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THIS DRAWING IS TO BE DONE UPTO MAIN MEMBER HEIGHT OF BASE PLATE TO AVOID VIBRATIONS.

NOTE : GROUT BASE PLATE UPTO LEVEL A
NOTE : ALL DEMENSIONS ARE IN mm EXCEPT SPECIFIED.

KEPL SCOPE OF SUPPLY

SYMBOL LEGEND: ■ YES □ NO

NO.	DESCRIPTION	KEPL SCOPE OF SUPPLY	KBL SCOPE OF SUPPLY	
1	STEAM INLET CONN. COMPANION FLANGE	■	□	
2	EXHAUST CONN. COMPANION FLANGE	■	□	
3	INLET CONN. BOLTING HARDWARES	■	□	
4	EXAUST CONN. BOLTING HARDWARES	■	□	
5	VERTICAL POSITIONING SCREWS	■	□	
6	HORIZONTAL POSITIONING SCREWS	■	□	
7	MOUNTING HARDWARE	■	□	
8	SHIMS	■	□	
9	EXHAUST RELIEF VALVE	□	□	
10	CLOSING PLATES FOR FLANGES	■	□	
11	STEAM TRAPS AND VALVES FOR DRAINS	■	□	
12	BLANKET TYPE INSULATION	■	□	
13	FOUNDATION BOLT	■	□	
14	COUPLING WITH GUARD (TUR.+GEAR BOX)	■	□	1
15	COUPLING GUARD (GEAR BOX +PUMP)	■	□	1
16	COUPLING-DRIVEN EQUIP. (CW PUMP)	□	■	1
17	CW PUMP SUC. SIDE REDUCER WITH FLANGE & HARDWARE (48"x24")	□	■	1
18	CW PUMP DIS. SIDE REDUCER WITH FLANGE & HARDWARE (20"x34")	□	■	1
19	48" BASKET STRAINER, 2 NOS. 48" COUNTER FLANGES (WELD NECK, 150 R.F.) FOR SUCTION STRAINER	□	■	2
20	TURBINE INLET SIDE EXPANDER WITH FLANGE & HARDWARE (4"x6")	■	□	1
21	TURBINE EXHAUST SIDE EXPANDER WITH FLANGE & HARDWARE (12"x14")	■	□	1
22	2 NOS. 6" CL. 600 COUNTER FLANGE & HARDWARE FOR STRAINER	■	□	1
23	PUMP ASSY. & ALINGMENT WITH TURBINE ON BASE PLATE (UNITISATION)	□	■	1
24	CW PUMP		■	1

GENERAL NOTES:

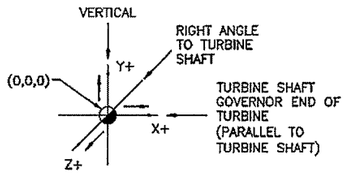
1. TURBINE BOLTS IN INLET AND EXHAUST CONNECTIONS TO STRADDLE CENTERLINE AS SHOWN. INLET AND EXHAUST CONNECTIONS WILL MATCH WITH ANSI STANDARD CONNECTIONS.
2. TURBINE BEARINGS:
   - □ RING OILED
   - □ RING OILED(USE EQUAL DIESTER SYNTHETIC OIL OR EQUAL)
   - □ RING OILED CIRCULATING SYSTEM
   - ■ PRESSURE LUBED
3. ALL DIMENSIONS ARE IN MILLIMETERS. UNLESS OTHERWISE SPECIFIED.
4. ALL DIMENSIONS ±3.0 UNLESS OTHERWISE SPECIFIED.
5. BASE PLATE IS SUITABLE FOR CEMENTOUS GROUT. GROUT BASE PLATE UP TO LEVEL 'G' AFTER ROUGH ALIGNMENT.
6. BASEPLATE WILL BE M.S. FABRICATED.
7. FOUNDATION SHOULD BE DESIGNED FOR STATIC LOAD = 10,000 kgs 1

⊕ CENTER-OF-GRAVITY

INSTALLATION NOTES:

1. TURBINE COMPLETE WITH DRIVEN EQUIPMENT SHOULD BE SUPPORTED ON A RIGID AND SUBSTANTIAL FOUNDATION.
2. ALL FORCES AND MOMENTS EXERTED BY STEAM PIPING CONNECTED TO THE TURBINE MUST NOT EXCEED TO THE LIMITS SPECIFIED BY PART 8 OF NEMA STANDARD SM23-1991.
3. 1 AN ATMOSPHERIC RELIEF VALVE, CAPABLE OF PASSING 14944 KG/HR, MUST BE INSTALLED BY THE PURCHASER BETWEEN THE TURBINE EXHAUST FLANGE AND THE FIRST SHUT OFF OR ISOLATION VALVE, AS PRESCRIBED IN SECTION 8.7 OF NEMA SM23-1991. THIS VALVE SHOULD BE SET TO BEGIN TO OPEN AT 109.56 PSIG [7.7 Kg/cm^{2}G] WITH FULL RELIEF AT NO GREATER THAN 10% ABOVE THE SET PRESSURE. 1
4. SENTINEL VALVE SET AT 110 PSIG [7.73 Kg/cm^{2}G]..
5. A STEAM TRAP SHOULD BE INSTALLED IN THE LOW POINT OF THE EXHAUST LINE TO PREVENT ACCUMULATION OF WATER IN THE TURBINE CASING. WHEN USED FOR STAND-BY SERVICE, AN ADDITIONAL STEAM TRAP IS REQUIRED IN THE INLET LINE.
6. DOWEL HOLES ARE TO BE REAMED AND DOWELS FITTED AFTER FINAL COUPLING ALIGNMENT.
7. THIS TURBINE IS NOT CAPABLE OF SUSTAINED REVERSE (OPPOSITE DIRECTION FROM INTENDED) ROTATION. REVERSE ROTATION OF MORE THAN 5 REVOLUTIONS MAY CAUSE DAMAGE TO THE TURBINE OR RELATED AUXILIARIES. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT ANY OCCURRENCE OF REVERSE ROTATION.
8. ALL DRILLED HOLES THRU 1.00" [25.4 mm] DIAMETER ARE SIZED 0.125" [3.2 mm] LARGER THAN THE BOLT OR STUD SIZE REQUIRED. ALL DRILLED HOLES LARGER THAN 1.00" [25.4 mm] DIAMETER ARE SIZED 0.188" [4.8 mm] LARGER THAN THE BOLT OR STUD SIZE REQUIRED.
9. FOR PRESSURE LUBED SYSTEMS, LOCATION OF OIL RESERVOIR MUST ALLOW FOR PROPER DRAINAGE OF THE OIL. THE MINIMUM VERTICAL ELEVATION FROM THE CENTERLINE OF THE TURBINE TO THE OIL LEVEL WITHIN THE RESERVOIR MUST BE 10.00" [254 mm] WITH A MAXIMUM OF 84.00" [2134 mm]. ALL OIL DRAIN PIPING MUST SLOPE TOWARD THE RESERVOIR. ELEVATIONS OUTSIDE OF THESE PARAMETERS MUST BE REVIEWD BY KEPL.
10. 1 DYNAMIC LOAD-12500 KG.
11. ALIGNMENT DATA :-
    DATA IS EXPRESSED IN INCHES, BASED ON DESIGN OPERATING CONDITIONS AND USES THE COORDINATE SYSTEM SHOWN. SHOWN AS ◐ BELOW.

