



**Multistage centrifugal pump
Pump model MDH, MDE, MDV**

50HZ or 60HZ





Introduction

MDV, MDE, MDH series multistage pumps utilize a modular design concept which maximizes component interchangeability. As such, multiple design configurations can be engineered to meet customer requirements without compromise to repair parts inventories.

Close radial type impeller designed for casing wear rings on both sides. Axial thrust is minimized by balance holes for minimum bearing loads and maximum bearing lifetime.

Diffusers separated from stage casings, easily exchangeable. Balanced radial forces, minimum shaft deflection, minimum vibrations.

Pump can be with more than one discharge-multioutlet design
Multistage pump in multi-outlet design can be fitted with a random number of discharge branches. The pumps are mostly used in fire fighting application to serve different pressure levels
Multi-outlet configurations are available for all horizontal and vertical MD designs.

1.Applications

Water supply
Booster system
Irrigation
Fire fighting
Cooling circuits
Boiler feed
Condensate

2.Handle liquid

Pure as well as slightly contaminated media
Cold and hot water
Oil suspensions
Caustic solutions
Brine

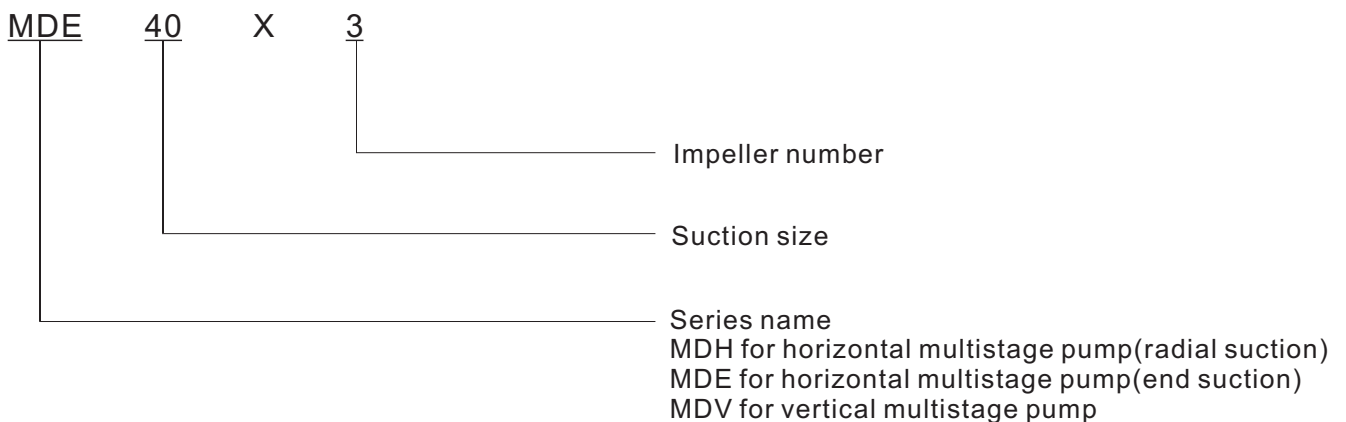
3.Technical data

a.Max liquid temperature
120°C(250 F)

b.Max casing pressure
48 bar

c.Capacity: up to 340m³/h
Head: up to 500m
Max rotate speed:3600rpm

Model Code

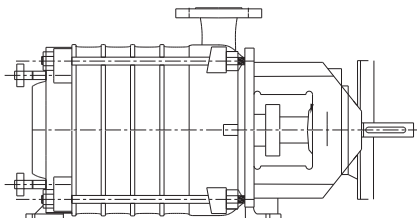


Modular system

Size	Discharge branch Dnd(mm)	Suction branch Dnd(mm)	Capacity Q(m ³ /h)	
			50HZ	60HZ
MD32	40	65	30	36
MD40			42	50
MD50	65	100	70	80
MD65			90	110
MD80	100	125	150	180
MD100			200	240
MD125	125	150	240	280
MD150			300	360

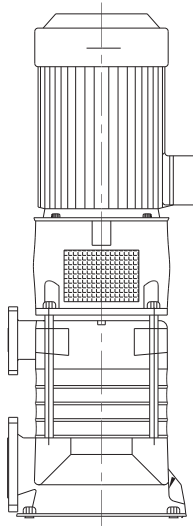
MATERIALS OF CONSTRUCTION

	Bronze Fitted	Cast iron	Stainless steel or Duplex
Casing	Cast iron	Cast iron	Stainless steel or Duplex
Impeller	Bronze	Cast iron	Stainless steel or Duplex
Wear Ring	Cast iron	Cast iron	Stainless steel or Duplex
Shaft	Stainless steel	Stainless steel	Stainless steel or Duplex
Shaft Nut	Stainless steel	Stainless steel	Stainless steel or Duplex
Shaft Sleeve	Stainless steel	Stainless steel	Stainless steel or Duplex
Lantern Ring	Cast iron	Cast iron	Cast iron
Gland	Cast iron	Cast iron	Cast iron



Model: MDE

End suction type, discharge branch radially upwards. Drive end at discharge side. Thrust bearing at drive side, grease lubrication, medium lubricated side bearing between first and second stage. Inducer design available for low NPSH application.



Model: MDV

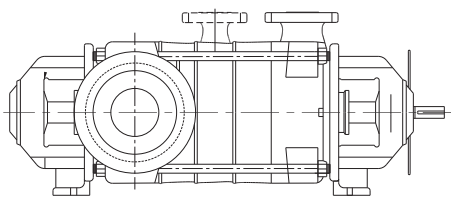
Vertical close coupled design using standard IEC motors .
The pump shaft is direct couple to the motor shaft.

Vertical design with separate thrust bearing and flexible coupling between motor and pump shaft. Standard IEC motor for 90 KW and larger

All axial forces taken up by motor bearing

Medium lubricated slide bearing in suction bearing

Vertical configuration with separate thrust, grease lubrication with grease nipples



Model: MDH

Drive end discharge, clockwise rotation
(Anti clockwise rotation available)

Branch directions :suction left view from drive end, discharge radially upwards

Branches can be adjust to meet requirements in 90 degree increments

Horizontal shaft with bearing at both ends , drive-ends at discharge side(standard), rotation clockwise, with suction branch left and discharge branch radially upwards, grease lubrication.

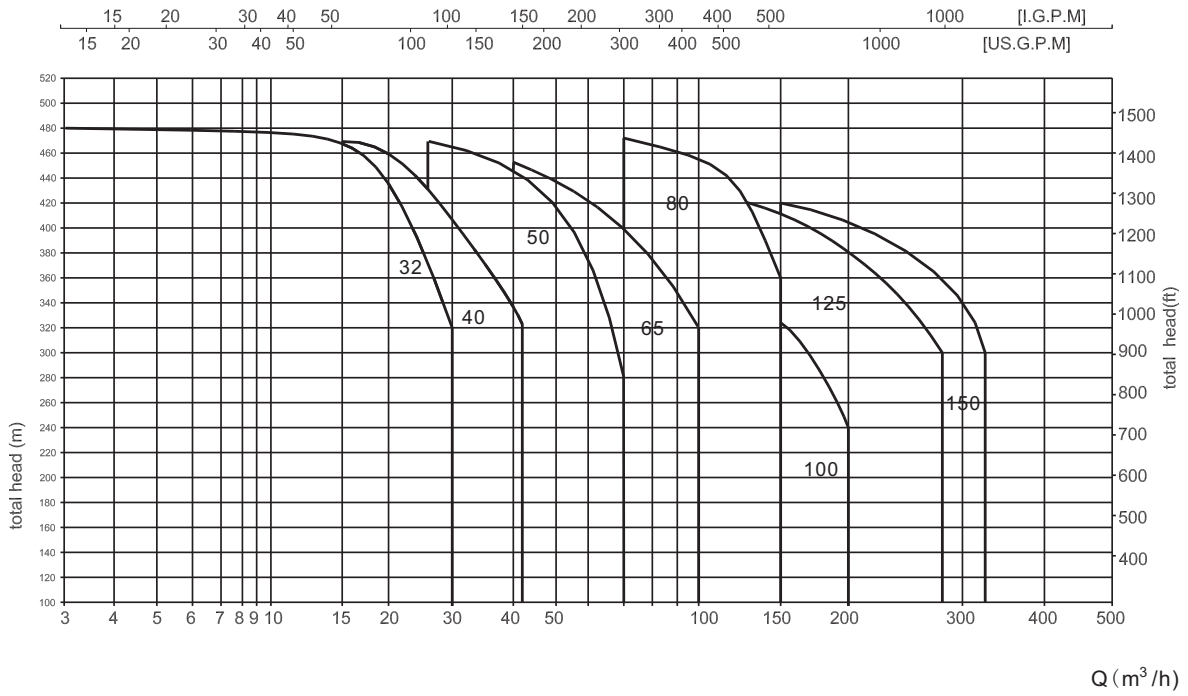
Counter clockwise rotation and other flange orientations available as an option

