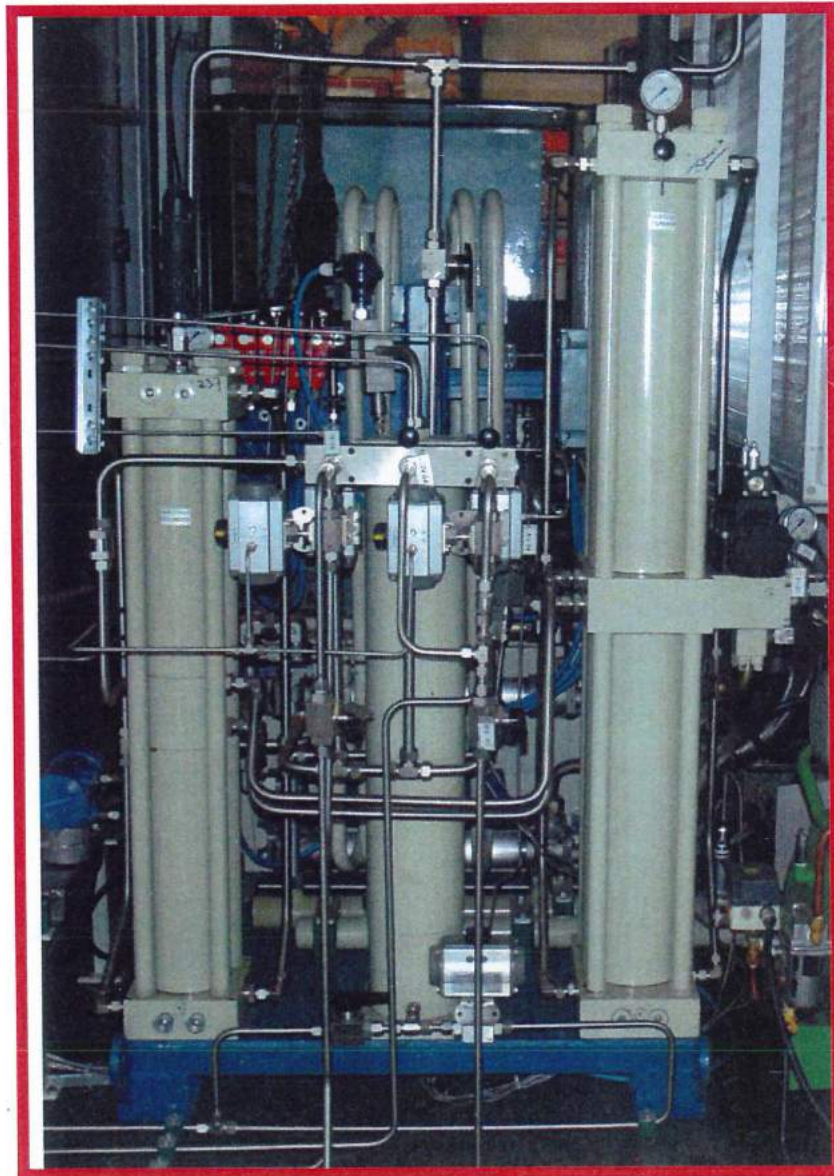


**OPERATION AND SERVICE MANUAL
FOR
HYDRAULIC BOOSTER COMPRESSOR**

Model: B50-30



INDIAN COMPRESSORS LIMITED

Compressor B50-30

COMPRESSORS IDENTIFICATION INFORMATION

Compressor Model: **B50-30**

Serial Number:

PO. No. **HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01**
DATE: 18.04.2019

Year Of Manufacture: **SEPT. 2019**

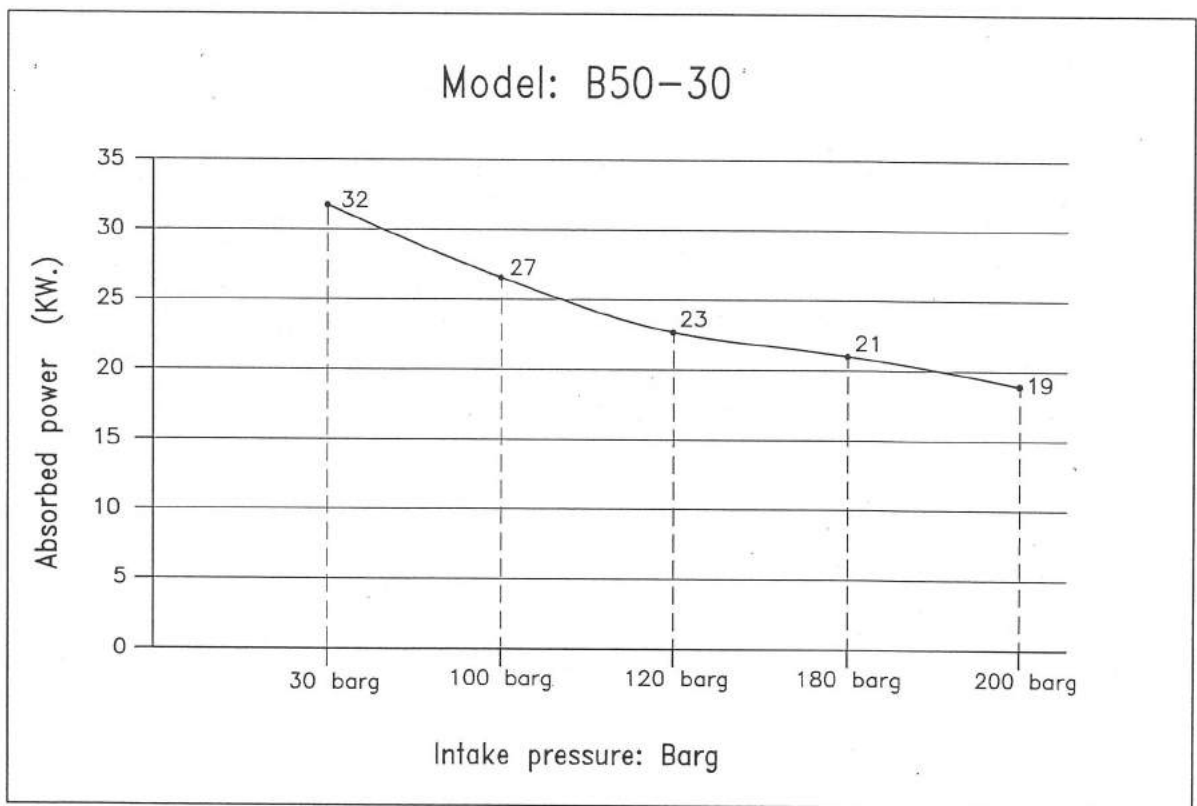
Customer: **HPOIL Gas Private Limited**

INDEX

TECHNICAL DATA OF COMPRESSOR
COMPRESSOR LIFTING MOD. B50-30
COMPRESSOR DIMENSIONS
COMPRESSOR FOUNDATION
MAINTENANCE SCHEDULE
MANUAL
DRAWINGS
ELECTRIC DOCUMENTATION

B50-30 Breakpower

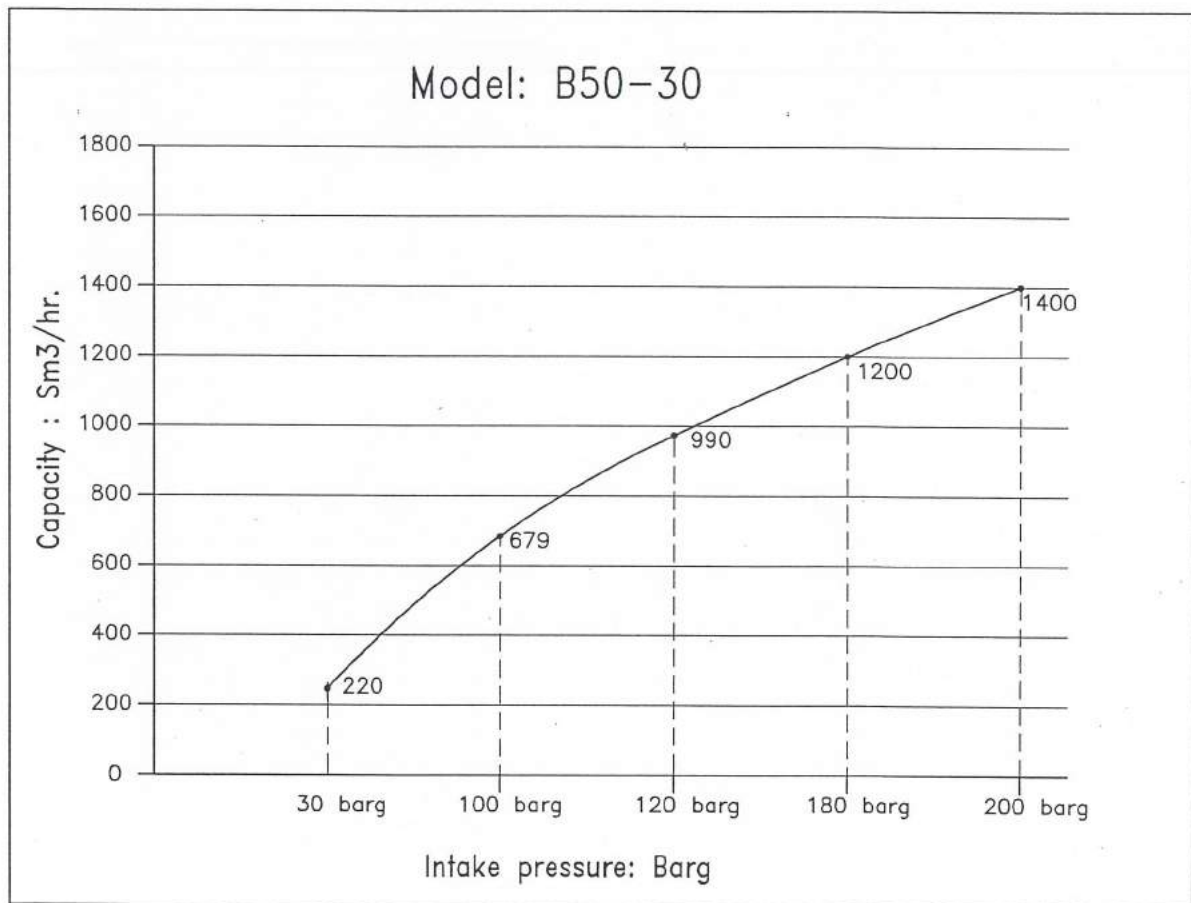
Inlet pressure (barg)	30	100	120	180	200
Outlet pressure (barg)	250	250	250	250	250
Absorbed power (KW.)	32	27	23	21	19



DIDWANIA COMPRESSORS	TITLE CAPACITY Vs ENERGY CONSUMPTION CURVE FOR HYDRAULIC COMPRESSOR MODEL: B50-30		INITIALS	DATE
		DRAWN	JACOB	16.06.19
		CHECKED	N.SINGH	16.06.19
		APPROVED		
INDIAN COMPRESSORS LIMITED		DRG.NO.	SCNG-029	

B50-30 Capacity

Inlet pressure (barg)	30	100	120	180	200
Outlet pressure (barg)	250	250	250	250	250
Capacity (Sm ³ /hr.)	220	679	990	1200	1400



DIDWANIA COMPRESSORS	TITLE CAPACITY Vs SUCTION PRESSURE CURVE FOR HYDRAULIC COMPRESSOR MODEL: B50-30		INITIALS	DATE
		DRAWN	JACOB	16.06.19
		CHECKED	N.SINGH	16.06.19
		APPROVED		
INDIAN COMPRESSORS LIMITED		DRG.NO.	SCNG-028	

**TECHNICAL DATA
OF COMPONENTS**

Compressor B50-30

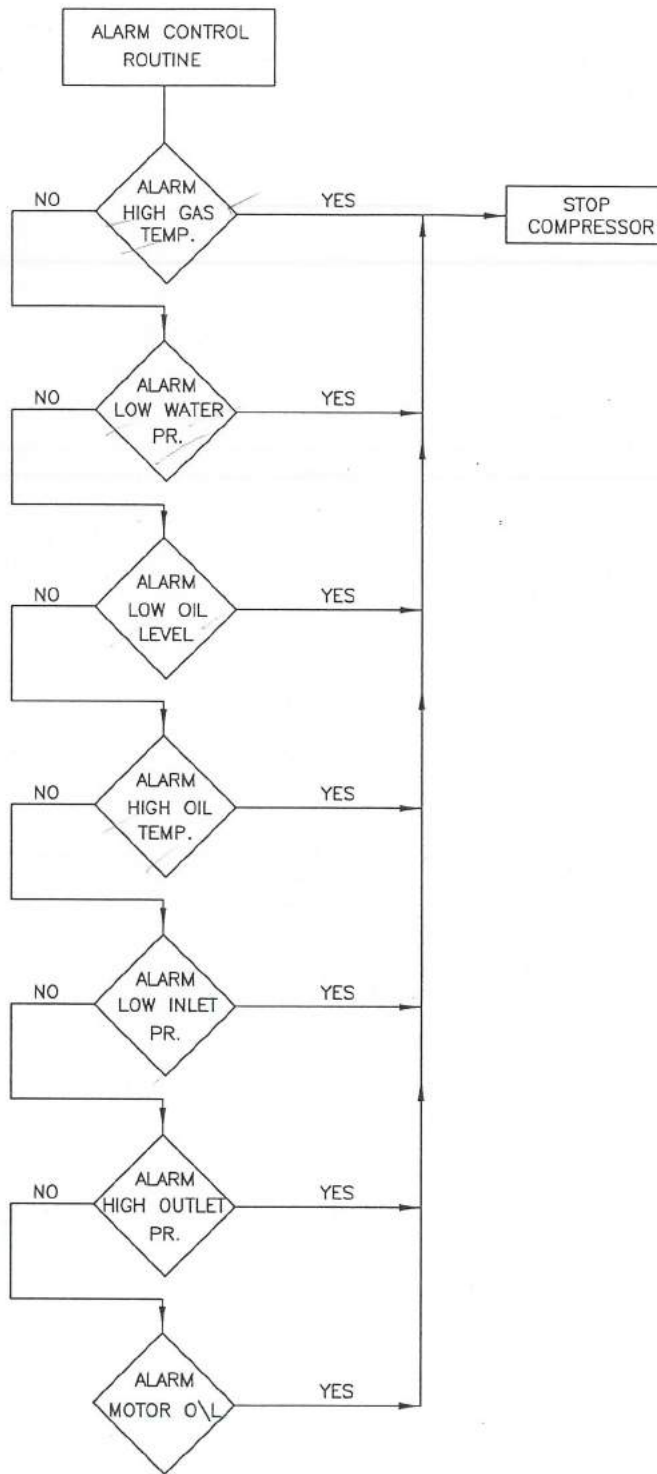
The compressor is supplied completed with:

1. Closed loop cooling system with radiator and electric fan: the gas is cooled , after is compression stage, in water gas heat exchanger . The oil is cooled by means of a water – oil heat exchanger.
2. N.I drive explosion – proof asynchronous electric motor ; n degree of poles; 4 – 415 V/50Hz – +/- 10% power 37 kw.
3. Safety and control devices including:- delivery pressure gauges ; delivery pressure switch; gas high temperature thermostat ; oil high temperature thermostat ; safety relief valves on each compression stage; sight and electric oil levels; start stop push button panel.

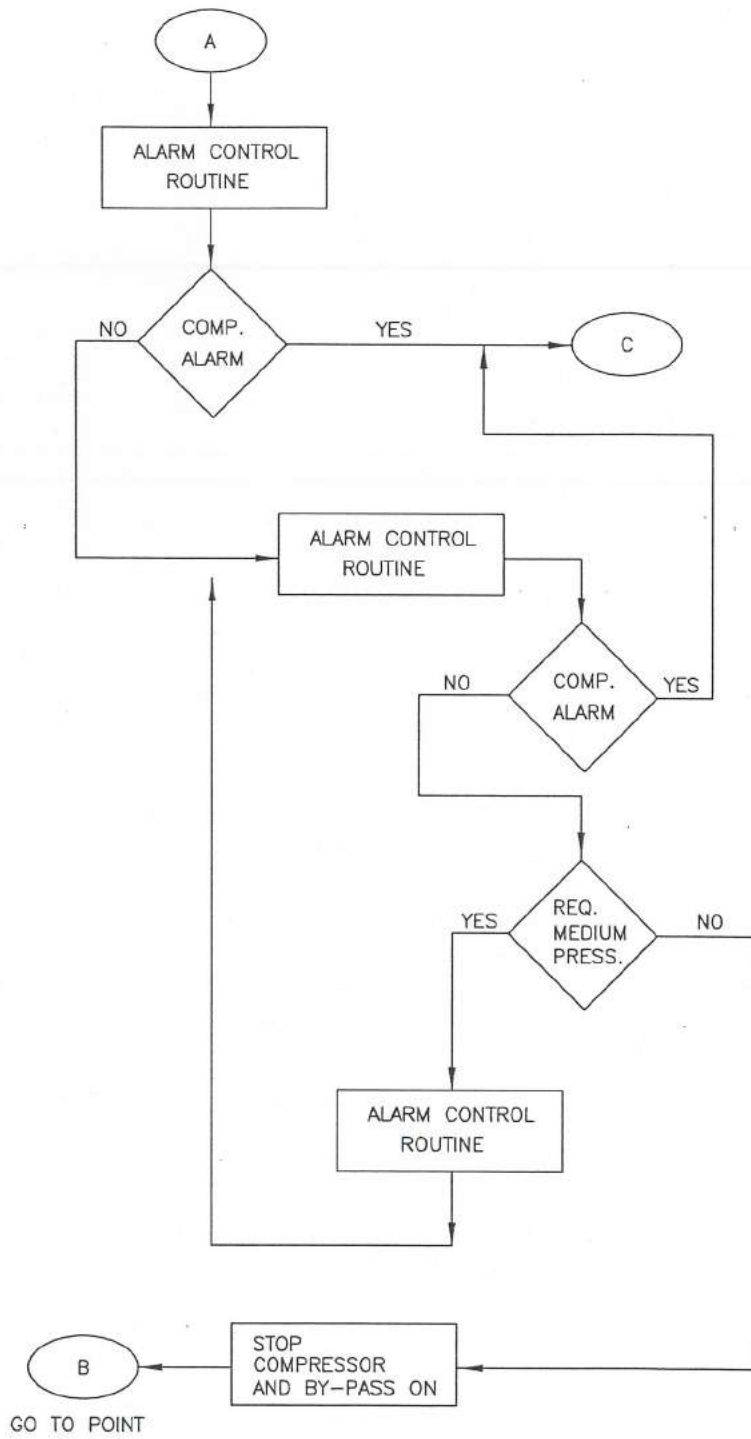
Technical notes:

- The operation of the compressor is automatic
- The above mentioned groups are interconnected and mounted on a single base
- No venting system is provided when the compressor starts and stops since the compressor can start under load - hydraulic oil capacity; 250 litres.
- Noise level – 1 meter distance – 75 dBa.
- Room temperature : 10/+45 degree C – hydraulic oil temperature ; +10/50 degree C
- Hydraulic oil filtering ; 20 micron – intake gas filtering ; 10 micron.
- Gas and water piping entirely pre-built and assembled
- The intake and delivery gas connections are placed on the base. The vents , including the safety relief valve exhausts are collected in a manifold ; we advise you to convey these exhausts into safety area.
- On the compressor can be installed an additional water – gas cooling system which must be connected by the customer when the room temperature is high or low gas temperature on the outlet is needed.
- As to the installation , no particular foundation is needed ; the compressor has simply to be set on the floor and gas , electrical and water connections are only to be connected to start the compressor.

ALARM



DIDWANIA COMPRESSORS	TITLE		INITIALS	DATE
	INTERLOCK BLOCK DIAGRAM B50-30	DRAWN	JACOB	06.03.18
INDIAN COMPRESSORS LIMITED		CHECKED	KSB	06.03.18
		APPROVED		
		DRG.NO.	SCNG-029	

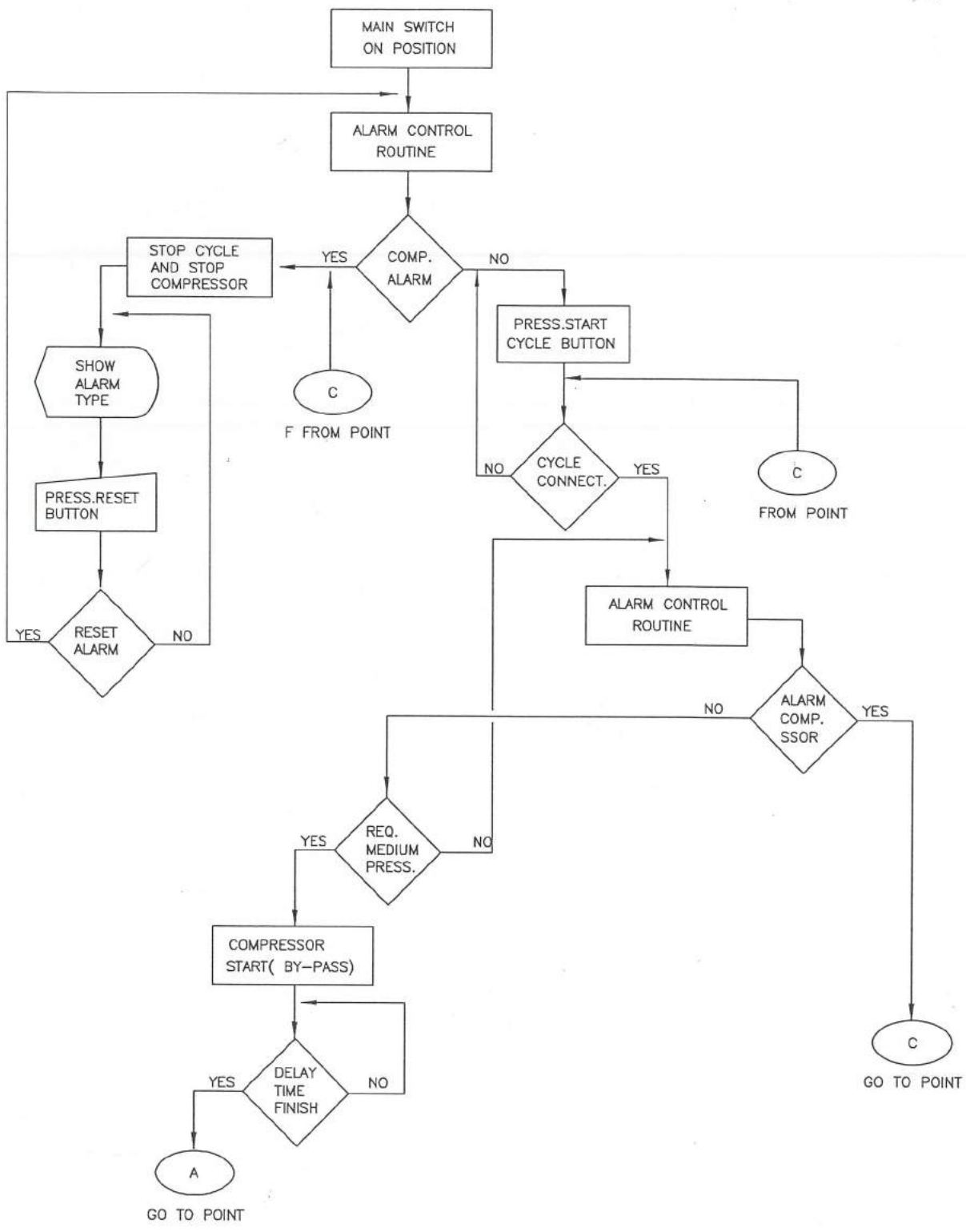


**DIDWANIA
COMPRESSORS**

TITLE
ALARM ROUTINE
FLOW CHART OF
COMP.MODEL: B50-30

	INITIALS	DATE
DRAWN	JACOB	06.03.18
CHECKED	KSB	06.03.18
APPROVED		
DRG.NO.	SCNG-030	

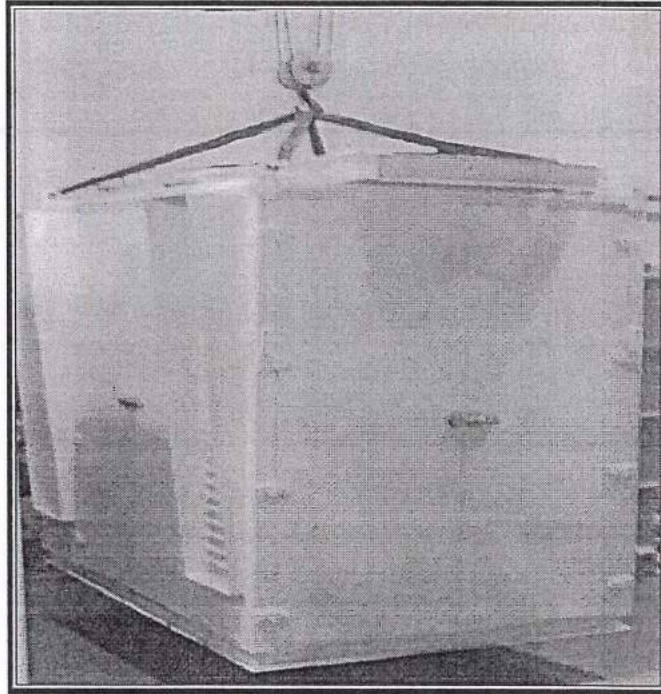
INDIAN COMPRESSORS LIMITED



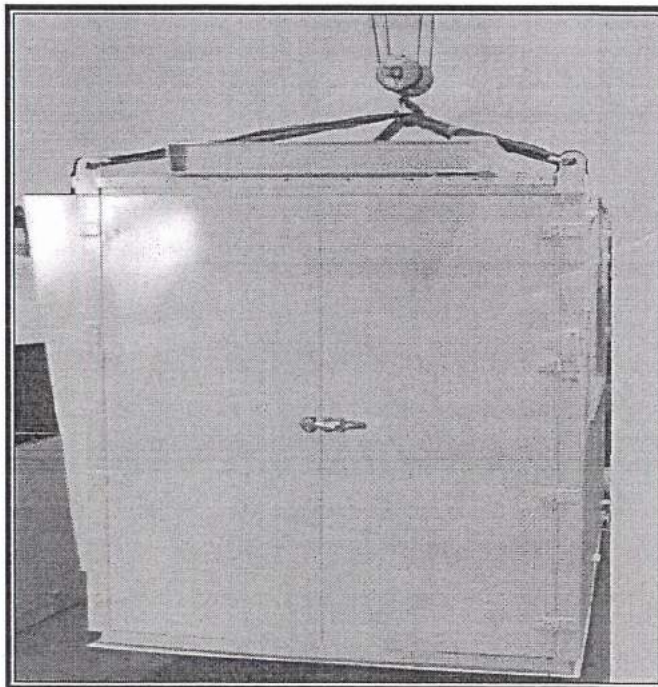
DIDWANIA COMPRESSORS	TITLE	INITIALS	DATE
	FLOW CHART OF COMP.MODEL: B50-30	JACOB	06.03.18
		KSB	06.03.18
INDIAN COMPRESSORS LIMITED		DRG.NO.	SCNG-031

