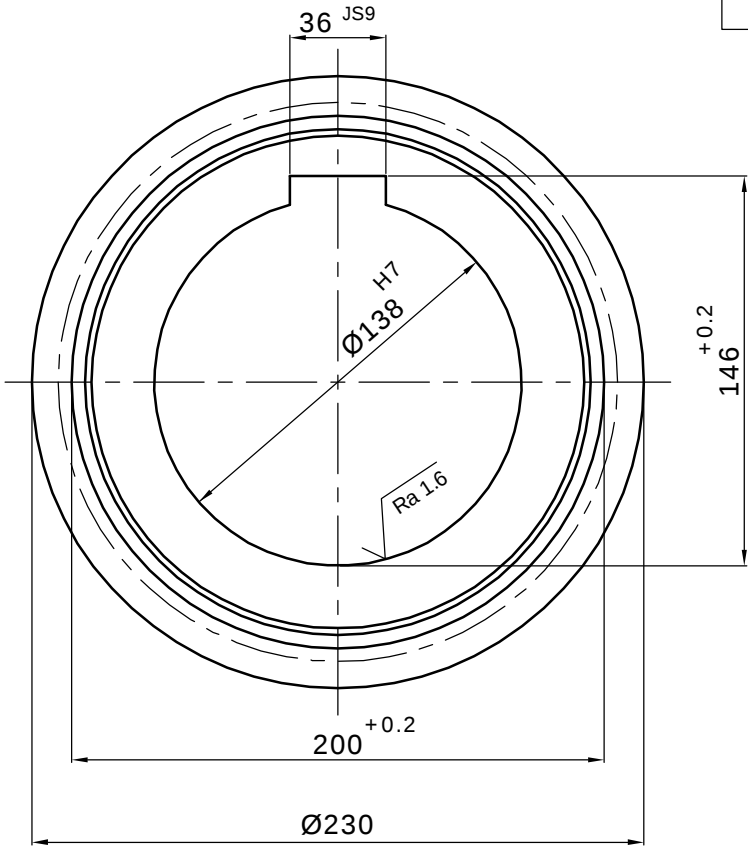
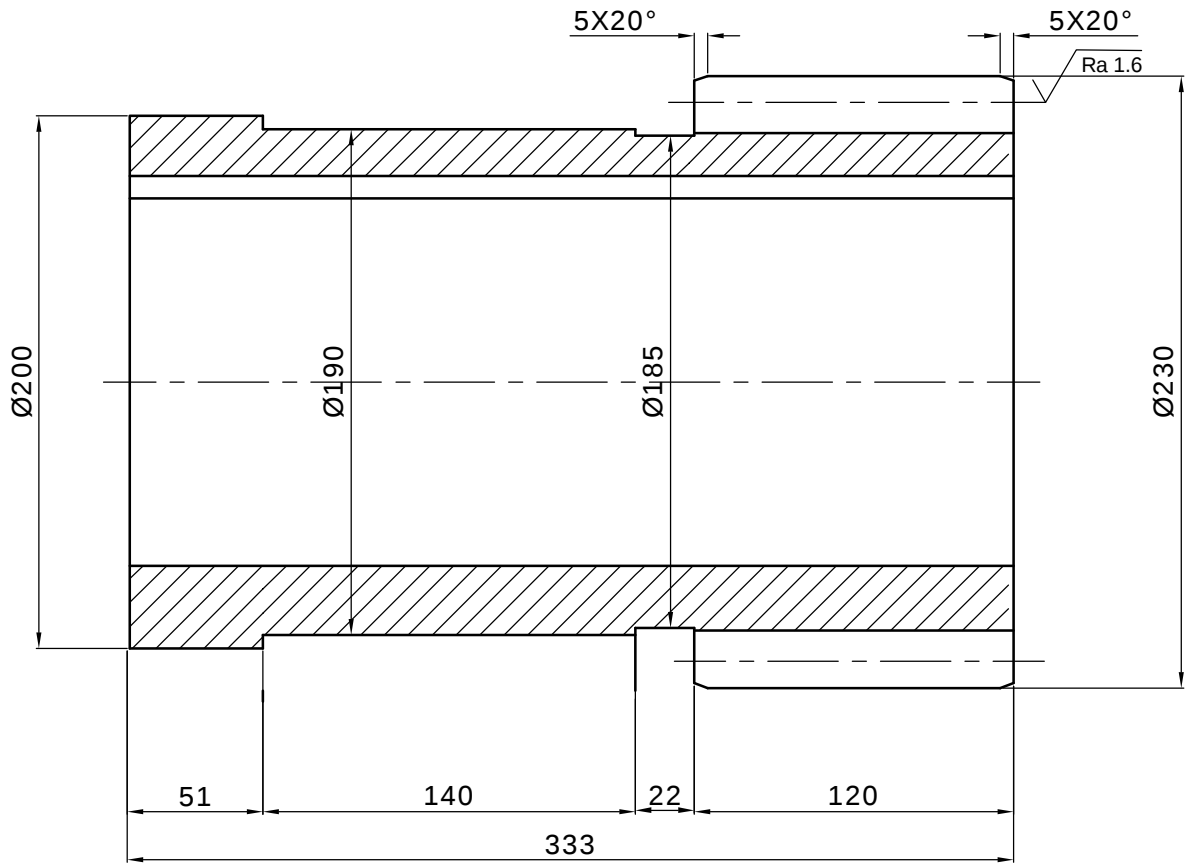


ALL DIMENSIONS ARE IN MILLIMETRES

16301-01-1011-7-3
DRAWING NO. : 3-7-1101-10-10391

$\sqrt{Ra\ 3.2}$ ($\sqrt{Ra\ 1.6}$)

H7 Ø138	+0.040 0.000
JS9 36	+0.031 -0.031



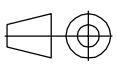
GEAR DATA

SPUR GEAR
NO OF TEETHS - 21
MODULE - 10
OD - 230
PCD - 210
WHOLE DEPTH - 21.57
PRESSURE ANGLE - 20°

NOTE:
HARDENED & TEMPERED TO 40 HRC

REV	DATE	ALTERED
01		CHECKED
		APPROVED

CAUTION: 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.

			40CrMo28 IS:1570			
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT	
			MATL SPEC		QTY	
EQPT: ROTARY HEARTH FURNACE						
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		NAME	SIGNATURE	DATE	
			DRN	S.S.N.KUMAR/M.D	S.S.N.Kumar/M.D	24.04.19
			CHD	S.S.N.KUMAR	S.S.N.Kumar	24.04.19
			APPD	D.ABHIGHNA	D.Abhighna	24.04.19
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
CODE 456	Ø/M/£ IS: 2102		1:2	47.66	REF TO OLD DWG NO RE/BA/SP/725/1/5	
TITLE			CARD CODE U 01	DRAWING NO : 3-7-1101-10-10391		REV 00
RHF-CLAMP GEAR BOOM ASSY.						

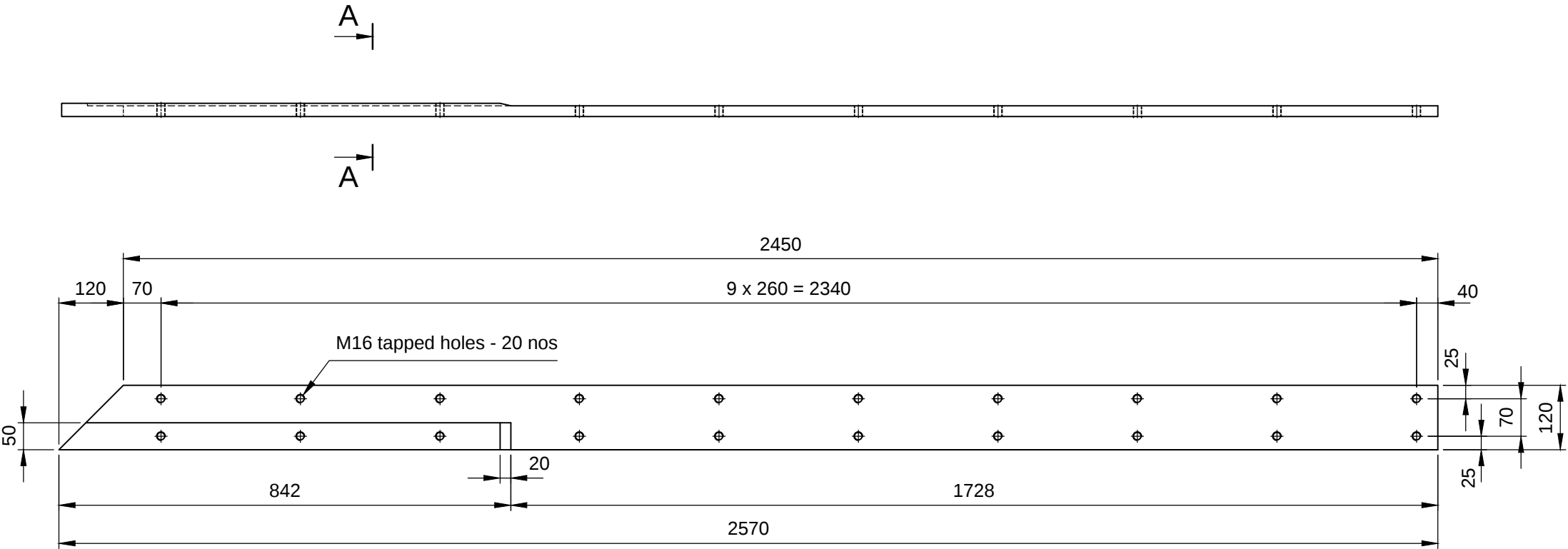
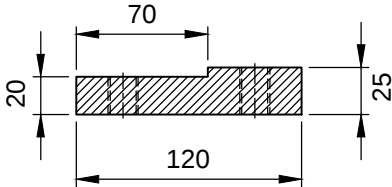
A3–SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

3-7-1123-51-10211
DRAWING NO:

