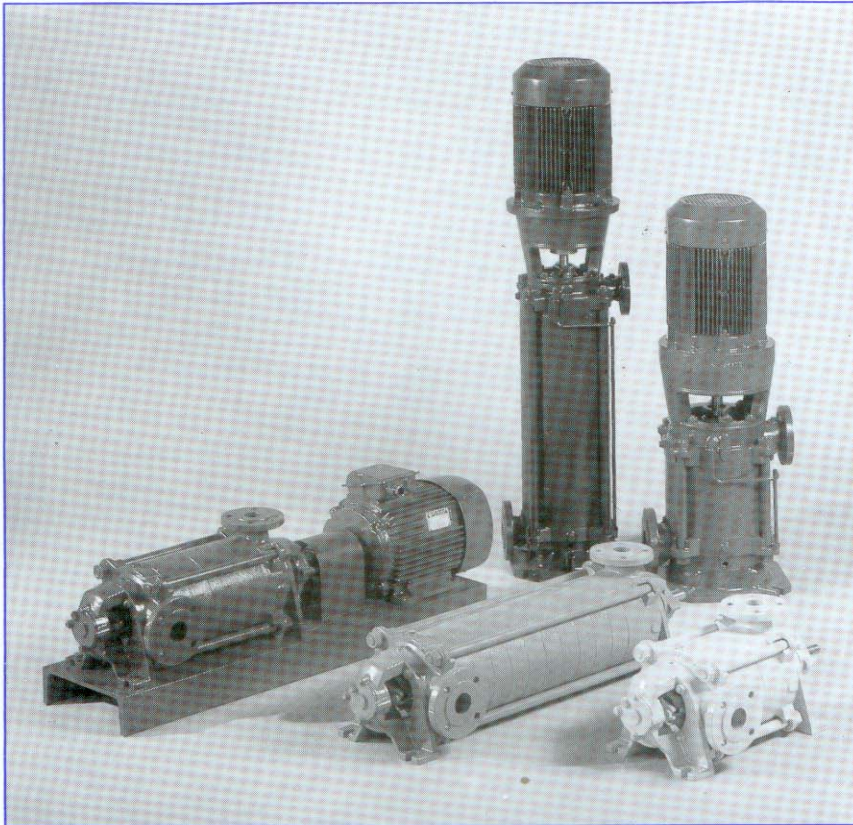


MULTI STAGE HIGH PRESSURE CENTRIFUGAL PUMPS

TYPE MS - E



Applications

In waterworks, in irrigation and sprinkler installation. As a recirculating pump for cooling and heating water and also as a fire fighting, boiler feed or pressure boosting pump.

The pumps are used for handling clean or only lightly contaminated media, for oils up to 150 mm²/sec (cts) and for non-aggressive liquids.

Hydraulic Data

Capacity up to 100 m³/h

Total head up to 400 m

Max casing pressure (suction pressure + shut-off head) 40 bar.

Temperature -20°C to 140°C

Maximum number of stages and motor size:

Design

The pump casing consists of a number of sectional stages, held together by large diameter tie bolts.

All impellers are balanced. Axial thrust is compensated for by balance holes in each impeller.

The pump shaft is protected against wear by sleeves through the stuffing box. It is supported in amply dimensioned, externally housed, heavy duty bearings.

All wearing parts such as impellers, diffusers, diffuser plates, and shaft sleeves are easily renewable and the glands are readily accessible.

The by-pass arrangement relieves the pressure in the delivery stuffing box and provides a perfect water seal in the suction stuffing box, even at maximum suction lift.

Sealing with packing or mechanical seal.