**COMPRESSOR
LIFTING**

SHIPPING OF THE COMPRESSOR MODEL: B50-30



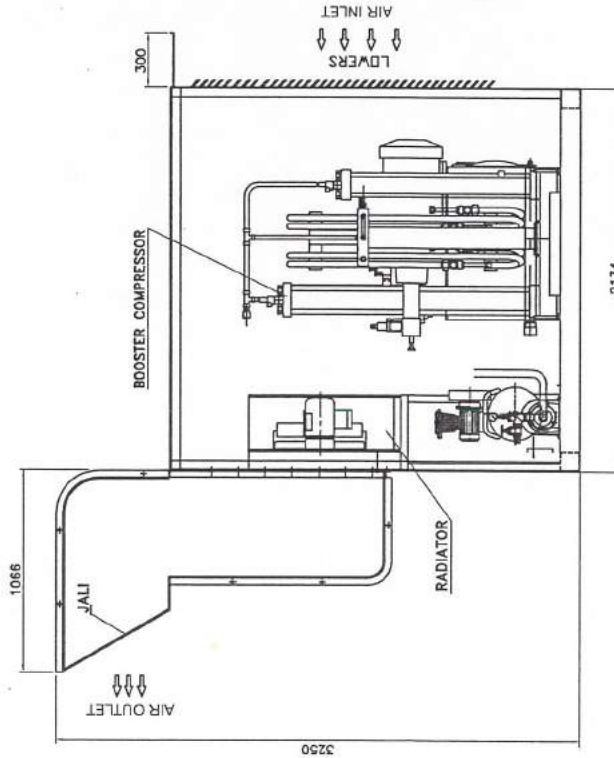
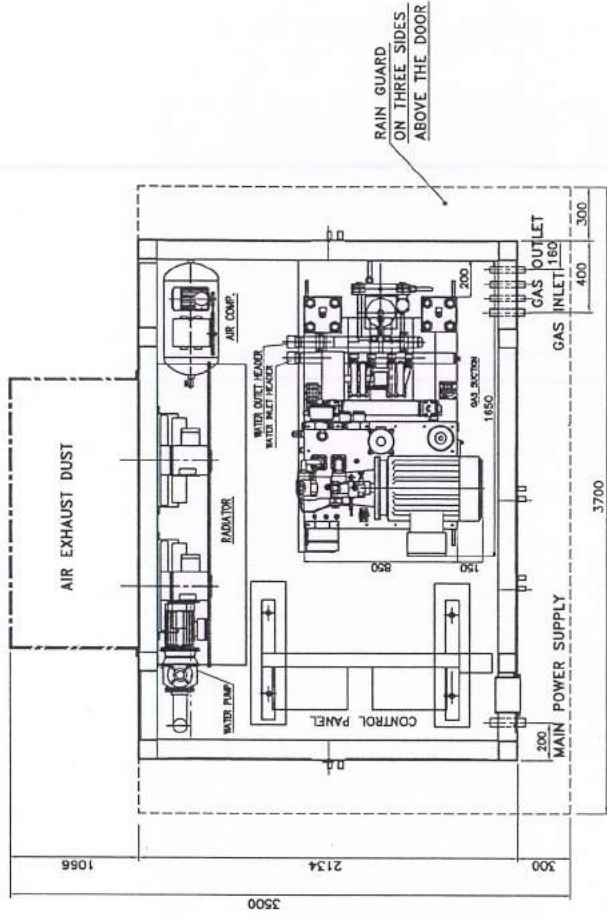
Lift the compressor as shown in photo
Length each cable = 2.6 m.
Compressor weight = 5500 kg.



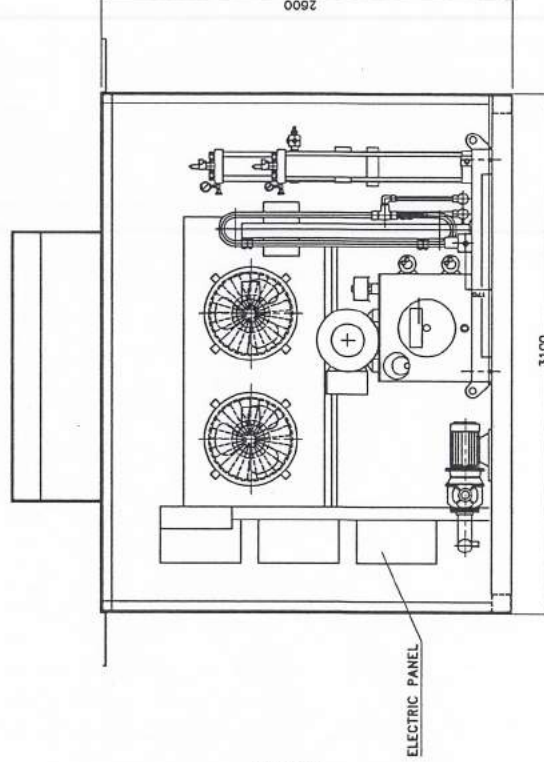
**COMPRESSOR
DIMENSIONS**

DO NOT SCALE THE DRG. IF IN DOUBT ASK

A2



SECTIONAL SIDE VIEW



ELEVATION

ALL DIMENSIONS ARE IN MM.

OVERALL SIZE IN MM.		
L	W	H
3700	3500	3250

WEIGHT IN TON	
EMPTY	3.8 TON
FULL LOAD	4.5 TON

CUSTOMER: HPOIL GAS PRIVATE LIMITED
 P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
 DATE: 18.04.2019

INITIALS	DATE
JACOB	20.05.19
N.SINGH	20.05.19
APPROVED	

TITLE	INITIALS
G.A.DRAWING BOOSTER B50-30 WITH ENCLOSURE (WITHOUT CASCADE)	

DRWN	CHECKED	APPROVED
JACOB	N.SINGH	

DRG.NO.	GA-B30-0810	RO

COMPRESSORS	INITIALS
DIDWANIA	

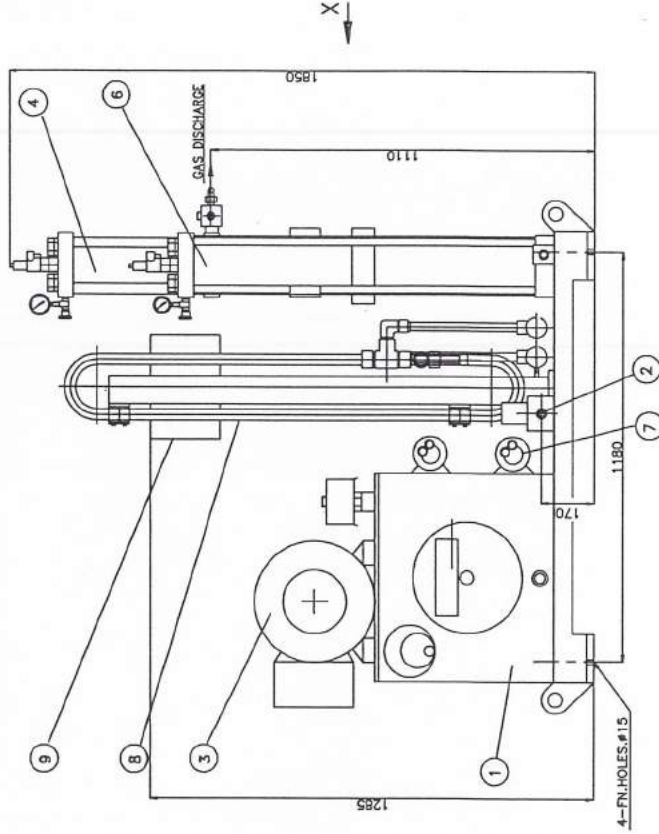
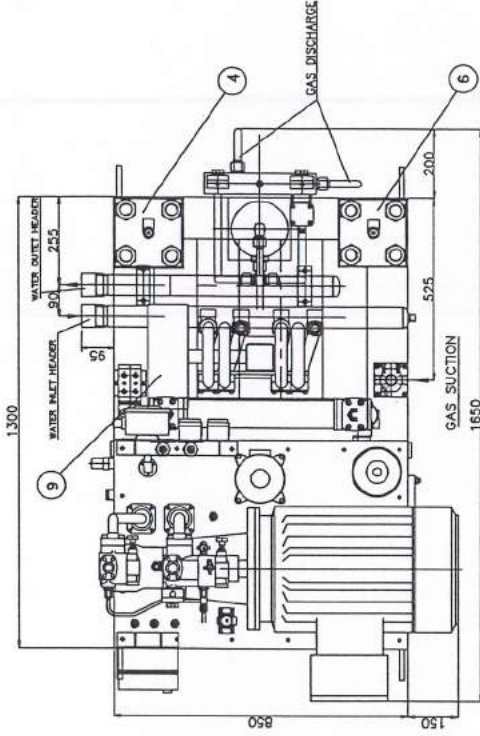
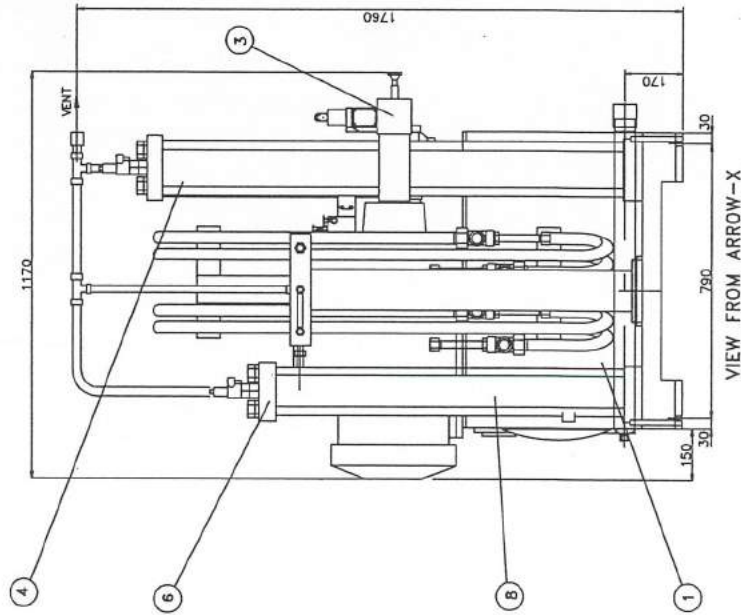
INDIAN COMPRESSORS LIMITED	MODIFICATIONS

Rev.	DATE
2	
1	

DO NOT SCALE THE DRG. IF IN DOUBT ASK

A3

S.NO.	QTY.	DESCRIPTION
9	1	ELECTRIC PANEL
8	2	GAS-WATER HEAT EXCHANGER
7	1	OIL-WATER HEAT EXCHANGER
6	1	2ND. STAGE CYLINDER
4	1	1ST. STAGE CYLINDER
3	1	OIL ELECTROPUMP GROUP
2	1	SUCTION LINE GRUOP
1	1	OIL TANK WITH ACCESSORIES



NOTE :

1. COMPLETE ENCLOSURE SHALL BE MOUNTED DIRECT ON FOUNDATION. NO FOUNDATION BOLTS REQUIRED FOR ERECTION OF ENCLOSURE AS THERE IS NO DYNAMIC LOAD IN OUR HYDRAULIC BOOSTER COMPRESSOR.
2. ENTIRE UNIT IS SUPPLIED WITH ACOUSTIC ENCLOSURE.

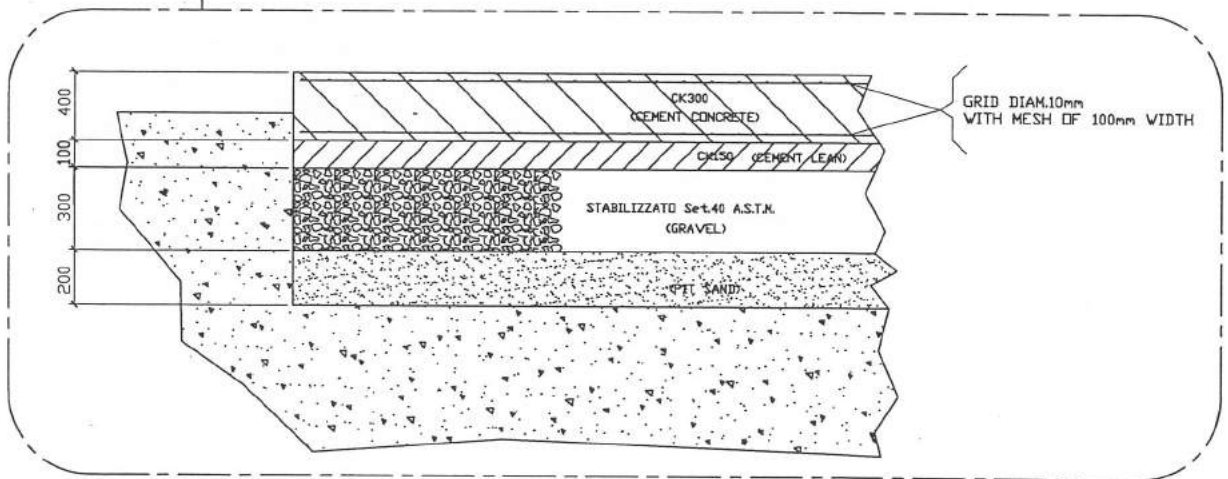
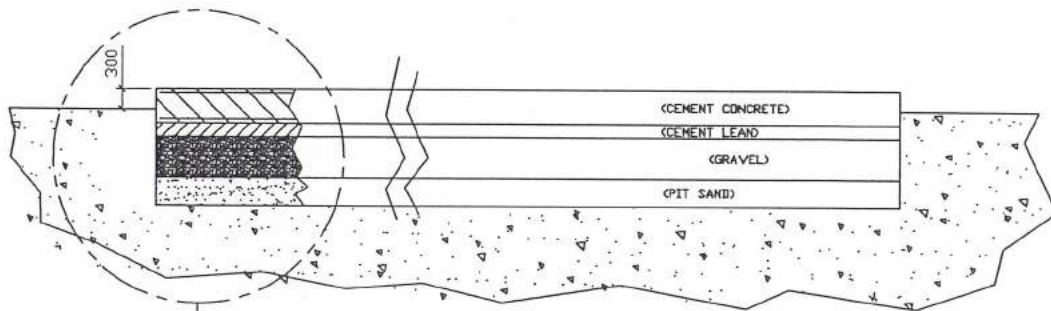
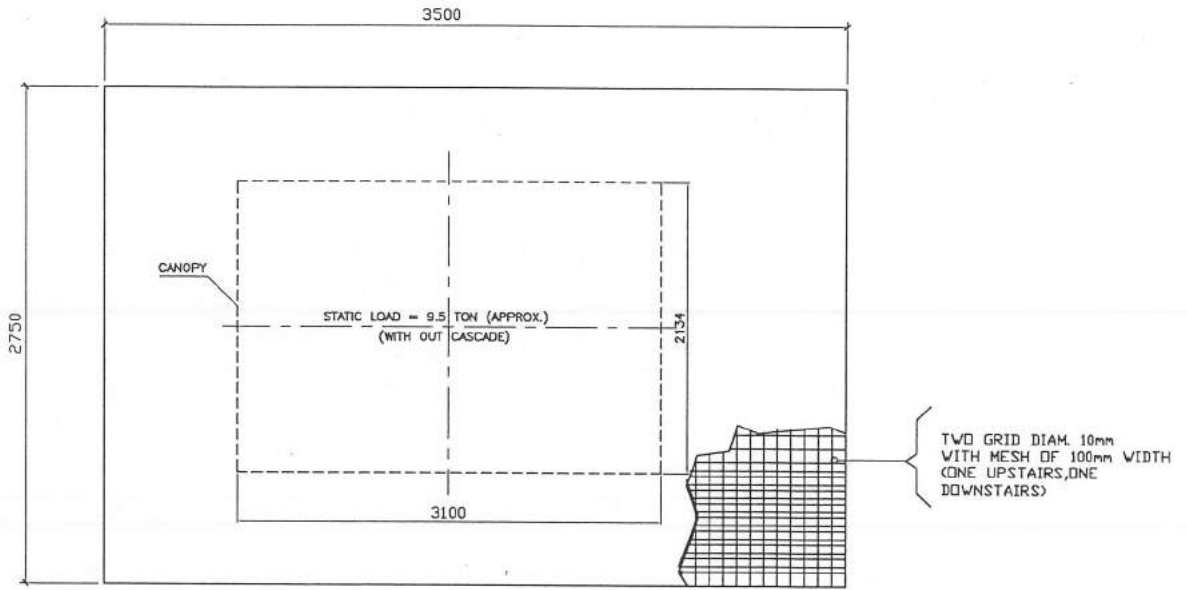
CUSTOMER: HPOIL GAS PRIVATE LIMITED
 P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/JCL/2019/01
 DATE: 18.04.2019

TITLE		GEN. LAYOUT OF		DATE	
DIDWANIA COMPRESSORS	CNG BOOSTER COMPRESSOR B50-30	DRAWN	JACOB	20.05.19	
		CHECKED	N.SINGH	20.05.19	
		APPROVED			
INDIAN COMPRESSORS LIMITED		DRG.NO.	SCNG-004A	RO	

NOTE - ALL DIMENSIONS ARE IN M.M.

**COMPRESSOR
FOUNDATION**

ISO CONTAINER PLATE



NOTE - ALL DIMENSION ARE IN M.M.

NOTES :-

1. GROUTING OF EQUIPMENT ON THE FOUNDATION INCLUDING SUPPLY OF MATERIAL WITH FOUNDATION BOLT, ANCHOR FASTENERS AS REQUIRED IS PART OF ERECTION * IS IN ICL SCOPE.
2. COMPLETE ENCLOSURE SHALL BE MOUNTED DIRECT ON FOUNDATION. NO FOUNDATION BOLTS REQUIRED FOR ERECTION OF PACKAGE AS THERE IS NO DYNAMIC LOAD IN OUR HYDRAULIC BOOSTER COMPRESSOR.

CUSTOMER: HPOIL GAS PRIVATE LIMITED
P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
DATE: 18.04.2019

		DIDWANIA COMPRESSORS	TITLE FOUNDATION OF CNG. BOOSTER COMPRESSOR MODEL: B50-30	INITIALS	DATE	
Rev.	DATE			INDIAN COMPRESSORS LIMITED	DRAWN	JACOB
				CHECKED	N.SINGH	20.05.19
				APPROVED		
				DRG.NO.	SCNG-002M	

**MAINTENANCE
SCHEDULE**

Preventive Maintenance Schedule 2000 / 6000 / 8000 hours

Estimated Down Time: 8 Hours
Number of Mandays required: 1 Day

Date:
R/O Name:
Compressor Model:
Compressor Sr. No.:
Hour Meter Reading:

S.No.	Type of Maintenance	Actual Status
A) Booster Compressor:		
1	Clean the Lubrication Oil Filter. ✓	
2	Clean the Suction Gas Filter. ✓	
3	Clean the Suction Valve for 1st stage	
4	Clean the Discharge Valve for 1st stage	
5	Clean the Suction Valve for 2nd stage	
6	Clean the Discharge Valve for 2nd stage	
7	Clean the contacts of Main / Star / Delta Contactors	
8	Tight all the Electrical connection.	
9	Check Voltage and Current with Multimeter	
10	Check the setting of Overload relay of Main Motor	
11	Check the setting of Overload relays of Auxillary Motors	
12	Clean the electrical panel	
13	Check the oil level. It should be 50% to 70%	
14	Check the water level. It should be 60% to 90%	
15	Check for any Gas leakage. Rectify if found any	
16	Check for any Oil leakage. Rectify if found any	
17	Check for any Water leakage. Rectify if found any	
18	Check for any Abnormal Sound. Rectify if found any	
19	Fill all the working parameters in the Log Book	
20	Drain the moisture and oil from the oil seperator	
21	Clean the Compressor	
B) Air Compressor:		
1	Check the oil level in Air Compressor	
2	Check for any Air leakage. Rectify if found any	
3	Drain Water from the Air Receiver of Air Comp.	
4	Check for any Abnormal Sound. Rectify if found any	
5	Check the condition of Air Compressor Belt, Replace if required	

Preventive Maintenance Schedule 4000 hours

Estimated Down Time: 16 Hours

Number of Mandays required: 2 Days

Date:

R/O Name:

Compressor Model

Compressor Sr. No.

