0/C

CLIENT : **TEC / PT. PUPUK KALIMANTAN TIMUR**
PROJECT : **KALTIM-5 PROJECT**
JOB NO. : **10107 / BA096300 / 11-018-01**
ITEM NO. : **101-J**
SERVICE : **AIR COMPRESSOR**
DOC. NO. : **K5-E3-101J-DW-111 Rev.2**

COMPRESSOR ASSEMBLY DRAWINGS（101-J [HP]）

CLIENT
PT PUPUK KALIMANTAN TIMUR
PUPUK KALTIM

CONTRACTOR
CONSORTIUM IKPT & TOYO
KT Global Toyo IKPT CONSORTIUM

2500 MTPD AMMONIA - 3500 MTPD UREA
KALTIM-5 PROJECT

REQ. NO.	AXGB002
PO. NO.	BA096321-AXGB002
EQUIP. NO.	101-J

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

A1× 5 Sheets(A3 長尺縮小にて印刷)
A2× 1 Sheets(A3 長尺縮小にて印刷)
A3× - Sheets
A4× 3 Sheets Total 9 Sheets (Including Cover)

FINAL

PLAN RECORD

Please refer to next page.

ENGINEERING & DESIGN DIVISION ENG. DEPARTMENT
COMP. & TURBINE ENGINEERING SECTION

PM	*H. Fukui*
Approved	*K. Shimizu*
Checked	*S. Iwamoto*
Prepared	*H. Higuchi*

Copy to: CUST. / E — 広品証 / 組立 / 品証T / コタ計 / PJ

Specified No. HBI-D01

Order	Item	Date Drawn
353N69	MCW121	Dec. 11, 2012

Drawing No. **790-44010**

Rev. 0 A

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Date Issued

C63A

REVISION RECORD SHEET

Rev.	Date	Prepared	Checked	Approved	PM	Sheet	Revision Record
0	Dec.11,2012	-	-	-	-	All	Original Issue.
A	Jan.17,2014	H.H	S.I	K.S	-	Cover	Issued as final.

CONTENTS

THIRD ANGLE PROJECTION

HYDRAULIC TEST PRESS Mpa

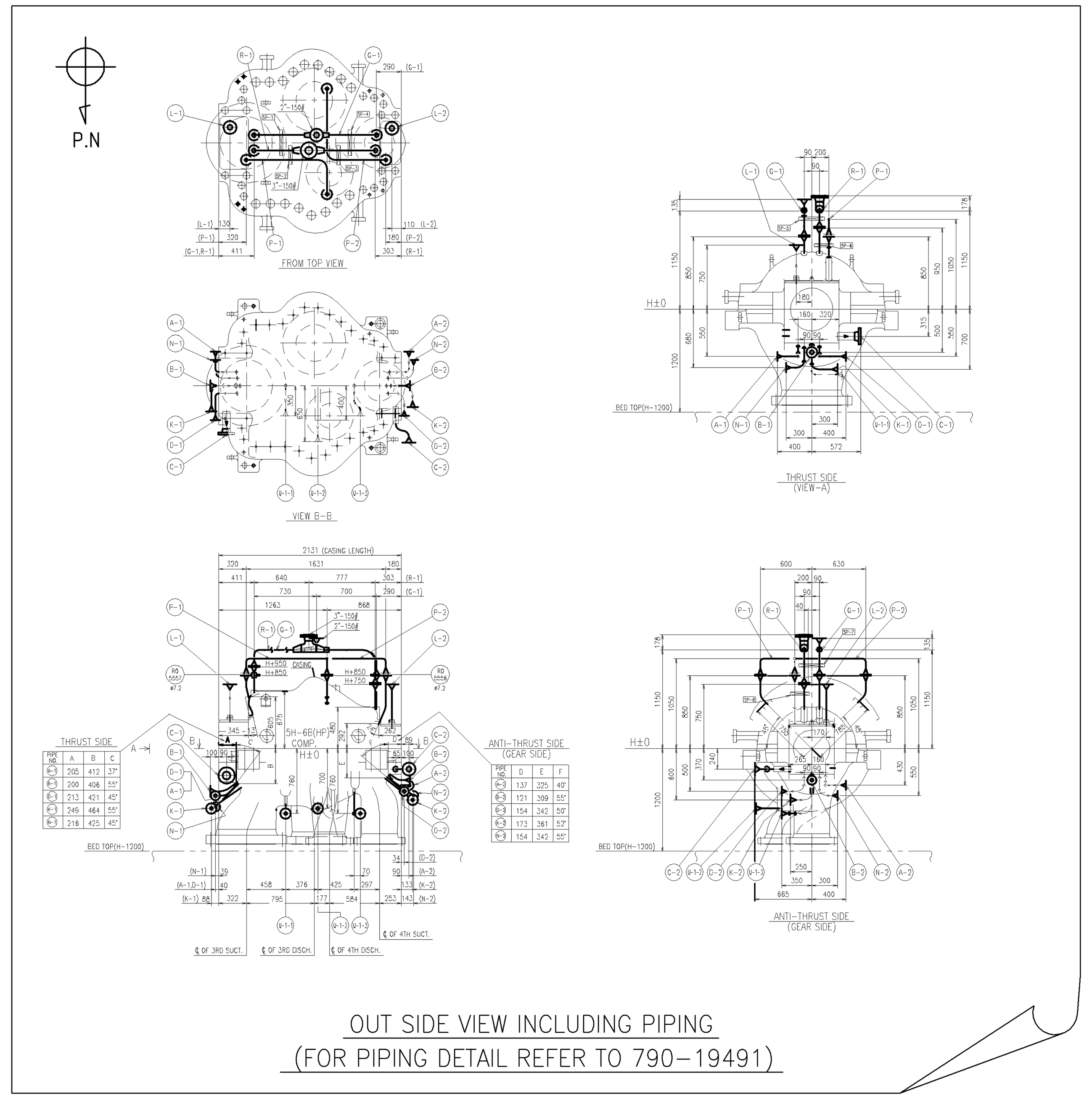
PLAN RECORD

THIS DRAWING REFERENCED TO

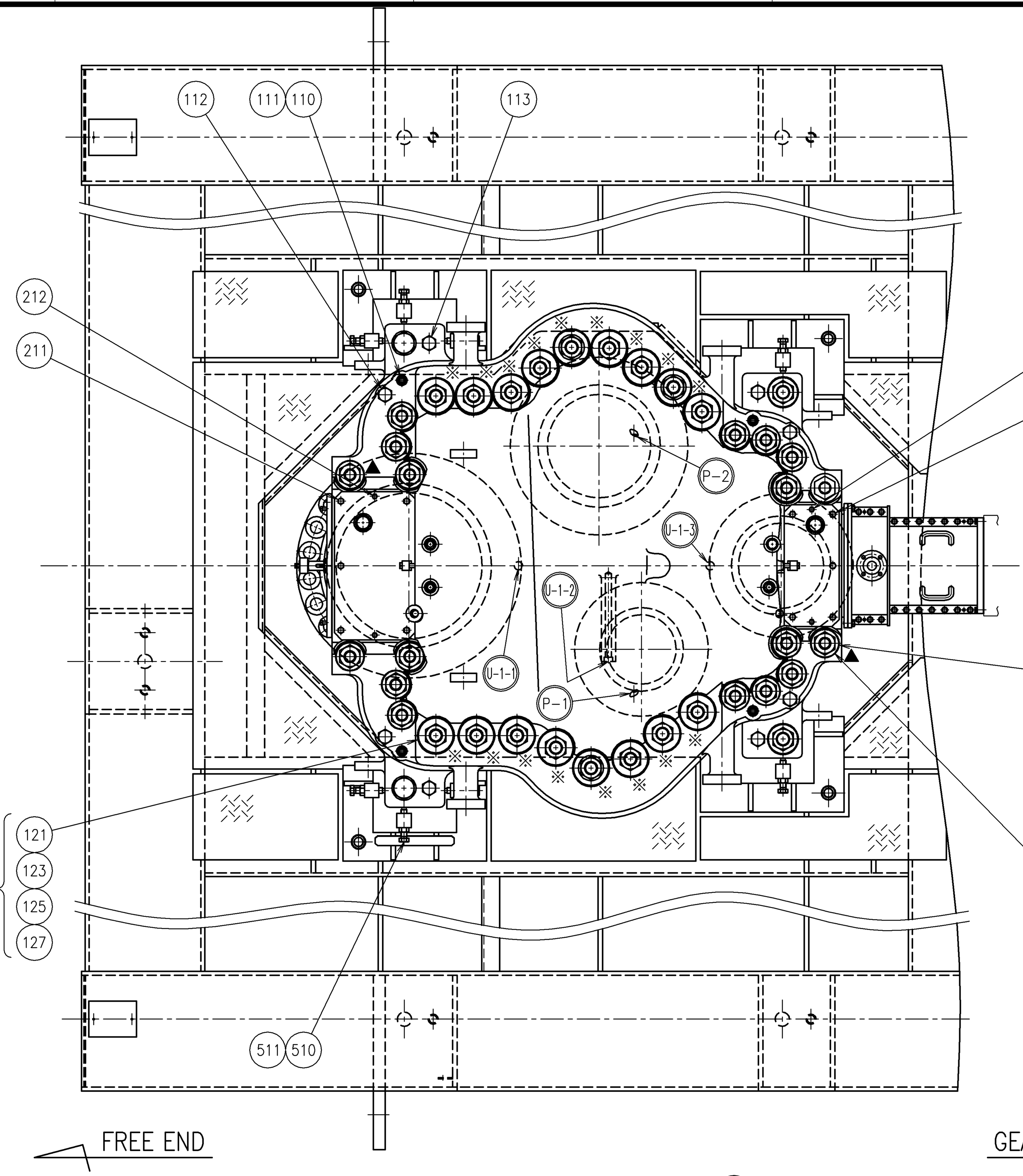
ORDER	ITEM	DRAWING NO.

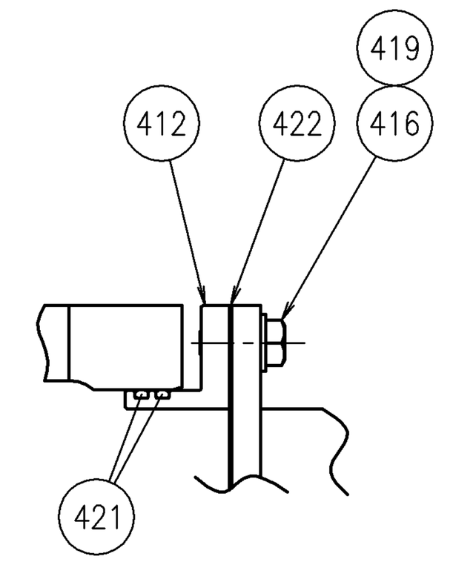
PIPING LIST

PIPE NO. TH. SIDE	PIPE NO. ATH. SIDE	PIPE NAME	REMARKS
A-1	A-2	SEPARATION GAS SUPPLY	
B-1		L.O. SUPPLY	
	B-2	L.O. SUPPLY	
C-1		L.O. DRAIN	
	C-2	L.O. DRAIN	
D-1	D-2	SEPARATION GAS DRAIN	
G-1		GAS VENT	
K-1	K-2	PRIMARY GAS DRAIN	
L-1	L-2	BEARING VENT	
N-1	N-2	SECONDARY GAS DRAIN	
P-1		HOT GAS INJECTION (FROM HP COMP. 3D)	
	P-2	HOT GAS INJECTION (FROM HP COMP. 4D)	
R-1		BLEED OFF CONNECTOR	
U-1		CASING DRAIN	