Pump type	Shaft 1.4021				Shaft 1.4401			
	Speed no. of stages	1450 RPM KW	Speed no. of stages	2900 RPM KW	Speed no. of stages	1450 RPM KW	Speed no. of stages	2900 RPM KW14
32 H+V	14 (14)	4 (7.5)	14 (10)	30 (30)	14 (14)	4 (7.5)	14 (10)	30 (30)
40 V	14 (14)	11 (15)	12 (7)	45 (45)	14 (14)	11 (15)	12 (7)	30 (37)
40 H	14 (14)	11 (15)	12 (7)	55 (55)	14 (14)	11 (15)	12 (7)	30 (37)
50 H+V	*13 (13)	18.5 (30)	8 (6)	75 (75)	*13 (13)	18.5 (30)	8 (6)	55 (55)
65 H+V	*11 (11)	30 (45)	7 (4)	110 (110)	*11 (11)	30 (45)	7 (4)	90 (110)

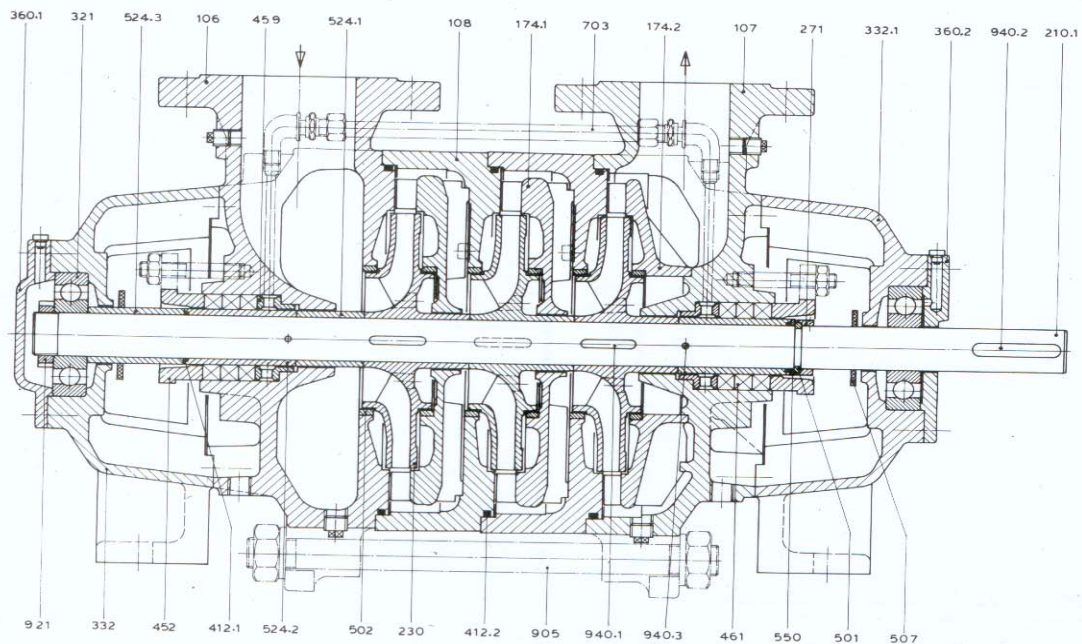
The values in the parentheses are valid for 60 Hz, 1750 and 3450 RPM respectively.

*a thrust bearing is used for vertical ("V") type with 5 or more stages (up to 16 stages).



