



# BLOVAC DRUM INSTRUCTION MANUAL

This manual is the explanation booklet for the safe and proper use of BLOVAC DRUM. Be sure to read through this manual before using. Keep this manual carefully at the convenient place to read whenever you need.

※Specifications are subject to change for improvement without prior notice.



## SYMBOL MARK, SIGNAL WORD and ITS MEANING

In the paragraph with these indications, the very important caution that might cause the injury to the human life or damage to property is mentioned. Fully realize these indication and meaning and then read the text.

"FORCIBLE WARNING" you must do without fall.



"ROUSE CAUTION" you must give attention.



**BLOVAC CO., LTD.**  
TOKYO, JAPAN

## 1.SUMMARY

BLOVAC DRUM is the pump of exclusive use for the drum, which makes use of the compressed air. It has three types. One is Q TYPE that is only for suction, second is TO TYPE that is only for discharge and the last is QTO TYPE that is for both suction and discharge. Also, besides the general type, there are three special types such as G · S · N. , according to the liquid to be handled. Any type of them has rather simple structure and can be easily handled. In addition, each type is equipped with distinguished efficiency.

## 2.MODEL and SPECIFICATION

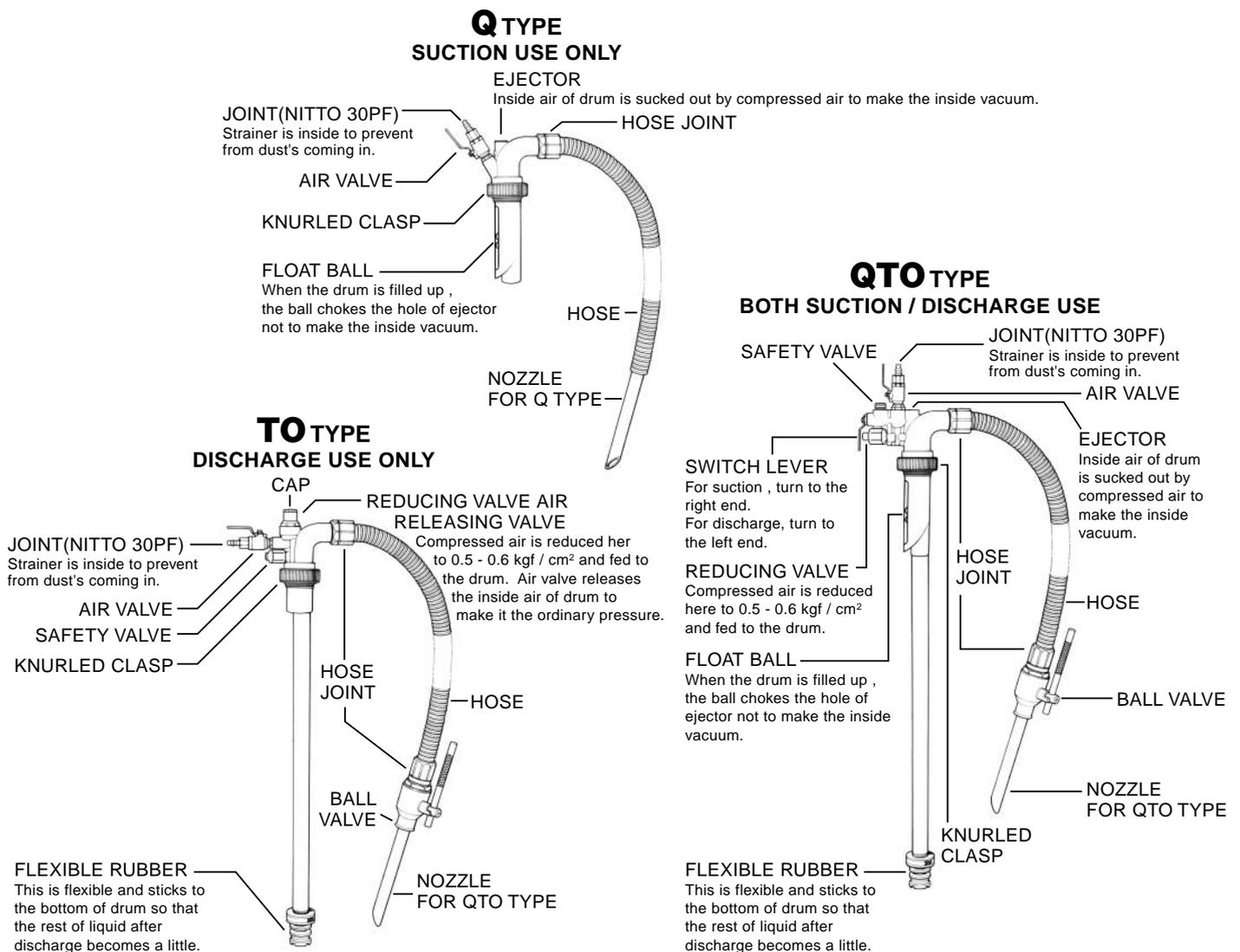
MODEL	Q · TO · QTO			
	GENERAL USE	G	S	N
OBJECTIVE LIQUID	WATER · OIL	GASOLINE · LIGHT OIL ALCOHOLE	THINNER	GENERAL SOLVENT
MAIN BODY	ALUMINUM ALLOY			
HOSE	OIL RESISTANT VINYL CHLORIDE φ 32 x 3m	NITRILE RUBBER WITH EARTH φ 25 x 3m	SPECIAL RUBBER φ 25 x 3m	SUS φ 25 x 2m
FLOAT BALL	NYLON			
FLEXIBLE TUBE			ALUMINUM ALLOY	
O-RING	NITRILE RUBBER		FLUORINE RUBBER	TEFLON

\* The O-ring for the air system of all the models is of Nitrile Rubber.

