



**EBARA**

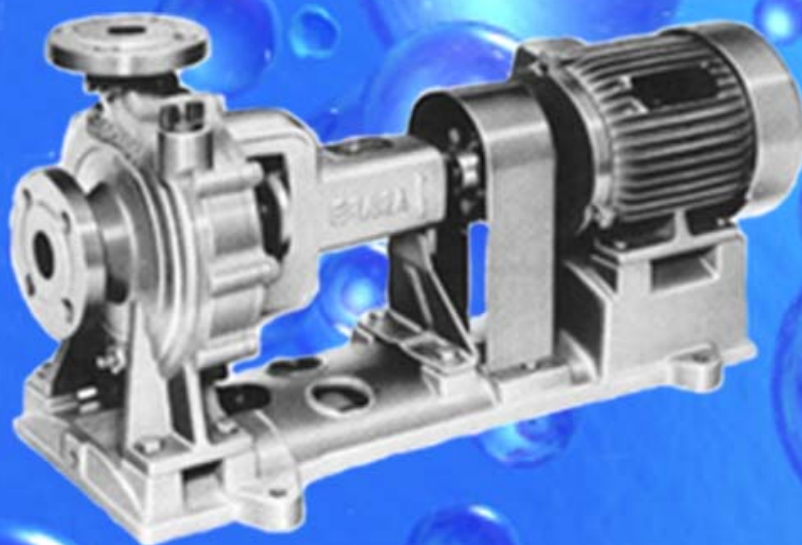


ISO 9001 : 2000  
Lic. No : QEC22090



**FS 8005-56 Rev. 3**

**TECHNICAL DATA BOOK  
EBARA END SUCTION VOLUTE PUMP  
MODEL FSA  
SUCTION SIZE 50 ~ 250 MM**



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**Note :**

*All specifications subject to change without prior notice*

### **Features**

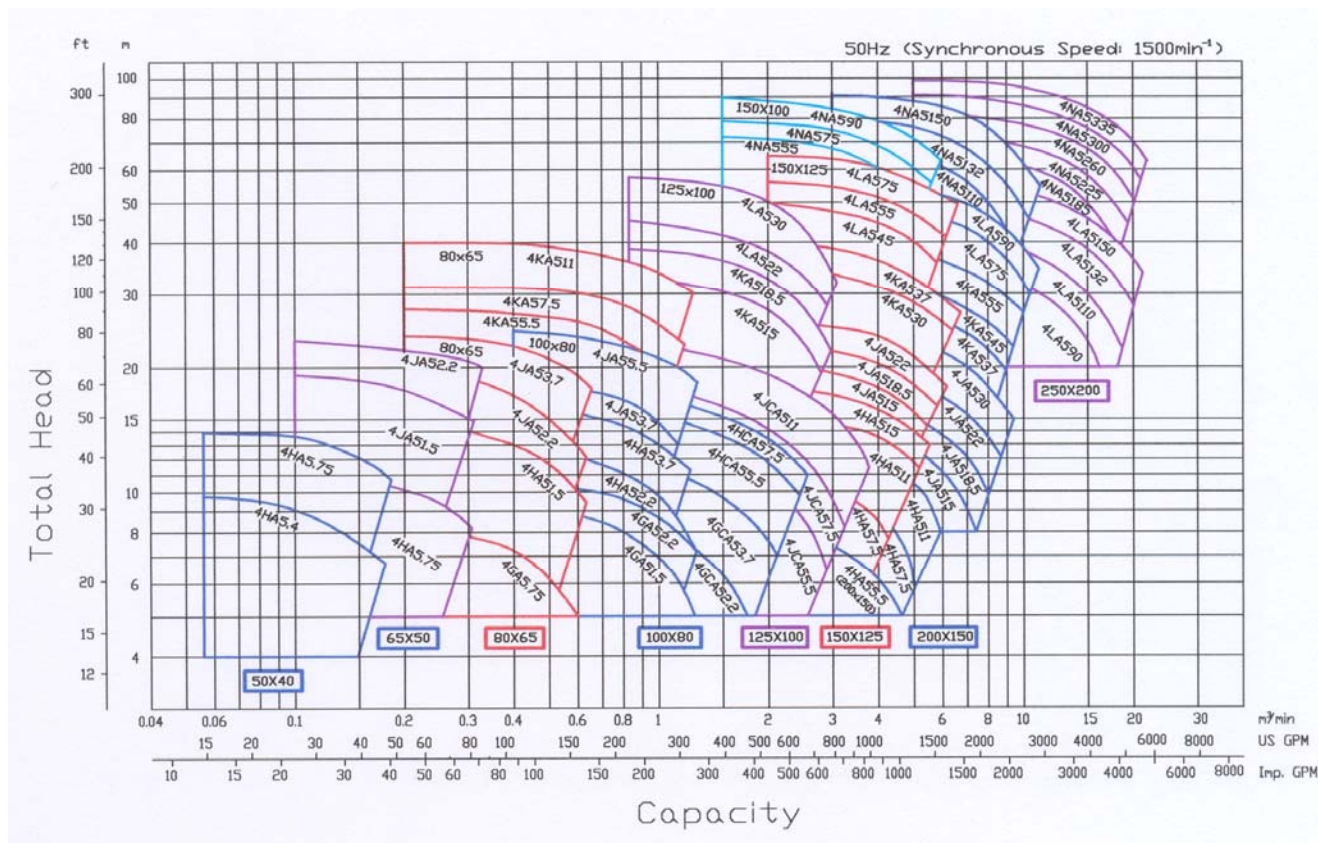
1. Easy removal and maintenance, BPO (Back Pull Out) system allows all rotating elements to be removed without disconnecting suction and discharge pipework.
2. Top centerline discharge, foot support under casing for maximum resistance to misalignment and distortion from pipe loads
3. Non-overload design to ensure stable performance for all applications
4. Wider range application with flow capacity up to 22 m<sup>3</sup>/min.
5. Higher working pressure up to 16 bar.

### **Applications**

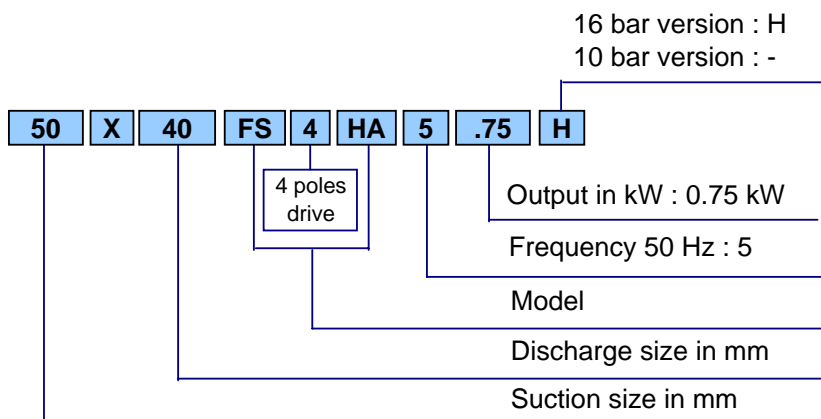
1. Industrial use
2. Water supply
3. Hot and cold water supply
4. For swimming pool
5. Sprinkling
6. Air conditioning
7. Fire-fighting application.

## Performance Chart and Model Code

### Performance Chart - 4 Poles - 50 Hz

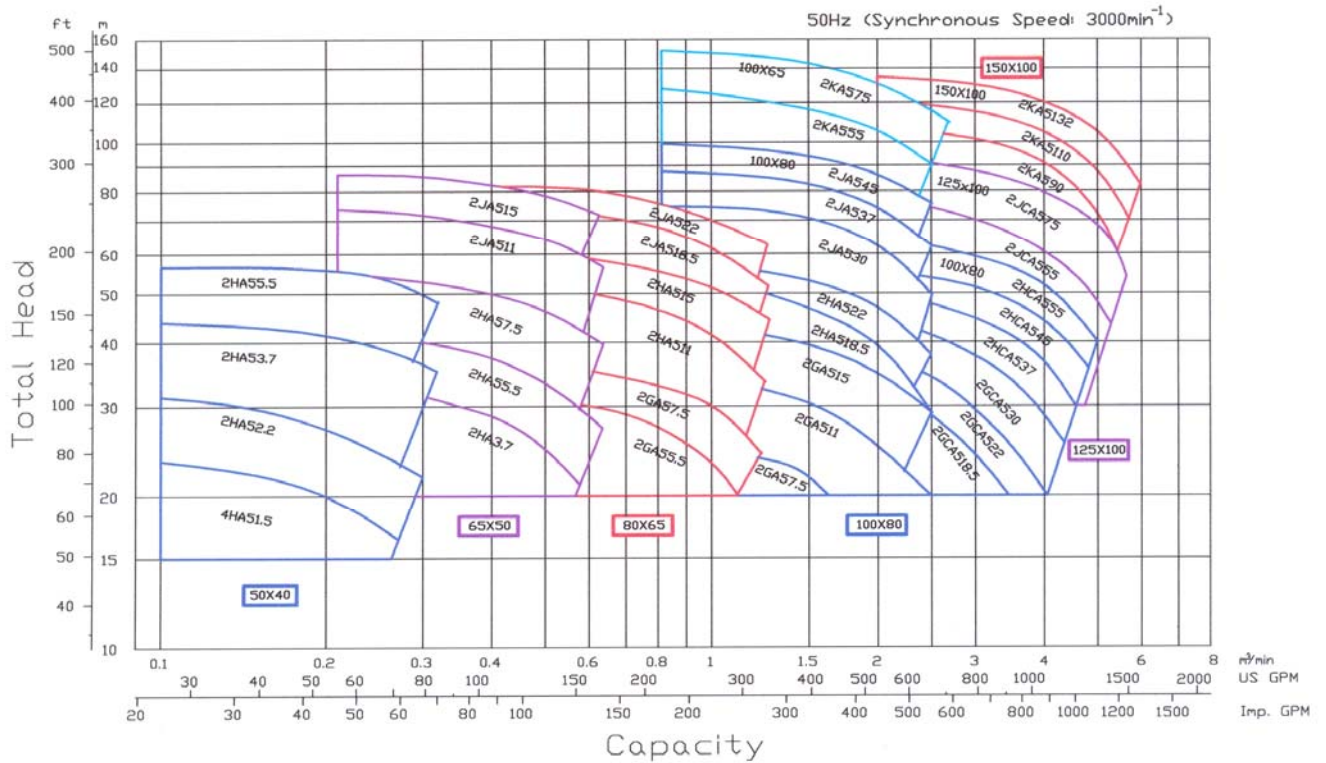


### Model Code - 4 Poles - 50 Hz

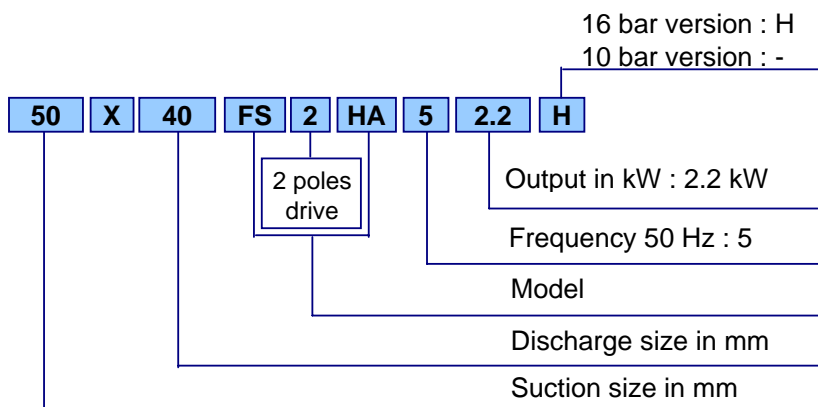


## Performance Chart and Model Code

### Performance Chart - 2 Poles - 50 Hz



### Model Code - 2 Poles - 50 Hz




Description		Standard		Optional	
		2 poles model	4 poles model	2 poles model	4 poles model
Liquid	Name	Clean water			
	Temperature	0 to 80 °C (32 to 176 °F)			
Max. Working Pressure		10 bar (10.2 kgf/cm <sup>2</sup> ) for standard flange JIS 10K RF		16 bar (16.3 kgf/cm <sup>2</sup> )	
		16 bar (16.3 kgf/cm <sup>2</sup> ) for standard flange JIS 16K RF			
Synchronous Speed		3000 min <sup>-1</sup>	1500 min <sup>-1</sup>		
Installation		Indoors		Outdoors	
Construction	Impeller	Enclosed			
	Shaft seal	Mechanical seal		Gland Packing	
	Sealing	Self flushing		External flushing	
	Bearing	Sealed ball bearing		Oil bath (some models only)	
Flange	Suction & Discharge	Suction < φ 150 mm, except 100x65 FSKA : JIS 10K RF		16 bar : JIS 16K RF; DIN PN-16	
		100x65 FSKA : JIS 16K RF		DIN PN-16	
		Suction = φ 150 mm, except below models : JIS 10K RF		16 bar : JIS 16K RF; DIN PN-16	
		150x100 FSKA; 150x100 FSNA : JIS 16K RF		DIN PN-16	
		Suction = φ 200 mm, except below models : JIS 10K RF		16 bar : JIS 16K RF; DIN PN-16	
		200x150 FSLA; 200x150 FSNA : JIS 16K RF		DIN PN-16	
		Suction = φ 250 : JIS 16K RF		DIN PN-16	
Material	Casing	Cast Iron		Ductile Cast Iron (FCD)	
	Impeller	Bronze Casting (CAC406/BC6)		Cast iron; Ductile Cast Iron (FCD)	
	Shaft	403 Stainless steel		304; 316 Stainless steel	
	Seal	Mechanical Seal: Ceramic/Carbon/NBR		Gland Packing : Teflon (PTFE) impregnated Mechanical Seal : SiC/SiC	
Accessories	Bare shaft			Priming funnel ; valve; Companion Flange	
	With motor	Common base, Coupling, Coupling guard		Priming funnel ; valve; Companion Flange	

Model	10 Bar version						16 Bar version					
	Material					Hydro Test	Material					Hydro Test
	Casing	Impeller		Shaft			Casing	Impeller		Shaft		
Standard		Option	Standard	Option	kg/cm <sup>2</sup>	Standard		Option	Standard	Option	kg/cm <sup>2</sup>	
50x40 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
65x50 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
65x50 FSJA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
80x65 FSGA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
80x65 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
80x65 FSJA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
80x65 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x80 FSGA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x80 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x80 FSJA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x65 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x80 FSGCA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
100x80 FSHCA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
125x100 FSJCA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
125x100 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
125x100 FSLA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5

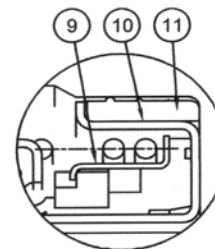
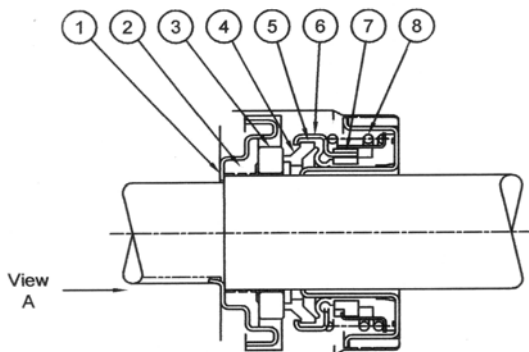
Model	10 Bar version						16 Bar version					
	Material					Hydro Test	Material					Hydro Test
	Casing	Impeller		Shaft			Casing	Impeller		Shaft		
		Standard	Option	Standard	Option	Standard		Option	Standard	Option	kg/cm <sup>2</sup>	
150x100 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
150x100 FSNA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
150X125 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
150x125 FSJA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
150x125 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
150x125 FSLA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
200x150 FSHA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
200x150 FSJA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
200x150 FSKA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Ductile Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
200x150 FSLA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
200x150 FSNA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
250x200 FSLA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5
250x200 FSNA	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	15.3	Cast Iron	Bronze	Cast Iron	403 St. Steel	304; 316 St. Steel	24.5



1	Customer	:		36	Number of pump required	:	
2	User	:		37	Ebara Model	:	
3	Job No.	:		<b>Performance</b>			
4	Item No.	:		38	Pump Speed	:	rpm
5	Doc. No.	:		39	Driver Output	:	kW
<b>Operating Conditions</b>				40	Efficiency	:	%
6	Liquid	:	water	41	Shaft Power	:	kW
7	Liquid Temp.	:	max. 80°C	42	Req. NPSH (Aq)	:	m
8	Specific Gravity	:	1.0	<b>Materials</b>			
9	Viscosity	:	1 cp	43	Casing	:	Cast Iron
10	Capacity	:	<input type="checkbox"/> l/s <input type="checkbox"/> m <sup>3</sup> /min <input type="checkbox"/> m <sup>3</sup> /H <input type="checkbox"/> USGPM	44	Impeller	:	Bronze
11	Total Head	:	<input type="checkbox"/> meter <input type="checkbox"/> kg/cm <sup>2</sup> <input type="checkbox"/> feet	45	Shaft	:	Stainless Steel
12	Corrosion / Eros.	:	non	46	C.W. Ring	:	Bronze
13	Solid	:	non	47	Base Plate	:	<input type="checkbox"/> Steel <input type="checkbox"/> Cast Iron
14	Suction Press.	:		<b>Accessories (Bare Shaft Pump)</b>			
15	Discharge Press.	:		48	Priming cook and priming funnel		
16	Diff. Press.	:		<b>Scope of Our Supply for Each Unit</b>			
17	Vapor Press.	:		49	<input type="checkbox"/> bare shaft pump <input type="checkbox"/> motor <input type="checkbox"/> flexible coupling <input type="checkbox"/> coupling guard <input type="checkbox"/> pressure gauge <input type="checkbox"/> compound gauge <input type="checkbox"/> foundation bolts <input type="checkbox"/> base plate <input type="checkbox"/> companions flanges (include bolt and packing)		
18	NPSH Av (Aq)	:		<b>Shop Test</b>			
<b>Constructions</b>				50	Performance Test	:	<input type="checkbox"/> yes <input type="checkbox"/> No
19	Nozzles Position	:	end - suction top - discharge	50	Casing Hydro Test	:	<input type="checkbox"/> yes
20	Size (Suction)	:	_____ mm	50	Witnessed Test	:	(performance) <input type="checkbox"/> yes <input type="checkbox"/> no
	(discharge)	:	_____ mm	<b>Attachment</b>			
21	Pump type	:	end suction volute foot mounted	51	<input type="checkbox"/> outline dwg. <input type="checkbox"/> Sectional dwg <input type="checkbox"/> performance curve <input type="checkbox"/> spare part list		
22	No. of stage	:	one	<b>Remarks</b>			
23	Type of Impeller	:	closed type, single suction				
24	Casing Test Pressure	:	Hydro test : _____ kg/m <sup>2</sup> Max. Positive Suction Press : _____ kg/m <sup>2</sup>				
25	Bearing Type	:	grease lubricated ball bearing				
26	Shaft Seal	:	<input type="checkbox"/> carbonized fiber gland packing <input type="checkbox"/> mechanical seal				
27	Flushing	:	<input type="checkbox"/> self <input type="checkbox"/> external				
28	Rotation	:	CW viewed from coupling end				
29	Connection	:					
<b>Motor Driver</b>							
30	Motor Power	:	kW; 4 poles; 3 phase      Voltage : <input type="checkbox"/> 380 V <input type="checkbox"/> 415 V <input type="checkbox"/> 50 HZ <input type="checkbox"/> 60 HZ kW; 2 poles; 3 phase      RPM : <input type="checkbox"/> 1500 min <sup>-1</sup> <input type="checkbox"/> 1750 min <sup>-1</sup> <input type="checkbox"/> 3000 min <sup>-1</sup> <input type="checkbox"/> 3600 min <sup>-1</sup>				
31	Type	:	Three phases, squirrel cage rotor, horizontal foot mounted Protection - totally enclosed fan cooled (TEFC) <input type="checkbox"/> IP-54, indoor inst. <input type="checkbox"/> IP-55, outdoor inst.				
32	Insulation	:	<input type="checkbox"/> class F <input type="checkbox"/> class B				
33	Starting Method	:	<input type="checkbox"/> star-delta <input type="checkbox"/> direct on lone				
34	Maker	:	<input type="checkbox"/> Teco <input type="checkbox"/> ABB <input type="checkbox"/> Leroy Somer <input type="checkbox"/>				
35	Supplied by	:	<input type="checkbox"/> Customer <input type="checkbox"/>				
				Approved by Customer	Approved by	Made by	

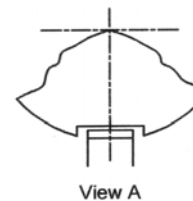
Model	Mechanical Seal	O-Ring/ Gasket	Gland Packing Size mm	Qty of Gland Packing	Ball Bearing		
50x40 FSHA	FH-25	Gs-225	41x25x8	4	6305 ZZ		
65x50 FSHA	FH-25	Gs-225	41x25x8	4	6305 ZZ		
65x50 FSJA		Gs-275					
80x65 FSGA	FH-25	Gs-180	41x25x8	4	6305 ZZ		
80x65 FSHA		Gs-225					
80x65 FSJA	FH-35	Gs-275	51x35x8				
80x65 FSKA		Gs-335					
100x65 FSKA	EA-262-40	Gs-335	56x40x8	4	6208 ZZ		
100x80 FSGA	FH-25	Gs-275	41X25X8	4	6305 ZZ		
100x80 FSHA	FH-35	Gs-225	51X35X8		6307 ZZ		
100x80 FSJA		Gs-275					
100x80 FSGCA	EA-262-35	Gs-185					
100x80 FSHCA		Gs-225					
125x100 FSJCA	EA-262-40	Gs-275				56x40x8	4
125x100 FSKA	FH-35	Gs-335		51x35x8			6307 ZZ
125x100 FSLA	EA-262-45	Gs-425	65x45x10	5	6309 ZZ		
150x100 FSKA	EA-262-50	370x320x0.8T	70x50x10	4	6310 ZZ		
150x100 FSNA	EA-262-55	560x515x0.8T	75x55x10	5	6312 ZZ		
150x125 FSHA	EA-262-35	Gs-225	51x35x8	4	6307 ZZ		
150x125 FSJA		Gs-275					
150x125 FSKA	EA-262-45	Gs-335	65x45x10	5	6309 ZZ		
150x125 FSLA		Gs-425					
200x150 FSHA	EA-262-35	Gs-225	51x35x8	4	6307 ZZ		
200x150 FSJA	EA-262-45	Gs-275	65x45x10	5	6309 ZZ		
200x150 FSKA	EA-262-55	Gs-335	75x55x10		6312 ZZ		
200x150 FSLA		450x415x0.8T					
200x150 FSNA	EA-262-65	560x515x0.8T	90x65x12.5		6313 ZZ		
250x200 FSLA	EA-262-65	480x440x0.8T	90x65x12.5	5	6313 ZZ		
250x200 FSNA	EA-262-75	615x550x0.8T	104x75x14.5		6315 ZZ		

### Model FH



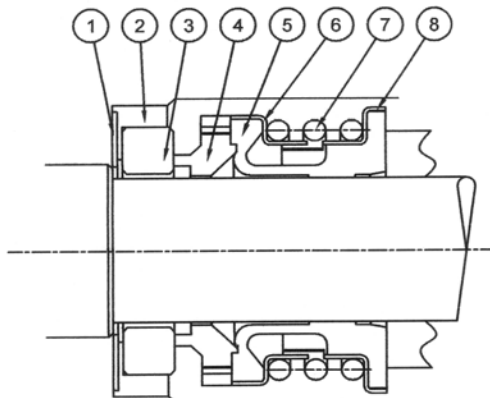
Detail of Cartridge,  
Seat Ring

Part No.	Part Name	Material	Qty/Unit
1	Case	304 Stainless Steel	1
2	Cup Gasket	NBR	1
3	Mating Ring	Ceramic NT-32	1
4	Seal Ring	Carbon NC-11B1	1
5	Bellows	NBR	1
6	Case	304 Stainless Steel	1
7	Drive Ring	304 Stainless Steel	1
8	Coil Spring	304 Stainless Steel	1
9	Spring Holder	304 Stainless Steel	1
10	Cartridge	304 Stainless Steel	1
11	Seat Ring	NBR A834	1



View A

### Model EA



Part No.	Part Name	Material	Qty/Unit
1	Washer	316 Stainless Steel	1
2	Cup Gasket	NBR	1
3	Mating Ring	Ceramic	1
4	Seal Ring	Carbon	1
5	Bellows	NBR	1
6	Case	316 Stainless Steel	1
7	Coil Spring	316 Stainless Steel	1
8	Spring Holder	316 Stainless Steel	1

# Ebara End Suction Volute Pump

# Model **FSA**

## Impeller and Coupling (1/3)

50 Hz

### 4 POLES - 1500 rpm

MODEL	MOTOR		IMPELLER DIAMETER mm	COUPLING CLA	SHAFT DIAMETER	
	POWER	FRAME			PUMP	MOTOR
	kW	No.			φ P (mm)	φ M (mm)
50x40 FSHA	0.4	71	182	112	24	14
	0.75	80	209			19
65x50 FSHA	0.75	80	199	112	24	19
65x50 FSJA	1.5	90L	240	112	24	24
	2.2	100L	261	125		28
80x65 FSGA	0.75	80	164	112	24	19
80x65 FSHA	1.5	90L	207	112	24	24
80x65 FSJA	2.2	100L	237	140	32	28
	3.7	112M	261			
	5.5	132S	279			
80x65 FSKA	7.5	132M	300	160	32	38
	11	160M	333			42
	1.5	90L	169			112
100x80 FSGA	2.2	100L	183	125	24	28
	3.7	112M	223	140		28
100x80 FSHA	2.2	100L	199	140	32	28
	3.7	112M	236			
100x80 FSJA	3.7	112M	236	140	32	48
	5.5	132S	265	160		
100x80 FSGCA	2.2	100L	166	140	32	28
	3.7	112M	190	140		
100x80 FSHCA	3.7	112M	187	140	32	28
	5.5	132S	205	160		38
	7.5	132M	223	160		38
125x100 FSJCA	5.5	132S	232	160	38	38
	7.5	132M	251			38
	11	160M	273			42
125x100 FSKA	7.5	132M	250	160	32	38
	11	160M	283			42
	15	160L	315			48
	18.5	180M	333			180
125x100 FSLA	22	180L	368	180	32	48
	30	200L	407	200		55
150x125 FSHA	7.5	132M	190	160	32	38
	11	160M	212			42
	15	160L	224			42
150x125 FSJA	15	160L	246	160	32	42
	18.5	180M	260	180		48
	22	180L	274			48
150x125 FSKA	30	200L	316	200	42	55
	37	225SC	334	224		60
150x125 FSLA	45	225MC	378	224	42	60
	55	250SC	400	250		70
	75	250MC	424			70
150x100 FSNA	55	250SC	409	250	55	70
	75	250MC	460			80
	90	280SC	499			280

### 4 POLES - 1500 rpm (Continued)

MODEL	MOTOR		IMPELLER DIAMETER mm	COUPLING CLA	SHAFT DIAMETER	
	POWER	FRAME			PUMP	MOTOR
	kW	No.			φ P (mm)	φ M (mm)
200x150 FSHA	5.5	132S	186	160	32	38
	7.5	132M	200			42
	11	160M	222			42
200x150 FSJA	15	160L	220	160	42	42
	18.5	180M	234	180		48
	22	180L	248	200		55
	30	200L	268			60
	37	225SC	274			224
200x150 FSKA	37	225SC	294	224	48	60
	45	225MC	310	250		70
	55	250SC	334			70
200x150 FSLA	75	250MC	385	250	48	70
	90	280SC	411	280		80
200x150 FSNA	110	280MC	445	280	60	80
	132	315SC	480	315		85
	150	315MC	495			85
250x200 FSLA	90	280SC	362	280	60	80
	110	280MC	380	315		85
	132	315SC	392			85
	150	315MC	408			85
250x200 FSNA	185	315MB	445	315	74	85
	225	315CB-95R	473	355		95
	260	355AB-95R	492			95
	300	355CB-95R	520			95
	335	355CB-95R	530			95

### 2 POLES - 3000 rpm

MODEL	MOTOR		IMPELLER DIAMETER mm	COUPLING CLA	SHAFT DIAMETER	
	POWER	FRAME			PUMP	MOTOR
	kW	No.			φ P (mm)	φ M (mm)
50x40 FSHA	1.5	90S	143	112	24	24
	2.2	90L	160			
	3.7	112M	188			
	5.5	132S	208			
65x50 FSHA	3.7	112M	166	125	24	28
	5.5	132S	185			
	7.5	132S	207			
65x50 FSJA	11	160M	232	160	24	42
	15	160M	250			
80x65 FSGA	5.5	132S	157	160	24	38
	7.5	132S	173			
80x65 FSHA	11	160M	199	160	24	42
	15	160M	215			
80x65 FSJA	18.5	160L	240	160	32	42
	22	180MA	246			
100x80 FSGA	7.5	132S	147	160	24	38
	11	160M	167			
	15	160M	180			
100x80 FSHA	18.5	160L	201	160	32	42
	22	180MA	211			
100x80 FSJA	30	200LA	235	200	32	55
	37	200LA	254			
	45	225MA	269			
100x65 FSKA	55	250SA	286	224	38	60
	75	250MA	328			
100x80 FSGCA	18.5	160L	166	160	32	42
	22	180MA	178			
	30	200LA	193			
100x80 FSHCA	37	200LA	197	200	32	55
	45	225MA	205			
	55	250SA	223			
125x100 FSJCA	55	250SA	236	200	38	55
	75	250MA	273			
150x100 FSKA	75	250MA	278	224	42	60
	90	280SA	291			
	110	280MA	310			
	132	315SA	323			

Part No.	Part Name	Standard Material	Q'ty/Unit
056	Ball Bearing	-	2
107	Liner Ring	Bronze	2
111	Mechanical Seal	Ceramic/Carbon/NBR	1
119	Gland Packing	Teflon (PTFE) Impregnated	3 or 4
	Coupling Rubber	NBR	1 set

## Inspections and Test

50 Hz

Item Check		Standard		Option
Material Inspection	EI	Material chemical composition and mechanical Properties are checked periodically according to JIS.	CR/ ES	Material certificat is to be submitted
Hydrostatic test *3	EN	Hydrostatic test is to be performed on casing using fresh water at normal temperature. Retention time of water pressure is 5 minutes for Cast Iron	EN	Hydrostatic test record is to be submitted
Balancing test *3	EN	Impeller is to be subject to balancing test	EN	
Assembly dimensional inspection *3	EN	Dimensions of the followings are to be subject to inspection * Position of foundation bolt hole * Position of suction & discharge flange * Relative positions of suction and discharge flange and foundation bolt hole.	CR	Outline dimensional inspection record is to be submitted.
Performance test General performance *1	ES	Capacity, total head, pump power input, and speed of rotation are to be measured and pump efficiency to be calculated. Measurement point are to be 5 points within the range from shutoff point 125% rated capacity. Judgement is to be based on JIS Testing Code B8301 9.1 (1)	CR	Judgement is to be based on following standards. * JIS Testing Code B8301 9.1 (2) * ISO 2548 Part 1 Class C (as requested by customer)
Bearing Vibration	EN	Vibration is to be measured on bearing housing at rated capacity. Judgement is to be based on JIS Testing Code B8301 9.4.1	CR	Measured record is to be submitted
Performance test Bearing Temperature	EN	Temperature is to be measured at saturated point of the temperature increase. Judgement is to be based on JIS Testing Code B8301 9.4.2	CR	Measurement record is to be submitted.
NPSH	NA		CR	Measurement record is to be performed for Req'd NPSH at above or below rated capacity
	EN	Internal Ebara Standard	CR	Noise level is to be measured at rated capacity. *2
Shipping Inspection	ES	Shipping Inspection is to be performed based on EBARA shipping inspection check sheet.	ES	

### NOTE :

- CR** : Ebara Inspector Witness Point (Record shall be submitted)
- EI** : Ebara Inspector Witness Point (Record shall be not submitted)
- EN** : Ebara Inspector Witness Point (Not Recorded but stamp/markings/OK inspection label)
- ES** : Ebara Inspector Witness Point (Record shall be kept)
- NA** : Not Applied.