DRAKOS - POLEMIS S.A.
PUMP MANUFACTURERS
Kryoneri - Athens Greece

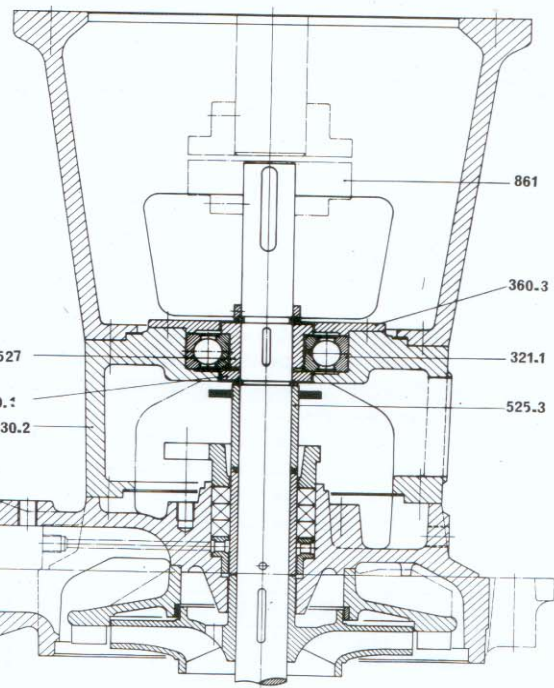
Form H / HORIZONTAL



MS-E 50V & MS-E 65V

For 5 stages or more

Form V / VERTICAL



Mechanical seal

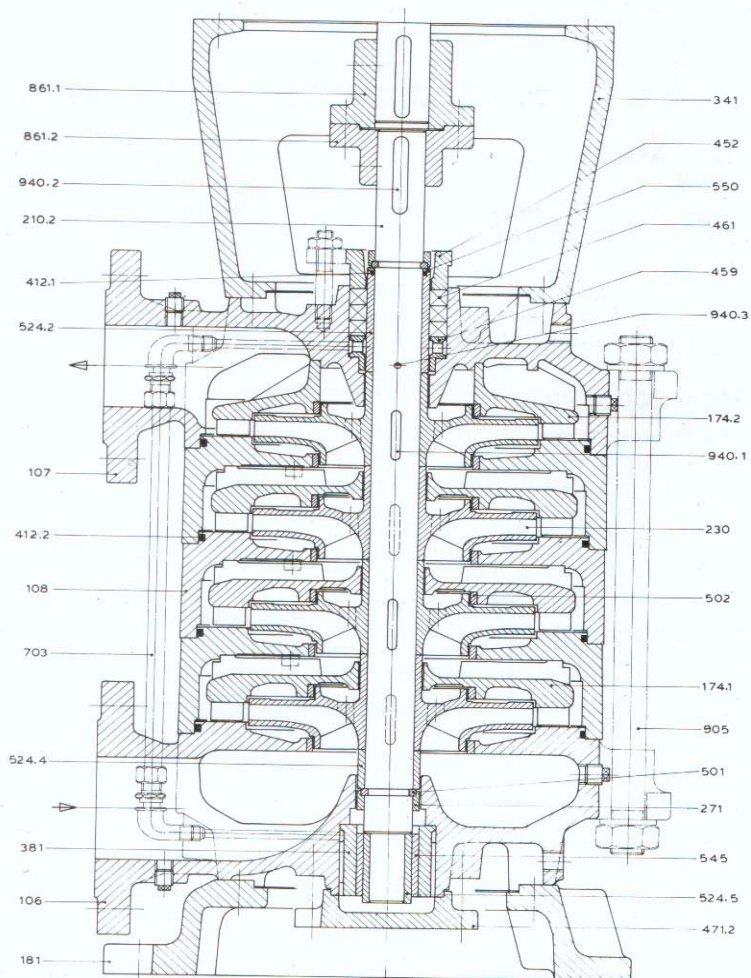
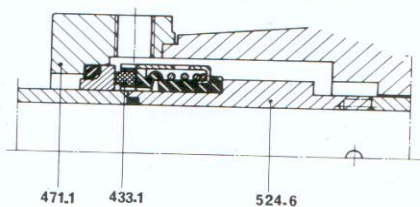
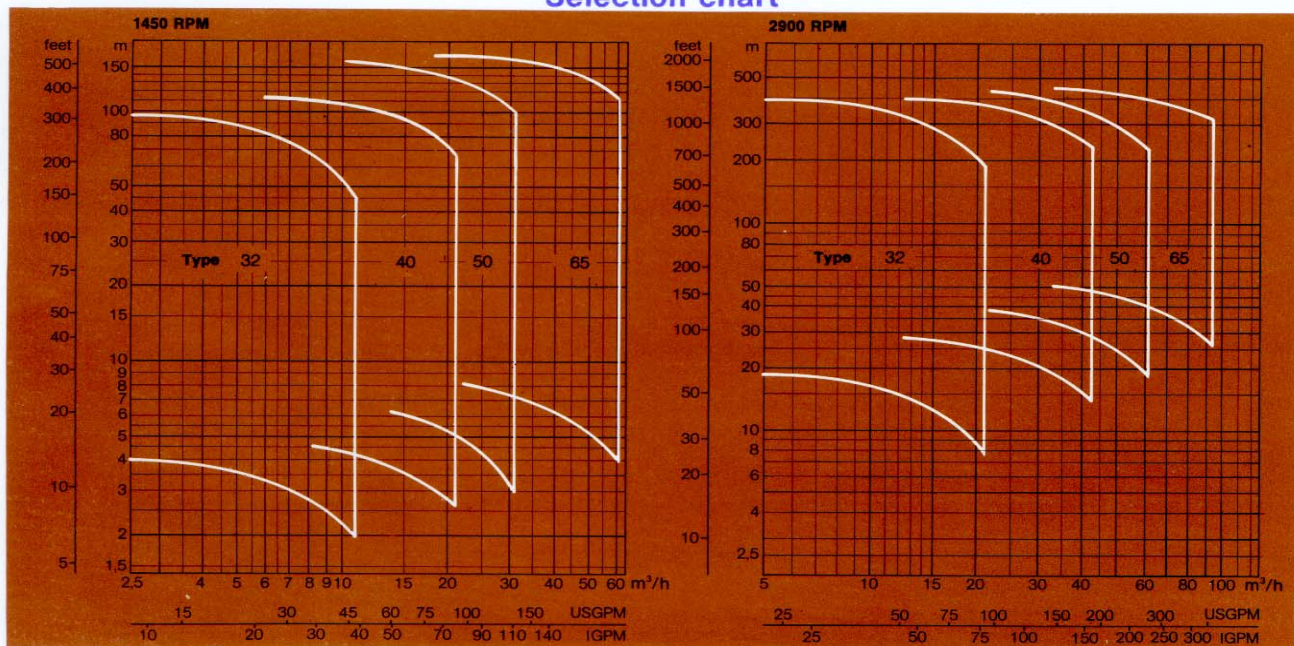


