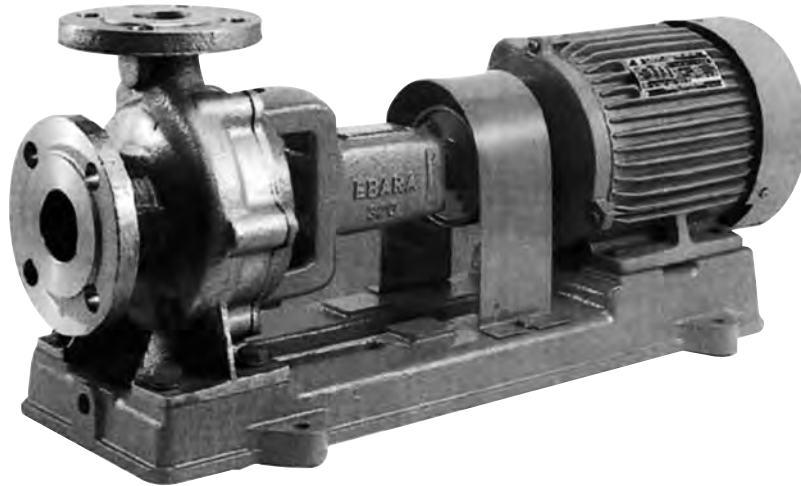


STAINLESS STEEL VOLUTE PUMPS



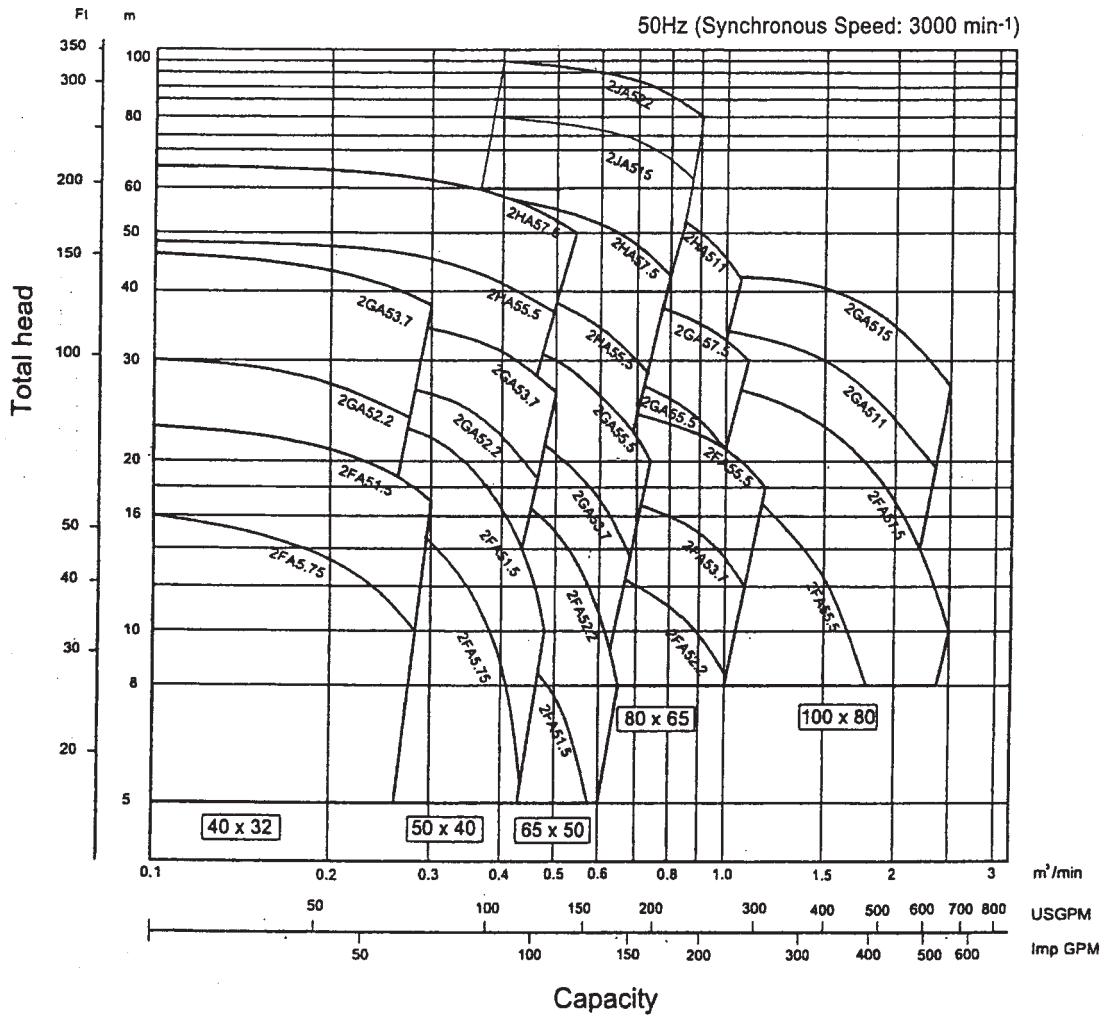
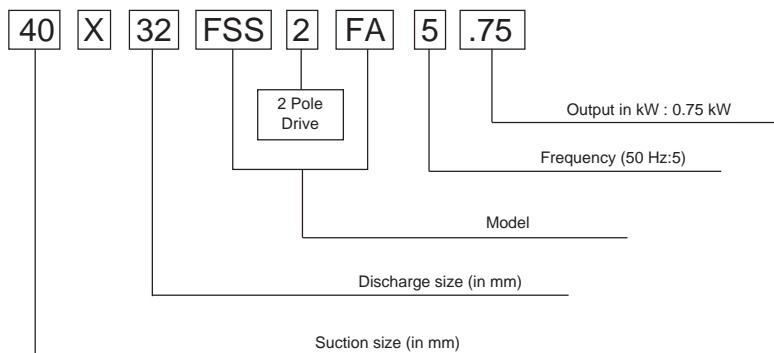
FEATURES

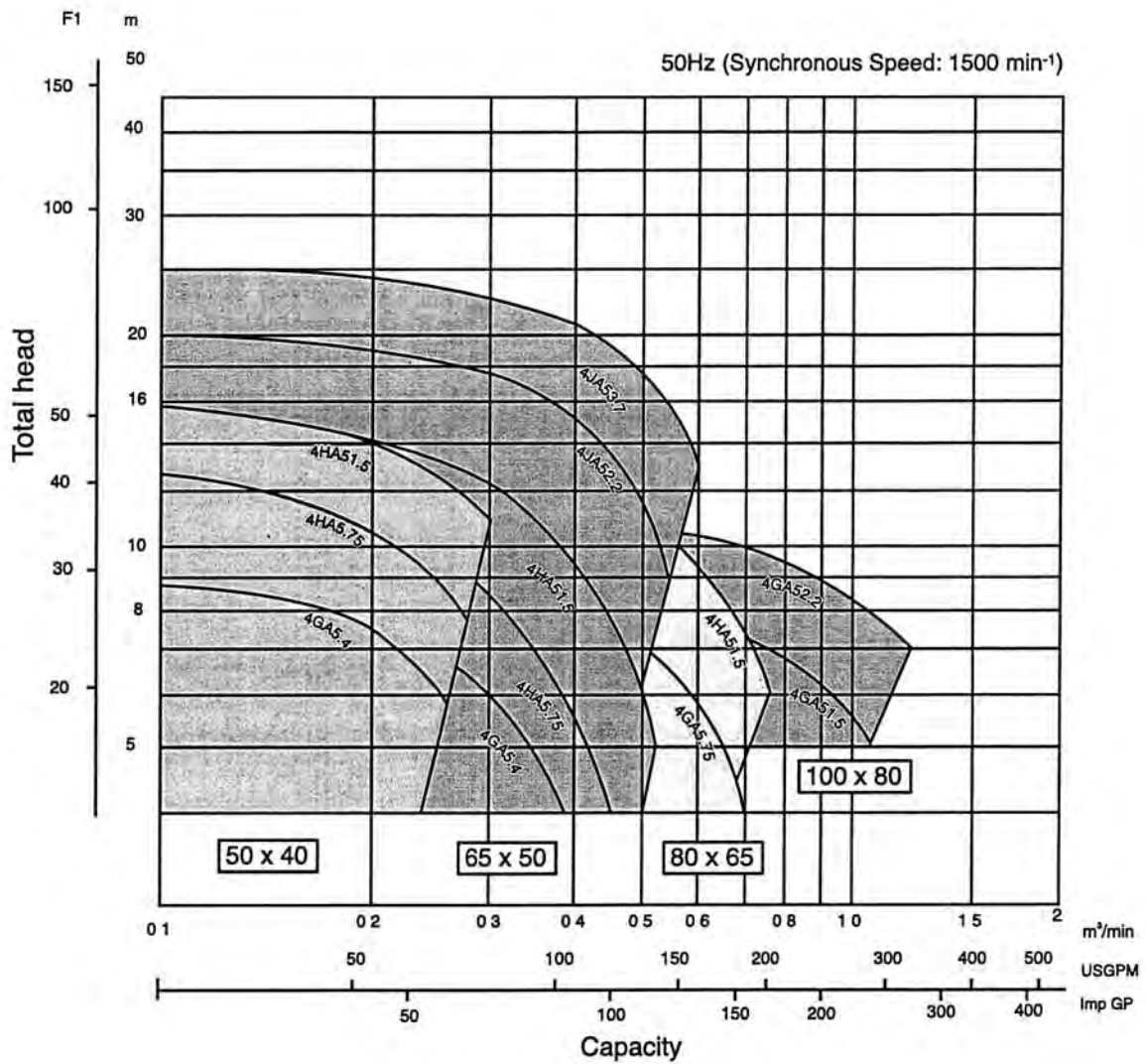
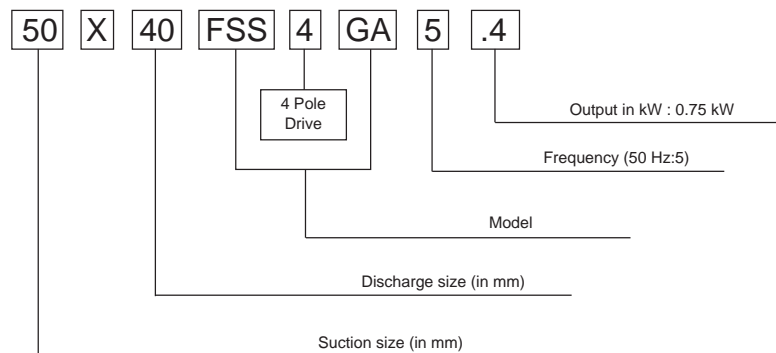
- Pump portion contacting liquid is made of high grade 316 stainless steel
- BPO (back pull out) system allows all rotating elements to be removed without disconnecting suction and discharge pipe work
- Top centreline discharge, foot support under casing for maximum resistance to misalignment and distortion from pipe loads
- Non-overload design to ensure stable performance for all applications
- Compact construction, applicable for two-poles high speed motor provides a compact unit and minimizes installation area
- Wide range application due to 316 stainless steel material

