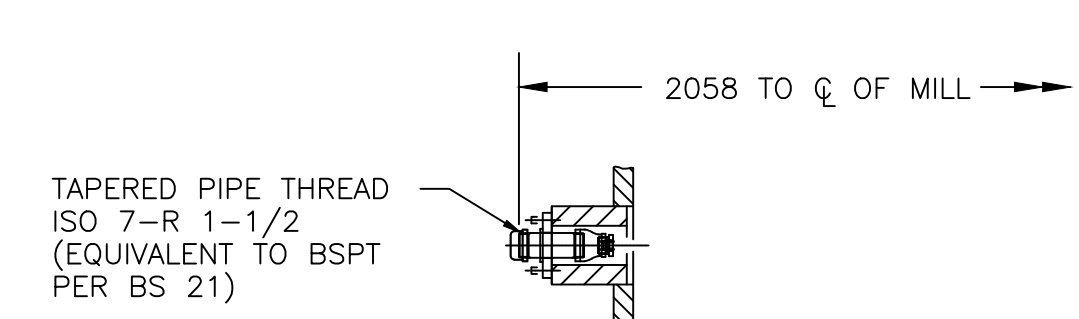
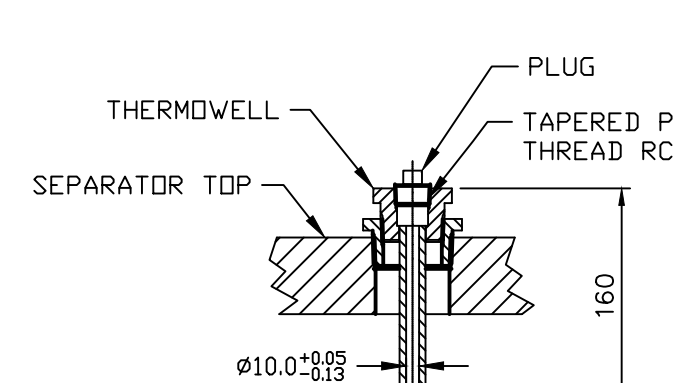
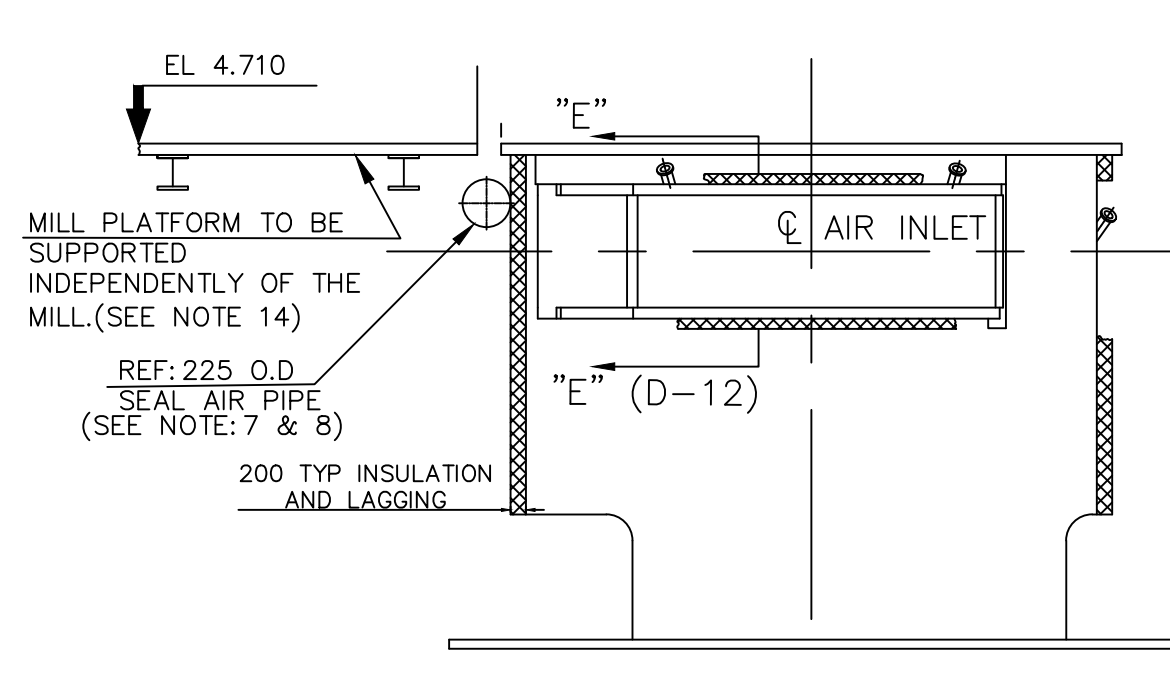
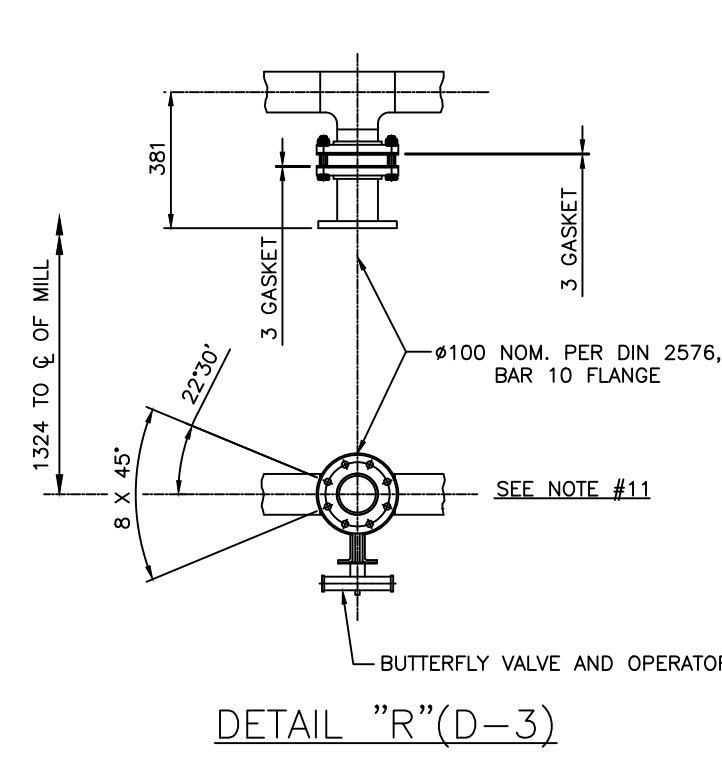
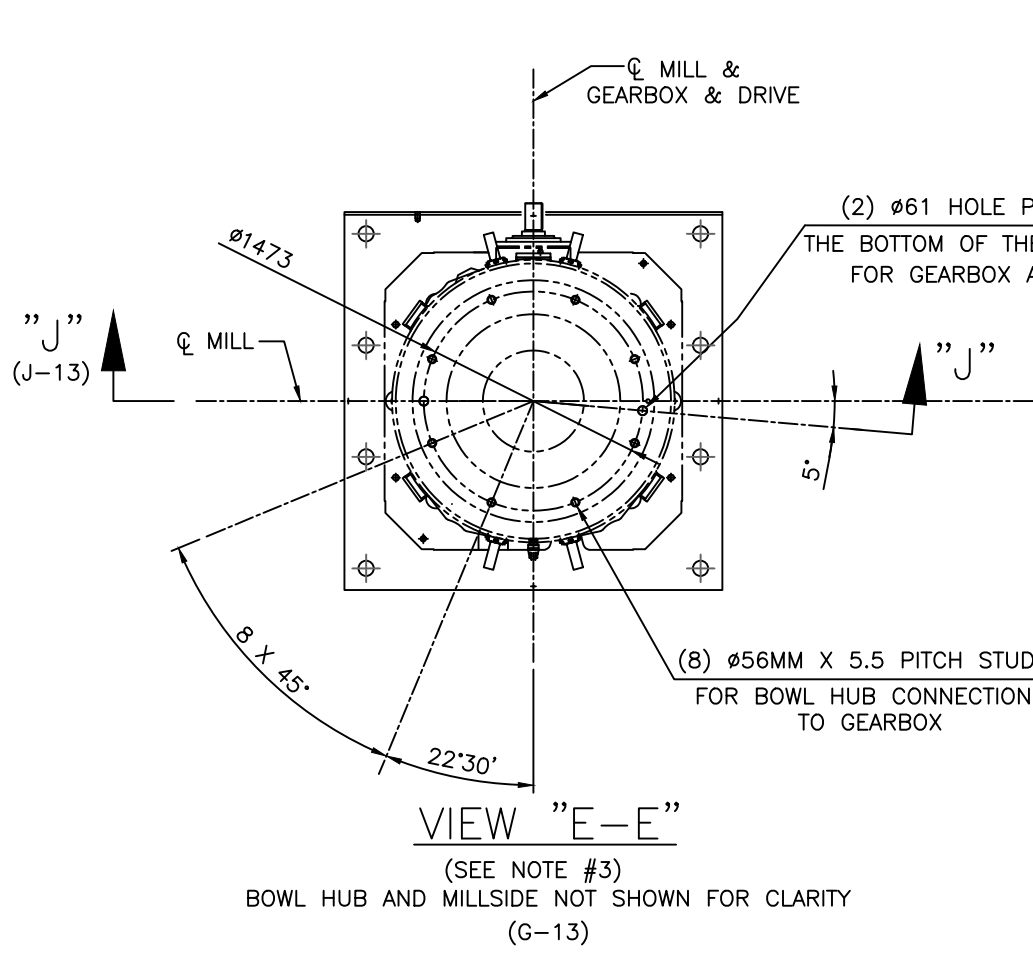
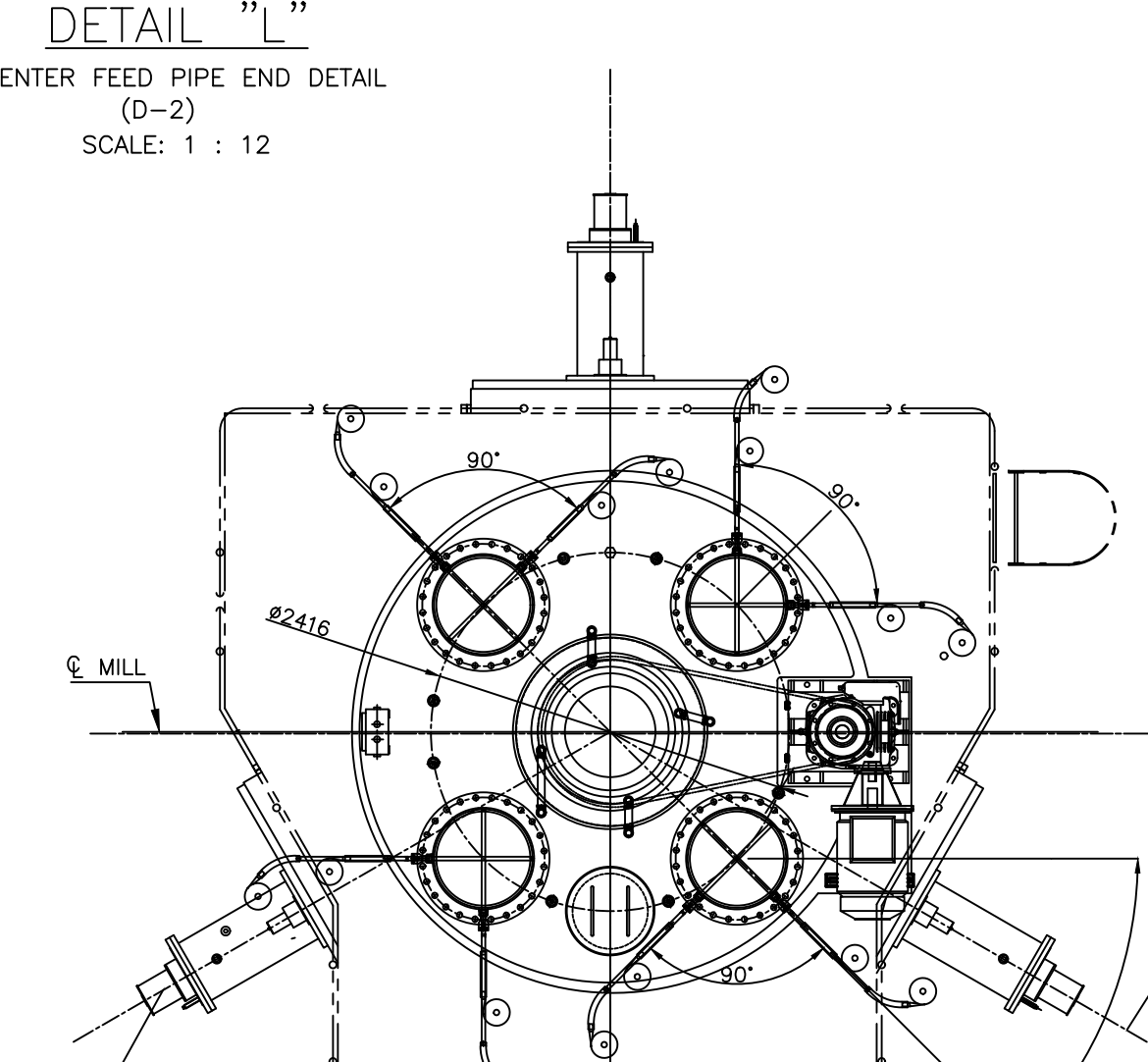
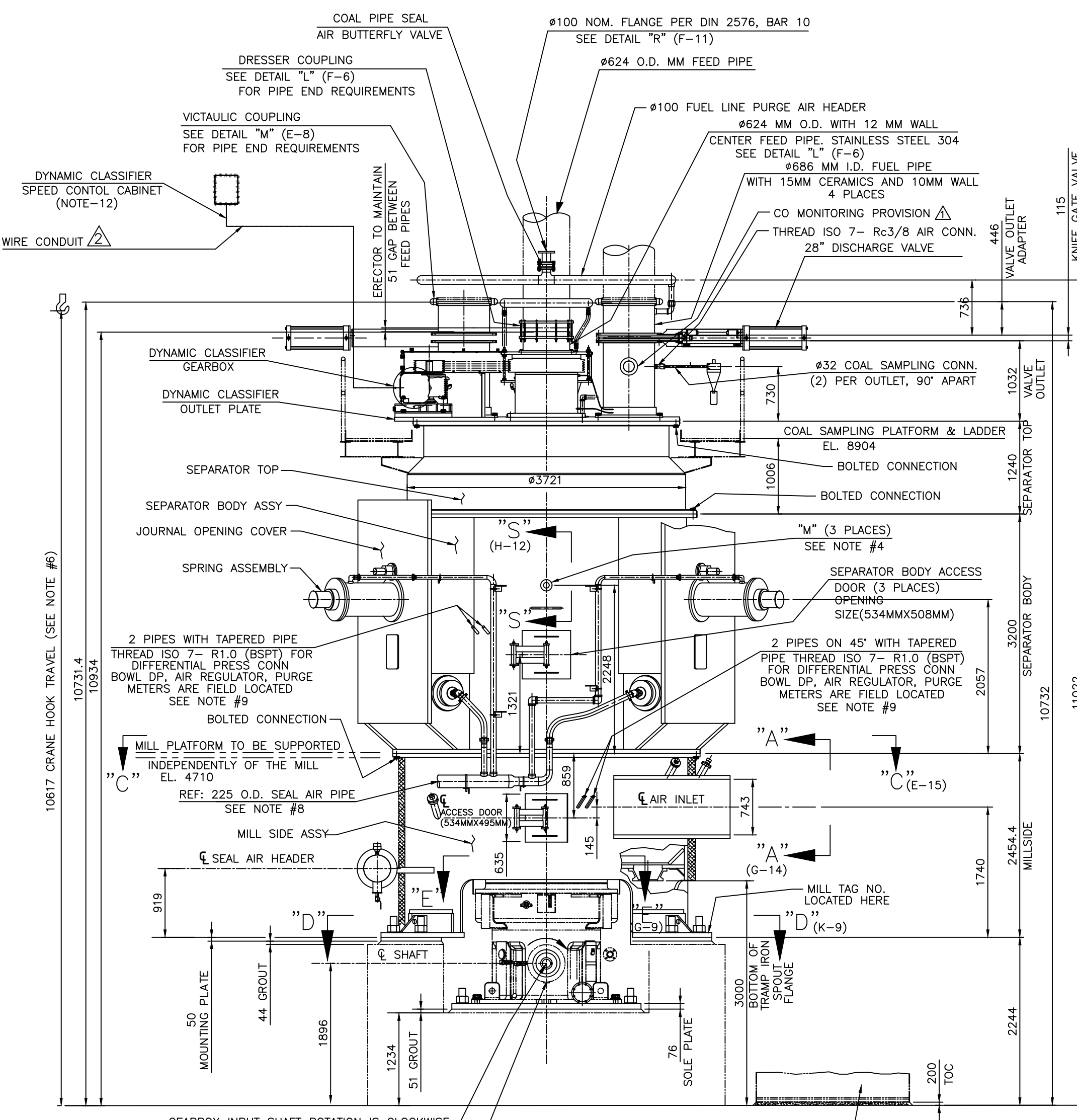