AXIS OF MOVEMENT	INLET FLANGE (NORM / NO-LOAD)	EXHAUST FLANGE (NORM / NO-LOAD)	SHAFT AT EXHAUST END BRG. (NORM / NO-LOAD)	SHAFT AT GOVERNOR END BRG. (NORM / NO-LOAD)
X (in)	0.1223 / 0.1393	0.0221 / 0.0328	N/A	N/A
Y (in)	-0.0345 / -0.0345	-0.0237 / -0.0381	0.0079 / 0.0079	0.0079 / 0.0079
Z (in)	-0.1173 / -0.1173	0.0703 / 0.1023	N/A	N/A
X (mm)	3.1064 / 3.5382	0.5613 / 0.8331	N/A	N/A
Y (mm)	-0.8763 / -0.8763	-0.6020 / -0.9677	0.2007 / 0.2007	0.2007 / 0.2007
Z (mm)	-2.9794 / -2.9794	1.7856 / 2.5984	N/A	N/A



12. STEAM PIPING MUST BE CONFIGURED SO AS NOT TO IMPOSE UNDUE STRAIN ON THE TURBINE. THE MAXIMUM ALLOWABLE FORCES AND MOMENTS ARE DEFINED IN SECTION 8.4.6 OF NEMA SM23-1991 AND ARE AS FOLLOWS:

THE TOTAL RESULTANT FORCE (FR) AND TOTAL RESULTANT MOMENT (MR) IMPOSED ON THE TURBINE AT ANY CONNECTION SHOULD NOT EXCEED THE FOLLOWING:

AT TURBINE INLET, 3 FR + MR ≤ 2000
FR MAX. = 667 lb [2965 N] WHEN MR=0
MR MAX. = 2000 lb-ft [2712 N-m] WHEN FR=0

AT TURBINE EXHAUST, 3 FR + MR ≤ 4667
FR MAX. = 1556 lb [6919 N] WHEN MR=0
MR MAX. = 4667 lb-ft [6327 N-m] WHEN FR=0

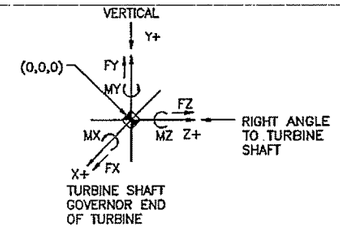
IN ADDITION TO THE ABOVE LIMITS, THE COMBINED RESULTANTS OF FORCES (FC) AND MOMENTS (MC) OF THE INLET AND EXHAUST CONNECTIONS, RESOLVED AT THE CENTERLINE OF THE EXHAUST CONNECTION SHOULD NOT EXCEED THE FOLLOWING:

2FC + MC ≤ 2554
FC MAX. = 1277 lb [5681 N] WHEN MC=0
MC MAX. = 2554 lb-ft [3463 N-m] WHEN FC=0

FURTHER, THE COMPONENTS OF THESE RESULTANTS SHOULD NOT EXCEED THE FOLLOWING:

FX = 511 lb [2272 N] MX = 2554 lb-ft [3463 N-m]
FY = 1277 lb [5681 N] MY = 1277 lb-ft [1731 N-m]
FZ = 1022 lb [4544 N] MZ = 1277 lb-ft [1731 N-m]

THE ABOVE LIMITS ARE ABSOLUTE VALUES AND SIGN/ORIENTATION ARE DEFINED BY THE FOLLOWING:



1

REFERANCE DRG LIST	DRG. NO.	REV.
C.W. PUMP GA DRAWING	TF17010D14	00
LUBE OIL SYSTEM GA DRAWING	LOS501010010100	00
GEAR BOX G.A.	XGR501010010100	00
COUPLING	XCP501010010100	00

KIRLOSKAR BROTHERS LTD. PUNE

DDC 22/7/11

APPROXIMATE MASS	
ITEM	kg
TURBINE NET	1098
TURBINE ROTOR	196
TURBINE CASING, TOP HALF	179
GEAR BOX	1300
BARE PUMP	2950
1 BASE PLATE	3600
1 COUPLING GUARDS	50
1 COUPLING(TURBINE+GEAR-BOX)	200
1 COUPLING(GEAR BOX+PUMP)	115

DETAILS OF COOLING WATER PUMP			
MAKE	KIRLOSKAR BROTHERS LTD. KIRLOSKARVADI		
TYPE	20UPH3(M1)		
SPEED	989 RPM		
O/A NO.	F04711A004		
DETAILS OF GEAR BOX			
MAKE	TRIVENI ENGG. & INDUSTRIES LTD., MYSORE		
MODEL	HSG-320		
OUTPUT POWER	624 KW		
INPUT SPEED	3850 RPM	OUTPUT SPEED	989 RPM

API 671 SPACER TYPE COUPLING

NAMEPLATE RATING 673 HP. KW. TURBINE SPEED 3850 REV/MIN

INLET PRESS.(GAGE) 41.0 PSI kg/cm^2 INLET TEMP. 385 °F °C EXHAUST PRESS.(GAGE) 6.5 PSI kg/cm^2

QUANTITY OF HAND VALVES FURNISHED: ONE

TURBINE SERIAL NO. X10833K103022

ATMOSPHERIC PRESSURE: 14.7 PSIA

TURBINE RATED NORM/NORM	HV.	UPPER (U): N/A LOWER (L): OPEN	673 HP. KW.	3850 REV/MIN	INLET PRESS.(GAGE)	41.0 PSI kg/cm^2	INLET TEMP.	385 °F °C	EXHAUST PRESS.(GAGE)	6.5 PSI kg/cm^2
PUMP RATED NORM/NORM	HV.	UPPER (U): N/A LOWER (L): CLOSED	550 HP. KW.	3850 REV/MIN	INLET PRESS.(GAGE)	41.0 PSI kg/cm^2	INLET TEMP.	385 °F °C	EXHAUST PRESS.(GAGE)	6.5 PSI kg/cm^2
TURBINE RATED MIN/MIX	HV.	UPPER (U): N/A LOWER (L): OPEN	673 HP. KW.	3850 REV/MIN	INLET PRESS.(GAGE)	40 PSI kg/cm^2	INLET TEMP.	385 °F °C	EXHAUST PRESS.(GAGE)	7.0 PSI kg/cm^2

REV No.	DESCRIPTION	DRAWN	APPROVED	DATE
04	REVISED AS PER MARKED 1	SMK	MK	07.07.2011
03	REVISED AS PER MARKED 1	SMK	MK	24.05.2011
02	REVISED AS PER MARKED 1	SMK	MK	11.04.2011
01	REVISED AS PER MARKED 1	SMK	MK	23.03.2011
00	FIRST SUBMISSION FOR APPROVAL	SMK	MK	29.01.2011

KEPL REVIEW

KEPL W/O No.	50101 -- DRG. NO. KFO 50101 002 0100		
P.O. No. & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225		
KEPL ITEM No.	002	SCALE	NTS
QUANTITY	01	TURBINE MODEL	DYRH T IIIB
SHEET No.	1 OF 4	PARTYS ITEM No.	GAT 380 562C 3

MANUFACTURER :
KIRLOSKAR EBARA PUMPS LTD.
(TURBINE DIVISION)

CLIENT	BHARAT HEAVY ELECTRICALS LTD., HYDERABAD.
PROJECT	MRPL PHASE III REFINERY PROJECT.
CONSULTANT	ENGINEERS INDIA LTD.(EIL)
SERVICE	CONDENSER COOLING WATER PUMP

KIRLOSKAR BROTHERS LIMITED
KIRLOSKARVADI 416308 DIST. SANGLI(INDIA)

DRN.
CHD.
APPD.

