed information, please consult our sales department.



## ●Custom-made stirrer blades

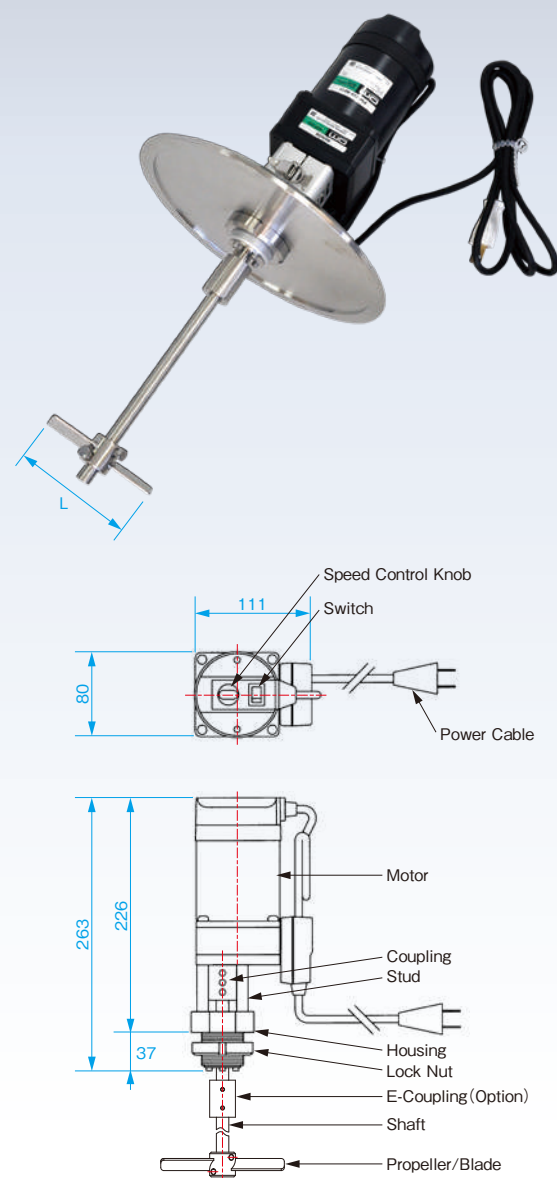
· Stirrer blades come in various design as shown in the picture.  
Besides the ones shown in the picture, we also manufacture blades in designs upon your request.



