

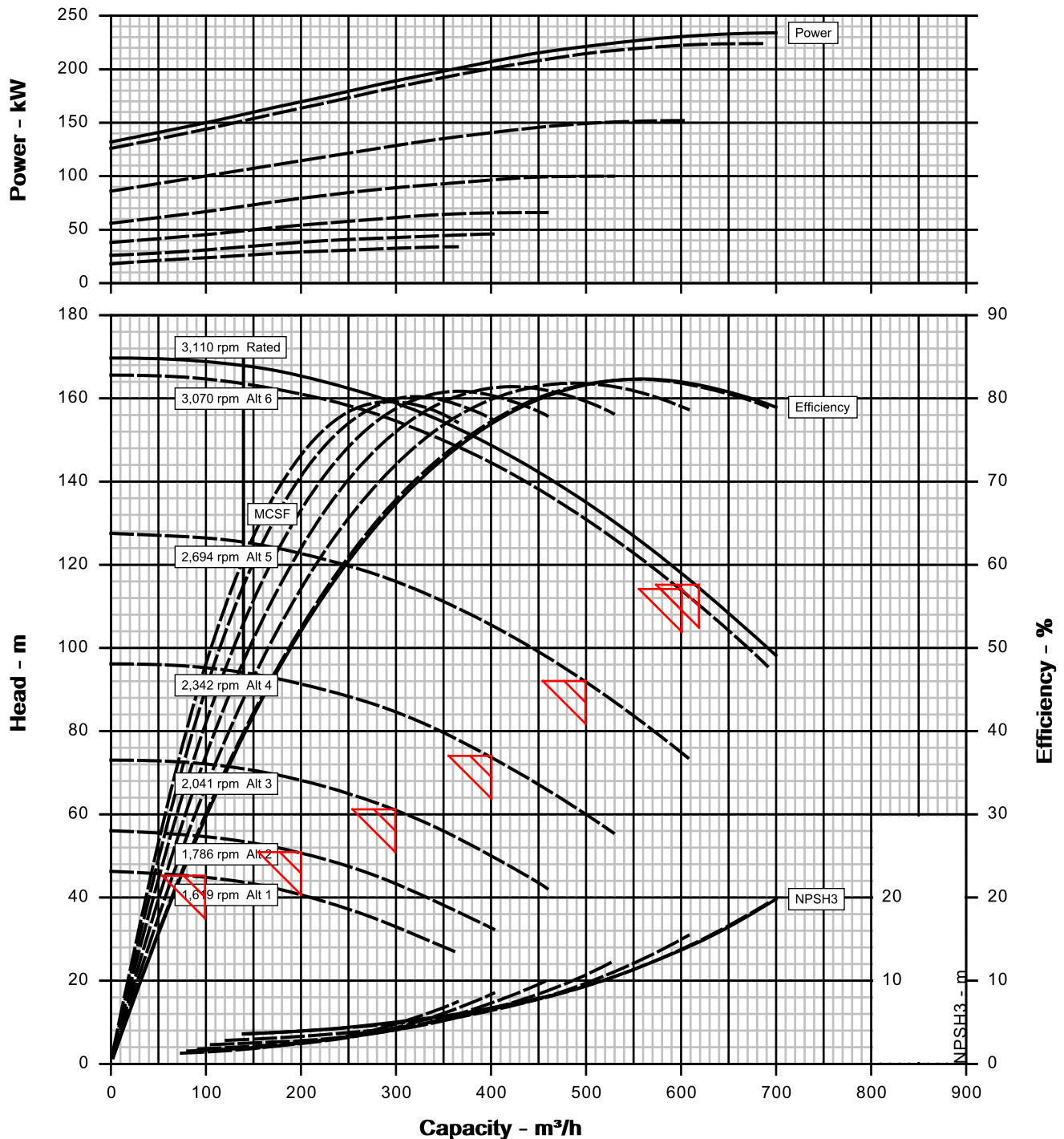


Pump size & type / Stages : 6HPX12C / 1  
Based on curve no. : 6HPX12C-2-2  
Impeller diameter : 324 mm

Customer :  
Item number : P01\_data02  
Service : Hot water circulation  
Flowserve reference : 1697557496  
Date : November 21, 2018

Capacity : 618.0 m<sup>3</sup>/h  
Head : 115.00 m  
Density / Specific gravity : - / 0.986  
Pump speed : 3110 rpm  
Ns / Nss : 1965 / 11618 (Metric units)  
Test tolerance : ISO 9906 Grade 1B

CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY.