GENERAL ARRGT. & FOUNDATION PLAN

REV. 04

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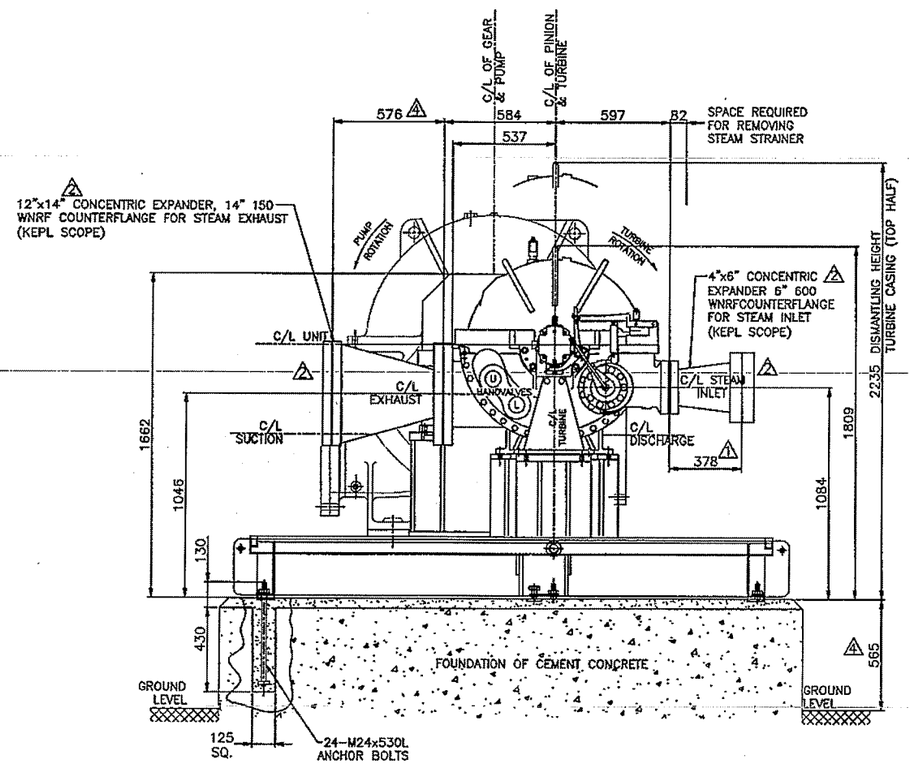
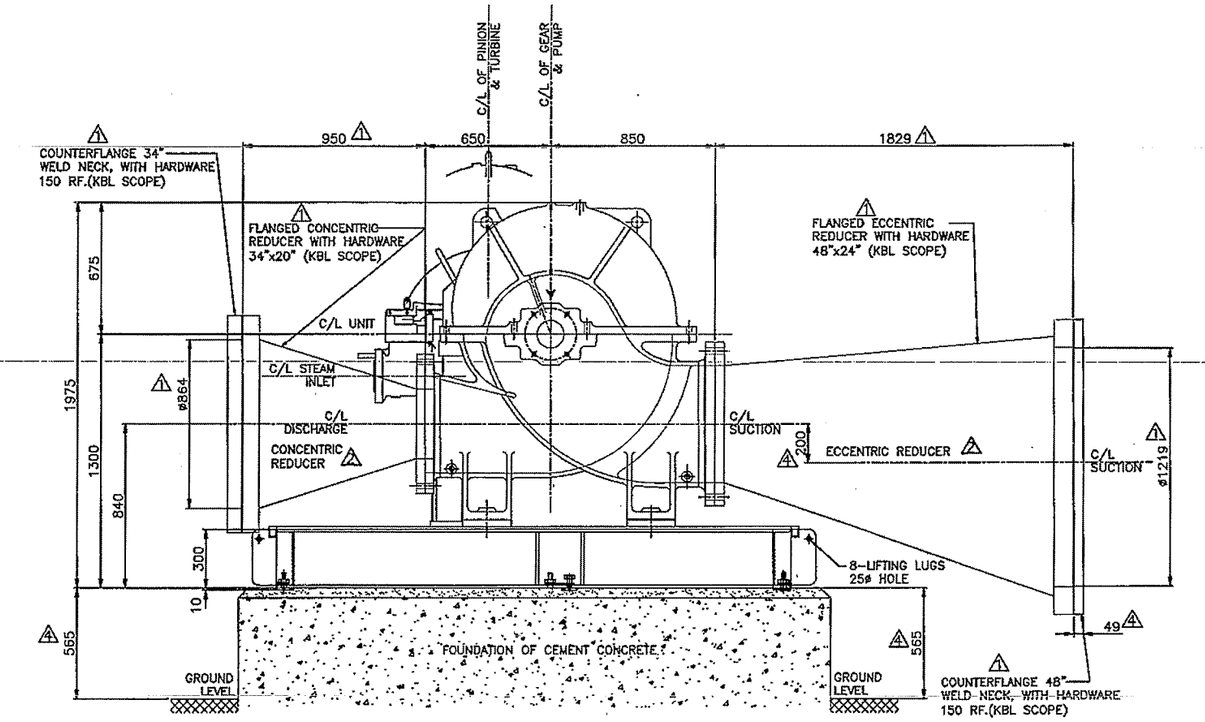
NOTE : GROUT BASE PLATE UPTO LEVEL A
NOTE : ALL DEMENSIONS ARE IN mm EXCEPT SPECIFIED.

△3 48" BASKET STRAINER, 2 NOS. 48" COUNTERFLANGE (WELD NECK, 150 RF) FOR SUCTION STRAINER ARE IN KBL SCOPE.

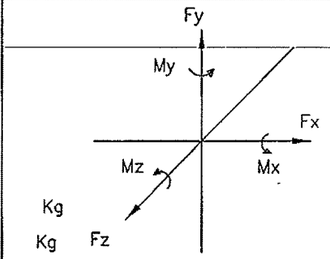


△2 VIEW FROM 'Y' WITH LOS SYSTEM



VIEW FROM 'X'

△1 KBL PUMP ALLOWABLE FORCES & MOMENTS



	ALLOWABLE FORCES(kg)			ALLOWABLE MOMENTS (Kgm)		
	Fx	Fy	Fz	Mx	My	Mz
[illegible]	±317	±702	±634	±483	±241	±241
DEL.	±286	±717	±573	±437	±218	±218

BHEL PROJECT ENGINEERING
CODE
1 NO COMMENTS
2 COMMENTS AS MARKED CLEARED FOR MANUFACTURE
3 COMMENTS AS MARKED
4 RETAINED FOR INFORMATION
INCASE OF CODE- 2/3 RESUBMIT REVISED DOCS
THIS APPROVAL DOES NOT CONSOLVE SUPPLIER FROM MEETING SPECIFICATION REQUIREMENTS SUPPLIER TO ENSURE SAFE OPERATION AND INTENDED PERFORMANCE
HYDERABAD
DATE: 8:36 am, Aug 02, 2011 SIGNATURE

For sheet 1 to 7.

