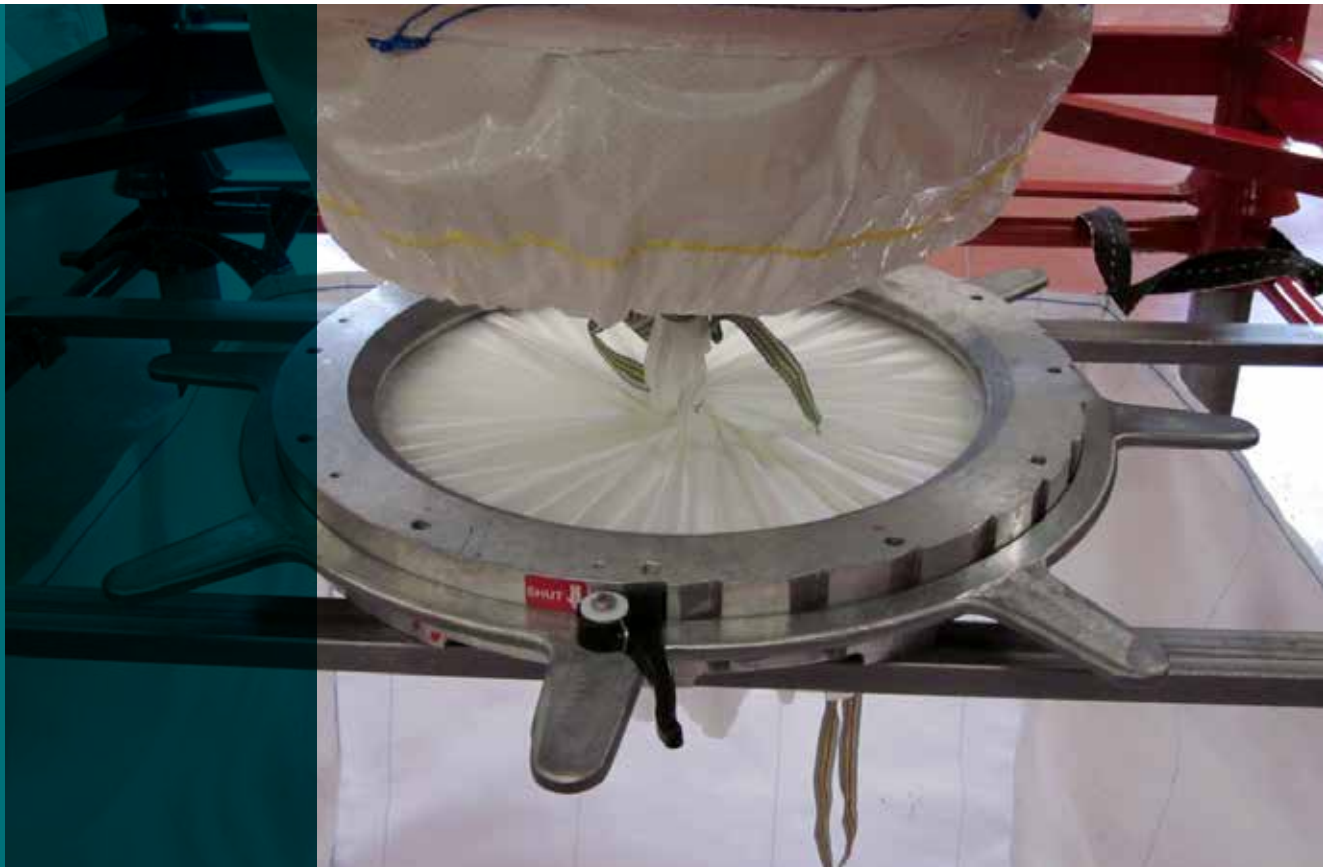


Superior Bulk Material Flow Control

Iris Valves –
Simple flow
control and
shut-off of
bulk solids



Introduction

Mucon is part of the [Schenck Process Group](#) supplying powder and bulk solids handling products to the food, chemical, pharmaceutical and other process industry sectors.

Other Products In The Mucon Range

- Slide Valves
- Butterfly Valves
- Disc Valves
- Discharge Aids
- Level Indicators

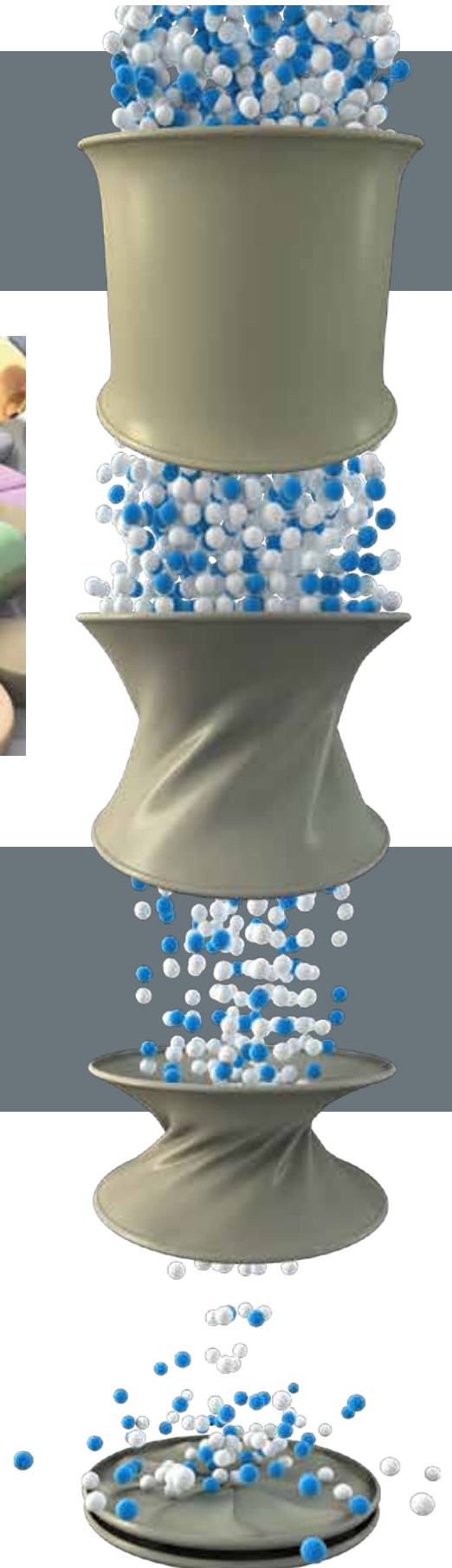


Industry Sectors

- Food Processing
- Pharmaceutical
- Chemical Processing
- Glass and Ceramics
- Plastics
- Sand and Cement

Mucon products have been used extensively in bulk materials handling processes for over 70 years. Throughout its history, Mucon has built a reputation for product innovation and reliability matched with levels of service that exceed customer expectations.

There can be few products more synonymous with powder handling than the Mucon Iris Diaphragm Valve. Since its development as one of the first ever Mucon products, it has been applied to powder handling applications worldwide. With superb flow control characteristics and almost limitless versatility it can be found in all manner of industries and applications; from simple flow control and shut-off of bulk solids to glanding around cables and pipes, they have even been applied in the transportation of live fish.



Overview

Series AD Valves

The AD Valve is the most popular range of Mucon hand operated Iris valves.

A double diaphragm valve is ideal for in-line applications, with no leakage to atmosphere.



p4

A2P Power Operated Valves

The latest in powered Iris Diaphragm Valve technology. The unit features air motor or electric motor operation for light and medium duties, with robust construction for frequent operation.



p7

Series BD Valves

Simplified construction for light duty applications on dust collection hoppers or small bins.



p9

Series E Valves

The 'E' Valves are the work horse of the powered Iris valve range. Its extremely robust design makes it suitable for the most arduous duties.



p10

Series H Valves

This low cost, compact valve has been fitted to thousands of IBCs the world over.

Its ease of operation makes it a popular choice with operators.



p13

Series JS Valves

The Series JS Valve is specifically designed for fitting to Big Bag Discharge Stations to allow controlled product discharge from Flexible Intermediate Bulk Containers (FIBCs).



p14

Series K Valves

This valve has been specifically designed for applications demanding high levels of hygiene.

This product is extremely popular with the food and pharmaceutical markets, as it can easily be stripped down and cleaned in moments.



p15

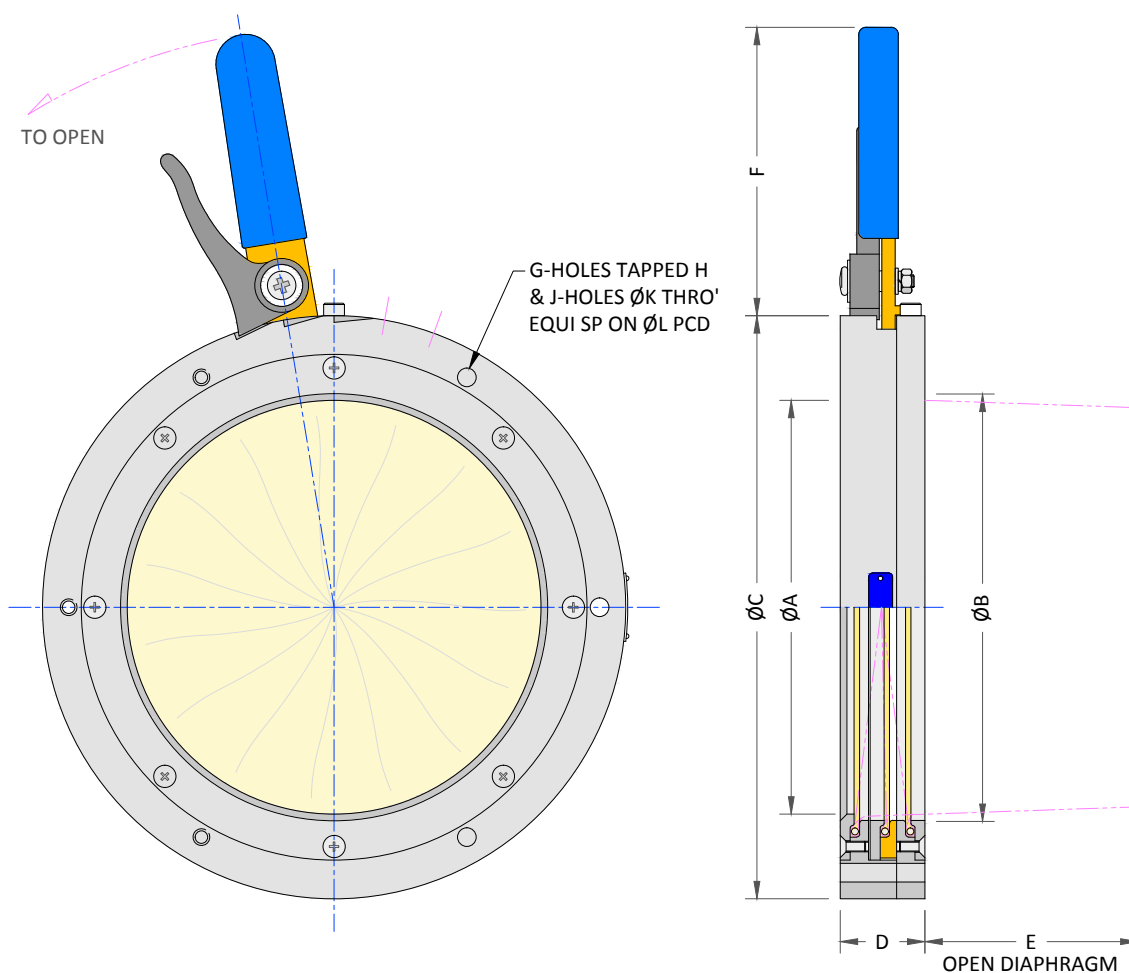
Series AD Valves

The Series AD Iris Diaphragm Valve is the most popular product and is widely used for in-line applications. This robust and cost effective solution provides the very best features of the Iris Diaphragm Valve

