

# ASME B73

## Centrifugal Pump Data Sheet

Rev No.: \_\_\_\_\_ Rev Date: \_\_\_\_\_

Issue Date  
November 2019ASME Centrifugal Pumps (US Customary Units)  
ASME B73.1, ASME B73.2

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Usage key - data provided by:  Purchaser  Supplier  Supplier if not by purchaser1 Issued for:  Proposal  Purchase  As built

2 Facility name / location: \_\_\_\_\_ P&amp;ID number: \_\_\_\_\_

3 Item name: \_\_\_\_\_ Purchaser / location: \_\_\_\_\_

4 Item tag number: \_\_\_\_\_ Job number: \_\_\_\_\_

5 Service: \_\_\_\_\_ Purchaser order number: \_\_\_\_\_

6 Unit: \_\_\_\_\_ Supplier / location: \_\_\_\_\_

7 Number of pumps required: \_\_\_\_\_ Supplier order / serial numbers: \_\_\_\_\_ /

 **GENERAL**9  Pump size: \_\_\_\_\_ Driver item number: \_\_\_\_\_10  Pump model: \_\_\_\_\_ Driver provided by: \_\_\_\_\_11  Pump type:  Horizontal End Suction  Vertical In-line  Repeller Driver mounted by: \_\_\_\_\_12  Recessed Impeller  Self Priming  Low Flow Variable speed operation  YES  NO13  **Operating Conditions**  **Performance**14 

	Rated	Maximum	Normal	Minimum	Other	
15 Flow:						(gpm)
16 <sup>1</sup> At flow designated above						
17 Head <sup>1</sup> :						(ft)
18 NPSHA <sup>1</sup> :						(ft)
19 Suct pres <sup>1</sup> :						(psig)

15 Flow: \_\_\_\_\_ (gpm)

16 <sup>1</sup> At flow designated above17 Head<sup>1</sup>: \_\_\_\_\_ (ft)18 NPSHA<sup>1</sup>: \_\_\_\_\_ (ft)19 Suct pres<sup>1</sup>: \_\_\_\_\_ (psig)

20

21 System design:

22 Suction pressure: min. / max.: \_\_\_\_\_ / \_\_\_\_\_ (psig)

23 Suction temperature: min. / max.: \_\_\_\_\_ / \_\_\_\_\_ (°F)

24  Stand alone operation25  Parallel operation with item no.: \_\_\_\_\_26  Series operation with item no.: \_\_\_\_\_

27 Service:

28  Continuous  Intermittent: \_\_\_\_\_ starts/day

29 System control method:

30  Speed  Throttle  System Resistance Only

31

32  **Pumped Fluid**  **Site Conditions and Utilities**33 Pumped fluid: \_\_\_\_\_ Location:  Indoor  Outdoor Altitude: \_\_\_\_\_ (ft)34 

	Rated	Maximum	Normal	Minimum	
35 Pumping temperature:					(°F)
36 <sup>2</sup> At pumping temperatures designated above					
37 Specific gravity <sup>2</sup> :					
38 Vapor pressure <sup>2</sup> :					(psia)
39 Viscosity <sup>2</sup> :					(cP)
40 Specific heat <sup>2</sup> :					(Btu/lb °F)

35 Pumping temperature: \_\_\_\_\_ (°F)

36 <sup>2</sup> At pumping temperatures designated above37 Specific gravity<sup>2</sup>: \_\_\_\_\_38 Vapor pressure<sup>2</sup>: \_\_\_\_\_ (psia)39 Viscosity<sup>2</sup>: \_\_\_\_\_ (cP)40 Specific heat<sup>2</sup>: \_\_\_\_\_ (Btu/lb °F)

41 Atm pressure boiling point: \_\_\_\_\_ (°F) @ \_\_\_\_\_ (psia)

42 Liquid:  Hazardous  Flammable pH \_\_\_\_\_43  Other: \_\_\_\_\_44 Fluid Rating System:  NFPA 704  HMIS

45 Health: \_\_\_\_\_ Flammability: \_\_\_\_\_ Instability: \_\_\_\_\_

46 Corrosion / erosion caused by: \_\_\_\_\_

47 % solids: \_\_\_\_\_  % Volume  % Weight

48 Max. particle size: \_\_\_\_\_ (in)

49 Other: \_\_\_\_\_

50

51

52

53

Performance curve number: \_\_\_\_\_

 Speed: \_\_\_\_\_ (rpm)  B73 curve speed  Job driver nameplate

Maximum differential head @ rated impeller: \_\_\_\_\_ (ft)