Table of materials for all forms

Part No	Part name	Construction Materials			Part No	Part name	Construction Materials		
		Standard	Special				Standard	Special	
106	Suction casing	CI	ZFB	SS 316	861.1	Coupling, motor half	CI	—	—
107	Delivery casing	CI	ZFB	SS 316	862.2	Coupling, Pump half	CI	—	—
108	Interstage casing	CI	ZFB	SS 316	905	Tie bolt	St	—	A4
174.1	Diffuser	CI	ZFB	SS 316	921	Lock nut	SS 316	—	—
174.2	Diffuser discharge casing	CI	ZFB	SS 316	940.1	Key	SS	—	—
181	Pump base	CI	—	SS 316	940.2	Key	St	—	SS
210.1	Shaft	SS 431	SS 316	SS 316	940.3	Pin	SS 316	—	—
210.2	Shaft	SS 431	SS 316	SS 316	Only for stuffing box with packing				
230	Impeller	ZFB	—	SS 316					
271	Locking ring	SS 316	—	—					
321	Grooved ball bearing	St	—	—					
332	Bearing housing	CI	—	SS 316	452	Gland	ZFB	—	SS 316
332.1	Bearing housing	CI	—	SS 316	459	Lantern ring	ZFB	—	SS316
341	Motor stool	CI	—	SS 316	461	Gland packing	TEFLON	—	—
360.1	Bearing cover	CI	—	SS 316	524.2	Shaft sleeve	ZFB	—	SS 316
360.2	Bearing cover	CI	—	SS 316	Only for mechanical seal				
381	Bearing cartridge	CI	ZFB	SS 316					
412.1	O - Ring	Rubber	—	—					
412.2	O -Ring	Rubber	—	—	433.1	Mechanical seal	Carbon/SIC	—	—
471.2	Seal Cover	CI	ZFB	SS 316	471.1	Seal cover	CI	ZFB	SS 316
501	Split ring	SS 316	—	—	524.6	Shaft sleeve	ZFB	—	SS 316
502	Wearing ring	ZFB	—	SS 316	Only for axial thrust bearing				
507	Thrower ring	Plastic	—	—					
524.1	Shaft sleeve	ZFB	—	SS 316					
524.3	Shaft sleeve	ZFB	—	SS 316	321.1	Grooved ball bearing	St	—	—
524.4	Shaft sleeve	ZFB	—	SS 316	330.2	Bearing housing	CI	—	—
524.5	Shaft sleeve	SS 420	—	SS 316	360.3	Bearing cover	CI	—	—
545	Bearing bush	ZFB	—	TC	525.3	Distance sleeve	ZFB	—	—
550	Distance ring	SS 316	—	—	527	Locating sleeve	SS 420	—	—
703	Bypass pipe	ST	SS 316	SS 316	550.1	Distance ring	SS 420	—	—
					861	Flexible couplings	GGG	—	—