Drive end thrust bearing, double row bearing. Suction side ball bearing, grease lubrication with grease nipples

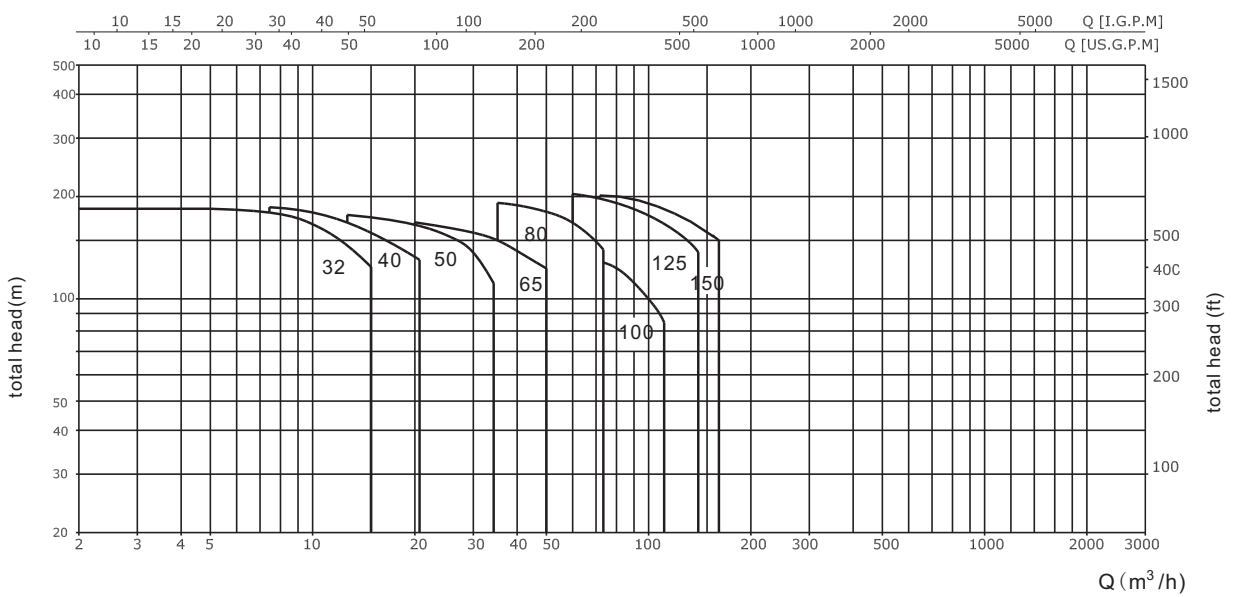
Thermal expansion of the pump rotor will be balanced internally without affecting the shaft alignment.

