VERDERGEAR

R series
Rotary Gear Pumps

Solutions in Pumping technology

VERDERGEAR gear pumps

R series

The VERDERGEAR series of pumps comprises the R series offering a comprehensive range of gear pumps.

This brochure deals specifically with the R series of pumps.

As with all VERDER pumps, emphasis is on maximum interchangeability and quality improvements, hence all products are covered by a two year guarantee as well as the standard VERDER warranty package.

VERDERGEAR R series

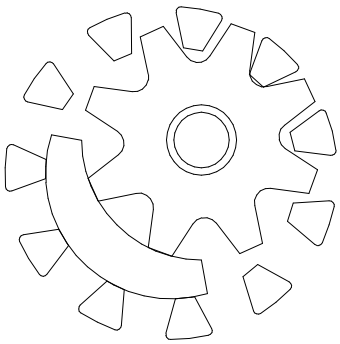
The internal gear pumps of the R series are positive displacement rotary pumps. The capacity is directly proportional to the rotation speed, and virtually independent of the pressure.

Internal gear pumps of the R series are designed to give a smooth non-pulsating flow in clockwise or anticlockwise rotation.

Depending on the application, pumps are selected with either packed gland, mechanical seal, or with special features such as double mechanical seals or seal-free magnetic couplings.

The pumps are manufactured in cast iron and stainless steel. If desired, special materials and material combinations can be used.

Also available are special constructions with a wearplate between the rotating parts, lock-rings for precise rotor positioning, pump casings with heated jackets, or an integrated relief valve, all greatly extending the application of the pump.



Nominal capacity:	up to 50 l/s (3000 l/min, 180 m^3/h)
Max. differential pressure:16 bar (230 PSI)	
Viscosity:	to over 100,000 mm^2/s (cSt)
Temperature:	from –60°C to +300°C

The internal gear pumps of the R series are used for fluids of any viscosity, such as solvents (1mm^2/s) or chocolate (max 100,000 mm^2/s). The special design makes the R pumps suitable also for lubricating and non-lubricating fluid as well as for liquids with solids Areas of application include:.

Paint and detergent industry
Food industry
Chemical industry
Pharmaceutical industry

Special Features

- Self-priming
- Viscous liquids
- Smooth non-pulsating flow
- Constant capacity
- Long life

R Series performance

Type	Ports		Viscosity		Speed		Nominal Capacity			Weight
	Inch	DN PN16	mm^2/S (cSt)	-°E	Min^{-1}	LPR*	1/min	m^3/h	1/s	kg
R35	1 1/4”	40	200	30	1450	0.04	55	3.3	0.9	11
			1000	150	960		36	2.2	0.6	
			4000	550	720		27	1.6	0.45	
			12000	1500	630		24	1.4	0.4	
			25000	3200	500		19	1.1	0.3	
			50000	7000	400		15	0.9	0.25	
R40	1 1/4”	40	200	30	1450	0.07	100	6	1.6	12
			1000	150	960		66	4	1.1	
			4000	550	720		50	3	0.8	
			12000	1500	630		43	2.6	0.7	
			25000	3200	500		35	2	0.6	
			50000	7000	400		28	1.7	0.5	
R50	2”	50	200	30	960	0.21	200	12	3.3	27
			1000	150	720		150	9	2.5	
			4000	550	630		125	7.5	2.1	
			12000	1500	500		100	6	1.6	
			25000	3200	400		80	4.8	1.3	
			50000	7000	315		63	3.8	1	
R65	2 ½”	65	200	30	630	0.48	300	18	5	46
			1000	150	500		240	14.4	4	
			4000	550	400		190	11.4	3.1	
			12000	1500	315		150	9	2.5	
			25000	3200	250		120	7.2	2	
			50000	7000	200		95	5.7	1.6	
R80	3”	80	200	30	500	1.2	600	36	10	75
			1000	150	400		480	28.8	8	
			4000	550	315		380	22.8	6.3	
			12000	1500	250		300	18	5	
			25000	3200	200		240	14.4	4	
			50000	7000	160		190	11.4	3.1	
R105	4”	100	200	30	500	2.4	1200	72	20	135
			1000	150	400		960	58	16	
			4000	550	315		760	45	12.6	
			12000	1500	250		600	36	10	
			25000	3200	200		480	29	8	
			50000	7000	160		380	23	6.3	

