

Neles™ pocket feeder Series M1/M2

The latest member in the M1/M2 ball valve series is the pocket feeder, for separator service. It is designed for automatic removal of sand and other fine debris from process. Typical applications are the chip chute circulation process of a continuous pulp digester and other junk traps.

M1/M2 pocket feeder valves can be delivered as complete operating assemblies. The complete unit consists full bore ball valve, pneumatic actuator, limit switches and solenoids for purging the interior cavity of the valve.

Design features

Special ball and seat design

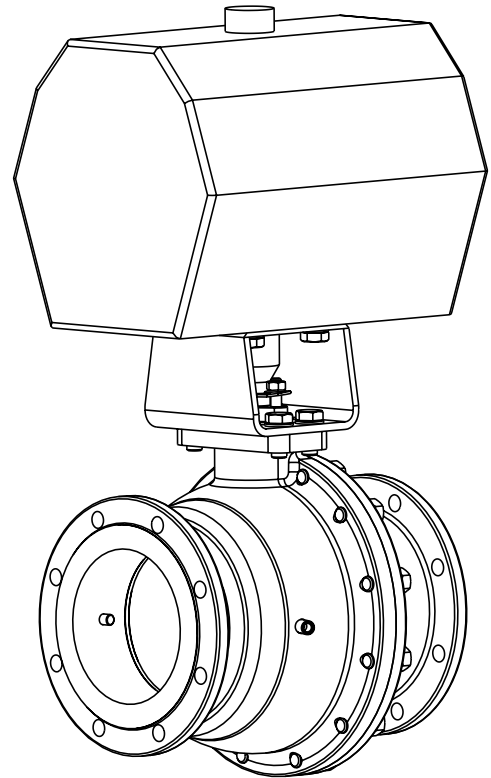
- A special ball collects large amounts of particulate matter and disperses it in one easy operation.
- The two biggest sizes DN 150 and DN 200, which are typically used in sand separation applications, have special tungsten carbide coating on both seat and ball to provide long trouble free life for this difficult service.
- Upstream seat is a solids proof design, there is no cavity behind the seat where the medium could build up and cause the valve to jam. Downstream seat is locked and it has a scraping effect to keep the ball surface clean.

Complete internal purges

- Both the body cavity and the ball cavity have purges connected for complete flushing during the emptying cycle

Added security

- M1/M2 pocket feeder can be operated against full process pressure without danger of through flow, this is thanks to the ball design which does not allow through flow at any opening.
- V-ring gland packing ensures long maintenance free operation.



Compact design

- One single unit can replace two separate on off valves, two air evacuation valves and a piece of pipe.