\*1 Performance test based on JIS B8301 " Testing Methods for Centrifugal Pumps, Mixed Flow Pumps and Axial Flow Pump" and JIS B8302 "Measurement Methods of Pump Discharge".

\*2 Measured Value on pump noise is considered as reference value because its include background noise effect of motor, discharge valve, etc.

\*3 Judgement is based on Ebara Standard.



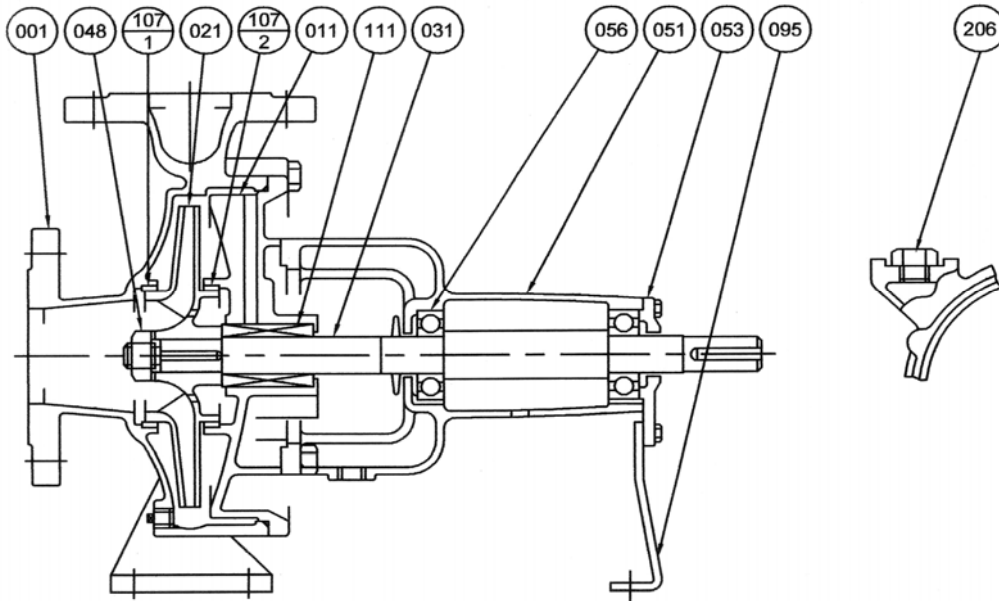
Part Name	Material (JIS Code)	Standard		Optional Inner Surface
		Inner Surface	Outer Surface	
<b>Casing</b>	Cast Iron (FC)	1 coat of Zinc chromate primer	Under coat - 1 coat of Zinc chromate primer Finish coat	1 coat of Tar epoxy resin
<b>Bearing Housing</b> <b>Bearing Cover</b>	Cast Iron (FC)		- 1 coat of Phthalic resin enamel	
<b>Common Base</b>	Cast Iron (FC)	Under coat - 1 coat of Zinc chromate primer Finish coat		
	Steel	- 1 coat of Phthalic resin enamel		

# Ebara End Suction Volute Pump

# Model FSA

## Sectional View - Mechanical Seal (Standard)

50 Hz

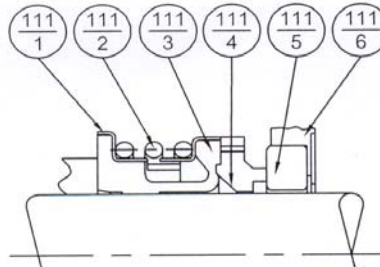
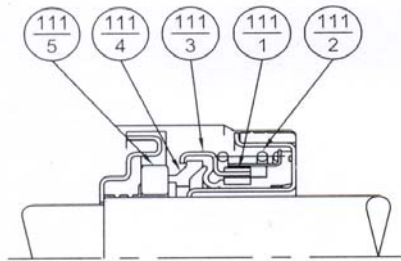


### Model FH

50x40 FSHA; 65x50 FSHA, FSJA;  
80x65 FSGA, FSHA, FSJA, FSKA;  
100x80 FSGA, FSHA, FSJA;  
125x100 FSKA

### Model EA

100x65 FSKA; 100x80 FSGCA, FSHCA;  
125x100 FSJCA, FSLA;  
150x100 FSKA, FSNA;  
150x125 FSHA, FSJA, FSKA, FSLA;  
200x150 FSHA, FSJA, FSKA, FSLA, FSNA;  
250x200 FSLA, FSNA



111-5	Mating Ring	Ceramic	1
111-4	Seal Ring	Carbon	
111-3	Friction Ring	NBR	
111-2	Coil Spring	Stainless Steel	
111-1	Spring Holder		
No.	Part Name	Material	Qty

111-6	Cup Gasket	NBR	1
111-5	Mating Ring	Ceramic	
111-4	Seal Ring	Carbon	
111-3	Bellows	NBR	
111-2	Spring	Stainless Steel	
111-1	Spring Holder		
No.	Part Name	Material	Qty

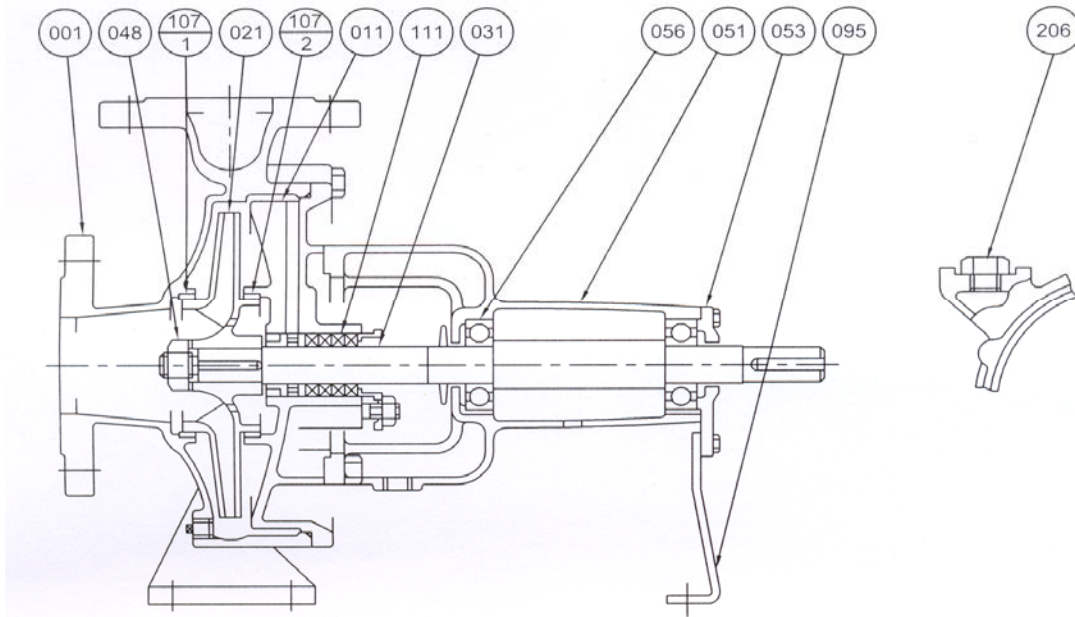
207	Plug	Steel	1
111	Mechanical Seal	-	
107-2	Casing Ring	Bronze	1
107-1	Casing Ring		
095	Stay	Steel	1
056	Ball Bearing	-	2
053	Bearing Cover	Cast Iron	1
051	Bearing Housing		
048	Impeller Nut	Brass	1
031	Shaft	Stainless Steel	
021	Impeller	Bronze	
011	Casing Cover	Cast Iron	
001	Casing		
No.	Part Name	Material	

# Ebara End Suction Volute Pump

# Model FSA

## Sectional View - Gland Packing (Option)

50 Hz

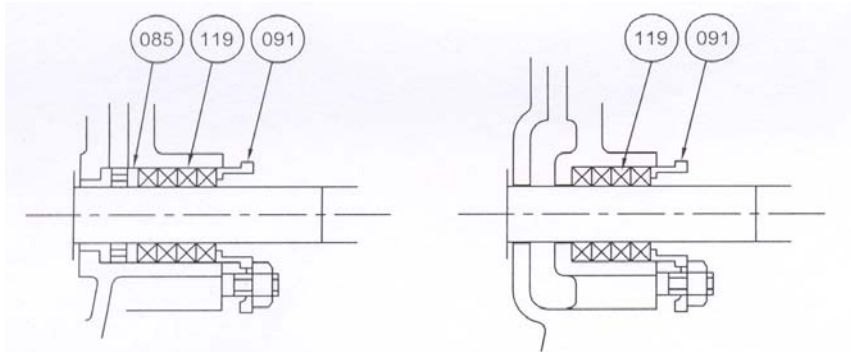


### With Lantern Ring

50x40 FSHA; 65x50 FSHA, FSJA;  
 80x65 FSGA, FSHA;  
 100x80 FSGA; 125x100 FSLA;  
 150x100 FSKA, FSNA;  
 150x125 FSKA, FSLA;  
 200x150 FSJA, FSLA, FSNA;  
 250x200 FSLA, FSNA

### Without Lantern Ring

80x65 FSJA, FSKA;  
 100x65 FSKA;  
 100x80 FSHA, FSJA, FSGCA, FSHCA;  
 125x100 FSJCA, FSKA;  
 150x125 FSHA, FSJA;  
 200x150 FSHA, FSKA;



119	Gland Packing	Non-Asbestos	4 or 5
091	Gland	Bronze	1
085	Lantern Ring		
No.	Part Name	Material	Qty

119	Gland Packing	Non-Asbestos	4 or 5
091	Gland	Bronze	1
No.	Part Name	Material	Qty

207	Plug	Steel	1
111	Gland Packing	Non-Asbestos	4 or 5
107-2	Casing Ring	Bronze	1
107-1	Casing Ring		
095	Stay	Steel	1
056	Ball Bearing	-	2
053	Bearing Cover	Cast Iron	
051	Bearing Housing		
048	Impeller Nut	Brass	
031	Shaft	Stainless Steel	1
021	Impeller	Bronze	
011	Casing Cover	Cast Iron	
001	Casing		
No.	Part Name	Material	Qty

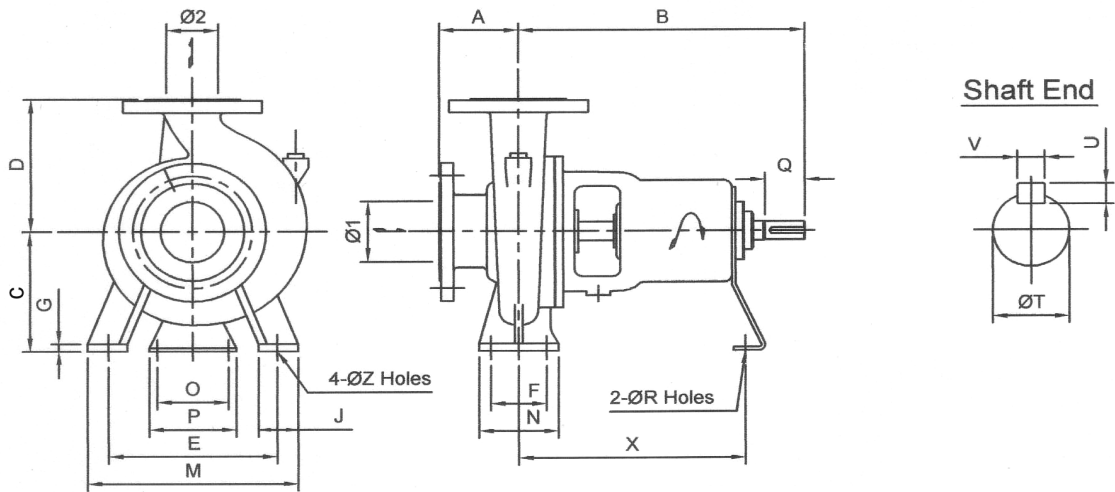
# Ebara End Suction Volute Pump

# Model FSA

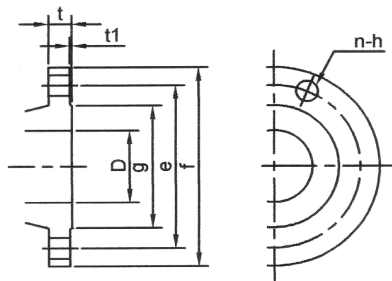
## Dimension - Bare Shaft Pump (10 Bar Model) 1/2

50 Hz

### Pump



### Flange



### Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
40	140	105	81	2	20	4	19
50	155	120	96	2	20	4	19
65	175	140	116	2	22	4	19
80	185	150	126	2	22	8	19
100	210	175	151	2	24	8	19
125	250	210	182	2	24	8	23
150	280	240	212	2	26	8	23
200	330	290	262	2	26	12	23

### Dimension - Pump (50/60 Hz)

Model	Size		Pump														Shaft				wt kg				
	φ1	φ2	A	B	C	D	E	F	G	J	M	N	O	P	R	X	Z	T	Q	U		V			
50x40 FSHA	50	40	80	360	160	180	190	70	12	50	240	100	110	150	17	285	15	24	50	7	8	37			
65x50 FSHA	65	50	100	360	160	180	212	70	12	50	265	100	110	150	17	285	15	24	50	7	8	42			
65x50 FSJA					180	225	250	95	14	65	320	125											49		
80x65 FSGA	80	65	100	360	160	180	212	70	12	50	265	100	110	150	17	285	15	24	50	7	8	39			
80x65 FSHA					180	225	250	95	14	65	320	125											48		
80x65 FSJA					180	225	250	95	14	65	320	125											60		
80x65 FSKA					125	470	225	280	315	120	16	80											400	160	370
100x80 FSGA	100	80	100	360	160	200	212	95	14	65	280	125	110	150	17	285	15	24	50	7	8	49			
100x80 FSHA					180	225	250				320	125											62		
100x80 FSJA					200	250	280	120	15	80	360	160											70		
100x80 FSGCA					125	360	180	225	250	95	14	65											320	125	62
100x80 FSHCA								250	280	95	14	65											345	125	65
125x100 FSJCA	125	100	140	360	225	280	315	120	16	80	400	160	110	150	17	285	19	32	80	8	10	108			
125x100 FSKA				470	250	315	400	150	20	100	500	200											128		
125x100 FSLA				530	280	355	400	150	20	100	500	200											168		
150x125 FSHA	150	125	140	470	250	315	315	120	15	80	400	160	110	150	17	370	19	32	80	8	10	120			
150x125 FSJA					355	400	150	16	80	400	160	128													
200x150 FSHA	200	150	160	470	280	355	400	150	18	100	500	200	110	150	17	370	24	32	80	8	10	137			

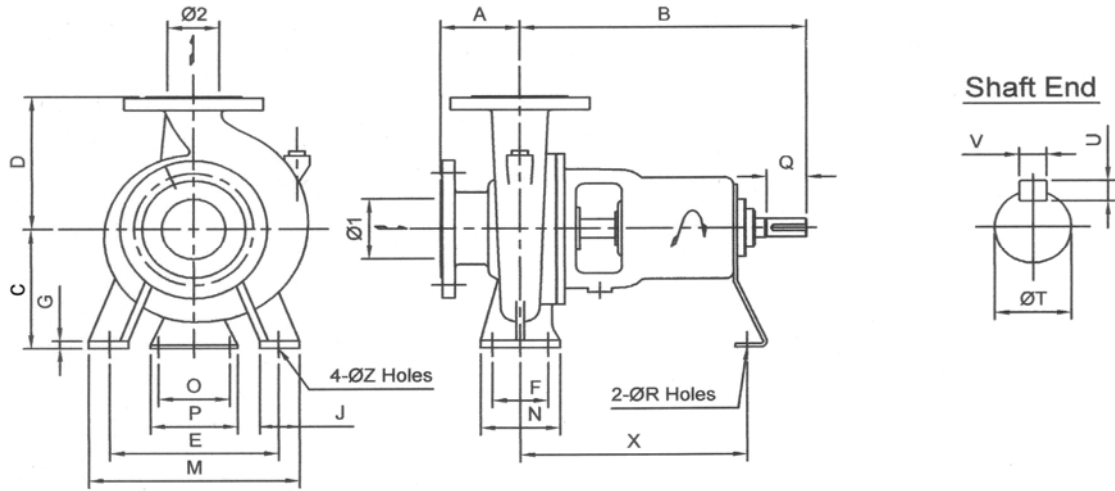
# Ebara End Suction Volute Pump

# Model FSA

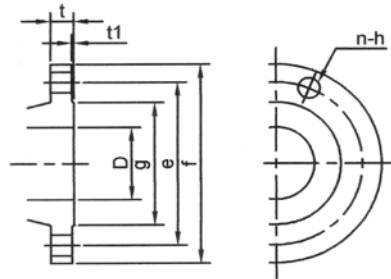
## Dimension - Bare Shaft Pump (10 Bar Model) 2/2

50 Hz

### Pump



### Flange



### Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
125	250	210	182	2	24	8	23
150	280	240	212	2	26	8	23
200	330	290	262	2	26	12	23

### Dimension - Pump

Model	Size		Pump														Shaft				wt (kg)	
	φ1	φ2	A	B	C	D	E	F	G	J	M	N	O	P	R	X	Z	T	Q	U		V
150x125 FSKA	150	125	140	530	280	355	400	150	16	100	500	200	110	150	17	370	24	42	110	8	12	170
150x125 FSLA					315	400																20
200x150 FSJA	200	150	160	530	280	375	400	150	18	100	500	200	110	150	17	370	24	42	110	8	12	183
200x150 FSKA					670	315																400

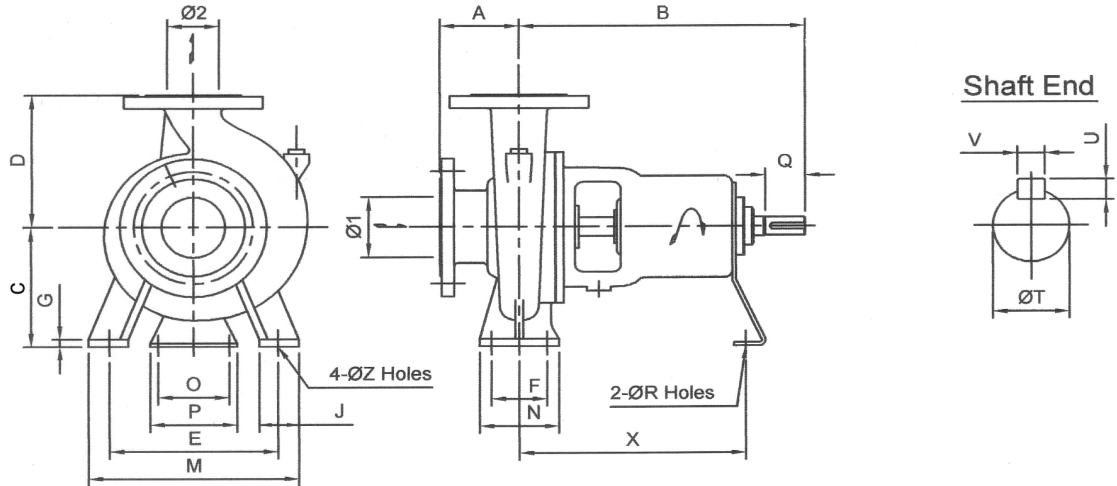
# Ebara End Suction Volute Pump

# Model FSA

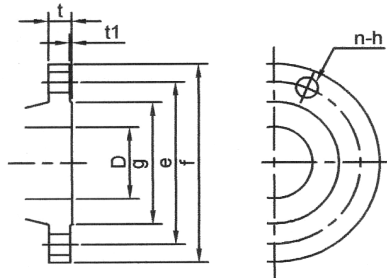
## Dimension - Bare Shaft Pump (16 Bar Model)

50 Hz

### Pump



### Flange



Dimension - Flange (JIS 16K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
65	175	140	116	2	22	8	19
100	225	185	160	2	26	8	23
150	305	260	230	2	28	12	25
200	350	305	275	2	30	12	25
250	430	380	345	2	34	12	27

### Dimension - Pump

Model	Size		Pump														Shaft				wt kg	
	φ1	φ2	A	B	C	D	E	F	G	J	M	N	O	P	R	X	Z	T	Q	U		V
100x65 FSKA	100	65	125	360	225	280	315	120	16	80	400	160	110	150	17	257	19	38	80	8	10	106
150x100 FSKA	150	100	140	530	250	315	315	120	16	80	400	160	90	120	15	373	19	42	95	8	12	146
150x100 FSNA			180	670	375	450	450	150	20	100	550	200	140	180	19	500	24	48	110	9	14	365
200x150 FSLA	200	150	162	670	315	450	450	150	20	100	550	200	140	180	19	500	24	48	110	9	14	336
200x150 FSNA			182		375	560											60	11		18	488	
250x200 FSLA	250	200	180	670	385	560	560	250	25	100	660	315	140	180	19	500	24	60	110	11	18	505
250x200 FSNA			200		820	435							630	160			200	630		27	74	125

Unit:mm, unless otherwise stated

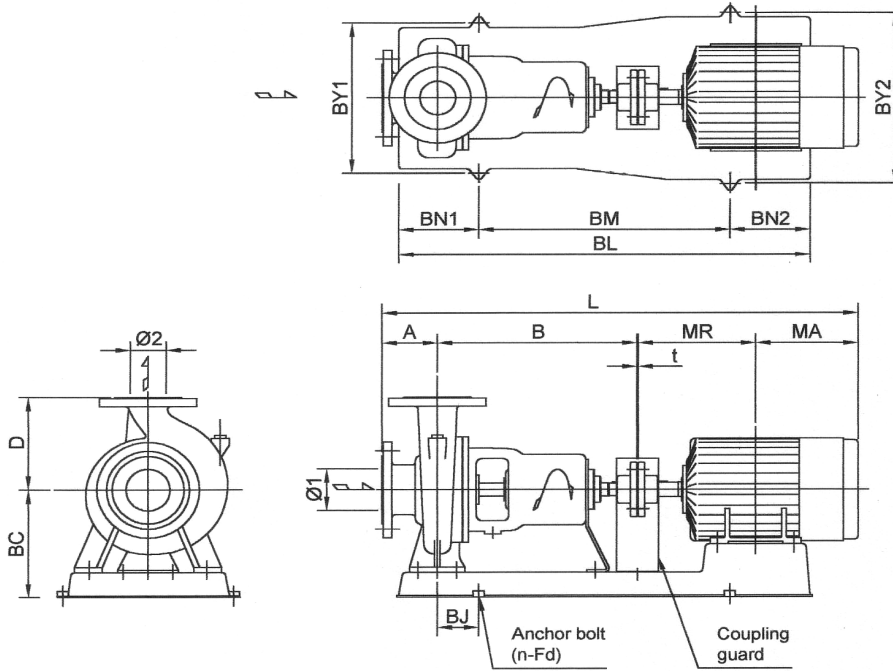
# Ebara End Suction Volute Pump

# Model FSA

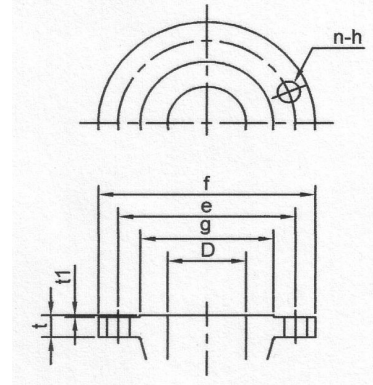
## Dimension - Pump With Motor (10 Bar Model) 4 Poles Drive - 50 Hz (1/3)

50 Hz

### Pump



### Flange



Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
40	140	105	81	2	20	4	19
50	155	120	96	2	20	4	19
65	175	140	116	2	22	4	19
80	185	150	126	2	22	8	19
100	210	175	151	2	24	8	19

### Dimension - Pump

Model	Motor		Pump					Motor					Common Base								Total			
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg
50x40 FS4HA	0.4	50	40	80	360	180	37	71	120	130.5	12	215	45	640	420	105	115	320	230	4-M12	19	3	693.5	71
	80							140	142.5	17	20										725.5		77	
65x50 FS4HA	0.75	65	50	100	360	180	42	80	140	142.5	17	215	45	640	420	105	115	320	230	4-M12	20	3	745.5	82
65x50 FS4JA	1.5	65	50	100	360	225	49	90L	168.5	164	23.5	230	40	740	480	115	145	400	260	4-M12	24.5	3	795.5	99.5
	100L							193	181.5	32	26										837.5		110.5	
80x65 FS4GA	0.75	80	65	100	360	180	39	80	140	142.5	17	215	45	640	420	105	115	320	230	4-M12	20	3	745.5	79
80x65 FS4HA	1.5	80	65	100	360	200	48	90L	168.5	164	23.5	230	40	740	550	115	75	360	290	4-M12	26	3	795.5	101
80x65 FS4JA	2.2	80	65	100	360	225	60	100L	193	181.5	32	230	40	740	480	115	145	400	260	4-M12	26	3	837.5	123
	112M							200	191.5	43	25								854.5		133			
80x65 FS4KA	5.5	80	65	125	470	280	108	132S	239	215	62	295	80	960	660	180	120	490	400	4-M16	56	3	1025	233
	7.5							132M	258	234	77										57		1090	249
	11							160M	323	285	115										57		1206	289
100x80 FS4GA	1.5	100	80	100	360	200	49	90L	168.5	164	23.5	230	40	740	550	115	75	360	290	4-M12	24	3	795.5	100
	2.2							100L	193	181.5	32										26		837.5	109
100x80 FS4HA	2.2	100	80	100	360	225	62	100L	193	181.5	32	230	40	740	480	115	145	400	260	4-M12	26	3	837.5	125
	3.7							112M	200	191.5	43			25					854.5		135			
100x80 FS4JA	3.7	100	80	100	360	250	70	112M	200	191.5	43	265	55	765	540	155	70	440	320	4-M16	33.5	3	854.5	151.5
	5.5							132S	239	215	62			270					855		630		350	38

Unit:mm, unless otherwise stated

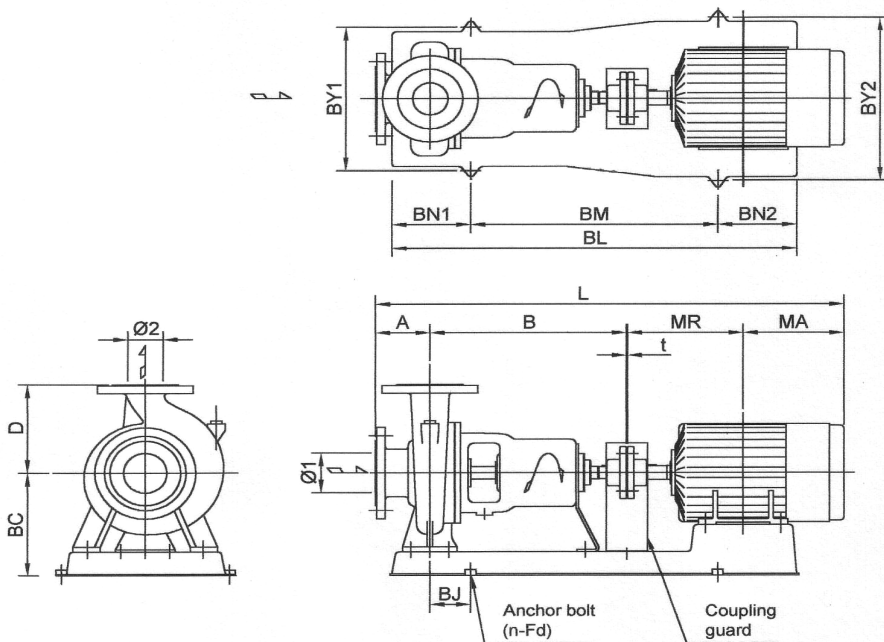
# Ebara End Suction Volute Pump

# Model FSA

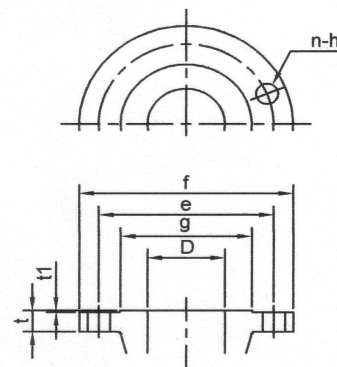
## Dimension - Pump With Motor (10 Bar Model) 4 Poles Drive - 50 Hz (2/3)

50 Hz

### Pump



### Flange



Dimension-Flange (JIS 10K RF)

D	f	e	g	t1	t	n	h
mm	mm	mm	mm	mm	mm	mm	mm
80	185	150	126	2	22	8	19
100	210	175	151	2	24	8	19
125	250	210	182	2	24	8	23
150	280	240	212	2	26	8	23
200	330	290	262	2	26	12	23

