

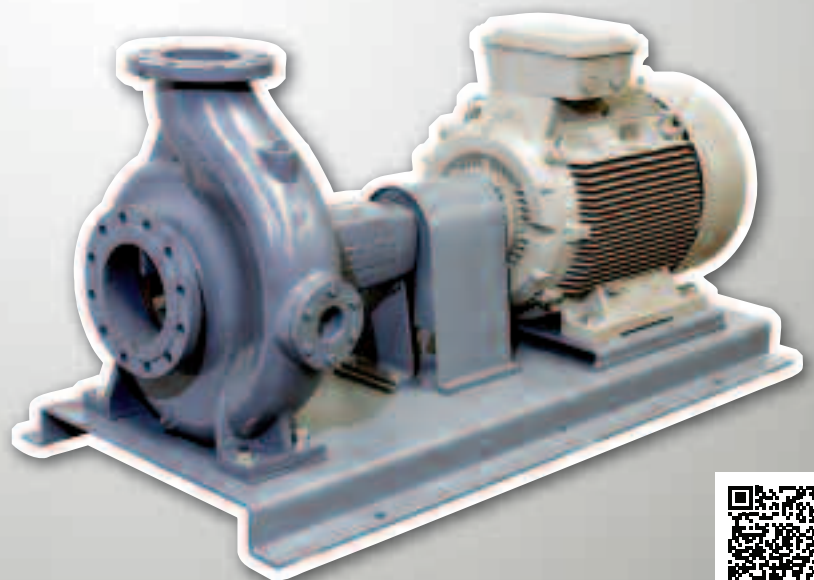


EBARA

FHA

END SUCTION VOLUTE PUMP (DIN 24256)

50 Hz



END SUCTION VOLUTE PUMPS

in cast iron



End suction volute pump in cast iron.

APPLICATIONS

- Water supply
- Fire-Fighting systems
- Hot and cold water supply
- Industrial use
- Swimming pool
- Sprinkling
- Air conditioning systems

TECHNICAL DETAILS

- Easy removal and maintenance, BPO (Back Pull Out) system allows all rotating elements to be removed without disconnecting suction and discharge pipework
- Top centerline 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

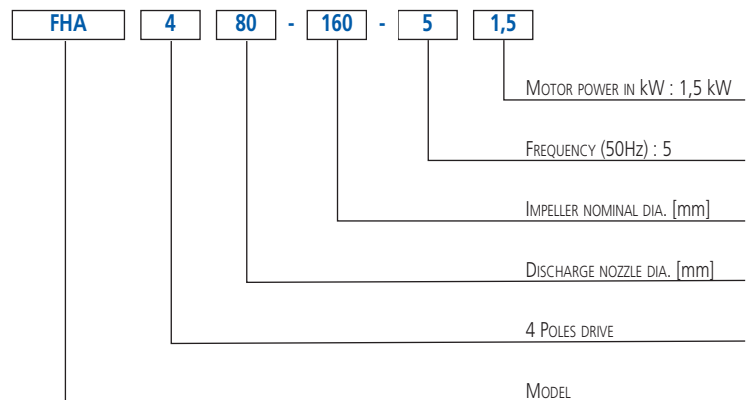
TECHNICAL DATA

- Maximum working pressure: 16 bar
- Temperature of the liquid:
 - from 0°C to +80°C (standard)
 - from -20°C to +120°C (on request)
- DIN PN16 suction and discharge connection
- Various supplier for motors

MATERIALS

- Casing in cast iron
- Impeller in bronze
- Shaft in AISI 403
- Mechanical seal in Ceramic/Carbon/NBR

IDENTIFICATION CODE





FHA

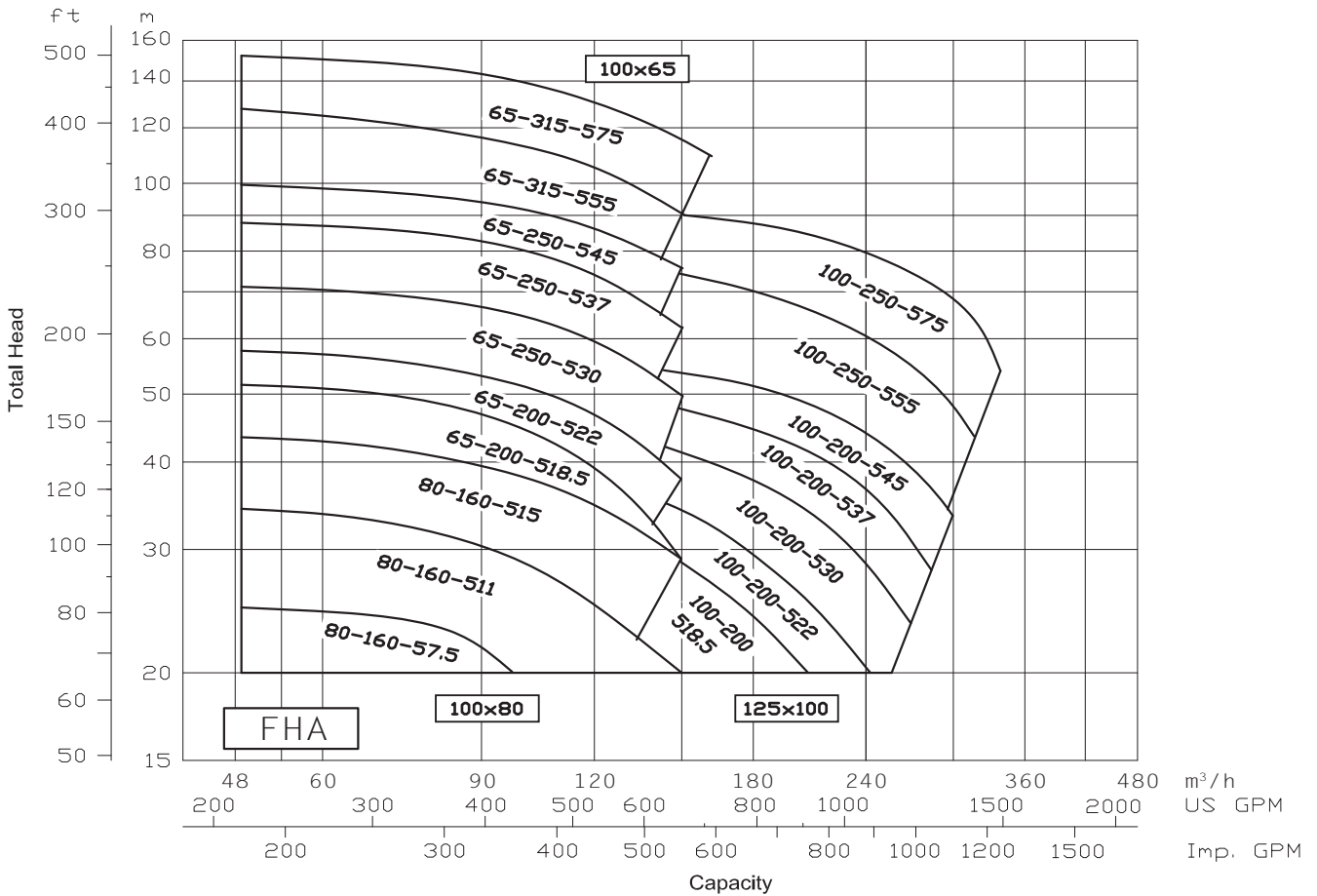
END SUCTION VOLUTE PUMPS

in cast iron

2 Poles

FHA PERFORMANCE CHART

at 3000 min⁻¹ (according to ISO 9906 Attachment A)





