

to be 1, FG for plan 32 is required

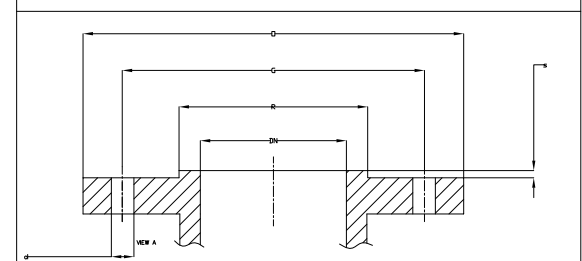
POS.	Q.	NPS	CONN. TYPE	DESCRIPTION	O (mm)	G (mm)	No. of holes	hole Ø (mm)	raised R (mm)	face S (mm)
N1	1	16"	ASME B16.5 # 300 RF	Suction Flange	648	571.5	20	35	469.9	1.6
N2	1	16"	ASME B16.5 # 300 RF	Discharge Flange	648	571.5	20	35	469.9	1.6
N3	1	1"	ASME B16.5 # 300 RF	Pump Drain Flange	124	88.9	4	19	50.8	1.6
N4	1	2"	ASME B16.5 # 150 RF	Base Plate Drain Pipe	152	120.6	4	19	92.1	1.6
N5	1	1/2"	ASME B16.5 # 300 RF	Sealing System Vent Flange	95	66.7	4	15.8	34.9	1.6
N6	1	1/2"	ASME B16.5 # 300 RF	Reservoir Drain Flange	95	66.7	4	15.8	34.9	1.6
N7	1	1/2"		Quick Coupler For nitrogen filling						
N8	1	1/2"	ASME B16.5 # 300 RF	Sealing System Flange(HHX)	95	66.7	4	15.8	34.9	1.6
N9	1	1/2"	ASME B16.5 # 300 RF	Sealing system Drain Flange	95	66.7	4	15.8	34.9	1.6
CI	1	1/2"	ASME B16.5 # 150 RF	Cooling Water Inlet	89	60.3	4	15.8	34.9	1.6
CO	1	1/2"	ASME B16.5 # 150 RF	Cooling Water Outlet	89	60.3	4	15.8	34.9	1.6
CLO	1		CLO	Constant level oiler By Vendor						
FG	1	1/2"	Flanged ANSI # 150RF	Flow Indicator By Vendor						
V1	1	1"	Gate Valve # 800	Pump Drain Valve By Vendor						
V2	1	1/2"	Gate valve #800	Cooling Water Outlet valve By Vendor						
V3	1	1/2"	Gate valve #800	Cooling Water Inlet valve By Vendor						
V4	1	1/2"	Ball valve #800	Heat Exchanger Drain valve By Vendor						
V5	1	1/2"	Ball valve #800	Sealing system Drain valve By Vendor						
S1	1	1/2"	#800 SS-316	strainer By Vendor						

Mass Moment inertia Motor :	28.11 kgm <sup>2</sup>
Mass Moment inertia Pump:	11.128 kgm <sup>2</sup>
Dynamic Load	
Motor Dynamic Load :	15.5 KN
Pump dynamic Load :	7.869 KN
Total Dynamic Load	Fx : 16.69 KN Fy: It can be ignored Fz: 16.69 KN
Static Load	
Motor Static Load :	46.5 KN
Pump Static Load :	27.8 KN
Moment	
Motor Dynamic Moment :	15.19 KN.m
Pump Dynamic Moment :	8.56 KN.m
Total Dynamic Moment	Mx: 0 My: 23.75 N.m Mz: 0

VIBRATION LEVEL (ISO 2372)  
Alarm :  $V(RMS) > 3 \text{ mm/sec}$   
Trip :  $V(RMS) > 4.5 \text{ mm/sec}$   
Max allowable vibration amplitude for foundation: 42.9  $\mu\text{m}$

Max.MISSALIGNMENT		
AXIAL 1.5 (mm)	RADIAL 1.2 (mm)	ANGULAR 0.5 (degree)

PUMP NOZZLES: ASME B16.5



Flange Raised Face Roughness 125~250 AARH

ELECTRICAL MOTOR	
MODEL :	Schorch
FRAME :	450
KW :	400
Speed :	994 RPM
PHASE :	3
VOLTAGE :	6000
Hz :	50

Pump Type: IOH2-400-728  
Sealing System Plan: 32-52

COUPLING & Coupling Guard  
COUPLING MANUFACTURER: IIP Group  
MODEL : Flexible Spacer Type

CENTER OF GRAVITY		( mm )
DRIVER C.o.G	X	63
TOTAL C.o.G	Y	778
PUMP C.o.G	Z	946

Instrument Number	
PT	40-PT-249 B
LT	40-LT-245 B
FG	40-FG-249 C/D
RO	40-RO-249 B
PG	40-PG-240 B
LG	40-LG-249 B

REFERENCE DOCUMENTS

DOC. NO.