Ra 1.6

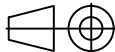
SECTION A-A
SCALE 1:4



NOTE:-
1.All sharp corners are chamfered to 1 x 45°
2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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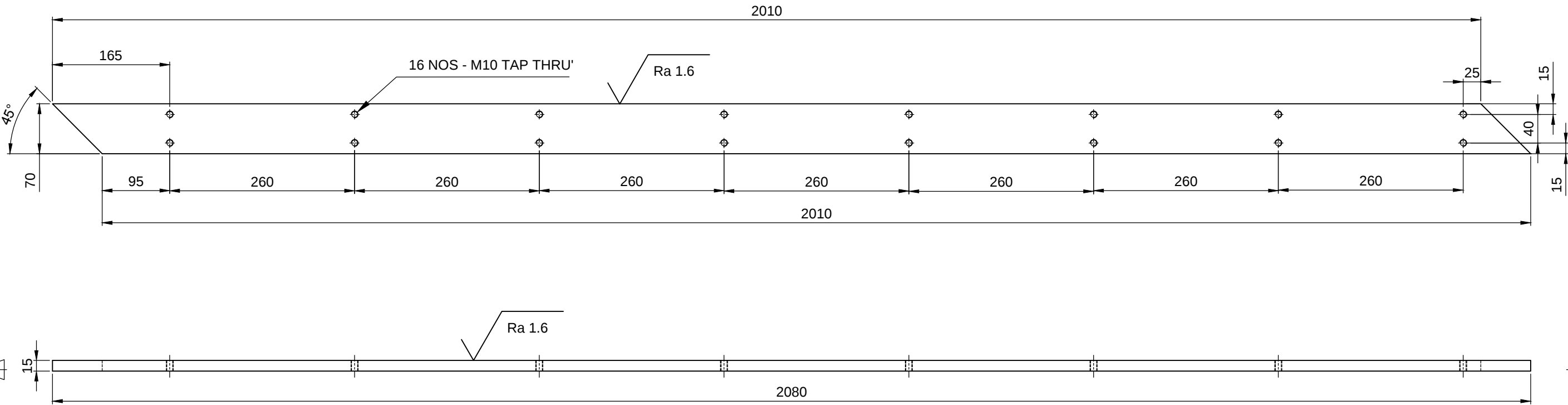
			48.3			
			45C8 IS:5517	1		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT		
			MATL SPEC	QTY		
EQPT: CROSS PIERCING & ELONGATION						
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014	DRN	V.KRISHNAKUMAR/S.RN	<i>V.Krishnakumar/S.Rn</i>	27.06.14	
		CHD	R.RAGHUVVEER	<i>R. Raghuvveer</i>	27.06.14	
		APPD	G.LOGANATHAN	<i>G. Loganathan</i>	27.06.14	
DEPT SSTP	GRADE OF UNTOL. DIM ϕ/M/ℱ IS: 2102		SCALE 1:10	WEIGHT (Kg) 48.3	REF TO ASSY DWG NO —	ITEM
CODE 456					REF TO OLD DWG NO 0101056–51.000_02	18
TITLE CPE - RUNNING GUIDE RAIL (RIGHT) FOR THRUST BLOCK SUPPORT			CARD CODE U 01	DRAWING NO : 3-7-1123-51-10211		REV 00

A3-SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-51-10302

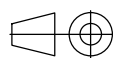
Ra 3.2 (Ra 1.6)



NOTE:
SHARP CORNERS ARE TO BE CHAMFERD TO 0.5X45°

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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			C45+C		2		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT		
			MATL SPEC		QTY		
EQPT: CROSS PIERCING AND ELONGATION – MAIN EQUIPMENT INCLUDING INLET PUSHER SIDE,OUTLET SIDE AND MB THRUST BLOCK							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	NAME SSN.KUMAR/YS.M	SIGNATURE <i>SSN.Kumar/ys.m</i>	DATE 28.07.15	
			CHD	RK.SINGH	<i>RK.Singh</i>	28.07.15	
			APPD	G.LOGANATHAN	<i>G.Loganathan</i>	28.07.15	
DEPT SSTP	GRADE OF UNTOL. DIM ϕ/M/ℱ IS: 2102		SCALE	WEIGHT (Kg) 16,400	REF TO ASSY DWG NO –		ITEM 19
CODE 456			1:4		REF TO OLD DWG NO 0101056–51.000		
TITLE CPE- RUNNING GUIDE RAIL THRUST BLOCK SUPPORT ASSY				CARD CODE U 01	DRAWING NO : 3-7-1123-51-10302		REV 00

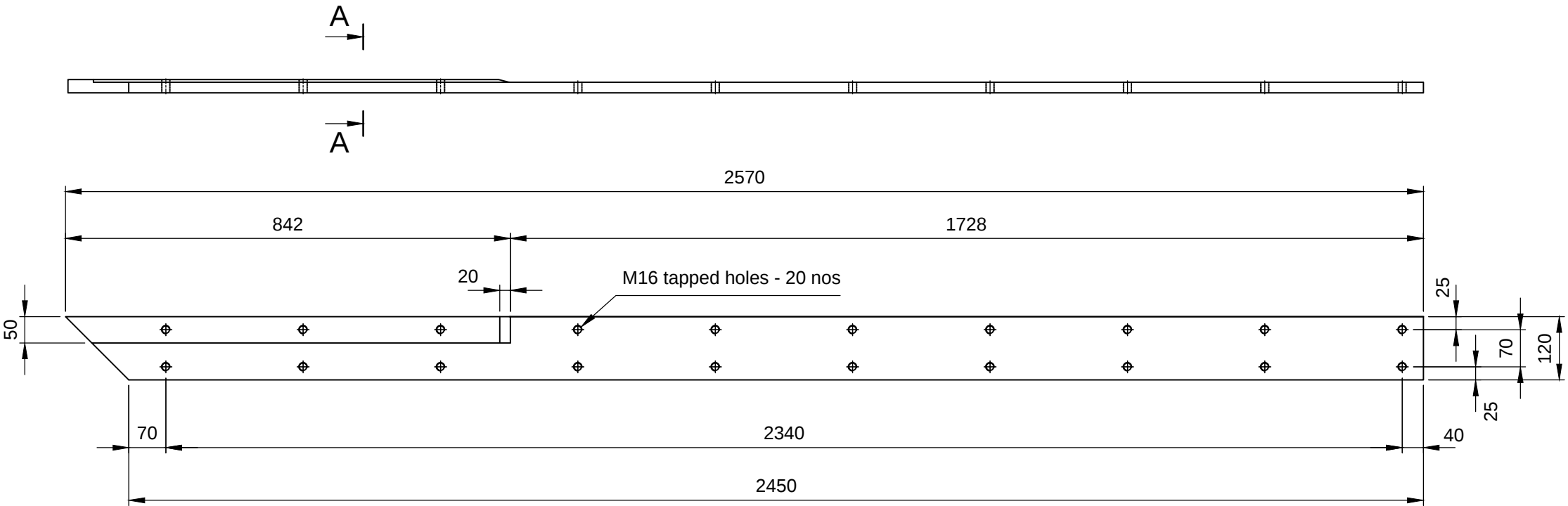
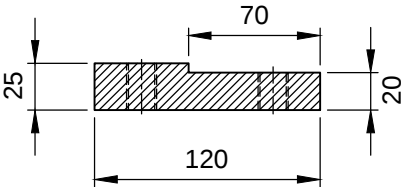
A3–SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

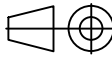
DRAWING NO: 3-7-1123-51-10213

Ra 1.6

SECTION A-A
SCALE 1:4



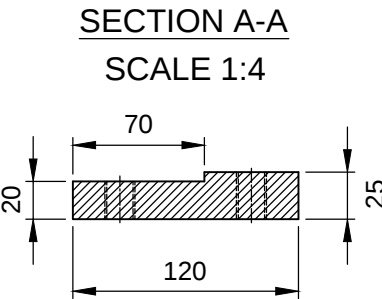
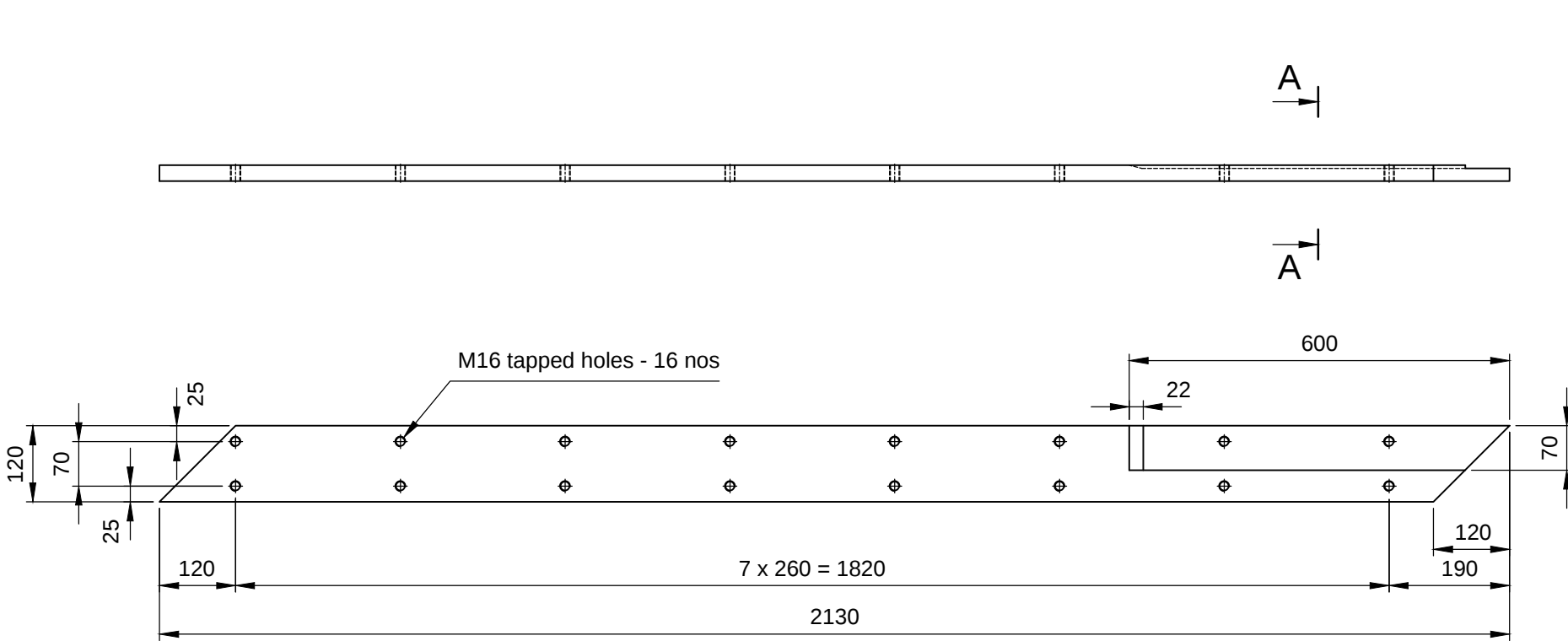
- NOTE:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