FHA

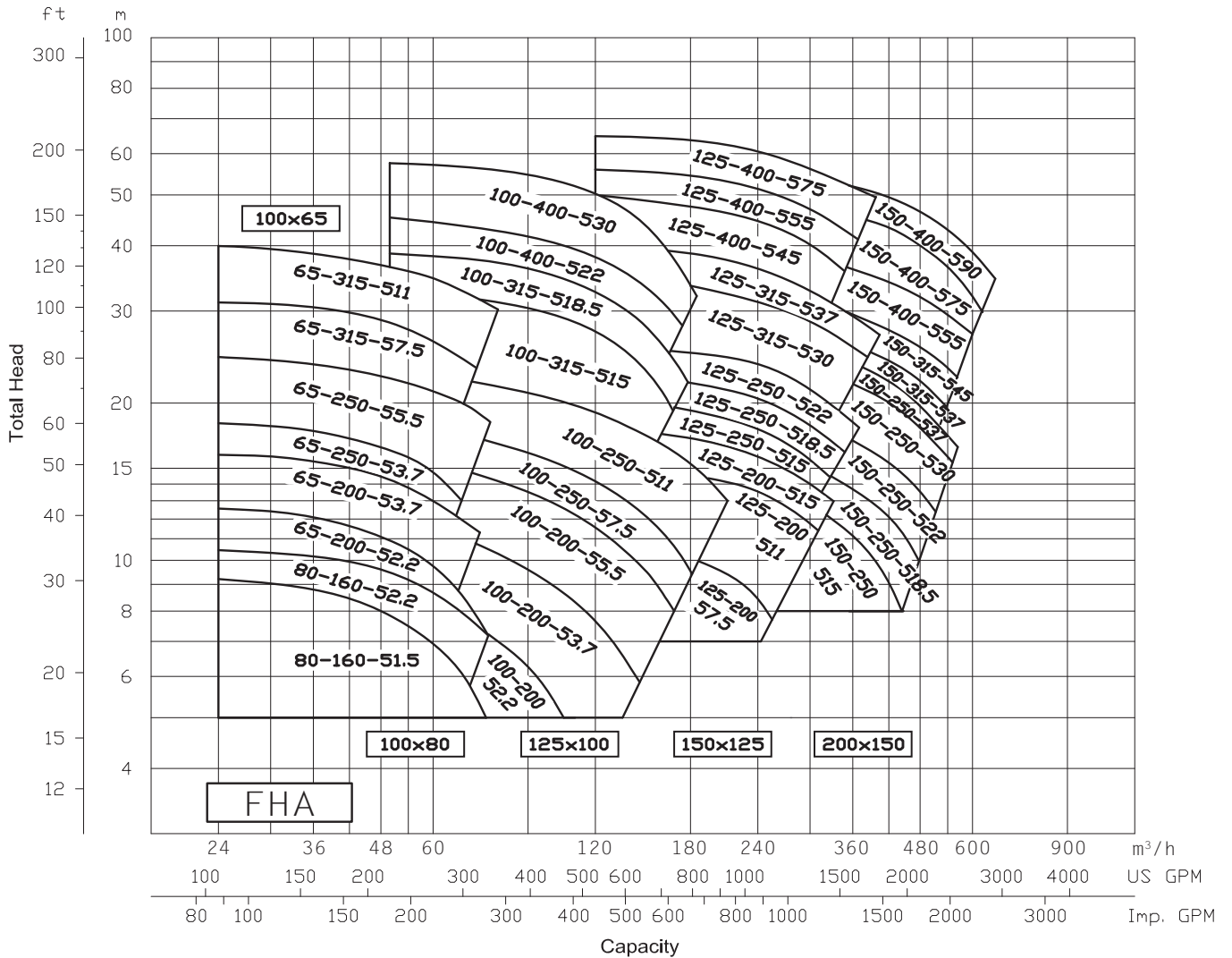
END SUCTION VOLUTE PUMPS

in cast iron

4 Poles

FHA PERFORMANCE CHART

at 1500 min⁻¹ (according to ISO 9906 Attachment A)



END SUCTION VOLUTE PUMPS in cast iron

PERFORMANCE CURVES FHA 80-160

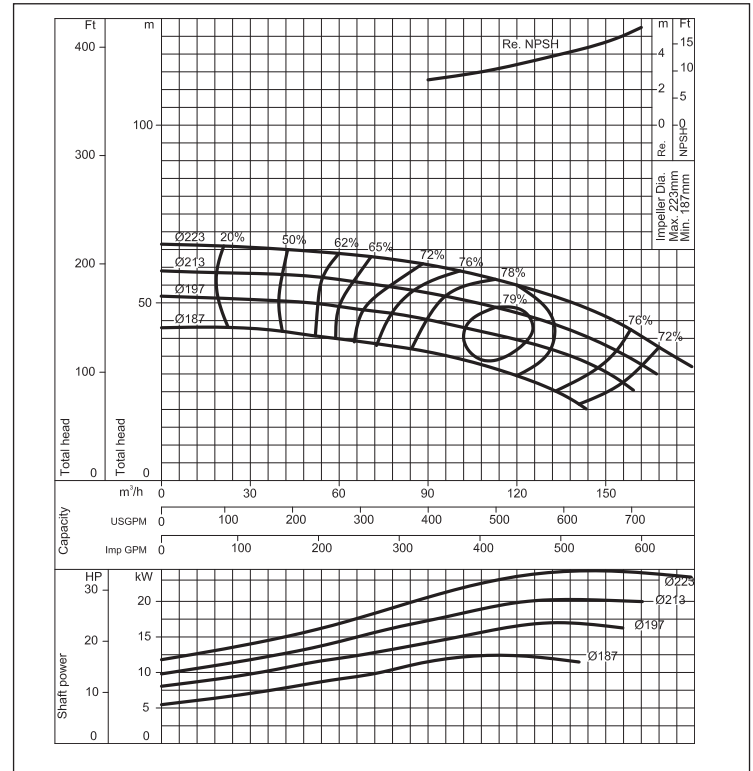
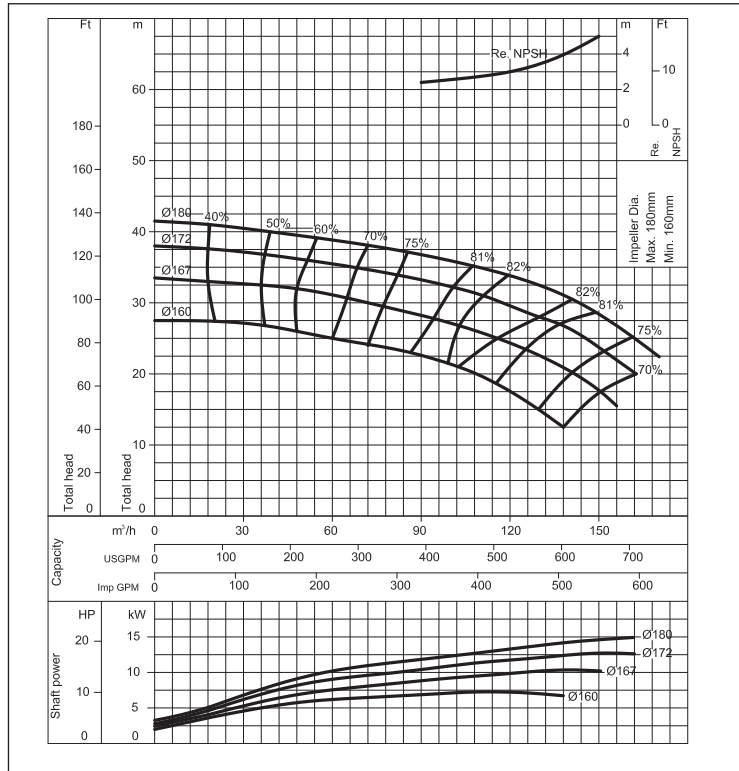
(according to ISO 9906 Attachment A)

2 Poles

PERFORMANCE CURVES FHA 65-200

(according to ISO 9906 Attachment A)

2 Poles



PERFORMANCE CURVES FHA 65-250

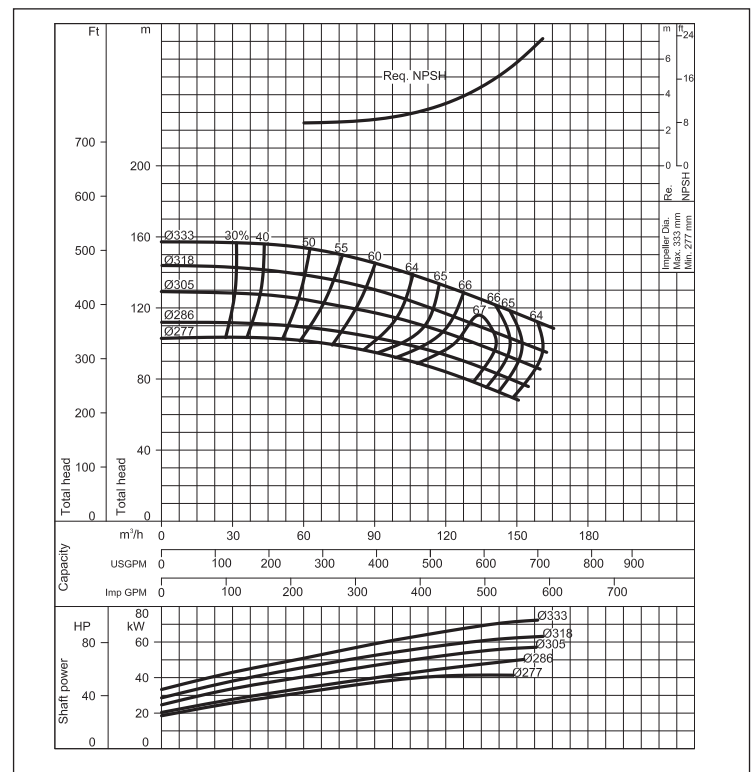
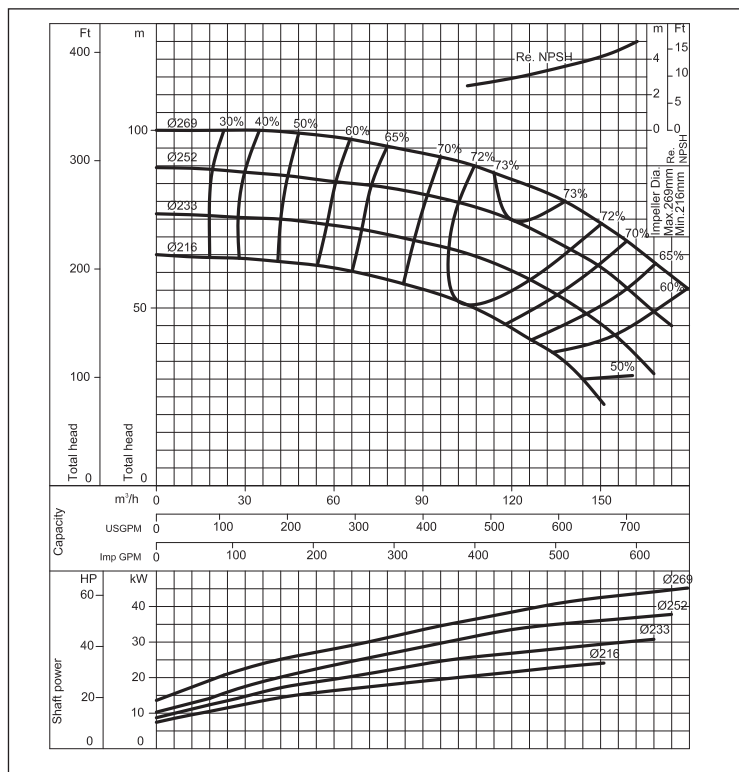
(according to ISO 9906 Attachment A)

2 Poles

PERFORMANCE CURVES FHA 65-315

(according to ISO 9906 Attachment A)

