



Customer Document title:

Flowserve Hydraulic Data Sheet

Flowserve Document title: **Flowserve Hydraulic Data Sheet**Flowserve Document No.: **1400944-002-5008-01**Document Revision No.: **A**Flowserve Order No.: **1400944**Flowserve Serial No.: **1400944CHP002A/D**Pump Type/Size: **MARK 3 STANDARD / 2K4X3-10OP**Quantity: **4**Customer Name: **DESMET BALLESTRA NORTH AMERICA**

Customer Tag No: DESMET TAG#: PW502.1/1, WORLD ENERGY TAG#: 19-P-754A, DESMET TAG#: PW502.1/2, WORLD ENERGY TAG #: 19-P-754B, DESMET TAG#: PW502.2/1, WORLD ENERGY TAG#: 19-P-854A, DESMET TAG#: PW502.2/2, WORLD ENERGY TAG#: 19-P-854B

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

Customer	: DESMET PROCESS & TECHNOLO...	Pump / Stages	: 2K4x3-10OP M3 ST	/ 1
Customer reference	: WORPAR	Based on curve no.	: MIII7885AV	
Item number	: PW502.1/1, 1/2, 2/1, 2/2	Flowserve reference	: 1989206898	
Service	: Degummed Oil Surge	Date	: August 25, 2021	
Operating Conditions		Materials / Specification		
Capacity (rated/normal)	: 445.7 USgpm / -	Material column code	: D4	
Water capacity (CQ=1.00)	: 446.6 USgpm	Pump specification	: ANSI B73.1	
Total developed head	: 273.00 ft	Other Requirements		
Water head (CH=1.00)	: 273.53 ft	Hydraulic selection	: No specification	
NPSHa/NPSHa less margin	: 35.7 ft / -	Construction	: No specification	
Maximum suction pressure	: 0.0 psig	Test tolerance	: ANSI/HI 14.6 Grade 1B	
Liquid		Driver Sizing	: Max Power (SO to EOC) not using SF	
Liquid type	: Other	Seal configuration	: Single Seal	
Liquid description	: Degummed Oil Surge	Veg Oil / Animal Fat		
Temperature	: 173 °F	Driver selection will not support any significant increase in impeller size		
Density / Specific gravity	: - / 0.887			
Solid Size - Actual / Limit	: - / 0.5630 in			
Viscosity / Vapor pressure	: 13.08 cP / -			
Performance				
Hydraulic power	: 27.3 hp	Impeller diameter		
Pump speed	: 3,550 rpm	Rated	: 8.88 in	
Pump overall efficiency (CE=0.95)	: 65.3 %	Maximum	: 10.00 in	
NPSH required (NPSH3)	: 11.7 ft	Minimum	: 6.00 in	
Rated brake power	: 41.7 hp	Ns / NSS	: 1,083 / 11,220 (US units)	
Maximum brake power	: 51.5 hp	Minimum continuous flow	: 154.4 USgpm	
Driver power rating	: 60.0 hp / 44.7 kW	Maximum head at rated diameter	: 312.22 ft	
Casing working pressure (based on shut off @ cut dia/rated SG)	: 119.9 psig	Flow at BEP	: 502.0 USgpm	
Maximum allowable	: 245.9 psig	Flow as % of BEP	: 88.8 %	
Hydrostatic test pressure	: 413.0 psig	Efficiency at normal flow	: -	
Estimated rated seal chamber pressure	: 19.2 psig	Impeller diameter ratio (rated/max)	: 88.8 %	
		Head rise to shut off	: 14.4 %	
		Total head ratio (rated / max) / (max / rated)	: 72.9 % / 137.1 %	

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.