<sup>3</sup> at specified flowHead<sup>3</sup>: \_\_\_\_\_ (ft)NPSHR<sup>3</sup>: \_\_\_\_\_ (ft)Speed(if variable)<sup>3</sup>: \_\_\_\_\_ (rpm)

Minimum continuous stable flow: \_\_\_\_\_ (gpm)

Allowable operating region: \_\_\_\_\_ to: \_\_\_\_\_ (gpm)

Best efficiency point for rated impeller: \_\_\_\_\_ (gpm)

Suction specific speed: \_\_\_\_\_

Impeller diameter Rated: \_\_\_\_\_ Max: \_\_\_\_\_ Min: \_\_\_\_\_ (in)

Pump rated power: \_\_\_\_\_ (BHP) Efficiency: \_\_\_\_\_ (%)

Maximum power with rated impeller: \_\_\_\_\_ (BHP)

**Case pressure rating:**

Maximum allowable working pressure: \_\_\_\_\_ (psig) @ \_\_\_\_\_ (°F)

Hydrostatic test pressure: \_\_\_\_\_ (psig)

31

32  **Pumped Fluid**  **Site Conditions and Utilities**Location:  Indoor  Outdoor Altitude: \_\_\_\_\_ (ft)

Range of ambient temperatures: min. / max.: \_\_\_\_\_ / \_\_\_\_\_ (°F)

Area classification:  Nonhazardous

Cl: \_\_\_\_\_ Div or Zone: \_\_\_\_\_ Gr: \_\_\_\_\_ T Code: \_\_\_\_\_

Electricity

Drivers

Heating

Cooling water: Source: \_\_\_\_\_

Supply temp.: \_\_\_\_\_ (°F) Max. return temp.: \_\_\_\_\_ (°F)

Supply pressure: \_\_\_\_\_ (psig) Design press.: \_\_\_\_\_ (psig)

Min. return press.: \_\_\_\_\_ (psig) Max. allow. D.P.: \_\_\_\_\_ (psi)

Chloride concentration: \_\_\_\_\_ (ppm)

 **General Remarks**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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Number

Date

Data Revision Description

By

Approved

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Usage key - data provided by:  Purchaser  Supplier  Supplier if not by purchaser**1 Mechanical Data**

2  **Impeller Type:**

3  Closed  Open  Semi-open

4  **Casing Mounting:**

5  Foot  Centerline  Vertical

6  **Bearings:**

7  Bearing manufacturer: \_\_\_\_\_

8 Radial bearing type: \_\_\_\_\_ No.: \_\_\_\_\_

9 Thrust bearing type: \_\_\_\_\_ No.: \_\_\_\_\_

10  Bearing isolators:  Labyrinth (standard)  Magnetic seal

11 Manufacturer: \_\_\_\_\_

12  **Lubrication:**

13  Oil bath  Pure mist  Shielded (grease)

14  Grease  Purge mist  Sealed (grease)

15  Magnetic drain plug in housing  Oil cooler

16  Oil viscosity: \_\_\_\_\_ ISO grade: \_\_\_\_\_ Other: \_\_\_\_\_

17  **Nozzle Connections:**

	Size	Rating	Facing
18 Suction:			
19 Discharge:			