CAUTION: 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.							48.3		
					45C8 IS:5517		1		
			ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT	
						MATL SPEC		QTY	
			EQPT: CROSS PIERCING & ELONGATION						
 Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014			DRN	NAME V.KRISHNAKUMAR/S.RN	SIGNATURE V.Krishnakumar/S.Rn	DATE 30.06.14			
			CHD	R.RAGHUVVEER	R. Raghuvveer	30.06.14			
			APPD	G.LOGANATHAN	G. Loganathan	30.06.14			
REV 01	DATE	ALTERED CHECKED APPROVED	DEPT SSTP	GRADE OF UNTOL. DIM		SCALE 1:10	WEIGHT (Kg) 48.3	REF TO ASSY DWG NO —	ITEM
ZONE			CODE 456	Ø/M/ℱ IS: 2102				REF TO OLD DWG NO 0101056–51.000_02	21
			TITLE CPE - RUNNING GUIDE RAIL (LEFT) FOR THRUST BLOCK SUPPORT					CARD CODE U 01	DRAWING NO : 3-7-1123-51-10213

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-51-10212

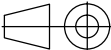
Ra 1.6



- NOTE:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED

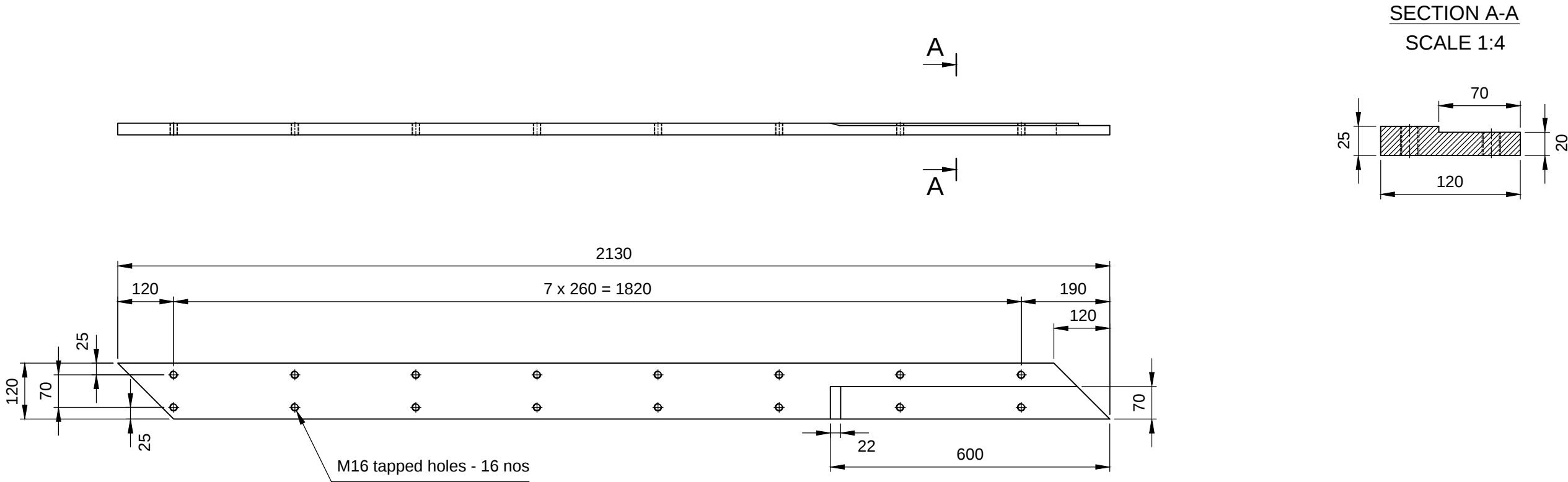
CAUTION: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED.IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

					46.8	
ITEM NO	DESCRIPTION	DRAWING NO	45C8 IS:5517		1	
			MATL CODE		UNIT WT	
			MATL SPEC		QTY	
EQPT: CROSS PIERCING & ELONGATION						
 Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	NAME V.KRISHNAKUMAR/S.RN	SIGNATURE <i>V. Krishnakumar/S. Rn</i>	DATE 30.06.14	
		CHD	R.RAGHUVVEER	<i>R. Raghuvveer</i>	30.06.14	
		APPD	G.LOGANATHAN	<i>G. Loganathan</i>	30.06.14	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
CODE	ϕ/M/# IS: 2102		1:10		46.8	
456					0101056–51.000_02	22
TITLE				CARD CODE	DRAWING NO :	REV
CPE - RUNNING GUIDE RAIL (RIGHT) FOR THRUST BLOCK SUPPORT					U 01	3-7-1123-51-10212

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-51-10214

Ra 1.6



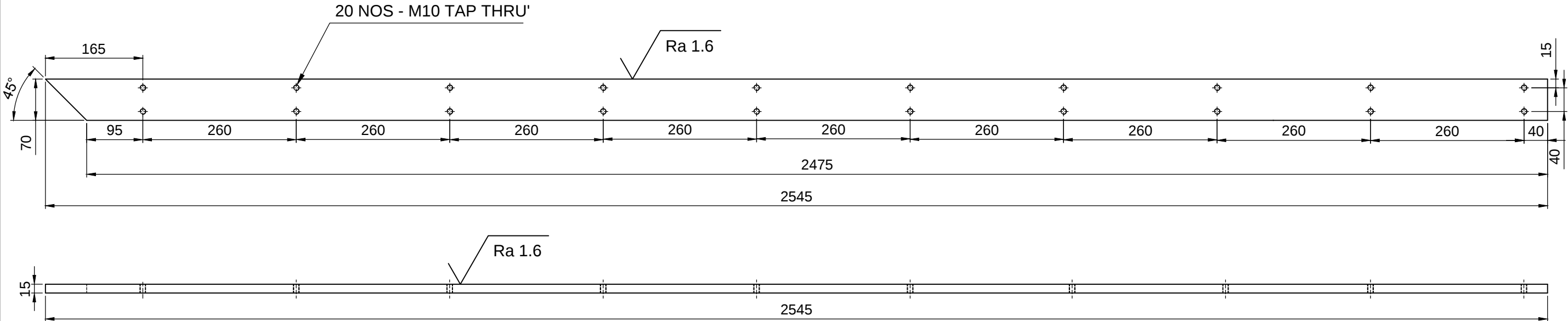
- NOTE:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

CAUTION: 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.	ITEM NO		DESCRIPTION		DRAWING NO		45C8 IS:5517		46.8
	EQPT: CROSS PIERCING & ELONGATION		NAME		SIGNATURE		DATE		1
	DEPT SSTD		GRADE OF UNTOL. DIM		SCALE		WEIGHT (Kg)		
	CODE 456		IS: 2102		1:10		46.8		
REV 01	DATE	ALTERED	CHECKED		APPROVED		REF TO ASSY DWG NO		ITEM
ZONE							REF TO OLD DWG NO		20
								DRAWING NO :	REV
								3-7-1123-51-10214	00

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-51-10303

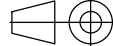
Ra 3.2 (Ra 1.6)



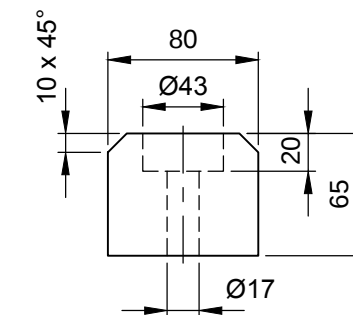
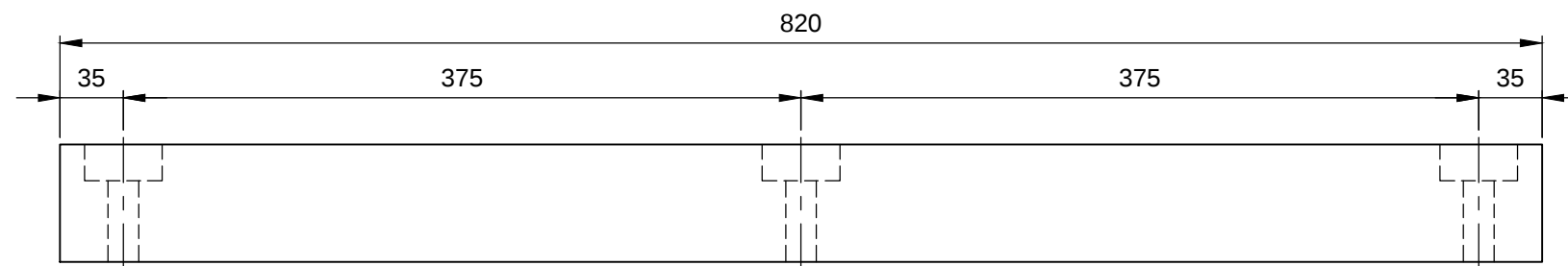
NOTE:
SHARP CORNERS ARE TO BE CHAMFERD TO 0.5X45°

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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			C45+C		2		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT		
			MATL SPEC		QTY		
EQPT: CROSS PIERCING AND ELONGATION – MAIN EQUIPMENT INCLUDING INLET PUSHER SIDE,OUTLET SIDE AND MB THRUST BLOCK							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	NAME SSN.KUMAR/YS.M	SIGNATURE <i>SSN.Kumar/ys.m</i>	DATE 28.07.15	
			CHD	RK.SINGH	<i>RK.Singh</i>	28.07.15	
			APPD	G.LOGANATHAN	<i>G.Loganathan</i>	28.07.15	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO –		ITEM 24
CODE 456	$\phi / M / F$ IS: 2102		1:5	20,400	REF TO OLD DWG NO 0101056–51.000		
TITLE CPE - RUNNING GUIDE RAIL THRUST BLOCK SUPPORT ASSY				CARD CODE U 01	DRAWING NO : 3-7-1123-51-10303		REV 00

√ Ra 3.2



REV 01	DATE	ALTERED	ITEM NO	DESCRIPTION	DRAWING NO	6.5			
		CHECKED				POLYAMID 6.6	3		
		APPROVED				MATL CODE	UNIT WT		
						MATL SPEC	QTY		
EQPT: CROSS PIERCING & ELONGATION									
			Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014			DRN	NAME V.KRISHNAKUMAR/S.RN	SIGNATURE V. Krishnakumar/S. Rn	DATE 23.07.14
						CHD	R.K.SINGH	R. K. Singh	23.07.14
						APPD	G.LOGANATHAN	G. Loganathan	23.07.14
DEPT SSTP		GRADE OF UNTOL. DIM			SCALE 1:4	WEIGHT (Kg) 6.5	REF TO ASSY DWG NO —		ITEM 17
CODE 456		ϕ / M / F IS: 2102					REF TO OLD DWG NO 0101056–53.000_02		
TITLE CPE - LEDGE FOR GUIDE						CARD CODE U 01	DRAWING NO : 3-7-1123-53-10231		REV 00

