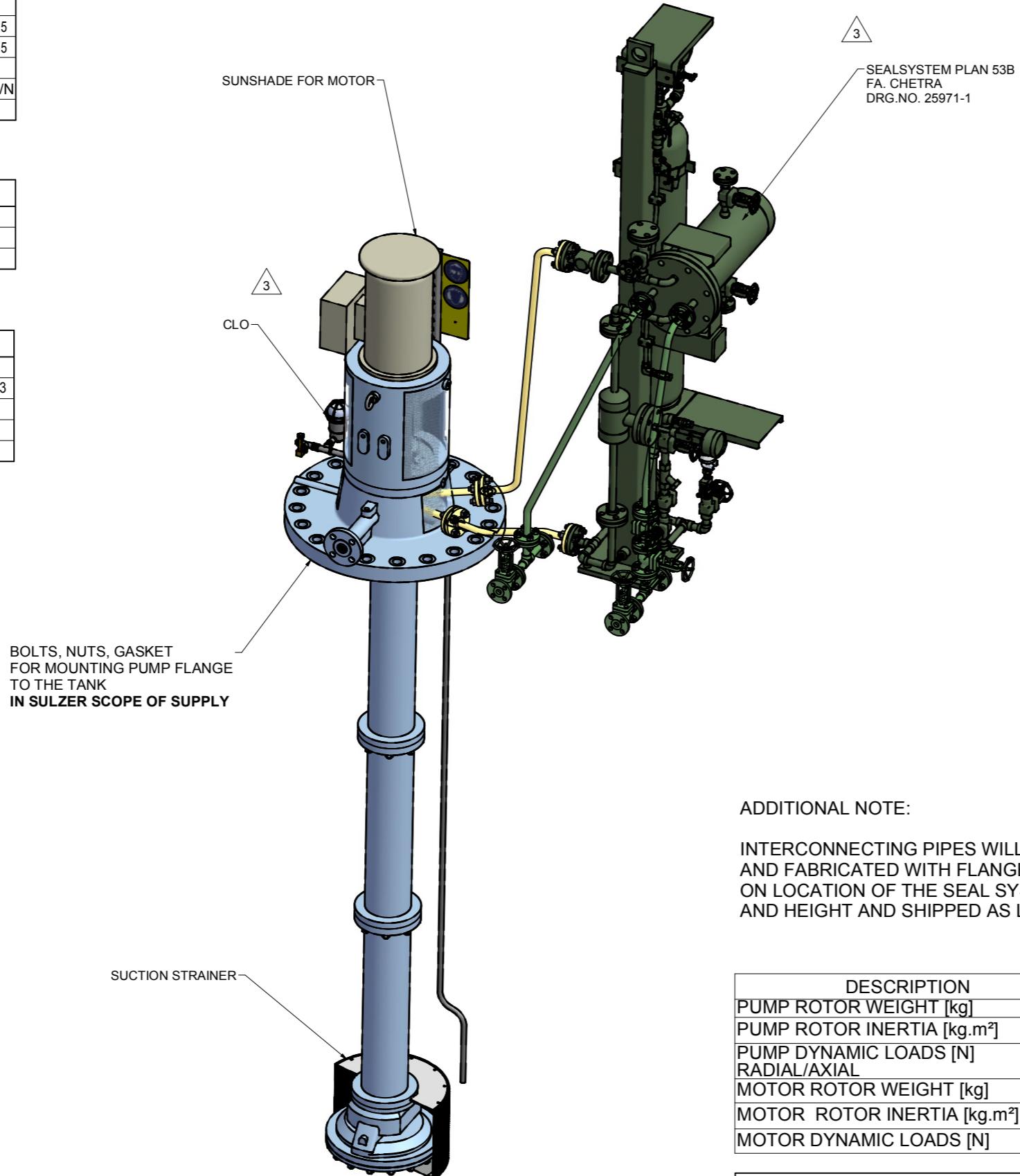


PUMP SPECIFICATIONS	
SIZE & TYPE:	BNO40-315
SPEED:	(see MOTOR SPECIFICATIONS)
ROTATION:	CW (AS VIEWED FROM DRIVER)
DISCH FLG:	1,5" CLASS: 300RF Standard: ASME B16.5
SUCT FLG:	- CLASS: - Standard: ASME B16.5
MECH SEAL TYPE:	J.CRANE TYP 851TB-038
MECH SEAL DRG:	25508-16-10-P1485 API CODE: BDTI/FP/N
API PIPING PLANS:	13, 53B

COUPLING SPECIFICATIONS	
MFR:	Metastream
TYPE:	TSKS SIZE: 0013
COUPLING-GUARD MATERIAL:	BRASS

DRIVER SPECIFICATIONS	
MOTOR:	Schorch
FRAME:	KD1132M-BB45P-M
ENCLOSURE:	ZONE 2, IIB, T3
kW:	7,5
SPEED:	1442 rpm
PHASE:	3
VOLTAGE:	400
FURNISHED BY:	SULZER
CYCLE:	50 Hz



NOTES:

1. **CAUTION!** CAREFULLY CHECK ALIGNMENT BEFORE STARTING UNIT. ALL HOLES IN FLANGES STRADDLE CENTERLINES. THE CONNECTION OF PIPES TO THE UNIT HAS TO BE STRESS FREE.