Selection chart



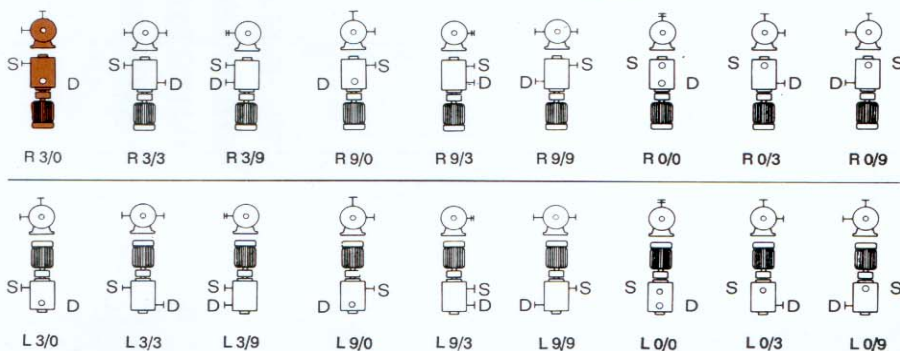
Form H / HORIZONTAL

Installation

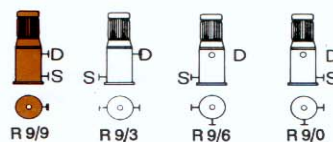
Form V / VERTICAL

Pump for clockwise rotation as seen from driver.

Branch position
Unless otherwise specified, branch arrangement R 3/0 will be supplied.



Branch arrangement

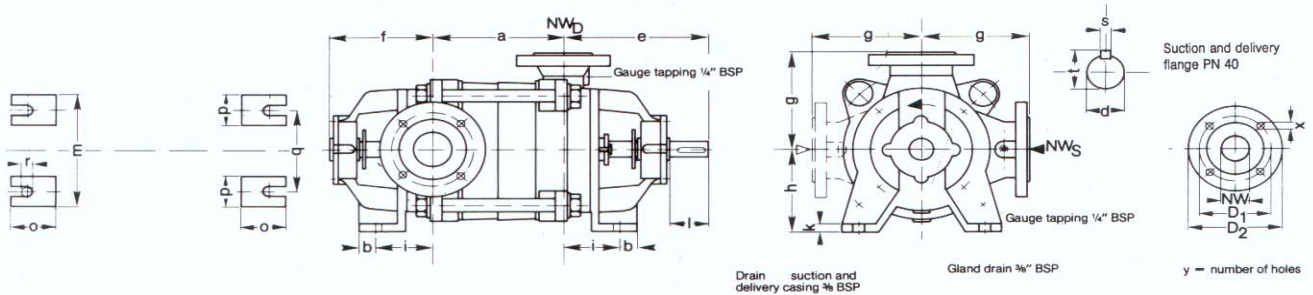


In the absence of specific instructions pumps are supplied with the following branch arrangements:
1 and 2 stage: as R 9/3, i.e. opposite to each other.
3 stages and up: as R 9/9, i.e. delivery branch above the suction branch.

Pump for counter - clockwise rotation as seen from driver.

