

DRESSER-RAND

"Commitment to Excellence"

SERVICE MANUAL

X – 45114

DR - CANADA

DRESSER RAND

DRESSER RAND INDIA PVT. LTD.

187, GIDC ESTATE, NARODA, AHMEDABAD-382330

PHONE : (+91-79) 2280 0800 FAX : (+91-79) 2280 5588

D-R JOB REF. => X-45114

MODEL => 6 X 5 ESH1 NL-2

**SERIAL NUMBER => Frame → XB1XC-1254
CYL. 6" → XB1XC-1254A**

ENGG. ORDER NO. => 297 - E - 100310

CUSTOMER => D- R CANADA

CUSTOMER P.O. NO => 195562 DTD Jan. 11 , 2010

**DESTINATION => Rochester Institute of Technology
Canada**

INDEX

SECTION	TITLE
A	OPERATING CHARACTERISTICS AND GENERAL DATA
B	INSTRUCTION BOOK
C	PART LIST
D	DRAWINGS

GENERAL DATA



OPERATING CHARACTERISTICS AND GENERAL DATA

I. COMPRESSOR TYPE :- 6 X 5 ESH1 NL- 2

II. CYLINDER DATA AND PERFORMANCE :-

SERVICE	AIR
STAGE	1
CYLINDER DIA. (IN.)	6
STROKE (IN.)	5
CYLINDER TYPE	DA
MATERIAL	CI
LINER	WEAR RESIST

REGULATION :- 0 – 50% – 100 %

UNLOADER & LOCATION :- FINGER TYPE (AIR TO UNLOAD) UNLOADER

Performance DESIGN CASE –		Stage – I 100%	Stage – I 50%
CYLINDER OPERATION	Type	DA	DA
INLET PRESSURE	PSIA	14.273	14.273
INLET TEMPERATURE	°F	90	90
DISCHARGE PRESSURE	PSIA	51.253	51.253
DISCH. TEMPERATURE	°F	328.63	328.63
PISTON DISPLACEMENT	CFM	57.1	27.6
CAPACITY AT INLET	ACFM	34	16.2
RATED CAPACITY (DRY)	NM ³ /HR	47.7	22.7
TOTAL COMPRESSOR BHP	HP	5.12	2.81
SPEED	RPM	360	360
BAROMETRIC PRESSURE	PSIA	14.7	14.7

* DISCHARGE TEMPERATURE IS ESTIMATED AS ADIABATIC RISE.

KEY TO ABBREVIATIONS :-

SAFE : SINGLE ACTING FRAME END SAOE : SINGLE ACTING OUTER END
DA : DOUBLE ACTING NI : NODULAR IRON
PSIA : POUND PER SQUARE INCHKg/Cm²G : KILOGRAM PER SQUARE
(ABSOLUTE) CENTIMETER (GAUGE)
NM³/HR: NORMAL METER CUBE PER HOUR SACE: SINGLE ACTING CRANK END
CFM : CUBIC FEET PER MINUTE

D-R REF. : X-45114

UNLOADING TABLE :-

Capacity	6" Cylinder	
	F.E.	O.E.
0%	NA	NA
50%	A	NA
100%	A	A

A – ACTING; NA – NON ACTING

III. REGULATION :-

A.	STARTING UNLOADING	THRU' UL90 TYPE UNLOADER
B.	CAPACITY REGULATION	0 –50 –100%
C.	REFERENCE GA & FD NO.	FIN52380
D.	P & I DIAGRAM NO.	RIN60600EF

IV. DRIVER :- BY D-R

MAKE & TYPE	LESSON ELECTRIC CORP. & TEFC, WEATHER PROOF TO IP43, CSA CERTIFIED
FRAME SIZE	215T-1000
H.P.	10
R.P.M.	1755

FRAME INSTRUCTIONS

Customer : DR CANADA / LOCAL UNIVERSITY
 D-R Order No.: X-45114

<u>DRESSER-RAND</u>			
RECIPROCATING PRODUCTS			
COMPRESSOR SIZE, STROKE, FRAME AND TYPE			
6.0"	5.00"	ESH-1	NL-2
PURCH ITEM NO.	SERIAL NO.	RATED RPM	YEAR
-----	XB1XC-1254	360	2010
ALWAYS GIVE SERIAL NO.WHEN ORDERING PARTS			

Purchase Item No.	Serial No.
-----	XB1XC - 1254

REVISIONS			
LTR	DESCRIPTION	DATE	APP

FRAME INSTRUCTIONS

1. Shop to refer to Approved Quality Plan furnished by projects for all components that require inspection, expediting or certification.
2. Compressor is to be painted to DRI standard painting procedure unless otherwise specified by projects.
3. Do not paint stainless steel pipe, tubing, plate or valves.
4. For Frame Shipment Preparation see D-R Standard 80,504-00, category- III
5. For Non Lubricated Cylinder Preparations see DR Standard 80,501-00.
6. For Shop Run Test Procedure sees DR Standard No Load Mechanical Run Test Procedure & approved quality assurance plan.
7. The use of Teflon tape is prohibited on this assembly.

DRESSER-RAND CHG TO: 149C

Naroda Plant, Ahmedabad 382 330

Drawn By: HVG 24/05/2010

Checked By: HVG

Approved By: DSB

**FRAME
INSTRUCTIONS
R83600 – 246
REV: 0**

Page 2 of 3

FRAME INSTRUCTIONS

COMPRESSOR CYLINDER PISTON ROD WEIGHTS

Order No.: X-45114

Serial No.: XB1XC-1254

Shop Order No.: _____

Recorded By: _____ Date: _____

Crank Number/ Cylinder Serial Number	Weight				Total Assy. Wt. (less Balance Wt.)	Bal. Assy. Wt.	Calc. Wt. (Less Bal. Wt.)	Calc. Bal. Wt.
	Piston	Rod	Locknut	Rings				
1	XB1XC-1254A						65	

* - Heavy crosshead flange

The measured total piston/rod/slinger/crosshead nut assembly weight should agree with the calculated weight within the tolerance shown below. If the calculated and measured weights are not within the tolerance then contact engineering.

Engineering will determine on the basis of compressor balance if remedial action needs to be taken.

Compressor Model		Weight Tolerance +/- Lbs.
BOS		5
PHE		10
HSE		15
HHE-FA/FB	BDC-OF9	20
HHE-VB		25
HHE-VC/VE	BDC-OF14 & OF12H	30
HHE-VG	BDC-OF16S	40
HHE-VK/VL	BDC-OF16H3	50
HHE-VM	BDC-OF18H2	70

Approved, Quality Control: _____

Approval of weight deviation, Engineer: _____

Explanation of deviation approval:

DRESSER-RAND

CHG TO: 149C

Naroda Plant, Ahmedabad 382 330

Drawn By: HVG 24/05/2010

Checked By: HVG

Approved By: DSB

**FRAME
INSTRUCTIONS
R83600 – 246
REV: 0**

Page 3 of 3

CUSTOMER : DR CANADA / LOCAL UNIVERSITY

ORDER NO. : X-45114 / 297- E- 100310

FRAME SERIAL NOS. : XB1XC-1254

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
1	RIDER RING 1 (ONE) PIECE WAS 2 (TWO) PIECE AS MARKED	29/06/10	JBR

DRESSER-RAND
RECIPROCATING PRODUCTS

CYLINDER TYPE

6.00 X 5 ESH-1 NL2

SERIAL NO. BORE STROKE
SEE NOTE 6.00 IN 152.40 MM. 5.00 IN. 127.00 MM.

NORMAL DISCH. PRESS.	36.55	PSIG	2.57	KG/CM ² G
RATED DISCH. PRESSURE	300	PSIG	21.09	KG/CM ² G
MAX. ALLOW. WORKING PRESS.	330	PSIG	23.20	KG/CM ² G
MAX. ALLOW. DISCH. GAS TEMP.	350	° F	176.67	° C
HYDROSTATIC TEST PRESS.	500	PSIG	35.15	KG/CM ² G
MAX. COOLING WATER PRESS.	75	PSIG	5.27	KG/CM ² G

	RPM	FRAME	OUTER	TOTAL	AVG.
DISPL CFM AT 360	360	27.60	29.50	57.10	
DISPL CU.M/HR AT 360	360	46.89	50.12	97.01	
% STD. CYL. CLEAR		17.70	16.36		17.03
NORMAL LINEAL CL. IN.		0.03	0.09		
NORMAL LINEAL CL. MM.		0.76	2.29		
ADDED CL. VOL. CU. IN.		0.00	0		
ADDED CL. VOL. CM.		0.00	0.00		

ALWAYS GIVE SERIAL NO. WHEN ORDERING SPARE PARTS

NOTE: STAMP

SERIAL NO. XB1XC - 1254A

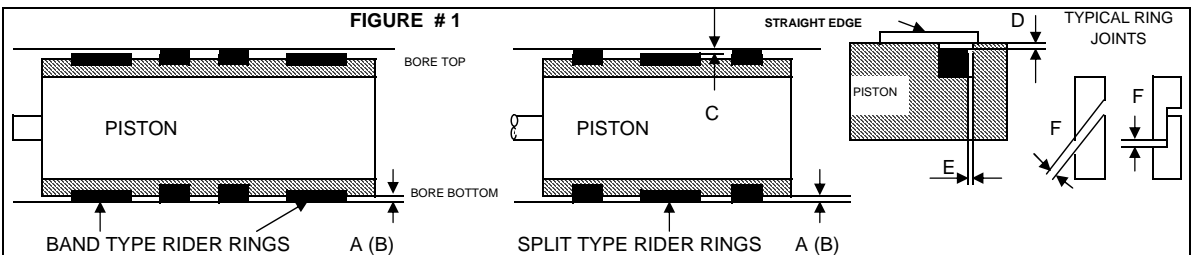
FOR FRAME NO. XB1XC - 1254

CYLINDER SIZE	FRAME END CLEARANCE	OUTER END CLEARANCE
6.00	0.025 - 0.040	0.060 - 0.150

CYLINDER SIZE	NUMBER OF LUBRICATION FEEDS(PER CYLINDER)			
	CYLINDER TOP	CYLINDER BOTTOM	PACKING	OTHER
6.00	0	0	0	--

- FULL LUBE
- MINI LUBE
- NL

PISTON DIAMETER AND MATERIAL	REFER TO FIGURE #1 FOR CLEARANCE LOCATION AND DESCRIPTION						PISTON / RIDER RING MATERIAL AND TYPE
	A	B	C	D	E	F	
6.00 C.I.				0.038 TO 0.022	0.011 TO 0.006	0.084 TO 0.072	(PISTON RING) (2) PC ANGLE CUT DW557
	0.067 TO 0.059	0.010 MIN.	0.031 TO 0.017		0.035 TO 0.029	0.150 TO 0.126	(RIDER RING) (1) PC ANGLE CUT DW557



- A - METAL PISTON CLEARANCE MEASURED BETWEEN BOTTOM BORE AND PISTON WHEN RIDER RING(S) ARE RIDING ON BOTTOM OF BORE.(BASIS NEW RIDER RINGS).
- B - SAME AS "A" EXCEPT MINIMUM ALLOWABLE CLEARANCE (MAXIMUM WEAR CONDITION) AT WHICH POINT RIDER RING(S) MUST BE REPLACED.
- C - RUNNING CLEARANCE MEASURED OVER RIDER RING(S) AT TOP WHEN PISTON RIDER RING(S) ARE RIDING ON BOTTOM OF BORE (BASIS NEW RIDER RING).
- D - BOTTOM OF PISTON RING TO BOTTOM RING GROOVE, MEASURED BY BOTTOMING RING IN GROOVE. (BASIS NEW PISTON RING).
- E - TOTAL SIDE CLEARANCE OF PISTON RING IN RING GROOVE.(BASIS NEW PISTON RING).
- F - PISTON RING END GAP, MEASURED WITH RING SQUARED IN BORE. (BASIS NEW PISTON RING).

NOTE:

1. WHERE ANODIZED ALUMINIUM PISTON ARE USED, RING CLEARANCES CAN BE UP TO .003" LESS THAN STANDARD.
2. IF THE CYLINDER NAME PLATE IS NOT ATTACHED TO THE CYLINDER ITSELF, PLEASE FILL OUT AND ATTACH NAME PLATE R82320.

PREPARED BY: HVG

APPROVED BY: DSB

DATE : 25/05/2010

DATE: 25/05/2010

CYLINDER INSTRUCTION NO. R79150A-246 REV. 1

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	SHEET 1 OF 3 REVISED	29/06/10	JBR

CUSTOMER : DR CANADA / LOCAL UNIVERISTY
ORDER NO. : X-45114 / 297- E- 100310
FRAME SERIAL NO(S). : XB1XC - 1254

CYLINDER INSTRUCTIONS

- 1 SHOP TO REFER TO APPROVED QUALITY PLAN, (LATEST REVISION) FURNISHED BY PROJECTS/Q.C. FOR ALL COMPONETS THAT REQUIRE INSPECTION, EXPEDITING OR CERTIFICATION.
- 2 ANAEROBIC SET STUDS TO BE INSTALLED WITH ANAEROBIC SEALANT TO ENGINEERING STANDARD 97,007-99.
- 3 FOR SHIPMENT PREPARATION SEE D-R STANDARD 80,504-00 CATEGORY- III, & D-R STANDARD 80,501-00.
- 5 FOR ARRANGEMENT OF CYLINDERS SEE GENERAL ARRANGEMENT DRAWING **FIN – 52380** LATEST REVISION & REFER P&ID **RIN – 60600EF** LATEST REVISION FOR UNLOADER TUBING.
- 6 PISTON NUT TIGHTENING ANGLE SHOULD BE 44 DEG. SHOP TO REFER INSTALLATION INSTRUCTION FOR TIGHTENING PROCEDURE.
- 7 PAINTING SHALL BE AS PER D-R STANDARD UNLESS OTHER WISE SPECIFIED BY PROJECTS.

PREPARED BY: HVG

APPROVED BY: DSB

DATE : 25/05/2010

DATE: 25/05/2010

		REV.
CYLINDER INSTRUCTION NO.	R79150A-246	1

DRESSER-RAND CYLINDER STRUCTIONS
SPECIAL CYLINDER BOLTING TORQUE VALUES

CUSTOMER : DR CANADA ORDER NO. : X-45114

CYLINDER SERIAL NUMBERS

XB1XC-1254A

DESCRIPTION (REFER TO FIGURE 1)	REF. NO. SEE FIGURE 1	BOLT SIZE (INCHES)	FINAL ASSY. & HELIUM TEST STRESS PSI (MPA)	FINAL ASSY. & HELIUM TEST TORQUE FT. LBS. (N-M)	HYDRO TEST STRESS PSI (MPA)	HYDRO TEST TORQUE FT. LBS. (N-M)
CYLINDER TO OUTER HEAD	1	0.875	30,000 (207)	131 (178)		
CYLINDER TO VALVE COVER	2	0.750	20,000 (138)	54 (74)		
VALVE COVER SET SCREW (INLET)	3	0.875	20,000 (138)	88 (119)		
VALVE COVER SET SCREW (DISCHARGE)	4	0.875	20,000 (138)	88 (119)		
CYLINDER TO FRAME HEAD	5	0.875	40,000 (276)	175 (237)		
CYLINDER TO DISTANCE PIECE	6 *	---	----	---		
FRAME HD. TO DISTANCE PIECE	7	0.750	40,000 (276)	109 (147)		
DISTANCE PC. TO DISTANCE PC.	8	---	---	---		
FRAME HD. TO PACKING	9	0.750	30,000 (207)	82 (111)		
INLET & DISCHARGE FLANGE	10	0.750	30,000 (207)	82 (111)		
RAM COVER	11	---	---	---		
OUTER HEAD TO PLUG OUTER HEAD	12	---	---	---		

* NOTE : FOR HYDRAULIC TENSIONING INFORMATION SEE DOCUMENT LISTED

THE TABLE ABOVE REFERS TO SPECIAL TORQUES FOR COMPRESSOR CYLINDER BOLTING ILLUSTRATED ON FIGURE 1.

NOT ALL LOCATIONS ARE USED ON ALL CYLINDER DESIGNS.

"SEE TIGHTENING INSTRUCTIONS IN CHAPTER 5 OF THE INSTRUCTION BOOK."

REVISION			
REV.	DESCRIPTION	DATE	APPROVED
1	SHEET 1 OF 3 REVISED	29/06/10	JBR

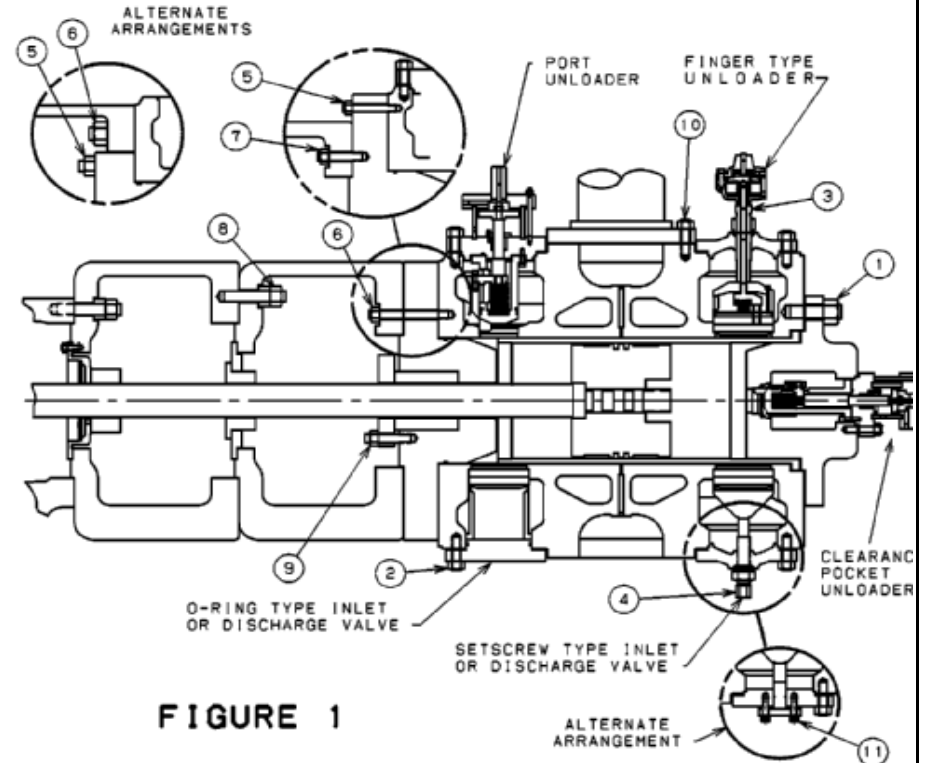


FIGURE 1

PREPARED BY: HVG

APPROVED BY: DSB

DATE : 25/05/2010

DATE: 25/05/2010

CYLINDER INSTRUCTION NO.	REV.
R79150A-246	1

Operating Parameters Summary

Client: Local university - Canada	Project:	F.O. No: X-45114
Service: Air Compressor	Item No:	E.O. No: 100310
Model: 6" X 5" ESH-1 NL2 @ 360 RPM	Quantity: 1	Sr. No: XB1XC-1254

GAS ANALYSIS AND ADDITIONAL OPERATING DATA (SPECIFIED BY CLIENT)

(X) Mole % / () Weight %	Mol. Wt.	OPERATING
Gas Composition:		
AIR	28.96	100%
Oxygen	32	
Nitrogen	28.016	
Carbon Monoxide	28.010	
Carbon Dioxide	44.010	
Hydr. Sulfide	34.078	
Hydrogen	2.016	
Methane	16.042	
Ethane	30.068	
Propane	44.094	
i-Butane	58.120	
n-Butane	58.120	
1-Butene	56.107	
T2-Butene	56.107	
C2-Butene	56.107	
i-Pentane	72.150	
Pentane	72.150	
3-M1-Butene	70.134	
1Pentene	70.134	
2M1Butene	70.134	
T2 Pentene	70.134	
C2 Pentene	70.134	
2M2Butene	70.134	
Cyclo Pentene	70.134	
Ammonia	17.030	
Water	18.016	
	Total %	100.00
Average Mol. Weight: () Wet / (X) Dry		28.96
Average CP/CV or K Value		

CLIENT SPECIFIED PARAMETERS (Pressures @ Compressor B.L. / Cyl Flange)

Relative Humidity	%	
Inlet Temp.	Deg C	
Inlet Pressure	Kg/cm2 g	
Discharge Pressure	Kg/cm2 g	
Total Required Capacity	Nm3/hr	

(Units of Measurement should be noted as per Client's Inquiry)

COMPRESSOR PERFORMANCE PARAMETERS (Pressures @ Cylinder Flange)

	Case	OPERATING
	Stage No.	1
No. Cylinders / Stage	Nos.	1
Single / Double Acting	SA / DA	DA
Cylinder Diameter	Inch	6
Stroke	Inch	5
Inlet Pressure	Kg/cm2 G	ATM
Inlet Temperature	Deg F	90
Inlet Compressibility	Zi	0.9996
Discharge Pressure	Kg/cm2 G	2.57
Disch. Temp. (Adia.)	Deg F	322.12
Disch. Compressibility	Zd	1.0005
Safety Valve Set Press.	Kg/cm2 G	3.68
Piston Displacement	CFM	57.10
Actual Inlet Capacity	ACFM	34.7
Reference Capacity(dry)	Nm3/hr	50.20
Rotational Speed	RPM	360
BHP per cylinder	HP	5.65
		Total Compressor BHP 5.65 HP
		Total Compressor BKW 4.2 kW
		Recommended Driver Power 7.5 kW

* NS:- Not Specified

INSTRUCTION BOOK



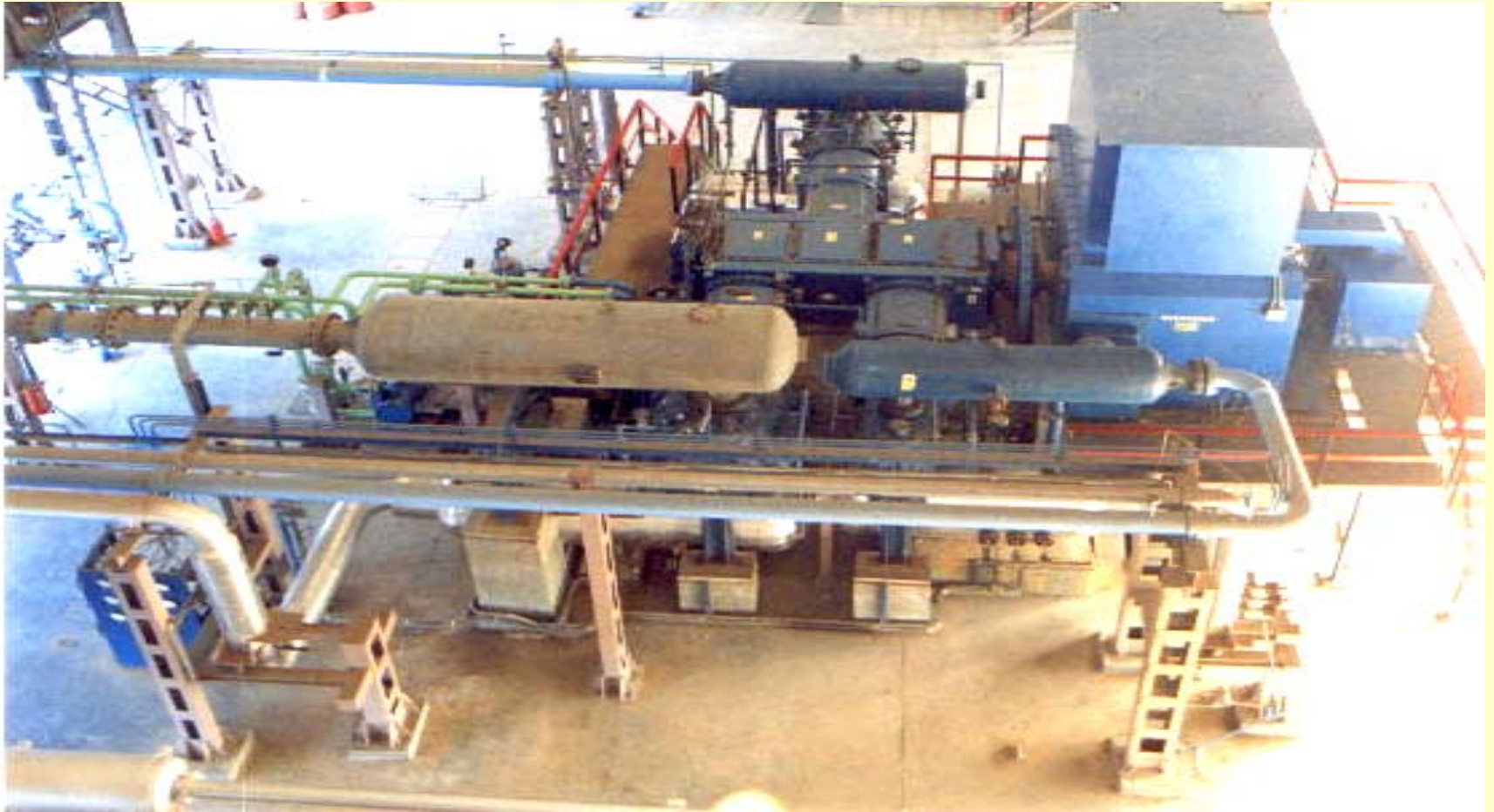
COMPRESSOR MODEL	=>	6" X 5" ESH NL-2
COMPRESSOR SRL NO.	=>	XB1XC- 1254
D-R ORDER NO.	=>	X – 45114 / 297 – E – 100130
CUSTOMER	=>	Rochester Institute of Technology Canada

I N D E X

INSTRUCTION PAGES

SR. NO.	P.G. NUMBER	TITLE
1	662F	SAFETY PRECAUTIONS
2	732D	METRIC CONVERSION EQUIVALENT
3	789	5" HSE - INSTALLATION, OPERATION. & MAINT. INSTRUCT
4	739G	GENERAL CYLINDER INSTRUCTION
5	740	CYLINDER INSTRUCTIONS – NL
6	652F	GENERAL VALVE MAINTENANCE INSTRUCTIONS
7	4746G	MAGNUM VALVE INSTRUCTIONS
8	454B	IMPORTANCE OF MAINTAINING VALVE RECORDS
9	785	VALVE INSTALLATION TOOL
10	4809	UL-90 OUTSIDE OPERATED UNLOADER
11	378A	PRESSURE VESSELS
12	791D	BELT DRIVE
13	557Q	HOW TO ORDER REPLACEMENT PART
14	707C	SERVICE PARTS – REPORTING

PART LIST - COMPRESSOR



DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 1 of 28

LIST NO	BARE COMPRESSOR X- 45114
MODEL	6 X 5 ESH1 NL-2
ASSLY. SERIAL NO	210 45 005
D-R JOB REF NO	X- 45114
ENGG. SERIAL NO	XB1XC - 1254
ENGG. ORDER NO.	297-E-100310
CUSTOMER	DR – CANADA
CUSTOMER PO. REFNO.	195562 DTD Jan. 11, 2010
DESTINATION	Rochester Institute of Technology - Canada

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.	BARE COMPRESSOR X-45114		DRWG	FIN52380	
DESCRIPTION	BILLS OF MATERIAL 6 X 5 ESH1 NL-2				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
-	BILLS OF MATERIAL	X-45114	1	NO	

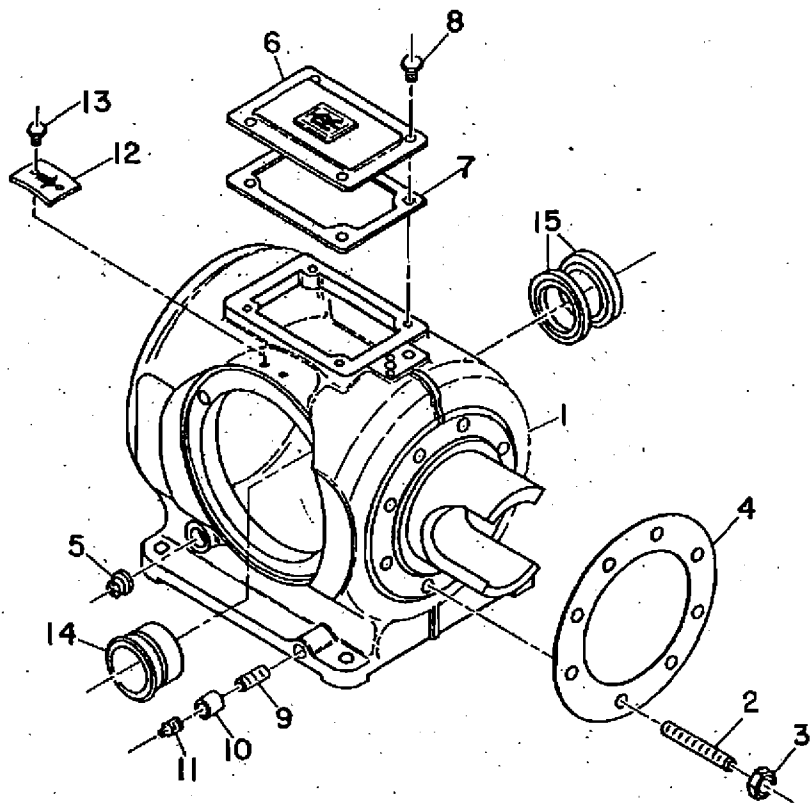
DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.	BARE COMPRESSOR X-45114		DRWG	FIN52380	
DESCRIPTION	BILLS OF MATERIAL 6 X 5 ESH1 NL-2				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
XXX	• FRAME & GEAR	FRAME & GEAR	1	NO	
010	• FRAME	MLH40734G1	1	NO	
020	• CONNECTING ROD	MLW125220G1	1	NO	M
030	• HOUSING OIL PUMP	MLW125218G1	1	NO	
040	• OIL PUMP & COVER	MLW114845G2	1	NO	
050	• CRANKSHAFT	MLW125219G1	1	NO	
060	• CROSSHEAD	MLW125221G1	1	NO	M
070	• ACCESSORIES FRAME	67729E	1	NO	
080	• DUAL OIL FILTER	72026BF	1	NO	
090	• DISTANCE PIECE	69031	1	NO	
100	• SCRAPPER & PACKING	67831D-2	1	NO	
XXX	• GAS END [6"]	GAS END [6"]	1	NO	
110	• HEAD FRAME & DIST.PC	MLH65953AAG2	1	NO	
120	• PIPING PACKING VENT	74152	1	NO	
130	• PACKING ROD COMPLETE	MLH65180AAG1	1	NO	
140	• CYLINDER	MLF30825AAG2	1	NO	
150	• VALVE INLET W/PLNG 4MAG	MLH44443MD10	2	NO	
160	• ACCESS VALVE INLET & UL90	MLH44435MD4	2	NO	
**	• HOLDER VALVE	144452	1	NO	
170	• VALVE DISCH 4.0MAG	MLH44433MD8	2	NO	
180	• ACCESS VALVE DISCH	MLH44437CC8	2	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.	BARE COMPRESSOR X-45114		DRWG	FIN52380	
DESCRIPTION	BILLS OF MATERIAL 6 X 5 ESH1 NL-2				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
190	• ROD PISTON	MLH65962G2	1	NO	
**	• SEAL OIL DEFLECTOR	300018AK3IM	1	NO	
200	• PISTON	MLH65202G5	1	NO	
210	• HEAD OUTER	CB5-5077	1	NO	
220	• TUBING REGULATION	69216HB	1	NO	
230	• SHEAVE COMPRESSOR	67623	1	NO	
**	• PULLEY MOTOR	512B4SDX080	1	NO	
**	• BUSH	HIN42505T4	1	NO	
**	• WASHER LOCK	14A5C55	3	NO	
**	• CAP SCREW	35A2J12	3	NO	
240	• CLOSURE	1R60971T28C	2	NO	

