

# CHOKE VALVE

for POWDER & GRANULE FLOW CONTROL

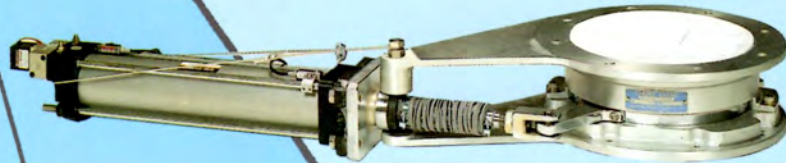
(Patented in Japan, U. S. A and England)

MITSUMI Powder & Granule Valve

Epock-making machanism!!  
Rope bind & release, applied  
for Sleeve Valve



MFV-200A  
(Manual type)



MAV-200A型  
(Automatic type)



 **MITSUMI TECHNICAL INDUSTRY CO., LTD**  
TOKYO JAPAN





Throughout history, rope and cloth has been cleverly used in an effort to improve life for mankind. At present, various kind of rope that has superior mechanical strength and chemical characteristics, some a few millimeters in diameter but stronger than steel, have been developed to withstand a load of several hundred kilograms.

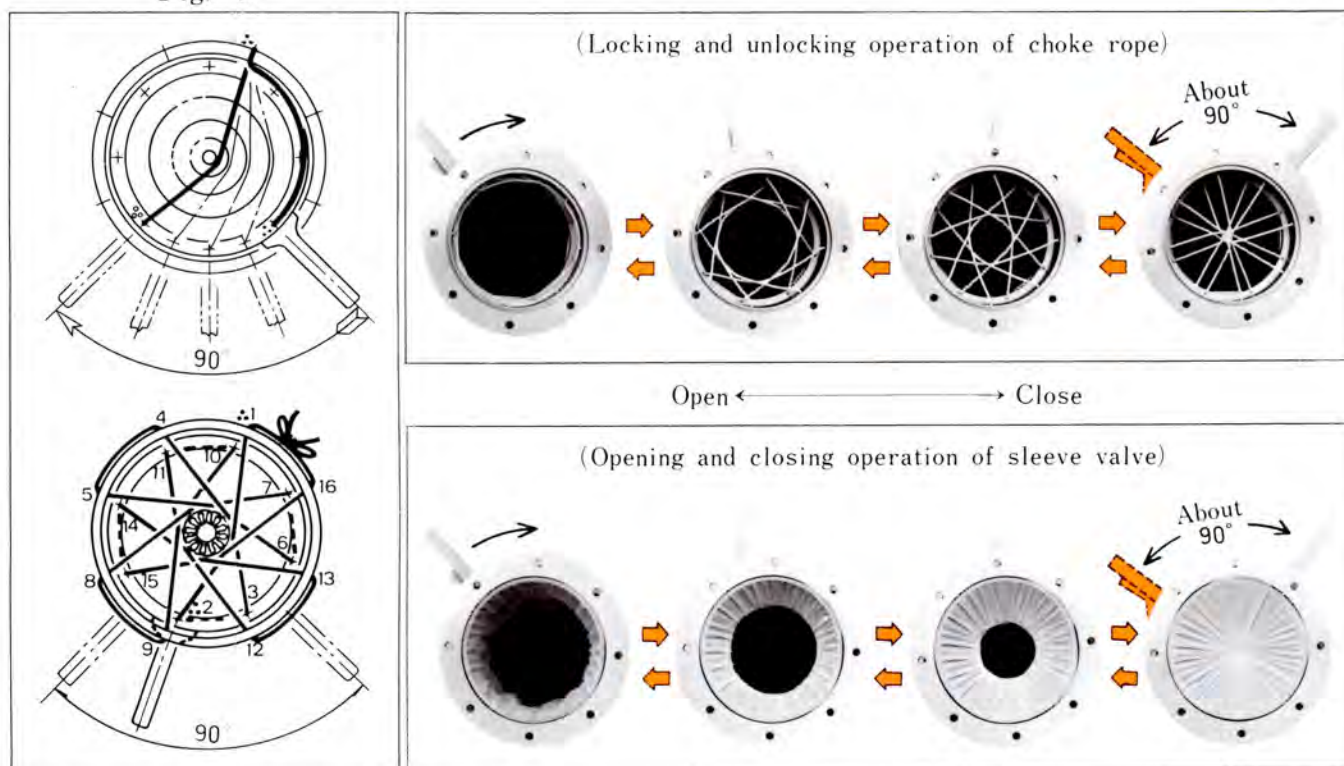
An entirely new type of powder and granule flow control choke valve utilizing rope and cloth has been developed by Mitsumi Technical Industry Co., Ltd.