Main Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Robust construction for medium to heavy duty applications, handling materials up to 1600 kg/m³
- In-situ diaphragm adjustment, reducing maintenance time
- Proven design suitable for frequent operation
- Diaphragms selected to suit application
- 316 stainless steel contact parts*
- Multi-notching to enhance flow control*
- Coating of standard construction*

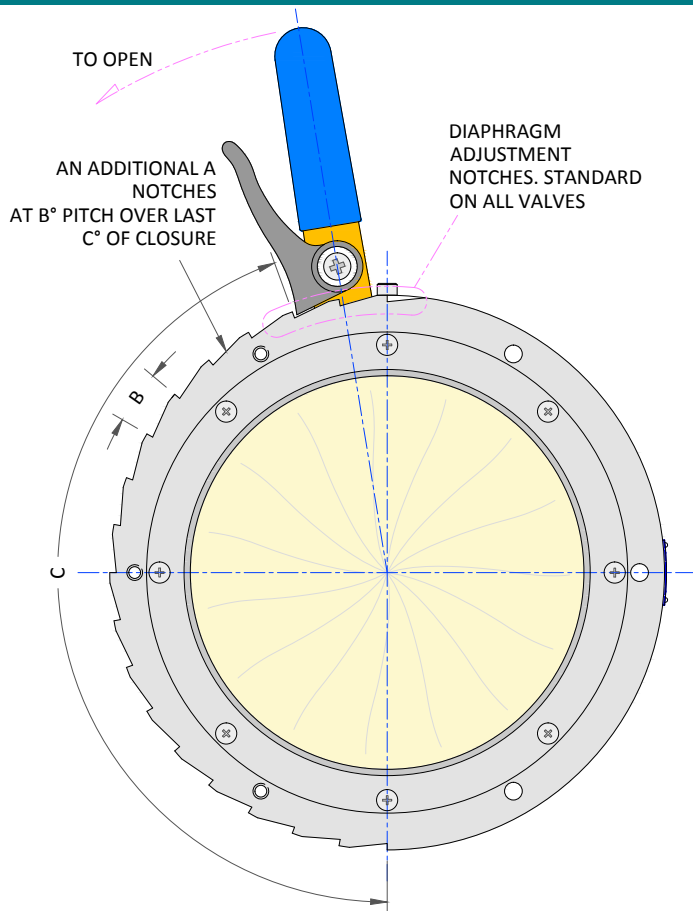
*optional



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
AD3	80	73	78	127	35	38	109	3	M6	3	7	113	1.1
AD4	100	102	106	172	36	50	136	3	M8	3	9	156	2.1
AD6	150	147	153	228	41	75	136	3	M8	3	9	203	3.1
AD8	200	198	204	280	41	102	136	3	M8	3	9	254	4.4
AD10	250	250	260	356	52	127	174	4	M10	4	11	327	8.7
AD12	300	300	310	406	52	152	174	4	M10	4	11	378	10.4
AD15	380	381	387	498	59	190	180	6	M10	6	11	470	19.1

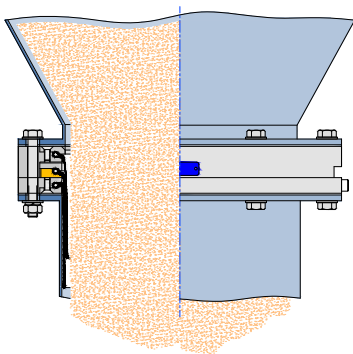
Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg

Series AD Valves

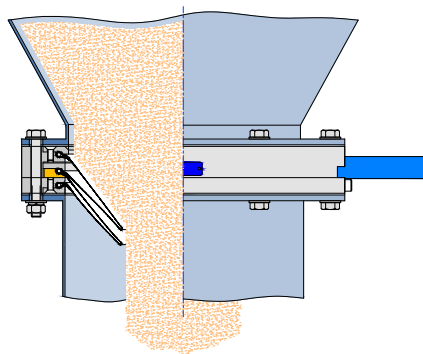


Valve Type	Nominal Bore	Notch Arrangement	A	B	C
AD3	80	Fully	11	14	154
AD4	100	Fully	14	11	154
AD4	100	Half	6	11	66
AD6	150	Fully	16	10	160
AD6	150	Half	7	10	70
AD8	200	Fully	16	10	160
AD8	200	Half	9	10	90
AD10	250	Fully	18	9	162
AD10	250	Half	9	10	90
AD12	300	Fully	16	10	160
AD12	300	Half	7	10	70
AD15	380	Fully	27	6	162
AD15	380	Half	15	6	90
AD18	450	Fully	35	5	175
AD18	450	Half	14	5	70

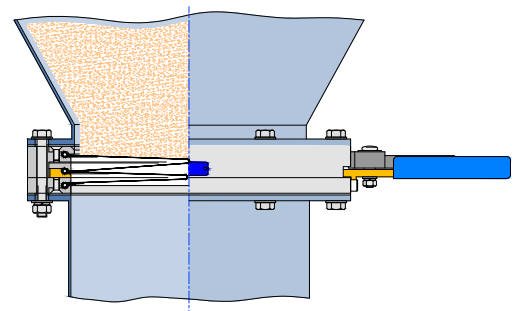
Unless otherwise stated, all dimensions in mm



Fully Open

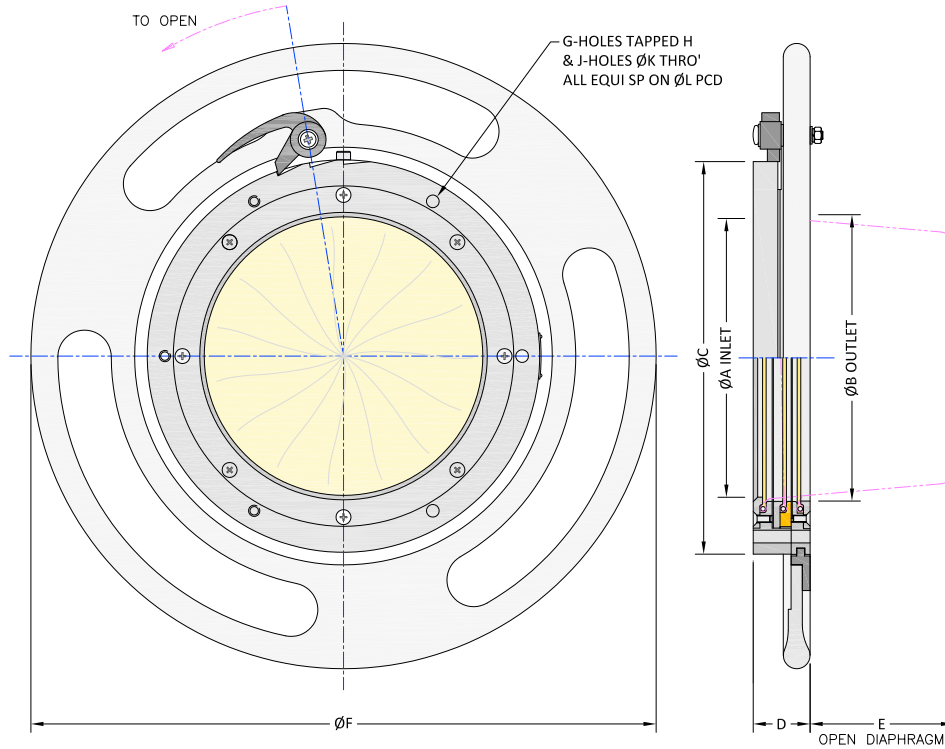


Flow Control



Fully Closed

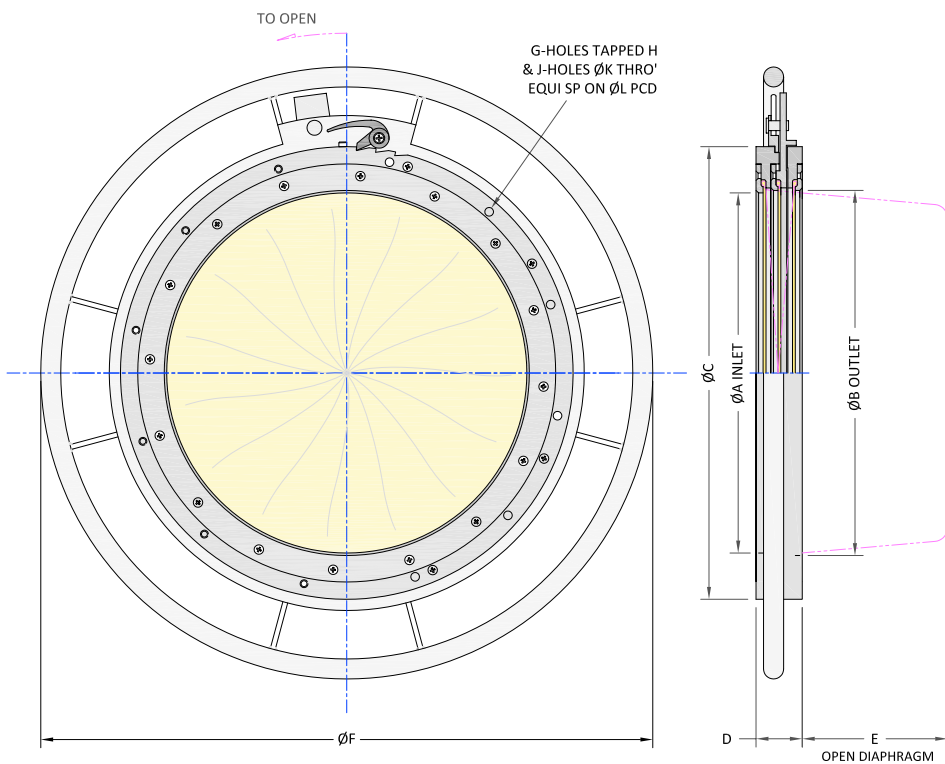
Series AD Hand Wheel Operated Valves



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
AD6	150	147	153	228	41	75	445	3	M8	3	9	203	3.1
AD8	200	198	204	280	41	102	445	3	M8	3	9	254	4.4
AD10	250	250	260	356	52	127	584	4	M10	4	11	327	8.7
AD12	300	300	310	406	52	152	584	4	M10	4	11	378	10.4

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg

Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
AD15	380	381	387	498	59	190	702	6	M10	6	11	470	19.1
AD18	450	457	464	575	59	228	778	6	M10	6	11	546	26.3



A2P Power Operated Valves

The Series A2P Iris valve with its innovative drive arrangement, offers a light, slim and robust construction for frequent operations in a variety of environments.

