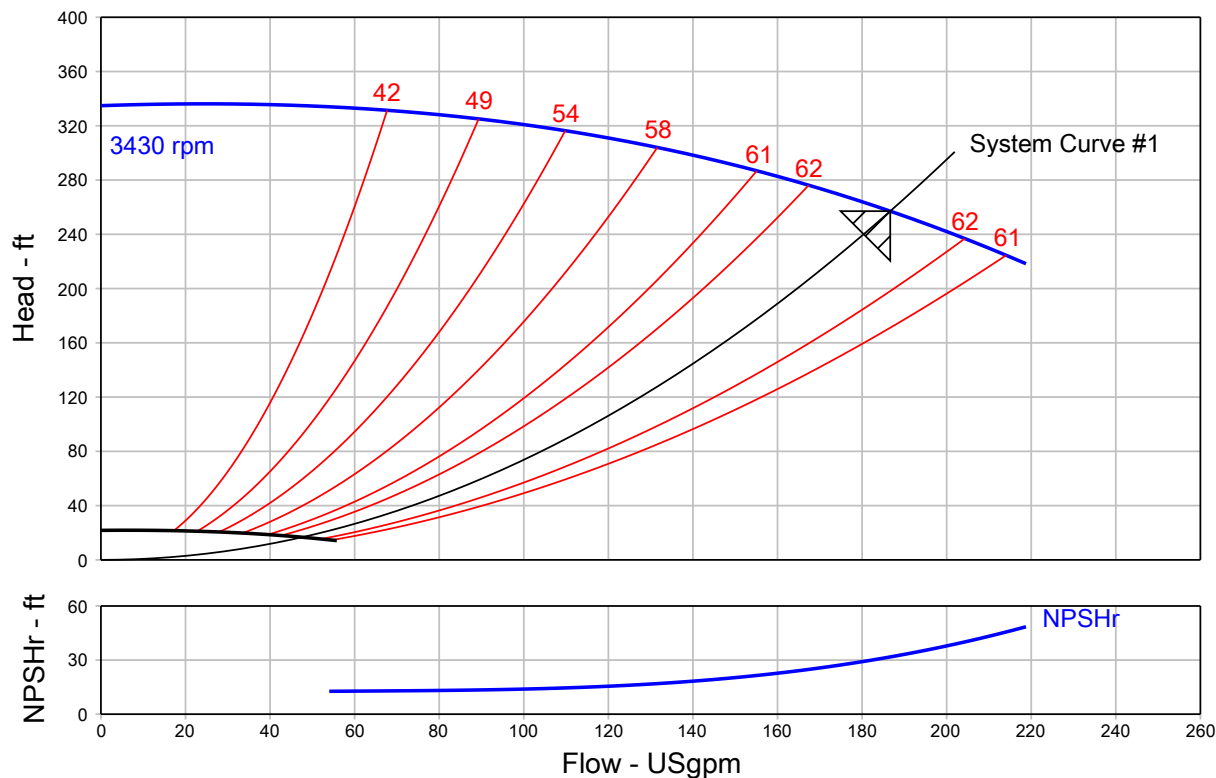


Pump Performance Datasheet

Customer	:	Quote Number / ID	: 1141840
Customer ref. / PO	:	Model	: 15951-2P-20HP LCSE
Tag Number	: Hurley Engineering	Stages	: 1
Service	: HYDRONIC	Based on curve number	: RC1949-SS-9.06 Rev 0
Quantity	: 1	Basic model number	: -
		Date last saved	: 03/27/2020 3:57 PM

Operating Conditions		Liquid	
Flow, rated	: 186.7 USgpm	Liquid type	: Cold Water
Differential head / pressure, rated (requested)	: 257.1 ft	Additional liquid description	:
Differential head / pressure, rated (actual)	: 257.1 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by volume	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
Performance		Viscosity, rated	: 1.00 cP
Speed, rated	: 3430 rpm	Vapor pressure, rated	: 0.34 psi.a
Speed, maximum	: 3430 rpm	Material	
Speed, minimum	: 900 rpm	Material selected	: Cast Iron
Impeller diameter, rated	: 9.06 in	Pressure Data	
Efficiency	: 62.65 %	Maximum working pressure	: 145.5 psi.g
NPSH required / margin required	: 31.74 / 0.00 ft	Maximum allowable working pressure	: 175.0 psi.g
nq (imp. eye flow) / S (imp. eye flow)	: 14 / 69 Metric units	Maximum allowable suction pressure	: 175.0 psi.g
MCSF	: 25.00 USgpm	Hydrostatic test pressure	: 263.0 psi.g
Head maximum, rated speed	: 336.2 ft	Driver & Power Data (@Max density)	
Head rise to shutoff	: 30.25 %	Motor sizing specification	: Max power (non-overloading)
Flow, best eff. point	: 186.7 USgpm	Margin over specification	: 0.00 %
Flow ratio, rated / BEP	: 100.00 %	Service factor	: 1.00 (used)
Speed ratio (rated / max)	: 100.00 %	Power, hydraulic	: 12.11 hp
Head ratio (rated speed / max speed)	: 100.00 %	Rated power (based on duty point)	: 19.33 hp
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00	Max power (non-overloading)	: 19.99 hp
Selection status	: Acceptable	Nameplate motor rating	: 20.00 hp / 14.91 kW (Fixed)
Energy Indexes			
PEI (VL)	: 0.49		
ER (VL)	: 51		



Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD

QUOTE NUMBER / ID 1141840

UNIT TAG Hurley Engineering

QUANTITY 1

REPRESENTATIVE

SERVICE HYDRONIC

SUBMITTED BY

DATE

ENGINEER

APPROVED BY

DATE

CONTRACTOR

ORDER #

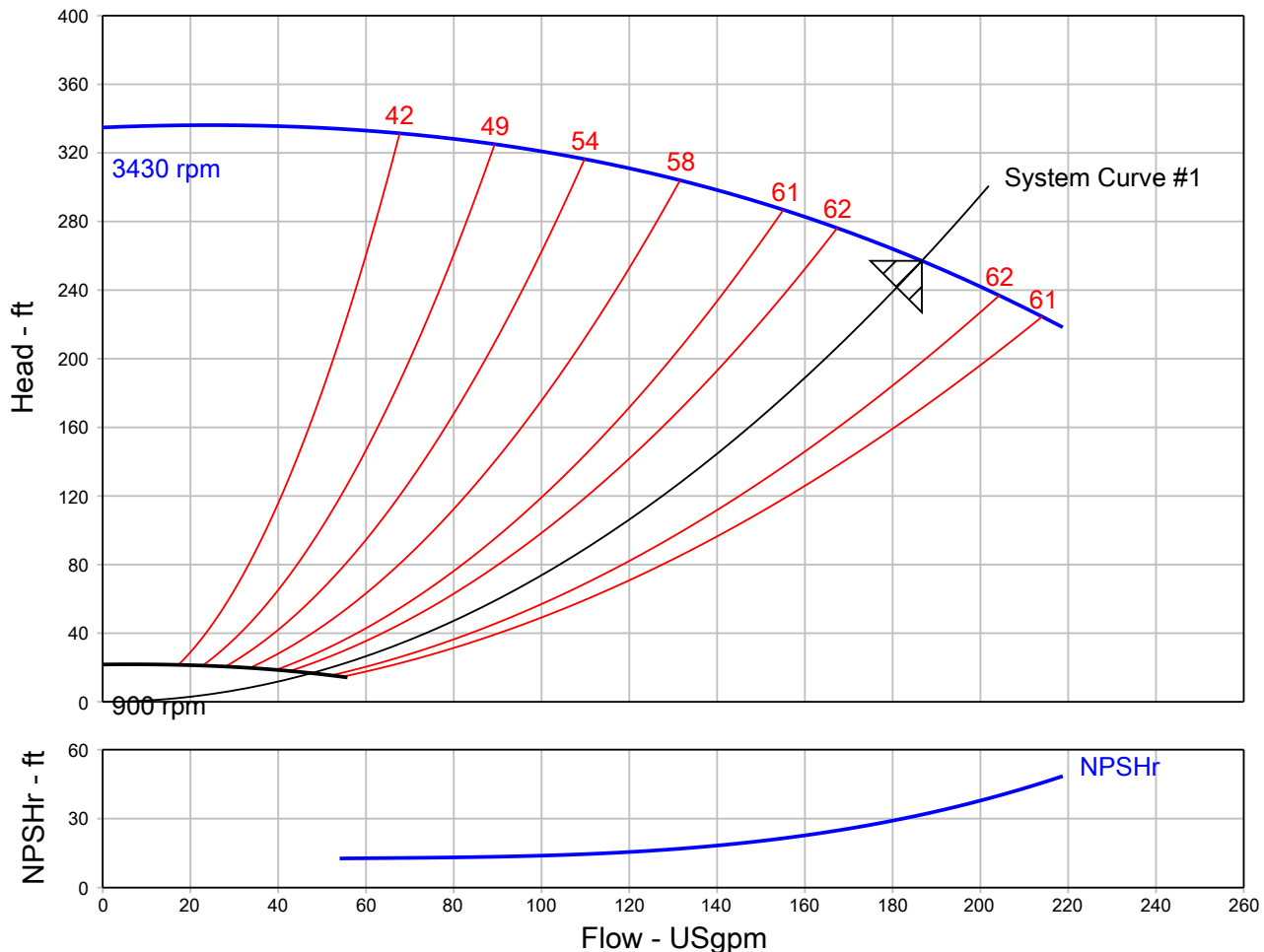
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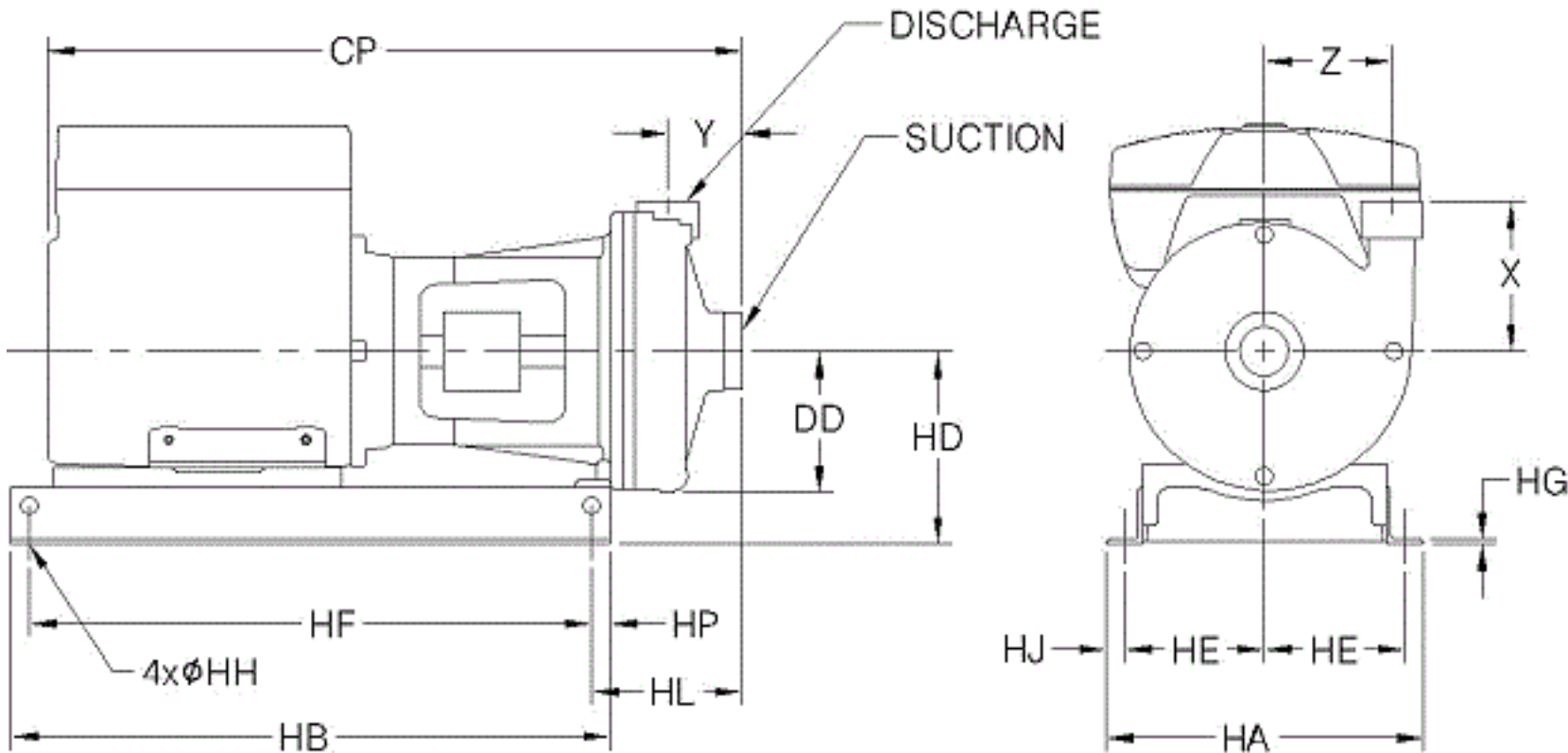
LCSE 15951-2P-20HP
3530 rpm

Part Number N/A

Conditions of Service		Pump Data		Motor Data	
Flow	186.7 USgpm	Impeller Diameter	9.06 in	Motor HP	20 HP
Head	257.1 ft	Efficiency	62.65 %	BHP	19.33
Liquid	Cold Water	Suction	2 in.	Enclosure	TEFC
Temperature	68.00 deg F	Discharge	1.5 in.	Voltage	460 V
NPSHr	31.74 ft	PEI (VL)	0.49	Phase	3 Phase
Viscosity	1.00 cP	ER (VL)	51	Cycle	60
Specific Gravity	1.000 SG			Frame Size	256TC



Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD



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Units	Frame	Suct	Disch	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z
inches	256TC	2	1.5	38.00	6.00	17.00	32.00	9.50	7.50	30.00	0.25	0.63	1.00	6.45	1.00	6.00	3.63	5.38

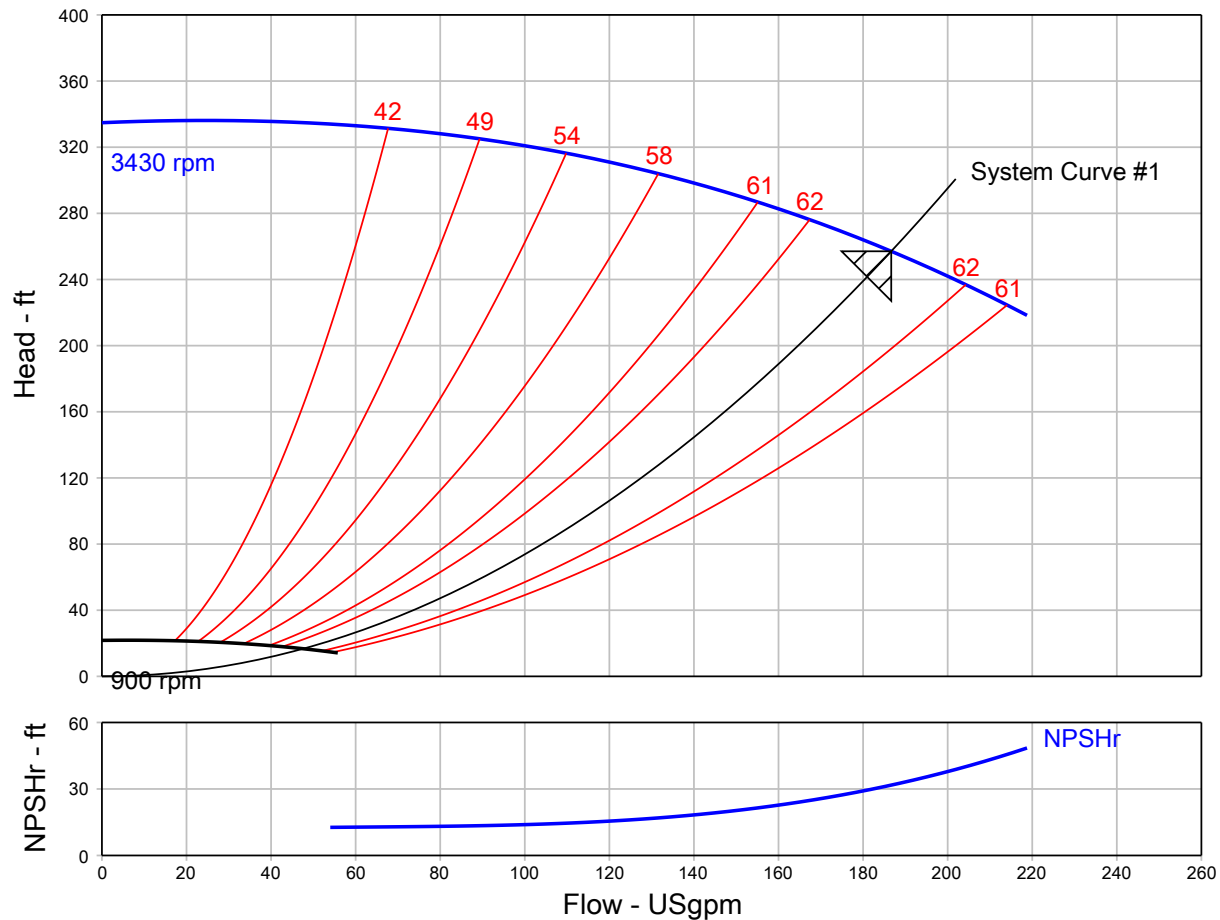
Grundfos Series LCSE - Split Coupled End Suction Pump with Integrated VFD

QUOTE NUMBER / ID 1141840	UNIT TAG Hurley Engineering	LCSE 15951-2P-20HP
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MATERIALS OF CONSTRUCTION			
PART	MATERIAL	PART	MATERIAL
Rotation Options	Clockwise	Impeller Washer	S.S., AISI-303
Base/Stand Type	Steel Base / Cast Iron	Impeller Key	Steel, AISI 1045
Bushing	Vesconite	Coupling Options	Rigid Aluminum Axially Split Coupling
Wear Ring Material	Vesconite	Pump Coatings	Standard Paint
Seal Type	Type 21	Seal Material	Ceramic/Carbon/Buna
O-Rings	Buna N	Casing	Cast Iron, ASTM-A48, CL 30
Backplate/Seal Plate	Cast Iron, ASTM-A48, CL 30	Seal Flush Options	External Flush, plastic tubing
Gaskets	Vegetable Fiber	Motor Bracket	Cast Iron, ASTM-A48, CL 30
Casing Bolts	Steel, Grade 5	Impeller	Stainless Steel, AISI-304
Impeller Cap Screw	S.S., AISI-303		