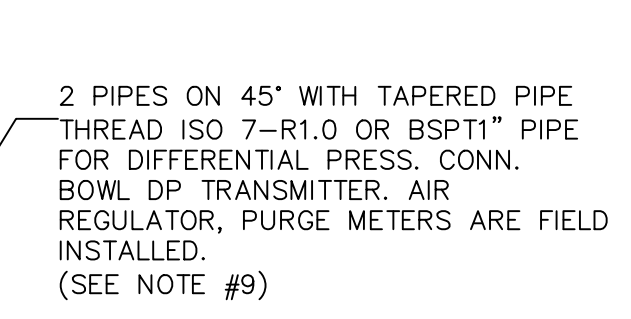
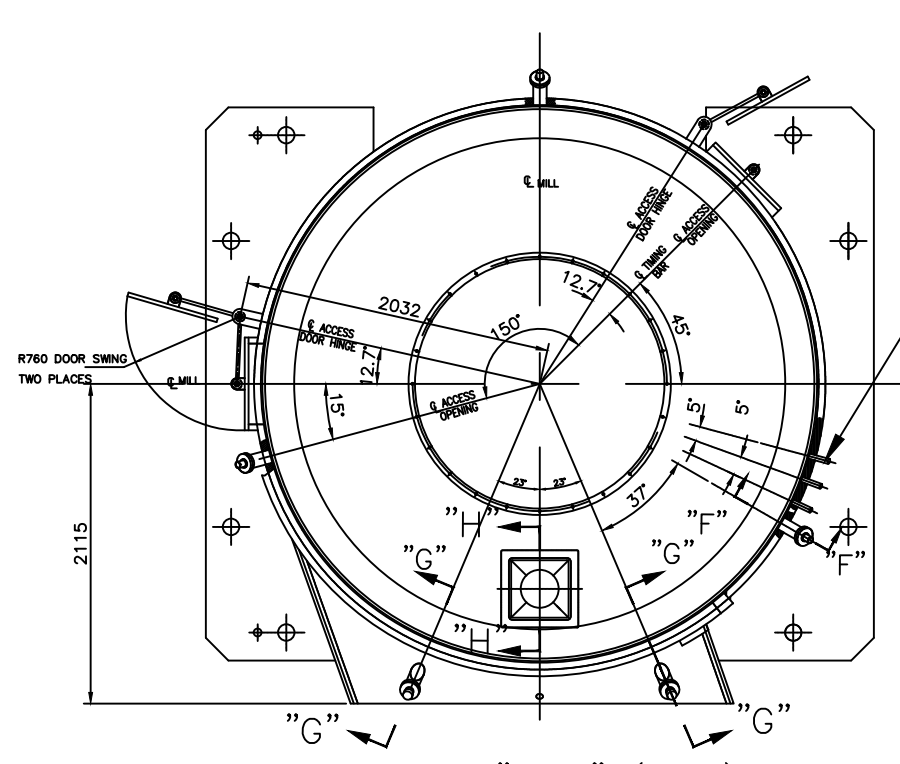
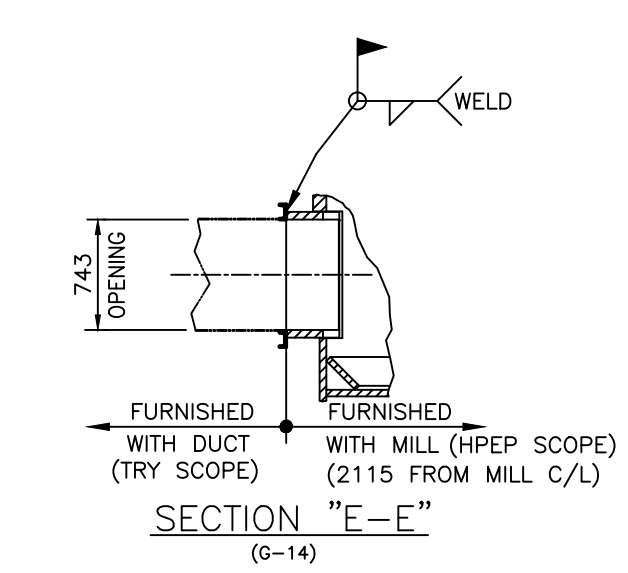
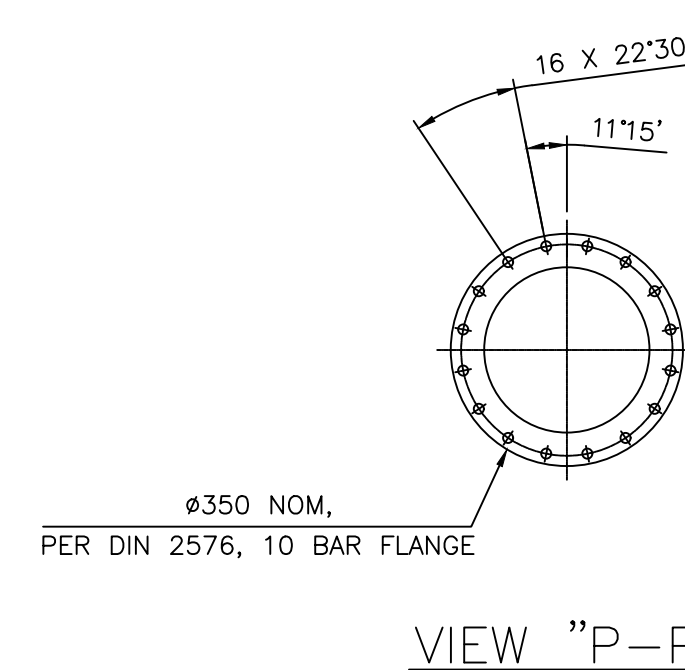
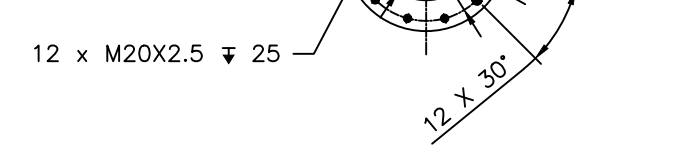
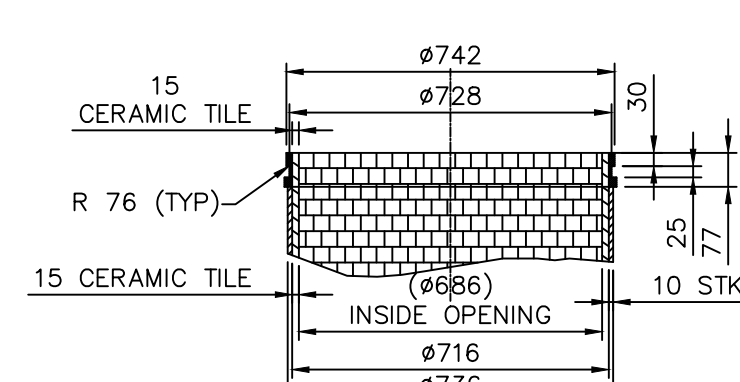
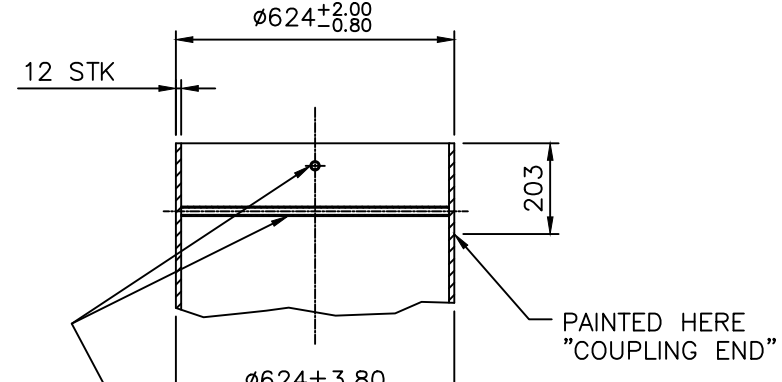