Main Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Suitable for heavy duty materials up to 1600 kg/m³
- Quick operation, capable of opening or closing in one second
- Belt driven for quiet operation
- Drive ring supported on bearings for smooth operation
- Valve is sealed against ingress of dust
- Low profile compact design
- Fully open, closed and intermediate electric proximity sensors
- Electric or air motor operation to suit application
- Bore sizes are 150mm, 200mm and 300mm
- Special switch/solenoid packages for hazardous locations*
- Surface coating to suit corrosive environments*
- 316 stainless steel product contact parts*
- ATEX Certified to Category 2D *

*optional



Technical Details

Electric Motor: 0.37kW, 2-pole, IP55 induction motor suitable for 220/240–380/415–3ph–50/60Hz supply.

Air Motor: D1 kW, 3000rpm reversible air motor using E1 L/min of lubricated compressed air at 5.6bar
Port sizes for the air motor control valve must be a minimum of ½" BSP to achieve the required air flow rate (see pneumatic table for additional information)

A2P Valve is fitted with Open, Closed and Trickle position indicator sensors

Proximity Sensors: Nominal voltage 8.2V (Intrinsically Safe), Current consumption >3mA and < 1 mA when activated. IP67

Option for Pulse Counting Trickle positioning

Proximity sensor in conjunction with a notched 'pulse' ring on the output shaft of the gearbox.

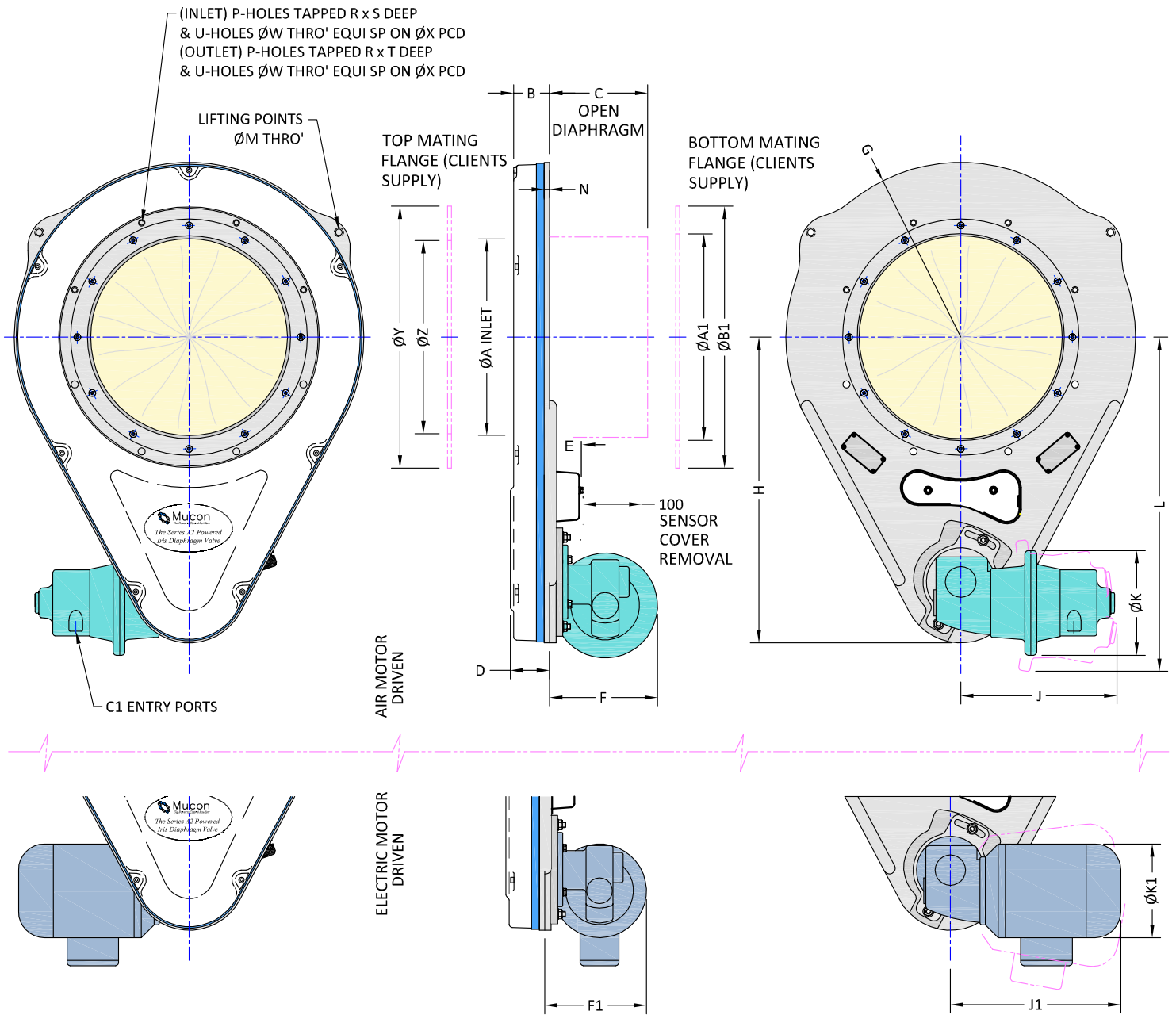
Proximity Sensor: Nominal voltage 8.2V (Intrinsically Safe), Current consumption >3mA and < 1 mA when activated. IP67

All switches have a two metre sensor cable that exits through a single port in the ABS switch box

Options

- Internal pulse generation assembly or for greater accuracy a motor with encoder. Both options are able to provide positional feedback on the size of the diaphragm opening between fully open and fully closed. Ideal for systems requiring variable trickle feed positions or even closed loop feedback for weighing applications.
- A control module is available for full integration with the client's control systems.

A2P Power Operated Valves



Common

Valve Type	Nominal Bore	A	B	C	D	E	G	H	L	M	N	P	R	S	T	U	W	X	Y	Z	A1	B1
A2P06	150	147	46	75	55	40	180	367	412	10	8	3	M8	15	12	3	9	203	228	142	158	228
A2P08	200	198	46	100	55	40	205	385	430	10	8	3	M8	15	12	3	9	254	280	193	209	280
A2P12	300	300	55	150	60	50	267	467	510	10	8	4	M10	20	15	4	11	378	400	295	315	400

Pneumatic

Valve Type	Nominal Bore	F	J	K	C1	D1	E1	Nett Weight
A2P06	150	165	214	160	1/4" BSP	0.56	1000	14
A2P08	200	165	214	160	1/4" BSP	0.56	1000	17
A2P12	300	173	210	160	3/8" BSP	1.0	1700	30

Electric

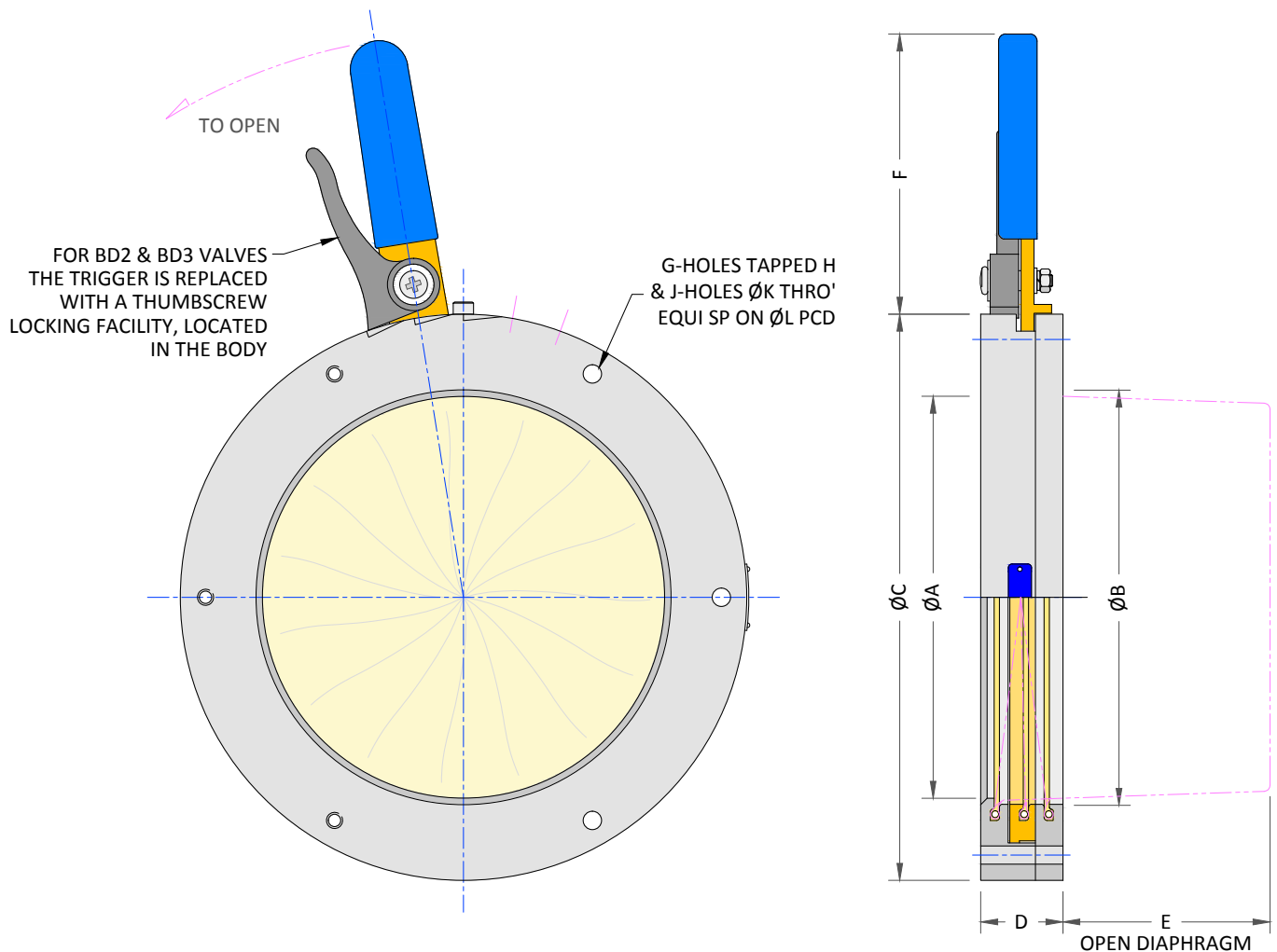
Valve Type	Nominal Bore	F1	J1	K1	Nett Weight
A2P06	150	148	278	160	14
A2P08	200	165	278	160	17
A2P12	300	165	250	160	30

Series BD Valves

The Series BD Iris Valve offers simplified construction compared to other in-line Iris Diaphragm Valves, as well as reduced cost, size and weight.

