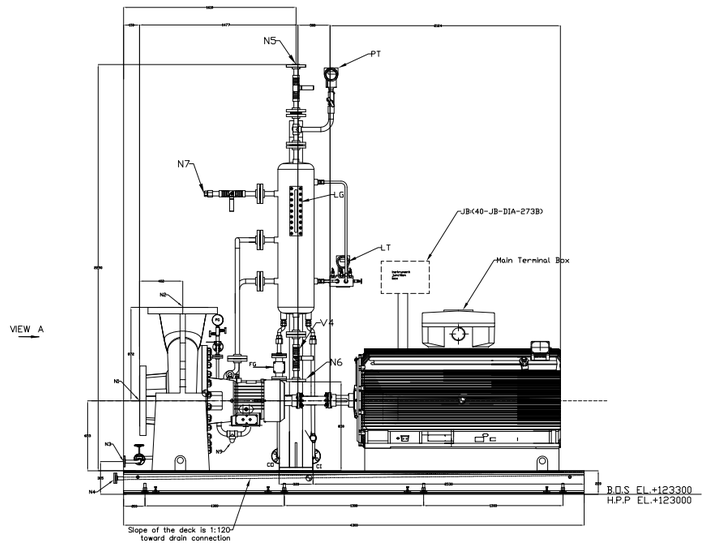
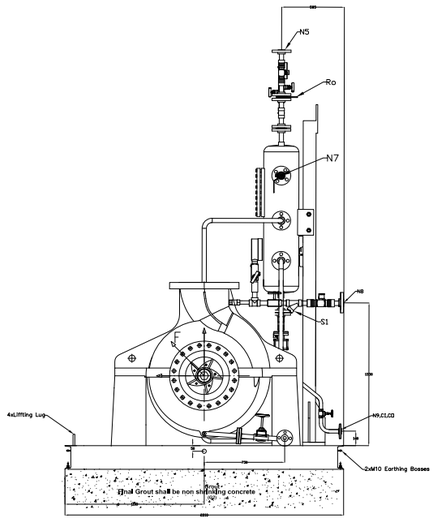
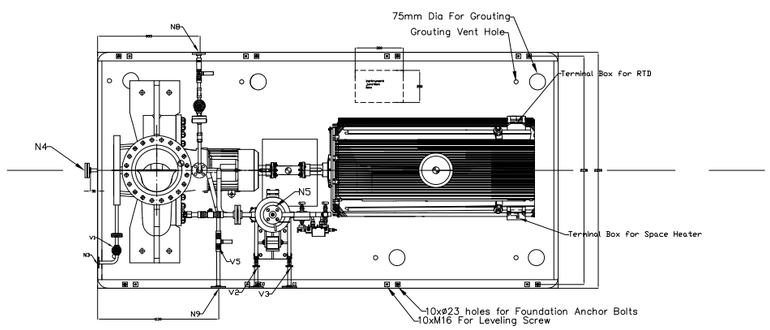




VIEW A



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						

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

Mass Moment inertia Motor :	28.11 kgm^2
Mass Moment inertia Pump:	11.128 kgm^2
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

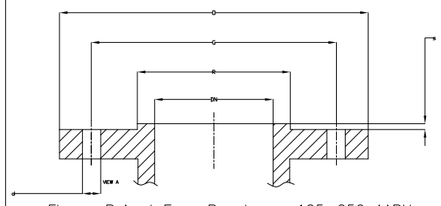
VIBRATION LEVEL (ISO 2372)
Alarm : V(RMS) > 3 mm/sec
Trip : V(RMS) > 4.5 mm/sec

Max allowable vibration amplitude for foundation: 42.9 μm

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

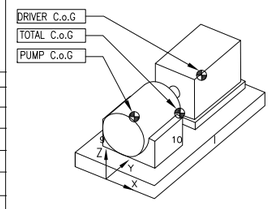
MODEL :	Schorch	PHASE :	3
FRAME :	450	VOLTAGE :	6000
KW :	400	Hz :	50
Speed :	994 RPM		

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)