With many kinds of granulated materials being increasingly used in recent years, the choke valve offers superb performance for opening/closing operation and flow control by attaching it to the inlet or outlet of powder and granule processing machines such as bins, hoppers, etc. The automatic type choke valve is specifically designed for remote control and perfectly meets the users' specifications for sanitation and fine-chemical plants. It is now being used extensively for broad applications in many fields, throughout industry

## (1) Configuration and performance

The choke valve is very simple in construction. The sleeve valve is fitted in the setting slot in the face of the flange on the casing, while the choke rope is set under the wall inside the casing. Also, a number of ropes are arranged in parallel at equal intervals on the choke ring. By turning the choke ring about  $90^\circ$  manually or automatically, the choke rope locks (binds) the sleeve valve towards the center of the valve. When it is turned in the reverse direction, the sleeve valve is unlocked (released), allowing the valve to be opened or closed, as shown in Fig. 1. The choke valve is opened and closed smoothly like a lens shutter, thus ensuring superb powder & granule flow control.

Fig. 1.



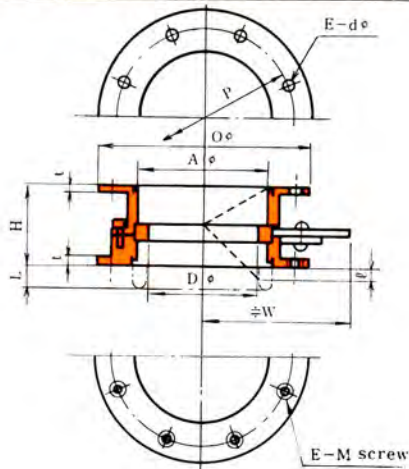
## (2) Features

- \* The sleeve valve can easily be removed and replaced (detachable at one touch).
- \* Powder and granules pass through the valve smoothly without interference.
- \* Powder and granules make contact only with the inside wall of the sleeve valve, not with other metallic parts (casing, etc.).
- \* Small operation torque (involute curve effect). Opening torques are almost 0.
- \* The valve is simple in construction, permitting easy disassembly and reassembly.
- \* The material of the sleeve valve can be selected according to sanitary and fine-chemical specifications.
- \* Opening and closing angle (shifting angle of handle or lever) is as little as  $90^\circ$ .
- \* Ultra-fine powder as well as air can be sealed by using appropriate coating cloth and rubber.
- \* Various types of forced opening adaptors can easily be installed for quick and complete opening of the sleeve valve.