2 Poles



END SUCTION VOLUTE PUMPS in cast iron

PERFORMANCE CURVES FHA 100-200

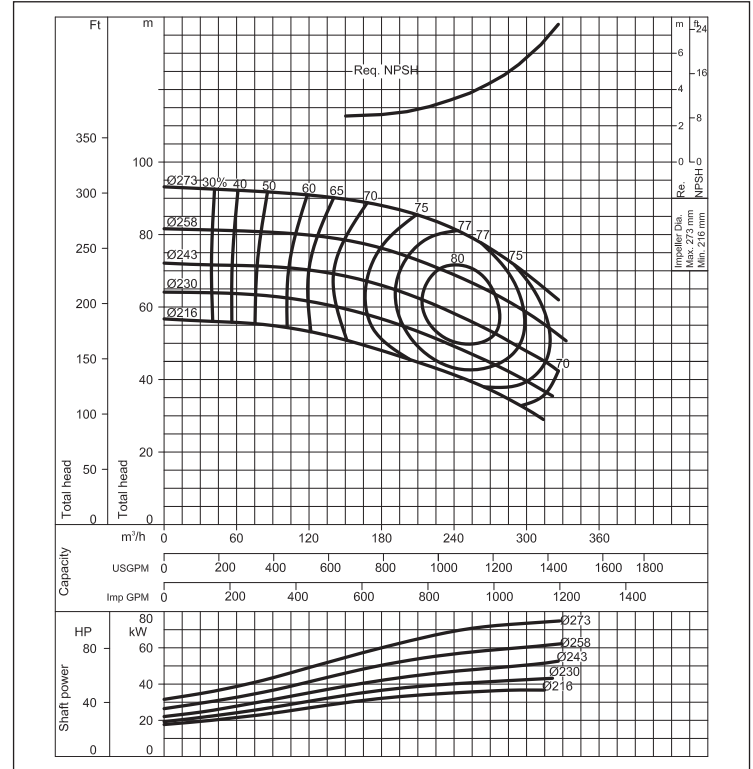
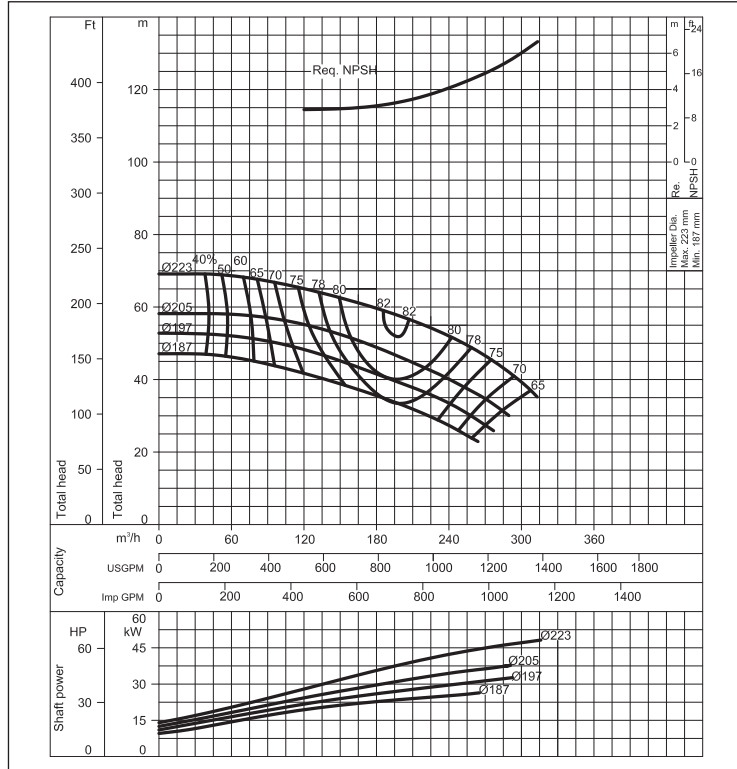
(according to ISO 9906 Attachment A)

2 Poles

PERFORMANCE CURVES FHA 100-250

(according to ISO 9906 Attachment A)

2 Poles

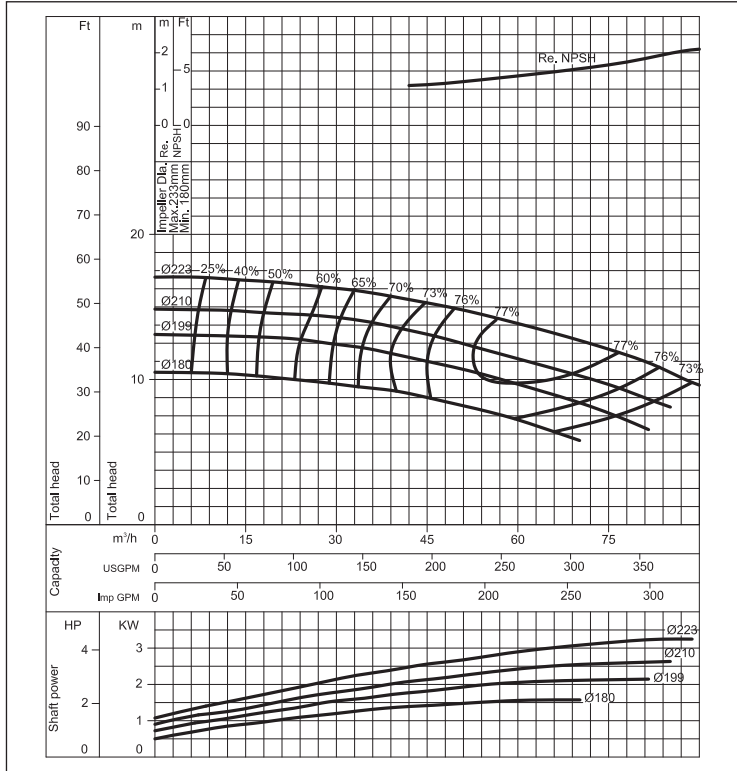


END SUCTION VOLUTE PUMPS in cast iron

PERFORMANCE CURVES FHA 65-200

(according to ISO 9906 Attachment A)

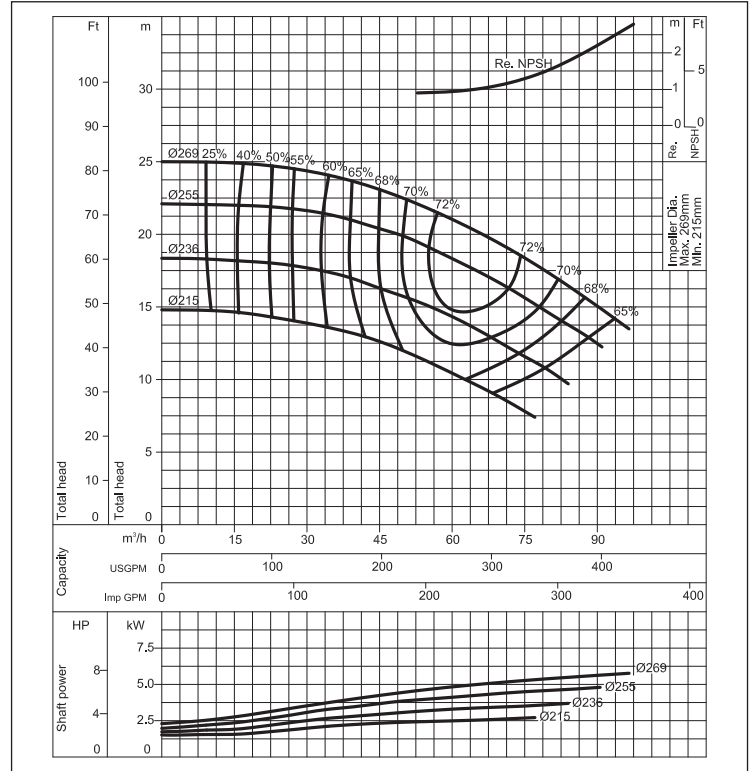
4 Poles



PERFORMANCE CURVES FHA 65-250

(according to ISO 9906 Attachment A)

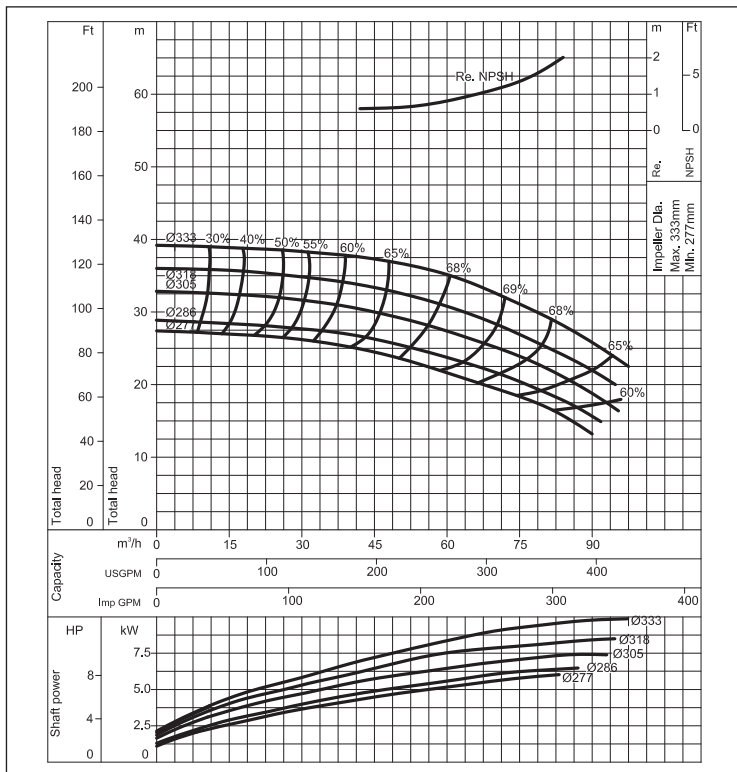
4 Poles



PERFORMANCE CURVES FHA 65-315

(according to ISO 9906 Attachment A)