APPLICATIONS

- Industrial use
- Chemical solutions
- Industrial drainage
- Hot and cold water supply
- Sea water
- Water supply
- For swimming pool
- Sprinkling
- Air-conditioning
- Drinking water

		STANDARD		OPTIONAL	
		2 Poles model	4 Poles model	2 Poles model	4 Poles model
Liquid	Name	Water, oil, liquid chemicals, Refer to table 1		For specifications other than at left, see the liquids list please contact Ebara	
	Temperature	0 to 100°C (32 to 212°F)			
	Viscosity	below 10cst			
	Special gravity	0.7 to 1.0			
Re. NPSH		4m...Except for Model 100 x 80 (2 pole) 7m...Model 100 x 80 (2 pole)			
Installation		Indoors		Outdoors	
Construction	Impeller	Enclosed		-	
	Shaft seal	Packing		Mechanical Seal (0~90°C)	
	Sealing	Internal-self		-	
	Bearing	Sealed ball bearing		-	
	Shaft sleeve	No		-	
Casing Ring		No		-	
Flange		JIS 10 kg/cm ² R.F.		-	
Materials	Casing	SCS-14 Stainless steel		-	
	Impeller	SCS-14 Stainless steel		-	
	Shaft	316 Stainless steel		-	
	Casing Ring	-		-	
	Casing O-Ring	Fluororubber (viton)		Teflon (PTFE)	
	Seal	Carbonized Fiber		Mech. Seal : SiC/SiC	
Accessories	Bare shaft	-		-	
	With motor	Common base, Coupling, Coupling guard		-	

PERFORMANCE CHART
2 Poles

SYMBOLS


PERFORMANCE CHART
4 Poles

SYMBOLS


LIQUID HANDLED

Liquid	Gasket	Gland packing	Mechanical seal		Specific gravity	Density	Temperature
			Material	Water Activation Method			
*A							
Acetaldehyde	T C	1	S				
Acetic acid	T C	1	S				
Acetic anhydride	T C	1	S				
Acetone	T C	1	S				
Acetonitrile	F D	1	S				
Acrylic acid	F D	1	S				
Acrylo nitrile	T C	1	S				
Alcoholic drinks	F C	1	S				
Allylacetate	T D	1	S				
Allyl acetone	T C	1	S				
Allyl alcohol	F C	1	S				
Allyl Chloride	F C	1	S				
Ammonium carbonate	F D	2	S + Q				
Ammonium bicarbonate	F C	2	S + Q				
Amyl acetate	T C	1	S				
Amyl alcohol	F C	1	S				
Amyl chloride	T D	1	S				
Amyl ether	F C	1	S				
Aqueous ammonia	F C	2	S				
*B							
Barium chloride	F C	2	S + Q				
Benzaldehyde	T C	1	S				
Benzene	T C	1	S				
Benzene	F C	2	S				
Benzyl acetate	T D	1	S				
Boric acid	F C	2	S + Q				
Brake oil	F C	1	S				
Butyl acetate	T D	1	S				
Butyl acetate diamyl	F D	1	S				
Butyl acetate dibutyl	T D	1	S				
Butyl acetate diethyl	F D	1	S				
Butyl alcohol	F C	1	S				
Butyl ether	C C	S					
Butyric acid	T C	1	S				
Butyric ethyl	T D	1	S				
Butyric methyl	T D	1	S				
*C							
Calcium Carbonate	F C	2	S + Q				
Calcium hydroxide	F C	2	S + Q				
Carbolic acid	T D	2	S + Q				
Carbonate water	F C	1	S				
Caustic soda	F D	2	S + Q				
Cellosolve	T D	1	S				
Cellulose acetate	T D	1	S				
Chlorobenzene	T C	1	S				
Chrome alum	F D	2	S + Q				
Citric acid	F C	2	S + Q				
Coconut oil	F C	1	S + Q				
Coffee extract	F C	1	S				
Copper nitrate	F D	2	S + Q				
Corn oil	F C	1	S				
Creosote	F D	1	S				
Cresol	F D	1	S + Q				
Cyclohexane	F C	1	S				
*D							
Diacetone alcohol	T C	1	S				
Dichlorobenzene	F C	1	S				
Dichloropentane	F D	1	S				
Diethyl benzene	F C	1	S				
Diethylene glycol	F C	1	S				
Dioxane	T D	1	S				
Drain	F C	2	S				
Dyeing solution	F D	2	S				

Liquid	Gasket	Gland packing	Mechanical seal		Specific gravity	Density	Temperature
			Material	Water Activation Method			
*E							
Emulsified oil	F C	2	S				
Ethyl acetate	T C	1	S				
Ethyl acrylate	T D	1	S				
Ethyl alcohol	F C	1	S				
Ethyl benzene	F C	1	S				
Ethylene chloride	F D	2	S				
Ethylene glycol	F C	1	S				
Ethyl pyridine	T D	1	S				
*F							
Ferric nitrate	F D	2	S + Q				
Formaline	F C	1	S				
Fruit juice	F C	1	S				
Fruit oil	F C	1	S				
Fuel oil	F C	1	S				
Furfural	T C	1	S				
*G							
Gas oil	F C	1	S				
Gasoline	F C	1	S				
Glycerine	F C	1	S				
*H							
Heavy oil	F C	1	S				
Heptane	F C	1	S				
Hexane	F C	2	S				
Hexyl alcohol	F C	1	S				
Hydraulic fluids	F C	1	S				
*I							
Ink	T D	1	S				
Isoamil alcohol	F C	1	S				
Iso butil alcohol	F C	1	S				
Iso butil-methyl ketone	F D	1	S				
Iso octane	F D	1	S				
Isopropyl alcohol	F C	1	S				
Isopropyl benzene	T D	1	S				
*J							
Juice	F C	1	S				
*K							
Kerosene	F C	1	S				
*L							
Lactic acid	F C	2	S				
Linseed oil	F C	1	S				
Lubricating oil	F C	1	S				
*M							
Magnesium hydroxide	F C	2	S + Q				
Methyl acrylate	T D	1	S				
Methyl alcohol	F C	2	S				
Methyl chloride	F D	2	S + Q				
Methyl chloroform	F C	1	S				
Methyl ethyl ketone	T D	1	S				
Methyl isobutyl ketone	T D	1	S				
Milk	F C	1	S				
Mineral oil	F C	1	S				
Mineral spirits	F C	1	S				
Monoethylene glycol	F C	1	S				
Mustard oil	F C	1	S				
*N							
Naphtha	F C	1	S				
Naphtha solvent	F C	1	S				
Natrium carbonate	F C	2	S + Q				
Natrium discarbonate	F C	2	S + Q				
Nonyl phenol	F D	1	S				

Liquid	Gasket	Gland packing	Mechanical seal		Specific gravity	Density	Temperature
			Material	Water Activation Method			
*O							
Octane	F D	1	S				
Octanol	F C	1	S				
Oleic acid	F C	1	S				
*P							
Paraffine wax	F C	2	S				
Parilla oil	F C	1	S				
Petroluem	F C	1	S				
Petroluem benzine	F C	1	S				
Pinene	F D	1	S				
Potassium bomide	F D	2	S + Q				
Potassium carbonate	F D	2	S + Q				
Potassium chloride	F C	2	S + Q				
Potassium dichromate	F C	2	S + Q				
Potassium iodine	F D	2	S + Q				
Potassium nitrate	F C	2	S + Q				
Propyl acetate	T D	1	S				
Propylene	F C	1	S				
*R							
Rapeseed oil	F C	1	S				
Refrigeration oil	F C	1	S				
*S							
Salad oil	F C	1	S				
Sea water	F C	1	S				
Soapsuds	F C	2	S + Q				
Soda bromide	F D	2	S + Q				
Soda nitrate	F C	2	S + Q				
Soda sulfate	F D	2	S + Q				
Sodium silicate	F C	2	S + Q				
Solar oil	F C	1	S				
Sour oil	F C	1	S				
Soya bean oil	F C	1	S				
Soy saurce	F C	1	S				
Stylene	F D	1	S				
Sugar liquids	F C	2	S				
Sunflower oil	F C	1	S				
*T							
Tannic acid	F D	2	S + Q				
Thiophenol	F D	1	S				
Trichloroethylene	F C	1	S				
Triole	T C	1	S				
Turpentine oil	F C	1	S				
*U							
Urea	F D	2	S + Q				
*V							
Vegetable oil	F C	1	S				
*W							
Whale oil	F C	1	S				
Whisky	F C	1	S				
Wine	F C	1	S				
*X							
Xylene	F C	1	S				

Gasket material : F : Flourorubber (viton)
T : Teflon (PTFE)

Gland packing material : C : Carbonized fiber
D : Teflon

Mechanical seal material :
1 : Ceramic/carbon
2 : Superhard alloy/carbon

Water Activation (mechanical seal):
S : Self-injection
S + Q : Self-injection + Quenching or external injection

Specific gravity : ○ : Check the value
Density : ○ : Check the value
Temperature : ○ : Check the value

Note: The above chart is a general guide. Liquids have been listed according to the most commonly used classification, but corrosion resistance will vary considerably depending on the characteristics of the liquid (temperature, density and purity) and the circumstances in which it is used.