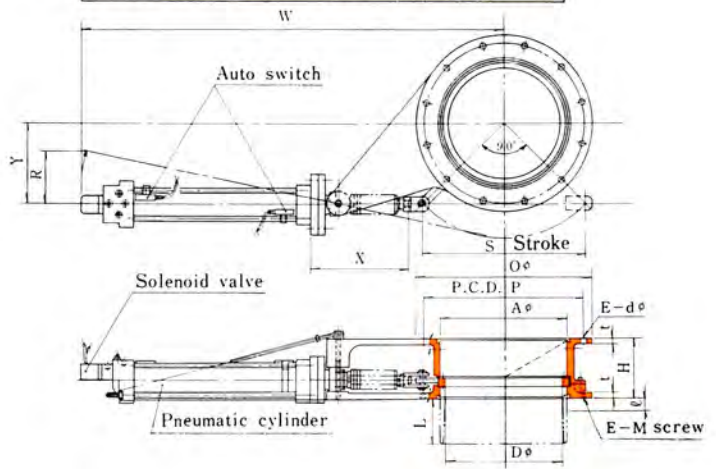


### (3) Dimensions

MFV Manual type choke valve



MAV Automatic type choke valve



Type	O	A	D	H	t	P	E	d	M	L	R	S	X	Y	l	L	Weight (kg)	
																	Aluminum	Stainless steel
MFV - 80A	180	102	80	75	10	145	4	10	M 8	225	—	—	—	—	30	45	2.0	5.9
MAV - 80A										687	80	200	181.5	100			10.5	15.0
MFV-100A	200	122	100	75	10	165	8	10	M 8	235	—	—	—	—	30	50	2.2	6.5
MAV-100A										687	80	200	181.5	100			11.0	16.0
MFV-125A	235	147	125	100	10	200	8	10	M 8	250	—	—	—	—	30	55	3.1	9.2
MAV-125A										774	100	250	194	125			13.0	20.7
MFV-150A	265	172	150	100	10	230	8	10	M 8	260	—	—	—	—	35	70	3.6	10.6
MAV-150A										774	100	250	194	125			13.5	21.5
MFV-200A	320	222	200	110	12	280	8	12	M 10	315	—	—	—	—	35	85	5.5	15.5
MAV-200A										862	120	300	206.5	150			16.5	29.0
MFV-250A	385	272	250	130	12	345	12	12	M 10	340	—	—	—	—	35	100	8.5	24.0
MAV-250A										949	130	350	219	175			20.0	38.0
MFV-300A	430	322	300	150	12	390	12	12	M 10	365	—	—	—	—	55	120	10.2	30.0
MAV-300A										1037	150	400	231.5	200			22.5	43.0
MFV-350A	480	372	350	180	14	435	12	14	M 12	390	—	—	—	—	55	140	17.0	50.0
MAV-350A										1124	170	450	244	225			32.0	61.0
MFV-400A	540	422	400	220	14	495	16	14	M 12	465	—	—	—	—	60	155	21.0	62.0
MAV-400A										1343	200	550	288	275			44.0	84.0
MFV-500A	655	526	500	250	15	605	20	14	M 12	521	—	—	—	—	65	190	35.0	80.0
MAV-500A										1518	230	650	313	325			61.0	116.0
MFV-600A	770	626	600	300	15	715	20	14	M 12	721	—	—	—	—	80	225	49.0	120.0
MAV-600A										1693	270	750	338	375			77.0	146.0

\* Valve sizes other than those in the above table are also available.

o Automatic intermediate stop (opening control):

Used for remote control of opening with pneumatic cylinder drive system. Detailed data are available on request.

\* Dimensions and materials are subject to change without prior notice.

