Transforms the rectilinear motion of two single acting opposite cylinders into rotary motion via a rack and pinion drive contained within the cylinder body.

- VRA version (Ø32 to Ø80mm)
- VRA standard version (Ø32 to Ø125mm) for corrosive environments
- Rotation angles of 96°, 186° or 366°
- Optional magnetic version
- Several options are available; rotative angle adjustable stop, male shaft or female shaft (through)

Operating information

Working pressure:	Max, 10 bar
Standard working temperature:	-10°C to +60°C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it has to be continued.

VRA - Magnetic, Female shaft, No end adjustment

Bore	Rotation Angle (°)	Order code
32	96	**VRAM032-96FNN**
32	186	**VRAM032-186FNN**
32	366	**VRAM032-366FNN**
40	96	**VRAM040-96FNN**
40	186	**VRAM040-186FNN**
40	366	**VRAM040-366FNN**
50	96	**VRAM050-96FNN**
50	186	**VRAM050-186FNN**
50	366	**VRAM050-366FNN**
63	96	**VRAM063-96FNN**
63	186	**VRAM063-186FNN**
63	366	**VRAM063-366FNN**
80	96	**VRAM080-96FNN**
80	186	**VRAM080-186FNN**
80	366	**VRAM080-366FNN**

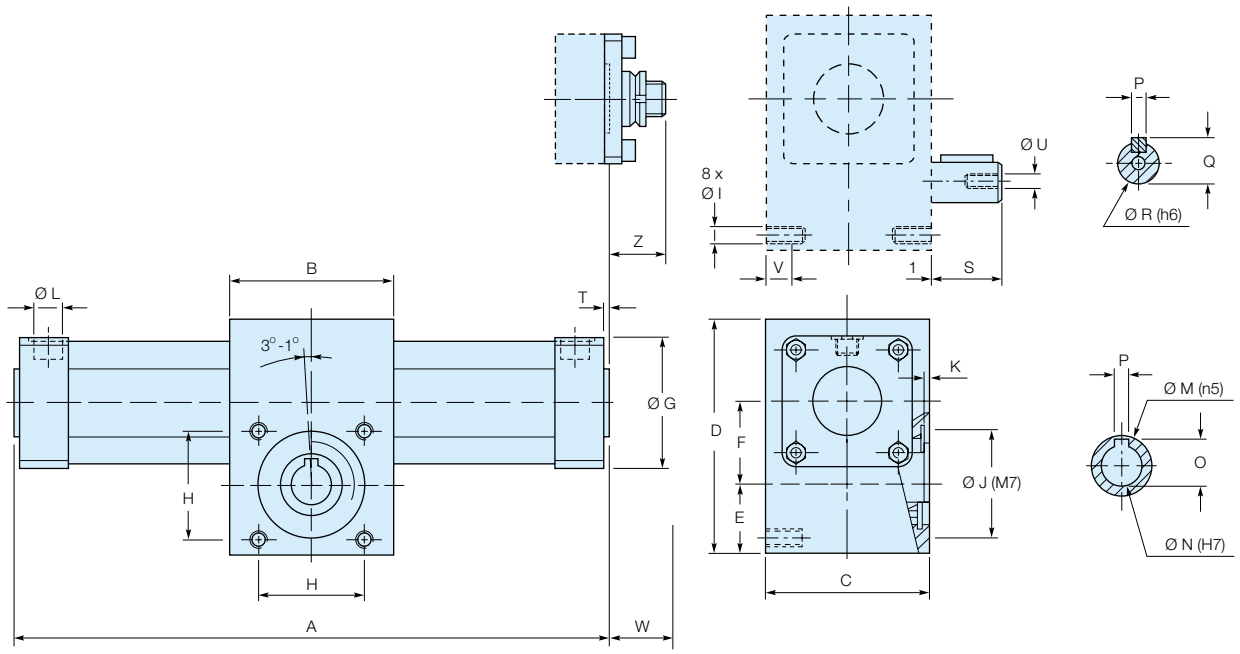
VRS - Magnetic, Female shaft, No end adjustment