Hour Meter Reading

S.No.	Type of Maintenance	Actual Status
A) Booster Compressor:		
1	Replace the Lubrication Oil Filter	
2	Replace the Suction Gas Filter	
3	Check the condition of Suction Valve for 1st stage, Replace if required	
4	Check the condition of Discharge Valve for 1st stage, Replace if required	
5	Check the condition of Suction Valve for 2nd stage, Replace if required	
6	Check the condition of Discharge Valve for 2nd stage, Replace if required	
7	Clean the contacts of Main / Star / Delta Contactors, Replace if required	
8	Check the setting of Reversal valve	
9	Check the setting of Pressure Switch of High Bank	
10	Check the setting of Pressure Switch of Medium Bank	
11	Check the setting of Suction Pressure Switch	
12	Check the setting of Emergency Pressure Switch	
13	Tight all the Electrical connection.	
14	Check Voltage and Current with Multimeter	
15	Check the setting of Overload relay of Main Motor	
16	Check the setting of Overload relays of Auxiliary Motors	
17	Clean the electrical panel	
18	Check the oil level. It should be 50% to 70%	
19	Check the water level. It should be 60% to 90%	
20	Check for any Gas leakage. Rectify if found any	
21	Check for any Oil leakage. Rectify if found any	
22	Check for any Water leakage. Rectify if found any	
23	Check for any Abnormal Sound. Rectify if found any	
24	Fill all the working parameters in the Log Book	
25	Drain the moisture and oil from the oil separator	
26	Clean the Compressor	

B) Air Compressor:

1	Replace the Air Compressor Oil
2	Check the setting of Air Compressor Pressure Switch
3	Check the condition of Air Compressor Belt, Replace if required
4	Check for any Air leakage. Rectify if found any
5	Drain Water from the Air Receiver of Air Comp.
6	Check for any Abnormal Sound. Rectify if found any

Preventive Maintenance Schedule 10000hours

Estimated Down Time: 36 Hours

Number of Mandays required: 3 Days

Date:

R/O Name:

Compressor Model

Compressor Sr. No.

Hour Meter Reading

S.No.	Type of Maintenance	Comments to replace	Actual status
A) Booster Compressor:			
1	Replace the Lubrication Oil Filter		
2	Replace the Suction Gas Filter		
3	Replace the 1st Stage Piston rings		
4	Replace the 2nd Stage Piston rings		
5	Replace the 1st Stage Piston Slyde Rings		
6	Replace the 2nd Stage Piston Slyde Rings		
7	Replace the 1st Stage Oil Dynamic Seal		
8	Replace the 2nd Stage Oil Dynamic Seal		
9	Replace the 1st Stage Oil Slyde Ring		
10	Replace the 2nd Stage Oil Slyde Ring		
11	Repalce the Compressor Oil		
12	Replace the Water in Compressor Radiator		
13	Check the condition of Liner 1st Stage		
14	Check the condition of Liner 2nd Stage		
15	Check the condition of Piston Rod 1st Stage		
16	Check the condition of Piston Rod 2nd Stage		
17	Check the condition of Piston 1st Stage		
18	Check the condition of Piston 2nd Stage		
19	Check the condition of Suction Valve for 1st stage, Replace if required		
20	Check the condition of Discharge Valve for 1st stage, Replace if required		
21	Check the condition of Suction Valve for 2nd stage, Replace if required		
22	Check the condition of Discharge Valve for 2nd stage, Replace if required		
23	Check the condition of Air Compressor Belt, Replace if required		
24	Clean the contacts of Main / Star / Delta Contactors, Replace if required		

25	Check the setting of Reversal valve	
26	Check the setting of Pressure Switch of High Bank	
27	Check the setting of Pressure Switch of Medium Bank	
28	Check the setting of Suction Pressure Switch	
29	Check the setting of Emergency Pressure Switch	
30	Tight all the Electrical connection.	
31	Check Voltage and Current with Multimeter	
32	Check the setting of Overload relay of Main Motor	
33	Check the setting of Overload relays of Auxiliary Motors	
34	Clean the electrical panel	
35	Check the oil level. It should be 50% to 70%	
36	Check the water level. It should be 60% to 90%	
37	Check for any Gas leakage. Rectify if found any	
38	Check for any Oil leakage. Rectify if found any	
39	Check for any Water leakage. Rectify if found any	
40	Check for any Abnormal Sound. Rectify if found any	
41	Fill all the working parameters in the Log Book	
42	Drain the moisture and oil from the oil separator	
43	Clean the Compressor	

B) Air Compressor:

1	Replace the Air Compressor Oil	
2	Check the setting of Air Compressor Pressure Switch	
3	Check the condition of Air Compressor Belt, Replace if required	
4	Check for any Air leakage. Rectify if found any	
5	Drain Water from the Air Receiver of Air Comp.	
6	Check for any Abnormal Sound. Rectify if found any	

Preventive Maintenance Schedule 16000 hours

Estimated Down Time: 36 Hours

Number of Mandays required: 3 Days

Date:
 R/O Name:
 Compressor Model
 Compressor Sr. No.
 Hour Meter Reading

S.No.	Type of Maintenance	Actual Status
A) Booster Compressor:		
1	Replace the Lubrication Oil Filter	
2	Replace the Suction Gas Filter	
3	Replace the 1st Stage Piston rings	
4	Replace the 2nd Stage Piston rings	
5	Replace the 1st Stage Piston Slyde Rings	
6	Replace the 2nd Stage Piston Slyde Rings	
7	Replace the 1st Stage Oil Dynamic Seal	
8	Replace the 2nd Stage Oil Dynamic Seal	
9	Replace the 1st Stage Oil Slyde Ring	
10	Replace the 2nd Stage Oil Slyde Ring	
11	Repalce the Compressor Oil	
12	Replace the Water In Compressor Radiator	
13	Check the condition of Liner 1st Stage	
14	Check the condition of Liner 2nd Stage	
15	Check the condition of Piston Rod 1st Stage	
16	Check the condition of Piston Rod 2nd Stage	
17	Check the condition of Piston 1st Stage	
18	Check the condition of Piston 2nd Stage	
19	Check the condition of Suction Vaive for 1st stage, Replace if required	
20	Check the condition of Discharge Valve for 1st stage, Replace if required	
21	Check the condition of Suction Vaive for 2nd stage, Replace if required	
22	Check the condition of Discharge Valve for 2nd stage, Replace if required	
23	Check the condition of Air Compressor Belt, Replace if required	
24	Clean the contacts of Main / Star / Delta Contactors, Replace if required	

25	Check the setting of Reversal valve	
26	Check the setting of Pressure Switch of High Bank	
27	Check the setting of Pressure Switch of Medium Bank	
28	Check the setting of Suction Pressure Switch	
29	Check the setting of Emergency Pressure Switch	
30	Tight all the Electrical connection.	
31	Check Voltage and Current with Multimeter	
32	Check the setting of Overload relay of Main Motor	
33	Check the setting of Overload relays of Auxillary Motors	
34	Clean the electrical panel	
35	Check the oil level. It should be 50% to 70%	
36	Check the water level. It should be 60% to 90%	
37	Check for any Gas leakage. Rectify if found any	
38	Check for any Oil leakage. Rectify if found any	
39	Check for any Water leakage. Rectify if found any	
40	Check for any Abnormal Sound. Rectify if found any	
41	Fill all the working parameters in the Log Book	
42	Drain the moisture and oil from the oil separator	
43	Clean the Compressor	

B) Air Compressor:

1	Replace the Air Compressor Oil	
2	Check the setting of Air Compressor Pressure Switch	
3	Check the condition of Air Compressor Belt; Replace if required	
4	Check for any Air leakage. Rectify if found any	
5	Drain Water from the Air Receiver of Air Comp.	
6	Check for any Abnormal Sound. Rectify if found any	

Monthly Check List for Booster B30-30 Compressor

R/O Name:
Compressor Sr. No.

Date:

S.No.	Type of Check	Status	Remarks
1	Clean the radiator from the top with Air		
2	Check the oil level. It should be 50% to 70%		
3	Check the water level. It should be 60% to 90%		
4	Check for any Gas leakage. Rectify if found any		
5	Check for any Oil leakage. Rectify if found any		
6	Check for any Water leakage. Rectify if found any		
7	Check for any Air leakage. Rectify if found any		
8	Check for any Abnormal Sound. Rectify if found any		
9	Fill all the working parameters in the Log Book		
10	Drain the moisture and oil from the oil separator		
11	Drain Water from the Air Receiver of Air Comp.		
12	Check the oil level in Air Compressor		
13	Clean the Compressor		

MANUAL

Compressor B30-30

INDEX

TECHNICAL DATA

COMPRESSOR OPERA

HYDRAULIC OIL CIRCUIT

GAS CIRCUIT

SAFETY AND MONITORING DEVICES

COOLING SYSTEM

COMPRESSOR INSTALLATION AND HOOK-UPS

COMPRESSOR START-UP

DRAINING OF SEPARATORS – DAMPER

SPARE PARTS

LIST OF INCLOSED DRAWINGS AND PHOTOGRAPHS

Compressor B50-30

TECHNICAL DATA

Compressor Type :	B50-30
Number of Cylinder:	2
Number of compression Stage:	2
Operation :	Continuous
Compressed Gas	Natural Gas

Gas intake requirements :

- Minimum pressure:	30 bar r
- Maximum Pressure:	250 bar r
- Gas Temperature:	20 degree c

Gas exhaust requirements :

-Maximum Pressure :	250 bar
Gas Temperature After final cooling :	about 10 degree C over ambient temperature

Environmental Operational Temperature :

- Minimum temperature :	- 10 c
- Maximum temperature :	-45 c

Compressor B50-30

Hydraulic Oil :-

- Quantity: 250 liters
- Recommended oil : SHELL TELLUS 32 or HLP-32

Oil Specification :

Density @ 15 C : 0.872 Kg /dm³

Flammability point V.A. ; 220 degree C

Flow point :- 30 degree C

Kinematic viscosity @ 40 C : 32 cSt

Kinematic viscosity at 100 C : 5,5 cSt

Viscosity index; 106

Hydraulic Oil Filtration;

(Model 30 RF 20 C)

-Low – pressure filter (max. 10 bar) installed on exhaust circuit. Filtration capability ; 20 micron.

Intake gas filtration;

- (Modal DF60 with cartridge type 0060 D010 BN3HC)

-Filter for medium – pressure (max. operational pressure 250 bar). Filtration capability;10 micron.

Cooling system

The cooling of the gas is achieved by means of an air – gas heat exchanger .

(Modal NHLN 58C)

Cooling water capacity: 80 liters

Compressor Oil

HLP-32

Set Pressure: 6 to 8 bar

Compressor B50-30.

ELECTRIC MOTORS:

Hydraulic oil pump Motor

1 no. Explosion proof electric motor with the following specifications :

Rpm. : 1475
Ins. : Cl. F
Amp.Temp. : 45 deg.C
Polarities : 4
Voltage : 415 +/- 10%
Frequency : 50 Hz
Power absorption : 37 kw
Construction type : B3

405 to 425 volt

37 kW

Radiator fan Motor

2 nos. electric motors;

Pole : 4
Voltage : 380-415 VAC
Frequency : 50 Hz
Power Absorption : 0.75 kw

0.75

Exhaust fan Motor

1 no. electric motors:

Pole : 4
Voltage : 380-415 VAC
Frequency : 50 Hz
Power Absorption : 0.75 kw

Compressor B50-30.

Water Pump Motor

1 no. electric motor:

Pole : 2
Voltage : 380-415 VAC
Frequency : 50 Hz
Power Absorption : 1.5 kw

Air Compressor Motor

1 no. electric motor:

Voltage : 380-415 VAC
Frequency : 50 Hz
Power Absorption : 1.5 kw

Mechanic Characteristics :

1st stage:

diam 145 mm
stroke 526 mm
rod 50 mm

2nd stage:

diam 100 mm
stroke 330 mm

Compressor B50-30.

COMPRESSOR OPERATION

The compressing unit is made up of the following main components ;

- A Tank and accessories (position 201 , drawing no. H-0000111N
- C Pumping assembly (position 2, 3 drawing NO. G-0000240N
- D Hydraulic exchange assembly (position 216, 208 drawing NO. H-0000111N
- E First stage pumping unit (position 2, drawing NO. G-0000240N
- F Second stage pumping unit (position 3, drawing NO. G-0000240N
- G First and stage water air cooling assembly (position 4, drawing NO. G-0000240N)

HYDRAULIC OIL CIRCUIT

Re; drawing H-0000111N

The compressor is driven hydraulically. The hydraulic oil stored in tank 201 is with drawn by double pump 206 powered by electric motor 204 and alternatively sent, by means of main sprig – loaded distributor 208, to the oil chambers of the pumping units.

The hydraulic circuit also includes maximum pressure relief valves 209 and 210.

Maximum pressure relief valve 209 discharge the main capacity section of pump 206 when a pre-determined hydraulic pressure valve is reached. This valve can be ready by pressure gauge P121.

Pressure gauge P122 reads the pressure of the hydraulic oil driving the pistons.

By-opening shut – off cock 214, it is possible to discharge the main capacity section of the pump.

GAS CIRCUIT

Re drawing G-0000240N

The gas coming from the pipe line goes through filter 1, is compressed in the 1st stage cylinder , then cooled in the air – gas heat exchanger 4, is further compressed in the 2nd stage and gain cooled in heat exchanger 4 , Moreover the gas circuit includes pressure gauge P101, threads the pressure from the first stage , pressure gauge P102 that reads the pressure from the 2nd stage , safety valve PSV01 in 1st stage , and safety valves PSV02 in 2nd stage.

The compressed gas goes through Filter – Damper 5 and is intercepted by Thermostat TSXH01, by Pressostats PSL / H 03 , and PSL/ H 04.

Compressor B50-30

SAFETY AND MONITORING DEVICES

Re: drawing G-0000240N

The equipment includes :

- intake gas filter (position 1)
-
- gas safety relief valves on each stage of the compressor (PSV01 1ST stage, PSV02 2ND stage).
-
- Inter-stage and delivery pressure gauge (P101 1ST stage delivery, P102 2nd stage delivery)
-
- Gas thermostat TSXH01

Re ; drawing H-0000111N

- Hydraulic circuit pressure gauges P122
-
- Visual indicators of oil temperature and level LG 20 , T120
-
- Electric oil level indicator LSXL20
-
- Oil thermostats TSXH20
-
- Maximum oil pressure relief valves 209, 210

COOLING SYSTEM

The cooling system consist of the following elements :

-Air – water cooling assembly

(position 303, drawing No. I-0000142N

At the outlet of each stage, the gas is cooled in the water gas heat exchanger , which is equipped with above – mentioned electric fan.

-water oil heat exchanger

(position 310 , drawing No . I-0000142N

The hydraulic oil is cooled by means of a water- oil heat exchanger.

Compressor B50-30

COMPRESSOR INSTALLATION AND HOOK – UPS

NO particular foundation is required for the installation of the compressor. The unit can simply sit on the ground.

To proceed with the compressor 's installation, the following procedure must be followed.

- Connect the compressor to the natural gas distribution network by means of the ¾'' NPT female thread located on the filter block, position 1 in drawing No. G-0000240N
- Connect the delivery pipe by means of the ½'' NPT female thread pos A,B,C, D drawing No . G-0000240N
- Connect the cooling heat exchanger.

Compressor B50-30

COMPRESSOR START – UP

Re: drawing No. G-0000240N and

The new compressor can perform two function :

- 1 Compress the gas stored from vessel truck to dispenser
- 2 Compress the gas from to line to dispenser
- A) Before start – up open the valves at suction and discharge line gas.
- B) Check the oil level in the tank. It must reach at least $\frac{3}{4}$ of the visual oil level indicator LG20 (drawing no. H-0000111N.)

Otherwise, do as follow:

Fill the hydraulic oil tank up to the total submersion of the visual oil level indicator (oil quantity required: 210 liters).

Use hydraulic oil with the following specifications ;

Density @ 15 C:	0.872 Kg/ dm3
Flammability point V.A. :	220 C
Flow point :	-30C
Kinematic viscosity @ 40 C :	32 cSt
Kinematic viscosity @ 100 C :	5.5 cSt
Viscosity index :	106

We recommended the use of hydraulic oil type SHELL TELLUS 32 equivalent (i.e. MOBILFLUID 32).

To fill with oil :

- 1 Remove fill plug 203
 - 2
 - 3 Fill oil tank up to the complete submersion of visual level indicator LG20
 - 4
 - 5 Fcrew plug 203 back on
- C) Make sure that the cooling water flows through the oil heat exchanger and that all shut – off cocks are open.
- G) Press the “run” button , located on the compressor’s panel.

Compressor B50-30

DRAINING OF SEPARATORS – DAMPER

Re drawing No . – G-0000240N

The draining of the fluid (oil and condensation) from the separator – damper 5 is achieved by opening valves 9 and only after the 8 and re-closing them when the draining is complete.

Be carefull: before opening the valve 9 check that valve 9 is closed.

SPARE PARTS

When ordering spare parts , please indicate ;

1 – compressor type and serial number (located on the identification plate of the compressor) : B50-30 mat, 38059.

2 – position or denomination, and code number of the part required .

3 – quantity required.

LIST OF ENCLOSED DRAWINGS AND PHOTOGRAPHS

G-0000240N	GAS CIRCUIT SCHEMATIC.
H-0000111N	HYDRAULIC CIRCUIT SCHEMATIC B50-30
I-0000142N	WATER CIRCUIT SCHEMATIC
F-0000418N	WATER – AIR EXCHANGER
L-00253	ELECTRICAL SCHEMATIC

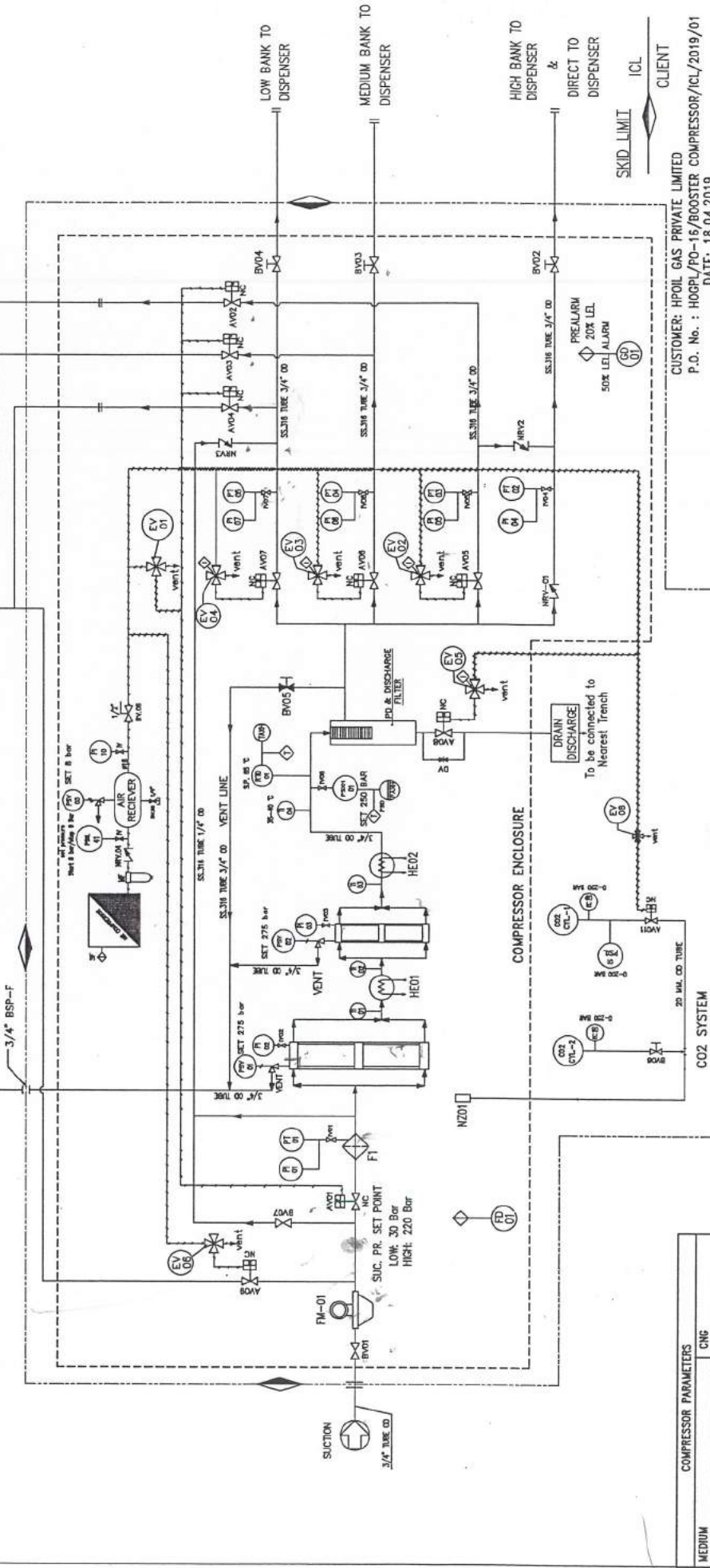
DRAWING

S.NO.	ITEM	DESCRIPTION
1	PI-01	SUCTION PR. TRANSMITTER
2	F1	INLET FILTER
3	PSV 01	1ST. STAGE SAFETY VALVE
4	PI 01	PR. INDICATOR INLET
5	PI 02	PR. INDICATOR 1ST. STAGE
6	TI 01	TEMPERATURE INDICATOR 1ST. STAGE BEFORE COOLER
7	HE 1	HEAT EXCHANGER 1ST. STAGE
8	PSV 02	2ND. STAGE SAFETY VALVE
9	PI 03	PR. INDICATOR 2ND. STAGE
10	TI 02	TEMP. INDICATOR 1ST STAGE AFTER COOLER
11	HE 02	HEAT EXCHANGER 2ND. STAGE
12	NRV 01	NON RETURN VALVE
13	NRV 02	NON RETURN VALVE GAS S. HIGH BANK
14	NRV 03	NON RETURN VALVE BYPASS LINE
15	BV01	BALL VALVE SUCTION LINE
16	BV02-04	BALL VALVE HIGH, MEDIUM & LOW BANK 1/2"
17	BV05	BALL VALVE VENT LINE 3/4"

S.NO.	ITEM	DESCRIPTION
15	BV06-07	BALL VALVE LOW BANK TO BYPASS LINE & CO2 CYL-1
16	AV01-04	ACTUATOR VALVE FOR ESD CASCADE & INLET LINE
17	AV-05-07	ACTUATOR VALVE FOR HIGH, MEDIUM & LOW BANK
18	AV08	ACTUATOR VALVE FOR AUTO DRAIN
19	AV09	ACTUATOR VALVE FOR LOW BANK CASCADE TO SUC
20	AV011	ACTUATOR VALVE FOR CO2 SYSTEM
21	PI-02	PR. TRANSMITTER DIRECT DISPENSER
22	PI-03	PR. TRANSMITTER HIGH BANK TO CASCADE
23	PI-04-05	PR. TRANSMITTER MEDIUM & LOW BANK
24	PI 04-07	PR. INDICATOR HIGH, MEDIUM & LOW BANK
25	PSXH 01	EMERGENCY PR. SWITCH
26	EV01-05	ELECTRO VALVE ESD, AUTO DRAIN, HIGH, MEDIUM & LOW BANK
27	EV06	ELECTRO VALVE FOR SUC. FROM CASCADE
28	EV08	ELECTRO VALVE FOR CO2 SYSTEM
29	PSXL-01	PR-SWITCH CO2 SYSTEM

S.NO.	ITEM	DESCRIPTION
30	NZ01	NOZZLE FOR CO2 SYSTEM
31	TI 03	TEMP. INDICATOR 2ND STAGE DISC. BEFORE COOLER
32	TI 04	TEMP. INDICATOR 2ND STAGE AFTER COOLER
33	IV01-08	ISOLATION VALVE 1/4" FOR PR. INDICATOR

34	FD01	FLAME DETECTOR
35	GD01	GAS DETECTOR
36	PD	PULSATION DAMPNER & DIS. COALESCER FILTER
37	FM-01	MASS FLOW METER COMPRESSOR SUCTION
38	CYL-01-02	CO2 CYLINDER
39	RTD01	TEMPERATURE SENSOR (PT-100)
40	PI 08-10	PR. INDICATOR CO2 SYSTEM & AIR COMPRESSOR
41	BV08	BALL VALVE AIR COMPRESSOR SYSTEM
42	PSV 03	SAFETY VALVE FOR AIR COMPRESSOR SYSTEM
43	NRV 04	NON RETURN VALVE AIR COMPRESSOR SYSTEM
44	MF	MOISTURE FILTER FOR AIR COMPRESSOR
45	SF	SUCTION FILTER FOR AIR COMPRESSOR

