



Customer Document title:

## Flowserve Hydraulic Data Sheet

Flowserve Document title: **Flowserve Hydraulic Data Sheet**Flowserve Document No.: **1400944-009-5008-01**Document Revision No.: **A**Flowserve Order No.: **1400944**Flowserve Serial No.: **1400944CHP009A/B**Pump Type/Size: **MARK 3 LO-FLO / 1K1.5X1LF-82OP**Quantity: **2**Customer Name: **DESMET BALLESTRA NORTH AMERICA**Customer Tag No: **DESMET TAG#: P632A1, World Energy TAG#: 19-P-767A, DESMET TAG#: P632A2, World Energy TAG#: 19-P-767B**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	: 1K1.5x1LF-82 M3 LF / 1
Customer reference	: WORPAR	Based on curve no.	: MIII7065V
Item number	CUSTOMER TAG#: 19-P-767A, P632A1 / P632A2	Flowserve reference	: 1989206898
Service	CUSTOMER TAG#: 19-P-767B, Vacuum Seal Tank Discharge	Date	: August 25, 2021

	Unit	Vacuum Seal Tank ...	Alternate 1	Alternate 2	-
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Operating Conditions					
Capacity	USgpm	18.5	15.0	10.0	-
Water capacity / CQ	USgpm	- / 1.00	- / 1.00	- / 1.00	- / -
Normal capacity	USgpm	-	-	-	-
Total developed head	ft	164.04	120.30	76.87	-
Water head / CH	ft	- / 1.00	- / 1.00	- / 1.00	- / -
NPSH available (NPSHa)	ft	29.5	29.5	29.5	-
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		Water	Water	Water	-
Liquid description		Vacuum Seal Tank ...	Vacuum Seal Tank ...	Vacuum Seal Tank ...	-
Temperature / Specific gravity	°F/	99 / 0.990	99 / 0.990	99 / 0.990	- / -
Solid Size - Actual / Limit	in/in	- / 0.2500	- / 0.2500	- / 0.2500	- / -
Viscosity / Vapor pressure	cP/psia	0.69 / -	0.69 / -	0.69 / -	- / -

Performance					
Actual head	ft	164.04	120.30	76.87	-
Hydraulic power	hp	0.76	0.45	0.19	-
Pump speed	rpm	3,501	2,989	2,371	-
Pump overall efficiency (CE=1.00)	%	18.7	15.7	11.7	-
NPSH required (NPSH3)	ft	3.6	2.5	1.3	-
Rated brake power	hp	4.06	2.87	1.64	-
Maximum brake power	hp	4.77	3.37	1.95	-
Driver power rating	hp / kW	7.50 hp / 5.59 kW	7.50 hp / 5.59 kW	7.50 hp / 5.59 kW	-
Casing working pressure	psig	73.7	53.7	33.8	-
(based on shut off @ cut dia/rated SG)					
Maximum allowable	psig	275.0	275.0	275.0	-
Hydrostatic test pressure	psig	413.0	413.0	413.0	-
Estimated rated seal chamber pressure	psig	12.9	12.9	12.9	-
Impeller diameter, Rated	in	5.75	5.75	5.75	-
Impeller diameter, Maximum/Minimum	in/in	8.19 / 4.00	8.19 / 4.00	8.19 / 4.00	- / -
Ns / Nss	(US units)	328 / 5,310	328 / 5,310	328 / 5,310	- / -
Minimum continuous flow	USgpm	-	-	-	-
Maximum head at rated diameter	ft	171.93	125.32	78.86	-
Flow at BEP	USgpm	33.8	28.9	22.9	-
Flow as % of BEP	%	54.7	52.0	43.7	-
Efficiency at normal flow	%	-	-	-	-
Impeller diameter ratio (rated/max)	%	70.2	70.2	70.2	-
Head rise to shut off	%	4.8	4.2	2.6	-
Total head ratio (rated / max) / (max / rated)	%	43.2 / 231.3	43.5 / 230.1	44.0 / 227.0	- / -

Materials / Specification					
Material column code	: D4	Pump specification	: ANSI B73.1		

Other Requirements					
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Hydraulic selection : No specification					
Construction : No specification					
Test tolerance : ANSI/HI 14.6 Grade 1B					
Driver Sizing : Rated Power					
Seal configuration : Single Seal					