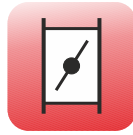
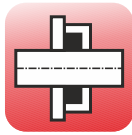


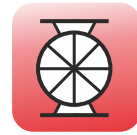
Engineered to last since 1959



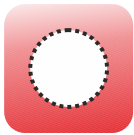
Butterfly



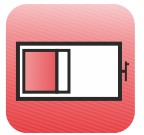
Seals



Rotary



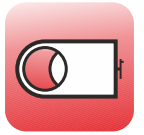
Sifter



Slide



Specials



Knifegate



Ceramic



Dyris



Diverter

mid.uk.com

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Who We Are Introduction

Engineered to last

THE MID DIFFERENCE

We are specialists within a specialised market. Since 1959, we have developed a reputation for long lasting, wear resistant valves, along with the ability to engineer a solution that for most, would be too tricky.



MID equipment, Boots, 1959

BESPOKE AS STANDARD

When a client's needs cannot be met by a standard valve, or a variation on standard, then our designers can engineer an one-off, specialised valve to exactly meet our client's needs.

We have designed very large rotary valves weighing tonnes, to tiny units you can hold in your hand. Our slide valves are rarely made as a standard size, but to fit exactly the space available, or with design parameters such as slam shut to prevent explosion propagation.

UNIQUE ENGINEERING

Many of our standard valves have features not found elsewhere- maintenance free, zero leakage shaft seals, self-adjusting slide valve seals and diamond ground alumina ceramic, adjustable liners.

TRUSTED BY BLUE CHIP

Standard, bespoke and engineered valves are used worldwide by household names. We are trusted the world over and have long relationships fostered over years of supplying the world's leading companies.



TRUSTED PARTNERSHIPS

Our TWA flagship rotary valve is unequalled for longevity and wear resistance. We have a distribution agreement with Claudius Peters, Germany, who act as our technical sales and distributors worldwide as the TWA compliments their range very well.

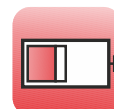
Fike, the leading experts in explosion protection, use an MID slam shut slide valve as a protective device to prevent explosion propagation. Working in conjunction with their detection and suppression system, the 135kg slide plate slams shut a 1.2m square opening in only 150ms, reaching a speed of 80mph.



Butterfly



Rotary



Slide



Knife gate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Manufacturers of powder handling equipment since 1959

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Engineered to last

THE MID DIFFERENCE

We supply the minerals, power generation, biomass, chemical, pharmaceutical, food and building material industries among many: our valve's reliability, durability and resistance to wear have been proven across a wide range of testing environments.

WEAR RESISTANCE

We are not restricted to using materials that can be cast. We can fabricate our valves, making use of other hard wearing materials in areas where they're needed most.

We have various methods of increasing longevity, the most simple being fabricating the valve from hardened wear plate or fitting hard liners to the valve.

Our flagship TWA valve has been specifically designed to be cast from Ni-hard, a material that's too hard to machine and can only be ground. For the ultimate in longevity we use diamond ground alumina ceramic to line the TWA.



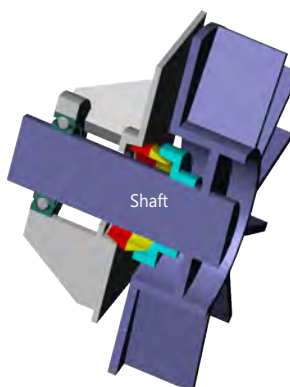
BESPOKE ROTARY VALVES

Fabricating our valves gives us a degree of dimensional flexibility that casting doesn't provide. If standard valves don't fit in the space available then we can fabricate a valve to exactly fit from a wide range of materials.



MECHANICAL LEAK FREE SHAFT SEALS

Used for over 25 years, our seals:



Mechanical seal

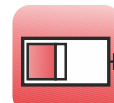
- Eliminate all repetitive, leaking shaft maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyrise



Ceramic



Specials

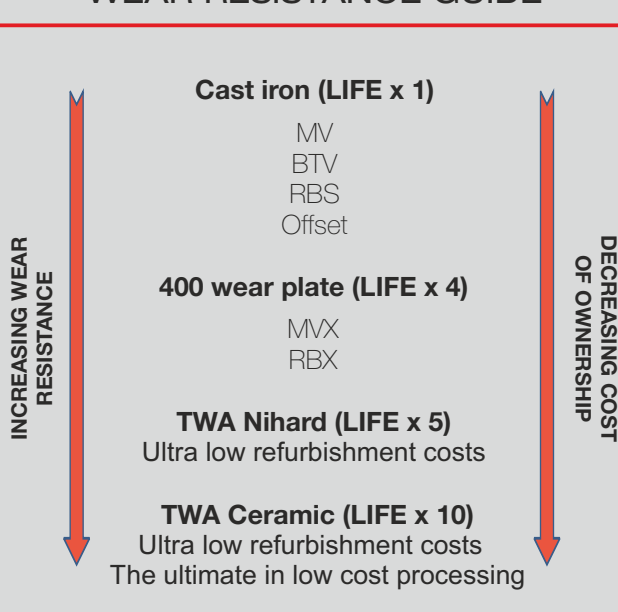


Sifter



Seals

WEAR RESISTANCE GUIDE



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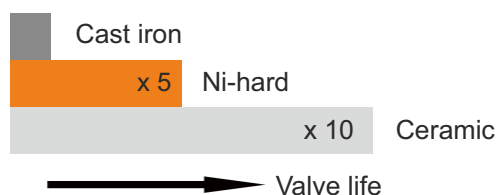
Rotary Valves TWA extreme duty

Engineered to last

THE ULTIMATE IN VALVE LIFE

The TWA has a proven, enviable track record for use with highly abrasive products that wear normal rotary valves out very quickly and require a high level of maintenance.

Wear parts are made from Ni-hard or alumina ceramic; incredibly long lasting materials that are hard all the way through, not just at the surface.



ULTRA LOW REFURBISHMENT COSTS

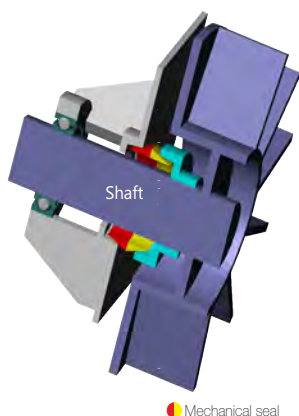
The TWA was designed with economical refurbishment in mind. The only wear parts are the rotor and liner, and subject to their being no damage, we can tell you the refurbishment costs in advance.

Once refurbished, the valve performs as it did when it was brand new.

MECHANICAL SHAFT SEALS

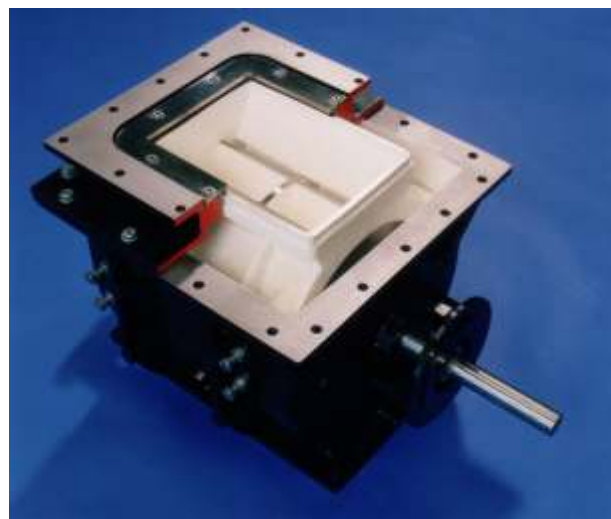
With traditional seals the product pushes past packings and wears the shaft, even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



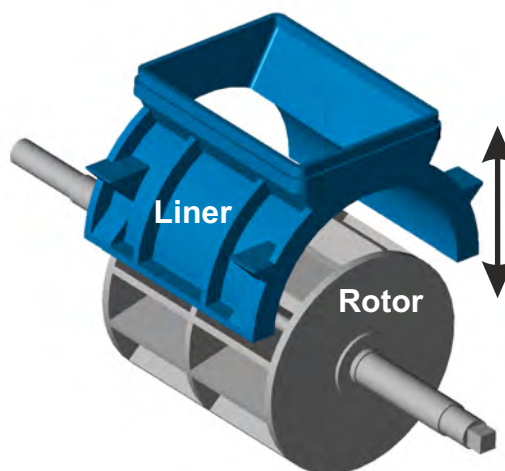
- No maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life

Mechanical seal



ADJUSTABLE (Patented)

With the valve in-situ, the gap between the rotor and liner can be adjusted to take account of product variation and even wear. (Ni-hard valve only)



ATEX CERTIFICATION

The TWA range have been certified by Baseefa for use with St2 dusts where an internal zone 20 explosive atmosphere is permanently present.

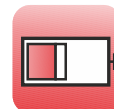
	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✗	✗



Butterfly



Rotary



Slide



Knife-gate



Diverter



Diaphragm



Ceramic



Specials



Sifter



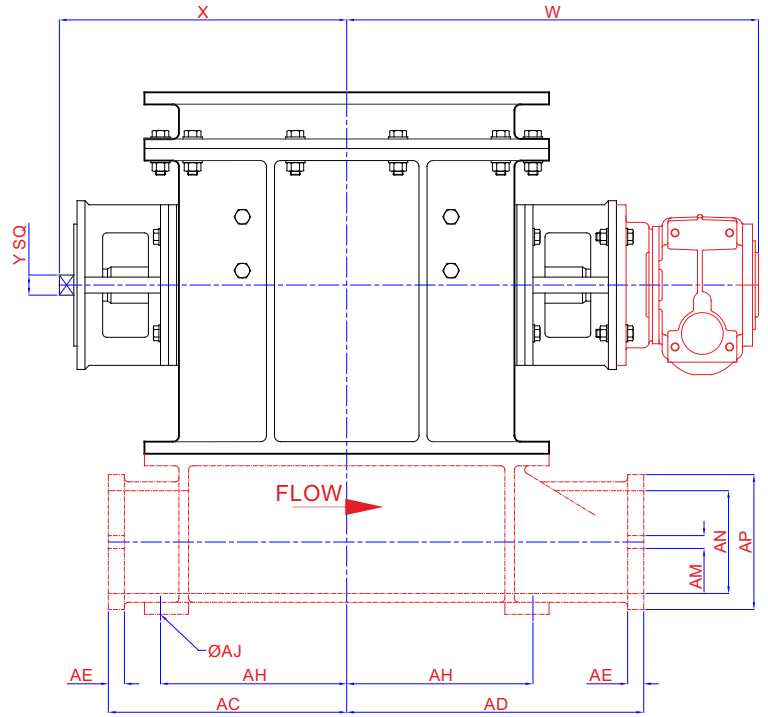
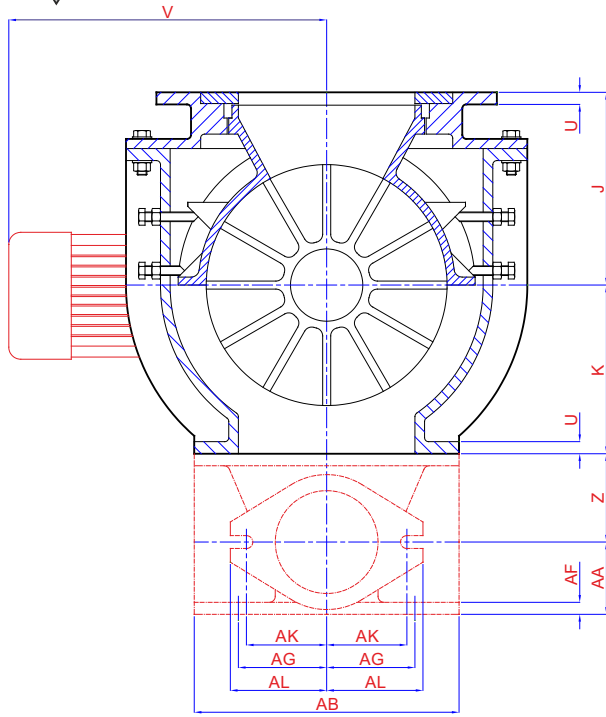
Seals

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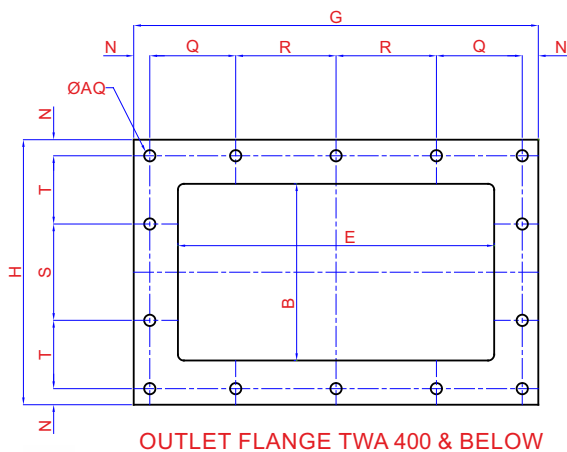
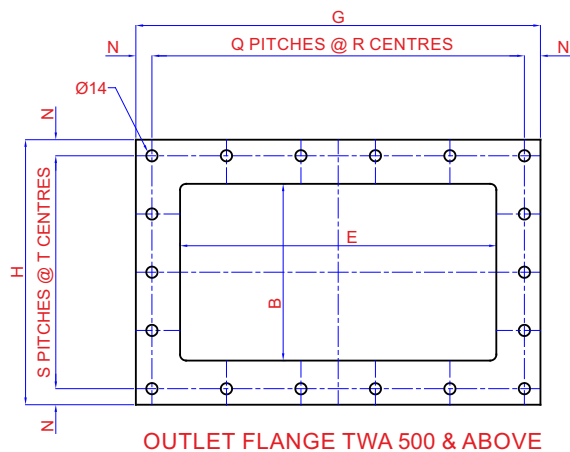
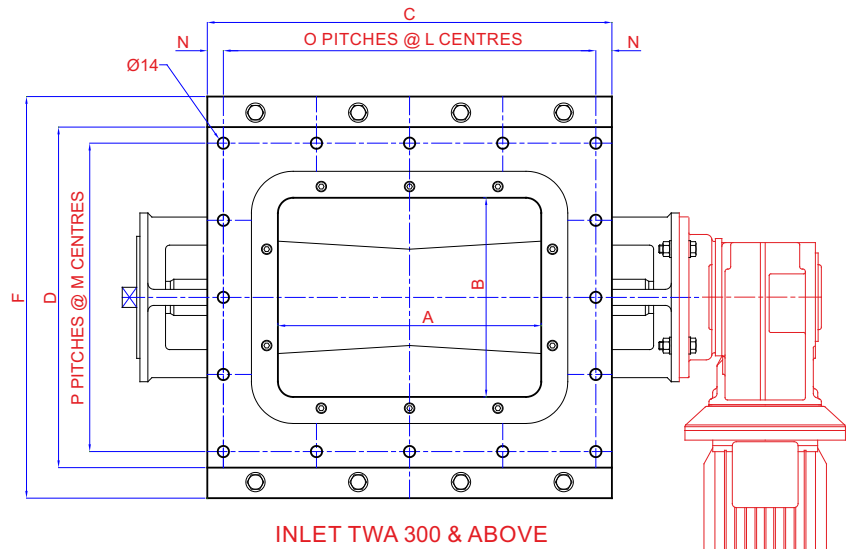
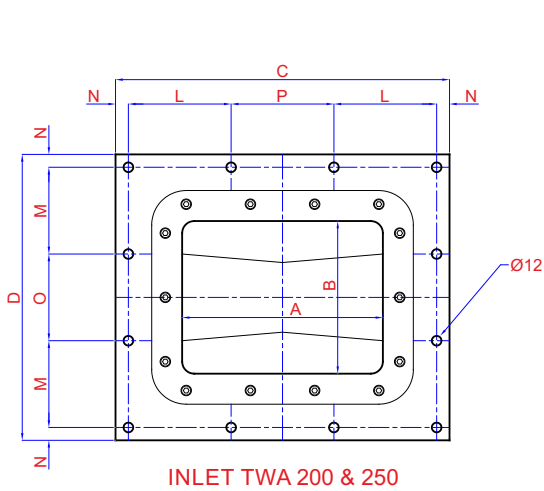
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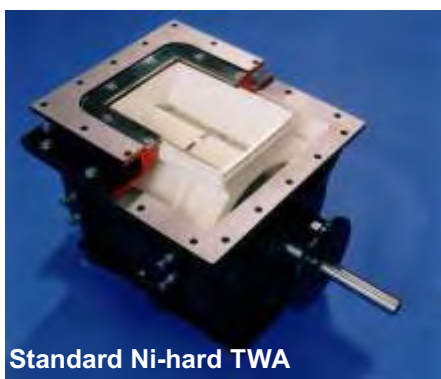
Size A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	AN	AP	AQ	I/rev																		
200	150	366	316	276	370	366	240	168	160	111	94	16	96	112	77	90	90	59	12	270	418	295	20	60	55	240	223	248	15	12	90	167	14	70	85	14	76	106	12	3.4																		
250	190	416	356	326	420	416	280	204	170	128	108	16	108	128	96	96	100	74	15	270	456	339	25	80	75	280	248	308	15	15	100	192	14	85	100	14	102	132	12	7																		
300	220	504	424	394	500	504	330	240	210	116	96	20	4	4	107	125	120	85	15	360	525	358	25	110	90	330	297	370	20	15	110	232	16	100	120	16	128	168	14	14																		
350	260	564	474	444	570	564	380	280	240	131	108.5	20	4	4	120	142	130	105	20	490	645	422	30	130	120	380	342	437	25	20	150	262	16	120	145	18	154	198	14	24																		
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500	350	650	500	594	720	714	470	450	260	72.5	86	35	8	5	5	134	4	107	20	617	777	567	38	200	220	350	438	562	10	8	PN10	255	16	PN10	PN10	PN10	203	PN10	14	80																		
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800 OUTLET																																																										



Engineered to last

Abrasion of rotary valves when handling abrasive products has always been a maintenance headache, especially when combined with the age-old problem of leaking shaft seals.

MID has partially solved this problem with the TWA extreme duty rotary valve. A combination of Ni-hard components and mechanical shaft seals increase valve life by a factor of around 5 over standard valves with virtually no maintenance.



Standard Ni-hard TWA

However, this still is not enough for customers handling intensely abrasive products where a standard valve lasts a matter of days and a TWA, even with its abrasion resistant components, lasts only a few weeks.



Worn TWA Ni-hard liner

The development of MID's ceramic tiling option for the TWA rotary valve makes the valve last up to 10 times longer than a standard cast iron valve.

We have developed a method of cutting alumina ceramic tiles so they are self-supporting- similar to a Roman arch. To prevent movement, the tiles are bonded to the parent material using a ceramic

Midland Industrial Designers Limited

epoxy resin, much harder than a standard epoxy and ideally suited to the job.

The rotor and liner are then ground using diamond wheels to a close tolerance,



Fitting the rotor tiles

taking off the high spots naturally found when manually assembling the tiles.

The TWA is then assembled, using the adjustable design to ensure the clearance between the rotor and the liner is tightly controlled.

A high performance polyurethane seal is then used on the top casting to allow the liner to float slightly for adjustment on site as the valve wears.



A fully assembled rotor

The result is a valve which can be used on materials traditionally considered too abrasive for rotary valve technology. The valve is also ideally suited where maintenance and downtime is critical and must be kept to a minimum.

The other good news is when the valve is worn beyond its adjustment capability, the tiles can be removed, a new set installed and ground and the valve returned as good as new, all for less than the price of a standard rotary valve of an equivalent size. The advantage is

obvious- the lifetime cost of a ceramic TWA rotary valve is dramatically less than a standard valve, especially when the costs of lost production, maintenance and downtime are also



A ceramic tiled liner

added into the equation.

When combined with MID's mechanical shaft seal technology (and we would not sell an abrasion resistant valve without these fitted) the TWA extreme duty ceramic lined rotary valve is the ultimate in rotary valve technology for abrasion resistance.

MID have a policy of continuous development. We strive to design and manufacture equipment to exacting standards and are well known within the industry for taking on challenges other companies shy away from. The



**An assembled ceramic TWA
(top casting removed)**

ceramic TWA rotary valve is the latest in a long line of products engineered for longevity and minimum maintenance.