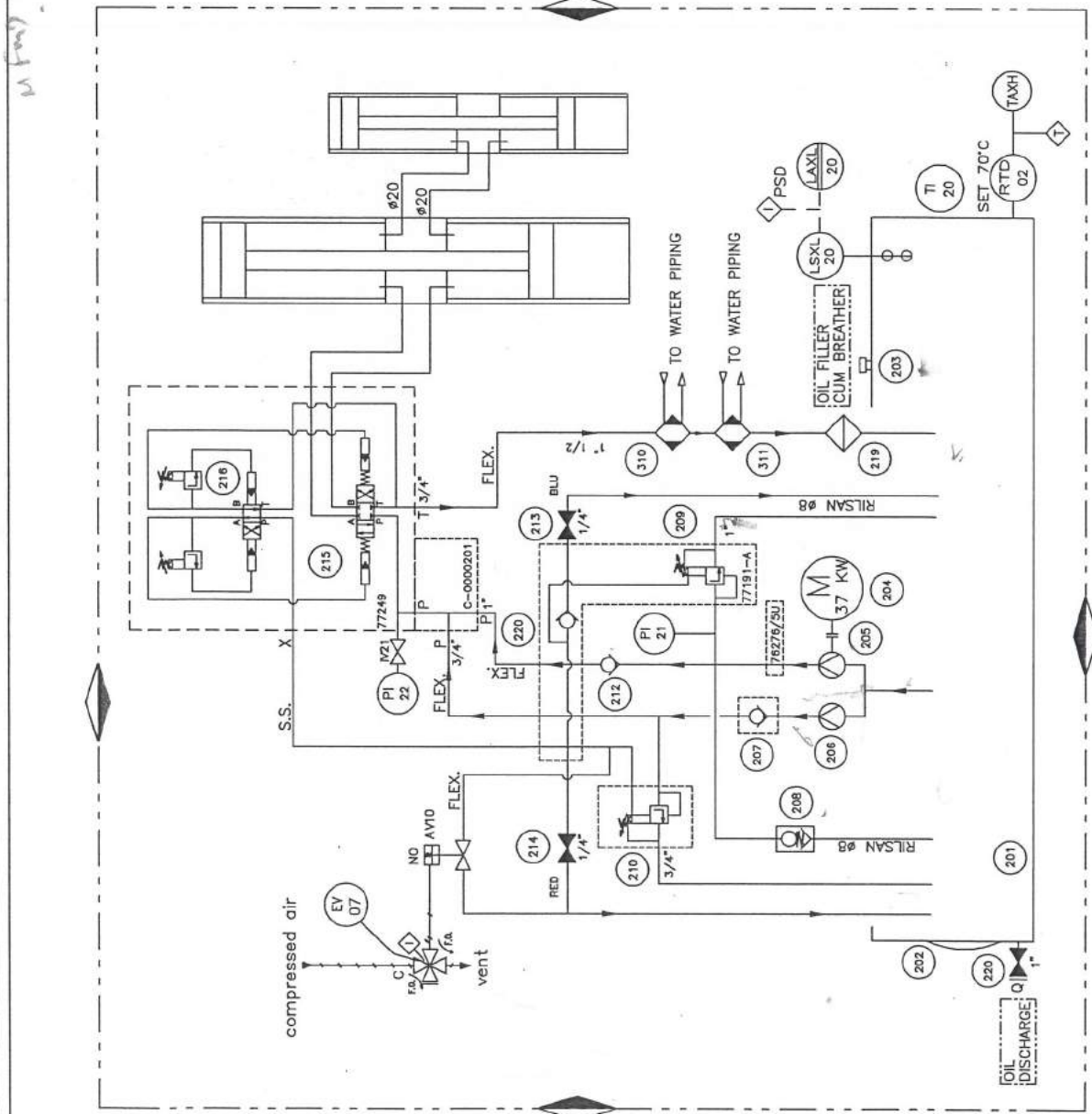


COMPRESSOR PARAMETERS	
MEDIUM FLOW	CNG 400 Scmh
SUCTION PRESSURE (Variable)	220-30 Bar
DISCHARGE PRESSURE	250 Bar
1st STAGE DISCHARGE PR.	150 Bar
2nd STAGE DISCHARGE PR.	250 Bar
TEMP. BEFORE 1st & 2nd STAGE COOLER	65 °C
TEMP. AFTER 1st & 2nd STAGE COOLER	35 °C

Rev.	DATE	MODIFICATIONS
4	19.07.19	REMOVED PSXH 01 FROM CO2 SYSTEM INSTRUMENT AIR LINE
3	16.07.19	PROVIDED AIR COMPRESSOR SYSTEM
2	12.07.19	PROVIDED PR. SWITCH BETWEEN CO2 CYL. AND ACTUATOR VALVE AV011

TITLE		P&ID GAS LINE OF	
DIDWANIA		CNG BOOSTER COMPRESSOR	
INDIAN COMPRESSORS LIMITED		MODEL: B50-30	
APPROVED		CHECKED	
DRG.NO.		DATE	
G-0000240N		R4	

CUSTOMER: HPOIL GAS PRIVATE LIMITED
P.D. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
DATE: 18.04.2019



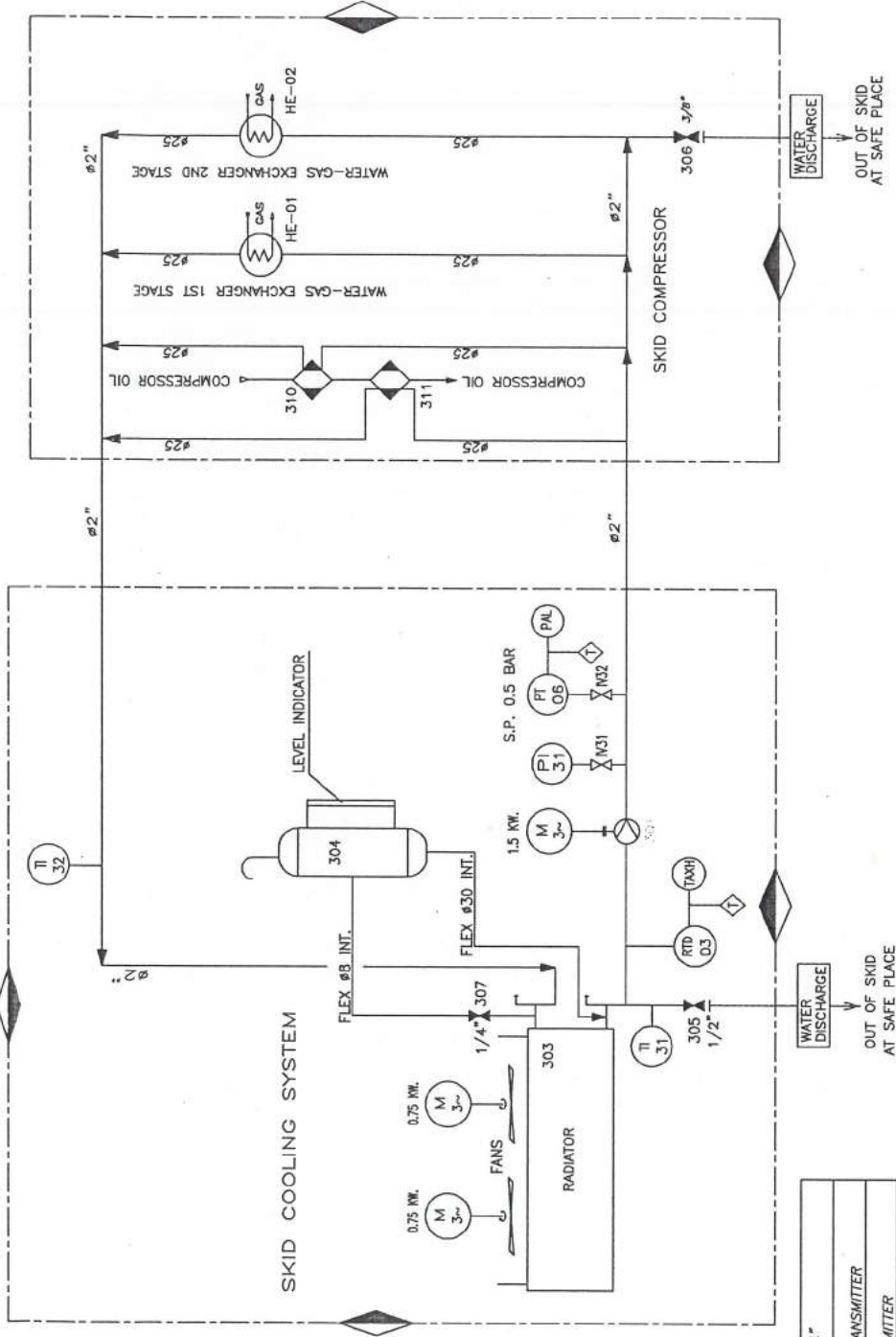
ITEM	Q.TY	DESCRIPTION
IV21	1	ISOLATION VALVE 1/4"
PI-22	1	PRESSURE INDICATOR
PI-21	1	PRESSURE INDICATOR
EV-07	1	ELECTRO VALVE
TI-20	1	TEMPERATURE INDICATOR
RTD-02	1	TEMPERATURE TRANSMITTER
LSXL	1	OIL LEVEL SWITCH
AV-10	1	UNLOADER VALVE(ACTIATOR WITH BALL VALVE)
220	1	OIL DRAIN VALVE
219	1	OIL FILTER RETURN LINE
311	1	OIL COOLER
310	1	OIL COOLER
216	1	REVERSAL VALVE
215	1	DIRECTION VALVE
214	1	NEEDLE VALVE 1/4"
213	1	NEEDLE VALVE 1/4"
212	1	NON-RETURN VALVE OIL PUMP LOW PR.
210	1	PILOT OPERATED PRIVALVE HIGH PR.
209	1	PILOT OPERATED PRIVALVE LOW PR.
208	1	NON-RETURN VALVE 1/4"
207	1	NON-RETURN VALVE OIL PUMP 2ND STG.
206	1	WAVE TYPE OIL PUMP-HIGH PR.
205	1	WAVE TYPE OIL PUMP-LOW PR.
204	1	MOTOR 37 KW
203	1	AIR BREATHER
202	1	OIL INDICATOR
201	1	OIL TANK

SKID LIMIT



CUSTOMER: HPOIL GAS PRIVATE LIMITED
 P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
 DATE: 18.04.2019

3									
2									
1	11.06.19	REVISED THE DRAWING AS PER THE COMMENTS ON 29.05.2019							
Rev.	DATE	MODIFICATIONS	INDIAN COMPRESSORS LIMITED		P&ID FOR OIL LINE		B50-30		APPROVED
			DIDWANIA COMPRESSORS		TITLE		INITIALS		DATE
							JACOB		20.05.19
							N.SINGH		20.05.19
							H-0000111N		R1



SKID LIMIT ICL CLIENT

NORMALLY CLOSED VALVE

NORMALLY OPEN VALVE

ITEM	QTY	DESCRIPTION
IV31&32	2	ISOLATION VALVE 1/4"
PT-06	1	WATER PRESSURE TRANSMITTER
RTD-03	1	TEMPERATURE TRANSMITTER
TI-31&32	2	TEMPERATURE GAUGE
PI-31	1	PRESSURE GAUGE
HE-02	1	WATER GAS HEAT EXCHANGER 2ND STAGE
HE-01	1	WATER GAS HEAT EXCHANGER 1ST STAGE
311	1	HEAT EXCHANGER OIL-WATER
310	1	HEAT EXCHANGER OIL-WATER
307	1	BALL VALVE 1/4"
306	1	BALL VALVE 3/8"
305	1	BALL VALVE 1/2"
304	1	EXPANSION TANK
303	1	HEAT EXCHANGER (RADIATOR)
301	1	ELECTRIC PUMP (WATER PUMP)

Rev.	DATE	MODIFICATIONS
2	11.06.19	REVISED THE DRAWING AS PER THE COMMENTS ON 29.05.2019
1		

TITLE		INITIALS	DATE
DIDWANIA COMPRESSORS	P&ID COOLING WATER BOOSTER COMPRESSOR	JACOB	20.05.19
	MODEL: B50-30	N.SINGH	20.05.19
	INDIAN COMPRESSORS LIMITED		

CUSTOMER: HPOIL GAS PRIVATE LIMITED
P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
DATE: 18.04.2019

**ELECTRIC
DOCUMENTATION**

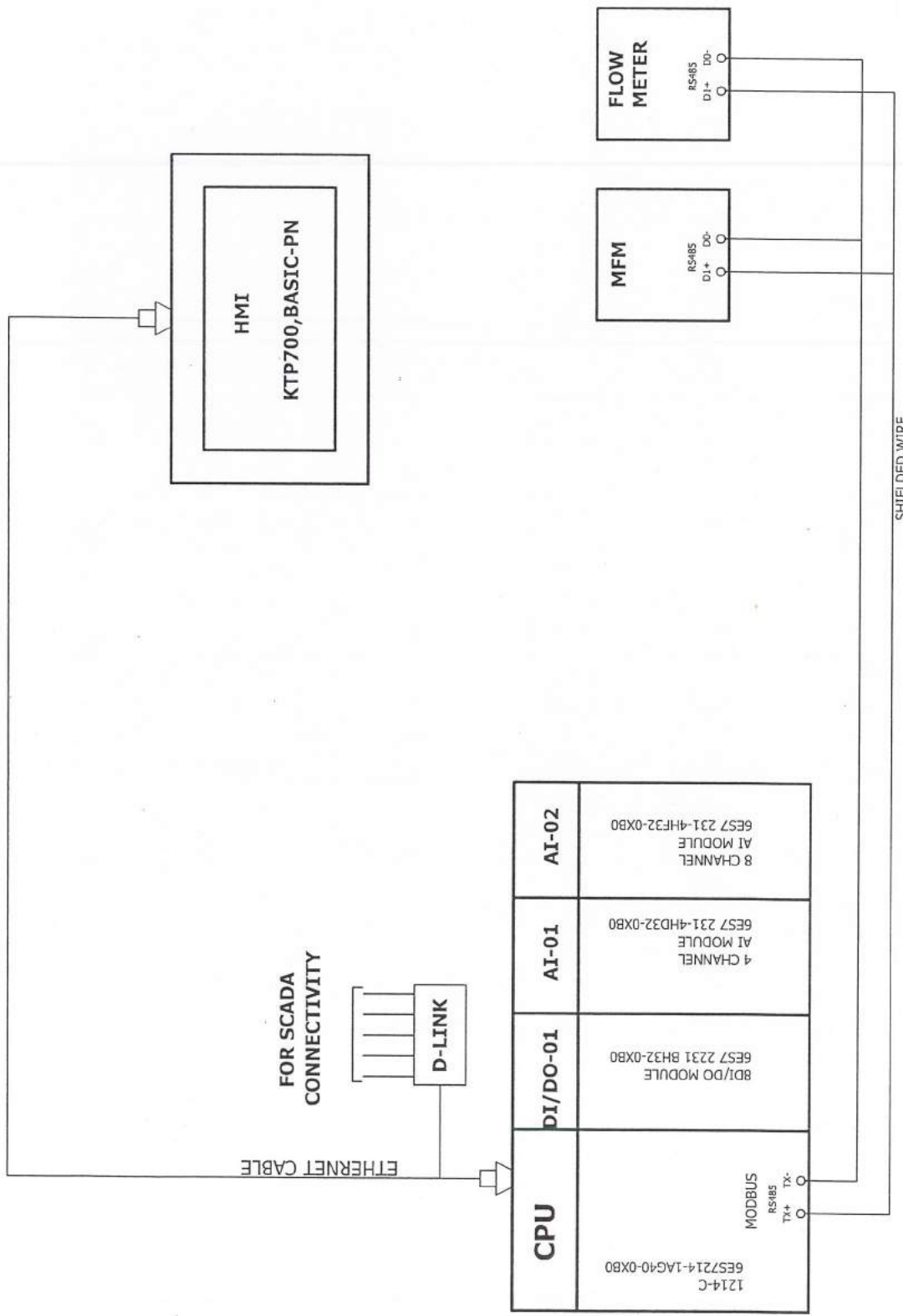
Manufacturer (company)

INDIAN COMPRESSOR LIMITED

Customer	HPOIL GAS PRIVATE LIMITED
P.O. No.	HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
Title	WIRING SCHEME FOR BOOSTER COMPRESSOR
Project description	PLC PANEL FOR 37 KW BOOSTER COMP.
Drawing number	L-00261
Project No.	ICL-37 KW COMP. (HOGPL)
Revision	
Mains/Control voltage	415/110VAC,24VDC
Type	PLC TYPE
Protection class	IP66
Created on	08/04/19
Edit date	29/04/19
	Number of pages 31

ELECTRIC EQUIPMENT SUMMARY TABLE

NOMINAL VOLTAGE : 415VAC	MACHINE TYPE : 850-30 HYDRAULIC COMP.
PHASE : 3	SERIAL NUMBER : L-00261
FREQUENCY : 50Hz	P.O. No. : HOGPL/PO-16/BOOSTER COMPRESSOR/ICL/2019/01
AUXILIARY CIRCUIT SUPPLY VOLTAGE : 110VAC/24VDC	PURCHASER : HPOIL GAS PVT. LTD
TOTAL INSTALLED POWER : 41.5KW	END USER : HPOIL GAS PVT. LTD.
WORKING TEMPERATURE deg C : 0-50 deg C	ELECTRICAL BOARD TYPE : PLC
WORKING RELATIVE HUMIDITY : 90%	REFERENCE STANDARDS : EN
TOTAL NUMBER OF SHEET : 24	



PLC SYSTEM ARCHITECTURAL

Previous page 2	Next page 4
DRAWG. NO.: L-00261	PROJECT NO.: ICL-37KW COMP. (HOGPL)
DATE: 08/04/19	PROJECT DESCRIPTION: PLC PANEL FOR 37KW BOOSTER COMP
MANUFACTURER: INDIAN COMPRESSOR LIMITED	CUSTOMER: HHOIL GAS PVT. LTD.
Modification date: 29/04/19	PAGE DESCR: PLC SYSTEM ARCHITECTURAL
REVISION:	APPROVED BY: _____
	CHECKED BY: _____
	Page 3

BILL OF MATERIALS

S.NO.	DESCRIPTION	TPYE NO.	MAKE	QTY.
1.00	PLC			
1.01	CPU, 1214-C, 14DI,10DO, 24VDC	6ES7-214-1AG40-0XB0	SIEMENS	1
1.02	8 DI/DO MODULE, 24VDC	6ES7-223-1BH32-0XB0	SIEMENS	1
1.03	8 AI MODULE, 4-20mA	6ES7-231-4HF32-0XB0	SIEMENS	1
1.04	4 AI MODULE, 4-20mA	6ES7-231-4HD32-0XB0	SIEMENS	1
1.05	HMI, KTP-700, BASIC-PN	6AV-2123-3GB03-0AX0	SIEMENS	1
2.00	SWITCHGEARS & MISC.			
2.01	MCB DP, 6A	A9N2P06C	SCHNEIDER	1
2.02	MCB DP, 10A	A9N2P10C	SCHNEIDER	1
2.03	MCB DP, 6A	A9N1P06C	SCHNEIDER	4
2.04	CONTACTOR 65A, 110VAC	LC1D65A	SCHNEIDER	3
2.05	OVERLOAD RELAY, 37-50A	LRD50	SCHNEIDER	1
2.06	CONTACTOR 12A, 110VAC	LC1D12	SCHNEIDER	3
2.07	MPCB, 1.6-2.5A	GV2ME07	SCHNEIDER	2
2.08	MPCB, 2.5-4A	GV2ME08	SCHNEIDER	2
2.09	MPCB, ADD ON BLOCK, 1NO+1NC	GVAE11	SCHNEIDER	4
2.10	CONTROL CONTACTOR, 9A, 24VDC	CA3KN22	SCHNEIDER	7
2.11	CONTROL RELAY, 110VAC	MY2N-GS	OMRON	2
2.12	POWER SUPPLY, 5A, 110VC/24VDC	EDR-120-24	MEAN WELL	1
2.13	SURGE ARESTOR, 230VAC	VAL-MS 320ST2838843	PHOENIX	1
2.14	SINGLE PHASE RELAY		MINILEC	1
2.15	EARTH FAULT RELAY		MINILEC	1
2.16	CBCT, 160/5A	CBCT	PROCOM	1
2.17	MULTIFUNCTION METER WITH RS-485	EM6436	CONSERVE	1
2.18	CURRENT TRANSFORMER, 160/5A	160/5A	AE	3
2.19	POTENTIAL TRANSFORMER	500VA, 415/110VAC	ASHOKA	1
2.20	RELAY BORAD, 1C/O, 24VDC		UL	2

DRAWING NO. - L-00261	PROJECT NO. - ICL-37KW COMP. (HOGPLU)	PROJECT DESCRIPTION - PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER - HPOIL GAS PVT. LTD.	MANUFACTURER - INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19	PAGE DESCR. - BILL OF MATERIAL
DATE - 06/04/19					REV. NO.	APPROVED BY:
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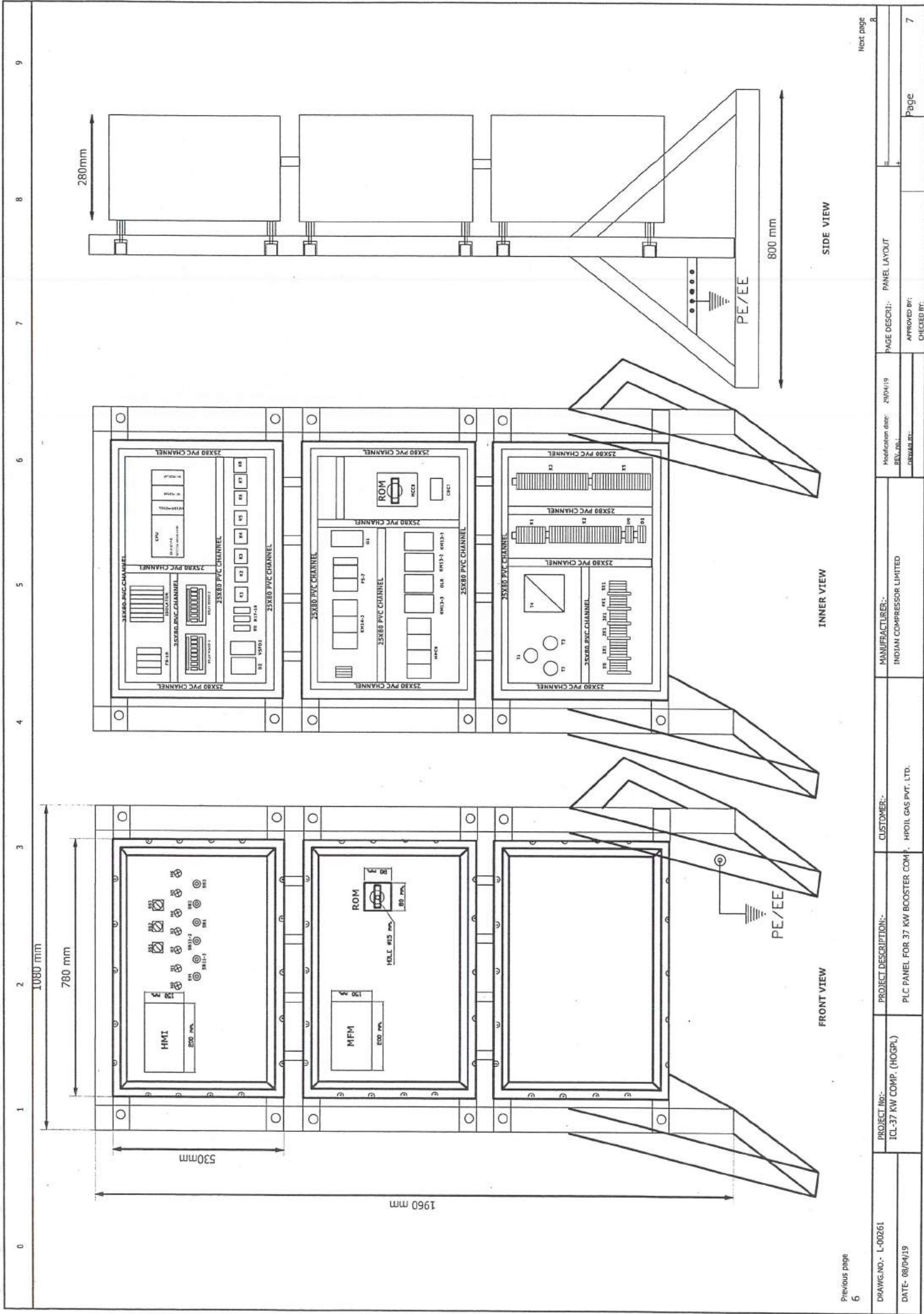
BILL OF MATERIALS

S.NO.	DESCRIPTION	TPYE NO.	MAKE	QTY.
2.21	STAR DELTA TIMER, 110VAC	H3DKZ-G	OMRON	1
2.22	GLASS FUSE, 0.5A	EI-0.5A	EI	7
2.23	GLASS FUSE, 1.0A	EI-1A	EI	18
2.24	POWER CABLE 25mm ² /16mm ² , 2.5mm ²	KEI	KEI	LOT
2.25	CONTROL CABLE 1.5mm ² , 1.0mm ² , 0.75mm ²	KEI	KEI	LOT
2.26	PVC DUCT CHANNEL	TBWDN25X80LG2, 40X80LH2	TRINITY	LOT
2.27	DIN RAIL CHANNEL		TRINITY	LOT
3.00	TERMINALS & CONNECTORS			
3.01	SCREW TPYE TERMINAL, 3.5mm ²	CTS35U	CONNECTWELL	4
3.02	SCREW TPYE TERMINAL, 2.5mm ²	CTS25U	CONNECTWELL	6
3.03	SCREW TPYE TERMINAL, 6mm ²	CTS6U	CONNECTWELL	14
3.04	SCREW TPYE TERMINAL, 2.5mm ²	CTS2.5UN	CONNECTWELL	76
3.05	SCREW TPYE FUSE TERMINAL, 4.0mm ²	CF4U	CONNECTWELL	25
3.06	GROUP MARKER HOLDER MOUTABLE ON CA103, GRAY	GMH8	CONNECTWELL	12
3.07	END STOPPER	CA702	CONNECTWELL	3
4.00	ICL SCOPE			
4.01	MCCB, 160A		ICL	1
4.02	FLAME PROOF BOX		ICL	1
4.03	DI BARRIER, 110VAC, 2CH.		ICL	1
4.04	AI BARRIER, INPUT:4-20mA, OUTPUT:4-20mA, 24VDC		ICL	4
4.05	RTD BARRIER, INPUT:RTD, OUTPUT:-4-20mA, 24VDC		ICL	3
4.06	ROM OF MCCB		ICL	1
4.07	SELECTOR SWITCH		ICL	3
4.08	EM. STOP		ICL	1
4.09	PUSH BUTTON		ICL	5
4.10	INDICTION LAMP		ICL	6
4.11	HOOTER		ICL	1
4.12	AVIATION LIGHT		ICL	1
4.13	TUBE LIGHT		ICL	1

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DRAWING NO. - L-00261 DATE - 08/04/19	PROJECT NO. - ICL-37 KW COMP. (HOGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER:- HPDIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 20/04/19 DESIGNED BY: DRAWN BY:	PAGE DESCR:- BILL OF MATERIAL APPROVED BY: CHECKED BY:	Page 6
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DRAWG.NO.- L-00261
DATE- 08/04/19

PROJECT No.-
ICL-37 KW COMP. (HOGPL)

PROJECT DESCRIPTION:-
PLC PANEL FOR 37 KW BOOSTER COMP.