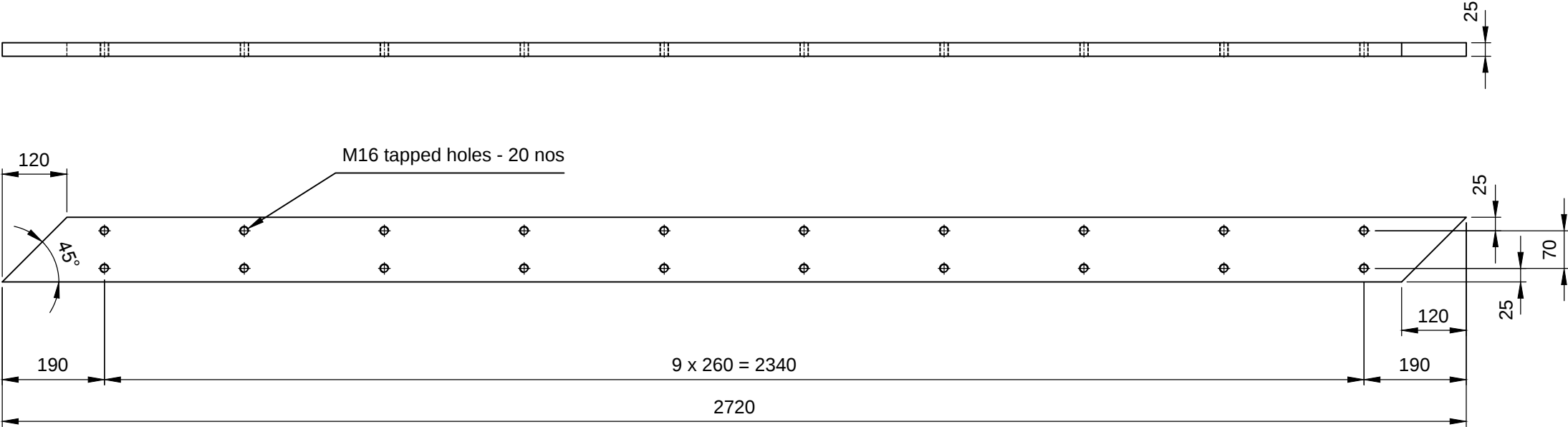
CAUTION: THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED.IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

A3-SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

3-7-1123-53-10216
DRAWING NO.:

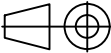
Ra 1.6



NOTE:-
1.All sharp corners are chamfered to 1 x 45°
2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED
ZONE		

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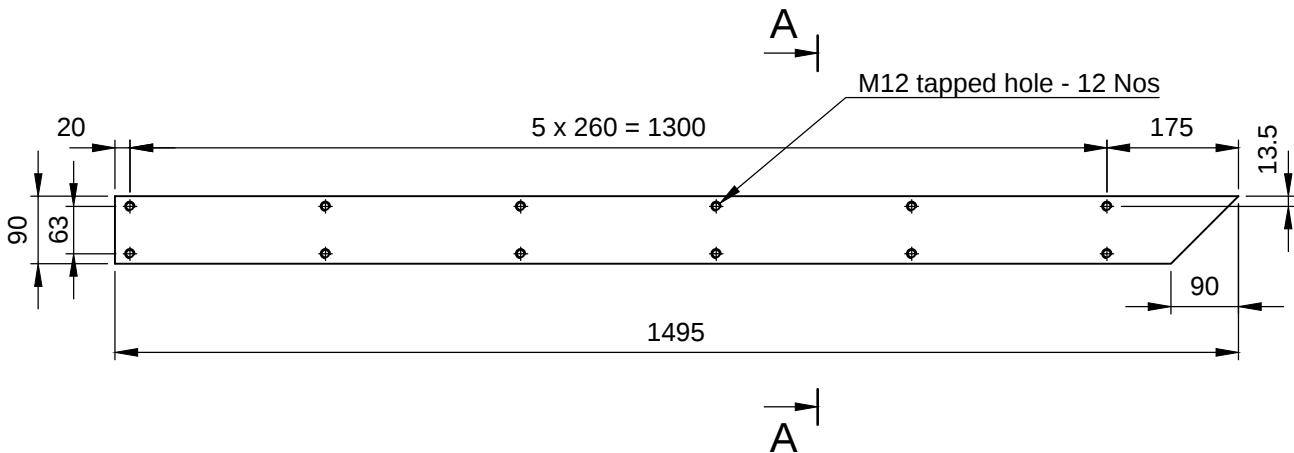
			60.5			
			C45+C IS:5517	8		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT		
			MATL SPEC	QTY		
EQPT: CROSS PIERCING & ELONGATION						
 Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	NAME V.KRISHNAKUMAR/S.RN	SIGNATURE <i>V.Krishnakumar/S.Rn</i>	DATE 16.07.14	
		CHD	R.K.SINGH	<i>R.K.Singh</i>	16.07.14	
		APPD	G.LOGANATHAN	<i>G.Loganathan</i>	16.07.14	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg) 60.5	REF TO ASSY DWG NO —	ITEM
CODE 456	$\phi/M/\#$ IS: 2102		1:10		REF TO OLD DWG NO 0101056–53.000_02	28
TITLE CPE - RUNNING GUIDE RAIL FOR GUIDE			CARD CODE U 01	DRAWING NO : 3-7-1123-53-10216	REV 00	

ALL DIMENSIONS ARE IN MILLIMETRES

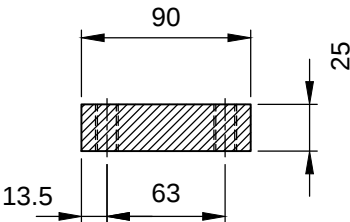
3-7-1123-53-10221

DRAWING NO:

Ra 3.2



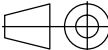
SECTION A-A
SCALE 1:4



- NOTES:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED

CAUTION: 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.

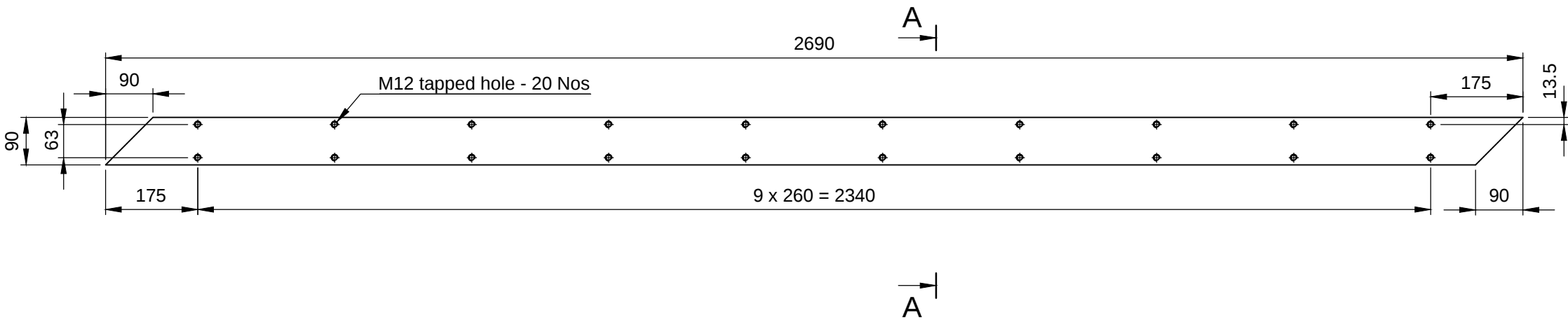
					25	
					C45+C IS:5517	2
ITEM NO	DESCRIPTION	DRAWING NO			MATL CODE	UNIT WT
					MATL SPEC	QTY
EQPT: CROSS PIERCING & ELONGATION						
 Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI — 620014		DRN	NAME V.KRISHNAKUMAR/S.RN	SIGNATURE <i>V.Krishnakumar/S.Rn</i>	DATE 17.07.14	
		CHD	R.RAGHUVVEER	<i>R. Raghuveer</i>	17.07.14	
		APPD	G.LOGANATHAN	<i>G.Loganathan</i>	17.07.14	
DEPT SSTP	GRADE OF UNTOL. DIM ϕ/M/# IS: 2102		SCALE 1:10	WEIGHT (Kg) 25	REF TO ASSY DWG NO —	
CODE 456			REF TO OLD DWG NO 0101056-53.800_01		ITEM 20	
TITLE CPE - RUNNING GUIDE RAIL (NORTH SIDE) FOR TRAILING CABLE				CARD CODE U 01	DRAWING NO : 3-7-1123-53-10221	
					REV 00	

ALL DIMENSIONS ARE IN MILLIMETRES

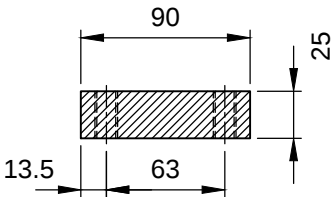
3-7-1123-53-10222

DRAWING NO:

Ra 3.2



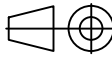
SECTION A-A
SCALE 1:4



- NOTES:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED

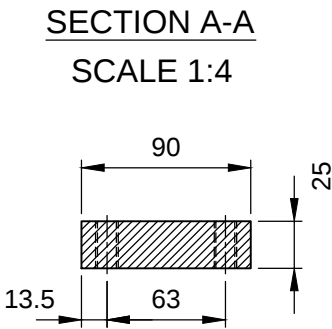
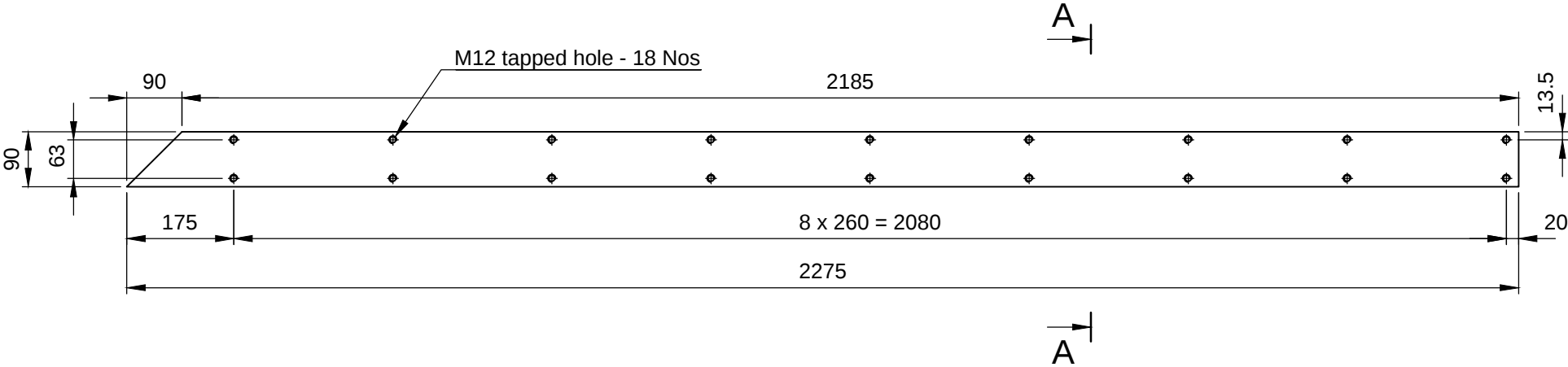
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			45.6			
			C45+C IS:5517	8		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT		
			MATL SPEC	QTY		
EQPT: CROSS PIERCING & ELONGATION						
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		NAME	SIGNATURE	DATE	
			DRN	V.KRISHNAKUMAR/S.RN	<i>V. Krishnakumar/S.Rn</i>	17.07.14
			CHD	R.RAGHUVVEER	<i>R. Raghuvveer</i>	17.07.14
			APPD	G.LOGANATHAN	<i>G. Loganathan</i>	17.07.14
DEPT SSTP	GRADE OF UNTOL. DIM $\phi/M/\#$ IS: 2102		SCALE 1:10	WEIGHT (Kg) 45.6	REF TO ASSY DWG NO —	ITEM
CODE 456					REF TO OLD DWG NO 0101056–53.800_01	21
TITLE CPE - RUNNING GUIDE RAIL (MIDDLE) FOR TRAILING CABLE			CARD CODE U 01	DRAWING NO : 3-7-1123-53-10222		REV 00