Bore	Rotation Angle (°)	Order code
32	96	**VRSM032-96FNN**
32	186	**VRSM032-186FNN**
32	366	**VRSM032-366FNN**
40	96	**VRSM040-96FNN**
40	186	**VRSM040-186FNN**
40	366	**VRSM040-366FNN**
50	96	**VRSM050-96FNN**
50	186	**VRSM050-186FNN**
50	366	**VRSM050-366FNN**
63	96	**VRSM063-96FNN**
63	186	**VRSM063-186FNN**
63	366	**VRSM063-366FNN**
80	96	**VRSM080-96FNN**
80	186	**VRSM080-186FNN**
80	366	**VRSM080-366FNN**
100	96	**VRSM100-96FNN**
100	186	**VRSM100-186FNN**
100	366	**VRSM100-366FNN**
125	96	**VRSM125-96FNN**
125	186	**VRSM125-186FNN**
125	366	**VRSM125-366FNN**

For more options consult techinical catalogue

Dimensions (mm)

Cylinder bores Ø 32 to 80mm



The location of the shaft key is indicated when the pistons are on the left.
First rotation as indicated (clockwise).

Ω : Rotative angle 96°, 186° or 360°

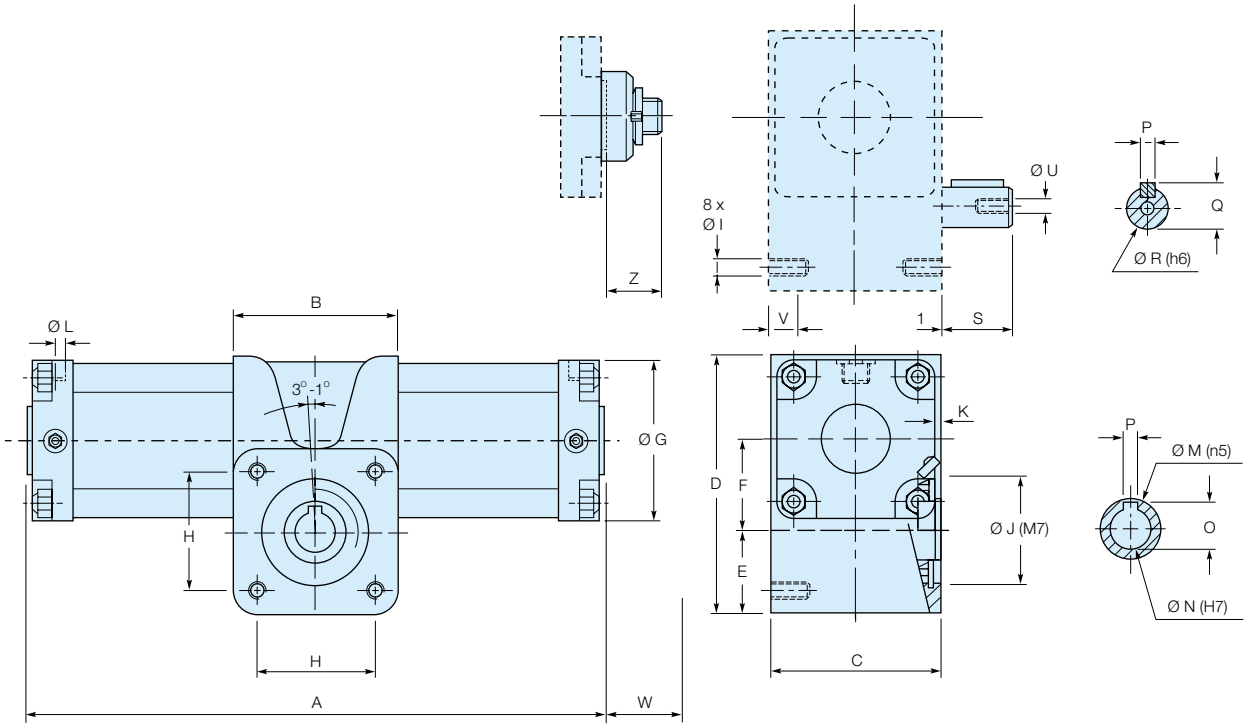
Ø	A*	B	C	D	E	F	G	H	I	J	K	L
32	128 + 0.523 Ω	50	50	72	25.0	24.0	45	35	M6	35	2.0	G1/8"
40	163 + 0.6981 Ω	65	65	95	32.5	29.5	52	47	M8	47	3.0	G1/4"
50	163 + 0.6981 Ω	65	65	95	32.5	29.5	65	47	M8	47	3.0	G1/4"
63	209 + 0.9424 Ω	95	95	126	40.0	38.0	75	62	M10	62	3.5	G3/8"
80	209 + 0.9424 Ω	95	95	126	40.0	38.0	95	62	M10	62	3.5	G3/8"