2. COLORS ARE NOT INTENDED TO REPRESENT "AS SHIPPED" PAINT REQUIREMENTS. THEY ARE FOR QUICK IDENTIFICATION OF PIPING AND EQUIPMENT.

3. PIPING AND EQUIPMENT ARE MODELED REPRESENTATIONS ONLY. ACTUAL LOCATION AND ORIENTATION MAY VARY PER SHOP STANDARDS, UNLESS OTHERWISE DIMENSIONED.

4. THE SUCTION PIPING OR INTAKE DESIGN SHALL MEET THE HYDRAULIC INSTITUTE STANDARDS ANSI/HI 9.8-1998 „PUMP INTAKE DESIGN“ REQUIREMENTS.

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ALL RIGHTS RESERVED. NO PART OF THIS DRAWING MAY BE REPRODUCED, DISTRIBUTED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING AND RECORDING, WITHOUT THE EXPRESS PRIOR WRITTEN CONSENT OF SULZER PUMPS

ADDITIONAL NOTE:

INTERCONNECTING PIPES WILL BE PRODUCED AND FABRICATED WITH FLANGES BY SULZER BASED ON LOCATION OF THE SEAL SYSTEM THE DISTANCES AND HEIGHT AND SHIPPED AS LOOSE ITEMS.

DESCRIPTION	VALUE
PUMP ROTOR WEIGHT [kg]	45,6
PUMP ROTOR INERTIA [kg.m <sup>2</sup> ]	0.6235
PUMP DYNAMIC LOADS [N] RADIAL/AXIAL	111 / 17
MOTOR ROTOR WEIGHT [kg]	16,7
MOTOR ROTOR INERTIA [kg.m <sup>2</sup> ]	0,03
MOTOR DYNAMIC LOADS [N]	6

MAINTENANCE WEIGHT PUMP: 425 kg

APPROXIMATE WEIGHTS	
PUMP:	425 kg
MOTOR:	110 kg
BASEPLATE:	- kg
AUXILIARY:	- kg
-	-
TOTAL:	535 kg

CONTRACT DATA	
PURCHASER:	AIOTEC GmbH
USER:	Kangan Petro-Refining Co.
JOB/PROJECT:	Kangan C2 Recovery and Fractionation Plant
CUST. P.O. NO.:	KP-10-00-PS-MA-P0-0003
SERVICE:	AMDEA MAKE UP/SLOP PUMP
INSTALLED AT:	KANGAN- ASSALUYEH - IRAN
PUMP OEM:	Sulzer Pumpen (Deutschland) GmbH
SULZER ORDER NO.:	100247188-0080

IDENTIFICATION NUMBERS		
SULZER SERIAL NO.	CUSTOMER TAG NO'S	
	PUMP	DRIVER
583641	10-P-1485	10-M-1485
DO NOT SCALE. DIMENSIONS: mm UNLESS OTHERWISE SPECIFIED TOLERANCES		
<input checked="" type="checkbox"/> CERTIFIED FINAL		
<input type="checkbox"/> CERTIFIED FOR NOZZLE & FOUNDATION ONLY		
<input type="checkbox"/> PRELIMINARY ONLY		
AUXILIARY CUSTOMER CONNECTION DIMENSIONS ± 25		

DRAWING CONTENT	
SHEET DESCRIPTION	SHEET NO.
GA ISOMETRIC DATA SHEET	1
FOUNDATION AND NOZZLE	2
CONNECTION LAYOUT	3
SCHEMA DRAWING	4

<input type="checkbox"/> Approved: No comment and the document is released for Manufacturing.
<input type="checkbox"/> Approved with comment: Vendor shall correct, revise and resubmit the document. The document can be released for Manufacturing if changes incorporated.
<input type="checkbox"/> 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 correct documents shall be resubmitted before starting the Manufacturing.
<input type="checkbox"/> Not Accepted (Rejected): Vendor shall re-work/re-design/re-specify the contents of the documents according to the comments made for rejection. All correct documents shall be resubmitted before starting the Manufacturing.
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.
DATE : DEPT. : EIED Signature :
Only for internal review
CV PI EL IN ME MA ST AR PR SA HV TL

03 15.11.17 "R"	For Approval	TR	RS	CH	PL
02 11.08.17 "R"	For Approval	TR	RS	CH	PL
01 30.06.17 "R"	For Approval	TR	RS	CH	PL
00 15.05.17 "F"	For Approval	TR	RS	CH	PL
REV. DATE Status	Purpose of Issue	PRE'P.	CH'C'D.	APP'D.	AUTH'D.

