

BETTER IN ROTARY VALVES

High Duty Rotary Airlock & Blowing Seals

Type HAR / HAX / HGR



 **tbma**

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Components for Dry Solids Handling

Rotary Valve Type HAR / HGR / HAX "High Duty" rotary airlock and blowing seals

Valve application

High-Duty rotary valves are employed in the conveying and dosing of almost any kind of product in the most demanding applications. These valves are eminently suitable for handling powdered and granulated materials in pneumatic conveying systems and under atmospheric conditions.

All high-duty models are ATEX 95 certified.

The three high-duty models are each suited for a specific application purpose.

ATEX 95 



Rotary airlock type HAR

The HAR type valve is basically suitable for almost any application you can think of. The valve functions mainly as an air- or explosion barrier or for dosing/discharging of a wide variety of materials.

Type HAR-X1 valves can be employed as a protective system up to 10 bar when handling dust explosion hazardous materials (dust class St2). The valve is also very suitable for dosing in a pneumatic conveying system when used in combination with a venturi or blow-through adaptor. HAR valves create a high filling efficiency and capacity due to their very effective inlet shape.

- Flange size: DN150 - DN500
- Rotor volume: 2,5 up to 125 ltr./rev



Blowing seal type HGR

TBMA High-Duty HGR type blowing seals have the same characteristics as the HAR type valve but are employed in the direct dosing of powdered and granulated materials into pneumatic conveying systems in the most demanding applications.

They are therefore designed with cast pipe inlet and outlet connections allowing the valve to be directly mounted in the pneumatic conveying line. The design of the conical transition area below the rotor ensures the efficient emptying of each rotor pocket.

- Flange size: DN150 - DN350
- Rotor volume: 2,5 up to 58 ltr./rev



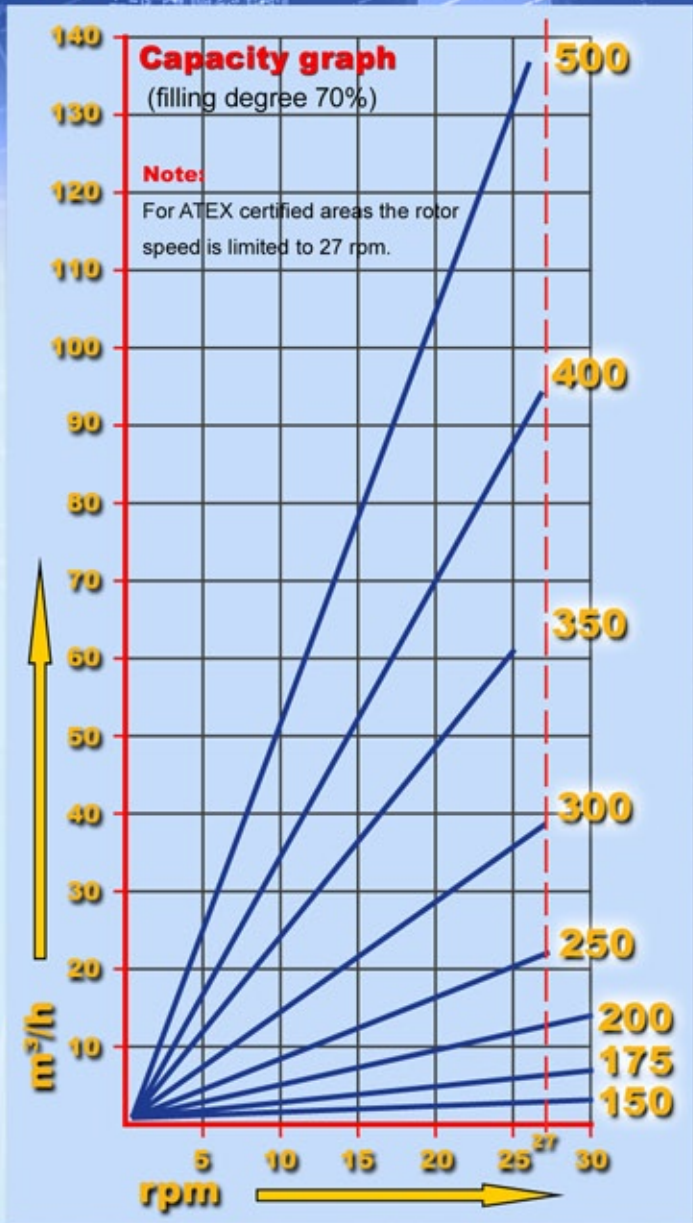
Rotary airlock type HAX

The TBMA HAX valves find their application mainly in situations where the flange size has a higher priority than valve capacity.