ALL DIMENSIONS ARE IN MILLIMETRES

3-7-1123-53-10223
DRAWING NO:

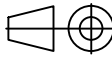
Ra 3.2



- NOTES:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Quenching & Tempering to 241 - 269 HBW

REV	DATE	ALTERED
01		CHECKED
		APPROVED

CAUTION: 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.

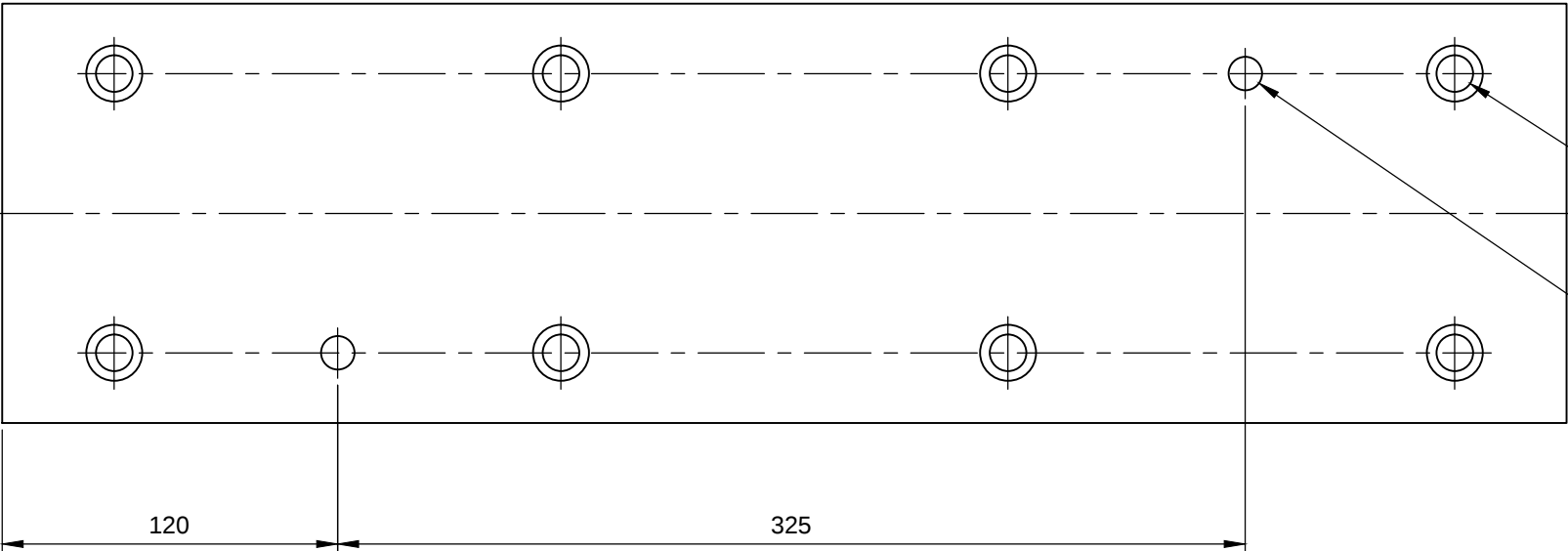
			39			
			C45+C IS:5517	2		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT		
			MATL SPEC	QTY		
EQPT: CROSS PIERCING & ELONGATION						
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		NAME	SIGNATURE	DATE	
			DRN	V.KRISHNAKUMAR/S.RN	<i>V. Krishnakumar/S.Rn</i>	17.07.14
			CHD	R.RAGHUVVEER	<i>R. Raghuvveer</i>	17.07.14
			APPD	G.LOGANATHAN	<i>G. Loganathan</i>	17.07.14
DEPT SSTP	GRADE OF UNTOL. DIM $\phi/M/\#$ IS: 2102		SCALE 1:10	WEIGHT (Kg) 39	REF TO ASSY DWG NO —	ITEM
CODE 456					REF TO OLD DWG NO 0101056–53.800_01	22
TITLE CPE - RUNNING GUIDE RAIL (SOUTH SIDE) FOR TRAILING CABLE			CARD CODE U 01	DRAWING NO : 3-7-1123-53-10223		REV 00

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-56-10322

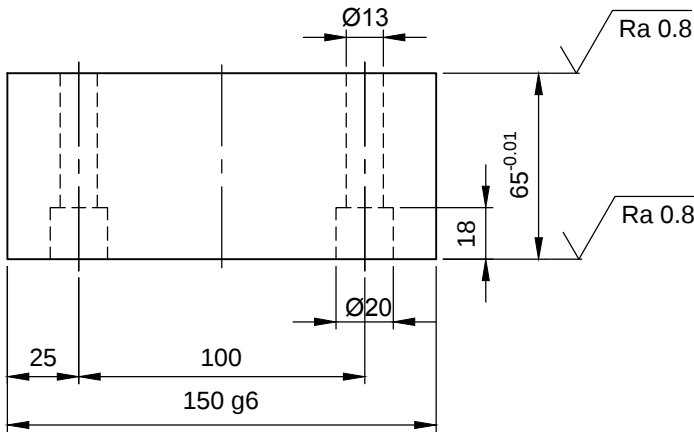
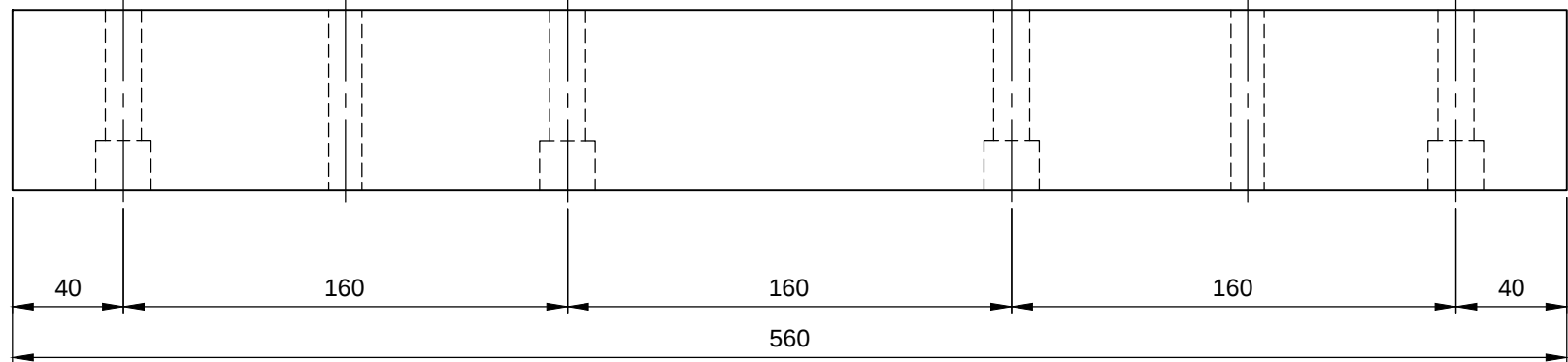
$\sqrt{Ra\ 1.6}$ ($\sqrt{Ra\ 0.8}$)

SIZE	DEVIATION
150 g6	-0.014 -0.039



COUNTER BORE - 8 NOS.

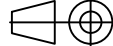
Ø12 THROUGH HOLES - 2 NOS.



- NOTE:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Casting should be free from harmful inclusions and cracks

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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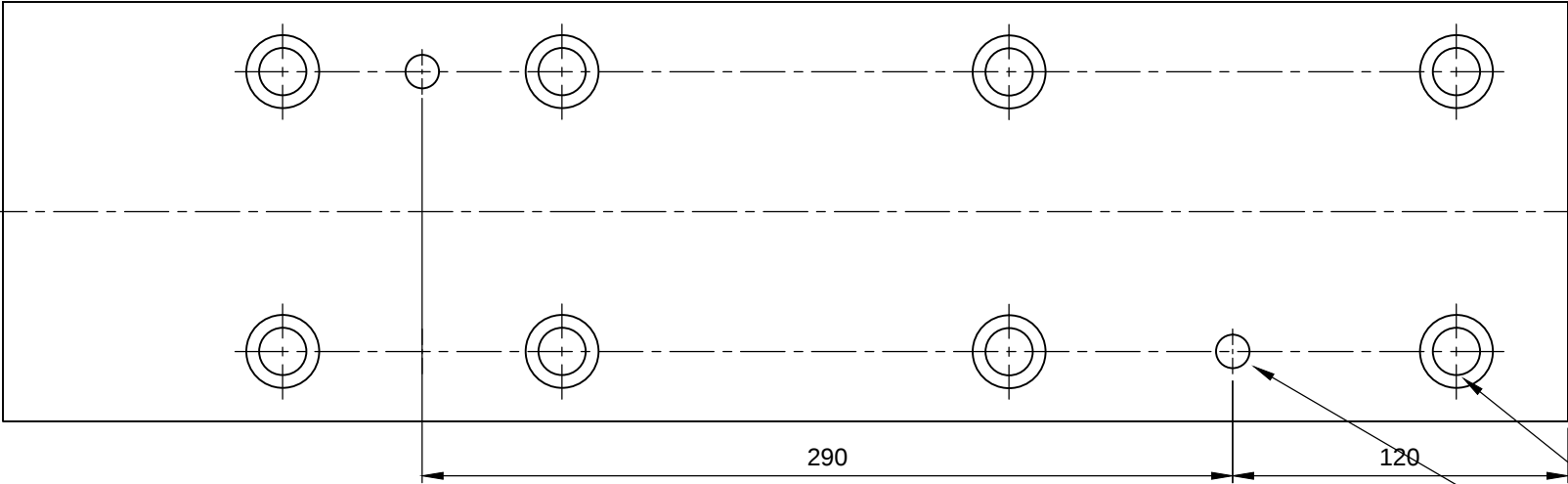
			CuSn12-C,DIN EN1982		42.8		
					1		
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT		
			MATL SPEC		QTY		
EQPT: CROSS PIERCING AND ELONGATION – MAIN EQUIPMENT INCLUDING INLET PUSHER SIDE, OUTLET SIDE AND MB THRUST BLOCK							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	NAME SSN.KUMAR / K.Nr	SIGNATURE <i>S.S.N. Kumar / K.Nr</i>	DATE 29.09.15	
			CHD	R.K.SINGH	<i>R.K. Singh</i>	29.09.15	
			APPD	R.K.SINGH	<i>R.K. Singh</i>	29.09.15	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO		ITEM
CODE 456	$\phi / M / F$ IS: 2102		1:2.5	42.8	REF TO OLD DWG NO 0101056–56.000_01		61
TITLE CPE - SLIDE LINER LH FOR MANDREL THRUST BLOCK				CARD CODE U 01	DRAWING NO : 3-7-1123-56-10322		REV 00

