

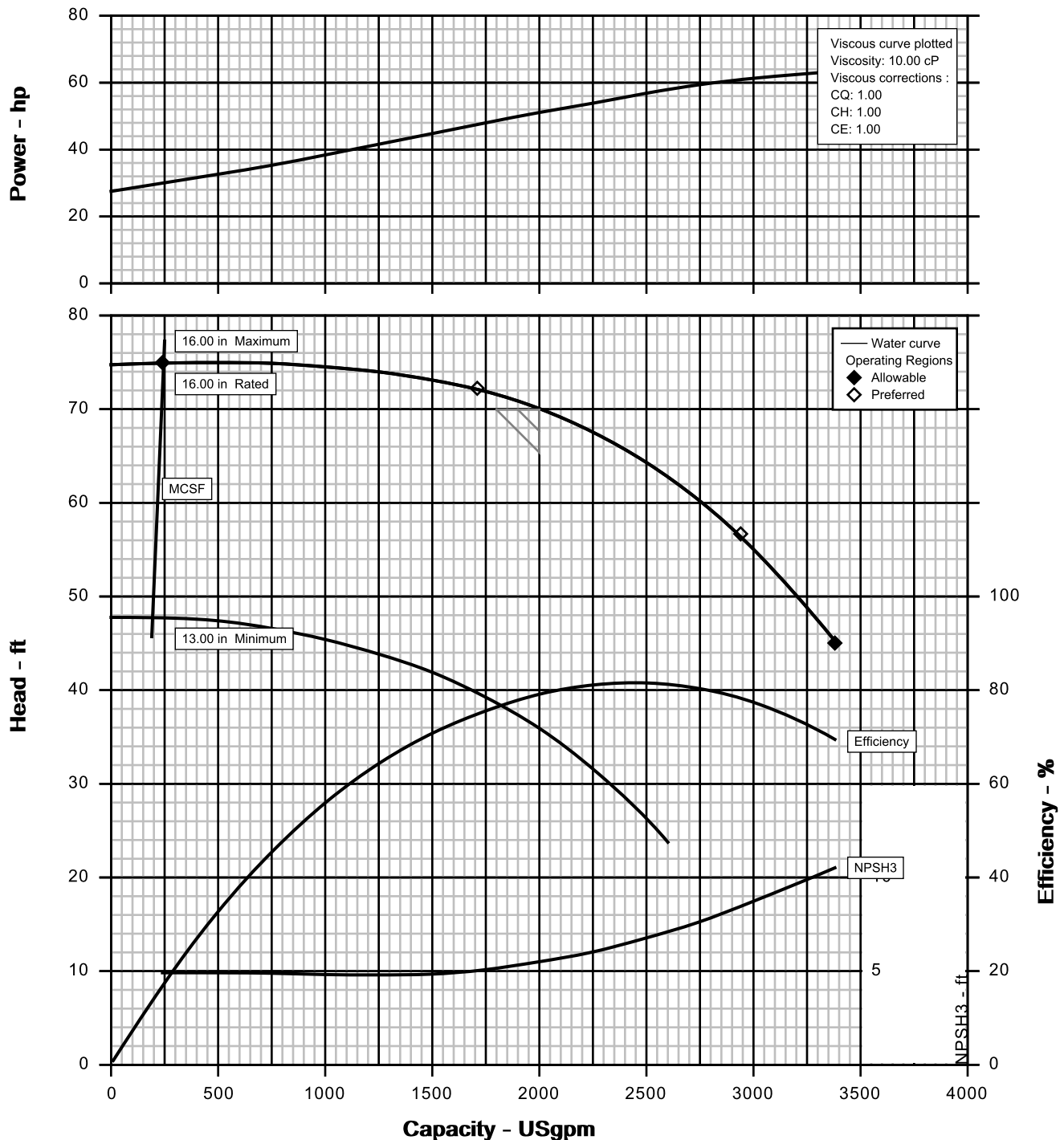


Pump size & type / Stages : 3K10x8-16RV M3 ST / 1
Based on curve no. : M118428BV
Impeller diameter : 16.00 in

Customer : CALORIS ENGINEERING, LLC
Item number : PP02 100 HP Alt
Service : 3% nacl
Flowserve reference : 2111000463
Date : January 2, 2020

Capacity : 2000.0 USgpm
Head : 70.00 ft
Density / Specific gravity : - / 1.140
Pump speed : 955 rpm
Ns / Nss : 2052 / 11510 (US units)
Test tolerance : ANSI/HI 14.6 Grade 1U