### Dimension - Pump

Model	Motor		Pump				Motor				Common Base								Total													
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg								
100x80 FS4GCA	2.2	100	80	125	360	225	62	100L	193	170	30	230	40	740	480	115	145	400	260	4-M12	24.5	3	851	124.5								
	112M							200	182	42	25										880		137									
100x80 FS4HCA	5.5	100	80	125	360	250	65	132S	239	207	65	250	55	855	630	155	70	440	350	4-M12	38	3	934	179								
	132M							258	234	77	40										980		193									
125x100 FS4JCA	5.5	125	100	140	360	280	108	132S	239	207	65	321	45	825	525	150	70	440	350	4-M12	55	3	949	233								
	132M							258	226	76	60										987		255									
	160M							323	281	120	60										1107		298									
125x100 FS4KA	15	125	100	140	470	315	128	160L	345	307	132	330	100	1075	740	190	145	490	400	4-M16	64.5	3	1265	331.5								
	18.5							180MC	351.5	320.5	172										84		1285	393								
125x100 FS4LA	22	125	100	140	530	355	168	180LC	370.5	339.5	205	390	95	1230	840	205	185	600	440	4-M20	774	3	1383	459.5								
	30							200LC	395.5	374.5	278										724		4	1444	532.5							
150x125 FS4HA	7.5	150	125	140	470	315	120	132M	258	234	77	320	80	960	660	180	120	490	400	4-M16	57	3	1105	261								
	11							160M	323	285	115										330		100	1075	740	190	145	44.7	1221	286.5		
	15							160L	345	307	132										320		1090	740	200	150	62	1265	321			
150x125 FS4JA	15	150	125	140	470	355	128	160L	345	307	132	320	100	1090	740	200	150	490	400	4-M16	62	3	1265	329								
	18.5							180MC	351.5	320.5	172										330		1075	740	190	145	83	1285	392			
	22							180LC	370.5	339.5	205										340		60	1425	960	230	235	670	600	4-M20	105	1323
150x125 FS4KA	30	150	125	140	530	355	170	200LC	395.5	374.5	278	390	120	1280	940	230	110	600	490	4-M20	72.4	4	1444	534.5								
	37							225SC	432	384	327										385		110	1425	960	235	670	600	141.6	1490	657	
150x125 FS4LA	45	150	125	140	530	400	205	225MC	444.5	396.5	351	395	110	1425	960	230	235	670	600	4-M20	108	4	1515	682.5								
	55							250SC	463.5	419	475										410		110	1425	960	230	235	670	600	110	1556.5	817
	75							250MC	482.5	438	550										410		109	1594.5	891							

Unit:mm, unless otherwise stated



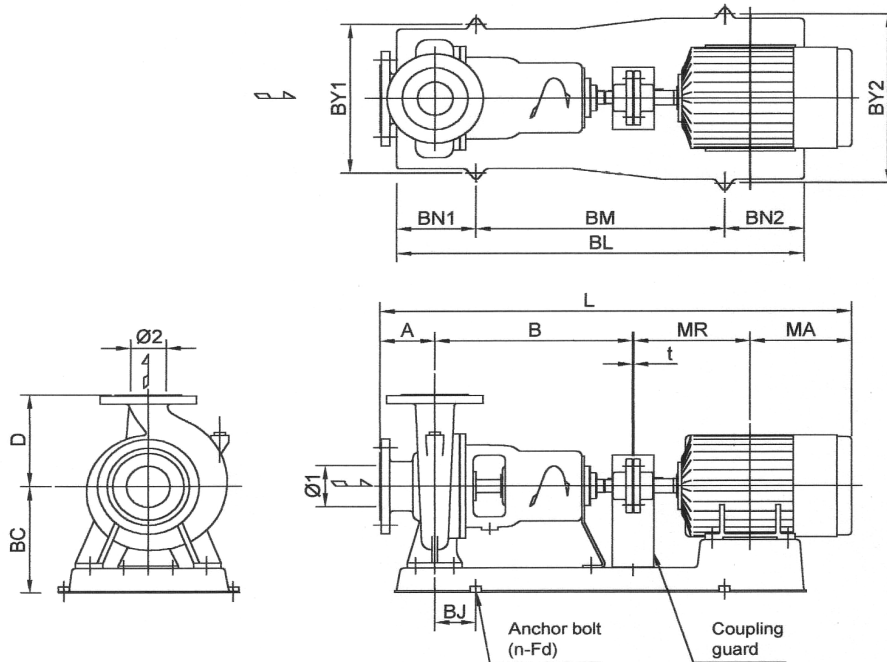
# Ebara End Suction Volute Pump

# Model FSA

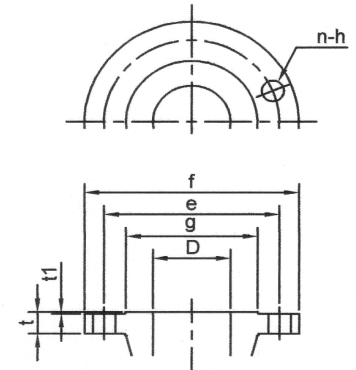
## Dimension - Pump With Motor (10 Bar Model) 4 Poles Drive - 50 Hz (3/3)

50 Hz

### Pump



### Flange



### Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
150	280	240	212	2	26	8	23
200	330	290	262	2	26	12	23

### Dimension - Pump

Model	Motor		Pump				Motor				Common Base								Total					
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg
200x150 FS4HA	5.5	200	150	160	470	355	137	132S	239	215	62	390	80	980	660	200	120	600	400	4-M16	78	3	1087	284
	7.5							132M	258	234	77												1125	299
	11							160M	323	285	115												1241	344
200x150 FS4JA	15	200	150	160	530	375	183	160L	345	307	132	390	95	1230	840	205	185	600	400	4-M16	104	3	1345	426
	18.5							180MC	351.5	320.5	172												1365	441.5
	22							180LC	370.5	339.5	205												1403	474.5
	30							200LC	395.5	374.5	278												1464	547.5
	37							225SC	432	384	327												1510	669.7
200x150 FS4KA	37	200	150	160	670	400	222	225SC	432	384	327	425	110	1460	1000	230	230	670	550	4-M20	141	4	1650	708.5
	45							225MC	444.5	396.5	351												1675	732.5
	55							250SC	463.5	419	475												1716.5	860

Unit:mm, unless otherwise stated

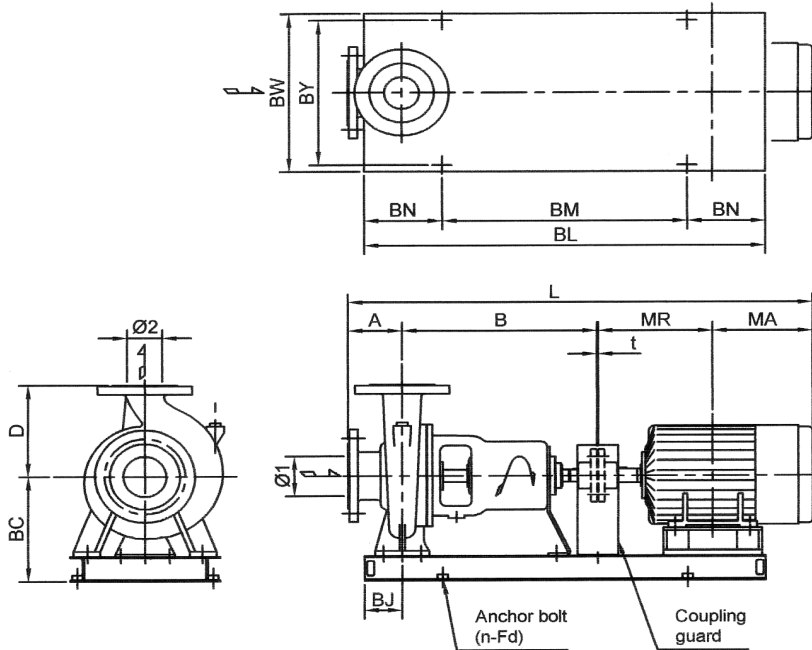
# Ebara End Suction Volute Pump

# Model FSA

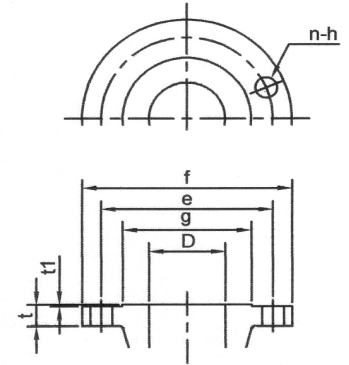
## Dimension - Pump With Motor (16 Bar Model) 4 Poles Drive

50 Hz

### Pump



### Flange



### Dimension - Flange (JIS 16K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
100	225	185	160	2	26	8	23
150	305	260	230	2	28	12	25
200	350	305	275	2	30	12	25
250	430	380	345	2	34	12	27

### Dimension - Pump (Steel baseplate)

Model	Motor		Pump				Motor				Common Base								Total						
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg	
150x100 FSNA	55	150	100	180	670	450	365	250SC	463.5	409	520	525	130	1500	2x600	150	150	580	640	6-M20	156	4	1736.5	1030	
	250MC							482.5	428	580	1530			2x615	170						1774.5		1120		
	280SC							544.0	478	660	1600			2x650	175						1876		1250		
200x150 FSLA	75	200	150	162	670	450	336	250MC	482.5	428	580	465	130	1530	2x615	150	150	580	640	6-M20	150	4	1756.5	1070	
	280SC							544.0	478	660	1600			2x650	145						1858		1191		
200x150 FSNA	110	200	150	182	670	560	488	280MC	569.5	502.5	720	550	130	1670	2x685	150	150	650	720	6-M20	176	4	1928	1434	
	315SC							589	527	920	1680			2x690	200						1972		1677		
	315MC							614.5	552.5	1030	1730			2x715	220						2023		1804		
250x200 FSLA	90	250	200	180	670	560	505	280SC	544.0	478	660	560	185	1680	2x675	165	165	690	760	6-M22	250	4	1876	1462	
	280MC							569.5	502.5	720	1730			2x700	255						1926		1528		
	315SC							589	527	920	1740			2x705	235						1970		1725		
	315MC							614.5	552.5	1030	1790			2x730	240						2021		1841		
250x200 FSNA	185	250	200	200	820	630		315MB	614.5	552.5	1070	610	185	1950	2x800	175	175		770	840	6-M22	290	4	2191	2067
	225							315CB	741.0	1116	1800			2240	2x945							340		2881	2850
	260							355AB	779.0	1200	2400			2300	2x975							330		3004	3467
	300							355CB	874.0	1295	2700			2490	2x1070							365		3194	3802
	335																								

Unit:mm, unless otherwise stated

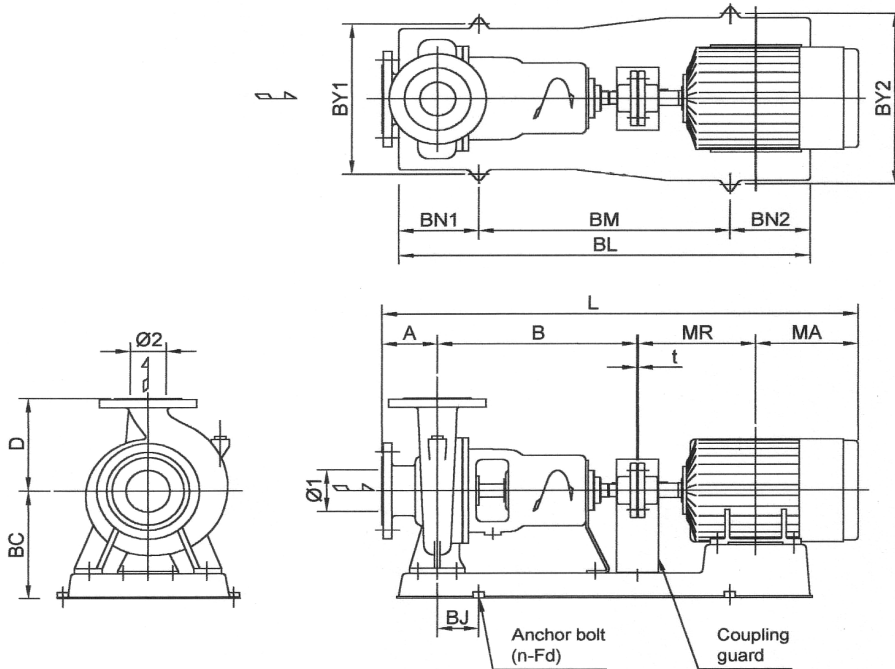
# Ebara End Suction Volute Pump

# Model FSA

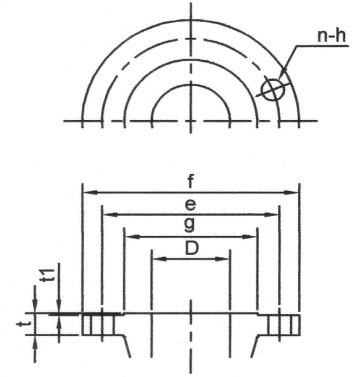
## Dimension - Pump With Motor (10 Bar Model) 2 Poles Drive (1/2)

50 Hz

### Pump



### Flange



Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
40	140	105	81	2	20	4	19
50	155	120	96	2	20	4	19
65	175	140	116	2	22	4	19
80	185	150	126	2	22	8	19

### Dimension - Pump

Model	Motor		Pump				Motor				Common Base								Total						
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg	
50X40 FS2HA	1.5	50	40	80	360	180	37	90S	156	151.5	21.5	220	40	740	550	115	75	360	290	4-M12	26	3	750.5	87.5	
	2.2							90L	168.5	164	26.5										29		775.5	95.5	
	3.7							112M	200	191.5	44										215		23	834.5	108
	5.5							132S	239	215	65										230		31.6	897	140'5
65X50 FS2HA	3.7	65	50	100	360	180	42	112M	200	191.5	44	215	55	740	540	130	70	350	290	4-M12	24	3	851.5	114	
	5.5							132S	239	215	65										230		32	917	146
	7.5							132S	239	215	70										230		34	917	151
65X50 FS2JA	11	65	50	100	360	225	49	160M	323	285	107	270	98	920	600	160	160	400	400	4-M16	69	3	1071	232	
	15							160M	323	285	122										122		247		
80X65 FS2GA	5.5	80	65	100	360	180	39	132S	239	215	65	230	55	820	540	130	150	350	350	4-M12	33	3	917	144	
	7.5							132S	239	215	70										70		149		
80X65 FS2HA	11	80	65	100	360	200	48	160M	323	285	107	250	98	920	600	160	160	400	400	4-M16	69	3	1071	231	
	15							160M	323	285	122										122		246		
80X65 FS2JA	18.5	80	65	100	360	225	60	160L	345	307	138	270	98	920	600	160	160	400	400	4-M16	69	3	1115	274	
	22							180M	351.5	320.5	180										180		1135	321	

Unit:mm, unless otherwise stated

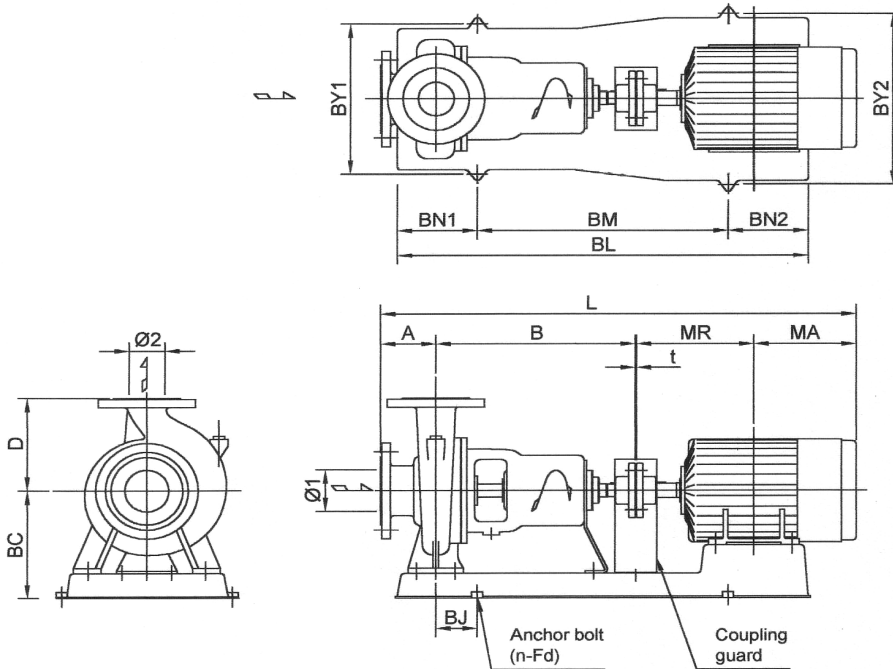
# Ebara End Suction Volute Pump

# Model FSA

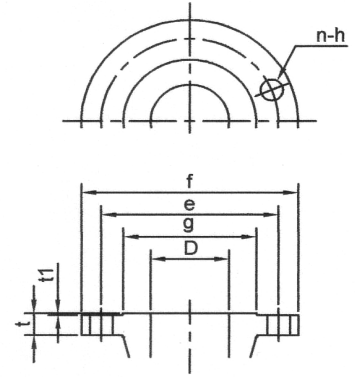
## Dimension - Pump With Motor (10 Bar Model) 2 Poles Drive (2/2)

50 Hz

### Pump



### Flange



Dimension - Flange (JIS 10K RF)

D mm	f mm	e mm	g mm	t1 mm	t mm	n	h mm
80	185	150	126	2	22	8	19
100	210	175	151	2	24	8	19
125	250	210	182	2	24	8	23

### Dimension - Pump

Model	Motor		Pump					Motor				Common Base								Total				
	kW	φ1	φ2	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg
100X80 FS2GA	7.5	100	80	100	360	200	49	132S	239	207	65	230	55	820	540	130	150	350	350	4-M12	30	3	909	144
	11							160M	323	281	120	250	98	920	600	160	160	400	400	4-M16	47		1067	216
	15							160M	323	281	120	250	98	920	600	160	160	400	400	4-M16	47		1067	216
100X80 FS2HA	18.5	100	80	100	360	225	62	160L	345	303	158	270	98	920	600	160	160	400	400	4-M16	47	3	1111	267
	22							170M	351.5	315.5	180												1130	289
100X80 FS2JA	30	100	80	100	360	250	70	200L	395.5	372.5	290	275	95	1040	660	185	195	440	440	4-M16	65	4	1232	425
	37							200L	395.5	372.5	290												1270	490
	45							225MA	414.5	391.5	355												1270	490
100X80 FS2GCA	18.5	100	80	125	360	225	62	160L	345	303	158	270	98	920	600	160	160	400	400	4-M16	47	4	1137	267
	22							180MA	351.5	320.5	185												1160	294
	30							200LA	395.5	374.5	270												1259	398
100X80 FS2HCA	37	100	80	125	360	250	65	200LA	395.5	372.5	290	275	95	1040	660	185	195	440	440	4-M16	65	4	1259	420
	45							225MA	414.5	396.5	343												1300	473
	55							250SA	463.5	419	452												1257	587
125X100 FS2JCA	55	125	100	140	360	280	108	250SA	463.5	419	452	275	95	1040	660	185	195	440	440	4-M20	65	4	1387	625
	75							250MA	482.5	438	525												1365	733

Unit:mm, unless otherwise stated

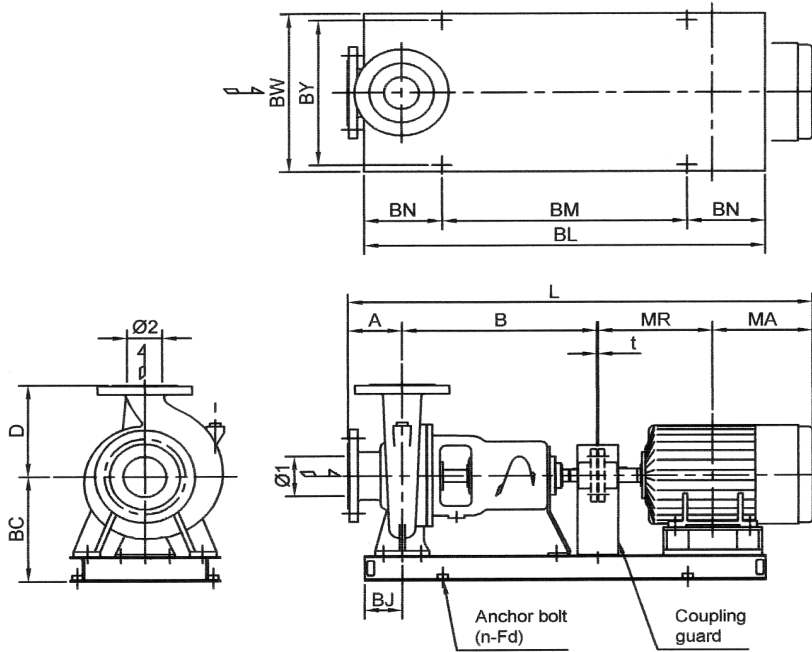
# Ebara End Suction Volute Pump

# Model FSA

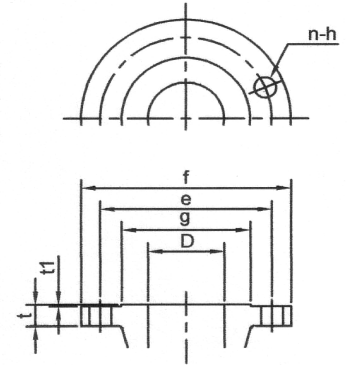
## Dimension - Pump With Motor (16 Bar Model) 2 Poles Drive

50 Hz

### Pump



### Flange



### Dimension - Flange (JIS 16K RF)

D	f	e	g	t <sub>1</sub>	t	n	h
mm	mm	mm	mm	mm	mm		mm
65	175	140	116	2	22	8	19
100	225	185	160	2	26	8	23
150	305	260	230	2	28	12	25

### Dimension - Pump (Steel baseplate)

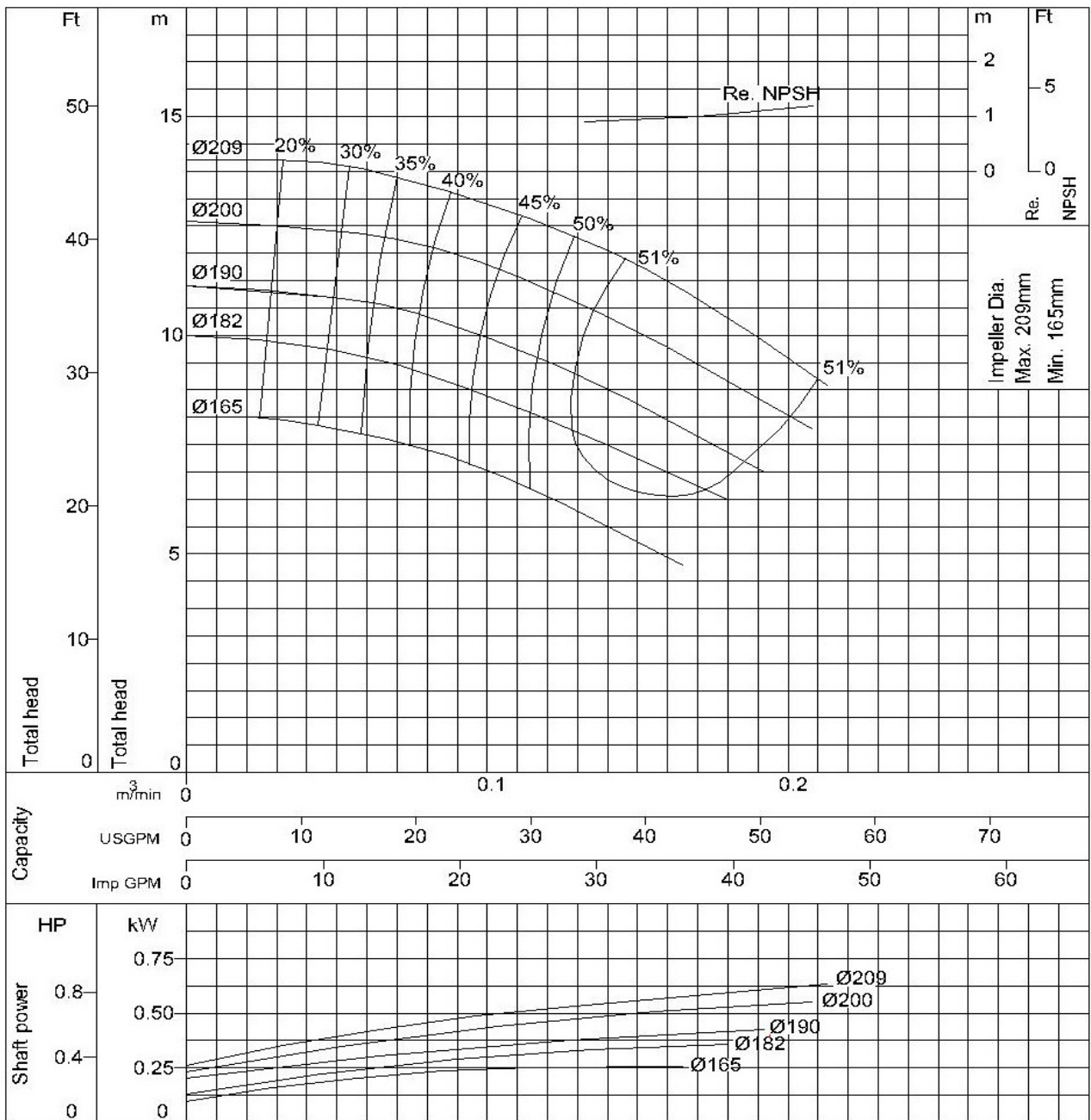
Model	Motor		Pump					Motor				Common Base								Total					
	kW	$\phi 1$	$\phi 2$	A	B	D	wt kg	Frame	MR	MA	wt kg	BC	BJ	BL	BM	BN1	BN2	BY1	BY2	n-Fd	wt kg	t	L	wt kg	
100x65 FS2KA	55	100	65	125	360	280	49	250SA	463.5	419	452	395	50	1190	770	175	245	540	600	4-M20	95	4	1371.5	614.5	
	75							250MA	482.5	438	525				65		1220				850		195	1409.5	692.5
150x100 FS2KA	90	150	100	140	530	315	62	280SA	514	478	600	430	125	1430	960	235	235	640	4-M20	115	4	1666	827		
	110							280MA	539.5	502.5	700					145	1480			260		260	130	1716	942
	132							315SA	559	527.0	920					155	1500			270		270	650	720	4-M22

Unit:mm, unless otherwise stated

## Performance Curve 4 Poles (1/27)

50 Hz

<b>50X40 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

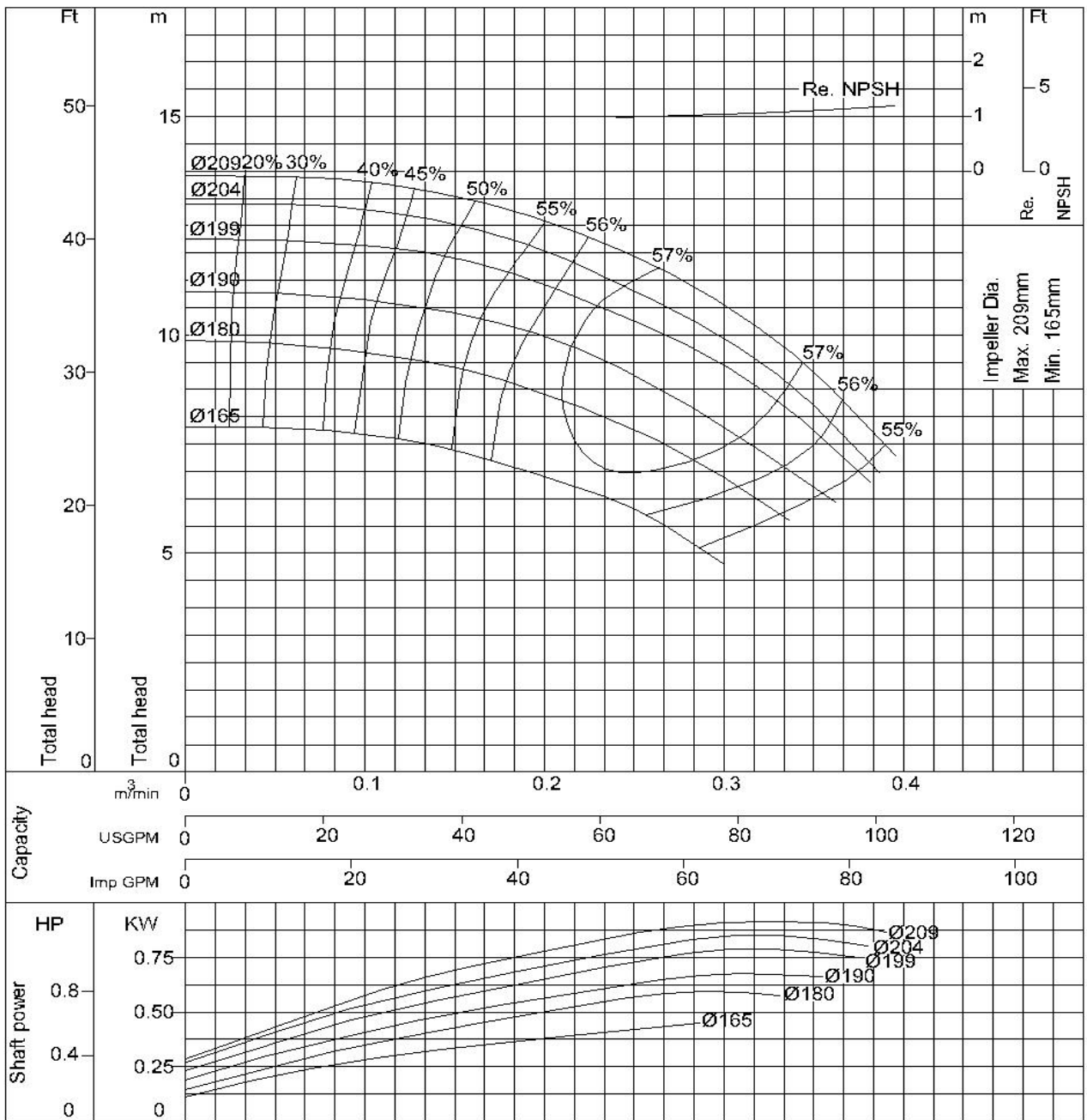


Curve No - 4 - 5FS5601

## Performance Curve 4 Poles (2/27)

50 Hz

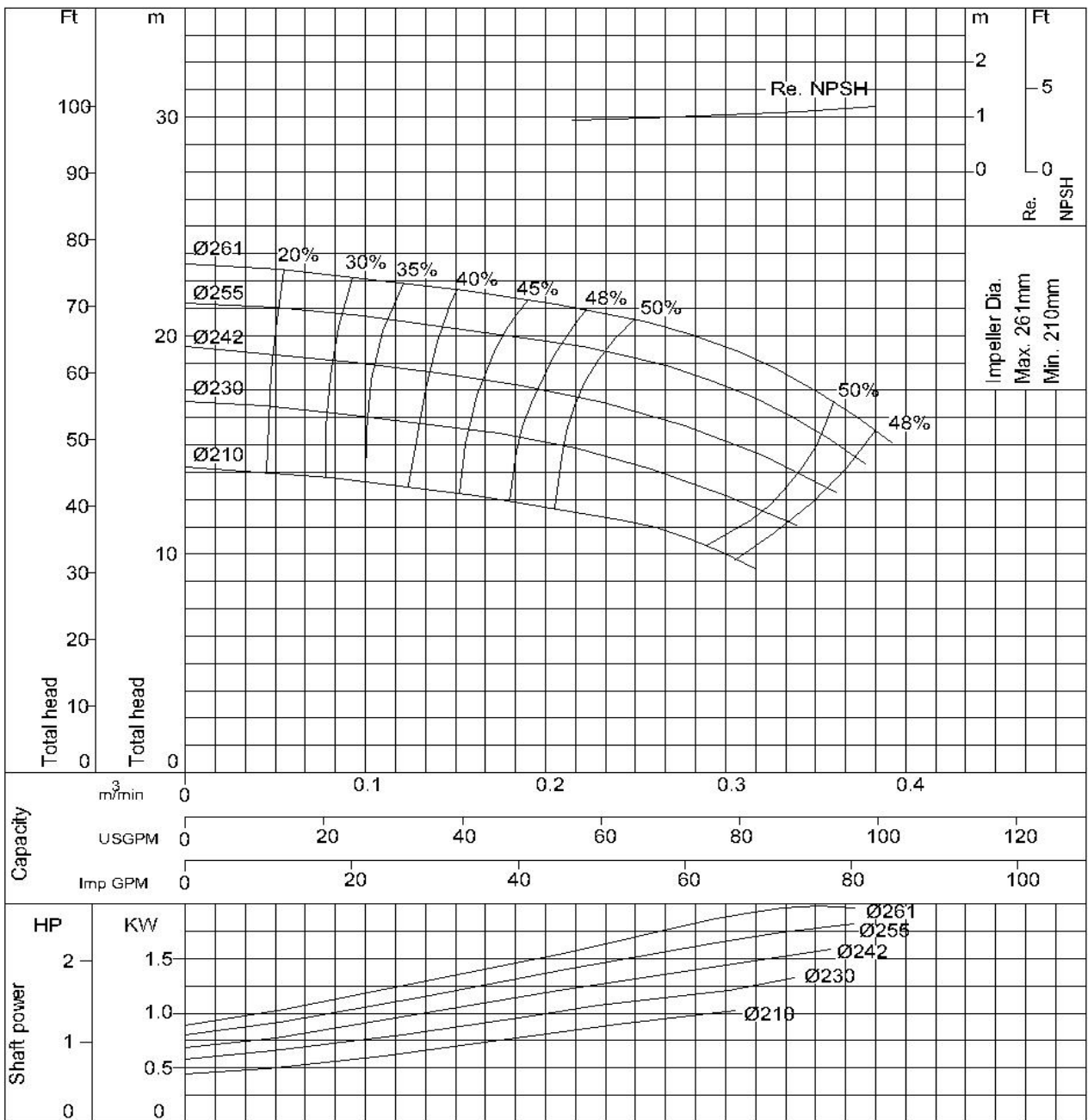
<b>65X50 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G. = 1.0 Vis. = 1.0 cSt



