



JOB NO. 648632 ITEM NO. 100  
 PURCHASE ORDER NO. 56619 / SO 64836  
 SPECIFICATION NO. N/A  
 REVISION NO. 02 DATE 20.11.2019  
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**CONTROLLED VOLUME PUMP (API 675-3rd)**  
**DATA SHEET**  
**SI UNITS**

1 APPLICABLE TO:  PROPOSAL  PURCHASE  AS BUILT  
 2 FOR LEWA-Nikkiso America, Inc. UNIT G3M M514SH Gr.72  
 3 SITE Pipestone AGI Project NO. OF PUMPS REQUIRED 1  
 4 SERVICE Acid Gas Pump MODEL G3M SIZE AND TYPE M514SH / 72  
 5 MANUFACTURER LEWA GmbH SERIAL NO. 648632-110.001

6 NOTE:  INDICATES INFORMATION TO BE COMPLETED BY PURCHASER  BY MANUFACTURER

**GENERAL**

8 NO. MOTORS DRIVEN 1 OTHER DRIVER TYPE N/A  
 9 PUMP ITEM NO'S TBA PUMP ITEM NO'S N/A  
 10 MOTOR ITEM NO'S TBA DRIVER ITEM NO'S N/A GEAR ITEM NO'S N/A  
 11 MOTOR PROVIDED BY OTHER DRIVER PROVIDED BY N/A GEAR PROVIDED BY LEWA  
 12 MOTOR MOUNTED BY LEWA DRIVER MOUNTED BY N/A GEAR MOUNTED BY LEWA  
 13 MOTOR DATA SHEET NO. N/A DRIVER DATA SHEET NO. N/A GEAR DATA SHEET NO. N/A

**OPERATING CONDITIONS**

15 CAPACITY @ PT [l/h]  
 16 MAXIMUM MINIM. 0,00 RATED 10000,00  
 17 DISCHARGE PRESSURE [bar]  
 18 MAXIMUM 300,0 MINIMUM 0,0  
 19 SUCTION PRESSURE [bar]  
 20 MAXIMUM 67,0 MINIMUM 60,0  
 21 DIFFERENTIAL PRESSURE [bar]  
 22 MAXIMUM 240,0 MINIMUM -67,0  
 23 NPIP AVAILABLE [bar] TBA  
 24 (INCLUDING ACCELERATION LOSSES)  
 25 TURNDOWN RATIO 5:1

**LIQUID**

15 TYPE OR NAME OF LIQUID ACID GAS  
 16 PUMPING TEMPERATURE (°C):  
 NORMAL MAX 43 MIN 43  
 17 SPECIFIC GRAVITY 0,72 MAXIMUM 0,72 MINIMUM  
 18 SPECIFIC HEAT Cp (kJ/kg °C)  
 19 VISCOSITY (Cp) 0,07 MINIMUM 0,07 MAXIMUM  
 20 CORROSIVE/EROSIVE AGENTS  
 21 CHLORIDE CONCENTRATION (PPM)  
 22 H<sub>2</sub>S CONCENTRATION (PPM)  
 23 LIQUID  TOXIC  FLAMMABLE  OTHER  
 24 VAPOR PRESSURE [bara] 14,85 MAXIMUM 11,59 MINIMUM

**PERFORMANCE**

27 NUMBER OF FEEDS 3 RATED CAPACITY [l/h] 10000  
 28 NPIP R (INC. ACC. LOSSES) (1) [bar] 0,40 NPSH R (m) 5,67  
 29 BKW RATED 119,36 AT RELIEF SETTING [bar] 330  
 30 PLUNGER SPEED (strokes/min) 21-198 DESIGN MAX 220  
 31 DIAMETER (mm) 72 LENGTH OF STROKE (mm) 120  
 32 PUMP HEAD: M514SH  
 33 MAXIMUM PRESSURE [bar] 335  
 34 HYDRO TEST PRESSURE [bar] 502,5  
 35 MAX DISCH PRESS. W/ JOB DRIVER [bar] 363  
 36 MAX BKW BASIS GEAR STRENGTH 609,79

**SITE AND UTILITY DATA**

LOCATION  INDOOR  OUTDOOR  
 HEATED  UNHEATED  UNDER ROOF  
 ELECTRICAL AREA ZONE GROUP CL  
 WINTERIZATION REQD  TROPICALIZATION REQD  
 SITE DATA  
 RANGE OF AMBIENT TEMPS:MIN/MAX 15 / 35 °C  
 UNUSUAL CONDITIONS  
 DUST  FUMES  SALT ATMOSPHERE  
 OTHER  
 UTILITY CONDITIONS

**CONSTRUCTION**

	SIZE	ANSI RATING	FACING	POSITION
CONNECTIONS				
SUCTION	3"	GRAYLOC	3GR23	bottom
DISCHARGE	3"	GRAYLOC	3GR23	top
FLUSH	-			

LIQUID END  JACKET REQ'D -  
 TYPE  DIAPHRAGM  PLUNGER  
 DIAPHRAGM DIA (mm) 244 NO REQ. 3 x set  
 VALVES/FEED  
 TYPE SUCTION DISCHARGE  
 cone valve cone valve  
 NUMBER 3 3

ELECTRICITY	DRIVERS	HEATING	CONTROL	SHUTDOWN
VOLTAGE	575			
HERTZ	60			
PHASE	3			
COOLING WATER	INLET	RETURN	DESIGN	MAX Δ
TEMP °C		MAX		
PRESS. [bar]		MIN		
SOURCE				
INSTRUMENT AIR		MAX		MIN
PRESSURE [bar]				