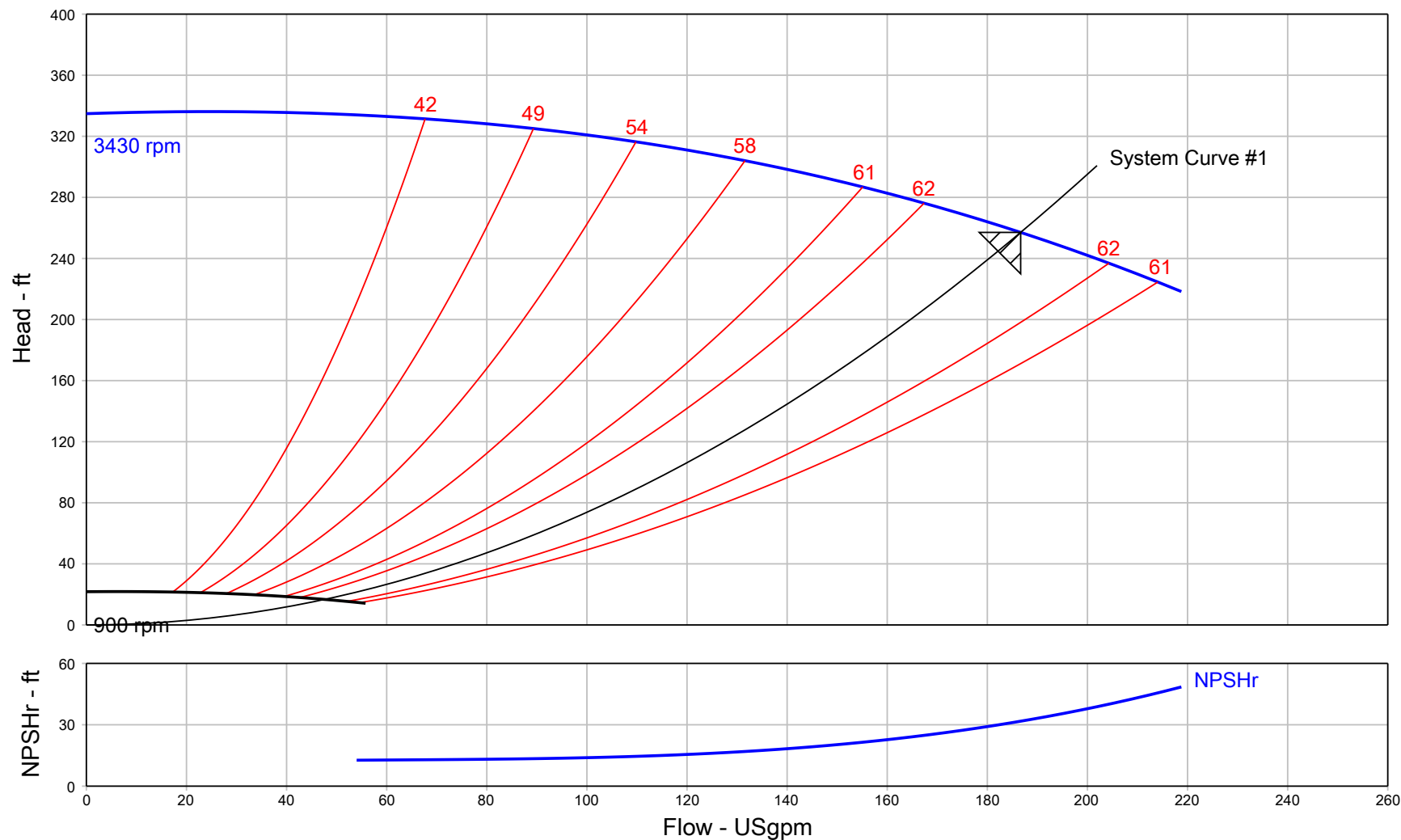
* All materials based on STANDARD configuration