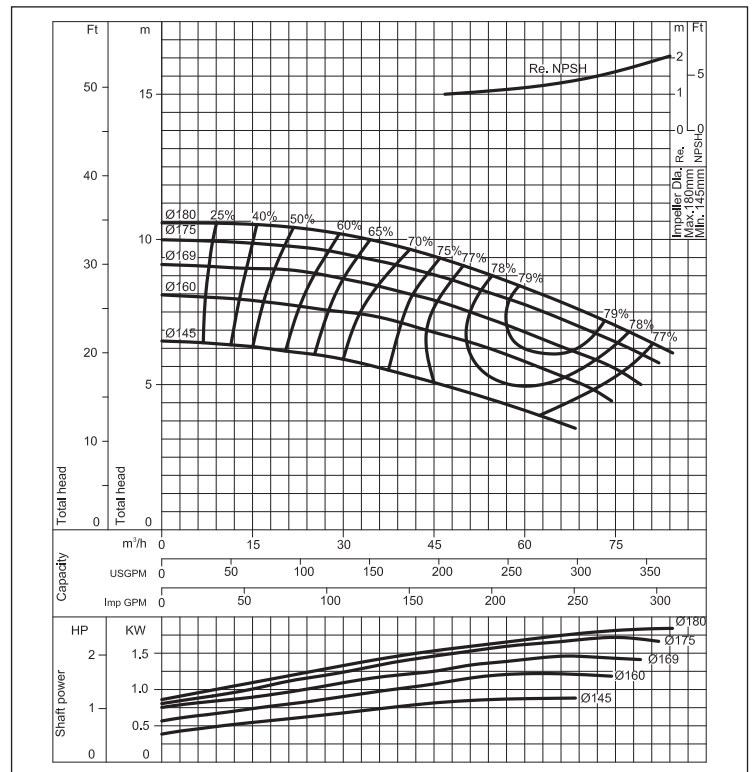
4 Poles



PERFORMANCE CURVES FHA 80-160

(according to ISO 9906 Attachment A)

4 Poles



END SUCTION VOLUTE PUMPS in cast iron

PERFORMANCE CURVES FHA 100-200

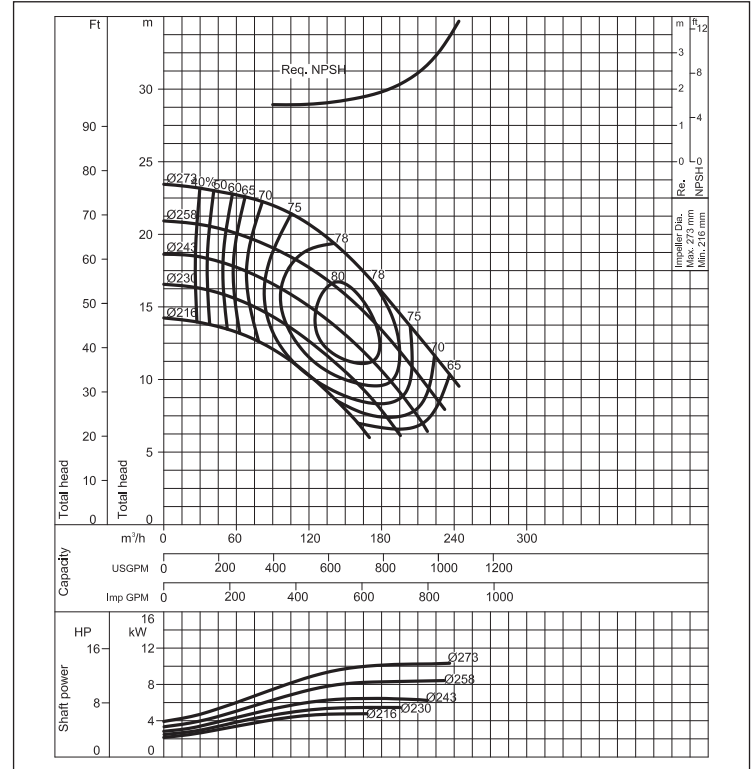
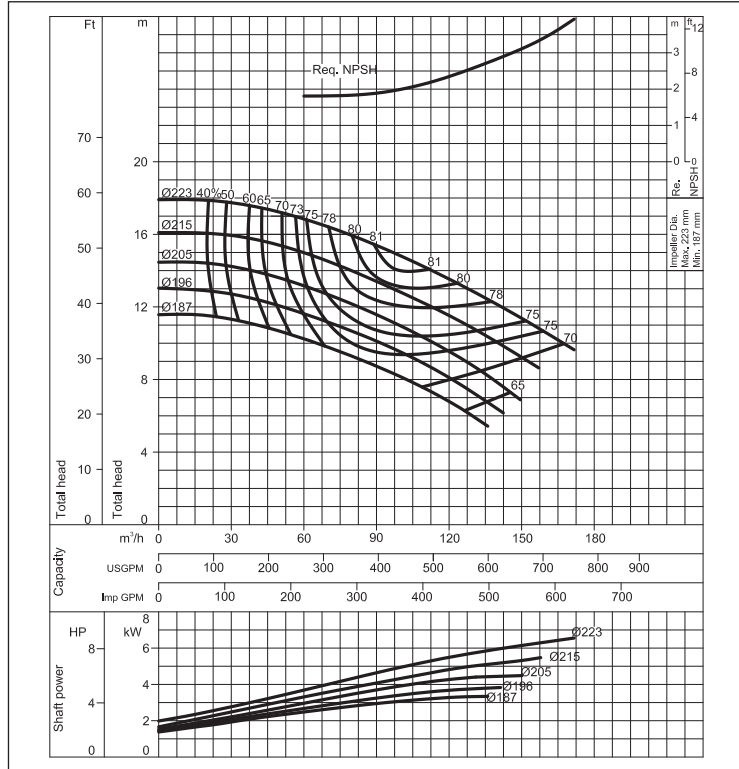
(according to ISO 9906 Attachment A)

4 Poles

PERFORMANCE CURVES FHA 100-250

(according to ISO 9906 Attachment A)

4 Poles



PERFORMANCE CURVES FHA 100-315

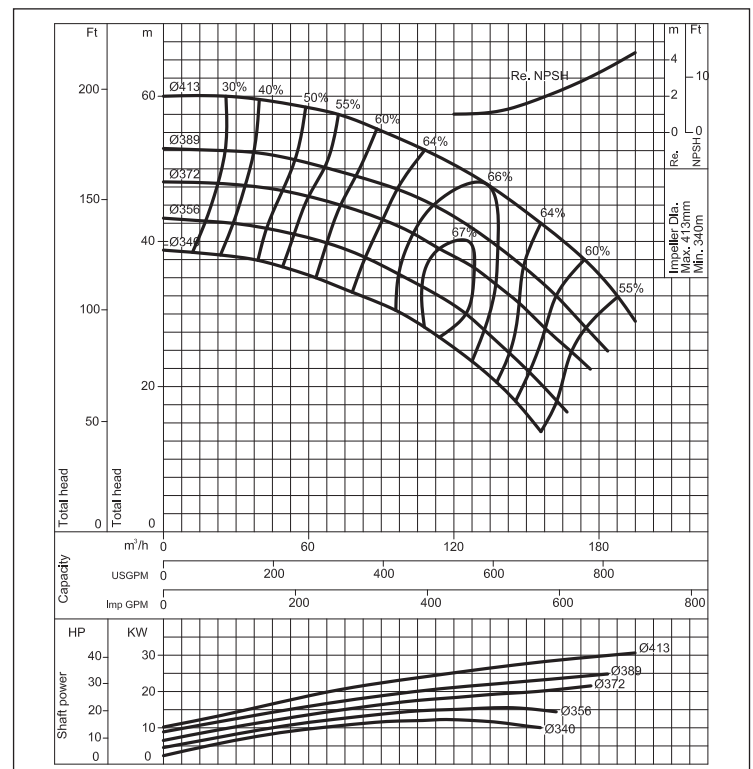
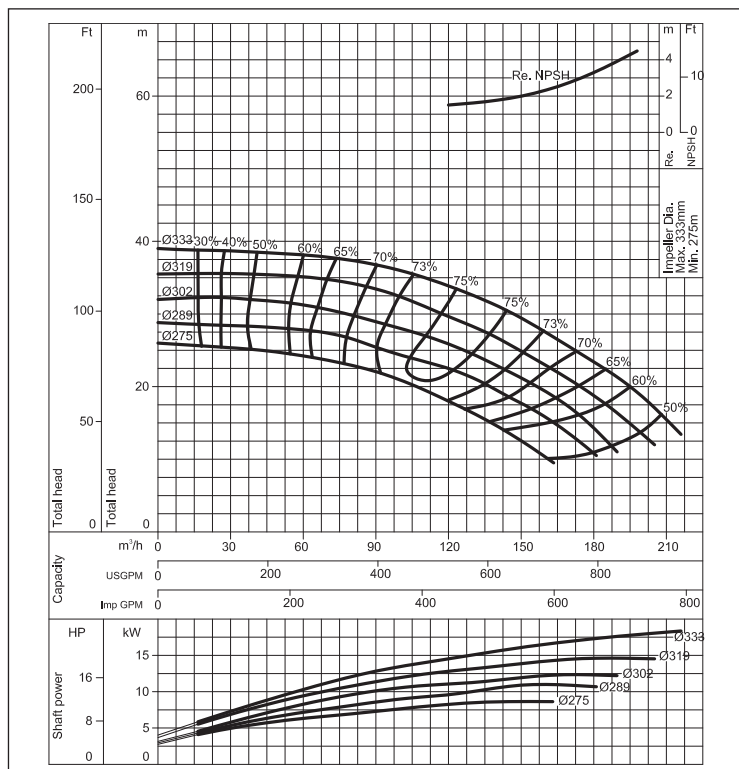
(according to ISO 9906 Attachment A)

4 Poles

PERFORMANCE CURVES FHA 100-400

(according to ISO 9906 Attachment A)