IMPELLER & COUPLING
2 Poles

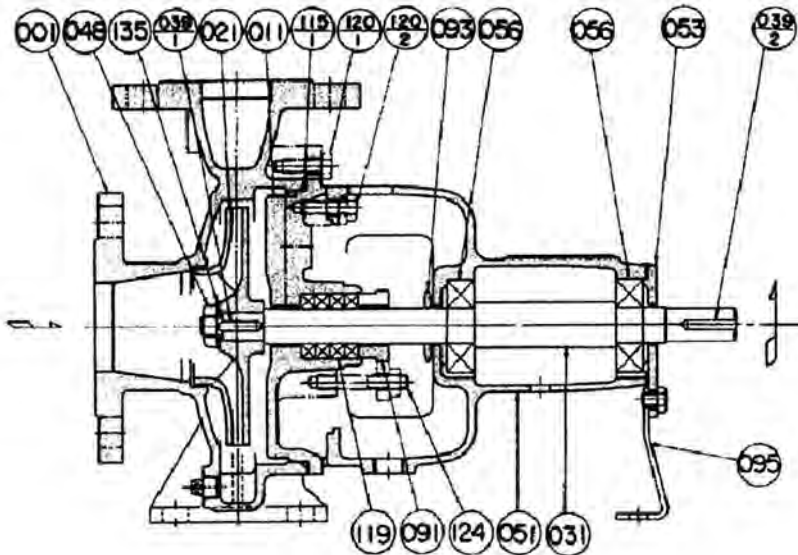
MODEL	MOTOR		IMPELLER DIAMETER mm	COUPLING CLA	SHAFT DIAMETER	
	POWER Kw	FRAME No.			PUMP dp (mm)	MOTOR dM (mm)
40x32 FSS2FA	0.75	80	122	112	19	19
	1.5	90S	135	112		24
40x32 FSS2GA	2.2	90L	162	12	19	24
	3.7	112M	180	125		28
50x40 FSS2FA	0.75	80	112	112	19	19
	1.5	90S	133	112		24
50x40 FSS2GA	2.2	90L	149	112	19	24
	3.7	112M	165	125		28
50x40 FSS2HA	5.5	132S	168	160	24	38
	7.5	132S	189	160		38
	11	160M	210	160		42
65x50 FSS2FA	2.2	90L	123	112	24	24
	3.7	112M	137	125		28
65x50 FSS2GA	2.2	90L	134	112	24	24
	3.7	112M	151	125		28
65x50 FSS2HA	5.5	132S	167	160	24	38
	7.5	132S	188	160		38
	11	160M	209	160		42
65x50 FSS2JA	11	160M	207	160	24	42
	15	160M	220	160		42
	18.5	160L	233	160		42
	22	180MA	259	180		48
80x65 FSS2FA	2.2	90L	118	112	24	24
	3.7	112M	132	125		28
	5.5	132S	147	160		38
80x65 FSS2GA	3.7	112M	142	125	24	28
	5.5	132S	160	160		38
	7.5	132S	178	160		38
80x65 FSS2HA	7.5	132S	172	160	24	38
	11	160M	194	160		42
	15	160M	215	160		42
100x80 FSS2FA	3.7	112M	122	125	24	28
	5.5	132S	137	160		38
	7.5	132S	152	160		38
100x80 FSS2GA	7.5	132S	146	160	24	32
	11	160M	165	160		42
	15	160M	183	160		42

IMPELLER & COUPLING
4 Poles

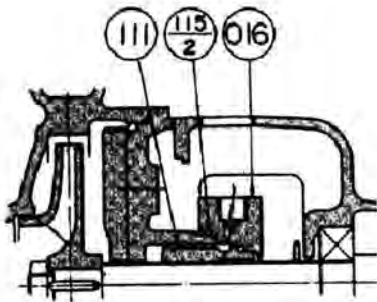
MODEL	MOTOR		IMPELLER DIAMETER mm	COUPLING CLA	SHAFT DIAMETER	
	POWER Kw	FRAME No.			PUMP dp (mm)	MOTOR dM (mm)
50x40 FSS4GA	0.4	71	165	112	19	14
50x40 FSS4GA	0.75	80	189	112	24	19
	1.5	90L	210	112	24	24
65x50 FSS4GA	0.4	71	165	112	24	14
65x50 FSS4HA	0.75	80	179	112	24	19
	1.5	90L	209	112	24	24
65x50 FSS4JA	2.2	100L	233	125	24	28
	3.7	112M	259	125	24	28
80x65 FSS4GA	0.75	80	169	112	24	19
80x65 FSS4HA	1.5	90L	215	112	24	24
100x80 FSS4GA	1.5	90L	165	112	24	24
	2.2	100L	183	125	24	28

SECTIONAL VIEW

Packing type (standard)



Mechanical seal type (standard)



PACKING TYPE (STANDARD)

PART NO.	PART	MATERIAL	QTY/ UNIT
091	GLAND	316 STAINLESS STEEL	1
119	GLAND PACKING	CARBONIZED FIBER	4
124	GLAND BOLT	316 STAINLESS STEEL	2

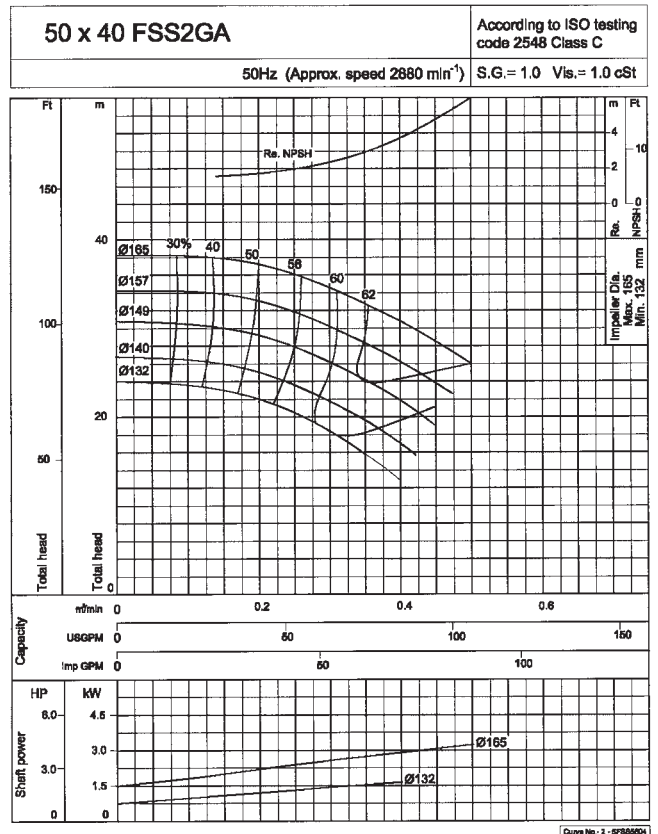
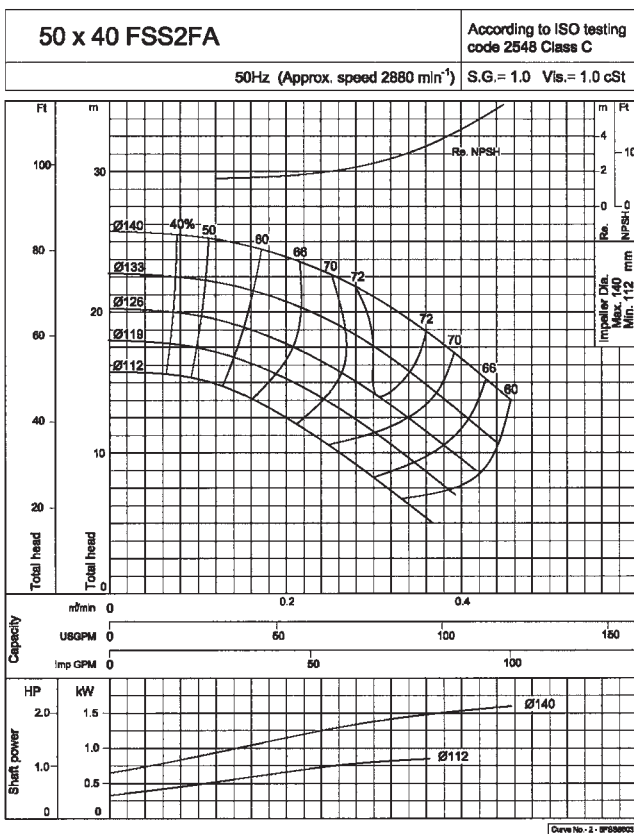
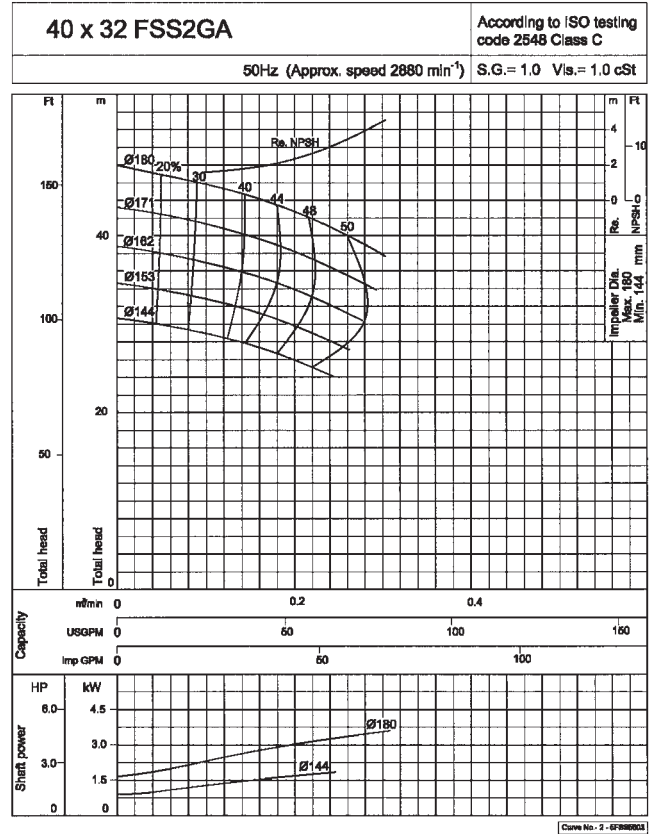
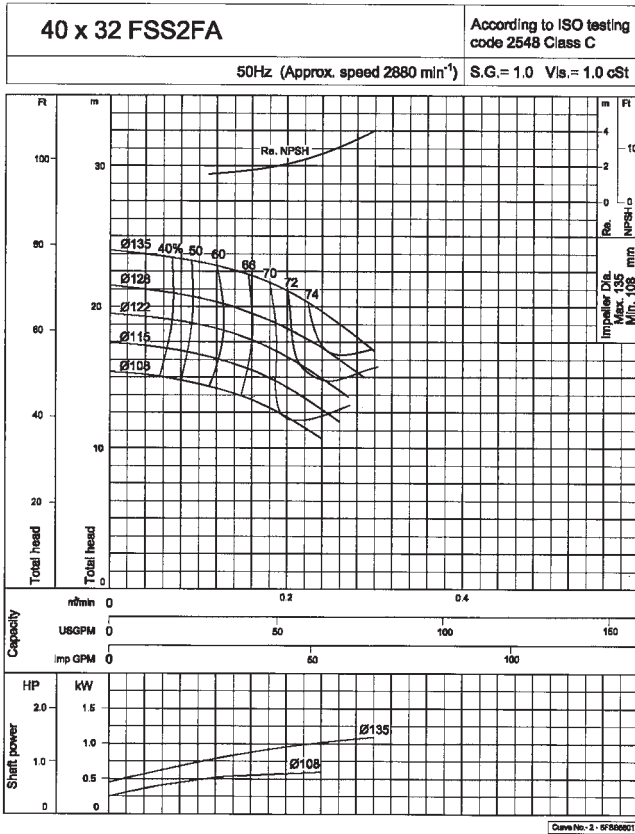
MECHANICAL SEAL TYPE (OPTIONAL)