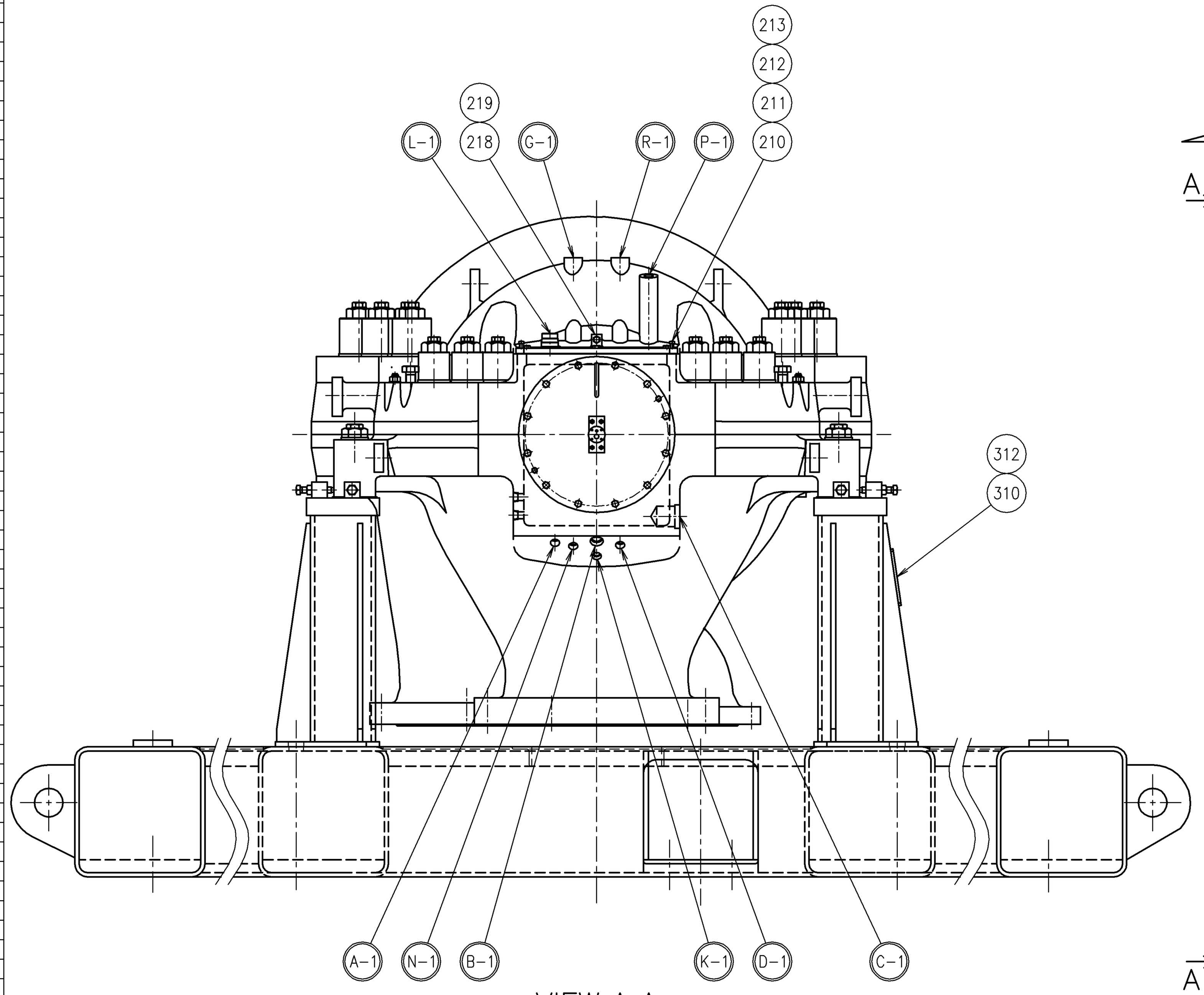


OUT SIDE VIEW INCLUDING PIPING
(FOR PIPING DETAIL REFER TO 790-19491)