KANGAN  
C2 RECOVERY & FRACTIONATION PLANT  
KANGAN PETRO RIFINING CO.

P.O. No.: KP-10-00-PS-MA-PO-0003 SCALE :

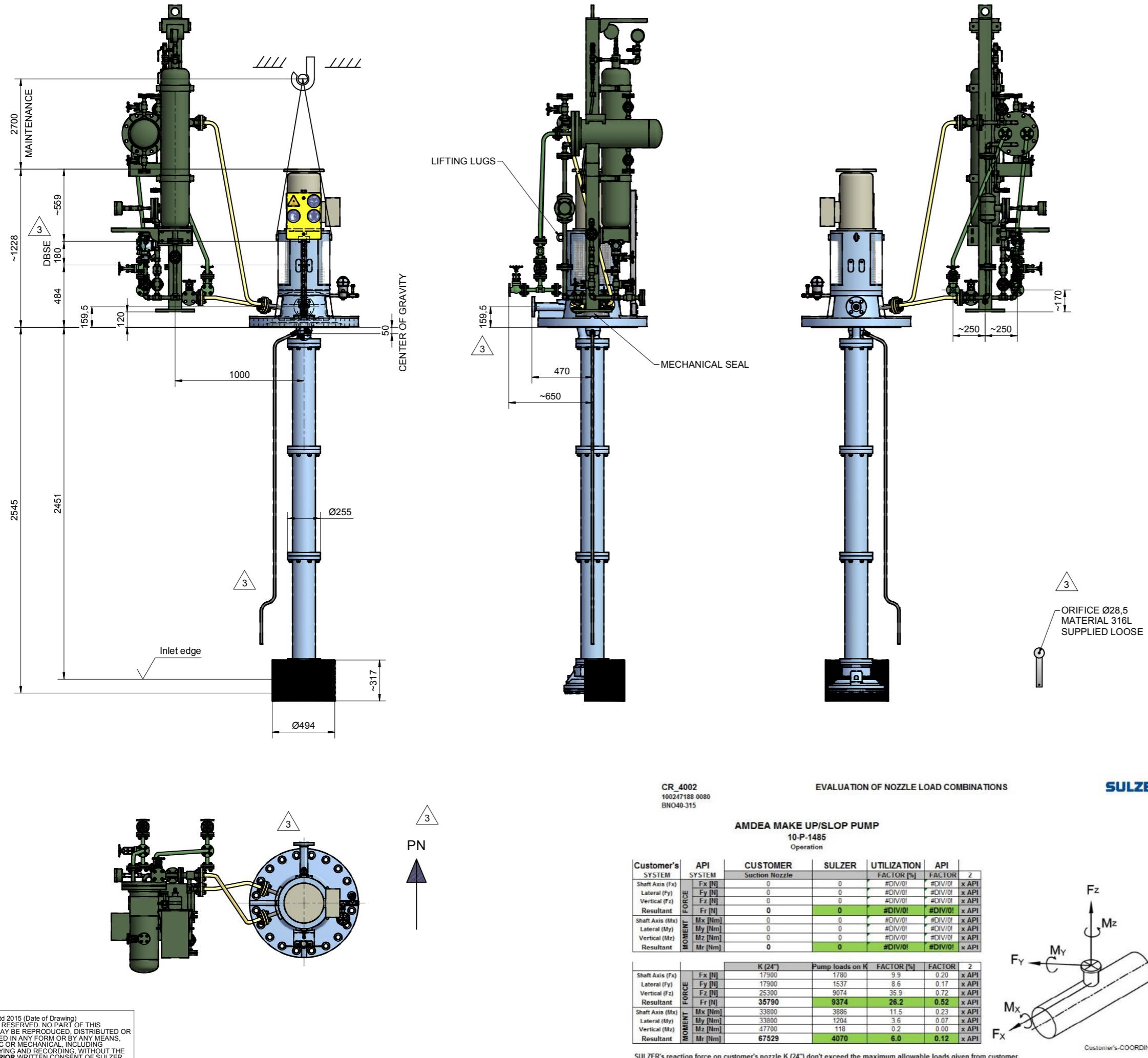
**SULZER** 

DRAWING TITLE:

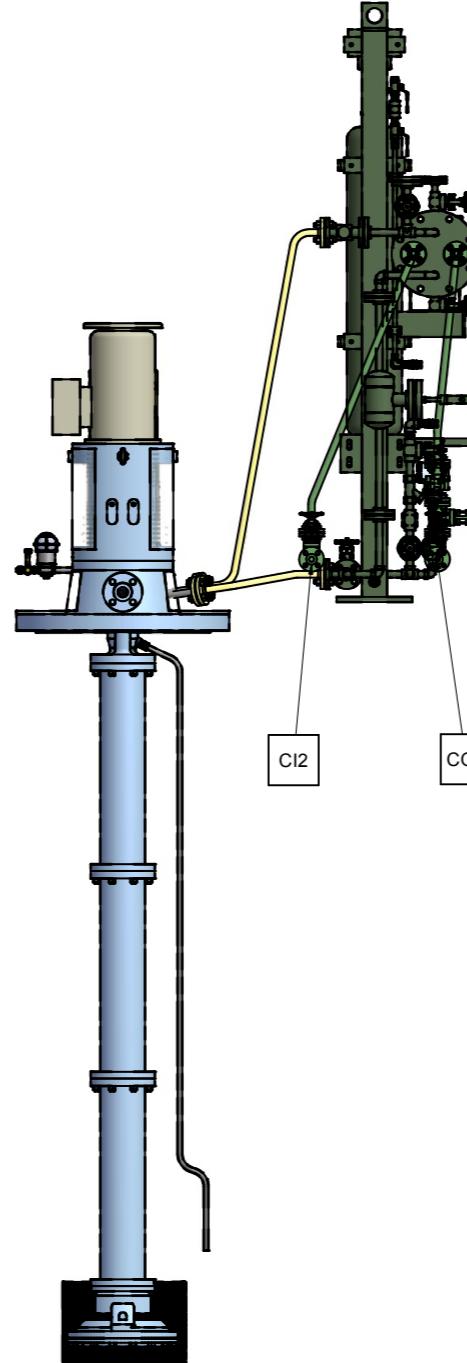
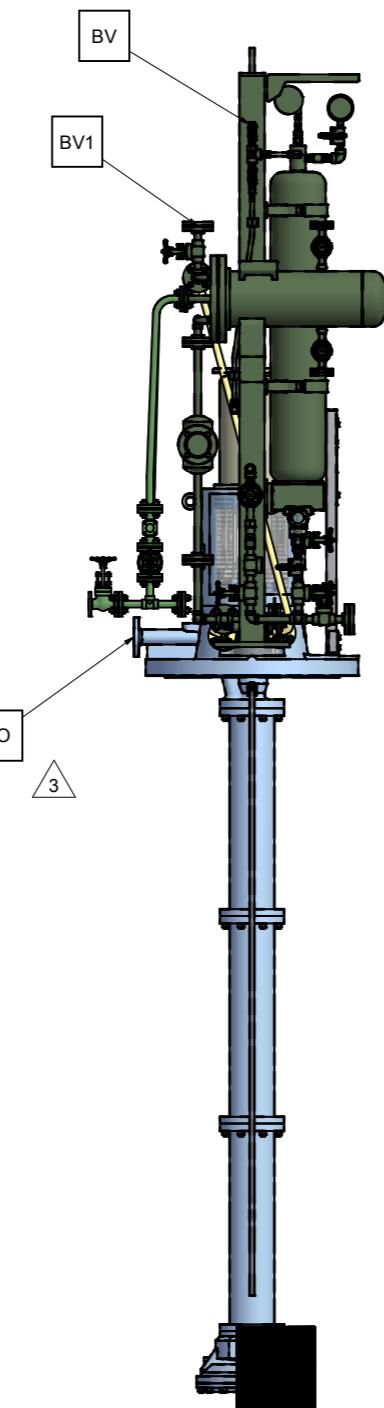
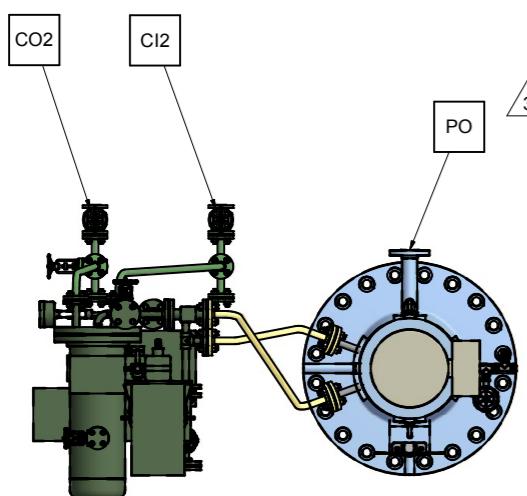