Pump Performance Curve



Customer	:	Model	: 15951-2P-20HP LCSE
Customer ref. / PO	:	Stages	: 1
Tag Number	: Hurley Engineering	Speed, rated	: 3430 rpm
Service	: HYDRONIC	Based on curve number	: RC1949-SS-9.06 Rev 0
Quantity	: 1	Efficiency	: 62.65 %
Quote Number / ID	: 1141840	Rated power (based on duty point)	: 19.33 hp
Date last saved	: 03/27/2020 3:57 PM	NPSH required	: 31.74 ft
Flow, rated	: 186.7 USgpm	Viscosity	: 1.00 cP
Differential head / pressure, rated	: 257.1 ft	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
Fluid density, rated / max	: 1.000 / 1.000 SG	Impeller diameter, rated	: 9.06 in
		PEI (VL)	: 0.49
		ER (VL)	: 51

Pump Performance Curve

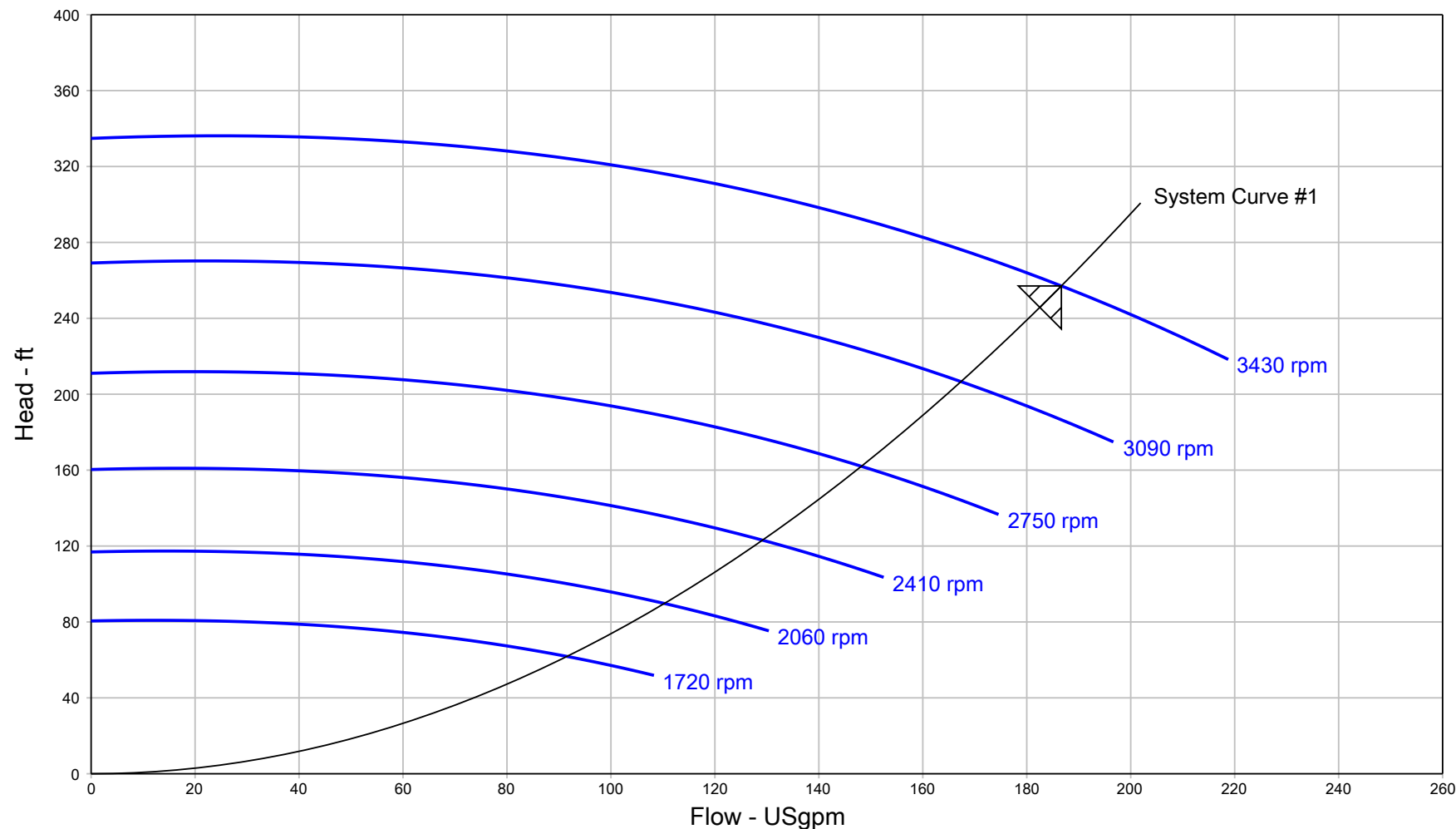


Project name : LCSE Project NC
 Consulting engineer :
 Customer :
 Customer ref. / PO :
 Quote Number / ID : 1141840
 Date last saved : 03/27/2020 3:57 PM
 Based on curve number : RC1949-SS-9.06 Rev 0