PART NO.	PART	MATERIAL	QTY/ UNIT
016	MECH. SEAL COVER	316 STAINLESS STEEL	1
111	MECH. SEAL	SiC/SiC	1
115-2	"O" RING	FLUORORUBBER (viton)	1

PART NO.	PART	MATERIAL	QTY/ UNIT
001	CASING	SCS14, STAINLESS STEEL CASTING	1
011	CASING COVER	SCS14, STAINLESS STEEL CASTING	1
031	SHAFT	316 STAINLESS STEEL	1
039-1	KEY	316 STAINLESS STEEL	1
039-2	KEY	CARBON STEEL	1
048	IMPELLER NUT	316 STAINLESS STEEL	1
051	BEARING HOUSING	CAST IRON	1

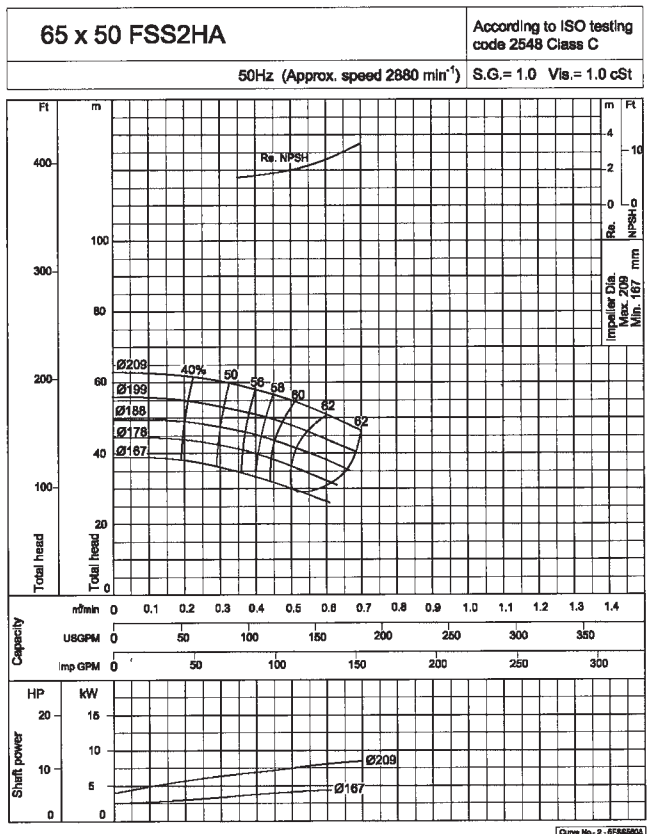
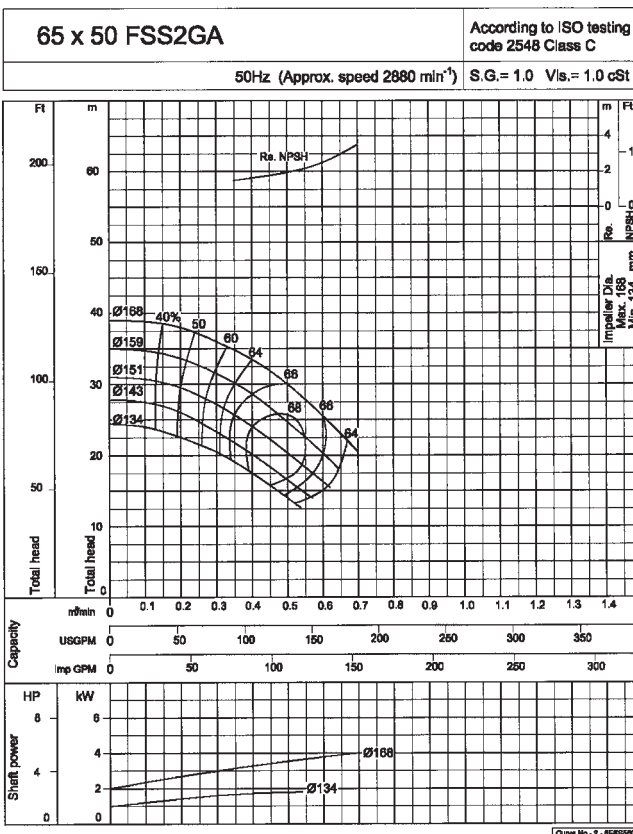
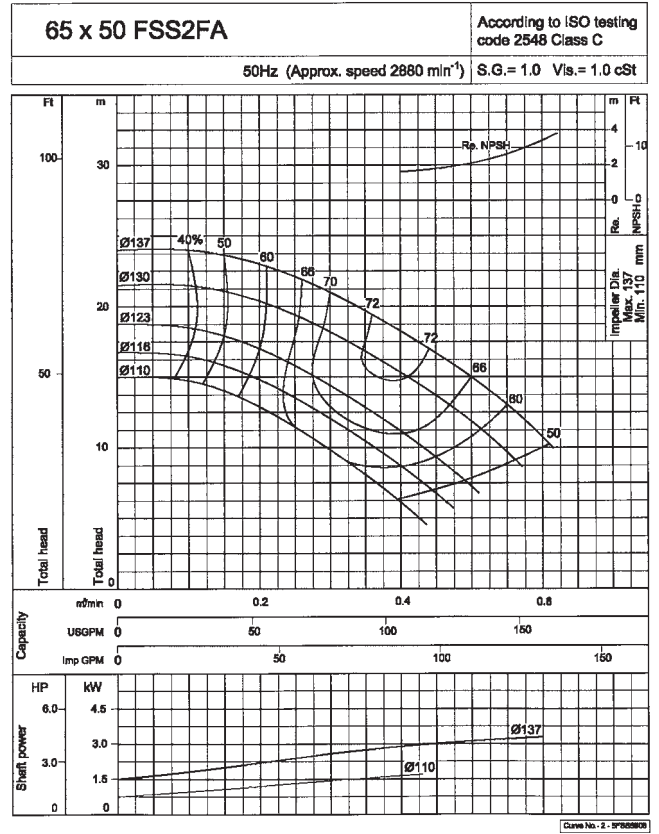
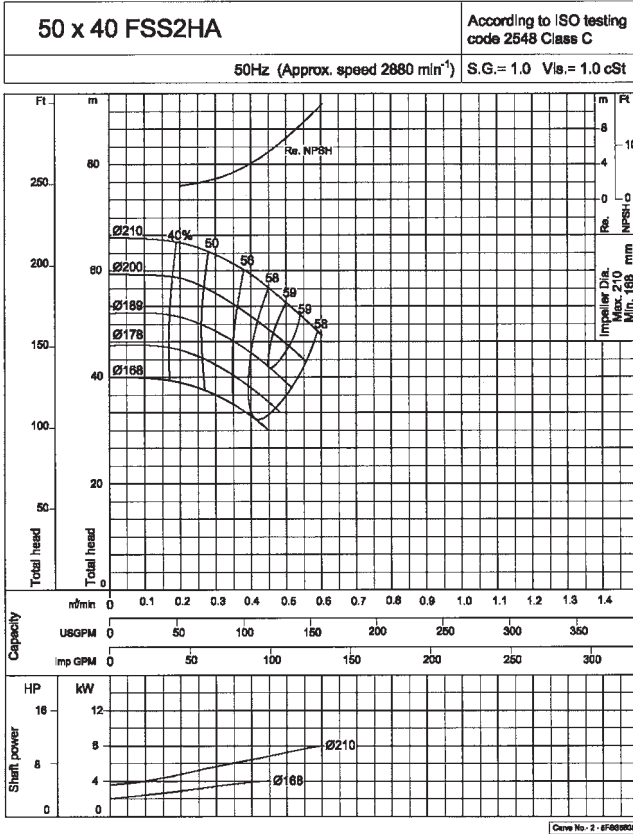
PART NO.	PART	MATERIAL	QTY/ UNIT
053	BEARING COVER	CAST IRON	1
056	BALL BEARING	-	2
093	DEFLECTOR	RUBBER (EPDM)	1
095	BEARING SUPPORT	STEEL	1
115-1	O-RING	FLUORORUBBER (viton)	1
120-1	BOLT, CASING	304 STAINLESS STEEL	1 SET
120-2	BOLT, B.HOUSING	STEEL	4
135	IMP, WASHER	304 STAINLESS STEEL	1