FRAME ASSEMBLY

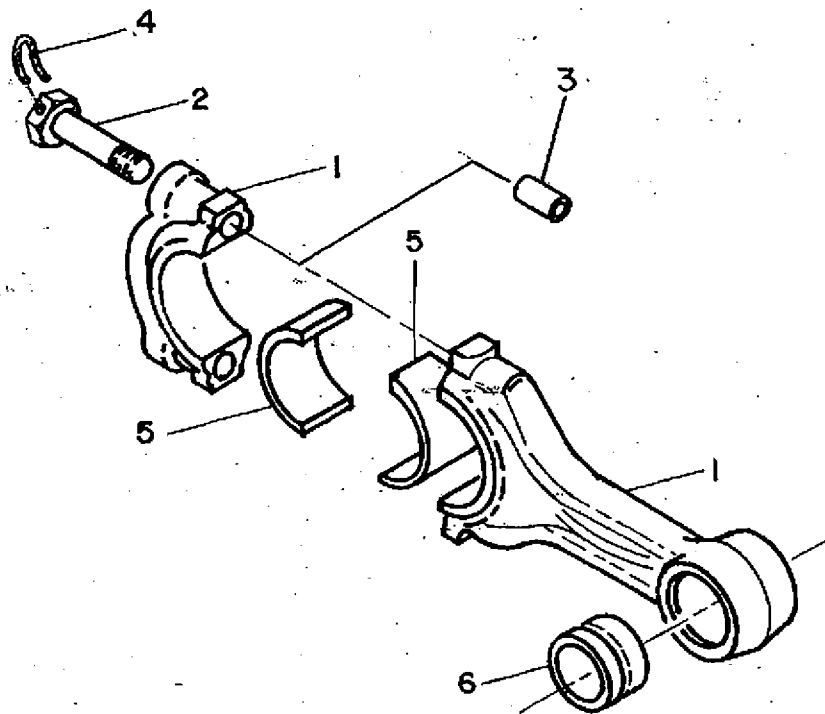


H-40734

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		MLH40734G1		DRWG		H40734	
DESCRIPTION		FRAME					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• FRAME	3683E1	1	NO			
2	•• STUD	R78164X05026R	8	NO			
3	•• NUT	16A4C7	8	NO			
4	•• GASKET FRAME	8366D1	1	NO	ROCEM		
5	•• GAUGE OIL LEVEL	6453B1	1	NO	M		
6	•• COVER FRAME	CIN42988	1	NO			
7	•• GASKET COVR FRM	15849C1	1	NO	ROCEM		
8	•• BOLT HEX HD	35A2D217	4	NO			
9	•• NIPPLE	19A7J44	1	NO			
10	•• COUPLING	11A7W4	1	NO			
11	•• PLUG	30A7S5	1	NO			
12	•• PLATE ROTATION	12478228T2	1	NO			
13	••DRIVE SCREW	122A2S57	2	NO			
14	•• BUSH M.B.HOUSING	5834C1	1	NO	OEM		
15	•• SEAL OIL C SHFT	X1220T120	2	NO	ROCEM		
--	•• PLUG	30A7S6	3	NO			
--	•• PLUG	30A7C8	1	NO			

CONNECTING ROD

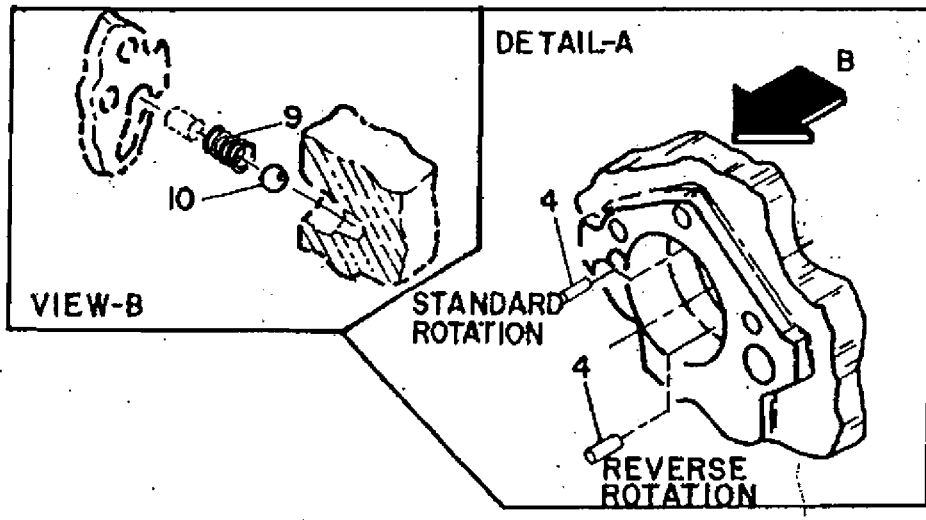
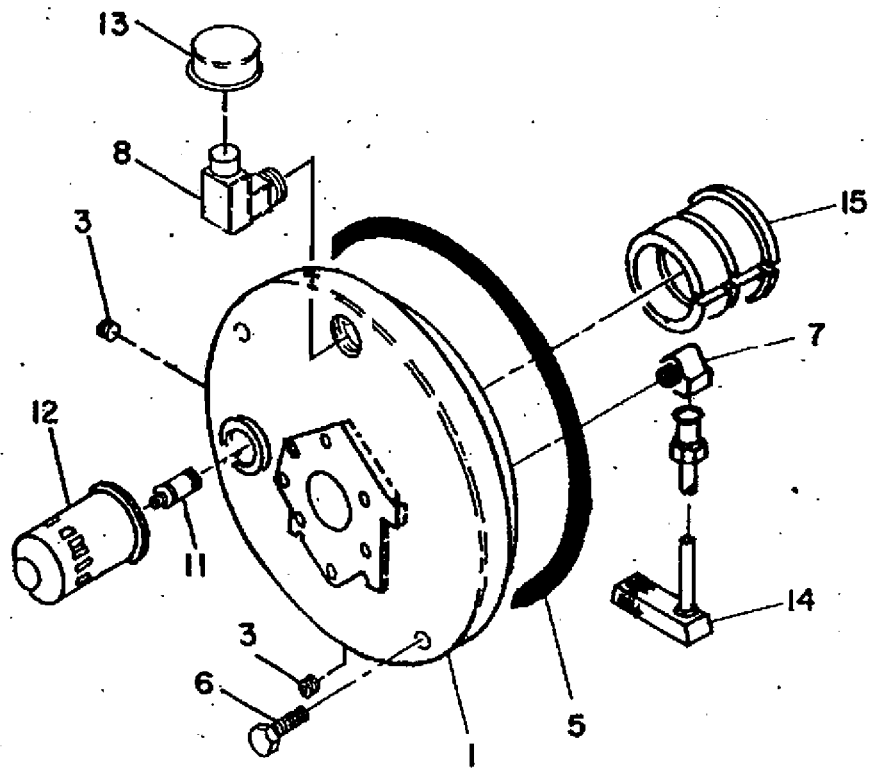


WI25206A

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		MLW125220G1		DRWG		W125206A	
DESCRIPTION		CONNECTING ROD					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• ROD CONNECTING	14276D1	1	NO			
2	••• BOLT CON ROD	36A2A335E	2	NO	EM		
3	••• BUSHING ALIGNMENT	40000168	2	NO	OEM		
4	•• WIRE LOCKING	X1636T120X5	16	IN			
5	•• BUSH CRANK PIN	5704C1	1	NO	OEM		
6	•• BUSHING PIN X HEAD	5720C1	1	NO	OEM		

OIL PUMP HOUSING ASSY.

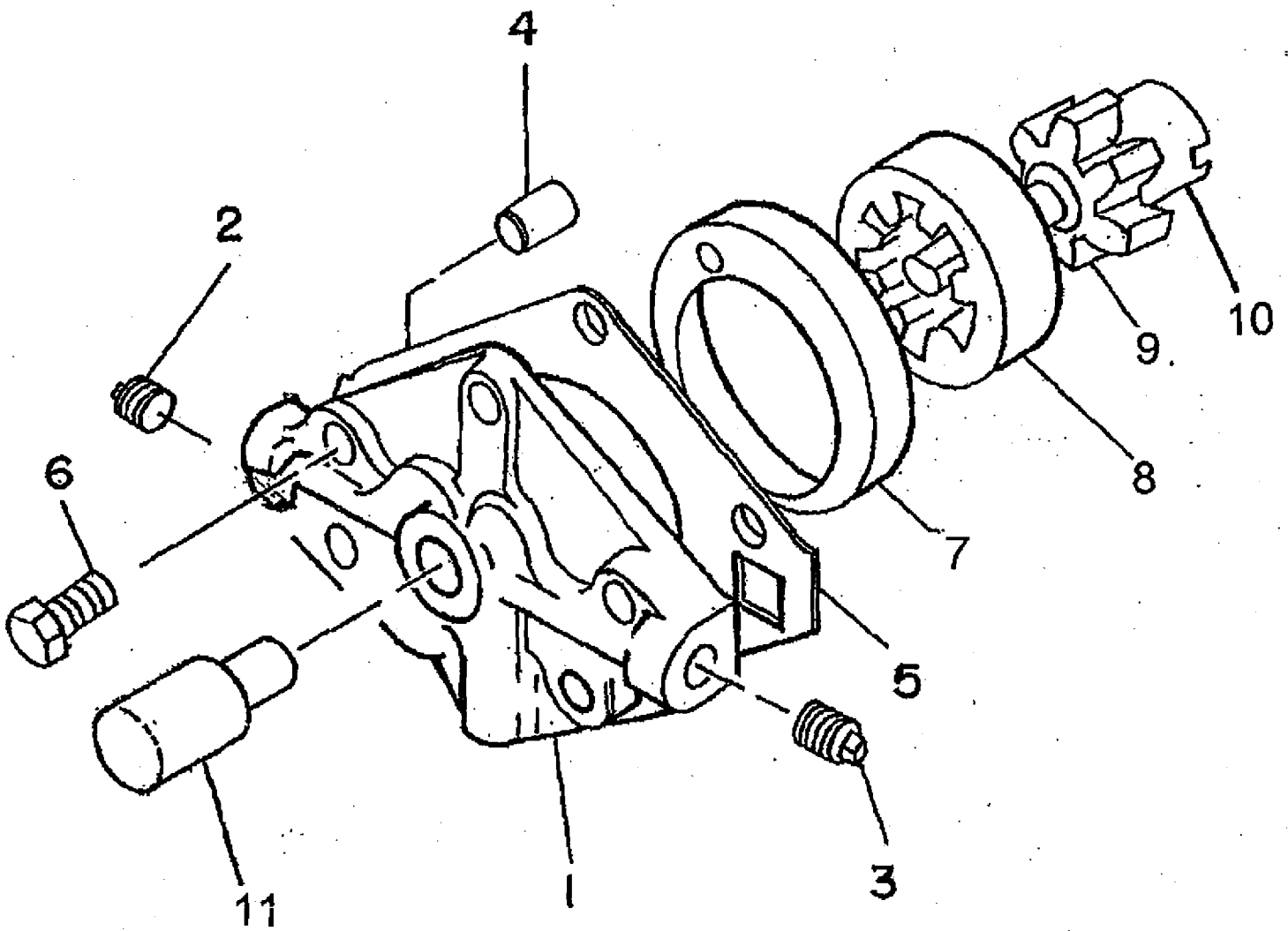


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DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		MLW125218G1		DRWG		W125218	
DESCRIPTION		HOUSING OIL PUMP					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• HOUSING MB WITH BUSH	3156E1N	1	NO	O EM		
3	•• PLUG	34A7S4	2	NO			
4	•• DOWEL PIN	17A13A141	1	NO	O EM		
5	•• O RING MBH	20A11CM450	1	NO	ROCEM		
6	•• CAPSCREW	35A2D332	2	NO			
7	•• ELBOW TUBE	75A10B20	1	NO			
8	•• ELBOW BREATHER	6768C1	1	NO			
9	•• SPRING VALVE RELIEF	4859B1	1	NO	ROCEM		
10	•• VALVE BALL RELIEF	6457B1	1	NO	O EM		
11	•• ADAPTOR FILTER	4765B1	1	NO			
12	•• FILTER OIL	6458B1	1	NO	ROCEM		
13	•• CAP BREATHER	6459B1	1	NO	O EM		
14	•• PIPE OIL SUCTN ASSY	1A3188E1	1	NO			
15	•• BUSH M.B.HOUSING	5834C1	1	NO	O EM		

OIL PUMP AND COVER ASSEMBLY



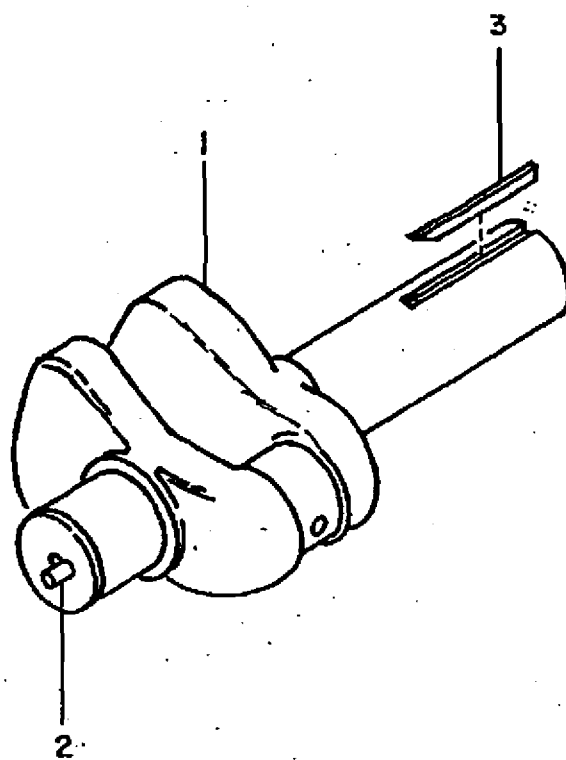
W-114845NP1

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 8 of 28

LIST NO.		MLW114845G2		DRWG		W114845NP1	
DESCRIPTION		OIL PUMP & COVER					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• PUMP OIL COVER	8141D1N	1	NO			
2	•• PLUG	34A7S4	1	NO			
3	•• PIPE PLUG	11021946	1	NO			
4	•• PIN ROLL	25A13C289	1	NO	ROCEM		
5	•• GASKET COVER	5856C1T1	1	NO	ROCEM		
6	•• BOLT HEX HD	35A2D163	5	NO			
-	•• PUMP OIL ASSY	Y1052T1	1	NO	EM		
7	••• RING LOCATING OIL	4686B1	1	NO	ROCEM		
8	••• ROTOR OUTER	SK0C6070A	1	NO			
9	••• ROTOR INNER	SK0C6070B	1	NO			
10	••• SHAFT PUMP DRIVE	5854C1	1	NO	EM		
11	•• COVER SHAFT NL	4944B1	1	NO			

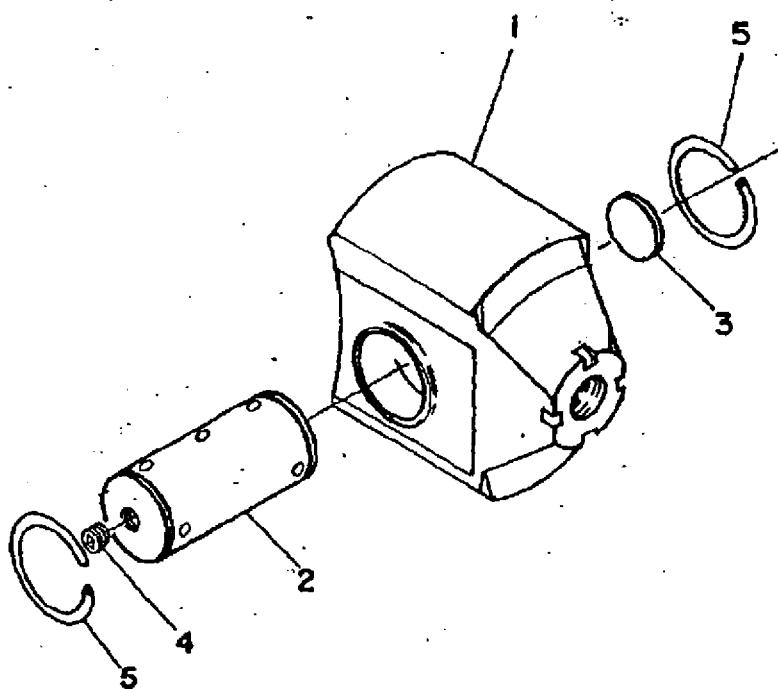
CRANKSHAFT ASSY.



W-125219

LIST NO.		MLW125219G1		DRWG		W125219	
DESCRIPTION		CRANKSHAFT					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• CRANK SHAFT	8106D1	1	NO			
2	•• DOWEL PIN	17A13A1330	1	NO	OEM		
3	•• KEY CRANK SHAFT	11A9C275	1	NO	OEM		

CROSSHEAD ASSEMBLY



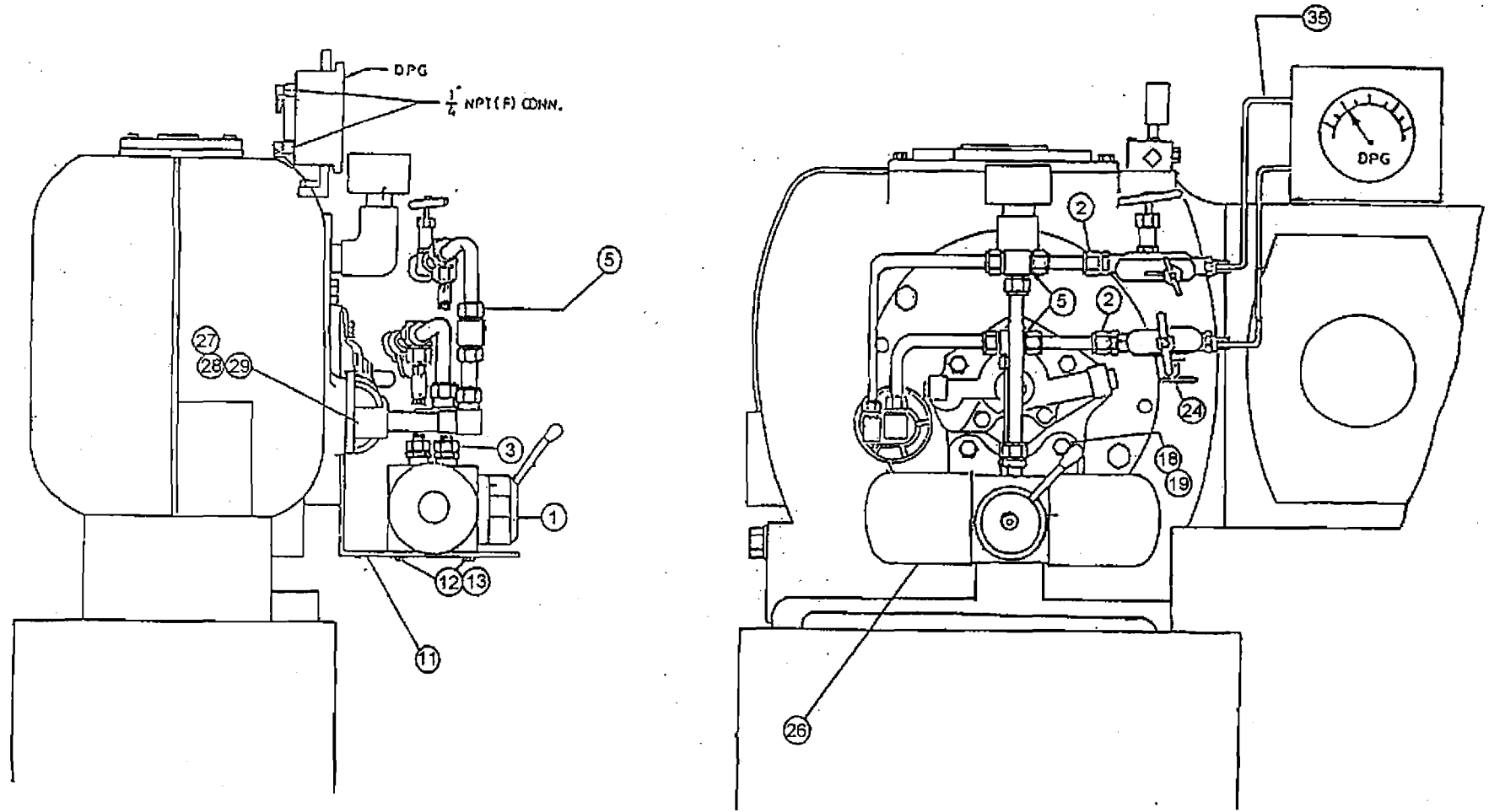
W-125221

LIST NO.		MLW125221G1		DRWG		W125221	
DESCRIPTION		CROSSHEAD					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• CROSS HEAD	3158E1P1	1	NO			
4	•• PLUG	34A7S3	1	NO			
2	•• PIN CROSS HEAD	8496C1	1	NO	EM		
3	•• PLUG PIN X HEAD	17219B1	1	NO			
5	•• RING RETAINER	Y1040T4IM	2	NO	ROCEM		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. 67729E		DESCRIPTION ACCESSORIES FRAME		DRWG ----		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
-	•• MOUNTING BLOCK	WIN8130	1	NO		
-	•• MACHSCREW	83A2S99	2	NO		
-	•• CONNECTOR MALE	426A10S08	1	NO		
-	•• CONNECTOR MALE	426A10S05	1	NO		
-	•• TUBE	STS025X0035W	2	MT		
-	•• PLUG	30A7S5	3	NO		

DUAL' OIL FILTER ASSEMBLY



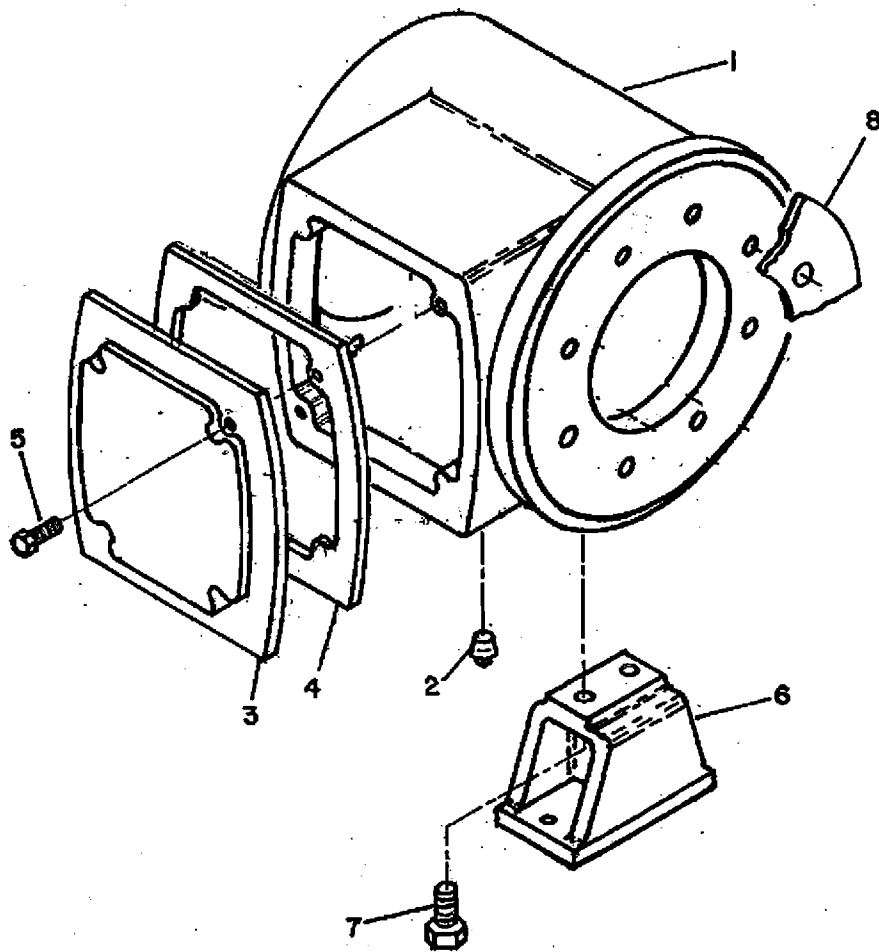
HIN41587N

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 12 of 28

LIST NO.		72026BF		DRWG		HIN41587N	
DESCRIPTION		DUAL OIL FILTER					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• VALVE ROTORY	RIN41364	1	NO	M		
2	•• CONNECTOR	426A10S20	4	NO			
3	•• CONNECTOR MALE	426A10S19	2	NO			
-	•• TUBE	STS062X0065W	6	MT			
5	•• TEE	431A10S08	2	NO			
11	•• BRCKT DUAL OIL FILTR	RIN41535	1	NO			
12	•• MACHSCREW	77A2C197	4	NO			
13	•• WASHER	14A5C76	4	NO			
18	•• BOLT HEX	35A2D162	3	NO			
19	•• WASHER SPRING	14A5C91	3	NO			
24	•• VALVE BLOCK & BLEED	WIN9182T1	2	NO			
26	•• FILTER OIL	6458B1	1	NO	ROCEM		
27	•• ADAPTOR	HIN6405	1	NO			
28	•• ADAPTOR FILTER	4765B1	2	NO			
29	•• O RING	20A11CM230	1	NO	ROCEM		

DISTANCE PC. ASSEMBLY

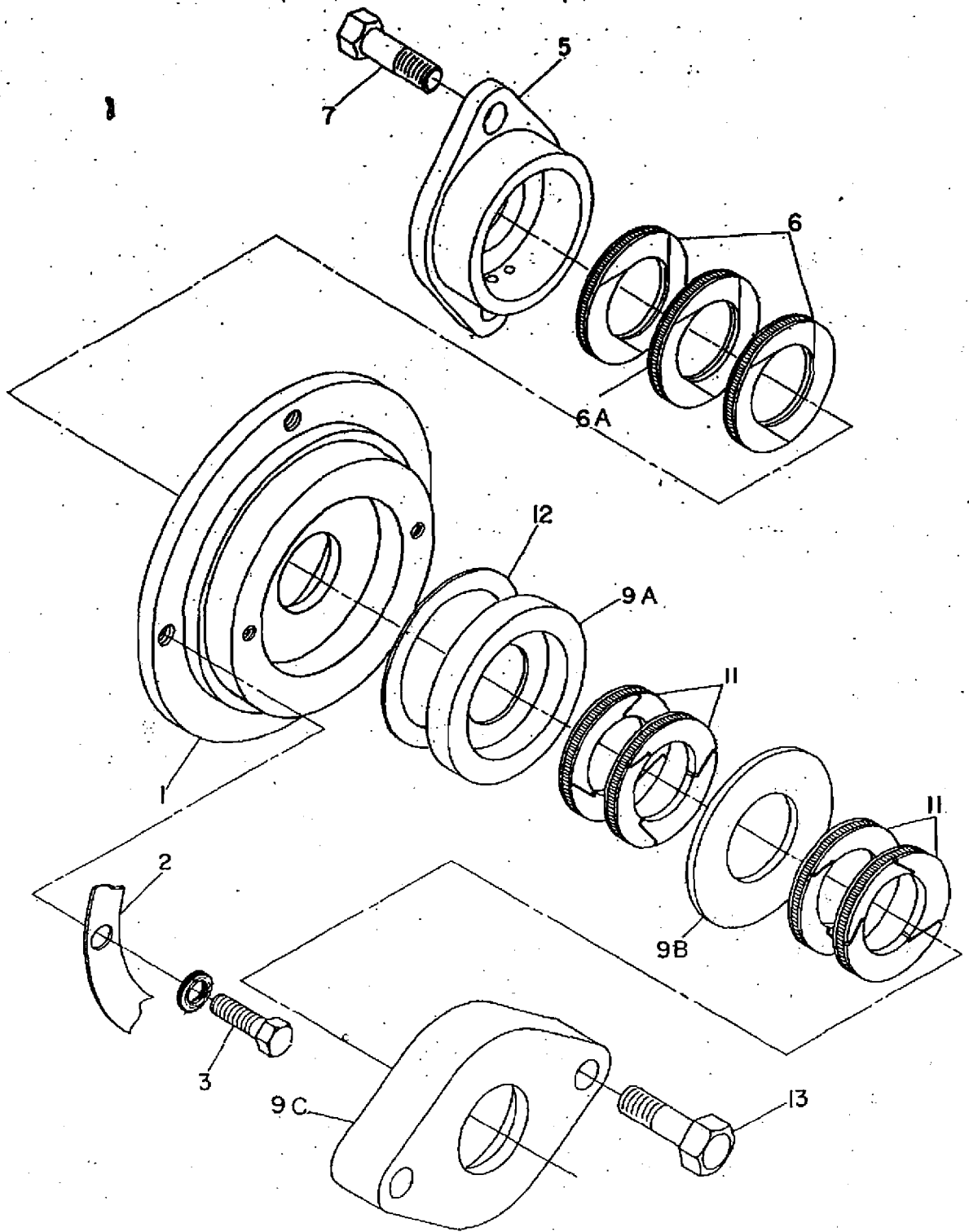


W125208N

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. 69031		DESCRIPTION DISTANCE PIECE		DRWG	W125208N		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• DISTANCE PIECE	DIN9327	1	NO			
2	•• PLUG	30A7S7	1	NO			
3	•• COVER	9390D1	1	NO			
4	•• GASKET	8305D1	1	NO	ROCEM		
5	•• BOLT HEX	35A2D215	4	NO			
6	•• FOOT PIECE	5917C1	1	NO			
7	•• BOLT HEX HD	35A2D323	2	NO			

SCRAPER & PACKING ASSEMBLY



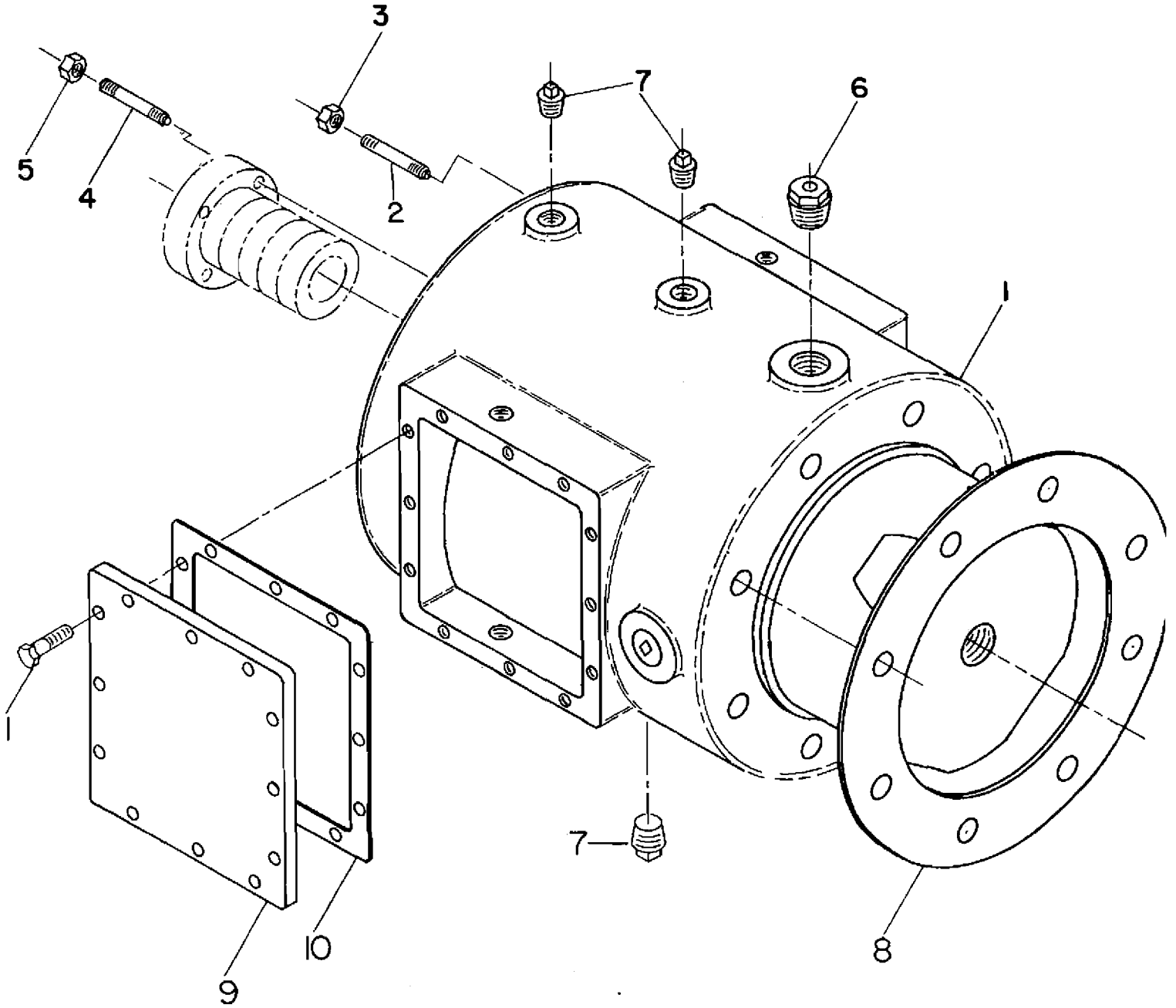
H-49819B

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 14 of 28

LIST NO.		67831D-2		DRWG		H 49819B	
DESCRIPTION		SCRAPER & PACKING					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• PLATE PARTITION	10584C1P1	1	NO			
2	•• GASKET	5439C1AT99	1	NO	ROCEM		
3	•• BOLT HEX HD	35A2D115	4	NO			
5	•• GLAND OIL SCRAPPER	7931B1P1	1	NO			
6	•• RING SCRAPPER	28A11G24DIM	2	NO	ROCEM		
6A	•• RING SCRAPPER	27A11G24DIM	1	NO	ROCEM		
7	•• BOLT HEX HD	35A2D222	2	NO			
9A	•• CUP PACKING CASE	8157C1A	1	NO			
9B	•• DISC PKG CASE	8157C1B	1	NO			
9C	•• FLANGE PKG CASE	8157C1C	1	NO			
11	•• PACKING RING SET	2A11T24	2	ST	ROCEM		
12	•• GASKET	X1561T8F	1	NO	ROCEM		
13	•• CAPSCREW	119A2A254	2	NO			

