

# Hydraulic Cylinders

## Double Acting



# VCR SERIE

ISO Seals

Maximum working Pressure : 300 bar

Bores : Ø32 to 125 mm





## ■ GENERAL CHARACTERISTICS

- Use Pressure : 160 - 300 bar maxi
- Test Pressure : 450 bar
- Fluids : Hydraulic Mineral oils HM-HL  
10 to 40 Cst at 50 °C  
very low-flammability inflammables C or D class
- Temperature : from -20 to +80 °C : Seals class N  
up to +200 °C : Seals class V  
glycol water max 90 °C : Seals class G
- Operating speed : 0.5 m/sec max.
- Filtering : ISO 17/14 or better
- Direct fitting ports "manifold"
- Sealing by O-Ring

## ■ FORCES

- Thrust force (daN)

Ø Bore	Section cm <sup>2</sup>	Pressure (bar)						
		90	120	140	160	180	200	300
32	8,04	724	965	1 126	1 286	1 447	1 608	2 412
40	12,56	1 130	1 507	1 758	2 010	2 261	2 512	3 768
50	19,63	1 767	2 356	2 748	3 141	3 533	3 926	5 889
63	31,17	2 805	3 740	4 364	4 987	5 611	6 234	9 351
80	50,26	4 523	6 031	7 036	8 042	9 047	10 052	15 078
100	78,54	7 069	9 425	10 996	12 566	14 137	15 708	23 562
125	122,72	11 045	14 726	17 181	19 635	22 090	24 544	36 816

All dimensions are in mm

- Pull force (daN)

Ø Bore	Ø Rod	Annular area cm <sup>2</sup>	Pressure (bar)						
			90	120	140	160	180	200	300
32	18	5,50	495	660	770	880	990	1 100	1 650
40	22	8,76	788	1 051	1 226	1 402	1 577	1 752	2 628
50	28	13,48	1 213	1 618	1 887	2 157	2 426	2 696	4 044
63	36	21,00	1 890	2 520	2 940	3 360	3 780	4 200	6 300
80	45	34,36	3 092	4 123	4 810	5 498	6 185	6 872	10 308
100	56	53,91	4 852	6 469	7 547	8 626	9 704	10 782	16 173
125	70	84,24	7 582	10 109	11 794	13 478	15 163	16 848	25 272

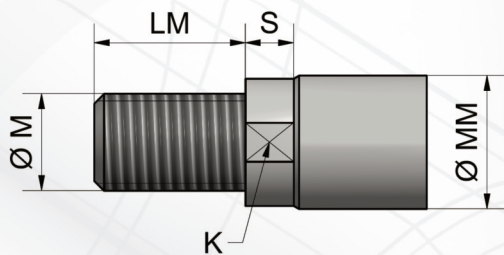
All dimensions are in mm



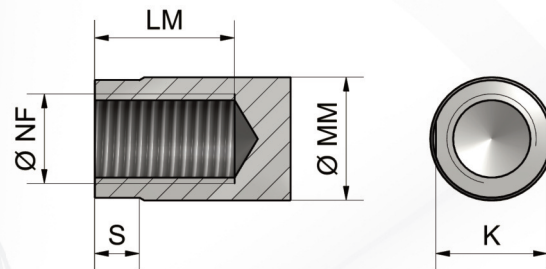
## VCR SERIE

## ROD END

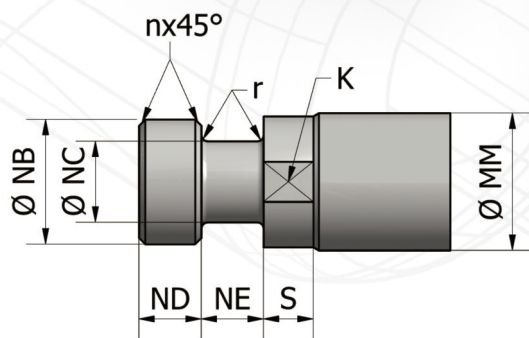
EXTERIOR THREAD (code1)