Main Features

- Double diaphragm for in-line applications, with no leakage to atmosphere
- Suitable for lighter duty materials up to 560 kg/m³
- Thumbscrew locking is available for 50mm to 80mm bores, giving infinite flow control
- Trigger locking mechanism on other sizes
- Diaphragm selection to suit specific applications
- Aluminium construction



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
BD2	50	51	51	90	20	16	108	3	M6	3	7	73	0.5
BD3	80	76	76	114	20	25	108	3	M8	3	7	98	0.6
BD4	100	102	102	152	27	38	137	3	M8	3	9	133	1.1
BD6	150	152	152	203	29	64	137	3	M8	3	9	184	1.7
BD8	200	203	203	254	30	90	137	3	M8	3	9	237	2.0
BD10	250	254	254	330	45	114	174	4	M10	4	11	305	6.4
BD12	300	305	305	380	45	140	174	4	M10	4	11	356	7.3

Unless otherwise stated, all dimensions in mm / weights given for Aluminium in kg

Series E Valves

The Series E Iris Valve has been the 'workhorse' of the Mucon range for many years. Its extremely robust construction and reliable drive elements make it suitable for the most arduous duties.

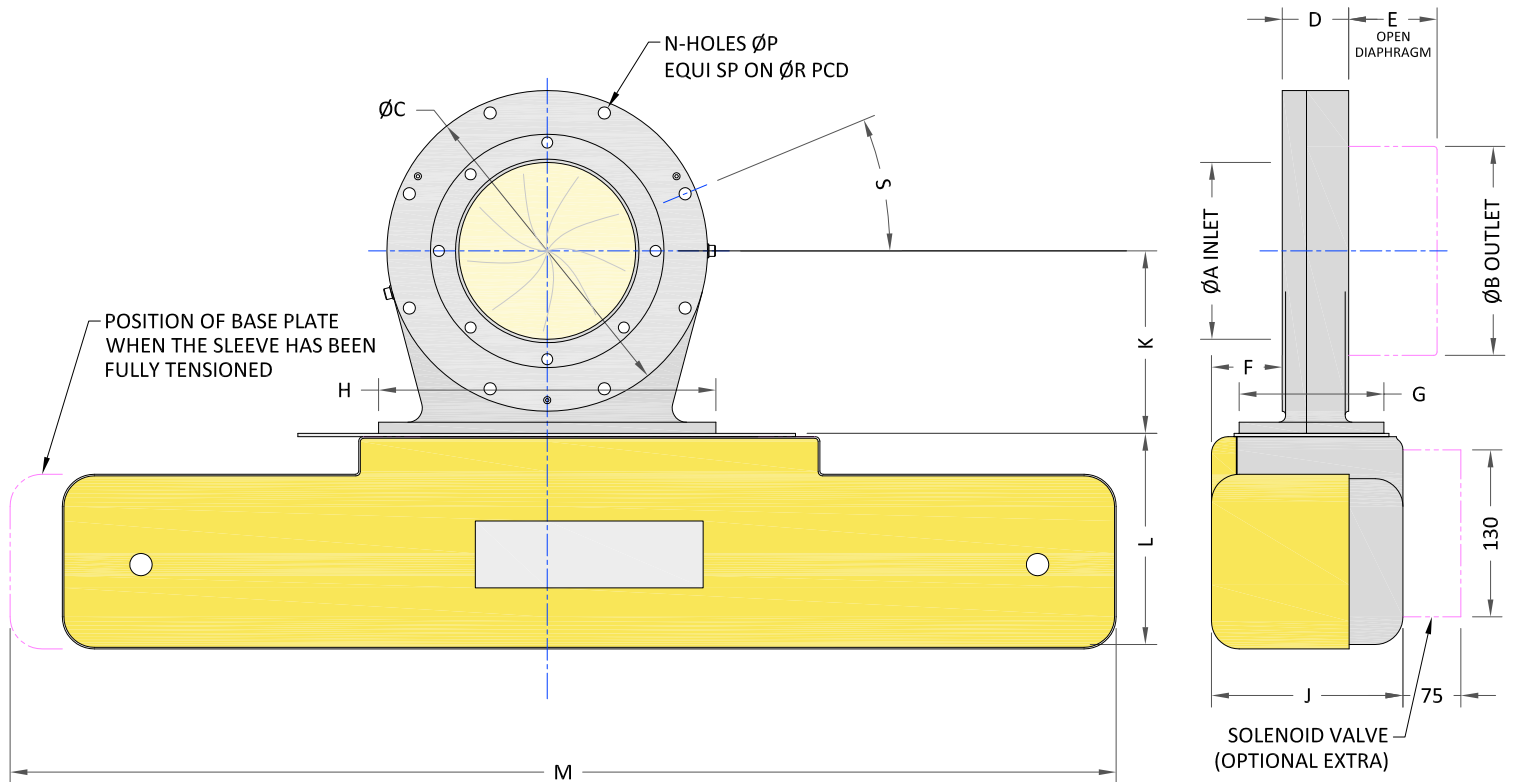
Main Features

- Double diaphragm for in-line applications with no leakage to atmosphere
- Robust construction make the E Valves suitable for product bulk densities over 1600 kg/m³
- Electrical or Pneumatic actuation is available
- In-situ diaphragm adjustment
- Internal high quality components make the E Valve suitable for frequent operation
- Diaphragm selection to suit specific applications
- Fully open, closed and intermediate electric or pneumatic limit switches
- 316L stainless steel product contact parts*
- Automatic closure system on pneumatic valves in case of air or electrical failure*
- Special ATEX packages to suit hazardous locations*
- A variety of surface coatings is available to suit corrosive environments*

*optional



Series E Pneumatic Valves



Technical Details

Pneumatic cylinder operation using T litres of compressed air at 6 barg per stroke.

Available with standard reed switches for open, closed and trickle feed. Also available with intrinsically safe proximity sensor assembly supplied with flying leads.

Standard reed switches rated AC/DC 10–230v, 1a < 100mA, contact rating (peak) 6W.

Standard pneumatic connection without solenoid option:

ED6/8/10 – 3/8" BSP

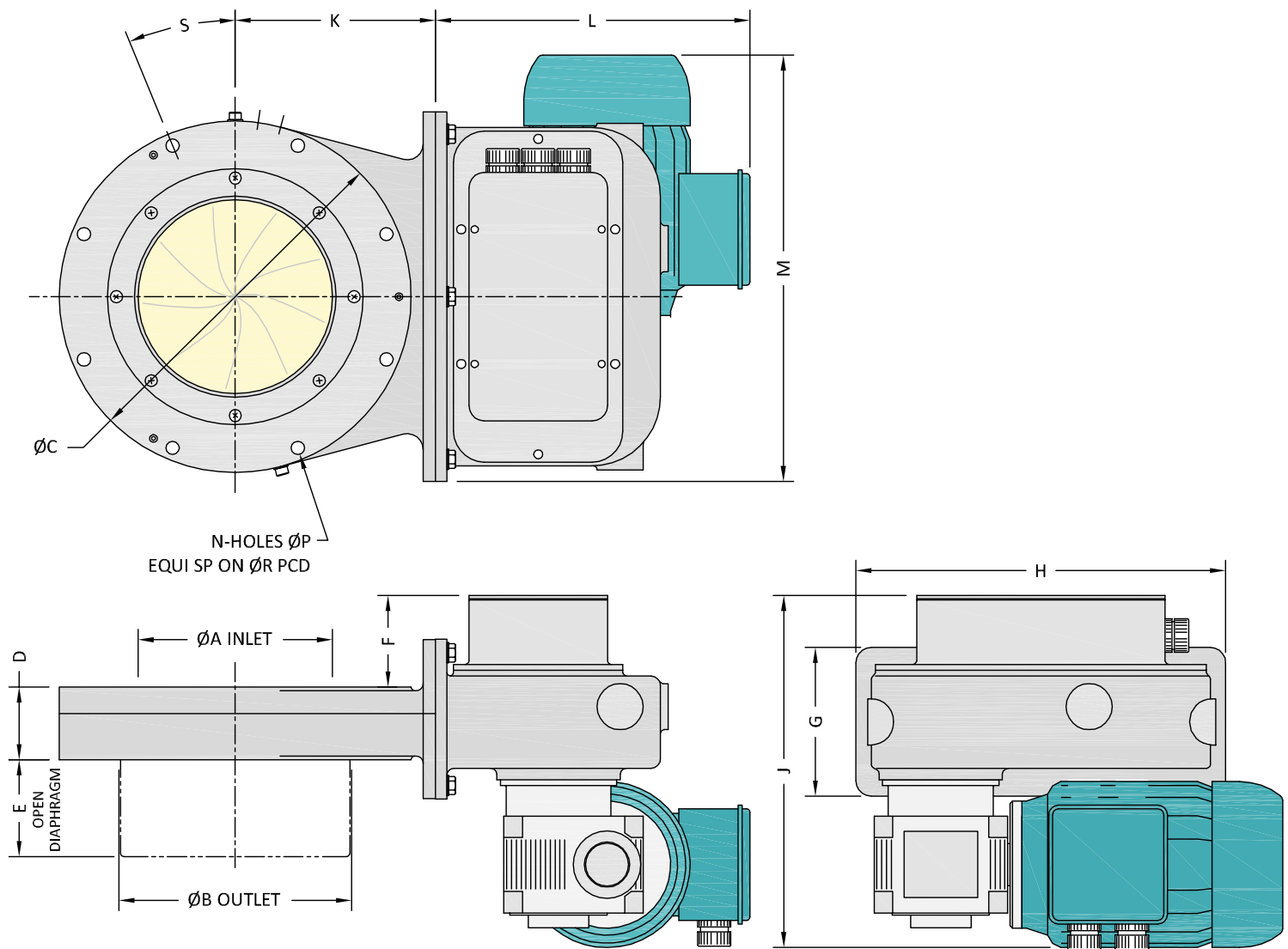
ED12/15/18 – 1/2" BSP

With solenoid option, connection is made via 8mm pneumatic fitting

Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	Nett Weight
ED6	150	160	190	290	60	80	67	131	305	177	165	203	1030	8	11	270	22.5°	3.5	25.4
ED8	200	212	240	350	60	110	66	131	305	177	197	203	1030	8	11	324	22.5°	4	28.1
ED10	250	263	292	400	60	130	65	131	305	177	222	203	1030	8	11	375	22.5°	5	30.3
ED12	300	314	343	470	76	160	64	140	356	200	267	214	1336	8	14	438	15°	8.5	52.1
ED15	380	390	420	565	89	200	58	140	356	200	314	214	1336	8	14	533	22.5°	10.5	72.0
ED18	450	467	495	641	89	230	58	140	356	200	352	214	1336	8	14	610	22.5°	12	77.5

Unless otherwise stated, all dimensions in mm / weights given in kg

Series E Electric Valves



Technical Details

Electric operation by 0.25kW, 4-pole, IP55 induction motor suitable for 220/240-380/415v-3ph-50Hz. 254/277-440/480v-3ph-60Hz supply.