Rotary Valves

MVX wear resistant

Engineered to last

ADDING WEAR RESISTANCE

The MVX range is designed to be made from wear resistant materials in the areas of the valve that commonly wear out the fastest.

Carbon steel and cast iron materials have a limited life when used with abrasive products.

Building more wear resistant materials into the valve drastically reduces your running costs.



ATEX CERTIFICATION

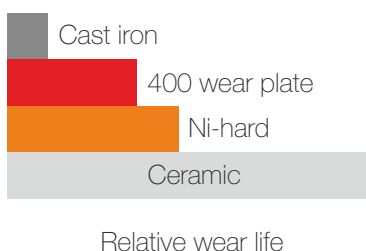
The MVX range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

LIFE EXPECTANCY X 4

Adding 400 wear plate quadruples valve life, compared to a cast iron or carbon steel valve, simply by virtue of the relative hardness of the materials used.



COSTS ONLY 30% MORE

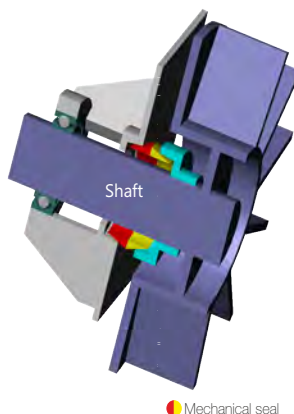
A valve that needed replacing every year, now only needs to be removed once every 4 years - reducing stoppages, lowering running costs and increasing productivity.

Combined with MID's mechanical shaft seals makes a hard wearing, reliable, low cost unit, for only an additional 30%.

MECHANICAL SHAFT SEALS

With traditional seals the product pushes past packings and wears the shaft - even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



- No maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life

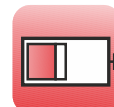
Mechanical seal



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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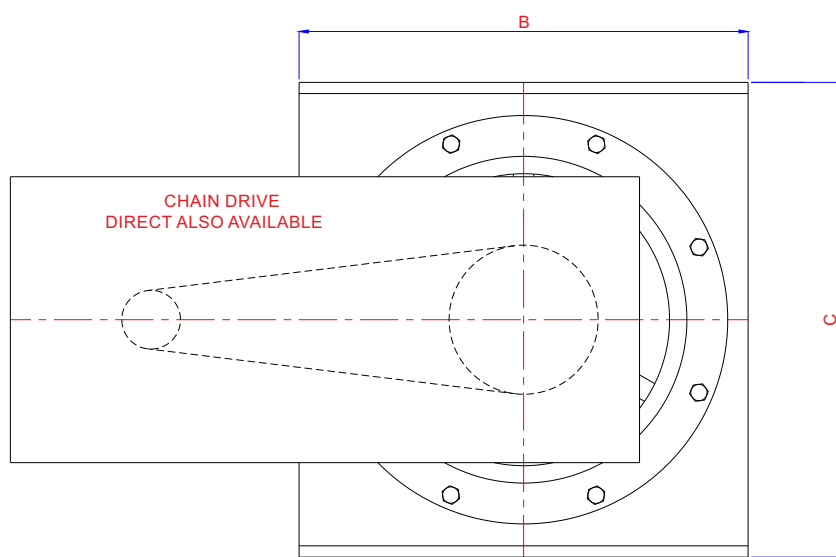
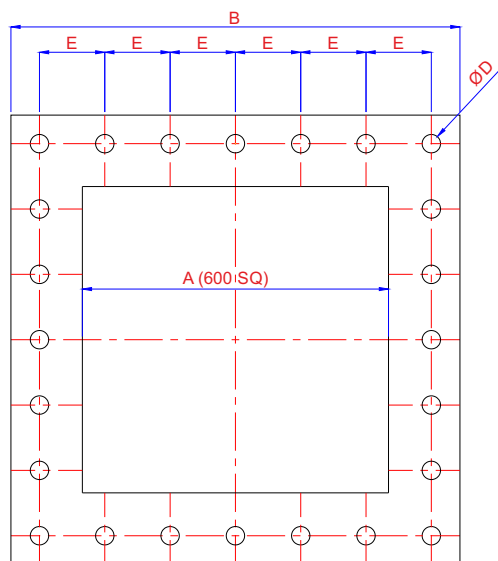
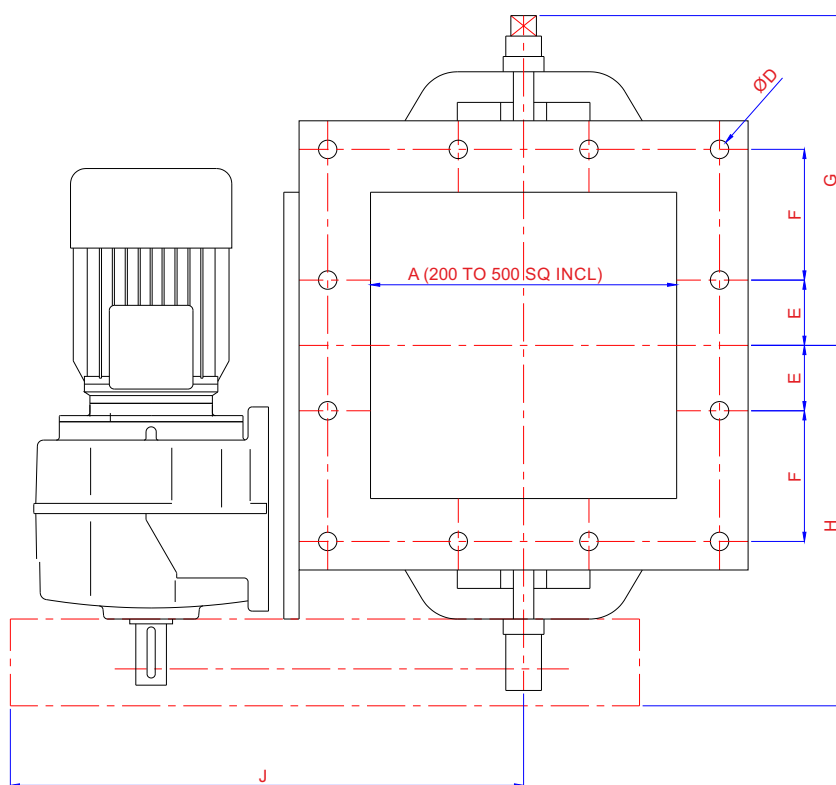
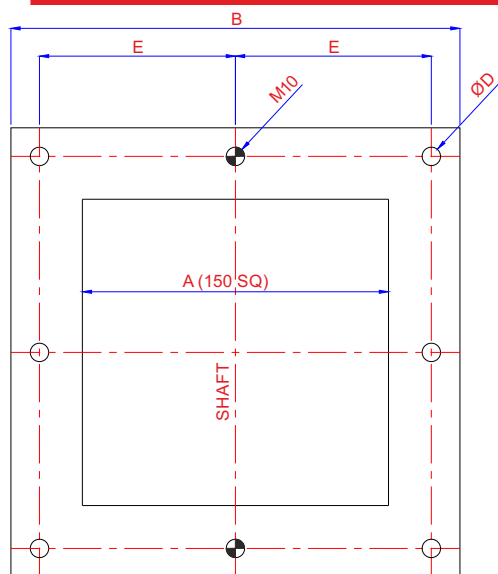




Rotary Valves

MVX square

Engineered to last



SIZE A	B SQ	C	D	E	F	G	H	J	l/rev	kW
150	280	250	12	115	-	213	233	354	2.5	0.12
200	300	310	12	45	90	260	280	400	6.2	0.37
250	370	388	18	54	108	275	292	450	12.2	0.55
300	440	465	18	64	128	323	353	503	20.6	0.75
350	490	520	14	75	145	348	382	536	32.5	1.1
400	550	580	18	85	170	385	425	585	49.5	1.5
450	600	640	18	90	180	378	419	620	61	1.5
500	650	670	18	100	200	447	515	635	92	2.2
600	800	770	18	148	-	633	654	685	140	3.0

Larger valves designed and built to order

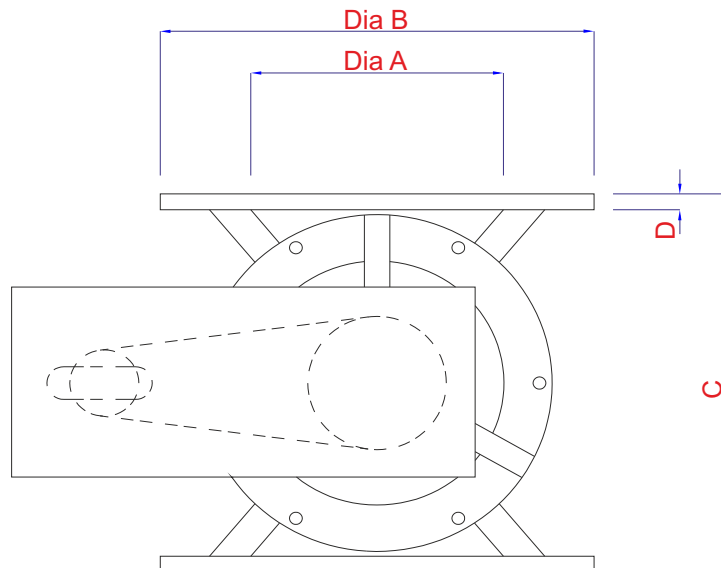
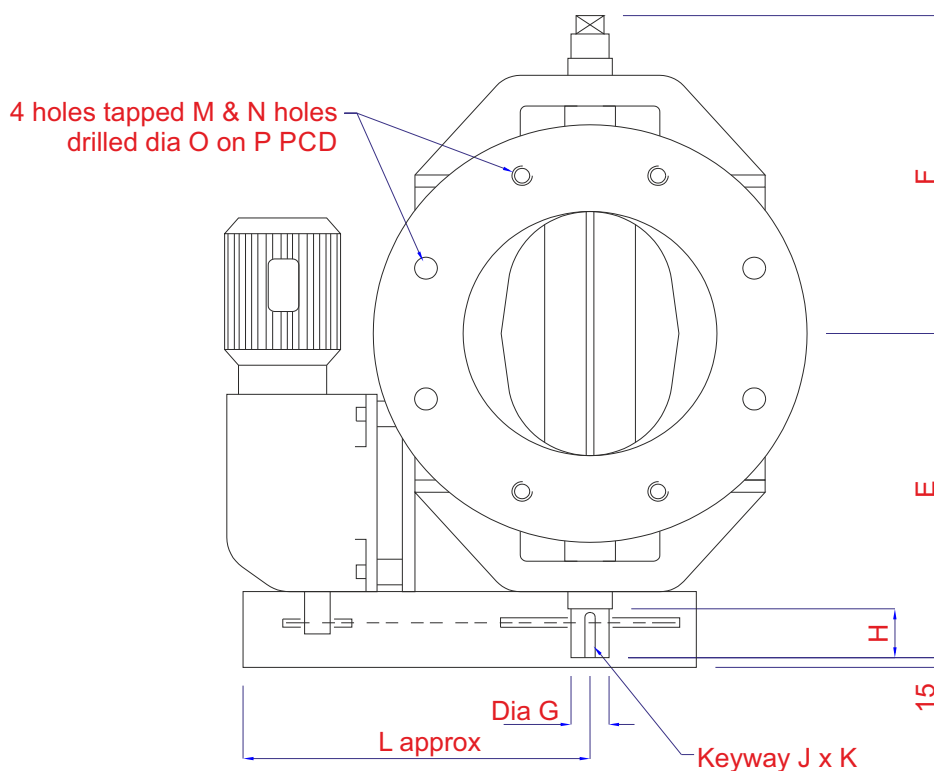
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Engineered to last



Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	ft ³ /rev	l/rev	kW
150	150	280	250	12	228	223	22	35	6	3.5	298	16	4	18	225	0.088	2.5	0.12
200	200	342	310	13	265	260	30	40	8	4	362	16	4	18	280	0.22	6.2	0.37
250	250	406	380	15	292	287	30	40	8	4	395	16	8	18	335	0.50	12.0	0.55
300	300	482	450	18	352	337	35	55	10	5	480	20	8	23	395	0.73	20.6	0.75
350	350	533	520	18	377	362	35	55	10	5	520	20	8	23	445	1.15	32.5	1.10
400	400	596	580	20	414	399	40	55	12	5	585	20	12	23	495	1.75	49.5	1.50
500	500	698	670	20	465	450	50	55	12	5	690	20	16	23	600	3.24	91.7	2.20

Larger valves designed and built to order

Midland Industrial Designers Limited

Engineered to last

STANDARD DESIGN 150-500mm

The MV range is designed to fit between standard, off the shelf flanges to make installation as easy as possible. For larger or smaller sizes, we fabricate the valves to fit.

If you need us to replace another manufacturers valve with slightly different dimensions, we can fabricate the valve so that our replacement will slot in exactly where the other unit was.



HIGHLY CONFIGURABLE

Rotor:

- Square tip
- Friction relieved
- Wear plate
- Polyurethane
- Spring steel
- Closed end
- Replaceable tips

Body:

- Round
- Square
- Twin outlet
- Round in - square out
- MVX wear plate
- Replaceable liners
- Odd shapes

LIFE EXPECTANCY X 4

Compared to a cast iron or carbon steel valve, adding 400 wear plate to the rotor and body extends the valve life, by between 3 to 4x, but only costs approximately 30% more.

See our MVX range for more details.

ATEX CERTIFICATION

The MV range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

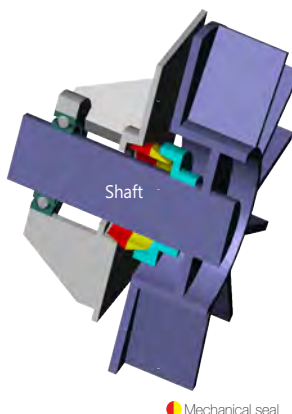
As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

MECHANICAL SHAFT SEALS

With traditional seals the product pushes past packings and wear the shaft and even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



- Zero Maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life

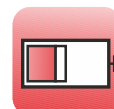
Mechanical seal



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



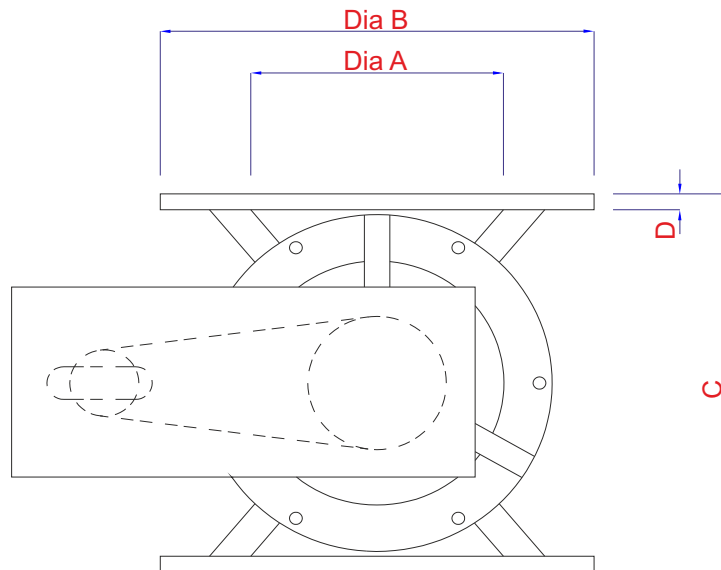
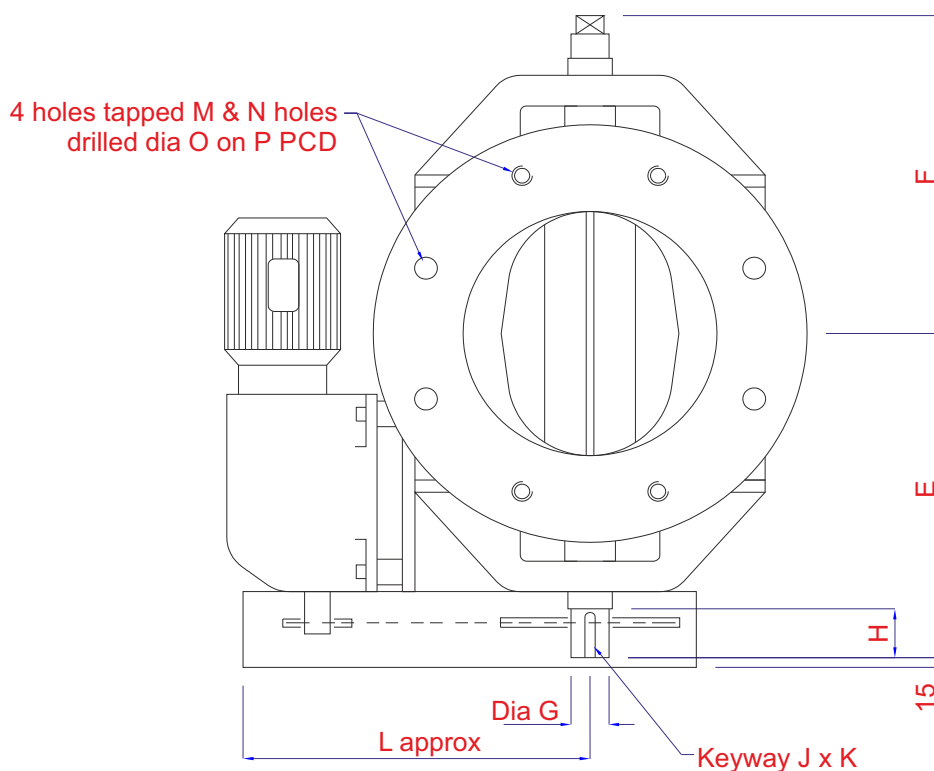
Seals

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Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	ft ³ /rev	l/rev	kW
150	150	280	250	12	228	223	22	35	6	3.5	298	16	4	18	225	0.088	2.5	0.12
200	200	342	310	13	265	260	30	40	8	4	362	16	4	18	280	0.22	6.2	0.37
250	250	406	380	15	292	287	30	40	8	4	395	16	8	18	335	0.50	12.0	0.55
300	300	482	450	18	352	337	35	55	10	5	480	20	8	23	395	0.73	20.6	0.75
350	350	533	520	18	377	362	35	55	10	5	520	20	8	23	445	1.15	32.5	1.10
400	400	596	580	20	414	399	40	55	12	5	585	20	12	23	495	1.75	49.5	1.50
500	500	698	670	20	465	450	50	55	12	5	690	20	16	23	600	3.24	91.7	2.20