A3–SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

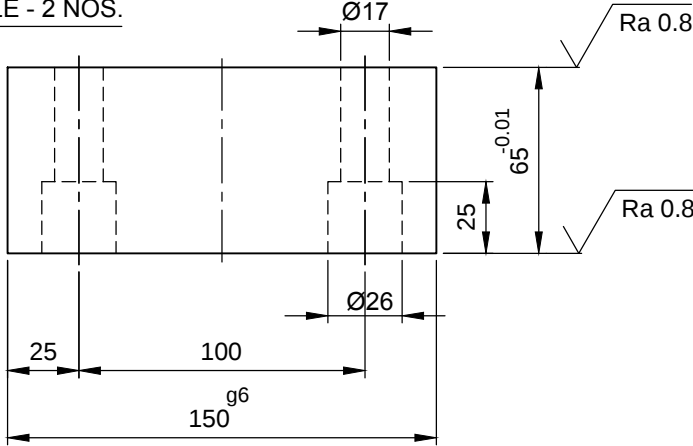
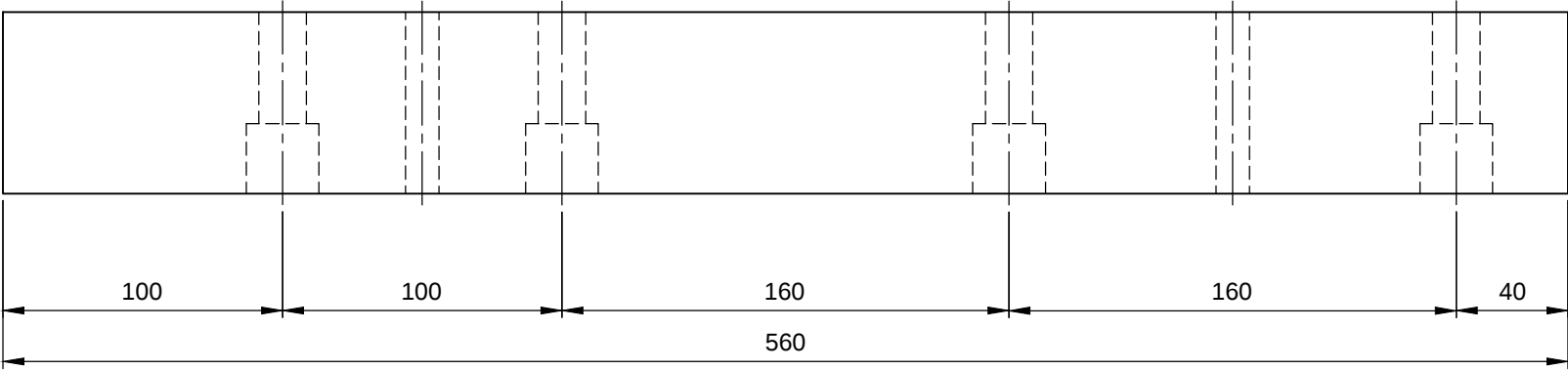
DRAWING NO: 3-7-1123-56-10354

$\sqrt{Ra\ 1.6}$ ($\sqrt{Ra\ 0.8}$)	
150 ^{g6}	-0.014
	-0.039



COUNTER BORE - 8 NOS.

Ø12 TROUGH HOLE - 2 NOS.



NOTE:-
1.All sharp corners are chamfered to 1 x 45°
2.Casting should be free from harmful inclusions and cracks

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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					CuSn12-C,DIN EN1982	1	42.8
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE			UNIT WT	
			MATL SPEC			QTY	
EQPT: CROSS PIERCING AND ELONGATION – MAIN EQUIPMENT INCLUDING INLET PUSHER SIDE, OUTLET SIDE AND MB THRUST BLOCK							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	S.S.N.KUMAR/A.P	S.S.N.Kumar/A.P	30.08.17	
			CHD	D.CHANDRASEKARAN	D.Chandrasekaran	30.08.17	
			APPD	D.CHANDRASEKARAN	D.Chandrasekaran	30.08.17	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM	
CODE 456	Ø/M/ℱ IS: 2102		1:2.5		42.8	REF TO OLD DWG NO 0101056–56.000_01	61
TITLE CPE - SLIDE LINER 2 - RH FOR MTB				CARD CODE U 01	DRAWING NO : 3-7-1123-56-10354		REV 00

A3–SIZE

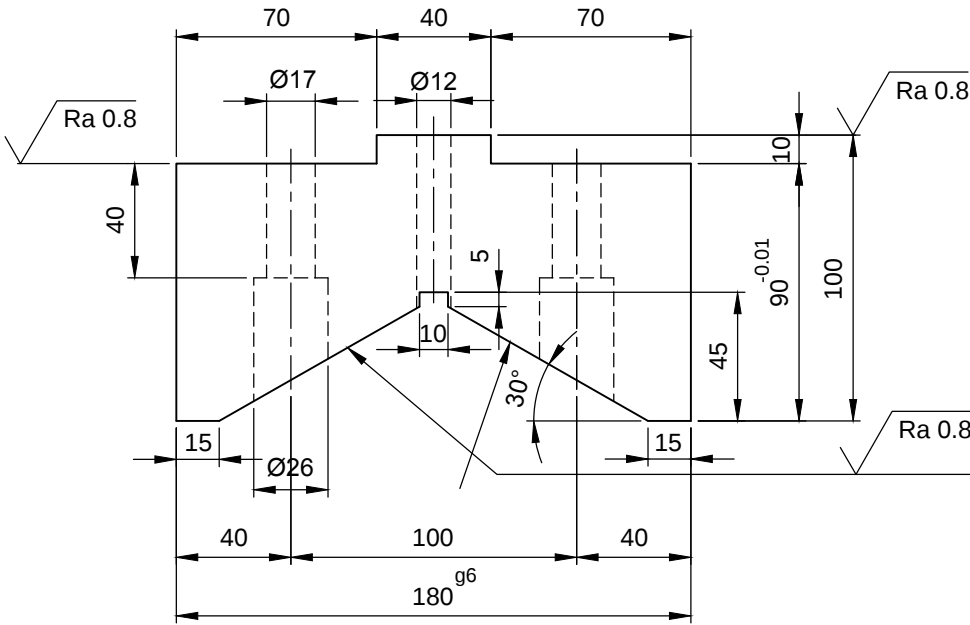
ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-56-10355

$\sqrt{Ra\ 1.6}$ ($\sqrt{Ra\ 0.8}$)	
180 ^{g6}	-0.014
	-0.039

Ø12 THROUGH HOLE - 2 NOS.

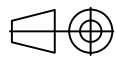
COUNTER BORE - 8 NOS.



- NOTE:-
- 1.All sharp corners are chamfered to 1 x 45°
 - 2.Casting should be free from harmful inclusions and cracks

REV	DATE	ALTERED
01		CHECKED
		APPROVED

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			62				
			CuSn12-C,DIN EN1982	2			
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT			
			MATL SPEC	QTY			
EQPT:CROSS PIERCING & ELONGTION							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		NAME	SIGNATURE	DATE		
			DRN	S.S.N.KUMAR/A.P	<i>S. S. N. Kumar/A. P</i>	30.08.17	
			CHD	D.CHANDRASEKARAN	<i>D. Chandrasekaran</i>	30.08.17	
			APPD	D.CHANDRASEKARAN	<i>D. Chandrasekaran</i>	30.08.17	
DEPT SSTP	GRADE OF UNTOL. DIM $\phi/M/\#$ IS: 2102		SCALE 1:2.5	WEIGHT (Kg) 62	REF TO ASSY DWG NO		ITEM
CODE 456					REF TO OLD DWG NO 0101056–56.000_01		62
TITLE CPE - SLIDE LINER 2 - LH FOR MTB				CARD CODE U 01	DRAWING NO : 3-7-1123-56-10355		REV 00