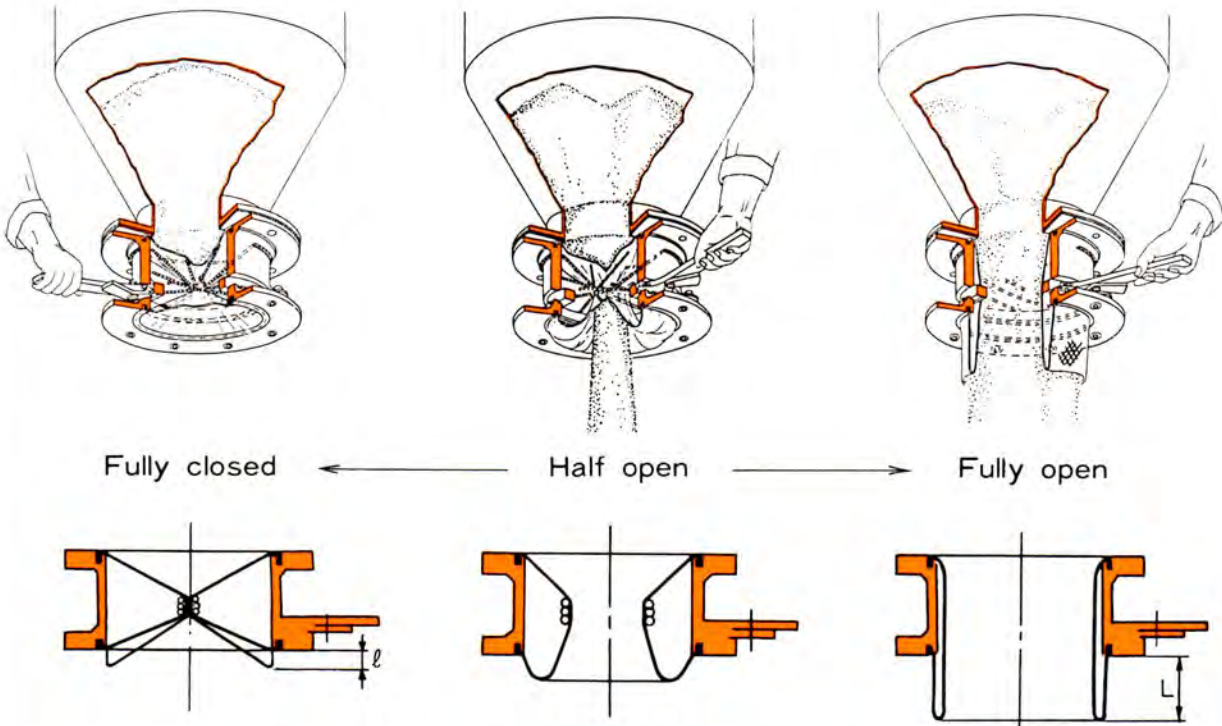
### (4) Materials (Japanese Industrial standards)

Un-contact part	Casing	Aluminum alloy (AC7A) plus surface hardened	Aluminum alloy (AC7A) plus PTFE hardened	Stainless steel (SUS304)
	Choke ring	Aluminum alloy (AC7A) plus surface hardened or Iron (SS41) plus hard chrome plated	Ditto	Stainless steel (SUS304) plus hard chrome plated
	Handle (manual type)	Aluminum alloy (A5052) plus surface hardened	Aluminum alloy (A5052) plus PTFE hardened	Ditto
	Stopper (manual type)	Synthetic Resin	Synthetic Resin	Ditto
	Arm (automatic type)	Iron (SS41) plus hard chrome plated	Stainless steel (SUS304) plus hard chrome plated	Ditto
	Actuator (automatic type)	SMC pneumatics Inc with solenoid valve, Auto switches		
	Opener	Stainless steel (SUS304)		
	Choke rope	Nylon, Polyester, Polyethylene, Wire etc (3.0φ to 6.0φ)		
contact part	Sleeve valve & Chute	Coating cloth ; silicone, Urethane, Acrylic etc with Nylon, Polyester, Polyethylene cloth etc Colth ; Silk, Cotton, PTFE, Heat-proof, Conductive, Stainless, etc Synthetic rubber sheet ; PVC, Hypalon, Viton, etc The others ; Natural rubber, Aluminum leaf laminated sheet, etc		