Tag Number : Hurley Engineering
 Service : HYDRONIC
 Model : 15951-2P-20HP LCSE
 Quantity : 1
 Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY
 Quoted By (Sales Engineer) : Steven Leingang
 Stages : 1
 Speed, rated : 3430 rpm

Flow, rated : 186.7 USgpm
 Differential head / pressure, rated : 257.1 ft
 Rated power (based on duty point) : 19.33 hp
 Max power (non-overloading) : 19.99 hp
 Efficiency : 62.65 %
 Impeller diameter, rated : 9.06 in
 PEI (VL) : 0.49
 ER (VL) : 51

Multi-Speed Performance Curve



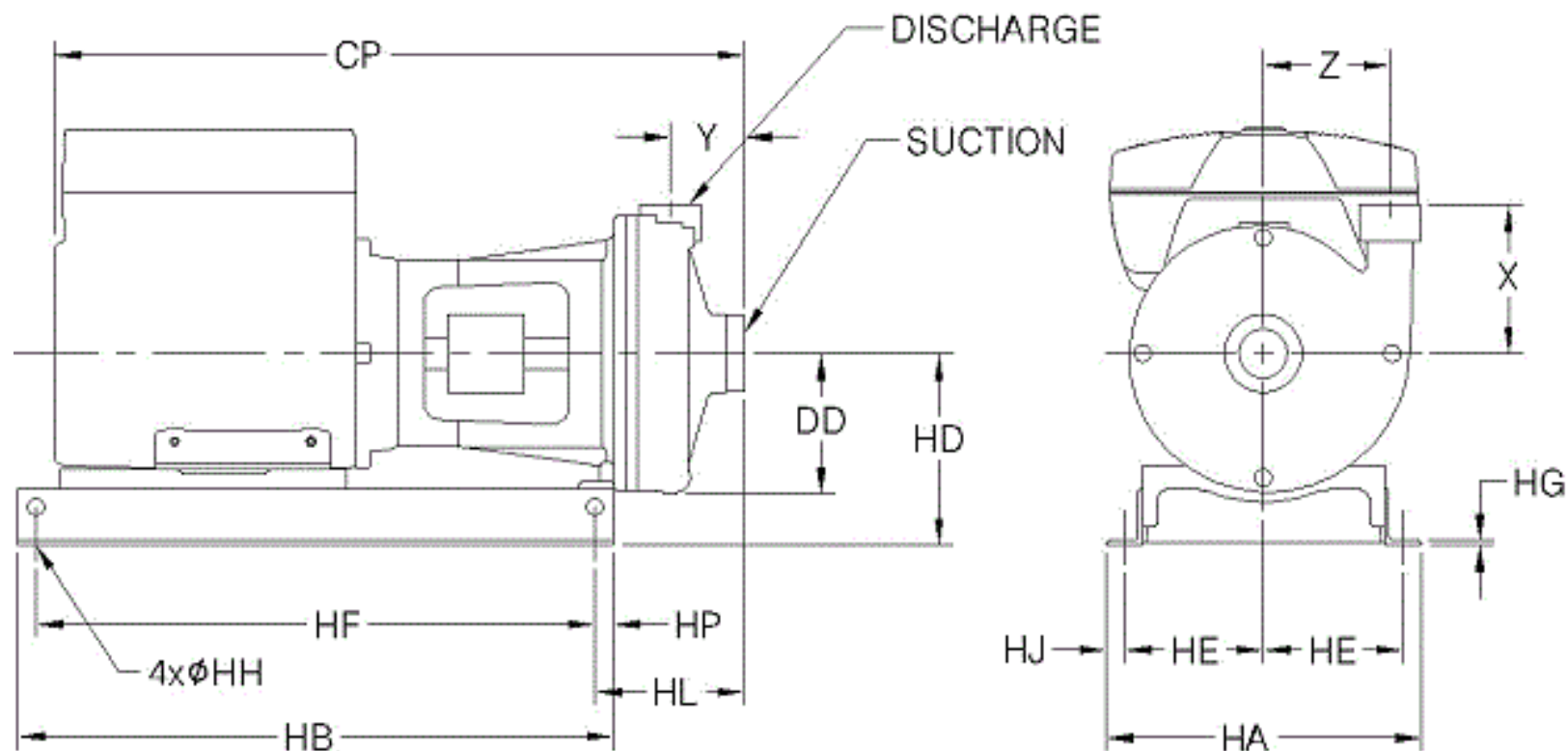
Project name	: LCSE Project NC	Tag Number	: Hurley Engineering	Speed, rated	: 3430 rpm
Consulting engineer	:	Service	: HYDRONIC	Flow, rated	: 186.7 USgpm
Customer	:	Model	: 15951-2P-20HP LCSE	Differential head / pressure, rated	: 257.1 ft
Customer ref. / PO	:	Quantity	: 1	Fluid density, rated / max	: 1.000 / 1.000 SG
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY	Viscosity	: 1.00 cP
Date last saved	: 03/27/2020 3:57 PM	Quoted By (Sales Engineer)	: Steven Leingang	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	: 1.00 / 1.00 / 1.00 / 1.00
		Stages	: 1	Based on curve number	: RC1949-SS-9.06 Rev 0