SELECTION CHARTS

2950RPM

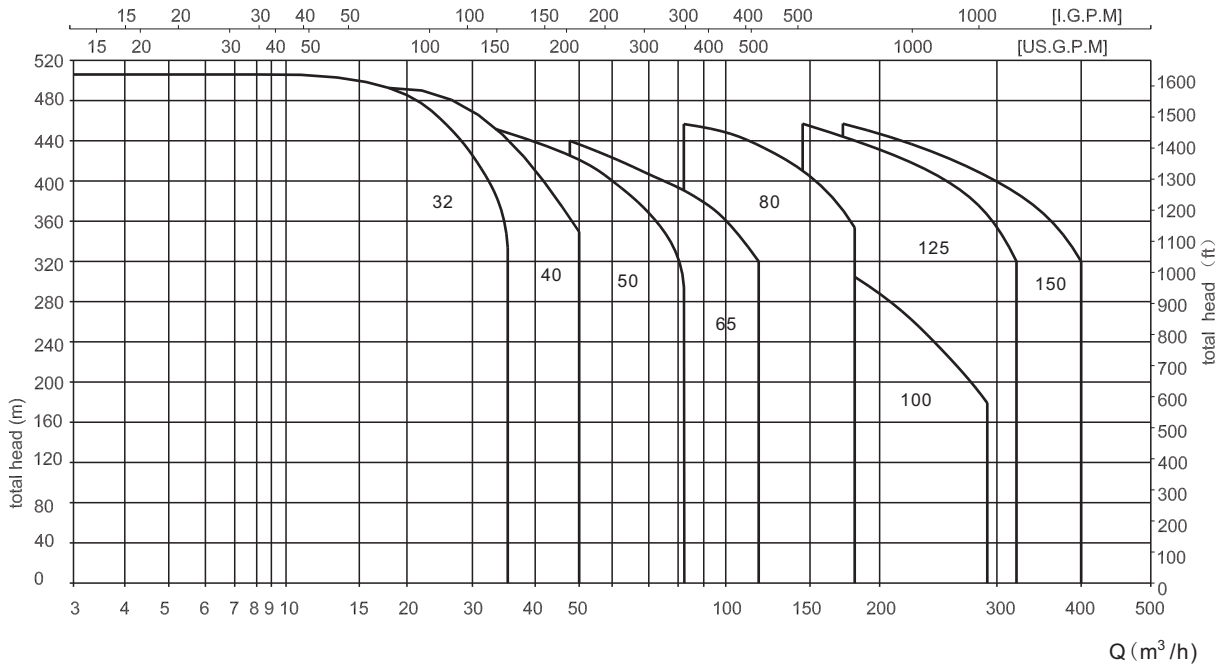


1450RPM

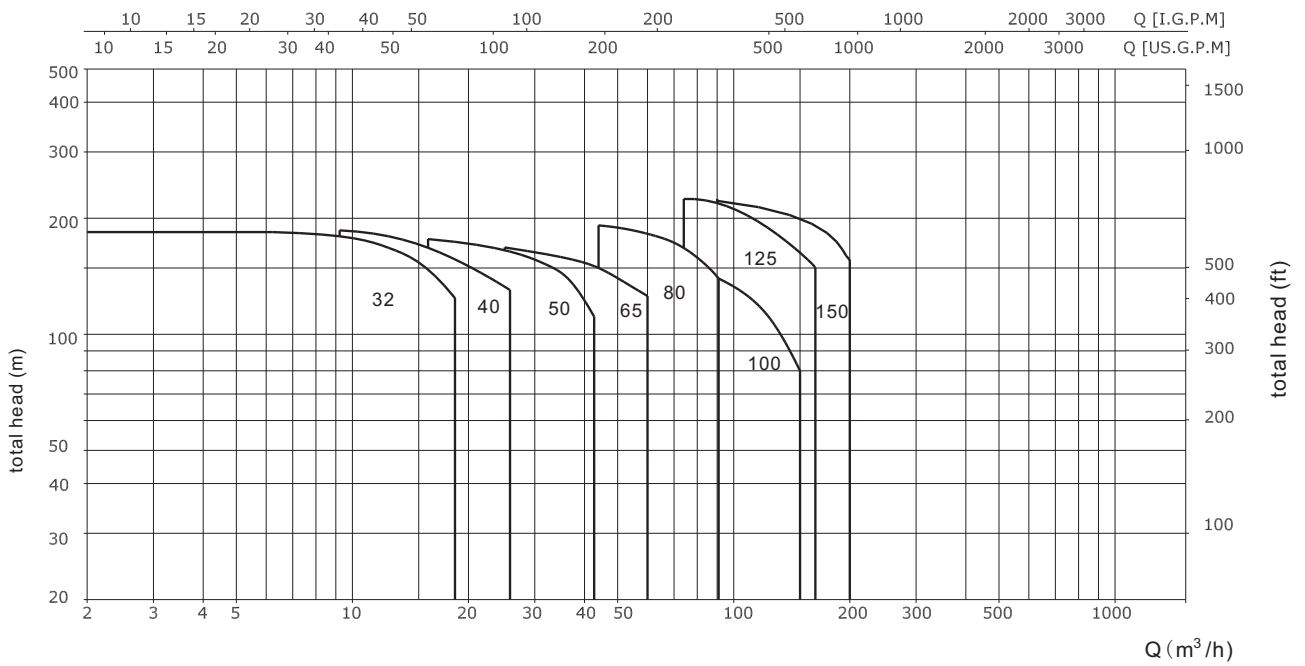


SELECTION CHARTS

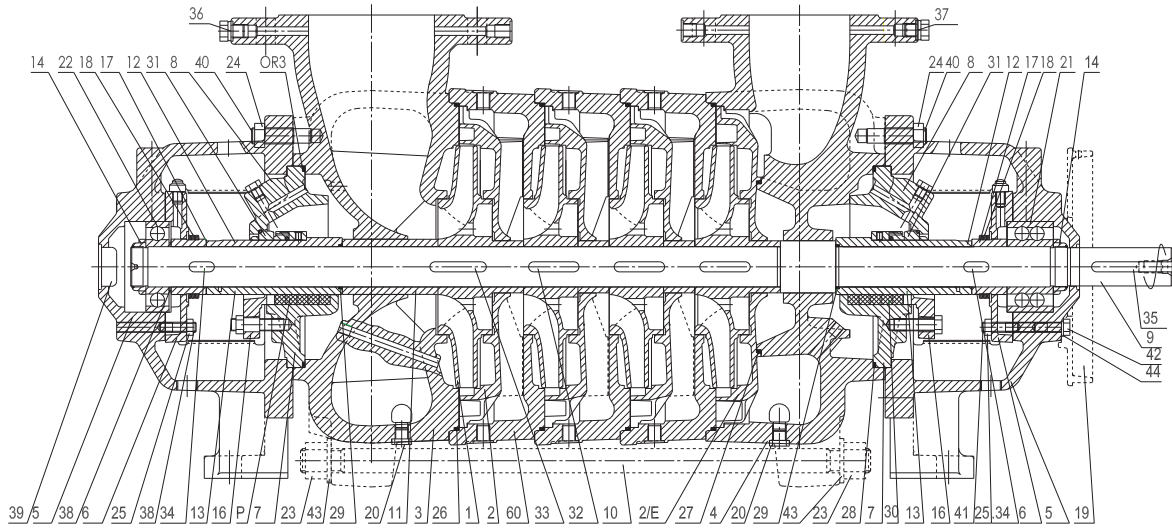
3550RPM



1750RPM

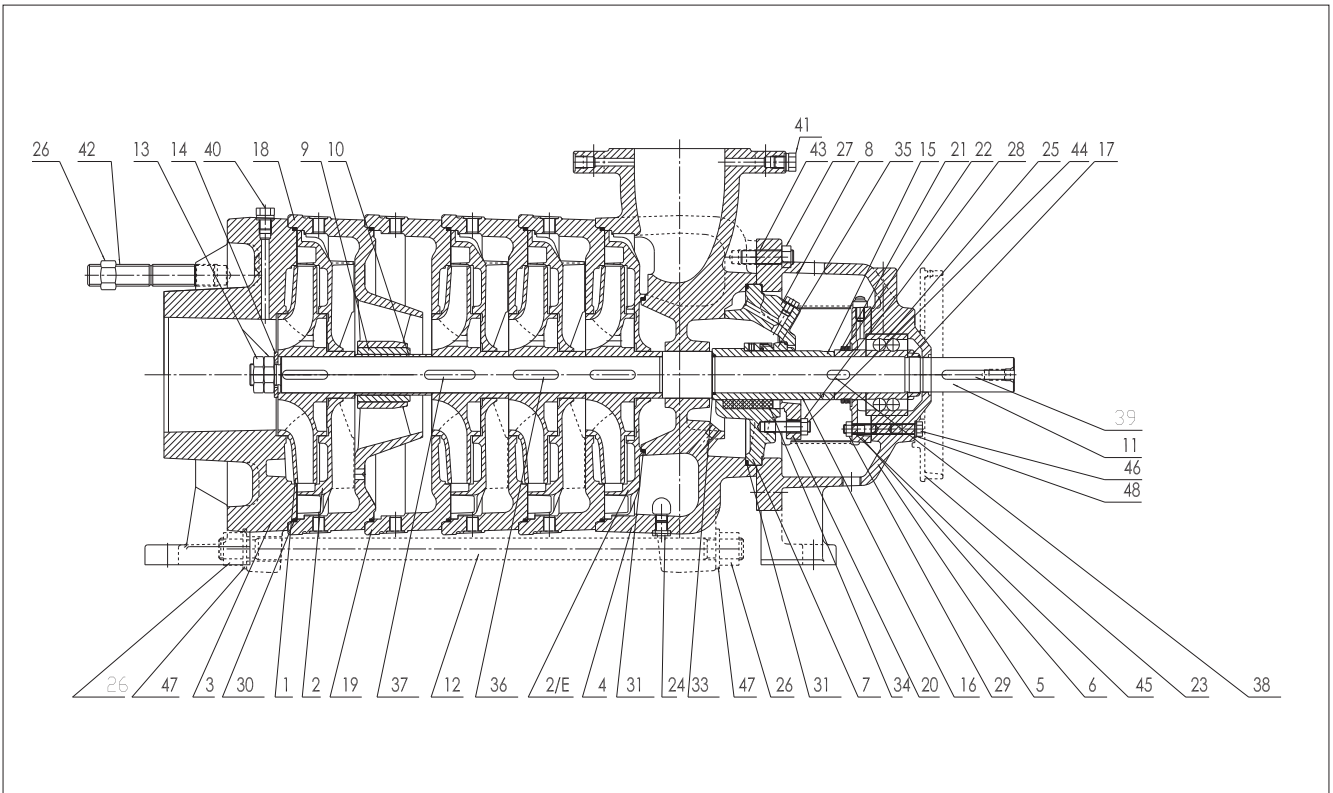


MDH Pump sectional drawing



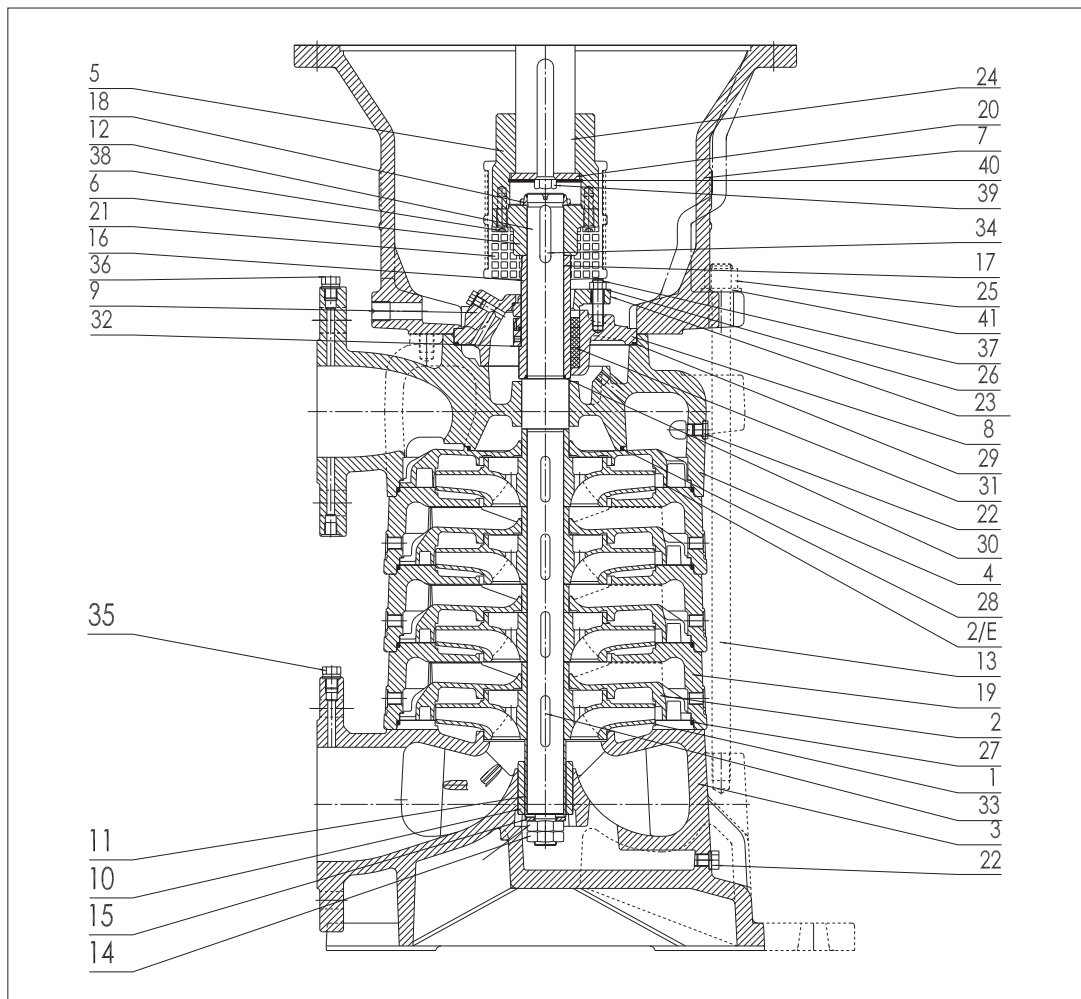
NO.	Name	NO.	Name	NO.	Name
1	impeller	15	stage casing	30	glang packing
2	diffuser	16	gland	31	glang packing
2/E	last stage diffuser	17	spacer sleeve	32	key
3	suction casing	18	thrower	33	key
4	diacharge casing	19	coupling suard adapeter	34	key
5	bearing bracket	20	drainpiug	35	key
6	bearing cover	21	radial ball bearing	36	pressure gauge
7	stuffing box housing	22	radial ball bearing	37	pressure gauge
8	seal cover	23	nut	38	disc spacer
9	shaft	24	nut	39	plug
10	tiebolt	25	nut	40	stud
11	sleeve	26	O-ring	41	stud
12	shaft wearing sleeve	27	O-ring	42	hexagon head screw