20  **Aux. case connection:**  Drain

21  Size: \_\_\_\_\_ NPT / NPS

22  Threaded  Welded and flanged

**23 MATERIALS**

24 Material class code: \_\_\_\_\_

25 Casing: \_\_\_\_\_

26 Impeller: \_\_\_\_\_

27 Cover: \_\_\_\_\_

28 Shaft: \_\_\_\_\_

29 Shaft sleeve: \_\_\_\_\_

30 Baseplate: \_\_\_\_\_

31 Casing gasket: \_\_\_\_\_

32 Impeller o-ring / gasket: \_\_\_\_\_

33 Casing fasteners: \_\_\_\_\_

34 Gland fasteners: \_\_\_\_\_

35 Bearing housing: \_\_\_\_\_

36 Bearing housing adapter: \_\_\_\_\_

37 Bearing isolators: \_\_\_\_\_

38 Coupling guard: \_\_\_\_\_

39 Mechanical seal materials - see page 3

**40 Coupling Between Pump and Driver**

41 Specification: \_\_\_\_\_

42 Manufacturer: \_\_\_\_\_

43 Type: \_\_\_\_\_

44 Model / Size: \_\_\_\_\_

45 Spacer length: \_\_\_\_\_ (in)

46  Coupling balanced to ISO 21940-11, grade G6.3

47  Straight bore hub with interference fit

48 Coupling guard type:

49  Pump supplier's standard ASME B73 Guard

50  Purchaser Specification: \_\_\_\_\_

51  Non-spark coupling guard

52 Remarks: \_\_\_\_\_

53 \_\_\_\_\_

54 \_\_\_\_\_

55 \_\_\_\_\_

56 \_\_\_\_\_

**Driver**

Power rating: \_\_\_\_\_ (HP) Speed: \_\_\_\_\_ (rpm)

Drive HP selected for max. S.G. \_\_\_\_\_ & max. visc.: \_\_\_\_\_ (cP)

Driver specification: \_\_\_\_\_

Driver manufacturer: \_\_\_\_\_

Driver enclosure: \_\_\_\_\_ Driver frame: \_\_\_\_\_

Remarks: \_\_\_\_\_

**Baseplate**

Type:  Grouted

Concrete filled (non-metallic pedestal baseplate)

Free standing  Pump CL to foundation \_\_\_\_\_ (in)

Vertical in-line pump case support bracket

Design:  Purchaser specification \_\_\_\_\_

ASME B73 standard

Industrial duty grouted fabricated steel

Non-metallic

Cast iron

Remarks: \_\_\_\_\_

**Paint, Shipment, and Storage Preparation**

Paint:  Pump supplier's standard

Other: \_\_\_\_\_

Shipment:  Domestic  Export  Export boxing

Storage:  Outside  Under roof  Environmentally controlled

Short term  Long term (>3 months)

Environment: \_\_\_\_\_

Supplier's standard preservation specification

Purchaser storage specification: \_\_\_\_\_

Unit shipping weight: \_\_\_\_\_ (lbs)

**Tests and Inspections**

Test:	Non-witnessed	Witnessed	Certificate
Hydrostatic:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leak:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NPSHR:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Opt perf acceptance criteria:  Power  Efficiency  Neither

Additional data:  Vibration  Brg temp

Other perf. data: \_\_\_\_\_

Final inspection Days notification required: \_\_\_\_\_

Dismantle and inspect after test

Casting repair procedure approval required

Statement of Compliance

Certified Mill Test Reports:

Casing  Cover  Impeller  Shaft

Other: \_\_\_\_\_

Inspection required for connection welds and castings:

Manufacturer's standard  Level 1  Level 2  Level 3

Other: \_\_\_\_\_

Remarks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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Usage key - data provided by:

 Purchaser Supplier Supplier if not purchaser

1  **Shaft Sealing**     Mechanical seal     Packing  
2    Furnished by     Supplier     Purchaser  
3    Installed by     Supplier     Purchaser

4  **Seal Chamber**     Taper bore     Large cylindrical bore  
5     Universal cover     Packing box  
6    Throat bushing     None     Fixed bushing  
7     Floating bushing  
8    Throat bushing material \_\_\_\_\_  
9    Jacketed seal chamber/packing box     Yes     No  
10    For     Heating     Cooling  
11    Remarks \_\_\_\_\_  
12

13  **Mechanical Seal**     Cartridge     Component  
14    (ref. Annex ii)     Arrangement 1 (single seal)  
15     Arrangement 2 (dual unpressurized seal)  
16     Arrangement 3 (dual pressurized seal)  
17    Flexible element     Rotating     Stationary  
18    B73.1 or B73.2 Mand. App. II configuration code: \_\_\_\_\_  
19    API 682 Category 1     Yes     No  
20    Manufacturer \_\_\_\_\_  
21    Model \_\_\_\_\_  
22    Manufacturer code \_\_\_\_\_  
23    Drawing number \_\_\_\_\_  
24    Remarks \_\_\_\_\_  
25

