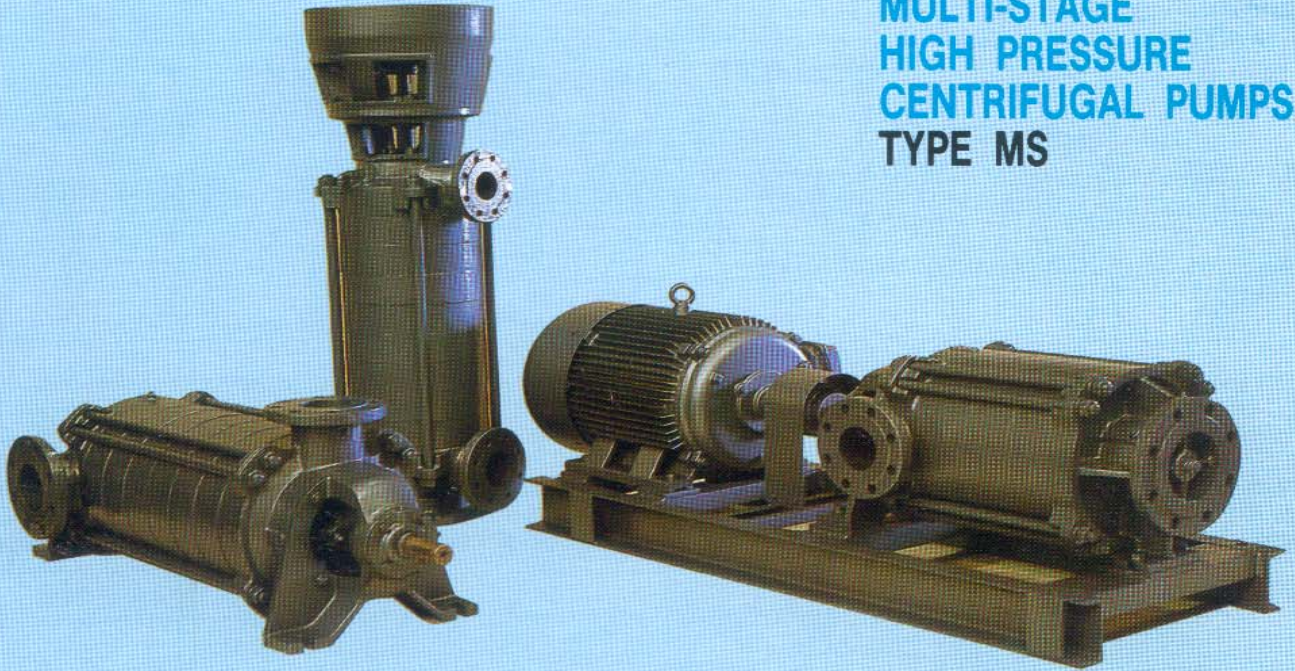


# MULTI-STAGE HIGH PRESSURE CENTRIFUGAL PUMPS TYPE MS



## Applications

In waterworks, in irrigation and sprinkler installations. As a recirculating pump for cooling and heating water and also as a fire-fighting, boiler feed or pressure boosting pump. The MS type pumps are used for handling clean or only lightly contaminated media, for oils up to 150 mm<sup>2</sup>/sec (cst) and for non-aggressive liquids.

## Hydraulic Data

- Capacity up to 550 m<sup>3</sup>/h
- Total head up to 300 m
- Temperature -20° C to 140° C.
- Max casing pressure of 30 bar (suction pressure + shut-off head).