The valve offers a relative large flanged diameter in relation to the rotor capacity for easy discharging of very poor flowing materials.

HAX type valves are manufactured with a square and circular flange. It is therefore possible to use the valve as a transition connection from square to round or vice versa. Both flange sides have a double shearing edge and the valve housing is executed with cast air vent provisions in both directions. This means a considerable reduction in installation height and cost for expensive transition flanges.

- Flange size: DN150 - DN350 (square/round)
- Rotor volume: 2,5 up to 34 ltr./rev



Standard design features

- All rotary valve are ATEX 95 certified for dust and gas zones : Inside zone 20 / outside zone 1 and 21
- Certified pressure shock resistant up to 10 bar
- Type HAR X-1 rotary valve ATEX 95 certified Protective system / explosion barrier dust class St 2 Explosion- and flame proof up to 10 bar
- High filling efficiency created by effective inlet shape
- Many options and special executions available
- Close running tolerances due to adjustable and replaceable rotor blades
- Max. operating pressure differential: 1,5 bar
- Max. standard product temperature: 120 °C
- Minimal air leakage
- Direct- or chain drive



Valve execution

Rotor bearing arrangement

- Outboard, dust-tight ball bearing "Sealed for Life"
- Heat resistant slide bearings, for temperatures up to 400°C.

Shaft sealings

- Gland packing, standard
- Gland packing, sanitary standards
- Gland packing, suitable for temperatures up to 400°C.
- Shaft sealing with wear bush (Garlock)
- Air purge seals in various executions

Drive units

- Geared drive unit, with chain drive in an enclosed guard
- Geared drive unit, directly connected

Valve construction

Body and end covers

- Cast iron GG25, stress relieved
- Cast iron GG25, internally hard chrome plated
- Cast iron GG25, chemically nickel plated
- Cast iron GG25, internally PTFE coated
- Cast iron GG25, internally Tungsten Carbide coated
- Stainless steel AISI 316 / DIN 1.4408

Rotors

- Steel S235JR
- Steel S235JR, partial hard chrome plated shaft ends
- Steel S235JR, Tungsten Carbide coated shaft ends
- Steel S235JR, PTFE coated rotor blades
- Stainless steel AISI 316 / DIN 1.4401

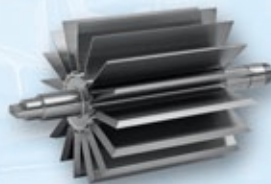
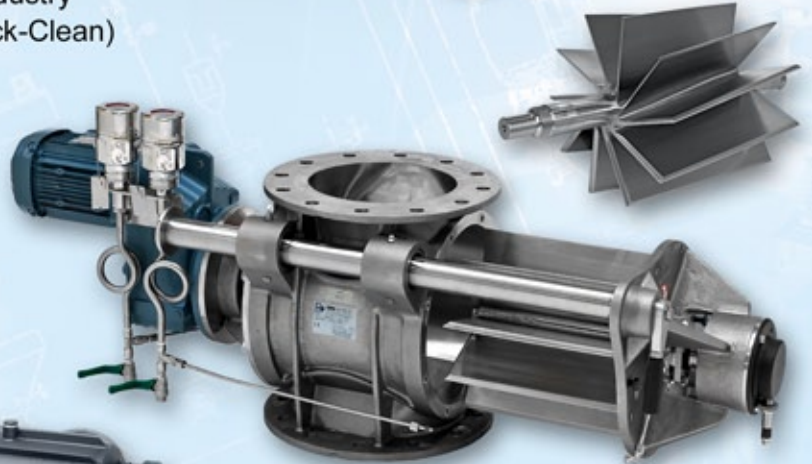
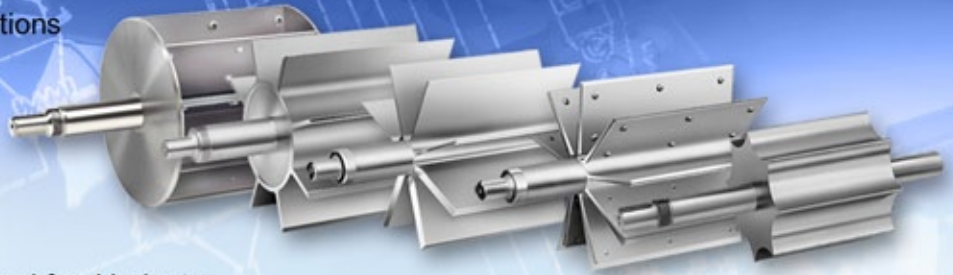
Rotor blades