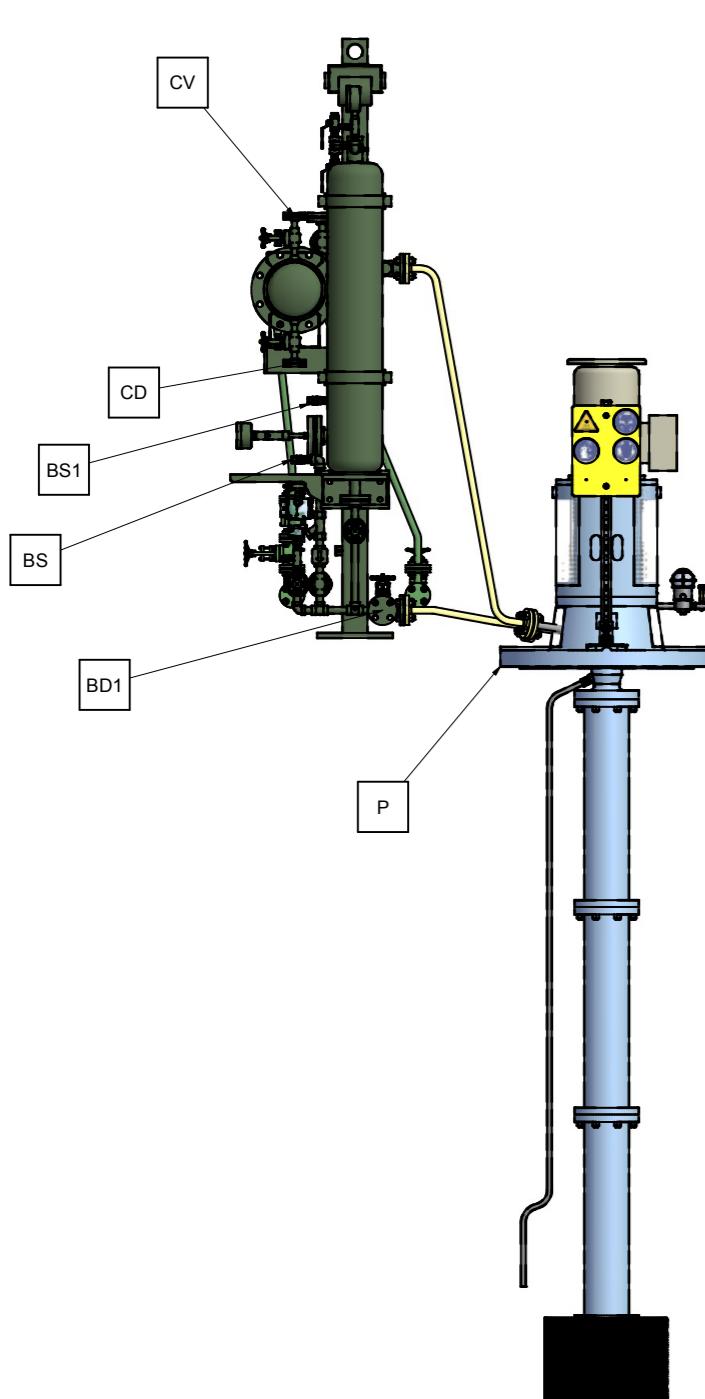
General Arrangement drawing for Item 10-P-1485