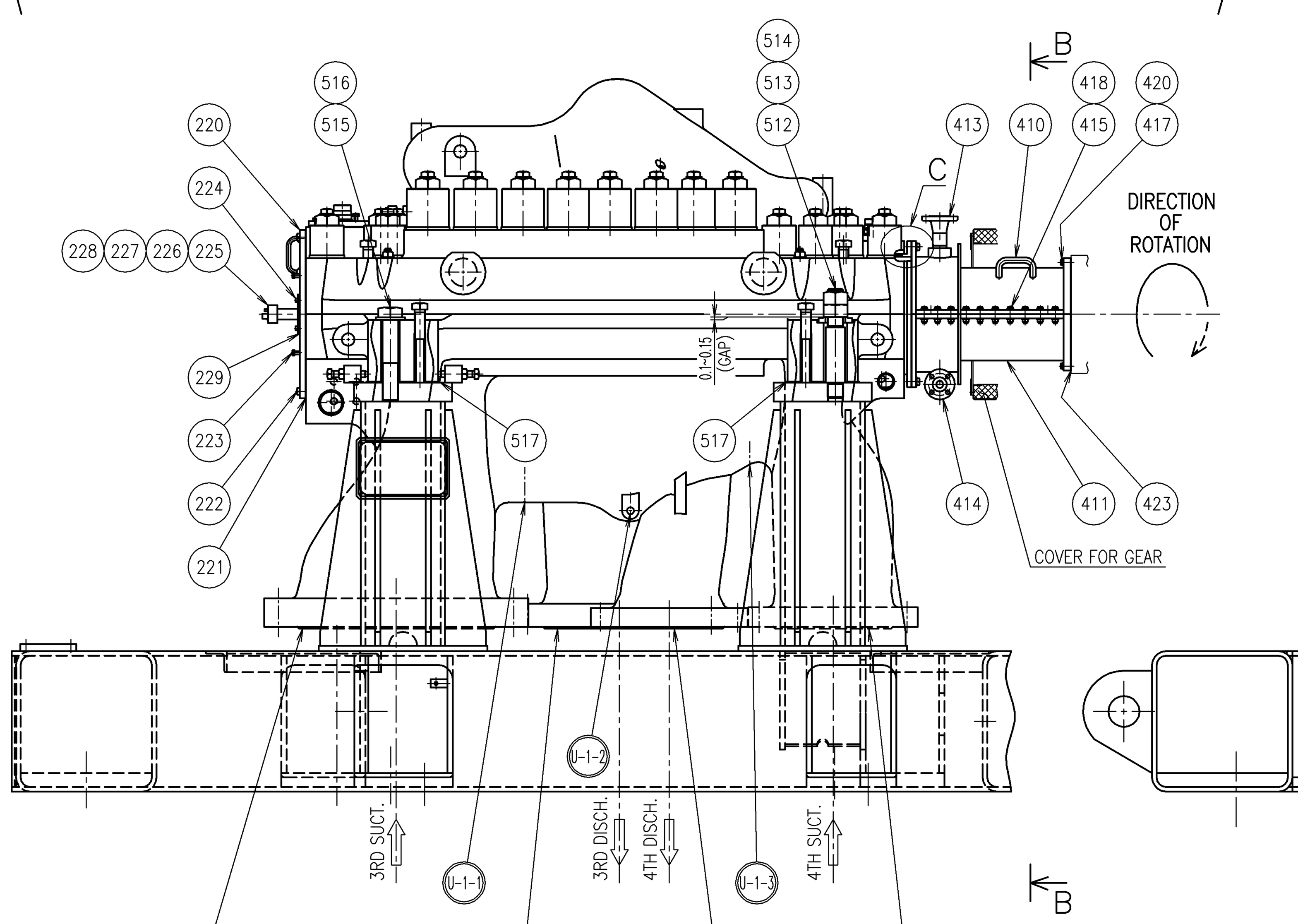


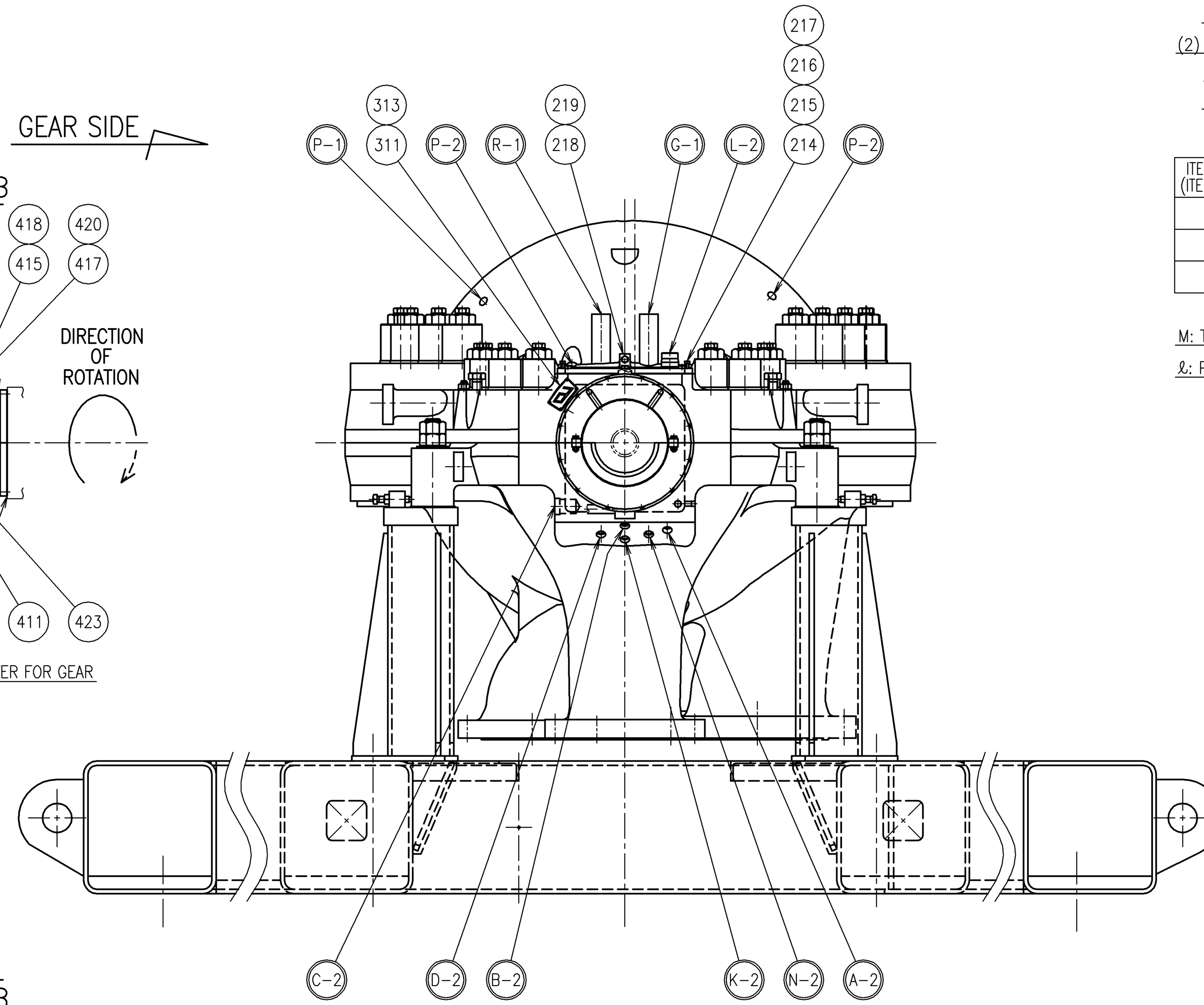


ITEM	PARTS NAME	QUANTITY	WEIGHT (Kg) PER PIECE	WEIGHT (Kg) TOTAL	PARTS NUMBER	REMARKS
517	SHIM (5H-6B)	4SET	0.7	2.8	3112-52	PROVIDED BY ORDER 353N68
516	WASHER M56	2	0.5	1.0	3112-35	
515	HEX BOLT SFIN M56*300	2	7.5	15.0	3112-34	
514	HEX NUT-1 M56	4	1.2	4.8	3112-33	
513	WASHER M56	2	1.0	2.0	3112-32	
512	TAP BOLT M56*390	2	9.5	19.0	3112-31	
511	HEX.NUT-1 M24	8	0.1	0.8	3112-15	
510	ADJUST BOLT M24*130	8	0.6	4.8	3112-12	
423	PACKING A=400 B=330 P=370	1		—	1451-84	
422	PACKING A=520 B=410 P=480	1		—	1451-83	
421	"O"RING D5.3*405(ID)	2		—	1451-81	
420	PLAIN WASHER 12	12		0.1	1451-77	
419	PLAIN WASHER 16	12		0.1	1451-76	
418	PLAIN WASHER 12	40		0.2	1451-75	
417	HEX BOLT M12*45	12		1.0	1451-62	
416	HEX BOLT M16*35	12		1.0	1451-61	
415	BOLT & NUT M12*50L	20		2.0	1451-51	
414	FLANGE&PIPE (DRAIN)	1		2.0	1451-34	
413	FLANGE&PIPE (VENT)	1		2.0	1451-33	
412	SLEEVE	1		13.0	1451-14	
411	GUARD BOTTOM	1		9.0	1451-13	
410	GUARD TOP	1		8.0	1451-11	
313	DRIVE SCREW 3*8	4		—	1371-75	
312	DRIVE SCREW 3*8	4		—	1371-71	
311	DIRECTION PLATE	1		—	1371-31	
310	NAME PLATE	1		—	1371-11	
229	GASKET (EARTH BRUSH)	1		—	1341-84	
228	BRUSH INSERT SCREW	2		—	1341-83	
227	BRUSH INSERT,REPLACEABLE	1		—	1341-82	
226	FLANGE	1		—	1341-81	
225	EARTH BRUSH	1		—	1341-80	
224	HB-BOLT HEX SOCK M8X16	4		0.1	1341-74	
223	JACK BOLT M12X40	2		0.1	1341-73	
222	HEX BOLT-SFIN M16X40	12		1.0	1341-72	
221	GASKET (END)	1		—	1341-71	
220	COVER (END)	1		48.2	1341-70	
219	HEX BOLT-SFIN M16X60	2	0.1	0.2	1341-31	
218	ADAPTER	2	0.4	0.8	1341-30	
217	GASKET (ANTI-THR.)	1		—	1341-24	
216	JACK BOLT M12X40	2		0.1	1341-22	
215	HEX BOLT-SFIN M16X40	5	0.1	0.5	1341-21	
214	COVER (ANTI-THR.)	1		19.2	1341-20	
213	GASKET (THRUST)	1		—	1341-14	
212	JACK BOLT M12X40	2		0.1	1341-12	
211	HEX BOLT-SFIN M16X40	5	0.1	0.5	1341-11	
210	COVER (THRUST)	1		34.2	1341-10	
127	PLUG M42*2	17	0.1	1.7	1112-82	
126	PLUG M36*2	18	0.1	1.8	1112-81	
125	WASHER ST 2ND M100	17	0.8	13.6	1112-63	
124	WASHER ST 2ND M80	18	0.5	9.0	1112-57	
123	CAP NUT ST-22 M100*3	17	13.6	231.2	1112-36	
122	CAP NUT ST-22 M80*3	18	8.3	149.4	1112-34	
121	STUD ST-23 M100*3*559	17	28.9	491.3	1112-17	
120	STUD ST-23 M80*3*416	18	13.6	244.8	1112-11	
113	JACK BOLT M36*260	4	2.0	8.0	1111-44	
112	JACK BOLT M36*240	4	2.4	9.6	1111-43	
111	WASHER 24	4		—	1111-17	
110	TPR PIN/NUT-A30*150 M=110	4	1.3	5.2	1111-16	



VIEW A A





SECTION B B

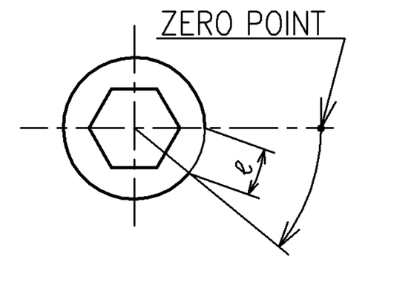
REFERENCE DWG.NO.	
INTERNAL ASSEMBLY	790-19487
ROTOR ASSEMBLY	790-28415
BEARING & SEAL ASSEMBLY DWG.(1/2)	790-19488
BEARING & SEAL ASSEMBLY DWG.(2/2)	790-19489
COUPLING ASSEMBLY	790-44012
PIPING ASS'Y DWG. AROUND 5H-6B(HP) COMPRESSOR	790-19491

TIGHTENING PROCEDURE FOR CASING STUD BOLTS AND CAP NUTS

(1) PROVISIONAL TIGHTENING
TIGHTEN THE CAP NUTS WITH TORQUE WRENCH.
NECESSARY TORQUE "M" IS SHOWN ON THE TABLE BELOW.
AFTER COMPLETION OF THE PROVISIONAL TIGHTENING, ZERO POINT SHALL BE MARKED.

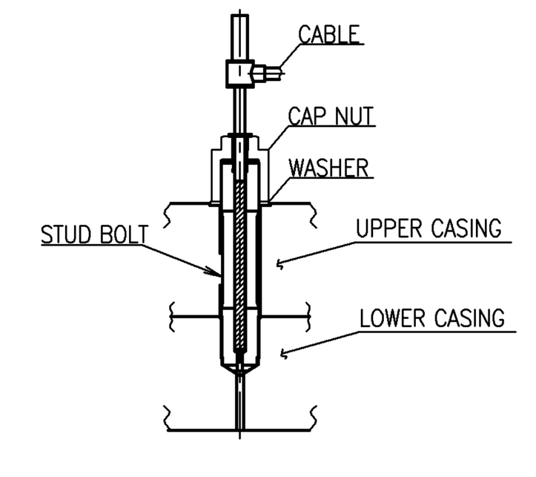
(2) AFTER THE PROVISIONAL TIGHTENING, TIGHTEN THE CAP NUTS
FURTHER ACCORDING TO THE PERIPHERAL ARC LENGTH "ℓ" SHOWN ON THE TABLE BELOW.
BOLT HEATERS TO BE APPLIED FOR THE STUD BOLTS (ITEM 120,121) AND CAP NUTS (ITEM 122,123).

ITEM NO. OF CAP NUTS (ITEM NO. OF STUD BOLTS)	M (kgf-m)	ℓ (mm)
122 (120)	80^{+4}_{0}	137^{+7}_{0}
123 (121)	158^{+8}_{0}	241^{+13}_{0}



M: TORQUE FOR THE PROVISIONAL TIGHTENING

ℓ: PERIPHERAL ARC LENGTH OF NUT FOR TIGHTENING



SETTING CONDITION OF BOLT HEATERS. (ITEM 120,121)

DRAWING NO. 790-19492

図中に指示なき場合はこの表による

削り加工の普通許容差	
寸法の区分	1 級
0.5以上 6以下	±0.1
6をこえ 30以下	±0.2
30 〃 120 〃	±0.3
120 〃 400 〃	±0.5
400 〃 1000 〃	±0.8
1000 〃 2000 〃	±1.2
2000 〃 4000 〃	±2.0
4000 〃 8000 〃	±2.0
8000 〃 16000 〃	±2.5

一般板金加工の普通許容差	
寸法の区分	—
0.5以上 6以下	±0.2
6をこえ 30以下	±0.5
30 〃 120 〃	±0.8
120 〃 315 〃	±1.2
315 〃 1000 〃	±2.0
1000 〃 2000 〃	±3.0
2000 〃 4000 〃	±4.0
4000 〃 8000 〃	±5.0
8000 〃 16000 〃	±6.0

溶接構造物の普通許容差	
寸法の区分	—
0.5以上 120以下	±1.5
120をこえ 315以下	±2.0
315 〃 1000 〃	±3.0

Auto CAD

配布先	部数
CUST.	
組立	2
鋳鍛	1
機生管	1
広品証	1
Pサ部	A3 RH×1 左とじ折
コタ設	A3 RH×1 左とじ折
控	
出図先	

SPARE	WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	QUANTITY PER WORKING	QUANTITY PER SPARE SET	WORKS	WEIGHT(kg) PER PIECE	WEIGHT(kg) TOTAL	REMARKS
1 SET											

ITEM: MCW121 / ORDER: 353N69
CUSTOMER: TEC/KALTIM-5 — APPROVED: O.I — CHECKED: Y.K
PREPARED: T.O — DATE: '12.11.22 — TEL 4512

ENGINEERING DEPARTMENT
COMPRESSOR & TURBINE ENGINEERING SECTION

PM
APPROVED O.Isumi
CHECKED Y.KOHNO
PREPARED T.OUTA
DRAWN K.OKANO
SCALE 1/15
▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

TEC/KALTIM-5

101-J AIR COMPRESSOR 5H-6B (HP) OUTLINE ASSEMBLY DRAWING

SPECIFIED NO. 9000

DRAWING NO. 790-19492

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

製図日付	'11.12.20	マイクロ	初 回	改正回次		図種コード	
出図日付		日 付				類別コード	1. 2. 3. 4. 5.

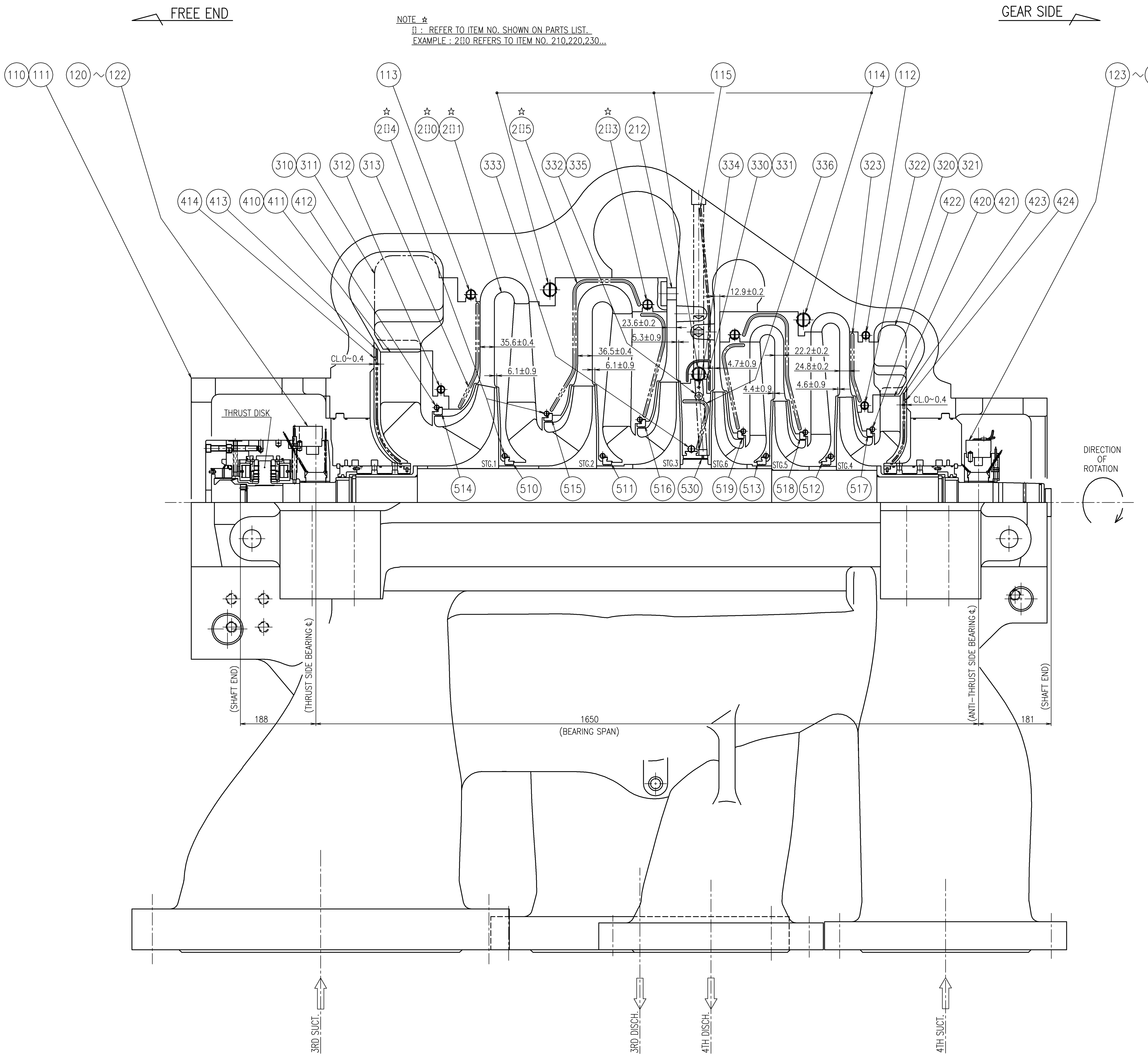
職制コード

要求 NO.