4 Poles



END SUCTION VOLUTE PUMPS

in cast iron

PERFORMANCE CURVES FHA 125-200

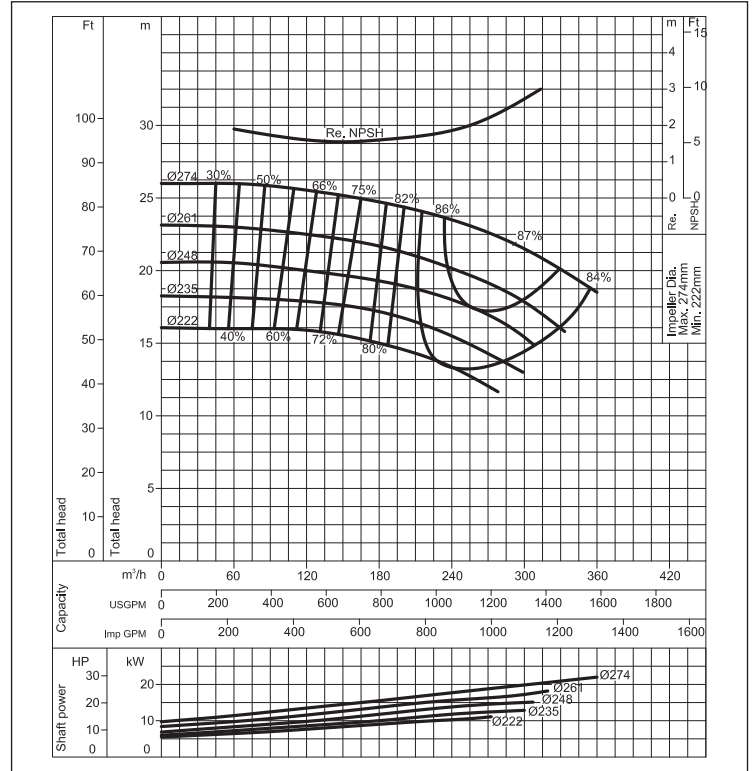
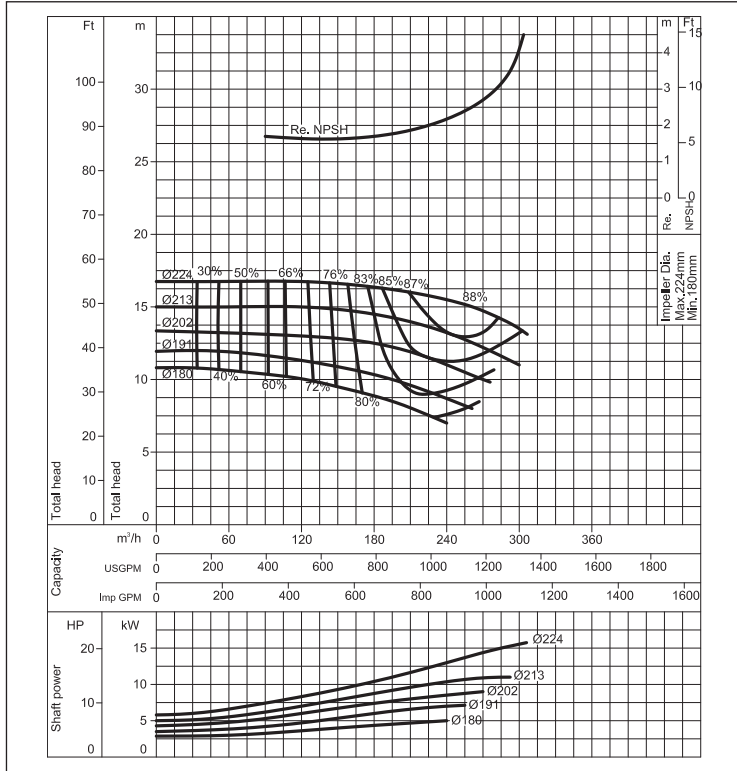
(according to ISO 9906 Attachment A)

4 Poles

PERFORMANCE CURVES FHA 125-250

(according to ISO 9906 Attachment A)

4 Poles



PERFORMANCE CURVES FHA 125-315

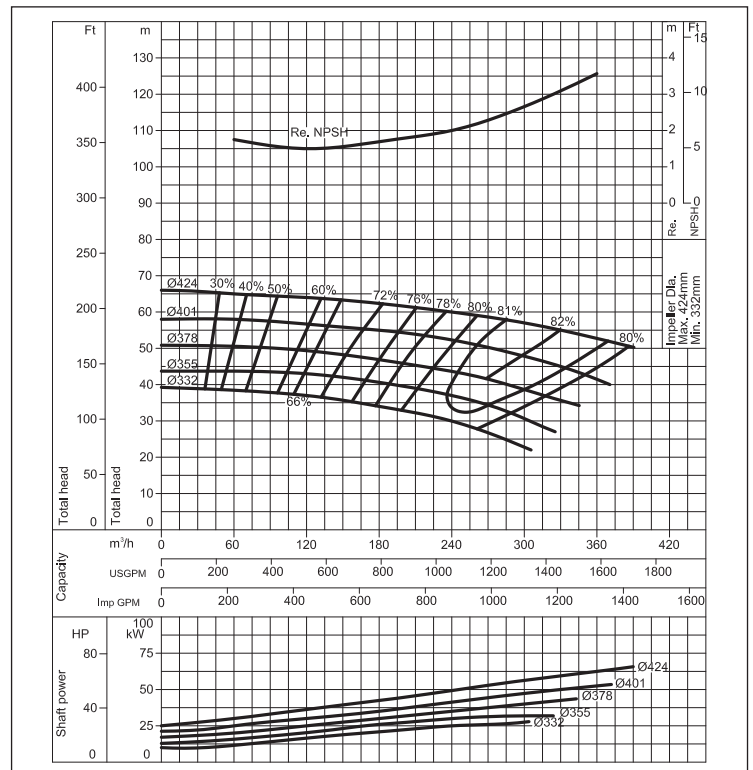
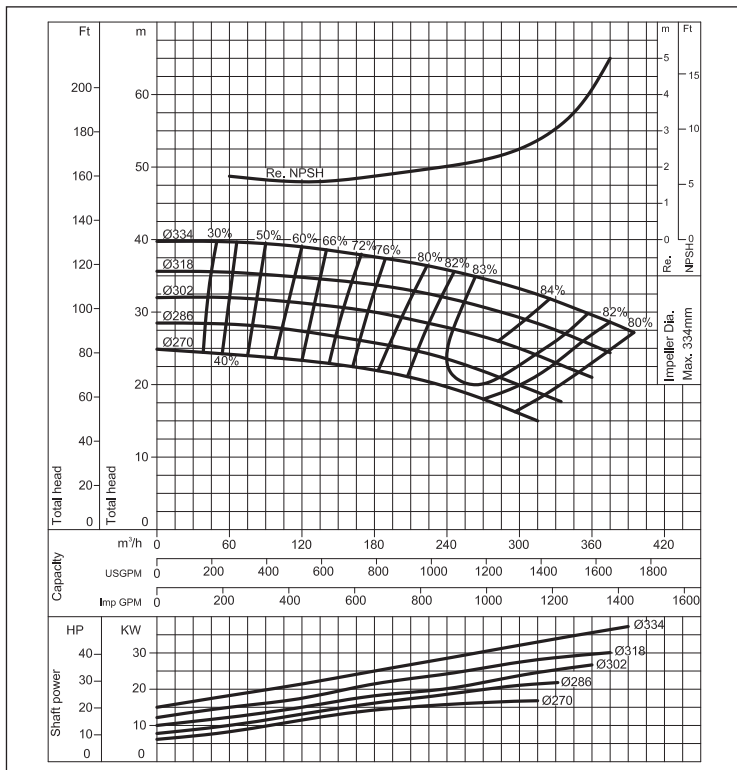
(according to ISO 9906 Attachment A)

4 Poles

PERFORMANCE CURVES FHA 125-400

(according to ISO 9906 Attachment A)

4 Poles





FHA

END SUCTION VOLUTE PUMPS

in cast iron

PERFORMANCE CURVES FHA 150-250

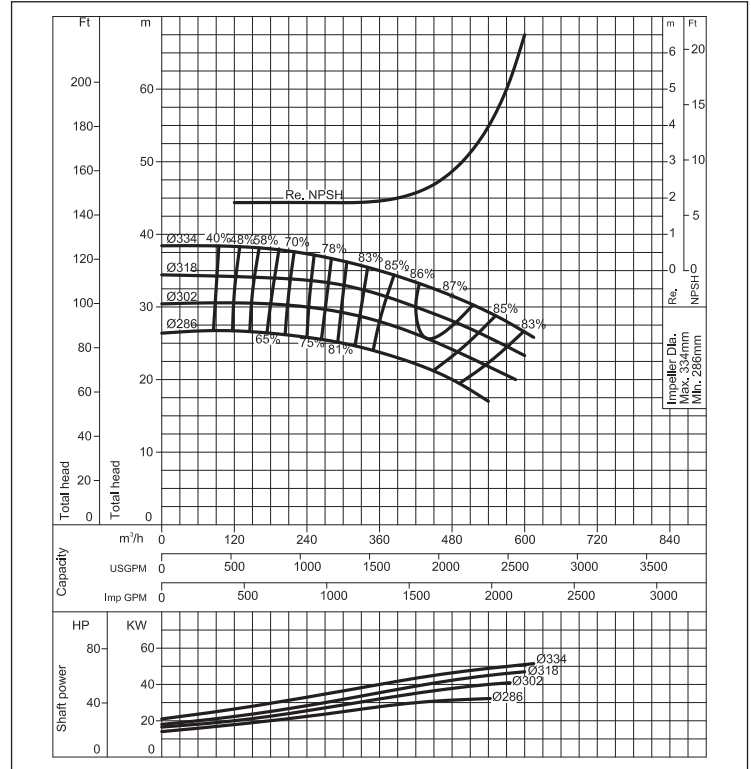
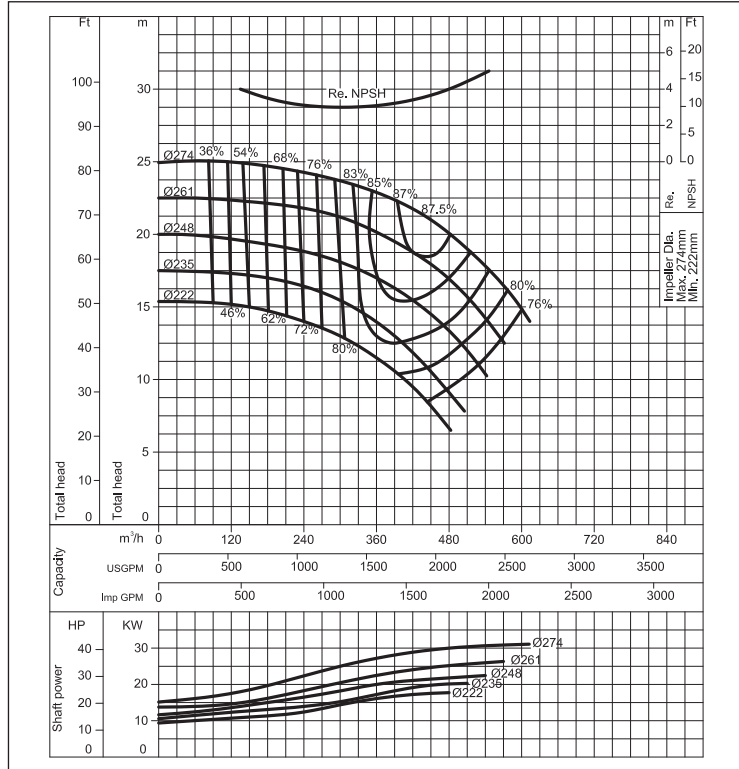
(according to ISO 9906 Attachment A)