DRAWING No. VP-10-00-MA-0003-0814 SHEET No. 1 OF 4 REV. 03

REV. MODIFICATION	MODIFIED	CHECKED	APPROVED
SEP. PARTS LIST: NO	FORMAT: A1	DESIGN GROUP: -	FIRST ANGLE PROJECTION <input checked="" type="checkbox"/>
REPLACED BY: -	SUBSTITUTE FOR: -	ORIGINAL SCALE: -	DRAWN: 12-Dec-2016 T.Ratzel
BNO 40-315	GENERAL ARRANGEMENT GA ISOMETRIC AND DATA SHEET	CHECKED: 12-Dec-2016 R.Scherban	APPROVED: <input checked="" type="checkbox"/>
100247188-0080	GENERAL ARRANGEMENT DRAWING		
SULZER	PART NO. EN PGA1002471880080-01	1 / 4	



<b>CONTRACT DATA</b>																			
PURCHASER:	AIOTEC GmbH																		
USER:	Kangan Petro-Refining Co.																		
JOB/PROJECT:	Kangan C2 Recovery and Fractionation Plant																		
CUST. P.O. NO.:	KP-10-00-PS-MA-P0-0003																		
SERVICE:	AMDEA MAKE UP/SLOP PUMP																		
INSTALLED AT:	KANGAN- ASSALUYEH - IRAN																		
PUMP OEM:	Sulzer Pumpen (Deutschland) GmbH																		
SULZER ORDER NO.:	100247188-0080																		
<b>IDENTIFICATION NUMBERS</b>																			
SULZER SERIAL NO.	CUSTOMER TAG NO'S																		
	PUMP DRIVER																		
583641	10-P-1485 10-M-1485																		
<b>DO NOT SCALE. DIMENSIONS: mm</b>																			
<b>UNLESS OTHERWISE SPECIFIED</b>																			
<b>TOLERANCES</b>																			
$\leq 500 \text{ mm}$ $\pm 3 \text{ mm}$																			
$> 500 \text{ mm}$ $\pm 12 \text{ mm}$																			
AUXILIARY CUSTOMER CONNECTION DIMENSIONS $\pm 25$																			
<b>MAXIMUM NOZZLE LOADINGS</b>																			
Forces do comply with 2 times of the forces shown in API 610																			
FORCE IN (N) MOMENTS IN (Nm)																			
<table border="1"> <thead> <tr> <th colspan="2">SUCT DISCH</th> </tr> <tr> <td>FORCE</td> <td><math>F_x</math> 1420</td> </tr> <tr> <td></td> <td><math>F_y</math> 1780</td> </tr> <tr> <td></td> <td><math>F_z</math> 1160</td> </tr> <tr> <td></td> <td><math>M_x</math> 2560</td> </tr> <tr> <td></td> <td><math>M_y</math> 920</td> </tr> <tr> <td></td> <td><math>M_z</math> 460</td> </tr> <tr> <td></td> <td><math>M_r</math> 700</td> </tr> <tr> <td></td> <td><math>M_r</math> 1240</td> </tr> </thead> </table>		SUCT DISCH		FORCE	$F_x$ 1420		$F_y$ 1780		$F_z$ 1160		$M_x$ 2560		$M_y$ 920		$M_z$ 460		$M_r$ 700		$M_r$ 1240
SUCT DISCH																			
FORCE	$F_x$ 1420																		
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	$M_z$ 460																		
	$M_r$ 700																		
	$M_r$ 1240																		
03	15.11.17	"R"	For Approval	TR	RS	CH	PL												
02	11.08.17	"R"	For Approval	TR	RS	CH	PL												
01	30.06.17	"R"	For Approval	TR	RS	CH	PL												
00	15.05.17	"F"	For Approval	TR	RS	CH	PL												
REV.	DATE	Status	Purpose of Issue	PRE'P.	CHC'D.	APP'D.	AUTH'D.												
KANGAN																			
C2 RECOVERY & FRACTIONATION PLANT																			
KANGAN PETRO RIFINING CO.																			
P.O. No.: KP-10-00-PS-MA-P0-0003																			
SCALE :																			
<b>SULZER</b>																			
<b>EIED</b>																			
DRAWING TITLE:																			
General Arrangement drawing for Item 10-P-1485																			
DRAWING No.	VP-10-00-MA-0003-0814	SHEET No.	2 OF 4	REV. 03															
REV. MODIFICATION																			
SEP. PARTS LIST:	NO	FORMAT: A1	DESIGN GROUP: -	FIRST ANGLE PROJECTION															
REPLACED BY:	-	SUBSTITUTE FOR:	-	ORIGINAL SCALE:															
BNO	40-315			DRAWN: 12-Dec-2016 T.Ratzel															
GENERAL ARRANGEMENT FOUNDATION AND NOZZLE																			
Customer's COORDINATES																			
Customer's COORDINATES																			
APPROVED:																			
100247188-0080																			
GENERAL ARRANGEMENT DRAWING																			
SULZER	PART NO.	EN	PGA1002471880080-01	2 / 4															



CONNECTION LEGEND			
ITEM	DESCRIPTION	SIZE	TYPE
P	PUMP FLANGE	24"	ASME B16.5 150 RF
PO	PUMP DISCHARGE NOZZLE	1,5"	ASME B16.5 300 RF
CI2	COOLING HEADER - INLET	3/4"	ASME B16.5 150 RF
CO2	COOLING HEADER - OUTLET	3/4"	ASME B16.5 150 RF
BS	PLAN 53B RESERVOIR FILL	1/2"	NPT-F QUICK COUPLING
BS1	PLAN 53B NITROGEN CHARGE	1/4"	NPT-F QUICK COUPLING
BD1	PLAN 53B RESERVOIR DRAIN	3/4"	ASME B16.5 300 RF BLIND FLANGE
BV	PLAN 53B HIGH POINT VENT	3/4"	ASME B16.5 300 RF BLIND FLANGE
BV1	PLAN 53B ACCUMULATOR VENT	3/4"	ASME B16.5 300 RF BLIND FLANGE
CV	PLAN 53B COOLER VENT	1/2"	ASME B16.5 150 RF BLIND FLANGE
CD	PLAN 53B COOLER DRAIN	1/2"	ASME B16.5 150 RF BLIND FLANGE

CONTRACT DATA	
PURCHASER:	AIOTEC GmbH
USER:	Kangan Petro-Refining Co.
JOB/PROJECT:	Kangan C2 Recovery and Fractionation Plant
CUST. P.O. NO.:	KP-10-00-PS-MA-P0-0003
SERVICE:	AMDEA MAKE UP/SLOP PUMP
INSTALLED AT:	KANGAN- ASSALUYEH - IRAN
PUMP OEM:	Sulzer Pumpen (Deutschland) GmbH
SULZER ORDER NO.:	100247188-0080
IDENTIFICATION NUMBERS	
SULZER SERIAL NO.	CUSTOMER TAG NO'S
	PUMP DRIVER
583641	10-P-1485 10-M-1485
DO NOT SCALE. DIMENSIONS: mm	
■ CERTIFIED FINAL	
UNLESS OTHERWISE SPECIFIED	
TOLERANCES	
≤ 500 mm ± 3mm	
> 500 mm ± 12mm	
AUXILIARY CUSTOMER CONNECTION DIMENSIONS ± 25	

03	15.11.17	"R"	For Approval	TR	RS	CH	PL
02	11.08.17	"R"	For Approval	TR	RS	CH	PL
01	30.06.17	"R"	For Approval	TR	RS	CH	PL
00	15.05.17	"F"	For Approval	TR	RS	CH	PL
REV.	DATE	Status	Purpose of Issue	PRE'P.	CHC'D.	APP'D.	AUTH'D.