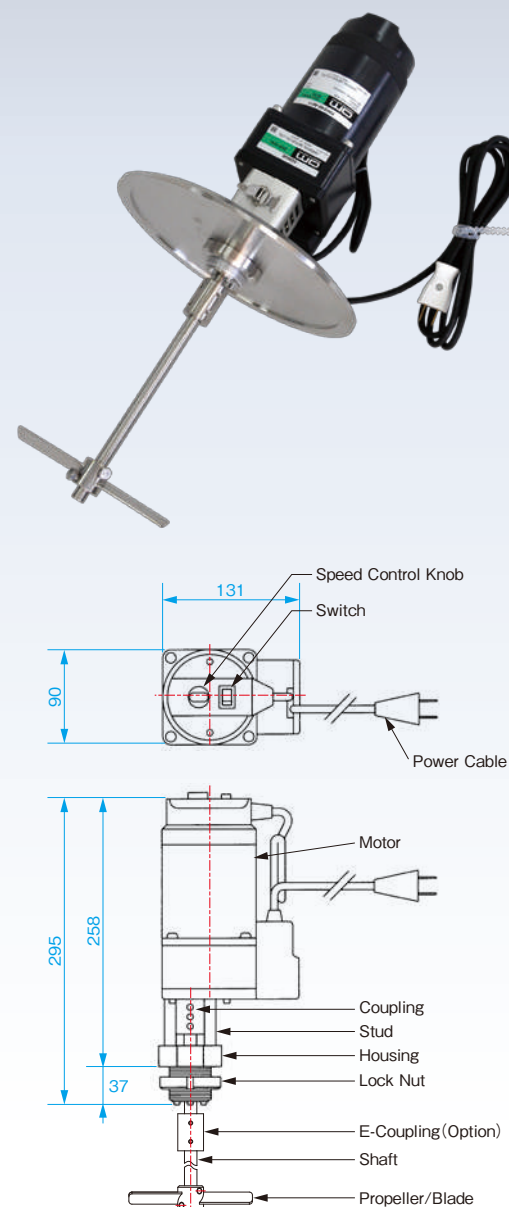
# KX series

## Electrical Motor

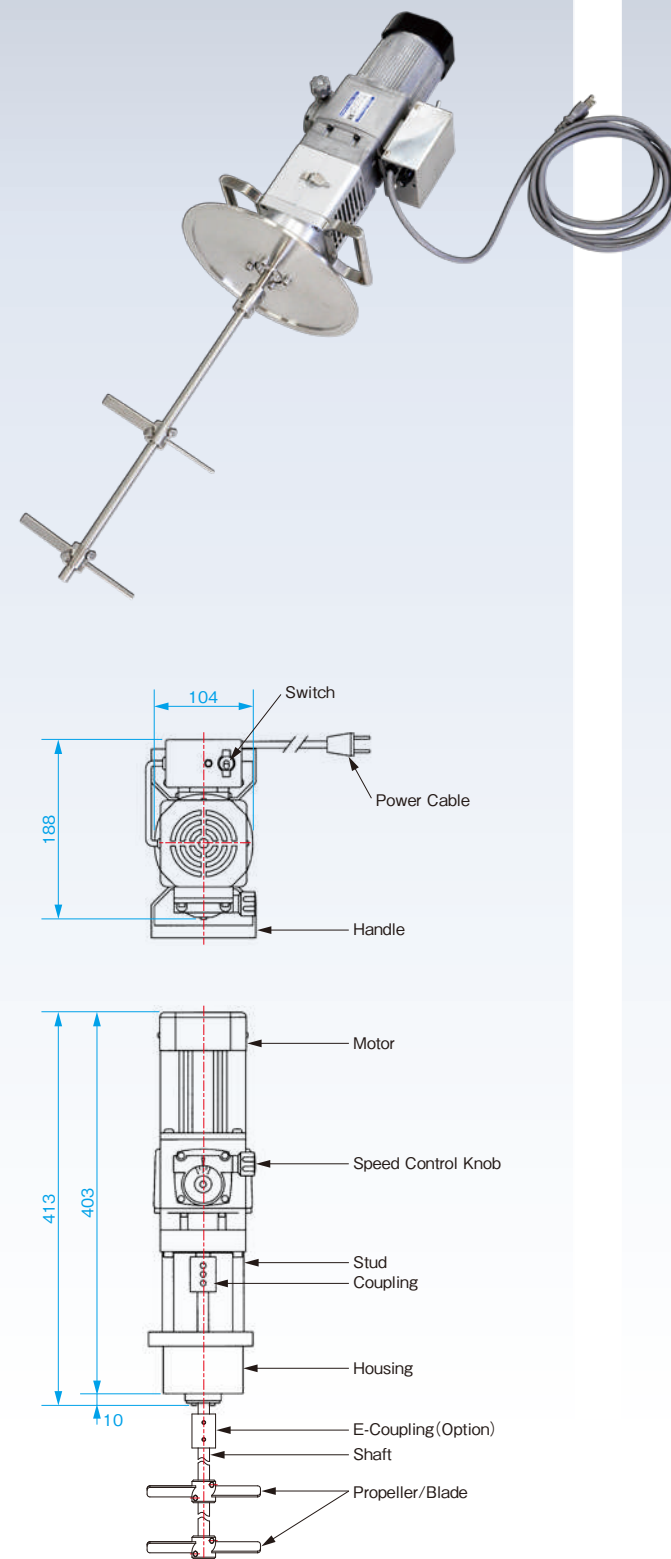
KX-125



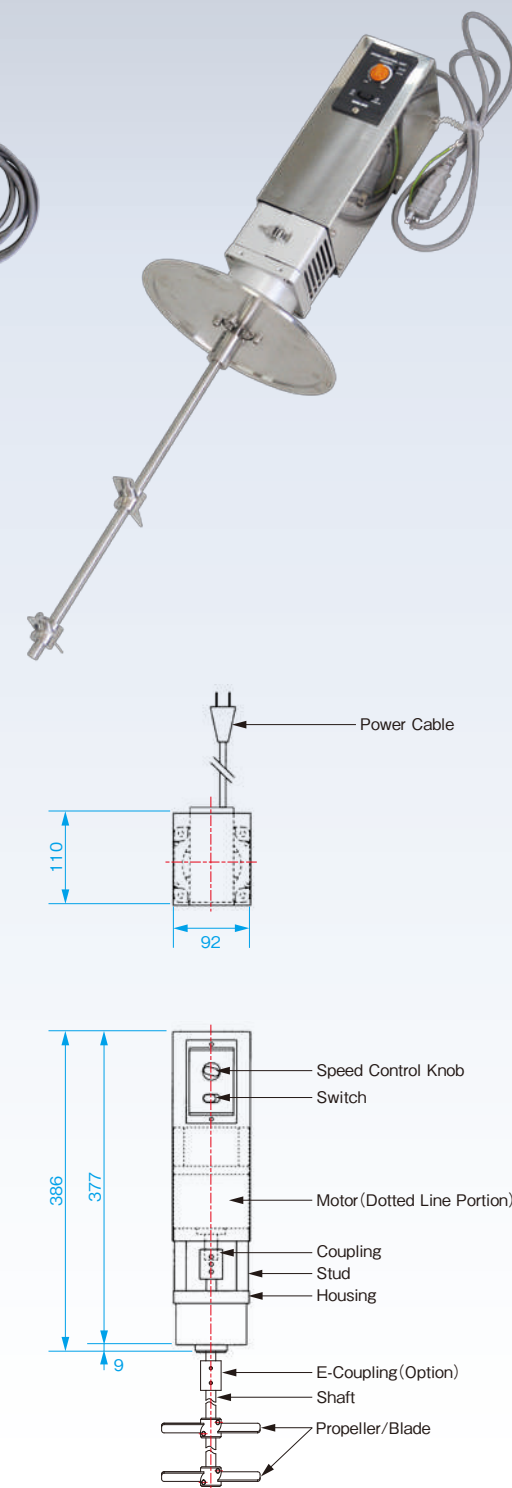
KX-145



KX-395P



KX-399R



Model	KX-125	KX-145	KX-395P	KX-399R
Wattage (Output)	25W	40W	90W	90W
Torque (N·m)	0.18~0.65	0.22~1.10	2.84~12.25	3.30 (Fixed)
Maximum Output (rpm)	280	280	173	222
Minimum Rotation (rpm)	18	18	0	11
Speed Control	Standard Equipment			
Shaft	φ12			
Propeller/Blade	2 2-wing blades or 4 1-wing blades L=90, 100, 120, 150mm			