Pump Data Sheet and Performance Curve for 40-P-223A/B

VP-40-000-MA-0011-0025

Pump cross sectional drawing and Part list for 40-P-223A/B

VP-40-000-MA-0011-0097

Coupling Drawing for 40-P-223A/B

VP-40-000-MA-0011-0133

Motor data sheets for 40-P-223A/B

VP-40-000-MA-0011-0189

Motor outline drawing for 40-P-223A/B

VP-40-000-MA-0011-0241

Pump P&ID for 40-P-223A/B

VP-40-000-MA-0011-0277

NOTE

1-All dimensions are in mm.  
2-Quantity of items shall be as per the bill of material (BOM) and not the bill of material (BOM) of the drawing.  
3-All dimensions are in mm unless otherwise specified.  
4-Reference line is 2m from motor and 1m from other side.  
5-Location of equipment shall be as per the drawing.

-Bolt material shall conform to specification ASTM A193 Grade B7 (anchor bolts shall be partly hot dip galvanized in thread length plus 100mm length embedded into concrete).  
-Anchor bolt and nut will be supplied by IIP.  
-All nuts & washers shall be hot dip galvanized according to ASTM A153.  
-Grout thickness: 30mm

M 12 Level Screw

Anchor Bolt M 20

Base Plate

Plate 60x60 th10mm

Plate 100x100-th 30mm

Anchor Bolt Box

Anchor Bolt Sleeve

Primary concrete

Plate 60x60-th3mm

socket welded

100x100

Thickness=25mm

150

LIFTING LUG

BASE PLATE

ANCHOR BOLTS

It seems unit is not correct. Please check and modify.

NOZZLE LOADS

FORCE

MOMENTS

Nm

2XAPI 610

DISCHARGE

16900

13340

20460

29700

14640

7320

10840

19640

SUCTION

16900

13340

20460

29700

14640

7320

10840

19640

FOUNDATION LOADS (approx. weight)

PUMP :

2623 Kg

ROTOR PUMP :

874 Kg

MOTOR :

4950 Kg

ROTOR MOTOR :

1150 Kg

BASE PLATE&SEALING SYSTEM :

1800 Kg

TOTAL :

9373 Kg

Code1

Approved:

No comment and the document is released for Manufacturing.

Code2

Approved with Minor comment:

Vendor shall correct, revise and resubmit the document. The document can be released for Manufacturing if changes incorporated.

Code3

Commented:

Vendor shall correct, revise and resubmit the document by the date specified. The document shall be revised under the Status of "R: Revised Issue". All corrected documents shall be resubmitted before starting the Manufacturing.

Code4

Not Accepted (Rejected):

Vendor shall re-work/re-design/re-specify the contents of the documents according to the comments/ reasons for rejection. All corrected documents shall be resubmitted before starting the Manufacturing process. In this case vendor shall proceed with subsequent work until receiving code 1 or code 2 or no code from CONSULTANT / OWNER / MC. VENDOR shall resubmit the documents with the same revision within (10) working days(including transmission/mailing time) after receiving the commented documents from CONSULTANT / OWNER / MC.

No Code

No Code Only for "FOR INFORMATION" documents and "As-Built Drawings"

Document has been submitted for CONSULTANT / OWNER / MC's information(FI) consistency, completeness and correctness of documents content is in VENDOR/EPC contractor responsibility.

Above checking results by EIED shall in no way relieve Vendor of any liability, obligation and responsibility out of the purchase order and the mutual agreement in writing.

EIED

DATE :

28.06.2022

DEPT. :

MA

Signature :

S.Razani

Only for internal review

CV

PI

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IN

ME

MA

ST

AR

PR

SA

HV

TL

05

21.Jun.2022

R

Issue for Approval

A.K

M.B

M.M

GH.P

01

11.Apr.2022

R

Issue for Approval

A.K

M.B

A.N

GH.P

03

02.Mar.2022

R

Issue for Approval

A.K

M.B

A.N

GH.P

02

25.Jun.2022

R

Issue for Approval

A.K

M.B

A.N

GH.P

01

01.Dec.2021

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Issue for Approval

A.K

M.B

A.N

GH.P

00

04.Sep.2021

F

Issue for Approval

A.K

S.G

A.N

GH.P

REV.