4 Poles

PERFORMANCE CURVES FHA 150-315

(according to ISO 9906 Attachment A)

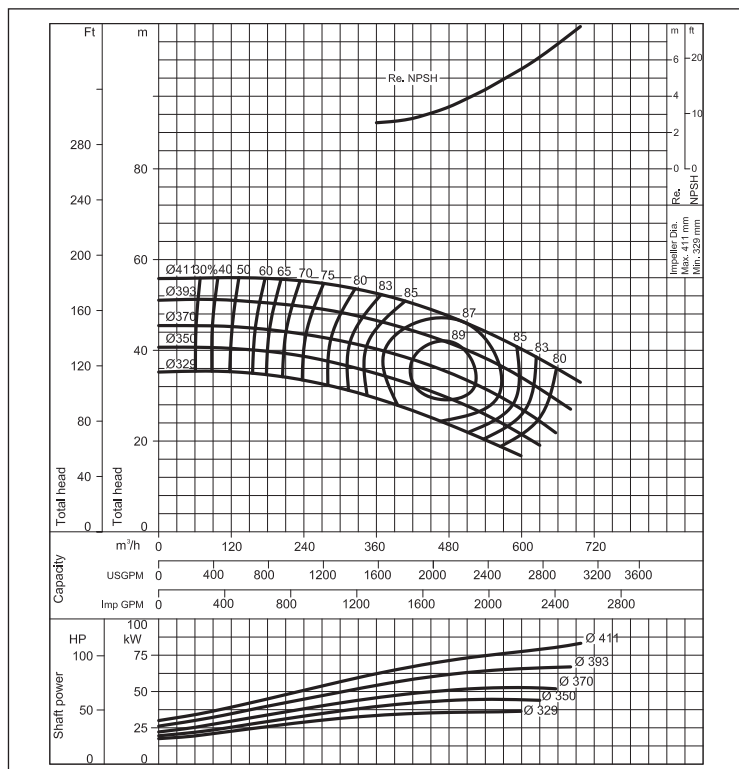
4 Poles



PERFORMANCE CURVES FHA 150-400

(according to ISO 9906 Attachment A)