13	shaft wearing sleeve	28	O-ring	43	washer
14	bearing nut	29	O-ring	44	washer

MDE Pump sectional drawing



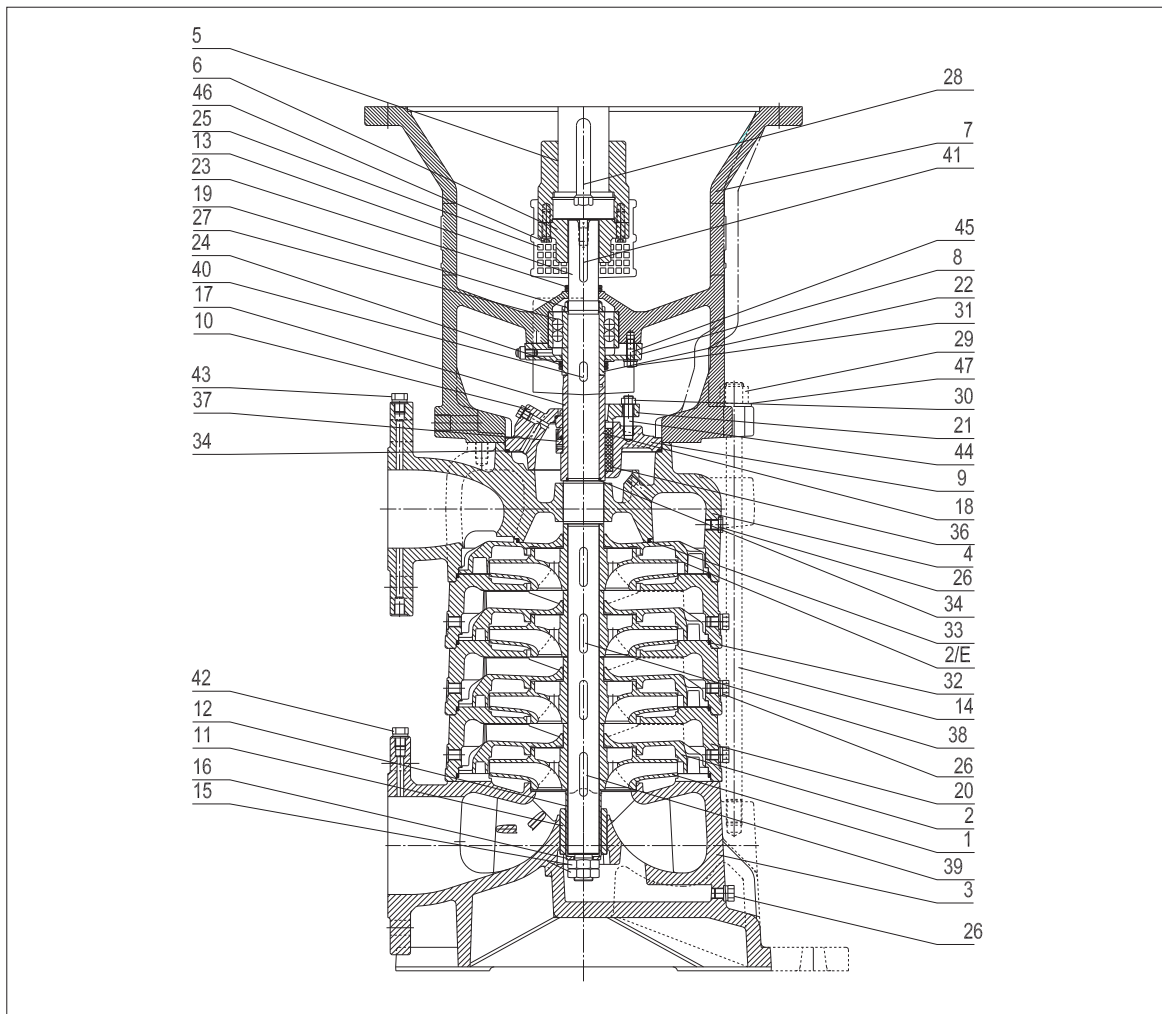
NO.	Name	NO.	Name	NO.	Name
1	impeller	16	shaft wearing sleeve	32	O-ring
2	diffuser	17	nut	33	O-ring
2/E	diffuser,last stage	18	stage casing	34	glang packing
3	suction casing	19	stage casing	35	glang packing
4	diacharge casing	20	gland	36	key
5	bearing bracket	21	spacer sleeve	37	key
6	bearing cover	22	thrower	38	key
7	stuffing box housing	23	coupling guard adapeter	39	key
8	seal cover	24	drainpiug	40	pressure gauge
9	Copper bearing	25	radial ball bearing	41	pressure gauge
10	sleeve	26	nut	42	stud
11	shaft	27	nut	43	stud
12	tiebolt	28	nut	44	stud
13	nut	29	nut	45	stud
14	disc spacer	30	O-ring	46	stud
15	shaft wearing sleeve	31	O-ring	47	washer
				48	washer

MDV Pump sectional drawing(Below 90KW)