CUSTOMER:-
HPOIL GAS PVT. LTD.

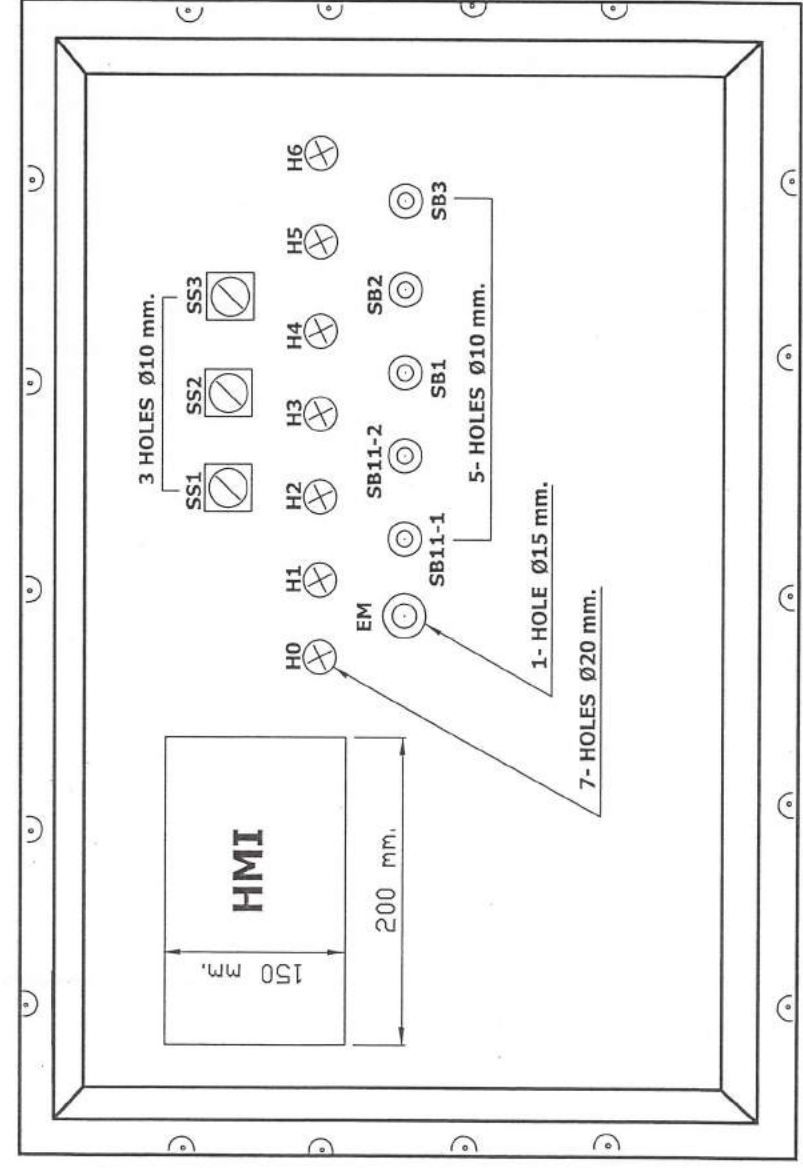
MANUFACTURER:-
INDIAN COMPRESSOR LIMITED

Modification date: 29/04/19
REV. NO.:

PAGE DESCR:- PANEL LAYOUT

APPROVED BY:
CHECKED BY:

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NOTE:1

1. Make : Sudhir / Shyam
2. Enclosure Class: IP66
3. Material: Cast Aluminium Alloy LM6
4. Paint shade: 631 Light gray epoxy powder coated

NOTE:2

1. Paint Thickness : 80 Micron min.
2. Enclosure Weight : 210 Kgs. (Approx. Enclosure With Stand)
3. Gland Plate Thickness : 13 mm. Thk. min. at Cable Entry Side
4. Enclosure Construction detail : LM6 Material
5. Enclosure : Ex-d , GAS gr.IIA & IIB, zone 1

DRAWG. NO.- L-00261	PROJECT No:- ICL-37 KW COMP. (HCGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 24/04/19	PAGE DESCR:- PANEL LAYOUT
DATE- 08/04/19					REV. NO.:	APPROVED BY:
					DRAWN BY:	CHECKED BY:
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LEGEND DETAILS

H0 : POWER ON
H1 :COMPRESSOR ON
H2 : PHASE FAILURE / EARTH FAULT
H3 : ALARM
H4 : SPARE
H5 : SPARE
H6 : SPARE

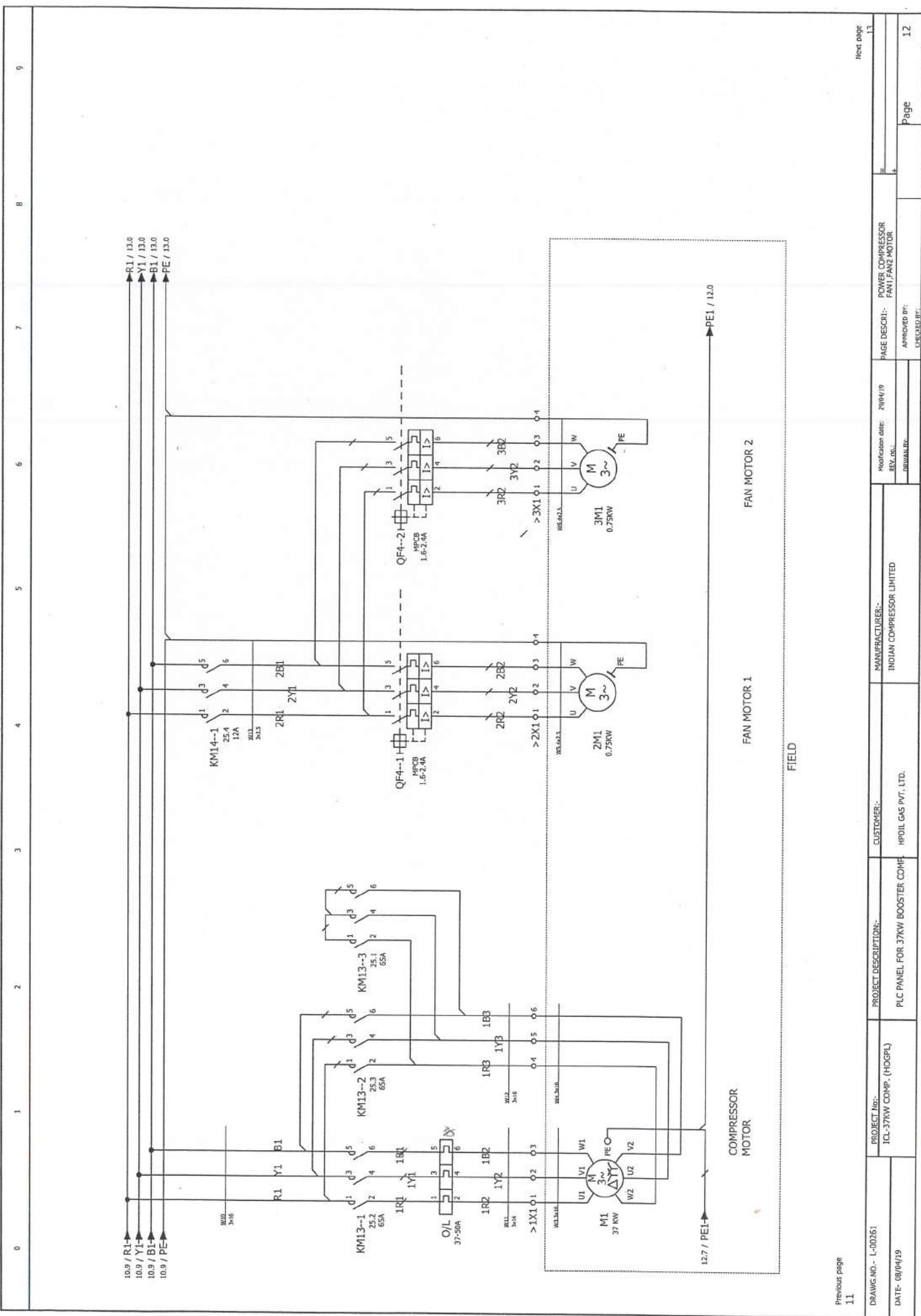
SB1 :TEST PB
SB2 : ACK PB
SB3 : RESET PB
SB11-1 : CYCLE START PB
SB11-2 : CYCLE STOP PB

SS1 : CO2 CYLINDER AUTO / OFF/ MANUAL
SS2 : SPARE
SS3: SPARE
EM: EMERGENCY STOP BUTTON

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DRAWG. NO. : L-00261	PROJECT No:- ICL-37 KW COMP. (HOGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19	PAGE DESCR:- PANEL LEGEND DETAIL
DATE- 08/04/19					BEN. DS.:	APPROVED BY:
					DR/MAN. BY:	CHECKED BY:
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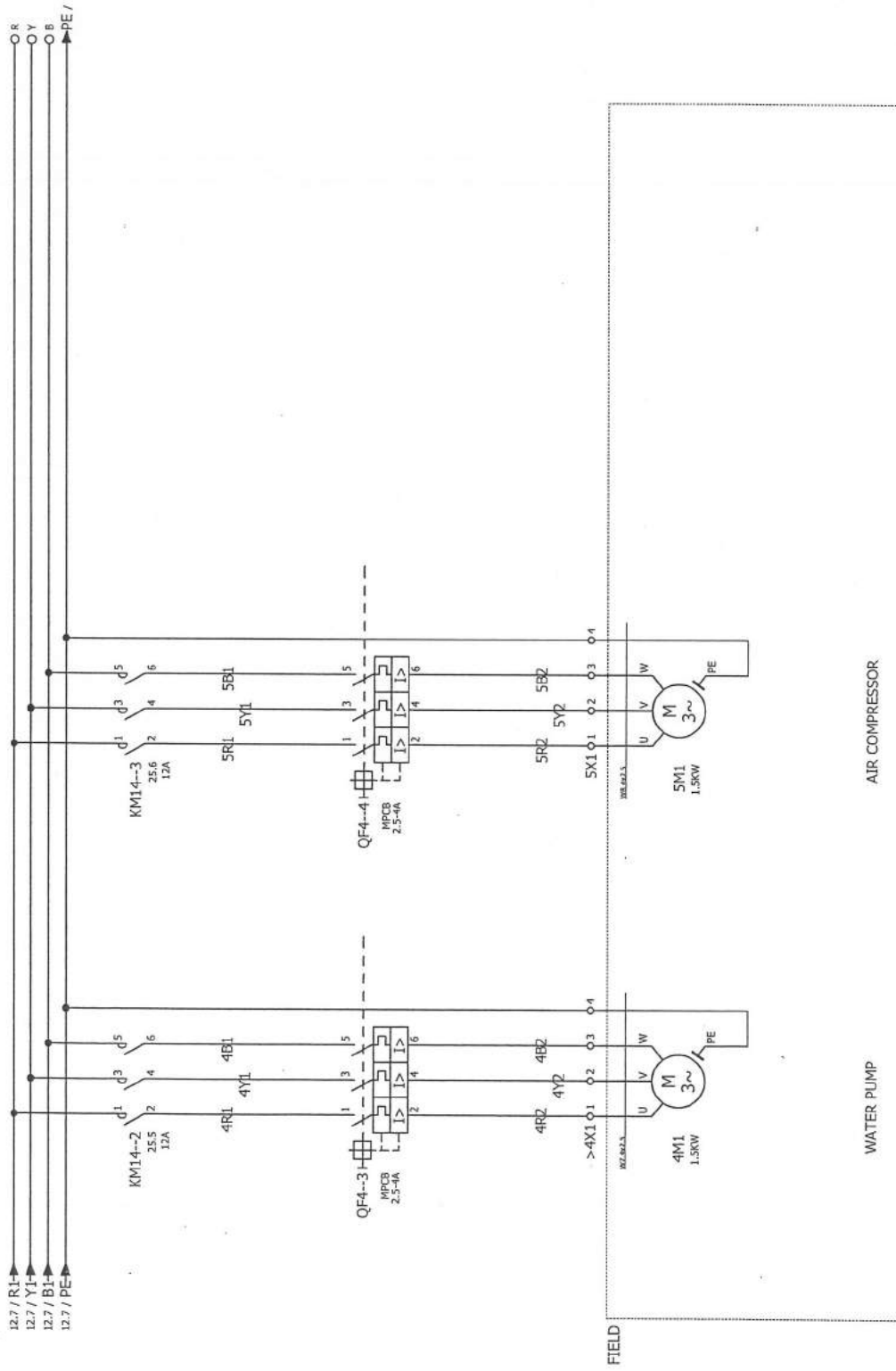


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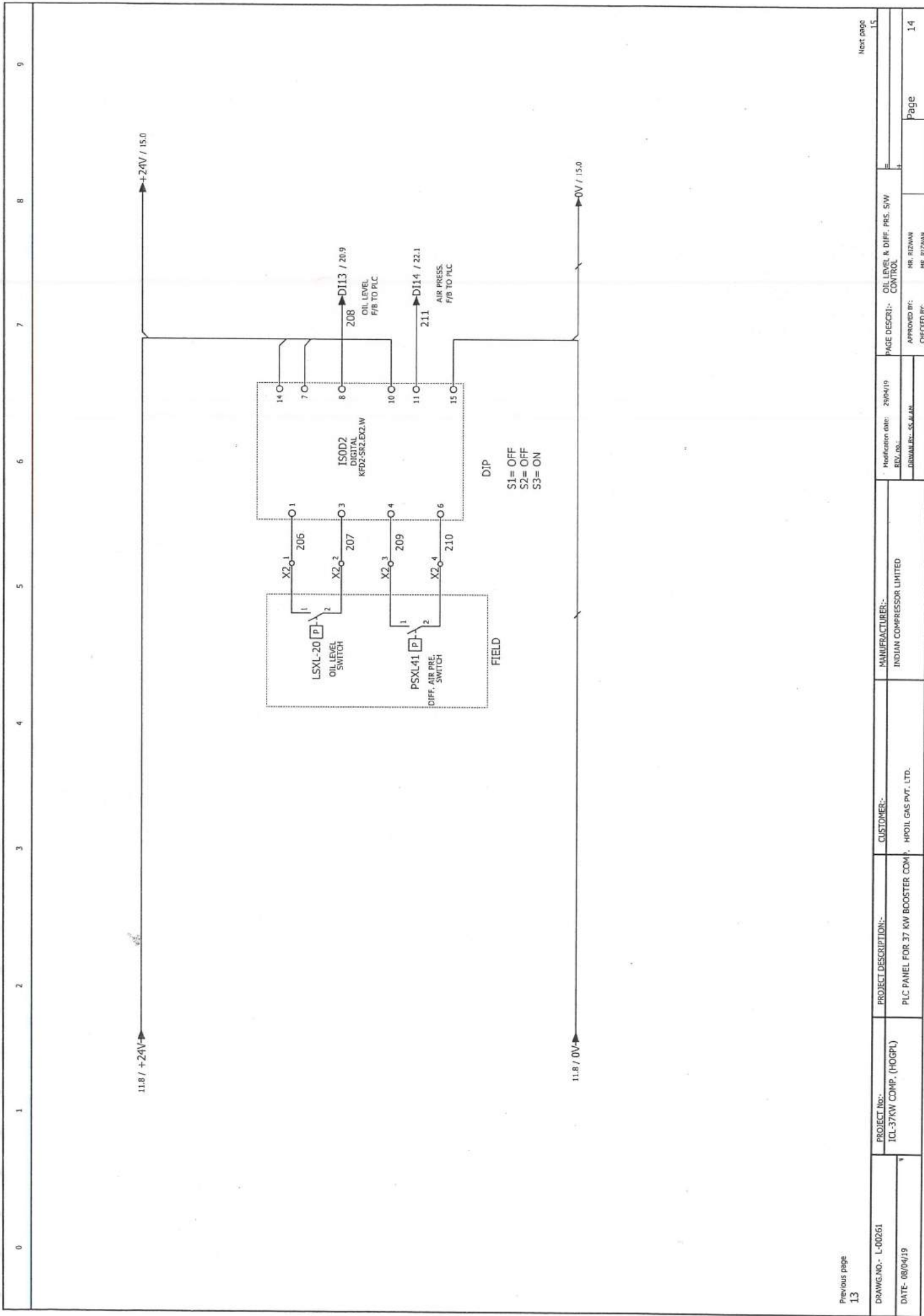
DRAWING NO. - L-00261	PROJECT NO. - ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION - PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER - HPOIL GAS PVT. LTD.	MANUFACTURER - INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19	PAGE DESCR - POWER COMPRESSOR FAN1, FAN2 MOTOR
DATE - 08/04/19					REV. NO. 1	APPROVED BY: _____
					REVISION BY: _____	CHECKED BY: _____
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DRAWING NO. - L-00261	PROJECT NO. - ICL-37KW COMP. (HDGPL)	PROJECT DESCRIPTION - PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER - HPOIL GAS PVT. LTD.	MANUFACTURER - INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19 REV. NO.:	PAGE DESCRIP - POWER WATER & AIR COMP. MOTOR
DATE - 08/04/19					APPROVED BY:	Page 13
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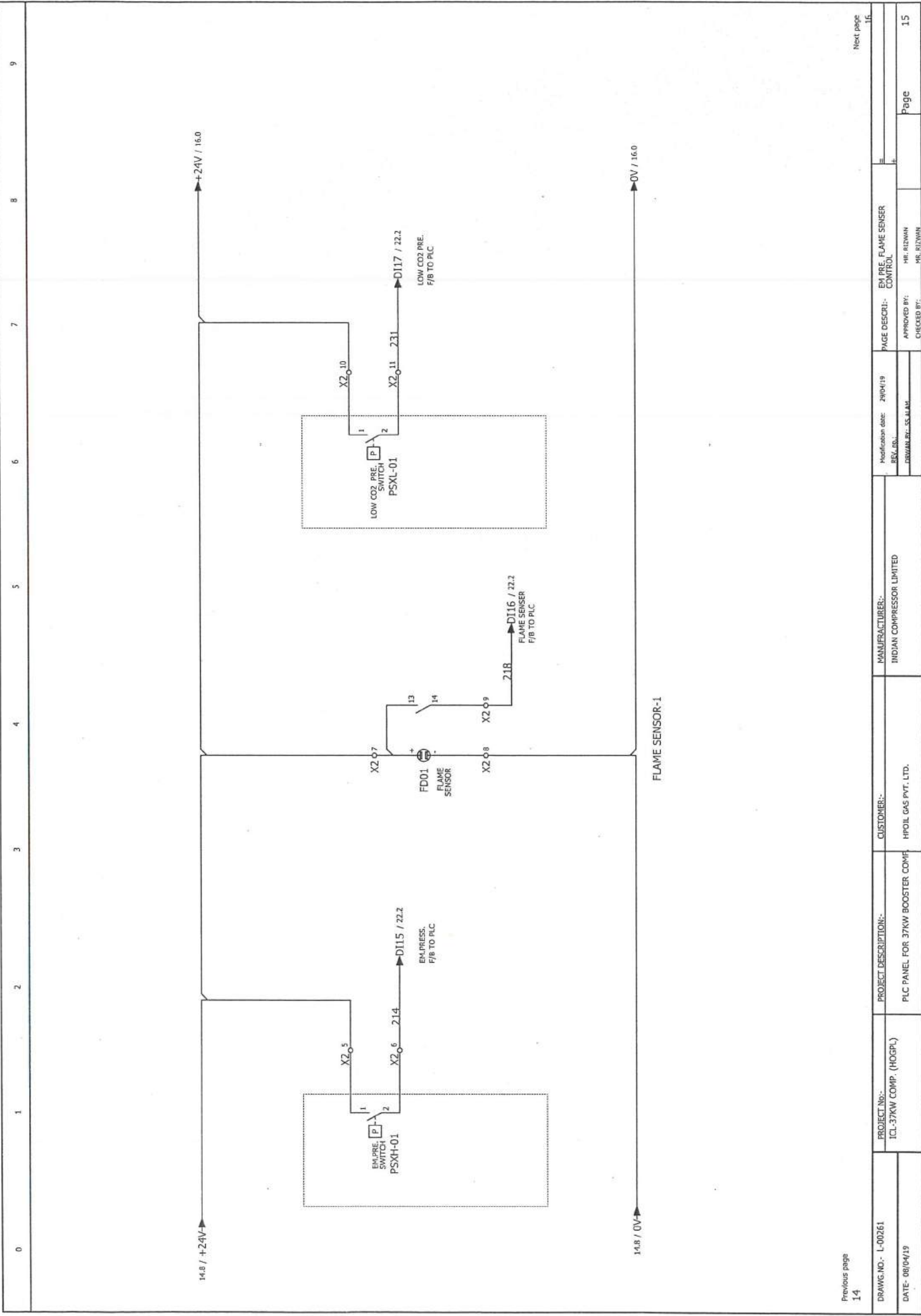