KEPL W/O No.	50101 -- DRG. NO. KFO 50101 002 0100
P.O. No. & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225
KEPL ITEM No.	002 — SCALE: NTS
QUANTITY	01 — TURBINE MODEL: DYRH T IIIB
SHEET No.	2 OF 4 — PARTYS ITEM No.: GAT 380 562C △3

MANUFACTURER :
KIRLOSKAR EBARA PUMPS LTD.
(TURBINE DIVISION)

CLIENT	BHARAT HEAVY ELECTRICALS LTD., HYDERABAD.
PROJECT	MRPL PHASE III REFINERY PROJECT.
CONSULTANT	ENGINEERS INDIA LTD.(EIL)
SERVICE	CONDENSER COOLING WATER PUMP

KIRLOSKAR BROTHERS LIMITED
KIRLOSKARVADI 416308 DIST. SANGLI(INDIA)

DRN.
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GENERAL ARRGT. & FOUNDATION PLAN

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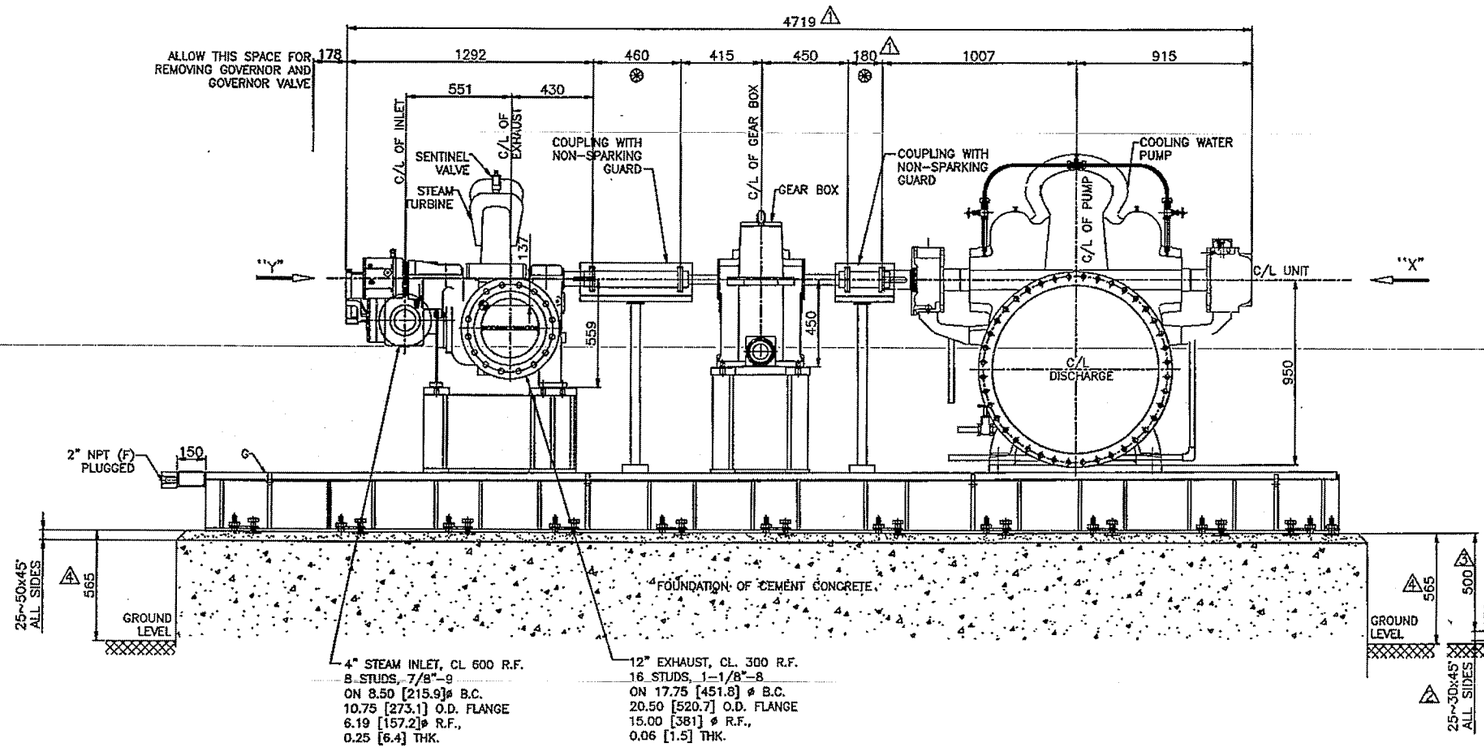
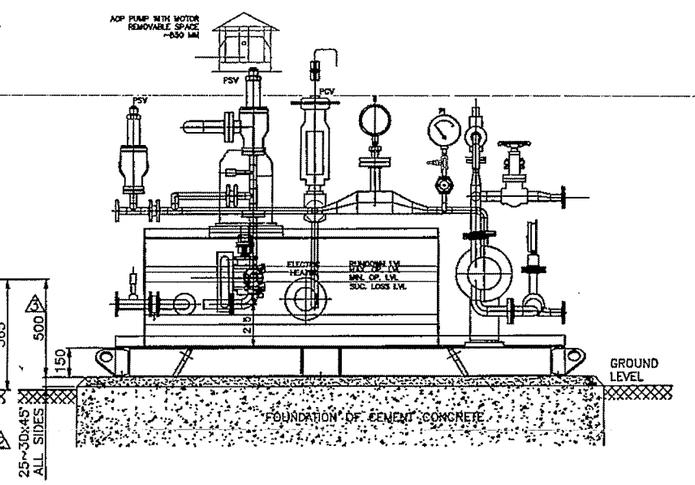
NOTE : GROUT BASE PLATE UPTO LEVEL A

NOTE : ALL DEMENSIONS ARE IN mm EXCEPT SPECIFIED.



TURBINE+GEAR BOX+PUMP



LUB OIL SYSTEM

KEPL W/O No.	50101 -- DRG. NO. KFO 50101 002 0100		
P.O. No. & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225		
KEPL ITEM No.	002	SCALE	NTS
QUANTITY	01	TURBINE MODEL	DYRH T IIIB
SHEET No.	3 OF 4	PARTYS ITEM No.	GAT 380 562C

MANUFACTURER :
KIRLOSKAR EBARA PUMPS LTD.
(TURBINE DIVISION)

CLIENT	BHARAT HEAVY ELECTRICALS LTD., HYDERABAD.
PROJECT	MRPL PHASE III REFINERY PROJECT.
CONSULTANT	ENGINEERS INDIA LTD.(EIL)
SERVICE	CONDENSER COOLING WATER PUMP

KIRLOSKAR BROTHERS LIMITED
KIRLOSKARVADI 416308 DIST. SANGLI(INDIA)