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



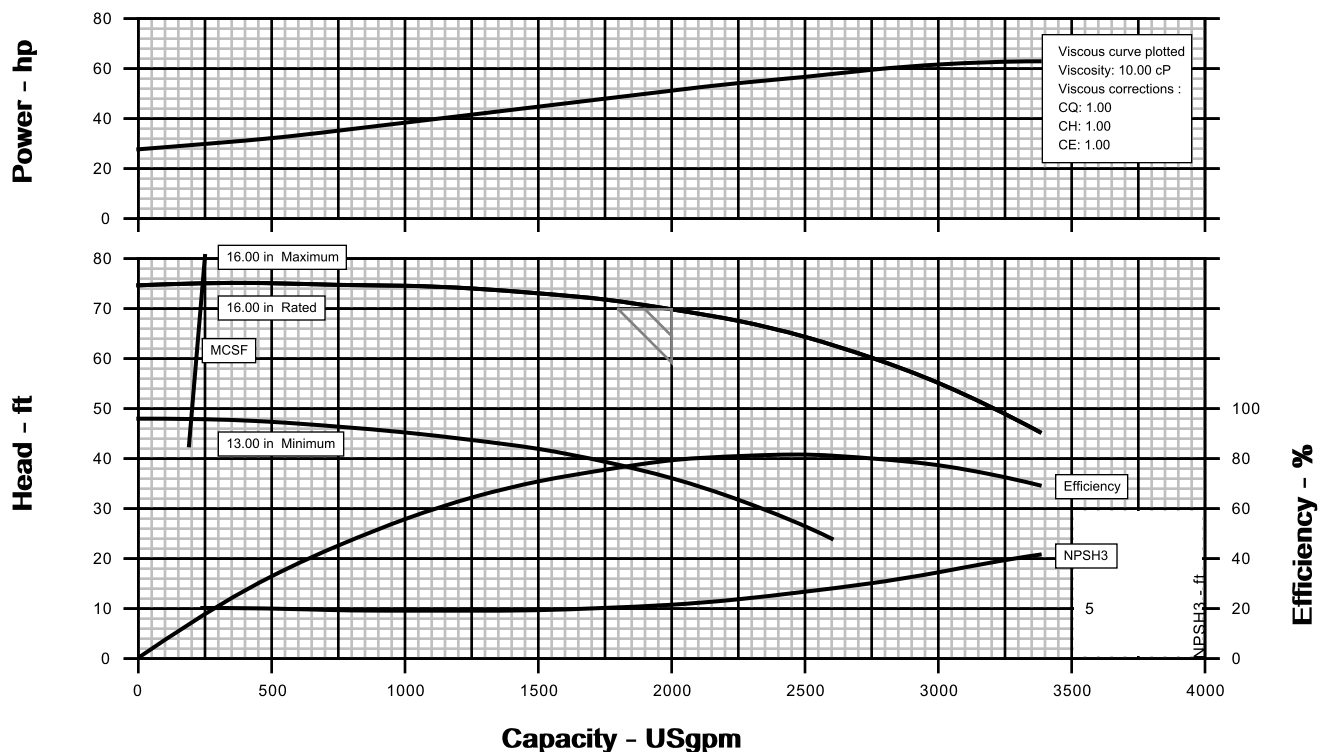
The customer must provide a minimum NPSHa of 5.5 ft.

Customer	: CALORIS ENGINEERING, LLC	Pump / Stages	: 3K10x8-16RV M3 ST / 1
Customer reference	: -	Based on curve no.	: MIII8428BV
Item number	: PP02 100 HP Alt	Flowserve reference	: 2111000463
Service	: 3% nacl	Date	: January 2, 2020

Operating Conditions		Materials / Specification	
Capacity (rated/normal)	: 2000.0 USgpm / -	Material column code	: CD4
Water capacity (CQ=1.00)	: 2,000.0 USgpm	Pump specification	: ANSI B73.1
Total developed head	: 70.00 ft	Other Requirements	
Water head (CH=1.00)	: 70.00 ft	Hydraulic selection : No specification	
NPSHa/NPSHa less margin	: Ample / -	Construction : No specification	
Maximum suction pressure	: 0.0 psig	Test tolerance : ANSI/HI 14.6 Grade 1U	
Liquid		Variable Speed - Maximize Efficiency	
Liquid type	: Other	Driver Sizing : Max Power(MCSF to EOC) using SF	
Liquid description	: salt solution	Seal configuration : Double Seal	
Temperature	: 212 °F	Static head : 3.50 ft	
Density / Specific gravity	: - / 1.140		
Solid Size - Actual / Limit	: - / 1.56 in		
Viscosity / Vapor pressure	: 10.00 cP / -		