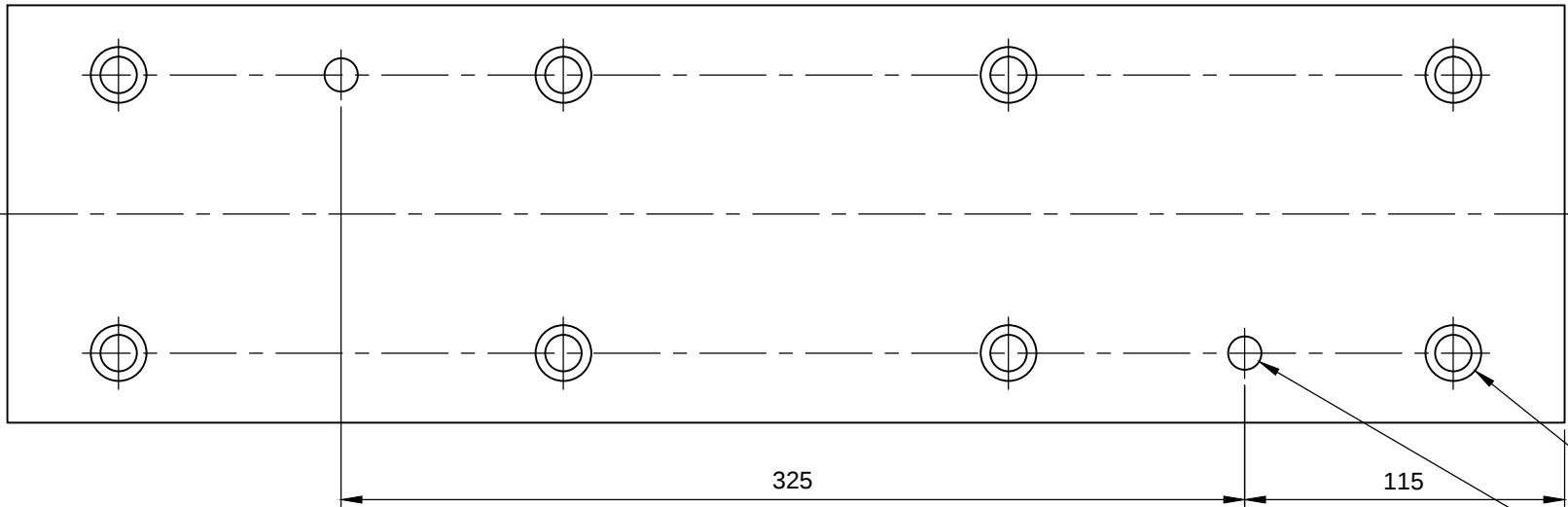
A3-SIZE

ALL DIMENSIONS ARE IN MILLIMETRES

DRAWING NO: 3-7-1123-56-10230

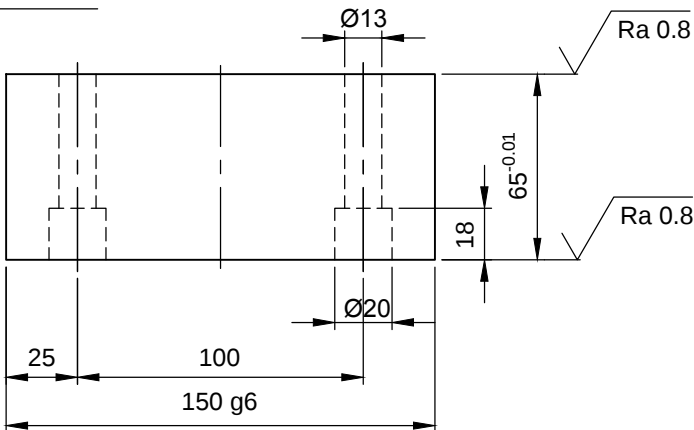
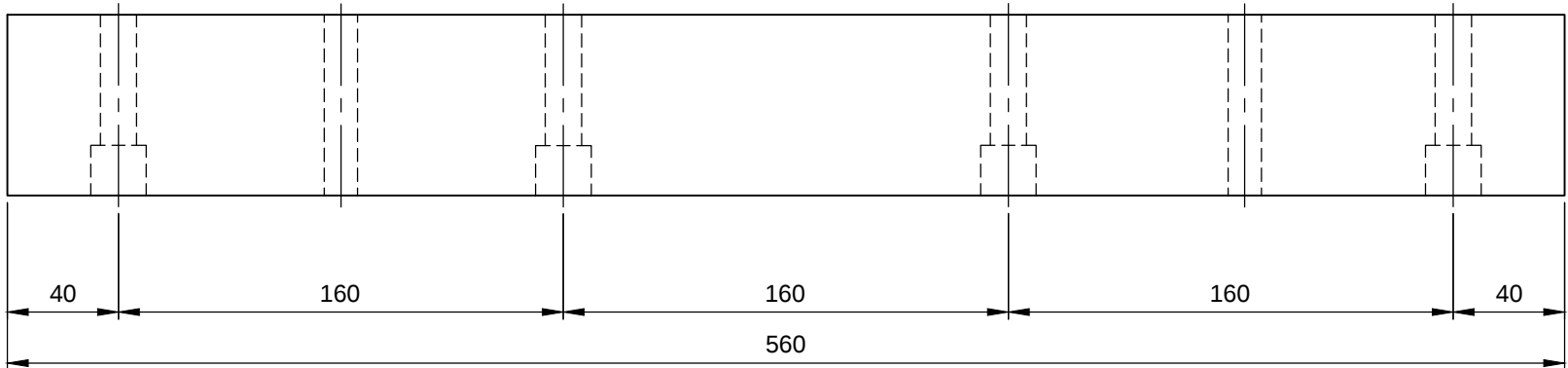
$\sqrt{Ra\ 1.6}$ ($\sqrt{Ra\ 0.8}$)

SIZE	DEVIATION
150 g6	-0.014 -0.039



COUNTER BORE - 8 NOS.

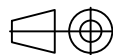
Ø12 TROUGH HOLE - 2 NOS.



NOTE:-
1.All sharp corners are chamfered to 1 x 45°
2.Casting should be free from harmful inclusions and cracks

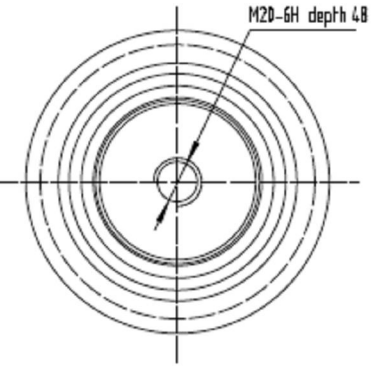
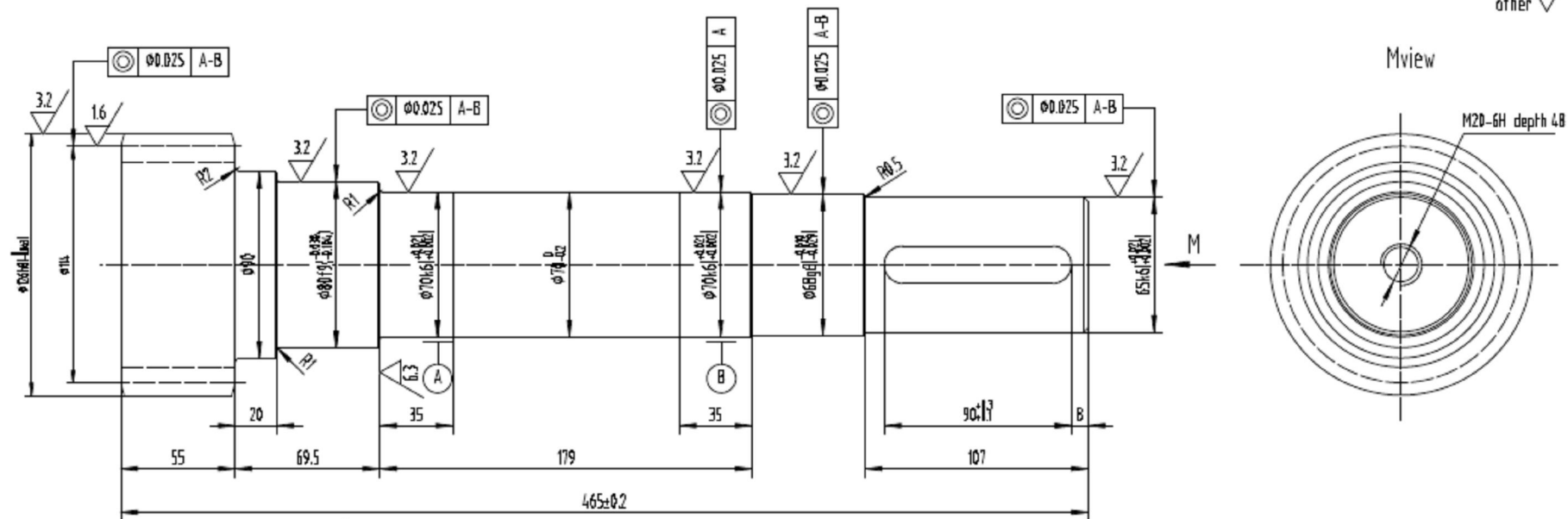
REV	DATE	ALTERED	PPN.Kumar / K.Nr
01	29.09.15	CHECKED	R.K.Singh
		APPROVED	R.K.Singh
Ø12 - 2 HOLES ADDED.			
THROUGH HOLES AT LEFT SIDE CHANGED TO COUNTER BORE.			

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					CuSn12-C,DIN EN1982	1	42.8
ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE		UNIT WT		
			MATL SPEC		QTY		
EQPT: CROSS PIERCING AND ELONGATION – MAIN EQUIPMENT INCLUDING INLET PUSHER SIDE, OUTLET SIDE AND MB THRUST BLOCK							
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI – 620014		DRN	V.KRISHNAKUMAR/S.RN	<i>V.Krishnakumar/S.Rn</i>	DATE 23.07.14	
			CHD	R.K.SINGH	<i>R.K.Singh</i>	23.07.14	
			APPD	G.LOGANATHAN	<i>G.Loganathan</i>	23.07.14	
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg) 42.8	REF TO ASSY DWG NO		ITEM
CODE 456	Ø/M/F IS: 2102		1:2.5		REF TO OLD DWG NO 0101056–56.000_01		61
TITLE CPE - SLIDE LINER RH FOR MANDREL THRUST BLOCK				CARD CODE U 01	DRAWING NO : 3-7-1123-56-10230		REV 01

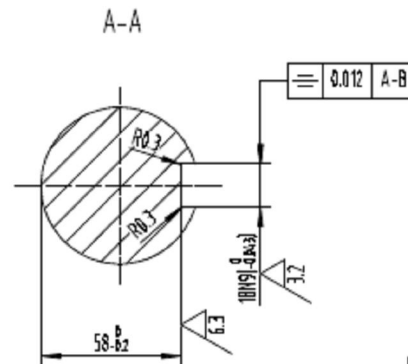
A3–SIZE

TA772.04.04.01

other $\frac{2.5}{\nabla}$ 

gear parameter

modulus	m	6
tooth number	Z	19
profile	α^t	20°
gear addendum coefficient	h^p	1
whole tooth depth	h	13.5
precision class	7 7 7 G J GB10095-1988	
cumulative pitch tolerance	F_r	0.063
profile tolerance	f_r	0.014
base pitch limit deviation	f_{pb}	±0.016
pitch limit deviation	f_{pt}	±0.018
tooth to tolerance	F_p	0.016
radial runout of tooth ring	F_r	0.040
base tangent length variable	F_v	0.028
tangent cross-no. of teeth	K	3
base tangent length	up error	-0.072
	down error	-0.108
matched rack	tooth no.	70
	drg no.	TA772.03.01.01



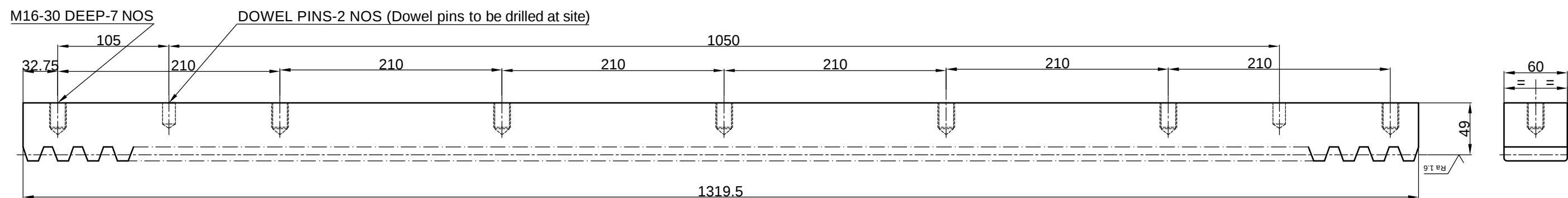
technical requirement

1. quenching and tempering 241-269HBW;
2. tooth surface quenching, quenching depth 2-3, quenching hardness HRC45-55;
3. no indicated chamfer is all 1x45°;
4. keyway centerline in drg should be same with one of tooth centerline.