Curve No - 4 - 5FS5602

## Performance Curve 4 Poles (3/27)

<b>65X50 FS4JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

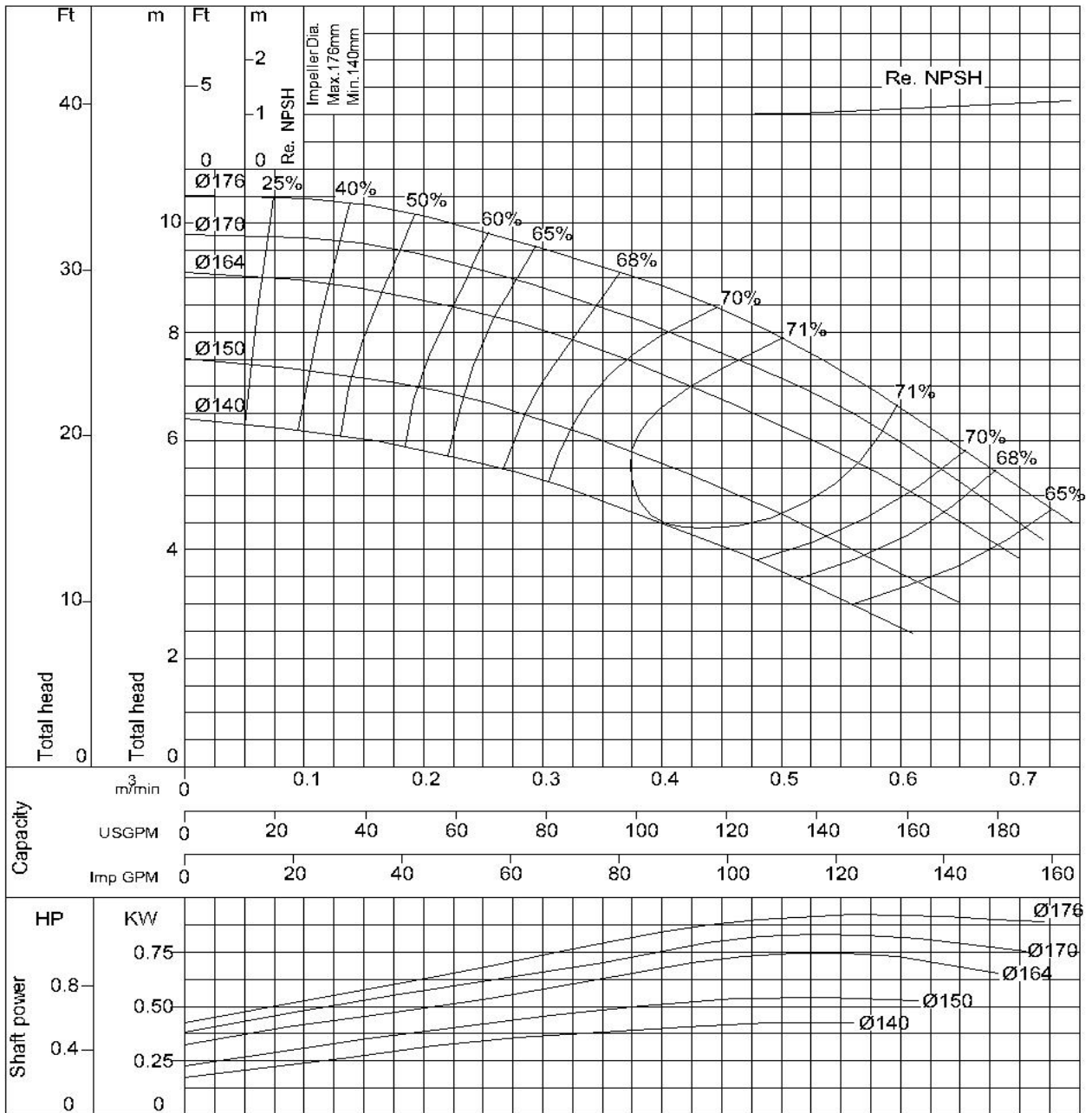


Curve No - 4 - 5FS5603



## Performance Curve 4 Poles (4/27)

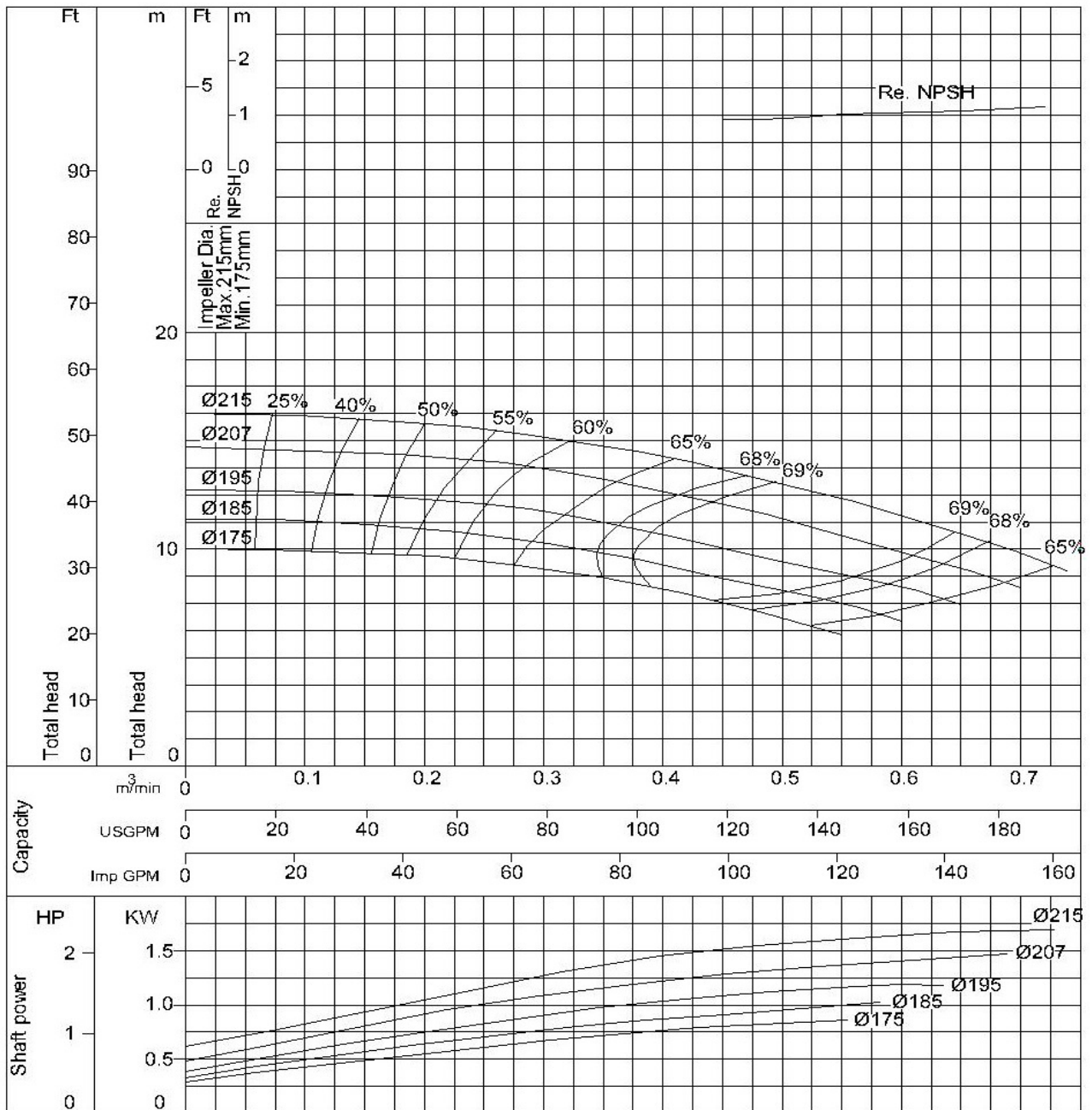
<b>80X65 FS4GA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FSS604

## Performance Curve 4 Poles (5/27)

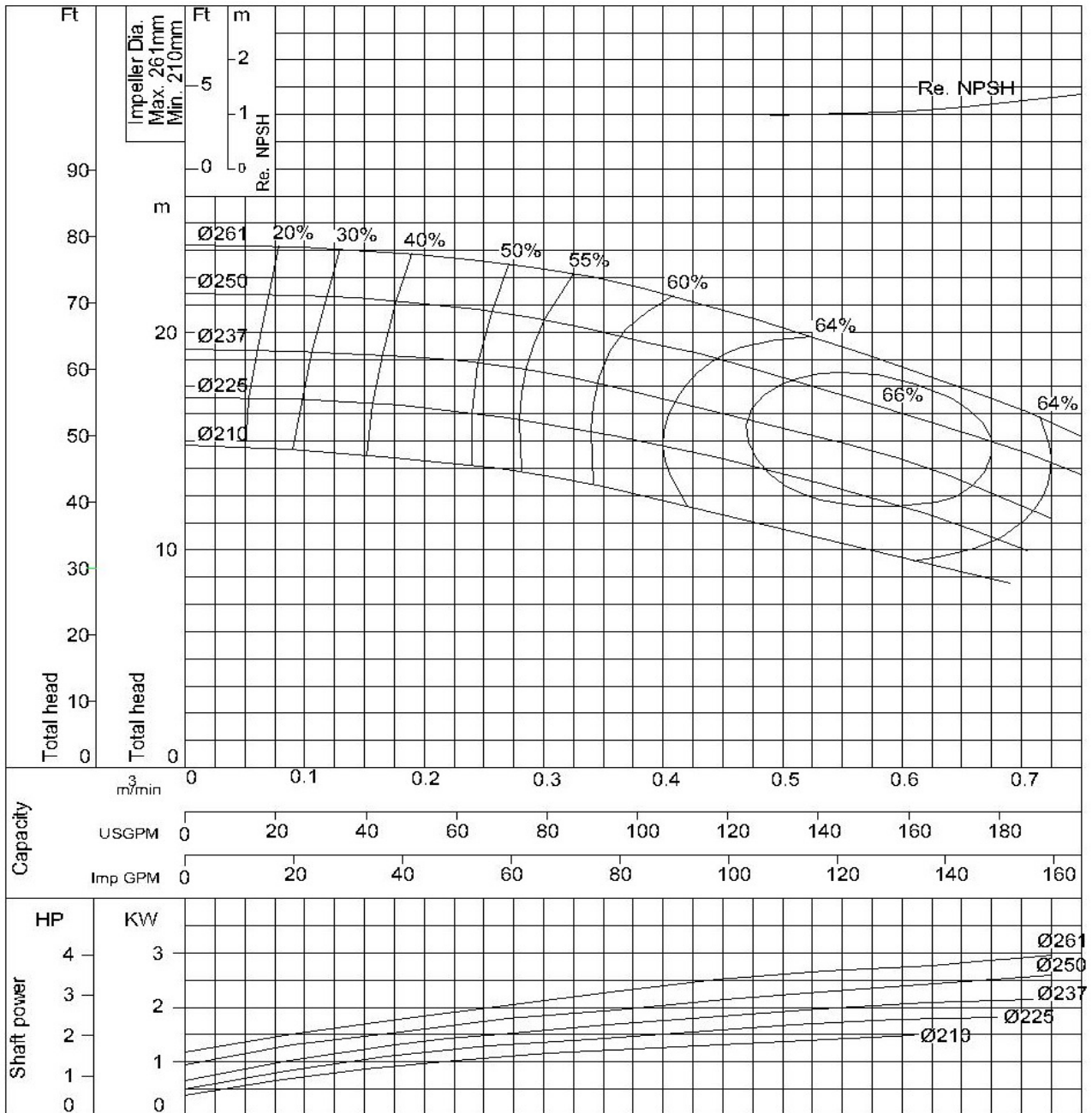
<b>80X65 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5605

## Performance Curve 4 Poles (6/27)

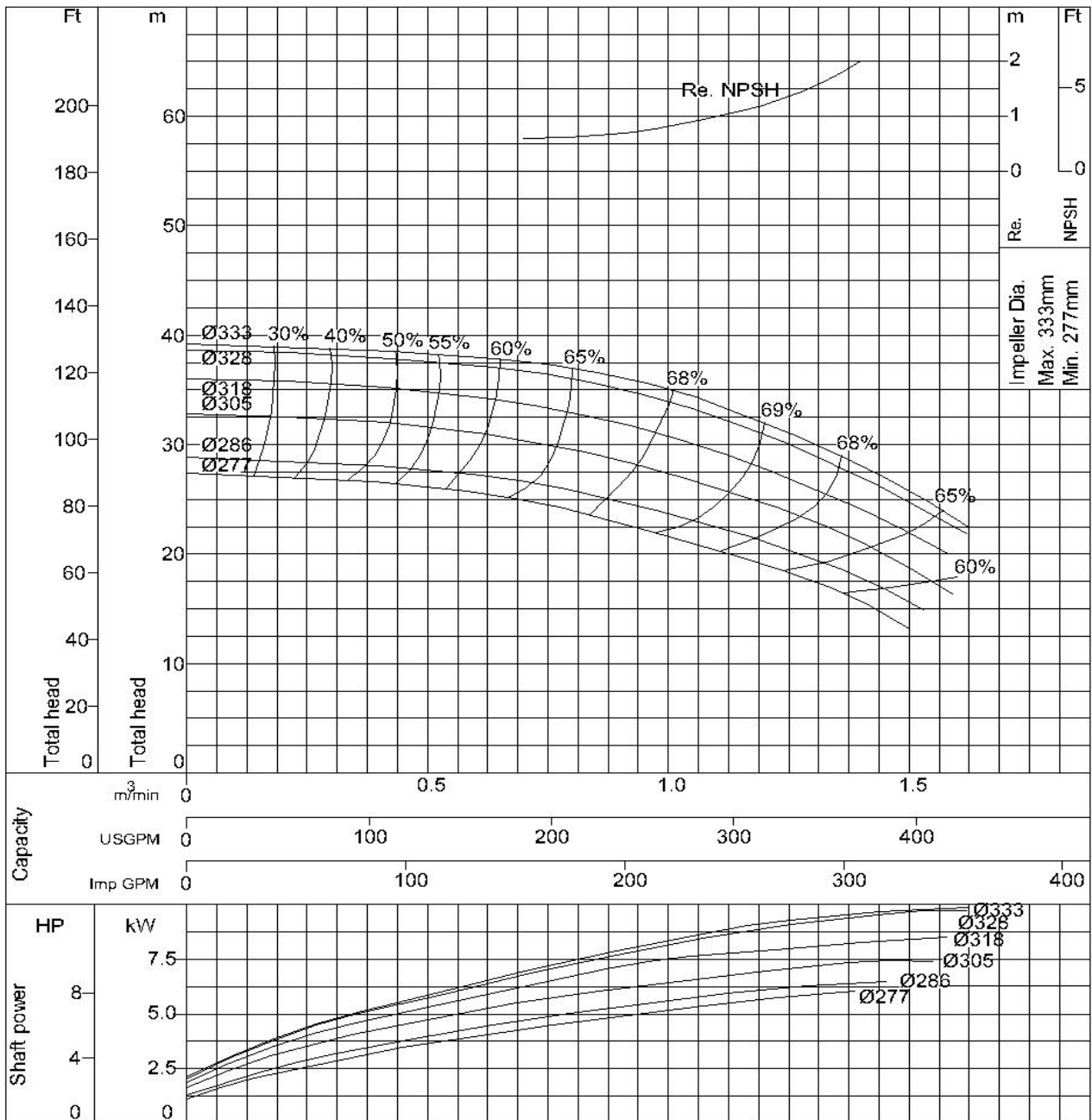
<b>80X65 FS4JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5606

## Performance Curve 4 Poles (7/27)

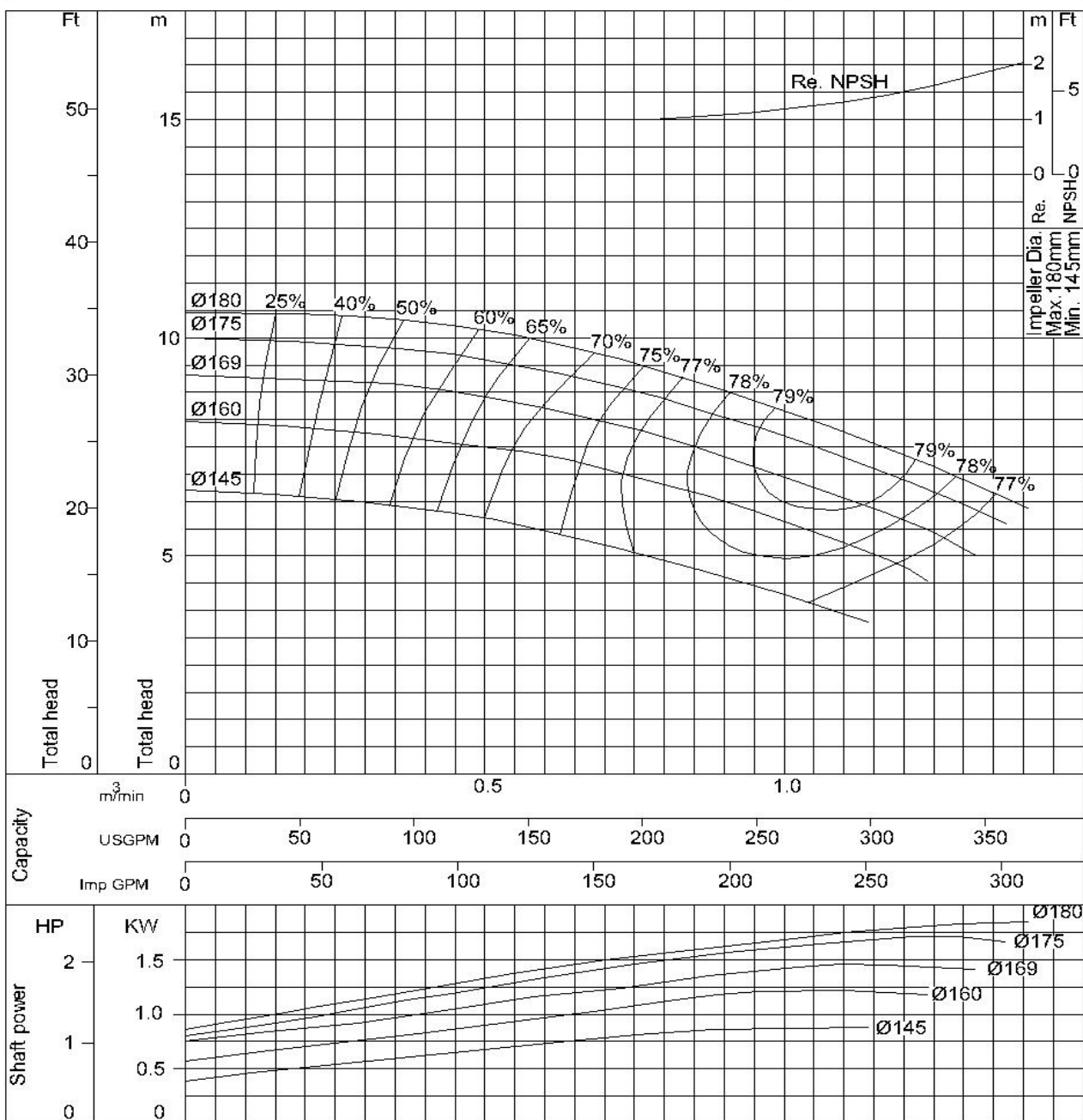
<b>80X65 FS4KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5607

## Performance Curve 4 Poles (8/27)

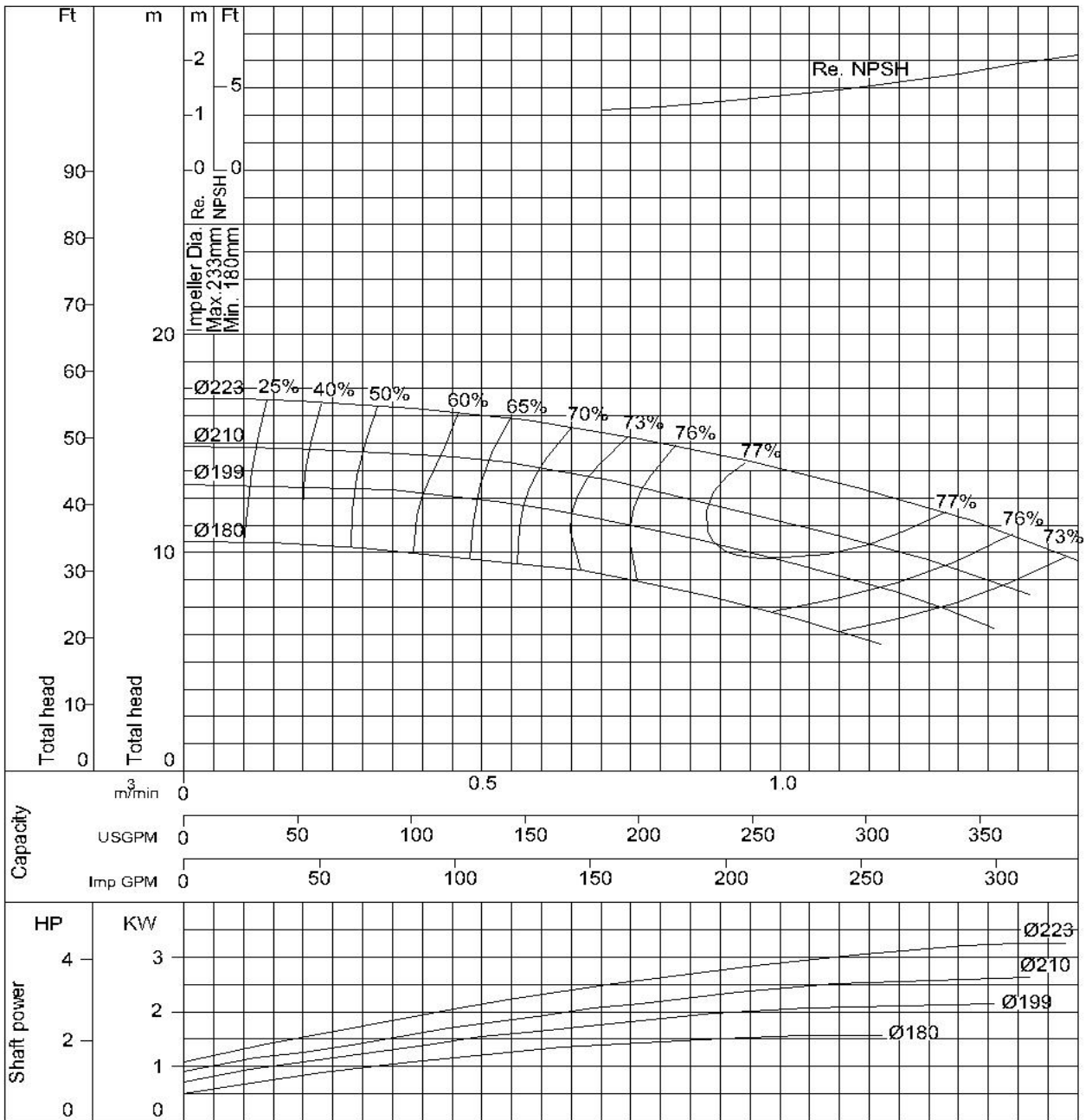
<b>100X80 FS4GA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5608

## Performance Curve 4 Poles (9/27)

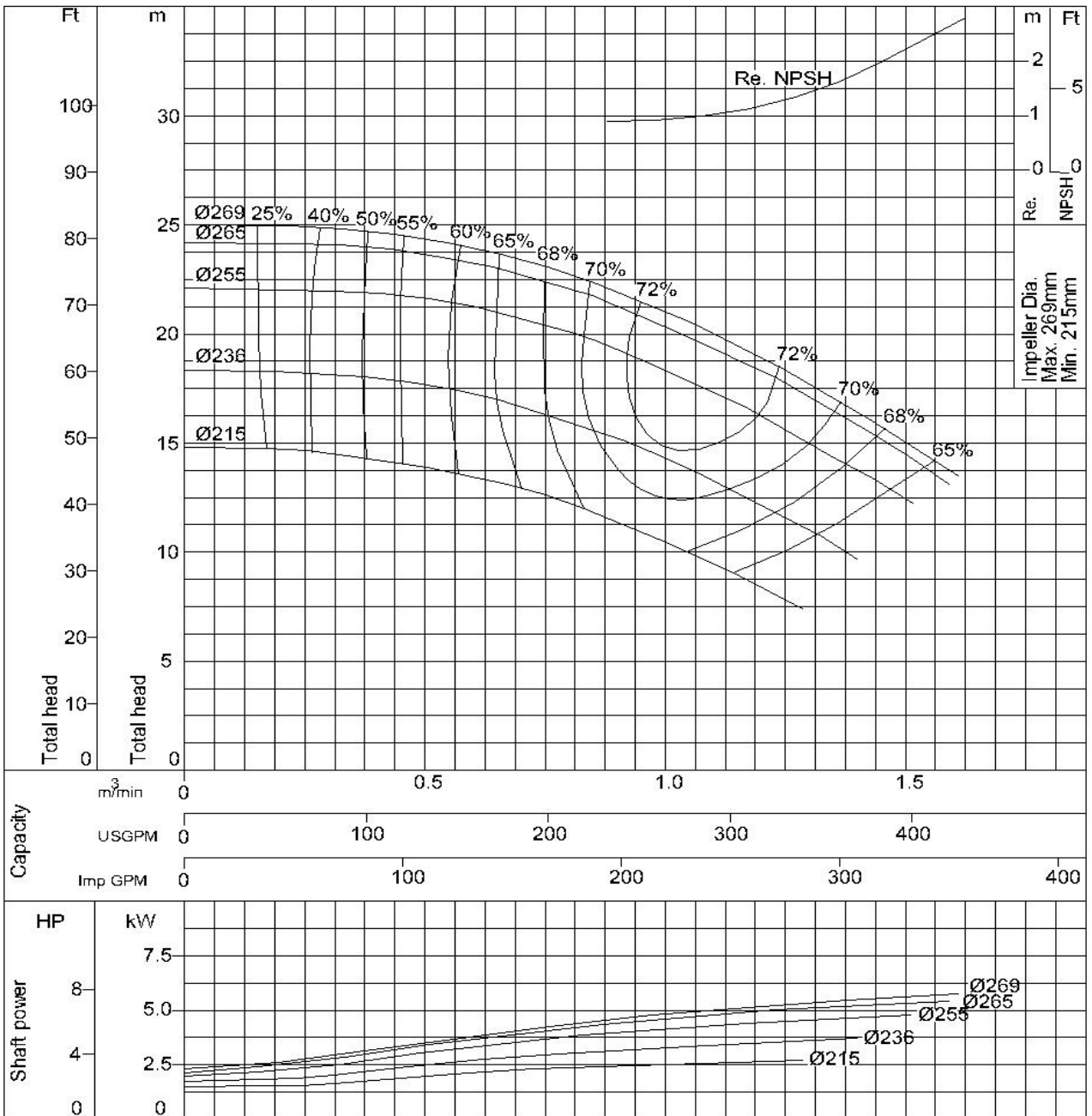
<b>100X80 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5609