FRAME HEAD ASS'Y



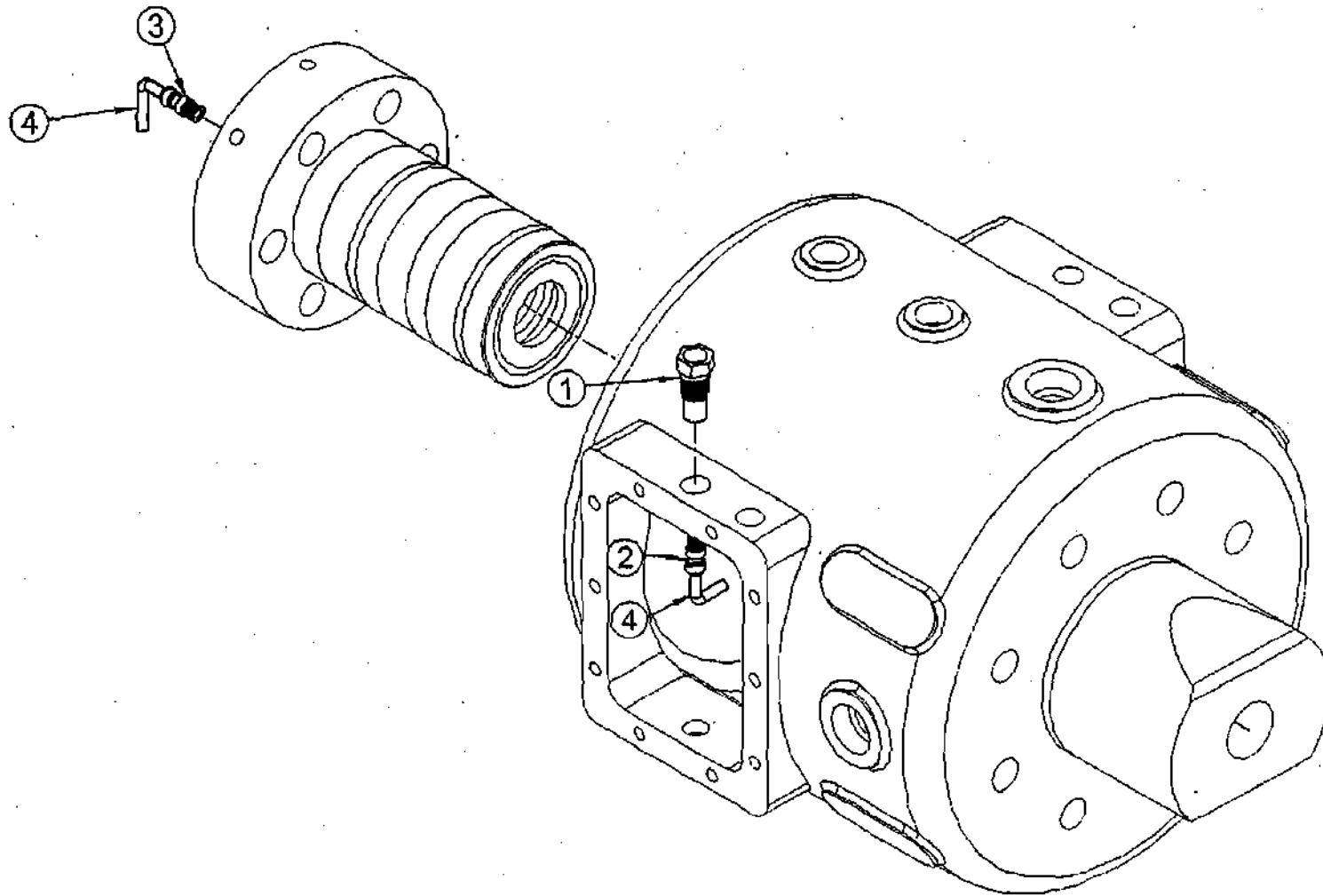
H45109C1

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 15 of 28

LIST NO.		MLH65953AAG2		DRWG		H45109C1	
DESCRIPTION		HEAD FRAME & DIST.PC					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• HEAD FRAME & DIST. PC	5583E1	1	NO			
8	•• GASKET HEAD FRAME	5439C1AT98	1	NO			
2	•• STUD	R78164X06027R	8	NO			
3	•• NUT	16A4C8	8	NO			
4	•• STUD	R78164X06043R	4	NO			
5	•• NUT	16A4C8	4	NO			
7	•• PLUG	30A7S7	3	NO			
-	•• PLUG	30A7S6	3	NO			
9	•• COVER DIST PC	9095B1	2	NO			
10	•• GASKET COVER	9096B1	2	NO			
11	•• BOLT HEX	35A2D217	24	NO			
-	•• LOCTITE	1W117165	1	NO		ROCEM	

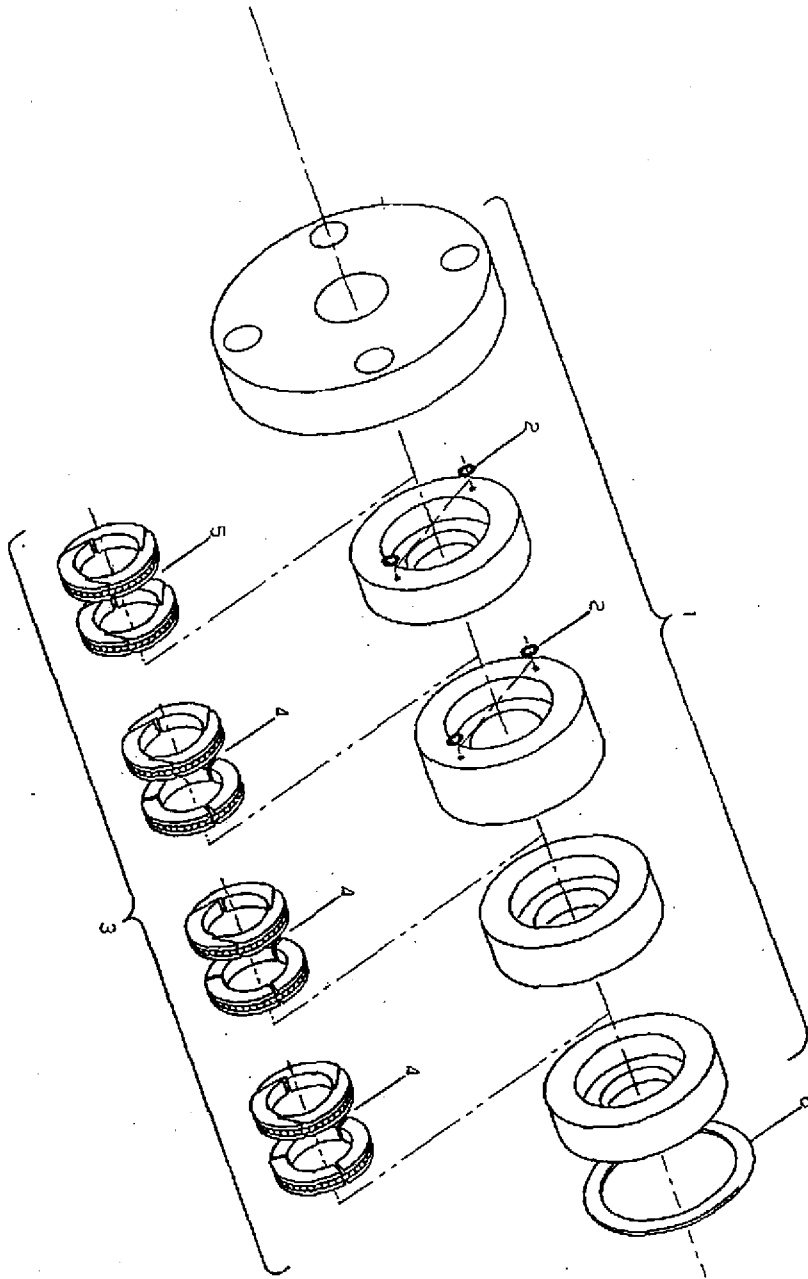
PIPING PACKING VENT & PURGE



H45121A2

LIST NO. 74152				DRWG H45121A2	
DESCRIPTION PIPING PACKING VENT					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
1	•• ADAPTOR	6885B1P8	1	NO	
2	•• CONNECTOR MALE	426A10S06	2	NO	
4	•• TUBE	STS025X0065W	2	FT	

COMPLETE PACKING ASSY

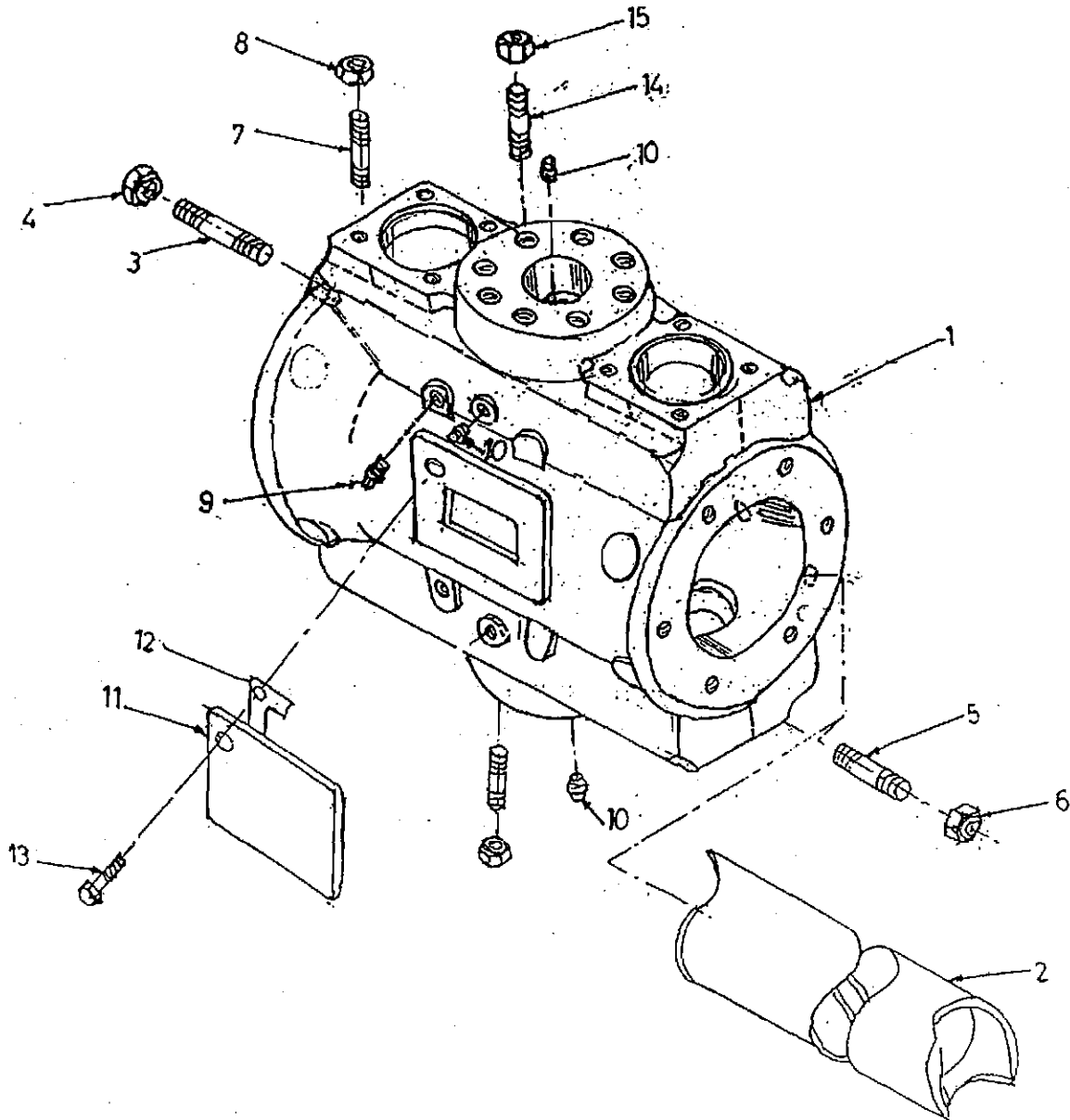


H52596

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		MLH65180AAG1			
DESCRIPTION		PACKING ROD COMPLETE		DRWG	H52596
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
-	•• ROD PACKING	1H44427T1L	1	NO	
-	••• ROD PACKING	H44427T1L	1	NO	
2	••• O RING	20A11EM009	8	NO	ROCEM
4	•• RING PACKING RTB	R87096C557B24IM	3	ST	
5	•• RING PACKING	R87096A557T24IM	1	ST	
6	•• GASKET PACKING CASE	X1561T25F	1	NO	ROCEM

CYLINDER ASSEMBLY



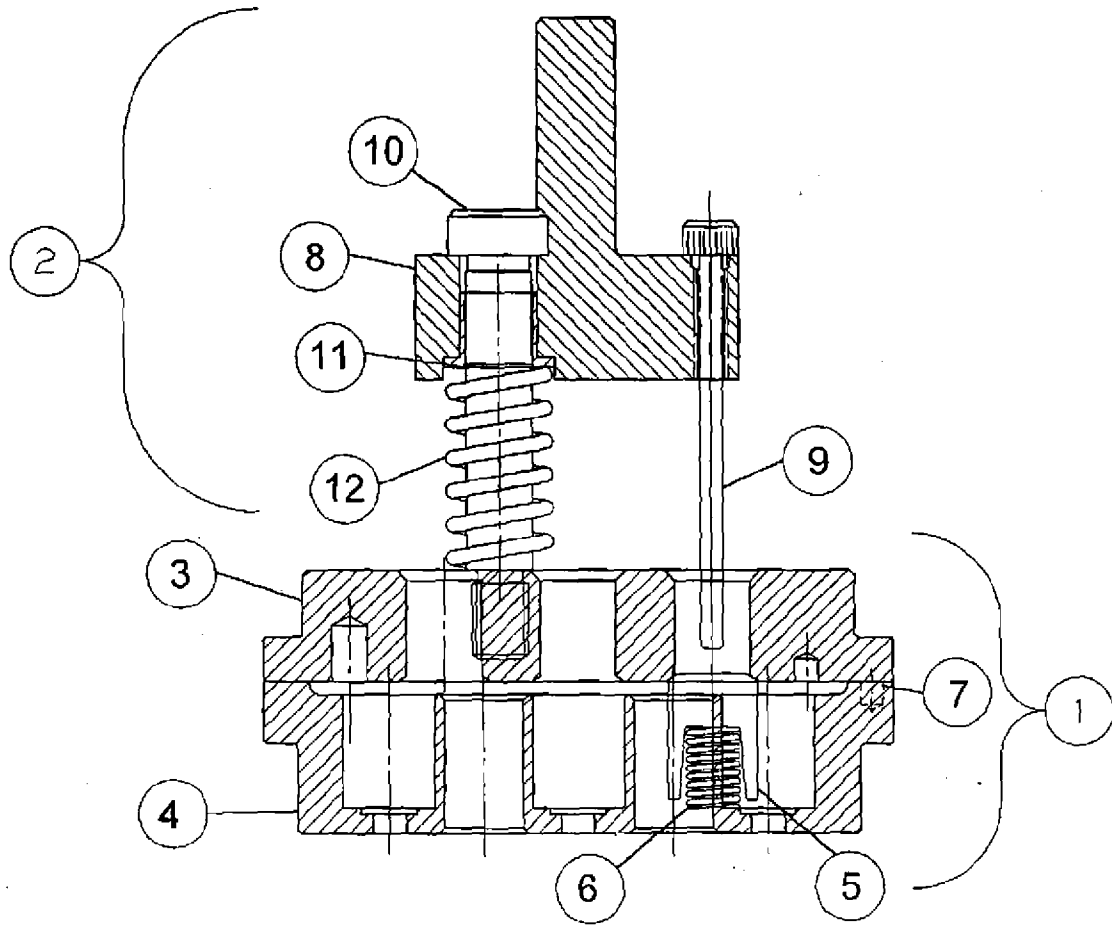
H 41663NA

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 18 of 28

LIST NO.		MLF30825AAG2		DRWG		H41663NA	
DESCRIPTION		CYLINDER					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• CYLINDER	F30798	1	NO			
2	•• LINER	10609C1	1	NO			
-	•• LINER	10609C1P1	1	NO			
-	••• INSTRUCTIONS LINER	F37456D	1	NO			
3	•• STUD 0.88" UNR X 6.88" LONG	R78164X07055R	8	NO			
4	•• NUT	16A4C9	8	NO			
5	•• STUD	R78164X07036R	6	NO			
6	•• NUT	16A4C9	6	NO			
7	•• STUD	R78164X06031R	16	NO			
8	•• NUT	16A4C8	16	NO			
9	•• PLUG	30A7S5	6	NO			
10	•• PLUG	30A7S3	4	NO			
-	•• INDICATOR VALVE	W102797CIM	2	NO			
11	•• COVER WATER	RIN40205	2	NO			
12	•• GASKET WATER COVER	WIN40206	2	NO	ROCEM		
13	•• BOLT HEX HD	35A2D217	12	NO			
14	•• STUD	R78164X06030R	16	NO			
15	•• NUT	16A4C8	16	NO			
-	•• NAME PLATE CYLINDER	RIN41748	1	NO			
-	•• DRIVE SCREW	122A2S57	4	NO			

VALVE & PLUNGER ASSEMBLY

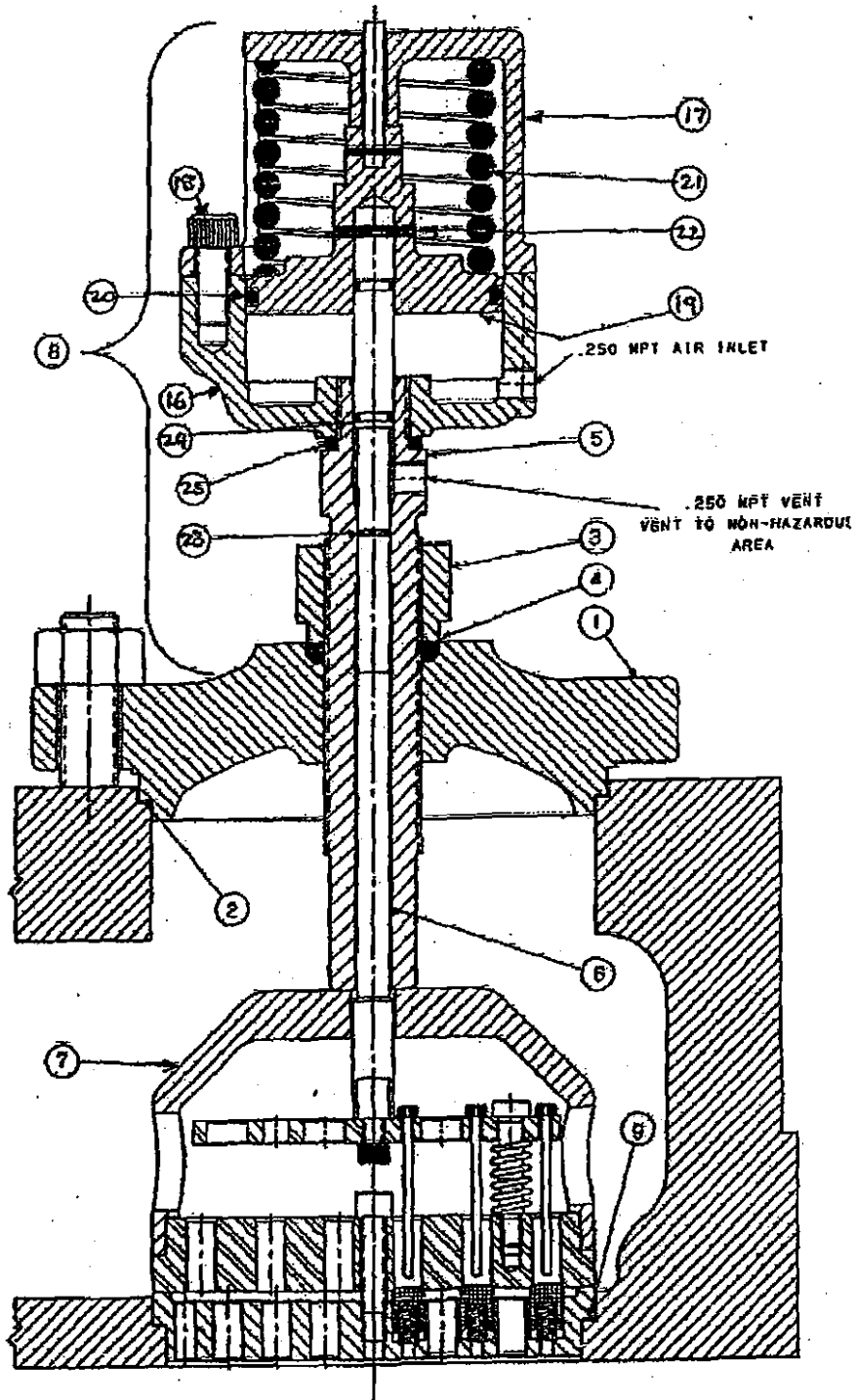


R83899NP2A

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 19 of 28

LIST NO.		MLH44443MD10		DRWG		R83899NP2A	
DESCRIPTION		VALVE INLET W/PLNG 4MAG					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• VALVE INLET	MLH44432MD8	1	NO			
3	••• SEAT INLET	F30758MD3	1	NO	EM		
4	••• STOPPLATE INLET	F30759MD5	1	NO	CEM		
5	••• BULLET	R83865AIM	16	NO	ROCEM		
6	••• INSERT & SPRING	PP1388NBIM	16	NO	ROCEM		
-	••• CAPSCREW	119A2R202	1	NO			
7	••• DOWEL PIN	17A13S99IM	4	NO	ROCEM		
2	•• UNLOADER 4.0MAG	MLH44438MD7	1	NO			
8	••• PLUNGER PLATE	H44495MD3D	1	NO			
9	••• FINGER MAGNUM	R83872P1T2IM	16	NO			
11	••• COLLAR SHLD BOLT	R86548AP1IM	4	NO	ROCEM		
10	••• BOLT SHOULDER	121A2R179IM	4	NO			
12	••• SPRING	PP1437IM	4	NO	ROCEM		



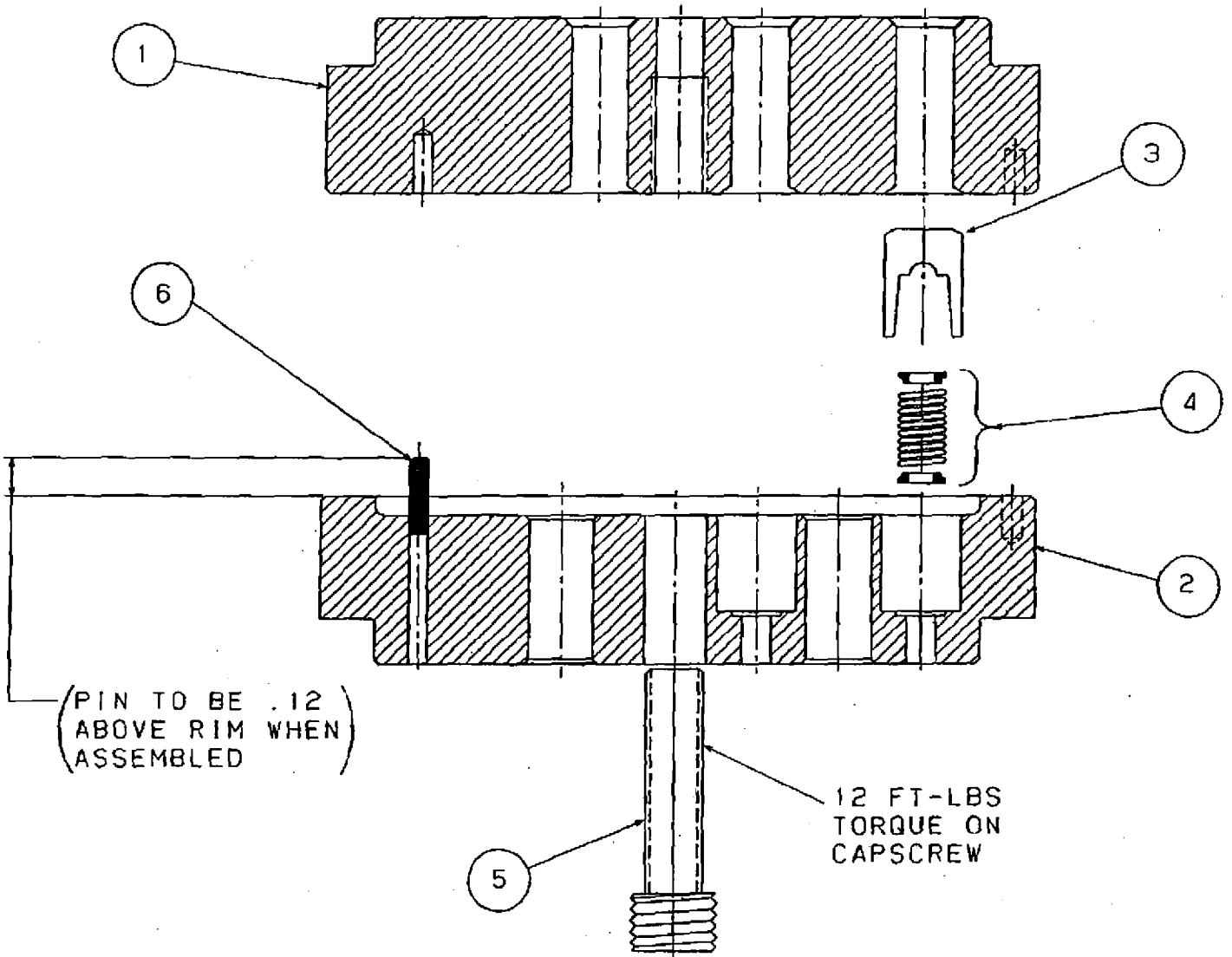
R83523B4

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 20 of 28

LIST NO.		MLH44435MD4		DRWG		R83523B4	
DESCRIPTION		ACCESS VALVE INLET & UL90					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• COVER VALVE	R83518MB1	1	NO			
2	•• GASKET VALVE COVER	X1014T4744F	1	NO	ROCEM		
5	•• SET SCREW	X1567T739C	1	NO			
3	•• NUT	X1060T4	1	NO	CEM		
4	•• GASKET GTB	X1131T2IM	1	NO	ROCEM		
6	•• PUSH ROD	W131775AAT30	1	NO			
7	•• CAGE	R83515MD10	1	NO			
9	•• GASKET VALVE SEAT	X1014T4339F	1	NO	ROCEM		
8	•• OPERATOR UL-90	34542	1	NO			
16	••• HOUSING PISTON	UL903H	1	NO			
17	••• COVER HOUSING	UL905K	1	NO			
-	••• GASKET	UL906	1	NO	ROCEM		
18	••• BOLT HEX HD	35A2D110	4	NO			
19	••• PISTON ACTUATING	UL907AF	1	NO			
22	••• O RING	20A11CM330	1	NO	ROCEM		
21	••• SPRING	PP833	1	NO	ROCEM		
-	••• NUT	16A4C1	1	NO			
23	••• O RING	20A11CM010	1	NO	ROCEM		
24	••• ADAPTOR	W72057	1	NO			
-	••• GASKET	30A11C0056X07	1	NO	ROCEM		

VAVLE DISCHARGE

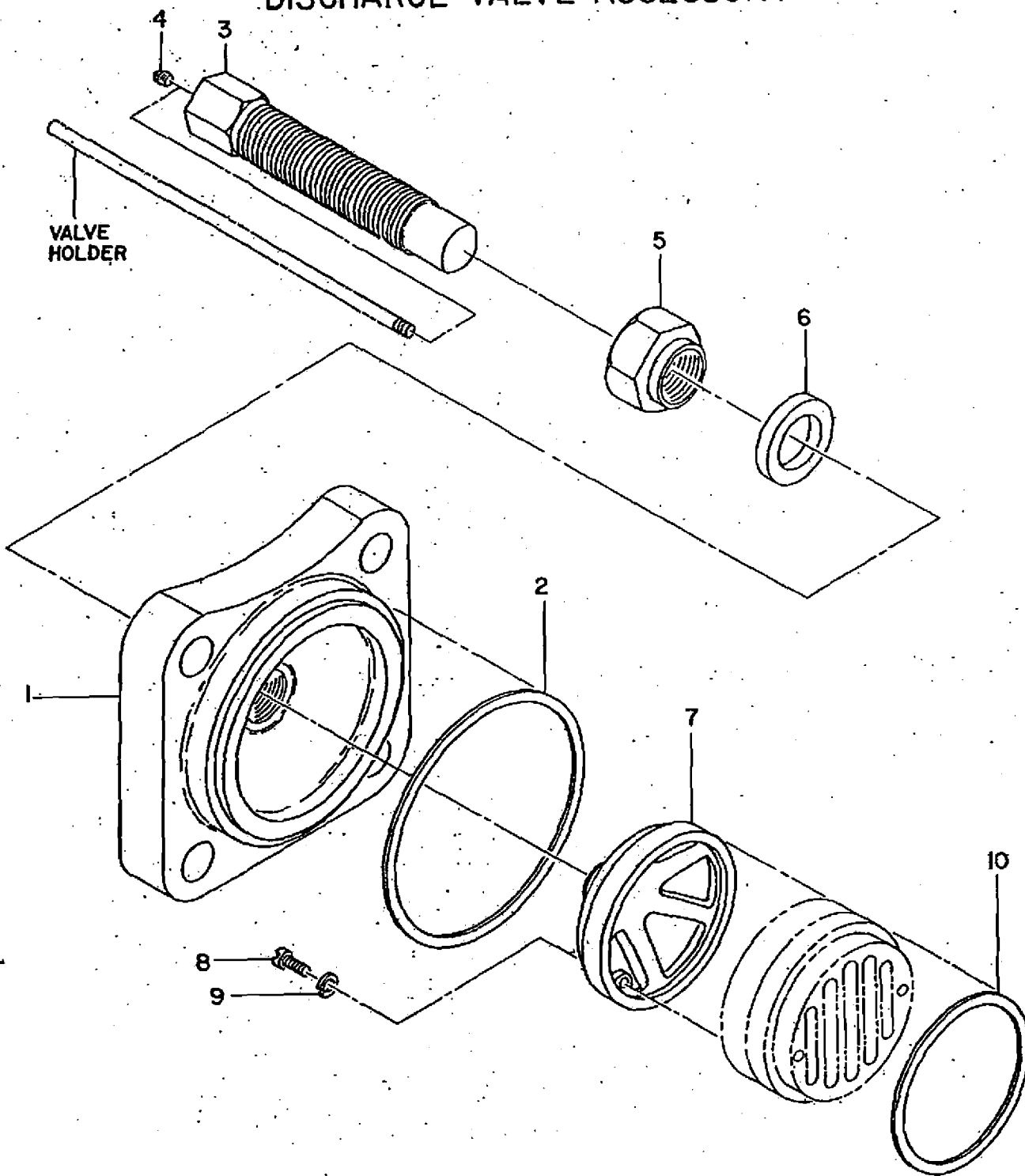


H63502

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		MLH44433MD8		DRWG		H63502	
DESCRIPTION		VALVE DISCH 4.0MAG					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• SEAT DISCH	F30760MD4	1	NO	EM		
2	•• STOPPLATE DISCH	F30761MD4	1	NO	CEM		
3	•• BULLET	R83865AIM	16	NO	ROCEM		
4	•• INSERT & SPRING	PP1388NBIM	16	NO	ROCEM		
5	•• CAPSCREW REMACH	R86530T2	1	NO	O EM		
6	•• DOWEL PIN	17A13S99IM	4	NO	ROCEM		