Full load current @ 230v ~ 1.65A @ 415v ~ 0.95A.

Fitted as standard with open, closed and trickle limit switches.
Access to terminations through \varnothing 20mm blanked hole

Switches rated at 10A @ 125v - 250v AC or 10A @ 30v DC

Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	Nett Weight
ED6	150	160	190	290	60	80	76	131	305	291	165	260	352	8	11	270	22.5°	27.2
ED8	200	212	240	350	60	110	76	131	305	291	197	260	352	8	11	324	22.5°	30.3
ED10	250	263	292	400	60	130	76	131	305	291	222	260	352	8	11	375	22.5°	32.6
ED12	300	314	343	470	76	160	66	140	356	306	267	263	393	8	14	438	15°	50.3
ED15	380	390	420	565	89	200	60	140	356	306	314	263	393	8	14	533	22.5°	63.0
ED18	450	467	495	641	89	230	60	140	356	306	352	263	393	8	14	610	22.5°	70.0

Unless otherwise stated, all dimensions in mm / weights given in kg

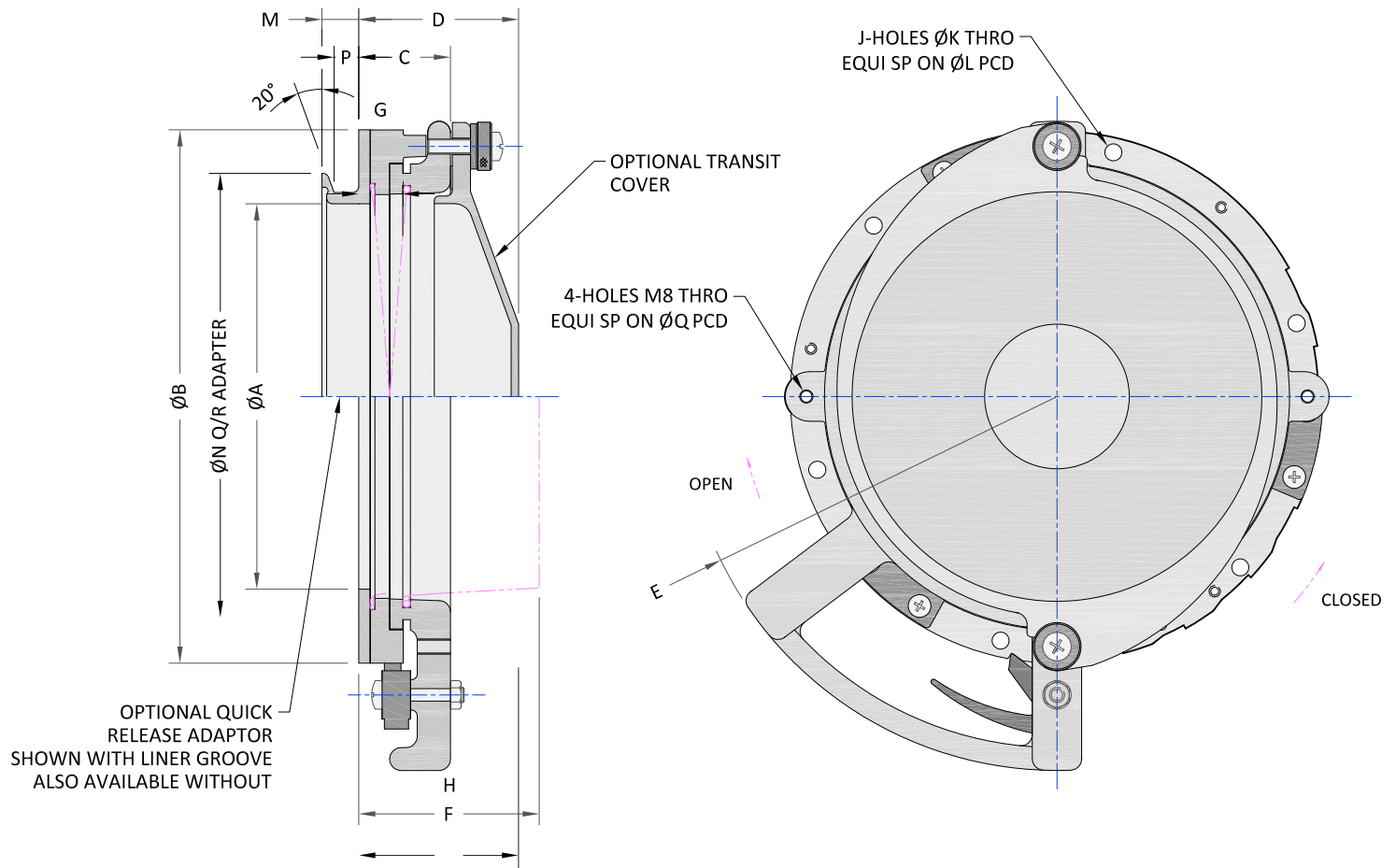
Series H Valves

This low cost, compact valve has been fitted to many thousands of IBCs the world over. Its popularity with operators owes much to its ease of operation, reliability and excellent regulation of discharge rates.

Main Features

- Single diaphragm for dust tight closure
- Simple construction suitable for materials up to 900 kg/m³
- In-situ diaphragm adjustment
- Hand operated
- Diaphragm selection to suit specific applications
- Additional positioning notches allows the valve orifice to be set in a variety of open positions (150mm and 200mm only)
- Fixing positions on the lower flange for a bagging off spigot (150mm and 200mm only)
- Coated valve body components*
- Additional notches for enhanced flow regulation* (not available on 150mm and 200mm models)
- Quick release transit cover for extra security during transportation*
- Quick release adaptor for valve mounting*

*optional



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	Nett Weight
H4	100	102	170	38		144	75	22		6	9	152	20				1.2
H6	150	152	230	50	86	170	100	23	98	6	9	213	20	190	11	209.5	2.0
H8	200	207	283	50	86	197	126	23	98	6	9	264	20	235	13	263.5	2.6
H10	250	264	340	52	103	235	156	27	115	6	11	320	20				3.6
H12	300	314	390	54	103	275	180	31	115	8	9	369	20	350	13		4.5

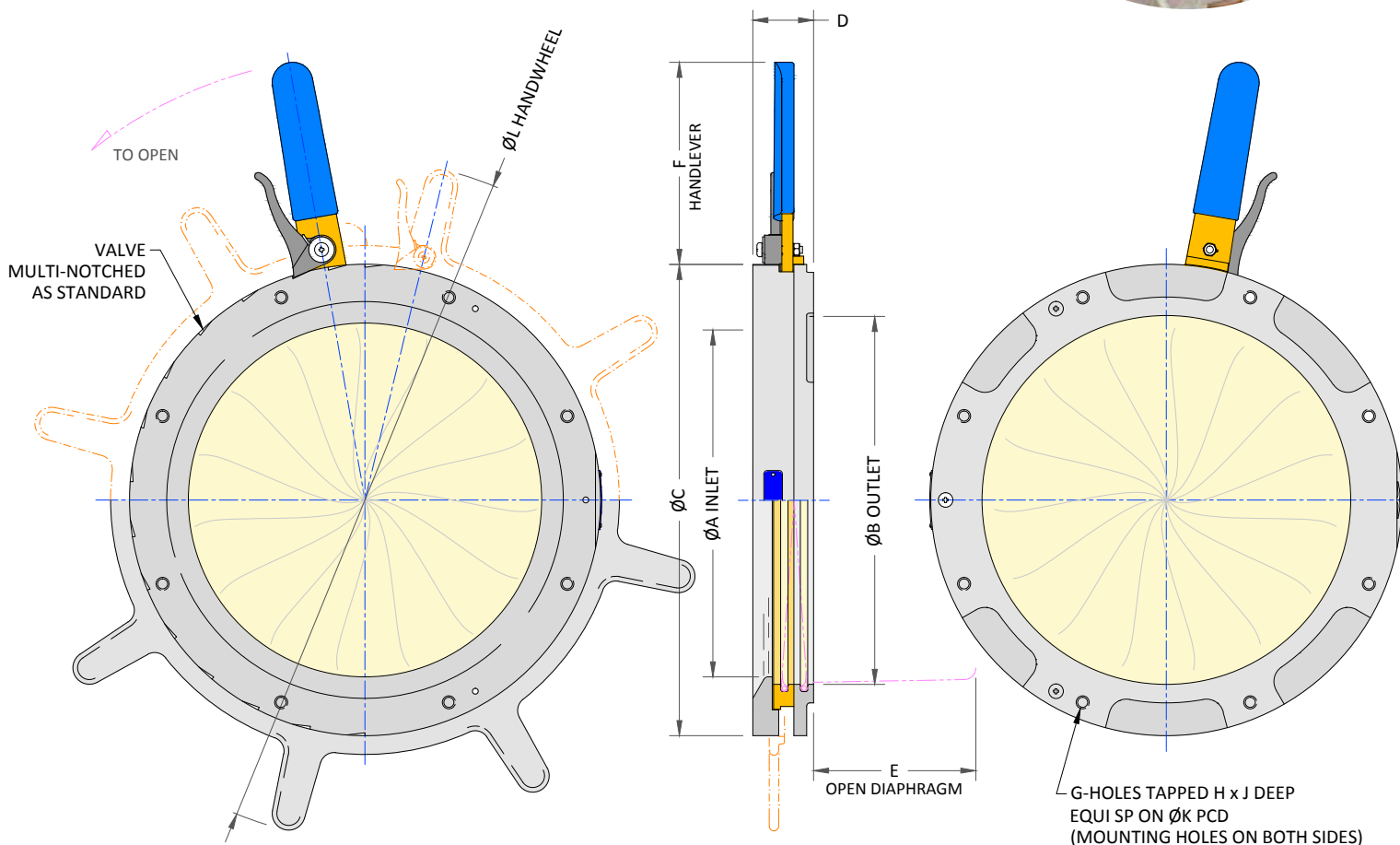
Unless otherwise stated, all dimensions in mm / weights given in kg

Series JS Valves

The Series JS Iris Valve is specifically designed for fitting to Big Bag discharge stations to allow controlled product discharge.