PERFORMANCE CURVE

 2900 min⁻¹


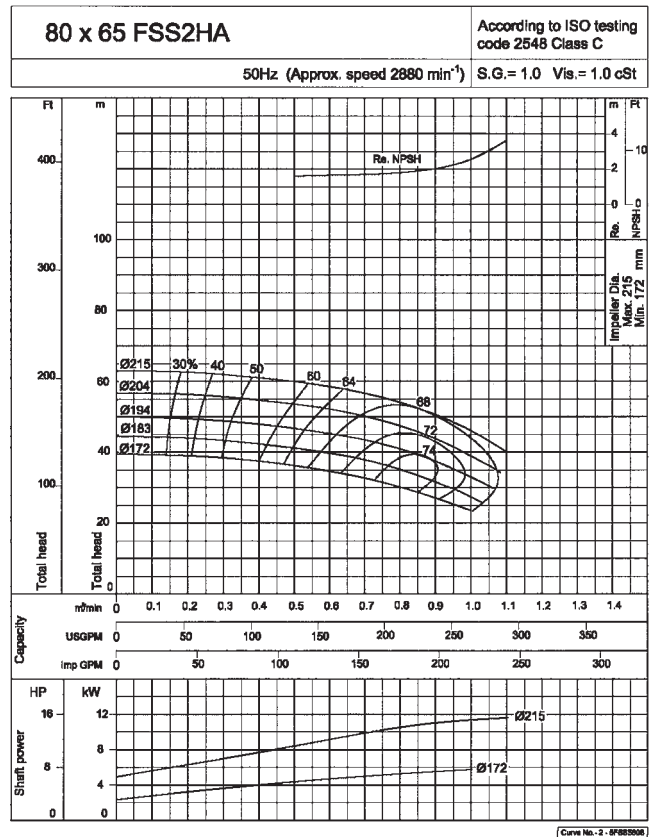
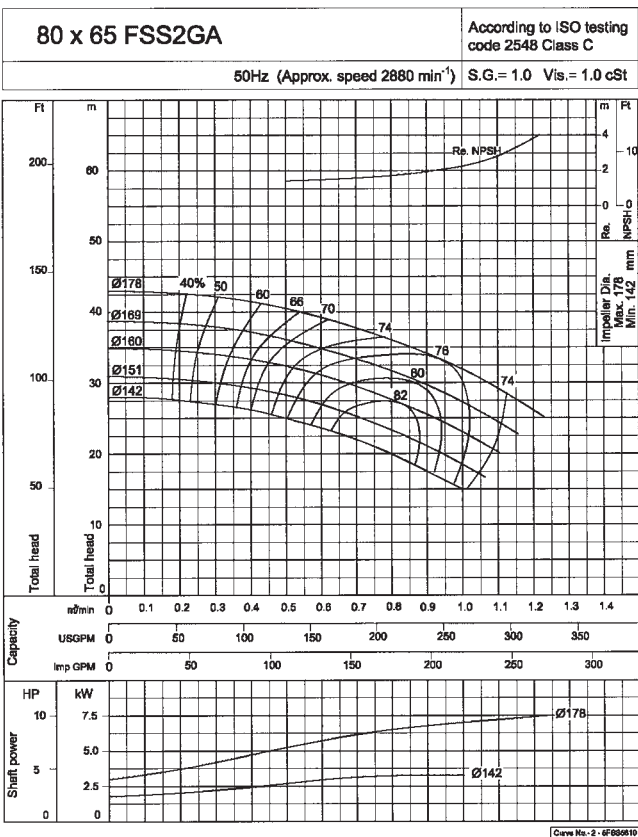
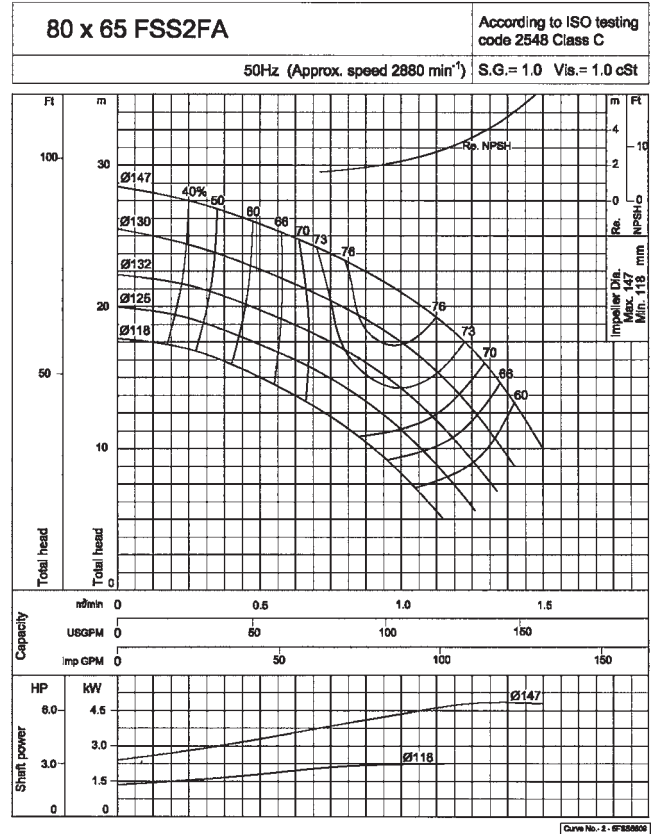
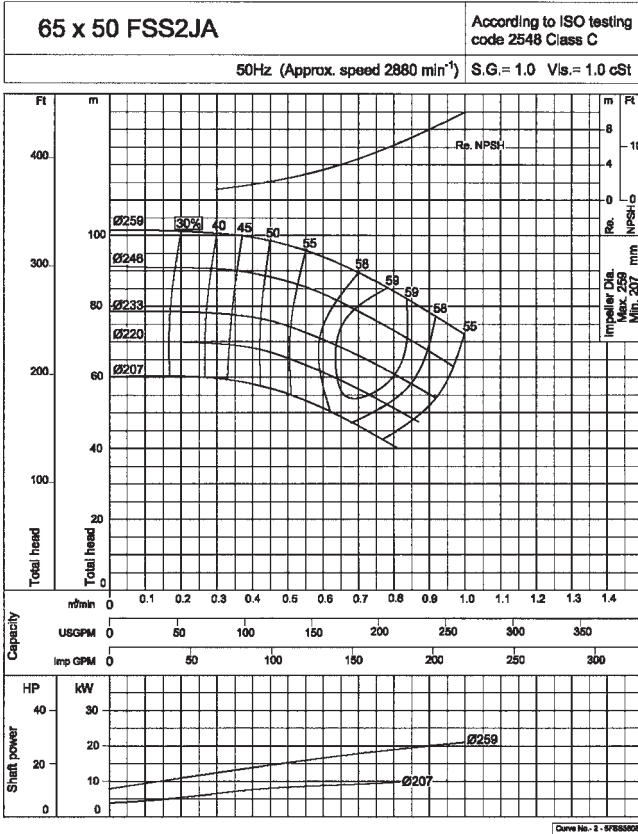
PERFORMANCE CURVE

2900 min⁻¹

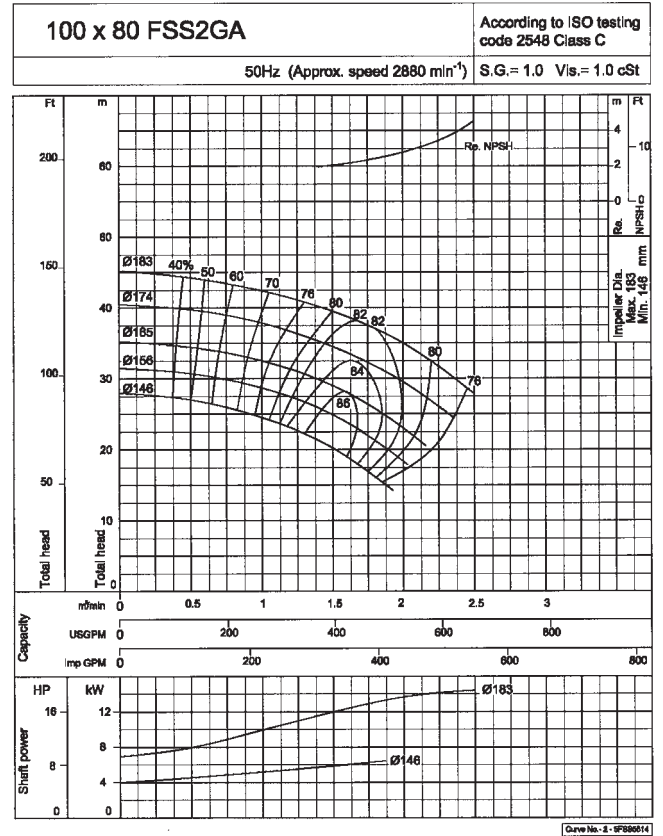
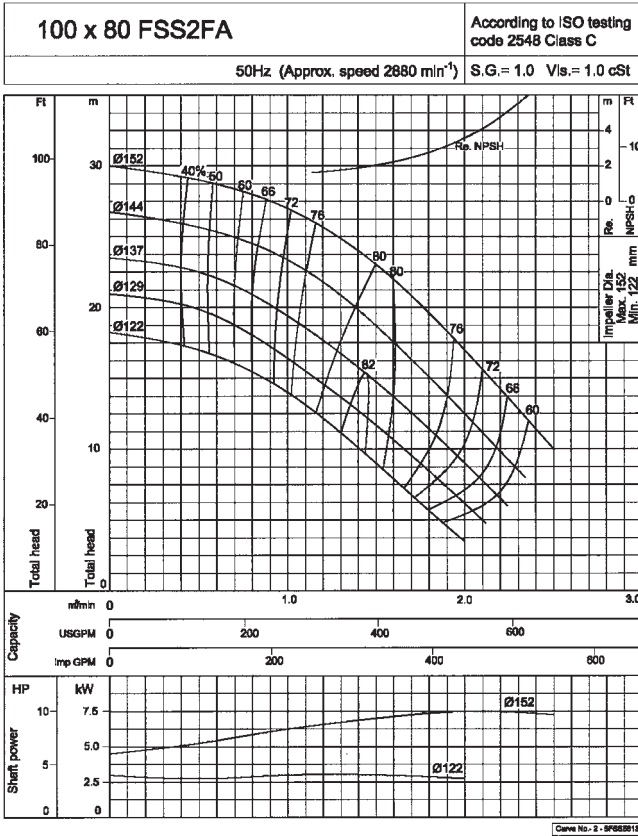