DISCHARGE VALVE ACCESSORY



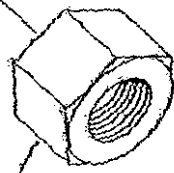
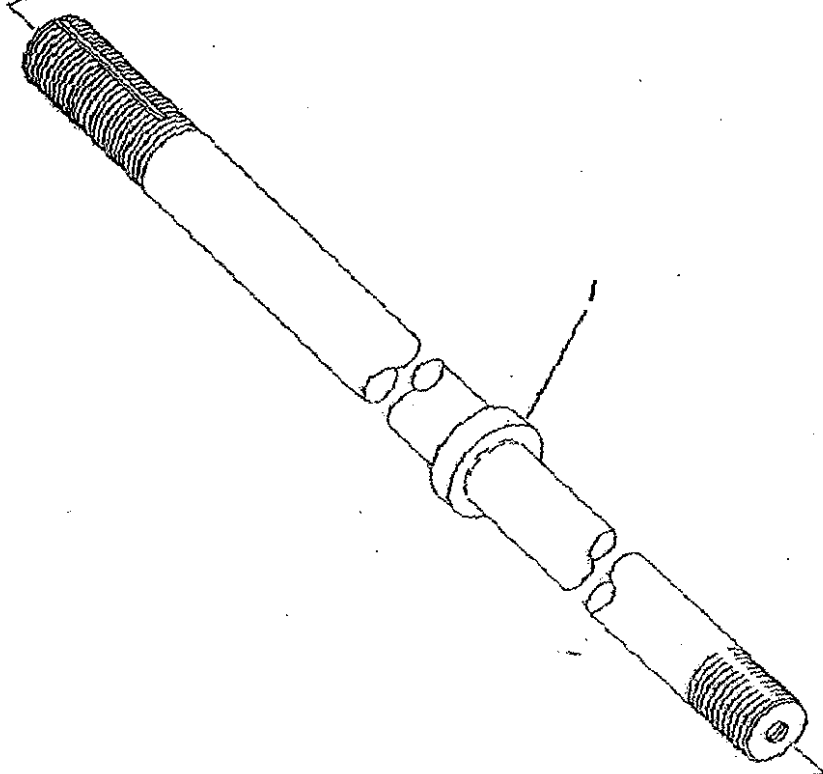
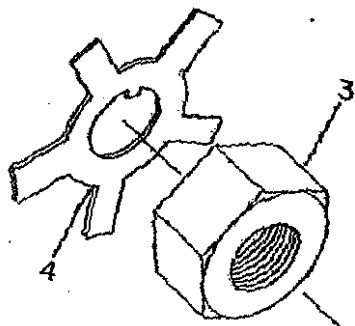
H41669

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

Page 22 of 28

LIST NO.		MLH44437CC8		DRWG		H41669	
DESCRIPTION		ACCESS VALVE DISCH					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• COVER VALVE	R83518MB1	1	NO			
2	•• GASKET VALVE COVER	X1014T4744F	1	NO	ROCEM		
3	•• SET SCREW	X1531T744C	1	NO			
4	•• PLUG	30A7S3	1	NO			
5	•• NUT	X1060T4	1	NO	CEM		
6	•• GASKET GTB	X1131T2IM	1	NO	ROCEM		
7	•• CRAB VALVE	36C20AP	1	NO	CEM		
8	•• MACH SCREW	87A2S149	2	NO	OEM		
9	•• WASHER	14A5S55	2	NO			
10	•• GASKET VALVE SEAT	X1014T4339F	1	NO	ROCEM		

PISTON ROD

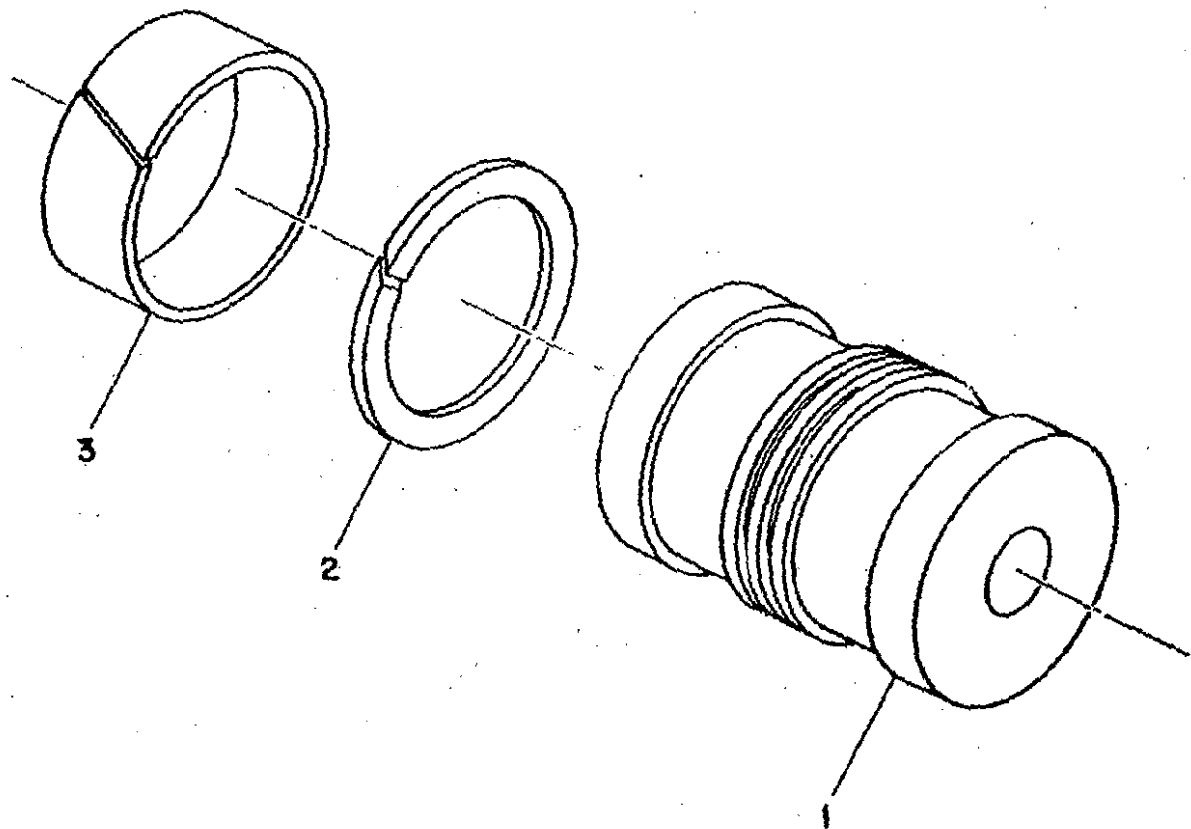


H-40741

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		MLH65962G2			
DESCRIPTION		ROD PISTON		DRWG	H40741
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
1	•• ROD PISTON	H65962CHD	1	NO	M
3	•• NUT JAM	8277B1T1	1	NO	M
4	•• WASHER STAR LOCK	4820B1	1	NO	
2	•• NUT PISTON	362703C1	1	NO	M

PISTON

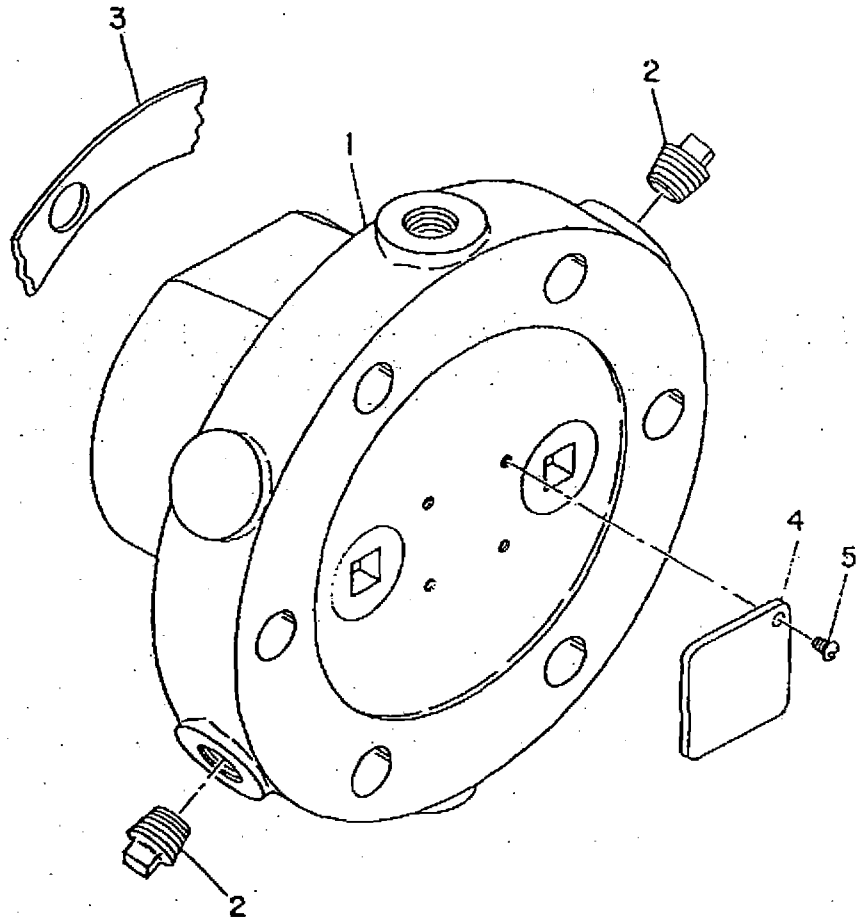


H-38117

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		MLH65202G5		DRWG		H38117	
DESCRIPTION		PISTON					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• PISTON	RIN43023CKP1	1	NO	M		
2	•• RING PISTON	WIN43021RJ23IM	2	NO	ROCEM		
3	•• RING RIDER	WIN43020PJ29IM	2	NO	ROCEM		

OUTER HEAD



H 41665

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

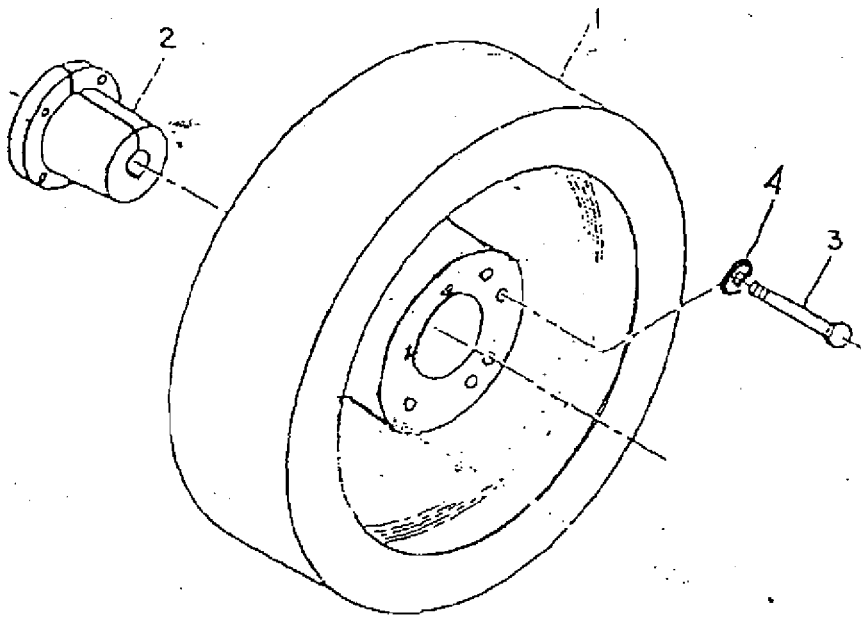
LIST NO. CB5-5077		DESCRIPTION HEAD OUTER		DRWG	H41665		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS		
1	•• HEAD OUTER	2848C1A	1	NO			
-	••• PLUG	31A7C9	2	NO			
2	•• PLUG	30A7S5	2	NO			
4	•• MONOGRAM DR	R78546N	1	NO			
5	•• DRIVE SCREW	122A2S57	4	NO			
3	•• GASKET OUTER HD	5439C1AT97	1	NO	ROCEM		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. 69216HB				DRWG -----	
DESCRIPTION TUBING REGULATION					
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
-	•• ELBOW	428A10S10	2	NO	
-	•• TUBE	STS038X0035W	10	FT	
-	•• ELBOW FEMALE	429A10S10	2	NO	

PARTS LIST

COMPRESSOR SHEAVE



67623D

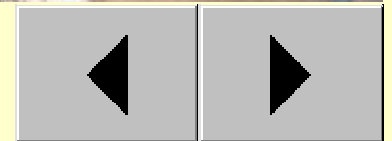
DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. 67623		DESCRIPTION SHEAVE COMPRESSOR		DRWG 67623D	
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
1	•• SHEAVE V	487696C1A	1	NO	
2	•• BUSH SHEAVE	166082	1	NO	EM
3	•• BOLT HEX HD	35A2J334	3	NO	
4	•• WASHER	14A5C120	3	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. 1R60971T28C				DRWG -----		
DESCRIPTION CLOSURE						
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
-	•• CLOSURE FLANGE	R60971T28	1	NO		
-	•• GASKET CLOSURE	R60985T28	1	NO		
-	•• PIPE	1SCH40W1.2NC	8	NO		

PART LIST - ACCESSORIES



DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO	ACCESSORIES INSTRUMENT & PIPING
MODEL	6" X 5" ESH1NL-2
D-R JOB REF NO	X-45114
ENGG. SERIAL NO	XB1XC1254
ENGG. ORDER NO.	297-E-100310
CUSTOMER	DRESSER – RAND
CUSTOMER PO. REFNO.	195562 DTD Jan. 11, 2010.
DESTINATION	Rochester Institute of Technology - Canada

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		ACCESSORIES INST. & PIPING X-45114		FIN-52380 GAFD		
DESCRIPTION		BILL OF MATERIAL				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	ELECTRIC MOTOR	ESH05X114EIMR	1	NO		
020	SAFETY RELIEF VALVE	ESH05X114ISRV	1	NO		
030	LOCAL CONTROL PANEL	ESH05X114EILCP	1	NO		
040	INSTRUMENTATION	ESH05X114IA	1	NO		
050	MAJOR ACCESSORIES	ESH05X114MA	1	NO		
060	INSTRUMENT HOOKUP	ESH05X114IHK	1	NO		
070	GAS PIPING VALVES	ESH05X114GSVL	1	NO		
080	COOLING WATER PIPING VALVES	ESH05X114CWVL	1	NO		
090	DIST. PC DRAIN PIPING VALVES	ESH05X114DPDVL	1	NO		
100	INSTRUMENT AIR PIPING VALVES	ESH05X114IAVL	1	NO		
110	OIL PIPING VALVES	ESH05X114OIVL	1	NO		
120	FOUNDATION ACCESSORIES	ESH05X114FA	1	NO		
130	COOLING WATER PIPING	ESH05X114CWP	1	NO		
140	DIST. PC DRAIN PIPING	ESH05X114DPDP	1	NO		
150	INSTRUMENT AIR PIPING	ESH05X114IAP	1	NO		
160	SRV PIPING	ESH05X114PSVP	1	NO		
170	PIPING SUPPORTS	ESH05X114PS	1	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114EIMR		FIN-52380 GAFD		
DESCRIPTION	ELECTRIC MOTOR				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
010	• MAIN MOTOR (LESSON MAKE)	RIN50020JYIM	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114ISRV		FIN-52380 GAFD		
DESCRIPTION	SAFETY RELIEF VALVE				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
010	• SAFETY RELIEF VALVE (TYCO SANMAR)	RIN51645FE	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114EILCP		FIN-52380 GAFD		
DESCRIPTION	LOCAL CONTROL PANEL				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
010	• FLP LCP (E.I.C.)	RIN40937HD	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114IA					
DESCRIPTION	INSTRUMENTATION					RIN-40935 / X-114 INST. INDEX
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• PRESSURE GAUGE	R65708X4MMLG	1	NO		
020	• PRESSURE GAUGE	R65708X4DMLG	1	NO		
030	• GAUGE PRESSURE	R65708X4RMLPG	1	NO		
040	• TEMP. GAUGE	TGSX6BAJHUEXXP	1	NO		
050	• THERMOWELL	TWTXA1B3C	1	NO		
061	• TEMP. GAUGE	TGSX6SAJHUYXXP	1	NO		
071	• THERMOWELL	TWTXA1B8C	1	NO		
081	• RTD WITH T-W	R65857X11EQL	1	NO		
090	• SMART. TEMP. TRANSMITTER	R78985A3221	1	NO		
101	• RTD WITH T-W	R65857X11EQL	1	NO		
110	• SMART. TEMP. TRANSMITTER	R78985A3221	1	NO		
120	• PRESS. TRANSMITTER	R78984A2J2	1	NO		
130	• PRESS. TRANSMITTER	R78984A2J2	1	NO		
140	• PRESS. TRANSMITTER	R78984A2J2	1	NO		
150	• VALVE SOLENOID	SOVXATFKNOR	1	NO		
160	• VALVE SOLENOID	SOVXATFKNOR	1	NO		
170	• SWITCH PRESSURE	R65858X11311	1	NO		
180	• VALVE THERMAL RELIEF	RIN40696	1	NO		
190	• SOLENOID VALVE	SOVXATFKNORT1	2	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO. ESH05X114MA						
DESCRIPTION MAJOR ACCESSORIES		FIN-52380 GAFD				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• VOLUME BOTTLE DISCHARGE	WIN51963	1	NO		
030	• FILTER -AIR	HIN51982T2	1	NO		
040	• SKID	FIN51367DM	1	NO		
050	• BELT GUARD	RIN51857BL	1	NO		
060	• NAME PLATE	WIN50841AFT27	1	NO		
070	• BELT - V	B124	4	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114IHK				
DESCRIPTION		INSTRUMENT HOOKUP		N.A.		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• VALVE BLOCK & BLEED	WIN9182T1	6	NO		
020	• ELBOW	501A7B304	6	NO		
030	• NIPPLE	19A7KK52	8	NO		
040	• ELBOW MALE	428A10S06	4	NO		
050	• CONNECTOR MALE	426A10S06	4	NO		
060	• CONNECTOR MALE	426A10S17	6	NO		
070	• UNION	437A10S07	6	NO		
080	• CONNECTOR FEMALE	427A10S14	4	NO		
090	• TUBE	STS025X0035W	20	MT		
100	• TUBE, UNION	437A10S04	4	NO		
110	• TEE	431A10S04	1	NO		
120	• CABLE	WIN40519T1	50	MT		
130	• CABLE	WIN40519T2	30	MT		
140	• GLAND CABLE	WIN40520C	6	NO		
150	• TRAY-CABLE	RIN41084T2Y	15	MT		
160	• CABLE TRAY	RIN41084T1Y	15	MT		
170	• CONNECTOR FEMALE	427A10S09	2	NO		
180	• NIPPLE	315A7KK4	5	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114GSVL				
DESCRIPTION		GAS PIPING VALVES		RIN-52380A ISO-GAS		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• VALVE GATE	RIN41445T4A	1	NO		
021	• VALVE CHECK	RIN9046T11LPR	1	NO		
031	• VALVE GATE	GT006DAXXXX	2	NO		
040	• PIPING VALVE-GLOBE	GB004DCXXXX	4	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114CWVL				
DESCRIPTION		COOLING WATER PIPING VALVES		RIN-52380B ISO-C.W. PIPING		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
011	• VALVE GATE	RIN9045T3GTSW	1	NO		
021	• VALVE GLOBE	RIN9045T3GBSW	1	NO		
030	• PIPING VALVE-GATE	GT006DCLXXX	1	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
020	• VALVE GATE	GT006DDXXXX	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114IAVL			
DESCRIPTION		INSTRUMENT AIR PIPING VALVES		RIN-52380D ISO-INST, AIR	
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
020	• VALVE GATE	RIN41445T3GSS	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114OIVL				
DESCRIPTION	OIL PIPING VALVES		N.A.		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
010	• VALVE GATE	RIN41445T1GSS	1	NO	

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.	ESH05X114FA		FIN-52380 FOUND. DWG.		
DESCRIPTION	FOUNDATION ACCESSORIES				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS
010	• FOUNDATION BOLT	RIN9107CT9	10	ST	

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114CWP		RIN-52380B ISO-C.W. PIPING		
DESCRIPTION		COOLING WATER PIPING				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• PIPE	P008S080D	32	FT		
020	• PIPE	P006S080D	6	FT		
030	• PIPE	P004S080D	2	MT		
040	• COUPLING	506A7A302	1	NO		
050	• VALVE VENT	WIN8906	1	NO		
060	• ELBOW	216A8F6	8	NO		
070	• ELBOW	216A8F5	2	NO		
080	• ELBOW	216A8F4	3	NO		
090	• TEE	222A8F1X1X12	2	NO		
100	• TEE	222A8F1X1X34	3	NO		
131	• REDUCER	213A8F1X12	2	NO		
140	• COUPLING	505A7A306	1	NO		
150	• NIPPLE	WIN50711A040848	4	NO		
160	• NIPPLE	WIN50711A060848	3	NO		
170	• SIGHT FLOW GLASS	71A12S4	1	NO		
180	• FLANGE	43A8F3	8	NO		
190	• GASKET	76A11DG1DR	6	NO		
200	• STUD	R78164VX04011	24	NO		
210	• NUT	16A4K5	48	NO		
220	• FLANGE	43A8F2	4	NO		
230	• GASKET	76A11DG1CR	2	NO		
240	• STUD	R78164VX04011	8	NO		
250	• NUT	16A4K5	16	NO		
260	• FLANGE	43A8F1	8	NO		
270	• GASKET	76A11DG1BR	4	NO		
280	• STUD	R78164VX04010	16	NO		
290	• NUT	16A4K5	32	NO		
301	• REDUCER CONC	213A8F34X12	2	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114CWP				
DESCRIPTION		COOLING WATER PIPING		RIN-52380B ISO-C.W. PIPING		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
310	• REDUCER	23A7M23	2	NO		
320	• NIPPLE	WIN50711A080848	1	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114DPDP				
DESCRIPTION		DIST. PC DRAIN PIPING		RIN-52380C ISO-DIST.PC DRAIN		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• PIPE	P006S080D	2	FT		
020	• ELBOW	216A8F5	2	NO		
030	• NIPPLE	WIN50711A060848	2	NO		
040	• FLANGE	43A8F2	2	NO		
050	• GASKET	76A11DG1CR	1	NO		
060	• STUD	R78164VX04011	4	NO		
070	• NUT	16A4K5	8	NO		
080	• REDUCER	23A7M11	1	NO		
090	• CAP DRAIN	507A7A306	1	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114IAP		RIN-52380D ISO-INST.AIR		
DESCRIPTION		INSTRUMENT AIR PIPING				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• PIPE	P008S080F	4	FT		
020	• TEE REDUCING	222A8KK1X1X12	2	NO		
030	• NIPPLE	WIN50711B080848	1	NO		
041	• COUPLING	505A7C308	1	NO		
050	• PLUG	30A7K7	1	NO		
060	• COUPLING	505A7B304	2	NO		
070	• NIPPLE	WIN50711B040848	2	NO		
080	• FLANGE	43A8KK3	1	NO		
090	• GASKET	76A11DG1DR	1	NO		
100	• STUD	R78164VX04011	4	NO		
110	• NUT	16A4K5	8	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114PSVP		RIN-60600EF P & ID		
DESCRIPTION		SRV PIPING				
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• PIPE	P016S040D	2	MT		
020	• PIPE	P006S160D	4	FT		
030	• ELBOW	500A8A016X04	1	NO		
040	• ELBOW	501A8A016X04	1	NO		
050	• ELBOW	247A8F3	3	NO		
070	• GASKET	76A11DG1GR	1	NO		
080	• STUD	R78164VX05013	4	NO		
090	• NUT	16A4K7	8	NO		
100	• GASKET	76A11DG1FR	4	NO		
110	• STUD	R78164VX04012	16	NO		
120	• NUT	16A4K5	32	NO		
130	• GASKET	76A11DG1DR	1	NO		
140	• STUD	R78164VX04011	4	NO		
150	• NUT	16A4K5	8	NO		
160	• GASKET	76A11DG3JR	2	NO		
170	• NIPPLE	WIN50711A061648	4	NO		
180	• CAP	507A7A606	2	NO		
190	• NIPPLE	WIN50711A041648	4	NO		
200	• CAP NPT	507A7A604	2	NO		
210	• FLANGE	43A8F2	4	NO		
220	• GASKET	76A11DG1CR	2	NO		
230	• STUD	R78164VX04011	8	NO		
240	• NUT	16A4K5	16	NO		

DRESSER - RAND INDIA PRIVATE LIMITED
 COMPRESSOR PARTLIST INDEX

LIST NO.		ESH05X114PS				
DESCRIPTION		PIPING SUPPORTS		FIN-52380 GAFD		
ILL	ITEM DESCRIPTION	ITEM	QTY	UM	SPARE CLASS	
010	• CLAMP	WIN41688T3	8	NO		
020	• BOLT HEX HD	35A2D222	16	NO		
030	• NUT	16A4K5	16	NO		
040	• WASHER	14A5C101	16	NO		
050	• ANGLE	ISA50	20	KG		

DRAWINGS

DR REF.: BOM- 45114 / 297 - E - 100310
P. O. NO. 195562 DTD Jan. 11 , 2010
Rochester Institute of Technology – Canada
AIR COMPRESSOR

DRAWING INDEX

S.No	Drawing No	Title	Sht
1	FIN- 52380	GENERAL ARRANGEMENT	1
2	RIN-60600FE	P & I DIAGRAM	6
3	FIN- 52380A	GAS DISCHARGE	1
4	FIN- 52380B	COOLING WATER SUPPLY / RETURN	1
5	FIN- 52380C	DISTANCE PIECE DRAIN	1
6	FIN- 52380D	INSTRUMENT AIR SUPPLY	1

ZONE	REV	DESCRIPTION	DATE	DR.	CH.	AP.
-	1	TERMINAL POINTS REVISED AS PER CLIENT'S COMMENT, REVISED DISCHARGE LOCATION.	26/05/10	JJM	PVM	KMP
-	2	REVISED AS PER CLIENT'S COMMENT	19/07/10	JJM	PVM	KMP

NOTES:-
 1) REF. FOLLOWING DOCUMENTS :
 WIN-40770A Rev-0 FOR GENERAL NOTES
 RIN-60600EF FOR P & I DIAGRAM FOR SCOPE OF SUPPLY
 2) BE SURE TO READ INSTALLATION INSTRUCTION BOOK BEFORE CONSTRUCTION OF FOUNDATION.
 3) FINAL STAGE HRV SHALL BE LOOSE SUPPLIED BY D-R.
 4) ALL PIPING TERMINALS ARE WITH TOLERANCE OF (+/-) 50mm TO FACILITATE SHOP FABRICATION & ROUTING.
 5) TERMINALS BOXES LOCATION ARE TENTATIVE & SUBJECT TO CHANGE DURING PACKAGING.
 6) A PREMIUM, NON-SHRINK, HI-TEMP THERMOSETTING PLASTIC BASED GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 10,000 PSI (69 MPa) AND THE ABILITY TO BOND ITSELF TO METALS MUST BE USED. CONSULT GROUT MANUFACTURER FOR LIMITS ON POUR AREA AND DEPTH. DESIGN FORMS ACCORDINGLY. CEMENTITIOUS GROUT MUST NOT BE USED.
 7) ALL FLANGE BOLT HOLES STRADDLE TO MAIN CENTER LINE. COMPANION FLANGES, NUTS, BOLTS, GASKETS ARE TO BE PROVIDED BY CLIENT.
 8) FOR DETAILED SCOPE OF SUPPLY REFER P & I DIAGRAM.
 9) THE FOUNDATION SHOWN IS INTENDED TO SUPPLY DIMENSIONAL INFORMATION ONLY AND DRESSER-RAND IS NOT RESPONSIBLE FOR SUITABILITY OF THIS FOUNDATION TO SPECIFIC SITE SOIL CONDITIONS. WE URGE CONSULTATION WITH A FOUNDATION EXPERT FOR DETAILED DESIGN SUITABLE FOR PROSPECTIVE SITE SOIL CONDITIONS AND SIZING OF UNDER GROUND MATT.
 10) A COMPETENT FOUNDATION ENGINEER SHOULD BE EMPLOYED TO DESIGN THE FOUNDATION. FOUNDATION DESIGN SHOULD BE ADEQUATE TO LIMIT VIBRATION AT TOP OF CONCRETE / SKID BASE FOR SKIDED UNIT TO A MAXIMUM DESIGN VALUE OF .0025" (63.5 MICROMETERS) PEAK TO PEAK IN ANY PLANE.
 11) DRESSER-RAND ASSUMES NO RESPONSIBILITY WHAT EVER FOR FOUNDATION, FOUNDATION DESIGN, PROPER CONCRETE MIXTURE & CORRECT REINFORCEMENT, TO PROVIDE PERMANENT SUPPORT AND TO PREVENT VIBRATIONS FOR COMPLIANCE TO LIMIT AS SPECIFIED. WE RECOMMEND TO CONSULT A FOUNDATION EXPERT FOR DETAILED DESIGN SUITABLE FOR SPECIFIC SITE SOIL CONDITION.
 12) PACKING MUST BE USED AROUND FOUNDATION BOLTS TO PREVENT GROUT FROM ENTERING BETWEEN SLEEVE AND BOLT. SLEEVES ARE TO BE TRIMMED FLUSH WITH TOP OF ROUGHED FOUNDATION.
 13) ALL SURFACES WILL BE COVERED WITH CHEQUERED PLATES BY D-R.
 14) *MARKED DIMENSIONS / DETAILS ARE INDICATIVE AND SHALL BE FURNISH LATER.
 15) DIMENSIONS SPECIFIED IN [] ARE IN INCHES & FOR REFERENCE ONLY.