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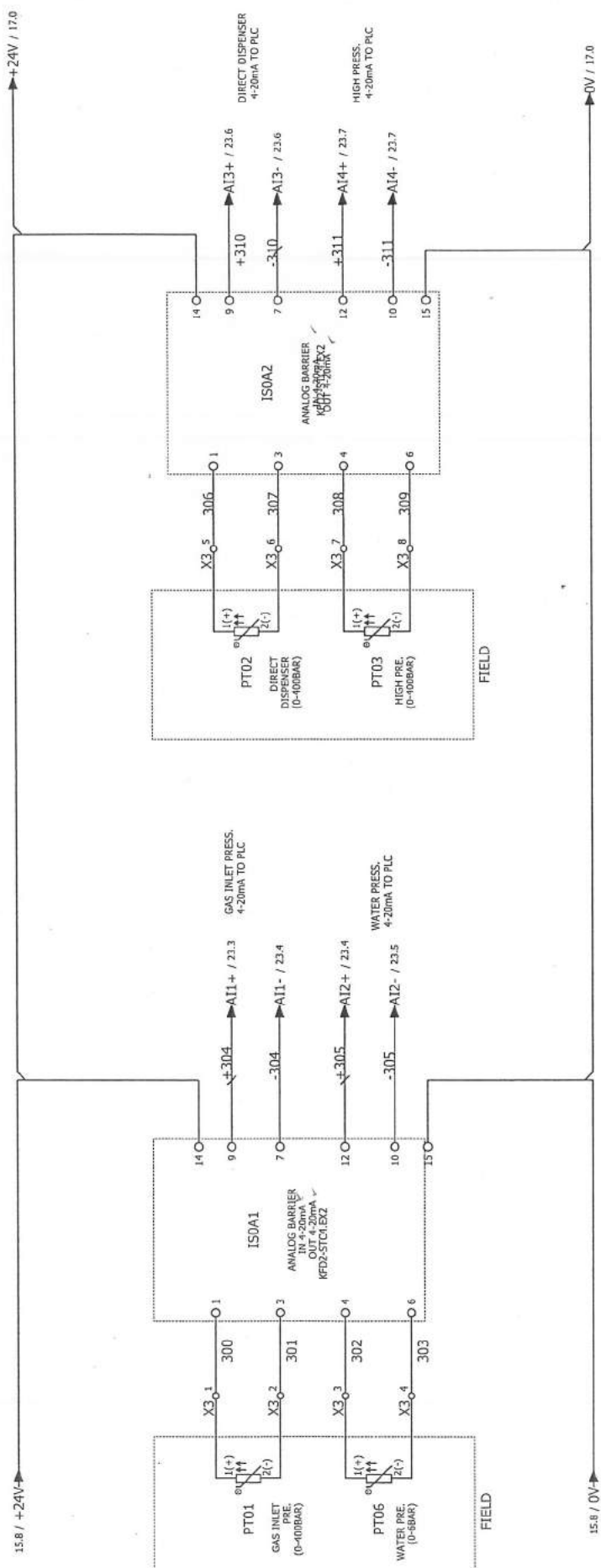
DRWG. NO.- L-00261	PROJECT No.- ICL-37KW COMP. (HOGPI)	PROJECT DESCRIPTION:- PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER:- HROIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19 REV. NO.:	PAGE DESCR:- OIL LEVEL & DIFF. PRES. SW CONTROL	APPROVED BY: MR. RIZWAN	Checked By: MR. RIZWAN	Page 14
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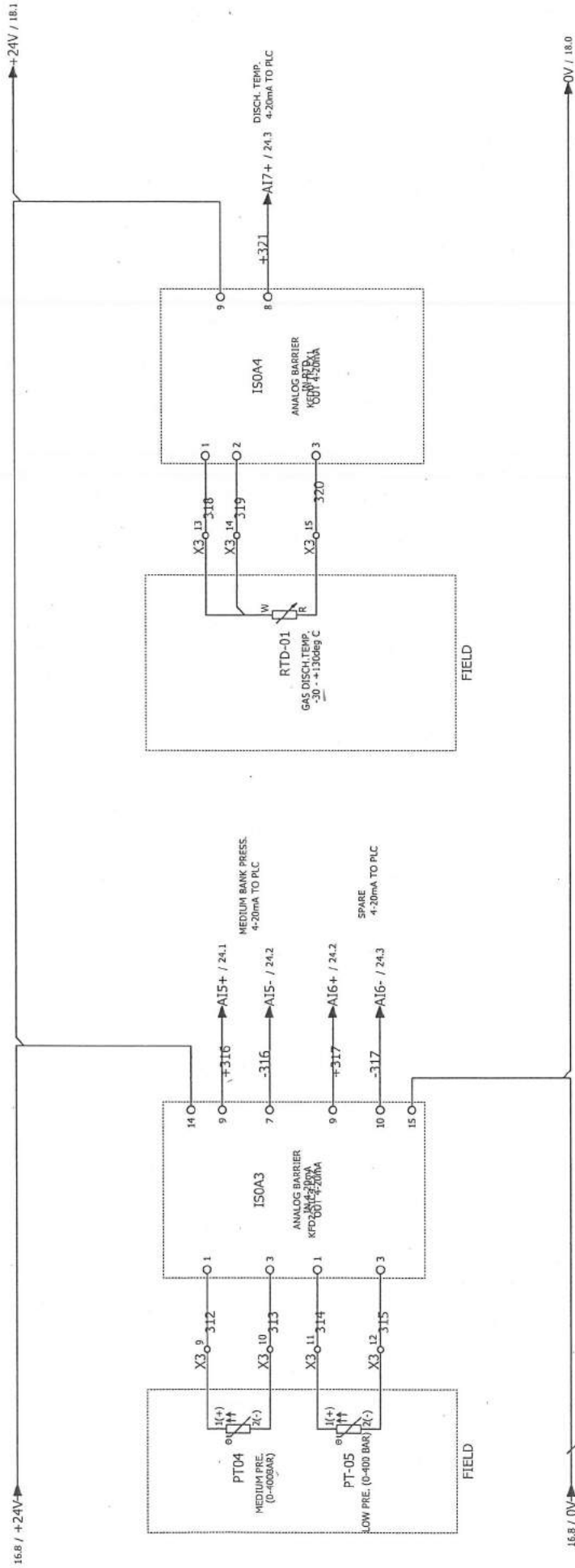
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16

DRAWG. NO. - L-00261	PROJECT No. - ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19 REV. NO.:	EM PRE. FLAME SENSOR CONTROL	PAGE
DATE: 08/04/19					DESIGNED BY: S.S. ALAM	APPROVED BY: MR. RISHWAN CHECKED BY: MR. RISHWAN	15



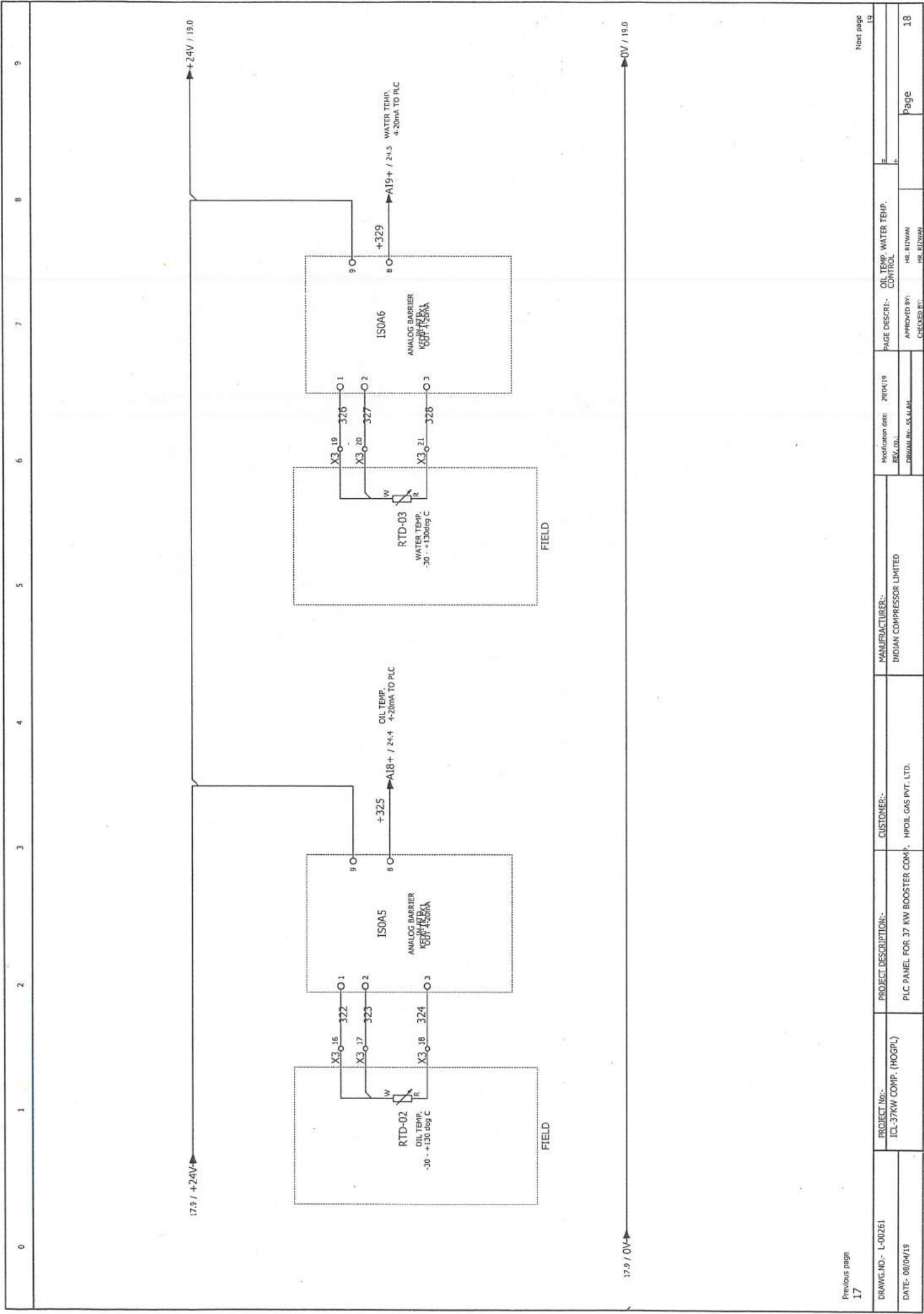
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DATE:- 08/04/19					DESIGNER:- S.SALIM	DIRECT PRE.
					APPROVED BY:- PSE. RIZWAN	
					CHECKED BY:- PSE. RIZWAN	
						Page 16



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DRAWG.NO. - L-00261	PROJECT No:- ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19 REV. NO.:	PAGE DESCR:- MED. PRE, GAS DISCH. TEMP.	Sheet page 17
DATE- 08/04/19					DESIGNED BY:- S.SULAM	APPROVED BY:- MR. RIJWAN CHECKED BY:- MS. RIJWAN	Page 17

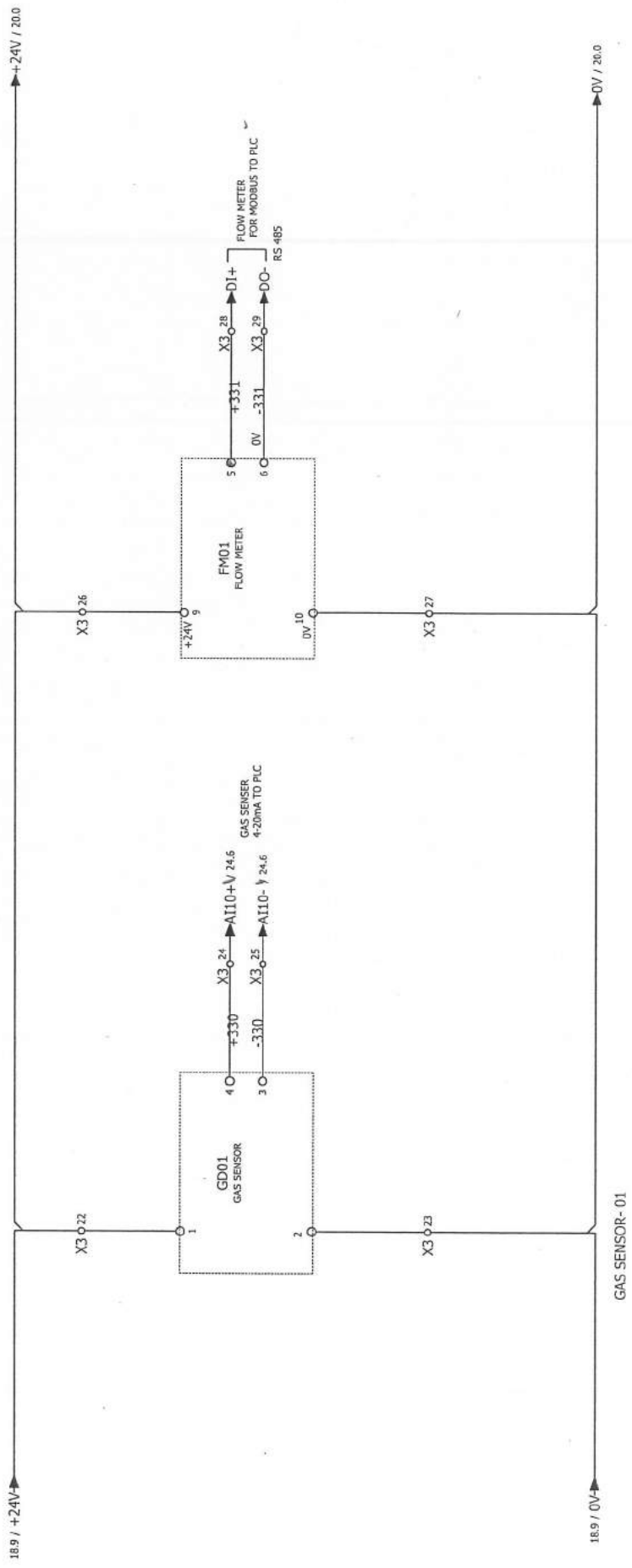


0 1 2 3 4 5 6 7 8 9

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DRAWG. NO. - L-00261	PROJECT No. - ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 29/04/19 REV. NO.: ORIGINAL REV. 05.04.19	PAGE DESCR:- OIL TEMP. WATER TEMP. CONTROL	APPROVED BY: MR. RIZWAN CHECKED BY: MR. AJAZAN	page 18
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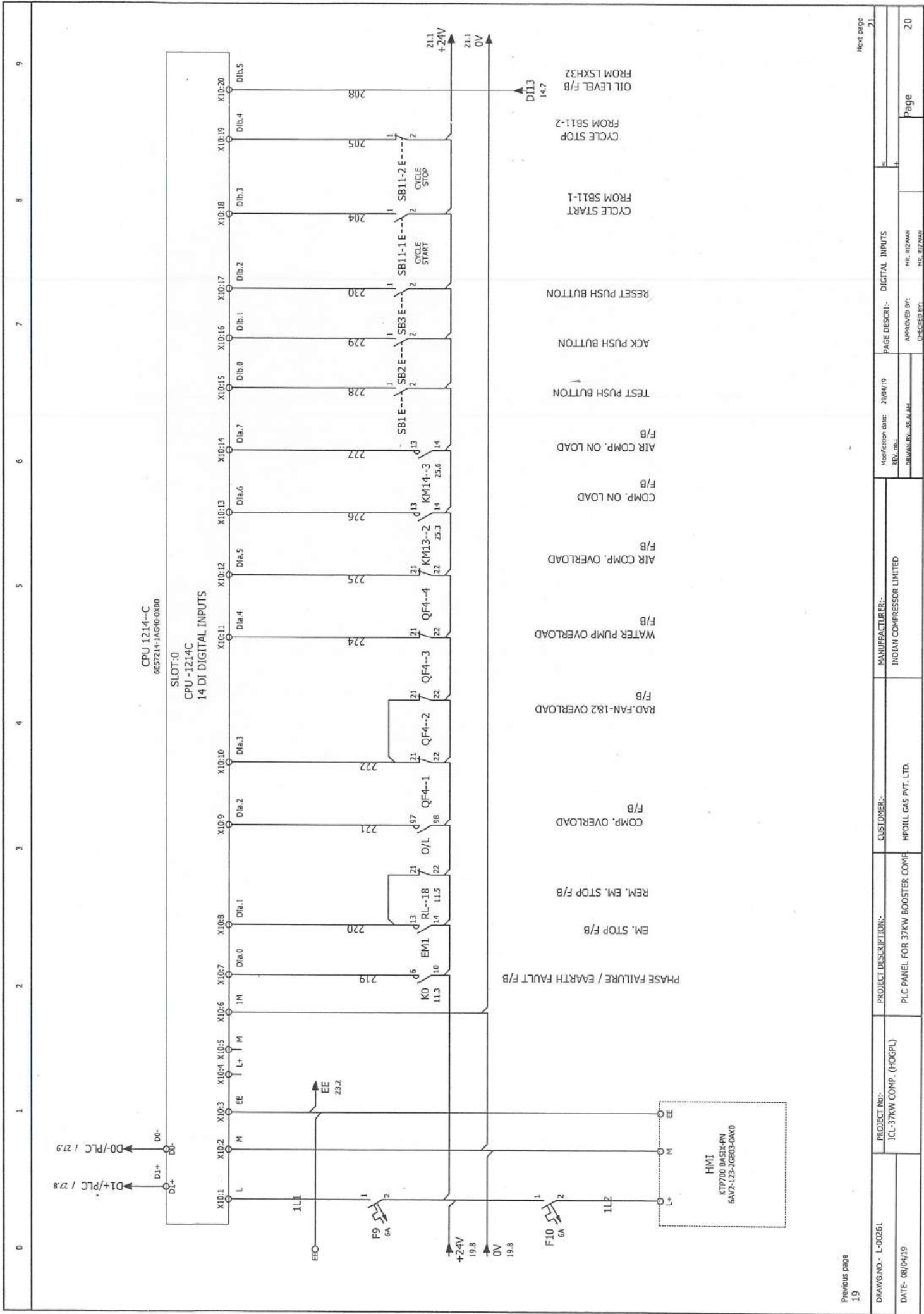


GAS SENSOR- 01

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DRAWG. NO. - L-00261	PROJECT No. - ICL-37 KW COMP. (HOGFL)	PROJECT DESCRIPTION:- PLC PANEL FOR 37 KW BOOSTER COMP.	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	Modification date: 23/04/19 REV. NO.:	PAGE DESCR:- GAS SENSER CONTROL
DATE- 08/04/19					APPROVED BY: MR. HIZWAN CHECKED BY: MR. ETZWAN	Page 19



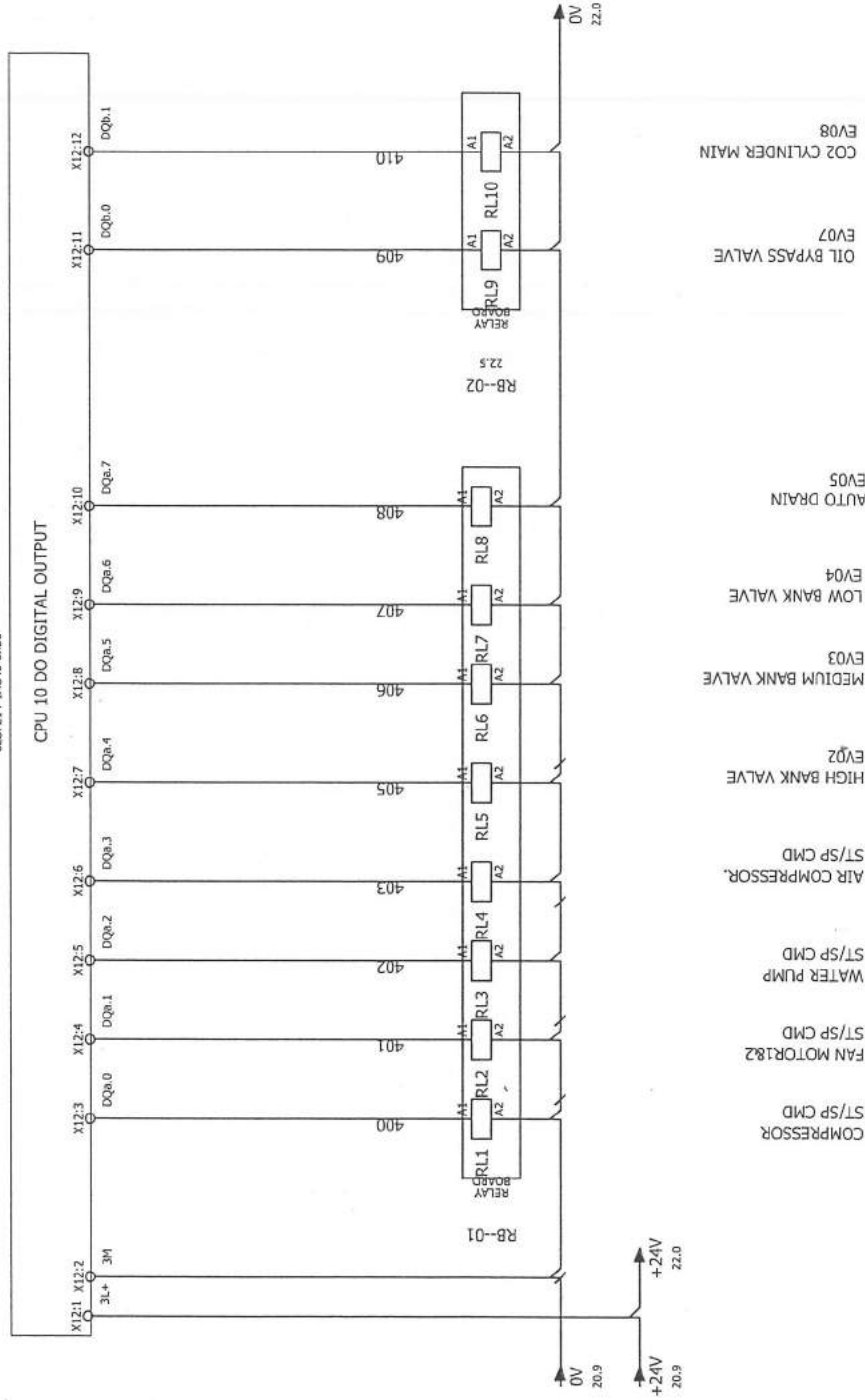
Previous page
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21

DRWG. NO. - L-00261	PROJECT NO. - ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION - PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER - HPOILL GAS PVT. LTD.	MANUFACTURER - INDIAN COMPRESSOR LIMITED	Modification date: 28/04/19 REV. NO.: 00000000000000000000	PAGE DESCRIP:- DIGITAL INPUTS	APPROVED BY: MR. RIZWAN MR. SIZWAN	Page 20
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CPU--1214C
6ES7214-1AG00-0XB0