## Performance Curve 4 Poles (10/27)

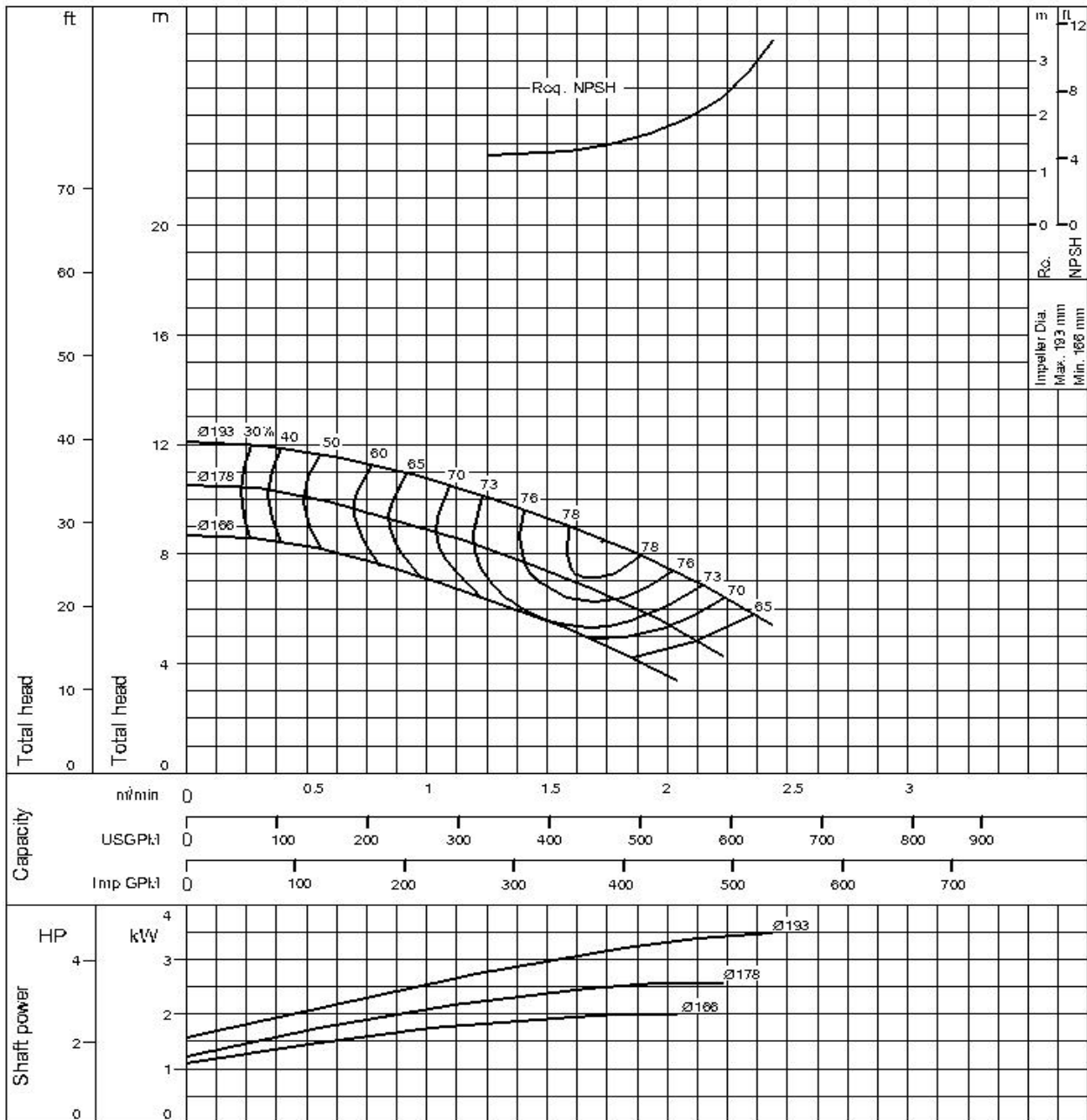
<b>100X80 FS4JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5610

## Performance Curve 4 Poles (11/27)

<b>100 x 80 FS4GCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

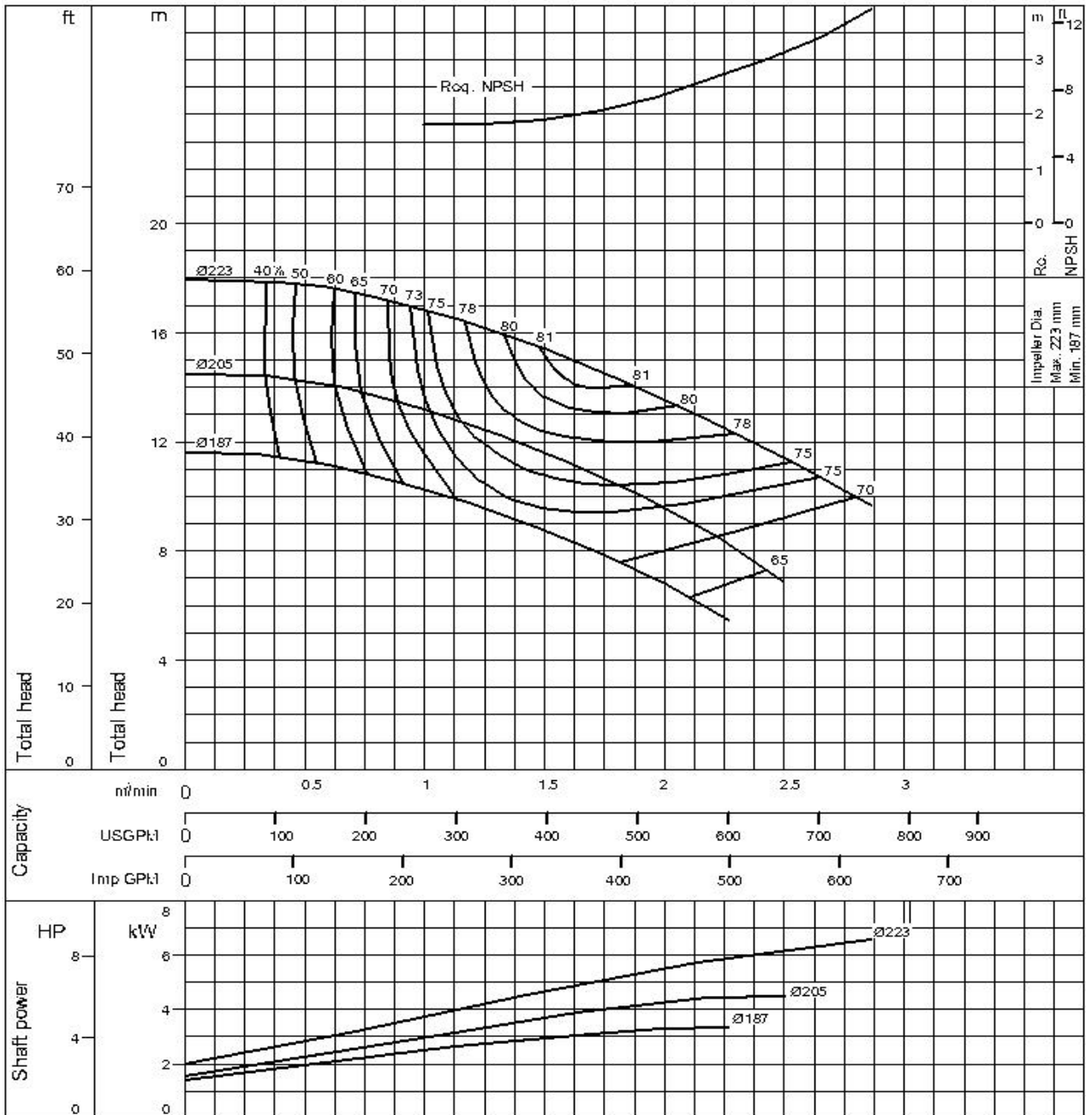


Curve No - 4 - 5FS5620



## Performance Curve 4 Poles (12/27)

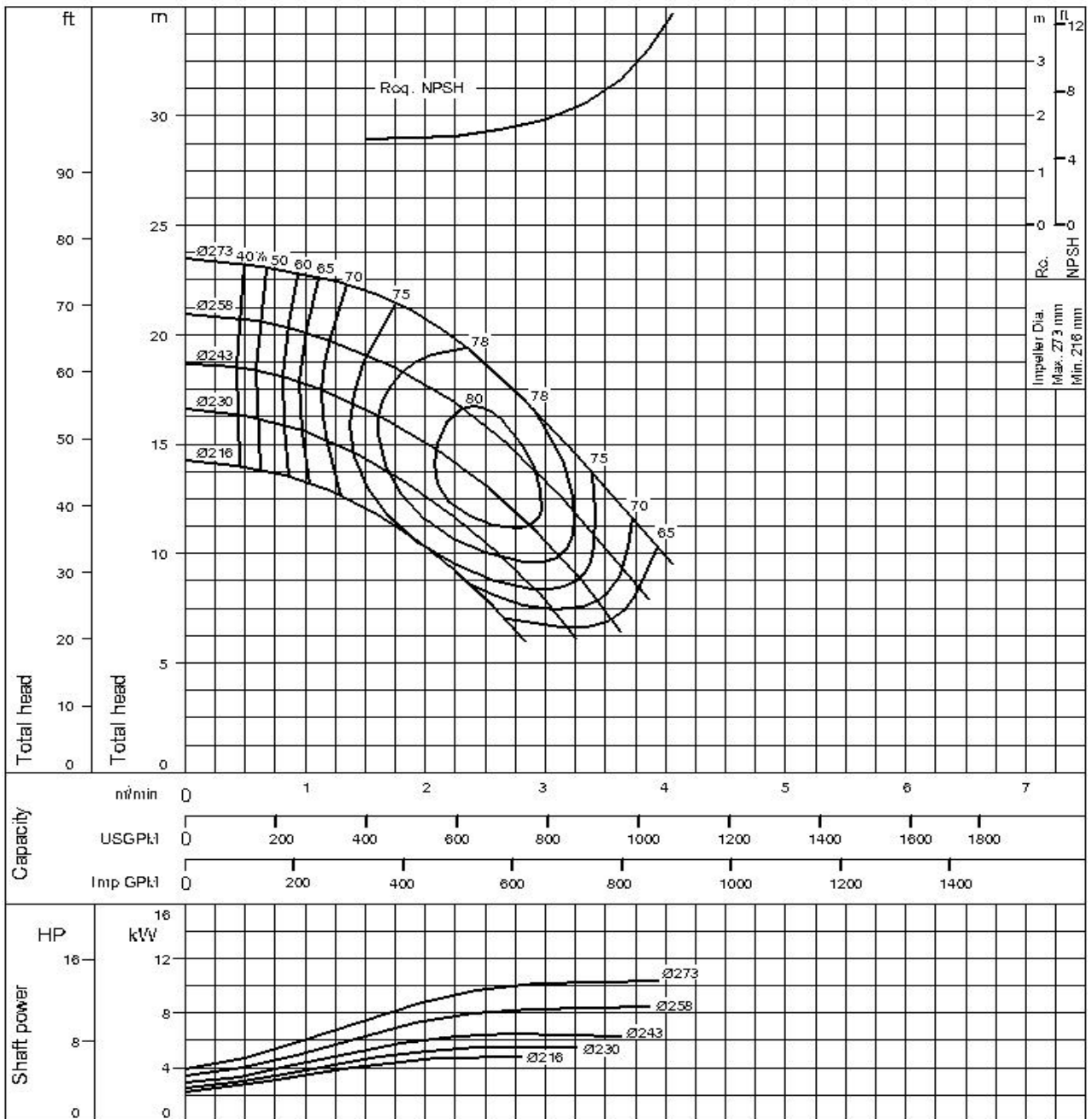
<b>100 x 80 FS4HCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5621

## Performance Curve 4 Poles (13/27)

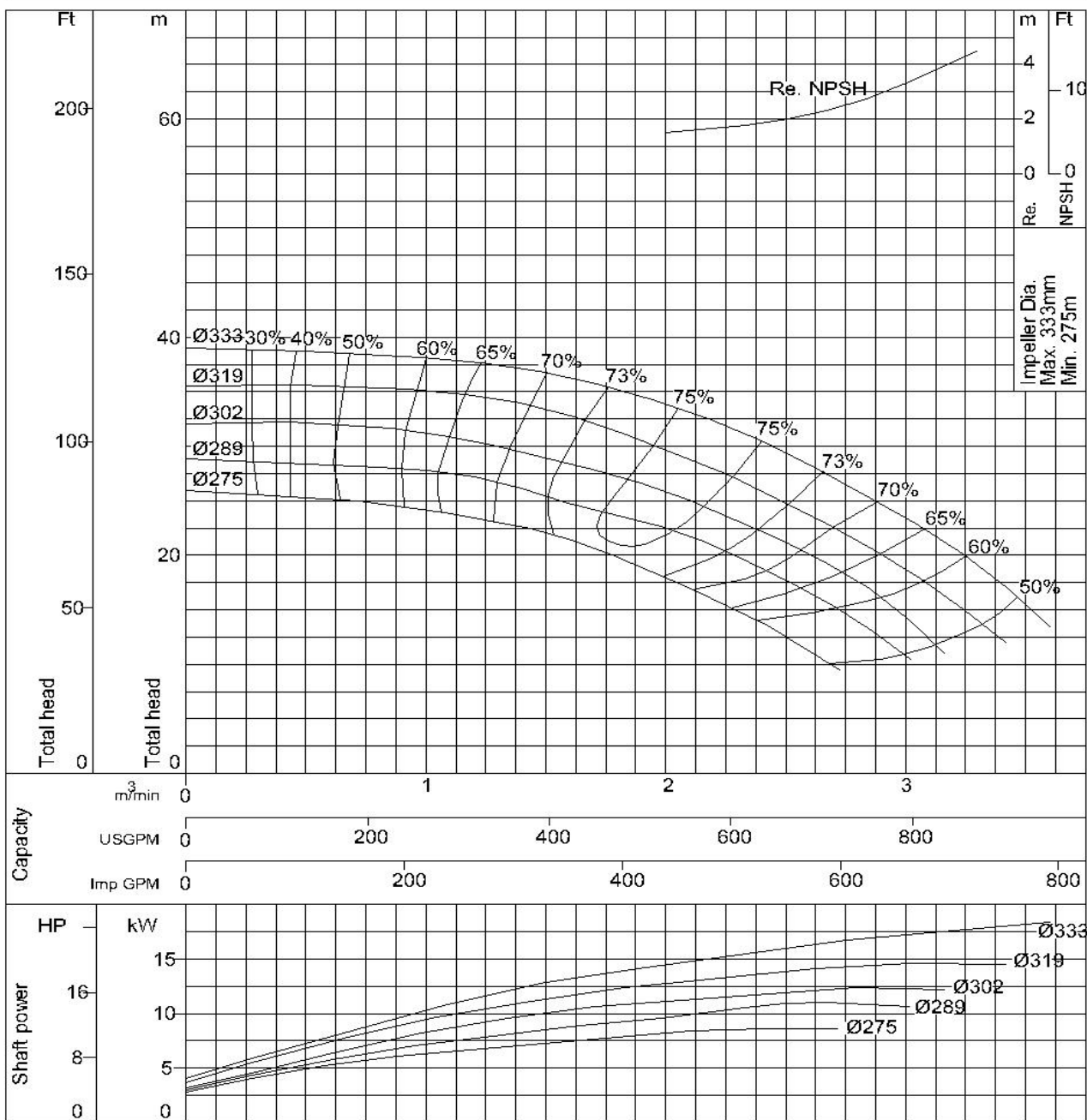
<b>125 x 100 FS4JCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - SFS5622

## Performance Curve 4 Poles (14/27)

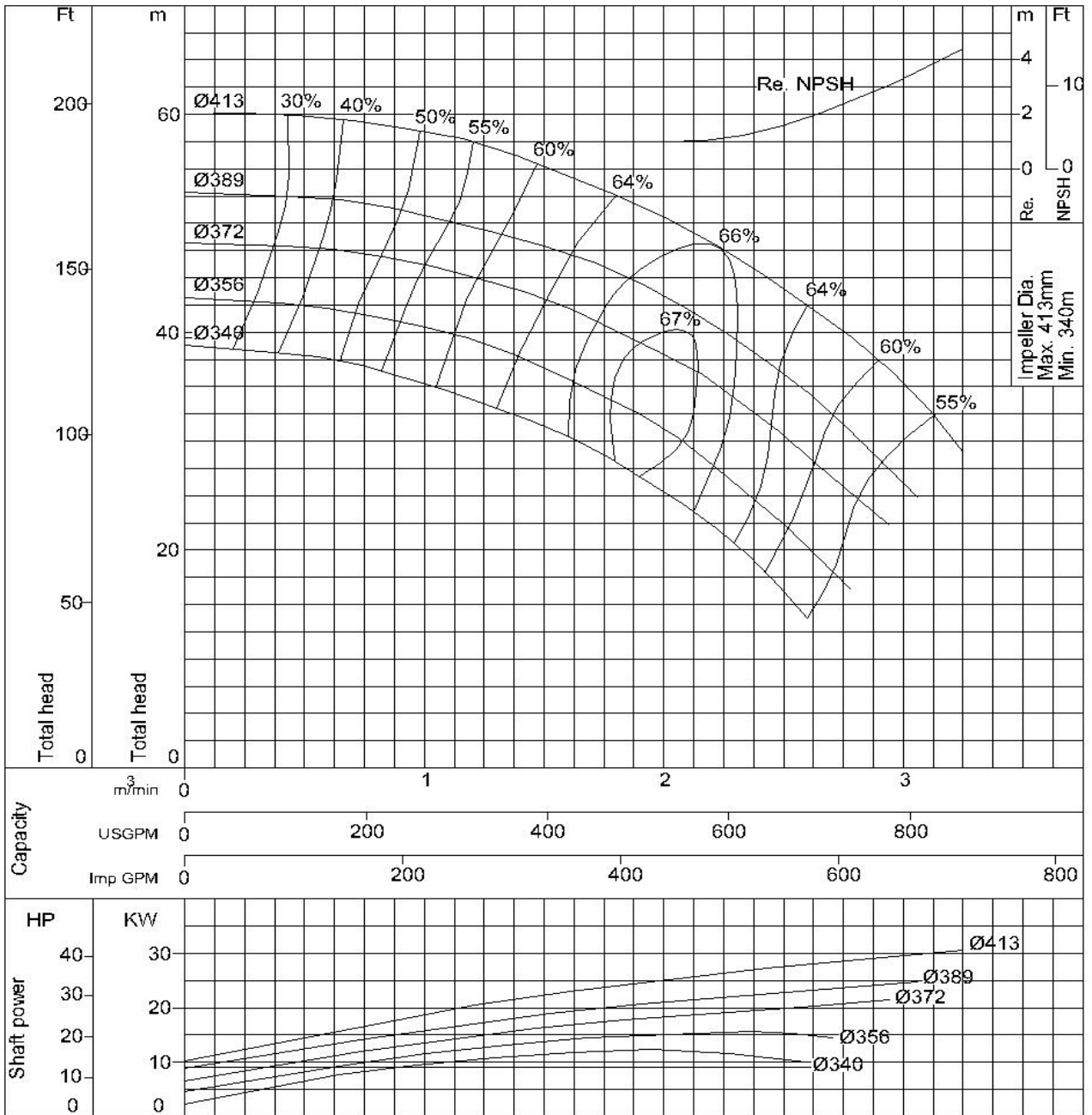
<b>125X100 FS4KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G. = 1.0 Vis. = 1.0 cSt



Curve No - 4 - 5FS5611

## Performance Curve 4 Poles (15/27)

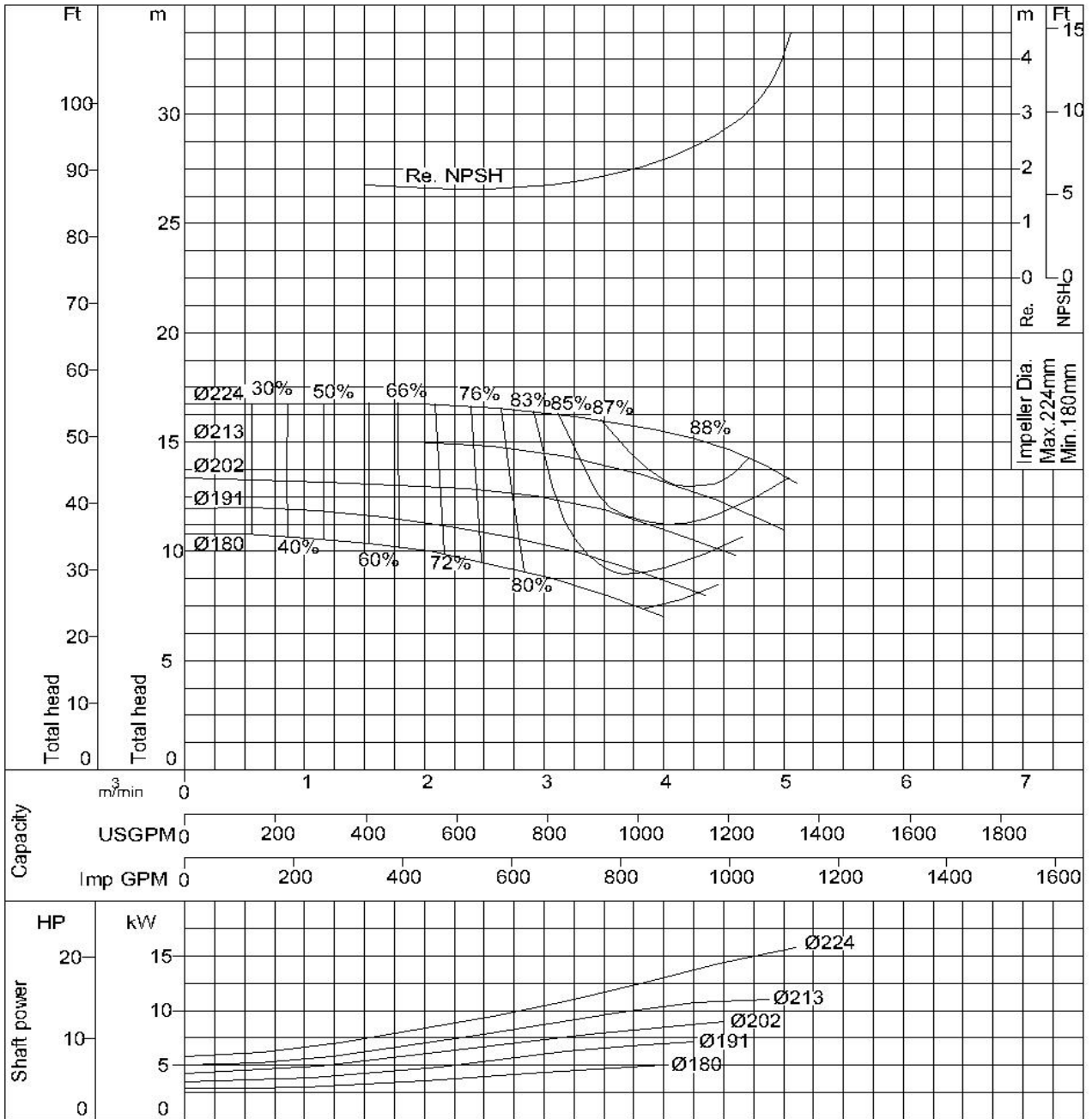
<b>125X100 FS4LA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5612

## Performance Curve 4 Poles (16/27)

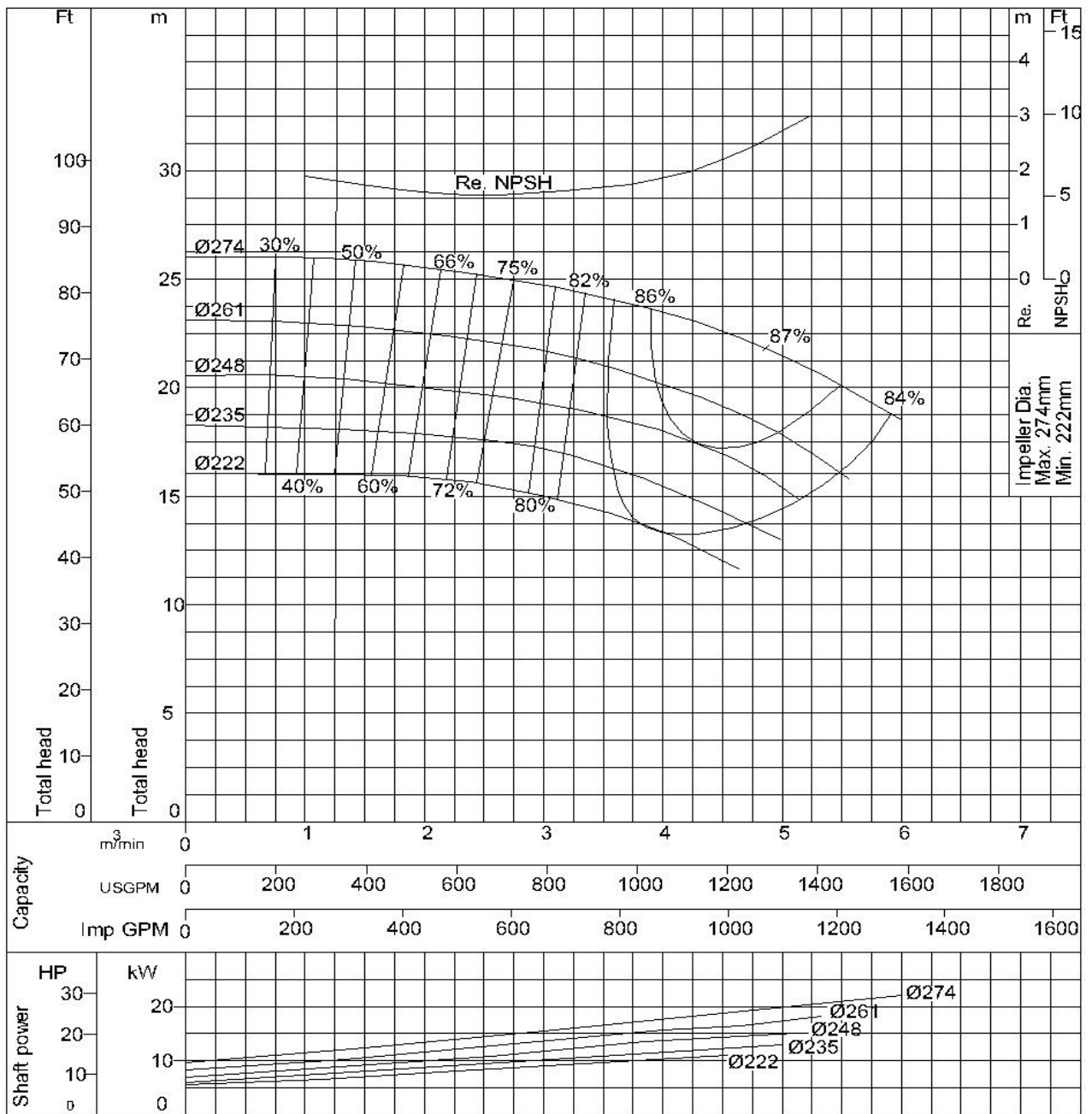
<b>150X125 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5613

## Performance Curve 4 Poles (17/27)

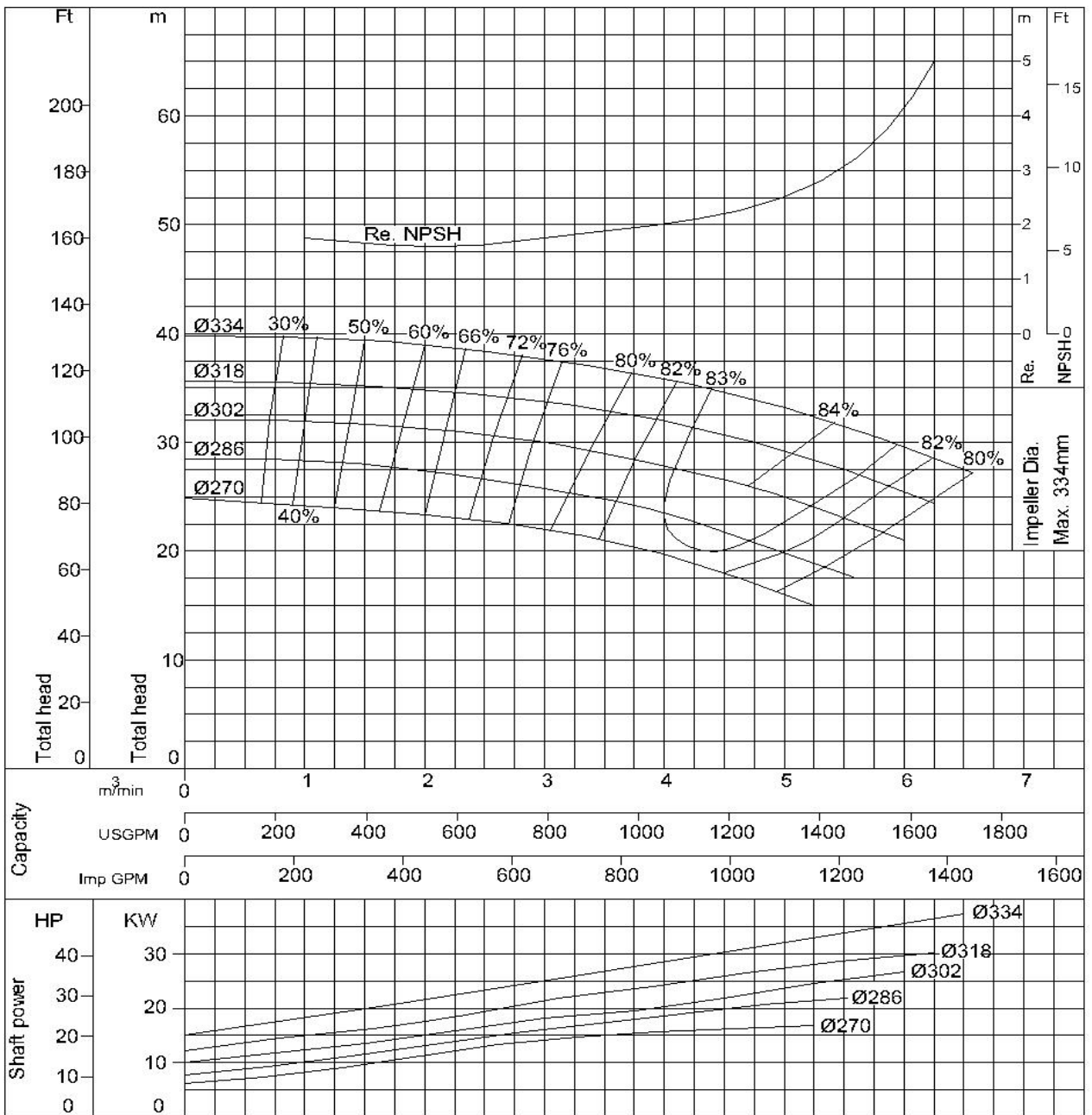
<b>150X125 FS4JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5614