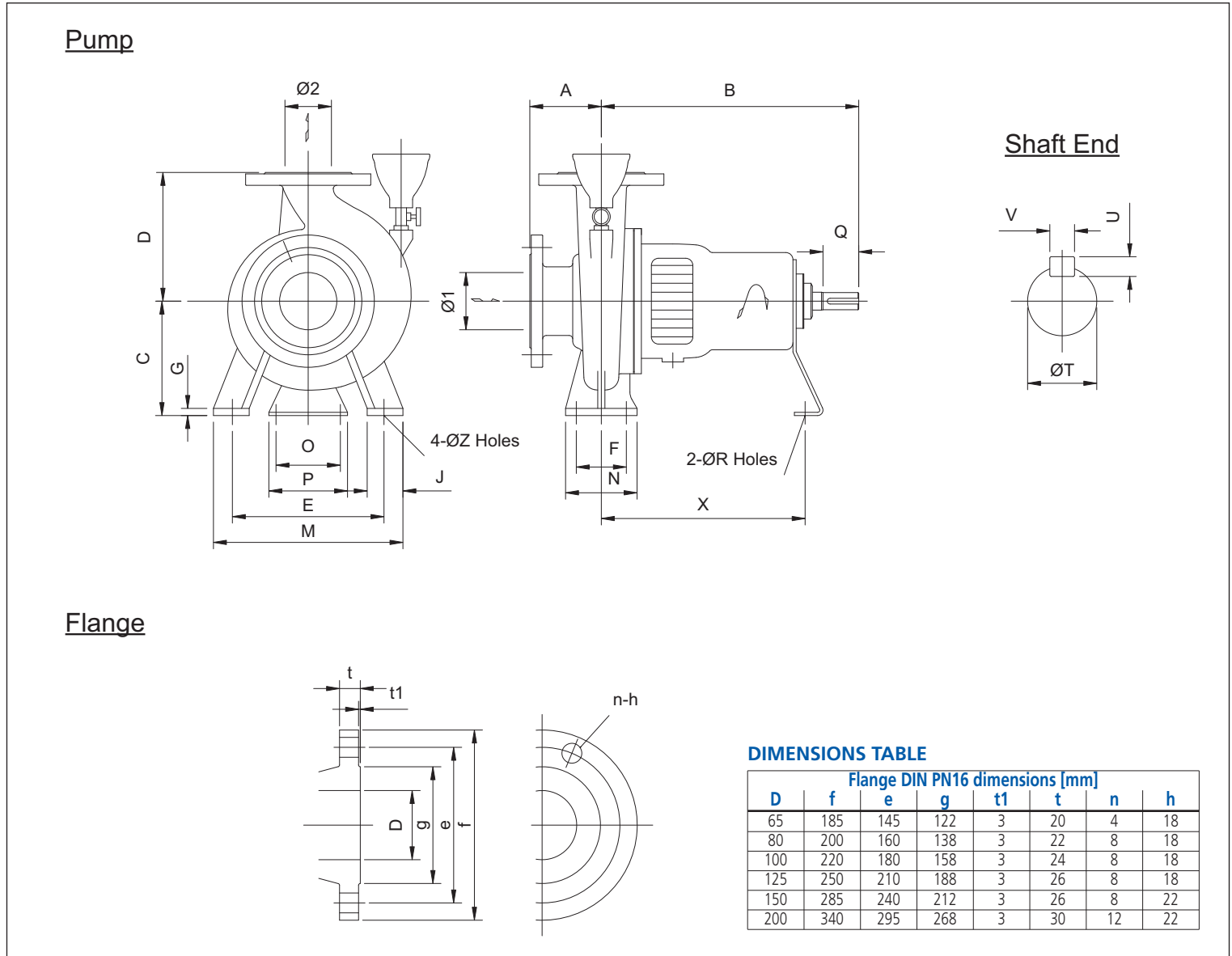
4 Poles



END SUCTION VOLUTE PUMPS

in cast iron

DIMENSIONS - Bare shaft pump



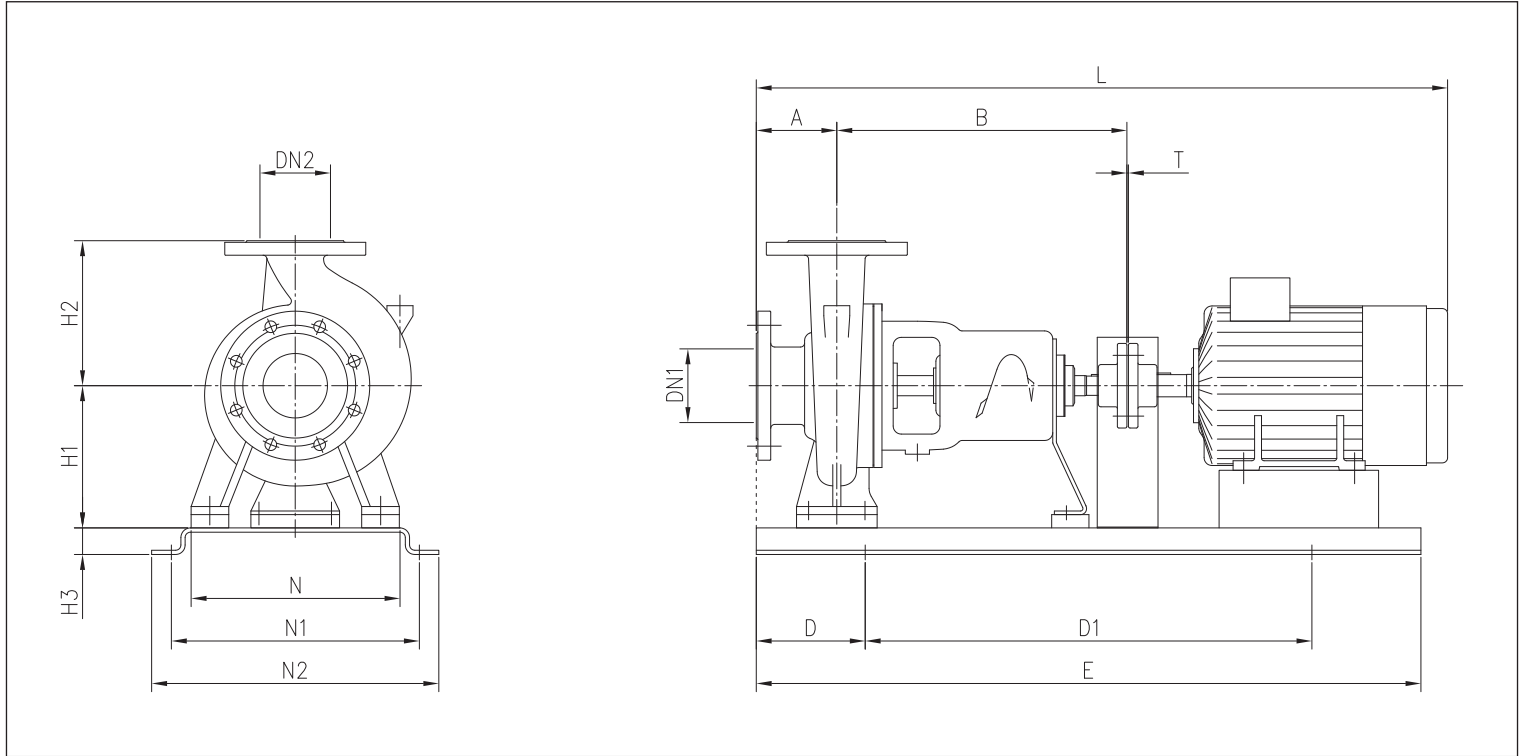
DIMENSIONS TABLE

Model	Size		Pump dimensions [mm]															Shaft dimensions [mm]				Weight [kg]
	Ø1	Ø2	A	B	C	D	E	F	G	J	M	N	O	P	R	X	Z	T	Q	U	V	
FHA 65-200	100	65	100	500	180	225	250	95	15	65	320	125	110	150	17	370	15	32	80	8	10	81,0
FHA 65-250	100	65	125	500	200	250	280	120	15	80	360	160	110	150	17	370	19	32	80	8	10	91,0
FHA 65-315	100	65	125	530	225	280	315	120	16	80	400	160	110	150	17	370	19	42	110	8	12	113,0
FHA 80-160	100	80	100	500	160	200	212	95	14	65	280	125	110	150	17	370	15	32	80	8	10	64,0
FHA 100-200	125	100	125	500	200	280	280	120	14	80	360	160	110	150	17	370	19	32	80	8	10	85,0
FHA 100-250	125	100	140	530	225	280	315	120	16	80	400	160	110	150	17	370	19	42	110	8	12	140,0
FHA 100-315	125	100	140	530	250	315	315	120	16	80	400	160	110	150	17	370	19	42	110	8	12	166,0
FHA 100-400	125	100	140	530	280	355	400	150	20	100	500	200	110	150	17	370	24	42	110	8	12	218,0
FHA 125-200	150	125	140	500	250	315	315	120	15	80	400	160	110	150	17	370	19	32	80	8	10	156,0
FHA 125-250	150	125	140	530	250	355	315	120	16	80	400	160	110	150	17	370	19	42	110	8	12	167,0
FHA 125-315	150	125	140	530	280	355	400	150	16	100	500	200	110	150	17	370	24	42	110	8	12	221,0
FHA 125-400	150	125	140	530	315	400	400	150	20	100	500	200	110	150	17	370	24	42	110	8	12	267,0
FHA 150-250	200	150	160	530	280	375	400	150	18	100	500	200	110	150	17	370	24	42	110	8	12	238,0
FHA 150-315	200	150	160	670	315	400	450	150	20	100	550	200	140	180	19	500	24	48	110	9	14	289,0
FHA 150-400	200	150	160	670	315	450	450	150	20	100	550	200	140	180	19	500	24	48	110	9	14	336,0