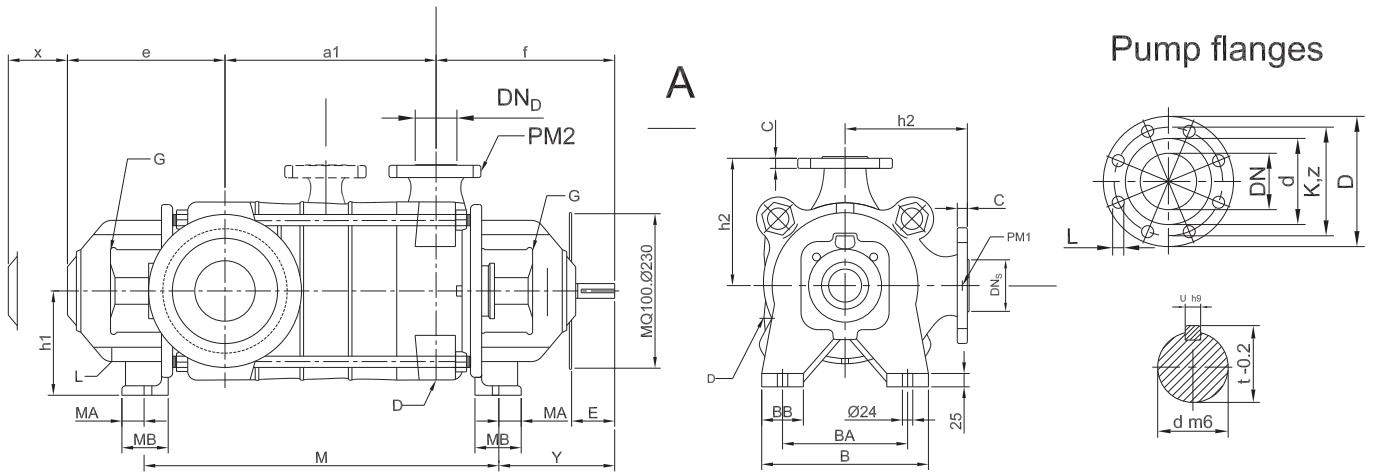
NO.	Name	NO.	Name	NO.	Name
1	impeller	14	nut	28	O-ring
2	diffuser	15	disc spacer	29	O-ring
2/E	diffuser,last stage	16	shaft wearing sleeve	30	O-ring
3	suction casing	17	shaft wearing sleeve	31	glang packing
4	diacharge casing	18	nut	32	glang packing
5	coupling	19	stage casing	33	key
6	coupling	20	thrust plate	34	key
7	motor stool	21	protective	35	pressure gauge
8	gland	22	drainiug	36	pressure gauge
9	seal cover	23	mechanical seal	37	stud
10	bearing bush	24	motor	38	hexagon socket screw
11	sleeve	25	nut	39	hexagon head screw
12	shaft	26	nut	40	circlip
13	tiebolt	27	O-ring	41	washer

MDV Pump sectional drawing(90KW or above)



NO.	Name	NO.	Name	NO.	Name
1	impeller	16	disc spacer	32	O-ring
2	diffuser	17	shaft wearing sleeve	33	O-ring
2/E	diffuser,last stage	18	shaft wearing sleeve	34	O-ring
3	suction casing	19	nut	35	O-ring
4	diacharge casing	20	stage casing	36	glang packing
5	coupling	21	gland	37	glang packing
6	coupling	22	spacer sleeve	38	key
7	motor stool	23	thrower	39	key
8	gland	24	thrower	40	key
9	stuffing box housing	25	protective lattice	41	key
10	seal cover	26	drainpiug	42	pressure gauge
11	Copper bearing	27	radial ball bearing	43	pressure gauge
12	sleeve	28	motor	44	stud
13	shaft	29	nut	45	stud
14	tiebolt	30	nut	46	hexagon head screw
15	nut	31	nut	47	washer

MDH32,MDH40,MDH50,MDH65



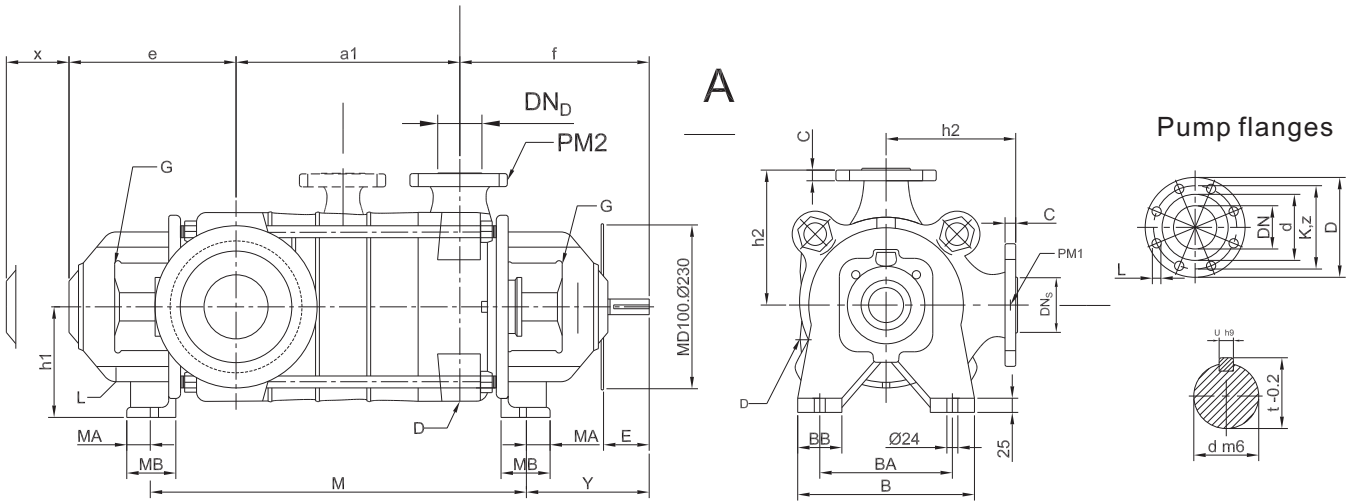
Pump size	Pump flanges		Dimensions of Pump											Pump shaft end			
	DN _S	DN _D	B	BA	BB	e	f	h1	h2	MA	MB	Y	x	d	t	u	E
MDH32/MDH40	65	40	230	160	70	203	280	140	180	20	60	187	160	28	31	8	75
MDH50/MDH65	100	65	250	180	70	230	315	160	210	25	67	207	180	32	35	10	80

Pump size		Number of stages																	
		1"	2"	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MDH32/MDH40	a1	90	145	200	255	310	365	420	475	530	585	640	695	750	805	960	915	970	1025
	M	274	329	384	439	494	549	604	659	714	769	824	879	934	989	1044	1099	1154	1209
MDH50/MDH65	a1	110	180	250	320	390	460	530	600	570	740	810	880	950	1020	-	-	-	-
	M	321	391	461	531	601	671	741	811	881	951	1021	1091	1161	1231	-	-	-	-

DIN 2501 / EN1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
100	10/16	235	180	27	156	19	8
	25/40	235	190	27	156	23	8
	63	273	200	32	156	28	8
125	10/16	279	210	29	184	19	8
	25/40	279	220	29	184	28	8
	63	330	240	35	184	31	8
125	10/16	300	240	32	211	23	8
	25/40	300	250	32	211	28	8

ASME B16.5							
DN	CLASS	D	K	C	d	L	z
4 (in)	150	235	191	27	156	19	8
	300	273	200	32	156	22	8
	600	273	216	32	156	25	8
5 (in)	150	279	216	29	184	22	8
	300	279	235	29	184	22	8
	600	330	267	35	184	29	8
6 (in)	150	300	241	32	211	22	8
	300	317	270	32	211	22	12

MDH80,MDH100,MDH125,MDH150



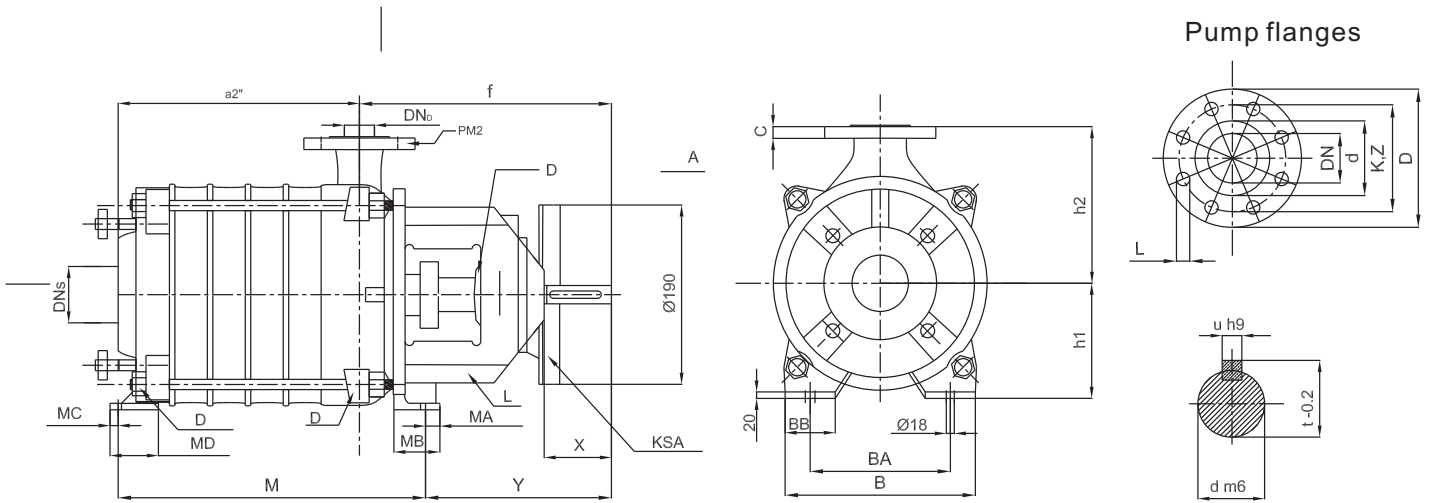
Pump size	Pump flanges		Dimensions of Pump											Pump shaft end			
	DN _s	ON _o	B	BA	BB	e	f	h1	h2	MA	MB	Y	x	d	t	u	E
MDH80/MDH100	125	100	340	240	100	271	370	210	250	25	83	222	200	38	41	10	90
MDH125/MDH150	150	125	400	280	120	335	450	250	300	25	90	280	245	48	51.5	14	105