CPU 10 DO DIGITAL OUTPUT



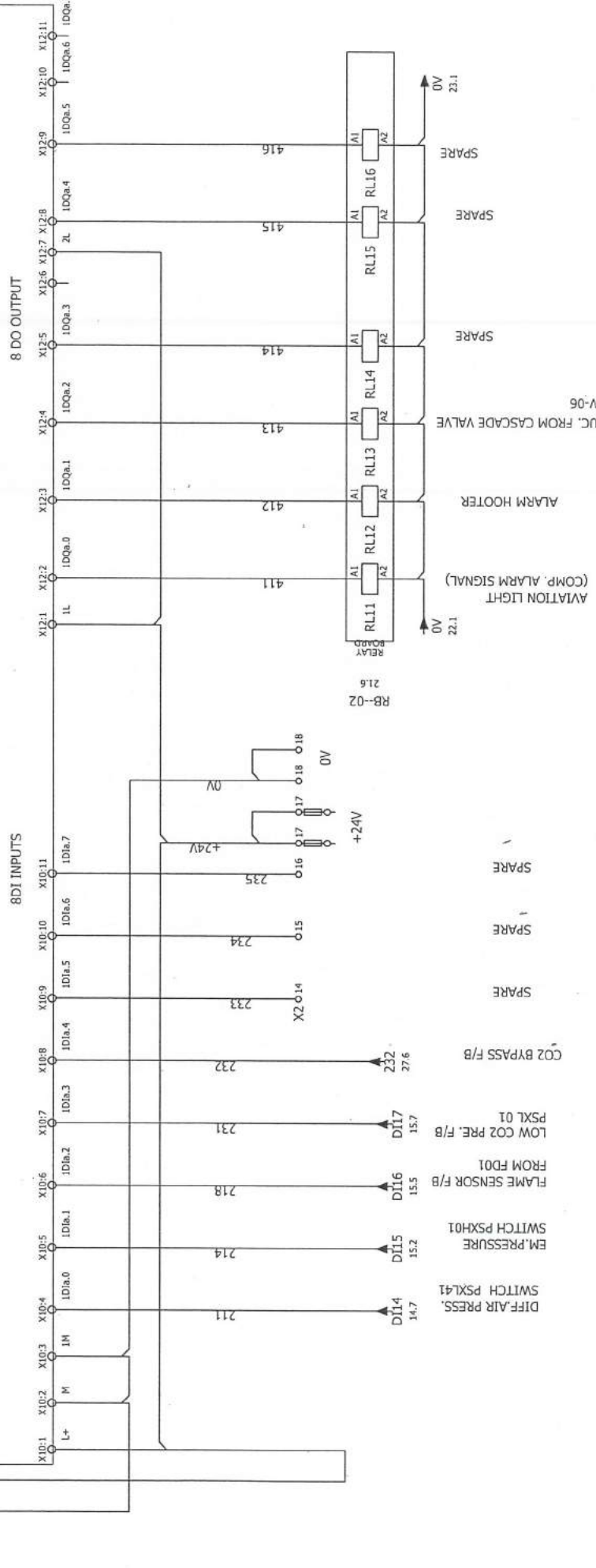
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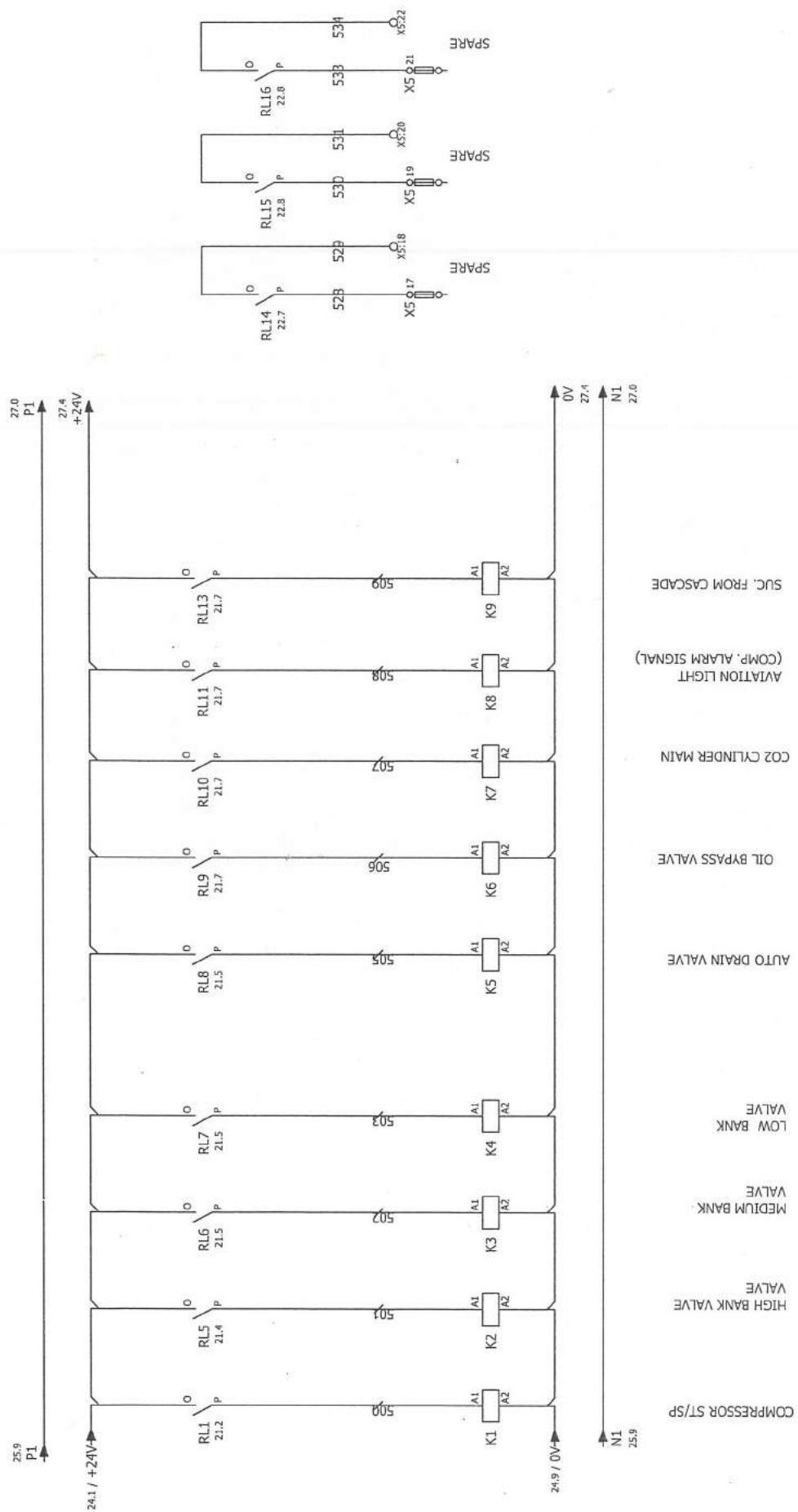
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DI/DO--MODULE
6E57 2231 BH32-0X80



0 - P 27.6 0 - P 26.5 0 - P 26.6 0 - P 26.7 0 - P 26.8

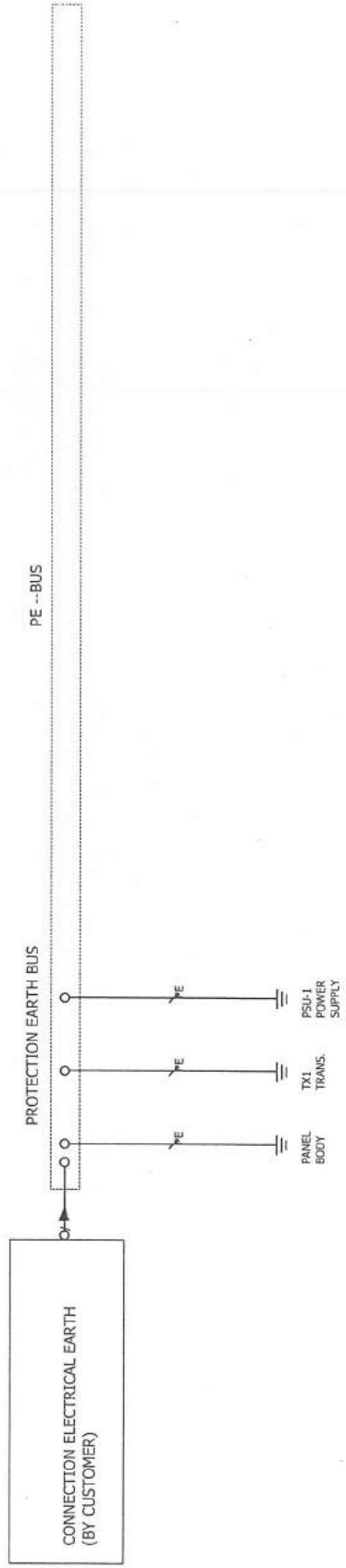
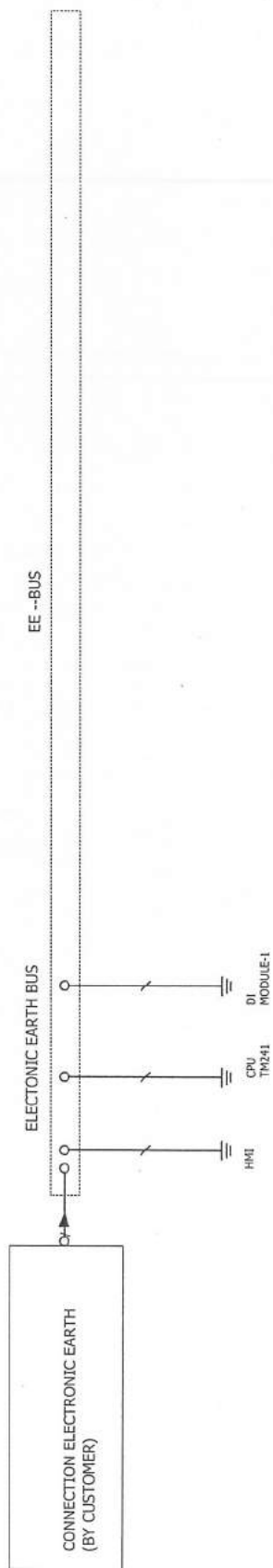
Previous page 21	Next page 23
DRAWG. NO.: L-00261	PROJECT No.: ICL-37KW COMP. (HOGPL)
DATE: 08/04/19	PROJECT DESCRIPTION:- PLC PANEL FOR 37KW BOOSTER COMP.
MANUFACTURER:- INDIAN COMPRESSOR LIMITED	CUSTOMER:- HPOIL GAS PVT. LTD.
Modification date: 29/04/19 REV. NO.: FORMAL REV. IS ALAM.	PAGE DESCR:- DIGITAL INPUT/OUTPUT
APPROVED BY: MR. RIZWAN MR. JIJITHAN	Page 22



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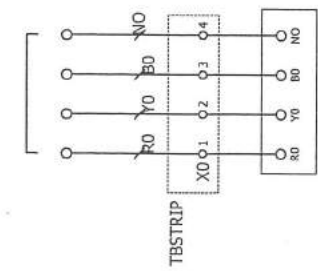
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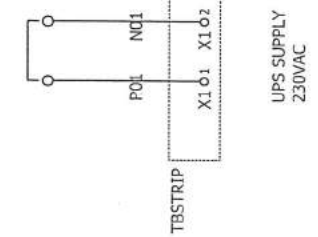
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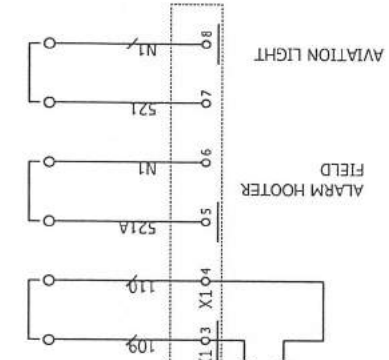
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					REV. NO.:	
DATE- 08/04/19					DESIGNED BY:- MR. RIDWAN	CHECKED BY: MR. RIDWAN
						Page 28



INCOMING SUPPLY
415VAC 3-PHASE, 4WIRE

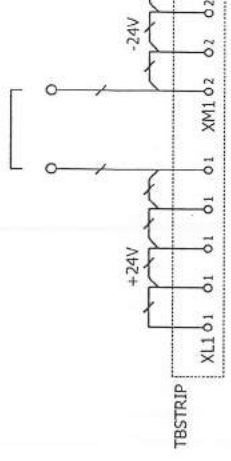


UPS SUPPLY
230VAC

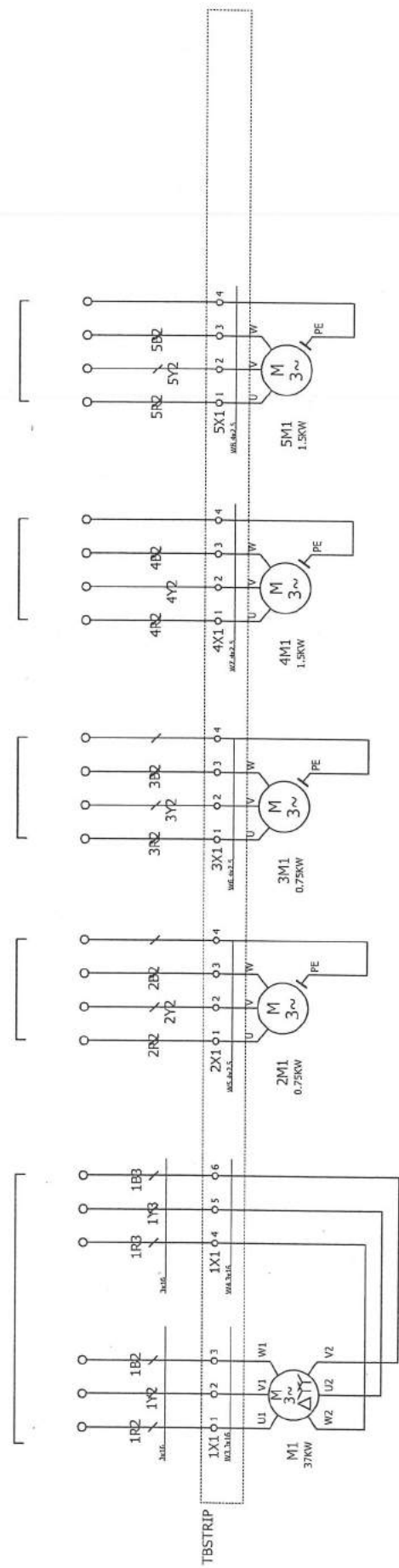


ALARM HOOTER
FIELD

AVIATION LIGHT



24V DC



COMPRESSOR
MOTOR

FAN MOTOR 1

FAN MOTOR 2

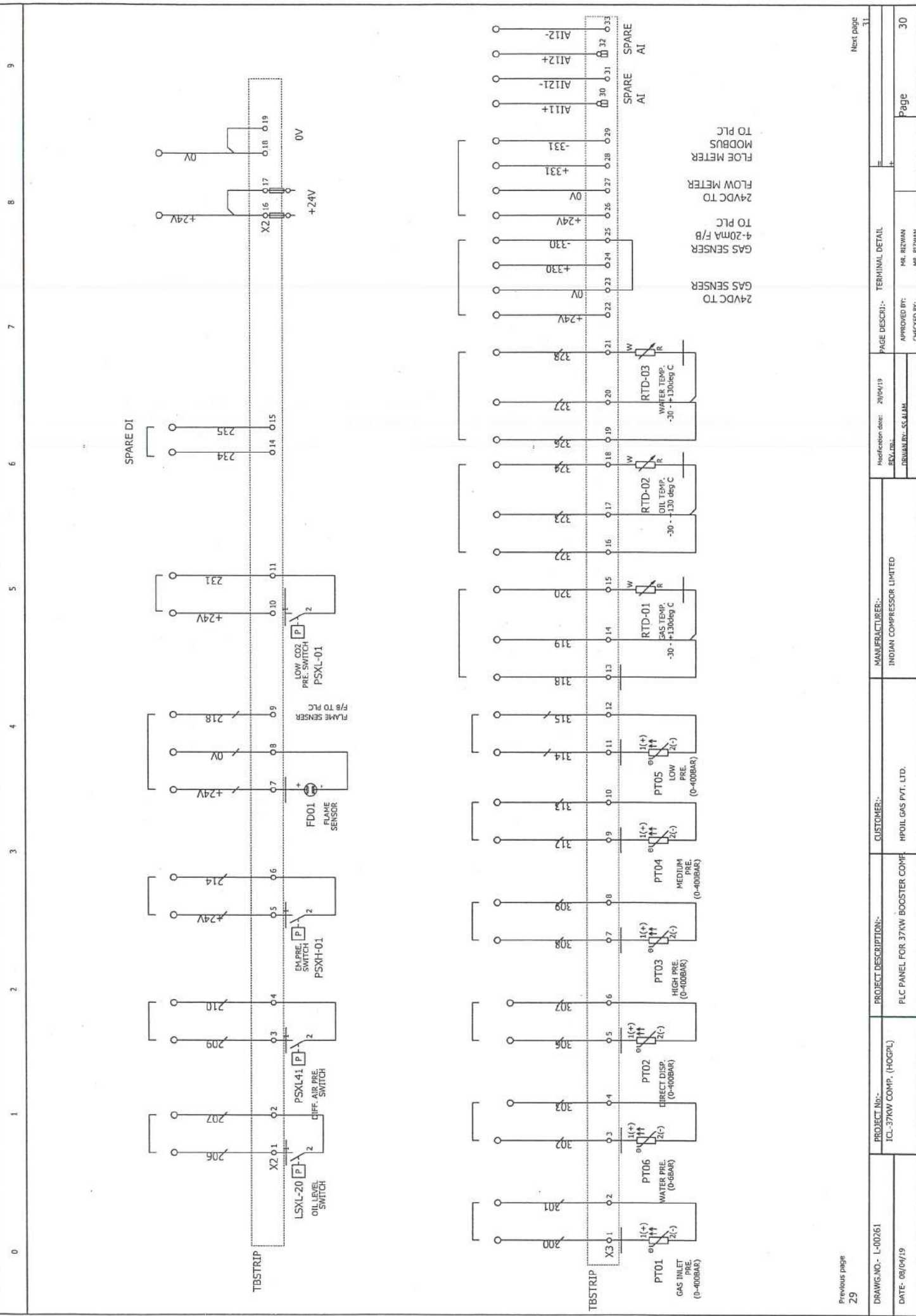
WATER PUMP

AIR COMPRESSOR

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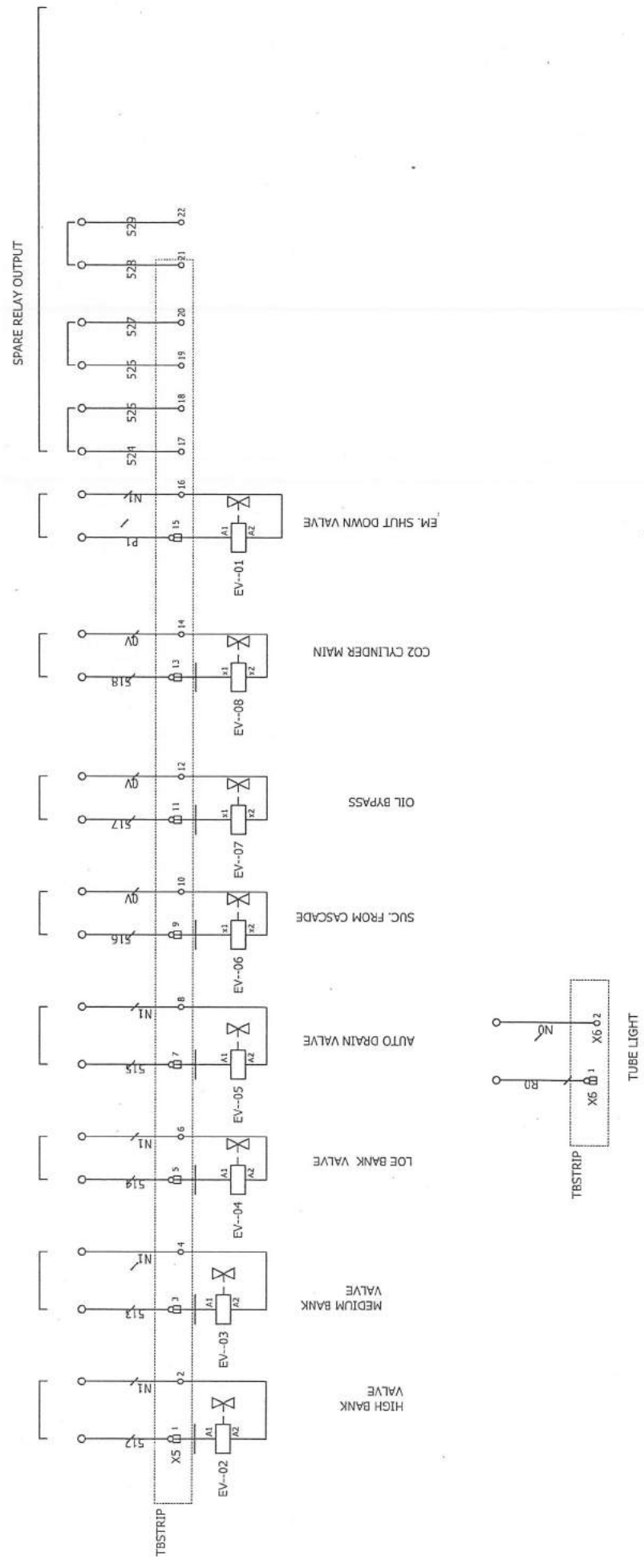
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	PLC PANEL FOR 37KW BOOSTER COME			INDIAN COMPRESSOR LIMITED	30/04/19	TERMINAL DETAIL	PHE RIZWAN	PHE RIZWAN	29

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DRAWING NO. - L-002/61	PROJECT NO. - ICL-37KW COMP. (HOGPL)	PROJECT DESCRIPTION. - PLC PANEL FOR 37KW BOOSTER COMP	CUSTOMER. - HPOIL GAS PVT. LTD.	MANUFACTURER. - INDIAN COMPRESSOR LIMITED	Modification date: 28/04/19 BY: S.M.	PAGE DESCI. - TERMINAL DETAIL	31
DATE: 06/04/19					APPROVED BY: MR. RIZWAN	CHECKED BY: MR. RIZWAN	Page 30



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DRAWING NO.- L-00261	PROJECT No:- TCL-37KW COMP. (HOGPL)	CUSTOMER:- HPOIL GAS PVT. LTD.	MANUFACTURER:- INDIAN COMPRESSOR LIMITED	DATE: 08/04/19	PROJECT DESCRIPTION:- PLC PANEL FOR 37KW BOOSTER COMP.	APPROVED BY: MR. RIYAN	PAGE DESCR:- TERMINAL DETAIL	DATE: 30/04/19	CHECKED BY: MR. RIYAN	Page 31
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SPARE PART LIST OF COMPRESSOR MODEL: B50-30

CYLINDER ASSEMBLY 1st STAGE

No.	Description	Quantity	Code
1	CYLINDER HEAD TOP	1	761261V50
2	CYLINDER HEAD BOTTOM	1	761281VC50
3	OIL SEAL HOUSING 1 st STAGE	1	77161-1G50
4	CYLINDER LINER 1 st STAGE	2	76128450
5	PISTON 1 st STAGE	2	76128-6C50
6	PISTON ROD 1 st STAGE	1	771612A50
7	STUD FOR CYLINDER LINER 1 st STAGE	4	76513950
8	SUCTION & DISCHARGE VALVE	2+2	7710750
9	O' RING FOR PISTON	2	89306136
10	NUT	4	765139M
11	CHECK NUT	4	765139N
12	STEP SEAL FOR PISTON Ø145	2	S000145
13	SLYDRING FOR PISTON Ø145	2	G0050781
14	STEP SEAL OIL SEAL HOUSING	1	89345050
15	SLYDRING OIL SEAL HOUSING	2	G50050782
16	O' RING FOR CYL. HEAD TOP & BOTTOM	2	89306253
17	BACKUP RING CYL. HEAD TOP & BOTTOM	2	76128350
18	O RING FOR PISTON	2	89306136
19	LOCKING SCREW	6	BG000105
20	BACKUP RING OIL SEAL HOUSING	2	76128250

CYLINDER ASSEMBLY 2nd STAGE

No.	Description	Quantity	Code
1	CYLINDER HEAD TOP	1	774811R1C22
2	CYLINDER HEAD BOTTOM	1	774812R1C22
3	OIL SEAL HOUSING 2 nd STAGE	1	7481-3A
4	CYLINDER LINER 2 nd STAGE	2	7612941
5	PISTON 2 nd STAGE	2	77481-5
6	PISTON ROD 2 nd STAGE	1	774814A
7	STUD FOR CYLINDER LINER 2 nd STAGE	4	765139N
8	SUCTION VALVE	2	77107D
9	DELIVERY VALVE	2	77107D
10	NUT	4	765139M
11	CHECK NUT	4	765139N
12	AQ SEAL FOR PISTON Ø100	2	89352100N
13	SLYDRING FOR PISTON Ø100	2	893321100A
14	STEP SEAL OIL SEAL HOUSING	1	89345040
15	SLYDRING OIL SEAL HOUSING	2	893306040A
16	O' RING CYL. HEAD & OIL SEAL HSG.	4	89311341
17	BACKUP RING CYL. HEAD TOP & BOTTOM	2	BG00098
18	O RING FOR PISTON ROD 2 nd STAGE	2	89306126
19	LOCKING SCREW 2 nd STAGE	6	BG000100

SUCTION & DISCHARGE VALVE ASSEMBLY 1ST STAGE

No.	Description	Quantity	Code
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	6372300
5	VALVE RETAINER SUCTION & DISCHARGE	1+1	77107350