Larger valves designed and built to order

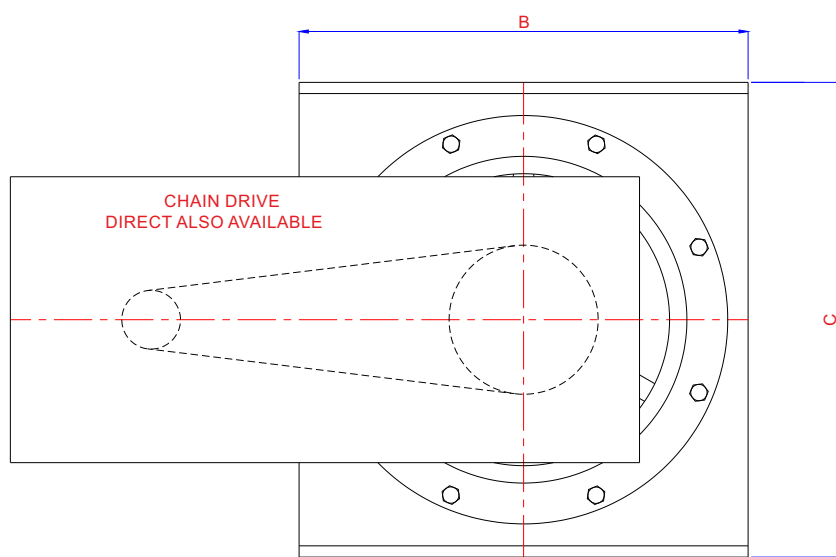
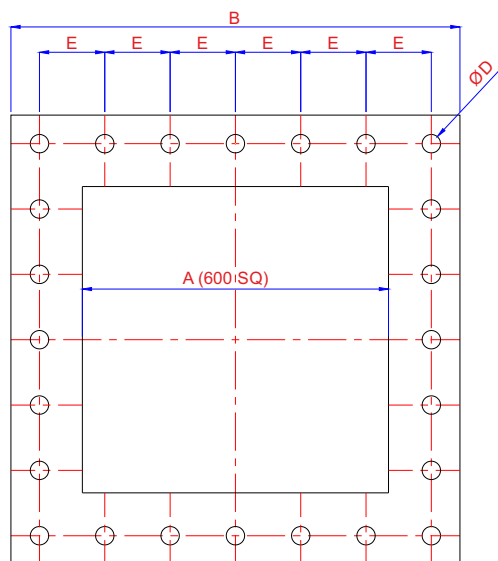
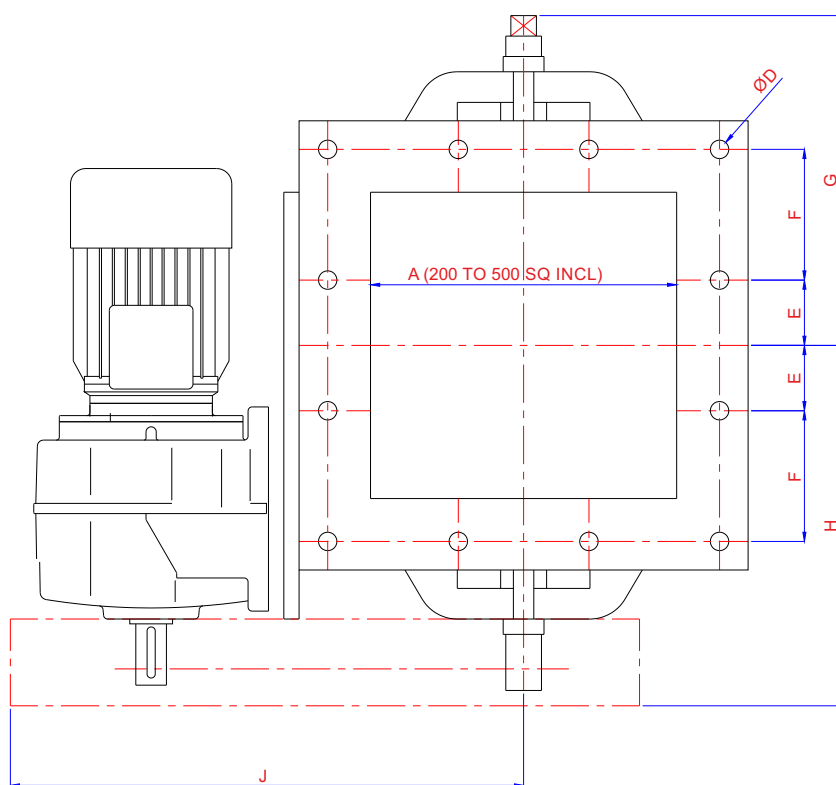
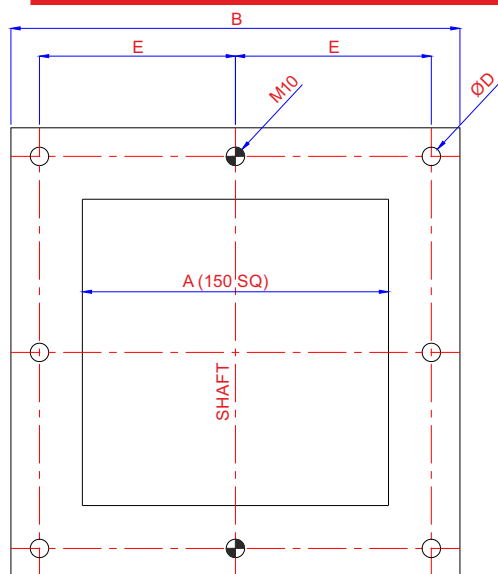
Midland Industrial Designers Limited



Rotary Valves

MV square

Engineered to last



SIZE A	B SQ	C	D	E	F	G	H	J	l/rev	kW
150	280	250	12	115	-	213	233	354	2.5	0.12
200	300	310	12	45	90	260	280	400	6.2	0.37
250	370	388	18	54	108	275	292	450	12.2	0.55
300	440	465	18	64	128	323	353	503	20.6	0.75
350	490	520	14	75	145	348	382	536	32.5	1.1
400	550	580	18	85	170	385	425	585	49.5	1.5
450	600	640	18	90	180	378	419	620	61	1.5
500	650	670	18	100	200	447	515	635	92	2.2
600	800	770	18	148	-	633	654	685	140	3.0

Larger valves designed and built to order

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FOR POOR FLOWING PRODUCTS

The SR range is designed to handle poor flowing products as it is made without any reduction in cross section in the inlet or outlet and with oversized rotors to allow products to enter and exit the valve easily.

The SR units are made as standard with a round inlet and square outlet (this can be reversed) to make a simple connection between a round silo and square downstream equipment.



HIGHLY CONFIGURABLE

Rotor:

- Square tip
- Friction relieved
- Wear plate
- Polyurethane
- Spring steel
- Closed end
- Replaceable tips

Body:

- Round
- Square
- Twin outlet
- Round in - square out
- MVX wear plate
- Replaceable liners
- Odd shapes

LIFE EXPECTANCY X 4

Compared to a cast iron or carbon steel valve, adding 400 wear plate to the rotor and body extends the valve life, by between 3 to 4x, but only costs approximately 30% more.

ATEX CERTIFICATION

The SR range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

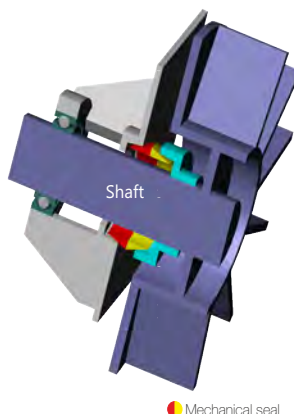
As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

MECHANICAL SHAFT SEALS

With traditional seals the product pushes past packings and wears the shaft - even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



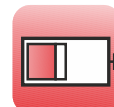
- No maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life



Butterfly



Rotary



Slide



Knife gate



Diverter



Dryis



Ceramic



Specials



Sifter



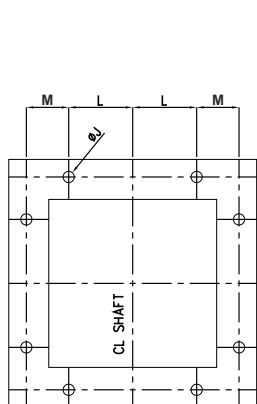
Seals



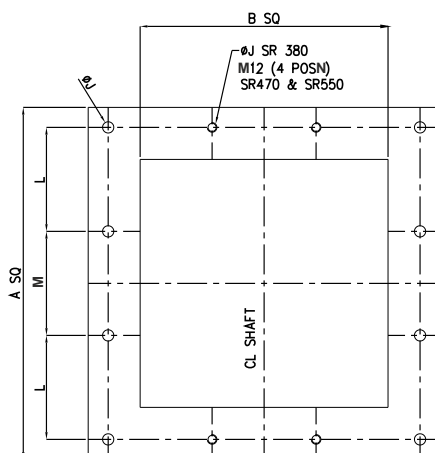
Rotary Valves

SR straight drop

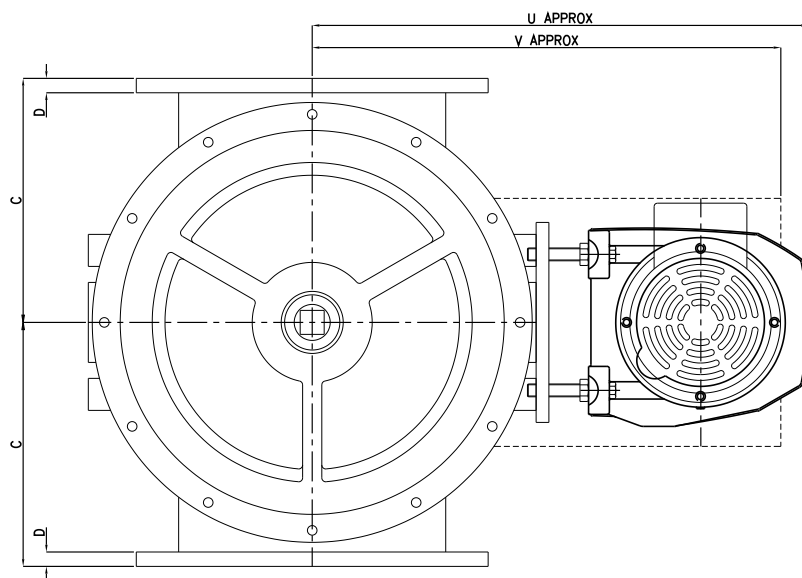
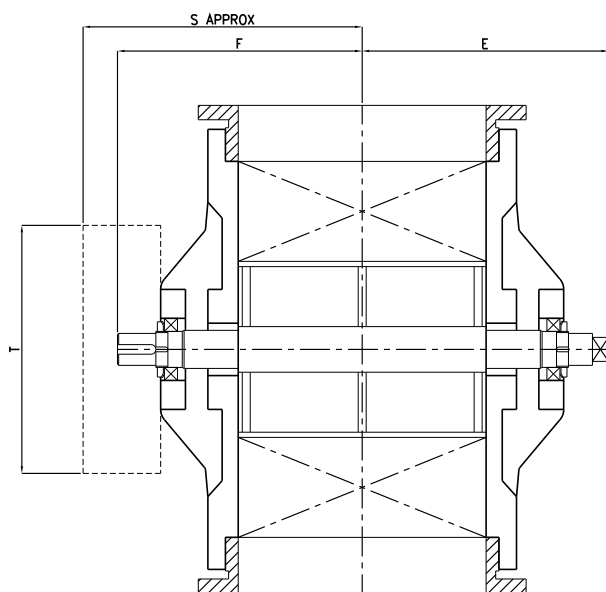
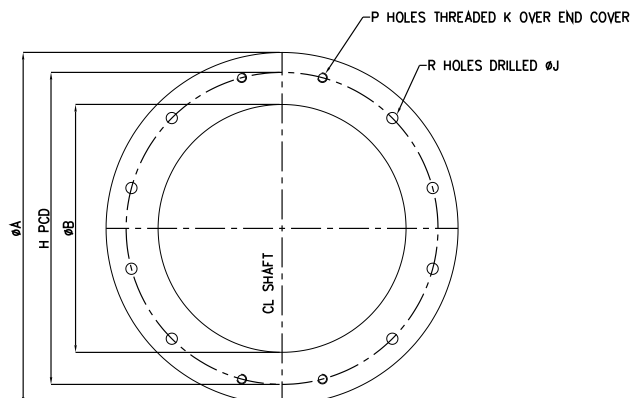
Engineered to last



SR 190, 250, 320



SR 380, 470, 550



TYPE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	Capacity	
																				ft ³ /rev	l/rev
190	200	130	130	10	185	215	22	174	12	M10	57	30	6x6	2	4	255	200	345	315	0.1	2.8
250	260	165	165	10	205	265	30	224	14	M12	65	47	8x7	2	4	305	210	415	385	0.23	6.6
320	310	205	205	12	230	265	35	266	14	M12	80	53	10x7	2	6	305	270	515	485	0.48	13.5
380	360	255	255	15	260	340	35	310	14	M12	100	110	10x7	4	8	380	310	560	530	0.78	22.2
470	440	305	305	18	258	306	40	390	14	M12	130	130	12x7	4	8	350	310	620	585	1.5	42.5
550	490	345	345	20	332	380	40	440	14	M12	145	150	12x7	4	8	367	310	660	625	2.3	65

Please note the type refers to the rotor diameter, not the inlet
Dimensions may vary depending on the options selected

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FAST ACCESS

Based on standard MV rotary valve components, the quick removable rotor option is designed for rapid access to the valve internals for cleaning between products or during hygienic cleaning operations.

The linear bearings and close machined tolerances make taking the rotor out very simple, with easy realignment to ensure the rotor is put back in the same place to maintain the running clearances.



ATEX CERTIFICATION

The MV range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

SAFE TO USE

As the valve offers access without tools, the drive automatically disconnects when the rotor is removed before any moving parts are exposed.

The mechanism can be fitted with a double circuit, safety approved electrical interlock switch to disable the motor when the contacts are broken. Mechanical key interlocks can also be fitted.

The rotor is held in the end cover and can be rotated easily for cleaning while removed on the linear bearings. Hygienic valves are designed to be cleaned with pressurised water jets without compromising the seal or bearing integrity. They can also be specified for use with steam cleaning systems.

LIFE EXPECTANCY X 4

Carbon steel and cast iron materials have a limited life when used with abrasive products.

Building more wear resistant materials into the valve drastically reduces your running costs.

Adding 400 wear plate into the valve extends the life by up to a factor of 4 and typically costs no more than an extra 30%

HIGHLY CONFIGURABLE

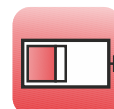
Along with all the normal options, we can fit chain or direct drives, and for high temperature applications extend the drive, use carbon lubricated or water cooled bearings and high temperature, gas purged shaft seals.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



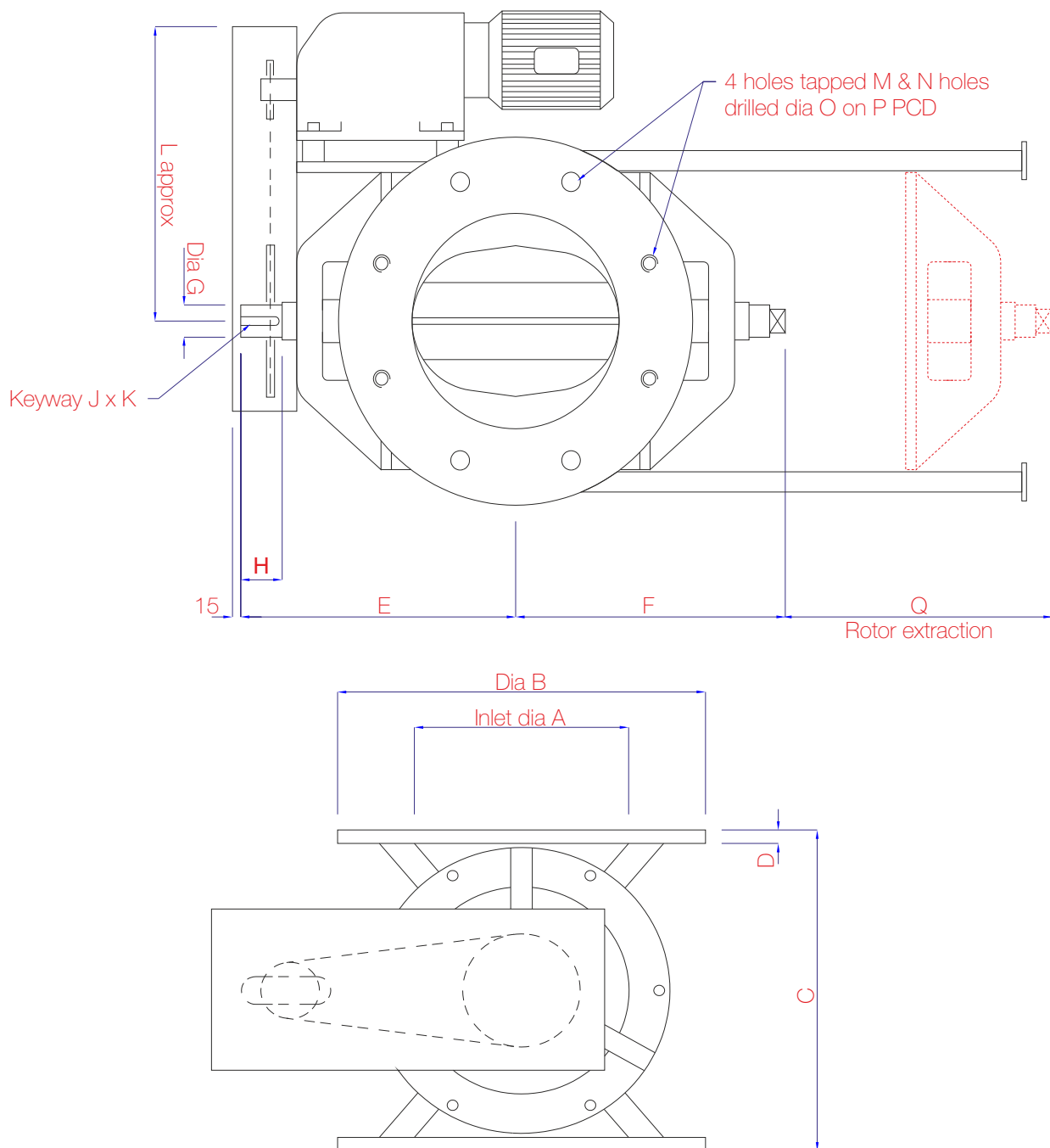
Seals

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Engineered to last



Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	l/rev	kW
150	150	280	250	12	228	223	22	35	6	3.5	298	16	4	18	225	180	2.5	0.12
200	200	342	310	13	265	260	30	40	8	4	362	16	4	18	280	240	6.2	0.37
250	250	406	380	15	292	287	30	40	8	4	395	16	8	18	335	290	12.0	0.55
300	300	482	450	18	352	337	35	55	10	5	480	20	8	23	395	345	20.6	0.75
350	350	533	520	18	377	362	35	55	10	5	520	20	8	23	445	395	32.5	1.10
400	400	596	580	20	414	399	40	55	12	5	585	20	12	23	495	460	49.5	1.50
500	500	698	670	20	465	450	50	55	12	5	690	20	16	23	600	560	91.7	2.20

Square, rectangular and offset versions also available

Midland Industrial Designers Limited

ADDING WEAR RESISTANCE

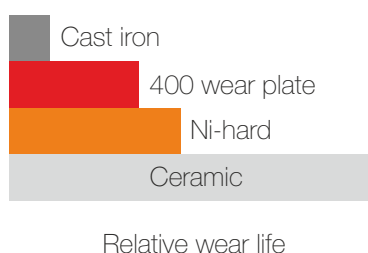
The RBX range is designed to be made from wear resistant materials in the areas of the valve that commonly wear out the fastest.

Cast iron and carbon steels have a limited wear life when used with abrasive products. For a small additional cost, we can introduce 400 wear plate in the areas most susceptible to wear.



LIFE EXPECTANCY X 4

Adding 400 wear plate quadruples valve life, compared to a cast iron or carbon steel valve, simply by virtue of the relative hardness of the materials used.












The main body of the valve is fabricated from 400 wear, which is 4x harder than cast iron or carbon steel, the rotor comes with replaceable 400 wear plate blade tips and for economical refurbishment the end covers are also designed with 400 wear plate replaceable inserts.