26  **Seal Materials - Single or Inner Seal**

27    Seal faces    Rotating face    \_\_\_\_\_  
28       Stationary face    \_\_\_\_\_  
29    Secondary seals    Rotating face    \_\_\_\_\_  
30       Stationary face    \_\_\_\_\_  
31       Sleeve    \_\_\_\_\_  
32    Springs \_\_\_\_\_ Bellows \_\_\_\_\_  
33    Metal parts \_\_\_\_\_  
34    Remarks \_\_\_\_\_  
35

36  **Seal Materials - Outer Seal**

37    Seal faces    Rotating face    \_\_\_\_\_  
38       Stationary face    \_\_\_\_\_  
39    Secondary seals    Rotating face    \_\_\_\_\_  
40       Stationary face    \_\_\_\_\_  
41       Sleeve    \_\_\_\_\_  
42    Springs \_\_\_\_\_ Bellows \_\_\_\_\_  
43    Metal parts \_\_\_\_\_  
44    Remarks \_\_\_\_\_  
45

46  **Seal Gland**    Material \_\_\_\_\_

47    Ports     Flush     Drain     Vent     Quench  
48        Buffer/barrier fluid inlet     Buffer/barrier fluid outlet  
49    Throttle bushing     Yes     No  
50    Throttle bushing material \_\_\_\_\_  
51    Remarks \_\_\_\_\_

**Flush Plan - Single or Inner Seal**

Piping plan number(s): \_\_\_\_\_  
External flush fluid \_\_\_\_\_  
Supply temperature    Min \_\_\_\_\_ Max \_\_\_\_\_ (°F)  
Specific gravity \_\_\_\_\_ Specific heat \_\_\_\_\_ (Btu/lb °F)  
Vapor pressure \_\_\_\_\_ psia @ \_\_\_\_\_ (°F)  
Flow rate required    Min \_\_\_\_\_ Max \_\_\_\_\_ (gpm)  
Maximum flow rate allowed by process \_\_\_\_\_ (gpm)  
Pressure required    Min \_\_\_\_\_ Max \_\_\_\_\_ (psig)  
Maximum pressure allowed by process \_\_\_\_\_ (psig)  
Temperature required    Min \_\_\_\_\_ Max \_\_\_\_\_ (°F)  
Inner seal flush plan piping     Tube     Pipe  
     Other \_\_\_\_\_  
Tube/pipe size \_\_\_\_\_  
Tube/pipe material     316 SS     Other \_\_\_\_\_  
Tube/pipe specification \_\_\_\_\_  
Tube/pipe connections     Threaded     Socket weld  
     Unions     Butt weld     Tube fitting  
     Other \_\_\_\_\_  
Furnished by     Supplier     Purchaser  
Remarks \_\_\_\_\_

**Flush Plan - Outer Seal**

Piping plan number(s): \_\_\_\_\_  
External flush fluid \_\_\_\_\_  
Supply temperature    Min \_\_\_\_\_ Max \_\_\_\_\_ (°F)  
Specific gravity \_\_\_\_\_ Specific heat \_\_\_\_\_ (Btu/lb °F)  
Vapor pressure \_\_\_\_\_ psia @ \_\_\_\_\_ (°F)  
Flow rate required    Min \_\_\_\_\_ Max \_\_\_\_\_ (gpm)  
Maximum flow rate allowed by process \_\_\_\_\_ (gpm)  
Pressure required    Min \_\_\_\_\_ Max \_\_\_\_\_ (psig)  
Maximum pressure allowed by process \_\_\_\_\_ (psig)  
Temperature required    Min \_\_\_\_\_ Max \_\_\_\_\_ (°F)  
MAWP Flush plan    \_\_\_\_\_ psig @ min temp \_\_\_\_\_ (°F)  
    \_\_\_\_\_ psig @ max temp \_\_\_\_\_ (°F)  
Outer seal flush plan piping     Tube     Pipe  
     Other \_\_\_\_\_  
Tube/pipe size \_\_\_\_\_  
Tube/pipe material     316 SS     Other \_\_\_\_\_  
Tube/pipe specification \_\_\_\_\_  
Tube/pipe connections     Threaded     Socket weld  
     Unions     Butt weld     Tube fitting  
     Other \_\_\_\_\_  
Furnished by     Supplier     Purchaser  
Remarks \_\_\_\_\_

**Quench**     Yes     No

Quench fluid \_\_\_\_\_  
Flow rate \_\_\_\_\_  
Remarks \_\_\_\_\_