GUARANTEES FOR MILL WEAR PARTS:	
GUARANTEED LIFE OF GRINDING ELEMENTS	: 10,000 HRS
GUARANTEED LIFE OF MILL DISCHARGE VALVES	: 15,000 HRS
GUARANTEED LIFE OF CERAMIC ITEMS	: 25,000 HRS

1.	ALL DIMENSIONS ARE IN MM. ELEVATIONS SHOWN IN METRES.	BO
2.	PAINT SHOP COAT IN ACCORDANCE WITH CONTRACT SPECIFICATION.	SE
3.	FOR RELATIVE LOCATIONS AND TRUE ORIENTATION OF MILL, MILL PARTS AND EXTERNAL EQUIPMENT SEE KEY PLAN.	SEPAR
4.	FIRE EXTINGUISHING SYSTEM: (PIPING & CONNECTORS IN PIPING CENTRE SCOPE). THE FOLLOWING NOZZLES WILL BE SUPPLIED PER MILL. SIZE NOTED BELOW.	DYNAM
	LOCATION OF CONNECTIONS SHOWN IN ELEVATION AND PLAN VIEWS.	AND
	(1) NOZZLES "K" PIPE THREAD ISO 7-R 1/2 - SEPARATOR TOP (ZONE D - 1)	JOURN
	(2) NOZZLES "L" PIPE THREAD ISO 7-R 1/2 - MILLISEL (ZONE D - 2 & D-14)	WITH
	(3) NOZZLES "M" PIPE THREAD ISO 7-R 1/2 - SEPARATOR BODY (ZONE C - 4)	JO
	30.66 LPM PER NOZZLE AT 2.812 Kg/cm ² , MAXIMUM PRESSURE 7.030 Kg/cm ²	JO
	PURGE AIR 7.08m ³ /Min PER MILL REQUIRED FOR NOZZLE @	
	PRESSURE 254 mm GREATER THAN UNDER BOWL PRESSURE.	
5.	ALL CONNECTIONS TO BE PER ISO, NOMINAL SIZES IN MM.	
6.	CRANE HOOK TRAVEL FROM GROUND FLOOR TO 101.56 MM SEE ELEVATION VIEW.	
7.	THE CRANE HOOK MUST TRAVEL 2337 FROM THE Q OF THE MILL ALONG THE Q OF THE JOURNAL TO 3971 FROM THE Q OF THE MILL ALONG THE Q OF THE JOURNAL. SEE KEY PLAN.	
8.	SEAL AIR CONSUMPTION PER MILL IS 5881 KG/HR WITH A MILL SEAL AIR HEADER PRESSURE 250 mm WATER COLUMN HIGHER THAN MILL INLET AIR PRESSURE. HIGHER SEAL AIR HEADER PRESSURE WILL RESULT IN GREATER SEAL AIR CONSUMPTION.	