DRN.
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REV. 04

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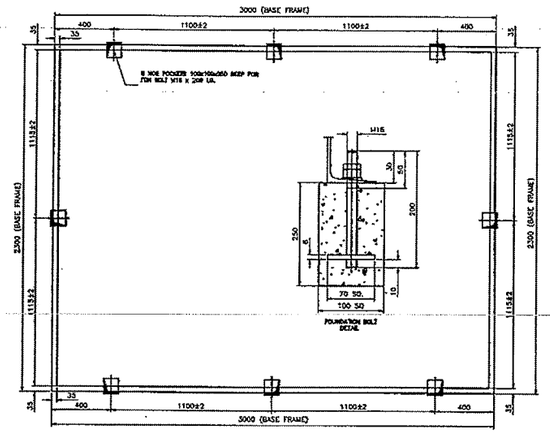
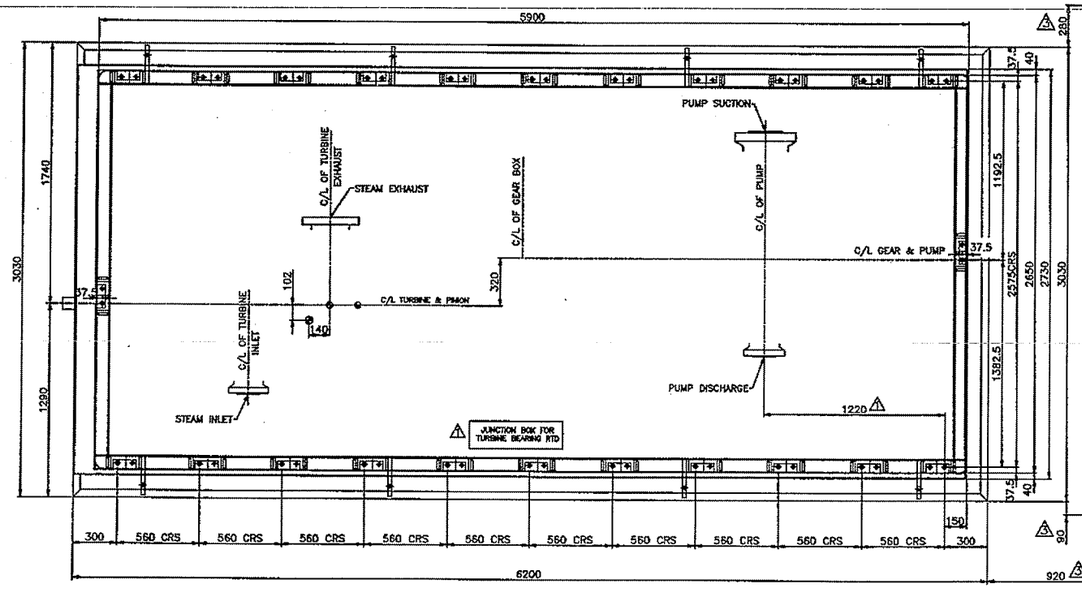
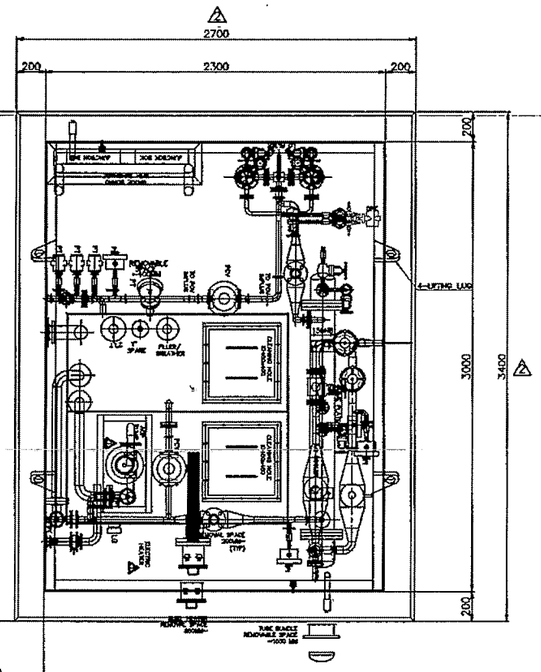
NOTE : ALL DEMENSIONS ARE IN mm EXCEPT SPECIFIED.



FOUNDATION PLAN DETAILS OF LOS SYSTEM △3





KEPL W/O No.	50101 -- DRG. NO. KFO 50101 002 0100		
P.O. No. & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225		
KEPL ITEM No.	002	SCALE	NTS
QUANTITY	01	TURBINE MODEL	DYRH T IIIB
SHEET No.	4 OF 4	PARTYS ITEM No.	GAT 380 562C △3
MANUFACTURER : KIRLOSKAR EBARA PUMPS LTD. (TURBINE DIVISION)			
CLIENT	BHARAT HEAVY ELECTRICALS LTD., HYDERABAD.		
PROJECT	MRPL PHASE III REFINERY PROJECT.		
CONSULTANT	ENGINEERS INDIA LTD.(EIL)		
SERVICE	CONDENSER COOLING WATER PUMP		
KIRLOSKAR BROTHERS LIMITED KIRLOSKARVADI 416308 DIST. SANGLI(INDIA)			
DRN.	GENERAL ARRGT. & FOUNDATION PLAN		
CHD.			
APPD.			REV. 04

CLARIFICATION SHEET		
Rev. No.	: 04	
Client	: MRPL	
Equipment Tag	: GAT 380562C	
DOC: General Arrangement & foundation plan.		
Sl. No.	BHEL comment	KEPL reply
Page 2 of 4		
1	Dimensions to be revised	Revised as per the comment
2	Suction strainer along with counter flanges for the steam system to be supplied by KBL as per the steam P & IDs	KEPL noted for turbine
3	Offset distance to be mentioned	Mentioned
4	Flange thickness to be mentioned	Mentioned
Page 3 of 4		
1	Dimensions to be revised	Revised as per the comment
Page 4 of 4		
1	The empty and floating weight for lube oil system to be specified.	This weight is already mentioned in the los GA drawing.Attached herewith the same for your ready ref.
2	Suggestive pipe routing from lube oil system to turbine to be indicated in a separate sheet as per last meeting with KBL at hydrabad.	Attached herewith the interconnecting piping drawing between turbine and lube oil skid for reference only.
END OF DOCUMENT		