\* The length of nozzle is 30cm.

\* The air volume adjustment screws are supplied with Q and QTO type as the standard accessories.  
Please refer their usage to [4 . CAUTION ON HANDLING] .

## 3.PART NAME and FUNCTION



## 4. CAUTION ON HANDLING

### "WARNING"



- ① Because of the material, any type cannot handle the corrosive acid and the alkalies.
- ② The applicable air pressure to all the models is below 7kg/cm<sup>2</sup>.  
When the air pressure is higher than it, reduce the pressure to below 7kg/cm<sup>2</sup>.

- ③ For Q and QTO type, the air adjustment screw (hereinafter called ADJUSTMENT SCREW) #7 for the air pressure below 7kg/cm<sup>2</sup> is set on delivery from the factory. When your air pressure is lower than it, replace it with the proper Adjustment Screw according to Table 1. But, in case the drum is damaged, use the adjustment screw for one-step higher pressure. To replace the adjustment screws, remove the joint of the air valve and then a adjustment screw with slotted head can be seen on the valve side. (Use the minus screw driver.)

Table 1

APPLICABLE AIR PRESSURE	AIR ADJUSTMENT SCREW
Below 7kg/cm <sup>2</sup>	#7 ( 7 is marked )
Below 6kg/cm <sup>2</sup>	#6 ( 6 is marked )
Below 5kg/cm <sup>2</sup>	#5 ( 5 is marked )
Below 4kg/cm <sup>2</sup>	NO MARKING

- ④ The drum to be used must be in accordance with JIS Standard 1 kind M class, 2 kind H class ( plate thickness 1.2 mm ) or more. But, when both operation of suction and discharge are repeatedly done in the same drum, the drum of 1 kind H class ( plate thickness 1.6 mm ) or more and of no damage must be used.
- ⑤ When the special type ( G · S · N ) is used, the earth wire must be surely grounded.
- ⑥ The temperature of the object to be handled is ; General type -- below 60°C / Special type -- below 110°C
- ⑦ The reducing valve and the safety valve are already adjusted. Do not break up nor adjust them.
- ⑧ In the case of suction, pay attention that the ejector might spout out the liquid due to the soiled float ball when the liquid fills the drum. When the volatile liquid is handled, pay enough attention to ventilation.
- ⑨ Do not put the goods on the drum. It may leap up when the valve is opened or closed.
- ⑩ In the case of discharge, do not put the end of nozzle into the liquid. It is because the liquid in the drum is blown up by the air after finishing discharge of the liquid.
- ⑪ In the case of the liquid that dislikes moisture, remove moisture in the compressed air by a air drier or the like.
- ⑫ In the case of handling the liquid that contains the foreign matters like the sludge, the metal cutting chips or the like, the maximum limit of the size of such foreign matters is 7 - 8 mm that is possible to pass through the hose and the body.
- ⑬ When disconnecting the body from the hose, do not separate the clasp from the hose.
- ⑭ After finishing the operation, shut the air valve without fail.

### "CAUTION"



## 5. HOW TO HANDLE

### 1) Q TYPE

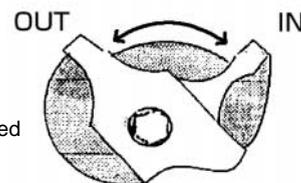
- ① Set the BLOVAC DRUM onto the filling opening of the drum firmly not to leak the air. Shut the ventilation hole (the smaller hole on the lid.)
- ② Shut the air valve. (= set the lever horizontally.)
- ③ Connect the joint with the compressed air.
- ④ Open the air valve. (= set the lever vertically.) Then, suction of the liquid starts.
- ⑤ When the drum is filled up, the float ball works to stop suction automatically.
- ⑥ Shut the air valve.  
At this time, pay attention that if the end of the hose is located lower than the drum, the liquid in the hose flows backward.

### 2) TO TYPE

- ①②③ are same as Q TYPE.
- ④ Shut the ball valve. (= set it perpendicularly to the nozzle.)
- ⑤ Check the air release valve. If it is open, push it down and turn it to the right after moving the cap up and down some times.
- ⑥ Open the air valve.
- ⑦ Open the ball valve. (= set it parallel to the nozzle) and then the liquid is discharged. When the drum becomes empty, the air come out with the liquid.
- ⑧ Shut the ball valve and then discharge of the liquid stops.
- ⑨ Shut the air valve.
- ⑩ Open the air release valve. (= turn the cap to the left so that the inside air of the drum pushes up the cap and is released to make the air pressure of the drum inside the ordinary pressure.)
- ⑪ Shut the air release valve in the same procedure as 5) immediately after releasing the air. (Excepting the time to release the air, always keep the air release valve shut.)