LEGEND:-

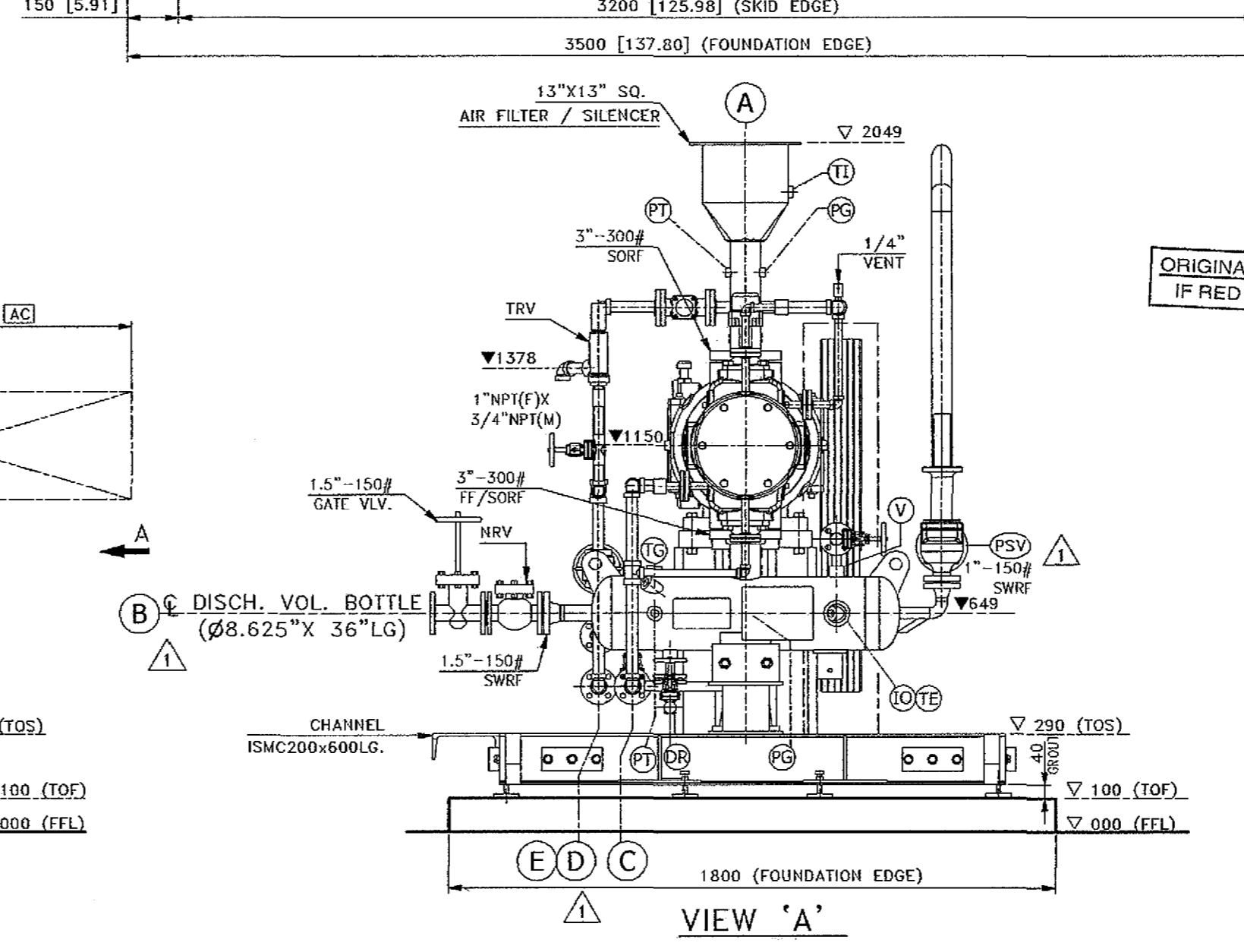
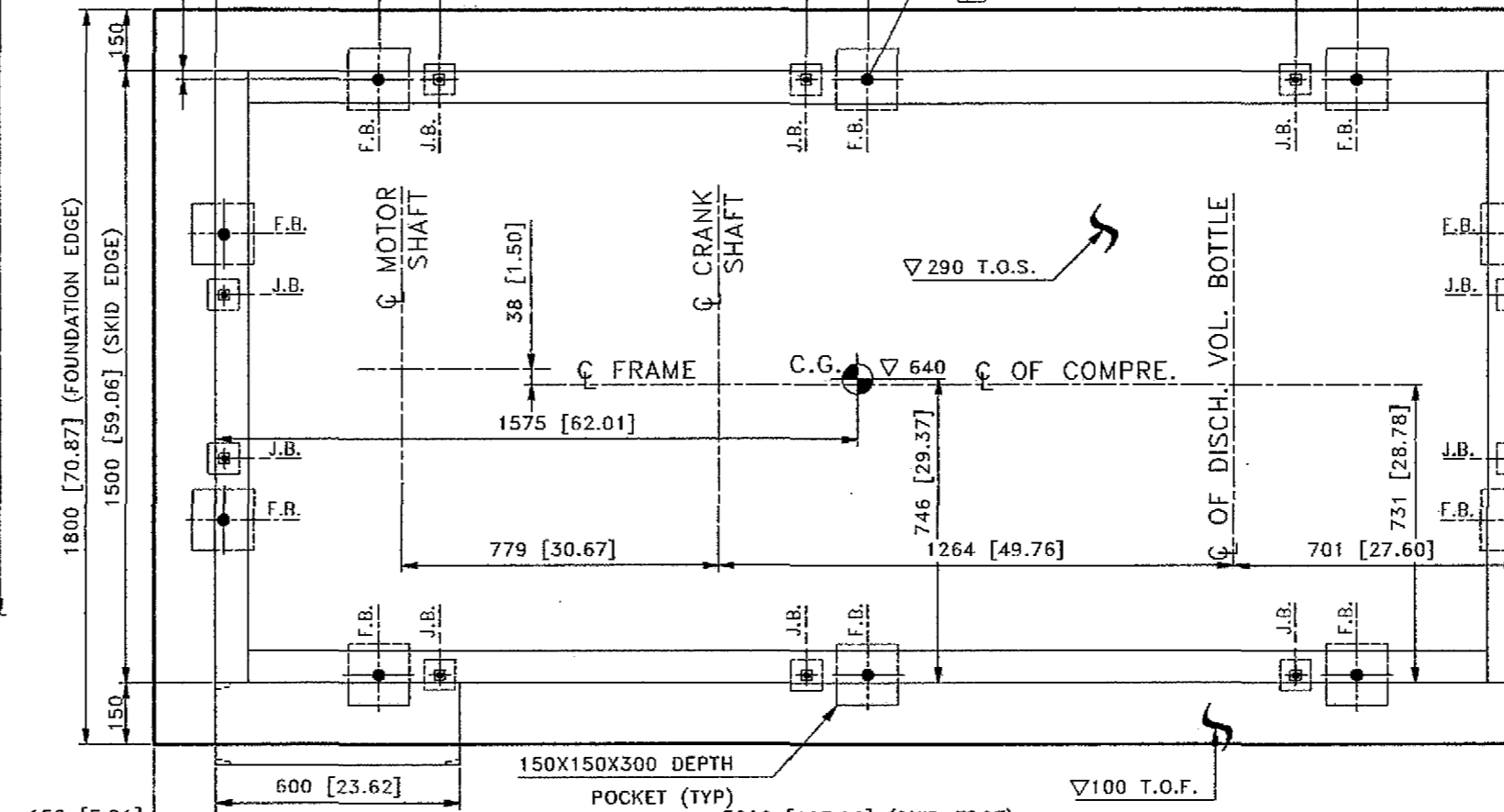
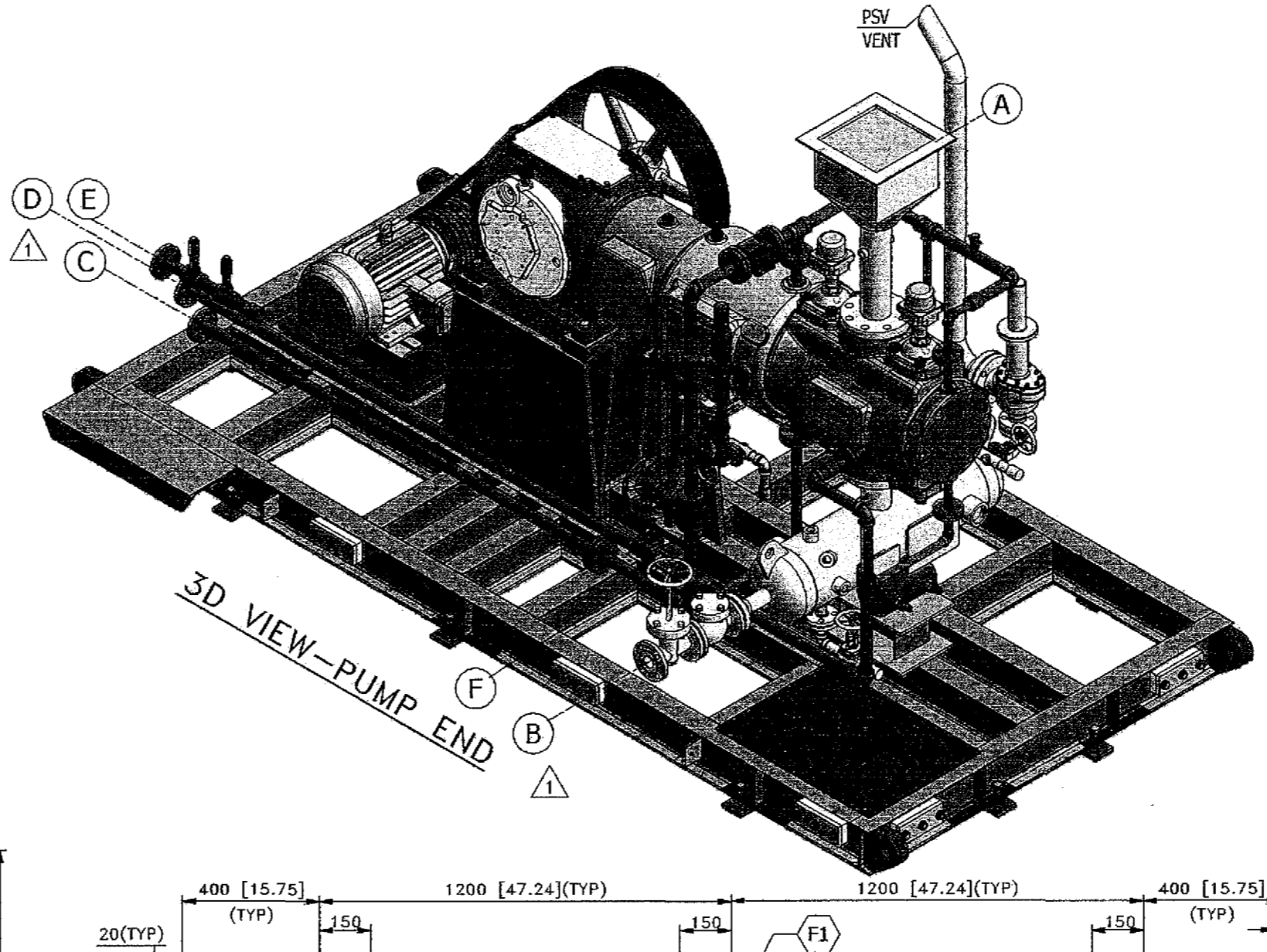
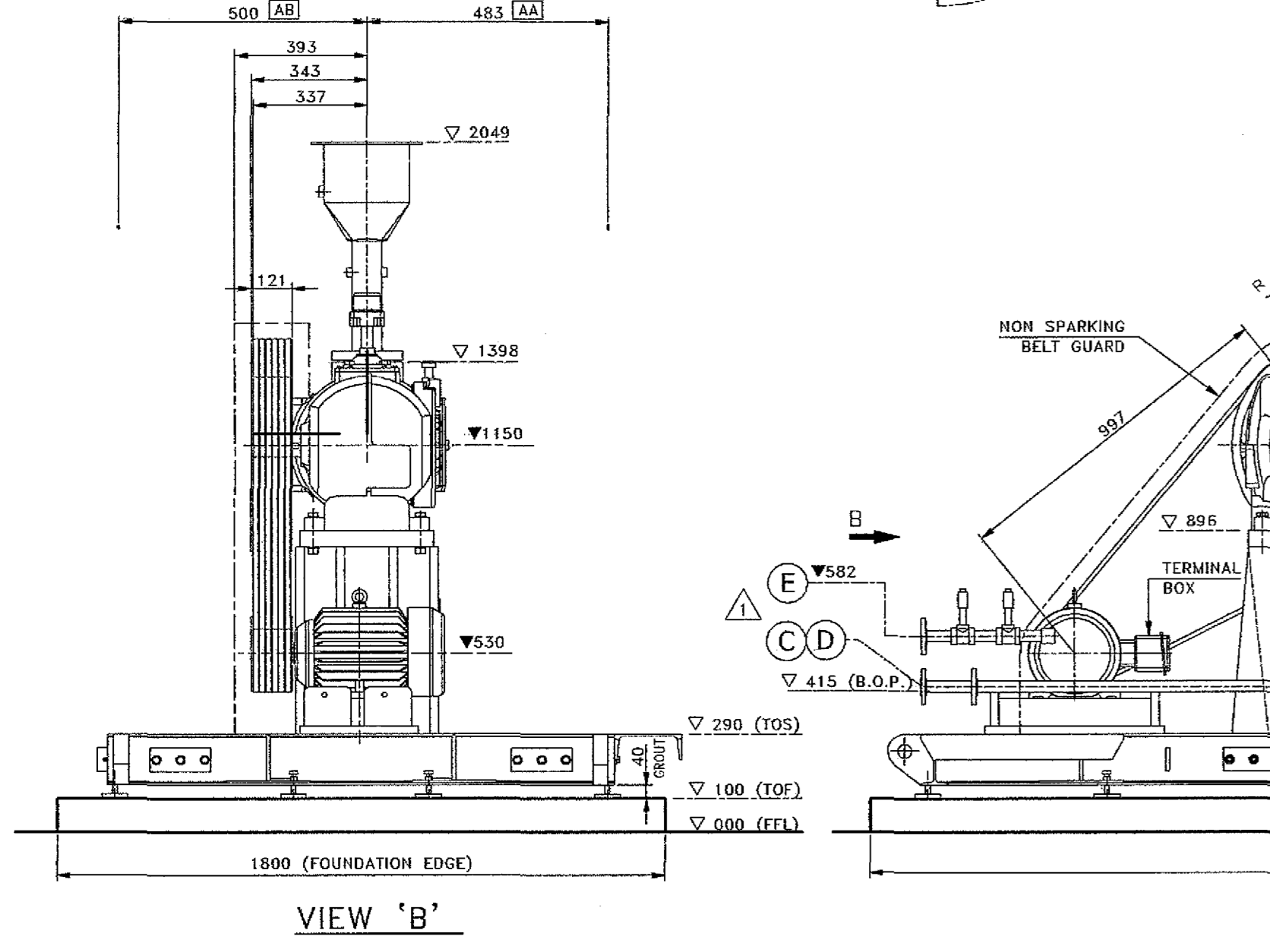
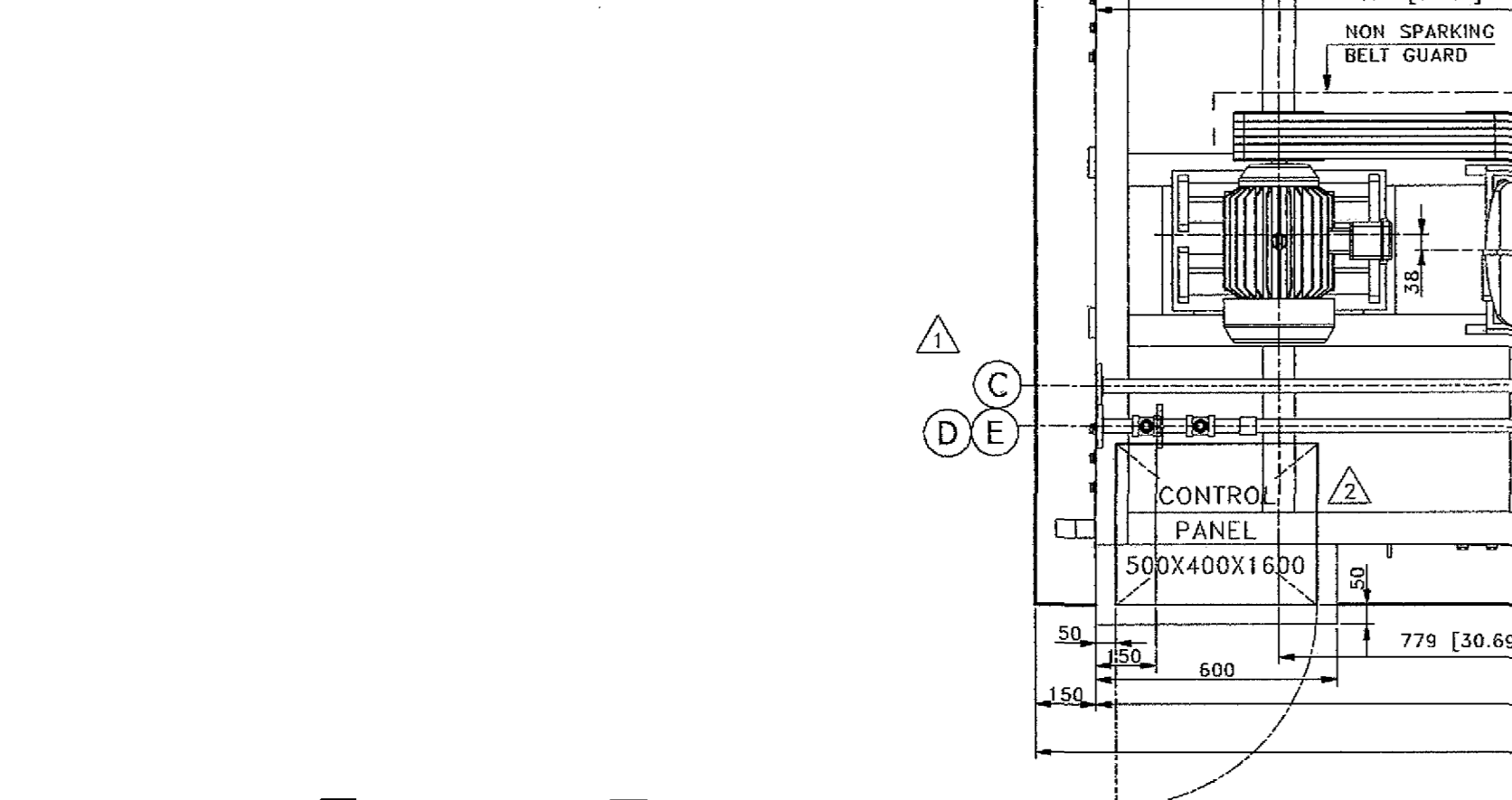
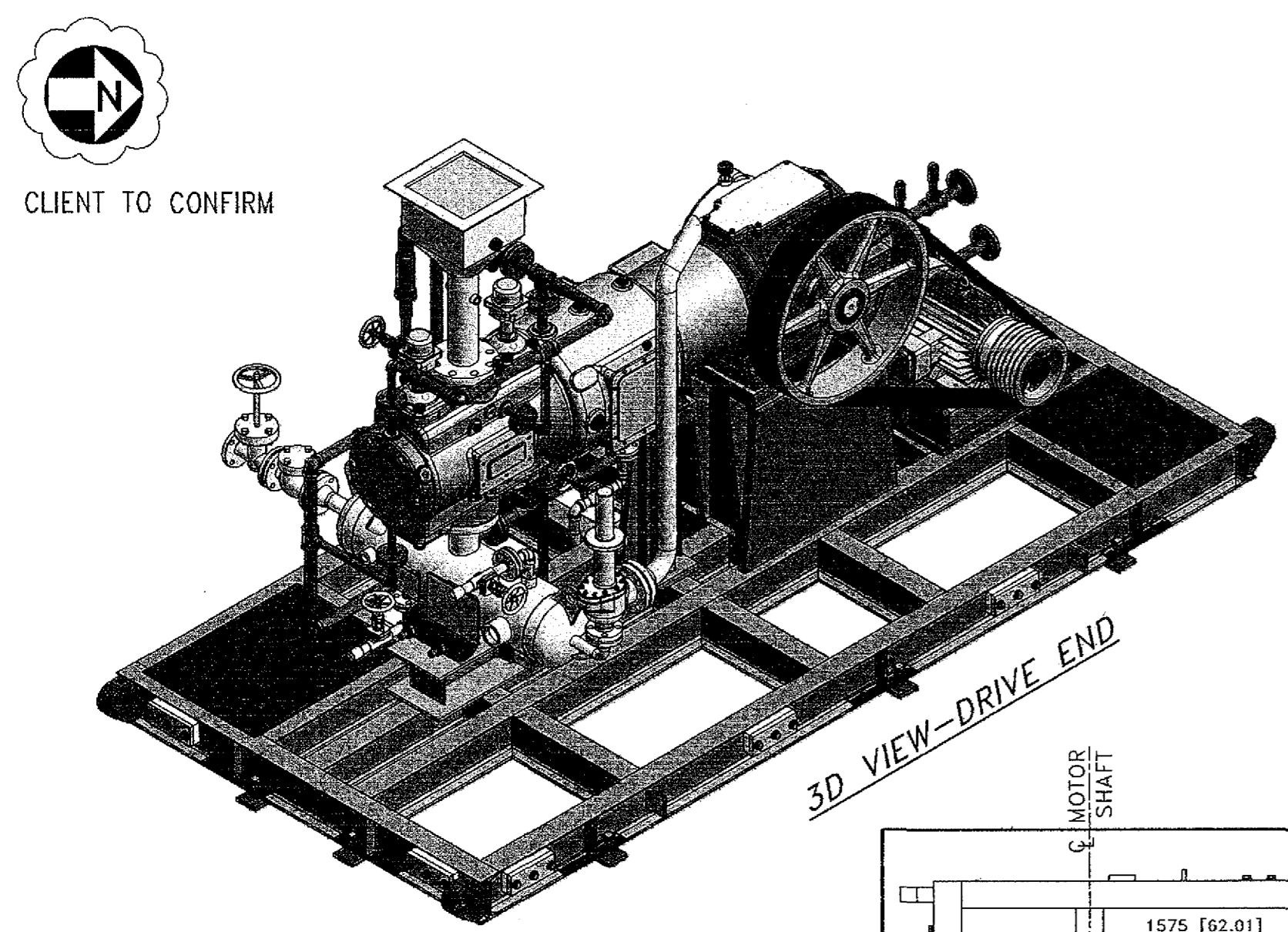
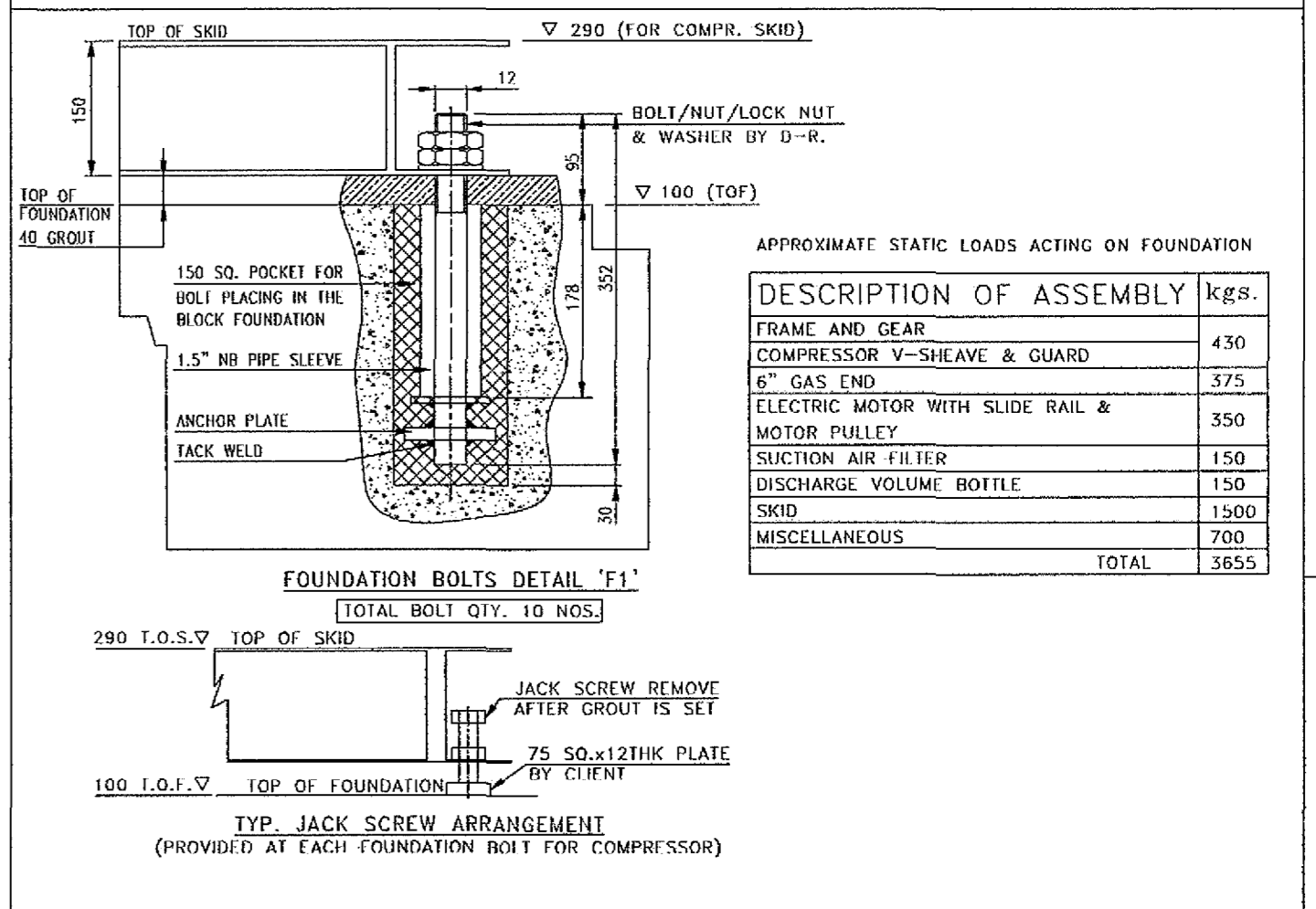
▽	- CENTRE LINE ELEVATION	V	: VENT
▽	- BOTTOM OF PIPE & SURFACE ELEVATION	DR	: DRAIN
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	PG	: PRESSURE GAUGE
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	TI	: TEMP. INDICATOR
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	TRV	: TEMP. RELIEF VALVE
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	PT	: PRESSURE TRANSMITTER
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	IO	: INSPECTION OPENING
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	WA	: WILL ADVISE
⊙	- CENTER OF GRAVITY - COMPRESSOR ONLY.	TE	: TEMP. ELEMENT

ACCESSORIES CONNECTION

TIE-IN POINTS	SERVICE	SIZE	RATING	ELEVATION
		ANSI B-16.5 ASA FLANGE	N.P.T. THREADED	
A	AIR SUCTION	-	-	▽2049
B	AIR DISCHARGE	1.5"-150# SWRF	-	▽649
C	COOLING WATER IN	1"-150# SWRF	-	▽415
D	COOLING WATER OUT	1"-150# SWRF	-	▽415
E	INSTRUMENT AIR SUPPLY	1"-150# SWRF	-	▽582
F	DIST. PIECE DRAIN	-	3/4"NPT, PLUGGED	▽-
G	PACKING VENT	-	3/4"NPT, PLUGGED	▽-
H	DIST. PIECE VENT	-	1"NPT, PLUGGED	▽-

V-BELT DRIVE DETAILS

QNTY. OF BELTS	PITCH DIA FENNER	PITCH DIA MOTOR PULLEY	PITCH DIA COMPR. SHEAVE	COMPR. SPEED R.P.M.
4 NOS.	B-124 (B-3200) (ANTISTATIC)	5.00" (127mm)	24.4" (620mm)	360



UNBALANCE INERTIA FORCES ON FOUNDATION @ 360rpm
 THE FOUNDATION MUST BE DESIGNED TO RESIST THE FOLLOWING FORCES.

VERTICAL FORCES	HORIZONTAL MOMENTS
MAXIMUM HORIZONTAL PRIMARY FORCE	467 KGS (1030 LBS)
MAXIMUM HORIZONTAL SECONDARY FORCE	119 KGS (263 LBS)
MAXIMUM VERTICAL PRIMARY FORCE	21 KGS (47 LBS)
MAXIMUM VERTICAL SECONDARY FORCE	0 KGS (0 LBS)
MAXIMUM HORIZONTAL PRIMARY MOMENT (ABOUT AXIS Y-Y)	111 K.G.M
MAXIMUM HORIZONTAL SECONDARY MOMENT (ABOUT AXIS Y-Y)	111 K.G.M
MAXIMUM VERTICAL PRIMARY MOMENT (ABOUT AXIS X-X)	111 K.G.M
MAXIMUM VERTICAL SECONDARY MOMENT (ABOUT AXIS X-X)	111 K.G.M

NOTES:
 1 : MOMENTS TAKEN ABOUT AXIS THROUGH CENTER OF SHAFT. FORCE TAKEN AS ACTING AT CENTER OF SHAFT.
 2 : PRIMARY FORCES & MOMENTS CHANGE FROM ZERO TO MAXIMUM GIVEN ABOVE TO ZERO TO SAME MAXIMUM IN REVERSE DIRECTION & BACK TO ZERO ONCE IN A CRANKSHAFT REVOLUTION. SECONDARY FORCES & MOMENTS GO THROUGH THIS CYCLE TWICE IN A REVOLUTION. THE SKETCH SHOWS THIS.

MOTOR DETAILS (BY D-R):
 MAKE : LESSON ELECTRIC CORP.
 TYPE : TEFC, WEATHERPROOF TO IP43, CSA CERTIFIED
 POWER 10 HP (7.5kw)
 SPEED 1800 RPM (SYN) 1755 (RTD)
 FRAME SIZE : 215T-1000
 SLIDE RAIL : 18" (BY D-R)
 FREQUENCY : 60 HZ
 PHASE : THREE

SPACES REQUIRED FOR REMOVAL

AA	CRANKSHAFT
AB	COMPR. SHEAVE
AC	PISTON AND ROD
AD	UNLOADERS

ALLOWABLE FORCES & MOMENTS ON GAS TERMINAL NOZZLES (AT DRI BATTERY LIMIT)

MAX. FORCES
50 Kg./INCH DIA ON 'X-X' AXIS
50 Kg./INCH DIA ON 'Y-Y' AXIS
50 Kg./INCH DIA ON 'Z-Z' AXIS

MAX. MOMENTS
50 Kg.m/INCH DIA ON 'X-X' AXIS
50 Kg.m/INCH DIA ON 'Y-Y' AXIS
50 Kg.m/INCH DIA ON 'Z-Z' AXIS

CLIENT : DRESSER RAND
 END USER : ROCHESTER INSTITUTE OF TECHNOLOGY.
 CLIENT'S REF. : 195562, Rev.1
 PROJECT : COMPRESSOR FOR TRAINING PURPOSE
 D-R REF. : X45114/297-E-100310
 D-R MODEL : 6" X 5" ESH-1,NL2
 SERVICE : AIR
 QUANTITY : ONE NO.

THIRD ANGLE PROJECTION

DRAWN JJM DATE 23.04.10
 CHECKED ATU/PVM DATE 04.05.10
 APPROVED KMP DATE 05.05.10

DO NOT SCALE THIS DRAWING UNLESS OTHERWISE SPECIFIED. ALL DIMENSIONS ARE IN MM.

