

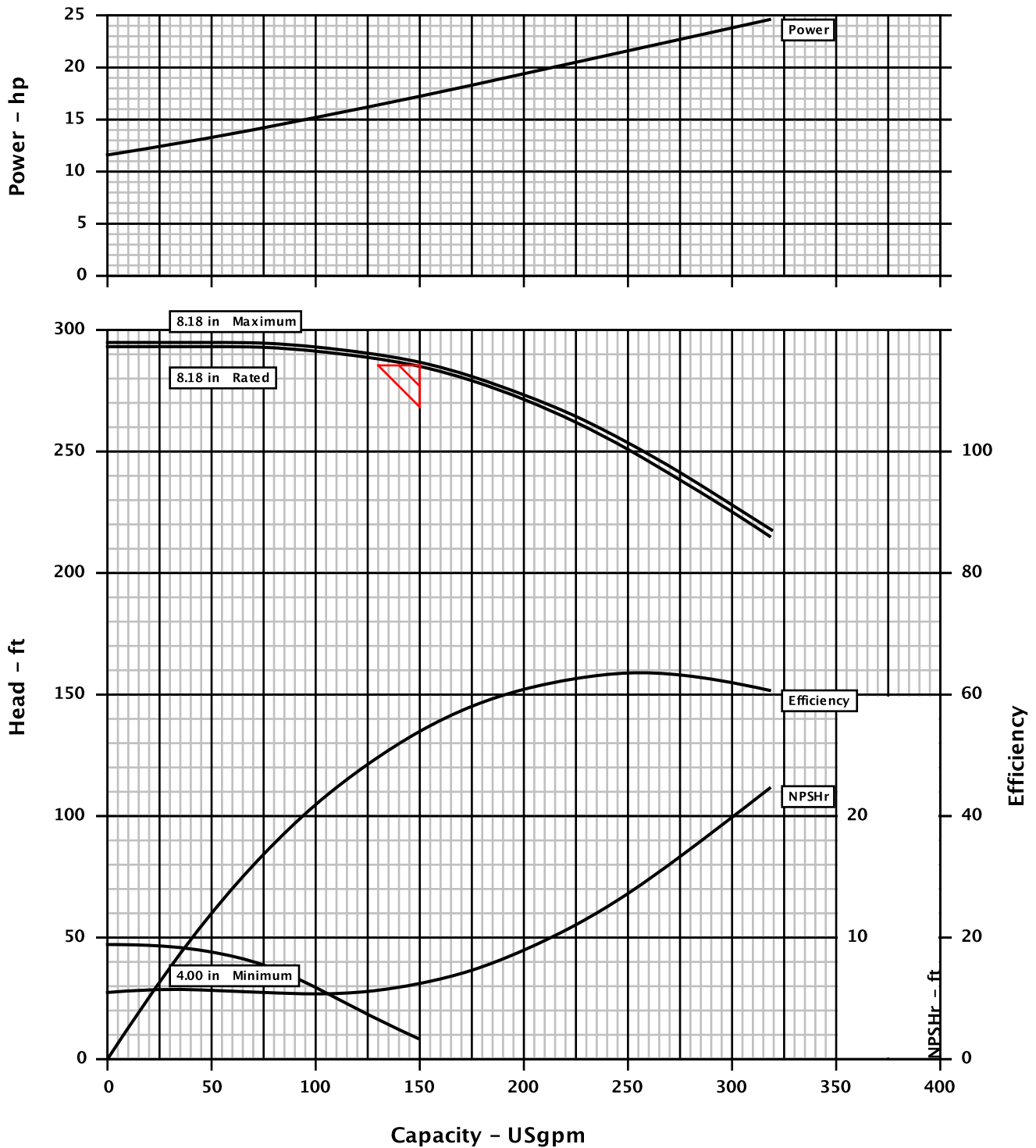


Pump size & type : 1K3x1.5-82RV M3 ST
Based on curve no. : MIII7140V
Number of stages : 1

Customer : ProEnergy
Item number :
Service : Liquid Fuel
Vendor reference : 60837 Version 1
Date : August 17, 2011

Capacity : 150.0 USgpm
Head : 285.00 ft
Specific gravity : 0.864
Pump speed : 3500 rpm