Power	AC100V (50/60Hz)			

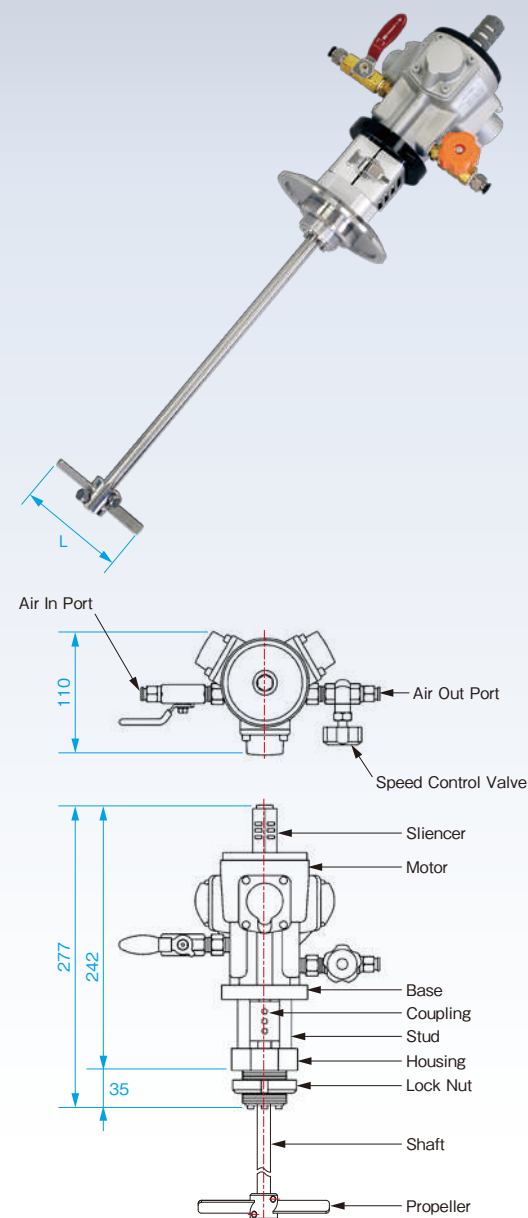
※Max torque for KX125, KX145 is 240rpm, min torque is 18rpm.  
 ※Max torque for KX395P is ≈0, min torque is 173rpm.  
 ※The torque for KX399R is constant regardless of the speed of rotation.  
 ※The highest and lowest speed of rotation is the motor specifications. The actual speed of rotation varies depending on the material viscosity and other factors.  
 ※We can produce single phase 200~230V and three-phase 200~230V specifications.