A1 広製共98(2)

111-4/

THIRD ANGLE PROJECTION	HYDRAULIC TEST PRESS	PLAN RECORD			
	Mpa	THIS DRAWING REFERENCED TO			
		ORDER	ITEM	DRAWING NO.	回 修



NOTE

1. ALL CLEARANCES ARE MEASURED ON THE HORIZONTAL SPLIT SURFACE.
2. AXIAL DIMENSIONS ARE MEASURED WHEN THE THRUST DISC IS IN THE MIDDLE OF THE THRUST BEARING CLEARANCE.
3. LOCKING SCREWS ARE SET ON THE HORIZONTAL SPLIT SURFACE OF UPPER CASING AND/OR DIAPHRAGMS, INLET GUIDE, INLET WALL. AND DIVISION WALL. O-RING CORDS ARE SET ON THE HORIZONTAL SPLIT SURFACE OF LOWER CASING AND/OR DIAPHRAGMS, INLET GUIDE, INLET WALL. AND DIVISION WALL.

IMPELLER, SHAFT AND BALANCE PISTON LABYRINTH CLEARANCES DETAIL (SEE TABLE).

CLEARANCE TABLE FOR INITIAL ASSEMBLY

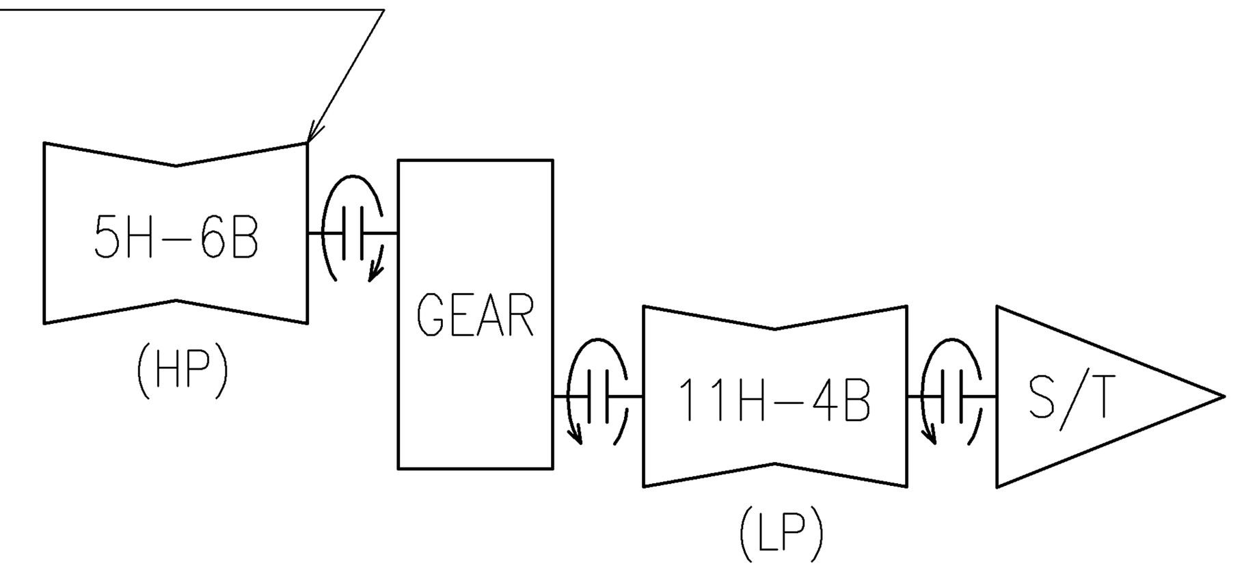
IMP.LABY. STG.	DIA. CLEARANCE (mm)	SHAFT.LABY. STG.	DIA. CLEARANCE (mm)
1	$0.8^{+0.2}_{0}$	1-2	$0.5^{+0.2}_{0}$
2	$0.7^{+0.2}_{0}$	2-3	
3		3-4	
4	$0.6^{+0.2}_{0}$	4-5	$0.5^{+0.2}_{0}$
5		5-6	
6			
BALANCE PISTON	$0.6^{+0.2}_{0}$		

NOTE

AFTER SHOP MECHANICAL RUNNING TEST CLEARANCES ADDED $^{+0.4}_{0}$ TO THE ABOVE VALUES ARE ACCEPTABLE.

REFERENCE DRAWING NO.	
ROTOR ASSEMBLY	790-28415
BEARING & SEAL ASSEMBLY DWG. (1/2)	790-19488
BEARING & SEAL ASSEMBLY DWG. (2/2)	790-19489
COUPLING ASSEMBLY	790-44012
COMP. OUTLINE ASSEMBLY	790-19492

THIS COMP. IS SHOWN



ITEM	PARTS NAME	QUANTITY	WEIGHT (Kg) PER PIECE	WEIGHT (Kg) TOTAL	PARTS NUMBER	REMARKS
530	BALANCE PISTON LABY.	1			2441-11	
519	LABY.-IMP. STG.6	1			2411-36	
518	LABY.-IMP. STG.5	1			2411-35	
517	LABY.-IMP. STG.4	1			2411-34	
516	LABY.-IMP. STG.3	1			2411-33	
515	LABY.-IMP. STG.2	1			2411-32	
514	LABY.-IMP. STG.1	1			2411-31	
513	LABY.-SHAFT STG.5-6	1			2411-14	
512	LABY.-SHAFT STG.4-5	1			2411-13	
511	LABY.-SHAFT STG.2-3	1			2411-12	
510	LABY.-SHAFT STG.1-2	1			2411-11	
424	O"RING CORD 4C 5.7*L850	2			2312-84	
423	O"RING CORD 4C 3.5*L220	2			2312-83	
422	LOCKING SCREW HM M6	1			2312-61	
421	INLET GUIDE (2S) BOTTOM	1		40.0	2312-20	
420	INLET GUIDE (2S) TOP	1		40.0	2312-10	
414	O"RING CORD 4C 5.7*L1200	2			2311-84	
413	O"RING CORD 4C 3.5*L340	2			2311-83	
412	LOCKING SCREW HM M6	1			2311-61	
411	INLET GUIDE (1S) BOTTOM	1		90.0	2311-20	
410	INLET GUIDE (1S) TOP	1		90.0	2311-10	
336	O"RING CORD 4C 5.7*L220	2			2231-83	
335	SPR. LOCK WASHER NO.2 10	2			2231-75	
334	TPR.PIN W/NUT TYPE A6*30	2			2231-71	
333	LOCKING SCREW HM M8	1			2231-61	
332	HEX.SKT.HEAD BOLT M10*45	2			2231-51	
331	DIVISION WALL (BOTTOM)	1		65.0	2231-20	
330	DIVISION WALL (TOP)	1		65.0	2231-10	
323	O"RING CORD 4C 5.7*L220	2			2212-83	
322	LOCKING SCREW M10*18	2			2212-61	
321	INLET WALL (2S) BOTTOM	1		85.0	2212-20	
320	INLET WALL (2S) TOP	1		110.0	2212-10	
313	O"RING CORD 4C 5.7*L310	2			2211-83	
312	LOCKING SCREW M10*18	2			2211-61	
311	INLET WALL (1S) BOTTOM	1		290.0	2211-20	
310	INLET WALL (1S) TOP	1		375.0	2211-10	
255	O"RING CORD 4C D5.7*280L	2			2115-81	
254	LOCK SCREWHM M6	2			2115-61	
251	DIAPHRAGM 5-6 (BOTTOM)	1		173.0	2115-20	
250	DIAPHRAGM 5-6 (TOP)	1		173.0	2115-10	
245	O"RING CORD 4C D5.7*440L	2			2114-81	
244	LOCK SCREWHM M6	2			2114-62	
243	SET SCREWHM M10*18	2			2114-61	
241	DIAPHRAGM 4-5 (BOTTOM)	1		320.0	2114-20	
240	DIAPHRAGM 4-5 (TOP)	1		320.0	2114-10	
225	O"RING CORD 4C D5.7*330L	2			2112-81	
224	LOCK SCREWHM M6	2			2112-61	
221	DIAPHRAGM 2-3 (BOTTOM)	1		296.0	2112-20	
220	DIAPHRAGM 2-3 (TOP)	1		296.0	2112-10	
215	O"RING CORD 4C D5.7*550L	2			2111-81	
214	LOCK SCREWHM M6	2			2111-62	
213	SET SCREWHM M10*18	2			2111-61	
212	DIFFUSER SPACER	12			2111-41	
211	DIAPHRAGM 1-2 (BOTTOM)	1		550.0	2111-20	
210	DIAPHRAGM 1-2 (TOP)	1		550.0	2111-10	
125	LOCK WASHER NO.2 30	2		0.2	1121-24	
124	BOLT HEX SOCK M30X120	2		2.0	1121-23	
123	BEARING CAP NON-THRUST	1		10.0	1121-21	
122	LOCK WASHER NO.2 30	2		0.2	1121-14	
121	BOLT HEX SOCK M30X140	2		2.2	1121-13	
120	BEARING CAP THRUST	1		20.0	1121-11	
115	O RING CORD D3.5X600L	2			1111-55	
114	SET SCREW M20*35	6			1111-34	
113	SET SCREW M10*18	2			1111-33	
112	SET SCREW M10*18	2			1111-31	
111	CASING (LOWER)	1		7000.0	1111-12	
110	CASING (UPPER)	1		4100.0	1111-11	

SPARE	WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	QUANTITY PER SET (WORKING / SPARE)	WORKS	WEIGHT(kg) PER PIECE	WEIGHT(kg) TOTAL	REMARKS
1 SET										

ORDER	353N69
ITEM	MCW121
CUSTOMER	TEC/KALTIM-5
CHECKED / APPROVED	O.I / Y.K
DATE	'12.9.28
PREPARED	T.O
TEL	4512

ENGINEERING DEPARTMENT
COMPRESSOR & TURBINE ENGINEERING SECTION

PM	
APPROVED	O.Isumi
CHECKED	Y.KOHNO
PREPARED	T.OUTA
DRAWN	K.OKANO
SCALE	1/5

▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

TEC/KALTIM-5

101-J AIR COMPRESSOR 5H-6B (HP) INTERNAL ASSEMBLY DRAWING

SPECIFIED NO. 2000

DRAWING NO. 790-19487

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

DRAWING NO. 790-19487

Auto CAD

配布先	部数
CAST	
組立	4
機械	1
鋳鍛	1
機生管	1
機品証	1
Pサ部	A3 RH×1 左とじ 折
コタ設	A3 RH×1 左とじ 折
控	
出図先	