ATEX CERTIFICATION

The RBX range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

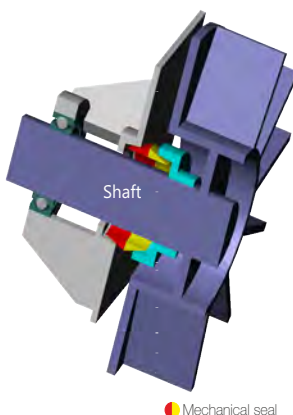
As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

		
	Internal	External
Zone 0/20		
Zone 1/21		
Zone 2/22		
APD		

MECHANICAL SHAFT SEALS

With traditional seals the product pushes past packings and wears the shaft - even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



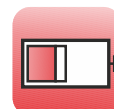
- No maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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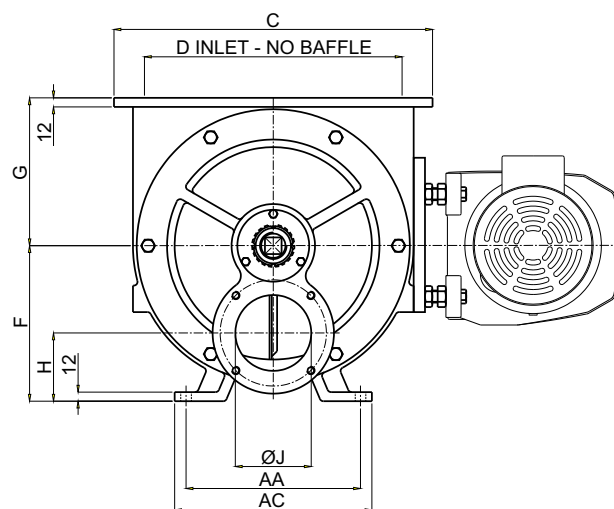
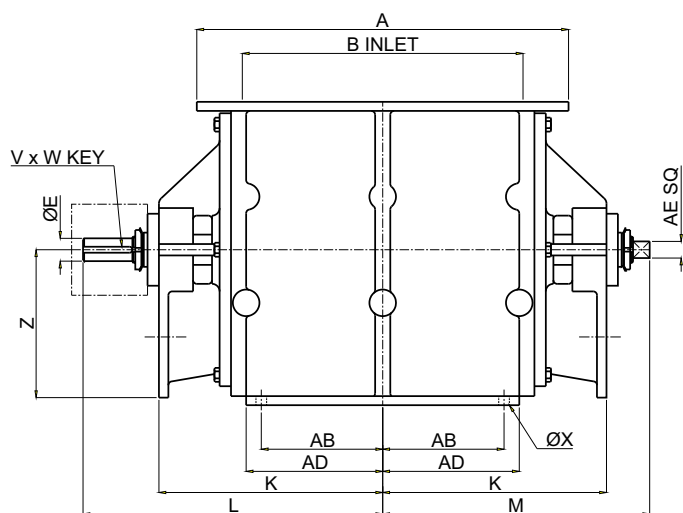
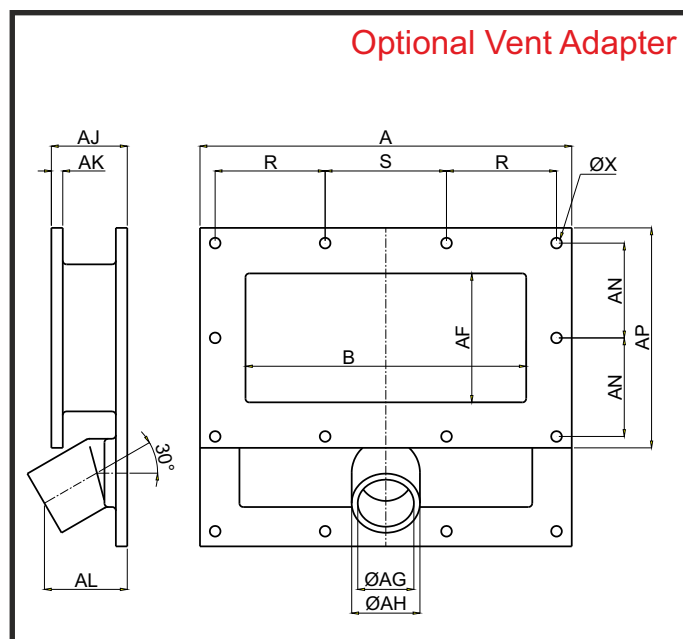
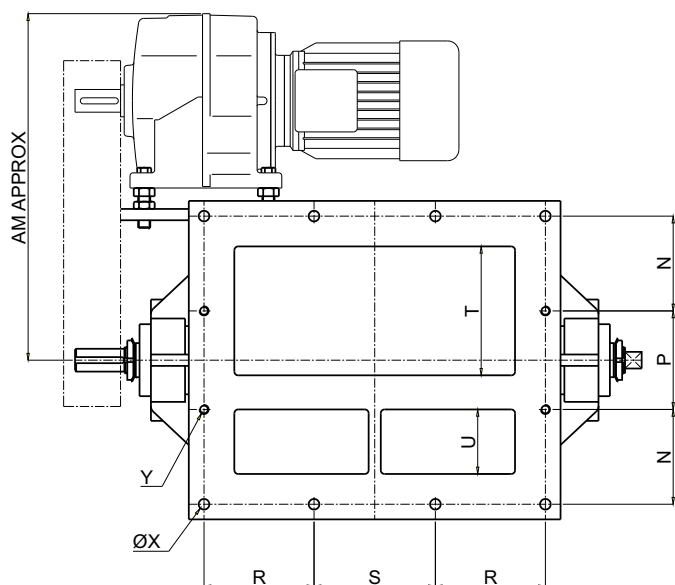
www.mid.uk.com



Rotary Valves

RBX wear resistant blowing seal

Engineered to last



Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W
02	310	210	320	220	30	180	152	60	75	227	267	306	97	96	92	96	120	50	8	6
04	390	280	360	250	30	180	170	80	75	250	285	345	110	110	120	120	140	70	8	6
08	490	370	420	300	30	205	195	90	100	295	330	395	125	130	145	160	170	85	8	6
12	500	380	470	350	40	245	225	105	125	305	340	420	145	140	150	160	200	100	12	8

Size	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	AN	AP	I/rev	ft³/rev
02	12	M10	175	180	85	210	100	22	120	48	63	80	12	90	267	95	220	5.7	0.2
04	12	M10	168	200	120	230	135	22	140	60	76	90	12	95	386	110	250	11.4	0.4
08	14	M10	195	230	160	260	180	22	170	74	90	100	15	123	457	125	290	22.8	0.8
12	14	M12	235	260	165	300	185	30	200	84	100	110	15	135	600	140	320	34.3	1.2

Metric/Round inlets are available. Please ask for details

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Rotary Valves

RBS blowing seal

Engineered to last

STANDARD SIZES TO 41m³/Hour

The RBS range is a heavy duty blowing seal, used to introduce abrasive products into a positive or negative pressure, pneumatic conveying system.

Metric/Round inlets are available. Please ask for details.

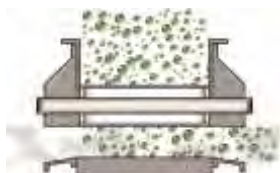
LIFE EXPECTANCY X 4

Adding 400 wear plate extends the life of the valve by 3 to 4X, compared to a cast iron or carbon steel valve. See the RBX range for more details.



OPERATION

The product enters the valve and falls into the moving rotor pockets. The rotor transports the product around the valve and directly into the air stream that blows directly through the bottom of the end covers, sweeping the material out of each pocket in turn and into the conveying pipe.



As the product is discharged from the rotor, conveying air can get trapped in the pocket but as the diagram above left shows, the minimum one blade seal between the vent and the product inlet, prevents the air from reaching and interfering with the product inlet.

ATEX CERTIFICATION

The RBS range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

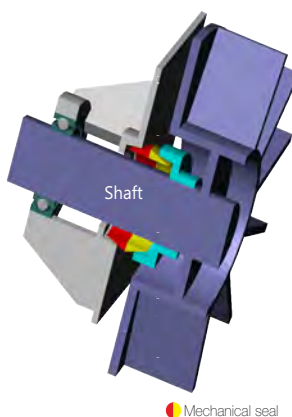
As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

MECHANICAL SHAFT SEALS

With traditional seals the product pushes past packings and wears the shaft - even the body behind hard facings can wear out. Used for over 25 years, MID's unique mechanical shaft seals are leak tight and maintenance free, dramatically reducing maintenance costs and improving site housekeeping.

GUARANTEED - NO LEAKAGE



- No maintenance
- Have no loss of product
- Immediately improve housekeeping and health and safety standards
- Eliminate compressed air purge costs
- Extend bearing life

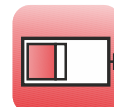
Mechanical seal



Butterfly



Rotary



Slide



Knifegate



Diverter



Dryis



Ceramic



Specials



Sifter



Seals

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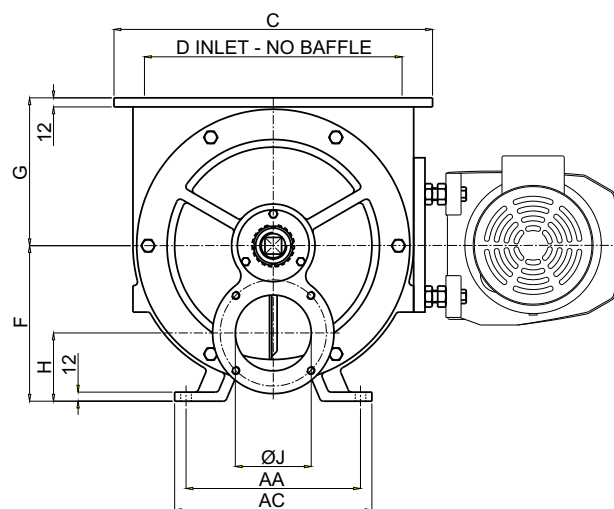
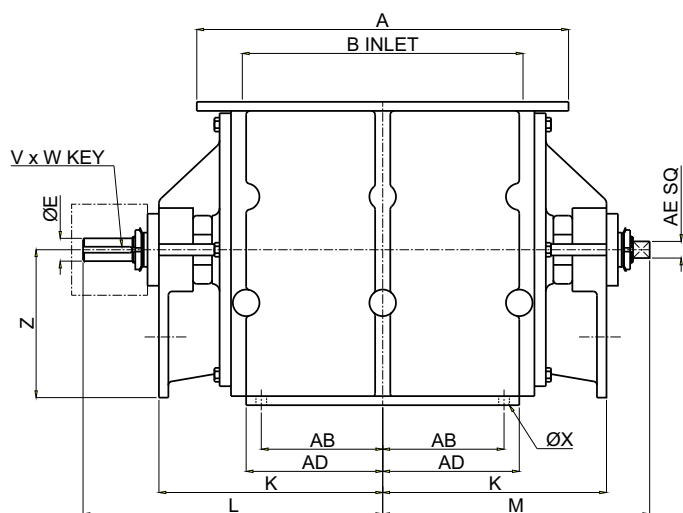
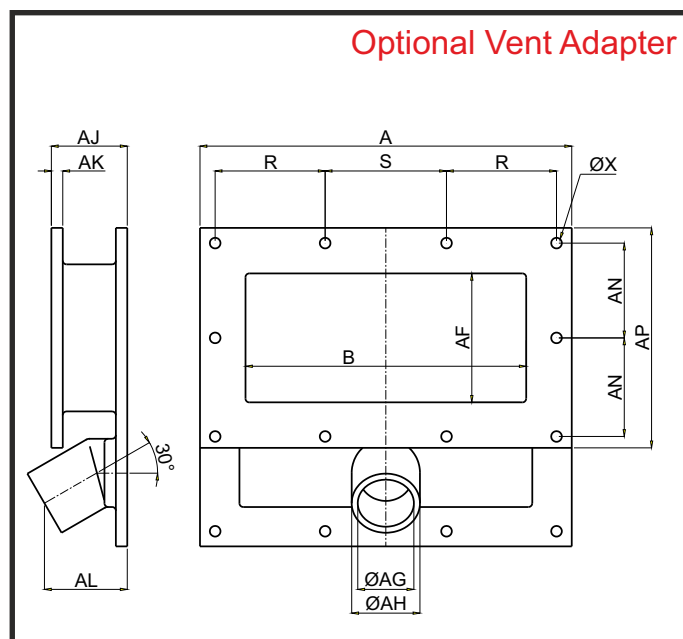
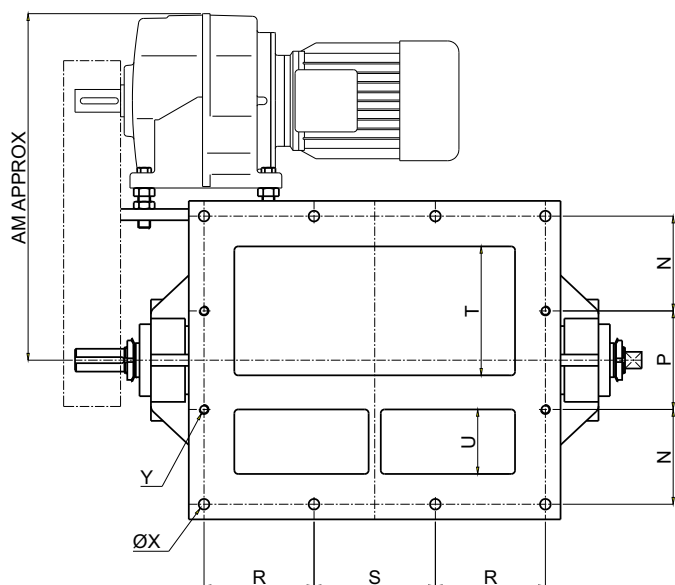




Rotary Valves

RBS blowing seal

Engineered to last



Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	W
02	310	210	320	220	30	180	152	60	75	227	267	306	97	96	92	96	120	50	8	6
04	390	280	360	250	30	180	170	80	75	250	285	345	110	110	120	120	140	70	8	6
08	490	370	420	300	30	205	195	90	100	295	330	395	125	130	145	160	170	85	8	6
12	500	380	470	350	40	245	225	105	125	305	340	420	145	140	150	160	200	100	12	8

Size	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	AN	AP	I/rev	ft ³ /rev
02	12	M10	175	180	85	210	100	22	120	48	63	80	12	90	267	95	220	5.7	0.2
04	12	M10	168	200	120	230	135	22	140	60	76	90	12	95	386	110	250	11.4	0.4
08	14	M10	195	230	160	260	180	22	170	74	90	100	15	123	457	125	290	22.8	0.8
12	14	M12	235	260	165	300	185	30	200	84	100	110	15	135	600	140	320	34.3	1.2

Round inlets are available. Please ask for details

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Rotary Valves

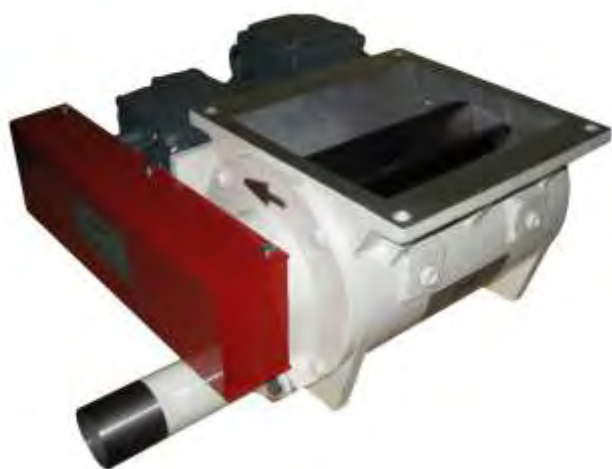
BTV blowing seal

Engineered to last

STANDARD SIZES 0.5m³ - 15m³/hr

The BTV is a light duty blowing seal used for introducing bulk powders or granules into a positive or negative pressure pneumatic conveying line.

Typically used to convey bakery flour or other, non abrasive products that don't quite require the wear resistance of the RBS range but still offering the same reliable and durable operation that is synonymous with the MID brand.



ATEX CERTIFICATION

The BTV range is certified by Basseefa for use with explosive products, both as equipment and as a protective device.

As equipment, the valves are suitable for use with an internal zone 20 atmosphere where an explosive mixture is constantly present. Where explosion isolation is required, they have been tested to 10 bar with St2 category dusts.

	Internal	External
Zone 0/20	✓	✗
Zone 1/21	✓	✓
Zone 2/22	✓	✓
APD	✓	✗

ECONOMICAL DESIGN

As standard, the valve comes with either a cast iron, stainless steel or aluminium body and has a square product inlet flange. An inlet plate adapter can be supplied to accommodate round flanges at minimal cost.

A fixed bladed, carbon rotor, with a choice of materials, single or double lip shaft seals and sealed for life shaft ball bearings ensure that your product is conveyed in the most cost effective way possible.

The air inlet and product outlet conveying tubes can be manufactured to any diameter and any length, ensuring a seamless integration into your system.

Flange drilling is as shown on the dimensional datasheet but where possible we're happy to manufacture to suit your existing installation.

NEED MORE WEAR RESISTANCE?

The BTV range is designed to provide a low cost means of conveying relatively free flowing, non abrasive products and as such has been designed with economy in mind.

The BTV is designed to handle mildly abrasive products such as flour and sugar but is not used for more abrasive products such as sand or cement.

For a more heavy duty, hard wearing and abrasion resistant valve we have our RBS and RBX product range which include further options for rotor blade tips, venting, zero maintenance mechanical shaft seals, wear resistant body construction, heavy duty bearings and high temperature options.

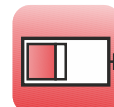
For the ultimate in longevity, our nihard and ceramic TWA range can be used with extremely abrasive materials such as silica and fly ash.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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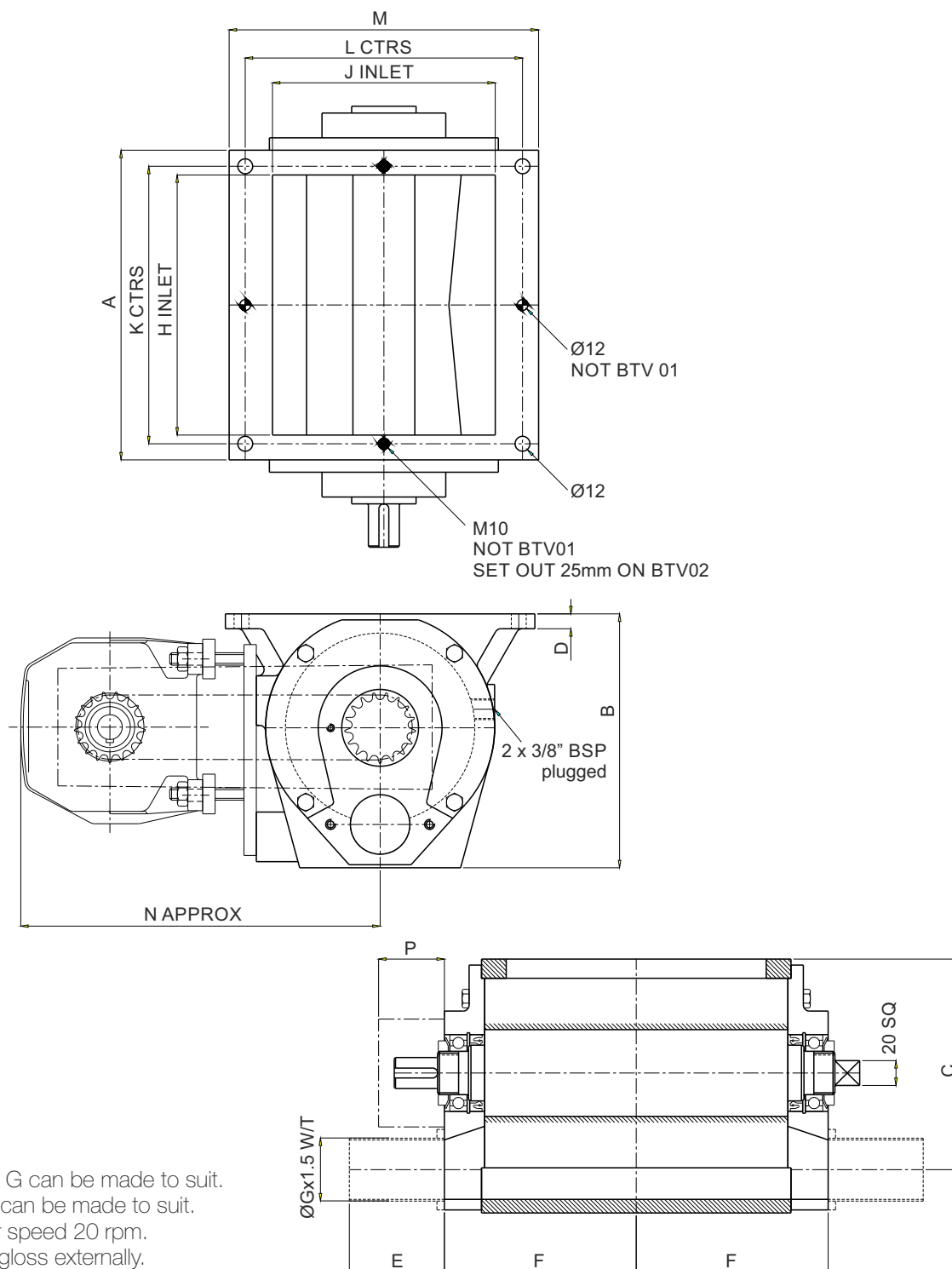
www.mid.uk.com





Rotary Valves BTV blowing seal

Engineered to last



Tube diameter G can be made to suit.
Tube length E can be made to suit.
Standard rotor speed 20 rpm.
Painted white gloss externally.
Internally unpainted.

Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	I/rev
01	250	207	170	12	50	155	41.3	210	180	224	224	250	355	55	2.8
02	350	270	225	12	60	192	50.8	280	230	270	270	300	395	60	5.6
04	390	330	275	15	80	207	76.3	310	290	360	340	370	410	60	11.3

Midland Industrial Designers Limited

Common Lane, Watnall, Nottingham, England NG16 1HD
T: (+44)(0)115 9382154 E: enquiry@mid.uk.com
Manufacturers of powder handling equipment since 1959

www.mid.uk.com



A COMPLETE CUSTOM DESIGN SERVICE

Since 1959 we have been designing bespoke, one off rotary valves to exactly match your requirements. Following is a selection of valves recently produced to show our capabilities. We try to use standard, proven components where possible to keep the costs down but if a project needs a complete one-off design we are geared up to produce these at a reasonable cost and timescale.