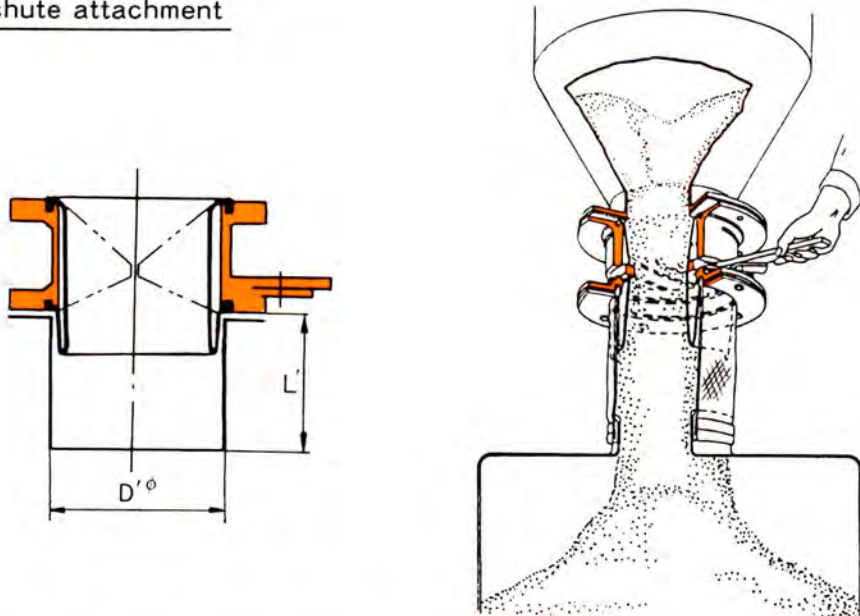
## (5) Sleeve valve

### Standard sleeve valve



Type	80A	100A	125A	150A	200A	250A	300A	350A	400A	500A	600A
Size $l$	30	30	30	35	35	35	55	55	60	65	80
Size $L$	45	50	55	70	85	100	120	140	155	190	225

### Lower chute attachment



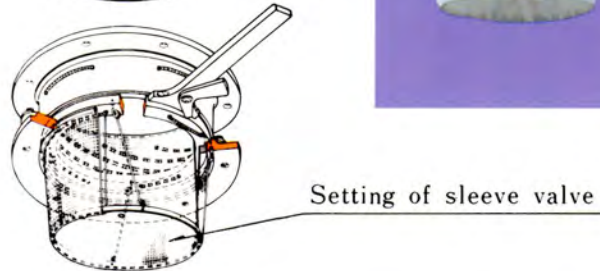
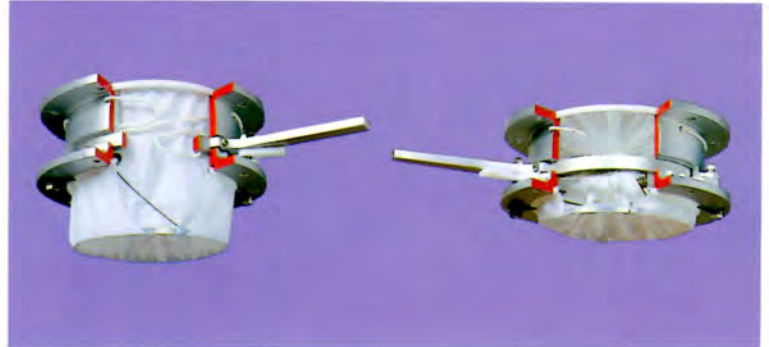
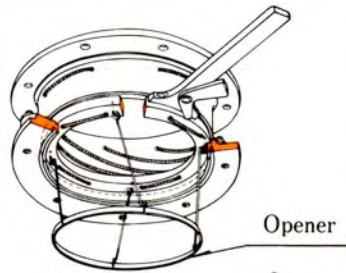
Type	80A	100A	125A	150A	200A	250A	300A	350A	400A	500A	600A
Size $L'$	150	150	200	200	250	300	350	400	450	550	650
Size $D'φ$	110	130	155	180	230	280	330	380	433	537	637

The size " $L'$  &  $D'φ$ " is the standard measurement but any size can be special ordered.