Large ball pocket capacity

- DN 150 = 3,39 liters
- DN 200 = 7,90 liters

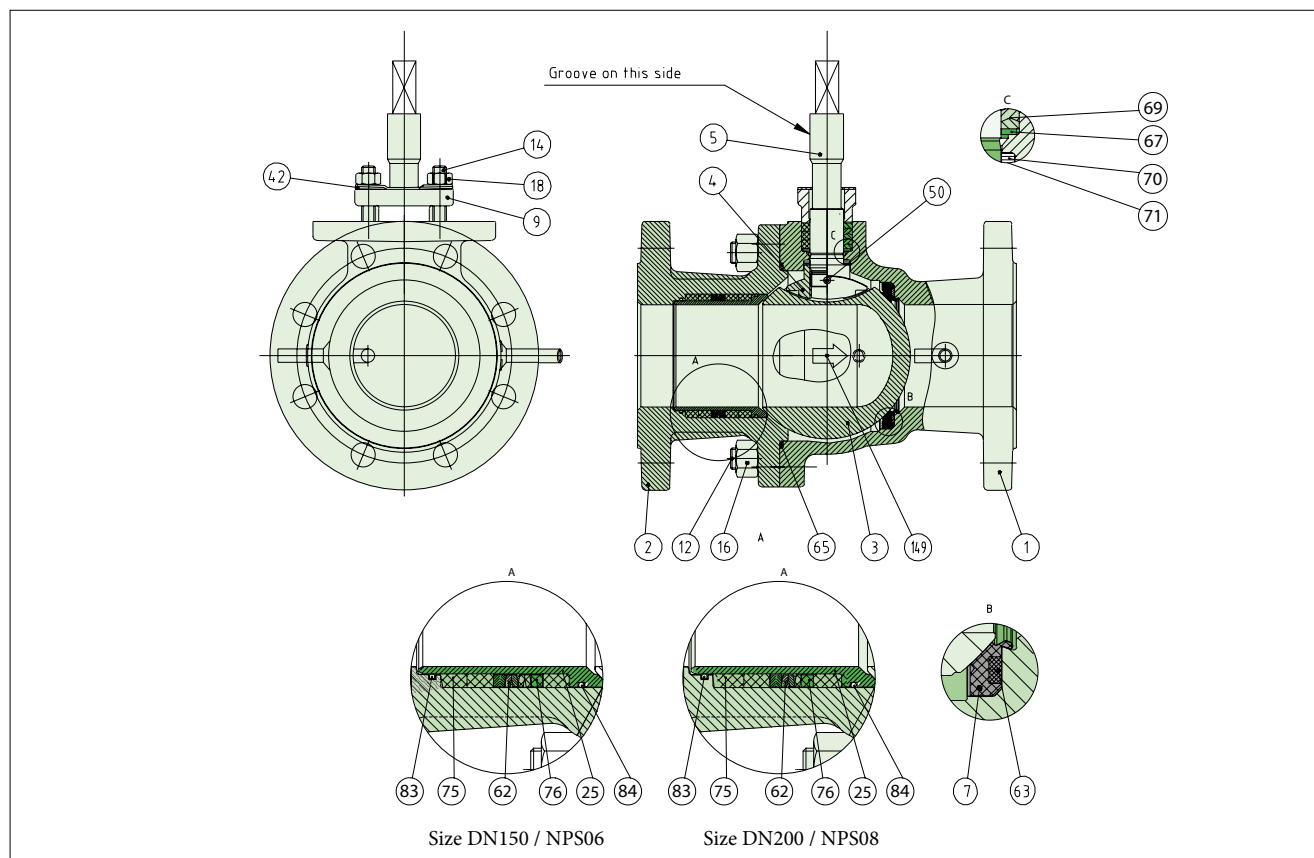
Automatic cycling

- Can be easily connected to process system or alternatively a control panel can be furnished that automatically times the cycling rate of the assembly to prevent overfilling of the ball.

Single source responsibility

- Valve, actuator and accessories can all be furnished as a single unit to ensure reliable operation and for ease of ordering and maintenance.

Assembly view



Parts list

Item	Part description	Material
1	Body	Stainless steel CF8M
2	Body cap	Stainless steel CF8M
3	Ball	Type AISI 329 + (W/Cr)C or hard chrome
4	Spline driver	Stainless steel CF8M / 1.4581
5	Shaft	Stainless steel XM-19
7	Ball seat	Type AISI 329 + (W/Cr)C or cobalt based alloy
9	Casting gland	Stainless steel CF8M / 1.4408
12	Stud	Stainless steel A2-70 or B8M
14	Stud	Stainless steel A2-70 or B8M
16	Hexagon nut	Stainless steel A2-70 or 8M
18	Hexagon nut	Stainless steel A2-70 or 8M
19	Identification plate	Stainless steel AISI 316
25	Seat	Type AISI 329 + (W/Cr)C or cobalt based alloy
42	Retainer plate	Stainless steel AISI 316L
50	Locking pin	Stainless steel XM-19
62	Disc spring	EN 10088-1.4418
63	Back seal	PTFE
65	Body gasket	PTFE + AISI 316
67	Support ring	Stainless steel AISI 316
69	V-ring set	PTFE
70	Thrust bearing	Alloy 6
71	Thrust bearing	Alloy 6
75	Back ring	Graphite
76	Support ring	Stainless steel AISI 316
83	O-ring	VITON
84	O-ring	VITON
149	Flow direction arrow	Stainless steel AISI 316

Technical specification

Product type

- Full bore flanged ball valve
- No through flow possibility at any opening see fig. on page 3
- Body and ball cavities purged
- Valve rotation max 165° (requires 180° rotating actuator)