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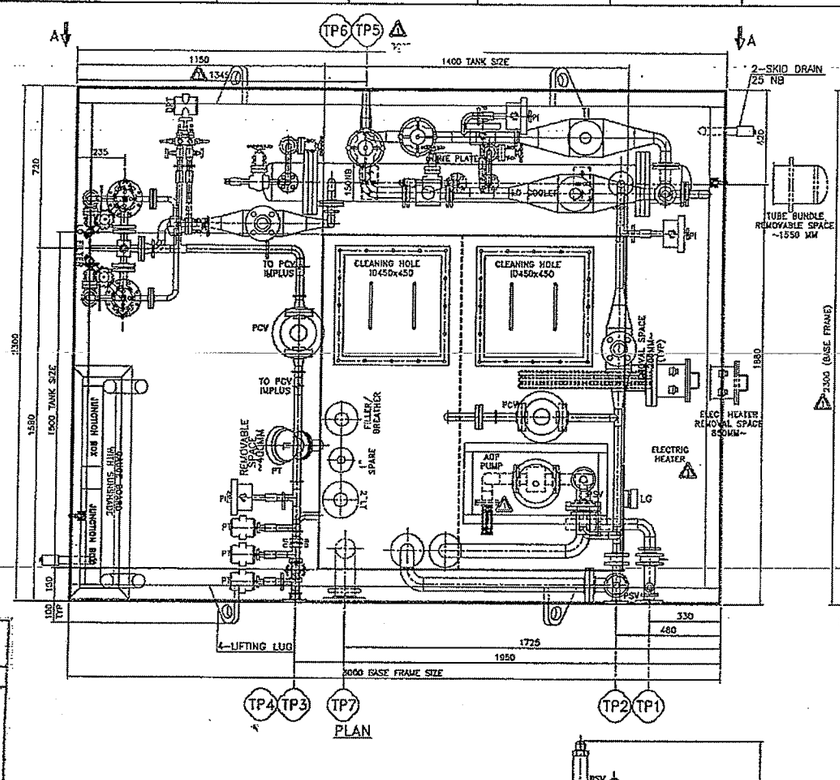
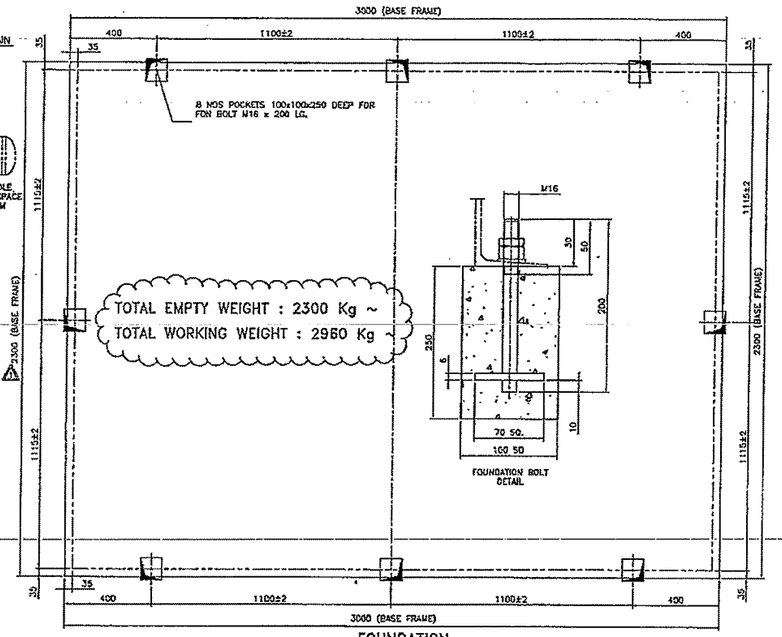
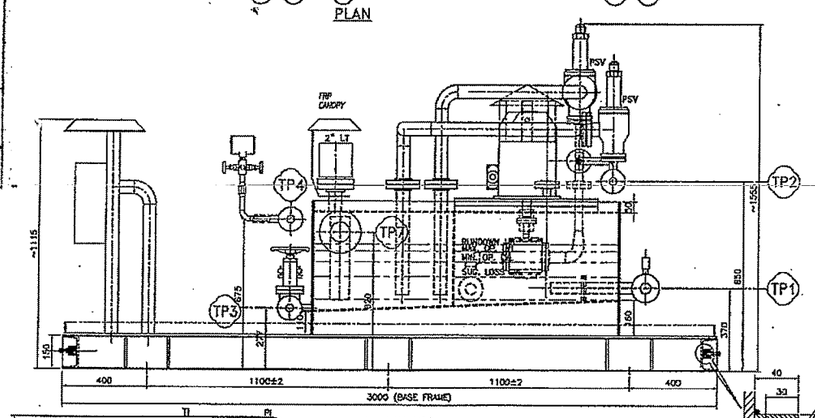
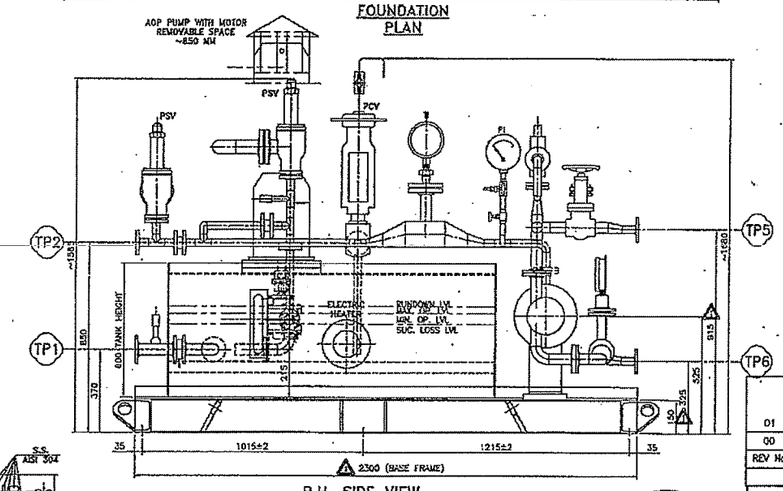
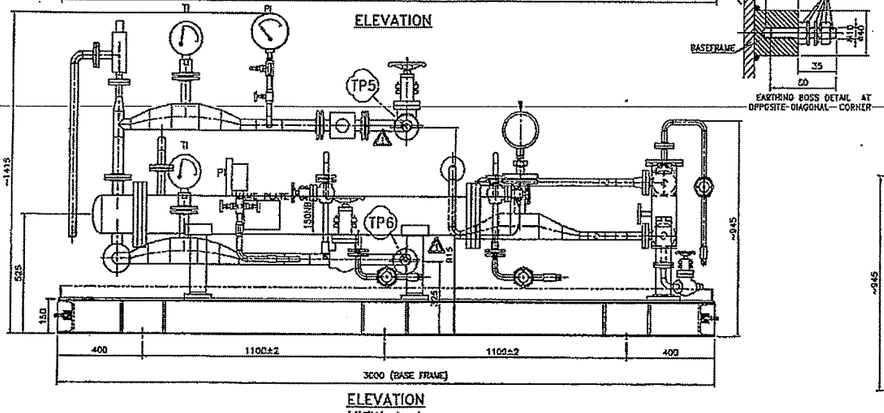
KLOSKAR R COPIED

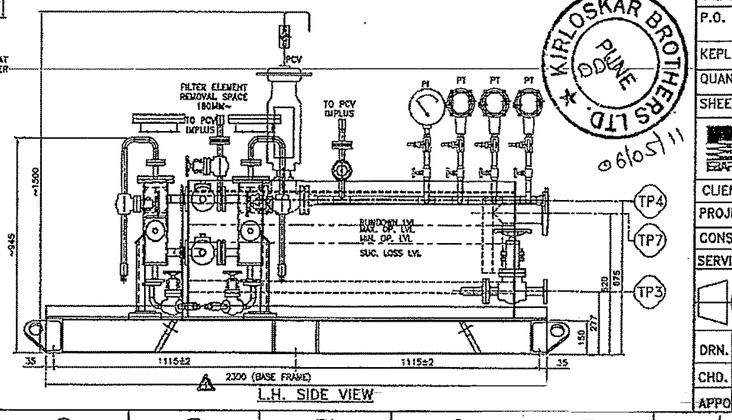


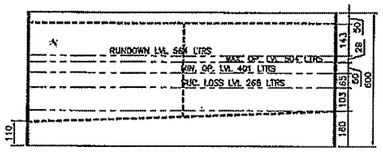












TANK SIZE
1500 (L) x 1400 (W) x 600 (H)