Parallel branches are only possible with 3 or more stages (model 65, 2 stages)

Form H



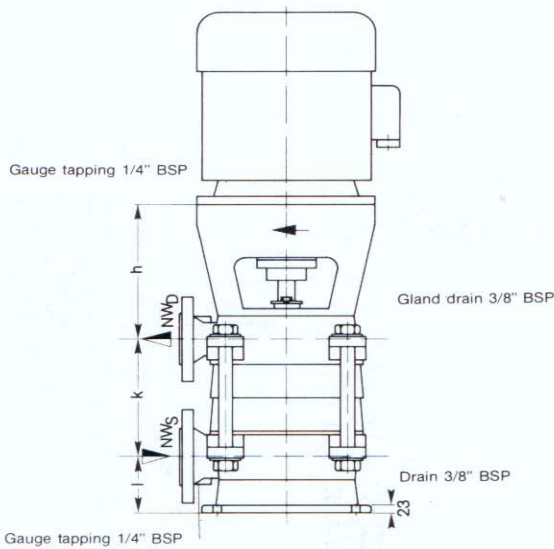
Dimension "a" with number of stages

Type	NW _S	NW _D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	b	e	f	g	h	i	k	m	q	o	p	r	l	d	t	s
32	40	32	83	131	179	227	275	323	371	419	467	515	563	611	659	707	20	215	150	165	132	78	16	260	200	60	60	14	65	25	28	8
40	50	40	90	145	200	255	310	365	420	475	530	585	640	695	750	805	20	215	150	170	132	78	16	260	200	60	60	14	65	25	28	8
50	65	50	102	169	236	303	370	437	504	571	638	705	772	839	906		30	250	180	190	160	98	16	280	220	80	60	18	70	30	33	8
65	80	65	125	200	275	350	425	500	575	650	725	800	875				30	275	195	210	180	108	16	330	270	80	60	18	80	35	38	10

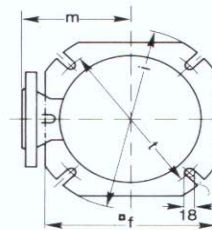
Shaft end

NW	D ₁	D ₂	x	y
32	100	140	18	4
40	110	150	18	4
50	125	165	18	4
65	145	185	18	8
80	160	200	18	8

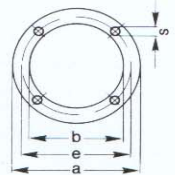
Flange connections
to DIN 2501 page 1 PN 40



Form V

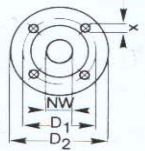


Motor stool
DIN 42948



z = number of holes

Suction and delivery
flange PN 40



y = number of holes

Dimension "K" with number of stages

Type	NW _s	NW _D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	q	i	l	m	t	a	b	e	h	s	z
32	40	32	83	131	179	227	275	323	371	419	467	515	563	611	659	707	300	350	105	165	300	200	130	165	220	M10	4
																						250	180	215	230	M12	4
																						300	230	265	250	M12	4
																						350	250	300	280	18	4
																						400	300	350	280	18	4
40	50	40	90	145	200	255	310	365	420	475	530	585	640	695	750	805	300	350	105	170	300	200	130	165	220	M10	4
																						250	180	215	230	M12	4
																						300	230	265	250	M12	4
																						350	250	300	280	18	4
																						400	300	350	280	18	4
																						450	350	400	280	18	8
50	65	50	102	169	236	303	370	437	504	571	638	705	772	839	906		350	400	120	190	350	250	180	215	245*	M12	4
																						300	230	265	265*	M12	4
																						350	250	300	295*	M16	4
																						400	300	350	295*	18	4
																						450	350	400	295*	18	8
																						550	450	500	325*	18	8
65	80	65	125	200	275	350	425	500	575	650	725	800	875				350	400	130	210	350	250	180	215	245*	M12	4
																						300	230	265	265*	M12	4
																						350	250	300	295*	M16	4
																						400	300	350	295*	18	4
																						450	350	400	295*	18	8
																						550	450	500	325*	18	8
																						660	550	600	325*	23	8

*With axial thrust bearing 118 mm must be added
The technical data of this leaflet are subject to change without notice.