



Customer Document title:

## Flowserve Hydraulic Data Sheet

Flowserve Document title: **Flowserve Hydraulic Data Sheet**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**

DESMET TAG#: PW582D.1/1, World Energy TAG#: 19-P-773A, DESMET TAG#:

Customer Tag No: **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	<a href="#">Morris, Tamika</a>	04-Feb-22

Customer	: DESMET PROCESS & TECHNOLOGY			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	-			
Operating Conditions									
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	-				
Liquid									
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 / -	- / -				
Performance									
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)					Seems odd to provide 50% margin on driver size given full size impeller				
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	%	100.0	100.0	100.0	-				
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	- / -				
Materials / Specification									
Material column code	: D4		Pump specification	: ANSI B73.1					
Other Requirements									
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									