Customer	: ENE-TEP,a.s.	Pump / Stages	: 6HPX12C / 1
Customer reference	: P18P041	Based on curve no.	: 6HPX12C-2-2
Item number	: P01_data02	Flowserve reference	: 1697557496
Service	: Hot water circulation	Date	: November 21, 2018

	Unit	Hot water circulation	Q=100m3/h	Q=200m3/h	Q=300m3/h
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Operating Conditions					
Capacity	m³/h	618.0	100.0	200.0	300.0
Water capacity / CQ	m³/h	- / 1.00	- / 1.00	- / 1.00	- / 1.00
Normal capacity	m³/h	-	-	-	-
Total developed head	m	115.00	45.00	51.00	61.00
Water head / CH	m	- / 1.00	- / 1.00	- / 1.00	- / 1.00
NPSH available (NPSHa)	m	39.9	39.9	39.9	39.9
NPSHa less NPSH margin	m	-	-	-	-
Maximum suction pressure	kPa.g	600.0	600.0	600.0	600.0
Rated suction pressure	kPa.g	300.0	300.0	300.0	300.0

Liquid					
Liquid type		Fresh water	Fresh water	Fresh water	Fresh water
Liquid description		hot water	hot water	hot water	hot water
Temperature / Specific gravity	°C/	55 / 0.986	55 / 0.986	55 / 0.986	55 / 0.986
Solid Size - Actual / Limit	mm/mm	- / 24.994	- / 24.994	- / 24.994	- / 24.994
Viscosity / Vapor pressure	cP/kPa.a	1.00 / 15.65	1.00 / 15.65	1.00 / 15.65	1.00 / 15.65

Performance					
Actual head	m	115.00	45.00	51.00	61.00
Hydraulic power	kW	191	12.1	27.4	49.1
Pump speed	rpm	3110	1619	1786	2041
Pump overall efficiency (CE=1.00)	%	81.9	49.7	71.5	79.3
NPSH required (NPSH3)	m	14.5	1.5	2.4	4.1
Rated brake power	kW	233	24.3	38.2	61.9
Maximum brake power	kW	234	33.8	45.2	67.0
Driver power rating	kW / hp	315 kW / 422 hp	315 kW / 422 hp	315 kW / 422 hp	315 kW / 422 hp
Casing working pressure	kPa.g	2240.5	1044.6	1141.0	1306.6
(based on shut off @ cut dia/rated SG)					
Maximum allowable	kPa.g	4138.0	4138.0	4138.0	4138.0
Hydrostatic test pressure	kPa.g	6207.0	6207.0	6207.0	6207.0
Estimated rated seal chamber pressure	kPa.g	320.7	320.7	320.7	320.7
Impeller diameter, Rated	mm	324	324	324	324
Impeller diameter, Maximum/Minimum	mm/mm	324 / 254	324 / 254	324 / 254	324 / 254
Ns / Nss	(Metric un...	1965 / 11618	1965 / 9050	1965 / 9608	1965 / 10305
Minimum continuous flow	m³/h	140.5	73.1	80.7	92.2
Maximum head at rated diameter	m	169.94	46.05	56.05	73.19
Flow at BEP	m³/h	560.7	291.9	322.0	367.9
Flow as % of BEP	%	110.2	34.3	62.1	81.5
Efficiency at normal flow	%	-	-	-	-
Impeller diameter ratio (rated/max)	%	100.0	100.0	100.0	100.0
Head rise to shut off	%	47.8	2.3	9.9	20.0
Total head ratio (rated / max) / (max / rated)	%	66.0 / 151.5	19.8 / 504.4	22.8 / 438.3	28.1 / 355.9

Materials / Specification					
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Material column code	: S-6	Pump specification	: -
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Other Requirements					
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Hydraulic selection : No specification	Performance data based on standard impeller
Construction : No specification	Seal configuration : Single Seal
Test tolerance : ISO 9906 Grade 1B	
Variable Speed - Maximize Efficiency	
Driver Sizing : Max Power(MCSF to EOC) using SF	