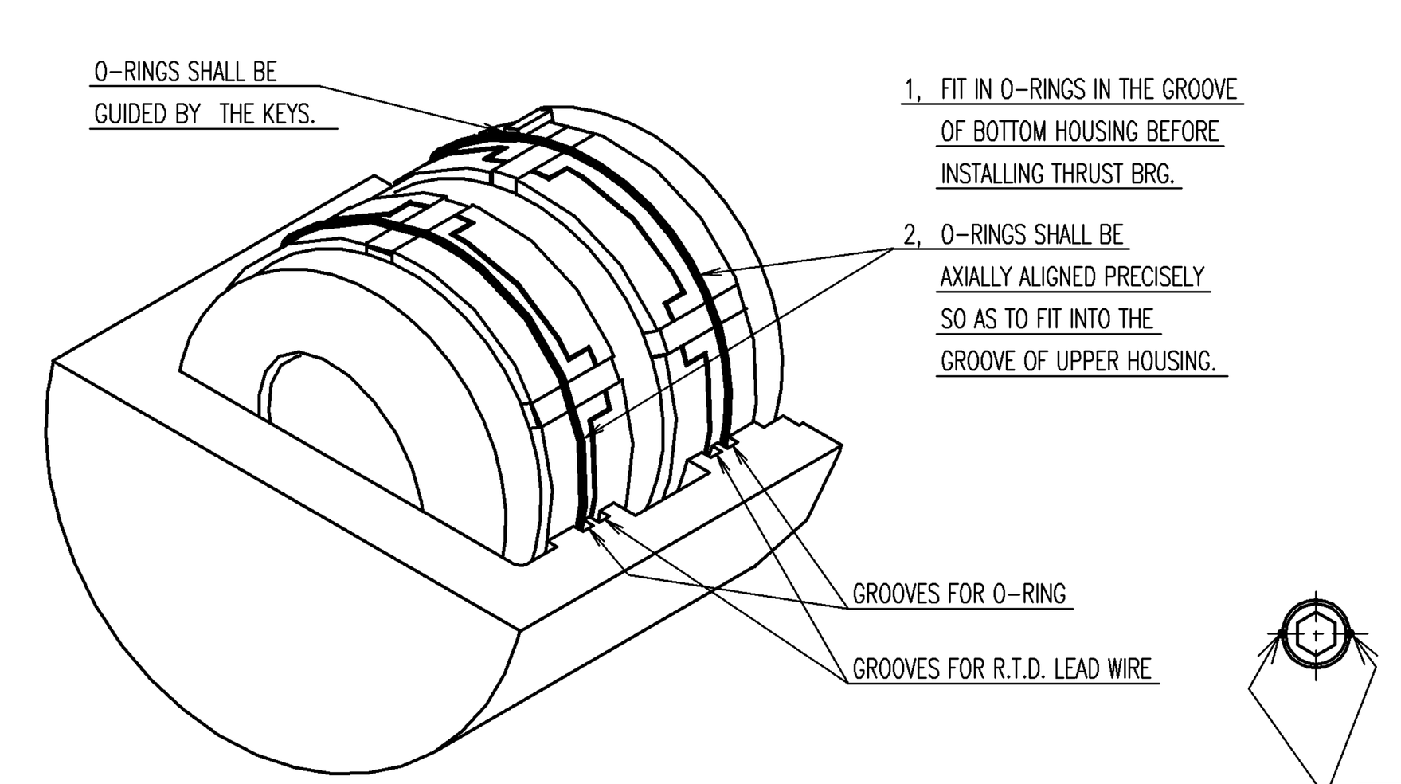
職制コード	
要求 NO.	

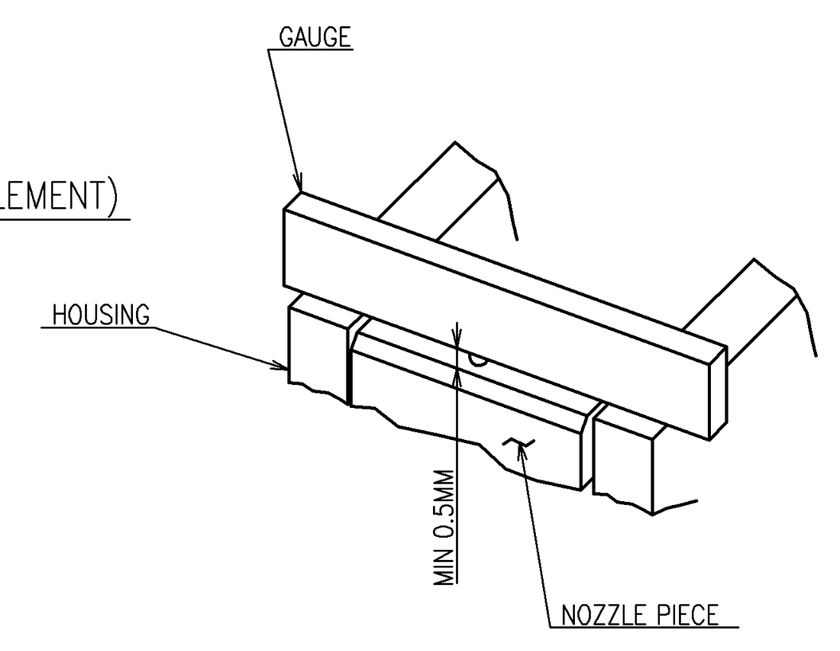
製図日付	'12.09.28	マイクロ	初 回	改正回次	図種コード	
出図日付		日 付			類別コード	1. 2. 3. 4. 5.

A1 広製共98(2)

111-5/

INSTALLATION PROCEDURE OF O-RINGS FOR THRUST BEARING

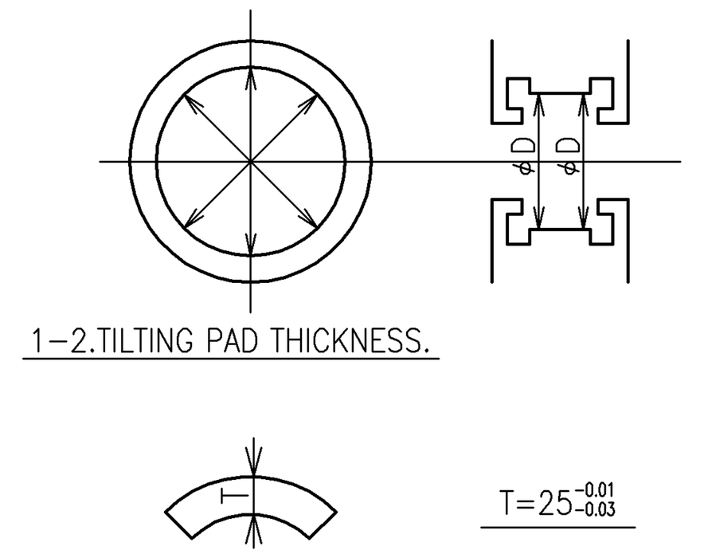




NOTE

1.JOURNAL BEARING CLEARANCE SHALL BE MEASURED AS FOLLOWS.

1-1.THE INNER DIAMETER OF HOUSING SHOULD BE MEASURED AFTER ASSEMBLING THE HOUSING.



$D=150^{+0.02}_{0}$

1-2.TILTING PAD THICKNESS.

$T=25^{-0.01}_{-0.03}$

1-3.TOTAL CLEARANCE=$D_{AVE.}$-2x$T_{AVE.}$-SHAFT DIA.=0.15～0.22

1-4.THE RESULTS OF MEASURING SHOULD BE RECORDED.

2.MARK "※" DIMENSIONS SHOW DIAMETRAL CLEARANCE.

REFERENCE DRAWING

1.BEARING & SEAL ASSEMBLY DRAWING(2/2)---- 790-19489

SPECIFICATION

1. THRUST BEARING TYPE K-8
2. JOURNAL BEARING DIA. φ100
3. SEAL DIA. φ140
4. SEPARATION LABYRINTH DIA. φ124

ITEM	PARTS NAME	PARTS NUMBER	QUANT-ITY	WEIGHT (Kg) PER PIECE	WEIGHT (Kg) TOTAL	REMARKS
49						
48						
47	CONICAL SPR.WSHR 2ND 6	4511-85	1		0.1	
46	BOLT HEX SOCK M6X8	4511-84	1		0.1	
45	O"RING D2.6XD171.1	4511-83	2		0.1	
44	SEPARATION LABYRINTH	4511-81	1		1.1	
43	O"RING D3.5XD20.2	4511-68	2		0.1	
42	PLUG M24	4511-65	2		0.4	
41	O"RING D3.5XD184.3	4511-64	1		0.1	
40	O"RING D3.5XD401.6	4511-63	3		0.1	
39	SEAL HOUSING HOLDER	4511-61	1		95.0	
38	O"RING D3.5XD171.2	4511-53	3		0.1	
37	SPRING PIN D5X10	4511-52	2		0.1	
36	SHAFT SEAL LABYRINTH	4511-51	1		2.9	
35	O"RING D3.5XD29.1	4511-46	4		0.1	
34	JOINT D36XL67	4511-43	2		0.6	
33	STOP RING	4511-11	1		0.4	
32						
31						
30	O"RING D3.5XD159	4111-82	2		0.1	
29	O/H DAMPER RING	4111-81	1		4.2	
28	SPRING PIN 5X10	4111-74	1		0.1	
27	CONICAL SPR.WSHR 2ND 12	4111-73	8		0.1	
26	BOLT HEX SOCK M12X50	4111-72	8		0.6	
25	O/H DAMPER HOUSING	4111-71	1		24.0	
24	SET BOLT M8X45 L=45	4111-62	3		0.1	
23	NOZZLE PIECE D2.0	4111-61	3		0.2	
22	SCREW +CON. M4X0.7X6	4111-53	12		0.1	
21	ADJUSTING LINER (BTM)	4111-52	2		0.3	
20	ADJUSTING LINER (TOP)	4111-51	2		0.3	
19	KINGSBURY ASSY K-8-B (INN)	4111-43	1		8.9	
18	KINGSBURY ASSY K-8-B (OUT)	4111-42	1		8.9	
17	TILTING PAD (THRUST)	4111-41	1		3.8	
16	SPR.LK.WSHR. NO.2 10	4111-27	2		0.1	
15	BOLT HEX SOCK M10X90	4111-26	2		0.2	
14	SCREW +CON. M4X0.7X20	4111-25	2		0.1	
13	SET PIN D13X14	4111-24	2		0.1	
12	BOLT HEX SOCK M12X65	4111-23	10		0.8	
11	HOUSING COVER (BOTTOM)	4111-22	1		13.0	
10	HOUSING COVER (TOP)	4111-21	1		13.0	
9	SPR.LK.WSHR. NO.2 10	4111-19	2		0.1	
8	BOLT HEX SOCK M10X40	4111-18	2		0.1	
7	O"RING D3.52XD202.8	4111-17	2		0.1	
6	SCREW +CON. M4X0.7X20	4111-16	2		0.1	
5	SET PIN D13X14	4111-15	2		0.1	
4	SPRING PIN 10X20	4111-14	1		0.1	
3	SET BOLT M12X35	4111-13	5		0.2	
2	BEARING HOUSING (BOTTOM)	4111-12	1		35.0	
1	BEARING HOUSING (TOP)	4111-11	1		35.0	

A1 広製共98(2)

DRAWING NO. 790-19488

図中に指示なき場合はこの表による	
削り加工の普通許容差	
寸法の区分	1 級
0.5以上 6以下	±0.1
6をこえ 30以下	±0.2
30 〃 120 〃	±0.3
120 〃 400 〃	±0.5
400 〃 1000 〃	±0.8
1000 〃 2000 〃	±1.2
2000 〃 4000 〃	±2.0
4000 〃 8000 〃	±2.0
8000 〃 16000 〃	±2.5
一般板金加工の普通許容差	
寸法の区分	―
0.5以上 6以下	±0.2
6をこえ 30以下	±0.5
30 〃 120 〃	±0.8
120 〃 315 〃	±1.2
315 〃 1000 〃	±2.0
1000 〃 2000 〃	±3.0
2000 〃 4000 〃	±4.0
4000 〃 8000 〃	±5.0
8000 〃 16000 〃	±6.0

THIRD ANGLE PROJECTION

PLAN RECORD — THIS DRAWING REFERENCED TO: ORDER / ITEM / DRAWING NO.