STEAM JACKETED

This is a 2 metre long, 350mm wide rotary valve designed to handle soya flake. It's constructed in 3 sections all carefully spigotted together using machined, close tolerance faces to give a close running fit. The rotor is designed to resist bending by being extremely robust with a central brace tube instead of a thin shaft. The design brief called for the body of the rotary valve to be steam jacketed so a double skin was used with steam injection and drain ports to warm the body.



HYGIENIC

A slightly unusual application- the valve is handling chicken feed for use with sterile chickens. These produce eggs in which vaccines are grown for the pharmaceutical industry. This valve had to have special seals as the whole of the handling plant was cleaned and disinfected with chlorine gas, highly toxic to kill any bugs but also dangerous if it comes in contact with operators. We designed a custom sealing system with inert gas blanketing to prevent the escape of toxic fumes.



EXTREME HIGH TEMPERATURE

This unit is used to discharge the sand from a fluidized bed at the bottom of a boiler at 750°C which presented a number of challenges, from sealing the shafts at that temperature to designing bearings that would perform reliably without collapsing. The motor is mounted remotely from the valve and uses a polished heat shield to reflect the infra-red heat from the valve body and prevent damage to the gearmotor.



DOMESTIC WASTE

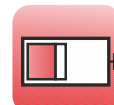
The extremely wide variety of materials that need to get through the rotary valve have to be catered for, from lumps of hard waste to extremely light, fibrous waste. All need to be handled without jamming the valve. We have developed a system using a rotor with specially produced spring steel parts to allow the rotor to bend and flex with the waste while still providing and effective seal. Steel offers a much longer service life than using rubber or polyurethane tips as the steel is more wear resistant and does not have the same problems with deformation.



Butterfly



Rotary



Slide



Knifegate



Diverter



Diaphragm



Ceramic



Specials



Sifter



Seals

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Rotary Valves

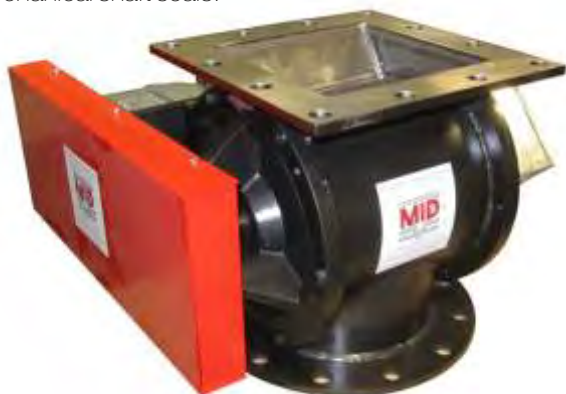
MVF replica valves

Engineered to last

DIMENSIONAL FLEXIBILITY

The MVF range is an incredibly flexible way of making a rotary valve exactly fit your application. We can make round, rectangular and square valves in almost any combination.

The dimensional flexibility allows us to match the flange drilling, face to face and throughput of almost any other manufacturer's valve while adding the unique advantages of the MID range of units such as wear resistance and mechanical shaft seals.



Square in, round out valve

WEIRD AND WONDERFUL

We have made valves that are very large or small, with steam jackets, ceramic linings, pressure shock resistant, and high temperature versions along with various rotors from friction relieved to castellated scrapers.



2m long steam jacketed valve

For very sticky products we have a range of ways of getting it out of the rotor pockets, from the simplest compressed air jets to active, gear driven synchronised scrapers that mechanically wipe the pocket clean as it rotates. To help even further we can apply non-stick coatings to the valve internals to stop product build-up.

ATEX CERTIFICATION

Available for St2 dusts, our Atex certification covers all types of rotor and body configurations for use with explosive dusts, internally to zone 20. For use as an explosion isolation unit, the configurations are a little more restrictive but the body shapes are still very flexible as long as the integrity of the explosion protection is not affected.



1.2m with wear liner

ONE-OFF DESIGNS

Our design and production is set up to produce one-off designs and low volume production runs. We use the latest 3D CAD systems, stress analysis and calculation tools to streamline designs, making one-offs and small batch runs a viable option.



Lengthened body

PROVEN TECHNOLOGY

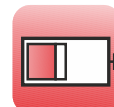
Ultra reliable, low maintenance mechanical seals are a standard fitment for our valves. We have developed them so they can be used up to 280°C, eliminating expensive downtime and loss of product. 50 years of design give us a huge library of experience which we can put into your valve.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Engineered to last

Many materials ranging from wheat flour to metal dusts, can, with the right mixture of air, form a potentially explosive mixture. This mix can be made intentionally during production or as a dusty by-product from the manufacturing process.

Materials that have been the fuel for dust explosions in the past include:

- Coal
- Metal
- Plastic and rubber
- Printer toner
- Cosmetics
- Dyes
- Textiles
- Wood and paper
- Soaps

Since the introduction of the ATEX directive, employers, if handling a potentially explosive dust, have to ensure that the workplace is safe.

One way of protecting plant and personnel equipment is to use a rotary valve as an explosion choke and flame barrier. These can be used as the normal part of the design of the plant but can also be added at the plant interfaces to protect the upstream and downstream areas.

These valves, as they require no intervention from the user to be effective, are known as "Autonomous Protective Devices" and have to be independently certified by a Notified Body.



For MID's range of valves, Baseefa were chosen as they had a track record with the Company. Tests

were carried out across a range of valves using the facilities at the Health and Safety Laboratory in Buxton.

Valves from the MV, Offset, SR and RBS ranges are approved as Autonomous Protective Devices for use with St1 and St2 dusts and for explosion pressures of up to 10 bar. They will act as a flame barrier, preventing transmission of a flame across the valve even at elevated pressures- the valves effectively extinguish the flame, protecting equipment, plant and personnel, making your workplace a safe place in the unfortunate event of a dust explosion.













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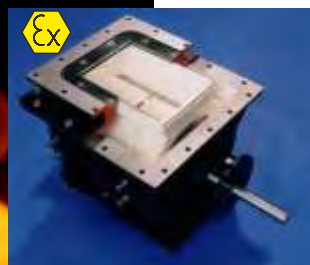
APD Certified Equipment

		Internal	External
MV round/square	Zone 0/20		
SR easy flow	Zone 1/21		
Offset	Zone 2/22		
RBS blowing seal			
APD			



ATEX Zoned Equipment. As above plus

		Internal	External
TWA extreme duty	Zone 0/20		
BTV blowing seal	Zone 1/21		
MV rectangular	Zone 2/22		
Waste handling valve			
APD			



Engineered to last

ZERO MAINTENANCE. ZERO LEAKS

MID's mechanical shaft seals effectively seal your rotating shafts used with powders.

Traditional shaft seals require continual adjustment to keep them from leaking product, especially when used with a pneumatic conveying system.

The MID mechanical shaft seals, once installed, requires no adjustment, no maintenance, no lubrication and doesn't even require expensive compressed air to work.

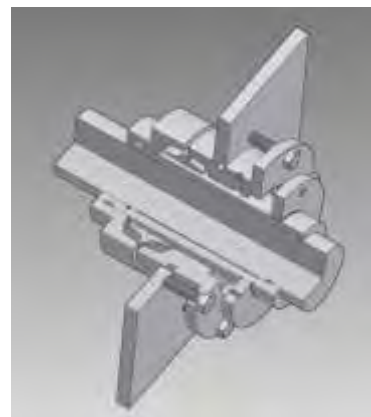
No leaks means no loss of product, a tidier workplace and reduced airborne hazardous dust.



WIDE RANGE OF APPLICATIONS

Mechanical shaft seals can be fitted to:

- Screw conveyors
- Mixers
- Classifiers
- Agitators
- Mills
- Bin dischargers
- Rotary valves
- Elevators
- Chain conveyors
- Crushers
- Screens



and any other application where you need to stop powder from leaking from a rotating shaft.

The shaft needs to be locked both radially and axially to prevent movement. Fitting is simple with the seal already pre-loaded and set in the factory ready for use.



Rotary valve with leaking shaft seals

PROVEN TECHNOLOGY

The seals were originally developed for use with our range of rotary valves and are now a standard fitment across our range.

Customers were so impressed with the performance of the valve shaft seals that they requested the seals be developed for use with other equipment.

LOW COST OF OWNERSHIP

Compared to traditional shaft seals, mechanical seals offer a very low lifetime cost of ownership.

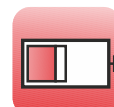
There is no regular maintenance, downtime or re-packing required so plant maintains a much better uptime record, dramatically reducing production losses and increasing profitability.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Engineered to last

STANDARD DESIGN 100-500mm

The FSV range of slide valves are used to halt or control the flow of powders or granules from a hopper or conveyor.

Standard designs range from 100mm to 500mm inlet, but much larger valves up to 2000mm can be accommodated on request. Please see our large bespoke slide valve datasheet for more details.

Although square by default, round feed flanges can be accommodated with a simple inlet plate, drilled to suit.



MANUFACTURED TO ANY SIZE

If the standard valve sizes are not suitable then MID offer a bespoke FSV, manufactured to exactly the dimensions you require.

If you need a custom square, round or rectangular inlet we can design a unit to fit your dimensions exactly. Thin face to face dimensions, custom flange widths etc are all possible.

CHOICE OF CHEST SEALS

For fine, powdered products we recommend using a stuffing box arrangement with an appropriate choice of seal material to prevent product ingress into the chest area.

Granular products can wear away the chest seal more quickly so we also offer a self adjusting, spring loaded seal arrangement which is more hard wearing and requires less maintenance. These come in hard wearing brass or food grade stainless steel.

TOO MUCH MAINTENANCE?

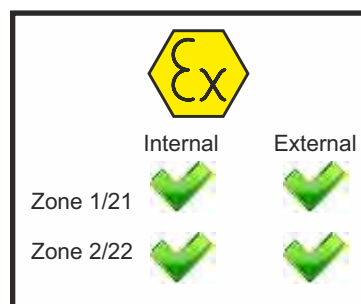
For many products, a stuffing box or self adjusting, spring loaded chest seal will suffice, but some very abrasive products can still, over a period of time, work their way into the chest area. With some applications this has no consequence other than the increased maintenance required, but for many weighing applications this causes process errors.

MID offer a totally enclosed slide valve which eliminates chest seal maintenance completely and redirects the leaked product back into the main process flow.

See our TESV datasheet for more details

ATEX CERTIFICATION

The FSV range is certified by Basseefa for use with explosive products within a Zone 21 / 22 hazardous area classification



ONE OR MORE SLIDE PLATES

Some processes require the discharge from a slide valve to be more central rather than opening and closing across the full inlet.

MID offer a made to order, double slide valve with twin slide plates.

For large openings we make valves with multiple slide plates, generally in multiples of two.

CHOICE OF ACTUATORS

Available with a manual slide with non-rising stem, with pneumatic or hydraulic cylinders or with electric actuator.

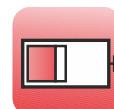
Positioners are available for powered models.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



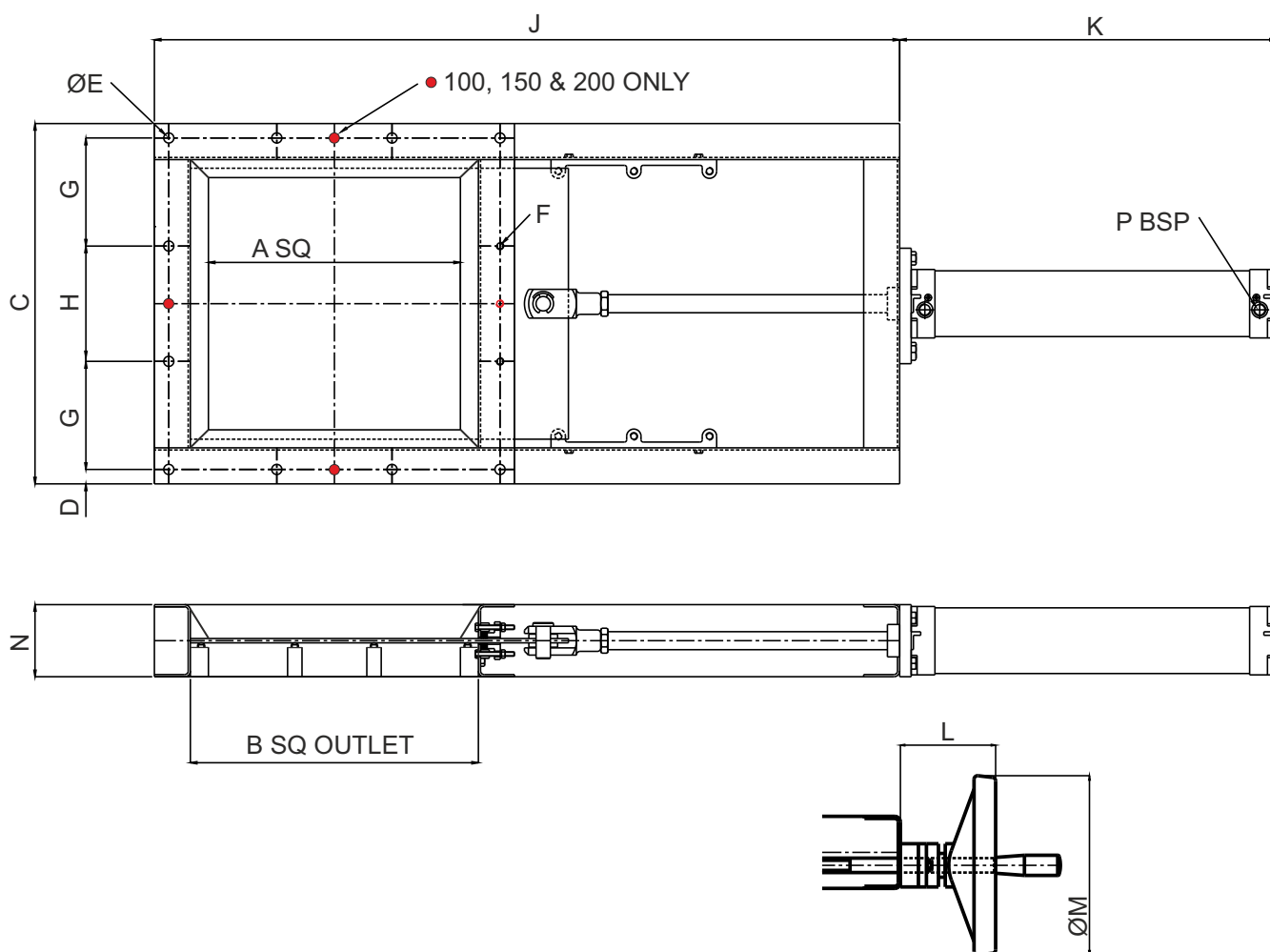
Seals

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Size A	B	C	D	E	F	G	H	J	K	L	M	N	P
100	150	250	20	12	M10	-	-	510	231	125	200	100	1/4
150	200	300	20	12	M10	-	-	610	281	125	200	100	1/4
200	250	350	20	12	M10	-	-	710	346	125	200	100	1/4
250	300	400	20	12	M10	120	120	835	408	125	200	100	1/4
300	350	450	20	12	M10	135	140	935	458	125	200	100	1/4
350	400	500	20	12	M10	150	160	1035	508	125	200	100	1/4
400	450	550	20	12	M10	170	170	1135	568	125	200	100	1/4
450	500	600	20	12	M10	185	190	1235	618	125	200	100	1/4
500	550	650	20	12	M10	200	210	1335	668	125	200	100	1/4
600	T O O R D E R												
700													
800													

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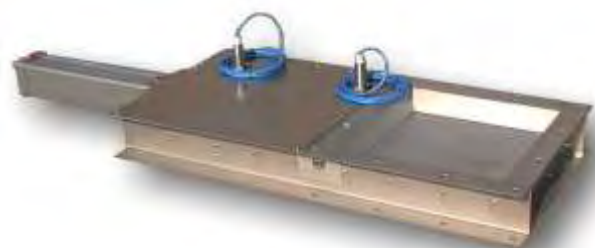
Engineered to last

STANDARD DESIGN 100-500mm

The FSV range of slide valves are used to halt or control the flow of powders or granules from a hopper or conveyor.

Standard designs range from 100mm to 500mm inlet, but much larger valves up to 2000mm can be accommodated on request. Please see our large bespoke slide valve datasheet for more details.

Although square by default, round feed flanges can be accommodated with a simple inlet plate, drilled to suit.



MANUFACTURED TO ANY SIZE

If the standard valve sizes are not suitable then MID offer a bespoke FSV, manufactured to exactly the dimensions you require.

If you need a custom square, round or rectangular inlet we can design a unit to fit your dimensions exactly. Thin face to face dimensions, custom flange widths etc are all possible.

CHOICE OF CHEST SEALS

For fine, powdered products we recommend using a stuffing box arrangement with an appropriate choice of seal material to prevent product ingress into the chest area.

Granular products can wear away the chest seal more quickly so we also offer a self adjusting, spring loaded seal arrangement which is more hard wearing and requires less maintenance. These come in hard wearing brass or food grade stainless steel.

TOO MUCH MAINTENANCE?

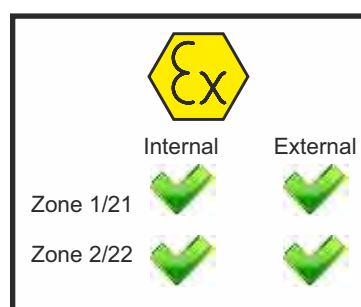
For many products, a stuffing box or self adjusting, spring loaded chest seal will suffice, but some very abrasive products can still, over a period of time, work their way into the chest area. With some applications this has no consequence other than the increased maintenance required, but for many weighing applications this causes process errors.

MID offer a totally enclosed slide valve which eliminates chest seal maintenance completely and redirects the leaked product back into the main process flow.

See our TESV datasheet for more details

ATEX CERTIFICATION

The FSV range is certified by Basseefa for use with explosive products within a Zone 21 / 22 hazardous area classification



ONE OR MORE SLIDE PLATES

Some processes require the discharge from a slide valve to be more central rather than opening and closing across the full inlet.

MID offer a made to order, double slide valve with twin slide plates.