- Steel S235JR
- Steel S235JR, hardened
- Stainless steel AISI 316 / DIN 1.4401
- Resins (Vulkollan, Teflon, Viton etc.)
- Brass/bronze (non-sparking applications)
- Hardox 400

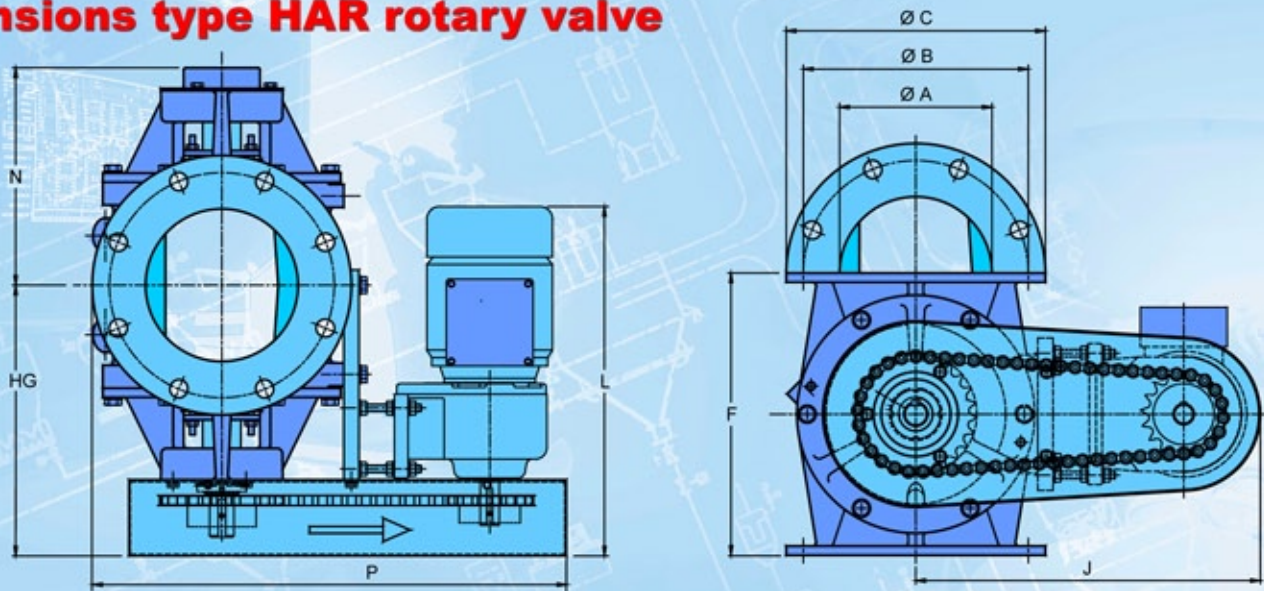


Valve options

- Corrosion- and abrasion resistant executions
- Special shaft seal executions
- Rotors in various special executions
- Special flange drilling pattern
- Heat resistant execution up to 400°C.
- Pulsed air injection system
- Venting facility on valve body
- Sanitary execution for pharmaceutical- and food industry
- Quick release rotor system with support track (Quick-Clean)
- Quick demountable valve in various executions
- Wide range of ventury and conveying adapters
- Wide range of inlet adapters and feed restrictors
- Shear-pin safety and clutch coupling
- Rotational speed transducers
- Mobile valve execution
- Custom-made designs