SPARE	WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	QUANTITY PER SET WORKING	QUANTITY PER SET SPARE	WORKS	WEIGHT(kg) PER PIECE	WEIGHT(kg) TOTAL	REMARKS
1 SET											

ENGINEERING DEPARTMENT
COMPRESSOR & TURBINE ENGINEERING SECTION

TEC/KALTIM-5

101-J AIR COMPRESSOR
5H-6B (HP)
BEARING & SEAL ASSEMBLY DRAWING (1/2)

ORDER	353N69
ITEM	MCW121
CUSTOMER	TEC/KALTIM-5
APPROVED	O.I
CHECKED	K.M
DATE	'12.9.27
PREPARED	T.O
TEL	4512
PM	
APPROVED	O.Isumi
CHECKED	K.MATSUBAYASHI
PREPARED	T.OUTA
DRAWN	K.OKANO
SCALE	1/2
SPECIFIED NO.	4100
DRAWING NO.	790-19488

▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

製図日付	'12.09.18	マイクロ	初 回	改正回次		図種コード	
出図日付		日 付				類別コード	1. 2. 3. 4. 5.

出図先	
CUST	
計電設	A3 RHx1 左とじ 折
組立	4
機械	1
鋳鍛	1
機生管	1
機品証	1
Pサ部	A3 RHx1 左とじ 折
コタ設	A3 RHx1 左とじ 折
控	

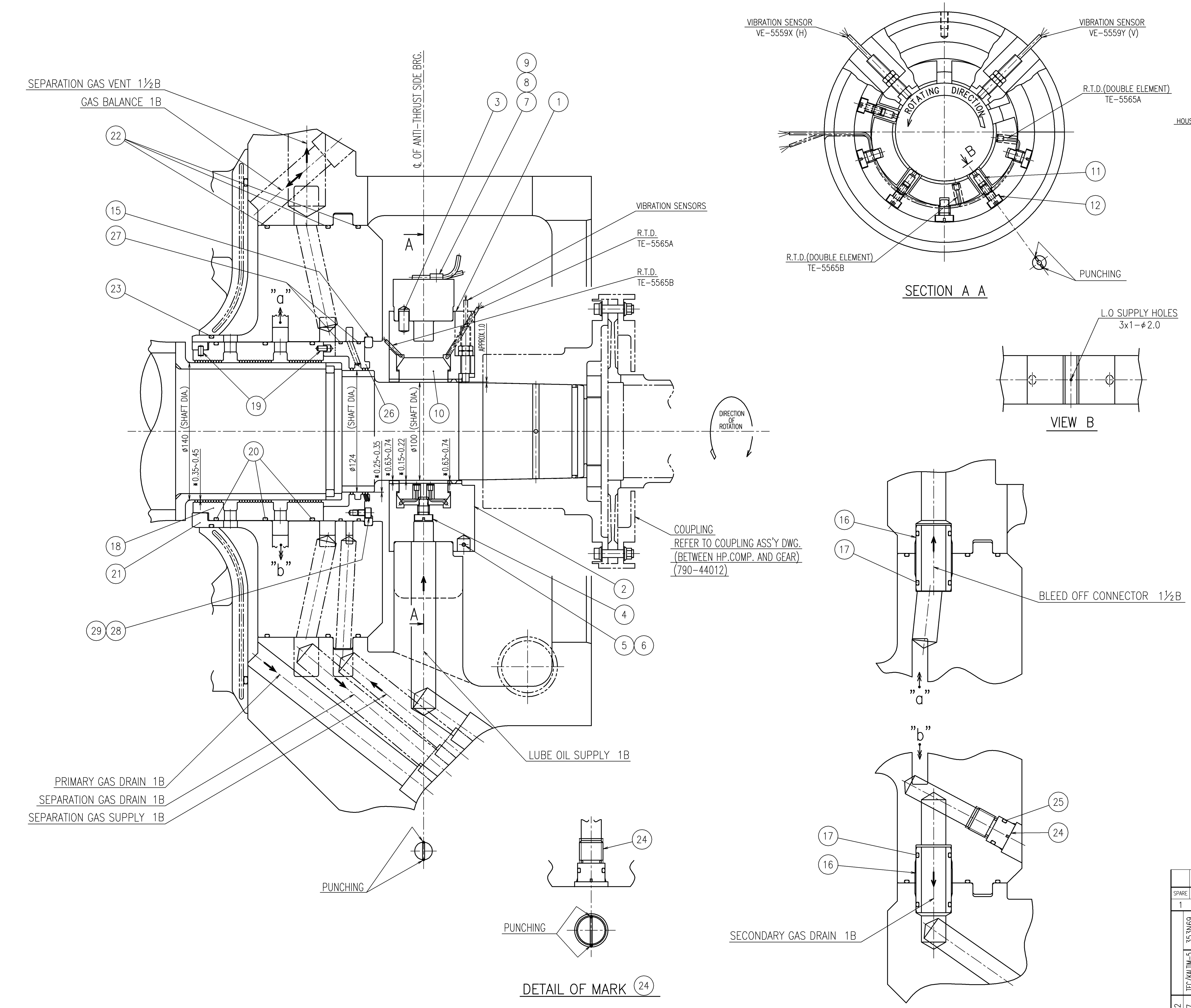
職制コード

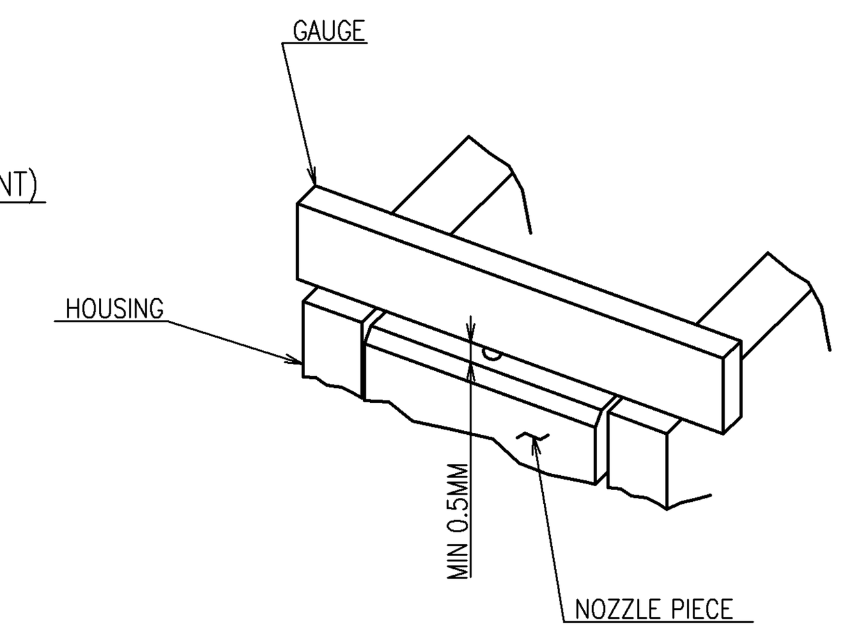
要求 NO.

Auto CAD

111-6/

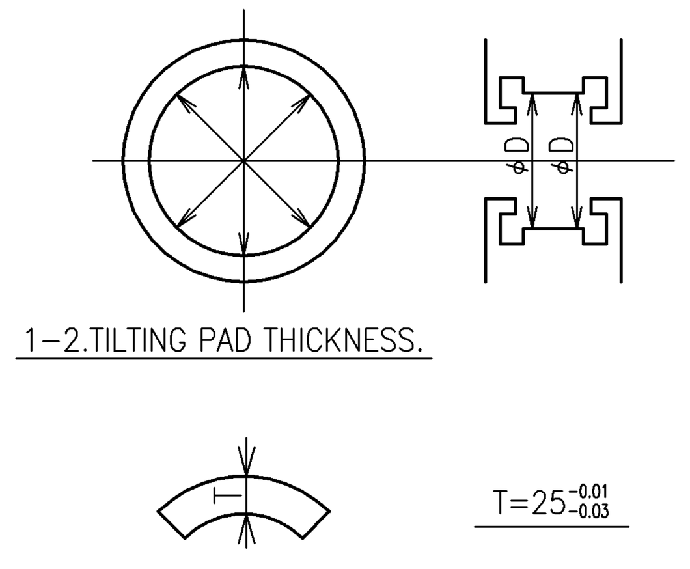
THIRD ANGLE PROJECTION	HYDRAULIC TEST PRESS Mpa	PLAN RECORD
		THIS DRAWING REFERENCED TO: ORDER / ITEM / DRAWING NO.





NOTE

1. JOURNAL BEARING CLEARANCE SHALL BE MEASURED AS FOLLOWS.
   - 1-1. THE INNER DIAMETER OF HOUSING SHOULD BE MEASURED AFTER ASSEMBLING THE HOUSING.



$D=150^{+0.02}_{0}$

   - 1-2. TILTING PAD THICKNESS.

$T=25^{-0.01}_{-0.03}$

   - 1-3. TOTAL CLEARANCE=$D_{AVE.}-2xT_{AVE.}$-SHAFT DIA.=0.15～0.22
   - 1-4. THE RESULTS OF MEASURING SHOULD BE RECORDED.
2. MARK "*" DIMENSIONS SHOW DIAMETRAL CLEARANCE.

REFERENCE DRAWING

1. BEARING & SEAL ASSEMBLY DRAWING(1/2)----790-19488

SPECIFICATION

1. JOURNAL BEARING DIA. ø100
2. SEAL DIA. ø140
3. SAPARATION LABYRINTH DIA. ø124

ITEM	PARTS NAME	PARTS NUMBER	QUANT-ITY	WEIGHT (Kg) PER PIECE	WEIGHT (Kg) TOTAL	REMARKS
31						
30						
29	CONICAL SPR.WSHR 2ND 6	4611-85	1		0.1	
28	BOLT HEX SOCK M6X8	4611-84	1		0.1	
27	O"RING D2.6XD171.1	4611-83	2		0.1	
26	SEPARATION LABYRINTH	4611-81	1		1.1	
25	O"RING D3.5XD20.2	4611-68	1		0.1	
24	PLUG M24	4611-65	1		0.2	
23	O"RING D3.5XD184.3	4611-64	1		0.1	
22	O"RING D3.5XD401.6	4611-63	3		0.1	
21	SEAL HOUSING HOLDER	4611-61	1		108.0	
20	O"RING D3.5XD171.2	4611-53	3		0.1	
19	SPRING PIN D5X10	4611-52	2		0.1	
18	SHAFT SEAL LABYRINTH	4611-51	1		2.9	
17	O"RING D3.5XD29.1	4611-46	4		0.1	
16	JOINT D36XL67	4611-43	2		0.6	
15	STOP RING	4611-11	1		0.4	
14						
13						
12	SET BOLT M8X17 L=17	4211-62	3		0.1	
11	NOZZLE PIECE D2.0	4211-61	3		0.2	
10	TILTING PAD (NON-THRUST)	4211-41	1		3.8	
9	SPR.LK.WSHR. NO.2 6	4211-33	4		0.1	
8	+PAN HEAD SCREW M6X10	4211-32	4		0.1	
7	CLAMP	4211-31	4		0.1	
6	SCREW +CON. M4X0.7X20	4211-16	2		0.1	
5	SET PIN D13X14	4211-15	2		0.1	
4	SET BOLT M12X16	4211-14	5		0.1	
3	SPRING PIN D10X20	4211-13	1		0.1	
2	BEARING HOUSING (BOTTOM)	4211-12	1		10.0	
1	BEARING HOUSING (TOP)	4211-11	1		10.0	

A1 広製共98(2)

SPARE / WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	QUANTITY PER SET (WORKING / SPARE)	WORKS	WEIGHT(kg) PER PIECE / TOTAL	REMARKS
1 SET								

ORDER: 353N69 — ITEM: MCW121
CUSTOMER: TEC/KALTIM-5 — CHECKED: K.M — APPROVED: O.I
DATE: TEL 4512 '12.9.27 — PREPARED: T.O

ENGINEERING DEPARTMENT
COMPRESSOR & TURBINE ENGINEERING SECTION

PM	
APPROVED	O.Isumi
CHECKED	K.MATSUBAYASHI
PREPARED	T.OUTA
DRAWN	K.OKANO
SCALE	1/2

▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

TEC/KALTIM-5

101-J AIR COMPRESSOR
5H-6B (HP)
BEARING & SEAL ASSEMBLY DRAWING (2/2)

SPECIFIED NO. 4200 — DRAWING NO. 790-19489

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

製図日付	'12.09.18	マイクロ	初 回	改正回次		図種コード	
出図日付		日 付				類別コード	1. 2. 3. 4. 5.