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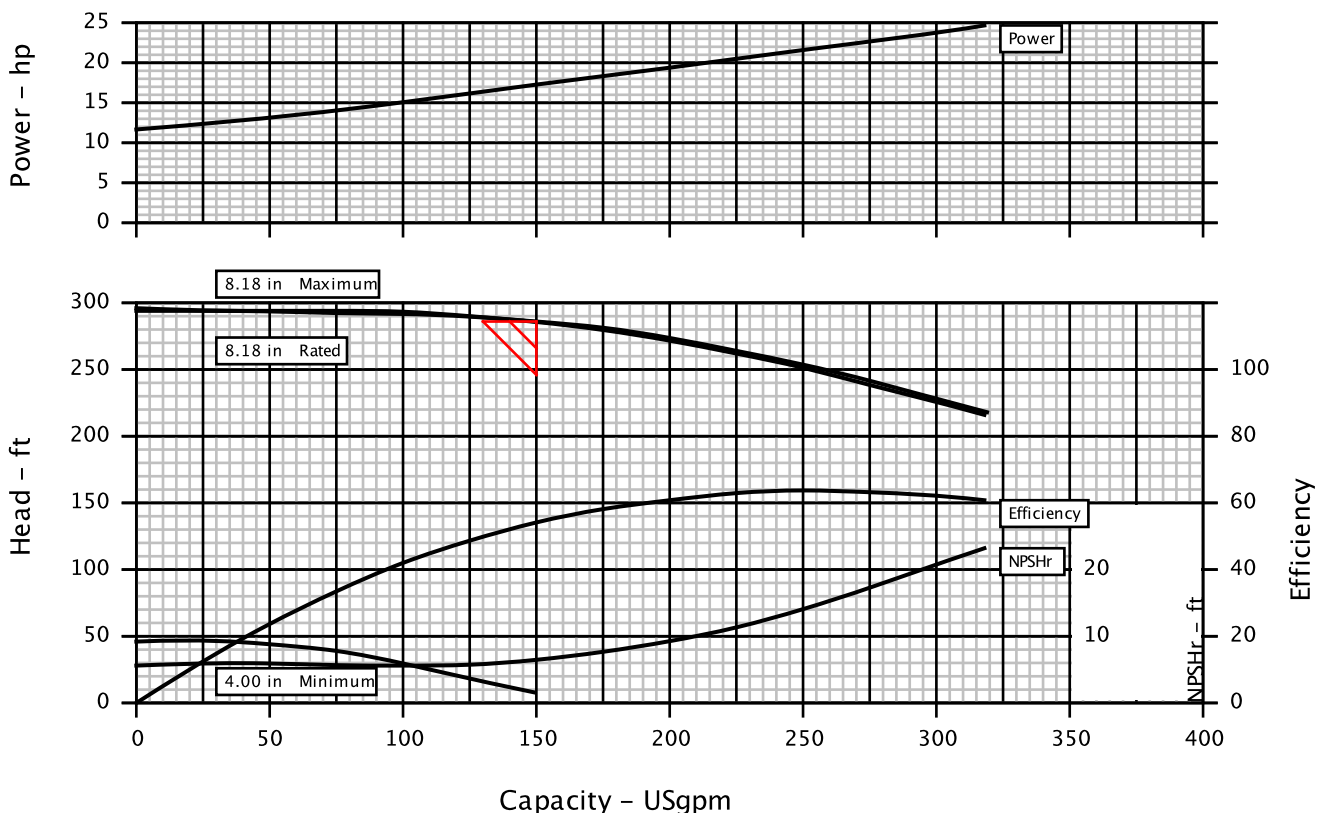


Customer	: ProEnergy	Pump / Stages	: 1K3x1.5-82RV M3 ST / 1
Customer reference	:	Based on curve no.	: MIII7140V
Item number	:	Vendor reference	: 60837 Version 1
Service	: Liquid Fuel	Date	: August 17, 2011

Operating Conditions	Materials / Specification
Capacity : 150.0 USgpm	Material column code : D4...
Water capacity (CQ=1.00) : 150.0 USgpm	Pump specification : ANSI B73.1
Normal capacity : -	
Total Developed Head : 285.00 ft	Other Requirements
Water head (CH=1.00) : 285.00 ft	Hydraulic selection : No specification
NPSH available (NPSHa) : Ample	Construction : No specification
NPSHa less NPSH margin : -	Test tolerance : Hydraulic Institute Level A
Maximum suction pressure : 0.0 psig	Driver Sizing : Max Power(MCSF to EOC)with SF
	Performance data based on standard impeller
	Seal configuration : Single Seal
Liquid	
Liquid type : Hydrocarbon	
Temperature / SG : 60 F / 0.864	
Solid Size - Actual / Limit : - / -	
Viscosity / Vapor pressure : 0.5 cSt / -	