## Max. permissible no. of stages

Pump models	1450 RPM	2900 RPM
MS 80 L - H, V, AS	9 (6)	2
MS 80 H - H, AS	13 (9)	4
MS 100 H, AS	10 (6)	3
MS 100 V	8	1
MS 125 H, AS	8 (5)	
MS 125 V	6	
MS 150 H, AS	5 (3)	
MS 150 V	3	

The values in the brackets are valid for 60 Hz, 1750 RPM

## 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. The pump features bronze wearing rings on both sides of the impellers. All wearing parts such as impellers and shaft sleeves are easily replaceable and the glands are readily accessible. The by-pass arrangement relieves the pressure on the delivery side stuffing box and provides a perfect water seal in the suction stuffing box, even at maximum suction lift. Gland packing or mechanical seal can be selected for sealing  
Branches: PN 16 DIN 2533  
PN 40 DIN 2535

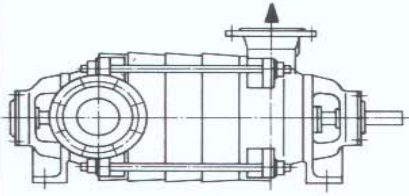


# DRAKOS-POLEMIS PUMPS



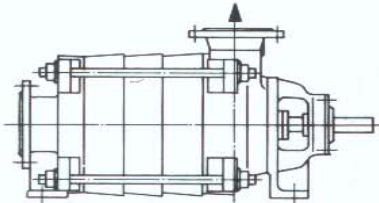
## Available configurations

### Form H



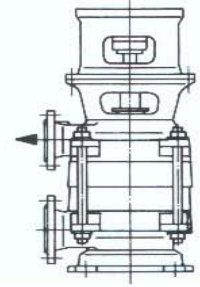
Horizontal pump with radial branches. Shaft supported in suction and delivery side roller bearings. Bearing lubrication with grease. Delivery side drive end standard. Suction side drive end optional. Shaft sealing on both sides.

### Form AS



Horizontal pump with axial suction branch and radial delivery branch. Shaft supported in bronze bearing on suction side and in ball bearings on delivery side. Bearing lubrication with grease. Delivery side drive end and shaft sealing.

### Form V



Vertical pump with radial branches. Shaft supported in bronze journal bearing on suction side and in ball bearing on delivery side. Bronze journal bearing lubrication with pumped liquid. Ball bearing lubrication with grease. Delivery side drive end and shaft sealing. Pump and motor shaft connected with a flexible coupling.

## Maximum transmissible power

$$P \text{ (KW)} = a \times N \text{ (RPM)}$$

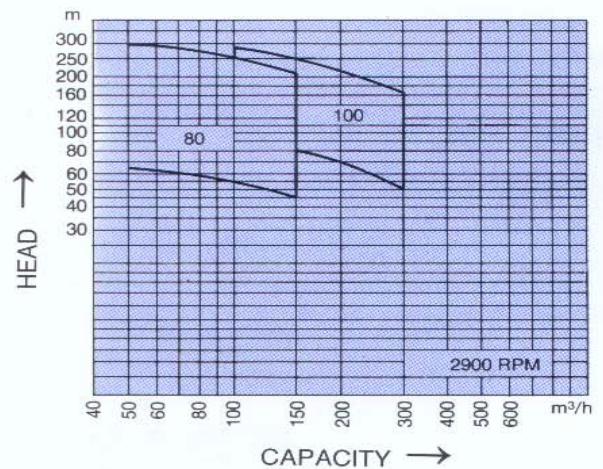
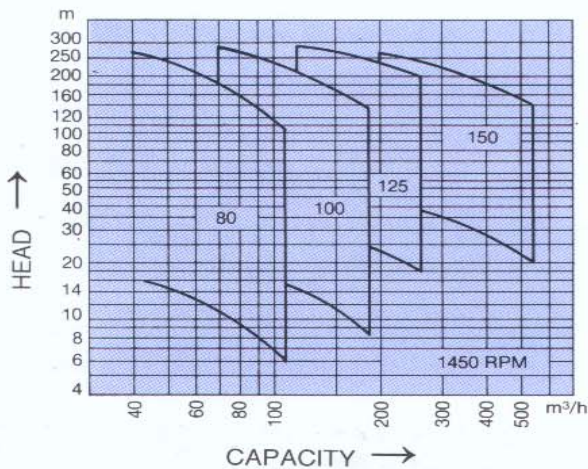
Shaft-end diameter	Coefficient a		
	1.0632	1.4021	1.4401
32		0,044	0,024
35		0,060	0,033
40	0,066	0,095	0,053
42	0,080	0,116	0,064
45	0,094	0,136	0,075
50	0,133	0,190	0,107
60	0,206	0,294	0,165

For diesel engine driver above coefficients must be reduced by 20%.