MAJOR COMPONENTS		WEIGHT (ESTIMATED) (MT)
PLANETARY GEAR BOX (W/O OIL)		16.00
MILLSIDE ASSEMBLY		19.83
BOWL AND BOWL HUB ASSEMBLY		18.35
SEPARATOR BODY ASSY. WITH TRUNNION SHAFTS		21.98
SEPARATOR TOP		4.74
DYNAMIC CLASSIFIER COMPLETE		11.80
DYNAMIC CLASSIFIER OUTLET PLATE AND DRIVE ASSEMBLY		9.00
JOURNAL SHAFT ASSEMBLY WITH GRINDING ROLL	(1)	5.76
JOURNAL HEAD ASSEMBLY	(1)	3.44
JOURNAL OPENING COVER ASSEMBLY WITH SPRING ASSEMBLY	(1)	3.91
JOURNAL MAINTENANCE: - JOURNAL TIE & END PLAY CHECKING		6.03
- JOURNAL BEARING		6.45

DYNAMIC CLASSIFIER REQUIREMENTS:

- MOTOR:
- CLASS F INVERTER DUTY INSULATION, NEMA DESIGN B

-DRIVE:

- VARIABLE FREQUENCY DRIVE 415 V, 3 PHASE, 50 HZ, IP-54
- 45 KW INVERTER DUTY CONSTANT TORQUE, TFC 415 V, 50 HZ
- 3 PHASE ENCLOSURE WITH AIR CONDITIONERS.

MILL DISCHARGE VALVE REQUIREMENTS:

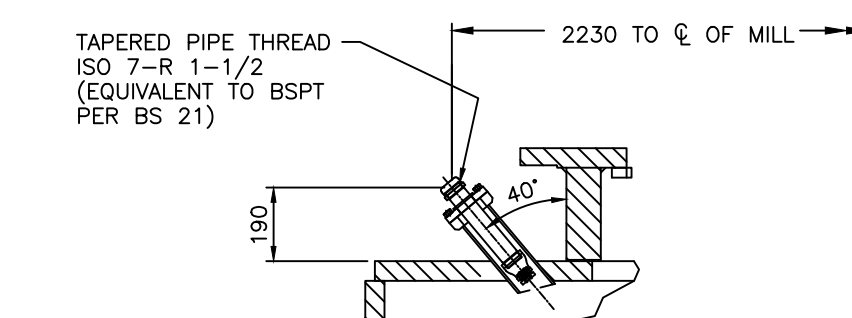
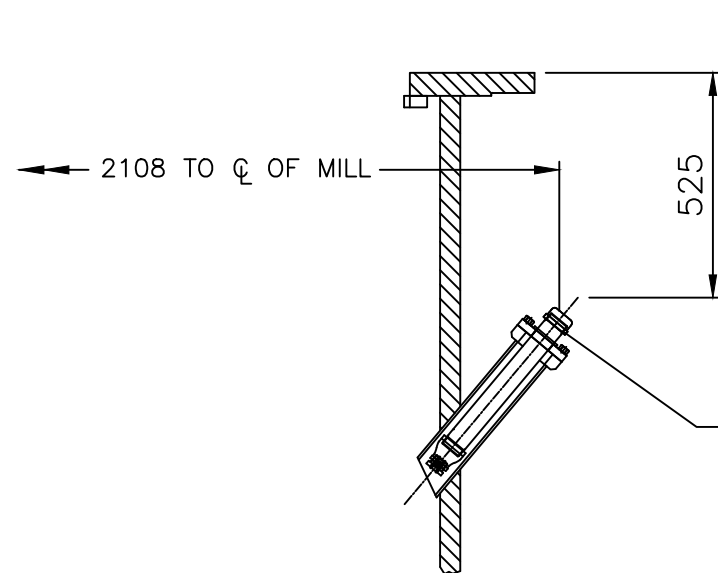
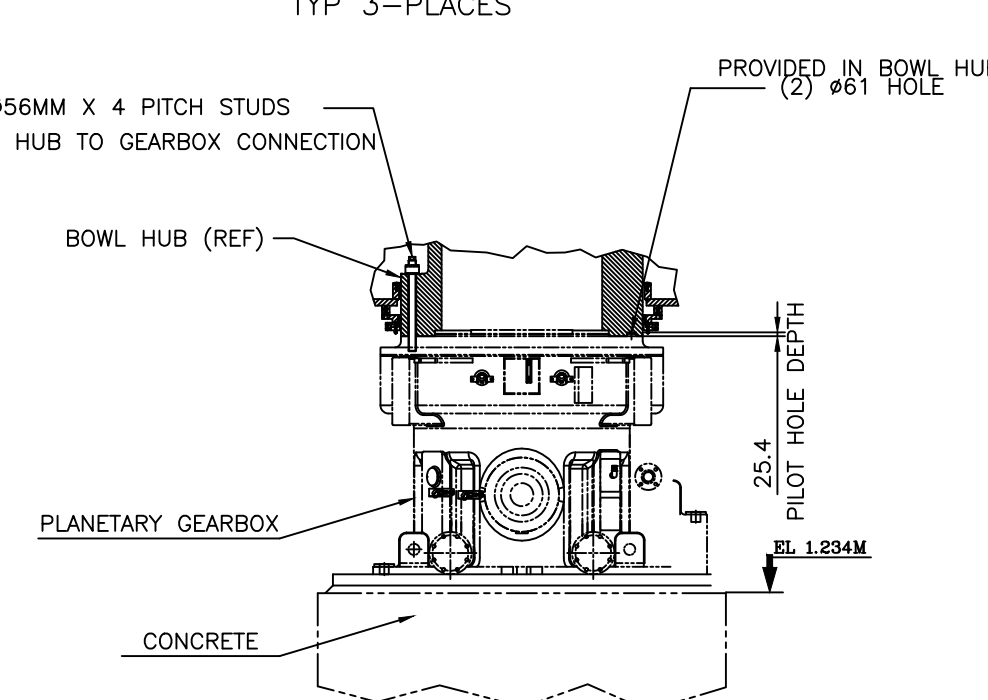
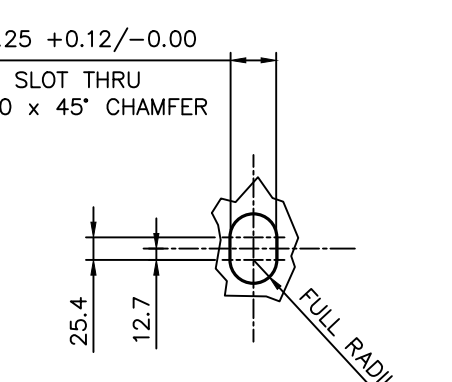
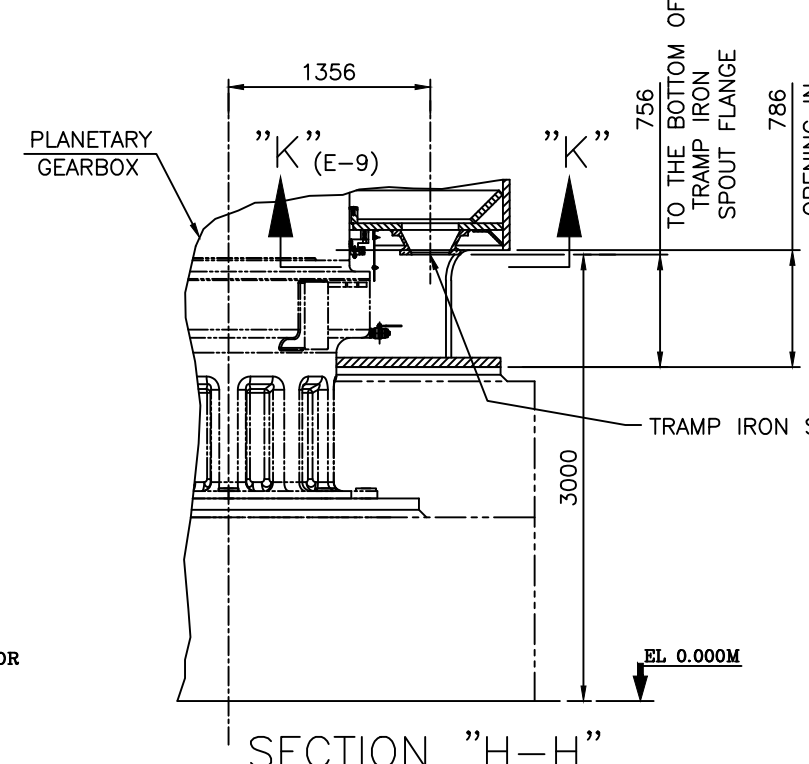
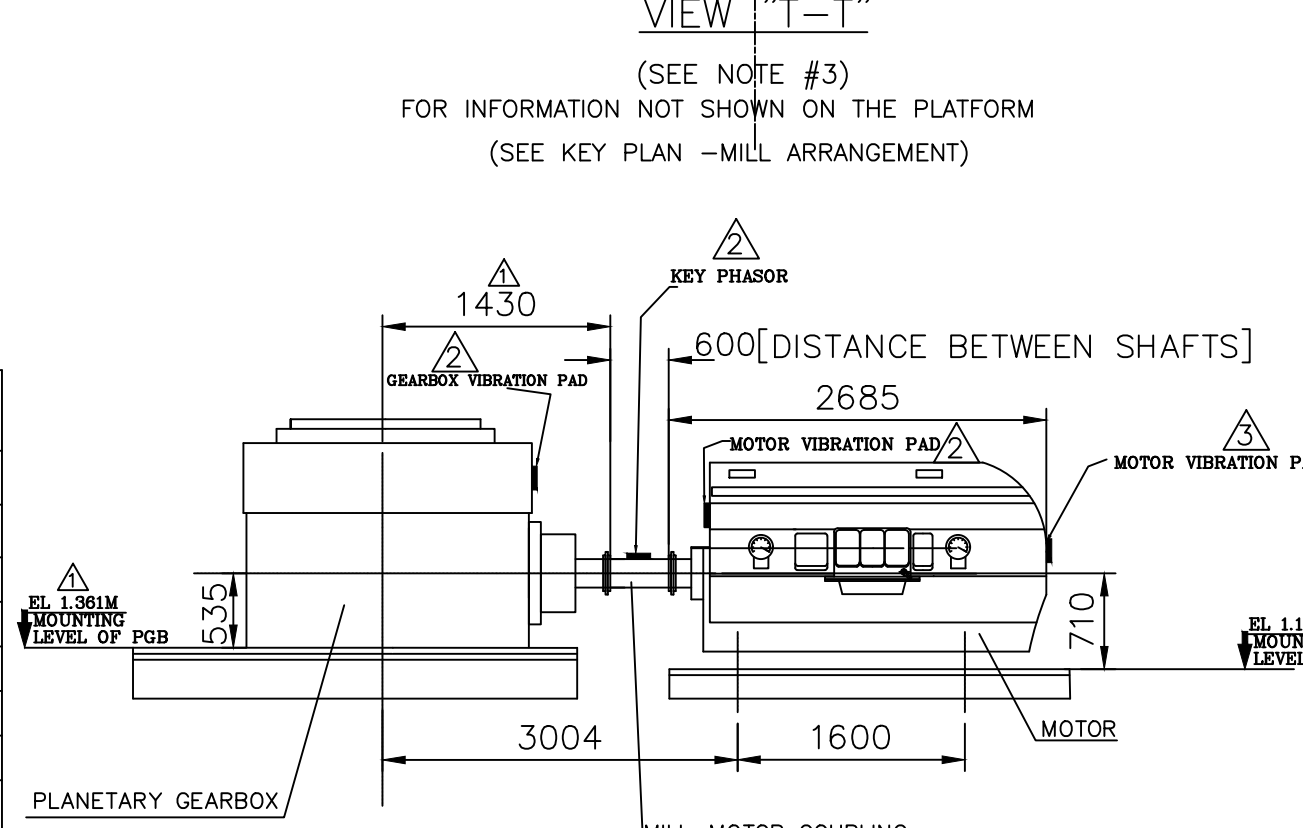
- DISCHARGE VALVE TERMINAL BOX - IP-65
- CONDUIT CONNECTION ISO 7-8 1-1/2 (BSP)

AIR CONTROL VALVE:
ELECTRICAL REQUIREMENTS: 240 VAC, RATED FOR CONTINUOUS DUTY.
IP 65 RATED, CLASS H COILS, DOUBLE SOLENOID.
4 WAY, 5 PORTS THREE POSITION VALVE,
1/31MM NPT CONNECTION, 10.546 Kg/cm² M.
0.20m³/Min
AIR REQUIREMENTS:
AIR SHALL BE OF INSTRUMENT AIR QUALITY.
@ 4.5-7.030 Kg/cm² OPERATING PRESSURE.

LIMIT SWITCHES:
ELECTRICAL REQUIREMENTS: RATED 10 AMP AT 240 VAC, 5 AMP @ 125 V.
(8 SWITCHES PER MILL.)

MATERIAL OF MILL WEAR PARTS:

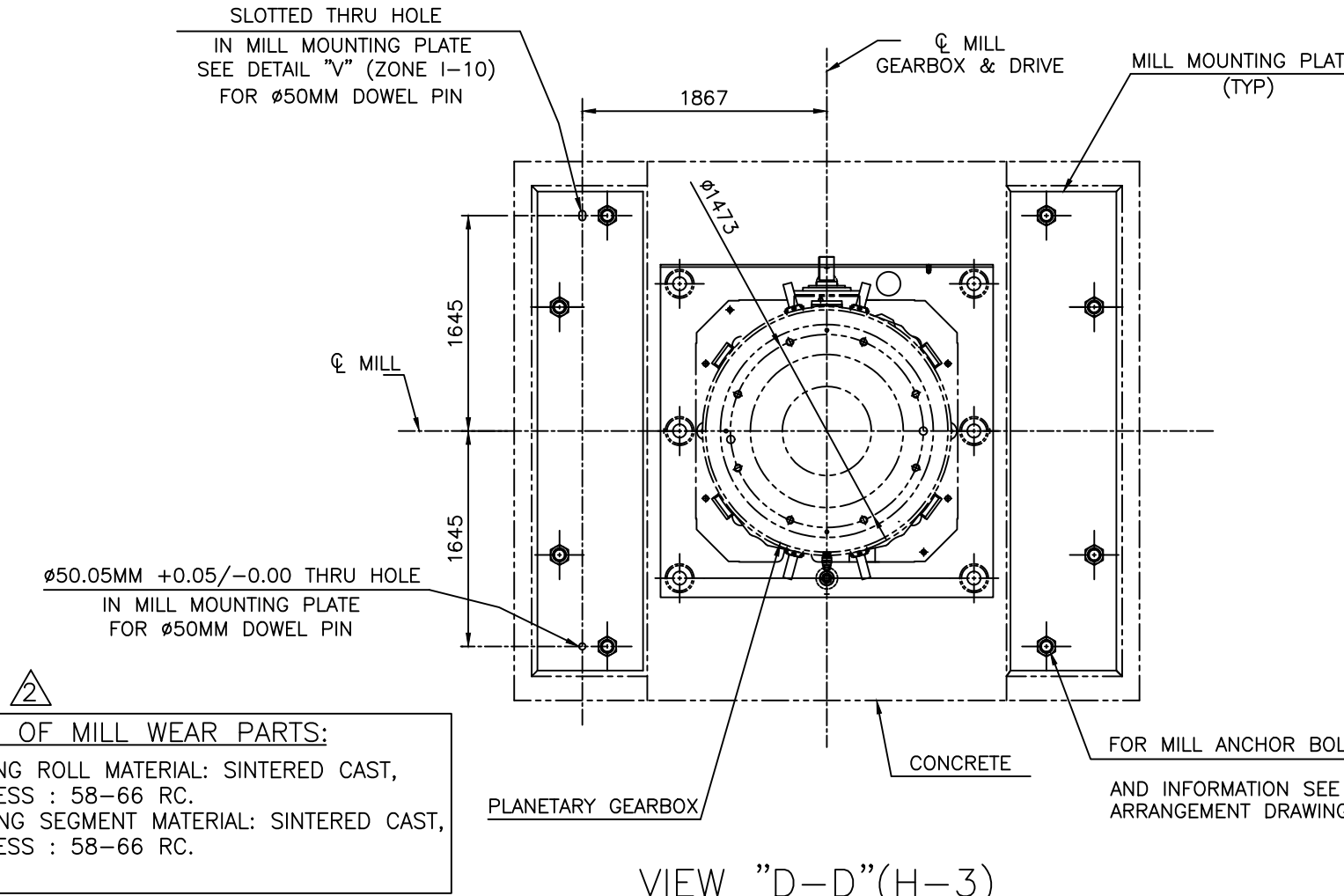
1. GRINDING ROLL MATERIAL: SINTERED CAST, HARDNESS : 58-66 RC.
2. BULLRING SEGMENT MATERIAL: SINTERED CAST, HARDNESS : 58-66 RC.

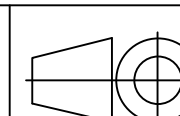


REV. 03	21.11.25	ALTERED UDAY	CHECKED KCM	APPROVED AMAN	REV. 02	28.10.25	ALTERED UDAY	CHECKED KCM	APPROVED AMAN	REV. 01	13.09.25	ALTERED UDAY	CHECKED KCM	APPROVED AMAN
MODIFIED INLINE WITH CUSTOMER VIDEO COMMENTS.					MODIFIED INLINE WITH CUSTOMER VIDEO COMMENTS.					MODIFIED INLINE WITH CUSTOMER VIDEO COMMENTS.				
REV. 04	05.12.25	ALTERED UDAY	CHECKED KCM	APPROVED AMAN										
MODIFIED INLINE WITH CUSTOMER VIDEO COMMENTS.														