Performance	
Hydraulic power : 9.33 hp	Impeller diameter
Pump speed : 3500 rpm	Rated : 8.18 in
Efficiency (CE=1.00) : 54.1 %	Maximum : 8.18 in
	Minimum : 4.00 in
NPSH required (NPSHr) : 5.9 ft	Suction specific speed : 7810 US units
Rated power : 17.2 hp	Minimum continuous flow : 25.3 USgpm
Maximum power : 24.7 hp	Maximum head @ rated dia : 293.54 ft
Driver power : 25.0 hp / 18.6 kW	Flow at BEP : 255.8 USgpm
Casing working pressure : 109.8 psig	Flow as % of BEP : 58.6 %
(based on shut off @ cut dia)	Efficiency at normal flow : -
Maximum allowable : 275.0 psig	Impeller dia ratio (rated/max) : 100.0 %
Hydrostatic test pressure : 413.0 psig	Head rise to shut off : 3.0 %
Est. rated seal chamb. press. : -	Total head ratio (rated/max) : 99.3 %

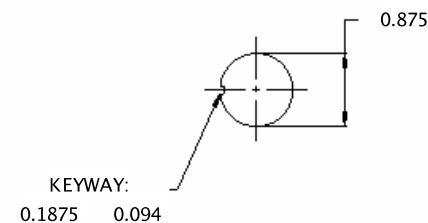
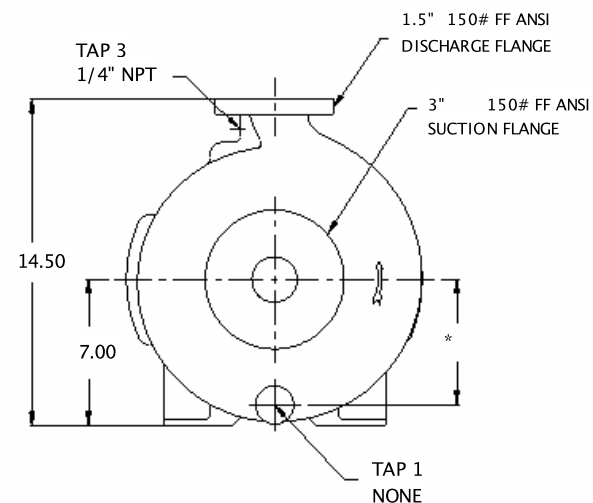
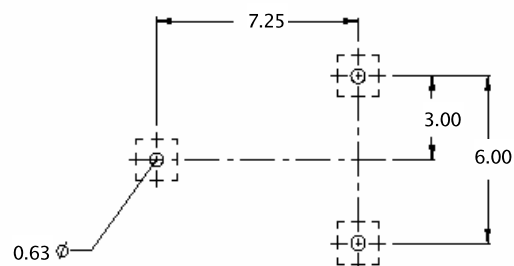
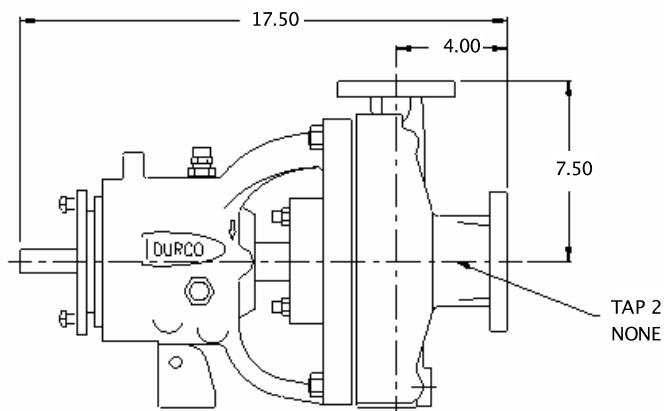
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Customer reference	:	Based on curve no.	: MIII7140V				
Item number	:	Vendor reference	: 60837 Version 1				
Service	: Liquid Fuel	Date	: August 17, 2011				
Construction		Driver Information					
Nozzles	Size	Rating	Face	Pos'n	Manufacturer	: By Others	
Suction	3.00	150#	FF	End	Power	: 25.0 hp / 18.6 kW	
Discharge	1.50	150#	FF	Top	Service factor (req'st / act)	: 1.0 / 1.15	
Casing mounting					: Foot	Speed	: 3600
Casing split					: Radial	Orientation / Mounting	: Horizontal / Foot
Impeller type					: Reverse Vane	Driver Type	: -
Bearing type (radial)					: Sgl Row	Frame-size / material	: 284TS / CAST IRON
Bearing number (radial)					: 6207-C3	Enclosure	: -
Bearing type (thrust)					: Dbl Row	Hazardous area class	: -
Bearing number (thrust)					: 5306-AC3	Explosion 'T' rating	: -
Bearing lubrication					: Flood	Volts / Phase / Hz	: 460 V / 3 / 60.0
Rotation (view from cplg)					: CW per Hyd.	Amps-full load/locked rotor	: - / -
Materials					Motor starting	: N/A	
Casing					: 316SS (D4/CF8M)	Insulation	: F
Impeller					: 316SS (D4/CF-8M)	Temperature rise	: -
Seal chamber					: FML Box / (316SS)	Bearings	: Ball
Shaft					: ZH/316SS ButtWelded	Lubrication	: Grease
Sleeve					: No Sleeve	Motor mounted by	: Flowserve
Baseplate, Coupling and Guard					Sound Pressure (dBA @ 1.0 m)		