SUCTION VALVE ASSEMBLY 2nd STAGE

No.	Description	Quantity	Code
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	6372300
5	VALVE RETAINER SUCTION	1	771073

DISCHARGE VALVE ASSEMBLY 2nd STAGE

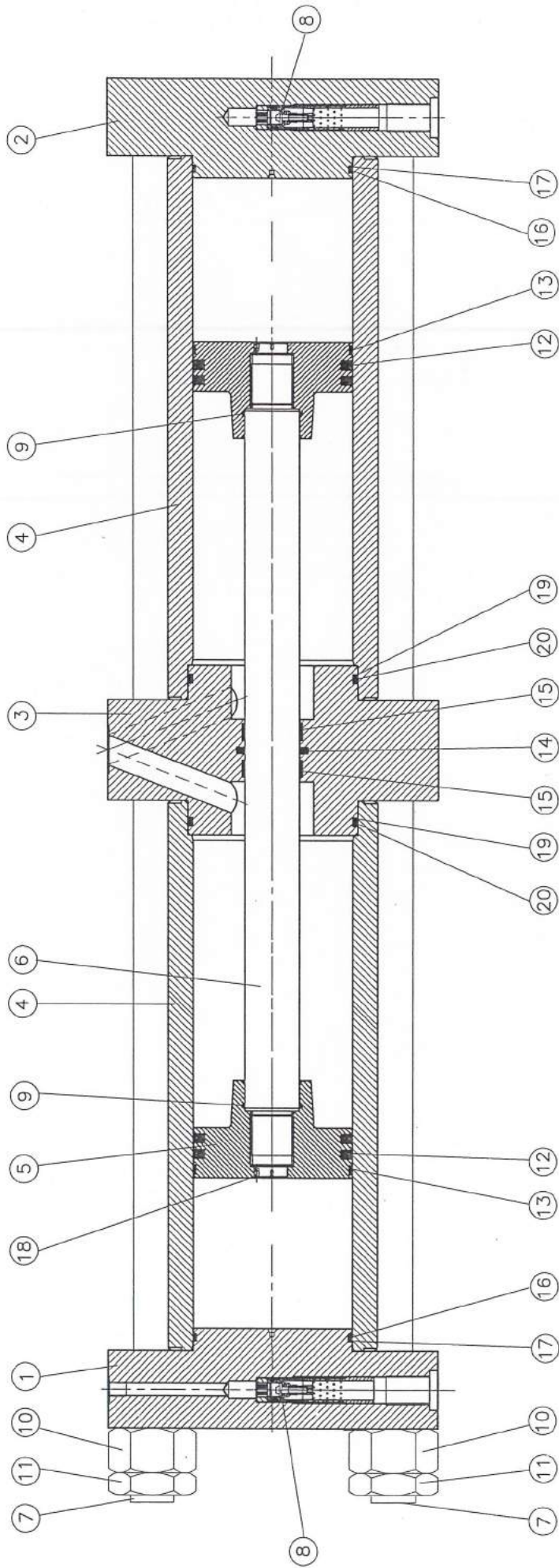
No.	Description	Quantity	Code
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	6372300
5	VALVE RETAINER DISC.	1	771072

SUCTION FILTER ASSEMBLY

No.	Description	Quantity	Code
1	O' RING FOR SUCTION FILTER COVER	1	89310228
2	BACKUP RING FOR SUCTION FILTER COVER	1	893202503
3	FILTER ELIMENT	1	F01206
4	SUCTION FILTER BLOCK	1	CNG10202
5	SUCTION FILTER COVER	1	CNG20203

PULSATION DAMPNER ASSEMBLY

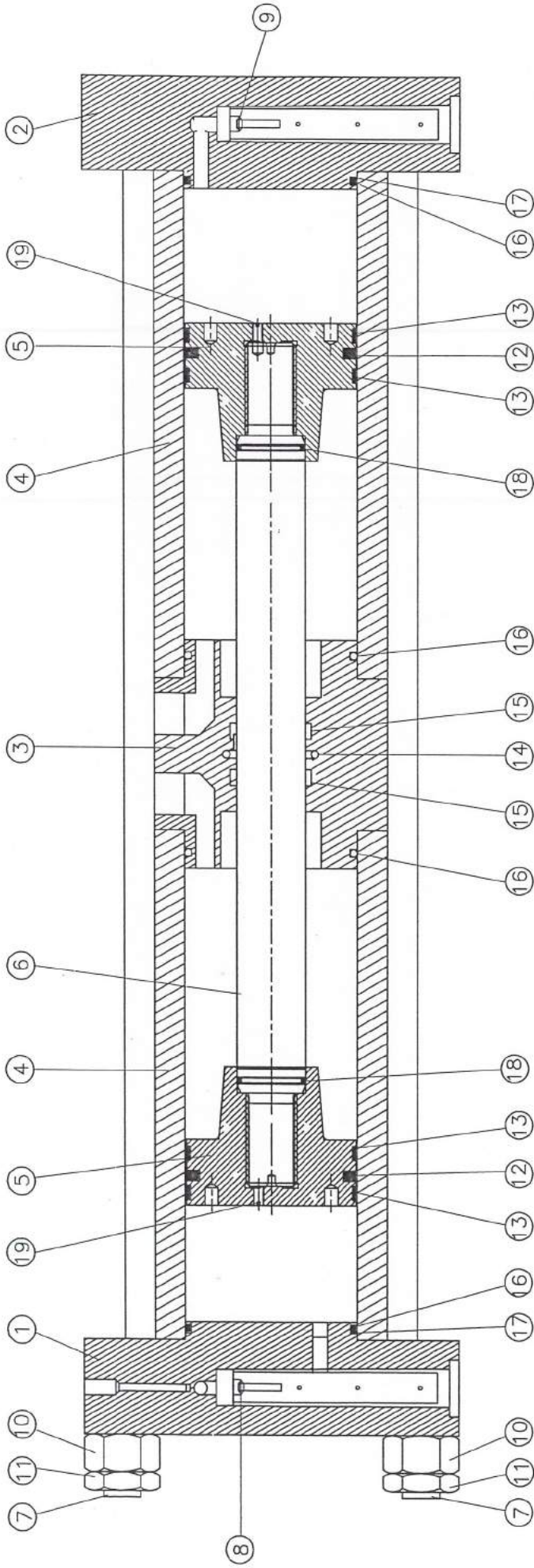
No.	Description	Quantity	Code
1	DAMPNER SHELL	1	A-0000366
2	TOP CASE	1	A-0000364
3	BOTTOM CASE	1	A-0000408
4	COALESCER FILTER	1	71ZV2000
5	STUD M8X550 LONG	1	880908
6	HEX NUT M8	2	880508
7	PLAIN WASHER W8	1	881008
8	BACKUP RING 246 122 ID X 128 OD X 1.5 THK.	4	89320246
9	O' RING 246 110.72 ID X Ø3.53	4	89310264
10	BOTTOM MOUNTING FLANGE	1	7799219
11	ALLEN BOLT M10X35 LONG	4	88003010035B
12	LOCK NUT M8	1	881808



S.NO.	DESCRIPTION	QTY.	CODE NO.
17	BACKUP RING CYL. HEAD TOP & BOTTOM	2	76128350
16	O' RING CYL. HEAD TOP & BOTTOM	2	89306253
15	SLYDRING OIL SEAL HOUSING	2	650050782
14	STEP SEAL OIL SEAL HOUSING	1	89345050
13	SLYDRING FOR PISTON #120	4	60050781
12	STEP SEAL FOR PISTON #120	2	S000145
11	CHECK NUT	4	765139N
10	NUT	4	765139M
9	O' RING FOR PISTON	2	89306136
8	SUCTION & DISCHARGE VALVE 1ST	2+2	77107250
7	STUD FOR CYLINDER LINER 1ST STAGE	4	76513950
6	PISTON ROD 1ST STAGE	1	771612A50
5	PISTON 1ST STAGE	2	76128-6C50
4	CYLINDER LINER 1ST STAGE	2	76128450
3	OIL SEAL HOUSING 1ST STAGE	1	77161-1G50
2	CYLINDER HEAD BOTTOM	1	761281V50
1	CYLINDER HEAD TOP	1	761261V50
S.NO.	DESCRIPTION	QTY.	CODE NO.

S.NO.		DESCRIPTION	QTY.	CODE NO.	INITIALS		DATE
20	O' RING CYL. OIL SEAL HSG.	2	89306358	JACOB		08.03.18	
19	BACKUP RING OIL SEAL HOUSING	1	76128250	N.SINGH		08.03.18	
18	LOCKING SCREW	6	B6000105	APPROVED			
				DRG.NO.	7716650		

DIDWANIA
COMPRESSORS
 TITLE X-SECTIONAL DRAWING OF
 CNG COMPRESSOR 1ST STAGE
 MODEL: B50-30
 CODE NO. 145013
INDIAN COMPRESSORS LIMITED



Max. Working pressure: = 275 bar
 Hydrostatic test pr. = 400 bar
 Test duration of time = 10 min.

S.NO.	DESCRIPTION	QTY.	CODE NO.
19	LOCKING SCREW 2ND STAGE	6	BG000100
18	O' RING FOR PISTON ROD 2ND STAGE	2	89306126
17	BACKUP RING CYL. HEAD TOP & BOTTOM	2	BG000098
16	O' RING CYL. HEAD & OIL SEAL HSG.	4	89311341
15	SLYDRING OIL SEAL HOUSING	2	893306040A
14	STEP SEAL OIL SEAL HOUSING	1	89345040
13	SLYDRING FOR PISTON Ø100	2	893321100A
12	AG SEAL FOR PISTON Ø100	2	89352100N
11	CHECK NUT	4	765139N
10	NUT	4	765139M
9	DELIVERY VALVE	2	77107D
8	SUCTION VALVE	2	77107D
7	STUD FOR CYLINDER LINER 2ND STAGE	4	765139N
6	PISTON ROD 2ND STAGE	1	774814A
5	PISTON 2ND STAGE	2	77481-5
4	CYLINDER LINER 2ND STAGE	2	7612941
3	OIL SEAL HOUSING 2ND STAGE	1	77481-3A
2	CYLINDER HEAD BOTTOM	1	774812R1C22
1	CYLINDER HEAD TOP	1	774811R1C22

DIDWANIA
COMPRESSORS

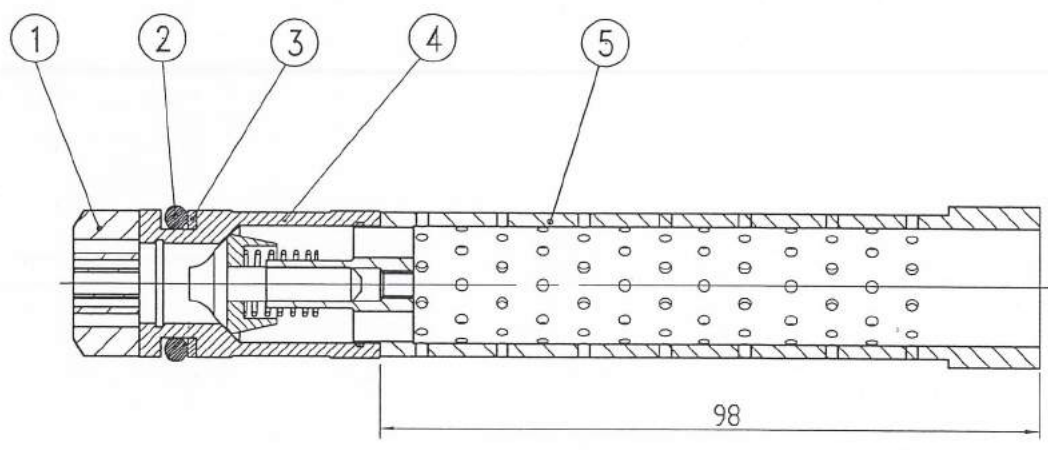
TITLE X-SECTIONAL DRAWING OF
 CNG COMPRESSOR 2ND STAGE
 MODEL: B50-30
 CODE NO. 143014

INITIALS	DATE
JACOB	30.03.17
RKS	30.03.17
APPROVED	
DRG.NO.	77167-C

INDIAN COMPRESSORS LIMITED

DO NOT SCALE THE DRG. IF IN DOUBT ASK

A4



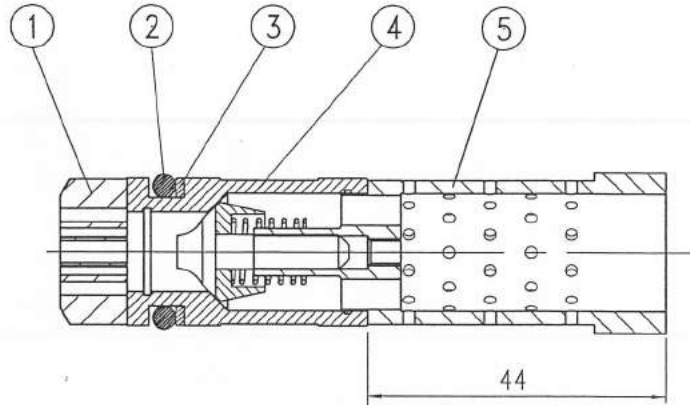
S.NO.	DESCRIPTION	QTY.	CODE NO.
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	77107250
5	VALVE RETAINER SUC.& DIS.	1+1	77107350

UNSPECIFIED MACHINING TOLERANCE				CODE NO.	77107250	
0---75 ±0.125	75---150 ±0.250	150---300 ±0.375	>300 ±0.500	DRG. NO.	VCD5030771072	
INDIAN COMPRESSORS LIMITED	MODEL	SURFACE FINISH			INITIALS	DATE
	B50-30	~	> 80	DRAWN	JACOB	13.05.13
		▽	40 - 80	CHECKED	KSB	13.05.13
		▽▽	16 - 40	APPROVED		
▽▽▽	UPTO 16					
SCALE -	TITLE			QTY.	MATERIAL	
	1ST STAGE SUCTION & DISCHARGE VALVE (B50-30)			2 NOS.	WT.	

DO NOT SCALE THE DRG.

IF IN DOUBT ASK

A4



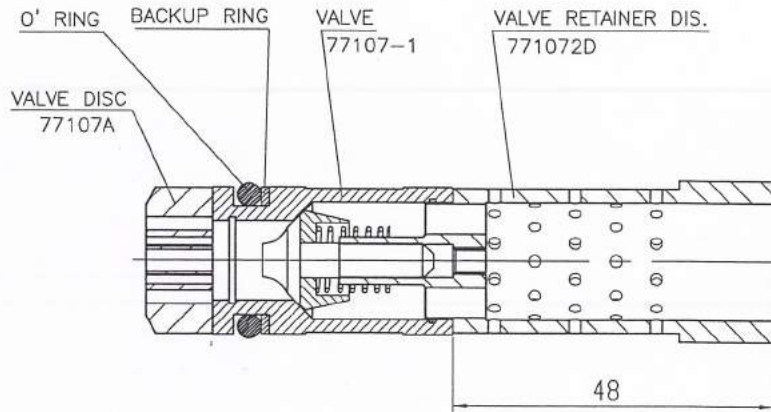
S.NO.	DESCRIPTION	QTY.	CODE NO.
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	6372300
5	VALVE RETAINER SUC.	1	771073

UNSPECIFIED MACHINING TOLERANCE				CODE NO.	77107-S				
0---75	±0.125	75---150	±0.250	150---300	±0.375	>300 ±0.500	DRG. NO.	VCD3030771072S	
INDIAN COMPRESSORS LIMITED	MODEL	SURFACE FINISH			INITIALS	DATE			
	B50-30	~	> 80	DRAWN	JACOB	13.05.13			
		▽	40 - 80	CHECKED	KSB	13.05.13			
		▽▽	16 - 40	APPROVED					
	▽▽▽	UPTO 16							
SCALE -	TITLE			QTY.	MATERIAL				
	SUCTION VALVE ASSBMBLY			2 NOS.	WT.				
	2ND STAGE								

DO NOT SCALE THE DRG.

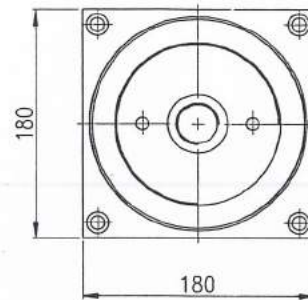
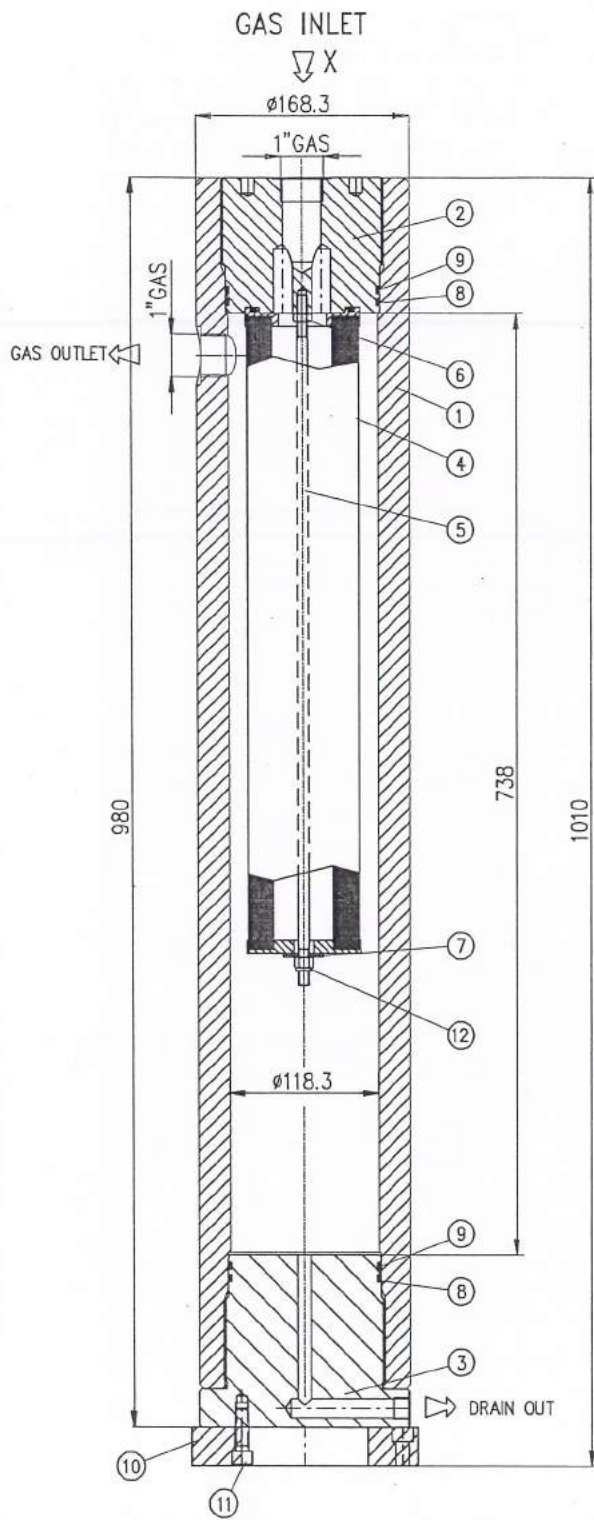
IF IN DOUBT ASK

A4



S.NO.	DESCRIPTION	QTY.	CODE NO.
1	VALVE DISC	1	771071A
2	O' RING	1	771075
3	BACKUP RING	1	771074
4	VALVE ASSEMBLY	1	6372300
5	VALVE RETAINER DISC.	1	771072

UNSPECIFIED MACHINING TOLERANCE				CODE NO.	77107-D					
0---75	±0.125	75---150	±0.250	150---300	±0.375	>300	±0.500	DRG. NO.	VCD3030771072D	
INDIAN COMPRESSORS LIMITED	MODEL		SURFACE FINISH			INITIALS	DATE			
	B50-30		~	> 80	DRAWN	JACOB	13.05.13			
			▽	40 - 80	CHECKED	KSB	13.05.13			
			▽▽	16 - 40	APPROVED					
		▽▽▽	UPTO 16							
SCALE -		TITLE			QTY.	MATERIAL				
		DIS. VALVE ASSBMBLY			2 NOS.					
		2ND STAGE.				WT.				



VIEW FROM ARROW-X

Working pressure: = 250 bar
 Hydrostatic test pr. = 375 bar
 Test duration of time = 30 min.
 Max working temperature: 60°C

S.NO.	QTY.	DESCRIPTION	CODE NO.
12	1	LOCK NUT M8	881808
11	4	ALLEN BOLT M10X35 LONG	88003010035B
10	1	BOTTOM MOUNTING FLANGE	7799219
9	4	O' RING 246 110.72 ID X 3.53	89310264
8	4	BACKUP RING 246 122 ID X128 OD X 1.5 THK.	89320246
7	1	PLAIN WASHER W6	881008
6	2	HEX. NUT M8	880508
5	1	STUD M8X550 LONG	880908
4	1	COALESCER FILTER	71ZV2000
3	1	BOTTOM CASE	A-0000408
2	1	TOP CASE	A-0000364
1	1	DAMPNER SHELL	A-0000366

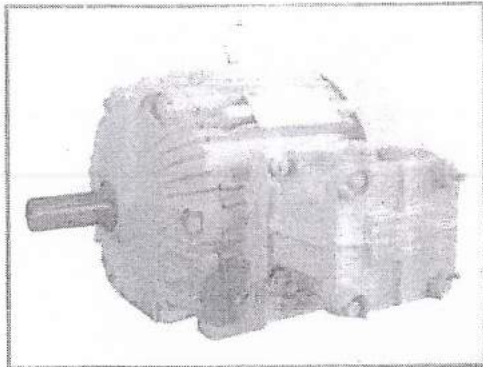
**DIDWANIA
COMPRESSORS**

TITLE
X-SECTIONAL ASSEMBLY OF
PULSATION DAMPNER
B30-30

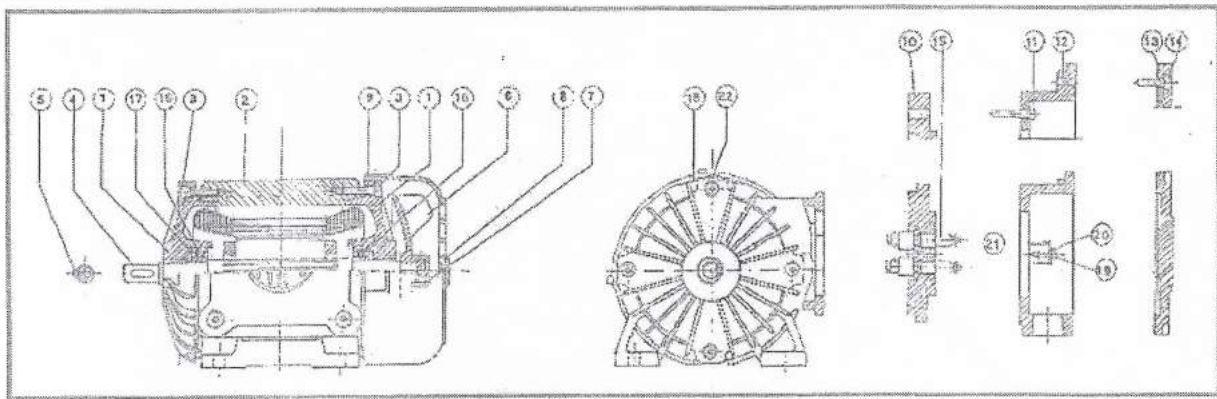
	INITIALS	DATE
DRAWN	JACOB	21.05.15
CHECKED	KSB	21.05.15
APPROVED		
DRG.NO.	F-0001658	

INDIAN COMPRESSORS LIMITED

COMPRESSOR ELECTRIC MOTOR



CODE	76H4AB00
Power	37 KW; 50HP
r.p.m	1445
Efficiency	88%



SPARE PARTS LIST	
1	Side Cover
2	Motor body
3	Screw
4	Shaft
5	Tongue
6	Fan
7	Screw
8	Cup
9	Screw
10	Plate
11	Screw
12	Terminal board box
13	Plate
14	Screw
15	Flameproof terminal
16	Bearings
17	Rings
18	Data plate
19	Screw
20	Washer
21	Washer
22	Screw