Customer	: ENE-TEP,a.s.	Pump / Stages	: 6HPX12C	/ 1
Customer reference	: P18P041	Based on curve no.	: 6HPX12C-2-2	
Item number	: P01_data02	Flowserve reference	: 1697557496	
Service	: Hot water circulation	Date	: November 21, 2018	
	Unit	Q=400m3/h	Q=500m3/h	Q=600m3/h
Operating Conditions				
Capacity	m³/h	400.0	500.0	600.0
Water capacity / CQ	m³/h	- / 1.00	- / 1.00	- / 1.00
Normal capacity	m³/h	-	-	-
Total developed head	m	74.00	92.00	114.00
Water head / CH	m	- / 1.00	- / 1.00	- / 1.00
NPSH available (NPSHa)	m	39.9	39.9	39.9
NPSHa less NPSH margin	m	-	-	-
Maximum suction pressure	kPa.g	600.0	600.0	600.0
Rated suction pressure	kPa.g	300.0	300.0	300.0
Liquid				
Liquid type		Fresh water	Fresh water	Fresh water
Liquid description		hot water	hot water	hot water
Temperature / Specific gravity	°C/	55 / 0.986	55 / 0.986	55 / 0.986
Solid Size - Actual / Limit	mm/mm	- / 24.994	- / 24.994	- / 24.994
Viscosity / Vapor pressure	cP/kPa.a	1.00 / 15.65	1.00 / 15.65	1.00 / 15.65
Performance				
Actual head	m	74.00	92.00	114.00
Hydraulic power	kW	79.4	123	183
Pump speed	rpm	2342	2694	3070
Pump overall efficiency (CE=1.00)	%	81.7	82.1	82.1
NPSH required (NPSH3)	m	6.5	9.7	13.7
Rated brake power	kW	97.2	150	223
Maximum brake power	kW	101	153	225
Driver power rating	kW / hp	315 kW / 422 hp	315 kW / 422 hp	315 kW / 422 hp
Casing working pressure	kPa.g	1530.3	1831.0	2198.6
(based on shut off @ cut dia/rated SG)				
Maximum allowable	kPa.g	4138.0	4138.0	4138.0
Hydrostatic test pressure	kPa.g	6207.0	6207.0	6207.0
Estimated rated seal chamber pressure	kPa.g	320.7	320.7	320.7
Impeller diameter, Rated	mm	324	324	324
Impeller diameter, Maximum/Minimum	mm/mm	324 / 254	324 / 254	324 / 254
Ns / Nss	(Metric un...	1965 / 10886	1965 / 11327	1965 / 11594
Minimum continuous flow	m³/h	105.8	121.7	138.7
Maximum head at rated diameter	m	96.37	127.52	165.60
Flow at BEP	m³/h	422.2	485.7	553.4
Flow as % of BEP	%	94.7	103.0	108.4
Efficiency at normal flow	%	-	-	-
Impeller diameter ratio (rated/max)	%	100.0	100.0	100.0
Head rise to shut off	%	30.2	38.6	45.3
Total head ratio (rated / max) / (max / rated)	%	35.7 / 280.5	47.3 / 211.3	64.2 / 155.9
Materials / Specification				
Material column code	: S-6	Pump specification	: -	
Other Requirements				
Hydraulic selection : No specification		Performance data based on standard impeller		
Construction : No specification		Seal configuration : Single Seal		
Test tolerance : ISO 9906 Grade 1B				
Variable Speed - Maximize Efficiency				
Driver Sizing : Max Power(MCSF to EOC) using SF				

Customer : ENE-TEP,a.s.					Pump / Stages : 6HPX12C / 1	
Customer reference : P18P041					Based on curve no. : 6HPX12C-2-2	
Item number : P01_data02					Flowserve reference : 1697557496	
Service : Hot water circulation					Date : November 21, 2018	
Construction					Driver Information	
Nozzles	Size	Rating	Face	Position	Manufacturer	: -
Suction	10 inch	ANSI 300#	RF	End	Power	: 315 kW / 422 hp
Discharge	6 inch	ANSI 300#	RF	Top	Service factor (requested / actual)	: 1.15 / 0.0
Casing mounting : Center-line					Synchronous speed	: 3000 rpm
Casing split : Radial					Orientation / Mounting	: Horizontal / -
Impeller type : Closed 5 vanes					Driver type	: -
Bearing type (radial) : Ball					Frame-size / material	: - / -
Bearing number (radial) : 6216					Enclosure	: No Driver
Bearing type (thrust) : Ball					Hazardous area class	: -
Bearing number (thrust) : 7314					Explosion 'T' rating	: -
Bearing lubrication : Flinger					Volts / Phase / Hz	: 220.0 / 3 PHASE / 50 Hz
Rotation (view from coupling) : CCW per Hyd. Institute					Amps-full load/locked rotor	: - / -
Materials					Motor starting	: Direct on line (DOL)
Casing : Carbon Steel					Insulation	: -
Impeller : A487 CA6NM					Temperature rise	: -
Case wear ring : 410 SS (A426-CPCA15)					Bearings	: -
Impeller wear ring : 410 SS (A426-CPCA15)					Lubrication	: -
Inducer : N/A					Motor mounted by	: No Driver
Shaft : 4140					Sound Pressure (dBA @ 1.0 m)	
Sleeve : See Mechanical Seal					Driver, expected	: -
Baseplate, Coupling and Guard					Pump & driver, estimated	: 85.0 dBA
Baseplate type : -					Seal Information	
Baseplate material : Fabricated Steel					Arrangement	: Single
Coupling manufacturer : No Coupling					Size	: 59.5 mm
Coupling size : -					Manufacturer / Type	: - / -
Coupling / Shaft guard : Non Supplied					Material code (Man'f/API)	: QB, 5U4X / -
Weights (Approx.)					Internal neck bushing	: -
Bareshaft pump (net) : 530.0 kg					Gland	
Baseplate (net) : -					Gland material	: -
Driver (net) : -					Flush	: 3/4 inch NPT
Shipping gross weight/volume : *** / -					Vent	: None
Testing					Drain	: 1/2 inch NPT
Hydrostatic test : Non witnessed					Auxiliary seal device	: -
Performance test : Non witnessed					Piping	
NPSH test : None					Seal flush plan	: Plan 11
Paint and Package					Seal flush construction	: -
Pump paint : -					Seal flush material	: -
Base grout surface prep : -					Aux seal flush plan	: -
Shipment type : Domestic					Aux seal flush construction	: -
					Aux seal flush material	: -
Notes						
-						
Shipping weight						
Maximum levels						
-						
-						
-						