DATE

STATUS

PURPOSE OF ISSUE

PREP.

CHKD.

APPD.

AUTH.

EIED

Soroush Mahestan Asaloyeh Company

HDPE Project

EIED

LLP GROUP

Contract No. SMAC-11-19/2021

P.O. No. KP-40-000-PS-MA-PO-0011

SCALE: None

DRAWING TITLE:

General Arrangement Drawing for 40-P-223 B

DRAWING NO.

VP-40-000-MA-0011-0061

REV.

05

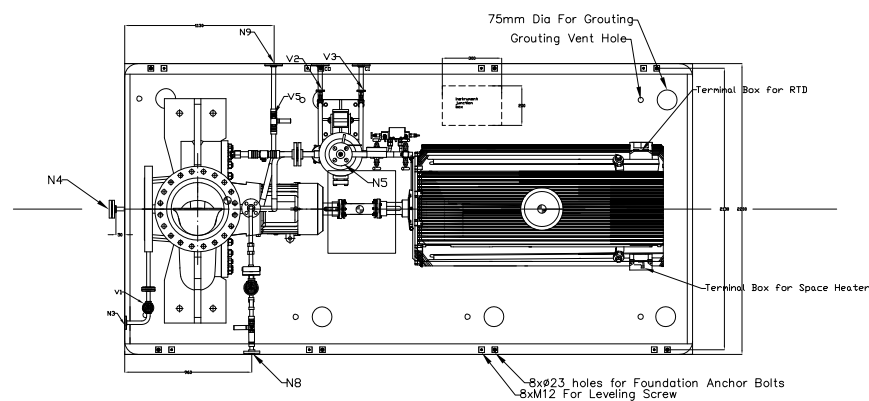
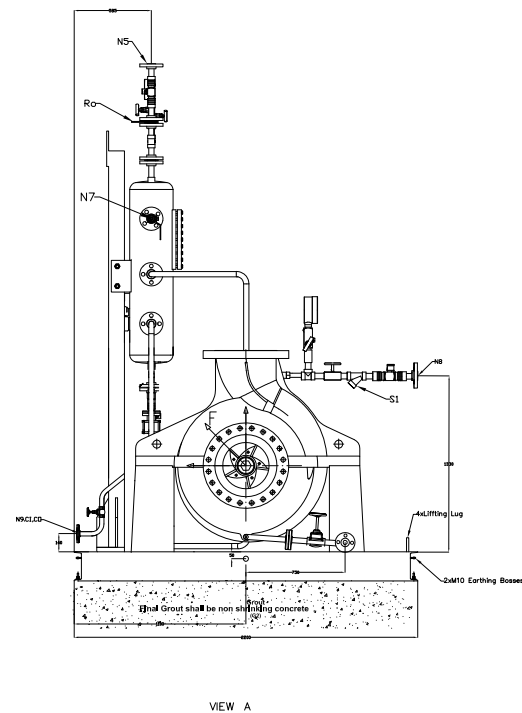
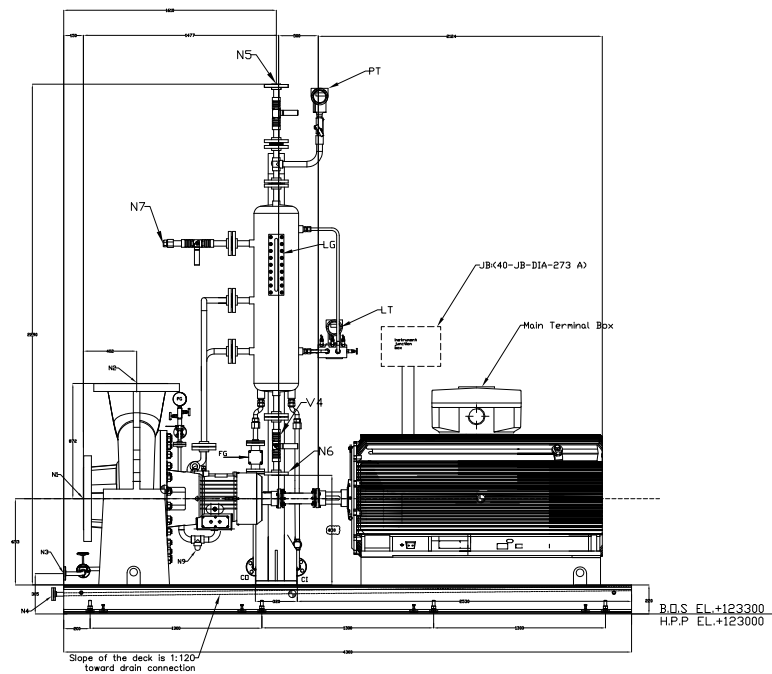
SHEET No.