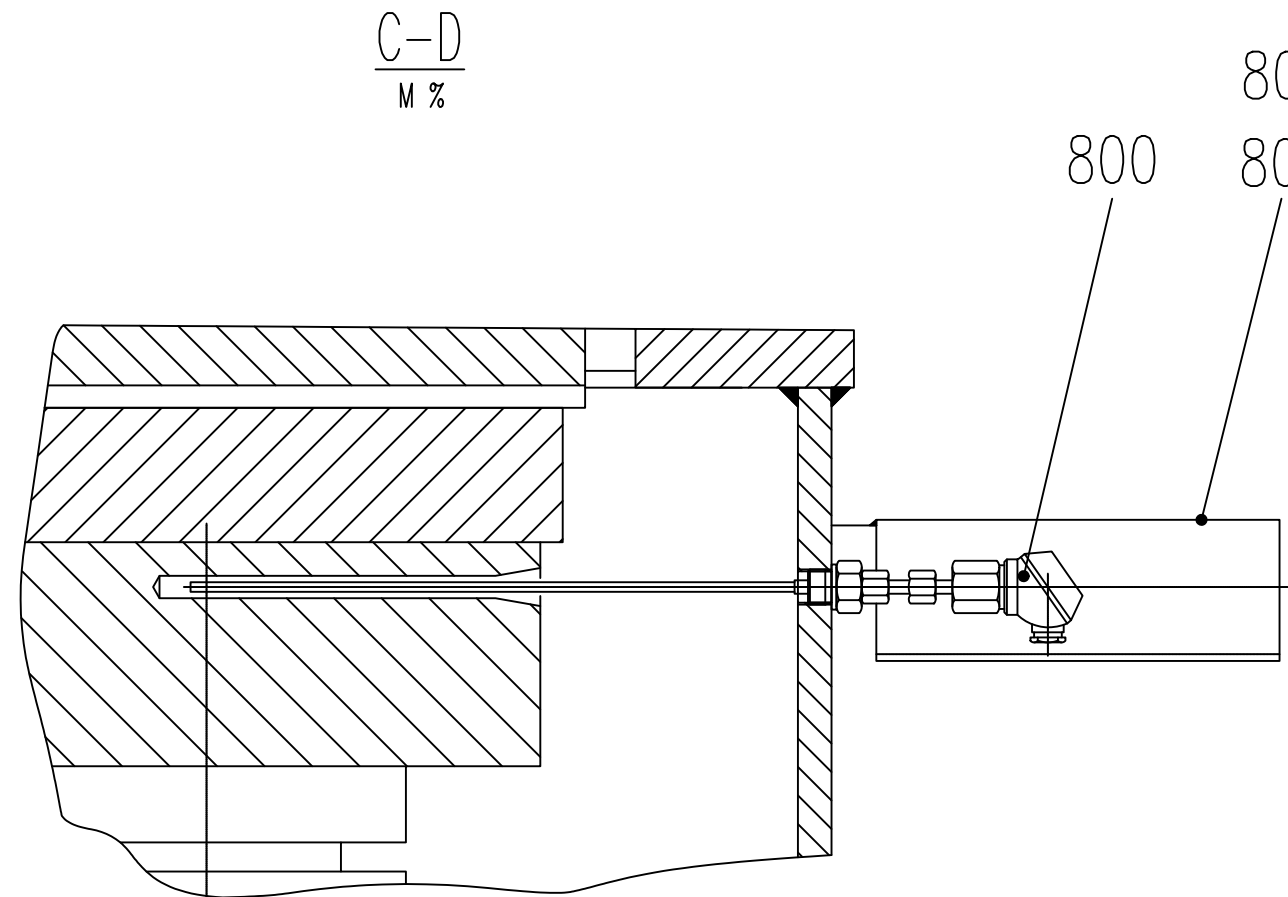
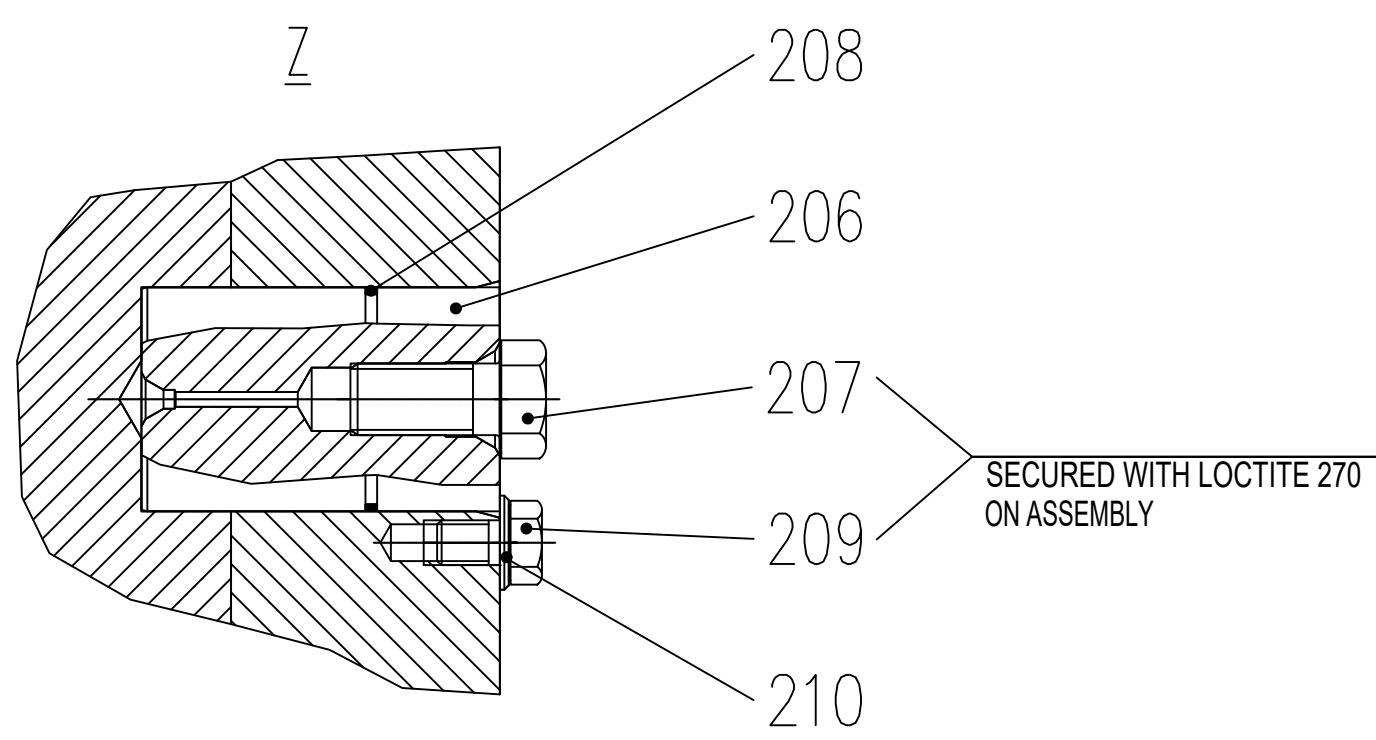
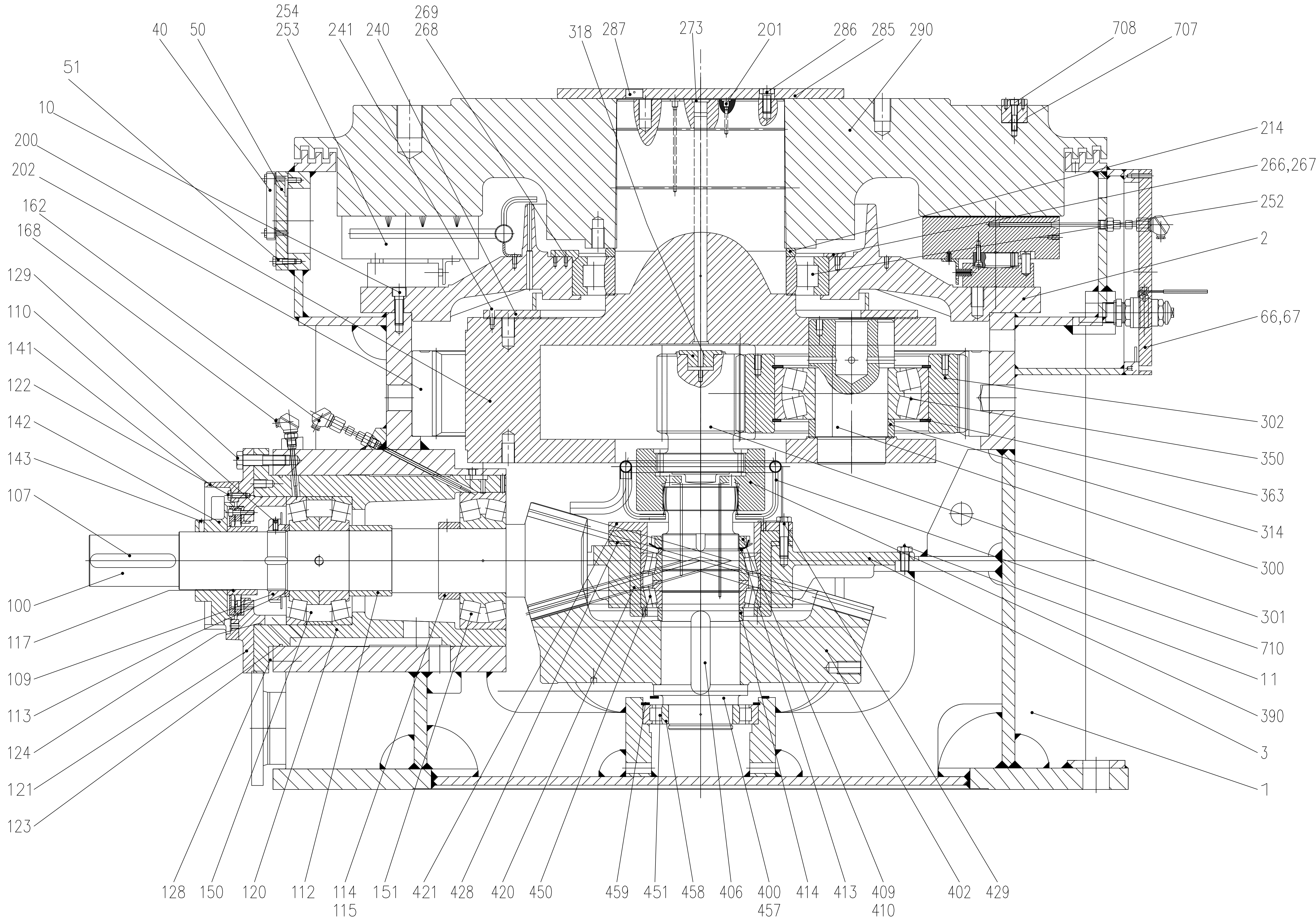
REFERENCE DRAWINGS: Δ

1. GENERAL ARRANGEMENT OF BOILER-SIDE ELEVATION-E-E DRAWING No.: 0-00-022-77975. &
BOILER PLAN SECTION DRAWING NO.: 0-00-022-77976.
2. MILL FOUNDATION PLAN DRG. NO.: - 0-00-610-87100
3. PULVERISED FUEL PIPING DRG NO. 0-47-280-02852.
4. P&ID OF MILL LUBE OIL SYSTEM INCLUDING OPERATING PROCEDURE --
DRAWING 1-61-190-02905.
5. MILL & FEEDER SEAL AIR PIPING ARRANGEMENTS -- DRAWING :
0-43-000-00743.
6. DESIGN MEMORANDUM OF MILL REJECT SYSTEM (PNEUMATIC TYPE) --
DRAWING : PE-DC-511-160-A001.
7. MILL HANDLING ARRANGEMENT DRG. ALONGWITH WRITE UP/ PROCEDURE &
LOADING DETAILS -- DRAWING : 1-61-510-02904.
8. MOTOR OGA DRAWING -- DRAWING : 34020048676.