Pump size		Number of stages											
		1"	2"	3	4	5	6	7	8	9	10	11	12
MDH80/MDH100	a1	170	255	340	425	510	595	680	765	850	935	-	-
	M	459	544	629	714	799	884	969	1054	1139	1224	-	-
MDH125/MDH150	a1	210	315	420	525	630	735	840	945	-	-	-	-
	M	543	648	753	858	963	1068	1173	1278	-	-	-	-

DIN 2501 / EN1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
100	10/16	235	180	27	156	19	8
	25/40	235	190	27	156	23	8
	63	273	200	32	156	28	8
125	10/16	279	210	29	184	19	8
	25/40	279	220	29	184	28	8
	63	330	240	35	184	31	8
125	10/16	300	240	32	211	23	8
	25/40	300	250	32	211	28	8

ASME B16.5							
DN	CLASS	D	K	C	d	L	z
4 (in)	150	235	191	27	156	19	8
	300	273	200	32	156	22	8
	600	273	216	32	156	25	8
5 (in)	150	279	216	29	184	22	8
	300	279	235	29	184	22	8
	600	330	267	35	184	29	8
6 (in)	150	300	241	32	211	22	8
	300	317	270	32	211	22	12

MDE32,MDE40,MDE50,MDE65



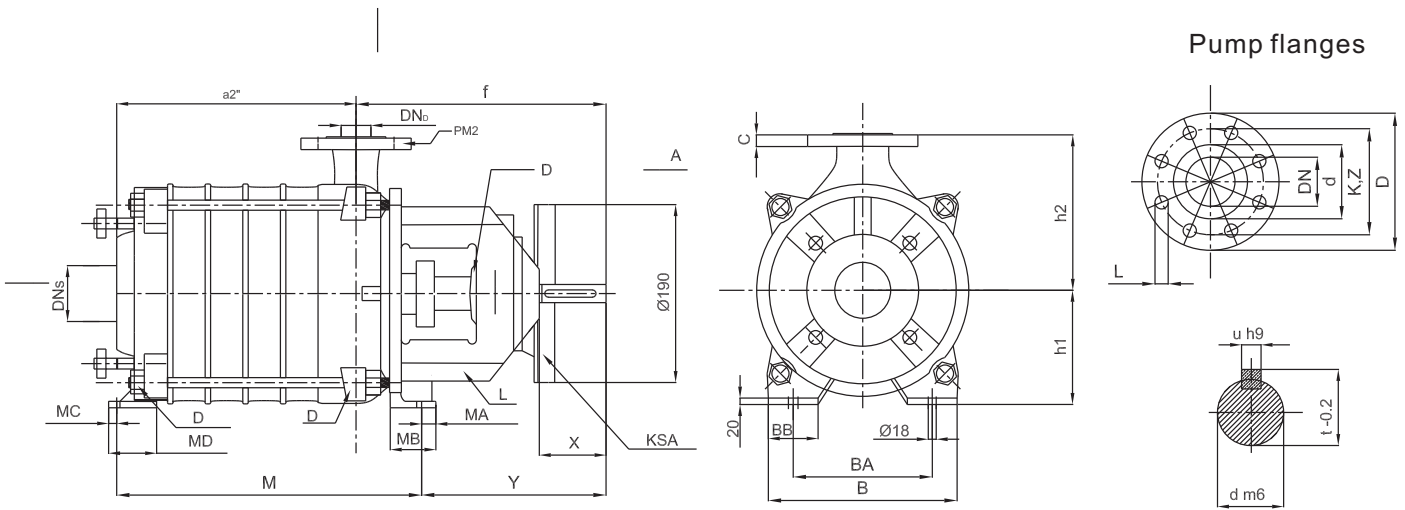
Pump size	Pump flanges													Pump shaft end			
	DNs	DND	B	BA	BB	f	h1	h2	MA	MB	MC	MD	Y	d	t	u	E
MDE32/MDE40	65	40	230	160	70	280	140	180	20	60	20	74	187	28	31	8	75
MDE50/MDE65	100	65	250	180	70	315	160	210	25	67	20	83	207	32	35	10	80

Pump size		Number of stages																	
		-	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MDE32/MDE40	a2"	-	240	295	350	405	460	515	570	625	680	735	790	845	900	955	1010	1065	1120
	M	-	329	384	439	494	549	604	659	714	769	824	879	934	989	1044	1099	1154	1209
MDE50/MDE65	a2"	-	280	350	420	490	560	630	700	770	840	910	980	1050	1120	-	-	-	-
	M	-	391	461	531	601	671	741	811	881	951	1021	1091	1161	1231	-	-	-	-

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
40	10/16	156	110	22	84	19	4
	25/40	156	110	22	84	19	4
	63	178	125	28	84	23	4
65	42293	191	145	24	118	19	4
	25/40	191	145	24	118	19	8
	63	205	160	28	118	23	8
100	42293	235	180	27	156	19	8
	25/40	235	190	27	156	23	8

ASME B16.5							
DN	CLASS	D	K	C	d	L	z
1 1/2 (in)	150	156	98	22	73	16	4
	300	156	114	22	73	22	4
	600	156	114	22	73	22	4
2 1/2 (in)	150	191	140	24	105	19	4
	300	191	149	24	105	22	8
	600	191	149	24	105	22	8
4 (in)	150	235	191	27	157	19	8
	300	254	200	32	157	22	8

MDE80, MDE100, MDE125, MDE150



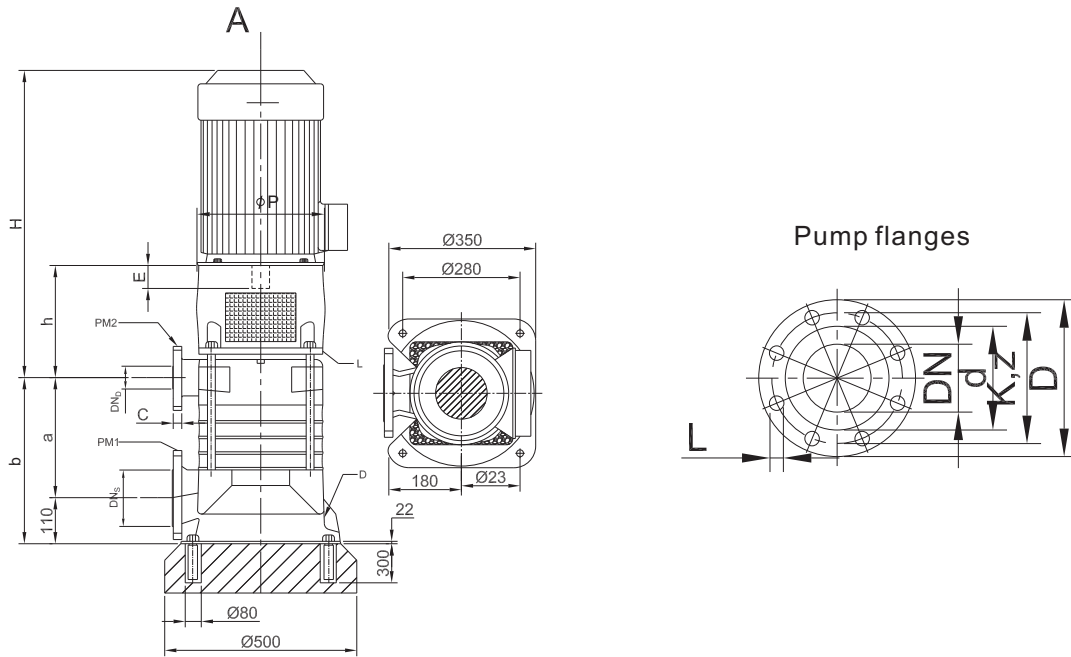
Pump size	Pump flanges													Pump shaft end			
	DN _s	DND	B	BA	BB	f	h1	h2	MA	MB	MC	MDE	Y	d	t	u	E
MDE80/MDE100	125	100	340	240	100	370	210	250	25	83	25	116	222	38	41	10	90
MDE125/MDE150	150	125	400	280	120	450	250	300	25	90	25	113	280	48	51.5	14	105