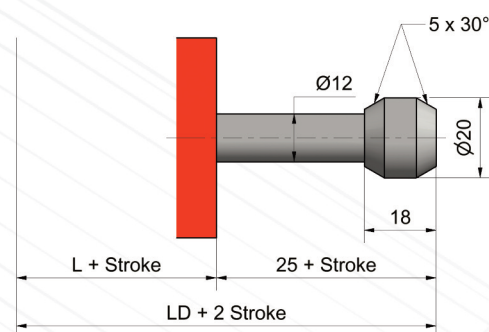
INTERIOR THREAD (code2)



TENON (code3)



INFORMATION ROD (codeD)



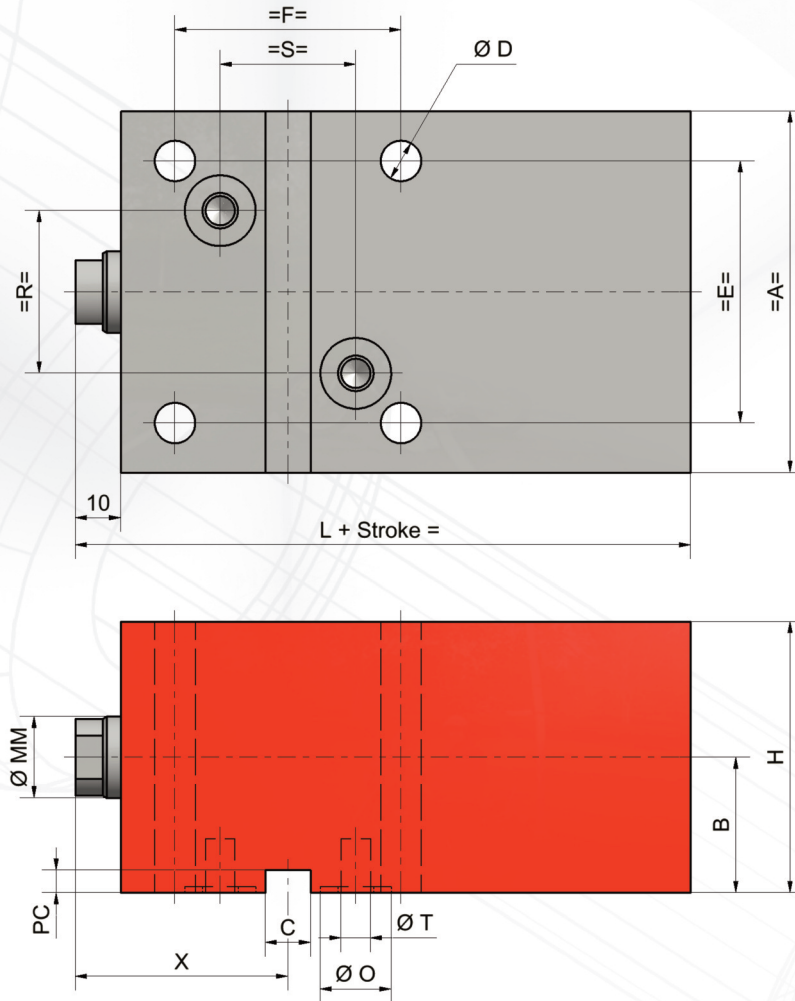
Ø Bore	32	40	50	63	80	100	125
Ø MM (Ø Rod)	18	22	28	36	45	56	70
K	14	17	22	30	36	46	60
LM	20	25	30	40	50	60	70
Ø M	M12x1,25	M16x1,5	M20x1,5	M27x2	M33x2	M42x2	M52x2
Ø NB	16	20	25	33	42	53	67
Ø NC	10	13	16	22	30	36	46
ND	8	10	13	16	20	30	30
NE	8	10	13	16	20	30	30
Ø NF	M8x1,25	M10x1,5	M16x1,5	M20x1,5	M27x2	M33x2	M42x2
n	1	1	1	2	2	2	2
r	1	1	1	2	2	2	2
S	6	8	8	8	8	8	8