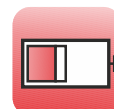
For large openings we make valves with multiple slide plates, generally in multiples of two.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

Midland Industrial Designers Limited

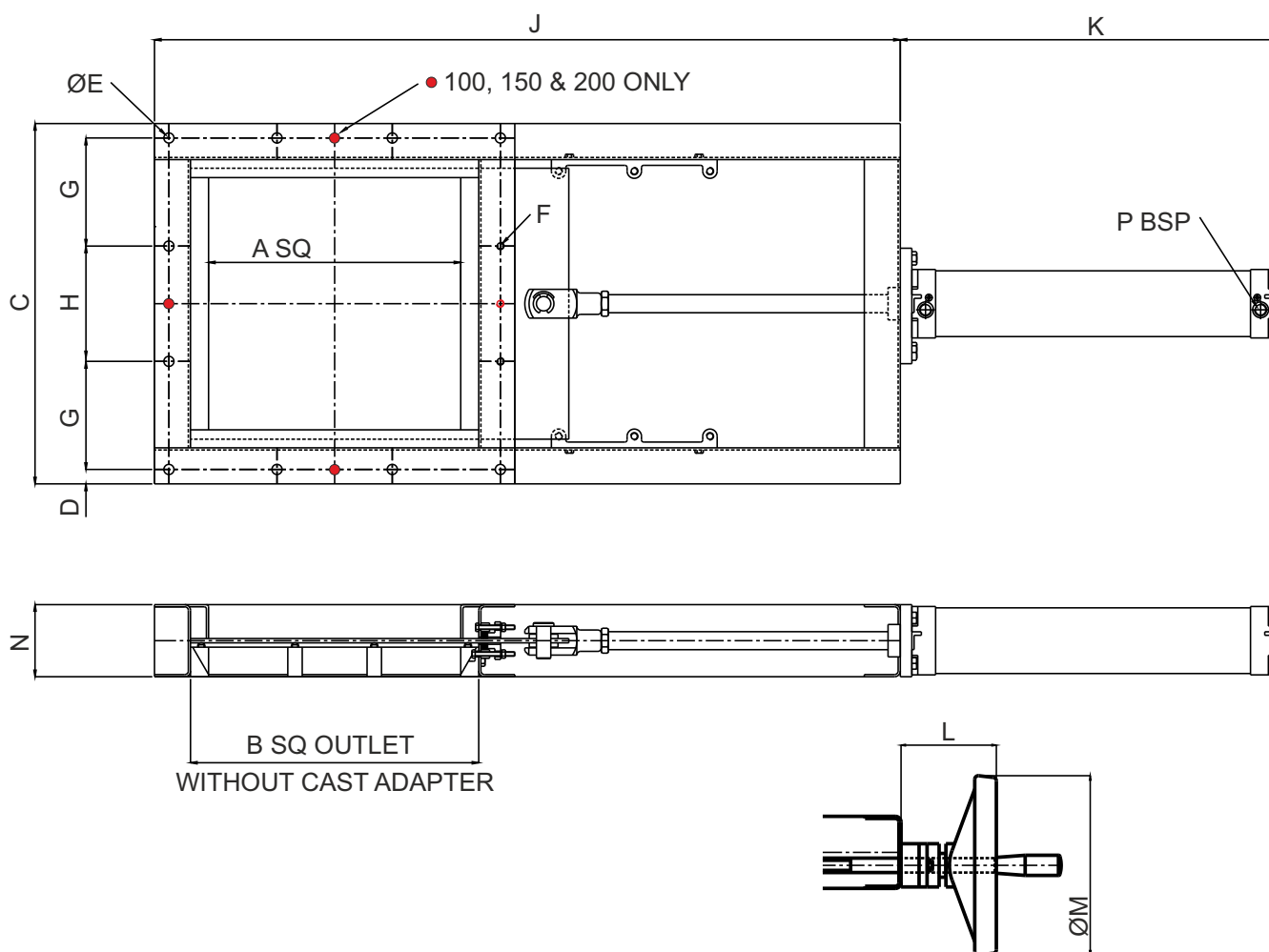
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Slide Valves FSV full bore

Engineered to last



Size A	B	C	D	E	F	G	H	J	K	L	M	N	P
100	150	250	20	12	M10	-	-	510	231	125	200	100	1/4
150	200	300	20	12	M10	-	-	610	281	125	200	100	1/4
200	250	350	20	12	M10	-	-	710	346	125	200	100	1/4
250	300	400	20	12	M10	120	120	835	408	125	200	100	1/4
300	350	450	20	12	M10	135	140	935	458	125	200	100	1/4
350	400	500	20	12	M10	150	160	1035	508	125	200	100	1/4
400	450	550	20	12	M10	170	170	1135	568	125	200	100	1/4
450	500	600	20	12	M10	185	190	1235	618	125	200	100	1/4
500	550	650	20	12	M10	200	210	1335	668	125	200	100	1/4
600	T O O R D E R												
700													
800													

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Engineered to last

STANDARD DESIGN 100-450mm

The TESS range of slide valves are used to halt or control the flow of powders or granules from a hopper or conveyor.

Standard designs range from 100mm to 450mm but we can design larger, smaller or intermediate sizes.

Although square by default, round feed flanges can be accommodated with a simple inlet plate and outlet transition, drilled to suit.



MANUFACTURED TO ANY SIZE

If the standard valve sizes are not suitable then MID offer a bespoke TESS, manufactured to exactly the dimensions you require.

If you need a custom square, round or rectangular inlet we can design a unit to fit your dimensions exactly. Thin face to face dimensions, custom flange widths etc are all possible.

NO CHEST SEAL

The main area of maintenance on a slide valve is the chest seal, where the slide plate pulls through a narrow slot, usually sealed with a compression packing. This, when used with abrasive products, wears out and needs continual maintenance.

The TESS does not have a chest seal to maintain. The body and plate are machined to a close tolerance to provide a good seal against powder when the valve is closed.

FREQUENT OPERATION

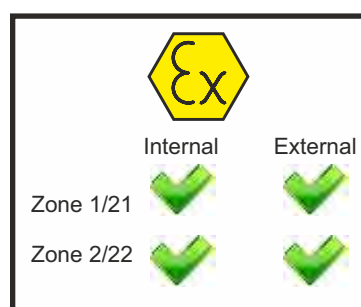
The lack of a chest seal means the TESS valve is particularly suited to high cycling duty such as load-out valves.

The unique cam system on the plate keeps the close tolerance machined surfaces away from each other when the plate is moving, removing the main area of wear in a slide valve and enabling the slide plate to be opened and closed without excessive maintenance.

For pneumatic valves, the exhaust air is piped back into the chest area to use the waste air to sweep the chest clean of any carry over product.

ATEX CERTIFICATION

The TESS range is certified by Basseefa for use with explosive products within a Zone 21 / 22 hazardous area classification



FLEXIBLE DESIGN

Some valves require careful engineering for the application. We have manufactured valves from Hastelloy, titanium and PTFE coated the internals for chemical compatibility.

Where a tight shutoff is required, we can use custom made inflatable seals that inflate when the valve is closed to isolate the valve.

Integral water spray systems and high temperature versions have also been made.

CHOICE OF ACTUATORS

Available with a manual slide with non-rising stem, with pneumatic or hydraulic cylinders or with electric actuator.

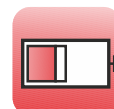
Positioners are available for powered models.



Butterfly



Rotary



Slide



Knife gate



Diverter



Diaphragm



Ceramic



Specials



Sifter

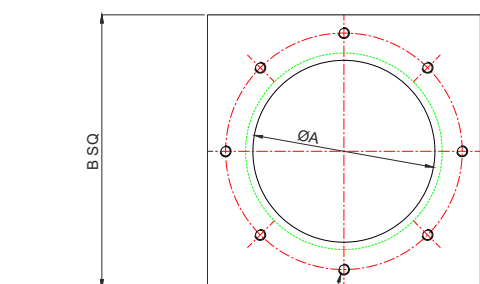


Seals

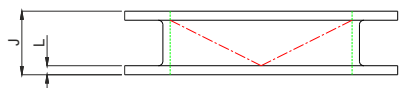
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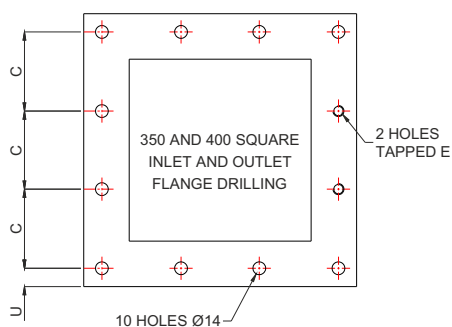
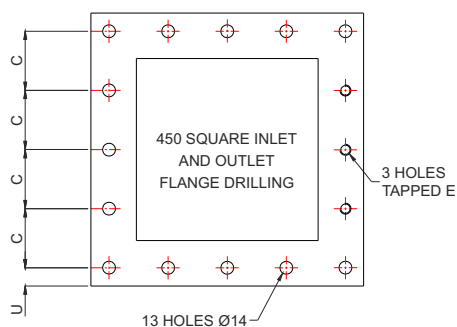
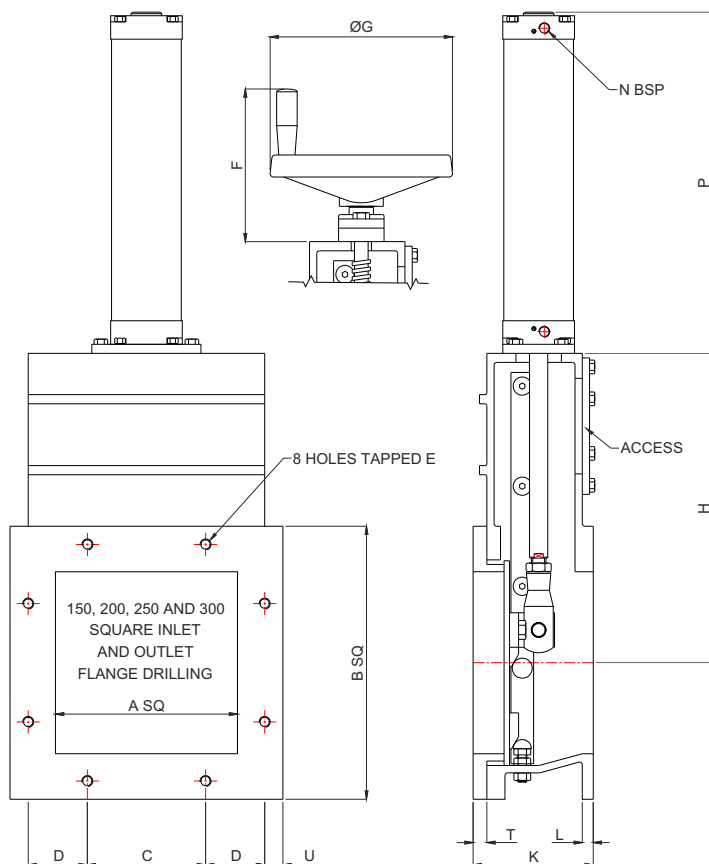
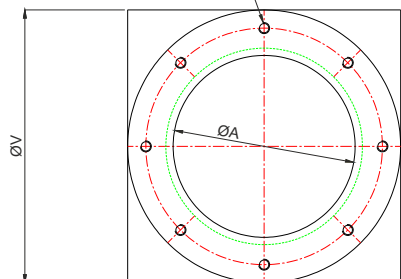
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8 HOLES TAPPED E ON M PCD ON CL
150, 200, 250 AND 300 ONLY
R STUDS E THREAD PROJECTING S OFF
CENTRE ON M PCD FOR 350 AND ABOVE



8 HOLES TAPPED E ON M PCD ON CL
150, 200, 250 AND 300 ONLY
R HOLES TAPPED E OFF CENTRE
ON M PCD FOR 350 AND ABOVE



Size A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V
150	250	120	45	M10	185	200	290	65	120	12	210	1/4"	305	8	-	15	20	250
200	300	130	65	M12	185	200	340	70	132	12	260	3/8"	375	8	-	15	20	300
250	350	140	85	M12	212	355	440	75	145	12	310	3/8"	405	8	-	15	20	350
300	400	150	105	M12	212	355	495	80	145	12	360	3/8"	475	8	-	15	20	400
350	520	153	-	M12	212	355	650	85	140	8	445	1/2"	530	12	25	10	30.5	490
400	572	170	-	M12	212	355	700	90	140	8	495	1/2"	580	16	25	10	31	540
450	622	140	-	M12	212	355	750	95	140	8	550	1/2"	610	16	30	10	31	590

Engineered to last

STANDARD DESIGN 50-1200mm

Also available in square profiles with a range of actuation options, from manual lever, manual handwheel, pneumatic, hydraulic and electric



Applications

- Heavy duty sealing for abrasive powders and granules
- Soft seat for products with a moisture content and fluids
- Viscous fluids, pastes, chemical waste
- Large range of body and seal materials for chemical compatibility
- Spares available for older 'Reiss' type valve

Standard Features

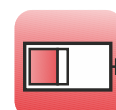
- 1** Tight shut-off using the edge seal along the side of the plate. The seal is mechanically retained and self-cleaning. It is also out of the product flow, increasing the longevity of the seal.
- 2** Gate guides ensure flutter and noise free operation.
- 3** Blade tip machined to shear off any remaining solids.
- 4** Gate geometry prevents jamming by pushing the product into specially enlarged flushing corners.
- 5** The unique transverse seal eliminates the high-maintenance stuffing box. The special profile compensates for wear and is fitted with scrapers to prevent product build up on the blade. The seal can be re-packed with the valve under pressure.
- 6** Minimised chest area has no space for jamming due to product build-up.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Engineered to last

DN 50–600 Standard construction

Valve operated by pneumatic cylinder

Supply pressure: 6–8 bar

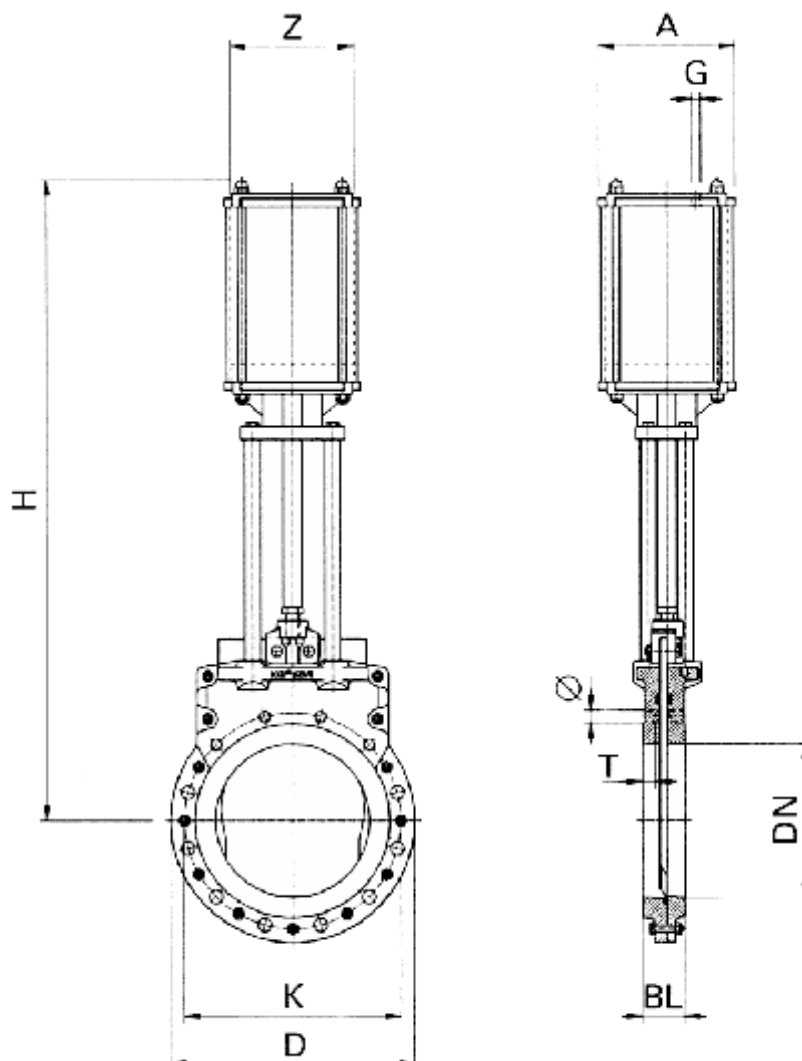
Flange drilling: PN 10/16 EN 1092 / ISO 7005

Face-to-face: EN 558 / ISO 5752 part 20

Nominal pressure PN: DN 50–300 10 bar
DN 350–400 6 bar
DN 450–600 4 bar

Operating pressure: Refer to table column OP

Test acc. EN 12266-1, rate A



DN	D	K	BL	H	Z	A	G	Ø	T	Qty screws	⊕	⊖	Weight [kg]	*OP max. bar
50	165	125	43	402	100	140	ISO 228-G¾	M16	—	4	—	4	9	10
65	185	145	46	453	100	140	ISO 228-G¾	M16	12	8	2	6	13	10
80	200	160	46	495	100	140	ISO 228-G¾	M16	13	8	2	6	14	8
100	220	180	52	568	100	140	ISO 228-G¾	M16	16	8	2	6	18	6
125	250	210	56	627	100	140	ISO 228-G¾	M16	18	8	2	6	22	5
150	285	240	56	728	160	180	ISO 228-G¾	M20	16	8	2	6	32	10
200	340	295	60	863	160	180	ISO 228-G¾	M20	18	8	2	6	42	6
250	395	350	68	1036	200	220	ISO 228-G¾	M20	21	12	4	8	64	6
300	445	400	78	1176	200	220	ISO 228-G¾	M20	21	12	4	8	91	5
350	505	460	78	1369	250	270	ISO 228-G½	M20	18	16	4	12	118	6
400	565	515	102	1502	250	270	ISO 228-G½	M24	24	16	4	12	162	5
450	615	565	114	1652	250	270	ISO 228-G½	M24	28	20	6	14	207	4
500	670	620	127	1770	300	320	ISO 228-G½	M24	28	20	6	14	248	4
600	780	725	154	2063	300	320	ISO 228-G½	M27	32	20	6	14	381	3

* Applicable for supply air pressure of 6 bar in troublefree media. Larger actuators on request.

† DN 65 with 8 holes

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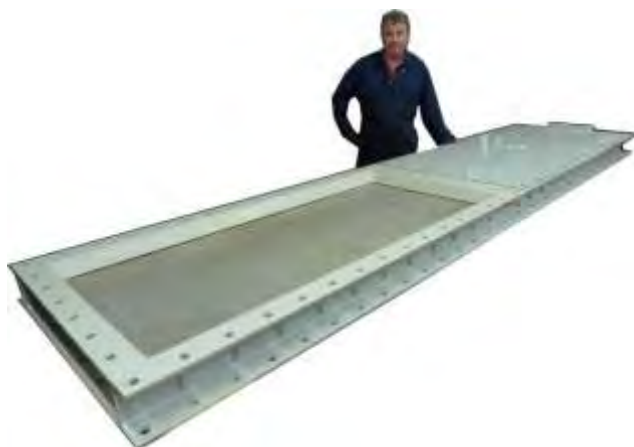
A COMPLETE CUSTOM DESIGN SERVICE

Our design and manufacturing facility is set up to be extremely flexible, allowing us to produce slide valves up to any size we can practically handle. We will make the valve fit your application, from extremely small pharmaceutical units up to valves designed to handle fuel for power generation.

We also work with other companies to develop unique valves that are a combination of technologies- we have developed the largest slam shut explosion protection valves currently available in conjunction with Fike.

DESIGNED TO FIT

The fabricated slide valve can be manufactured from any material that can be welded and almost any size. This valve is installed to handle biomass wood pellet at Drax power station- 32 of them are installed below storage silos, hydraulically operated to isolate the downstream conveyors.



EXPLOSION ISOLATION

For storage of potentially explosive products, isolation of parts of the system is required to stop an explosion propagating through a plant. The 135kg slide plate in this 1000x1200mm slide valve closes in under 300ms, damped by a deformable honeycomb matrix.

The valve was designed and built by MID working with Fike, the market leader in explosion protection and isolation.



MULTIPLE PLATES

Some applications require the control of the product through multiple slide plates to give a fine, even control.

This is a 3 plate slide valve, with stainless steel blades and a chainwheel for operation from a walkway below the valve.

We can produce these units in many different configurations with many slide plates with all sorts of actuators from hand to pneumatic, hydraulic and electric.



ATEX RATED

Many powdered products can form an ignition cloud which can be ignited by a hot surface or spark.

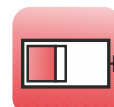
Our fabricated valves have been certified for use in an ATEX zone 21 area so can safely handle biomass, coal dust and other potentially explosive products. This hydraulic valve was designed to handle sugar and the body was strengthened to withstand an explosion pressure shock.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Engineered to last

BV STANDARD DESIGN TO 500mm

MID's butterfly valves can be used across a variety of applications including providing a tight shut off for powders and granules in a silo or hopper, to throttling pneumatic conveying air and being used in fume extraction systems.

BD DAMPERS TO 2.2M

MID's BD Damper valves are very similar in design to the BV, but are fabricated in larger or intermediate sizes and to order- up to 2.2 metres in diameter.



UNIQUELY POSITIONED VANE SEAL

Unlike other butterfly/damper valves that typically have a liner in the body that the vane closes against, MID's unique BV design moves the seal from the body to the vane itself, meaning that seal changes can be made without removing the valve, saving time and reducing process stoppages. There is less resistance to powder flow and the vane can be made thinner.



GRANULES?

We can also remove the vane seal completely leaving a close machined seat which is sufficient to halt the flow of products with granules that exceed this dimension.

ATEX CERTIFICATION

The BV and BD range can both be offered with Zone 22 internal and external ATEX certification.

	Internal	External
Zone 0/20	✗	✗
Zone 1/21	✗	✗
Zone 2/22	✓	✓
APD	✗	✗

RECTANGULAR BUTTERFLY?

In some applications, a rectangular butterfly valve can replace a problematic slide valve, particularly when the slide has a very short stroke. Replacing with a rectangular butterfly can eliminate the "crabbing" effect that can occur when trying to withdraw a wide slide plate over a short distance. It very often works out to be cheaper too.