Performance			
Hydraulic power	: 40.3 hp	Impeller diameter	
Pump speed	: 955 rpm	Rated	: 16.00 in
Pump overall efficiency (CE=1.00)	: 79.4 %	Maximum	: 16.00 in
NPSH required (NPSH3)	: 5.5 ft	Minimum	: 13.00 in
Rated brake power	: 50.8 hp	Ns / Nss	: 2052 / 11510 (US units)
		Minimum continuous flow	: 240.7 USgpm
Maximum brake power	: 63.3 hp	Maximum head at rated diameter	: 74.84 ft
Driver power rating	: 100 hp / 74.6 kW	Flow at BEP	: 2446.9 USgpm
Casing working pressure	: 36.9 psig	Flow as % of BEP	: 81.7 %
(based on shut off @ cut dia/rated SG)		Efficiency at normal flow	: -
Maximum allowable	: 256.4 psig	Impeller diameter ratio (rated/max)	: 100.0 %
Hydrostatic test pressure	: 428.0 psig	Head rise to shut off	: 6.9 %
Estimated rated seal chamber pressure	: 5.5 psig	Total head ratio (rated / max) / (max / rated)	: 90.3 % / 110.8 %

CURVES ARE APPROXIMATE, PUMP IS GUARANTEED FOR ONE SET OF CONDITIONS; CAPACITY, HEAD, AND EFFICIENCY.
MCSF PROVIDES MECHANICAL PROTECTION ONLY. MINIMUM THERMAL FLOW MUST BE CALCULATED FOR THE SPECIFIC FLUID AND OPERATING CONDITIONS.



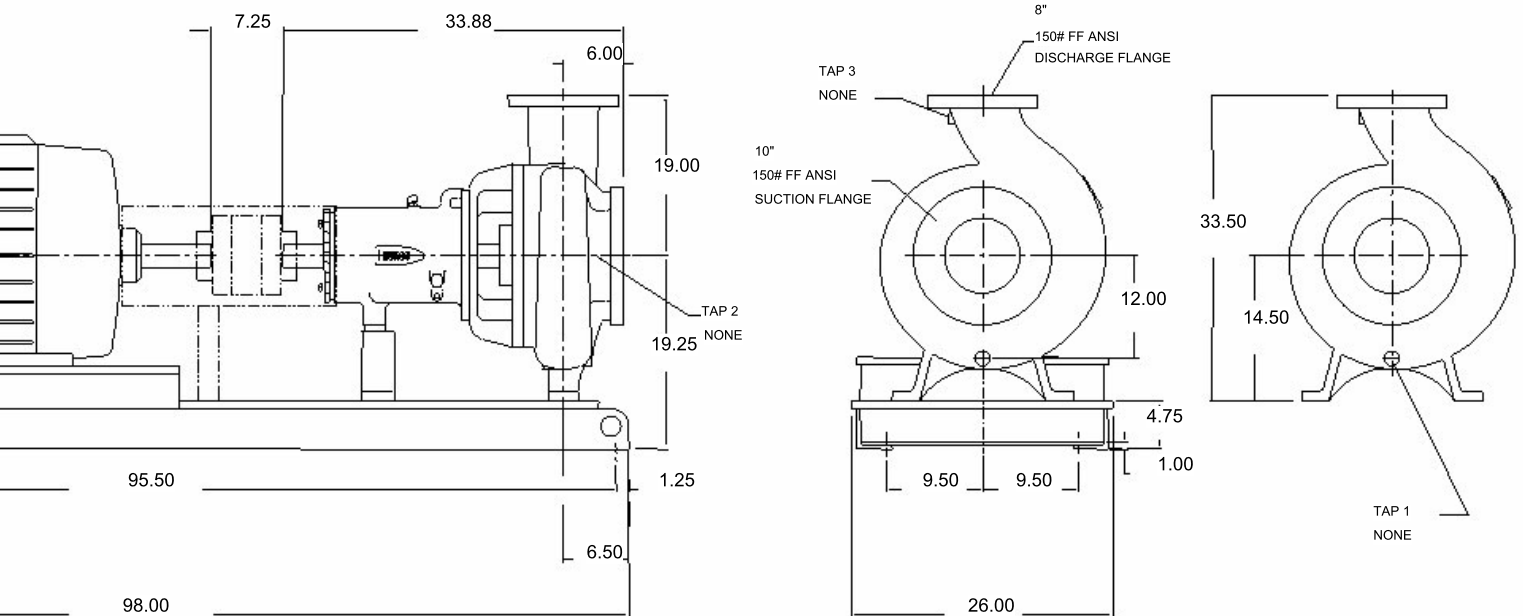
The customer must provide a minimum NPSHa of 5.5 ft.