## Bearing type

Pump model	Suction side	Delivery side
MS 80 L - H	6407 C3	6407 C3
MS 80 L - AS		6407 C3
MS 80 L - V	2x7308 B.UA	6310 ZZ
MS 80 H - H		6308 C3
MS 80 H - AS		2x7308 B.UA
MS 100 H	2x7309 B.UA	6309 C3
MS 100 AS, V	2x7311 B.UA	2x7309 B.UA
MS 125 H		6311 C3
MS 125 AS, V	2x7313 B.UA	2x7311 B.UA
MS 150 H		6313 C3
MS 150 AS, V		2x7313 B.UA

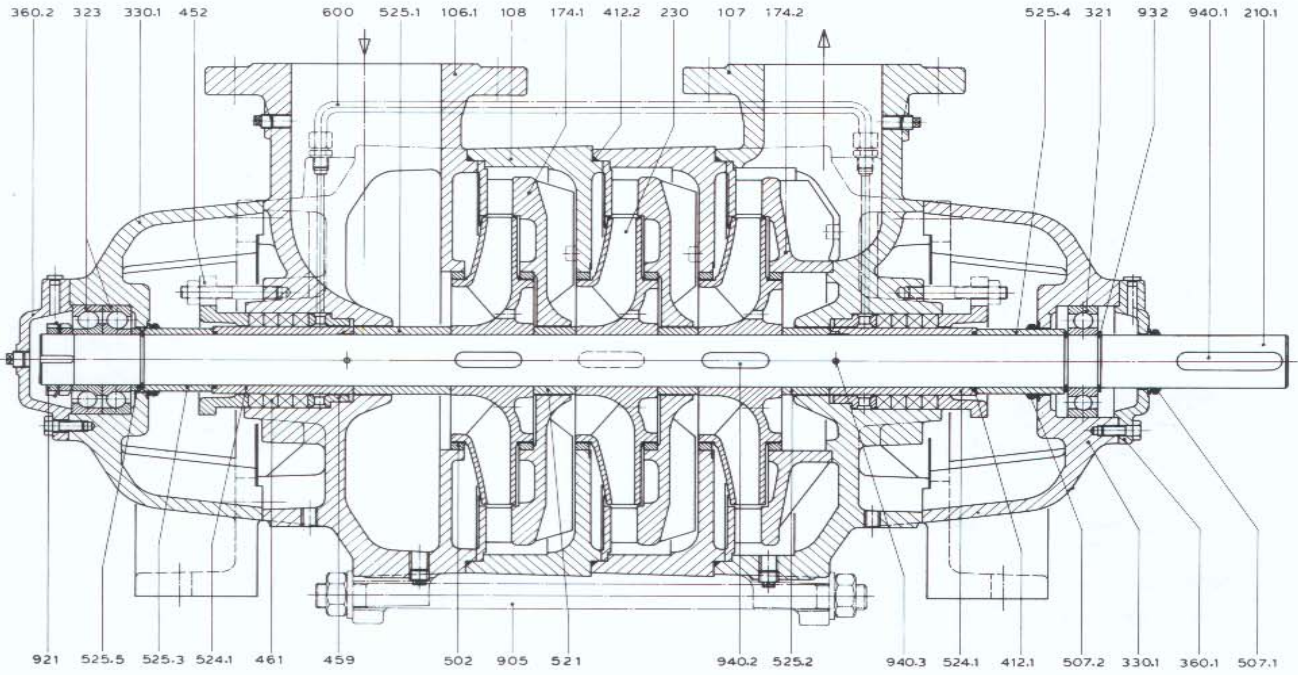
## Performance range



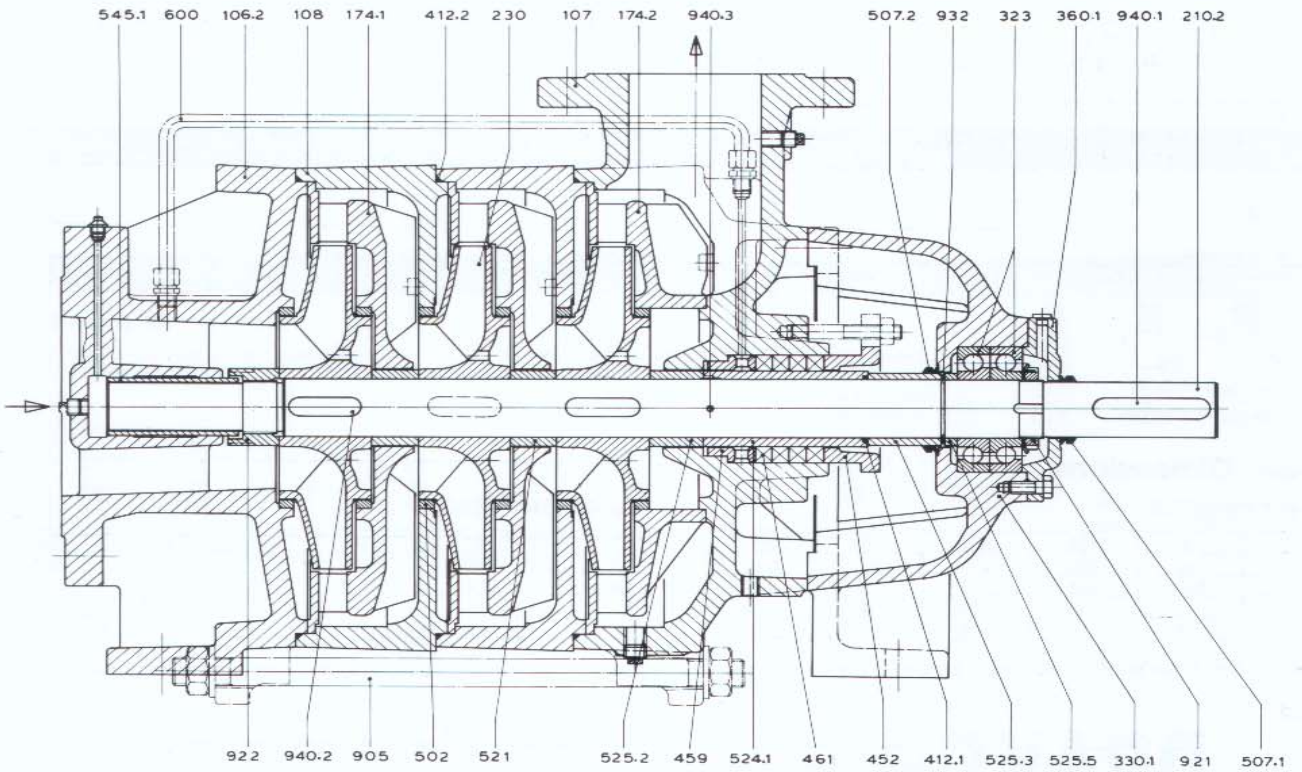


# SECTIONAL VIEWS

## Form H

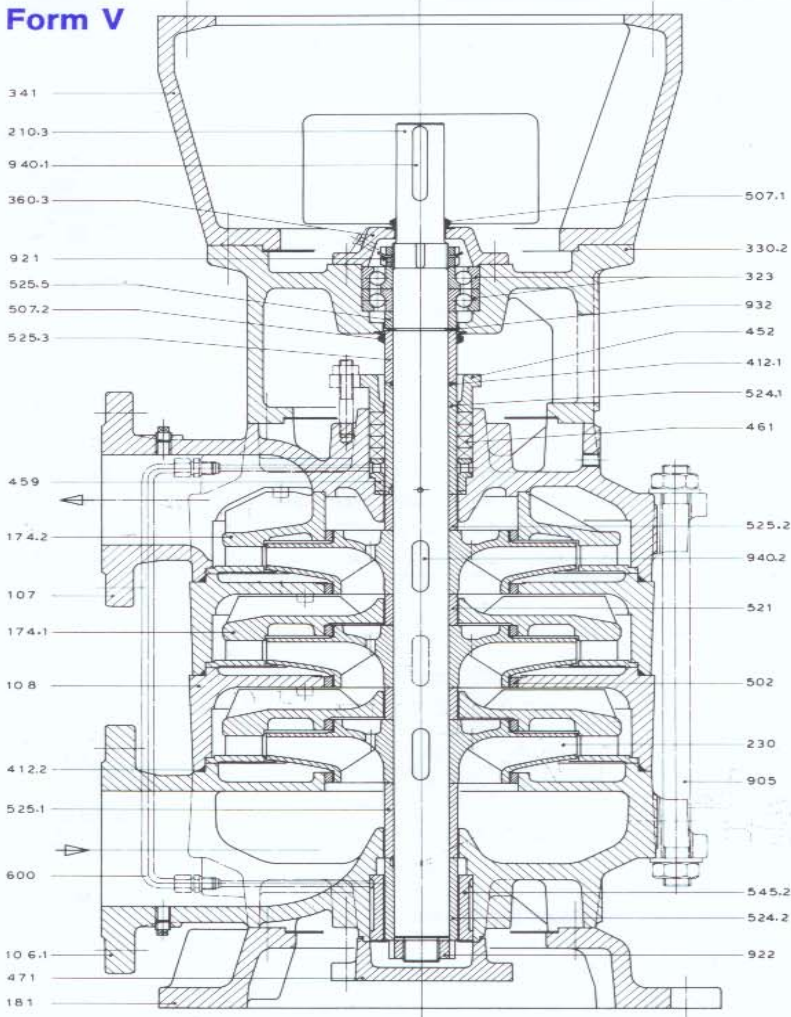


## Form AS



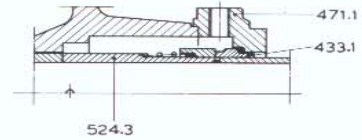
# SECTIONAL VIEWS

## Form V

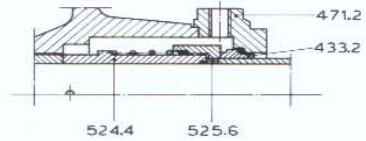


## Mechanical seal

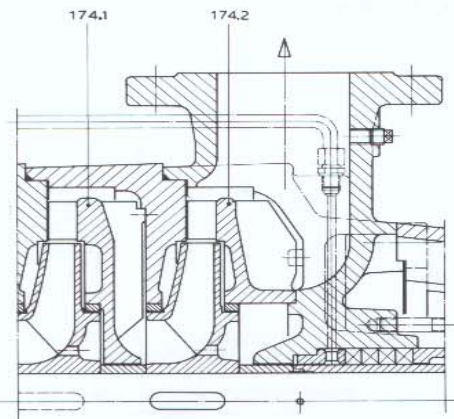