Construction Datasheet

Project name : LCSE Project NC				Tag Number : Hurley Engineering	
Consulting engineer :				Service : HYDRONIC	
Customer : HURLEY ENGINEERING COMPANY				Model : 15951-2P-20HP LCSE	
Customer ref. / PO :				Quantity : 1	
Quote Number / ID : 1141840				Quoted By (Sales Office) : HURLEY ENGINEERING COMPANY	
Date last saved : 03/27/2020 3:57 PM				Quoted By (Sales Engineer) : Steven Leingang	
Construction				Motor Information	
Nozzle	Size (in.)	Nozzle Configuration	Pos'n	Manufacturer	: Grundfos MLE
Suction	2	NPS	-	Frame Size	: 256TC
Discharge	1.5	NPS	-	Power	: 20.00 hp
Orientation / Configuration : Horizontal				RPM	: 3600 rpm
Rotation : Clockwise				Enclosure	: TEFC
Wear Ring Configuration : Single - Case				Operating Power Supply	: 460/3/60
Discharge Elbow Size : -				Efficiency	: Premium
Subplate : -				Service factor	: 1.15
Sump Depth (feet) : -				Motor Application	: Suitable for Variable Speed Drive
Bearing Frame : -				Motor Options/Accessories	: -
Bearing Frame Foot : -				Cord Length (feet)	: -
Bearing Type (Radial/Thrust) : -				Materials	
Bearing Lubrication : -				Case	: Cast Iron, ASTM A48 - Class 30
Thrust Bearing : -				Motor Bracket	: Cast Iron, ASTM-A48, CL 30
Intermediate Bearing : -				Impeller	: Stainless Steel, AISI-304 (H304)
Lower Bearing : -				Impeller Cap Screw and Washer	: Stainless Steel, AISI-303
Bearing Housing Accessories : -				Impeller Key	: Stainless Steel, AISI 316
PACO Construction code : 24-15951-14036A-2511MS1				Case wear ring	: Vesconite
Baseplate, Coupling and Guard				Impeller wear ring	: -
Baseplate : Welded Steel Fabrication				Pump Shaft	: Stainless Steel, AISI-303
Drip Pan : No drip pan				Sleeve	: -
Coupling : Rigid, Axial Split Coupling (aluminum) RASC3				Line Shaft	: -
Guard : OSHA Approved				Column	: -
Seal & Packing Construction				Discharge Pipe	: -
Sealing Method : Single Seal, Type 21				Discharge Elbow	: -
Seal Material : Buna Carbon Ceramic SS-Spring and Hardware				Suction Elbow	: -
Packing Gland : -				Subplate	: -
Lantern Ring : -				Hardware	: Steel, Grade 5
Recirculation Lines : Nylon Tubing with Brass Fittings				O Rings	: Buna N
Weights (Approx.)				Pump Coatings	: Standard Manufacturer's Paint
Pump : 70.00 lb					
Baseplate : 61.00 lb					
Driver : 307.0 lb					
Estimated Shipping gross weight : 438.0 lb					

General Arrangement

Project name	: LCSE Project NC	Tag Number	: Hurley Engineering
Consulting engineer	:	Service	: HYDRONIC
Customer	: HURLEY ENGINEERING COMPANY	Model	: 15951-2P-20HP LCSE
Customer ref. / PO	:	Quantity of pumps	: 1
Quote Number / ID	: 1141840	Quoted By (Sales Office)	: HURLEY ENGINEERING COMPANY
Date last saved	: 03/27/2020 3:57 PM	Quoted By (Sales Engineer)	: Steven Leingang



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Units	Frame	Suct(in)	Disch(in)	CP	DD	HA	HB	HD	HE	HF	HG	HH	HJ	HL	HP	X	Y	Z	Weight ea
inches	256TC	2	1.5	38.00	6.00	17.00	32.00	9.50	7.50	30.00	0.25	0.63	1.00	6.45	1.00	6.00	3.63	5.38	438.0

Conditions of Service				Motor Data					
Flow: 186.7 USgpm	Fluid: Cold Water	HP: 20	Encl: TEFC	Phase: 3	Efficiency: Premium				
TDH: 257.1 ft	Temp.: 68.00 deg F	RPM: 3530 rpm	Hz: 60	Voltage: 460	S.F.: 1.15				