DR DRESSER-RAND
 NARODA PLANT, AHMEDABAD

SIZE 6"	STROKE 5"	TYPE ESH-1,NL2
TITLE GENERAL ARRANGEMENT & FOUNDATION DRAWING		
SCALE F	CAD FILE X114E5G2	DWG NO. FIN-52380
WT.	#	REV. 2
SHEET 1 OF 1		

LEGEND

	D-R SCOPE OF SUPPLY RIL SCOPE OF SUPPLY		GATE VALVE NORMALLY CLOSED
			GLOBE VALVE
	MAIN PROCESS GAS LINE		BALL VALVE
	WATER LINE / UTILITY LINE		2 WAY VALVE MANIFOLD
	ELECTRICAL SIGNAL		CHECK VALVE
	PNEUMATIC SIGNAL		PRESSURE SAFETY VALVE/ THERMAL RELIEF VALVE
	SOFT LINK		SOLENOID VALVE
	GATE VALVE		LOCAL(FIELD) MOUNTING
	SIGHT FLOW INDICATOR		DCS MOUNTING BY CLIENT
	Y-TYPE STRAINER		GEAR PUMP
	LOCAL CONTROL STATION/PANEL MOUNTING		GAUGE BOARD/STAND MOUNTING
	TIE - IN POINT		MOTOR INDICATION
	PLC INTERLOCK		NEEDLE VALVE
	PRV SELF ACTUATED		

CAPACITY CONTROL SCHEMATIC

CAPACITY	UNLOADER OPERATING		6" GAS END	
	SOV 679B/ 680B	SOV 679A/ 680A	CRANK END CE	HEAD END HE
0 %	DE	DE	NA	NA
50 %	DE	E	NA	A
100 %	E	E	A	A

- E : ENERGIZED
- DE : DE ENERGIZED
- A : ACTING
- NA : NONACTING
- CE : CRANK END
- HE : HEAD END
- C : CLOSED
- O : OPEN

LIST OF TIE IN POINTS

MARK SYMBOL	DESCRIPTION	CONNECTION		LOCATION SHEET NO.
		ANSI B-16.5 ASA FLANGE	TYPE	
TP-01 A/B	GAS SUCTION	3"-150#	WNRF	2 OF 6
TP-02 A/B	GAS DISCHARGE	3"-150#	WNRF	2 OF 6
TP-03 A/B	C.W. SUPPLY TO GAS END AT B/L.	1"-150#	SWRF	3 OF 6
TP-04 A/B	C.W. RETURN FROM GAS END B/L	1"-150#	SWRF	3 OF 6
TP-05 A/B	PACKING VENT TO FLARE	1"-150#	SWRF	4 OF 6
TP-06 A/B	DIST. PC. DRAIN	1"-150#	SWRF	4 OF 6
TP-07 A/B	DIST. PC. VENT TO SAFE HEIGHT	1"-150#	SWRF	4 OF 6
TP-08 A/B	INSTRUMENT AIR SUPPLY.	1"-150#	SWRF	4 OF 6
TP-09 A/B	N2 PURGE INLET TO DIST. PC.	1"-150#	SWRF	4 OF 6
TP-10A/11A	PSV INLET M/C-A	2"-150#	SORF	2 OF 6
TP-10B/11B	PSV INLET M/C-B	2"-150#	SORF	2 OF 6

PROCESS OPERATING PARAMETERS AT PULSATION SUPPRESSION DEVICE

GAS INLET PRESSURE (Kg/Cm2A)	1.455
GAS INLET TEMP. (°C)	5
GAS OUTLET PRE. (Kg/Cm2A)	3.705
GAS OUTLET TEMP. (°C)	33.27 (ADB)
FLOW Nm3/Hr	93.5

ELECTRIC POWER SUPPLY (FOR BOTH COMPRESSOR RUNNING)

	VOLTS	PHASE	CYCLE HZ	POWER RATING
ELECTRIC MOTOR FOR COMPR.	415 AC	3	50	11 KW
LOCAL CONTROL PANEL	110 AC	1	50	600VA X 2
AOP MOTOR	415 AC	3	50	1.1 KW
GANTRY PANEL	110 AC	1	50	100VA
HEATER	230 AC	1	50	0.5 KW

SITE UTILITY DATA (FOR BOTH COMPRESSOR RUNNING)

	SUPPLY		RETURN		DESIGN (PIPING)		DESIGN (JACKET)		CONSUMPTION (APPROX.)	REQD. FLOW
	PRESS. Kg/Cm2g	TEMP. °C	PRESS. Kg/Cm2g	TEMP. °C	PRESS. Kg/Cm2g	TEMP. °C	PRESS. Kg/Cm2g	TEMP. °C		
COOLING WATER	4	32	2	38	8	75	5.27	176	20 LIT./DAY	17 LPM PER COMPR.
INSTRUMENT AIR	4.0 (MIN.) 5.5 (NOR.) 7.5 (MAX.)	AMB	-	-	10	-	-	-	15x2 Nm3/Hr	-
N2 PURGE	2.3	AMB	-	-	3.5	65	-	-	1 Nm3/Hr PER COMPR.	-

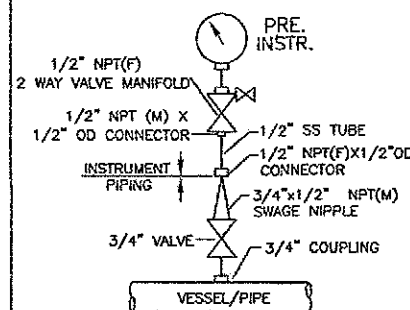
LOCAL PANEL MOUNTED/GANTRY PANEL LAMP, PUSH BUTTONS, SELECTOR SWITCH Etc. NOT SHOWN IN THIS P&ID

110V AC ON/OFF	GANTRY INDI.(LCP)	ANN. ACK.	110 V AC ON/OFF	LAMP TEST
ANN. RESET	ANN. LAMP TEST	ESD. INDI.(LCP)	LOCAL INDI.(LCP)	KOD HIGH-HIGH LEVEL TRIP
KOD HI-HI PRE. TRIP FOR COMPA	KOD HI-HI PRE. TRIP FOR COMPB	TANKER UNLOADING MODE	VAPOURDECANTATION MODE INDI.	SPHERE HIGH-HIGH LEVEL TRIP
OVER ALL RESET PUTS BUTTON	COMMON ALARM INDI. (GANTRY)	COMMON ALARM INDI. (LCP)	OVERALL ACKNOW LEDGE PUSH BUTTON	COMMON TRIP. INDI. FOR COMP. B (LCP)
COMMON TRIP. INDI. FOR COMP. B (LCP)				

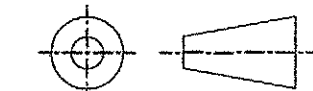
IDENTIFICATION CODES

P : PROCESS	D : DRAIN
CWS : COOLING WATER SUPPLY	V : VENT
CWR : COOLING WATER RETURN	TP : TIE IN POINT
AI : INSTRUMENT AIR	OWS : OILY WATER SEWER
IG : NITROGEN	CBD : CLOSED BLOWDOWN
OL : LUBE OIL	LO : LOCK OPEN

TYPICAL HOOK UP FOR PRESSURE. INSTR.(GB MOUNTING)



CLIENT : RELIANCE INDUSTRIES LIMITED
 CLIENT'S REF. : MXA/7263558
 PROJECT : BUTENE-1 PROJECT AT HAZIRA
 ITEM NO. : GB-7651 A/B
 D-R REF. NO. : BOM-45383
 D-R MODEL : 6.0" X 5" ESH-1 NL @ 410 RPM
 SERVICE : C4 RAFFINATE
 QUANTITY : 2 NOS.



THIRD ANGLE PROJECTION

DRAWN HKK	DATE 29.07.10
CHECKED HNS/NRG	DATE 29.07.10
APPROVED KMP/BNS	DATE 29.07.10

DO NOT SCALE THIS DRAWING
ALL DIMENSIONS ARE IN MM.

DR DRESSER-RAND NARODA PLANT, AHMEDABAD.

SIZE 6"	STROKE 5"	TYPE ESH 1, NL2
TITLE PIPING AND INSTRUMENTATION DIAGRAM TABLES DETAILS		
SIZE R	CAD FILE B383E5P2	DWG NO. RIN-60600FE
SCALE-N.T.S.	REV. 2	SHEET 1 OF 6

REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	ECAD	HNS/NRG	KMP/BNS

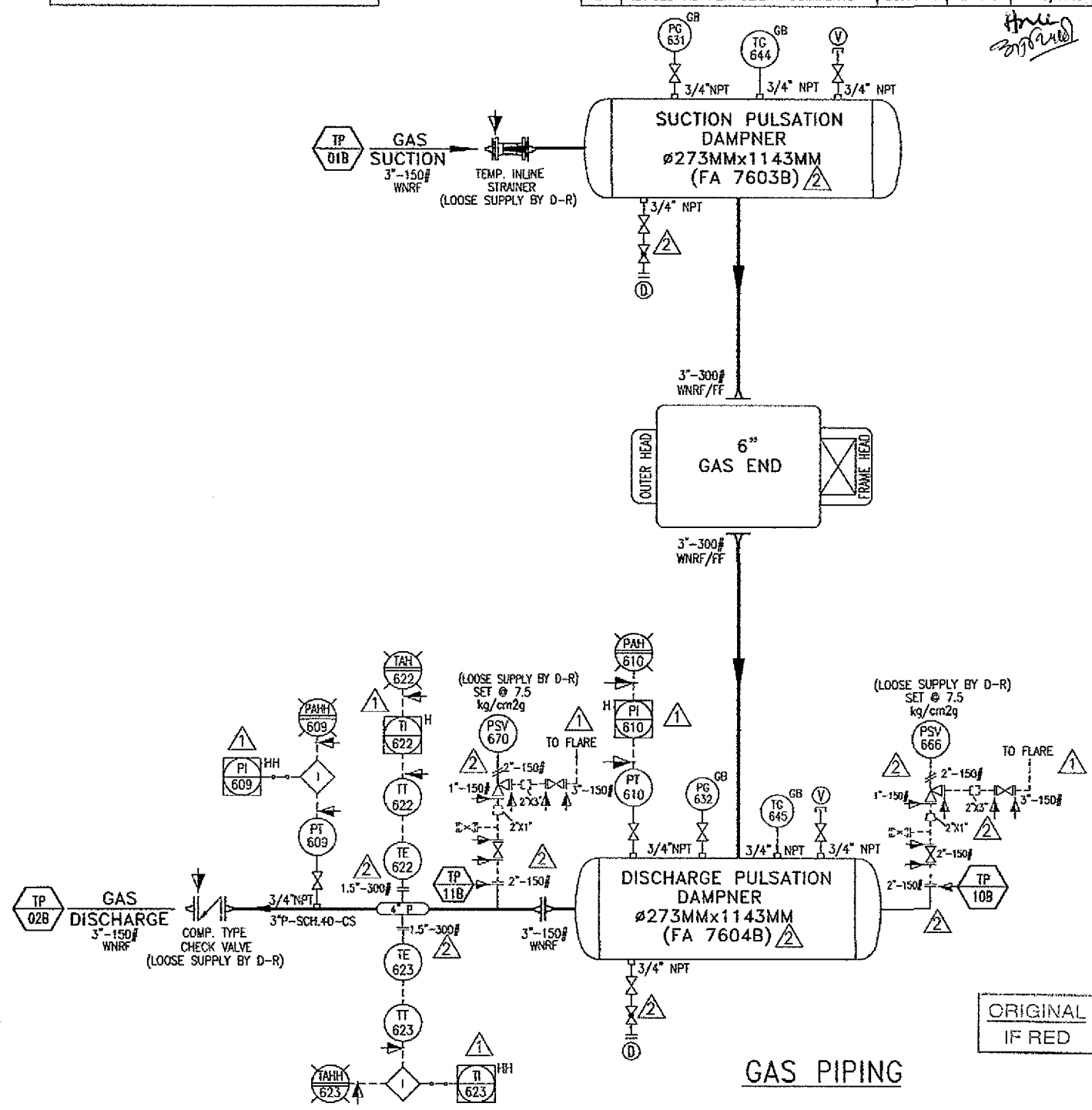
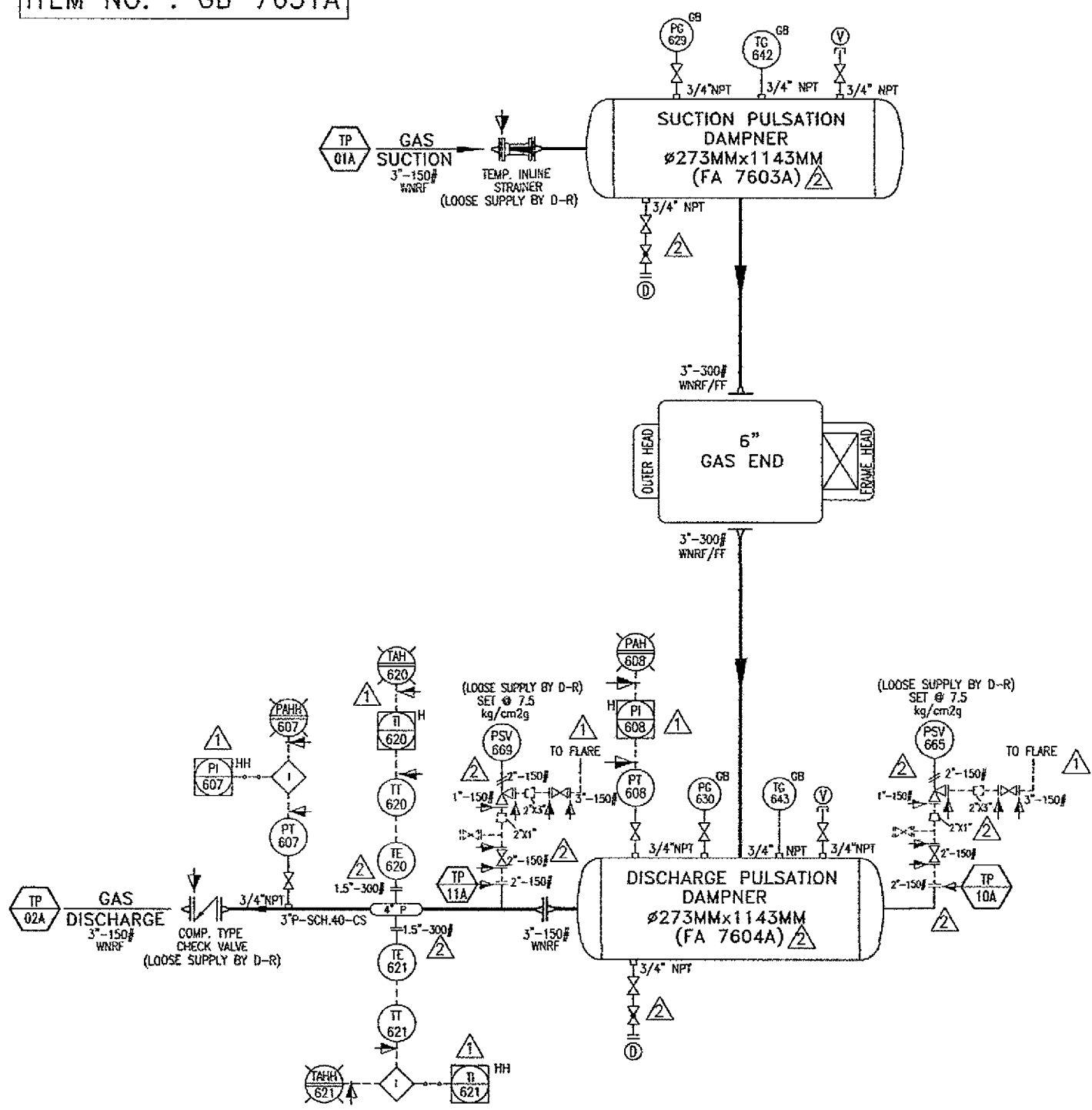
- NOTES :
- REFER DRAWINGS
> FIN-52393 FOR GENERAL ARRANGEMENT DRAWING.
> RIN-40935/B383 FOR INSTRUMENTS SCHEDULE.
 - PSV ON COMPRESSOR DISCHARGE LINE SHALL BE LOOSE SUPPLIED BY D-R & TO BE MOUNTED SUITABLY BY D-R WITHIN BATTERY LIMIT.
 - ALL MONITORING, CONTROL, ALARM, ANNUNCIATION, INTERLOCK & SEQUENCE OF COMPRESSOR PACKAGE SHALL BE FROM MAIN DCS/PLC SYSTEM IN CONTROL ROOM.
 - ALL HIGH & LOW POINT SHALL BE PROVIDED WITH VENT & DRAIN RESPECTIVELY WITH VALVE.
 - WHERE SPACE DOES NOT PERMIT THE USE OF PIPE, SS TUBING MAY BE FURNISHED.
 - TEMPERATURE BULB FOR TEMPERATURE CONNECTION IS OF 100 NB (4" NB) SIZE.
 - COMPRESSOR MOUNTED INSTRUMENT HOOK UP SHALL BE AS PER D-R STD.
 - THIS DRG IS ONLY SYMBOLIC REPRESENTATION OF PIPING & INSTRUMENT. IT SHOULD NOT BE INTERPRETED FOR PHYSICAL POSITIONING OF PIPING, INSTRUMENT & EQUIPMENT OR ITS SHAPES.
 - SUCTION STRAINER, DISCHARGE NRV & 2NOS. OF PSV AT GAS DISCHARGE WILL BE LOOSE SUPPLIED BY D-R.
 - DETAILS MARKED AS '*' IS REQUIRED FROM RIL.
 - ALL PR./TEMP. INSTRUMENTS WILL BE GAUGE BOARD MOUNTED.
 - INST. TAG NO. SHALL BE PREFIXED BY 25 WHERE NOT INDICATED.

ORIGINAL IF RED

REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	E-CAD	HNS/NRG	KMP/BNS

ITEM NO. : GB-7651A

ITEM NO. : GB-7651B

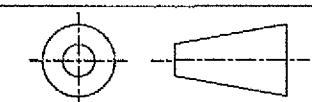


GAS PIPING

GAS PIPING

PROCESS EQUIPMENT OPERATING & DESIGN PARAMETER

		SUCTION VOLUME BOTTLE	DISCHARGE VOLUME BOTTLE
OPERATING PRESS.	KG/CM2G	1.455	3.705
DESIGN PRESS.	KG/CM2G	10/VACUUM COND.	10/VACUUM COND.
OPERATING TEMP.	Deg.C	5	33.8
DESIGN TEMP.	Deg.C	150	150
MOC		CS	CS



THIRD ANGLE PROJECTION

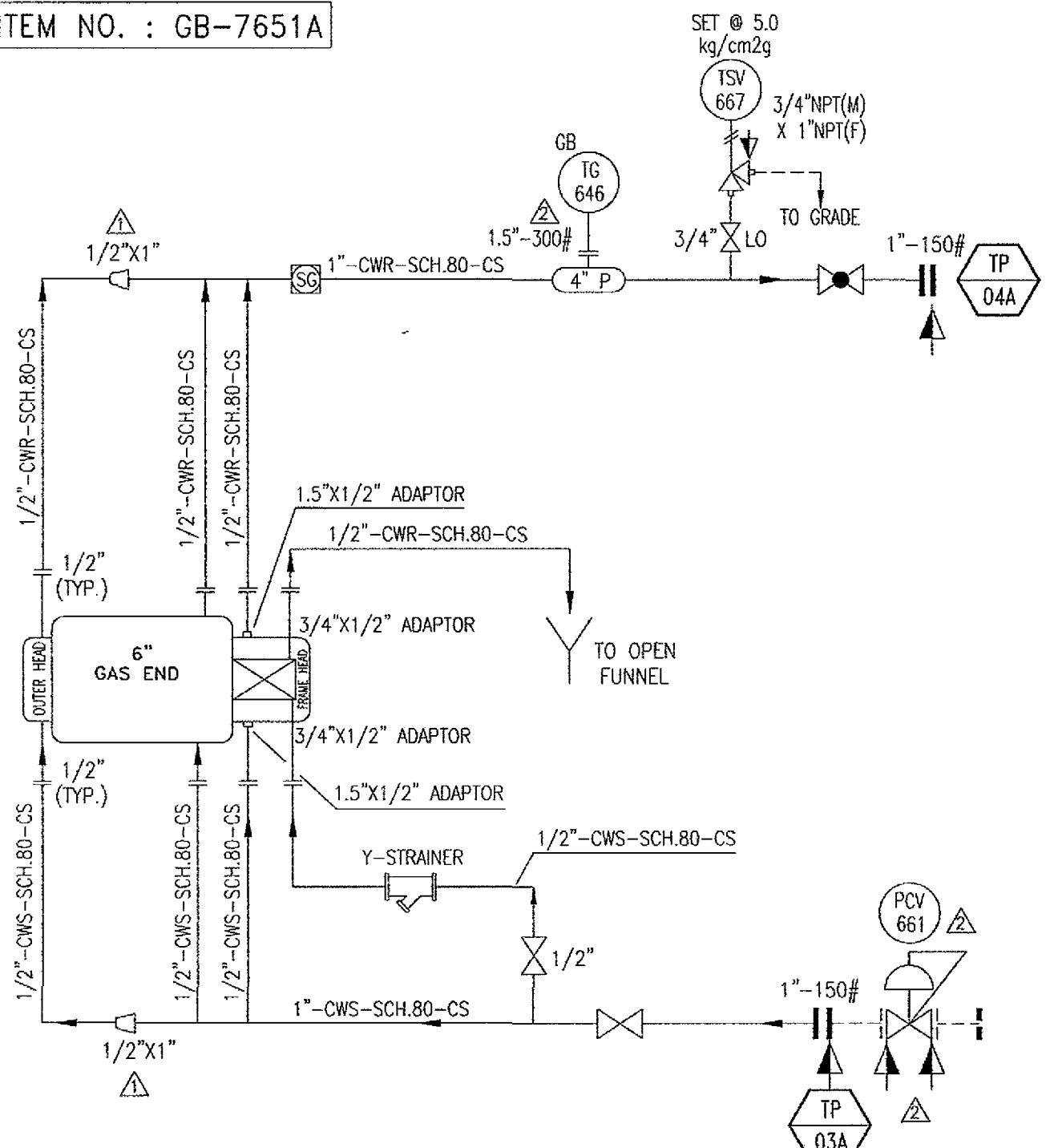
DR DRESSER-RAND
NARODA PLANT, AHMEDABAD.

SIZE	6"	STROKE	5"	TYPE	ESH 1, NL2
TITLE PIPING AND INSTRUMENTATION DIAGRAM (PROCESS GAS FLOW)					
SIZE	CAD FILE	DWG NO.	REV.		
R	8383E5P2	RIN-60600FE	2		
SCALE-N.T.S			SHEET 2 OF 6		

ORIGINAL IF RED

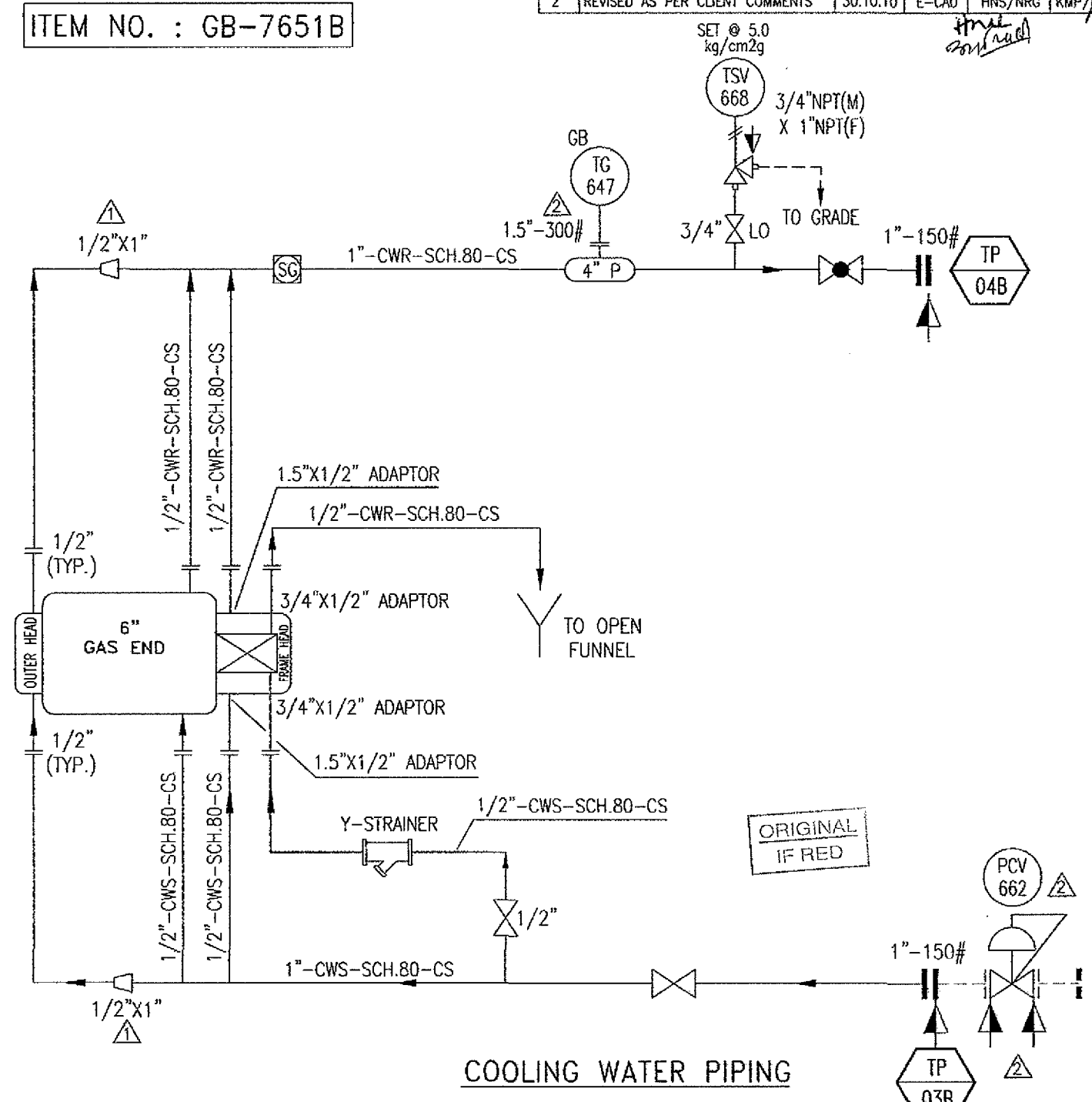
REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	E-CAD	HNS/NRG	KMP/BNS

ITEM NO. : GB-7651A



COOLING WATER PIPING

ITEM NO. : GB-7651B



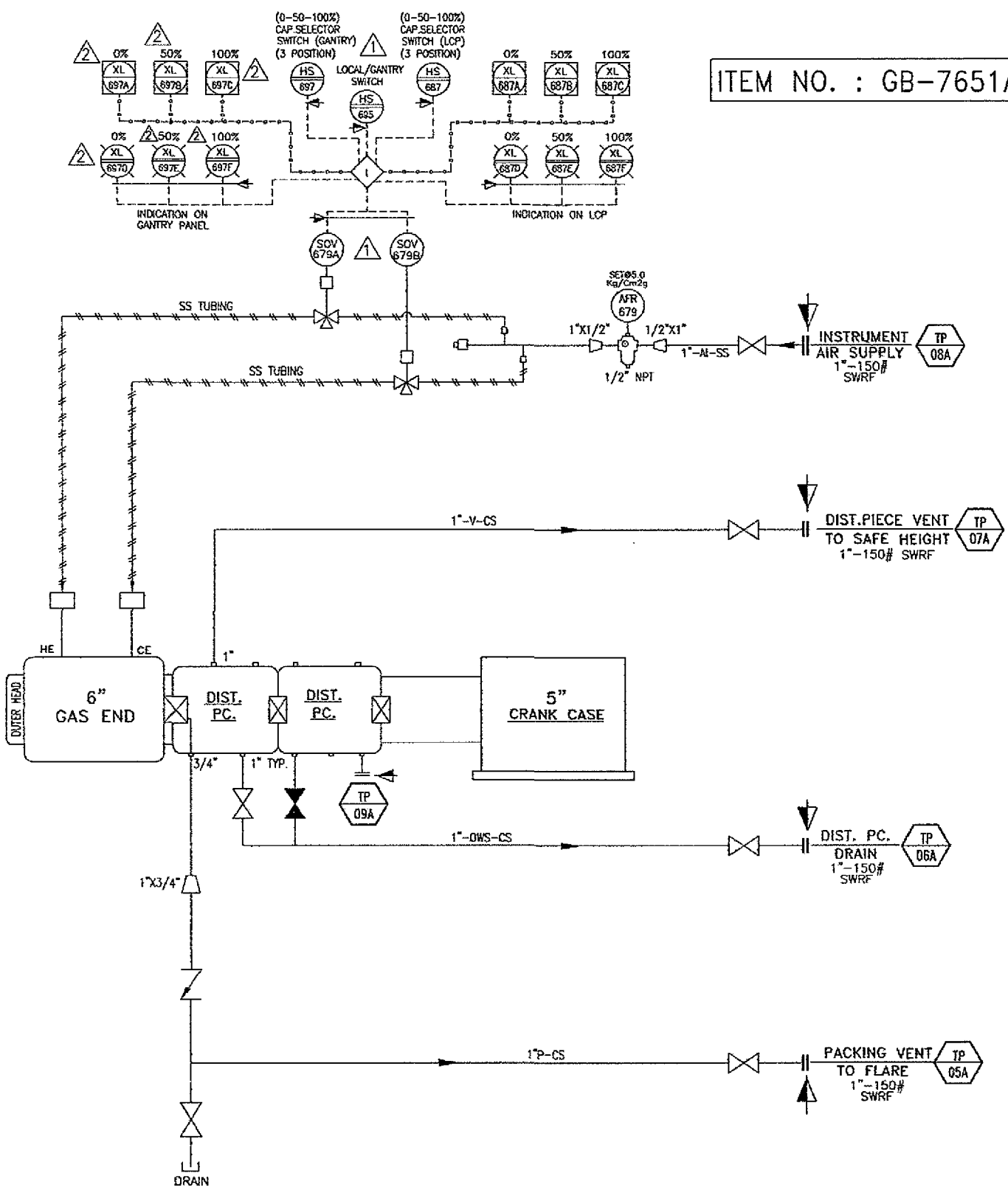
COOLING WATER PIPING

<p>THIRD ANGLE PROJECTION</p>		<p>DR DRESSER-RAND NARODA PLANT, AHMEDABAD.</p>		
		SIZE 6"	STROKE 5"	TYPE ESH 1, NL2
DRAWN HKK DATE 29.07.10	CHECKED HNS/NRG DATE 29.07.10	TITLE PIPING AND INSTRUMENTATION DIAGRAM (COOLING WATER SCHEMATIC)		
APPROVED KMP/BNS DATE 29.07.10	SIZE R CAD FILE B383E5P2	DWG NO. RIN-60600FE	REV. 2	SCALE-N.T.S.
DO NOT SCALE THIS DRAWING ALL DIMENSIONS ARE IN MM.		SHEET 3 OF 6		