Size range

- DN 150, 200

Pressure ratings

- PN 16 - 40 and ASME 150 - 300

Temperature range

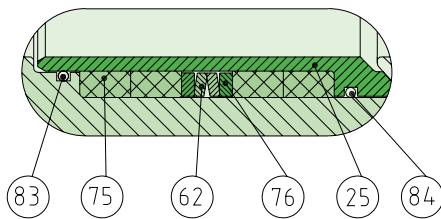
- -50 ... +250 °C

Valve tightness

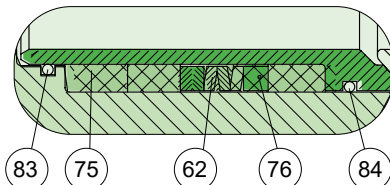
- Metal seats
- ISO 5208 Rate D, standard
- ANSI FCI class V
- DIN 3230 Rate 2

Standard seats

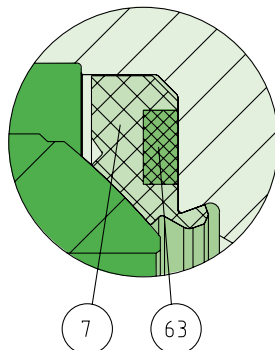
DN150 /
NPS06



DN200 /
NPS08

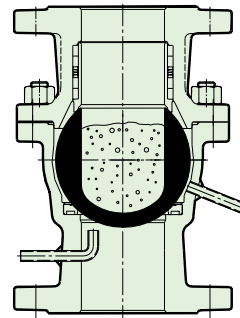


Upstream seat design is solids proof to prevent medium entering the seat cavities



Downstream seat is a locked scraping seat

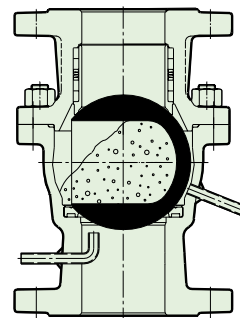
Dumping and purge sequence



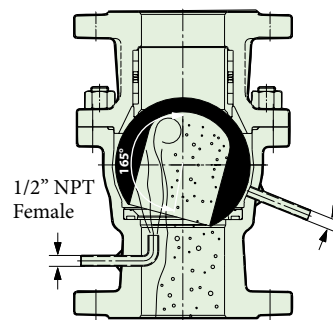
Fill position

Flushing lines should be equipped with check valves to prevent reverse flow of flushing fluid.

Flushing should be turned on prior to starting to operate the dumping cycle.



Ball during rotation from fill position to dump position. Ball remains sealed at all times.



Dump position

In dumping position valve is adjusted to 165 degrees from filling position.

Flushing to operate thru the whole dumping cycle.

The figure shows the arrangement for filling the ball, starting the dump cycle, turning on the water purges and completing the dump cycle.

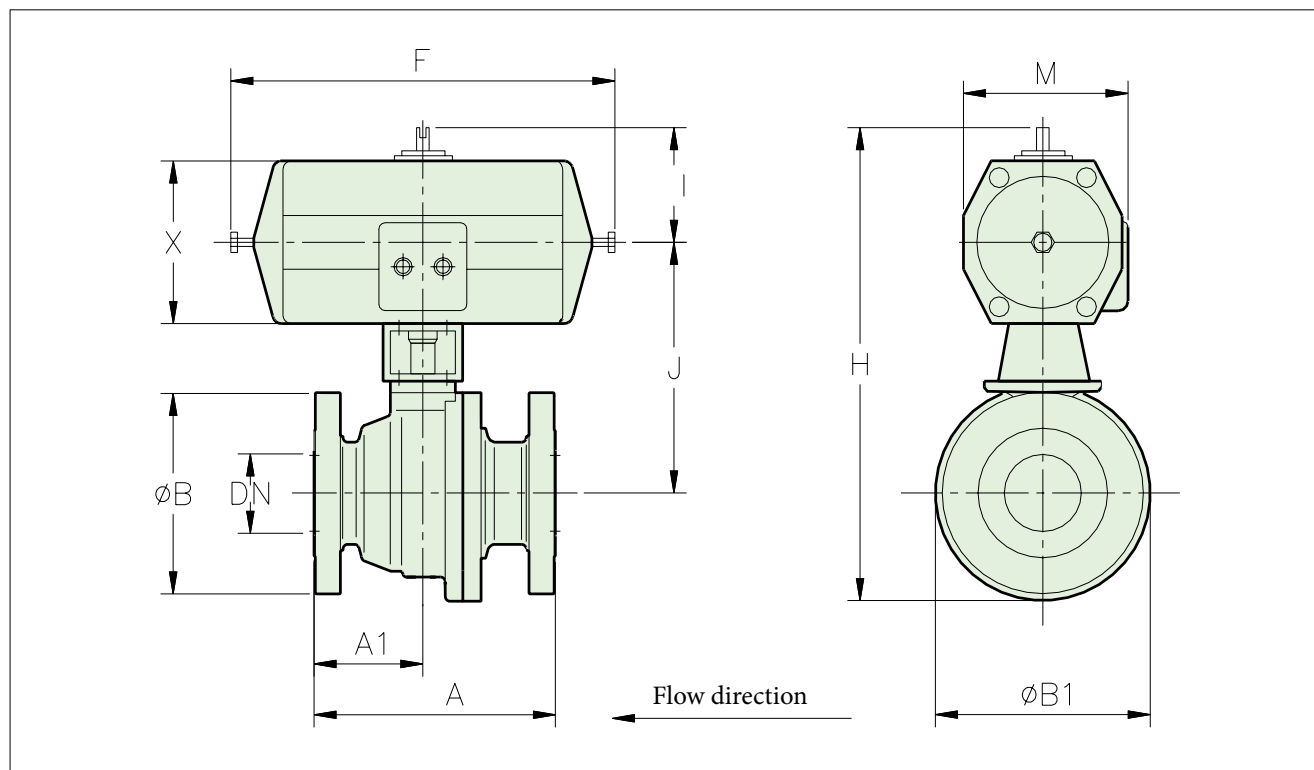
Water purging to body and ball cavities is essential to ensure proper dumping of the ball. Body cavity purge cleans the cavity between the ball and body, this extends valves service life.