DRAWING NO. 790-19489

Auto CAD

配布先: CUST

THIRD ANGLE PROJECTION	HYDRAULIC TEST PRESS Mpa	PLAN RECORD

THIS DRAWING REFERENCED TO

ORDER	ITEM	DRAWING NO.	同 / 修

DRAWING NO. 790-28415

100 ROTOR ASSEMBLY

2084(ROTOR OVERALL LENGTH)

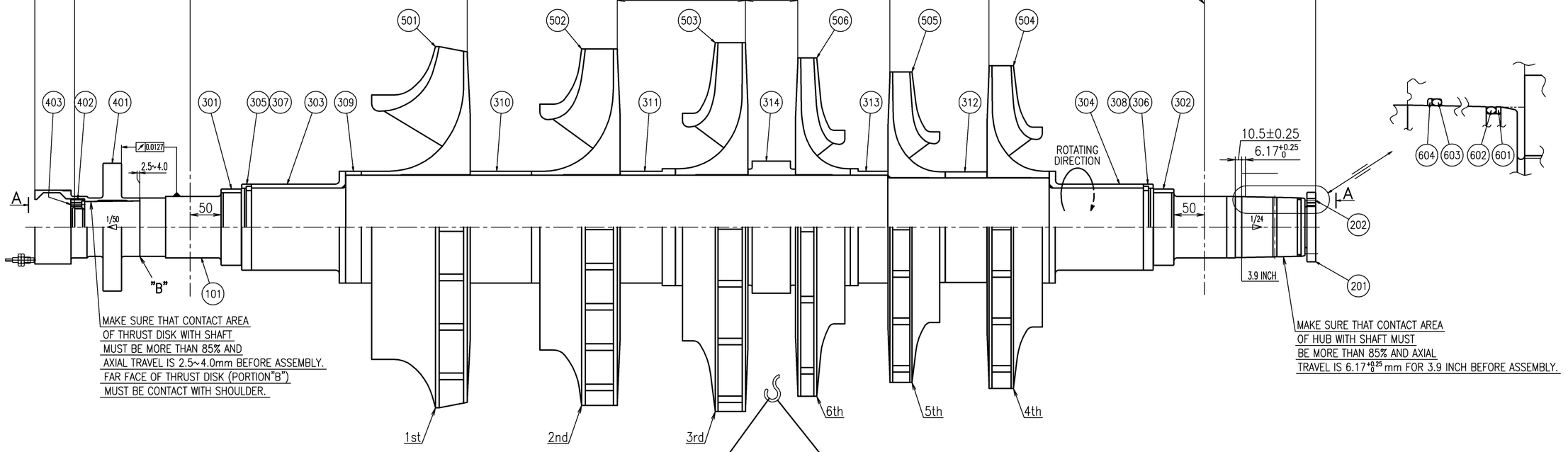
2019(SHAFT OVERALL LENGTH)

1650(BEARING SPAN)

65 188 450.7 452.6 208.7 85 235.1 396.3 350.4 181

℄ OF THRUST SIDE BEARING

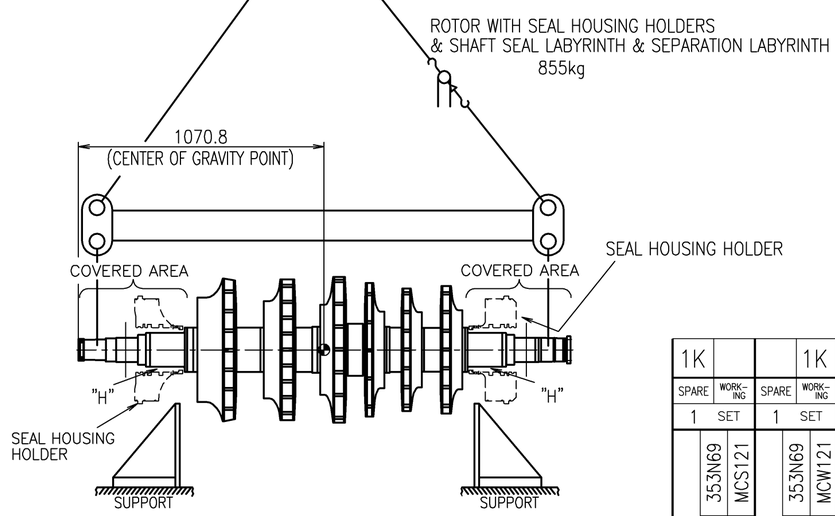
℄ OF ANTI THRUST SIDE BEARING



MAKE SURE THAT CONTACT AREA OF THRUST DISK WITH SHAFT MUST BE MORE THAN 85% AND AXIAL TRAVEL IS 2.5~4.0mm BEFORE ASSEMBLY. FAR FACE OF THRUST DISK (PORTION"B") MUST BE CONTACT WITH SHOULDER.

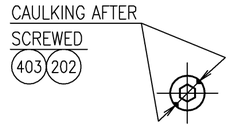
MAKE SURE THAT CONTACT AREA OF HUB WITH SHAFT MUST BE MORE THAN 85% AND AXIAL TRAVEL IS $6.17^{+0.25}_{0}$ mm FOR 3.9 INCH BEFORE ASSEMBLY.

MARK	PARTS NAME			PARTS NUMBER	Q'TY WORKING	Q'TY SPARE	WEIGHT(kg) PER PIECE	WEIGHT(kg) TOTAL	REMARKS
100	ROTOR ASSEMBLY			5001-00	1SET			639.5	
101	SHAFT			5111-11	1			261.0	
201	COUPLING LOCK NUT (3.9 INCH)			5211-11	1			0.7	
202	SET SCREW (FOR COUPLING)			5211-12	2			—	
301	SLEEVE (THRUST SIDE)			5212-11	1			4.1	
302	SLEEVE (ANTI THRUST SIDE)			5212-12	1			4.1	
303	SHAFT SLEEVE (THRUST SIDE)			5212-13	1			0.6	
304	SHAFT SLEEVE (ANTI THRUST SIDE)			5212-14	1			0.6	
305	SHROUD RING (THRUST SIDE)			5212-21	1			0.3	
306	SHROUD RING (ANTI THRUST SIDE)			5212-22	1			0.3	
307	SPLIT RING (THRUST SIDE)			5212-25	1			0.2	
308	SPLIT RING (ANTI THRUST SIDE)			5212-26	1			0.2	
309	1st IMPELLER SPACER			5212-31	1			0.7	
310	1st~2nd IMPELLER SPACER			5212-32	1			2.6	
311	2nd~3rd IMPELLER SPACER			5212-33	1			2.7	
312	4th~5th IMPELLER SPACER			5212-34	1			2.7	
313	5th~6th IMPELLER SPACER			5212-35	1			1.8	
314	BALANCE PISTON			5213-11	1			7.4	
401	THRUST DISK			5214-11	1			10.0	
402	LOCK NUT (FOR THRUST DISK)			5214-12	1			0.5	
403	SET SCREW (FOR THRUST DISK)			5214-13	2			—	
501	1st IMPELLER			5511-20	1			80.0	
502	2nd IMPELLER			5512-20	1			70.0	
503	3rd IMPELLER			5513-20	1			64.0	
504	4th IMPELLER			5514-20	1			43.0	
505	5th IMPELLER			5515-20	1			38.0	
506	6th IMPELLER			5516-20	1			44.0	
601	BACKUP RING (3.9 INCH)			5711-31	1			—	
602	"O" RING (3.9 INCH)			5711-32	1			—	
603	"O" RING (3.9 INCH)			5711-33	1			—	
604	BACKUP RING (3.9 INCH)			5711-34	1			—	



NOTE FOR ROTOR SUPPORTING

1. LIFTING WIRE SHOULD BE PLACED AT THE TAPER PART OF THE ROTOR AND WILL BE LIFTED AS INDICATED IN ABOVE SKETCH DURING ASSEMBLY OR DISASSEMBLY OF COMPRESSOR. (LOCK NUT SHOULD BE ASSEMBLED BEFORE LIFTING TO PREVENT SLIPPING OF LIFTING WIRE.)
2. ROTOR SHALL BE SUPPORTED AT "H" POINTS AND RUBBER SHEETS SHALL BE KEPT BETWEEN ROTOR AND SUPPORTS. (SEAL PORTION SHALL BE COVERED FOR PROTECTION)



VIEW A

COUNTERCLOCKWISE DIRECTION FROM THRUST SIDE VIEW.

SPARE	WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	WORKING	SPARE	WORKS	PER PIECE	TOTAL	REMARKS
1K		100	ROTOR ASSEMBLY			1K				639.5	
1 SET						QUANTITY PER SET			WEIGHT(kg)		

	SPARE	WORKING
ORDER ITEM	353N69 MCS121	353N69 MCW121
CUSTOMER CHECKED APPROVED	TEC/KALTIM-5 O.I	TEC/KALTIM-5 O.I
DATE PREPARED	TEL 4140 '12.8.20 A.I	TEL 4140 '12.8.20 A.I

TURBO MACHINERY ENG. DEPT.
COMPRESSOR & TURBINE ENGINEERING SECTION

PM
APPROVED O.Isumi
CHECKED Y.KOHNO
PREPARED A.IKENO
DRAWN S.TSUCHIYAMA
SCALE 1/5

▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

TEC/KALTIM-5

101-J AIR COMPRESSOR
5H-6B (HP)
ROTOR ASSEMBLY

SPECIFIED NO. 500A

DRAWING NO. 790-28415

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

製図日付	'12.08.16	マイクロ	初回	改正回次	図幅コード	
出図日付		日付			類別コード	1. 2. 3. 4. 5.

図中に指示なき場合はこの表による

削り加工の普通許容差	
寸法の区分	1 級
0.5 以上 6 以下	± 0.1
6 をこえ 30 以下	± 0.2
30 〃 120 〃	± 0.3
120 〃 400 〃	± 0.5
400 〃 1000 〃	± 0.8
1000 〃 2000 〃	± 1.2
2000 〃 4000 〃	± 2.0
4000 〃 8000 〃	± 2.0
8000 〃 16000 〃	± 2.5

一般鋳金加工の普通許容差	
寸法の区分	—
0.5 以上 6 以下	±0.2
6 をこえ 30 以下	± 0.5
30 〃 120 〃	± 0.8
120 〃 315 〃	± 1.2
315 〃 1000 〃	± 2.0
1000 〃 2000 〃	± 3.0
2000 〃 4000 〃	± 4.0
4000 〃 8000 〃	± 5.0
8000 〃 16000 〃	± 6.0

溶接構造物の普通許容差	
寸法の区分	—
0.5 以上 120 以下	±1.5
120 をこえ 315 以下	± 2.0
315 〃 1000 〃	± 3.0
1000 〃 2000 〃	± 5.0
2000 〃 4000 〃	± 7.0
4000 〃 8000 〃	±10.0
8000 〃 16000 〃	±15.0

Auto CAD

配布先	部数
CUST	

Pサ部 A3x1

控

出図先

職制コード

要求 NO.