* litres per revolution

R Series operating ranges

	bar					mm^2/s (cSt)		°C		
Type*	A	B	C	D	E	Min	Max	Min	Max	pH
Cast Iron Model										
G1	12	8	4	12	20	100	100,000	-40	+200	6–13
G44	12	8	4	12	20	100	100,000	-30	+150	6-13
GW44	-	-	8	12	20	100	100,000	-30	+150	6-8
H1	12	8	4	12	20	20	100,000	+120	+300	6-8
HR1	12	8	4	12	20	20	100,000	+120	+300	6-8
S43	-	8	-	12	20	1	4,000	-30	+150	6-13
Stainless Steel Model										
K1	12	6	-	12	20	20	4,000	-40	+200	2-14
KB1	12	8	4	12	20	100	100,000	-40	+200	6-8
K43	12	6	-	12	20	20	4,000	-30	+150	2-14
KB44	12	8	4	12	20	100	100,000	-30	+150	6-8

A - Maximum differential pressure with lubricating liquids
B - Maximum differential pressure with non lubricating liquids
C- Ma ximum differential pressure with abrasive liquids (viscosity>100mm^2/s)
D- Maximum operating pressure
E - Test pressure

* for explanation of type identification see overleaf

- To increase the life of the pump with abrasive liquids, reduce the pump speed to 1/3 of the rated speed.

Type	Rated Speed	Recommended Speed
R 35	1450	500
R 40	1450	500
R 50	960	315
R 65	800	250
R 80	620	200
R105	510	160
R125	450	125

Type Identification

R35 G F 1 A +Y

Ê Ë Ì Í Î Ï

Ê Pump Size

Ë Material

G	all cast iron
S	cast iron (for solvents)
H	cast iron (for high temperature)
C	cast iron (for chocolate)
K	all AISI 316 stainless steel

Ì Internal Option

B	bronze bushings
F	flanged ports
L	in-line ports
R	heating jacket around casing
W	pin and idler bushing in tungsten carbide

Í Shaft Seal

1	with packing
43	mechanical seal graphite, ceramic, PTFE
44	mechanical seal tungsten carbide, ceramic, PTFE
45	mechanical seal tungsten carbide, silicon,