Main Features

- Designed specifically for FIBCs. Suitable for materials up to 1000 kg/m³
- Single diaphragm for dust tight closure
- Concentric opening/closing for ideal flow characteristics
- Multi-notched body for maximum flow control
- Tapered valve inlet prevents damage and aids flow
- Fabric diaphragms ensure gentle effective shut off
- Robust construction
- Slim design
- Double drilled mounting holes as standard



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
JS12	300	305	320	406	52	145	174	8	M10	17	378		7.9
JS15	380	381	398	500	60	190		12	M10	18	470	720	13.8
JS18	450	436	464	574	57	235		12	M10	25	546	806	19.2

Unless otherwise stated, all dimensions in mm / weights given for Aluminium unit in kg

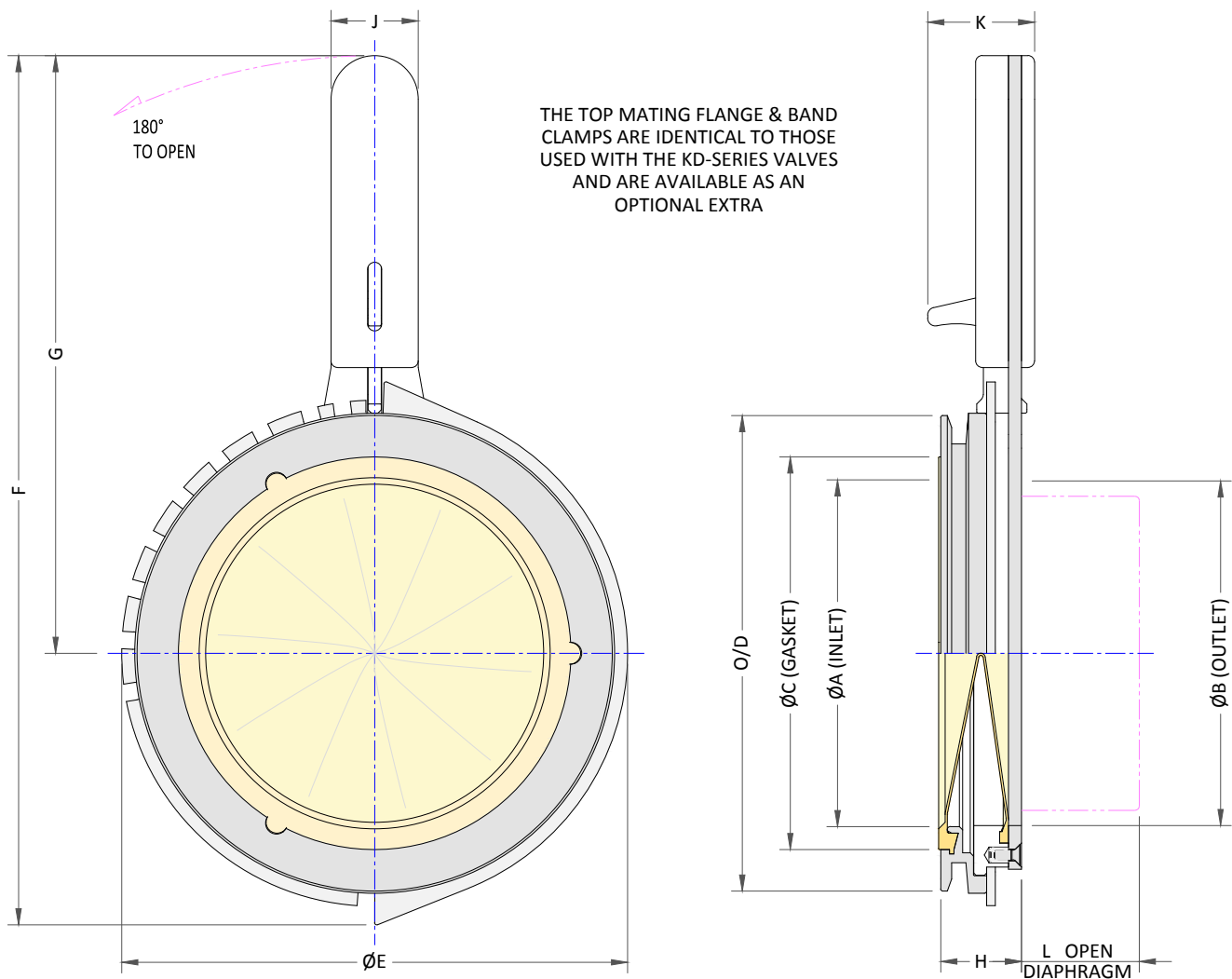
Series KS Hand Operated Valves – Quick Release

Following the success enjoyed by the standard Series K range of double diaphragm Iris valves. The Series KS has been designed with a single diaphragm specifically for light duties associated with open discharge applications in the Pharmaceutical, Dairy and Food processing sectors.

The Series KS Iris valve has all the same proven features and benefits required for today's process industries concerning hygiene; ease of assembly and disassembly for quick and frequent cleaning without the need for tools. The Series KS valve can also be supplied with a Transit Cover for added security.

Main Features

- Superb material flow control
- Non jamming
- Ideal for use with Intermediate Bulk Containers (IBC) and open discharge applications
- Choice of FDA compliant easy to clean diaphragms
- Speed of cleaning reduces downtime and increases productivity
- Band Clamp flange connections for quick release



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	Nett Weight
KS06	150	159	158	180	218	232	400	274	37	40	49	60	3.12
KS08	200	210	218	231	268.5	287	455	302	37	40	49	70	3.85
KS10	250	250	260	284	320	334	502	325	37	40	49	80	4.59

Unless otherwise stated, all dimensions in mm / weights given for Stainless Steel in kg

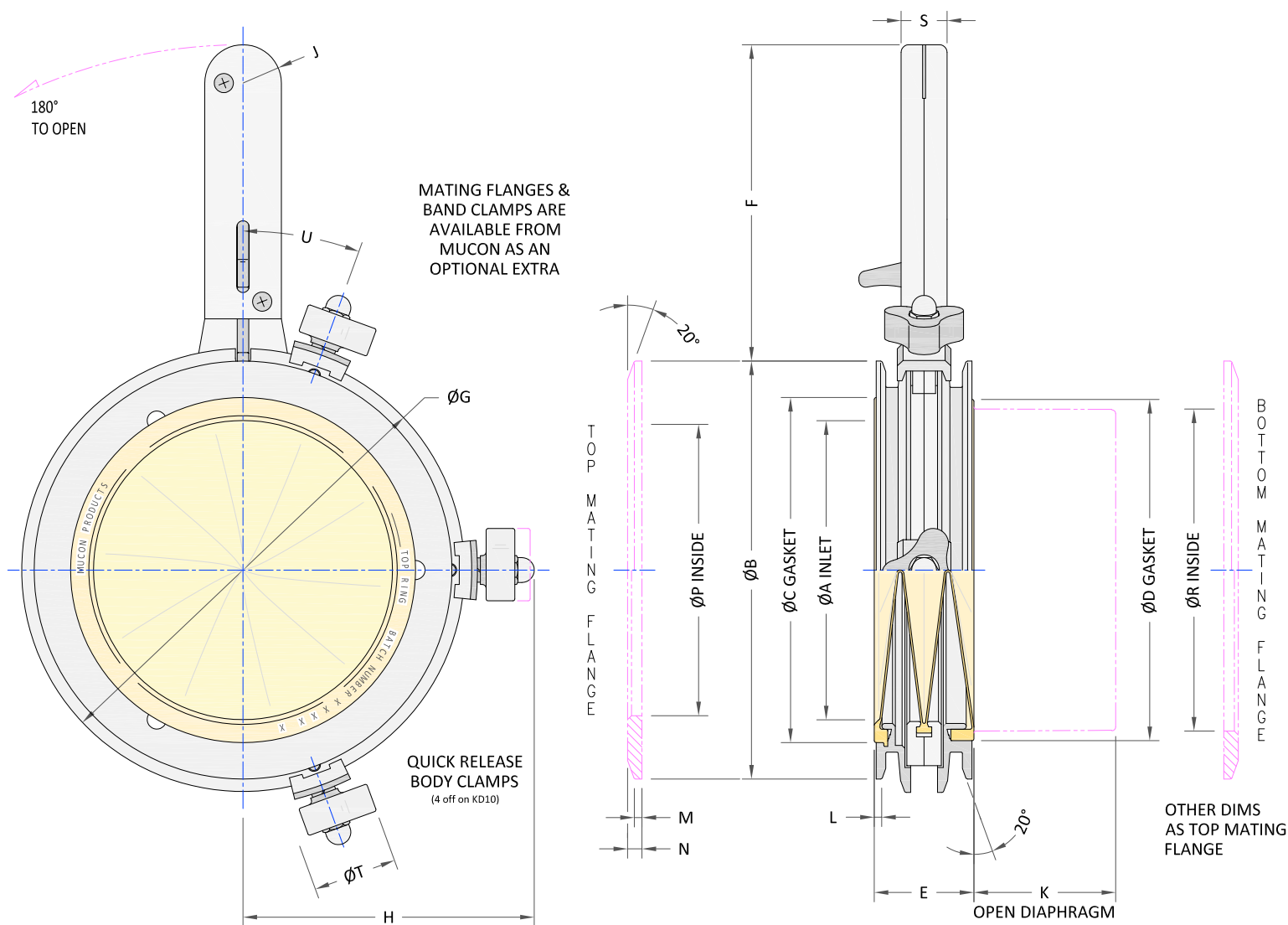
Series K Hand Operated Valves – Quick Release

Specifically designed for Pharmaceutical, Dairy and Food Industry applications, the Series K Valve incorporates the well proven benefits of the Mucon Iris Diaphragm Valve principles.

Meeting the stringent demands of today's process industries for hygiene including disassembly of equipment without the need for tools and thorough cleaning, the Mucon Series K Valve is the ideal solution for ease of use and increased productivity.