A2 広製共98(3)

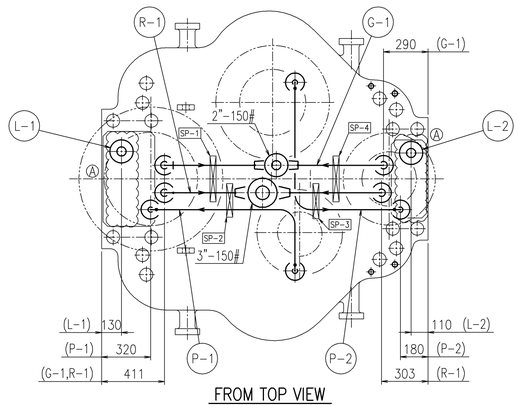
THIRD ANGLE PROJECTION	HYDRAULIC TEST PRESS Mpa	PLAN RECORD

THIS DRAWING REFERENCED TO

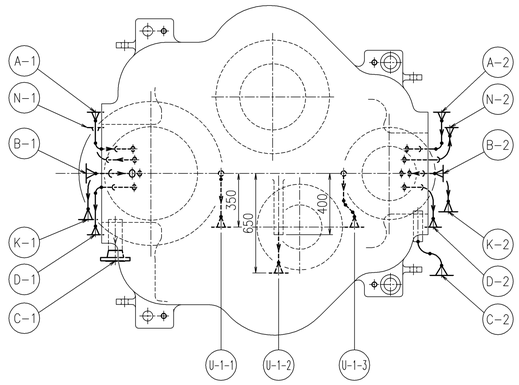
ORDER	ITEM	DRAWING NO.	用 修

Rev.Ⓐ
1.REVISED PIPE No.L-1&L-2.
'12.10.4 T.F,Y.O,Y.K,O.I

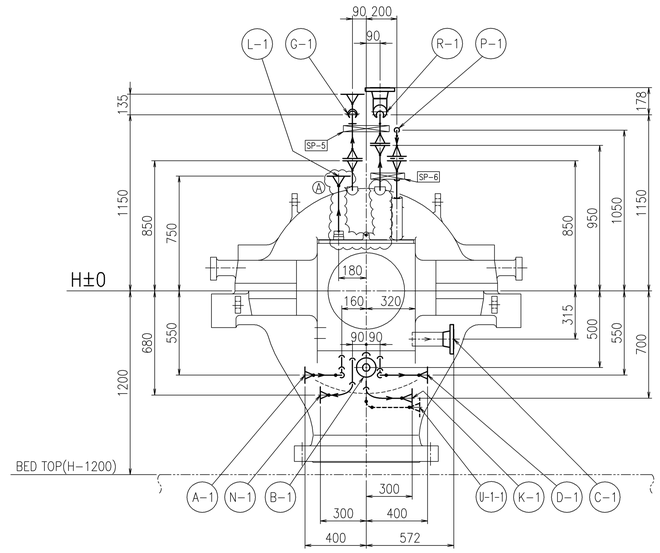
P.N



FROM TOP VIEW



VIEW B-B

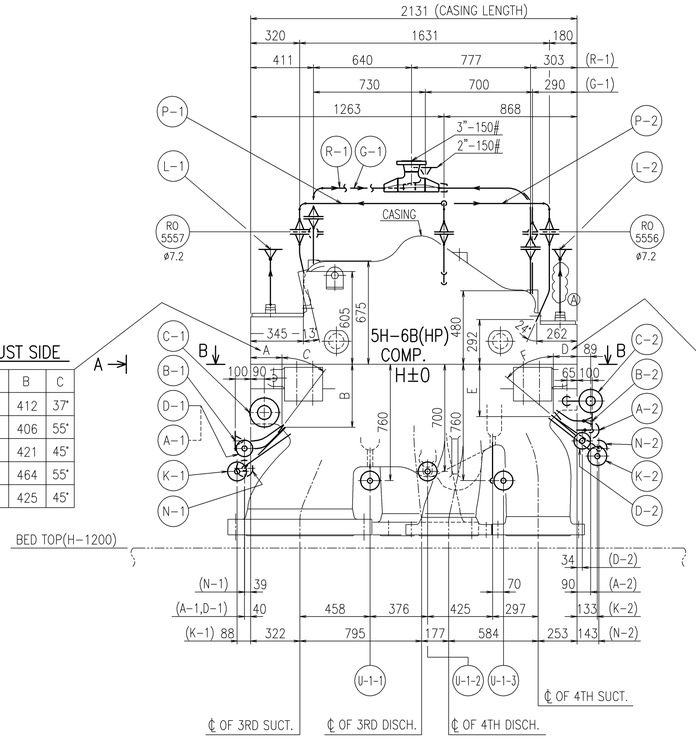


THRUST SIDE
(VIEW-A)

PIPING

PIPE NO. TH. SIDE	PIPE NO. ATH. SIDE	PIPE NAME	SIZE & RATING
A-1	A-2	SEPARATION GAS SUPPLY	1" ASME 150# RF
B-1		L.O. SUPPLY	1½" ASME 150# RF
	B-2		1" ASME 150# RF
C-1		L.O. DRAIN	3" ASME 150# RF
	C-2		2" ASME 150# RF
D-1	D-2	SEPARATION GAS DRAIN	1" ASME 150# RF
G-1		GAS VENT	1½" ASME 150# RF
K-1	K-2	PRIMARY GAS DRAIN	1" ASME 600# RF
L-1	L-2	BEARING VENT	2" ASME 150# RF
N-1	N-2	SECONDARY GAS DRAIN	1" ASME 150# RF
P-1		HOT GAS INJECTION (FROM HP COMP. 3D)	1" ASME 600# RF
	P-2	HOT GAS INJECTION (FROM HP COMP. 4D)	1" ASME 600# RF
R-1		BLEED OFF CONNECTOR	1½" ASME 150# RF
U-1		CASING DRAIN	1" ASME 600# RF

NOTE.;
1). SP-NO MARKS SHOW POSITIONS OF PIPE SUPPORTS.

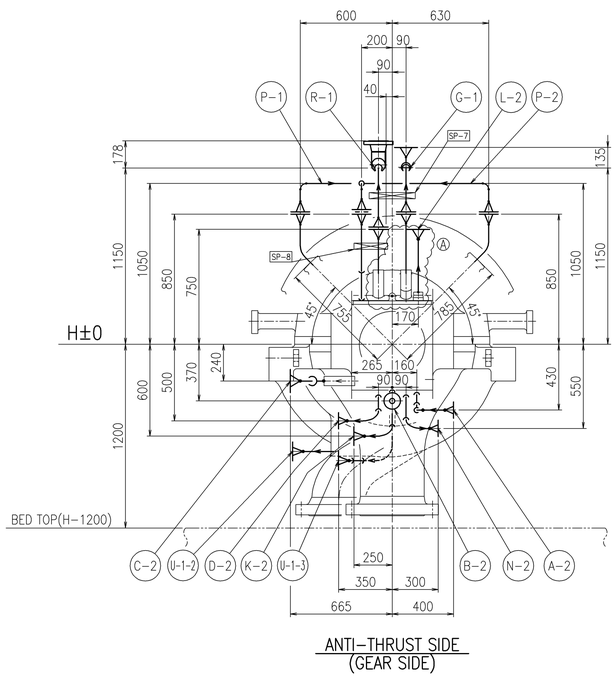


THRUST SIDE

PIPE NO.	A	B	C
A-1	205	412	37°
B-1	200	406	55°
P-1	213	421	45°
K-1	249	464	55°
N-1	216	425	45°

ANTI-THRUST SIDE
(GEAR SIDE)

PIPE NO.	D	E	F
A-2	137	325	40°
B-2	121	309	55°
D-2	154	342	50°
K-2	173	361	52°
N-2	154	342	55°



ANTI-THRUST SIDE
(GEAR SIDE)

REF. DWG.;

1). ISOME DWG.	:	861-32373
2). 車室水圧試験要領図	:	790-28414
3). 車室 (1/7)	:	961-13632A
4). 車室 (2/7)	:	961-13633
5). 車室 (3/7)	:	961-13634
6). 車室 (4/7)	:	961-13635A
7). 車室 (5/7)	:	961-13636A
8). 車室 (6/7)	:	961-13637
9). 車室 (7/7)	:	961-13638A
10). 軸受点検蓋 (スラスト側)	:	~~799-20111J~~ 791-24457 Ⓐ
11). 軸受点検蓋 (反スラスト側)	:	~~799-20112K~~ 791-24458
12). 技術連絡メモ(P&I 線図作成用コンプレッサ避り配管データ)	:	796-81225
13). P&ID LUBE OIL & LABY. SEAL SYSTEM (BASE PLATE)	:	750-18938B

SPARE	WORKING	MARK	DESCRIPTION	MATERIAL	TEST PIECE	WORKING QUANTITY PER	SPARE QUANTITY SET	WORKS	PER PIECE WEIGHT(kg)	TOTAL WEIGHT(kg)	REMARKS
1 SET											

ORDER ITEM	35JN69	MCW121	PLANT ENGINEERING DEPARTMENT COMPRESSION SYSTEM DESIGN SECTION
CUSTOMER CHECKED APPROVED	TEC/KALTIM-5	O.I	TEC/KALTIM-5
		Y.K	PM
			APPROVED O.Isumi
			CHECKED Y.KOHNO
DATE PREPARED	TEL 4241	'12.7.30	PREPARED Y.Okamoto
		Y.O	DRAWN T.FUJII

A-101-J AIR COMPRESSOR TRAIN PIPING ASS'Y DWG. AROUND 5H-6B (HP) COMP. Ⓐ

SCALE 1/20
▽▽▽▽0.8S ▽▽▽6.3S ▽▽25S ▽100S

SPECIFIED NO. 8100
DRAWING NO. 790-19491

MITSUBISHI HEAVY INDUSTRIES COMPRESSOR CORPORATION

製図日付		マイクロ	新	旧	改正印次	図種コード	
出図日付		日 付				識別コード	1. 2. 3. 4. 5.

DRAWING NO. 790-19491

図中に指示なき場合はこの表による

削り加工の普通許容差	
寸法の区分	1 級
0.5 以上 6 以下	± 0.1
6 を こえ 30 以下	± 0.2
30 〃 120 〃	± 0.3
120 〃 400 〃	± 0.5
400 〃 1000 〃	± 0.8
1000 〃 2000 〃	± 1.2
2000 〃 4000 〃	± 2.0
4000 〃 8000 〃	± 2.0
8000 〃 16000 〃	± 2.5

一般金加工の普通許容差	
寸法の区分	—
0.5 以上 6 以下	± 0.2
6 を こえ 30 以下	± 0.5
30 〃 120 〃	± 0.8
120 〃 315 〃	± 1.2
315 〃 1000 〃	± 2.0
1000 〃 2000 〃	± 3.0
2000 〃 4000 〃	± 4.0
4000 〃 8000 〃	± 5.0
8000 〃 16000 〃	± 6.0

溶接構造物の普通許容差	
寸法の区分	—
0.5 以上 120 以下	± 1.5
120 を こえ 315 以下	± 2.0
315 〃 1000 〃	± 3.0
1000 〃 2000 〃	± 5.0
2000 〃 4000 〃	± 7.0
4000 〃 8000 〃	± 10.0
8000 〃 16000 〃	± 15.0

Auto CAD

配布先	部数
広品証	1
組立	3
コケ設	A3x1
プ装設	A3x1
控	
出図先	

製造コード
6321
要求 NO.