\*The coupling part is protected by safety cover.  
 \*Picture shows E type for all, shaft can be removed from the cover.

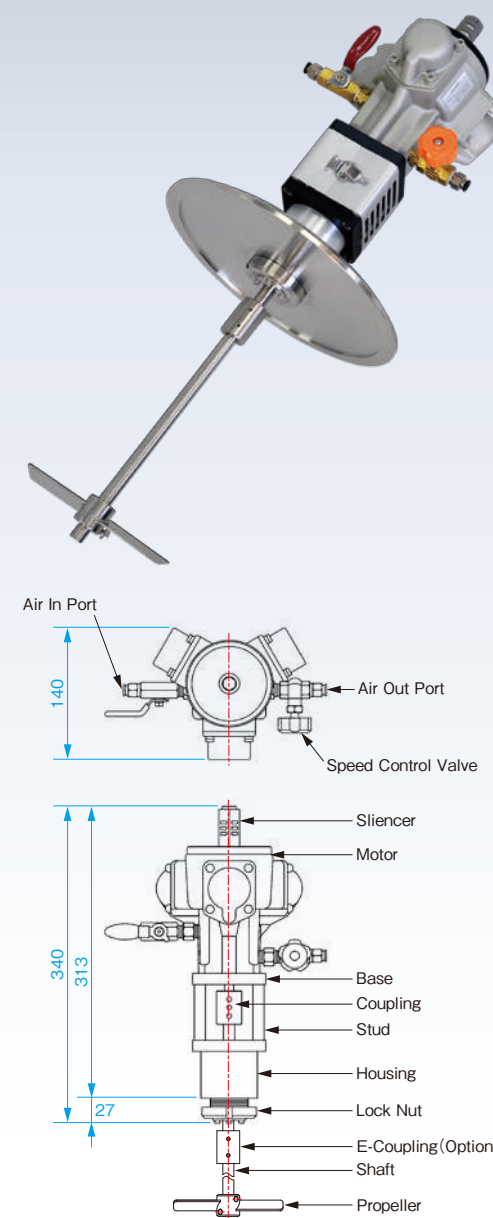
# KYseries

## Air Motor

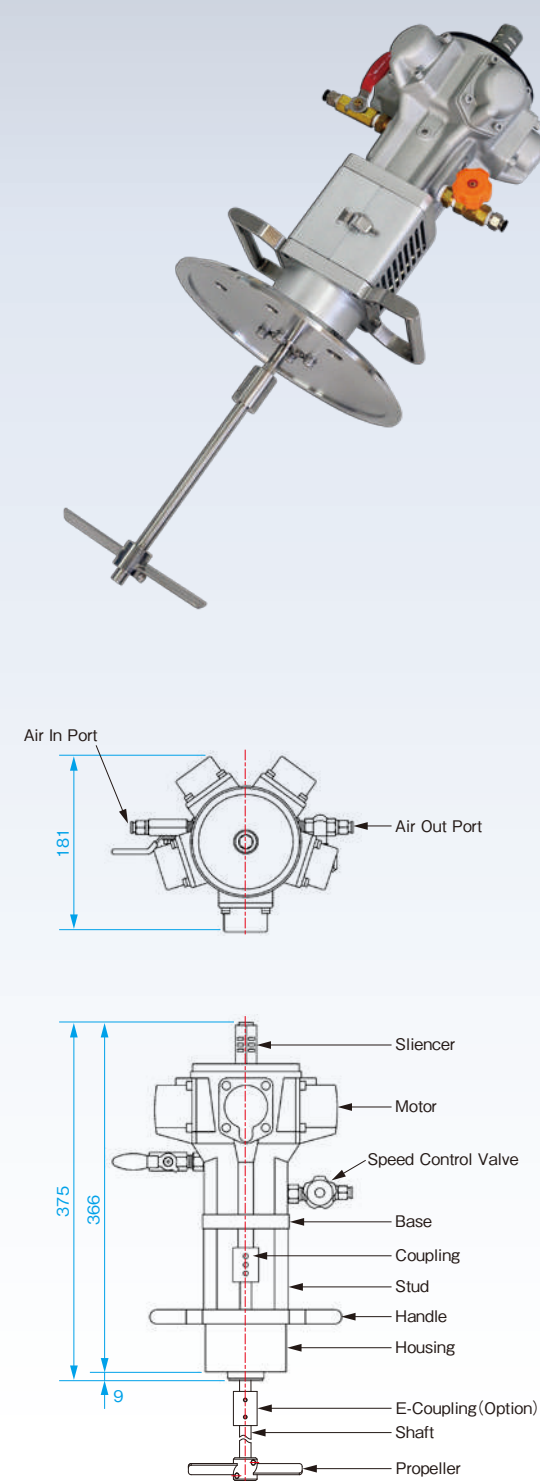
KY-110



KY-215



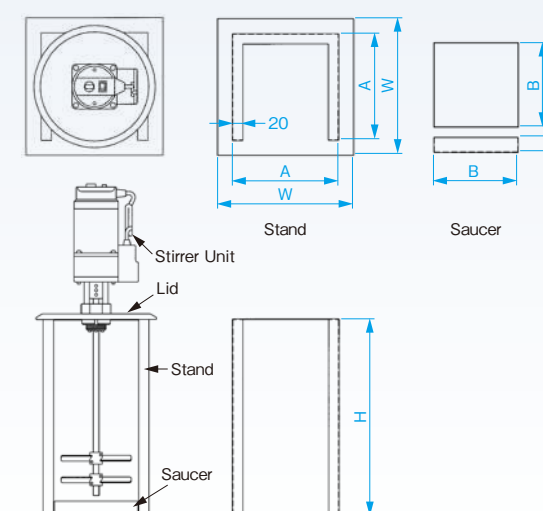
KY-330



Stirrer Unit Stand



- The stand is used to store the stirrer unit after it is removed from the tank.
- 2 types of standard sizes KO-300, KO-400, KO-530 are available.
- The sizes of the stand varies depending on the stirrer unit, so please consult the sales department.



Dimension (Unit : mm)

Model	KO-300	KO-400	KO-530
A	160	215	215
W	220	275	275
H	300	400	530
B	115	170	170

Model	KY-110	KY-215	KY-330
Maximum Drive Air Pressure	0.6MPa	0.6MPa	0.6MPa
Maximum Output	73.5W	125W	228W
Maximum Torque (N.m)	0.637	1.37	2.94
Maximum Rotation (rpm)	1,100rpm (Variable)	900rpm (Variable)	750rpm (Variable)
Practical Minimum Rotation	approx 220rpm	approx 180rpm	approx 150rpm
Air Consumption (at Max. Torque)	200ℓ/min	260ℓ/min	400ℓ/min
Shaft	φ12		
Propeller/Blade	2 2-wing blades or 4 1-wing blades L=90, 100, 120, 150mm		

※Please ensure you use lubricator when using air motor stirrer unit.  
 ※The maximum torque is the value at maximum speed of rotation.  
 ※The highest and lowest speed of rotation is the motor specification. The actual speed of rotation varies depending on the material viscosity and other factors.

\*The coupling part is protected by safety cover.  
 \*The picture shows KY-110 as standard type, E type for KY215, KY330 (Option), shaft can be removed from the cover.