All dimensions are in mm

# VCR SERIE

## VOLUME

- Anticipate the screw head height in addition to the H dimension or choose LV option



X = Indicate at order

S = Oil feeding for pushing movement

R = Oil feeding for pulling movement

## OPERATING MODE

- L1 Non cushioned :



- L3 Front cushioned :



- L2 Front and rear cushioned :



- L4 Rear cushioned :



## VCR SERIE

<b>Ø Bore</b>		32	40	50	63	80	100	125
<b>Ø MM (Ø Rod)</b>		18	22	28	36	45	56	70
<b>A</b>		80	90	100	120	140	160	190
<b>B</b>		30	35	40	50	55	65	80
<b>C</b>		10	12	16	16	20	20	20
<b>Ø D</b>		9	9	13	13	13	15	17
<b>E</b>		58	65	75	90	110	130	160
<b>F</b>		50	60	70	70	80	80	90
<b>H</b>		60	70	80	100	110	130	160
<b>L + Stroke ± 1mm</b>	L1	86	95	105	118	136	150	175
	L2	118	130	151	161	186	-	-
	L3	104	112	126	140	162	-	-
	L4	100	113	130	139	160	-	-
<b>Ø O - O-Ring Seals</b>		R9	R9	R9	R9	R10	R10	R11
<b>PC</b>		5	5	5	5	5	5	5
<b>R</b>		36	40	46	50	70	80	100
<b>S</b>		30	35	40	40	45	45	50
<b>Ø T</b>		6,5	6,5	6,5	6,5	8	8	10
<b>X min.</b>		47	52	59	60	65	71	80
<b>X max.</b>		<b>X min. + Stroke</b>						
<b>Stroke mini</b>	L1	5	10	10	10	10	10	10
	L2	50	50	50	70	70	-	-
	L3	30	30	30	50	50	-	-
	L4	30	30	30	50	50	-	-

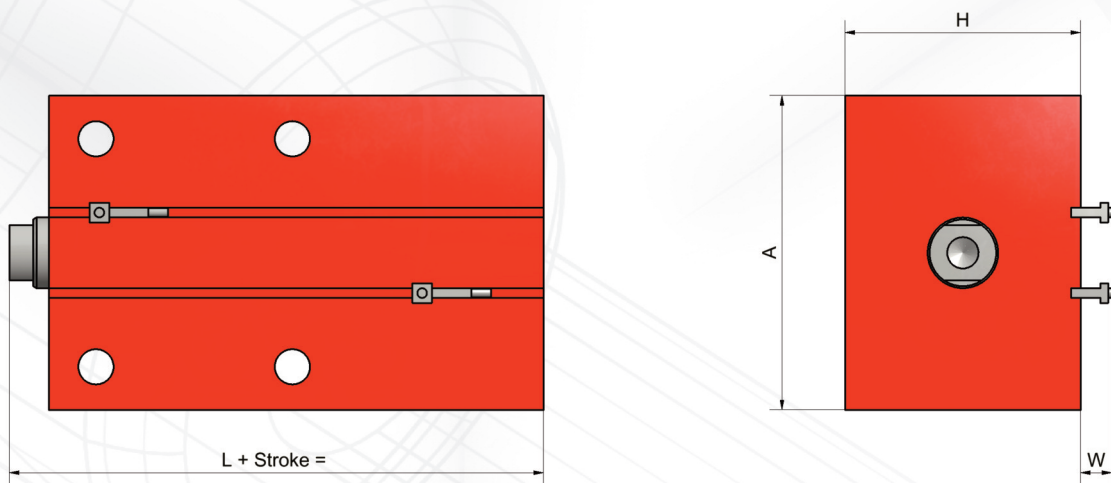
All dimensions are in mm

# VCR SERIE

## ■ MAGNETIC SENSOR ONLY FOR OPTION L1 Ø32 TO 80

WORKING PRESSURE, 160 BAR MAXIMUM

- Anticipate the screw head height in addition to H dimension or choose LV option



Ø Bore	32	40	50	63	80
L	96	105	110	128	141
W	8	8	8	8	8

All dimensions are in mm

Note : For all VCR type magnetic detection cylinders, a minimum stroke of 15 mm is mandatory.  
Operating Temperature - 25 + 85 °C.