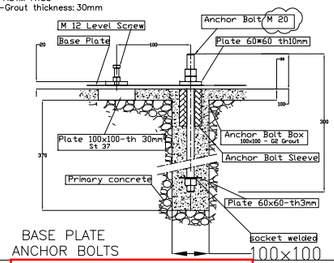
PUMP	X	63
	Y	778
	Z	946
DRIVER	X	0
	Y	3159
	Z	873
BASE	X	0
	Y	1780
	Z	153
TOTAL	X	21.67
	Y	2276.4
	Z	865

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-0011-0169
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

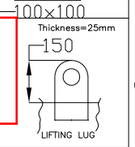
NOTE

1-All Dimensions are mm.
2-Material of base plate is A537 & bolt A193 Gr B7 and nut A194 Gr 2H.
3-Maintenance Area is 2m from Motor end and 1m from other sides.
4-All Dimension Clearances are according to ISO 286-1.
5-Location of dynamic loss is at the C.o.G

-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



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



NOZZLE LOADS

	FORCE N 2XAPI 610				MOMENTS Nm 2XAPI 610			
	Fx	Fy	Fz	Fe	Mx	Mr	Mz	Me
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

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 not 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 DWGs"* 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	EL	IN	ME	MA
ST	AR	PR	SA	HV	TL

REV.	DATE	STATUS	PURPOSE OF ISSUE	PREP.	CHKD.	APPD.	AUTH.
05	21.Jun.2022	R	Issue for Approval	A.K	M.B	M.M	GH.P
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

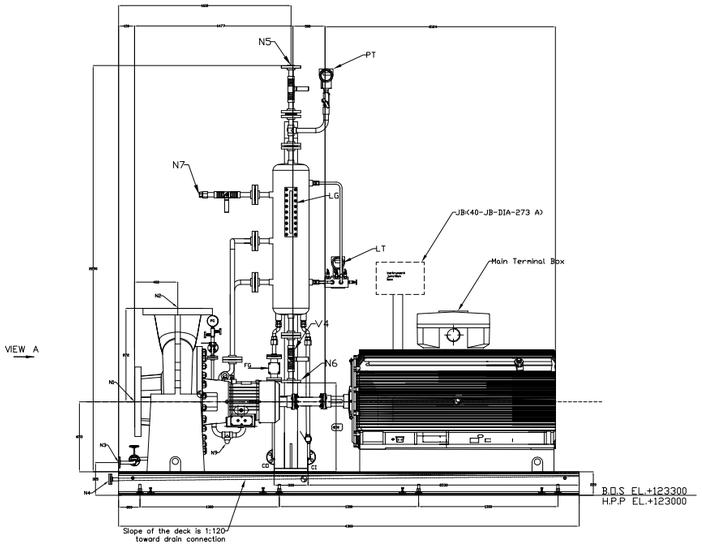
EIED — Soroush Mahestan Asaloyeh Company HDPE Project

LLP GROUP — P.O DESCRIPTION: Centrifugal pumps

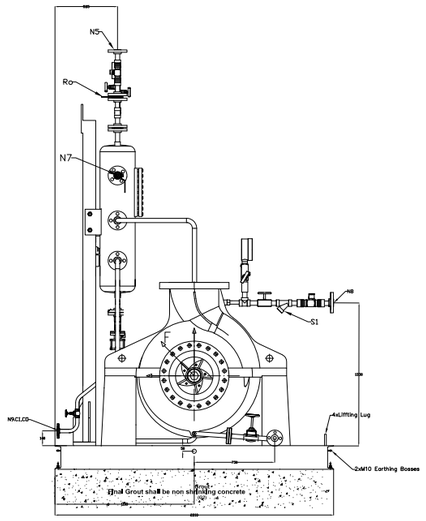
Contract No. SMAC-H-19/804 — P.O No. KP-40-000-PS-MA-PO-0011 — SCALE: None