Baseplate type					: None	Driver, expected	: -
Baseplate material					: N/A	Pump & driver, estimated	: N/A
Baseplate size					: None Supplied	Seal Information	
Coupling manufacturer					: T.B. Woods	Arrangement	: Sgl Int O-Ring
Coupling size					: Sureflex SC7	Size	: 1.375
Coupling / Shaft guard					: Steel	Manufactu... / Type	: Flowserve / ISC Pusher
Shaft / seal guard					: None Supplied	Material code (Man'f/API)	: CSCPX----ECXV- / BSTFN
Weights (Approx.)					Internal neck bushing	: Not Available	
Bareshaft pump(nett)					: 124.0 lb	Gland	
Baseplate(nett)					: -	Gland material	: 316SS
Driver(nett)					: -	Flush	: .375" NPT
Shipping gross weight/vol.					: 142.6 lb / -	Vent	: .375" NPT
Testing					Drain	: .375" NPT	
Hydrostatic test					: Non witness	Auxiliary seal device	: Carbon Bushing
Performance test					: Witnessed	Piping	
NPSH test					: Non witness	Seal flush plan	: Plan 12
Paint and Package					Seal flush construction	: Piping	
Pump paint					: Std.Polyurethane	Seal flush material	: Stainless s
Base grout surface prep					: Standard	Aux seal flush plan	: None
Shipment type					: Domestic	Aux seal flush construction	: -
					Aux seal flush material	: -	
Notes							
-							
Mark 3A w/Watchdog oiler							
-							
-							
-							
-							

Dimensions certified for construction
 as properly endorsed below.
 Refer to factory for any "x" dimensions.
 NOT SCALE DRAWING

NOTES:
 Consult pump I.O.M. before installing
 pump.
 Installation dimensions are + / - .13"
 (mm), unless otherwise noted.
 Foundation bolts and piping should
 be set rigidly before receipt of
 equipment.
 Allow a minimum of .75" (19mm) under
 plate for adjustment and grouting.
 All holes in flanges are offset
 on centerlines.
 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.



All dimensions are in inches unless otherwise specified

Customer	: ProEnergy	Pump size & type	: 1K3x1.5-82RV M3 ST	Drawing number	: -
Item number	:	Pump speed / Stages	: 3500 rpm / 1	Date	: August 17, 2011
Service	: Liquid Fuel	Flow / Head	: 150.0 USgpm / 285.00 ft	Certified by / Date	: -
Customer PO #	: -	Driver power / Frame	: 25.0 hp / 18.6 kW / 284TS	Seal type	: ISC Pusher
Vendor reference	: 60837 Version 1	Volts / Phase / Hz	: 460 / 3 / 60.0	Seal flush plan	: Plan 12