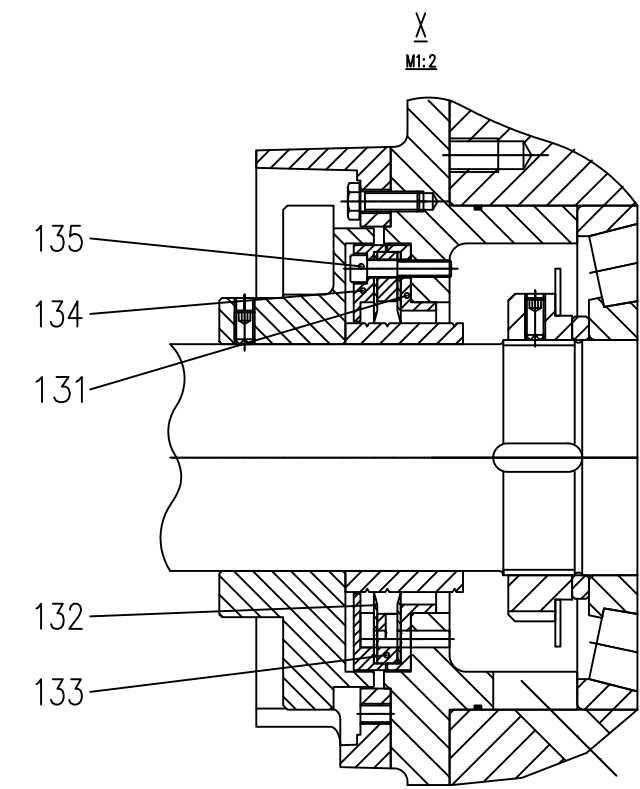
		CUSTOMER: NLC INDIA LIMITED (A Government of India Enterprise)																				
		CONSULTANT DEVELOPMENT CONSULTANTS PRIVATE LIMITED CONSULTING ENGINEERS KOLKATA MUMBAI CHENNAI NEWDELHI																				
PROJECT:		NLC TALABIRA THERMAL POWER PROJECT (NTTPP) 3x800 MW – PHASE-I, JHARSUGUDA, ODISHA																				
		BHARAT HEAVY ELECTRICALS LIMITED HYDERABAD		<table><tr><td>DRN.</td><td>NAME</td><td>SIGN.</td><td>DATE</td><td rowspan="4">NO.OF VAR.</td></tr><tr><td>UDAY</td><td></td><td></td><td></td></tr><tr><td>CHD.</td><td>PVS</td><td></td><td></td></tr><tr><td>APPD.</td><td>AMAN</td><td></td><td></td></tr></table>		DRN.	NAME	SIGN.	DATE	NO.OF VAR.	UDAY				CHD.	PVS			APPD.	AMAN		
DRN.	NAME	SIGN.	DATE	NO.OF VAR.																		
UDAY																						
CHD.	PVS																					
APPD.	AMAN																					
DEPT. ENGG. CODE 446	UNTOL. DIMS. GR. C/M/F		SCALE NTS	WEIGHT (KG)	BHEL DRAWING NUMBER 0-00-620-87132	ITEM NO.	NO.OF ITEMS															
TITLE GENERAL ARRANGEMENT DRAWING OF HP-1103 MILL (WITH PLANETARY GEAR BOX)				CARD CODE	CUSTOMER DRAWING NO. 0-00-620-87132		REV. 04															
				SHEET NO. 01		NO. OF SHEETS 01																

DRG. NO. HY-PGB-YMNG



Adjustment of bevel gear contact pattern by adaption of part No. 128 and part No. 428
All flange screws M 2). part No. 1). must be tightened with a screw torque $T_A = 3)..... Nm$

T. 1)	Nr.	Gew. 2)	TA 3)
10	M20	400	
11	M20	400	



0129	HEXAGON HEAD SCREW M24X100	0.42	8
0128	BEVEL PINION SHAFT SHIM PLATE	---	1
0124	O-RING	---	1
0123	O-RING	---	1
0122	HEX HDSCREW M12X35	0.045	8
0121	LABYRINTH COVER	50.00	1
0120	FLANGED BUSH	262	1

0803	HEX HEAD SCREW M10X25	0.05	8
0802	PROTECTION COVER	0.5	4
0800	RTD-L280	1.0	4
0402	BEVEL GEAR	---	1
0202	INTERNAL GEAR	---	1
0708	HEXAGON SOC HEAD CAP SCREW M12X60	0.09	2
0707	DOWEL PIN	1.9	2
0710	PIPING ASSEMBLY	---	1
0459	CIRCLIP	0.4	1
0458	CIRCLIP	0.1	1
0451	CYL. ROLLER BEARING	12	1
0450	TAPER ROLLER BEARING	30	1
0429	HEX HEAD SCREW M20X75	0.25	1
0428	BEVEL GEAR SHIM PLATE	---	1
0421	BEARING COVER	20.00	1
0420	Z-BUSHING	51.00	1
0414	RING 180X200X30	1.4	1
0413	RING 180X198X10	0.400	1
0410	LOCKING PLATE	4	1
0409	SLOTTED NUT	3.1	1
0406	PARALLEL KEY	3.23	2
0400	SHAFT	110	1
0390	COUPLING SLEEVE	25.00	1
0363	CIRCLIP	0.9	1
0350	ROLLER CONTACT BEARING	58.5	1
0318	PIPE PLUG	0.4	1
0314	RING 70X200X44	3.00	3
0302	GEAR WHEEL	162	1
0301	PINION SHAFT	1	1
0300	PLANETARY AXLE	62.100	3
0287	SCRUB GRB SOC M 20X30	0.052	2
0286	HEX SOC HEAD CAP SCREW M20X40	0.18	8
0285	COVER	40.00	1
0273	HEX SOC SCR G1"	0.1	1
0269	HEX SOC HEAD CAP SCREW M8X25	0.15	4
0268	SUPPORT	0.2	0.4
0267	HEX HEAD SCREW M12X25	0.4	4
0266	FISH PLATE	0.62	0.62
0254	HEX SOC HEAD CAP SCREW M12X60	0.066	24
0253	THRUST SLIDE BEARING	530	1
0252	ROLLING CONTACT BEARING	92.5	1
0241	HEX HEAD SCREW M10X35	0.032	18
0240	OIL LEVEL PIPE	65	1
0214	ADAPTER RING	5.8	1
0210	DISC	0.003	6
0209	HEX HEAD SCREW M10X6	0.21	6
0208	O-RING	0.75	1
0207	HEX HEAD SCREW M12X25	0.002	6
0206	CYLINDER PIN	1.8	2.65
0201	PLUG MS-8	0.03	2
0200	PLANETARY CARRIER	---	---
0168	RTD-L140	0.30	1
0162	RTD-L230	0.75	1
0158	SET SCREW M10X25	0.01	1
0151	ROLLER CONTACT BEARING	41.5	1
0150	TAPER ROLLER BEARING	50.00	1
0143	SET SCREW M12X20	0.125	2
0142	CAM	15.00	1
0141	PROTECTIVE RING	13.00	1
0130	RING LABYRINTH	6.5	1
0115	SCR GRUB SOC M10X12	0.010	2
0114	SET COLLAR	3.1	7.6
0113	RING	0.3	1
0112	C.S. PIPE	4.7	1
0110	SET SCREW M12X25	0.019	0.019
0109	RING FOLLOWER	4.00	1
0107	PARALLEL KEY	0.9	2.5
0100	BEVEL PINION SHAFT	140	1
0087	HEX HDSCREW M10X45	0.3	0.3
0086	INSPECTION COVER OVER FLOW LINE	35.00	35.00
0064	HEX HDSCREW M12X65	0.15	0.15
0063	INSPECTION COVER	10	10
0062	HEX HDSCREW M12X45	0.1	0.1
0061	INSPECTION COVER	10.0	10.00
0060	INSPECTION COVER	10.0	10.00
0057	SOCKET UNION 20	0.10	0.10
0056	AIR FILTER	0.10	0.10
0055	EQUAL ELBOW STEEL SIZE NOM.20	0.10	0.10
0054	PARALLEL NIPPLE	0.10	0.10
0053	PLUG SCREW	0.2	0.2
0051	HEX HD SCREW SCR M10X45	0.38	0.38
0050	INSPECTION COVER	10.00	10.00
0045	BALLCOCK	75	75
0044	NIPPLE 25 NOM	0.156	0.156
0040	OIL LEVEL INDICATOR	0.3	0.3
0011	HEX HD SCREW M16X30	0.108	0.108
0010	HEX SOC HD CAP SCR M20X75	0.25	0.25
0003	HOUSING COVER	200.00	---
0002	BEARING HOUSING	935.00	---
0001	PGB HOUSING	6015.00	---

ITEM NO.	DESCRIPTION	NET WT.	GROSS WT.
		QUANTITY	

THE FOLLOWING CONDITIONS APPLY EXCEPT OTHERWISE STATED.

- REF. TO HY202081 FOR UNSPECIFIED TOLERANCES
- CHAMFER MCD. SHARP EDGES 1:2 TO 1:0 AT 45°
- INTERNAL MCD. CORNER RADI 1 TO 0.7
- THE SURFACE ROUGHNESS WHERE-EVER NOT SHOWN SHALL BE TAKEN FROM THE SURFACE ROUGHNESS SHOWN OUT SIDE THE BACK SLASH GIVEN OR THE TOP MOST RIGHT CORNER OF THE DRG.

TYPE OF PRODUCT HP1103 BOWL MILL
NAME OF CUSTOMER/PROJECT

NAME	SIGN.	DATE	NO OF VAR.
UDAY		01.01.23	
MITT		01.01.23	
AMAN		01.01.23	

DEPT. 4450	SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO OF ITEMS
DRG. C.D. 1/1					
ENG.					

PLANETARY GEAR BOX ASSEMBLY
DRAWING NO. HY-PGB-YMNG 00
SHEET NO. NO OF SHEETS

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

COMP. FILE NAME

REF. DRG. NO.

INVENTORY NO.

REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED					REV. DATE ALTERED CHECKED APPROVED																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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