## (6) Forced-opening adaptor

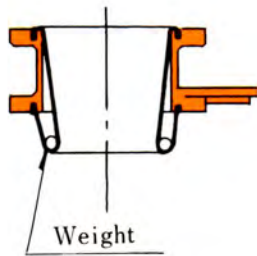
There are two methods for opening the sleeve valve quickly and completely.

### (A) Opener type

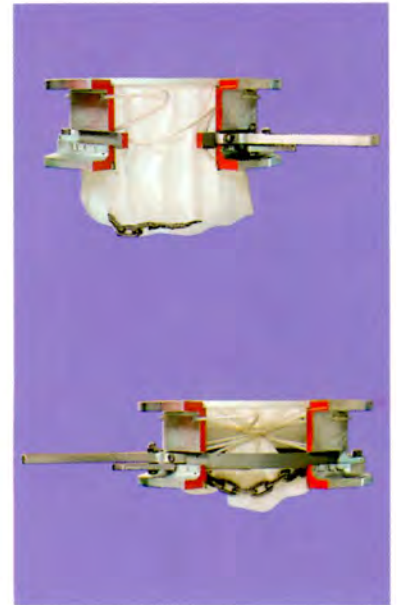
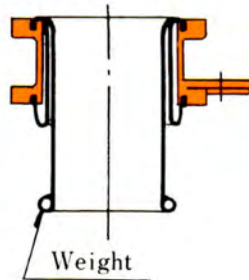


### (B) Weight type

Standard sleeve

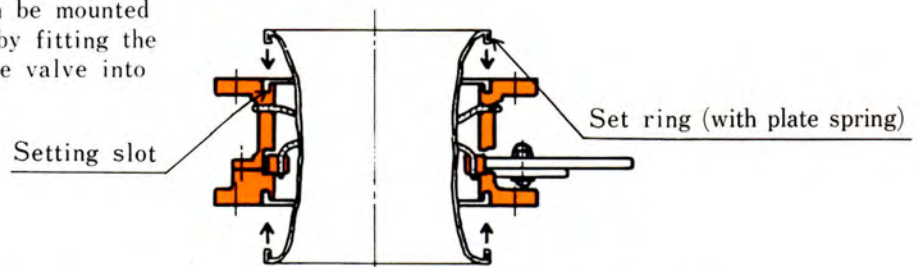


Upper chute sleeve valve with weight



## (7) Setting of sleeve valve

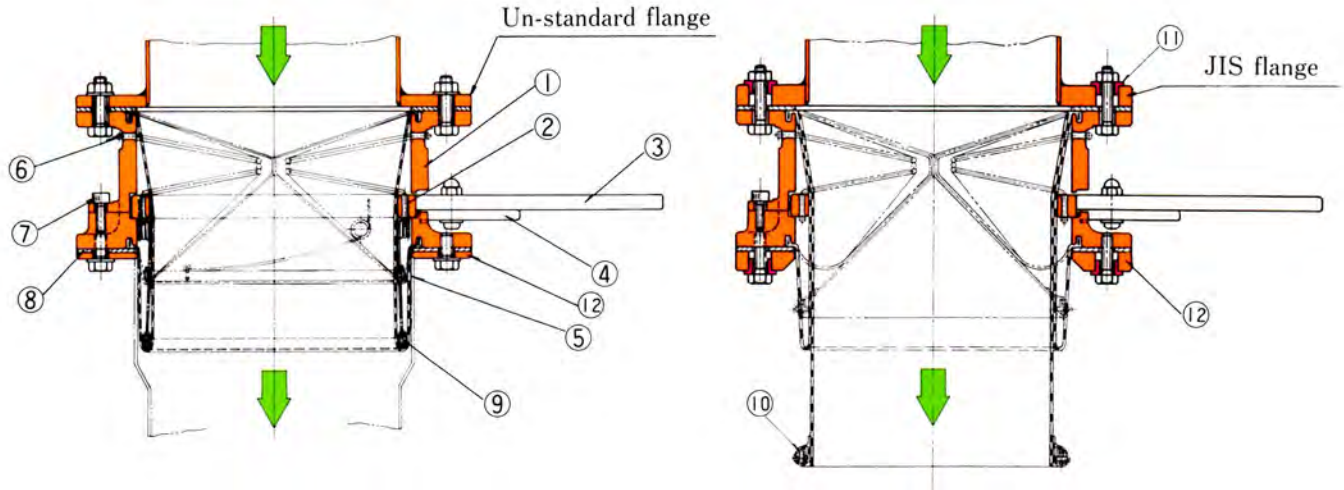
The sleeve valve can be mounted and removed simply by fitting the set ring of the sleeve valve into the setting slot.