Main Features

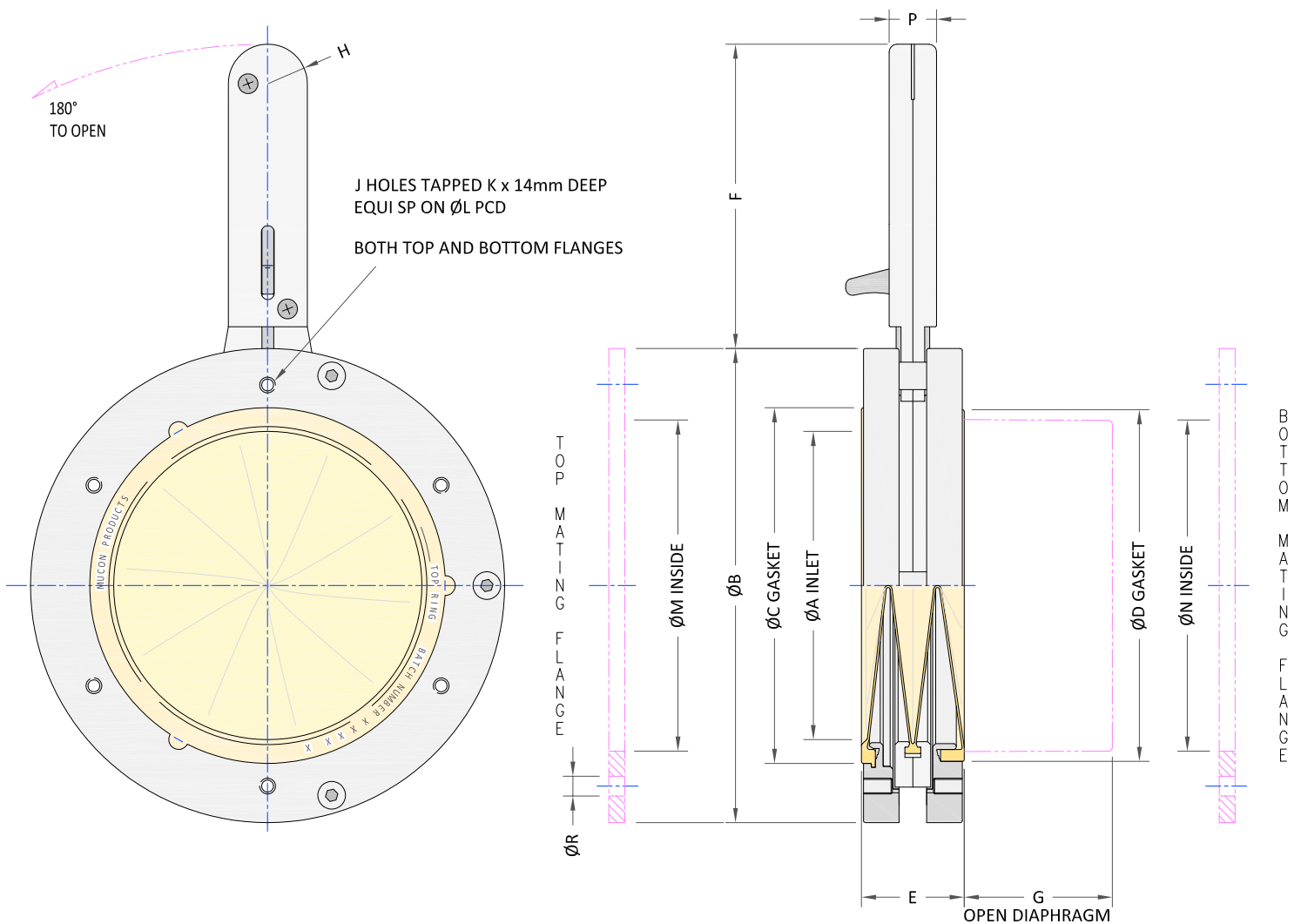
- Only the diaphragm comes into contact with the product
- Unique fasteners for rapid assembly
- Easy to clean moulded diaphragm
- Band clamped flange connections on quick release models



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	Nett Weight
KD6Q	150	156	218	180	178	52	165	231	152	20	75	4	4	7.5	152	168	24	45	20°	4.0
KD8Q	200	206	269	230	228	52	165	283	180	20	80	4	4.5	8	203	218	24	45	17°	5.1
KD10Q	250	260	323	282	280	52	165	337	210	20	95	4	4.5	8	257	272	24	45	14°	6.5

Unless otherwise stated, all dimensions in mm / weights given in kg

Series K Hand Operated Valves – Bolted



Valve Type	Nominal Bore	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	Nett Weight
KD6B	150	156	240	180	178	52	155	75	20	6	M8	230	152	168	24	10	6.6
KD8B	200	206	290	230	228	52	155	80	20	6	M8	254	203	218	24	10	8.4
KD10B	250	260	345	282	280	52	155	95	20	8	M10	327	257	272	24	12	10.7

Unless otherwise stated, all dimensions in mm / weights given in kg

Series K2P Valves – Pneumatic or Electric Actuator

Now in its second generation, the Series K2 Powered Iris Valves have been specifically designed for automatic and remote applications, complimenting the popular hand operated versions. The standard safe area K2P Valve: nominal voltage 24v DC, operating current 2–100mA.

Developed for applications requiring a high level of hygiene, this valve utilises our patented, moulded diaphragm technology already employed throughout the K-Valve range.

Our Engineers have taken great care to balance the requirements for quick disconnect, ease of cleaning and hygienic design with the requirements for reliability and control system integration. This attention to detail results in a quantum leap in technology compared to the first version of the K-Powered valve.

All body parts are manufactured from 316L stainless steel, as standard. White moulded diaphragms of Natural Rubber, EPDM and Silicone are all manufactured from FDA approved materials. Body seal is produced in FDA approved silicone rubber.

Main Features

- The moulded diaphragm extends fully from inlet to outlet, doubling as the Iris Valve's gasket
- Open, Closed and an Adjustable intermediate position switch is fitted as standard
- Bore sizes from 150mm to 200mm
- Safe Area or Certified for ATEX 1D/2D categories

Technical Details

Electric Motor: 0.25kW, 2 Pole, IP66 Induction Motor suitable for 230/400V 3ph 50Hz Supply.

Air motor: 0.56kW, 3000rpm reversible air motor using 1000 L/min of lubricated compressed air at 5.6bar
Port sizes for the air motor control valve must be a minimum of ½" BSP to achieve the required air flow rate

Open, Closed and Trickle position indicator sensors

Proximity Sensors: ATEX Valves Nominal voltage 8.2V (Intrinsically Safe)
Current consumption >3mA and < 1mA when activated. IP67

Option for Pulse Counting Trickle positioning

Proximity sensor (as specified above) in conjunction with a notched 'pulse' ring on the output shaft of the gearbox.

All switches have a two metre sensor cable that exits through a single port in the ABS switch box

Key Benefits

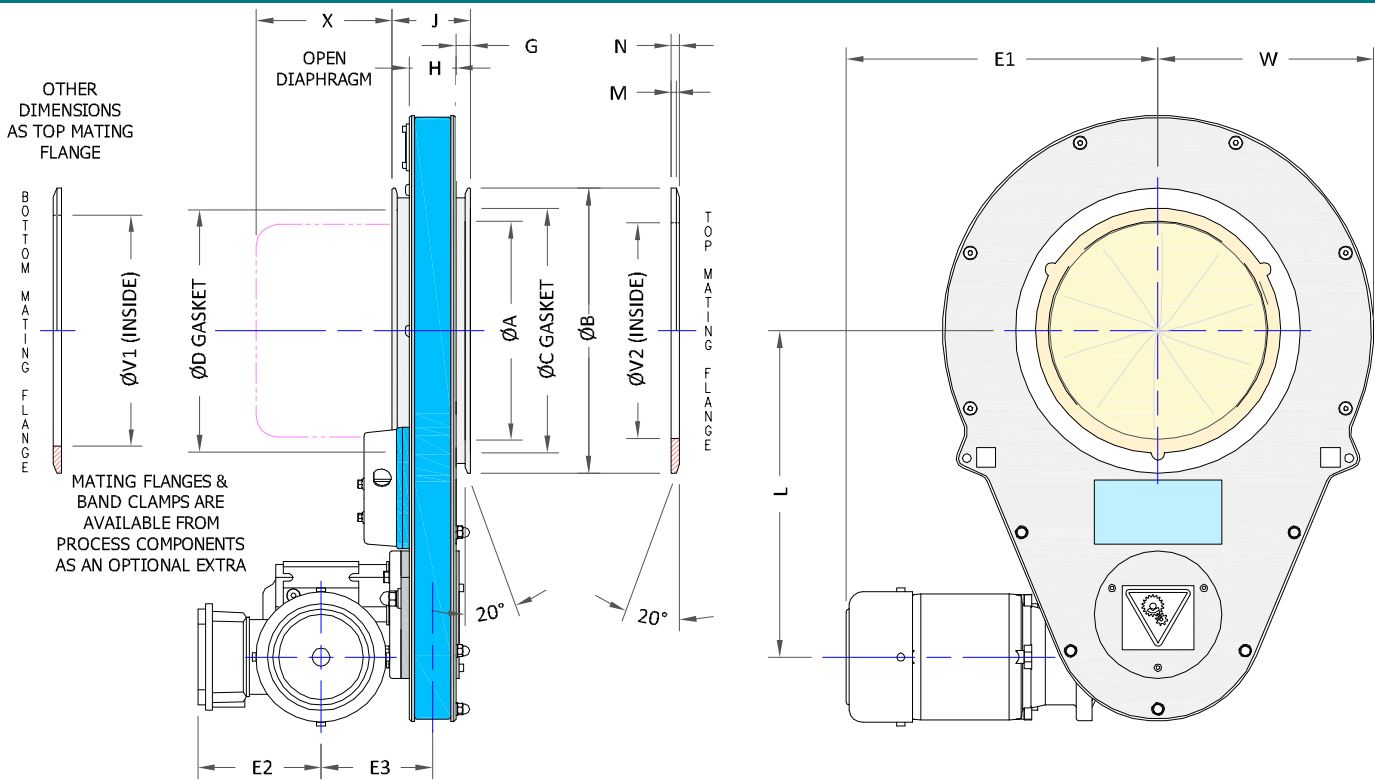
- Only the diaphragm comes into contact with the product
- Strong yet gentle on product, ideal for tablets or capsules
- Easy to clean

Options

- Bolt mounting and Quick Release versions
- Weldable mounting flanges with quick release clamps
- Internal pulse generation assembly or for greater accuracy a motor with encoder.
Both options are able to provide positional feedback on the size of the diaphragm opening between fully open and fully closed. Ideal for systems requiring variable trickle feed positions or even closed loop feedback for weighing applications.
- A control module is available for full integration with the client's control systems.