### • Unbalanced



### • Balanced



## MS 80



## Table of materials for all forms

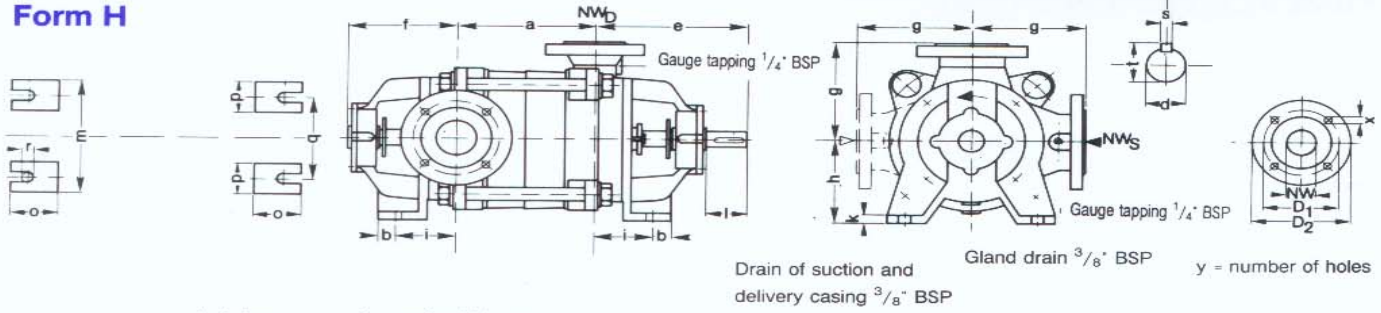
Part No	Part name	Construction Materials		Part No	Part name	Construction Materials	
		Standard	Special			Standard	Special
106.1	Suction casing	CI	G-CuSn 10	525.5	Distance ring	1.4021	
106.2	Suction casing	CI	G-CuSn 10	545.1	Bearing bush	G-CuSn 12	
107	Delivery casing	CI	G-CuSn 10	545.2	Bearing bush	G-CuSn 10	
108	Interstage casing	CI	G-CuSn 10	600	Axial balance pipe	St	1.4301
174.1	Diffuser	CI	G-CuSn 10	905	Tie bolt	St	
174.2	Diffuser discharge casing	CI	G-CuSn 10	921	Shaft locking nut	St	
181	Pump base	CI	G-CuSn 10	922	Impeller nut	G-CuSn 12	