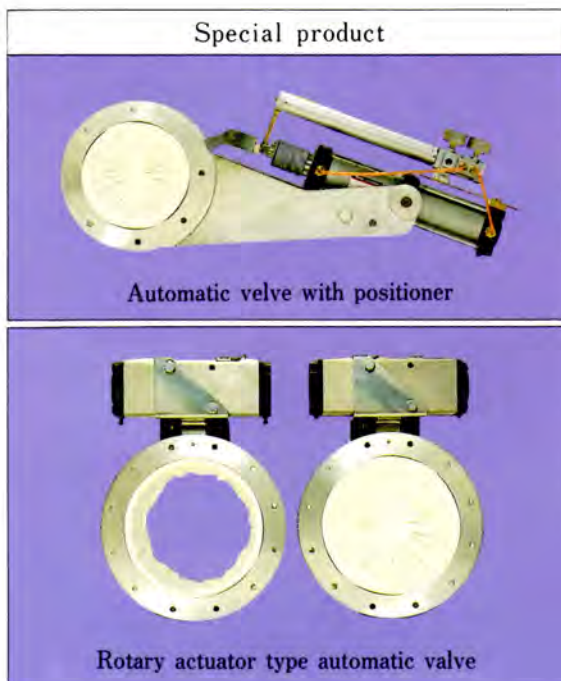


## (8) Parts name & be sure to observe the following points when using the Forced-opening adaptor

- (1) Sleeve valve lower set supporting flange (outlet side): When the bottom of the choke valve is open, that is, when it is not provided with a connecting pipe, and if the sleeve valve is fully opened, the lower set is given a downward tension by the action of the adaptor and hence a flange needs to be installed to prevent the sleeve valve from dropping off the valve.
- (2) Connecting pipe at the bottom of choke valve (outlet side): When the sleeve valve is fully opened by the action of the adaptor, it is forced against the wall of the connecting pipe as shown below, or in the case of a weight type, the effective area of the valve is reduced. To avoid this situation the connecting pipe should be same as than the inside diameter of the valve casing.



- ① Casing ② Choke ring ③ Handle (MFV type)/Arm (MAV type) ④ Stopper (MFV type only)  
 ⑤ Sleeve valve ⑥ Choke rope ⑦ Hexagonal bolt ⑧ Packing ⑨ Opener ⑩ Stainless steel weight  
 ⑪ Bush for standard type flange ⑫ Flange (special sized inner diameter flange prevent from dropping off the sleeve valve)



## (9) Items to be specified when ordering choke valve

- \* Valve drive system (manual or automatic)
- \* Type of valve (inside diameter)
- \* Material of casing (aluminum, stainless steel, aluminum surface treatment)
- \* Material and type of sleeve valve
- \* Adaptors (with or without)
- \* Power source and operating air pressure (for automatic type)
- \* Necessity of intermediate stop
- \* Name, characteristics, shape, hardness and flowing efficiency of powder and granules to be used (in detail)
- \* Devices connected to valve
- \* Spare parts (with or without)
- \* Other

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