Pump size		Number of stages											
		-	2	3	4	5	6	7	8	9	10	11	12
MDE80/MDE100	a2"	-	400	485	570	655	740	825	910	995	1080	-	-
	M	-	544	629	714	799	884	969	1054	1139	1224	-	-
MDE125/MDE150	a2"	-	480	585	690	795	900	1005	1110	-	-	-	-
	M	-	648	753	858	963	1068	1173	1278	-	-	-	-

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
40	10/16	235	180	27	156	19	8
	25/40	235	190	27	156	23	8
	63	273	200	32	156	28	8
65	42293	279	210	29	184	19	8
	25/40	279	220	29	184	28	8
	63	330	240	35	184	31	8
100	42293	300	240	32	211	23	8
	25/40	300	250	32	211	28	8

ASME B16.5							
DN	CLASS	D	K	C	d	L	z
1 1/2 (in)	150	191	191	27	156	19	8
	300	273	200	32	156	22	8
	600	273	216	32	156	25	8
2 1/2 (in)	150	279	216	29	184	22	8
	300	279	235	29	184	22	8
	600	330	267	35	184	29	8
4 (in)	150	300	241	32	211	22	8
	300	317	270	32	211	22	12

MDV32,MDV40



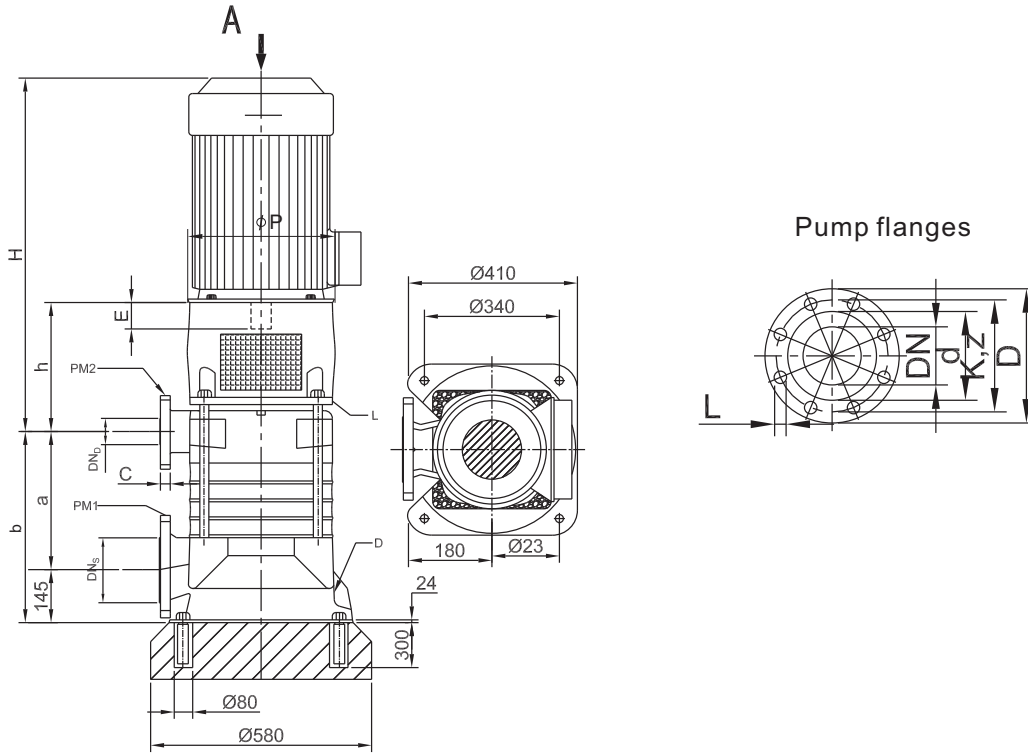
Number of stages																		
	1*1	2*1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
a	100	155	210	265	320	375	430	485	540	595	650	705	750	815	870	925	980	1035
b	210	265	320	375	430	485	540	595	650	760	815	870	925	980	1035	1090	1145	

IEC Motor	KW(min-1)				h	H	P	E
	3550	2950	1750	1450				
90S	1.7	1.5	1.3	1.1	262	518	200	50
90L	2.5	2.2	1.7	1.5	262	543	200	50
100L	3.5	3	2.5	2.2	272	586	250	60
100L	-	-	3.5	3	272	586	250	60
112M	4.6	4	4.6	4	272	595	250	60
132S	6.3	5.5	6.3	5.5	292	692	300	80
132S	8.6	7.5	-	-	292	692	300	80
132M	-	-	8.6	7.5	292	692	300	80
160M	12.7	11	12.7	11	322	842	350	110
160M	17.3	15	-	-	322	842	350	110
160L	21	18.5	17.3	15	322	886	350	110
180M	25	22	21	18.5	322	917	350	110
180L	-	-	25	22	322	917	350	110
200L	35	30	35	30	322	1022	400	110
200L	43	37	-	-	322	1022	400	110
225M	52	45	-	-	322	1067	450	110
250M	63	55	-	-	352	1192	550	140
280S	86	75	-	-	352	1272	550	140

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
100	10/16	156	110	22	84	19	4
	25/40	156	110	22	84	19	4
	63	178	125	28	84	23	4
125	10/16	191	145	24	118	19	4
	25/40	191	145	24	118	19	8

ASME B16.5							
DN	Class	D	K	C	d	L	z
4 (in)	150	156	98	22	73	16	4
	300	156	114	22	73	22	4
	600	156	114	22	73	22	4
5 (in)	150	191	140	24	105	19	4
	300	191	149	24	105	22	8