1 OF 2

SIZE

A3

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	POS.	Q.	NPS	CONN. TYPE	DESCRIPTION	0 (mm)	G (mm)	No. of holes	hole Ø (mm)	raised R (mm)	face S (mm)
F	N1	1	16"	ASME B16.5 # 300 RF	Suction Flange	648	571.5	20	35	469.9	1.6
	N2	1	16"	ASME B16.5 # 300 RF	Discharge Flange	648	571.5	20	35	469.9	1.6
	N3	1	1"	ASME B16.5 # 300 RF	Pump Drain Flange	124	88.9	4	19	50.8	1.6
	N4	1	2"	ASME B16.5 # 150 RF	Base Plate Drain Pipe	152	120.6	4	19	92.1	1.6
	N5	1	1/2"	ASME B16.5 # 300 RF	Sealing System Vent Flange	95	66.7	4	15.8	34.9	1.6
	N6	1	1/2"	ASME B16.5 # 300 RF	Reservoir Drain Flange	95	66.7	4	15.8	34.9	1.6
	N7	1	1/2"		Quick Coupler For nitrogen filling						
	N8	1	1/2"	ASME B16.5 # 300 RF	Sealing System Flange(HHX)	95	66.7	4	15.8	34.9	1.6
	N9	1	1/2"	ASME B16.5 # 300 RF	Sealing system Drain Flange	95	66.7	4	15.8	34.9	1.6
	C1	1	1/2"	ASME B16.5 # 150 RF	Cooling Water Inlet	89	60.3	4	15.8	34.9	1.6
G	C0	1	1/2"	ASME B16.5 # 150 RF	Cooling Water Outlet	89	60.3	4	15.8	34.9	1.6
	CLO	1		CLO	Constant level oiler By Vendor						
	FG	1	1/2"	Flanged ANSI # 150RF	Flow Indicator By Vendor						
	V1	1	1"	Gate Valve # 800	Pump Drain Valve By Vendor						
	V2	1	1/2"	Gate valve #800	Cooling Water Outlet valve By Vendor						
	V3	1	1/2"	Gate valve #800	Cooling Water Inlet valve By Vendor						
	V4	1	1/2"	Ball valve #800	Heat Exchanger Drain valve By Vendor						
	V5	1	1/2"	Ball valve #800	Sealing system Drain valve By Vendor						
	S1	1	1/2"	#800 SS-316	strainer By Vendor						




	Instrument Number
PT	40-PT-249 A
LT	40-LT-245 A
FG	40-FG-249 A/B
RO	40-RO-249 A
PG	40-PG-240 A
LG	40-LG-249 A

Mass Moment inertia Motor :	28.11 kgm <sup>2</sup>
Mass Moment inertia Pump:	11.128 kgm <sup>2</sup>
Dynamic Load	
Motor Dynamic Load :	15.5 KN
Pump dynamic Load :	7.869 KN
Total Dynamic Load:	Fx : 16.69 KN Fy: It can be ignored Fz: 16.69 KN
Static Load	
Motor Static Load :	46.5 KN
Pump Static Load :	27.8 KN

Moment	
Motor Dynamic Moment :	15.19 N.m
Pump Dynamic Moment :	8.56 N.m
Total Dynamic Moment	Mx: 0 My: 23.75 N.m Mz: 0

VIBRATION LEVEL (ISO 2372)	
Alarm :	V(RMS) > 3 mm/sec
Trip :	V(RMS) > 4.5 mm/sec

Max allowable vibration amplitude for foundation: 42.9
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Max.MISSALIGNMENT		
		
AXIAL 1.5 (mm)	RADIAL 1.2 (mm)	ANGULAR 0.5 (degree)

PUMP NOZZLES: ASME B16.5
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Flange Raised Face Roughness 125~250 AARH

