



Customer Document title:

## Flowserve Hydraulic Data Sheet

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Flowserve Document No.: **1400944-013-5008-01**

Document Revision No.: **A**

Flowserve Order No.: **1400944**

Flowserve Serial No.: **1400944CHP013A/D**

Pump Type/Size: **MARK 3 STANDARD / 2K4X3-10RV**

Quantity: **4**

Customer Name: **DESMET BALLESTRA NORTH AMERICA**

Customer Tag No: **DESMET TAG#: PW582D.1/1, World Energy TAG#:19-P-773A, DESMET TAG#: PW582D.1/2, World Energy TAG#:19-P-773B, DESMET TAG#:PW582D.2/1, World Energy TAG#:19-P-873A, DESMET TAG#: PW582D.2/2, World Energy TAG#:19-P-873B**

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	: 2K4x3-10RV M3 ST	/ 1
Customer reference	: WORPAR	Based on curve no.	: MIII7901FV	
Item number	: PW582D.1/1, 1/2, 2/1, 2/2	Flowserve reference	: 1989206898	
Service	: Oil Collecting Tank Disch.	Date	: August 26, 2021	

	Unit	Oil Collecting Tank ...	Alternate 1	Alternate 2	-			
<b>Operating Conditions</b>								
Capacity	USgpm	447.3	350.0	250.0	-			
Water capacity / CQ	USgpm	452.6 / 0.99	355.5 / 0.98	255.1 / 0.98	- / -			
Normal capacity	USgpm	-	-	-	-			
Total developed head	ft	190.00	131.00	92.00	-			
Water head / CH	ft	192.10 / 0.99	132.87 / 0.99	93.54 / 0.98	- / -			
NPSH available (NPSHa)	ft	31.9	31.9	31.9	-			
NPSHa less NPSH margin	ft	-	-	-	-			
Maximum suction pressure	psig	0.0	0.0	0.0	-			
Rated suction pressure	psig	0.0	0.0	0.0	-			
<b>Liquid</b>								
Liquid type		Other	Other	Other	-			
Liquid description		Oil Collecting Tank D...	Oil Collecting Tank D...	Oil Collecting Tank D...	-			
Temperature / Specific gravity	°F/	122 / 0.900	122 / 0.900	122 / 0.900	- / -			
Solid Size - Actual / Limit	in/in	- / 0.6560	- / 0.6560	- / 0.6560	- / -			
Viscosity / Vapor pressure	cP/psia	25.14 / -	25.14 / -	25.14 / -	- / -			
<b>Performance</b>								
Actual head	ft	190.00	131.00	92.00	-			
Hydraulic power	hp	19.3	10.4	5.23	-			
Pump speed	rpm	2,548	2,103	1,737	-			
Pump overall efficiency (CE=0.90)	%	62.0	59.5	54.7	-			
NPSH required (NPSH3)	ft	6.4	4.1	2.4	-			
Rated brake power	hp	31.2	17.5	9.57	-			
Maximum brake power	hp	39.6	22.8	13.2	-			
Driver power rating	hp / kW	60.0 hp / 44.7 kW	60.0 hp / 44.7 kW	60.0 hp / 44.7 kW	-			
Casing working pressure	psig	82.4	56.1	38.3	-			
(based on shut off @ cut dia/rated SG)								
Maximum allowable	psig	266.2	266.2	266.2	-			
Hydrostatic test pressure	psig	413.0	413.0	413.0	-			
Estimated rated seal chamber pressure	psig	5.9	5.9	5.9	-			
Impeller diameter, Rated	in	10.00	10.00	10.00	-			
Impeller diameter, Maximum/Minimum	in/in	10.00 / 6.00	10.00 / 6.00	10.00 / 6.00	- / -			
Ns / Nss	(US units)	1,111 / 13,010	1,111 / 13,010	1,111 / 13,010	- / -			
Minimum continuous flow	USgpm	143.2	118.2	97.6	-			
Maximum head at rated diameter	ft	211.51	144.08	98.30	-			
Flow at BEP	USgpm	483.1	398.8	330.1	-			
Flow as % of BEP	%	92.6	87.8	75.7	-			
Efficiency at normal flow	%				-			
Impeller diameter ratio (rated/max)	%	100.0	100.0	100.0	-			
Head rise to shut off	%	11.3	10.0	6.8	-			
Total head ratio (rated / max) / (max / rated)	%	69.0 / 145.0	46.1 / 216.9	31.9 / 313.8	- / -			
<b>Materials / Specification</b>								
Material column code	: D4	Pump specification	: ANSI B73.1					
<b>Other Requirements</b>								
Hydraulic selection : No specification			Seal configuration : Single Seal					
Construction : No specification								
Test tolerance : ANSI/HI 14.6 Grade 1B								
Variable Speed - Maximize Efficiency								
Driver Sizing : Max Power (SO to EOC) not using SF								