## Performance Curve 4 Poles (18/27)

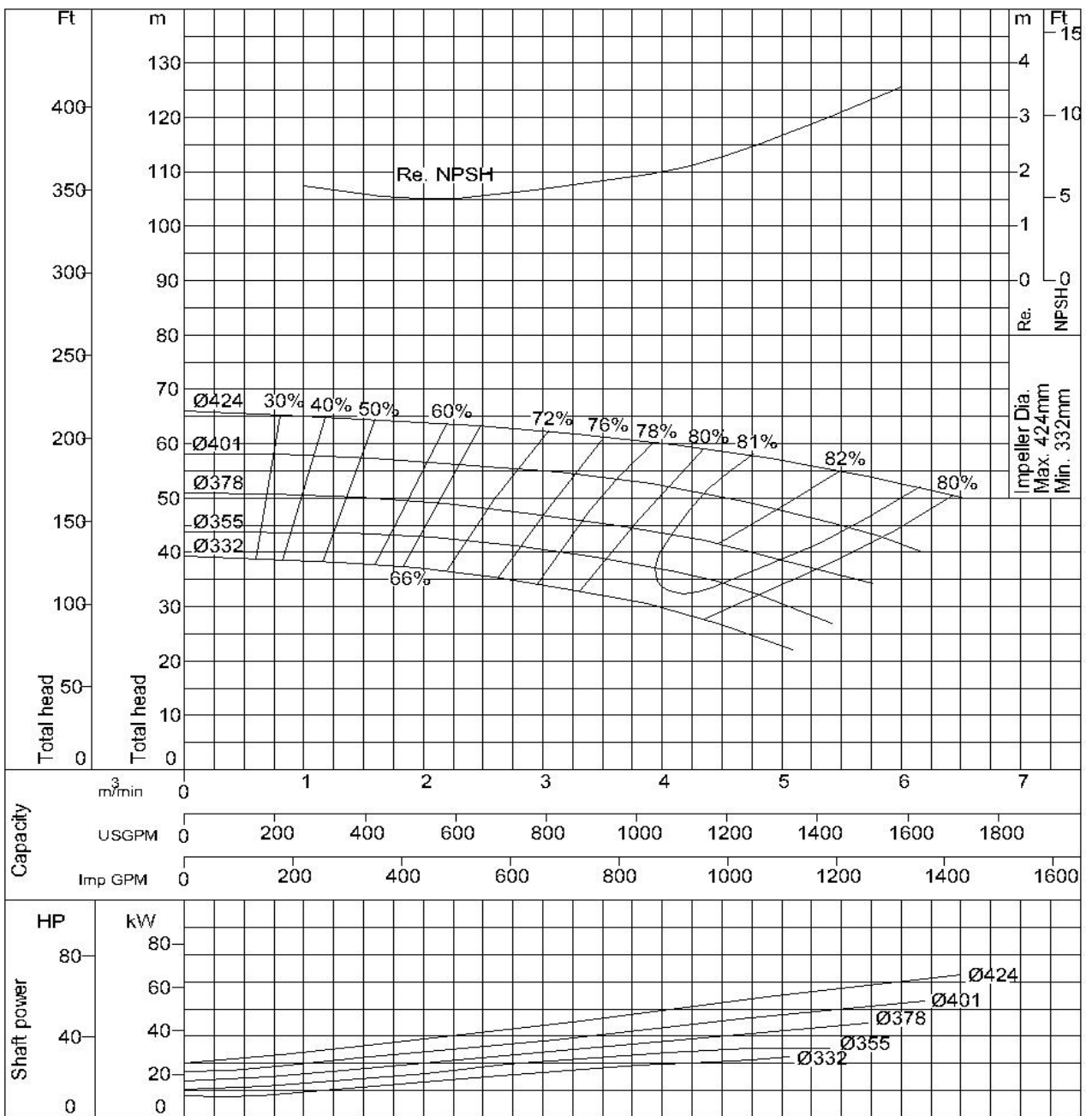
<b>150X125 FS4KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5615

## Performance Curve 4 Poles (19/27)

<b>150X125 FS4LA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

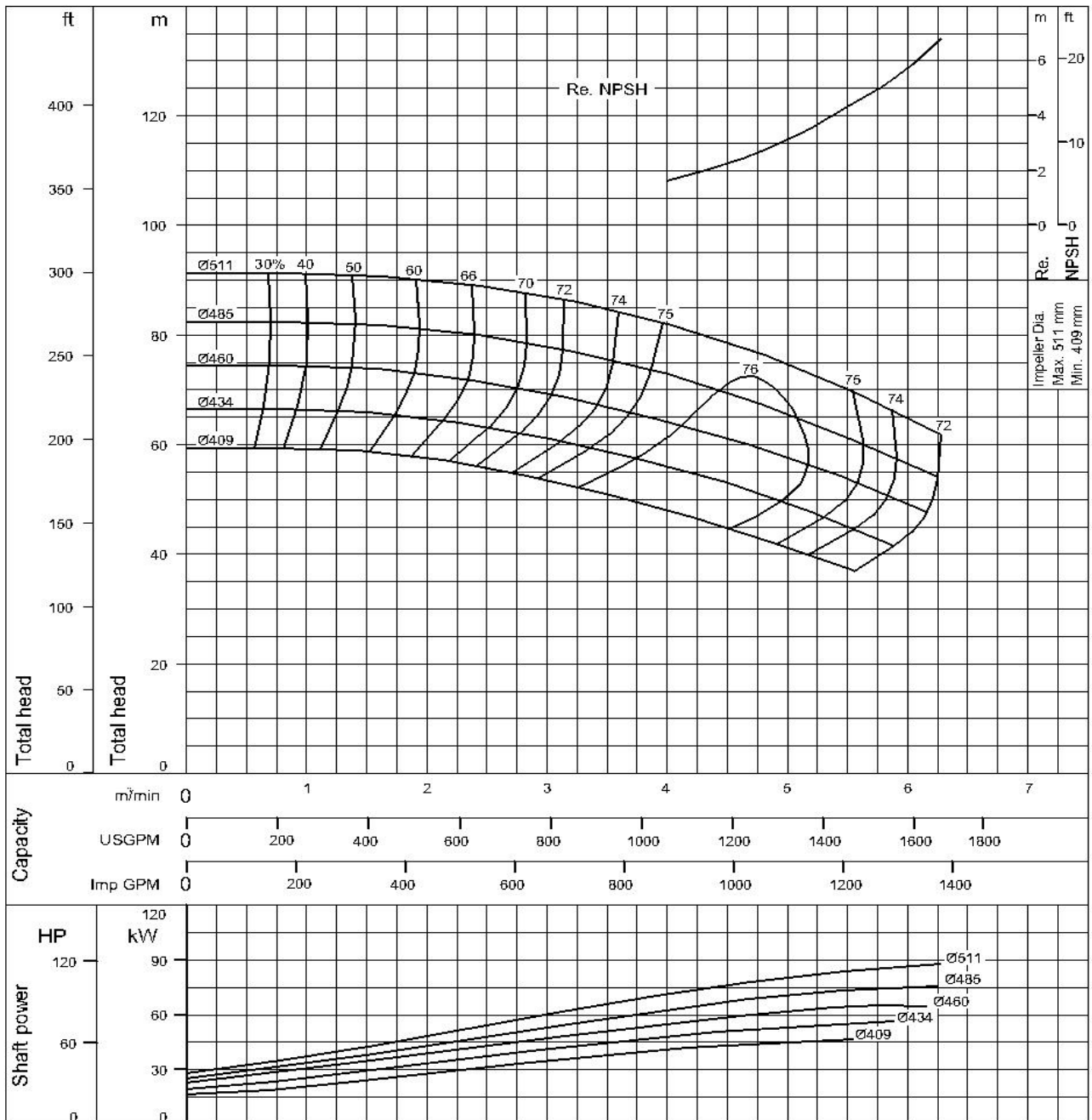


Curve No - 4 - 5FS5616



## Performance Curve 4 Poles (20/27)

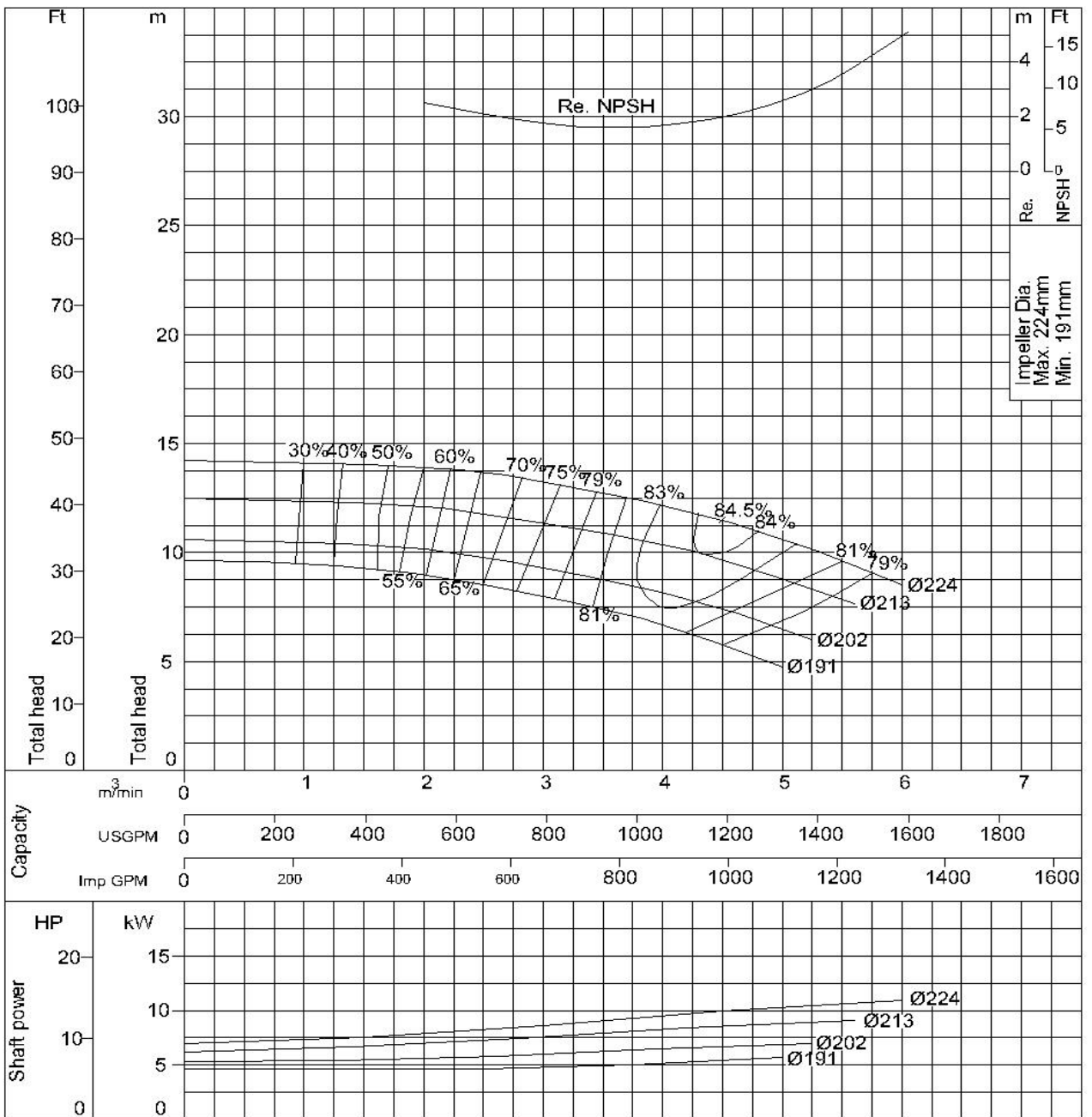
<b>150 x 100 FS4NA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5624

## Performance Curve 4 Poles (21/27)

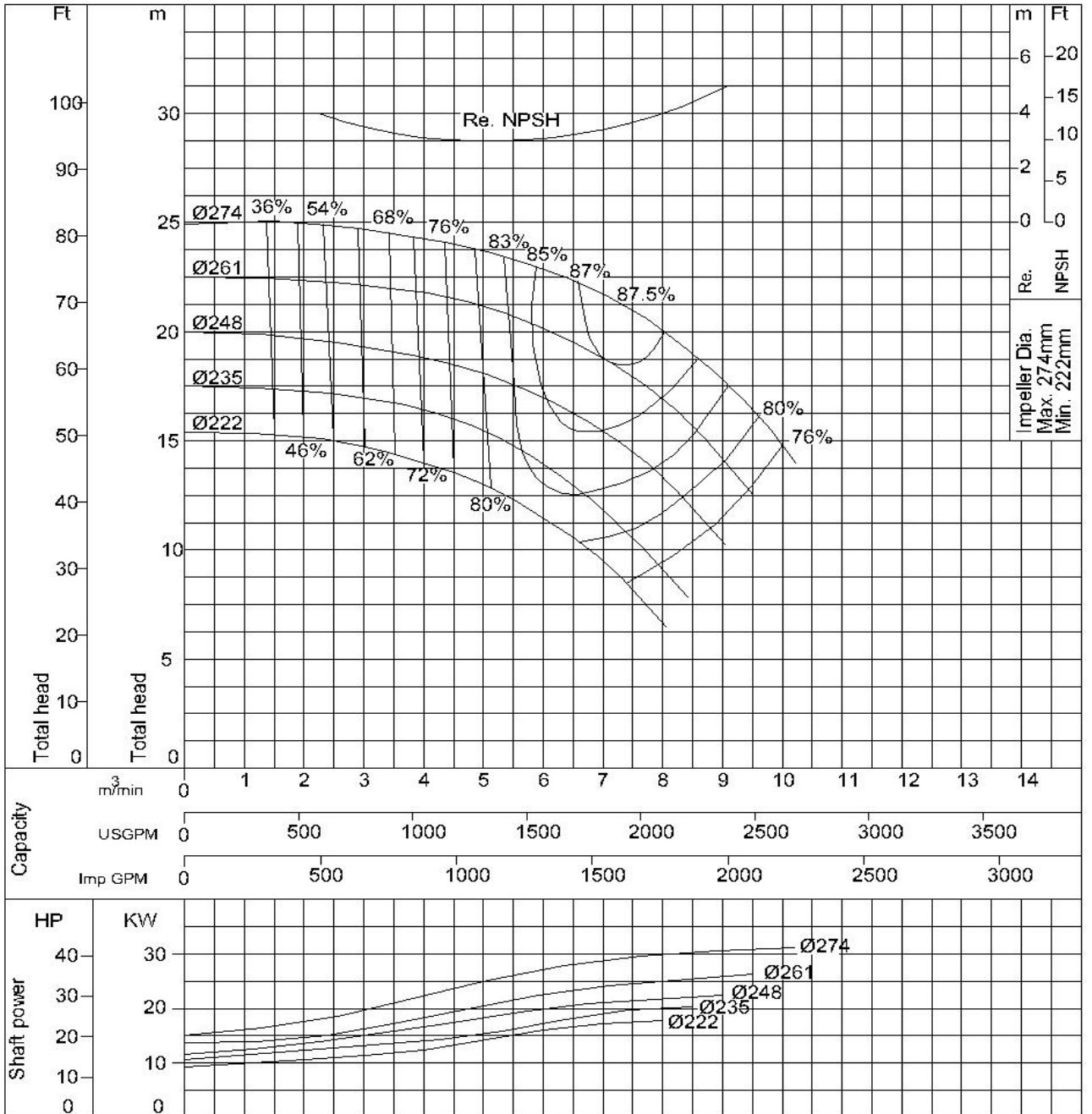
<b>200X150 FS4HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5617

## Performance Curve 4 Poles (22/27)

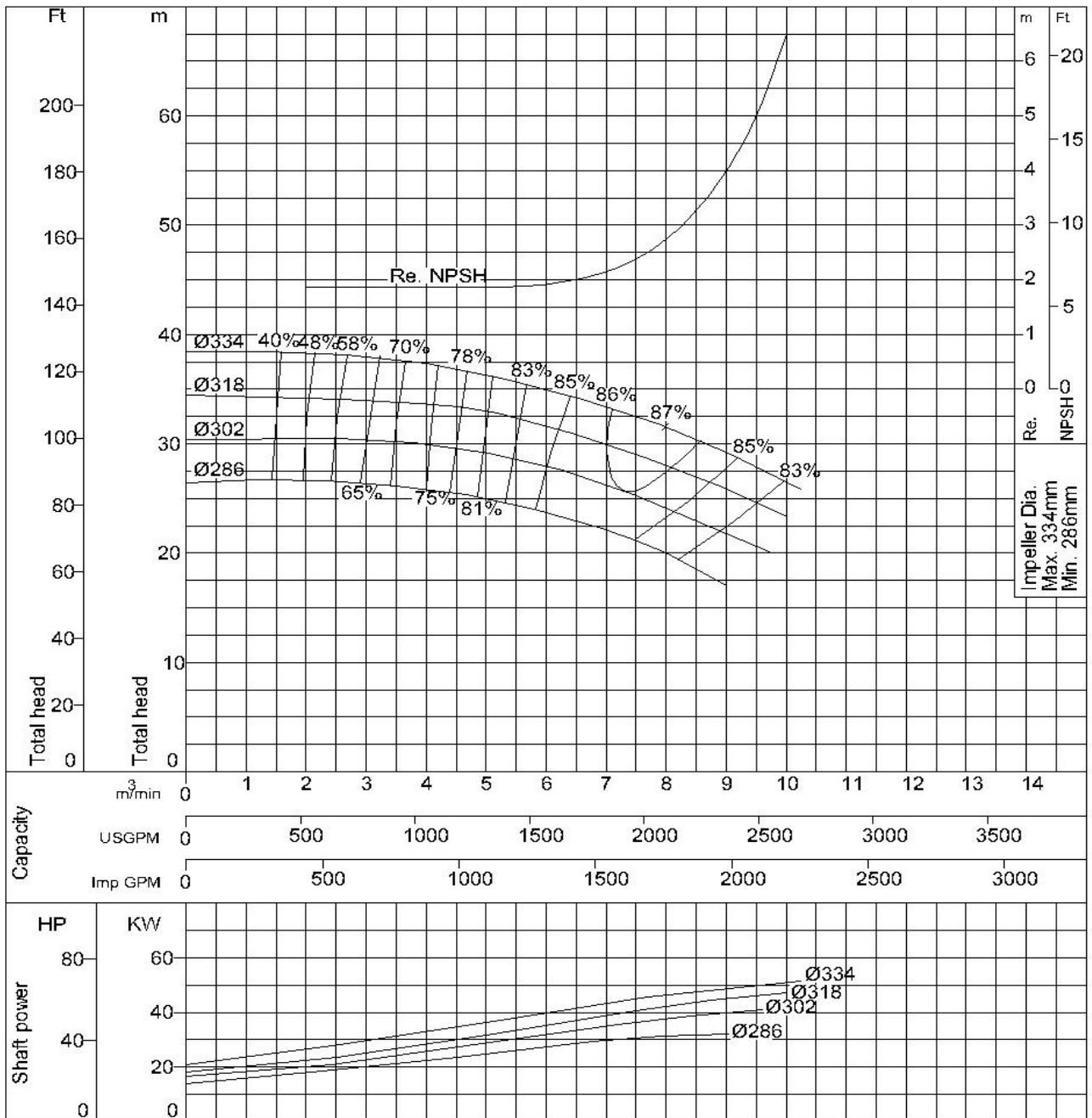
<b>200X150 FS4JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FSS618

## Performance Curve 4 Poles (23/27)

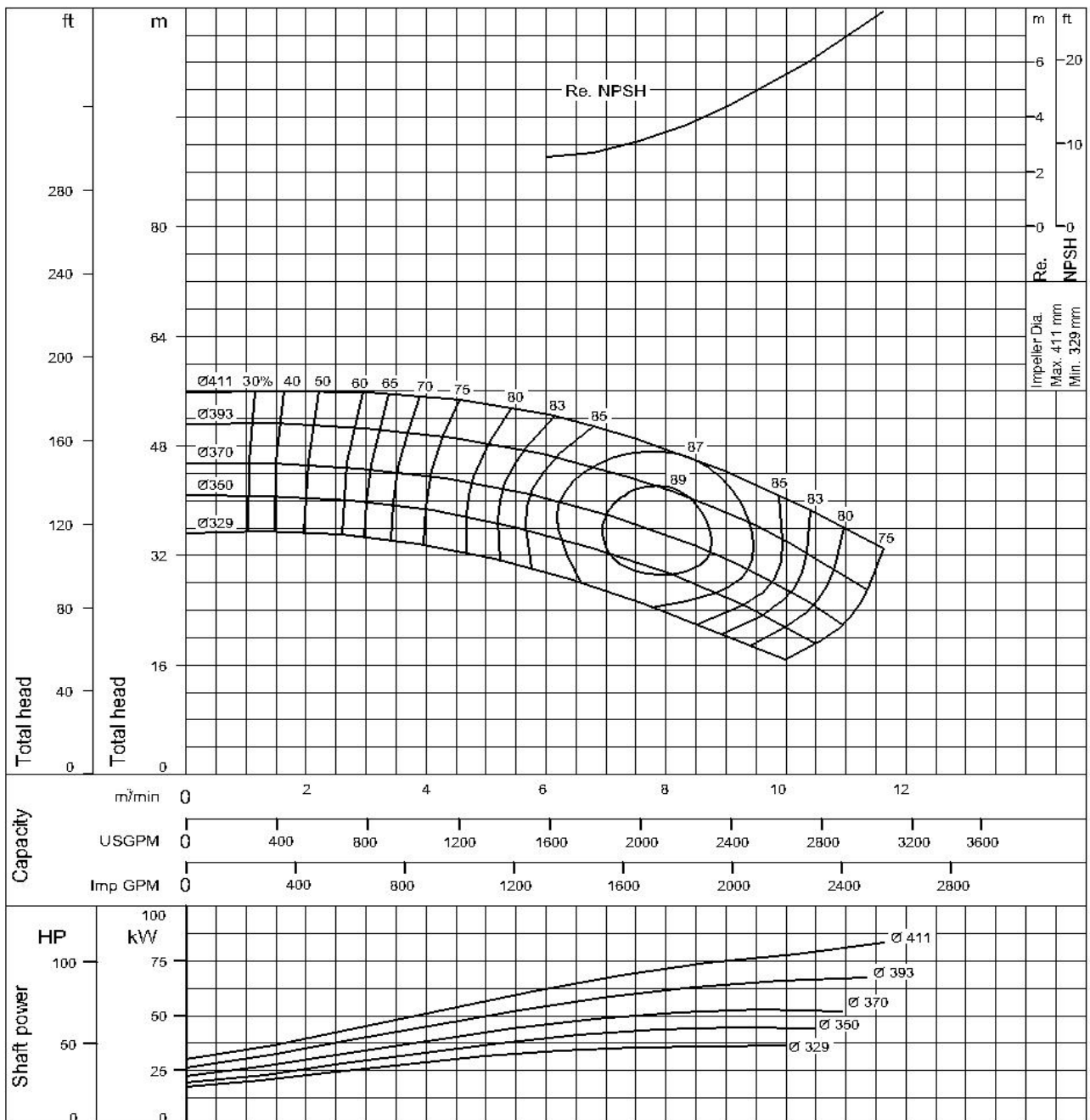
<b>200X150 FS4KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FSS619

## Performance Curve 4 Poles (24/27)

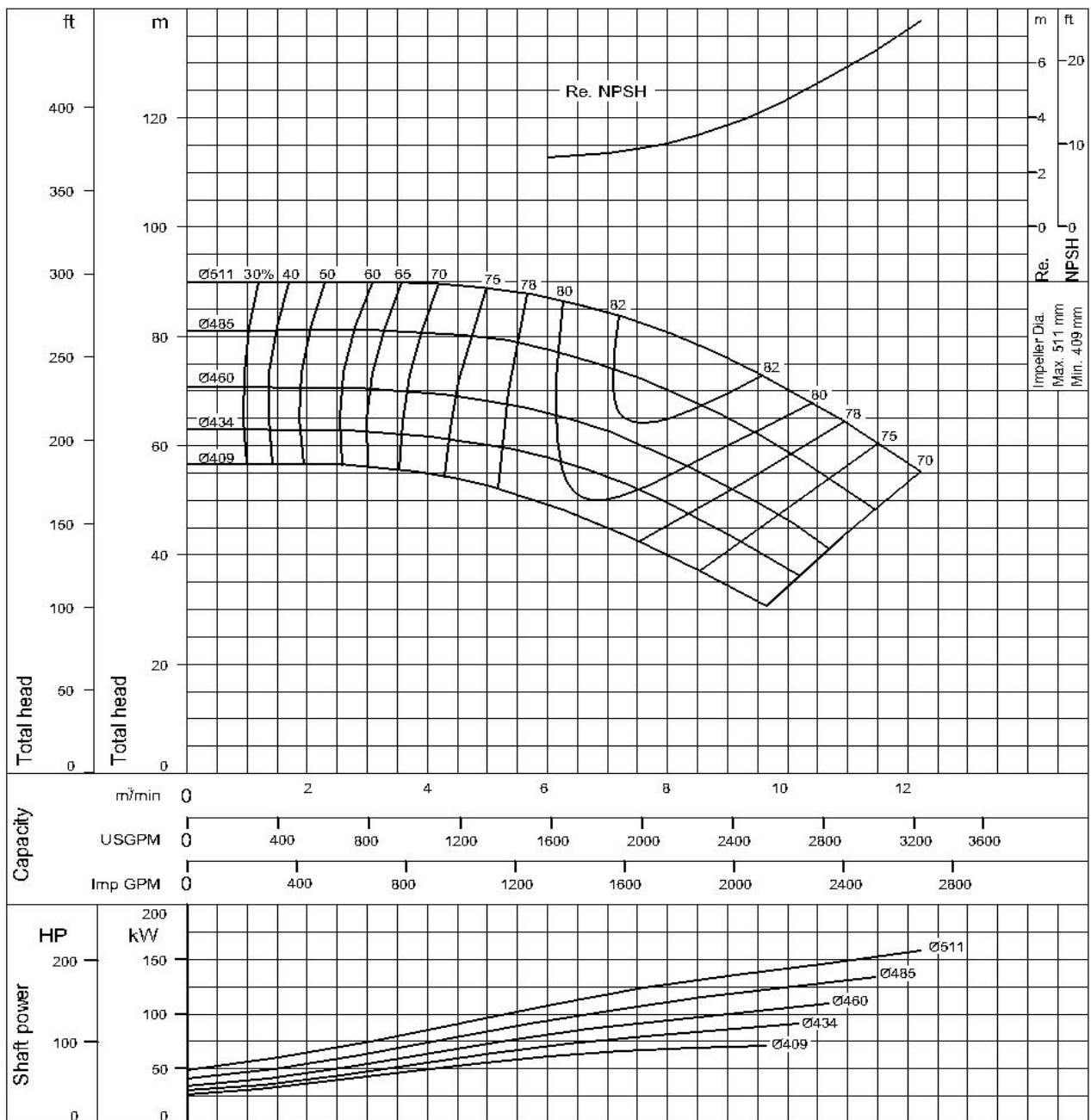
<b>200 x 150 FS4LA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5625

## Performance Curve 4 Poles (25/27)

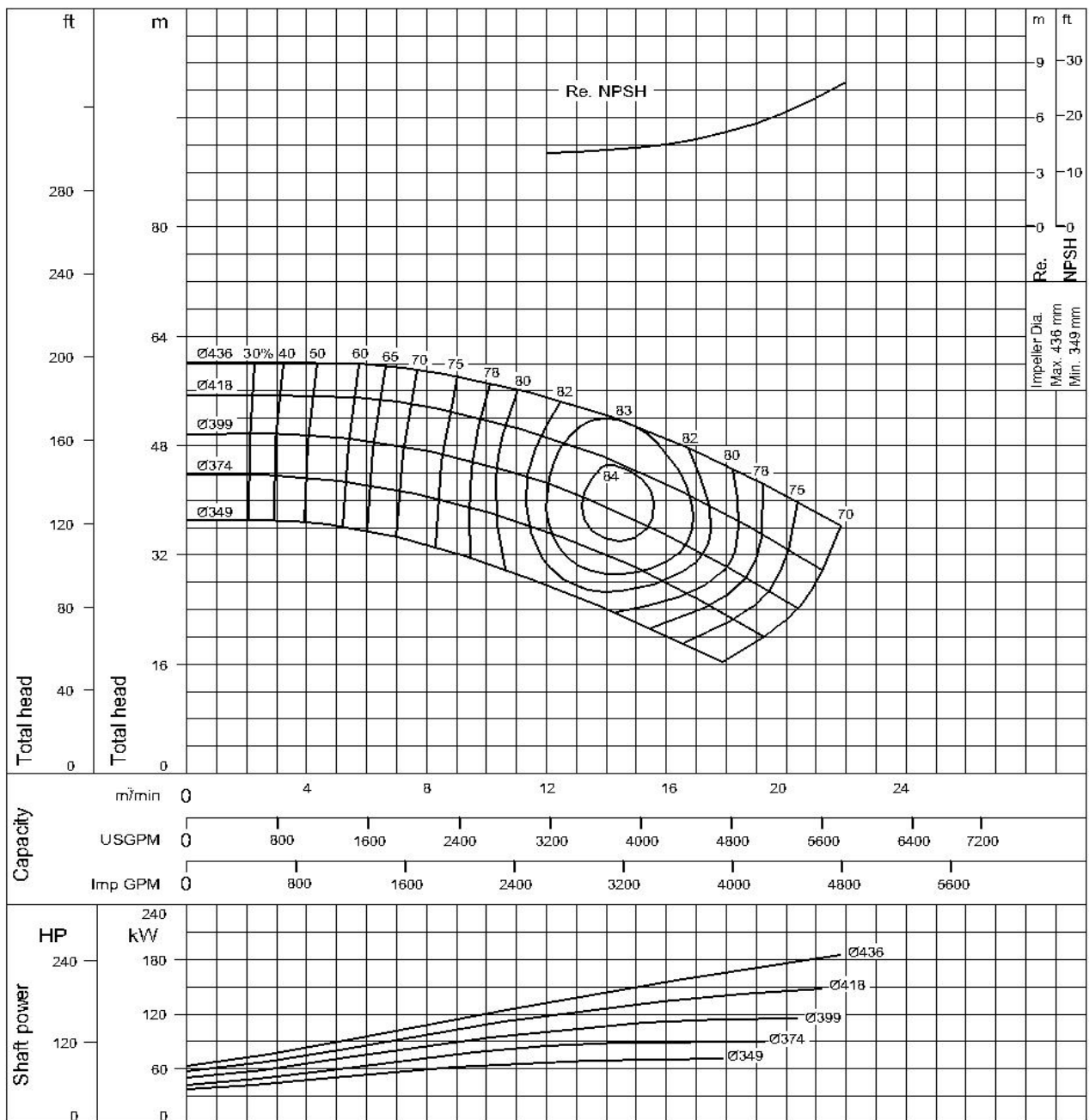
<b>200 x 150 FS4NA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed $1450 \text{ min}^{-1}$ )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5626