KANGAN  
C2 RECOVERY & FRACTIONATION PLANT



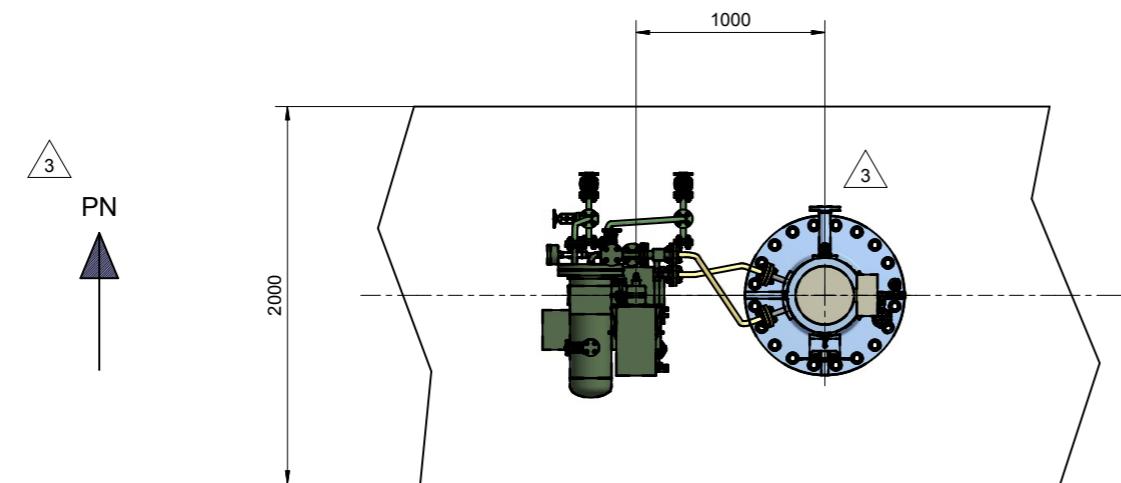
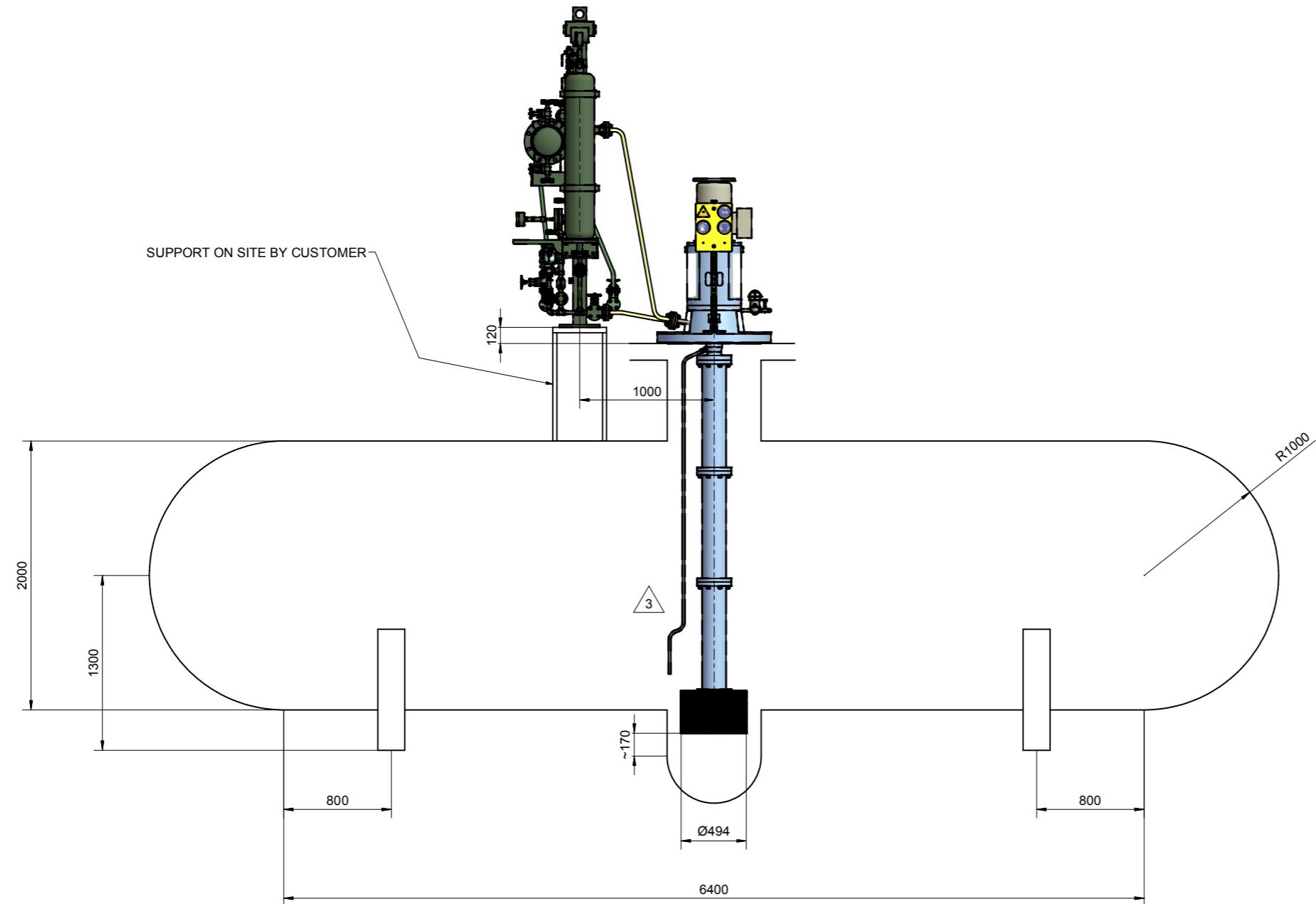
P.O. No.: KP-10-00-PS-MA-P0-0003 SCALE :