**APPLICABLE SPECIFICATIONS:**

API 675 POSITIVE DISPLACEMENT PUMPS - CONTROLLED VOLUME  
 GOVERNING SPECIFICATION (IF DIFFERENT)  
 NACE MR-0103  NACE MR-0175  
 OTHER

REMARKS (1) at pumphead suction flange

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- MATERIALS
- 2 LIQUID END 316/316L (UNS-S31600/S31603)
  - 3 CONTOUR PLATE
  - 4 HYDRAULIC DIAPHRAGM PTFE
  - 5 PROCESS DIAPHRAGM PTFE
  - 6 PLUNGER -
  - 7 LANTERN RING
  - 8 PACKING GLAND
  - 9 PACKING -
  - 10 VALVE CLOSING BODY 17-4-PH (UNS S17400)
  - 11 VALVE SEAT 316/316L (UNS-S31600/S31603)
  - 12 VALVE GUIDE 316/316L (UNS-S31600/S31603)
  - 13 VALVE BODY 316/316L (UNS-S31600/S31603)
  - 14 VALVE GASKET -
  - 15 FRAME
  - 16 SPECIAL MATERIAL TESTS (6.14.2.5) 100% PMI on fluid wetted parts
  - 17
  - 18  LOW AMBIENT TEMPERATURE MATERIALS TESTS (6.14.6)
  - 19

**CONTROLS**

**TYPE:**  
 MANUAL       REMOTE  
 AUTOMATIC       LOCAL

**SIGNAL:**  
 PNEUMATIC  
 ELECTRONIC

**STROKE CONTROL:**  
PNEUMATIC [bar]  
MINIMUM \_\_\_\_\_ MAXIMUM \_\_\_\_\_  
ELECTRONIC (mA):  
MINIMUM \_\_\_\_\_ MAXIMUM \_\_\_\_\_

- QA INSPECTION AND TEST**
- 21  COMPLIANCE WITH INSPECTORS CHECK LIST
  - 22  CERTIFICATION OF MATERIALS (user to define components in remarks)
  - 23  FINAL ASSEMBLY CLEARANCES (user to define components in remarks)
  - 24  SURFACE AND SUBSURFACE EXAMINATIONS
    - 25  RADIOGRAPHY
    - 26  ULTRASONIC
    - 27  MAGNETIC PARTICLE
    - 28  LIQUID PENETRANT for fluid wetted pressurized parts
  - 29  CLEANLINESS PRIOR TO FINAL ASSEMBLY
  - 30  HARDNESS OF PARTS, WELDS & HEAT AFFECTED ZONES
  - 31  FURNISH PROCEDURES FOR OPTIONAL TESTS

**OTHER PURCHASE REQUIREMENTS**

NAMEPLATE UNITS  U.S. CUSTOMARY  SI

VENDOR FURNISHED PROCESS PIPING

VENDOR REVIEW PIPING DRAWINGS

VENDOR FURNISHED PULSATION SUPPRESSION DEVICES

VENDOR FURNISHED RELIEF VALVE

INTERNAL       EXTERNAL

RELIEF VALVE SETTING [bar] 330 EXT 335 INT

VENDOR FURNISHED BACK-PRESSURE VALVE

DOUBLE CHECK VALVES REQUIRED

OIL-FILLED PRESSURE GAUGES REQUIRED

VENDOR FURNISHED CONTROL PANEL

BASEPLATE PREPARED FOR EPOXY GROUT

PROVIDE TECHNICAL DATA MANUAL

TESTS	REQ'D	WIT	OBS
33 HYDROSTATIC (8.3.2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34 STEADY STATE ACCURACY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35 REPEATABILITY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36 LINEARITY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37 PERFORMANCE (8.3.4)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
38 MECHANICAL RUN (8.3.5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39 NPIP (8.3.7.1)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
40 COMPLETE UNIT (8.3.7.2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41 SOUND LEVEL (8.3.7.3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42 HIGH DISCH. PRES. (8.3.7.4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43 FACTORY ACCEPT. (8.3.8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PREPARATION FOR SHIPMENT**

DOMESTIC       EXPORT       EXPORT BOXING

OUTDOOR STORAGE MORE THAN 6 MONTHS

**WEIGHTS (KG)**

PUMP 5576     BASE     GEAR     DRIVER 1814

**DRIVERS**

MOTOR:

MANUFACTURER BALDOR / ABB Motors

TYPE A44-5001-5677

FRAME NO. L449TC

CONSTANT SPEED

VARIABLE SPEED

kW 186 (250 HP)      RPM 1190

VOLTS 575      PHASE 3

HERTZ 60      SERVICE FACTOR 1

ENCLOSURE TEFC

OTHER (SEE SEPARATE DATA SHEETS) Motor Data Sheet

GAS DRIVEN

STEAM TURBINE

OTHER

- LUBRICATION FLUID**
- CRANKCASE       INTERMEDIATE
- HYDRAULIC FLUID
- ACCESSORIES**
- SPEED REDUCER MANUFACTURER LEWA GmbH
- INTEGRAL       SEPARATE
- MODEL worm gear
- RATIO 1:6
- BASEPLATE UNDER
- COUPLING MANUFACTURER KTR
- TYPE Rotex

50 REMARKS

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