## Performance Curve 4 Poles (26/27)

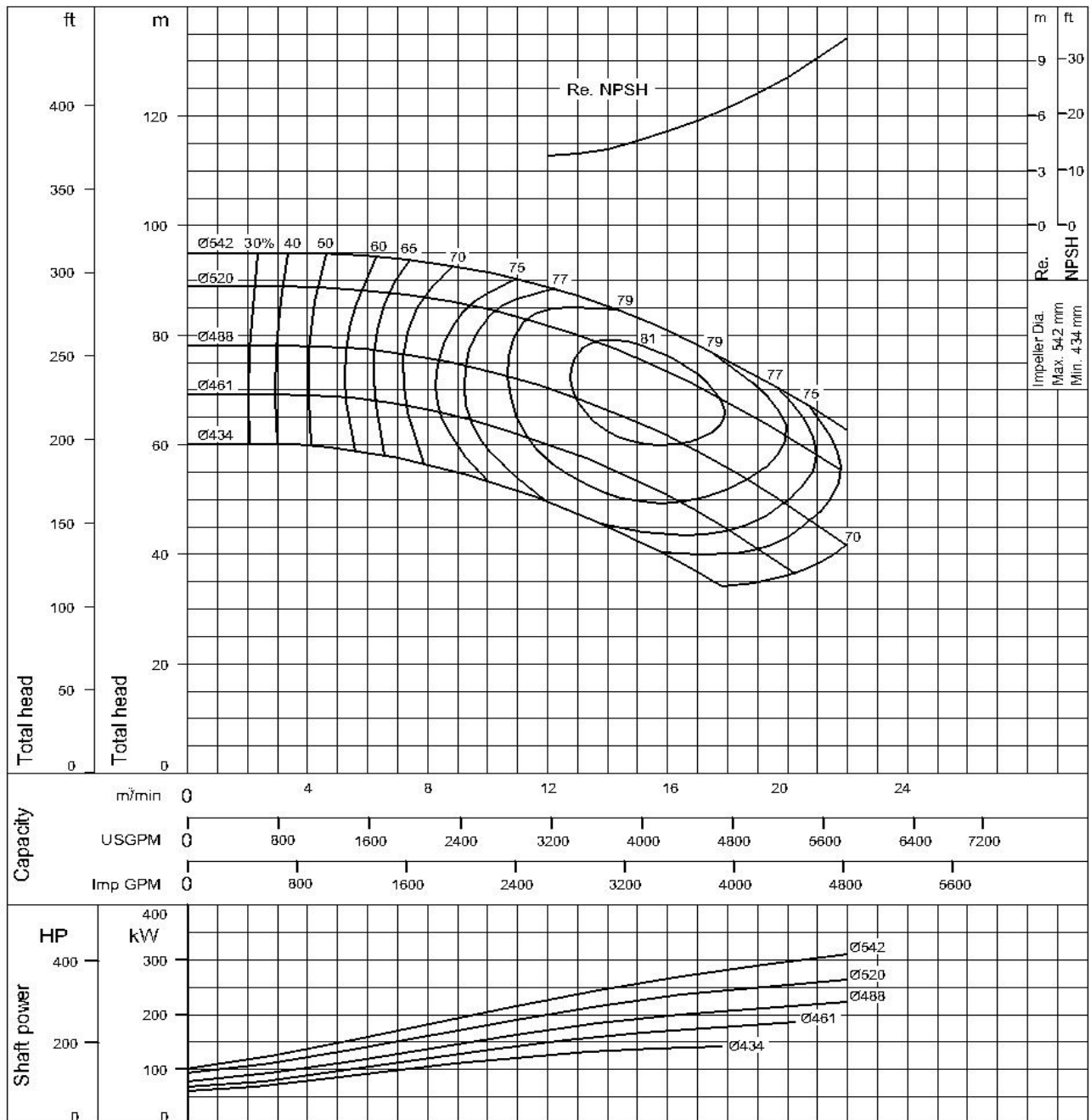
<b>250 x 200 FS4LA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 4 - 5FS5627

## Performance Curve 4 Poles (27/27)

<b>250 x 200 FS4NA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 1450 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

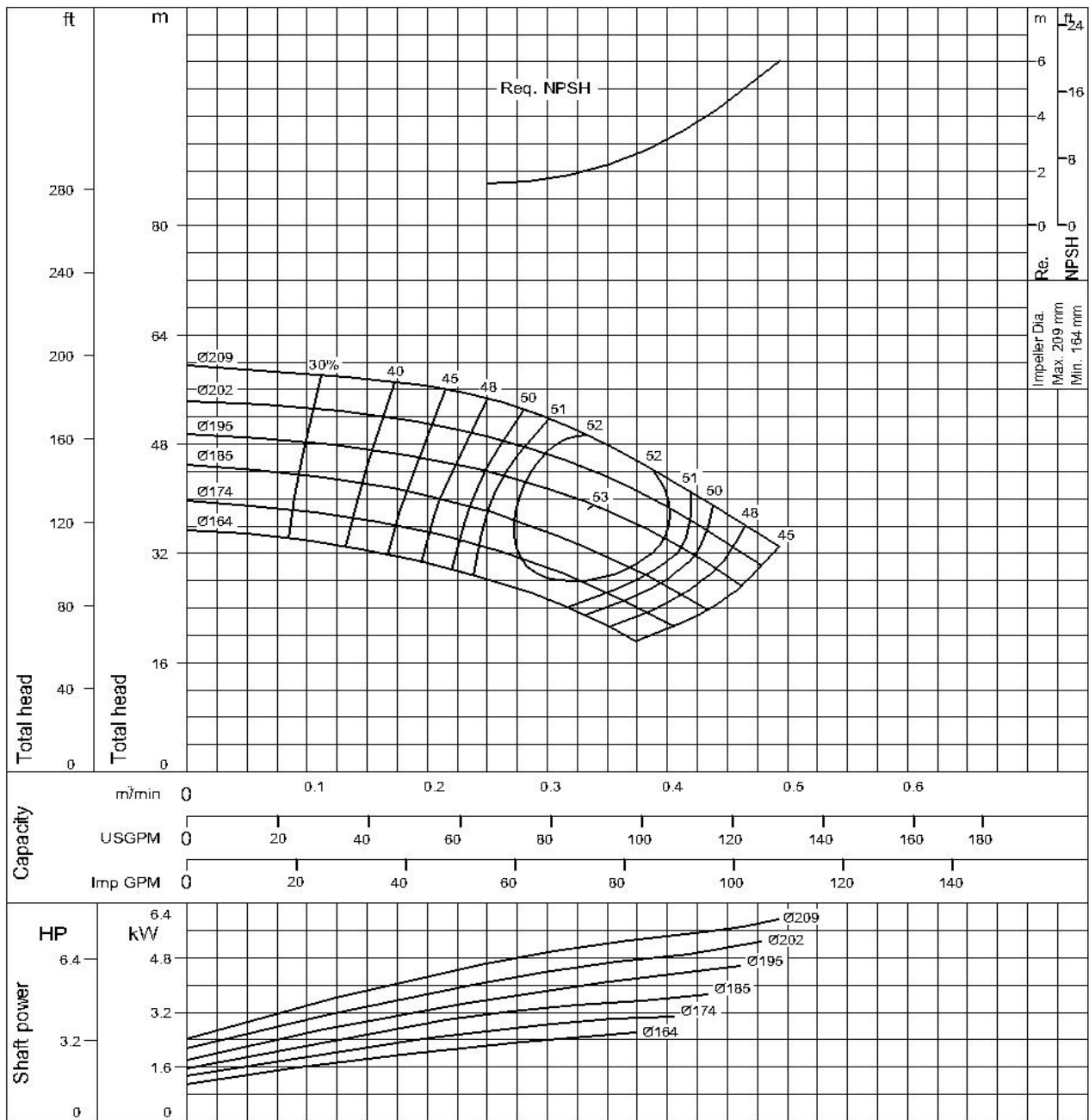


Curve No - 4 - 5FS5628



## Performance Curve 2 Poles (1/14)

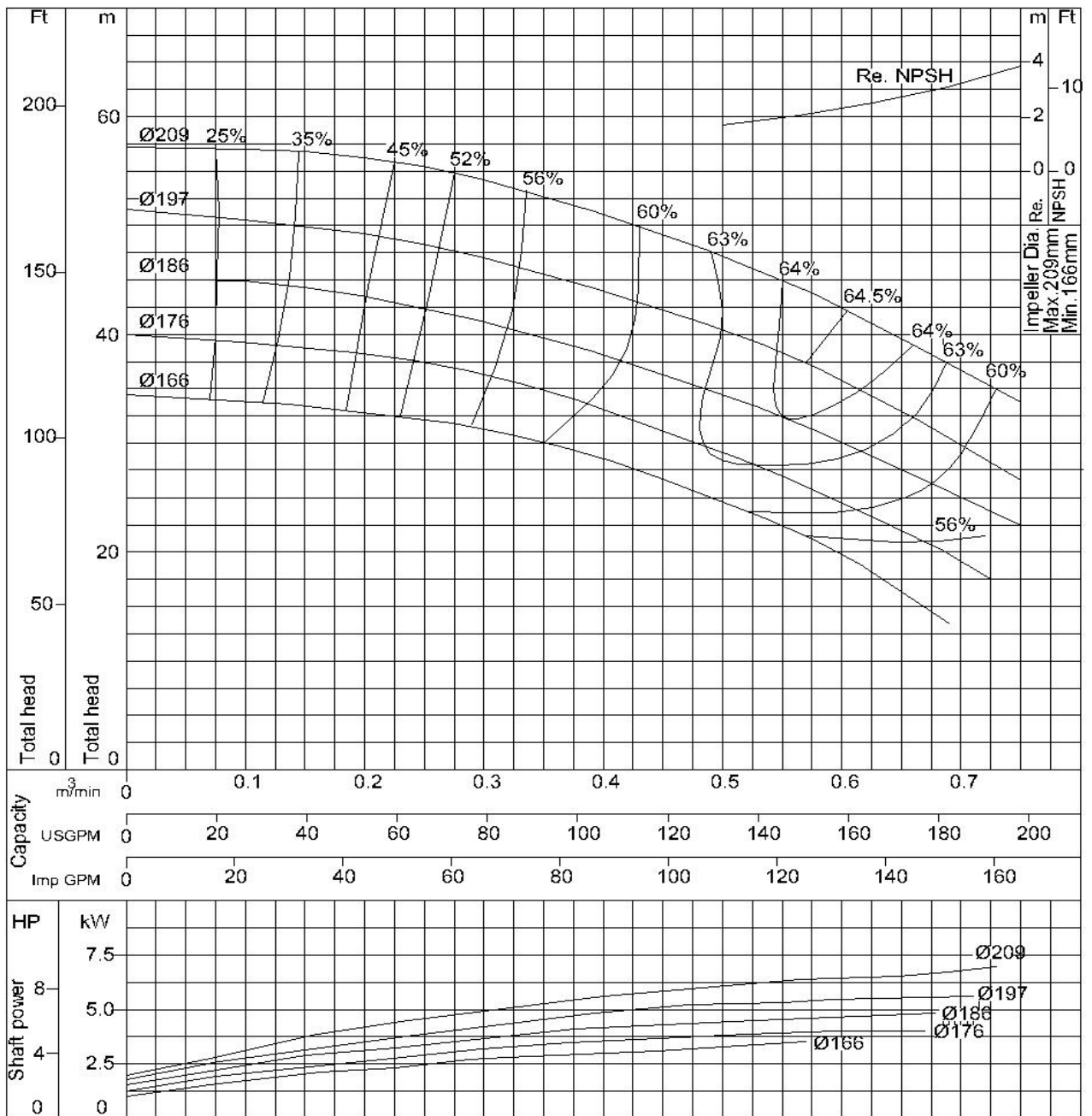
<b>50 x 40 FS2HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5601

## Performance Curve 2 Poles (2/14)

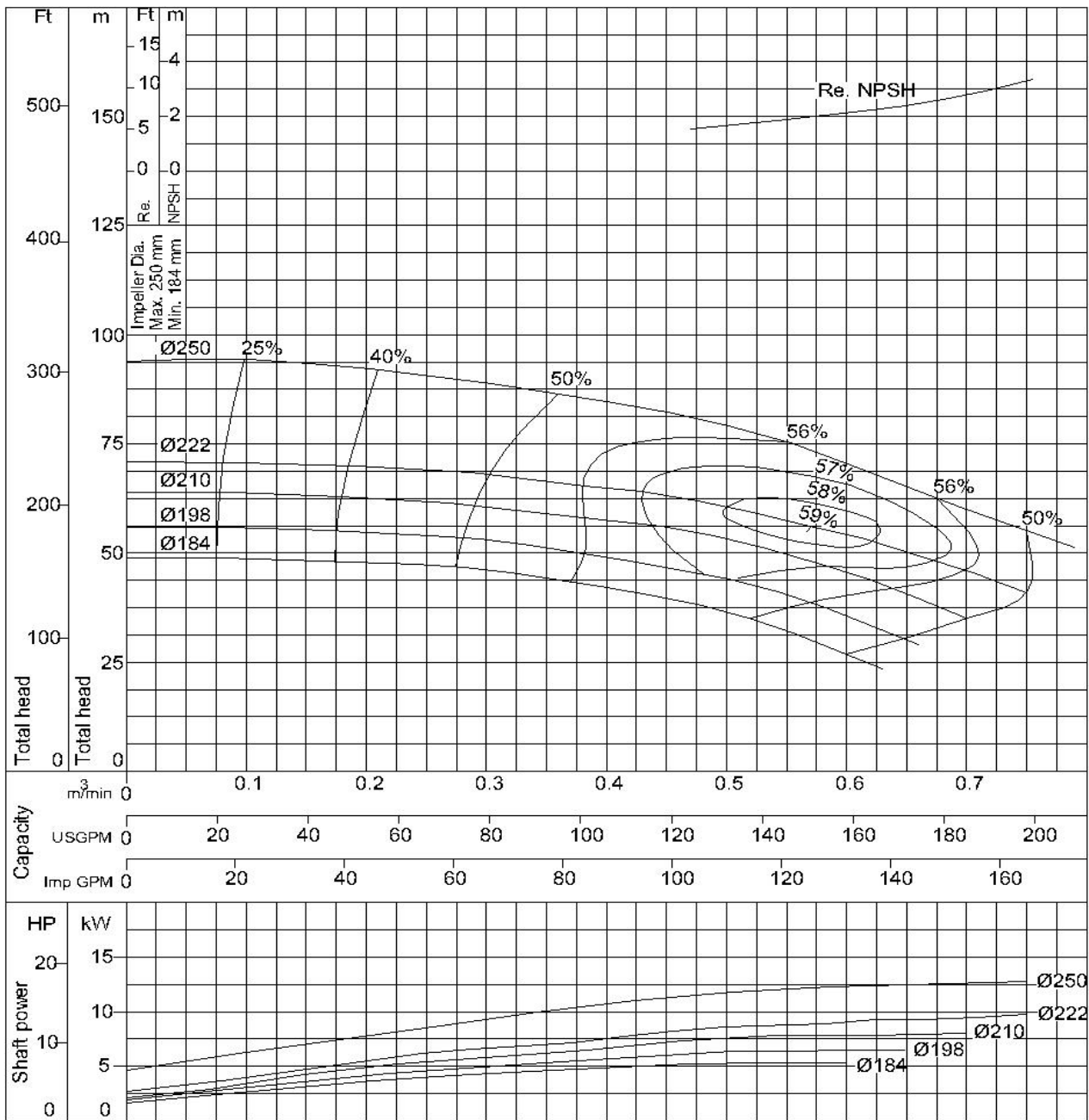
<b>65X50 FS2HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G. = 1.0 Vis. = 1.0 cSt



Curve No - 2 - 5FS5602

## Performance Curve 2 Poles (3/14)

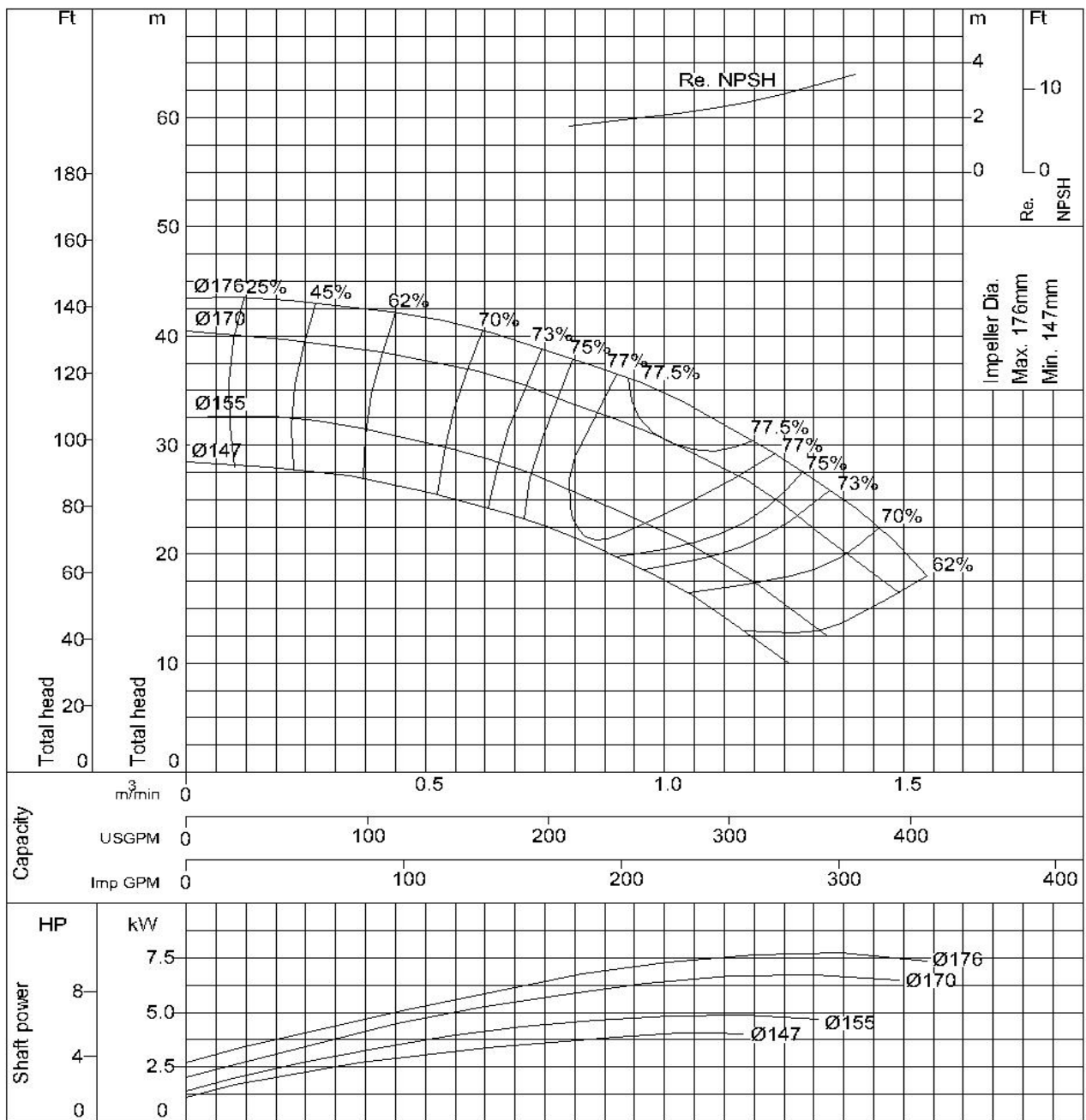
<b>65X50FS2J</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5603

## Performance Curve 2 Poles (4/14)

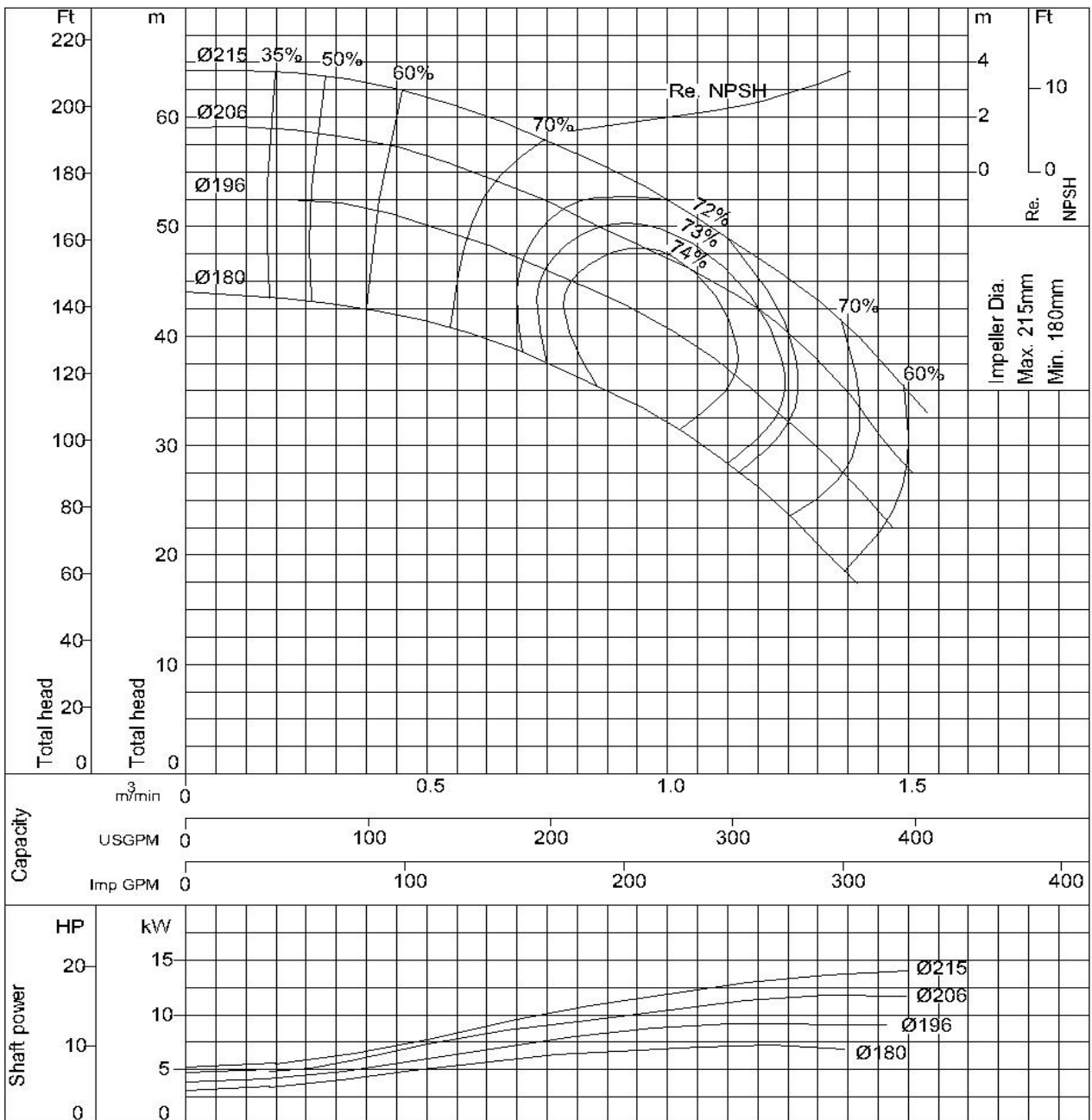
<b>80X65 FS2GA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5604

## Performance Curve 2 Poles (5/14)

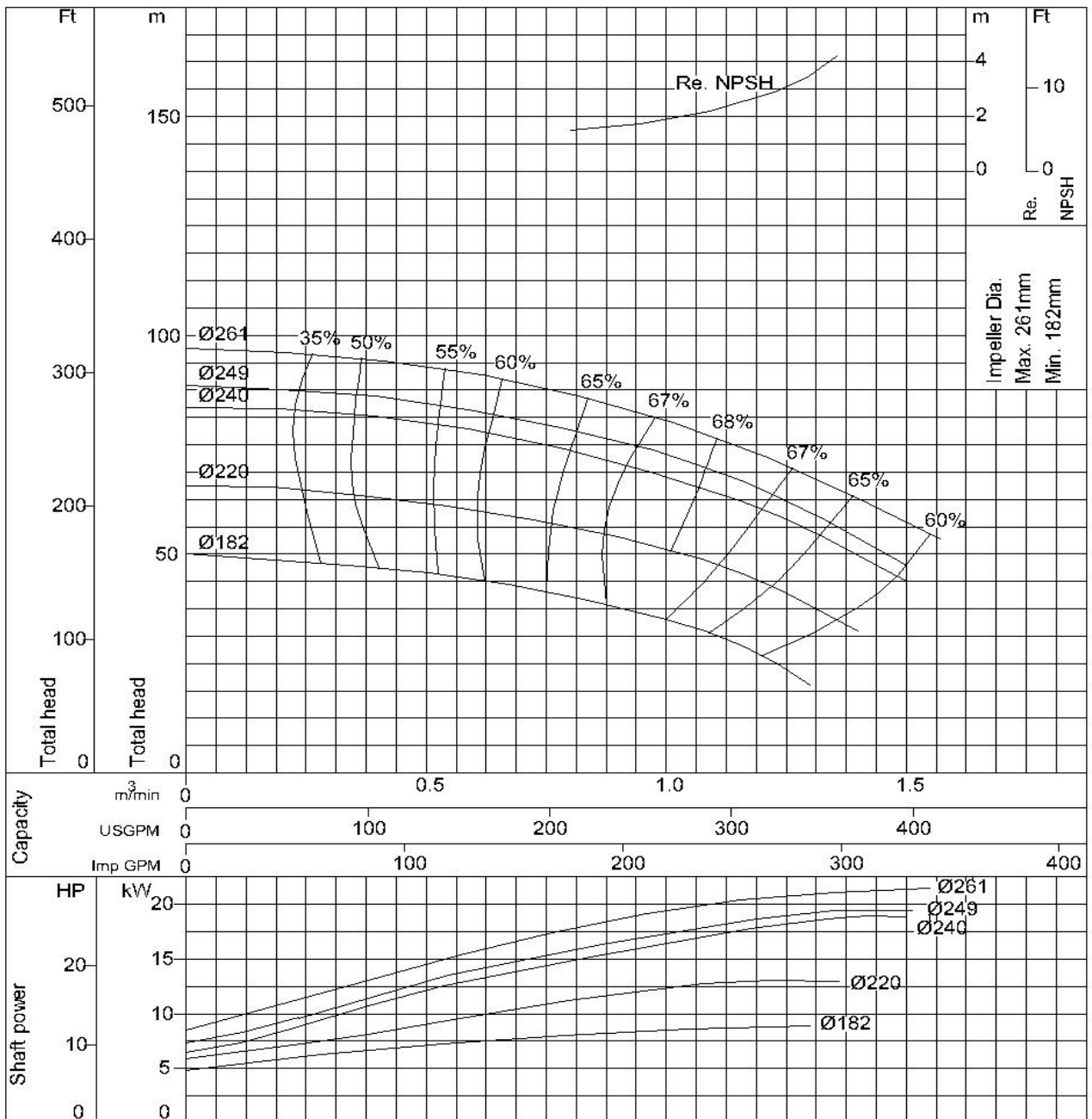
<b>80X65 FS2HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5605

## Performance Curve 2 Poles (6/14)

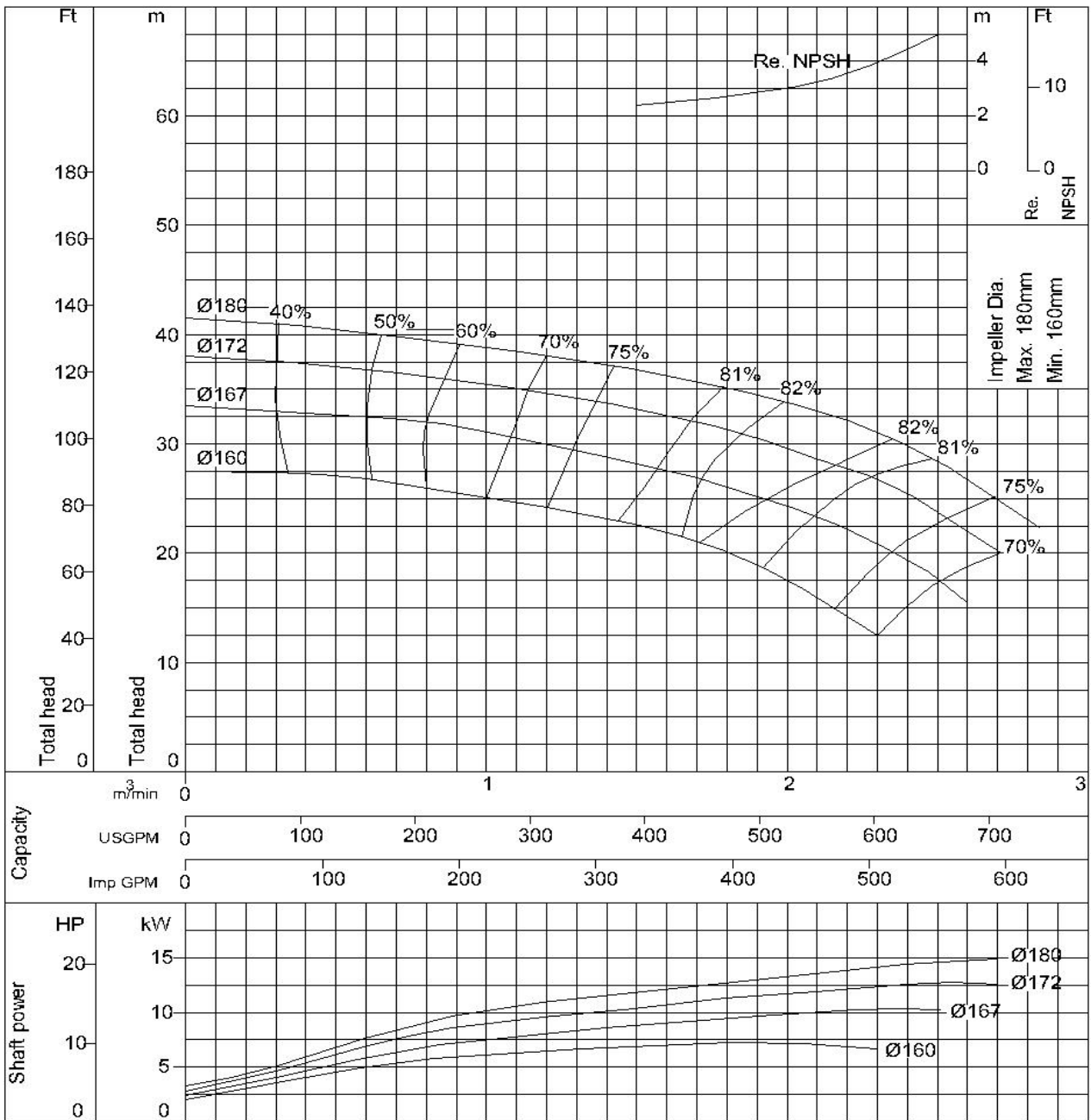
<b>80X65 FS2JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5606