Ø	M	N	O	P	Q	R	S	T	U	V	W*	Z
32	17	10	11.7	4	13.5	12	20	2	M4 x 10	10	22	31
40	25	15	17.2	5	18.0	16	30	3	M5 x 15	12	24	35
50	25	15	17.2	5	18.0	16	30	3	M5 x 15	12	29	35
63	35	24	27.2	8	27.0	24	40	3	M8 x 20	15	32	32
80	35	24	27.2	8	27.0	24	40	3	M8 x 20	15	32	32

* Add W to A for the magnetic version (magnet on right hand side as standard).

Dimensions (mm)

Cylinder bores Ø 100 to 125mm



The location of the shaft key is indicated when the pistons are on the left.
First rotation as indicated (clockwise).

Ω : Rotative angle 96°, 186° or 360°

Ø	A*	B	C	D	E	F	G	H	I	J	K	L
100	304 + 1.309 Ω	130	142	188	64.0	53.5	115	90	M14	90	4.5	G1/2"
125	304 + 1.309 Ω	130	142	188	64.0	53.5	140	90	M14	90	4.5	G1/2"

Ø	M	N	O	P	Q	R	S	U	V	W*	Z
100	55	35	38.7	10	38.5	35	50	M12 x 20	24	4	38
125	55	35	38.7	10	38.5	35	50	M12 x 20	24	4	38

* Add W to A for the magnetic version (magnet on right hand side as standard).

Material specification

	VRS	VRA
Rack	XC40 steel	XC40 steel
Floating piston	Aluminium	Aluminium
Magnet (***M version)	Magnetic elastomer	Magnetic elastomer
Piston seals	Polyurethane	Polyurethane
Rack and pinion gear seals		Silicone
Body	Anodised aluminium	Anodised aluminium
Integrated tie rods, nuts, circlips, screws	Zinc plated steel	303 stainless steel
Body	Hard anodised aluminium extrusion	Hard anodised aluminium extrusion
End caps	Anodised aluminium	Anodised aluminium
Male or female transmission shaft	XC40 steel	304 stainless steel (female)
Cushion sleeve	Brass	Brass
Clearance adjusting block (Ø 32 to 80mm)	Acetal	Acetal
Adjusting screw blanking plate		Aluminium + silicone seal

Condition of use

	Ø 32 to 80mm	Ø 100 and 125mm
Temperature range	-10°C to +60°C (14°F to 140°F)	
Pressure range (bar)	0.5 to 10 7 to 145 psi)	0.3 to 10 (4 to 145 psi)
Air condition	Filtered air 40µ, lubricated or non lubricated, dry or non dry	

Theoretical torque

Ø Bore mm	Pinion Module	ØPm	Torque (N.m) 2 bar	4 bar	6 bar	8 bar	10 bar
32	1.5	20	2.4	4.8	7.2	9.6	12
40	2	40	5.0	10.0	15.0	20.0	25
50	2	40	8.0	16.0	24.0	32.0	40
63	3	54	17.0	34.0	51.0	68.0	85
80	3	54	27.0	54.0	81.0	108.0	135
100	5	75	58.0	116.0	174.0	232.0	290
125	5	75	92.0	184.0	276.0	368.0	460

The table above shows the theoretical torque at different pressures. A maximum efficiency of 80% should be assured due to functional losses.

Technical data

Bore (mm)		32	40	50	63	80	100	125
Maximum load (N)	Axial	110	350	350	1050	1050	2500	2500
	Radial	35	220	220	900	900	2000	2000
Cushion angle (°)		50	45	45	32	32	30	30
Nominal moment of inertia (kg.m²)		0.003	0.01	0.02	0.1	0.2	0.3	0.4
Rotative angle (-1°)		96°, 186°, 366°						
Angular tolerance		0°10'	0°10'	0°10'	0°10'	0°10'	1°	1°