Determining the size of the valve

Influencing factors are line size and the amount of reject to be removed. It is recommended to empty the valve when ball cavity is approximately 1/2 full.

Over filling of the valve will shorten the valve life time and valve will loose its tightness. Therefore the actual site related frequency of dump valve cycles shall be adjusted based on the amount of reject in process to be removed.

Dimensions



Type	DN	Actuator *)	Dimensions in mm										Kg
			A	A1	Dia B	Dia B1	F	M	H	I	J	X	
M1J	150	P4000	394	197	285	338	890	390	885	220	495	380	205
	200	P4000	457	228.5	340	426	890	390	1010	220	575	380	275
M1K	150	P4000	394	197	285	338	890	390	885	220	495	380	205
	200	P4000	457	228,5	340	426	890	390	1010	220	575	380	275
M1L	150	P4000	403	201,5	300	346	890	390	885	220	495	380	270
	200	P4000	502	251	360	432	890	390	1010	220	575	380	315
M1M	150	P4000	403	201,5	300	346	890	390	885	220	495	380	270
M2C	150	P4000	394	197	280	342	890	390	887	220	495	380	205
	200	P4000	457	228,5	343	430	890	390	1012	575	380	275	290
M2D	150	P4000	403	201,5	317,5	353	890	390	887	220	495	380	240
	200	P4000	419	209,5	380	462	890	390	1010	220	575	380	355

*) NOTE 1. When ordered ask for 0° - 165° stroke!

NOTE 2. For DN200 valve size PD4000 pneumatic actuator is limited to operate at max. 6 barg differential pressure. For higher differential pressure cases, please consult the factory.

How to order

1. sign	Valve series, face-to-face length
M1	Seat supported ball valve, full bore, PN rating
M2	Seat supported ball valve, full bore, ASME rating

2. sign	Pressure rating of body and flanges
J	PN 10
K	PN 16
L	PN 25
M	PN 40
C	ASME 150
D	ASME 300

3. sign	Construction
P	Pocket Feeder construction. Drive shaft with square head.

4. sign	Size
	150, 200
	06", 08"

Materials							
5. sign	Body	Trim & Coating	Seat & Coating	Thrust bearing	Stem	Packing and gaskets	Bolting
G	CF8M	Type AISI 329 & (W/Cr)C	Type AISI 329 & (W/Cr)C	MTFE	XM-19	PTFE	A2

Seat type and back seals material		
6. sign	Seat type	Back seal material
B	Solids Proof + locked P	PTFE

7. sign	End connection style
	EN 1092-I Type B1 (PN rated valves) ASME B16.5, smooth finish (Ra 3,2 - 6.3) (ASME rated valves)

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