PERFORMANCE CURVE

2900 min⁻¹

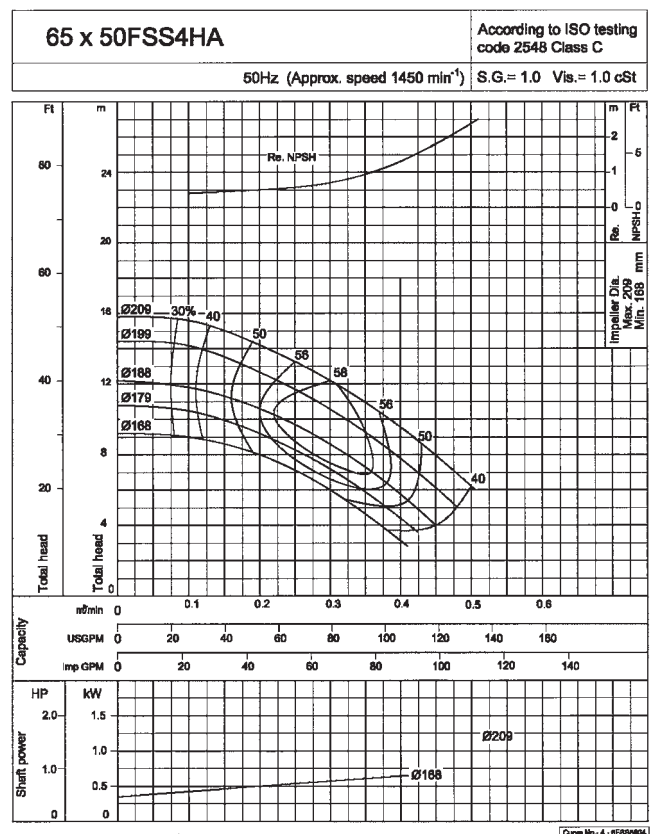
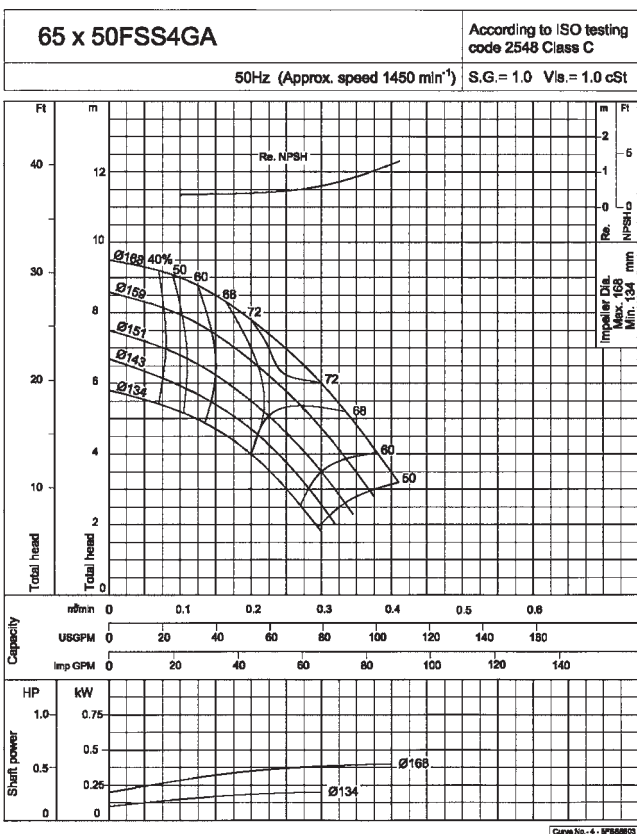
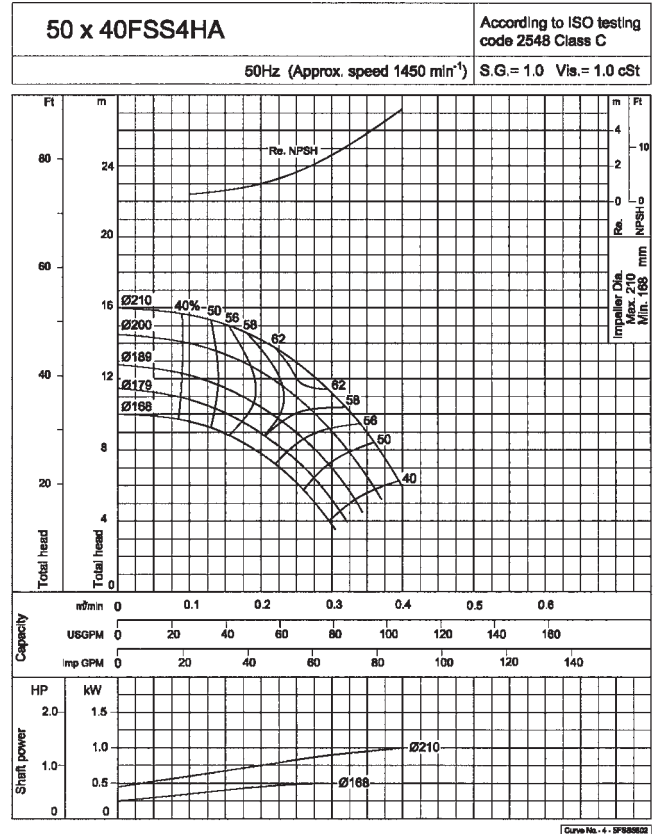
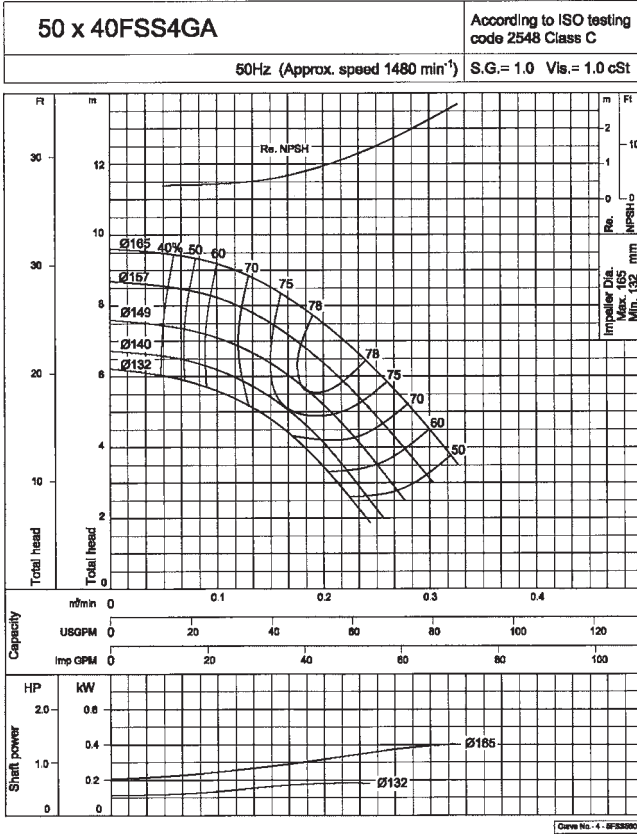