DRAWING TITLE:
General Arrangement Drawing for 40-P-223 B

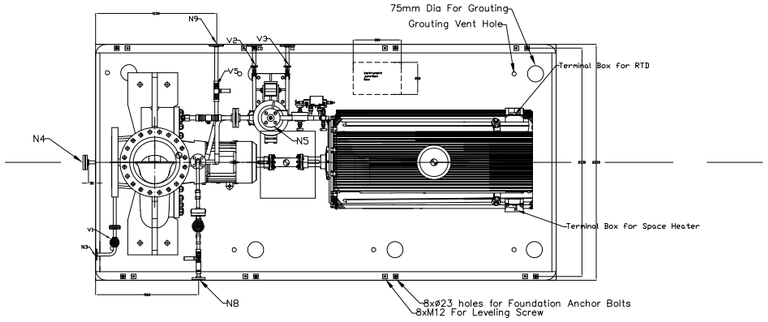
DRAWING NO. VP-40-000-MA-0011-0061 — REV. 05 — SHEET No. 1 OF 2 — SIZE A3



VIEW A



VIEW A



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						

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^2
Mass Moment inertia Pump:	11.128 kgm^2
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

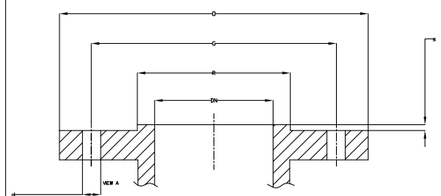
VIBRATION LEVEL (ISO 2372)
Alarm : V(RMS) > 3 mm/sec
Trip : V(RMS) > 4.5 mm/sec

Max allowable vibration amplitude for foundation: 42.9 μm

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

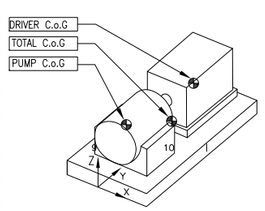
MODEL :	Schorch	PHASE :	3
FRAME :	450	VOLTAGE :	6000
KW :	400	Hz :	50
Speed :	994 RPM		

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)



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	2276.4
	Z	865

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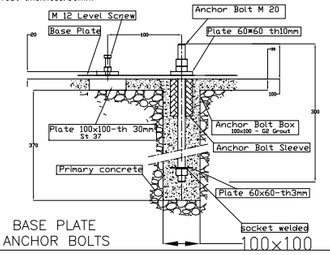
Pump cross sectional drawing and Part list for 40-P-223A/B	VP-40-000-MA-0011-0097
Coupling Drawing for 40-P-223A/B	VP-40-000-MA-0011-0133
Motor data sheets for 40-P-223A/B	VP-40-000-MA-0011-0169
Motor outline drawing for 40-P-223A/B	VP-40-000-MA-0011-0241
Pump P&ID for 40-P-223A/B	VP-40-000-MA-0011-0277

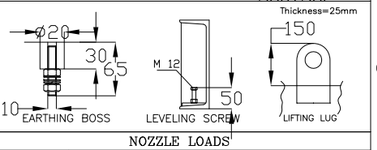
NOTE

1-All Dimension are mm.
2-Material of base plate is A537 & bolt A193 Gr B7 and nut A194 Gr 2H.
3-Maintenance Area is 2m from Motor end and 1m from other sides.
4-All Dimension Clearances are according to ISO 286-1.
5-Location of dynamic loss is at the C.o.G

-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



BASE PLATE ANCHOR BOLTS



NOZZLE LOADS

	FORCE N 2XAPI 610				MOMENTS Nm 2XAPI 610			
	Fx	Fy	Fz	Fe	Mx	Mr	Mz	Me
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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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

EIED — Soroush Mahestan Asaloyeh Company HDPE Project

LLP GROUP — P.O DESCRIPTION: Centrifugal pumps

Contract No. SMAC-HI-19/1804 — P.O No. KP-40-000-PS-MA-PO-0011 — SCALE: None

DRAWING TITLE:
General Arrangement Drawing for 40-P-223 A

DRAWING NO. VP-40-000-MA-0011-0061 — REV. 05 — SHEET No. 2 OF 2 — SIZE A3