MDV50,MDV65



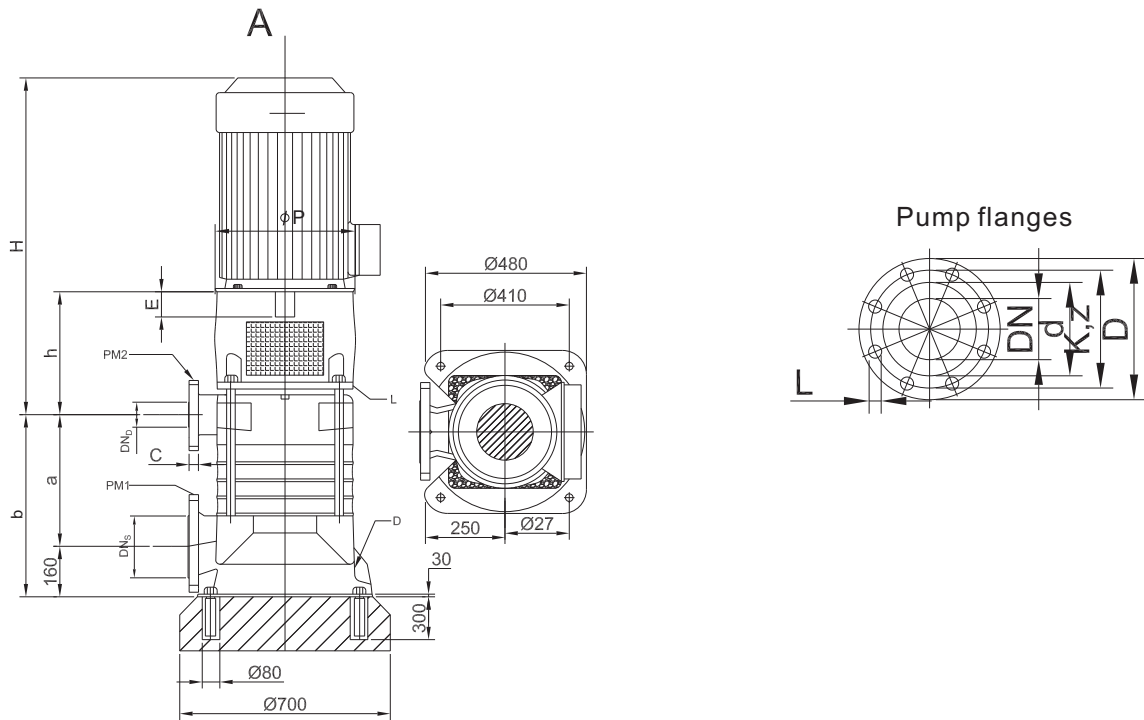
Number of stages																		
	1*1	2*1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
a	125	195	265	335	405	475	545	615	685	755	825	895	965	1035	-	-	-	-
b	270	340	410	480	550	620	690	760	830	900	970	1040	1110	1180	-	-	-	-

IEC Motor	KW(min-1)				h	H	P	E
	3550	2950	1750	1450				
100L	3.5	3	2.5	2.2	291	605	250	60
100L	-	-	3.5	3	291	605	250	60
112M	4.6	4	4.6	4	291	614	250	60
132S	6.3	5.5	6.3	5.5	311	711	300	80
132S	8.6	7.5	-	-	311	711	300	80
132M	-	-	8.6	7.5	311	711	300	80
160M	12.7	11	12.7	11	341	861	350	110
160M	17.3	15	-	-	341	861	350	110
160L	21	18.5	17.3	15	341	905	350	110
180M	25	22	21	18.5	341	936	350	110
180L	-	-	25	22	341	936	350	110
200L	35	30	35	30	341	1041	400	110
200L	43	37	-	-	341	1041	400	110
225M	52	45	-	-	341	1086	450	110
250M	63	55	-	-	371	1211	550	140
280S	86	75	-	-	371	1291	550	140
280M	104	90	-	-	371	1351	550	140

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
65	10/16	191	145	24	118	19	4
	25/40	191	145	24	118	19	8
	63	205	160	28	118	23	8
100	10/16	235	180	27	156	19	8
	25/40	235	190	27	156	23	8

ASME B16.5							
DN	Class	D	K	C	d	L	z
2 1/2 (in)	150	191	140	24	105	19	4
	300	191	149	24	105	22	8
	600	191	149	24	105	22	8
4 (in)	150	235	191	27	157	19	8
	300	235	200	32	157	22	8

MDV80,MDV100



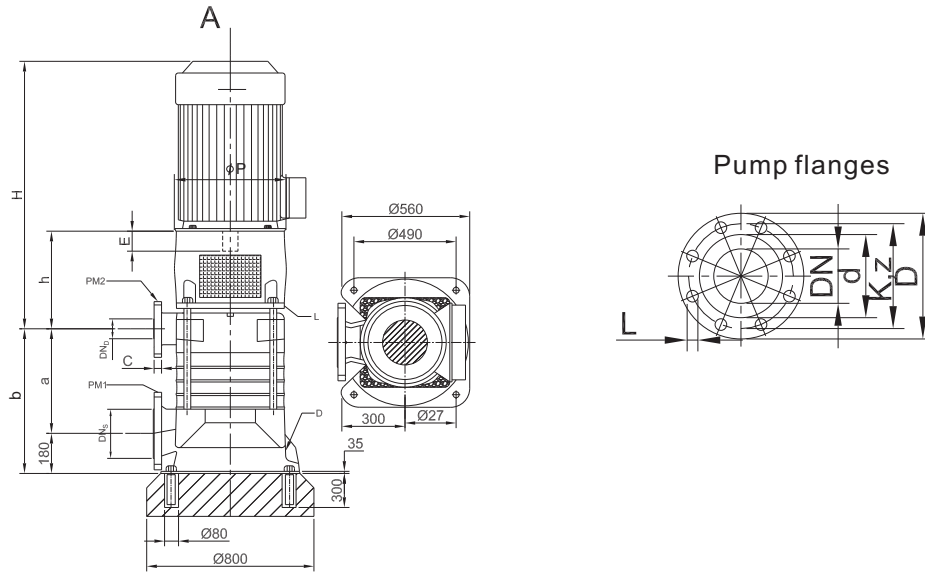
Number of stages										
	1*1	2*1	3	4	5	6	7	8	9	10
a	175	260	345	430	515	600	685	770	855	940
b	335	420	505	590	675	760	845	930	1015	1100

IEC Motor	KW(min-1)				h	H	P	E
	3550	2950	1750	1450				
160M	-	-	12.7	11	371	891	350	110
160L	-	-	17.3	15	371	935	350	110
180M	-	-	21	18.5	371	966	350	110
180L	-	-	25	22	371	966	350	110
200L	35	30	35	30	371	1071	400	110
200L	43	37	-	-	371	1071	400	110
225S	-	-	43	37	401	1126	450	140
225M	52	45	-	-	371	1116	450	110
225M	-	-	52	45	401	1146	450	140
250M	63	55	63	55	401	1241	550	140
280S	86	75	-	-	401	1321	550	140
280M	104	90	-	-	401	1381	550	140

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
100	10/16	235	180	27	156	19	8
	25/40	235	190	27	156	23	8
	63	273	200	32	156	28	8
125	10/16	279	210	29	184	19	8
	25/40	279	22	29	184	28	8

ASME B16.5							
DN	Class	D	K	C	d	L	z
4 (in)	150	235	191	27	156	19	8
	300	273	200	32	156	22	8
	600	273	216	32	156	25	8
5 (in)	150	279	216	29	184	22	8
	300	279	235	29	184	22	8

MDV125,MDV150



Number of stages								
	1*1	2*1	3	4	5	6	7	8
a	220	325	430	535	640	745	850	955
b	400	505	610	715	820	925	1030	1135

IEC Motor	KW(min-1)				h	H	P	E
	3550	2950	1750	1450				
160M	-	-	12.7	11	567	1087	350	110
160L	-	-	17.3	15	567	1131	350	110
180M	-	-	21	18.5	567	1162	350	110
180L	-	-	25	22	567	1162	350	110
200L	-	-	35	30	567	1267	400	110
225S	-	-	43	37	597	1322	450	140
225M	-	-	52	45	597	1342	450	140
250M	63	55	63	55	597	1437	550	140
280S	86	75	86	75	597	1517	550	140
280M	104	90	104	90	597	1577	550	140
315S	127	110	-	-	597	1637	660	140
315S	-	-	127	110	627	1667	660	170
315M	152	132	-	-	597	1652	660	140
315M	-	-	152	132	627	1667	660	170
315M	184	160	-	-	597	1652	660	140
315M	-	-	184	160	627	1682	660	170
315L	230	200	-	-	597	1722	660	140
355S	230	200	-	-	597	1767	800	140
355M	288	250	-	-	597	1827	800	140
355S	230	200	-	-	627	1811	800	170
355M	288	250	-	-	627	1811	800	170
355M	322	280	-	-	597	1827	800	140
355L	362	315	-	-	597	1907	800	140
355L	408	355	-	-	597	1907	800	140

DIN 2501 / EN 1092 / ISO 7005							
DN	PN	D	K	C	d	L	z
100	10/16	279	210	29	184	19	8
	25/40	279	220	29	184	28	8
	63	330	240	35	184	31	8
125	10/16	300	240	32	211	23	8
	25/40	300	250	32	211	28	8

ASME B16.5							
DN	Class	D	K	C	d	L	z
4 (in)	150	279	216	29	184	22	8
	300	279	235	29	184	22	8
	600	330	267	35	184	29	8
5 (in)	150	300	241	32	211	22	8
	300	317	270	32	211	22	12