ELECTRICAL MOTOR			
MODEL :	Schorch	PHASE :	3
FRAME :	450	VOLTAGE :	6000
KW :	400	Hz :	50
Speed :	994 RPM		

Pump Type:	10H2-400-728
Sealing System Plan:	32-52

COUPLING & Coupling Guard  
COUPLING MANUFACTURER: IIP Group  
MODEL : Flexible Spacer Type

CENTER OF GRAVITY		( mm )
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Isometric view of a mechanical assembly. The assembly consists of a base, a driver, and a pump. The dimensions are as follows:

- Base: 100 (length), 50 (width), 10 (height)
- Driver: 50 (length), 50 (width), 10 (height)
- Pump: 50 (length), 50 (width), 10 (height)

The coordinate system (X, Y, Z) is defined as follows:

- X: Horizontal axis, pointing right.
- Y: Vertical axis, pointing up.
- Z: Depth axis, pointing into the page.

The assembly is shown with the following dimensions:

- Base: 100 (length), 50 (width), 10 (height)
- Driver: 50 (length), 50 (width), 10 (height)
- Pump: 50 (length), 50 (width), 10 (height)


PUMP	X	63
	Y	778
	Z	946
DRIVER	X	0
	Y	3159
	Z	873
BASE	X	0
	Y	1780
	Z	153
TOTAL	X	21.67
	Y	2276
	Z	865

REFERENCE DOCUMENTS	DOC. NO.
Pump Data Sheet and Performance Data for 40-P-223A/B	VP-40-000-MA-0011-0025
Pump cross sectional drawing and Part list for 40-P-223A/B	VP-40-000-MA-0011-0097
Coupling Drawing for 40-P-223A/B	VP-40-000-MA-0011-0133
Motor data sheets for 40-P-223A/B	VP-40-000-MA-0011-0169
Motor outline drawing for 40-P-223A/B	VP-40-000-MA-0011-0241
Pump P&ID for 40-P-223A/B	VP-40-000-MA-0011-0277

NOTE	
1-All Dimension are mm.	
2-Cooping guard is Aluminium.	
3-Material of base plate is MS7 & bolt A193 Gr B7 and nut A194 Gr 2H.	
4-Reference Area is 2m from Motor end and 2m from other sides.	
5-All Dimension Clearances are according to ISO 286-1.	
6-Location of dynamic load is at the C.O.S	

- Bolt material shall conform to specification ASTM A193 Grade B7 (anchor bolts shall be partly hot dip galvanized in thread length plus 100mm length embedded into concrete).
- Anchor bolt and nut will be supplied by IIP
- All nuts & washers shall be hot dip galvanized according to ASTM A153
- Grout thickness: 30mm

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NOZZLE LOADS								
		FORCE N 2XAPI 610				MOMENTS Nm 2XAPI 610		
		F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	F <sub>R</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
SUCTION :	20460	16900	13340	29700	14640	7320	10840	19640
DISCHARGE :	16900	13340	20460	29700	14640	7320	10840	19640

FOUNDATION LOADS (approx. weight)	
PUMP :	2623 Kg
ROTOR PUMP :	874 Kg
MOTOR :	4950 Kg
ROTOR MOTOR :	1150 Kg
BASE PLATE&SEALING SYSTEM :	1800 Kg
TOTAL :	9373 Kg

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05	21 Jun 2022	P	Issue for Approval	AK	MB	MM	GH P
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04	11.Apr.2022	R	Issue for Approval	A.K	M.B	A.N	GH.P
03	02.Mar.2022	R	Issue for Approval	A.K	M.B	A.N	GH.P

02	25.Jan.2022	R	Issue for Approval	A.K	M.B	A.N	GH.P
01	01.Dec.2021	R	Issue for Approval	A.K	M.B	A.N	GH.P

00	04.Sep.2021	F	Issue for Approval	A.K	S.G	A.N	GH.P
REV.	DATE	STATUS	PURPOSE OF ISSUE	PREP.	CHKD.	APPD.	AUTH.

	Soroush Mahestan Asgalyeh Company HDPE Project	
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 I.I.P. GROUP INDIAN INDUSTRIAL PUMP CO.	P.O DESCRIPTION: Centrifugal pumps		
Contract No. SMAC-H-19/804	P.O No.      KP-40-000-PS-MA-PO-0011	SCALE: None	
DRAWING TITLE			

DRAWING TITLE:				
General Arrangement Drawing for 40-P-223 A				
DRAWING NO.	REV.	SHEET No.	SIZE	

VP-40-000-MA-0011-0061		05	2 OF 2	A3
14	15	16		