



Customer Document title:

Flowserve Hydraulic Data Sheet

Flowserve Document title: **Flowserve Hydraulic Data Sheet**Flowserve Document No.: **1400944-014-5008-01**Document Revision No.: **A**Flowserve Order No.: **1400944**Flowserve Serial No.: **1400944CHP014A/D**Pump Type/Size: **MARK 3 STANDARD / 2K6X4-10RV**Quantity: **4**Customer Name: **DESMET BALLESTRA NORTH AMERICA**

Customer Tag No: **DESMET TAG#:P6355.1/1,World Energy TAG#:19-P-752A, DESMET TAG#:P635S.1/2,World Energy TAG#:19-P-752B, DESMET TAG#: P635S.2/1,World Energy TAG#:19-P-852A, DESMET TAG#:P635S.2/2,World Energy TAG#:19-P-852B**

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.
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☐ **FOR INFORMATION.** REVIEW NOT REQUIRED
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- 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	: 2K6x4-10RV M3 ST	/ 1
Customer reference	: WORPAR	Based on curve no.	: MIII8382AV	
Item number	: P635S.1/1, 1/2, 2/1, 2/2	Flowserve reference	: 1989206898	
Service	: Silica Reactor Discharge	Date	: August 26, 2021	

	Unit	Silica Reactor Disc...	Alternate 1	Alternate 2	-			
Operating Conditions								
Capacity	USgpm	444.7	300.0	200.0	-			
Water capacity / CQ	USgpm	445.6 / 1.00	301.2 / 1.00	201.3 / 0.99	- / -			
Normal capacity	USgpm	-	-	-	-			
Total developed head	ft	92.00	53.77	35.05	-			
Water head / CH	ft	92.14 / 1.00	53.92 / 1.00	35.19 / 1.00	- / -			
NPSH available (NPSHa)	ft	35.8	35.8	35.8	-			
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		Silica Reactor Disch...	Silica Reactor Disch...	Silica Reactor Disch...	-			
Temperature / Specific gravity	°F/	185 / 0.880	185 / 0.880	185 / 0.880	- / -			
Solid Size - Actual / Limit	in/in	- / 0.6880	- / 0.6880	- / 0.6880	- / -			
Viscosity / Vapor pressure	cP/psia	11.42 / -	11.42 / -	11.42 / -	- / -			
Performance								
Actual head	ft	92.00	53.77	35.05	-			
Hydraulic power	hp	9.09	3.58	1.56	-			
Pump speed	rpm	1,667	1,263	1,011	-			
Pump overall efficiency (CE=0.96)	%	58.7	50.2	38.9	-			
NPSH required (NPSH3)	ft	3.3	1.7	1.0	-			
Rated brake power	hp	15.5	7.15	4.01	-			
Maximum brake power	hp	19.9	9.32	5.31	-			
Driver power rating	hp / kW	25.0 hp / 18.6 kW	25.0 hp / 18.6 kW	25.0 hp / 18.6 kW	-			
Casing working pressure	psig	37.4	21.5	13.8	-			
(based on shut off @ cut dia/rated SG)								
Maximum allowable	psig	241.2	241.2	241.2	-			
Hydrostatic test pressure	psig	413.0	413.0	413.0	-			
Estimated rated seal chamber pressure	psig	1.1	1.1	1.1	-			
Impeller diameter, Rated	in	10.00	10.00	10.00	-			
Impeller diameter, Maximum/Minimum	in/in	10.00 / 7.00	10.00 / 7.00	10.00 / 7.00	- / -			
Ns / Nss	(US units)	1,546 / 10,960	1,546 / 10,960	1,546 / 10,960	- / -			
Minimum continuous flow	USgpm	61.6	46.7	37.4	-			
Maximum head at rated diameter	ft	98.23	56.39	36.13	-			
Flow at BEP	USgpm	635.4	486.8	395.6	-			
Flow as % of BEP	%	70.0	61.6	50.6	-			
Efficiency at normal flow	%				-			
Impeller diameter ratio (rated/max)	%	100.0	100.0	100.0	-			
Head rise to shut off	%	6.8	4.9	3.1	-			
Total head ratio (rated / max) / (max / rated)	%	84.6 / 118.2	47.8 / 209.1	30.9 / 323.1	- / -			
Materials / Specification								
Material column code	: D4	Pump specification	: ANSI B73.1					
Other Requirements								
Hydraulic selection : No specification			Seal configuration : Double 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								