Dimensions type HAR rotary valve

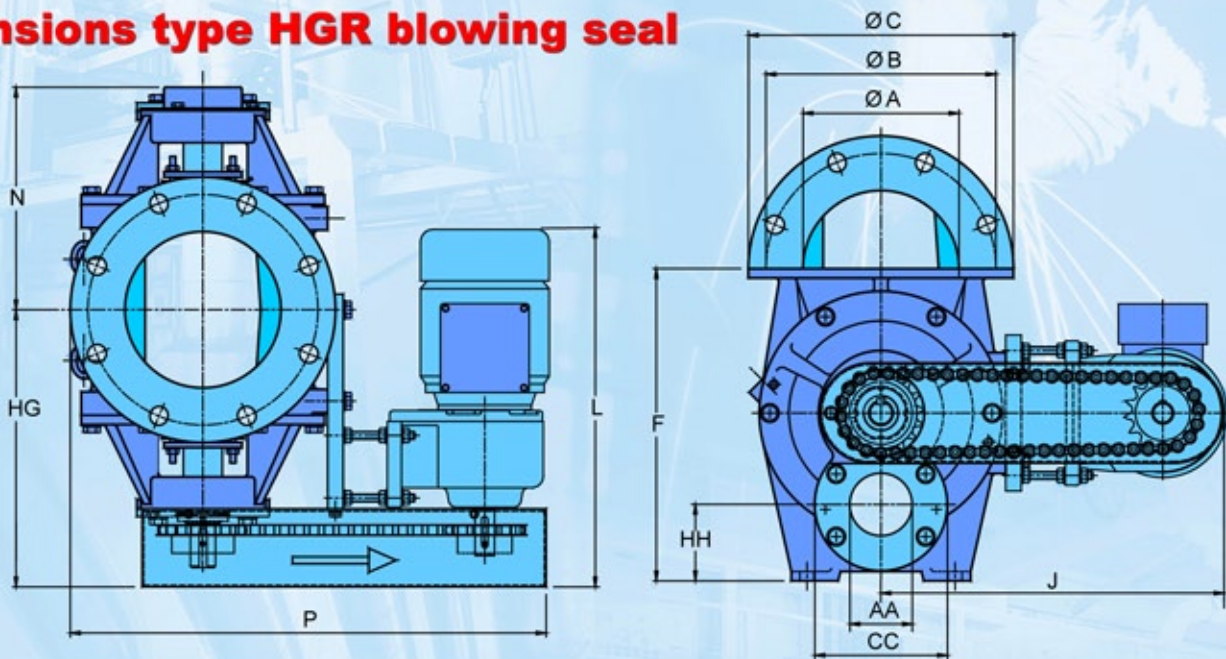


H-AR	Ltr/rev	kW	A	B	C	HG	N	P	L	F	J	kg
150	2,5	0,25	150	240	285	273	228	485	460	260	342	75
175	5,5	0,37	175	270	315	320	250	550	500	320	392	95
200	10,5	0,55	200	295	340	355	285	622	608	370	452	145
250	19,0	0,75	250	350	395	380	310	720	620	430	522	220
300	34,0	0,75	300	400	445	430	365	785	660	520	562	315
350	58,0	1,1	350	460	505	465	400	875	680	610	622	450
400	85,5	1,5	400	515	565	590	513	982	725	710	667	600
500	125,0	2,2	500	620	670	631	550	1072	725	780	737	950

PN 10: Standard flange drilling: (Alternative drilling patterns on request)

Note: All dimensions are in mm and might be subject to change (Design changes reserved)