210.1	Shaft	1.0632	1.4401	932	Circlip	1.4401	
210.2	Shaft	1.0632	1.4401	940.1	Key	St	
210.3	Shaft	1.0632	1.4401	940.2	Key	1.4571	1.4571
230	Impeller	CI	G-CuSn 10	Only for stuffing box with packing rings			
321	Grooved ball bearing	St		452	Gland	CI	G-CuSn 10
323	Thrust ball bearing	St		459	Lantern ring	CI	G-CuSn 12
330.1	Bearing housing	CI		461	Gland packing	TEFLON	
330.2	Bearing housing	CI		524.1	Shaft sleeve	G-CuSn 12	1.4401
341	Motor stool	CI/St		Only for unbalanced mechanical seal			
360.1	Bearing cover	CI		433.1	Mechanical seal	Cr/Carbon	SiC/Carbon
360.2	Bearing cover	CI		471.1	Seal cover	CI	G-CuSn 10
360.3	Bearing cover	CI		524.3	Shaft sleeve	G-CuSn 12	1.4401
412.1	O-ring	Rubber		Only for balanced mechanical seal			
412.2	O-ring	Rubber		433.2	Mechanical seal	SiC/Carbon	SiC/SiC
471	Seal cover	CI	G-CuSn 10	471.2	Seal cover	CI	G-CuSn 10
502	Wearing ring	G-CuSn 12		524.4	Shaft sleeve	1.4021	1.4401
507.1	Thrower ring	Rubber		525.4	Shaft sleeve	G-CuSn 12	
507.2	Thrower ring	Rubber		525.6	Distance sleeve	G-CuSn 12	
521	Distance Sleeve	G-CuSn 12	1.4401				
524.2	Shaft sleeve	1.4021					
525.1	Distance Sleeve	G-CuSn 12					
525.2	Distance Sleeve	G-CuSn 12					
525.3	Distance Sleeve	G-CuSn 12					
525.4	Distance Sleeve	G-CuSn 12					

Other materials such as cast stainless steel 1.4408 are also available on request for the wetted components.