PERFORMANCE CURVE

 2900 min⁻¹


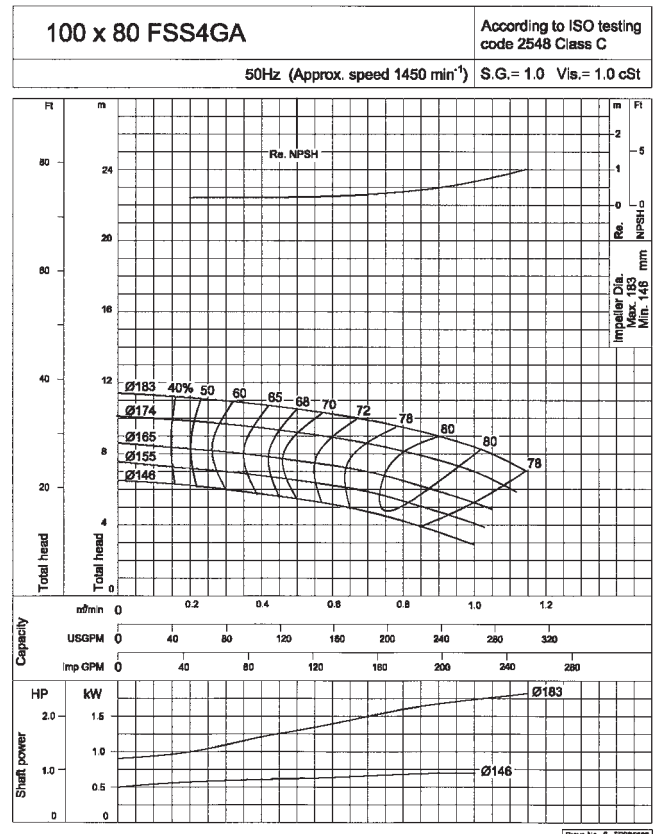
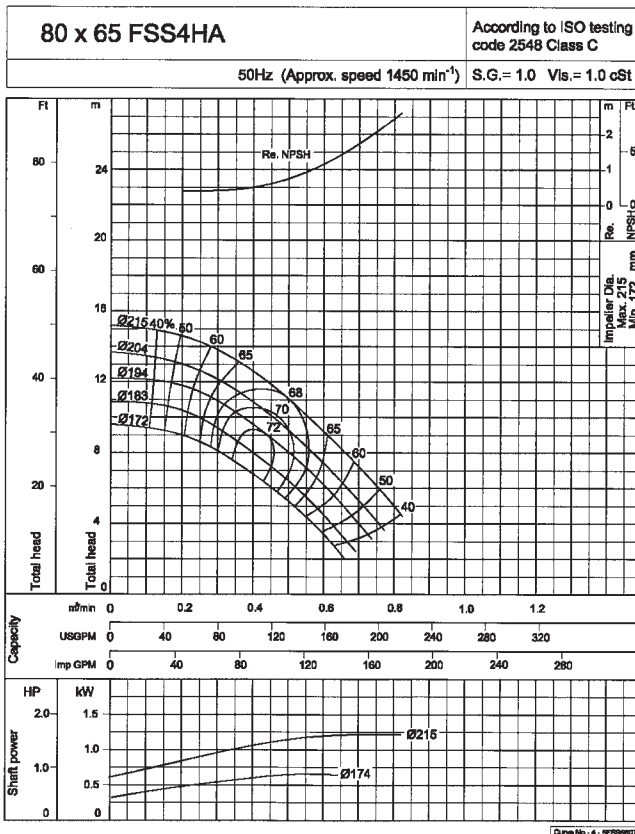
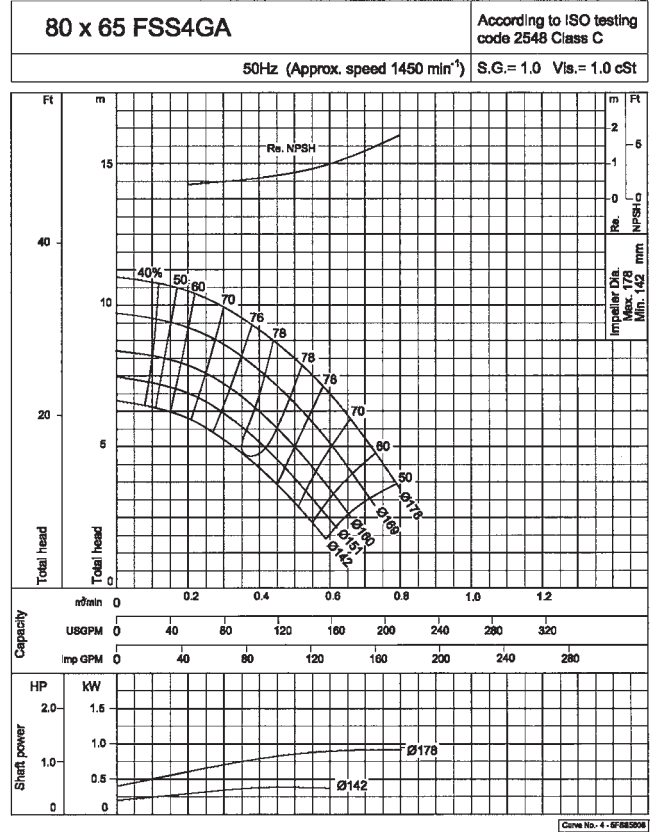
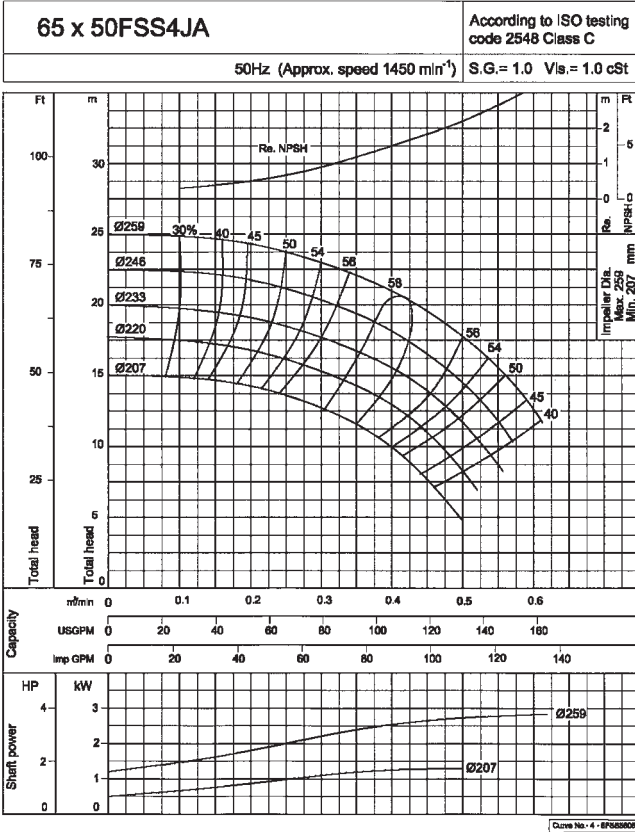
PERFORMANCE CURVE

1450 min⁻¹

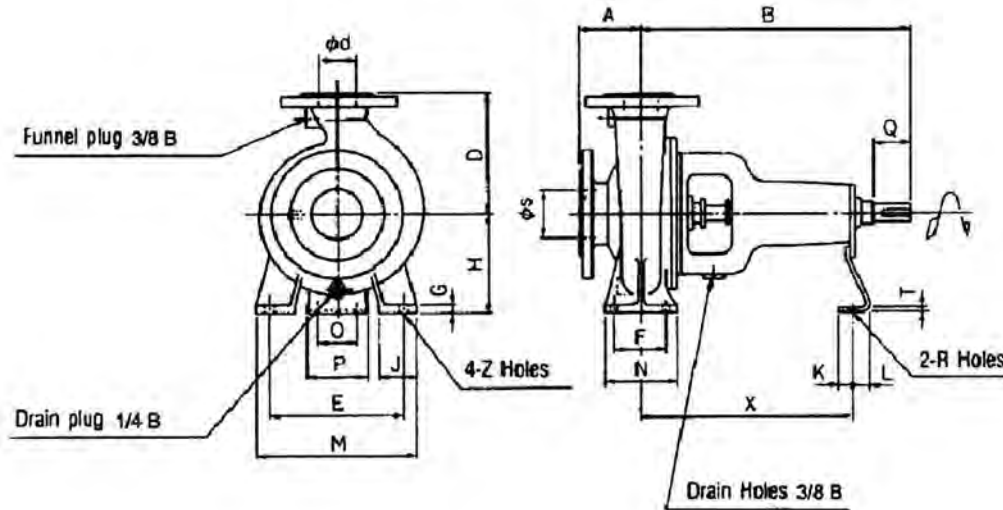


PERFORMANCE CURVE

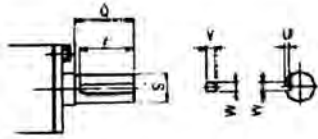
1450 min⁻¹



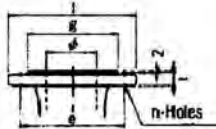
DIMENSION - BARE SHAFT PUMP



Shaft



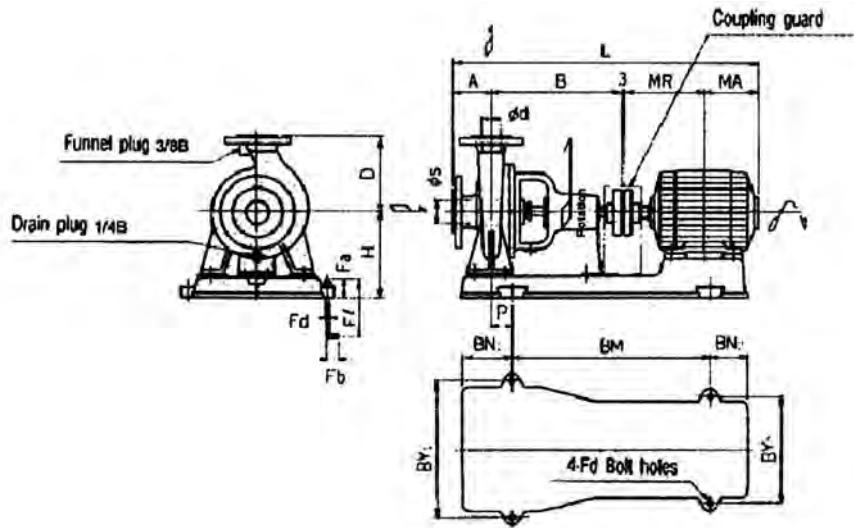
Flange (JIS 10K R.F.)