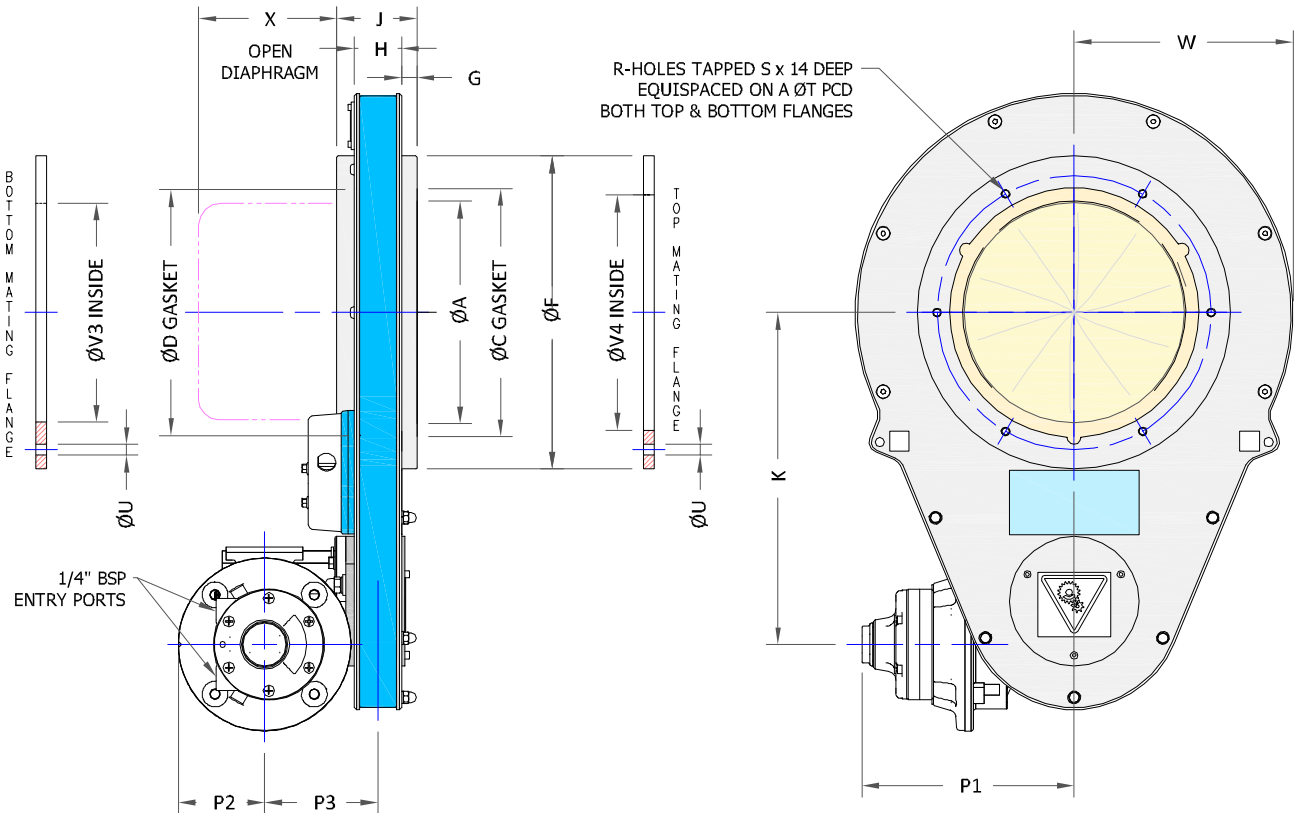
Series K2P Valves – Pneumatic or Electric Actuator



Valve Type	Nominal Bore	A	B	C	D	F	G	H	J	K	L	M	N	R	S	T	U	V1	V2	V3	V4	W	X
K2P06	150	156	218	180	178	240	14	44	74	307	307	4	7.5	6	M8	203	10	168	152	168	152	178	72
K2P08	200	206	269	230	228	290	14	44	74	307	307	4.5	8	6	M8	254	10	218	203	218	203	203	72

Valve Type	Nominal Bore	E1	E2	E3	P1	P2	P3	Nett Weight
K2P06	150	295	119	105	197	80	105	30.3
K2P08	200	295	119	105	197	80	105	32.1

Unless otherwise stated, all dimensions in mm / weights given for Electric Motor in kg



Applications

Series AD

- Outlet valve for Silos, Bins, Hoppers and Chutes
- Can be used for In-Line applications
- Discharge from Sifters, Ribbon Mixers and Double Cone Blender outlets
- For manual bagging of material where frequent operation is involved
- Controlling discharge from containers into Weigh Hoppers
- Closing the 'necks' of Big Bags where a valve smaller than the Series JS is required



Series BD

- For protecting fish in transit and during discharge
- Double flanged outlet valve for Intermediate Bulk Containers (IBC)
- Outlet valve for Dust Collection Hoppers
- For controlling (not shut off) airflow in Ventilation Ducting



Series E

- Used on the outlets of Silos handling heavy bulk solids, E.g. Sand, Cement, Lime Powder etc
- Linked to Weigh Scale set points for bagging off automatically
- For controlling (not shut off) air flow in Ventilation Ducting
- Big Bag discharge where automatic actuation is required
- Used in In-Line applications
- E Valves can be certified for ATEX Zone 21



Applications

Series H

- Outlet valve to regulate the flow from the bottom of Intermediate Bulk Containers (IBC)
- Outlet on Dust Collection Hoppers
- Glanding around plastic pipes on extrusion cooling baths
- The H Valve can be certified for ATEX Zone 21 provided that an Anti-Static diaphragm material is used



Series JS

- Ideally suited for 'choking' the necks and controlling the flow of material from FIBC / Big Bags



Series K

- Any application where a high degree of cleanliness is required and where regular strip down for cleaning is required. E.g. Food and Pharmaceutical industries
- For handling Pharmaceutical tablets or capsules. The soft diaphragm material and gentle action of the valve prevents damage to the product, thereby significantly reducing waste product
- Hand operated valves can be used on the walls of Cleanrooms for Glanding around cables, tubes or service pipes
- Power operated valve with pulse generation facility is ideally suited for applications where product Weighing or Batching is required



Installation of a Mucon Valve

Installation of a Mucon Valve

The diaphragm below shows the correct way to install a Mucon Iris Diaphragm Valve.

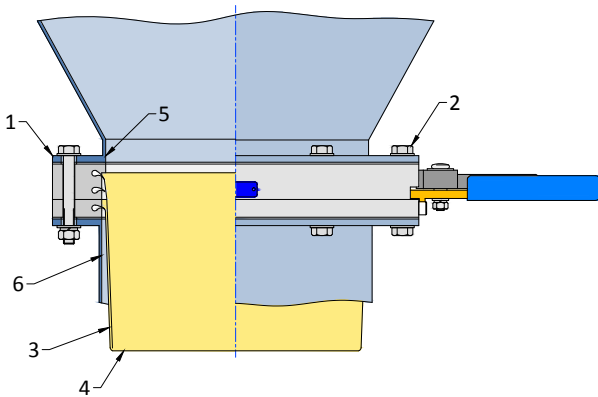
If our recommendations are followed, a prolonged diaphragm life will result.

The AD, BD, JS and K Series have lever slots, which allow the control levers to move through 180°.

Installation of the Iris valve requires a combination of through bolts and set screws to be used.

If there is any misalignment of the ductwork, the lever slot may be caused to open or close when the Iris valve is connected. Serious misalignment of the ductwork will put the valve body under stress, resulting in rapid wear of certain valve components.

All valves are fitted with a label indicating the direction of material flow.



1. Flanges must be flat and free from distortion
2. Fixing bolts over and under the lever slot must not protrude into the slot. If so, the Control Ring would be unable to open and close the valve.
3. The length of the open diaphragm below the valve (see valve details in brochure)
4. There must be a 12mm clearance between the base and open diaphragm
5. The outlet diameter of a hopper should be 5mm smaller than the inlet of the valve.
6. The discharge diameter of the diaphragm should be 10mm larger than the outlet valve diameter.

Use of Liners

The need for a liner with a Mucon Iris Diaphragm Valve installation may become apparent after the valve has been used for a short period of time. This is because Liners are successful in combating three basic problems.

- Assisting diaphragm opening where powders are very fine and with a low bulk density.
- Combating diaphragm wear if the material handled is particularly abrasive.
- Reduces the effort required to operate a valve, where a high static load is imposed on the valve.

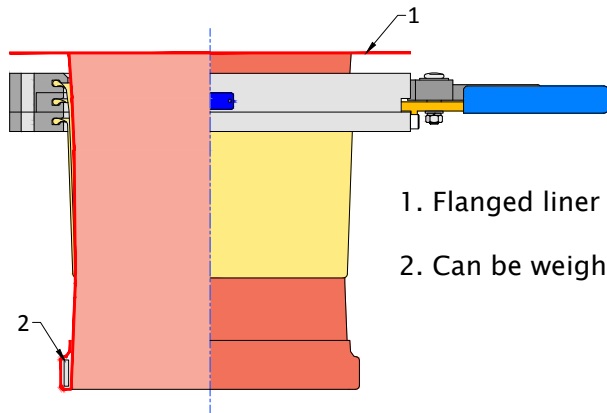
Liners can be used on their own with a Quick Release Adaptor.

Liners to Assist Opening

When a fabric diaphragm is specified, it is always necessary to have a certain weight of material acting downwards to make it open fully. If the material handled has a tendency to 'bridge', often the diaphragm will only partially open, as there is insufficient material weight acting on the diaphragm to make it open fully.

This situation can be overcome if a flanged liner is hung through the valve, with a stainless steel ring sewn into the hem of the liner.

Installation of a Mucon Valve



1. Flanged liner

2. Can be weighted with a stainless steel ring sewn into the hem (if required)

Liners to Combat Wear

The life of a diaphragm cannot be easily quantified, as there are many variables that need to be considered, such as;

- Number of operations per day.
- The amount of material passed over the diaphragm each day.
- The abrasiveness of the material handled etc.

In our experience the life of a diaphragm can vary between a few months and many years. Where the life of the diaphragm can be measured in months, it is often beneficial to consider the use of a liner.

The liner material most frequently used for combating abrasion is T893 red rubber. This natural rubber liner offers a better level of resistance to abrasion than steel. Where a T893 liner is used, it is important that a fabric diaphragm is installed with the Iris valve to effect a tight shut off.

For in-line, heavy bulk density product applications, a double flanged liner can be used.

Various powdered materials exert differing pressures on a diaphragm. Normally a Mucon Iris Diaphragm Valve is easily operated. However, on occasions some free flowing products can exert a high static load on to the valve, making the control lever difficult to operate. This situation arises because;

1. The load exerted by the product forces the various layers of the diaphragm material tightly together, making the Control Lever difficult to operate.
2. It has been observed that when a Mucon Iris Diaphragm Valve operates, the material in the column adjacent to the 'top face' of the valve tries to also turn as the valve is opened.

Both of these problems can be eliminated by the use of a liner.

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