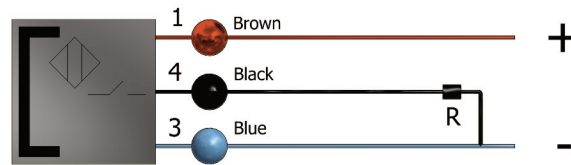
### WARNING !!!

- To avoid any contact errors no external magnetic field which exceeds 1Ka/m shall surround the cylinder.
- There must be no ferritic material close to the magnetic sensors.
- Covers must be provided against ferritic swarf.
- Ambient temperature must not exceed + 85° C.



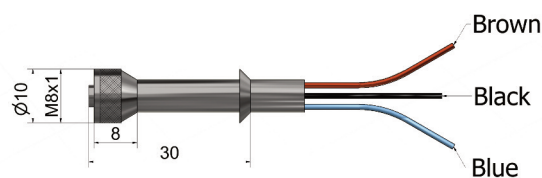
## TECHNICAL CHARACTERISTICS OF MAGNETIC SENSOR

PNP  
Normally open/positive sensing



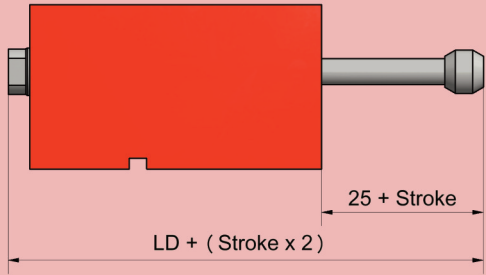
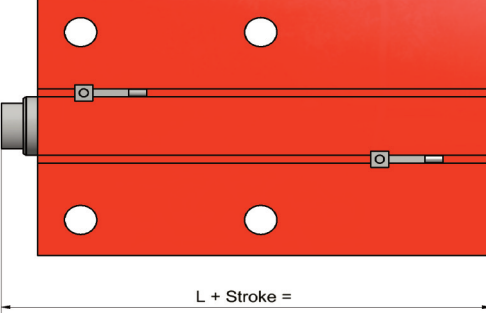
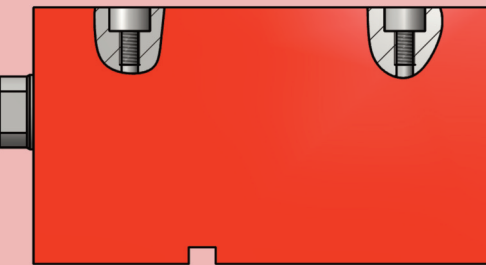
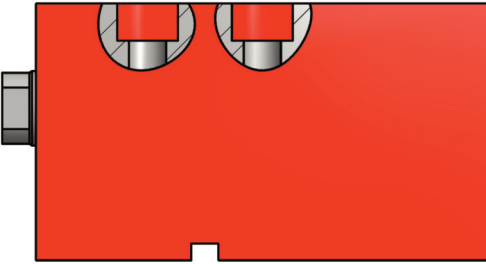
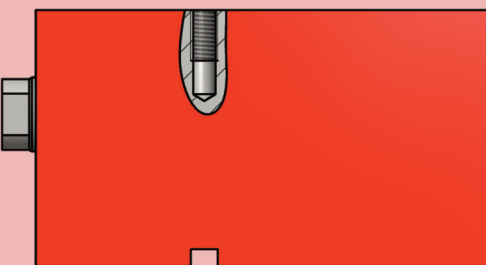
Operating voltage $U_B$	10...30 V DC
Voltage drop $U_d$	$\leq 3,1V$
Rated insulation voltage $U_i$	75 V DC
Eff. operating current $I_e$	200 mA
No-load current $I_o$ max.	$\leq 30$ mA
Polarity reversal protected	Yes
Short circuit protected	Yes
Intervention protected	Yes
Rated switching field strength $I H_n I$	1,2 kA/m
Assured switching field streng	$\geq 2$ kA/m
Hysteresis of $I H_n I$	$\leq 45\%$
Temperature drift $I H_n I$	$\leq 0,3\%$ /°C
Ambient temperature $T_a$	-25 ... + 85 °C
Enclosure Type per IEC 60529	IP67
Approvals/ conformity	CE, cULus
Housing material	LCP
Connection type	Cable with connector M8