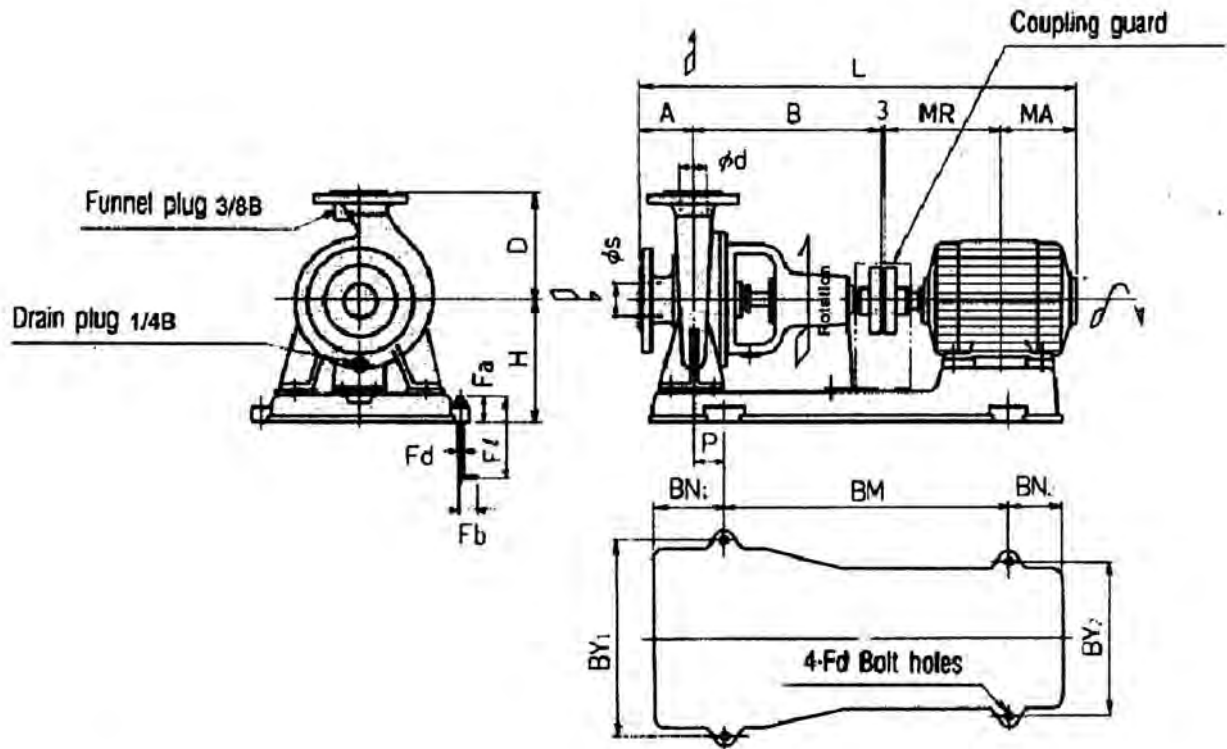
Size Ø	g	e	f	t	n	h
32	80	100	135	16	4	19
40	85	105	140	16	4	19
50	100	120	155	16	4	19
65	120	140	175	18	4	19
80	130	150	185	18	8	19
100	155	175	210	18	8	19

SIZE ø _s ø _d	MODEL	Pump															SHAFT						Bearing	Packing X 4	Weight kg	
		A	B	D	E	F	G	H	J	M	N	O	P	R	T	X	Z	S	Q	T	U	V				W
40	40x32 FSSFA	65	280	140	140	70	8	112	50	190	100	-	-	-	-	15	19	40	31	3.5	6	6	6304ZZ	20x36x8	19	
	40x32 FSSGA	80	280	160	190	70	8	132	50	240	100	80	120	17	4.5	205	15	19	40	31	3.5	6	6	6304ZZ	20x36x8	23
50	50x40 FSSFA	80	280	140	140	70	8	112	50	190	100	80	120	17	4.5	205	15	19	40	31	3.5	6	6	6304ZZ	20x36x8	20
	50x40 FSSGA	80	280	160	190	70	8	132	50	240	100	80	120	17	4.5	205	15	19	40	31	3.5	6	6	6304ZZ	20x36x8	24
	50x40 FSSHA	80	360	180	190	70	10	160	50	240	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	30
65	65x50 FSSFA	80	360	140	160	70	8	112	50	210	100	110	150	17	4.55	285	15	24	50	44	4	7	8	6304ZZ	20x36x8	24
	65x50 FSSGA	80	360	160	190	70	10	132	50	240	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6034ZZ	20x36x8	27
	65x50 FSSHA	100	360	180	212	70	10	160	50	265	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	33
	65x50 FSSJA	100	360	225	250	90	12	180	65	320	125	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	40
80	80x65 FSSFA	100	360	160	190	70	10	132	50	240	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	28
	80x65 FSSGA	100	360	180	212	70	10	160	50	265	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	32
	80x65 FSSHA	100	360	200	212	70	10	160	50	265	100	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	37
100	100x80 FSSFA	100	360	180	212	95	10	160	65	280	125	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	33
	100x80 FSSGA	100	360	200	212	95	10	160	65	280	125	110	150	17	4.5	285	15	24	50	44	4	7	8	6305ZZ	25x41x8	36

Unit : mm, unless otherwise stated

DIMENSION - PUMP WITH MOTOR
2 Poles


Size	Model		Out put kW	Pump					Motor			Common base					Anchor bolt				Weight kg	
				A	B	H	D	L	P	Frame No.	MR	MA	BM	BN1	BN2	BY1	BY2	Fd	F1	Fa		Fb
40	32	40 x 32 FSSFA5.75	0.75	65	280	162	140	621	35	80	140	133	370	95	95	230	230	M10	200	40	40	45
		40 x 32 FSSFA51.5	1.5	65	280	162	140	621	35	90S	156	151.5	370	95	95	230	230	M10	200	40	40	52
		40 x 32 FSSGA52.5	2.2	80	280	182	160	690	45	90L	168.5	158.5	420	105	80	290	230	M10	200	40	40	60
		40 x 32 FSSGA53.7	3.7	80	280	182	160	690	45	112M	200	175	420	105	80	290	230	M10	200	40	40	79
50	40	50 x 40 FSSFA5.75	0.75	80	280	162	140	636	35	80	140	133	370	95	95	230	230	M10	200	40	40	45
		50 x 40 FSSFA51.5	1.5	80	280	162	140	636	35	90S	156	151.5	370	95	95	230	230	M10	200	40	40	52
		50 x 40 FSSGA52.5	2.2	80	280	182	160	690	45	90L	168.5	158.5	420	105	80	290	230	M10	200	40	40	61
		50 x 40 FSSGA53.7	3.7	80	280	182	160	690	45	112M	200	175	420	105	80	290	230	M10	200	40	40	80
		50 x 40 FSSHA55.5	5.5	80	280	230	180	887	55	132S	239	205	540	130	150	350	350	M12	250	50	50	121
		50 x 40 FSSHA57.5	7.5	80	280	230	180	887	55	132S	239	205	540	130	150	350	350	M12	250	50	50	131
65	50	65 x 50 FSSFA51.5	1.5	80	280	162	140	636	35	90S	156	151.5	370	95	95	230	230	M10	200	40	40	52
		65 x 50 FSSFA52.2	2.2	80	280	182	160	690	45	90L	168.5	158.5	420	105	80	290	230	M10	200	40	40	62
		65 x 50 FSSGA53.7	3.7	80	360	202	160	818	70	112M	200	175	540	130	60	290	290	M12	250	50	50	88
		65 x 50 FSSGA55.5	5.5	80	360	202	160	818	70	132S	239	205	540	130	60	290	290	M12	250	50	50	121
		65 x 50 FSSHA55.5	5.5	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	124
		65 x 50 FSSHA57.5	7.7	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	134
		65 x 50 FSSJA515	15	100	360	225	225	1041	95	160M	323	255	660	170	120	400	400	M16	315	65	63	211
		65 x 50 FSSJA518.5	18.5	100	360	225	225	1041	95	160L	345	275	660	170	120	400	400	M16	315	65	63	221
80	65	80 x 65 FSSFA52.2	2.2	100	360	182	160	790	55	90L	168.5	158.5	480	115	90	290	230	M10	200	40	40	70
		80 x 65 FSSFA53.7	3.7	100	360	182	160	790	55	112M	200	175	540	130	60	290	290	M12	250	40	50	89
		80 x 65 FSSFA55.5	5.5	100	360	182	160	907	70	132S	239	205	540	130	150	350	350	M12	250	50	50	117
		80 x 65 FSSGA55.5	5.5	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	123
		80 x 65 FSSGA57.5	7.5	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	133
		80 x 65 FSSHA511	11	100	360	245	200	1041	95	160M	323	255	660	170	120	400	400	M16	315	65	63	191
100	80	100 x 80 FSSFA55.5	5.5	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	124
		100 x 80 FSSFA57.5	7.5	100	360	230	180	907	55	132S	239	205	540	130	150	350	350	M12	250	50	50	134
		100 x 80 FSSGA511	11	100	360	245	200	1041	95	160M	323	255	660	170	120	400	400	M16	315	65	63	190
		100 x 80 FSSGA515	15	100	360	245	200	1041	95	160M	323	255	660	170	120	400	400	M16	315	65	63	190

DIMENSION - PUMP WITH MOTOR
4 Poles


Size	Model	Out put kW	Pump							Motor			Common base						Anchor bolt				Weight kg
			A	B	H	D	L	P	No.	MR	Frame MA	BM	BN1	BN2	BY1	BY2	Fd	F _l	F _a	F _b			
50 X 40	50 x 40 FSSGA5.37	0.37	80	280	182	160	613.5	45	71	120	130.5	420	105	90	290	190	M10	200	40	40	43		
	50 x 40 FSSHA5.75	0.75	80	360	215	180	725.5	45	80	140	142.5	420	105	115	320	320	M10	200	40	40	56		
	50 x 40 FSSHA51.5	1.5	80	360	220	180	775.5	100	90L	168.5	164	550	115	75	360	290	M10	200	40	40	71		
65 X 50	65 x 50 FSSGA5.75	0.75	80	280	202	160	645.5	45	80	140	142.5	420	105	115	350	210	M10	200	40	40	55		
	65 x 50 FSSHA5.75	0.75	100	360	215	180	745.5	45	80	140	142.5	420	105	115	320	230	M10	200	40	40	61		
	65 x 50 FSSHA51.5	1.5	100	360	220	180	795.5	40	90L	168.5	164	550	115	75	360	290	M10	200	40	40	71		
	65 x 50 FSSJA52.2	2.2	100	360	230	225	837.5	40	100L	193	181.5	480	115	145	400	260	M10	200	40	40	95		
	65 x 50 FSSJA53.7	3.7	100	360	230	225	854.5	40	112M	200	191.5	480	115	145	400	290	M12	250	50	50	106		
80 X 65	80 x 65 FSSGA5.75	0.75	100	360	215	180	745.5	45	80	140	142.5	420	105	115	320	230	M12	250	50	50	61		
	80 x 65 FSSHA51.5	1.5	100	360	220	200	795.5	40	90L	168.5	164	550	115	75	360	290	M12	250	50	50	71		
100 X 80	100 x 80 FSSGA51.5	1.5	100	360	220	200	795.5	40	90L	168.5	164	550	115	75	360	290	M12	250	50	50	73		
	100 x 80 FSSGA52.5	2.2	100	360	220	200	837.5	40	100L	193	181.5	550	115	75	360	290	M12	250	50	50	81		