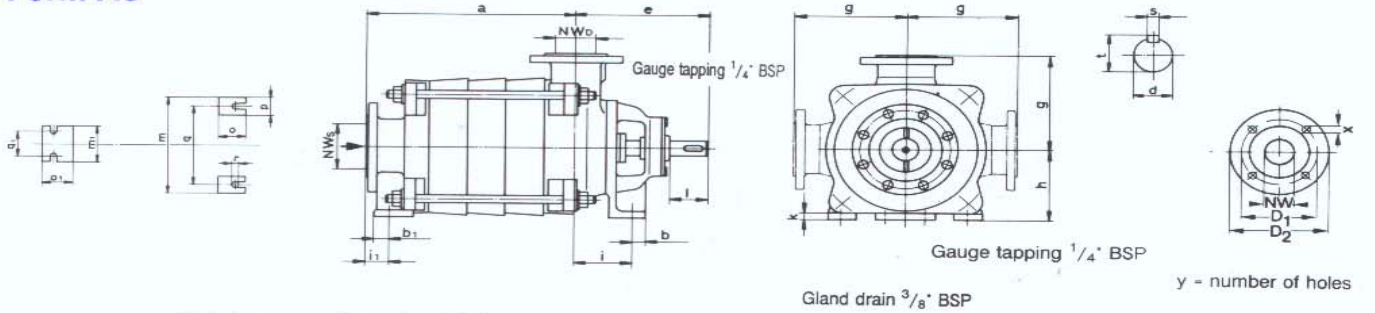
# DIMENSIONS

## Form H



Model	1 st stage			a for each add'l stage																
	NWs	NW <sub>D</sub>	a	e	f	g	h	i	b	k	m	q	o	p	r	l	d	t	s	
MS 80 L	100	80	140	83	290	205	240	180	123	30	16	330	270	80	60	18	85	35	38	10
MS 80 H	100	80	140	83	337	250	240	180	123	30	16	330	270	80	60	18	100	40	43	12
MS 100	125	100	175	104	397	305	280	225	155	35	20	420	340	100	80	20	110	45	48,5	14
MS 125	150	125	205	130	470	345	340	280	75	40	22	540	420	120	120	25	110	50	53,5	14
MS 150	200	150	235	150	510	395	380	350	85	45	25	640	500	140	140	27	110	60	64	18

## Form AS

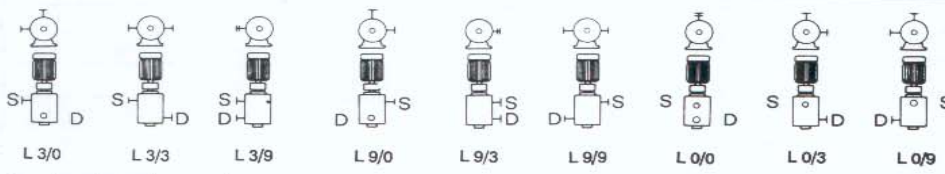
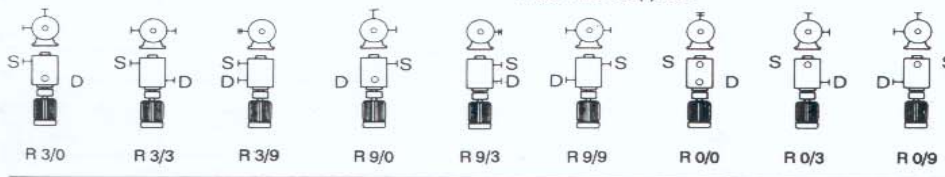


Model	1 st stage			a for each add'l stage																				
	NWs	NW <sub>D</sub>	a	e	g	h	i	b	i1	b1	k	m	q	m1	q1	o	o1	p	r	l	d	t	s	
MS 80 L	125	80	210	83	290	240	180	123	30	50	35	16	330	270	125	85	80	85	60	18	85	35	38	10
MS 80 H	125	80	210	83	337	240	180	123	30	50	35	16	330	270	125	85	80	85	60	18	100	40	43	12
MS 100	150	100	266	104	397	280	225	155	35	75	40	20	420	340	160	120	100	100	80	20	110	42	45	12
MS 125	200	125	295	130	470	340	280	75	40	82	35	22	540	420	160	110	120	100	120	25	110	50	53,5	14
MS 150	200	150	300	150	510	380	350	85	45	75	45	25	640	500	200	140	140	120	140	27	110	60	64	18

# Installation

## Form H

Pump for clockwise rotation as seen from driver side.