Customer : CALORIS ENGINEERING, LLC					Pump / Stages : 3K10x8-16RV M3 ST / 1				
Customer reference : -					Based on curve no. : MIII8428BV				
Item number : PP02 100 HP Alt					Flowserve reference : 2111000463				
Service : 3% nacl					Date : January 2, 2020				
Construction					Driver Information				
Nozzles	Size	Rating	Face	Position	Manufacturer : WEG				
Suction	10.00	150#	FF	End	Power : 100 hp / 74.6 kW				
Discharge	8.00	150#	FF	Top	Service factor (requested / actual) : 1.15 / 1.15				
Casing mounting				: Foot					
Casing split				: Radial					
Impeller type				: Reverse Vane					
Bearing type (radial)				: Sgl Row					
Bearing number (radial)				: 6314-C3					
Bearing type (thrust)				: Dbl Row					
Bearing number (thrust)				: 5314-AC3					
Bearing lubrication				: Flood					
Rotation (view from driver)				: CW per Hyd. Institute					
Materials					Motor starting : Direct on line (DOL)				
Casing				: CD4M/CD-4MCuN					
Impeller				: CD4M/CD-4MCuN					
Seal chamber				: FML Box / (CD4M)					
Shaft				: ZC20 Steel W/Alloy-d					
Sleeve				: No Sleeve					
Baseplate, Coupling and Guard					Sound Pressure (dBA @ 1.0 m)				
Baseplate type				: Type A Foundation					
Baseplate material				: Steel					
Baseplate size				: 398 Baseplate					
Coupling manufacturer				: T.B. Woods					
Coupling size				: Dura-Flex WES50					
Coupling / Shaft guard				: Steel					
Shaft / seal guard				: None Supplied					
Weights (Approx.)					Driver, expected : 70.0 dBA				
Bareshaft pump (net)				: 917.0 lb					
Baseplate (net)				: 850.0 lb					
Driver (net)				: 1544.0 lb					
Shipping gross weight/volume				: 3807.6 lb / 62.04 cu.ft					
Testing					Pump & driver, estimated : 75.0 dBA				
Hydrostatic test				: Non witnessed					
Performance test				: None					
NPSH test				: None					
Paint and Package					Seal Information				
Pump paint				: FLS St'd PU Topcoat					
Base grout surface prep				: Flowserve St'd D14-3					
Shipment type				: Domestic					
					Arrangement : Dbl Int O-Ring				
					Size : 2.625				
					Manufacturer / Type : Flowserve / ISC2 Pusher				
					Material code (Man'f/API) : - / BDPFX				
					Internal neck bushing : Not Available				
					Gland				
					Gland material : 316SS				
					Flush : .500" NPT (inlet)				
					Vent : -				
					Drain : .500" NPT (outlet)				
					Auxiliary seal device : Pumping Ring				
					Piping				
					Seal flush plan : Plan 54				
					Seal flush construction : -				
					Seal flush material : -				
					Aux seal flush plan : -				
					Aux seal flush construction : -				
					Aux seal flush material : -				
Notes									
-									
ANSI 3A w/site, magnetic drain plug									
-									
-									
-									
XSD Drawing No. 0000AMK3SXX3KXXFTRVSSMSFM									

6. Piping, foundations, and systems are the responsibility of others. Flowserve Pump Division data and comments are offered as an aid, but Flowserve Pump Division cannot assume responsibility for the system design or operation. It is recommended that a specialist skilled in this area be consulted to ensure a successful installation.

7. Dimension shown from bottom of base to centerline of pump includes any blocks under pump, as necessary.

ASME size A120
 Shaft Dia. at Seal 2.625"
 Shaft Dia.at Cplg: 2.375"



ENGINEERING, LLC lt	Pump size & type	: 3K10x8-16RV M3 ST	Drawing number	: -
	Pump speed / Stages	: 955 rpm / 1	Date	: January 2, 2020
	Flow / Head	: 2000.0 USgpm / 70.00 ft	Certified by / Date :	: -
	Driver power / Frame	: 100 hp / 74.6 kW / 444T	Seal type	: ISC2 Pusher
	Volts / Phase / Hz	: 575 / 3 / 60 Hz	Seal flush plan	: Plan 54

ed.