Dimensions type HGR blowing seal

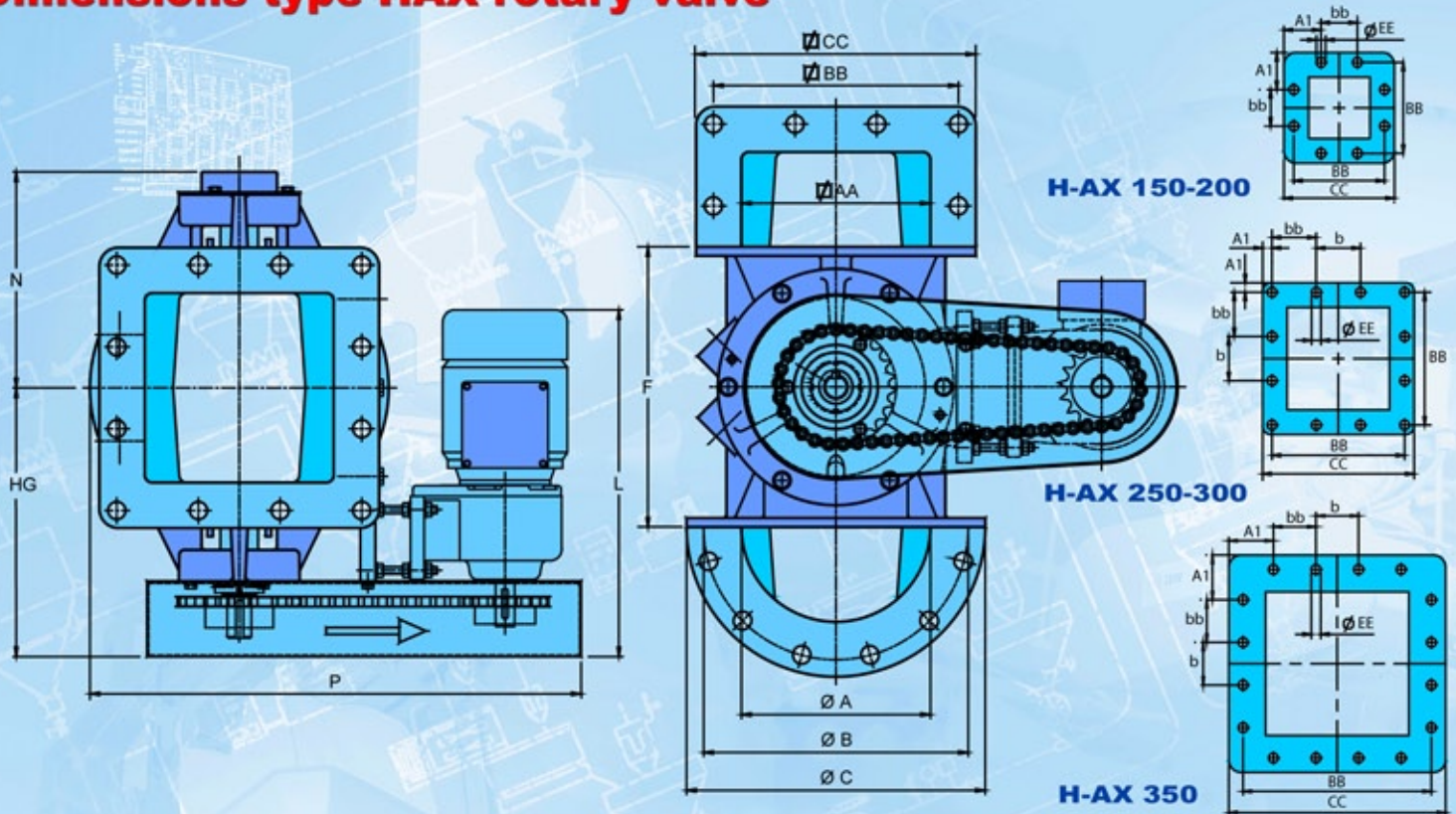


H-GR	Ltr/ rev	kW	A	B	C	N	HG	L	P	J	F	HH	AA	CC	kg
150	2,5	0,37	150	240	285	228	273	398	480	337	280	73	50	120	75
175	5,5	0,37	175	270	315	250	320	423	526	368	335	79	65	150	93
200	10,5	0,75	200	295	340	285	355	482	610	440	400	98	80	170	165
250	19,0	0,75	250	350	395	310	380	482	678	480	465	110	100	200	200
300	34,0	1,5	300	400	445	365	450	545	778	555	555	125	125	230	350
350	58,0	1,5	350	460	505	400	485	545	873	620	645	130	150	240	490

Standard flange drilling: PN 10 (Alternative drilling patterns on request)

Note: All dimensions are in mm and might be subject to change (Design changes reserved)

Dimensions type HAX rotary valve



H-AX	Ltr/rev	kW	A/AA	A1	B	b	BB	bb	C	CC	N x ØEE	HG	F	J	L	N	P	kg
150	2,5	0,25	150	89	240	-	222	92	285	270	8x Ø 23	273	260	342	398	228	485	73
200	5,5	0,37	200	103,5	295	-	273	113	340	320	8x Ø 23	320	320	392	423	250	550	95
250	10,5	0,55	250	23	350	108	324	108	395	370	12x Ø 23	355	370	452	458	285	622	145
300	19,0	0,75	300	28	400	128	384	128	445	440	12x Ø 23	380	430	522	482	310	720	220
350	34,0	0,75	350	109	460	104	460	104	505	530	16x Ø 23	430	520	562	482	365	785	313

PN10: Standard flange drilling - Alternative drilling patterns on request

Note: All dimensions are in mm and might be subject to change (design changes reserved)

The flange which is to be used as inlet must be confirmed by the client when ordering the valve

Quality is not a Coincidence

Rotary valves are an essential part of your process equipment for pneumatically conveying or dosing powdered and granulated materials.

TBMA has a wide range of expertise in the application of rotary valves in many fields of the process industry. The result is an extensive size range of rotary airlocks and blowing seals with numerous execution possibilities. This may vary from a simple dust valve to a valve handling product of a critical nature.

**TBMA can make the difference.
Contact us and find out!**

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