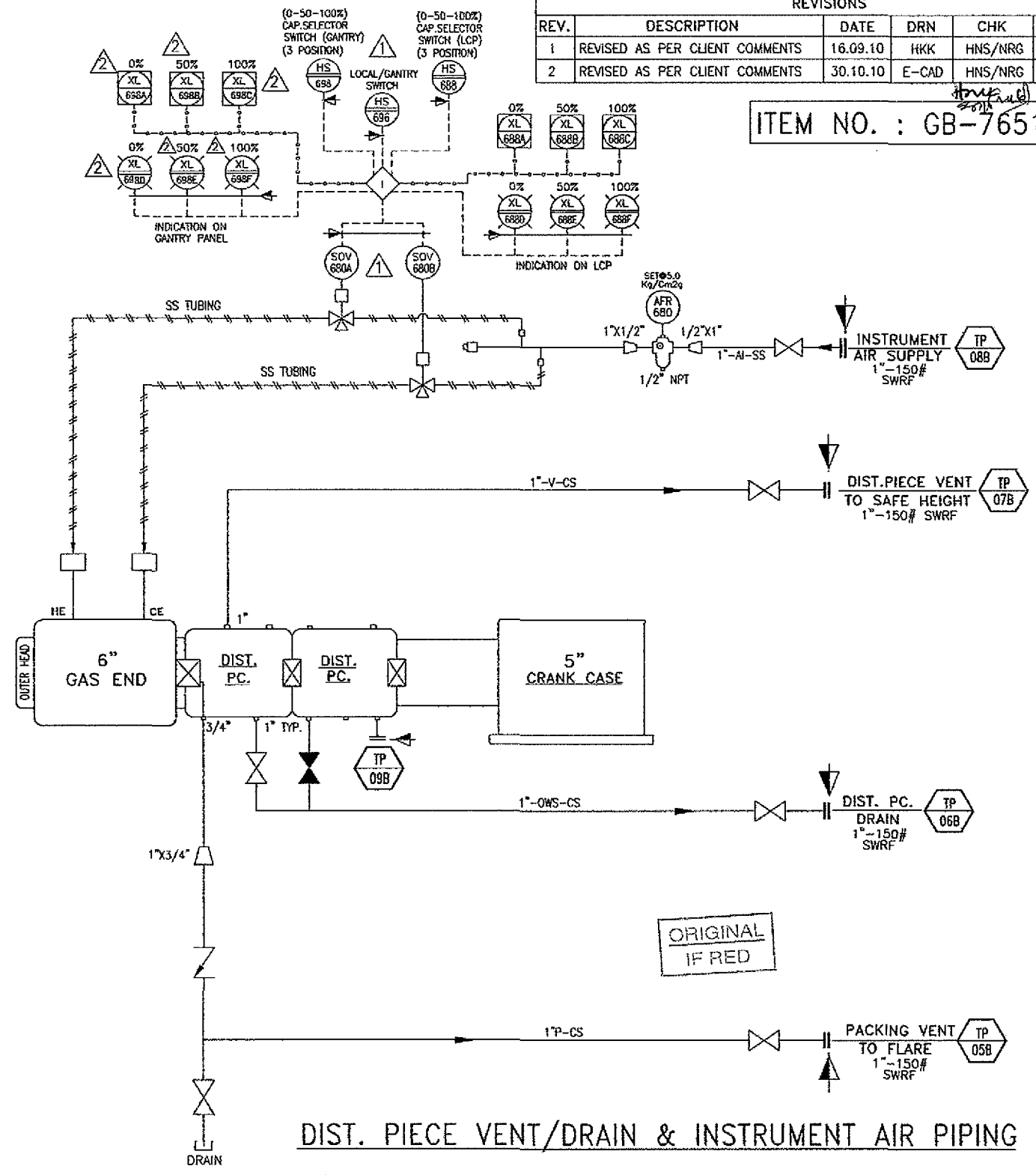
REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	E-CAD	HNS/NRG	KMP/BNS

ITEM NO. : GB-7651A

ITEM NO. : GB-7651B



DIST. PIECE VENT/DRAIN & INSTRUMENT AIR PIPING



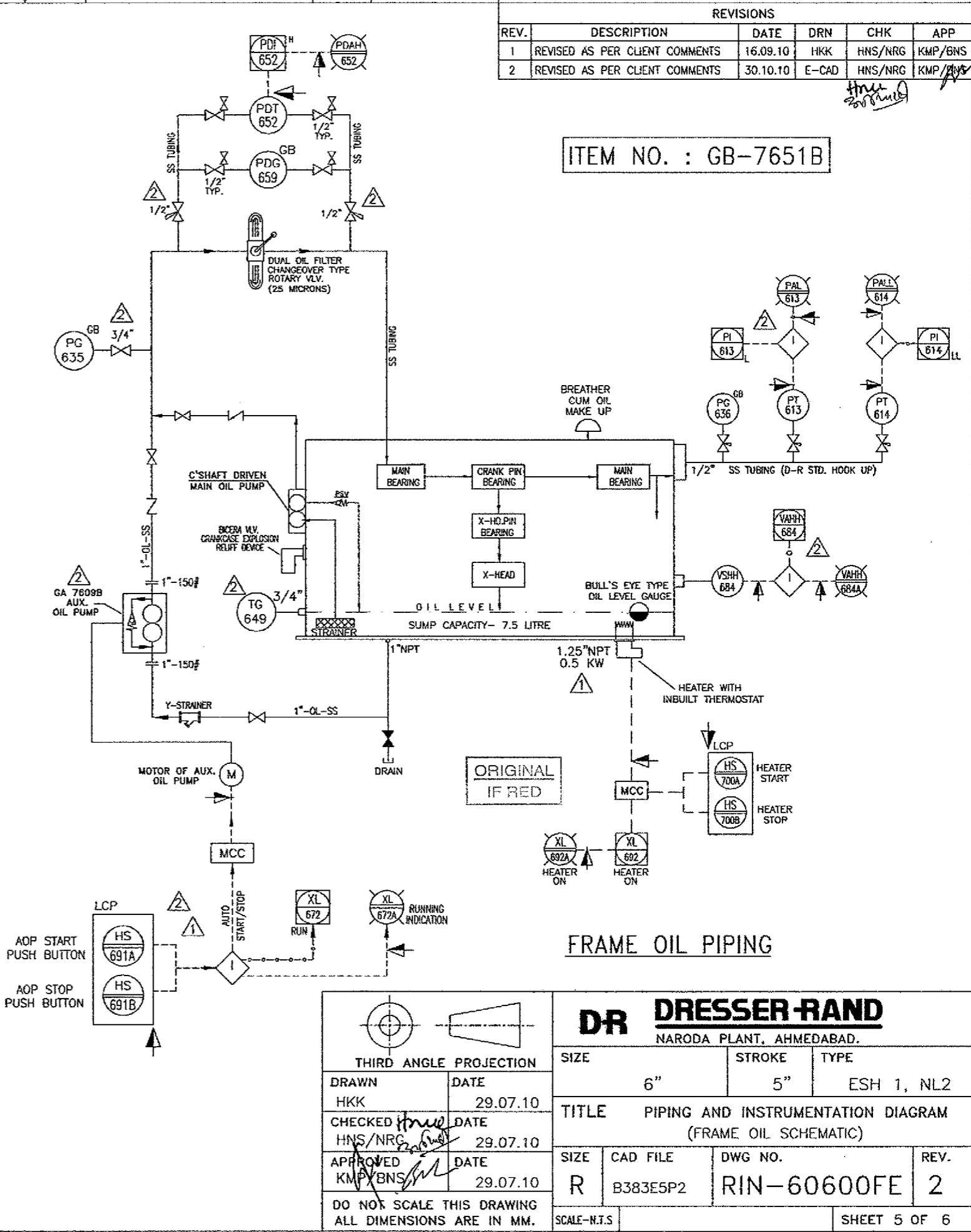
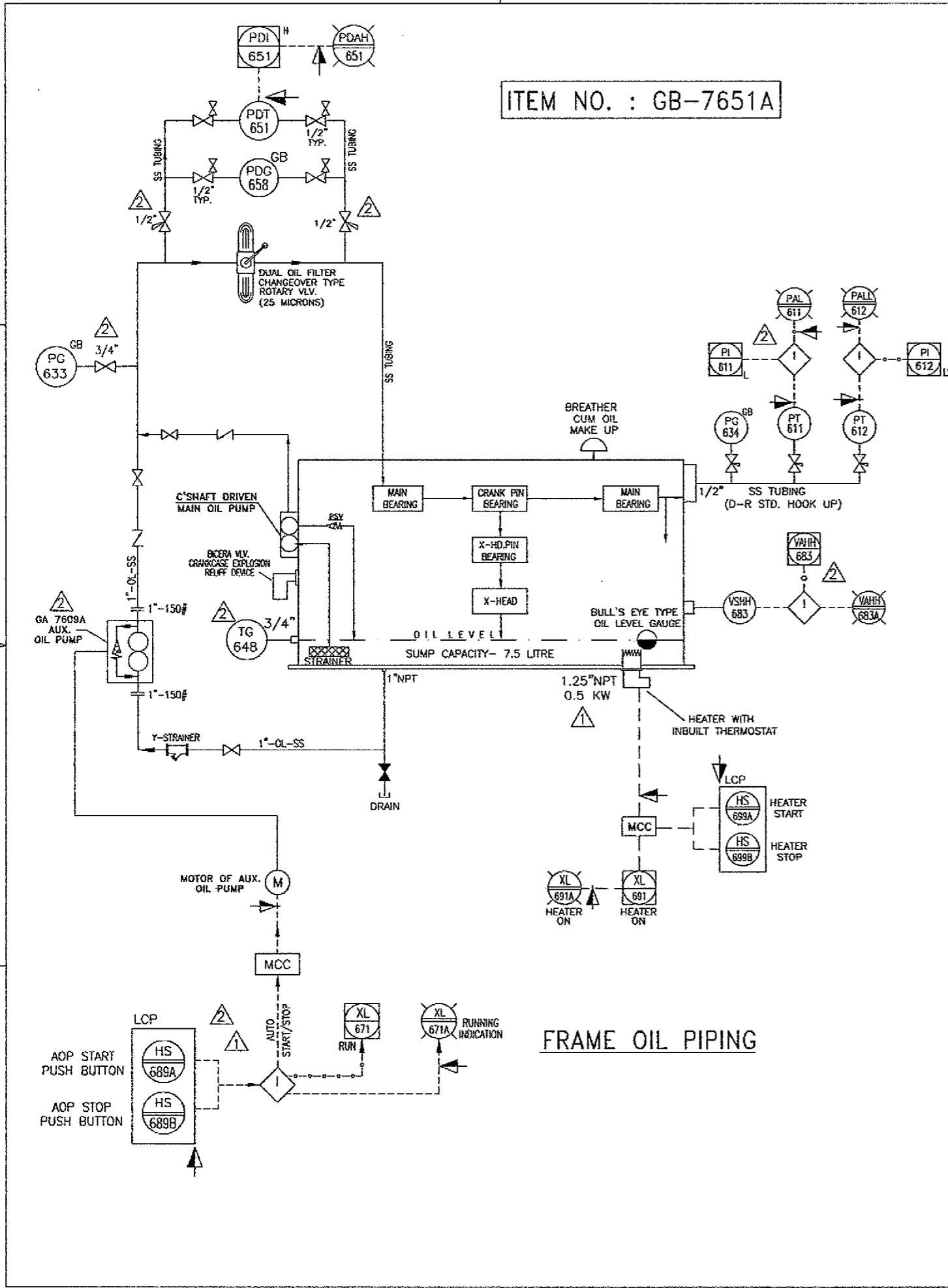
DIST. PIECE VENT/DRAIN & INSTRUMENT AIR PIPING

<p>THIRD ANGLE PROJECTION</p>		<p>DR DRESSER-RAND NARODA PLANT, AHMEDABAD.</p>		
<p>DRAWN HKK</p>	<p>DATE 29.07.10</p>	<p>SIZE 6"</p>	<p>STROKE 5"</p>	<p>TYPE ESH 1, NL2</p>
<p>CHECKED HNS/NRG</p>	<p>DATE 29.07.10</p>	<p>TITLE PIPING AND INSTRUMENTATION DIAGRAM (DIST. PIECE VENT/DRAIN & INSTRUMENT AIR)</p>		
<p>APPROVED KMP/BNS</p>	<p>DATE 29.07.10</p>	<p>SIZE R</p>	<p>CAD FILE B383E5P2</p>	<p>DWG NO. RIN-60600FE</p>
<p>DO NOT SCALE THIS DRAWING ALL DIMENSIONS ARE IN MM.</p>		<p>SCALE-N.T.S</p>	<p>REV. 2</p>	<p>SHEET 4 OF 6</p>

REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	E-CAD	HNS/NRG	KMP/BNS

ITEM NO. : GB-7651A

ITEM NO. : GB-7651B



FRAME OIL PIPING

<p>THIRD ANGLE PROJECTION</p>		<p>DR DRESSER-RAND NARODA PLANT, AHMEDABAD.</p>	
<p>DRAWN HKK</p>	<p>DATE 29.07.10</p>	<p>SIZE 6"</p>	<p>STROKE 5"</p>
<p>CHECKED HNS/NRG</p>	<p>DATE 29.07.10</p>	<p>TITLE PIPING AND INSTRUMENTATION DIAGRAM (FRAME OIL SCHEMATIC)</p>	
<p>APPROVED KMP/BNS</p>	<p>DATE 29.07.10</p>	<p>SIZE R</p>	<p>CAD FILE B383E5P2</p>
<p>DO NOT SCALE THIS DRAWING ALL DIMENSIONS ARE IN MM.</p>		<p>DWG NO. RIN-60600FE</p>	<p>REV. 2</p>
<p>SCALE-N.T.S</p>		<p>SHEET 5 OF 6</p>	

4

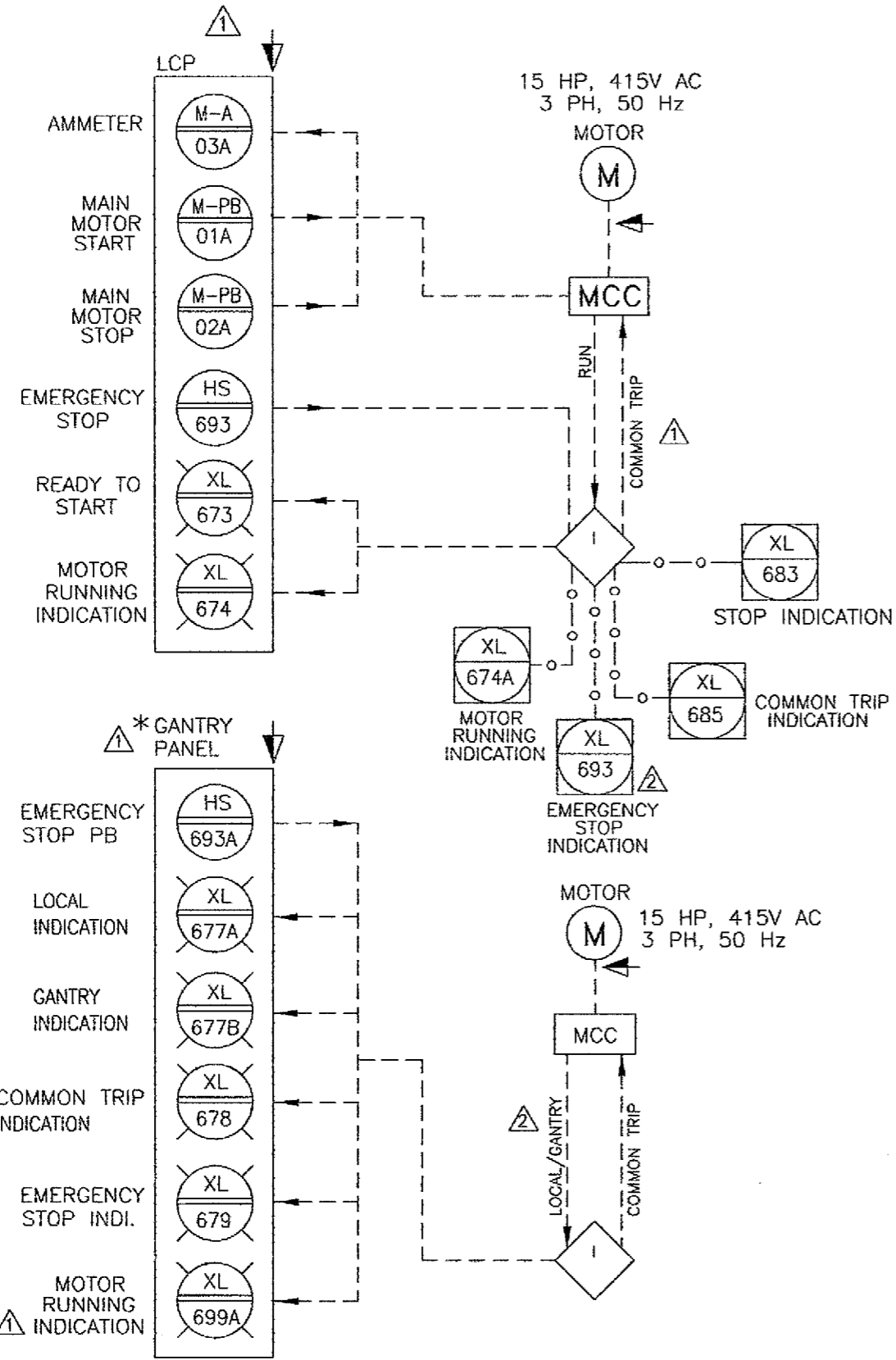
3

2

1

MAIN MOTOR SCHEMATIC

ITEM NO. : GB-7651A



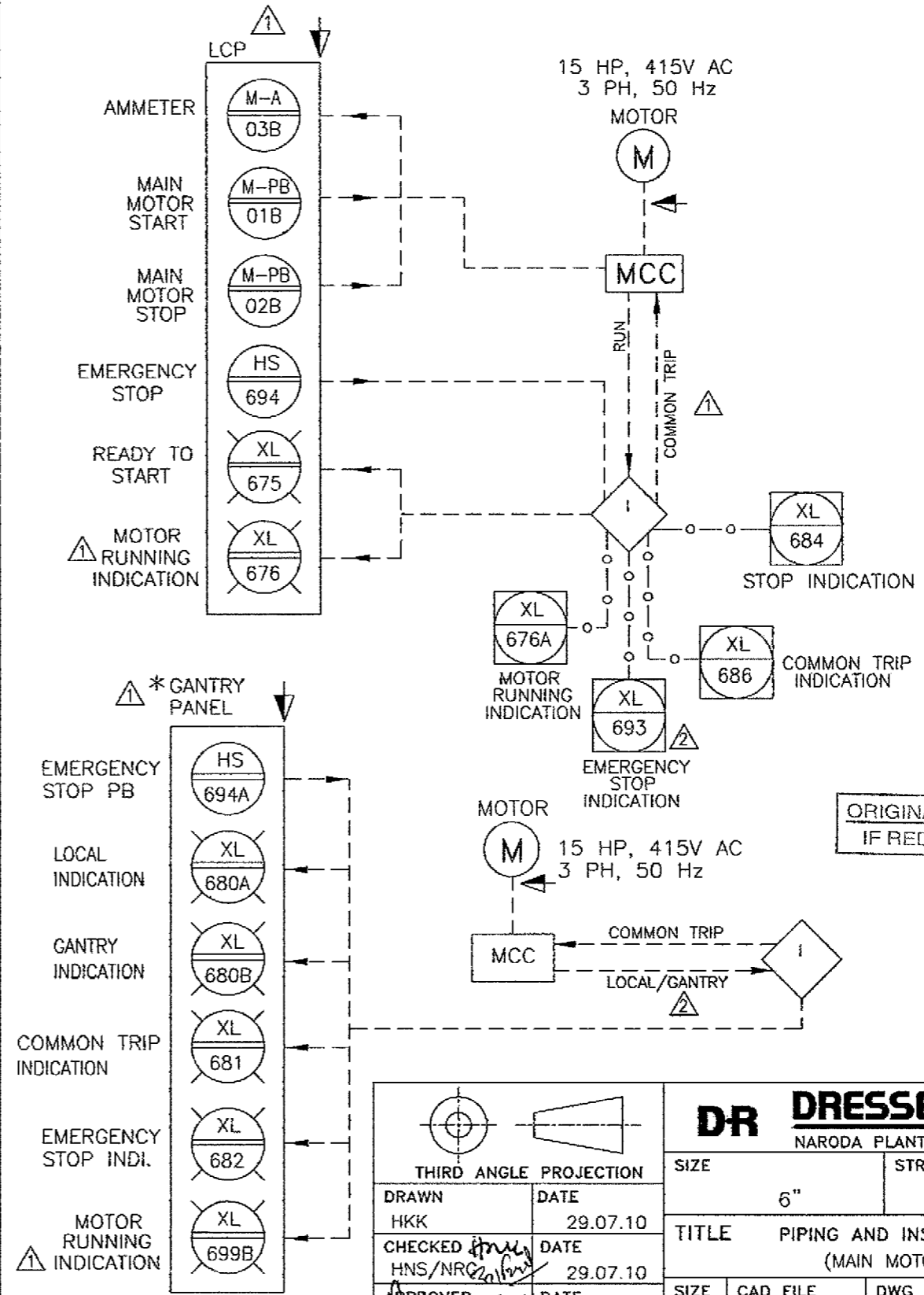
* GANTRY PANEL IS COMMON FOR BOTH MACHINE HAVING DIFFERENT INDICATIONS.

4

3

MAIN MOTOR SCHEMATIC

ITEM NO. : GB-7651B



THIRD ANGLE PROJECTION		DR DRESSER-RAND NARODA PLANT, AHMEDABAD.			
SIZE	6"	STROKE	5"	TYPE	ESH 1, NL2
TITLE		PIPING AND INSTRUMENTATION DIAGRAM (MAIN MOTOR SCHEMATIC)			
SIZE	R	CAD FILE	B383E5P2	DWG NO.	RIN-60600FE
REV.	2	SCALE-N.T.S		SHEET 6 OF 6	

REVISIONS					
REV.	DESCRIPTION	DATE	DRN	CHK	APP
1	REVISED AS PER CLIENT COMMENTS	16.09.10	HKK	HNS/NRG	KMP/BNS
2	REVISED AS PER CLIENT COMMENTS	30.10.10	E-CAD	HNS/NRG	KMP/BNS

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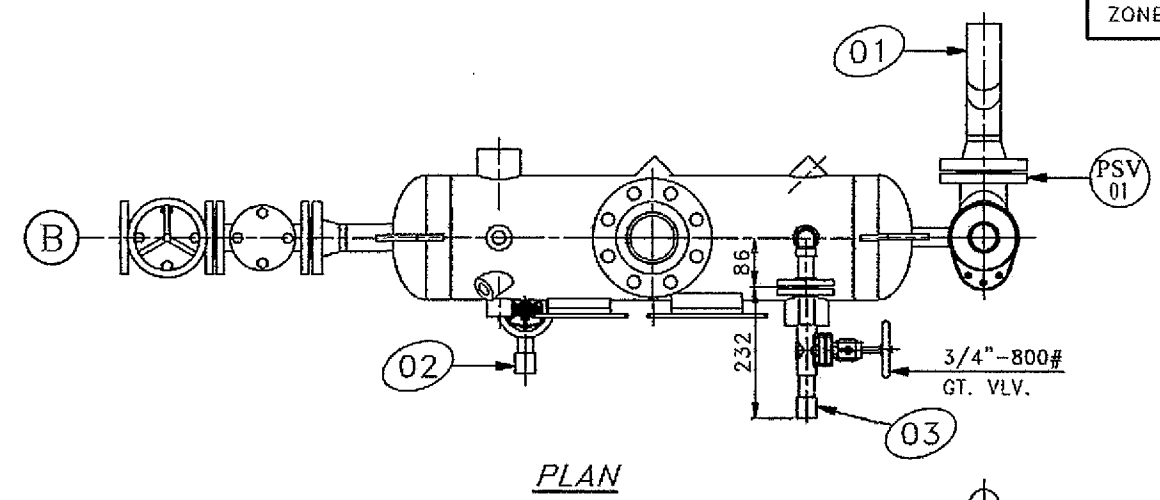
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3

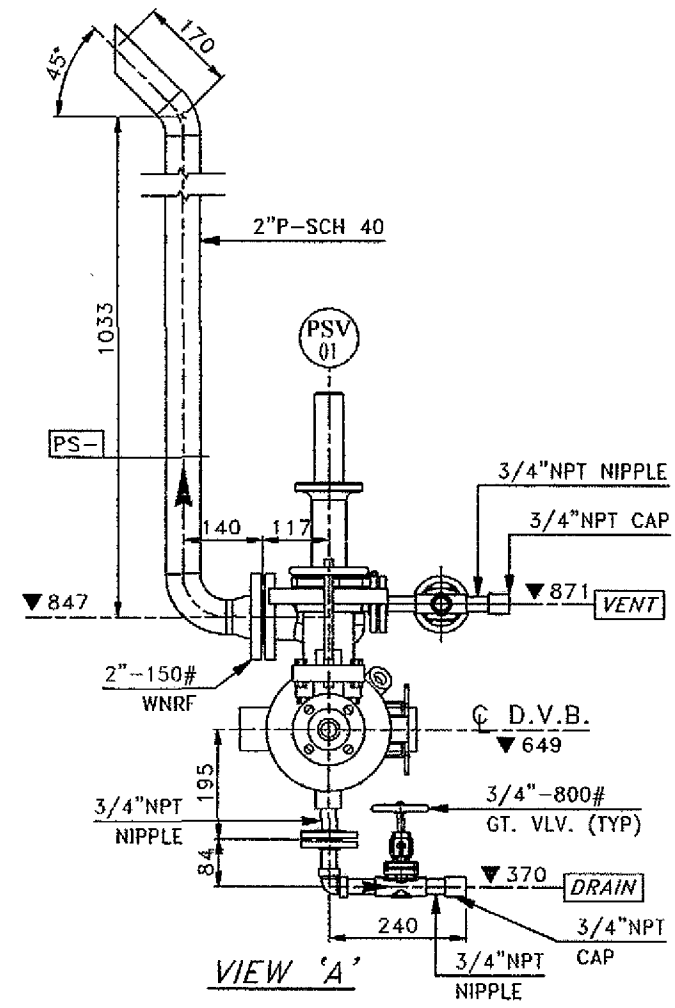
2

1

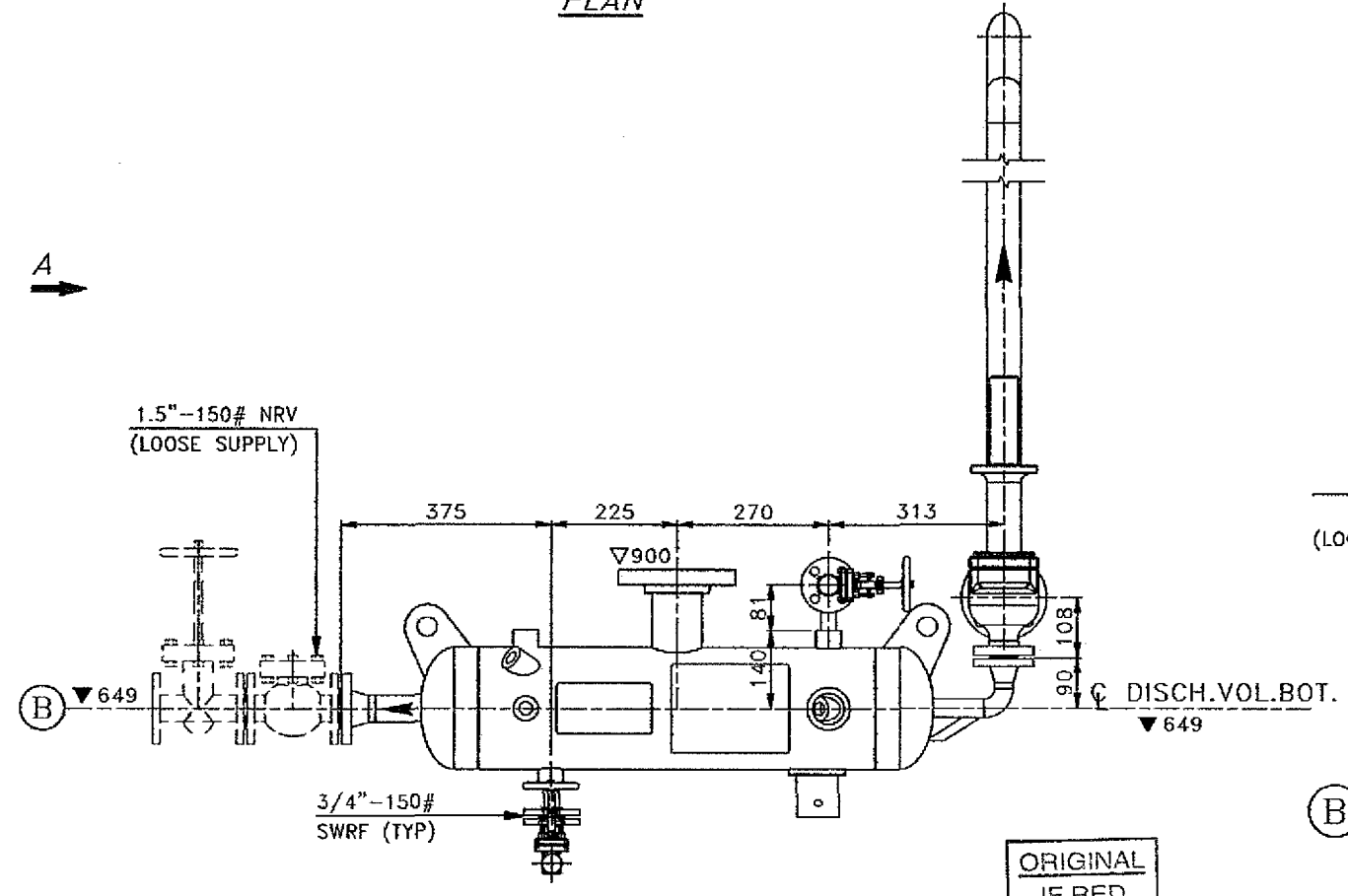
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



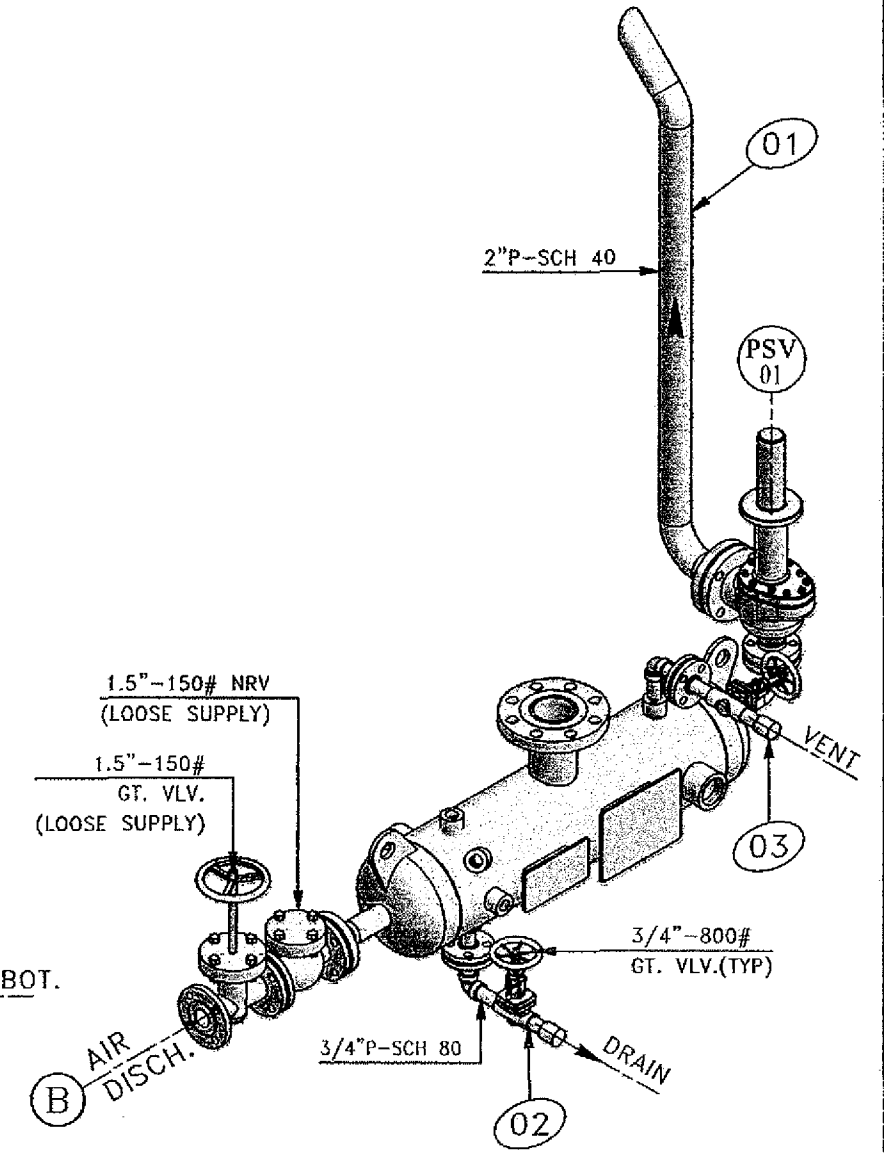
PLAN



VIEW 'A'



ELEVATION



ORIGINAL
IF RED

- NOTES :
1. ALL DIMENSIONS ARE THEORETICAL & SHOULD BE AS PER ACTUAL MEASUREMENTS AT ASSEMBLY.
 2. ▽ DENOTES ELEVATION OF PIPES AT BOTTOM (B.O.P.)
 3. ▽(.....) DENOTES ELEVATION OF CENTRE LINE OF PIPE.
 4. ALL DIMENSIONS & ELEVATIONS ARE IN MM.
 5. PIPES TO BE CUT FOR SUITABLE LENGTHS. THEREAFTER ONF/BOTH ENDS TO BE MACHINED & SUITABLY CHAMFERED FOR BUTT WELDING.
 6. UNLESS OTHERWISE STATED FLANGE BOLT HOLES TO BE OFF CENTRES & ALL BENDS 90~ LONG RADIUS.
 7. SHOP FABRICATED PIPING WHICH HAS MAKE UP PIPE WELDS OR LOOSE FLANGES SHALL BE 75 MM LONGER AT WELD POINT THAN DIMENSIONS SHOWN.
 8. FABRICATOR SHALL MARK SITE WELDS REQUIRED TO FACILITATE TRANSPORTATION.
 9. WHERE REQUIRED, CUT THREADED END OF NIPPLE SUITABLY.
 10. PUT METALLIC TAGS.
 11. REF. PIPE SUPPORT CLAMP DRG.NO. RIN.9128A.
 12. SUITABLE STRUCTURE SUPPORTS TO BE PROVIDED BY PURCHASER.
 13. ALL PIPE SPOOL TAG NO. TO BE PREFIXED BY "RIN-52380A"
 14. FOR STANDARD WELDING JOINT DETAIL REFER DRAWING NO. A028, REV.0
- PS - PIPE SUPPORT

CLIENT : DRESSER RAND, CANADA.
 END USER : ROCHESTER INSTITUTE OF TECHNOLOGY
 CLIENT'S REF. : 195562
 PROJECT : COMPRESSOR FOR TRAINING PURPOSE
 D-R REF. : X-45114/297-E-100310
 D-R MODEL : 6" X 5" ESH-1,NL2
 SERVICE : AIR
 QUANTITY : ONE NO.

