Flowserve Flow Solutions Group

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Customer Document title:

Flowserve Hydraulic Data Sheet

Flowserve Document title:	**Flowserve Hydraulic Data Sheet**
Flowserve Document No.:	**1400944-015-5008-01**
Document Revision No.:	**A**
Flowserve Order No.:	**1400944**
Flowserve Serial No.:	**1400944CHP015A/D**
Pump Type/Size:	**MARK 3 STANDARD / 2K6X4-10HRV**
Quantity:	**4**
Customer Name:	**DESMET BALLESTRA NORTH AMERICA**
Customer Tag No:	**DESMET TAG#:P650/81C.1-1,World Energy TAG#: 19-P-777A,DESMET TAG#:P650/81C.1-2, World Energy TAG#: 19-P-777B, DESMET TAG#: P650/81C.2-1,World Energy TAG#:19-P-877A, DESMET TAG#:P650/81C.2-2,World Energy#: 19-P-877B**
Customer PO No.:	**28493**
End User:	**DESMET BALLESTRA NORTH AMERICA**

Please complete and return:			
Document Reviewed by:		**Document Reviewed date:**	

☐ **APPROVED**. NO ACTION REQUIRED
☐ **APPROVED**. **RE-SUBMIT AS FINAL.**
☐ **APPROVED WITH COMMENTS**. DOCUMENT WILL BE MODIFIED AND RESUBMITTED AS FINAL.
☐ **REJECTED**. CORRECT AND RE-SUBMIT FOR APPROVAL.
☐ **FOR INFORMATION**. REVIEW NOT REQUIRED
☐ **AS-BUILT**

- **Return any documents sent for review with your comments by the stated return date. All documents not returned two weeks after requested Return date will be considered Approved, no action.**
- **Purchaser's comments and/or corrections within the scope of contract will be made on the first completed document submitted by Flowserve Corp. and returned.**
- **Corrections, alterations, additions and/or modifications outside scope of contract or made after first submittal may require an additional engineering service charge.**
- **Items conditionally approved or with deferred approval by purchaser must be specifically stated otherwise delivery may be affected.**

Rev	Revision Description	Released	Release Date
	For Information	Morris, Tamika	04-Feb-22

Hydraulic Datasheet

Customer	: DESMET PROCESS & TECHNOLO...	Pump / Stages	: 2K6x4-10HRV M3 ST / 1
Customer reference	: WORPAR	Based on curve no.	: MIII8385AV
Item number	: P650/81C.1-1, 1-2, 2-1, 2-2	Flowserve reference	: 1989206898
Service	: Tempered Water	Date	: August 26, 2021

Operating Conditions

Capacity (rated/normal)	: 835.1 USgpm / -
Water capacity (CQ=1.00)	: -
Total developed head	: 52.49 ft
Water head (CH=1.00)	: -
NPSHa/NPSHa less margin	: 26.3 ft / -
Maximum suction pressure	: 0.0 psig

Liquid

Liquid type	: Other
Liquid description	: Tempered Water
Temperature	: 113 °F
Density / Specific gravity	: - / 0.990
Solid Size - Actual / Limit	: - / 0.5630 in
Viscosity / Vapor pressure	: 0.60 cP / -

Water

Materials / Specification

Material column code	: DCI
Pump specification	: ANSI B73.1

Other Requirements

Hydraulic selection : No specification
Construction : No specification
Test tolerance : ANSI/HI 14.6 Grade 1B
Driver Sizing : Max Power (SO to EOC) not using SF
Seal configuration : Single Seal

Performance

Hydraulic power	: 11.0 hp	Impeller diameter	
Pump speed	: 1,780 rpm	Rated	: 8.06 in
Pump overall efficiency (CE=1.00)	: 74.9 %	Maximum	: 10.00 in
NPSH required (NPSH3)	: 13.3 ft	Minimum	: 6.50 in
Rated brake power	: 14.6 hp	Ns / Nss	: 1,922 / 9,070 (US units)
		Minimum continuous flow	: 178.6 USgpm
Maximum brake power	: 15.9 hp	Maximum head at rated diameter	: 63.44 ft
Driver power rating	: 20.0 hp / 14.9 kW	Flow at BEP	: 819.3 USgpm
Casing working pressure	: 27.2 psig	Flow as % of BEP	: 101.9 %
(based on shut off @ cut dia/rated SG)		Efficiency at normal flow	: -
Maximum allowable	: 248.1 psig	Impeller diameter ratio (rated/max)	: 80.6 %
Hydrostatic test pressure	: 375.0 psig	Head rise to shut off	: 20.9 %
Estimated rated seal chamber pressure	: 4.8 psig	Total head ratio (rated / max) / (max / rated)	: 50.0 % / 200.1 %

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.