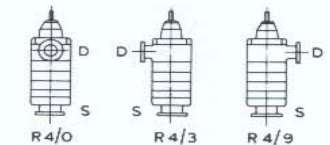
Counter-clockwise rotation as seen from driver side.

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

Branches in parallel on the same side only possible with 2 or more stages.

## Form AS

**Branch arrangement**  
Standard construction R4/0

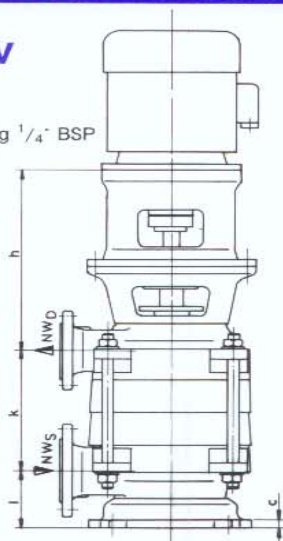


Clockwise rotation as seen from driver side

# DIMENSIONS

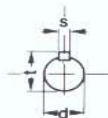
## Form V

Gauge tapping  $\frac{1}{4}$ " BSP

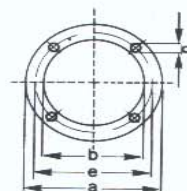


Gland drain  $\frac{3}{8}$ " BSP

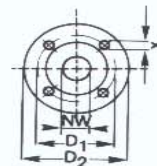
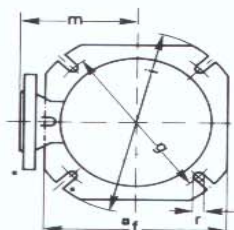
Drain  $\frac{3}{8}$ " BSP



motor stool flange  
DIN 42948



z - number of holes



y - number of holes

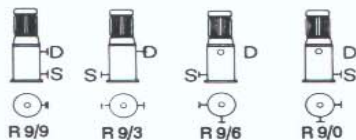
1 st stage      k for each add'l stage

Model	NW <sub>S</sub>	NW <sub>D</sub>	k	a <sub>f</sub>	i	c	l	m	g	r	d	t	s	a	b	e	h	n	z	
MS 80	100	80	140	83	350	400	23	145	240	350	18	32	35	10	350	250	300	465	19	4
															400	300	350	465	19	4
															450	350	400	495	19	8
															550	450	500	495	19	8
MS 100	125	100	175	104	450	510	25	170	280	450	23	42	45	12	350	250	300	465	19	4
															400	300	350	465	19	4
															450	350	400	495	19	8
															550	450	500	495	19	8
															660	550	600	495	22	8
660	550	600	525	22	8															
MS 125	150	125	205	130	600	680	28	205	340	600	27	50	53,5	14	450	350	400	615	19	8
															550	450	500	615	19	8
															660	550	600	645	22	8
MS 150	200	150	235	150	600	680	28	230	380	600	27	60	64	18	550	450	500	655	19	8
															660	550	600	685	22	8

## Installation

### Form V

Branch arrangement



In the absence of specific instructions pumps are supplied with the following branch arrangements:  
1 stage: R 9/3  
2 or more stages: R 9/9

### Flange Dimensions

PN 16 DIN 2533

NW	80	100	125	150	200
D1	160	180	210	240	295
D2	200	235	270	300	375
x	18	18	18	23	23
y	8	8	8	8	12

PN 40 DIN 2535

NW	80	100	125	150	200
D1	160	190	220	250	320
D2	200	235	270	300	375
x	18	23	27	27	30
y	8	8	8	8	12

The technical data in this brochure are subject to change without prior notice and should not be used for construction without the consent of the manufacturer.

8M.04.9/3.000

# DRAKOS-POLEMIS PUMPS

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