### 3) QTO TYPE

- ①②③ are same as Q TYPE.
- ④ Shut the ball valve. (Perpendicular to the nozzle.)
- ⑤ Set the switch lever to the purpose. (Refer to the figure in right.)  
Turn the lever to IN (suction) or to OUT (discharge) till it stops firmly. If the lever stopped halfway, it will cause the abnormal pressure.
- ⑥ Open the air valve.
- ⑦ When the ball valve is opened. In the case of IN (suction) : The liquid is sucked. When the drum becomes empty, the float ball works to stop suction. In the case of OUT (discharge) : The liquid is discharged. When the drum becomes empty, the air comes out with the liquid.
- ⑧ Shut the ball valve. In the case of IN, it prevents the liquid from flowing backward.
- ⑨ Shut the air valve.
- ⑩ In the case of OUT, the air release of the drum inside after operation must be done with the switch lever surely after shutting the air valve. (When the change lever is set to "IN" position, the inside air is released and the inside of the drum turns to be the ordinary pressure.)



## 6.MAINTENANCE

### 1) STRAINER

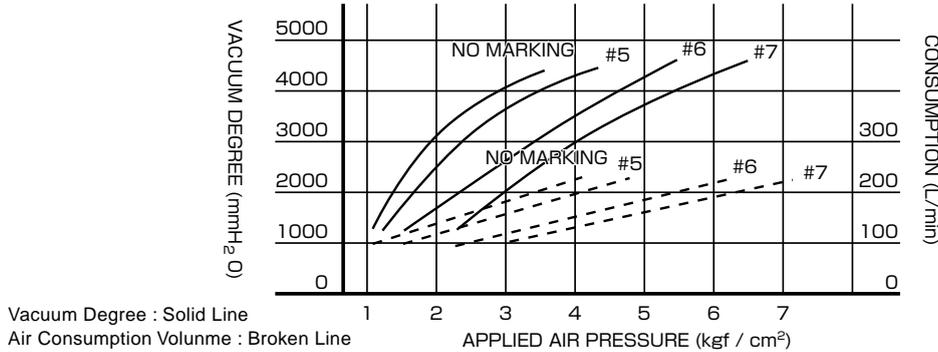
If the strainer of the joint gathers the dust too much, it may cause the trouble to the flow of the compressed air or affect the function of other parts. So, clean it with the soapy water without taking out the strainer from the joint.

### 2) FLOAT BALL and GROOVE

Always keep the float ball and its groove clean to move smoothly. If its movement is not smooth, it becomes the cause of the leakage of liquid from the ejector.

## 7.REFERENCE

### 1) VACUUM DEGREE and AIR CONSUMPTION of EACH AIR ADJUSTMENT SCREW (In the case of SUCTION)



### 2) Max. Discharge Pressure and Air Consumption Volume (In the case of DISCHARGE)

Max. Discharge Pressure 0.5 - 0.6 kgf / cm<sup>2</sup>      Max. Air Consumption Volume 100 L / min.

## 8.TROUBLE AND TROUBLESHOOTING

When anything abnormal occurs, stop operation immediately and check the trouble according to the following tables.

### In the case of Suction (IN)

TRouble	MODEL	INSPECTION AND TREATMENT	(Reference)
No Suction At All	Q · QTO	Compressed air is firmly connected ?	
		Drum is shut tightly ?	(5-1-①)
		The float ball and its groove are clean ?	(6-②)
Suction Is Weak	Q · QTO	Air adjustment screw is correct ?	(4-③)
		Drum or Hose has no damaged part ?	
		Hose or Nozzle is not choked ?	
		Strainer is not soiled ?	(6-①)
		Viscosity of liquid isn't high ?	
	QTO	Switch Lever is fully turned to the stop position on IN side ?	(5-3-⑤)
Drum is deformed hollowly	Q · QTO	Air Pressure isn't high ?	(4-②)
		Air adjustment screw is correct ?	(4-③)
		How is the strength of drum ?	(4-④)

### In the case of Discharge (OUT)

TRouble	MODEL	INSPECTION AND TREATMENT	(Reference)
No Discharge At All	TO · QTO	Compressed air is firmly connected ?	
		Drum is shut tightly ?	(5-1-①)
		Drum or Hose has no damaged part ?	
Discharge Is Weak	TO	Air Release Valve is shut ?	(5-2-⑤)
	TO · QTO	Hose or Nozzle is not choked ?	
		Viscosity of liquid isn't high ?	
Drum Is Swelled	QTO	Switch Lever is fully turned to the stop position on OUT side ?	(5-3-⑤)
	TO · QTO	How is the strength of drum ?	(4-④)
Drum Is Swelled	QTO	Switch Lever is fully turned to the stop position on OUT side ?	(5-3-⑤)

Manufacturer

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