END SUCTION VOLUTE PUMPS

in cast iron

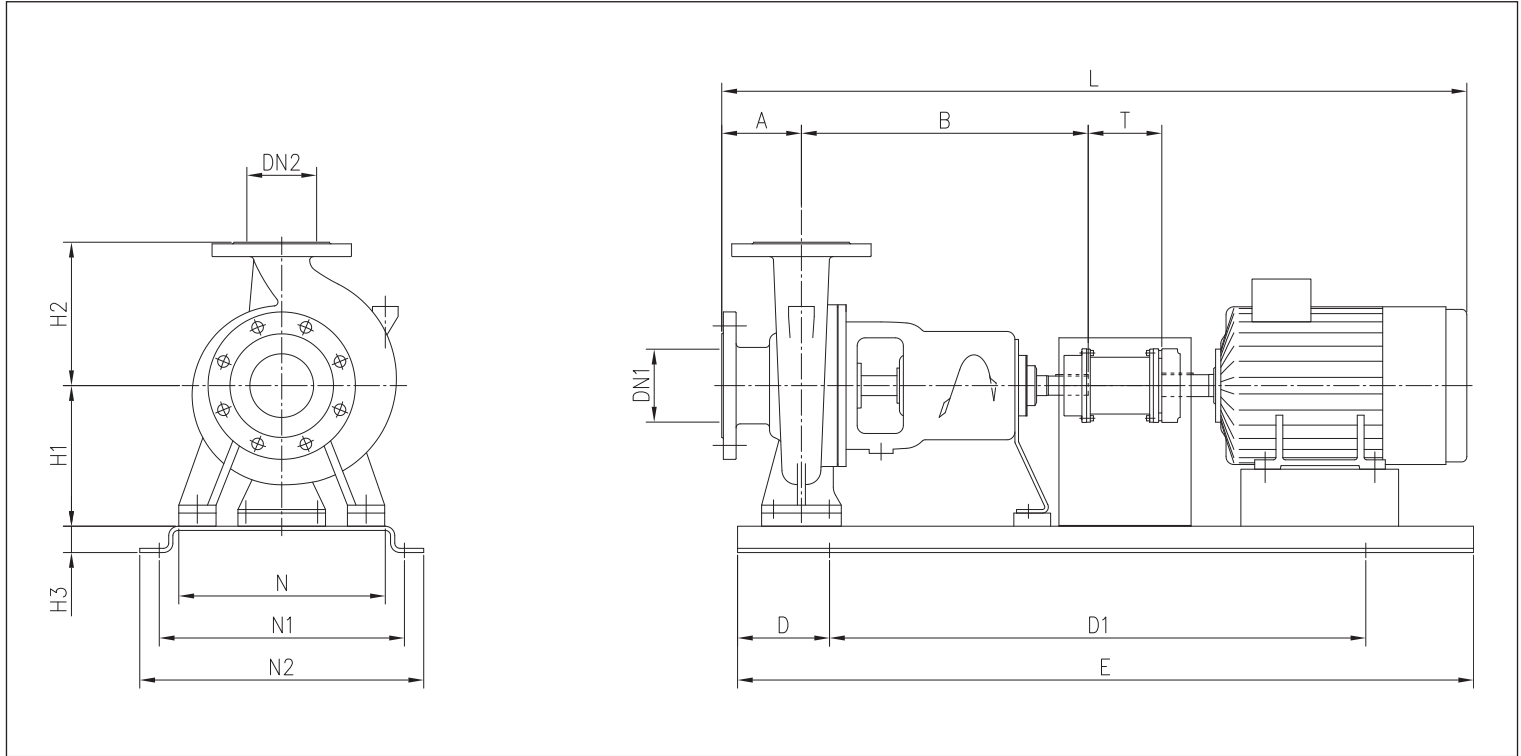
DIMENSIONS - Pump + motor



END SUCTION VOLUTE PUMPS

in cast iron

DIMENSIONS - Pump + motor with spacer



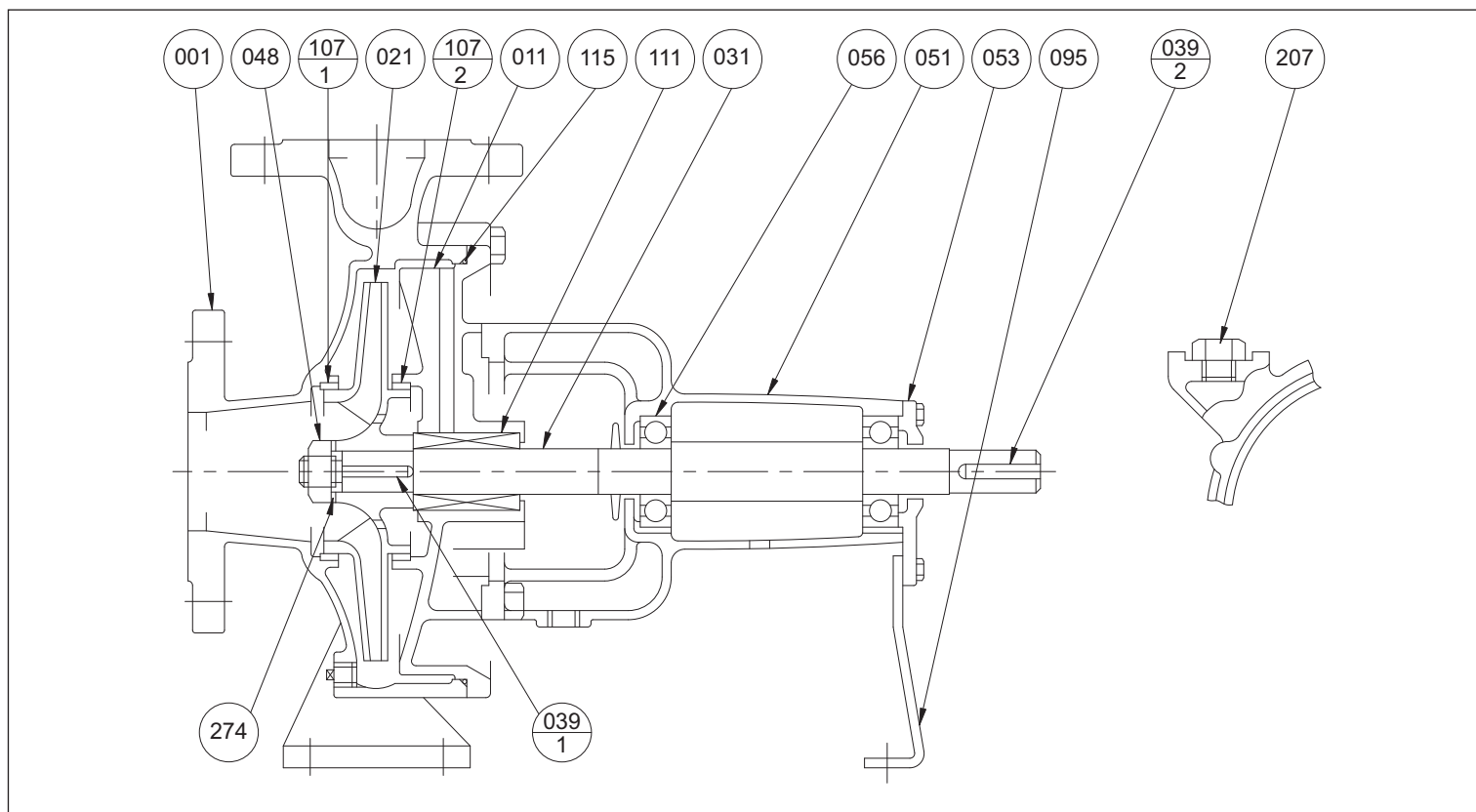
END SUCTION VOLUTE PUMPS

in cast iron

SPECIFICATIONS

Description	Standard		Optional	
	2 poles model	4 poles model	2 poles model	4 poles model
Liquid Name	Clean water, Light chemical treatment			
Temperature	0°C to +80 °C		-20°C to +120 °C	
Max. working pressure	16 bar (16.3 kgf/cm ²)			
Synchronous speed	3000 min ⁻¹	1500 min ⁻¹	3000 min ⁻¹	1500 min ⁻¹
Installation	Indoors		Outdoors	
Construction	Impeller	Enclosed		
	Shaft seal	Mechanical seal		Gland Packing
	Sealing	Self flushing		External flushing
	Bearing	Sealed ball bearing		Oil bath
Flange	Suction & Discharge	DIN PN-16		JIS 16K ; ANSI 250
	Casing	Cast Iron		Ductile Cast Iron (GJS400)
Material	Impeller	Bronze Casting (CAC406/BC6)		Cast iron; Ductile Cast Iron (GJS400)
	Shaft	403 Stainless steel		304; 316 Stainless steel
	Seal	Mechanical Seal: Ceramic/Carbon/NBR		Gland Packing : Teflon (PTFE) impregnated Mechanical Seal : SiC/SiC
	Bare shaft	-		Priming funnel ; valve; Companion Flange
Accessories	With motor	Common base, Coupling, Coupling guard		Priming funnel ; valve; Companion Flange

SECTIONAL VIEW



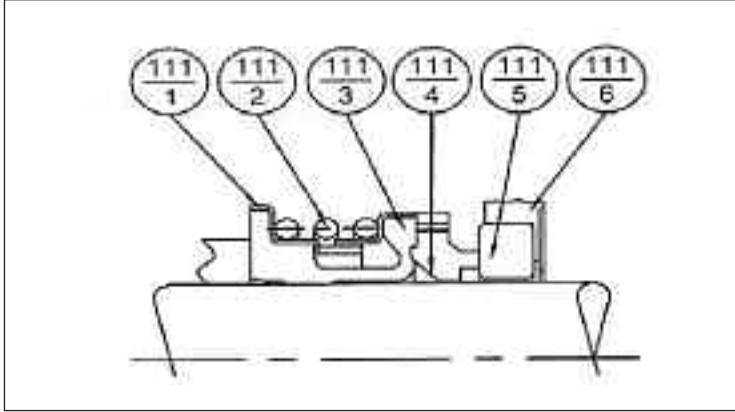
MATERIALS TABLE

Ref.	Name	Material	Ref.	Name	Material
001	Casing	Cast Iron	056	Ball Bearing	-
011	Casing Cover	Cast Iron	095	Stay	Steel
021	Impeller	Bronze	107-1	Casing Ring	Bronze
031	Shaft	Stainless Steel	107-2	Casing Ring	Bronze
039-1	Impeller Key	Steel	111	Mechanical Seal	Ceramic/Carbon/NBR
039-2	Key	Steel	115	O-Ring	NBR
048	Impeller Nut	Brass	207	Plug	Steel
051	Bearing Housing	Cast Iron	274	Impeller Nut Washer	Steel
053	Bearing Cover	Cast Iron			

END SUCTION VOLUTE PUMPS

in cast iron

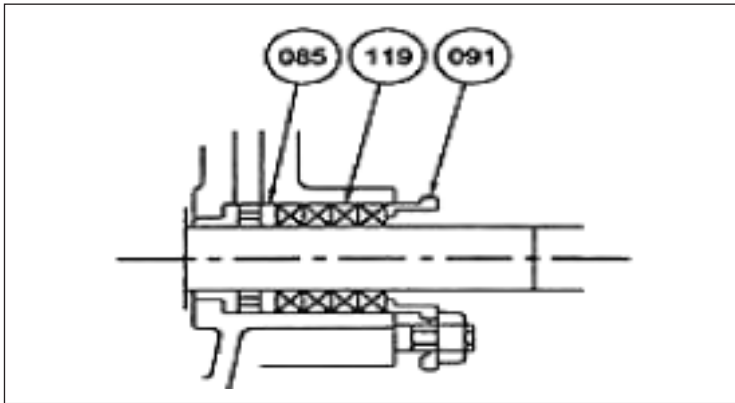
MECHANICAL SEAL standard



MATERIALS TABLE

Ref.	Name	Material
111-6	Cup Gasket	NBR
111-5	Mating Ring	Ceramic
111-4	Seal Ring	Carbon
111-3	Bellows	EPDM
111-2	Spring	Stainless Steel
111-1	Spring Holder	Stainless Steel

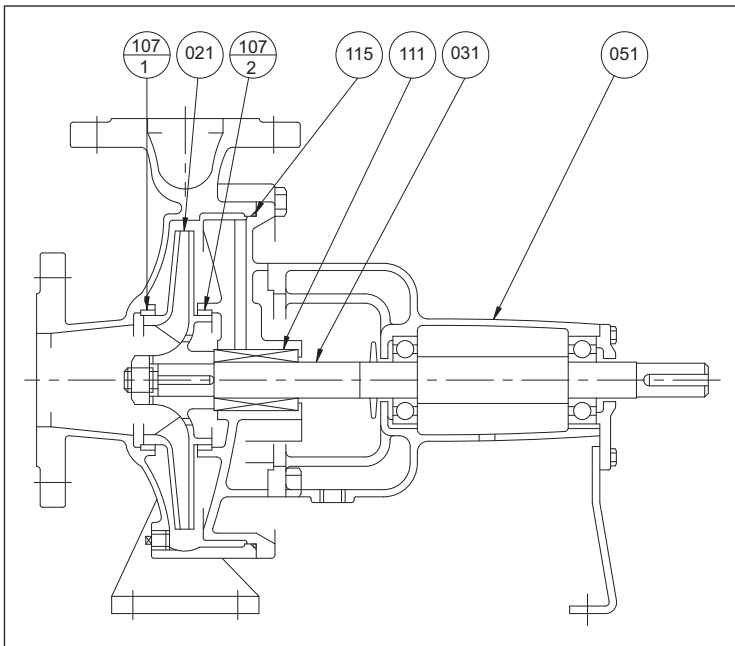
GLAND PACKING option



MATERIALS TABLE

Ref.	Name	Material
119	Gland Packing	Teflon Impregnated
091	Gland	Bronze
085	Lantern Ring	Bronze

SECTIONAL VIEW



SPARE PARTS

Recommended spare parts sock for 2 years' continus operation

Ref.	Name	Q.ty/Unit
Pumps with mechanical seals (standard):		
021	Impeller	1
031	Shaft	1
051	Ball bearing	2
107	Casing ring	2
111	Mechanical seal	1
115	O-Ring	1
Pumps with gland packing (optional):		
111	Gland packing	1



FHA

END SUCTION VOLUTE PUMPS

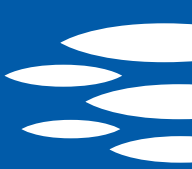
in cast iron

CHANGEABILITY CHART

Part name	Casing	Casing cover	Impeller	Shaft	Impeller key	Key	Impeller nut	Bearing housing	Bearing cover	Ball bearing	Stay	Casing ring	Mechanical seal	Casing gasket	Plug	Impeller nut wash
Model	001	011	021	031	039-1	039-2	048	051	053	056	095	107	111	115	207	274
FHA 65-200	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FHA 65-250	2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1
FHA 65-315	3	3	3	2	1	2	2	2	2	2	2	1	2	3	1	2
FHA 80-160	4	4	4	3	2	1	3	1	1	1	1	2	3	4	1	3
FHA 100-200	5	5	5	1	1	1	1	1	1	1	1	3	1	1	1	1
FHA 100-250	6	6	6	2	3	2	2	2	2	2	2	3	2	2	1	2
FHA 100-315	7	7	7	4	1	2	1	2	2	2	2	4	3	3	1	4
FHA 100-400	8	8	8	5	4	2	2	2	2	2	2	4	2	5	1	5
FHA 125-200	9	9	9	1	1	1	1	1	1	1	1	4	1	1	2	1
FHA 125-250	10	10	10	4	1	2	1	2	2	2	2	5	2	2	2	4
FHA 125-315	11	11	11	5	4	2	2	2	2	2	2	6	3	3	2	5
FHA 125-400	12	12	12	5	4	2	2	2	2	2	2	6	2	4	2	5
FHA 150-250	13	13	13	5	4	2	2	2	2	2	2	7	2	2	2	5
FHA 150-315	14	14	14	6	5	3	4	3	3	3	3	8	4	3	2	6
FHA 150-400	15	15	15	6	5	3	4	3	3	3	3	8	4	5	2	6

The chart shows the part list (main parts) of FHA pumps, and each part is designated by a number. (1,2,3,...)

Parts designated by the same number and placed in the same column means that these parts are changeable among these pumps sizes.



FHA

END SUCTION VOLUTE PUMPS

in cast iron