HIGHLY CONFIGURABLE

Standard specification includes;

- cast iron, carbon steel, stainless or aluminium body and vane
- vane and shaft seals including Nitrile, Viton, EPDM and PTFE
- available with manual or infinite lock handles, pneumatic or electric actuation

Options include;

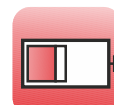
- 400 wear plate body/vane
- rectangular design
- high temperature (800°C) gland packing
- exotic materials (Hastelloy, Kalrez)



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



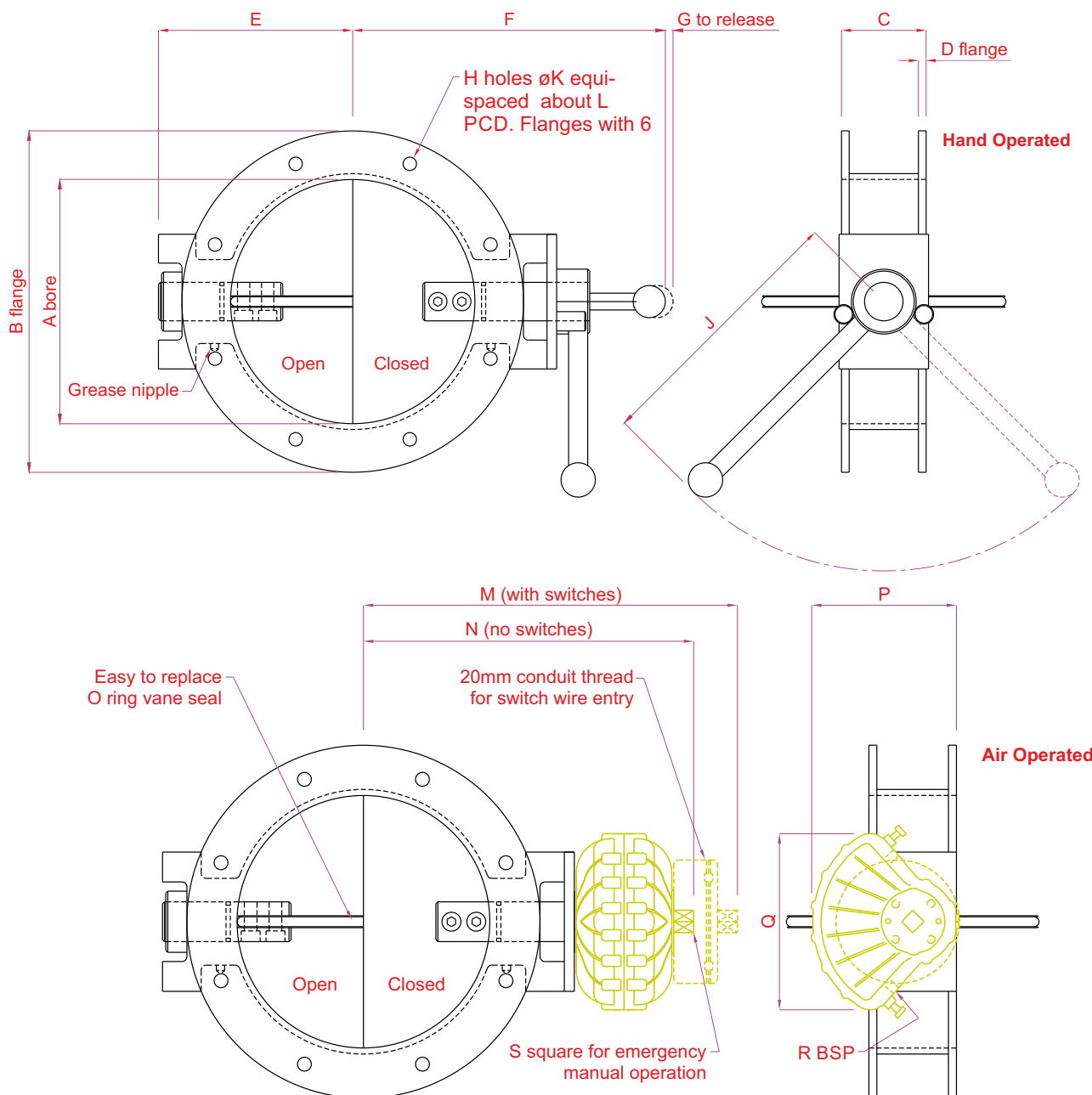
Seals

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Stainless

Size	A	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
3"	76	75	140	64	8	105	166	6	4	172	11	114	250	202	96	114	1/8"	9
4"	102	100	165	64	8	100	162	6	6	172	11	140	250	205	120	125	1/8"	9.5
6"	152	150	230	64	8	130	190	6	6	185	11	196	280	235	120	125	1/8"	9.5
7"	178	175	255	75	8	128	263	8	6	280	12	220	301	250	79	136	1/8"	16
200	200	195	305	85	8	178	275	8	8	280	14	260	360	315	150	180	1/4"	16
9"	228	225	330	85	8	190	300	8	8	280	14	286	375	330	150	180	1/4"	16
10"	254	250	355	88	8	202	325	8	8	280	14	310	385	340	150	180	1/4"	16
12"	305	300	405	95	8	230	330	8	8	355	14	362	410	365	150	180	1/4"	16
16"	406	400	533	102	11	300	420	11	8	465	14	476	565	515	225	295	3/8"	25
20"	508	500	660	125	13	360	476	11	8	465	14	596	630	575	235	295	3/8"	25

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Butterfly Valves

BD custom damper

Engineered to last

BD DAMPERS ANY SIZE TO 2.2M

MID's Damper valves are very similar in design to the BV, but are more commonly used to throttle air in either dust extraction systems or pneumatic conveying applications.

Manufactured to order, from 500mm to 2.2 metres in diameter, the valve does not provide a pressure rated seal, although by area, the valve seals by over 99.95% and for many customers applications this is adequate.



2.2m inflatable seat valve

UNIQUELY DESIGNED VANE SEAL

Unlike other damper valves that typically have a seal in the body that the vane closes against, MID's unique BD design moves the seal from the body to the vane itself, meaning that seal changes can be made without removing the valve, saving time and reducing process stoppages.

WEAR RESISTANCE? GRANULES?

For powder applications we can also remove the vane seal completely leaving a close tolerance clearance of no more than 0.008" which is sufficient to halt the flow of products with granules that exceed this dimension.

We can then manufacture the vane and body from 400 wear plate and create a valve with 4X the life of a standard cast iron valve with no soft seat to wear away or seal to replace.

ATEX CERTIFICATION

The BD range can be offered with Zone 22 internal ATEX certification

	Internal	External
Zone 0/20	✗	✗
Zone 1/21	✗	✗
Zone 2/22	✓	✓
APD	✗	✗

RECTANGULAR DAMPER?

In some powder applications, a rectangular damper valve can replace a problematic slide valve, particularly when the slide has a very short stroke. Replacing with a rectangular damper can eliminate the "crabbing" effect that can occur when trying to withdraw a wide slide plate over a short distance. It very often works out to be cheaper too.

HIGHLY CONFIGURABLE

Standard specification includes;

- cast iron, carbon steel, stainless or aluminium body and vane
- vane and shaft seals including Nitrile, Viton, EPDM and PTFE
- available with manual or infinite lock handles, pneumatic or electric actuation

Options include;

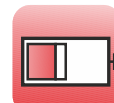
- rectangular design
- high temperature (800°C) gland packing
- exotic materials (Hastelloy, Kalrez)



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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Engineered to last

WBV STANDARD DESIGN TO 500mm

MID's wafer style butterfly valves can be used across a variety of applications including providing a tight shut off for powders and granules in a silo or hopper, to throttling pneumatic conveying air or being used in fume extraction systems.

Unlike the BV range, the WBV fits in-between existing flanges - see sheet overleaf for compatibility with standard flanges



UNIQUELY DESIGNED VANE SEAL

Unlike other butterfly valves that typically have a seal in the body that the vane closes against, MID's unique BV design moves the seal from the body to the vane itself, meaning that seal changes can be made without removing the valve, saving time and reducing process stoppages.



WEAR RESISTANCE? GRANULES?

We can also remove the vane seal completely leaving a close tolerance clearance of no more than 0.008" which is sufficient to halt the flow of products with granules that exceed this dimension.

We can then manufacture the vane and body from 400 wear plate and create a valve with 4X the life of a standard cast iron valve with no soft seat to wear away or seal to replace.

ATEX CERTIFICATION

The BV and BD range can both be offered with Zone 22 internal ATEX certification

	Internal	External
Zone 0/20	✗	✗
Zone 1/21	✗	✗
Zone 2/22	✓	✗
APD	✗	✗

HIGHLY CONFIGURABLE

Standard specification includes;

- cast iron, carbon steel, stainless or aluminium body and vane
- vane and shaft seals including Nitrile, Viton, EPDM and PTFE
- available with manual or infinite lock handles, pneumatic or electric actuation

Options include

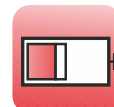
- high temperature (800°C) gland packing
- exotic materials (Hastelloy, Kalrez)



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

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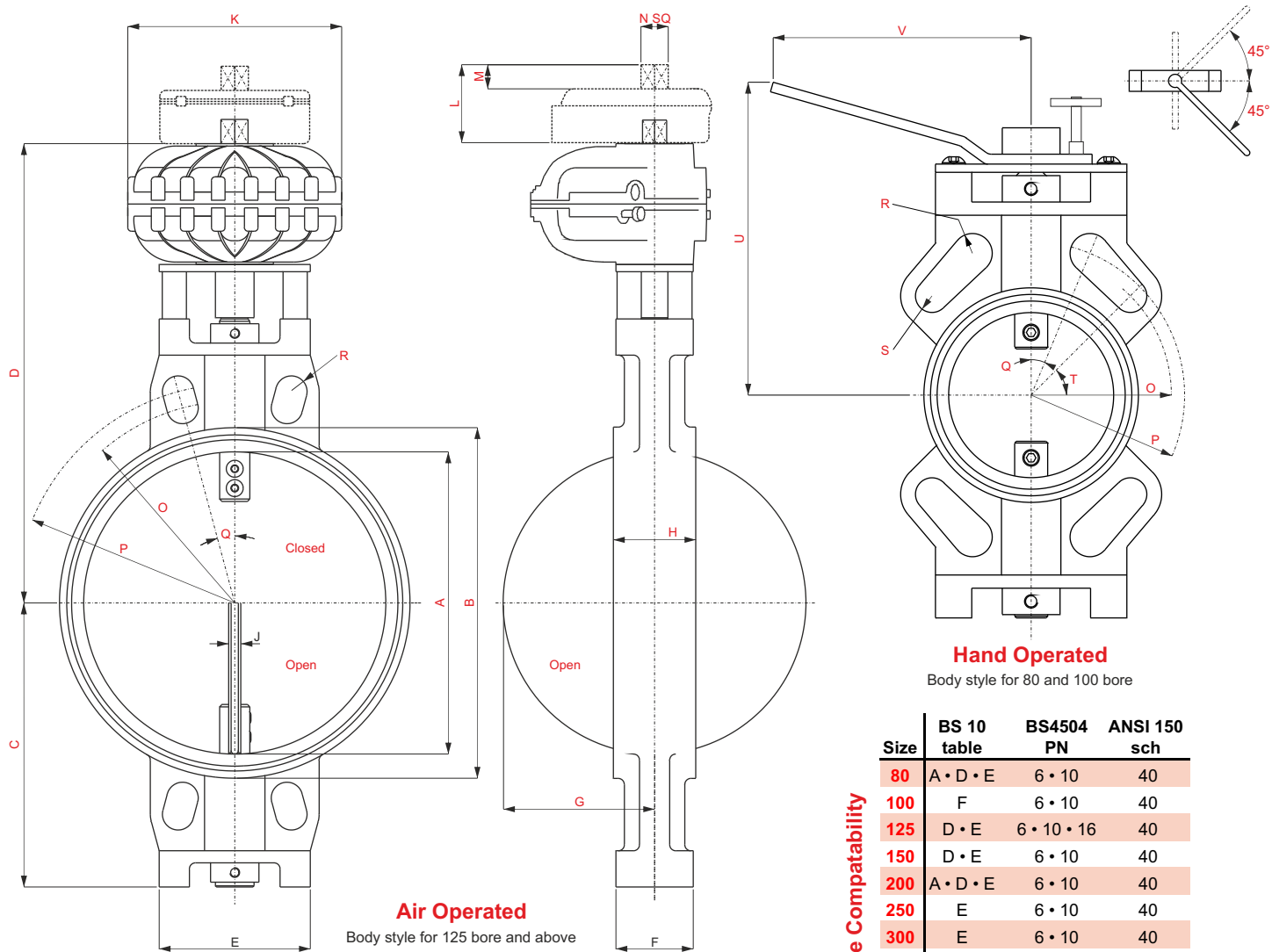
www.mid.uk.com



Butterfly Valves

WBV wafer pattern

Engineered to last



Hand Operated

Body style for 80 and 100 bore

	BS 10 table	BS4504 PN	ANSI 150 sch
Size	A • D • E	6 • 10	40
80	A • D • E	6 • 10	40
100	D • E	6 • 10 • 16	40
125	D • E	6 • 10	40
150	A • D • E	6 • 10	40
200	E	6 • 10	40
250	E	6 • 10	40
300	D • E	6	20
350	-	6 • 10 • 16	20
400	E	-	20
450	-	6 • 10 • 16	20
500			

Size	Actuator													Switches										
	A	B	C	D	E	F	G	H	J	K	L	M	N	M	N	O (rad)	P (rad)	Q°	R	S	T°	U	V	
80	80	110	121	207	116	34	40	44	6	113	62	12	9	10	8	75	80	22.5	10	10	45	190	180	
100	100	130	135	233	116	36	50	48	8	136	64	13	9.5	20	16	85	93	22.5	12	10	45	205	180	
125	125	155	148	246	116	38	62.5	50	8	136	64	13	9.5	20	16	100	108	22.5	11	-	-	218	180	
150	150	180	160	258	116	46	75	52	8	136	64	13	9.5	20	16	112	121	22.5	11	-	-	230	180	
200	200	240	190	335	125	58	100	60	10	178	64	20	16	20	16	140	150	22.5	11	-	-	280	285	
250	250	290	235	406	125	64	125	68	10	178	64	20	16	20	16	167	181	15	13	-	-	325	285	
300	300	350	270	452	160	70	150	76	12	227	64	26	19	20	16	197	216	15	14	-	-	390	365	
350	338	388	295	477	160	70	175	76	12	227	64	26	19	20	16	222	240	15	15	-	-	415	365	
400	390	440	337	556	178	70	200	86	12	294	80	31	25	25	25	247	270	33.75	15	-	-	477	450	
450	442	492	380	599	222	88	225	100	12	294	80	31	25	25	25	275	292	33.75	16	-	-	520	450	
500	488	538	410	629	222	88	250	120	12	294	80	31	25	25	25	300	325	45	17	-	-	550	450	

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GR STANDARD DESIGN TO 380mm

MID's gravity diverter valve is used to divert powders and granules falling under gravity, but can also be used in low pressure pneumatic conveying applications.

BESPOKE DESIGN TO 1000mm

Like most of MID's products, if the standard designs don't suit, then we can engineer a valve that does. This includes manufacturing valves with inlets up to 1000mm sq. but can also include a multitude of options from adding additional outlets, inspection and access hatches, diverting flap positional control and a variety of corrosion and wear resistant materials.



UNIQUE SELF ADJUSTING FLAP SEAL

Most diverter valves are manufactured with a soft seal on the flap to ensure product is conveyed in the intended direction and doesn't leak.

In applications with a high cycling frequency, this can cause premature wear of the seal allowing product to ingress through the gap.

MID's diverting vanes are manufactured from solid steel and feature three spring loaded, self adjusting seals, that not only seal the vane itself, but also the back of the shaft that the vane is mounted on.

ATEX CERTIFICATION

The GR range can be configured with ATEX Zone 22 certification

STANDARD MODELS AND FEATURES

- Y type, with 2 off 30° outlets
- Straight through with a 30° divert
- Straight through with a 45° divert
- Custom sizes and angles to order

Standard features

- Heavy duty fabricated steel plate body
 - Wear resistant polyurethane tip seal
 - 2 off self adjusting, spring loaded vane seals
 - 1 off self adjusting, spring loaded back shaft seal
 - Sealed for life ball bearings

Options

- Manual, pneumatic or electric actuation
 - Exotic materials of construction
 - ATEX certification
 - Pressure shock resistant
 - Three way



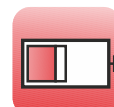
Custom unit, rubber lined



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



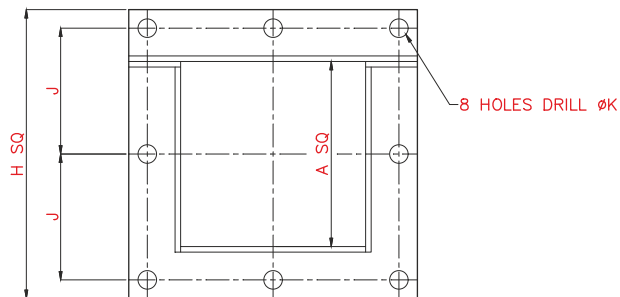
Seals

Midland Industrial Designers Limited

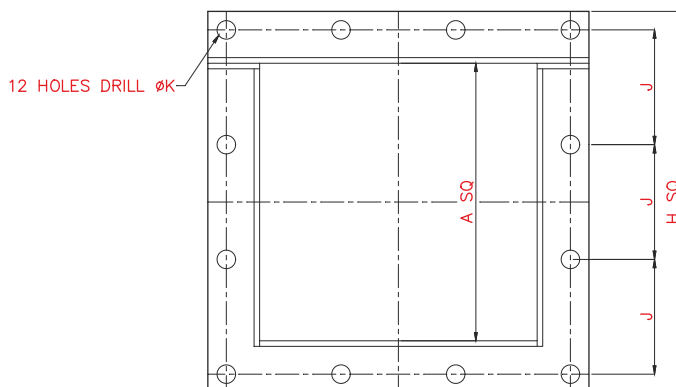
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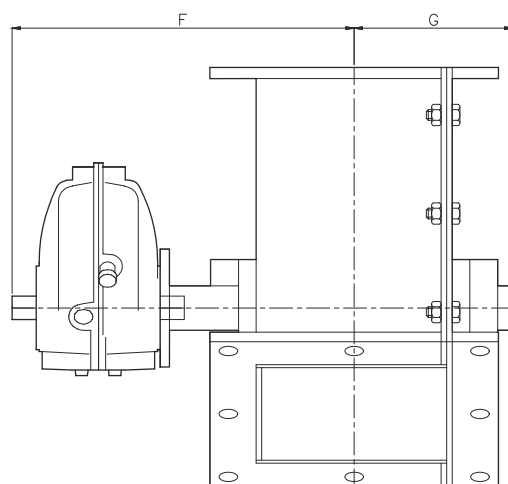
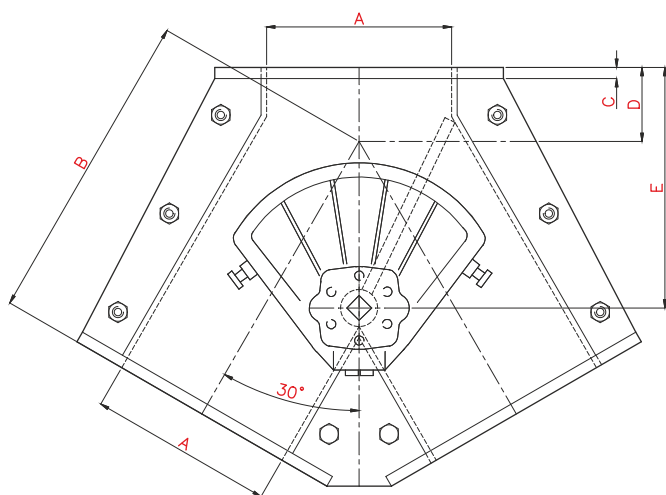
Engineered to last



Flange 100 to 250



Flange 300 and above



Size A	B	C	D	E	F	G	H	J	K
100	170	6	40	130	197	89	156	68	10
150	240	6	60	200	224	116	222	98	10
200	300	10	76	265	306	144	286	128	12
250	360	10	95	335	332	170	340	154	17
300	430	12	117	403	409	204	412	124	17
380	500	12	160	530	451	246	496	152	17

Standard sizes shown. Custom sizes made to suit.
Available as a straight through version.
Also available with a manual hand lever.