REVIEWED
By Mukund Kulkarni at 4:47 pm, May 05, 2011

Kirloskar

TERMINAL POINTS

POS.	SIZE	DESCRIPTION	DISCRIPTION	QTY
TP1	1½"	ASME,B16.5,150#,SORF	MOP SUCTION	1
TP2	1"	ASME,B16.5,150#,SORF	MOP DISCHARGE	1
TP3	1"	ASME,B16.5,150#,SORF	TANK DRAIN	1
TP4	1"	ASME,B16.5,150#,WNRF	LUBE OIL SUPPLY	1
TP5	1"	ASME,B16.5,150#,SORF	COOLING WATER RETURN	1
TP6	1"	ASME,B16.5,150#,SORF	COOLING WATER SUPPLY	1
TP7	3"	ASME,B16.5,150#,SORF	LUBE-OIL RETURN	1

NOTES :-

1) ALL DIMENSIONS ARE IN mm
2) INTERNAL DIMENSIONS MAY VARY TO SUIT ASSEMBLY
3) TOLERANCE FOR ALL TERMINAL POINTS +/- 5 mm
4) REFER P & ID DRG. NO. :- 10218-2-001
5) HYDRO TEST PRESSURE FOR
   SUCTION PIPING : 3 kg/cm2 g
   DISCHARGE PIPING : 12.75 kg/cm2 g
   COOLING WATER PIPING : 7.8 kg/cm2 g
6) OIL : ISO VG 32
7) LUBE OIL FLOW : 45 LPM & 1.5 Kg/cm2 g @45°C
8) AREA CLASSIFICATION : SAFE INSTALLATION- OUTDOOR
9) POWER SUPPLY : 3Ph., AC, 415V, 50Hz FOR MOTOR & ELEC.HEATER
10) PAINTING:- AS PER PAINTING SPECS :- PSP - 10218
11) SS FABRICATED PARTS - ACID PICKLED & PASSIVATED
12) ALL FIELD MOUNTED INSTRUMENTS WILL BE PROVIDED WITH FRP CANOPY

VENDOR: ENPRO INDUSTRIES PVT.LTD.
D1,12/4,M.I.D.C. CHINCHWAD PUNE-411 019

REV No.	DESCRIPTION	DRAWN	APPROVED	DATE
01	SKID SIZE CHANGED, COOLING WATER PIPE ROUTINE CHANGED, PRE FABRICATED ARRGT CHANGED., TP5, TP6 LINE SIZE CHANGED., LUBE OIL SUPPLY LINE FLANGE TYPE CHANGED. AOP PUMP LOCATION & PIPE ROUTINE CHANGED	TAK	PBS	04.05.2011
00	FIRST SUBMISSION FOR APPROVAL	CBB	MK	30.3.2011

KEPL REVIEW

KEPL W/O No.	50101 -- DRG. NO. LOS 50101 001 0100		
P.O. No. & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225		
KEPL ITEM No.	001	SCALE	NTS
QUANTITY	01	TURBINE MODEL	DYRH T HIB
SHEET No.	1 OF 1	PARTYS ITEM No.	GAT 380 563C

MANUFACTURER :
KIRLOSKAR EBARA PUMPS LTD.
(TURBINE DIVISION)

CLIENT	BHARAT HEAVY ELECTRICALS LTD., HYDERABAD.
PROJECT	MRPL PHASE III REFINERY PROJECT.
CONSULTANT	ENGINEERS INDIA LTD.(EIL)
SERVICE	AUXILIARY COOLING WATER PUMPS

KIRLOSKAR BROTHERS LIMITED
KIRLOSKARVADI 416308 DIST. SANGLI(INDIA)

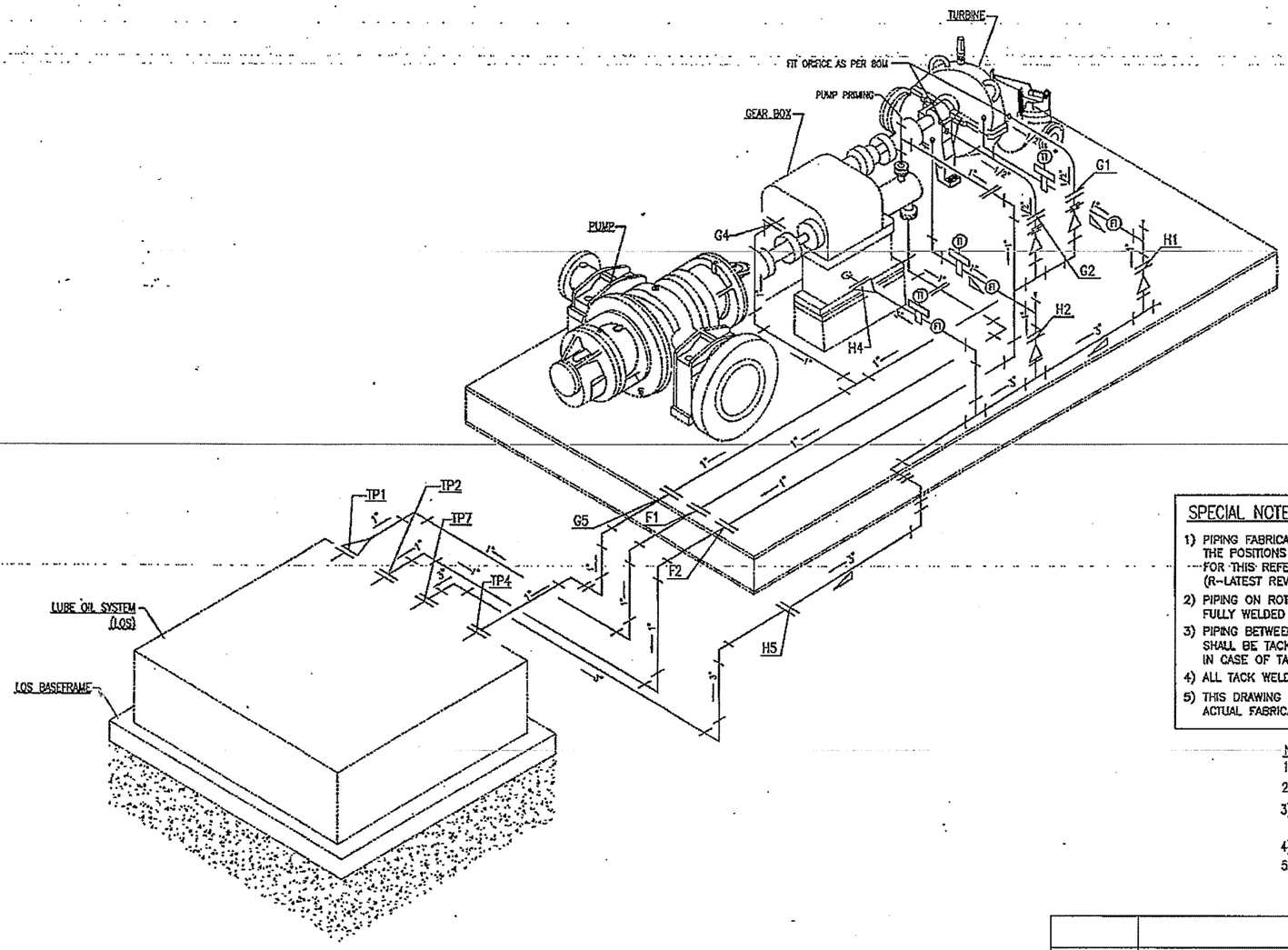
DRN.	TAK	ITEM:- LUBE OIL SYSTEM (API 611 4th EDDITION)
CHD.	PBS	TITLE:- GA FOR LUBE OIL SYSTEM
APPD.	SKG	DWG NO. 10218-01-002 — REV. No. 01