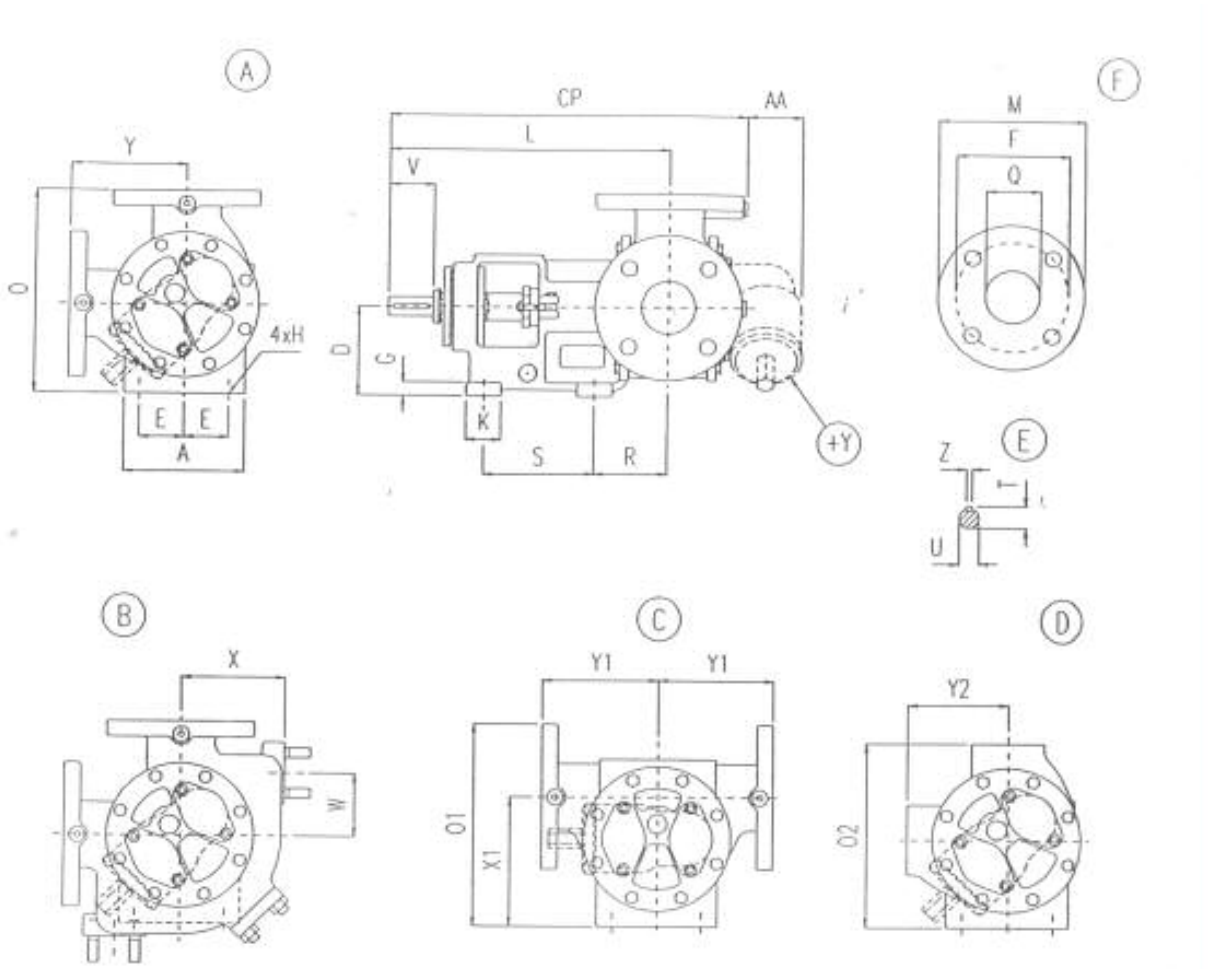
Î Pedestal

A,B	heavy duty pedestal

Ï External Option

+O2	quench reservoir
+Y	bypass (relief valve)
+YY	double bypass

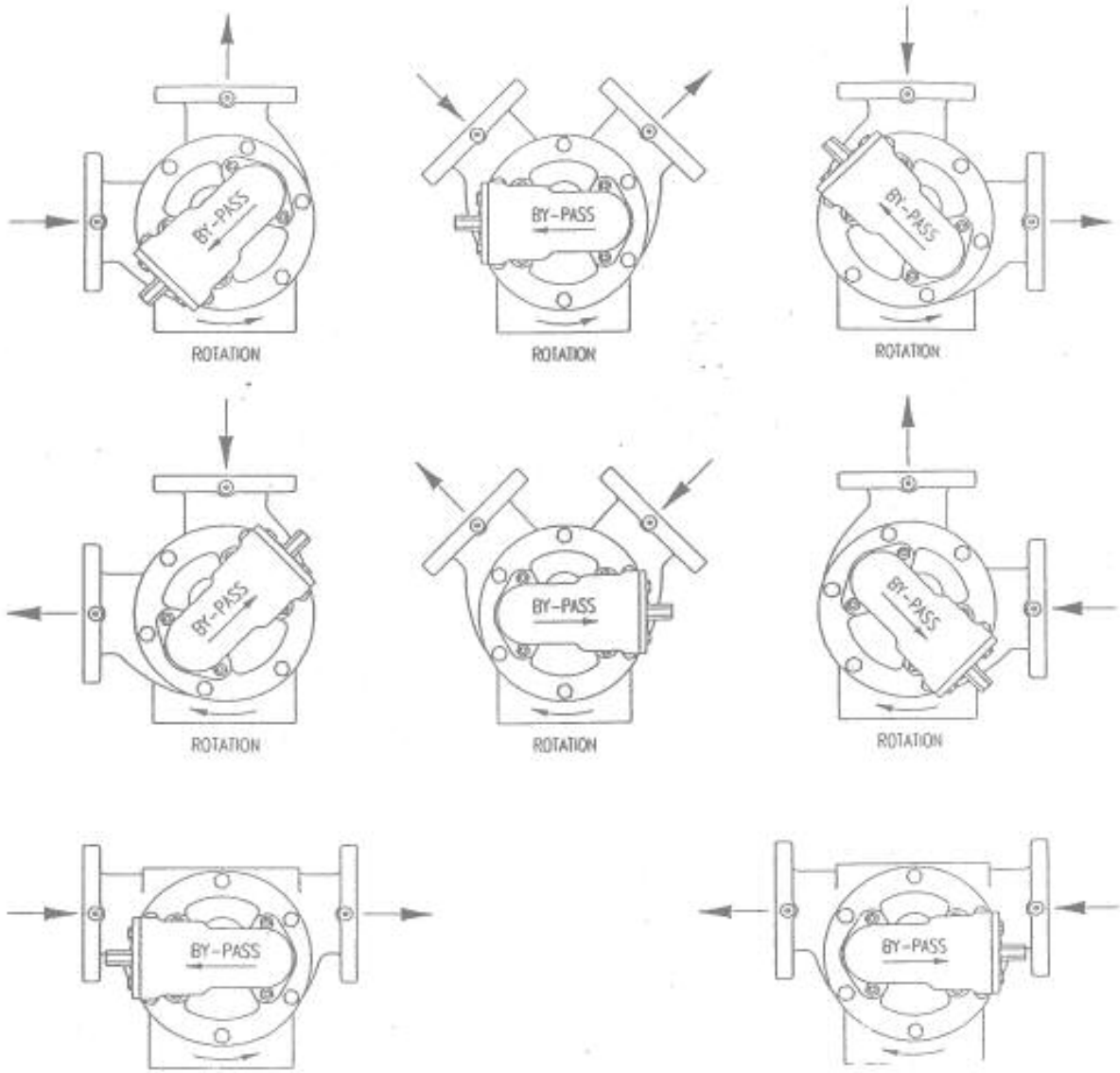
Dimensions (mm)



	A	D	CP	E	G	H	A K	L	O	R	S	V	Y	+Y AA
R35,40	120	80	312.8	47.5	12	∅12	30	247	180	65	90	40	100	37.7
R50	135	100	400	50	15	∅12	40	313.5	230	81.5	125	50	130	63
R65	180	132	442	70	18	∅14	50	347	297	91.5	140	60	165	68.5
R80	200	160	533	80	20	∅14	60	430	360	117	160	80	200	99
R105	220	180	633.5	90	22	∅18	60	505	405	135	180	110	225	115
R125	300	200	680	120	22	∅18	80	539	450	164	185	110	250	140

	B		C			D		E			F		
	X	W	X1	O1	Y1	O2	Y2	T	U	Z	M	F	Q
R35,40	65	80				160	80	21.5	19	6	150	110	DN40
R50	116	72				210	110	24.5	22	6	165	125	DN50
R65	140	100	187	279.5	160			31	28	8	185	145	DN65
R80	170	120	225	325	195			32	32	10	200	160	DN80
R105	195	140						45	42	12	220	180	DN100
R125	220	140						51.5	48	14	285	240	DN150

Alignment



All R series pumps are equipped with pump casings that can be rotated on the pedestal.
All casings can be rotated to 45° or 90° from the original position (R35 and R40 90° only)
By-pass must always point to the suction port.

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