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STANDARD DESIGN TO 168mm DIA.

The TSY, TST and TSD diverter valves are suitable for use within lean phase, positive pressure, pneumatic conveying systems for diverting or converging a stream of dry powders. They can also be used just as effectively with full vacuum systems.



Y type

RECESSED SEAL

The tongue seal is kept out of the product flow and away from abrasion by recessing it in the body, extending wear life and increasing reliability.



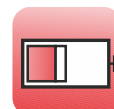
Diverter vent type



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



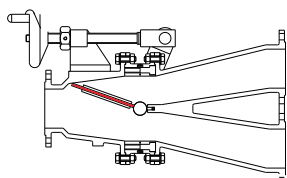
Sifter



Seals

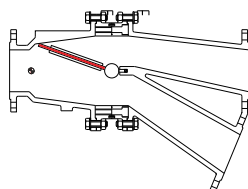
STANDARD MODELS

Available in cast iron, aluminium and stainless steel in three different versions:



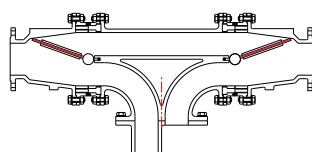
TSY Diverter

'Y' type with 22.5° divert



TST Diverter

Straight through with a 22.5° divert












TSD Diverter Vent

Commonly called a vent or scale valve, used to control the filling of storage bins or silos

ATEX CERTIFICATION

The TSY, TST and TSD range of valves can be certified to Zone 22 internal and external.

		
	Internal	External
Zone 0/20		
Zone 1/21		
Zone 2/22		
APD		

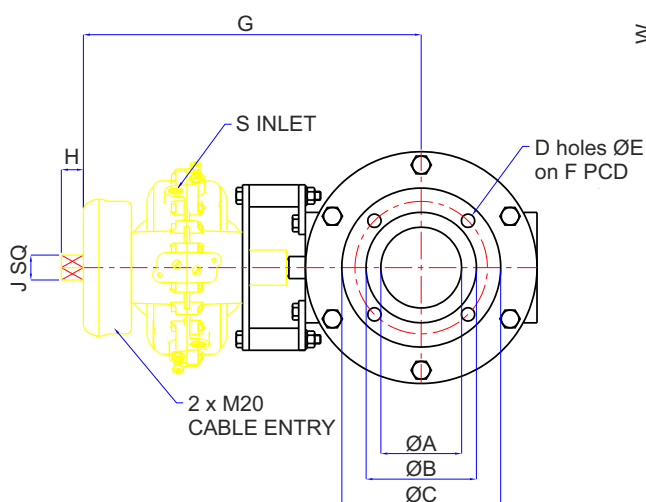
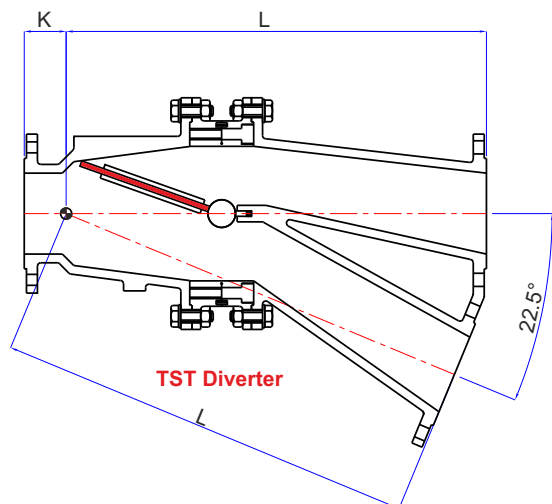
STANDARD FEATURES

Standard specification includes:

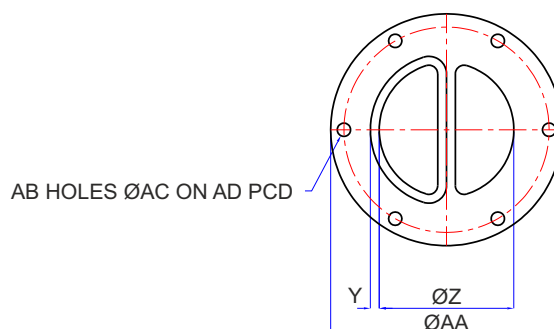
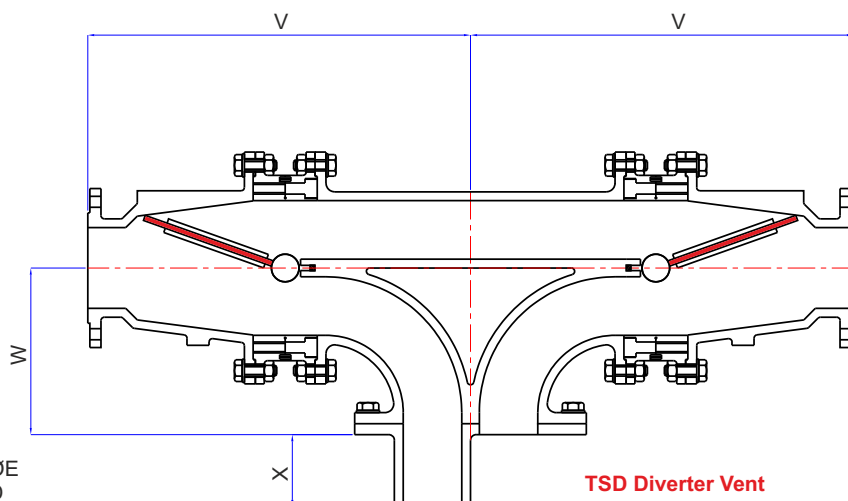
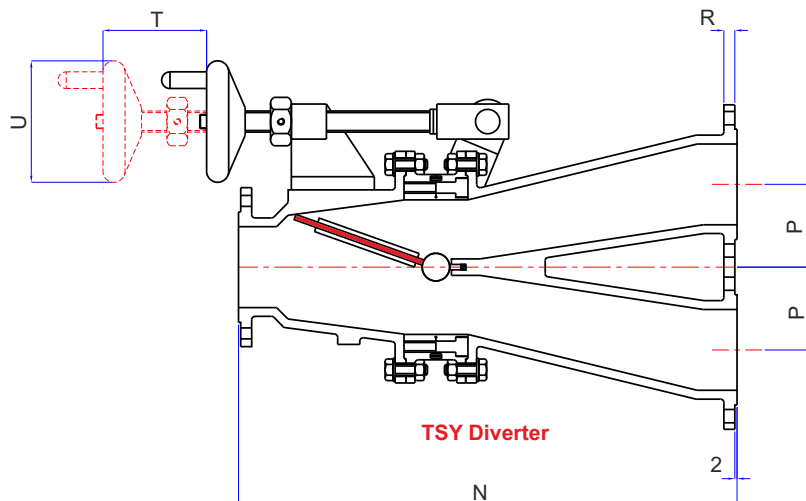
- cast iron, stainless steel or aluminium body
- carbon steel or stainless vane with heavy duty polyurethane tongue (viton available)
- manual or pneumatic actuation

Options include

- high temperature viton tongue seal
- abrasion resistant impact wear plates



Flange and actuator detail



Size	A	B	C	D	E	F	G	H	J	K	L	N	P
50	47	68	106	4	10	86	264	20	16	35	325	330	55
75	73	100	144	4	12	120	306	20	16	38	381	452	75
100	98	128	182	4	14	152	357	20	16	40	466	506	93
125	120	150	294	8	14	174	434	20	16	41.5	514	577	105
168	160	190	244	8	14	214	471	25	25	72	623	660	125

Size	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
50	8	G 1/4	85	100	232	110	50	6	83	140	4	10	120
75	10	G 1/4	105	100	347	151	65	8	122	210	6	12	186
100	10	G 1/4	125	100	421	185	90	8	160	260	6	12	226
125	12	G 1/4	145	100	503	216	110	9	200	300	6	14	268
168	14	G 3/8	165	100	623	282	125	10	265	400	8	18	350

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STANDARD DESIGN TO 6TPH

Used mainly, but not exclusively, within the food industry, sifters and conditioners remove contaminants and produce a homogeneous, aerated product discharge.

Commonly used with bakery flour and other ingredients, the units maximum capacity depends on the product itself and the degree to which it needs to be conditioned. In many cases, this will be established empirically.



TWIN CHAMBER DESIGN TO 12TPH


Product enters the sifter through the inlet cone and a small screw pushes the product along and into the sifting chamber. The high speed rotating paddle forces the product outwards and through the perforated sifting basket.

Unlike other sifters, we use solid, perforated plate rather than much weaker mesh, and this means that any stray nuts, bolts or general contaminants that find their way into the chamber won't cause any damage.

MID offers the FS100 single chamber unit that can deliver up to 6tph and the twin FS102 twin chamber version with a maximum throughput of 12tph, depending on product characteristics.

ATEX CERTIFICATION

The high speed of the sifting chamber prohibits us from offering ATEX certification internally, although externally we can offer Zone 22 certification.

		
	Internal	External
Zone 0/20	✗	✗
Zone 1/21	✗	✗
Zone 2/22	✗	✓
APD	✗	✗

HIGHLY CONFIGURABLE

Standard specification includes an aluminium body with a nickel plated, mild steel paddle and sieve, with an IP55 motor, but fully or partial stainless steel models are available on request.

In addition to this, there are a number of other options available including;

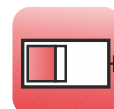
- different screen sizes and perforations
- wedge wire screens
- inlet swivel - discharge into multiple hoppers
- dust suppressing outlet skirt
- inspection panels
- quick removable rotor/paddle
- fan assisted filter vent unit
- inlet cyclone
- pneumatic conveying version - sift "in-line"
- condition monitoring extras/sensors
- ATEX certification to Zone 22 external



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyriss



Ceramic



Specials



Sifter



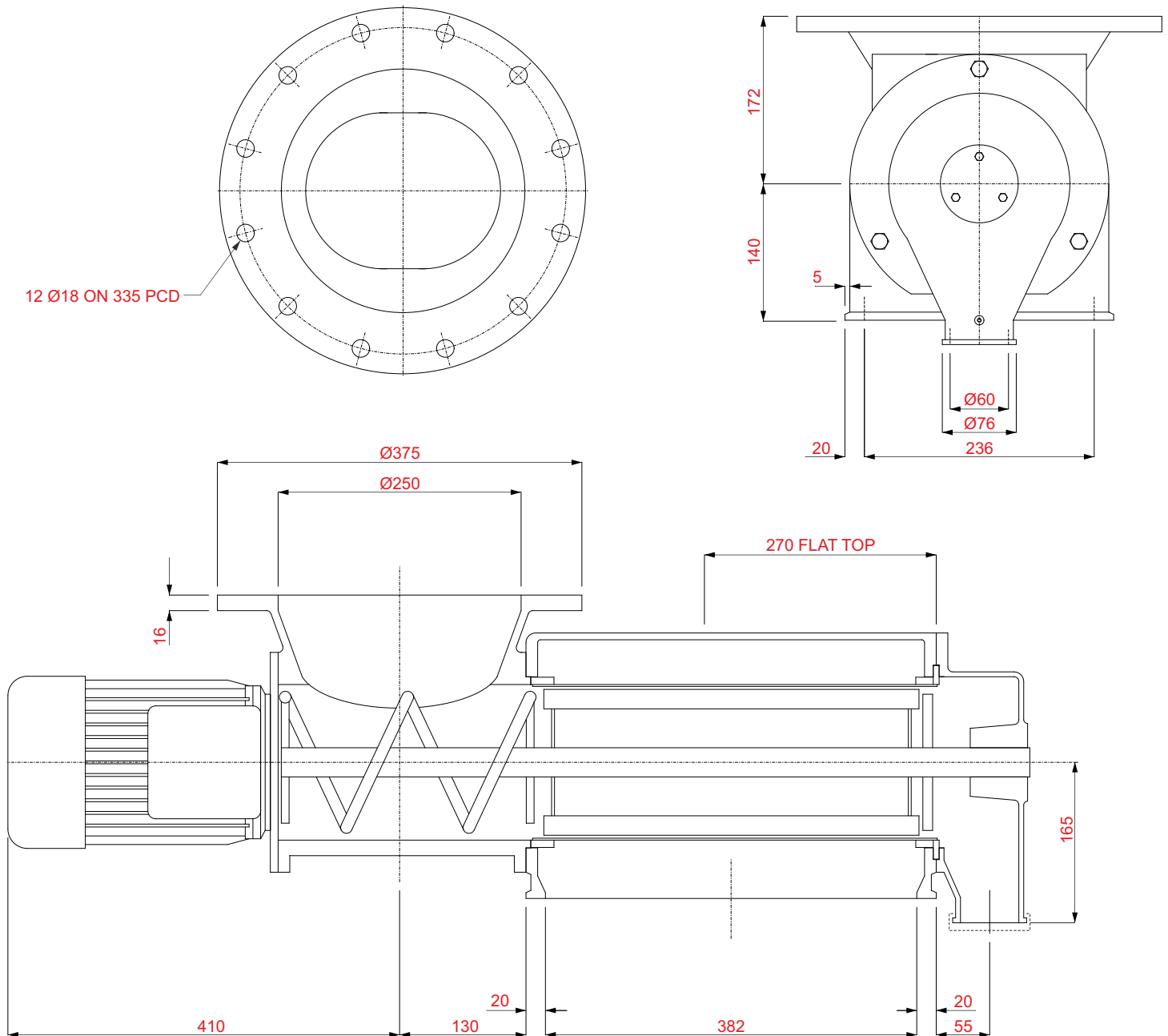
Seals

Midland Industrial Designers Limited

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T: (+44)(0)115 9382154 **E:** enquiry@mid.uk.com
 Manufacturers of powder handling equipment since 1959

www.mid.uk.com

Engineered to last



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POSITIVE CLOSING IRIS VALVE

The Dyris valve is our oldest, most proven valve in our range and has been manufactured since 1962.

Unlike other iris valves on the market that twist the sleeve to close it, the Dyris has a set of steel petals behind the sleeve that give a firm, positive closing action and work in a similar way to a camera aperture system.

This results in a longer sleeve life, and the ability, if the sleeve should break, to still control the discharge until it is convenient to change the sleeve.



WEAR RESISTANT MATERIALS

The sleeve is made from Linatex natural rubber, a wear resistant elastomer used extensively in the minerals handling industry to line chutes, hoppers and pumps.

The Dyris valve has been used with ceramic powders, alumina, sand and other abrasive materials.

FOOD GRADE MATERIALS

For food or pharmaceutical applications, Linatex is available in a white, FDA version (Linaplus) with the body fitted with stainless steel rings where it comes into contact with the product.

They have been used to control sugar, flour and additives in food applications and fillers for pharmaceutical applications.

SIMPLE ACTUATION

Unlike iris valves that twist the sleeve, the Dyris handle only has to move through 90° instead of 180°.

We can fit a variety of actuators including pneumatic, hydraulic and electric, with positioning and locking systems for part opening to finely control product flow.

ATEX CERTIFICATION

The Dyris valve is certified for use in a zone 22 dust area. It has been used for decades in applications handling organic powders, light metals and other materials that could be potentially hazardous.

SAFE DISCHARGE OF BIG BAGS

A popular application is to mount the Dyris valve on the outlet of a big bag discharger and lower the bag outlet spout through the valve, using the petals in the valve to clamp it shut.

In this configuration, the centre tripod that the sleeve normally clamps to, is left out.

The sleeve can then be opened safely without spillage and if the bag is to be part emptied, closed off and the spout tied off without spillage.

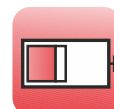
Manual, pneumatic and interlocked versions are available to do this.



Butterfly



Rotary



Slide



Knifegate



Diverter



Dyris



Ceramic



Specials



Sifter



Seals

Midland Industrial Designers Limited

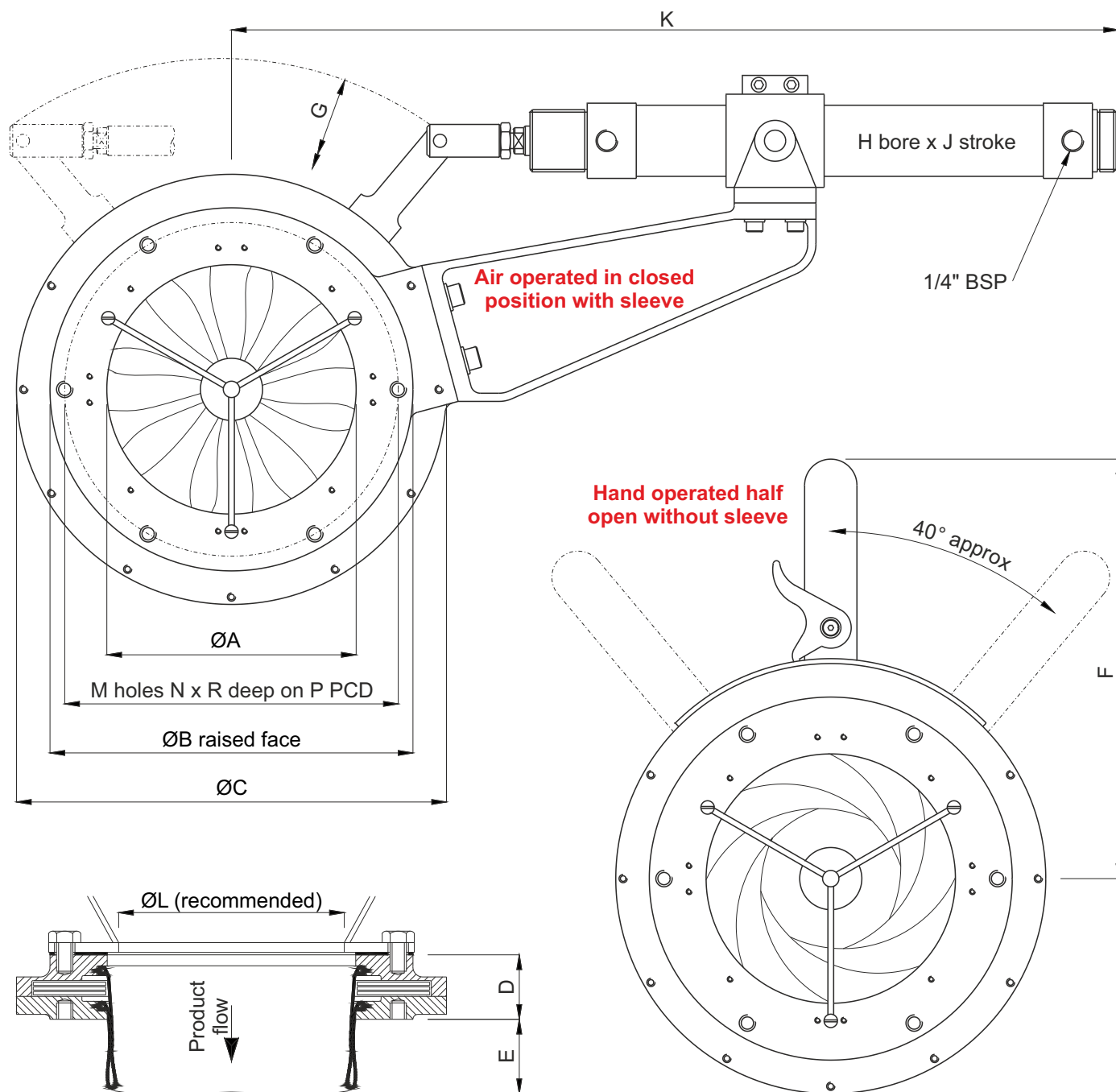
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A size	B	C	D	E	F	G	H	J	K	L	M	N	P	R
100	158	180	36	30	200	135	40	150	355	86	6	M6	142	10
150	222	264	40	50	250	185	40	200	465	138	6	M10	204	10
200	274	340	48	75	325	245	40	280	580	180	6	M10	254	10
250	352	432	50	95	365	305	40	350	690	220	8	M10	326	10
300	404	508	50	110	400	345	40	400	770	270	8	M10	378	10
400	540	658	50	190	510	510	50	600	1130	370	16	M12	495	16

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VALVES

Rotary Diverter Bespoke
Slide Butterfly Sifters



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equipment since 1959

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