DESIGN PRE.	7 Kg/cm ² g	RADIOGRAPHY	NIL	CHG TO: -
DESIGN TEMP.	-	PAINTING	D-R STD	HEAT TREATMENT NIL
OPER. PRE.	2.57 Kg/cm ² g	TESTING	HYD. TEST	DRAWN JJM <i>[Signature]</i> DATE 06.05.10
OPER. TEMP.	162 °C	ARRGT. DWG.	FIN-52380	CHECKED KATU / PVM <i>[Signature]</i> DATE 19.07.10
HYD. TEST. PRE.	10.5 Kg/cm ² g	FLOW DWG. (P&I DIAG.)	RIN-60600EF	APPROVED KM <i>[Signature]</i> DATE 20.07.10

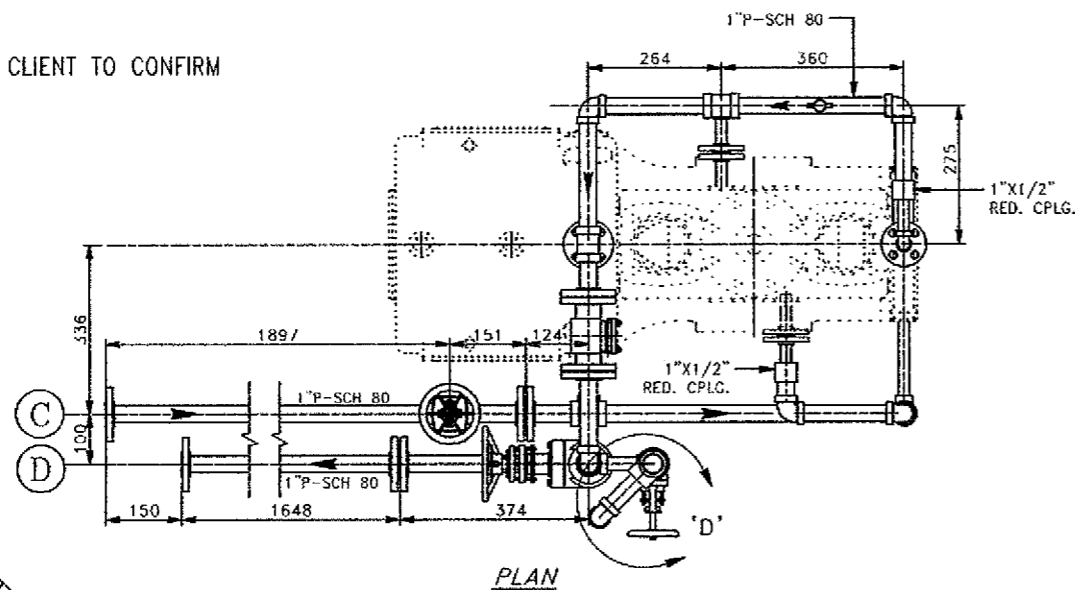
DO NOT SCALE THIS DRAWING UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM.

D-R DRESSER-RAND		
NARODA PLANT, AHMEDABAD.		
SIZE 6"	STROKE 5"	TYPE ESH-1, NL2
NAME OF PART ISO PIPING FOR GAS DISCHARGE		
SIZE R	CAD FILE X114GS10	DWG NO. RIN-52380A
SCALE NTS	WT. LBS	REV. 0
SHEET 1 OF 1		

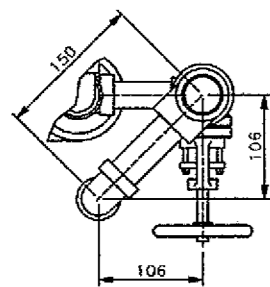
REVISIONS					
ZONE	REV	DESCRIPTION	DATE	DRN.	CHKD. APPD.
-	1	REVISED AS PER CLIENT'S COMMENT	19.07.10	JAM	PVM / ATU



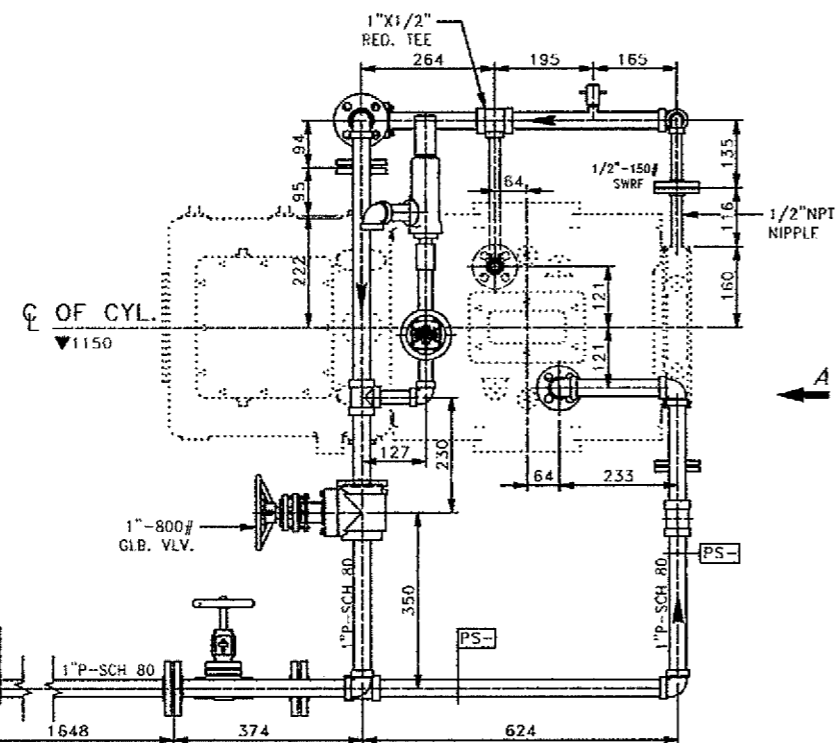
CLIENT TO CONFIRM



PLAN

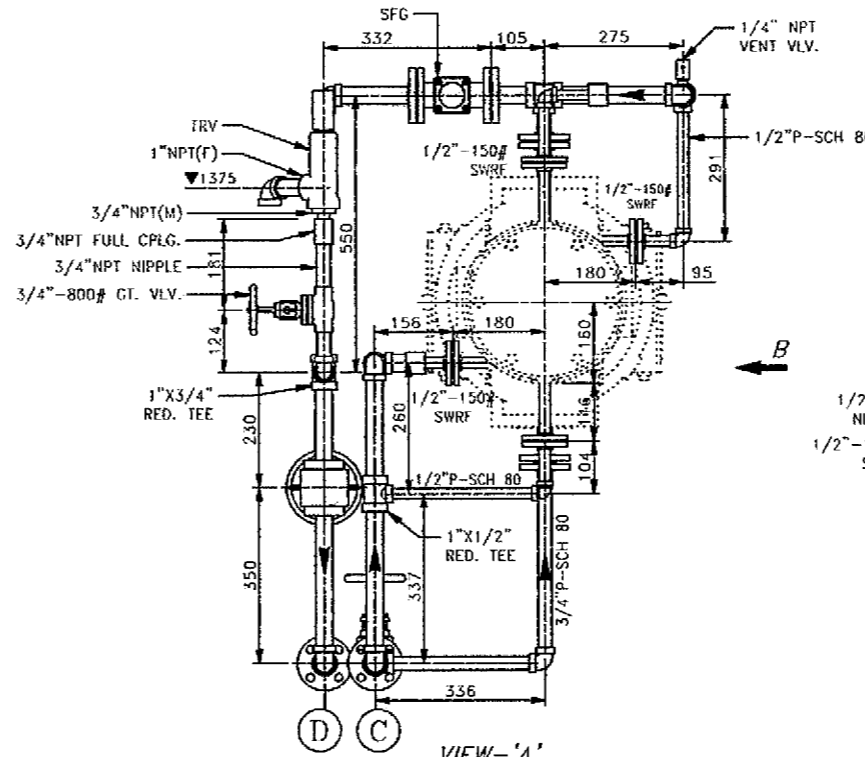


DETAIL - 'D'

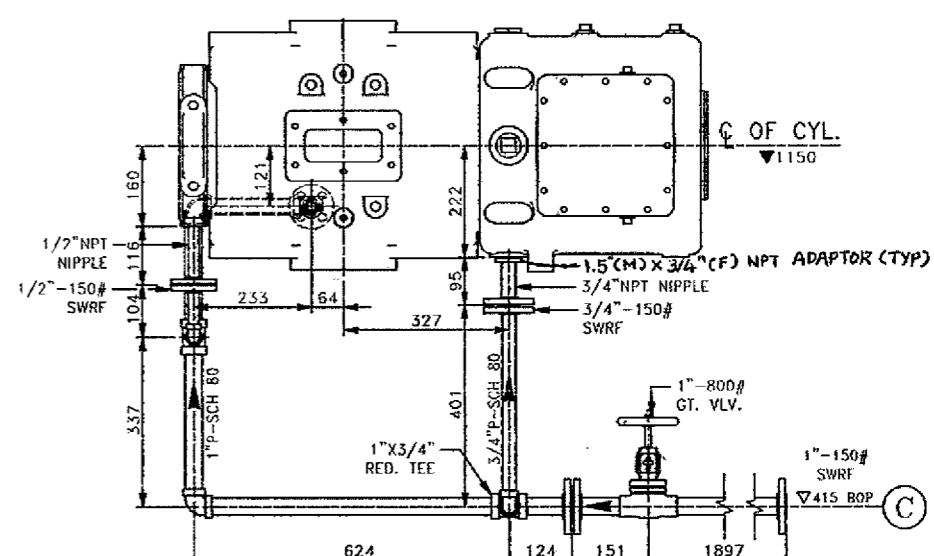
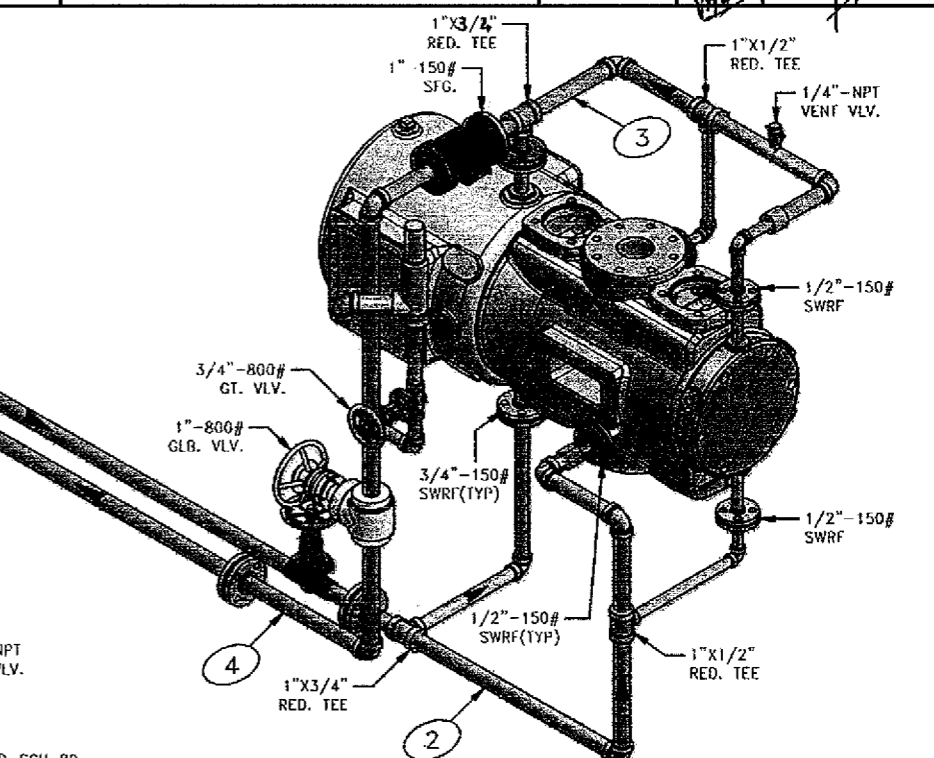


ELEVATION

ORIGINAL IF RED



VIEW - 'A'



VIEW - 'B' (ONLY SUPPLY PIPING)

- NOTES :
1. ALL DIMENSIONS ARE THEORETICAL & SHOULD BE AS PER ACTUAL MEASUREMENTS AT ASSEMBLY.
 2. ▼ DENOTES ELEVATION OF PIPES AT BOTTOM (B.O.P.)
 3. ▼ (.....) DENOTES ELEVATION OF CENTRE LINE OF PIPE.
 4. ALL DIMENSIONS & ELEVATIONS ARE IN MM.
 5. PIPES TO BE CUT FOR SUITABLE LENGTHS. THEREAFTER ONE/BOTH ENDS TO BE MACHINED & SUITABLY CHAMFERED FOR BUTT WELDING.
 6. UNLESS OTHERWISE STATED FLANGE BOLT HOLES TO BE OFF CENTRES & ALL BENDS 90° LONG RADIUS.
 7. SHOP FABRICATED PIPING WHICH HAS MAKE UP PIPE WELDS OR LOOSE FLANGES SHALL BE 75 MM LONGER AT WELD POINT THAN DIMENSIONS SHOWN.
 8. FABRICATOR SHALL MARK SITE WELDS REQUIRED TO FACILITATE TRANSPORTATION.
 9. WHERE REQUIRED, CUT THREADED END OF NIPPLE SUITABLY.
 10. PUT METALLIC TAGS.
 11. REF. PIPE SUPPORT CLAMP DRG.NO.WIN.9128A.
 12. SUITABLE STRUCTURE SUPPORTS TO BE PROVIDED BY PURCHASER.
 13. ALL PIPE SPOOL TAG NO. TO BE PREFIXED BY "RIN-52380B"

CLIENT : DRESSER RAND, CANADA.
 END USER : ROCHESTER INSTITUTE OF TECHNOLOGY
 CLIENT'S REF. : EXE-6039
 PROJECT : COMPRESSOR FOR TRAINING PURPOSE
 D-R REF. : X-45114/297-E-100310
 D-R MODEL : 6" X 5" ESH-1,NL2
 SERVICE : AIR
 QUANTITY : ONE NO.

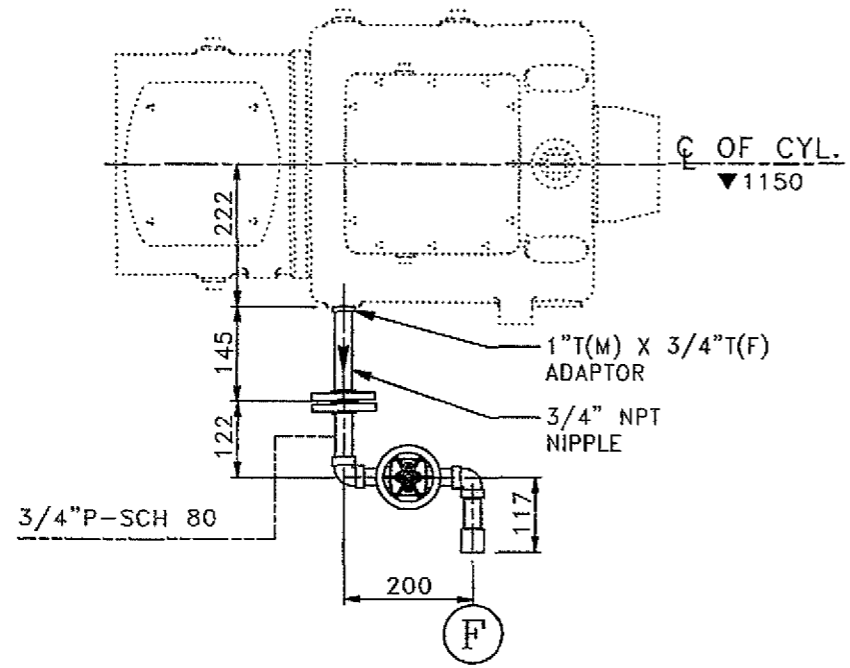
DESIGN PRE.	5 Kg/cm ² g	RADIOGRAPHY	NIL
DESIGN TEMP.	80°C	PAINTING	D-R STD
OPER. PRE.	4 Kg/cm ² g	TESTING	HYD. TEST
OPER. TEMP.	32°C	ARRGT. DWG.	FIN-52380
HYD. TEST. PRE.	7.5 Kg/cm ² g	FLOW DWG. (P&I DIAG.)	RIN-60600EF

CHG TO: -	
HEAT TREATMENT NIL	
DRAWN JJM	DATE 28.04.10
CHECKED ATU / PVM	DATE 03.05.10
APPROVED KMP	DATE 03.05.10
DO NOT SCALE THIS DRAWING UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM.	

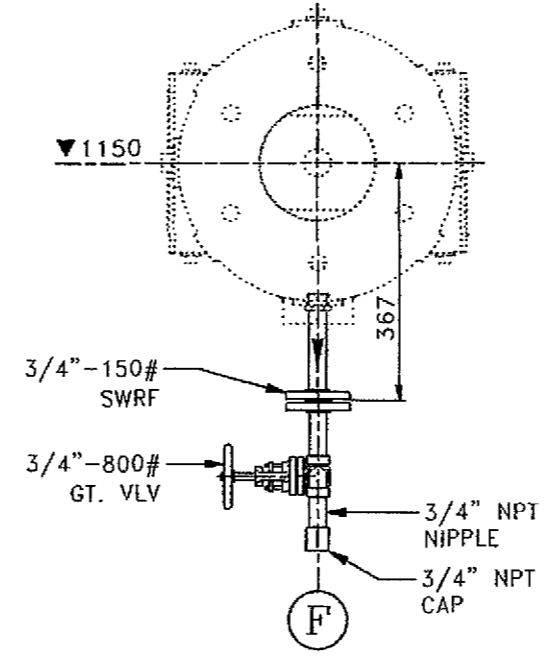
D-R DRESSER-RAND
 NARODA PLANT, AHMEDABAD.

SIZE	STROKE	TYPE	
6"	5"	ESH-1, NL2	
NAME OF PART ISO PIPING FOR COOLING WATER SUPPLY / RETURN			
SIZE	CAD FILE	DWG NO.	REV.
R	X114CW10	RIN-52380B	1
SCALE	NTS	WT.	LBS
		SHEET 1 OF 1	

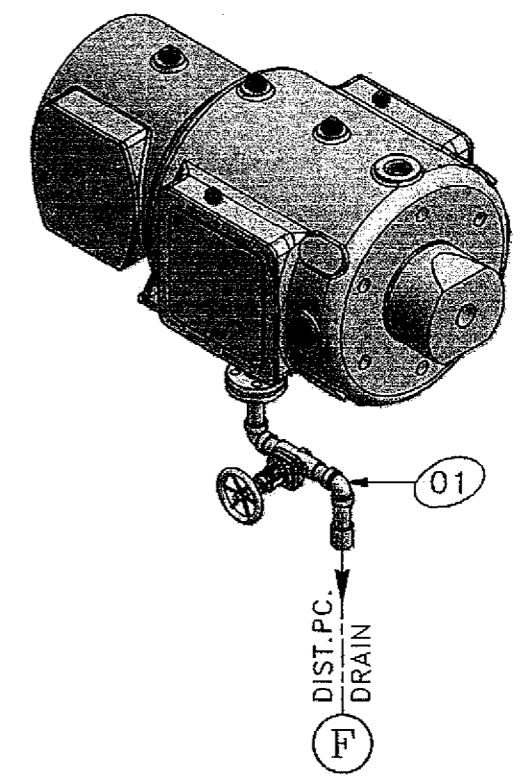
REVISIONS						
ZONE	REV	DESCRIPTION	DATE	DRN.	CHKD.	APPD.
-	1	REVISED AS PER CLIENT'S COMMENT	19.07.10	JJM	PVM	ATU



ELEVATION



VIEW 'A'



ORIGINAL
IF RED

ORIGINAL
IF RED

- NOTES :
1. ALL DIMENSIONS ARE THEORETICAL & SHOULD BE AS PER ACTUAL MEASUREMENTS AT ASSEMBLY.
 2. ▼ DENOTES ELEVATION OF PIPES AT BOTTOM (B.O.P.)
 3. ▼ (.....) DENOTES ELEVATION OF CENTRE LINE OF PIPE.
 4. ALL DIMENSIONS & ELEVATIONS ARE IN MM.
 5. PIPES TO BE CUT FOR SUITABLE LENGTHS. THEREAFTER ONE/BOTH ENDS TO BE MACHINED & SUITABLY CHAMFERED FOR BUTT WELDING.
 6. UNLESS OTHERWISE STATED FLANGE BOLT HOLES TO BE OFF CENTRES & ALL BENDS 90° LONG RADIUS.
 7. SHOP FABRICATED PIPING WHICH HAS MAKE UP PIPE WELDS OR LOOSE FLANGES SHALL BE 75 MM LONGER AT WELD POINT THAN DIMENSIONS SHOWN.
 8. FABRICATOR SHALL MARK SITE WELDS REQUIRED TO FACILITATE TRANSPORTATION.
 9. WHERE REQUIRED, CUT THREADED END OF NIPPLE SUITABLY.
 10. PUT METALLIC TAGS.
 11. REF. PIPE SUPPORT CLAMP DRG.NO. RIN.9128A.
 12. SUITABLE STRUCTURE SUPPORTS TO BE PROVIDED BY PURCHASER.
 13. ALL PIPE SPOOL TAG NO. TO BE PREFIXED BY "RIN-52380C"

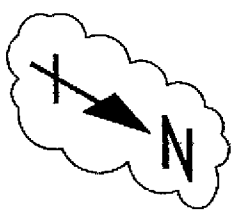
CLIENT : DRESSER RAND, CANADA.
 END USER : ROCHESTER INSTITUTE OF TECHNOLOGY
 CLIENT'S REF. : EXE-6039
 PROJECT : COMPRESSOR FOR TRAINING PURPOSE
 D-R REF. : X-45114/297-E-100310
 D-R MODEL : 6" X 5" ESH-1,NL2
 SERVICE : AIR
 QUANTITY : ONE NO.

DESIGN PRE.	7 Kg/cm ² g	RADIOGRAPHY	NIL	CHG TO: -
DESIGN TEMP.	-	PAINTING	D-R STD	HEAT TREATMENT NIL
OPER. PRE.	ATM Kg/cm ² g	TESTING	HYD. TEST	DRAWN JJM <i>[Signature]</i> DATE 28.04.10
OPER. TEMP.	AMB	ARRGT. DWG.	FIN-52380	CHECKED ATU / PVM DATE 03.05.10
HYD. TEST. PRE.	10.5 Kg/cm ² g	FLOW DWG. (P&I DIAG.)	RIN-60600EF	APPROVED [Signature] DATE 03.05.10

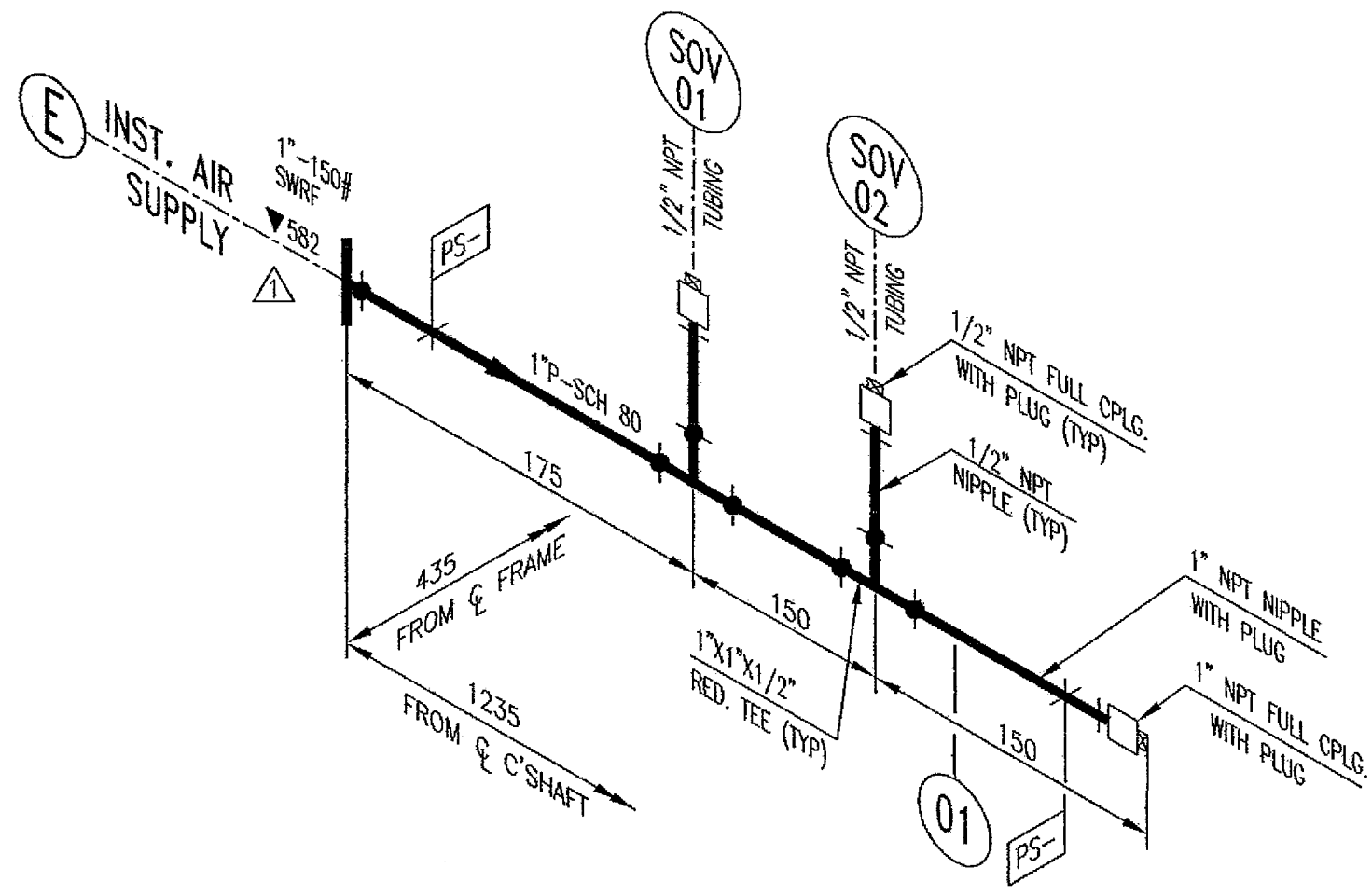
D-R DRESSER-RAND NARODA PLANT, AHMEDABAD.			
SIZE 6"	STROKE 5"	TYPE ESH-1, NL2	
NAME OF PART ISO PIPING FOR DISTANCE PIECE DRAIN			
SIZE R	CAD FILE X114VD10	DWG NO. RIN-52380C	REV. 1
SCALE	NTS	WT.	LBS SHEET 1 OF 1

ORIGINAL
IF RED

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	DR. CH. AP.
	1	REVISED AS PER CLIENT'S COMMENT	19.07.10	JJM PVM KMP



CLIENT TO CONFIRM



MATERIAL: SS 304

- NOTES:
1. ALL DIMENSIONS ARE THEORETICAL & SHOULD BE AS PER ACTUAL MEASUREMENTS AT ASSEMBLY.
 2. ▽ DENOTES ELEVATION OF PIPES AT BOTTOM (B.O.P.)
 3. ▽ (.....) DENOTES ELEVATION OF CENTRE LINE OF PIPE.
 4. ALL DIMENSIONS & ELEVATIONS ARE IN MM.
 5. PIPES TO BE CUT FOR SUITABLE LENGTHS. THEREAFTER ONE/BOTH ENDS TO BE MACHINED & SUITABLY CHAMFERED FOR BUTT WELDING.
 6. UNLESS OTHERWISE STATED FLANGE BOLT HOLES TO BE OFF CENTRES & ALL BENDS 90° LONG RADIUS.
 7. SHOP FABRICATED PIPING WHICH HAS MAKE UP PIPE WELDS OR LOOSE FLANGES SHALL BE 75 MM LONGER AT WELD POINT THAN DIMENSIONS SHOWN.
 8. FABRICATOR SHALL MARK SITE WELDS REQUIRED TO FACILITATE TRANSPORTATION.
 9. WHERE REQUIRED, CUT THREADED END OF NIPPLE SUITABLY.
 10. PUT METALLIC TAGS.
 11. REF. PIPE SUPPORT CLAMP DRG. NO. WJN-9128A.
 12. SUITABLE STRUCTURE SUPPORTS TO BE PROVIDED BY PURCHASER.
 13. ALL PIPE SPOOL TAG NO. TO BE PREFIXED BY "RIN-52380D".
 14. FOR STANDARD WELDING JOINT DETAIL REFER DRAWING NO. AG28, REV.0
- PS- PIPE SUPPORT

CLIENT : DRESSER-RAND, CANADA.
 END USER : ROCHESTER INSTITUTE OF TECHNOLOGY
 CLIENT'S REF. : EXE-6039
 PROJECT : COMPRESSOR FOR TRAINING PURPOSE
 D-R REF. : X-45114/297-E-100310
 D-R MODEL : 6" X 5" ESH-1,NL2
 SERVICE : AIR
 QTY. : ONE NO.

DESIGN PRE.	10 Kg/Cm ² g	RADIOGRAPHY	NIL
DESIGN TEMP.	70°C	PAINTING	PICKLING & PASSIVATION
OPER. PRE.	5-7 (MAX) Kg/Cm ² g	TESTING	HYD. TEST
OPER. TEMP.	40°C	ARRGT. DWG.	FIN-52380
HYD. TEST. PRE.	15 Kg/Cm ² g	FLOW DWG. (P & I DIAG.)	RIN-60600EF

HEAT TREATMENT NIL	
DRAWN JJM <i>[Signature]</i>	DATE 28.04.10
CHECKED KMP <i>[Signature]</i>	DATE 03.05.10
APPROVED KMP <i>[Signature]</i>	DATE 05.03.10

DR DRESSER-RAND
 NARODA PLANT, AHMEDABAD.

SIZE 6"	STROKE 5"	TYPE ESH-1,NL2
NAME OF PART ISO PIPING LAYOUT FOR INSTRUMENT AIR SUPPLY		
SIZE R	CAD FILE X114IA11	DWG NO. RIN-52380D
SCALE N.T.S.	WT. LBS	REV. 1

SHEET 1 OF 1