**SULZER**

DRAWING TITLE:  
General Arrangement drawing for Item 10-P-1485

DRAWING No. VP-10-00-MA-0003-0814 SHEET No. 3 OF 4 REV. 03

REV.	MODIFICATION	MODIFIED	CHECKED	APPROVED
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REPLACED BY:	-	SUBSTITUTE FOR:	ORIGINAL SCALE:	-
BNO	40-315	GENERAL ARRANGEMENT	DRAWN: 12-Dec-2016 T.Ratzel	
	-	CONNECTION LAYOUT	CHECKED: 12-Dec-2016 R.Scherban	APPROVED:
100247188-0080		GENERAL ARRANGEMENT DRAWING		
SULZER		PART NO.	EN	PGA1002471880080-01 3 / 4



CONTRACT DATA							
PURCHASER:							AIOTEC GmbH
USER:							Kangan Petro-Refining Co.
JOB/PROJECT:							Kangan C2 Recovery and Fractionation Plant
CUST. P.O. NO.:							KP-10-00-PS-MA-PO-0003
SERVICE:							AMDEA MAKE UP/SLOP PUMP
INSTALLED AT:							KANGAN- ASSALUYEH - IRAN
PUMP OEM:							Sulzer Pumpen (Deutschland) GmbH
SULZER ORDER NO.:							100247188-0080
IDENTIFICATION NUMBERS							
SULZER SERIAL NO.	CUSTOMER TAG NO'S						
	PUMP	DRIVER					
583641	10-P-1485	10-M-1485					
CERTIFIED FINAL				DO NOT SCALE. DIMENSIONS: mm			
<input checked="" type="checkbox"/>				UNLESS OTHERWISE SPECIFIED			
<input type="checkbox"/>				TOLERANCES			
				≤ 500 mm ± 3mm			
				> 500 mm ± 12mm			
AUXILIARY CUSTOMER CONNECTION DIMENSIONS ± 25							
03	15.11.17	"R"	For Approval	TR	RS	CH	PL
02	11.08.17	"R"	For Approval	TR	RS	CH	PL
01	30.06.17	"R"	For Approval	TR	RS	CH	PL
00	15.05.17	"F"	For Approval	TR	RS	CH	PL
REV.	DATE	Status	Purpose of Issue	PRE'P.	CH'C'D.	APP'D.	AUTH'D.
KANGAN C2 RECOVERY & FRACTIONATION PLANT							
P.O. No.: KP-10-00-PS-MA-PO-0003							
SCALE :							
<b>SULZER</b>							
DRAWING TITLE: General Arrangement drawing for Item 10-P-1485							
DRAWING No.	VP-10-00-MA-0003-0814	SHEET No.	4 OF 4	REV.	03		
REV.	MODIFICATION	MODIFIED	CHECKED	APPROVED			
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REPLACED BY:	-	SUBSTITUTE FOR:		ORIGINAL SCALE:			
BNO	GENERAL ARRANGEMENT			DRAWN:	12-Dec-2016		
40-315	SCHEMA DRAWING			T.Ratzel			
	-			CHECKED:	12-Dec-2016		
				R.Scherban			
100247188-0080	GENERAL ARRANGEMENT DRAWING			APPROVED:			
SULZER	PART NO.	EN	PGA1002471880080-01	4 / 4			