## Performance Curve 2 Poles (7/14)

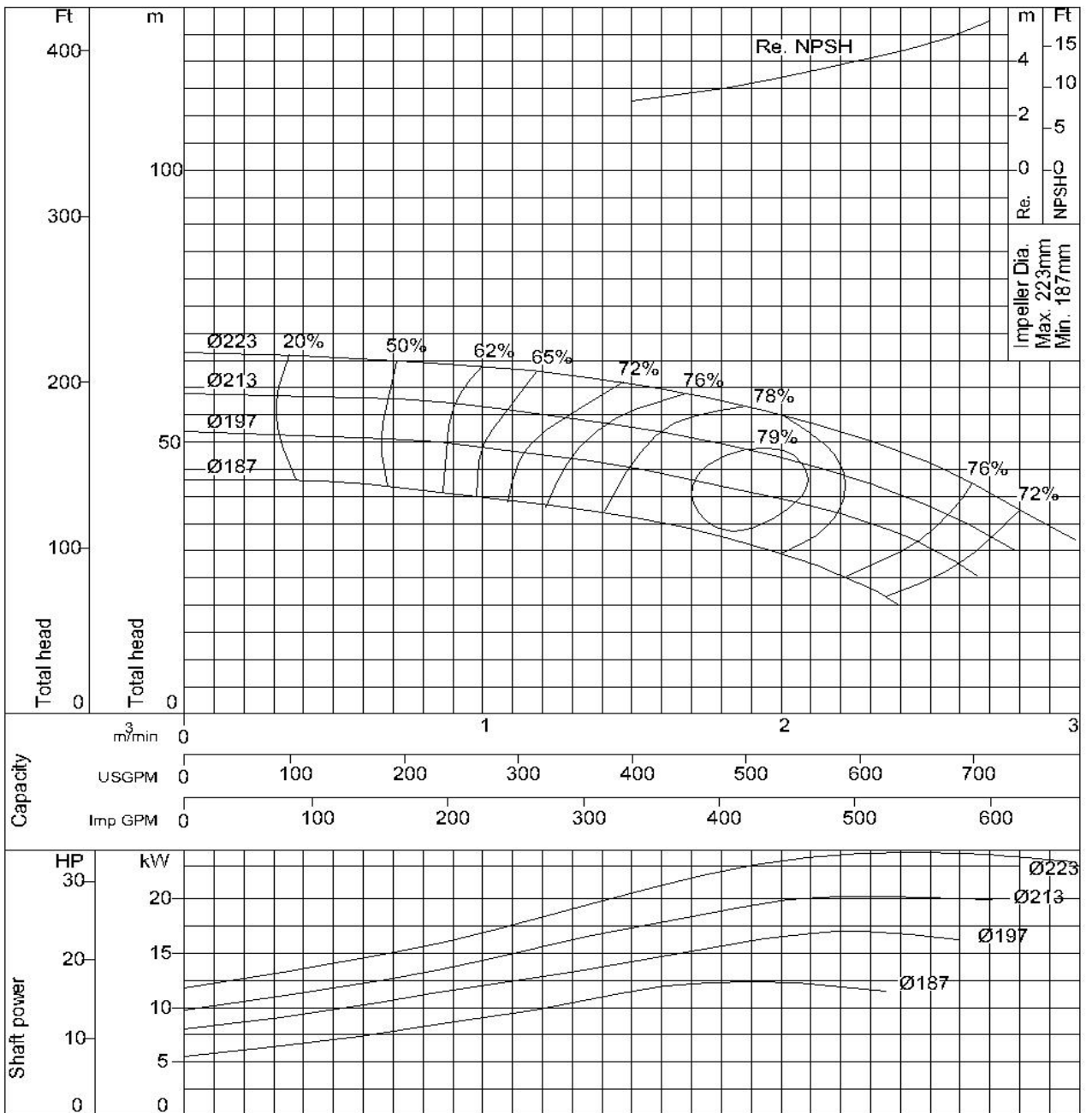
<b>100X80 FS2GA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5607

## Performance Curve 2 Poles (8/14)

<b>100X80 FS2HA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

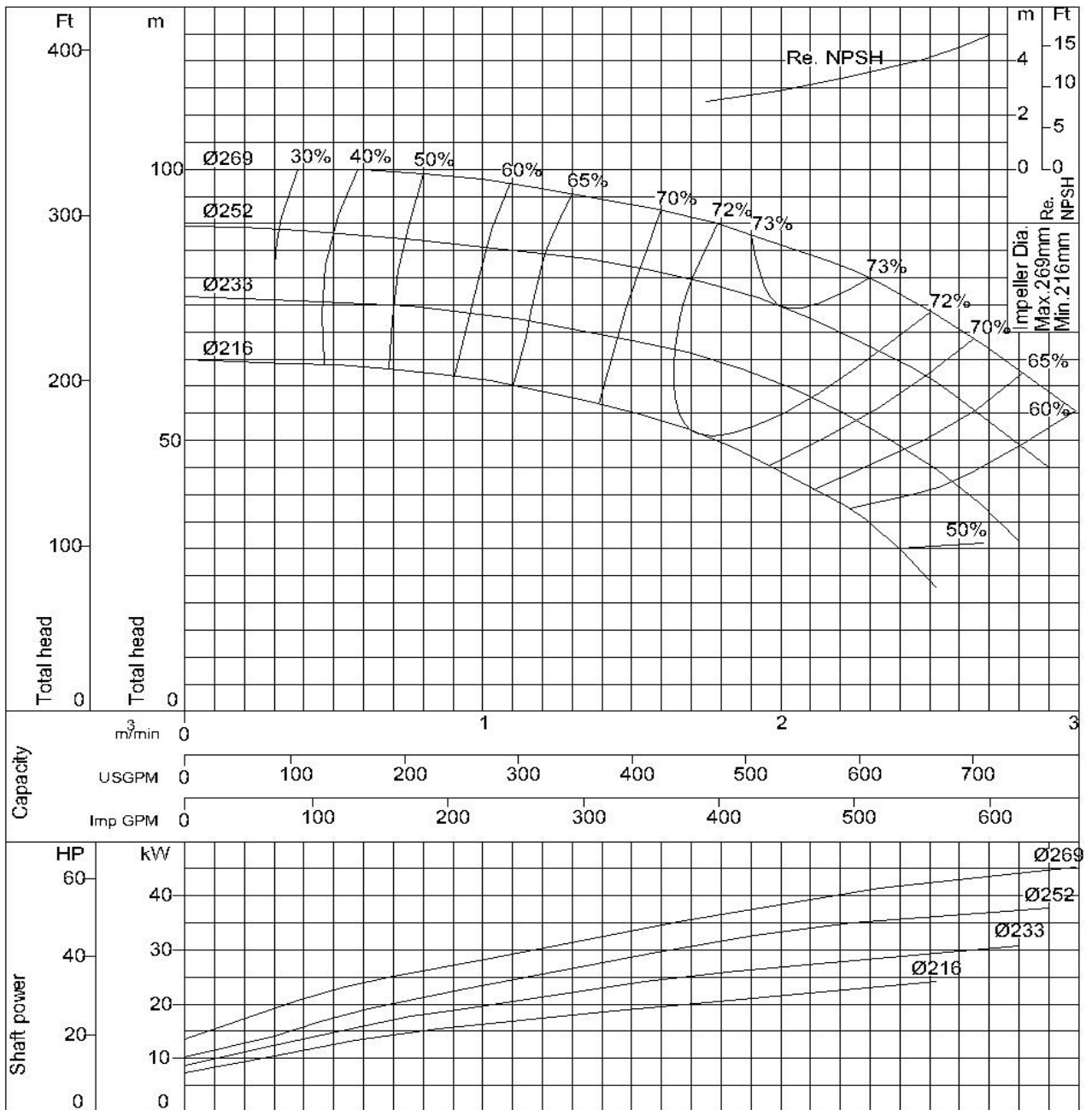


Curve No - 2 - 5FS5608



## Performance Curve 2 Poles (9/14)

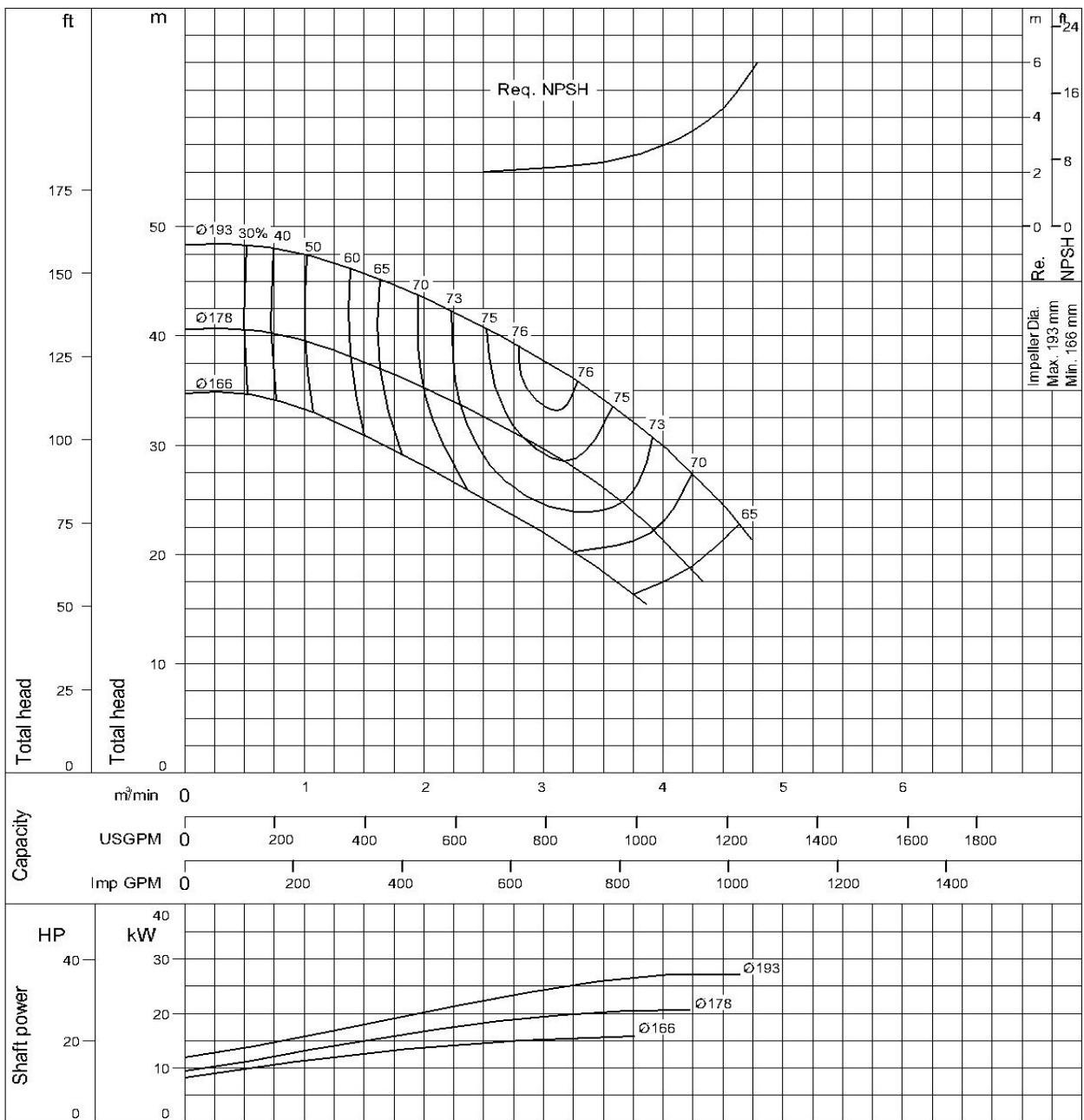
<b>100X80 FS2JA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5609

## Performance Curve 2 Poles (10/14)

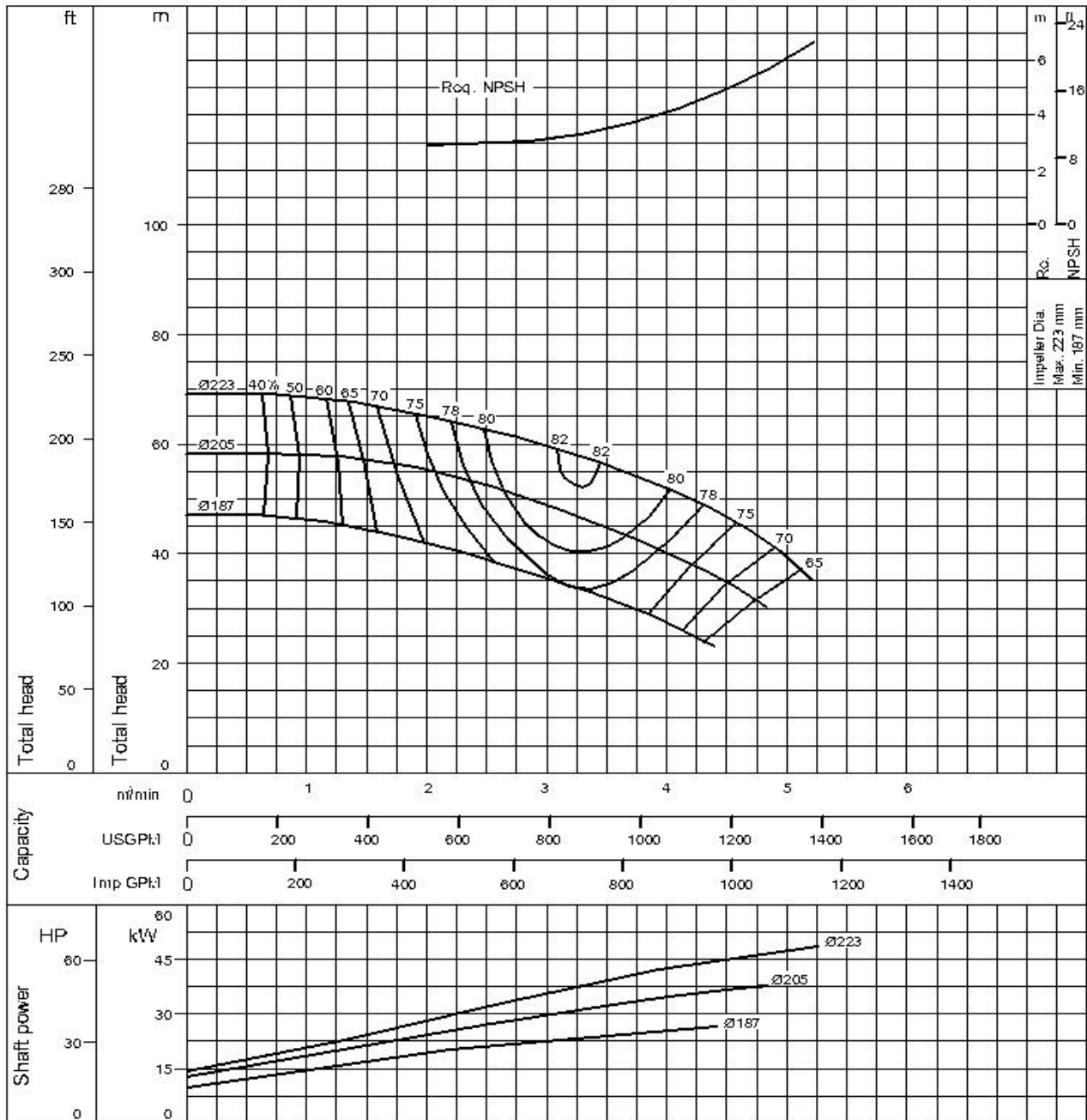
<b>100 x 80 FS2GCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5610

## Performance Curve 2 Poles (11/14)

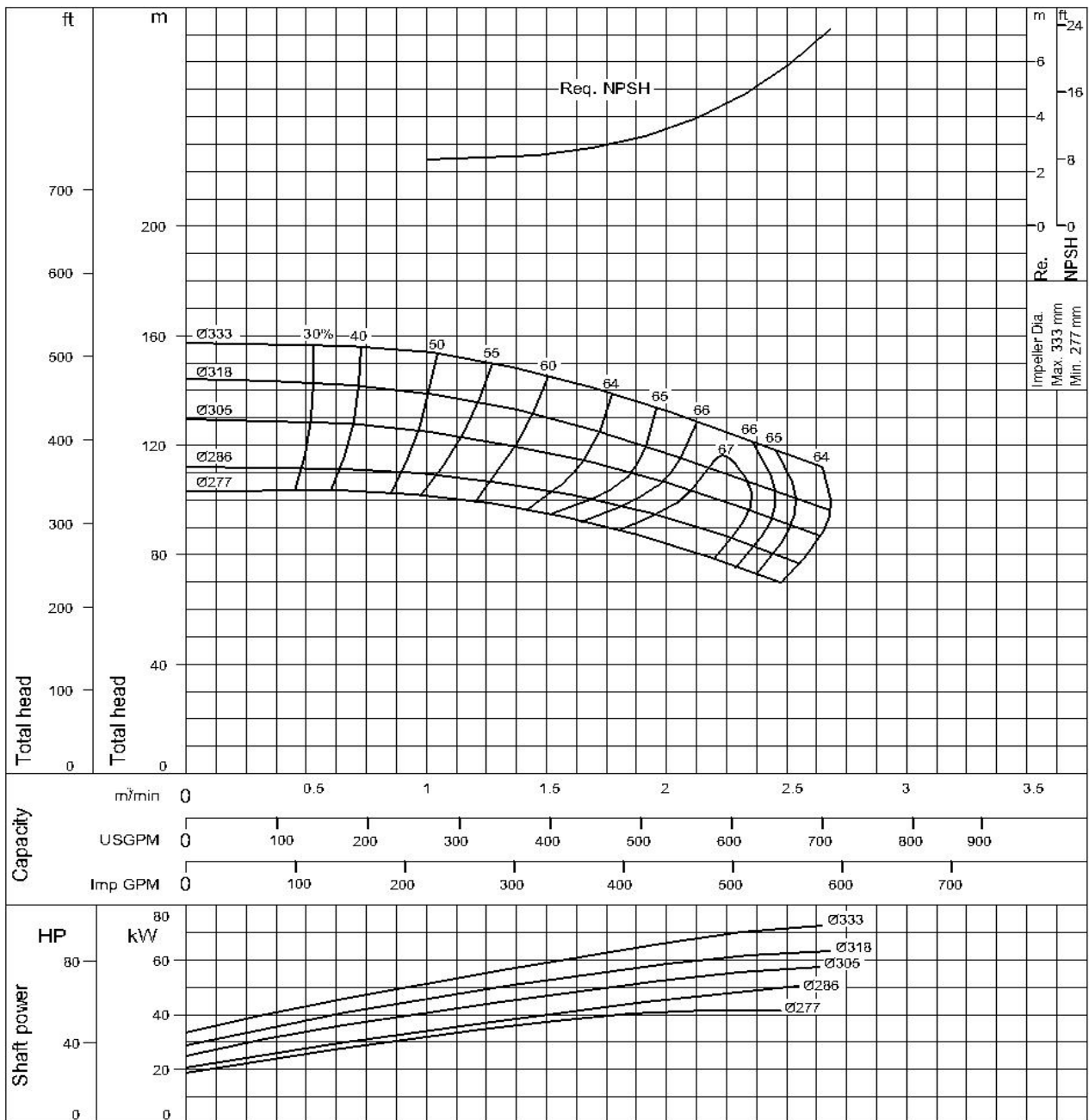
<b>100 x 80 FS2HCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5611

## Performance Curve 2 Poles (12/14)

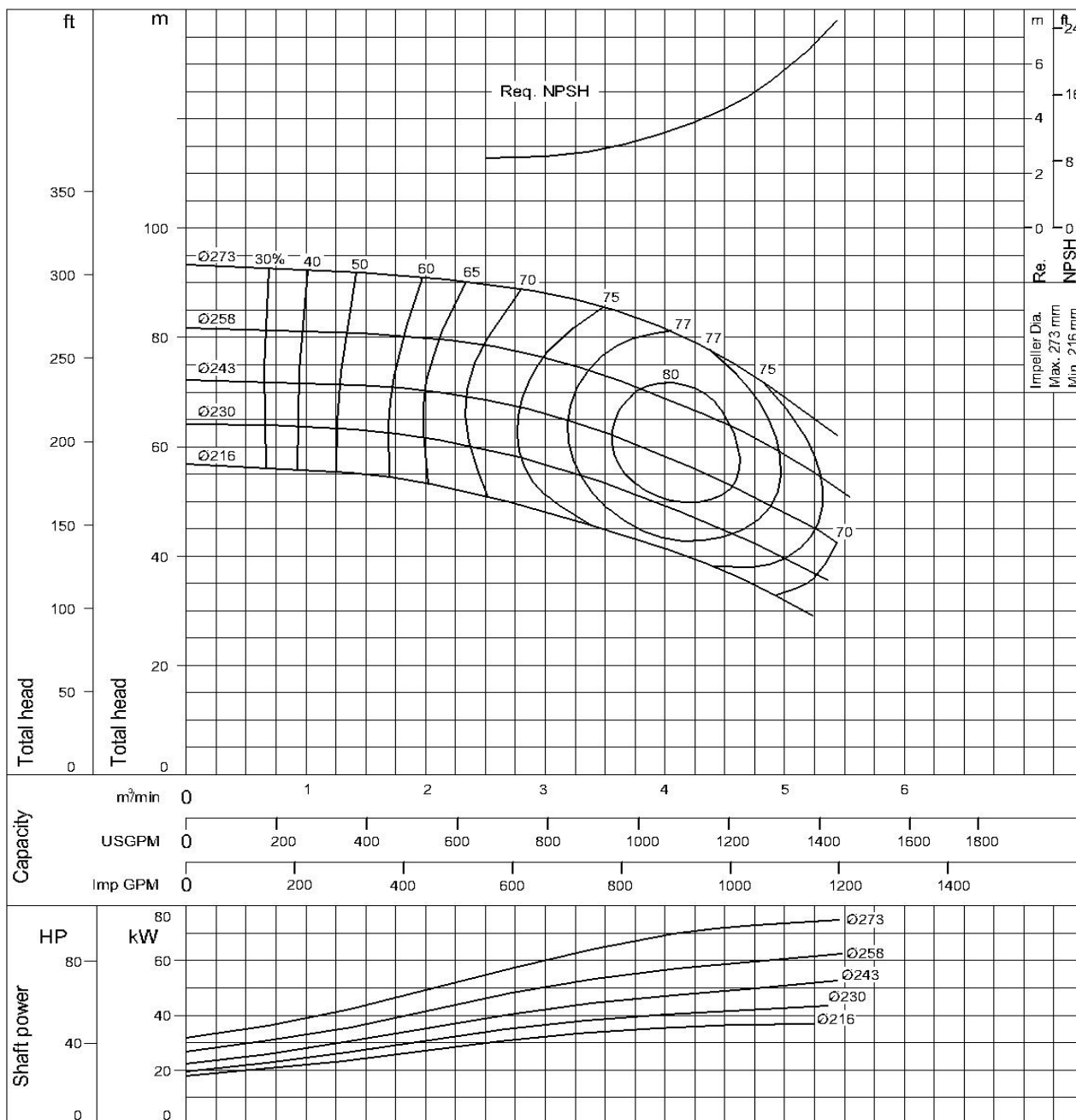
<b>100 x 65 FS2KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5612

## Performance Curve 2 Poles (13/14)

<b>125 x 100 FS2JCA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt

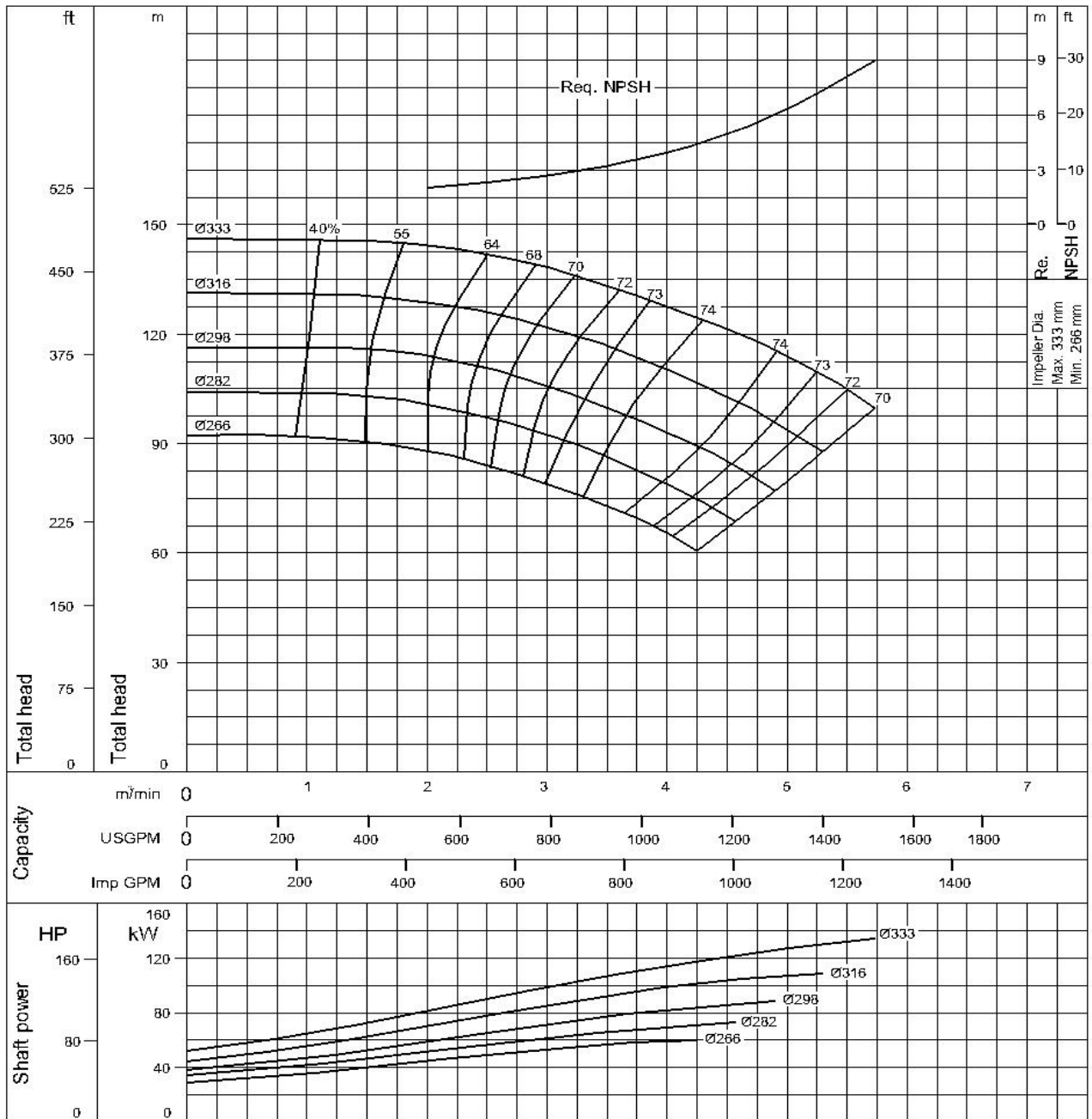


Curve No - 2 - 5FS5613

## Performance Curve 2 Poles (14/14)

50 Hz

<b>150 x 100 FS2KA</b>	According to ISO testing code 2548 Class C
50Hz (Approx. speed 2900 min <sup>-1</sup> )	S.G.= 1.0 Vis.= 1.0 cSt



Curve No - 2 - 5FS5614

All specifications are subject to change without notice



## EBARA CORPORATION

Head Office, Tokyo	Phone: 81 - 3 - 3743 - 6111	
International Division, Tokyo	Phone: 81 - 3 - 5461 - 6111	
Singapore Office	Phone: 65 - 862 - 3536	Fax: 65 - 861 - 0589
Beijing Office	Phone: 86 - 10 - 6590 - 8150	Fax: 86 - 10 - 6590 - 8158
Bangkok Office	Phone: 66 - 2 - 216 - 4935	Fax: 66 - 2 - 216 - 4937
Hanoi Office	Phone: 84 - 4 - 826 - 3601	Fax: 84 - 4 - 826 - 3617
Jakarta Office	Phone: 62 - 21 - 8740852	Fax: 62 - 21 - 8740033
Kuala Lumpur Office	Phone: 603 - 5569 - 1655	Fax: 603 - 5569 - 3766
Manila Office	Phone: 63 - 2 - 816 - 7524	Fax: 63 - 2 - 817 - 6662
Taipei Office	Phone: 886 - 2 - 567 - 1310	Fax: 886 - 2 - 567 - 1046
Dubai Office	Phone: 971 - 4 - 883 - 8889	Fax: 971 - 4 - 883 - 5307

Distributor / Dealer



## SELECTION CHART

4 POLE

2 POLE

BY ROTATION

### END SUCTION VOLUTE PUMP – 50 Hz

• FSA



• FSSA



• FSDA



### HORISONTAL SPLIT CASING PUMP – 50 Hz

• CNA / CSA



### SUBMERSIBLE PUMP – 50 Hz

• DS , DVS



• DL , DF



• DLM



### MIXED FLOW PUMP ( SZ )

• 200 , 250 , 300 , 350 , 400 , 500



### SELF PRIMING PUMP ( SQPB )

• 50 , 80 , 100 , 150