KIRLOSKAR BROTHERS LTD. PUNE 06/05/11

BHEL PROJECT ENGINEERING
COPY
1. NO COMMENTS
2. COMMENTS AS MARKED CLEARED FOR MANUFACTURE
3. COMMENTS AS MARKED
4. RETAINED FOR INFORMATION
ISSUED OF COPY- 2/3 REVISIT REVISED DOCS
THIS APPROVAL DOES NOT CONSOLVE SUPPLIER FROM MEETING SPECIFICATION REQUIREMENTS SUPPLIED TO ENSURE SAFE OPERATION AND INTENDED PERFORMANCE
HYDERABAD
DATE: 1:53 pm, May 13, 2011 SIGNATURE

THIS DRAWING IS TO BE DONE UPTO MAIN MEMBER BROTHERS LIGHT OF BASE PLATE TO AVOID VIBRATIONS. WITHOUT THE

NOTE : GROUT BASE PLATE UPTO LEVEL A
NOTE : ALL DEMENSIONS ARE IN mm EXCEPT SPECIFIED.



CONNECTION LIST

CONN	SIZE	DESCRIPTION
G1	1/2" CL. 150 ANSI R.F. FLANGE	LUBE OIL SUPPLY (STEAM END)
G2	1/2" CL. 150 ANSI R.F. FLANGE	LUBE OIL SUPPLY (EXHAUST END)
G4	1" CL. 150 ANSI R.F. FLANGE	LUBE OIL SUPPLY (GEAR BOX)
G5	1" CL. 150 ANSI R.F. FLANGE	LUBE OIL SUPPLY TO TURBINE, AND GEAR BOX
H1	1" CL. 150 ANSI R.F. FLANGE	LUBE OIL DRAIN (STEAM END)
H2	1" CL. 150 ANSI R.F. FLANGE	LUBE OIL DRAIN (EXHAUST END)
H4	4" CL. 150 ANSI R.F. FLANGE	LUBE OIL DRAIN (GEARBOX)
H5	3" CL. 150 ANSI R.F. FLANGE	LUBE OIL RETURN FROM TURBINE & GEARBOX
F1	1" CL. 150 ANSI R.F. FLANGE	MAIN OIL PUMP SUCTION
F2	1" CL. 150 ANSI R.F. FLANGE	MAIN OIL PUMP DISCHARGE

SPECIAL NOTES

1) PIPING FABRICATION TO BE COMPLETED AT KEPL SHOP AFTER ENSURING THE POSITIONS OF BASE PLATES OF TURBINE SKID AND LUBE OIL SYSTEM. FOR THIS REFER: GENERAL ARRANGEMENT DRG: KFO501010020100-R (R-LATEST REVISION)
2) PIPING ON ROTORY UNIT SKID UP TO F1,F2,G5 & H5 CONNECTIONS SHALL BE FULLY WELDED AT KEPL SHOP ONLY. IT WILL BE WITHIN THE ROTORY UNIT SKID.
3) PIPING BETWEEN LUBE OIL SYSTEM CONNECTIONS TO F1,F2,G5 & H5 CONNECTIONS SHALL BE TACK WELDED.
   IN CASE OF TACK WELDED JOINTS 300 mm EXTRA PIPE SHALL BE PROVIDED.
4) ALL TACK WELDS WILL BE FULLY WELDED AT SITE ONLY.
5) THIS DRAWING INDICATES NOMINAL ROUTE AND CONFIGURATION OF PIPING AND THE ACTUAL FABRICATED PIPING MAY DIFFER WITHOUT AFFECTING FUNCTIONAL REQUIREMENTS.

NOTES :
1) ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2) ALL FLANGES HAVE SERRATED SURFACE FINISH Ra 125 TO 250 µIN. AARH
3) ALL DRAIN LINES TO SLOPE DOWNWARD TOWARD OIL RESERVOIR 40 MILLIMETER PER 1000 MILLIMETER MINIMUM.
4) ALL DIMENSIONS TO ±10 mm.
5) PIPING TO BE STAINLESS STEEL, ASTM-A-312 TYPE 304 (ELLIOTT SPEC. 228A),

00	RELEASE FOR MANUFACTURING	SMK	MK	10.06.2011
REV No.	DESCRIPTION	DRAWN	APPROVED	DATE

DRAWING NAME	PIPING FOR PRESSURISED LUBE OIL (TURBINE, GEARBOX & LUBE OIL SYSTEM)	TURBINE MODEL	DYRH-T
KEPL W/O No.	50101	KEPL ITEM No.	002
CLIENT/~~END USER~~	BHEL	QUANTITY	01
PURCHASER	------	PARTY'S ITEM No.	GAT 380 562C
CONSULTANT	EIL	JOB No.	------
PROJECT	MRPL PHASE-III	DRIVEN EQPT.	CONDENSER COOLING WATER PUMP
P.O. / ~~ENQ. No.~~ & DATE	PROJ/PUR/STEAM TURBINE/BHEL MRPL PH 3/225	SHEET No.	1 OF 1
DRN BY	SMK .06.2011	KIRLOSKAR EBARA PUMPS LTD. (TURBINE DIVISION) PRIDE KUMAR SENATE BLDG., PUNE-411 016 (INDIA)	SCALE NTS
CHD BY	CBB .06.2011		DRAWING No. KCO 50101 002 0100
APPD BY	MK .06.2011		REV. 00

	STUD / NUTS	ASTM A193-B7 / A194-2H		
	GASKET	18:8:8 SPIRAL WOUND GASKET		
	ORIFICE	ST.ST 304	0.17"(4.3mm)ø	IN BUILT
	ORIFICE	ST.ST 304	1/8"(3mm)ø	IN BUILT
	GATE VALVE	ST.ST 304		S.W.
	ADAPTOR	ST.ST 304		B.W.
	PLUG	ST.ST 304		SCR'D
	FLOW INDICATOR	ST.ST 304		FLANGED
	ELBOW	FORGED ST.ST. 304	CL. 3000	B.W.
	TEE	FORGED ST.ST. 304	CL. 3000	B.W.
	FLANGE	FORGED ST.ST. 304	ANSI 150 RF	S.O.
	FLANGE	FORGED ST.ST. 304	ANSI 150 RF	W.N.-ONLY LUBE OIL SUPPLY
	PIPE (SEAMLESS)	ST.ST. 304	NOTE-5	
	PARTICULAR	MATERIAL	RATING	FITTING

KIRLOSKAR EBARA PUMPS LTD. TURBINE DIVISION PUNE