Straight plug - 3 m of cable

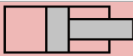





# VCR SERIE

## OPTIONAL AVAILABLE ON REQUEST

	<p>Information rod only L1</p> <p>Code D</p> <table border="1"> <tr> <td>Ø Bore</td> <td>32</td> <td>40</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> <td>125</td> </tr> <tr> <td>LD + 2 Stroke</td> <td>109</td> <td>120</td> <td>130</td> <td>145</td> <td>165</td> <td>179</td> <td>205</td> </tr> </table>	Ø Bore	32	40	50	63	80	100	125	LD + 2 Stroke	109	120	130	145	165	179	205
Ø Bore	32	40	50	63	80	100	125										
LD + 2 Stroke	109	120	130	145	165	179	205										
	<p>Magnetic sensor</p> <p>Code DM</p>																
	<p>Purge screws from bore Ø 40</p> <p>Code PG</p>																
	<p>Screw countebore (DIN 912)</p> <p>Code LV</p>																
	<p>Interior threads for handling from bore Ø 40</p> <p>Code TA</p>																

## ■ HOW TO ORDER

<b>Serie</b>	<b>Cylinder</b>	<b>VCR</b>
<b>Ø Bore</b>	Indicate the diameter in mm 32, 40, 50, 63, 80, 100, 125	***
<b>Mounting</b>	<b>Fitting ports</b>	<b>MS</b>
<b>Rod end</b>	Exterior thread	1
	Interior thread	2
	Tenon	3
<b>Seals quality</b>	Standard seals, +80° max	N
	Viton seals, +200° max	V
	Glycol water, +90° max	G
<b>Stroke</b>	Indicate real stroke in mm	***
<b>Rod</b>	Single rod	S
	Information rod	D
<b>X dimension</b>	Indicate in mm	***
<b>Operating mode</b>	Non cushioned	 L1
	Front and rear cushioned	 L2
	Front cushioned	 L3
	Rear cushioned	 L4

## ■ OPTIONAL AVAILABLE ON REQUEST

<b>Magnetic sensor</b>	Only L1 from Ø 32 to Ø 80 Seals quality N Working pressure 160 bar maxi	<b>DM</b>
<b>Purges</b>	From bore Ø 40	<b>PG</b>
<b>Counterbores</b>	Counterbores	<b>LV</b>
<b>Interior threads for handling</b>	From bore Ø 40	<b>TA</b>

## ■ EXAMPLE

									OPTIONS :	
Serie	Ø Bore	Mounting	Rod end	Seals	Stroke	Rod	X Dim.	Operating mode	Purges	Counterbores
VCR	50	MS	1	V	120	S	62	L1	PG	LV

\*HPS reserves the right to modify at any time and without notice the dimensions that are presented only for guidance.



Head office:

**Hydraulique Production Systems**

62, chemin de la Chapelle Saint-Antoine

Z.A.C. - 95300 ENNERY - FRANCE

Tél. : +33.1.34.35.38.38 - Fax : +33.1.30.75.08.08

**E-mail : [hps@hp-systems.fr](mailto:hps@hp-systems.fr) - [www.hp-systems.fr](http://www.hp-systems.fr)**