BHEL DRG NO:3-9-1124-04-00031-0-0

				DESIGNATION		DRAWING NO.	
shaft				45		TA772.04.04.01	
DESIGNER				WEIGHT		18.07	SCALE
CHECKED				SHEETS			1:2
INSPECTOR				ISOM		E	
				NAME		DATE	
				MARK		DOCUMENT NO.	
				NAME		DATE	
						Universal Technical Standard JBT300	

Ra 3.2 Ra 1.6

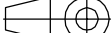


MODULE=6
PRESSURE ANGLE=20°
TOOTH DEPTH= 13.5
NO. OF TEETH=70

NOTES:

1. QUENCHING AND TEMPERING 241-269 HBW
2. TOOTH SURFACE HARDNESS 45-55 HRC DEPTH 2-3 MM
3. TOOTH DIMENSIONS AS PER MATCHING DRAWING

MATCHING DRAWING: TA772.04.04.01

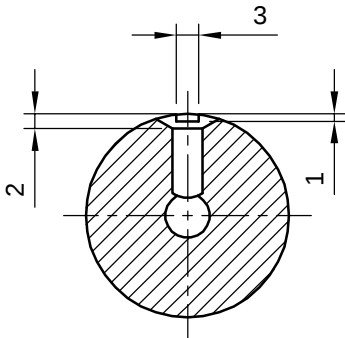
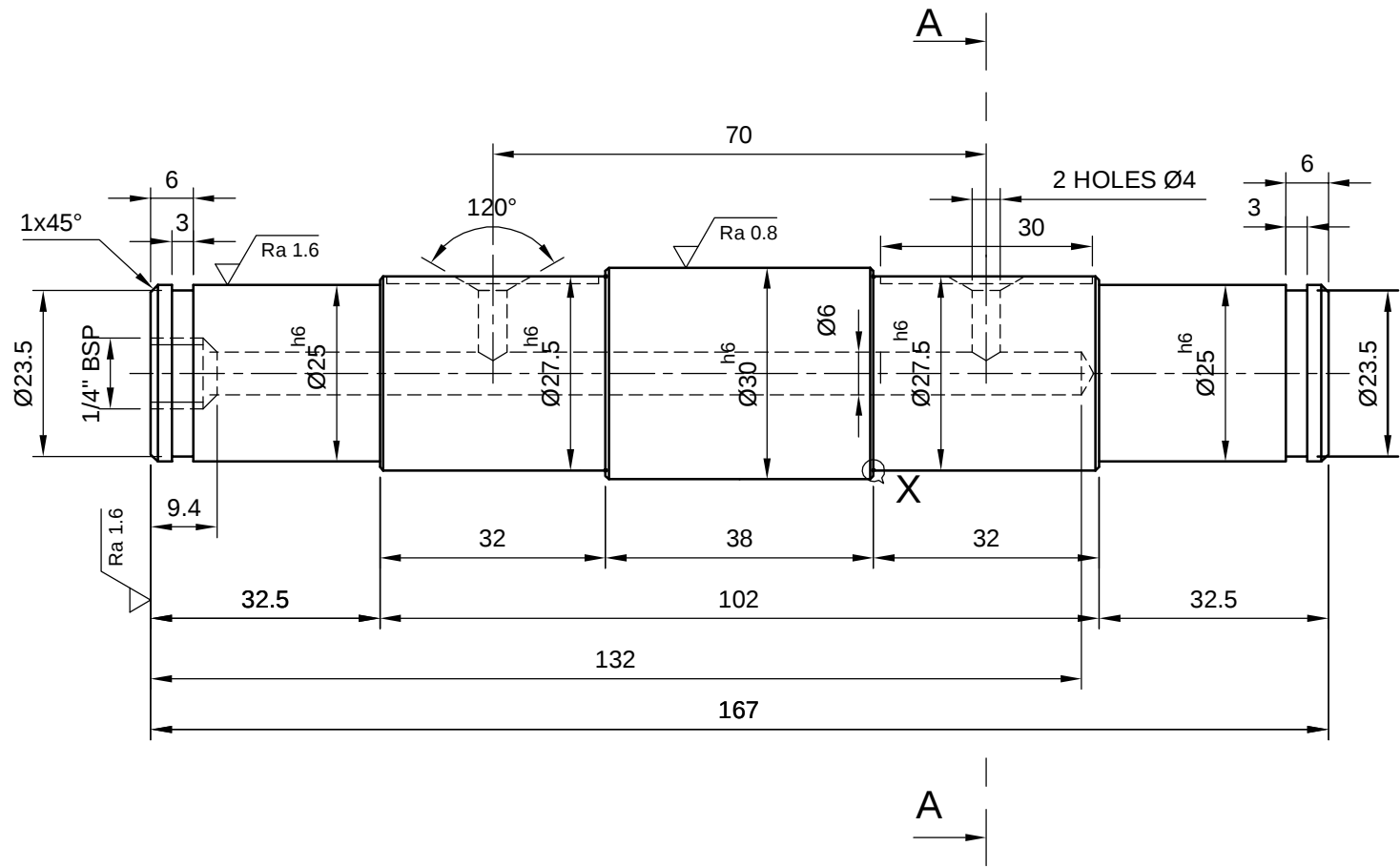
REV 01	DATE	ALTERED	MATERIAL 45C8	IS:2073		WEIGHT (Kg) -	DRN	NAME SSN.KUMAR/M.D	SIGNATURE <i>SSN.Kumar/M.D</i>	DATE 02.07.19
		CHECKED					CHD	SSN.KUMAR	<i>SSN.Kumar</i>	02.07.19
		APPROVED					APPD	D.ABHIGNA	<i>D.Abhigna</i>	02.07.19
			TITLE MPL-RACK LIFTING RACK BEAM ASSY.			CARD CODE U 01	DRAWING NO : SSTP:PD:2019(097)003			REV 00

ALL DIMENSIONS ARE IN MILLIMETRES

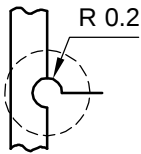
DRAWING NO: 3-7-1125-21-10114

Ra 3.2 (Ra 0.8 Ra 1.6)

Nominal size	Tolerance field	Deviation
Ø25	h6	-0.000 -0.013
Ø27.5	h6	-0.000 -0.013
Ø30	h6	-0.000 -0.016



SECTION - AA



DETAIL - X
SCALE 1:10

REV 02	DATE 28.03.16	ALTERED	<i>S.P.N. Kumar / y.s.m</i>
		CHECKED	<i>R.K. Singh</i>
		APPROVED	<i>R.K. Singh</i>
MISSING DIMENSION OF CIRCLIP GROOVE Ø23.5 ADDED			

REV 03	DATE 25.03.19	ALTERED <i>S.P.N. Kumar / M.D</i>	1/4" BSP WAS G 1/4 REVISED AS PER USER'S REQUEST		
		CHECKED <i>S.P.N. Kumar</i>			
		APPROVED <i>D. Abhighna</i>			

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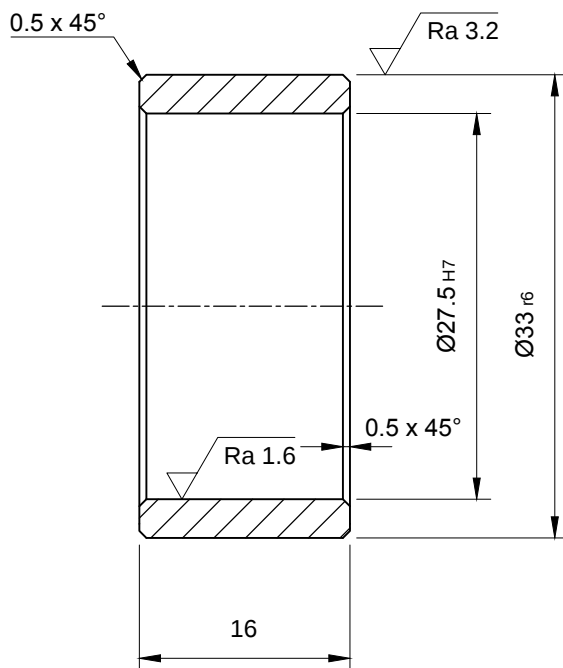
ALL DIMENSIONS ARE IN MM

REV 01	DATE 19.08.2015	ALTERED	<i>S.N. Kumar / K.Nr</i>
		CHECKED	<i>R.K. Singh</i>
		APPROVED	<i>S. Loganathan</i>
Ø27.5 H7 WAS Ø30 H7 REVISED AS PER USER'S REQUEST			

REV 02	DATE 28.03.16	ALTERED	<i>S.N. Kumar / V.P.M</i>
		CHECKED	<i>R.K. Singh</i>
		APPROVED	<i>R.K. Singh</i>
MATL. SPEC. SS304 WAS CUSn8Zn4 IS 306 REVISED AS PER USER'S REQUEST.			

✓ (✓ Ra 1.6 ✓ Ra 3.2)

Nominal size	Tolerance field	Deviation
Ø27.5	H7	+0.021 +0.000
Ø33	r6	+0.050 +0.034

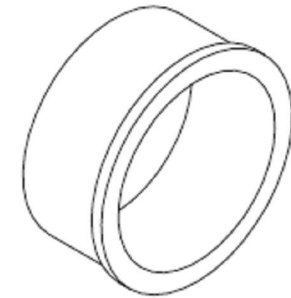
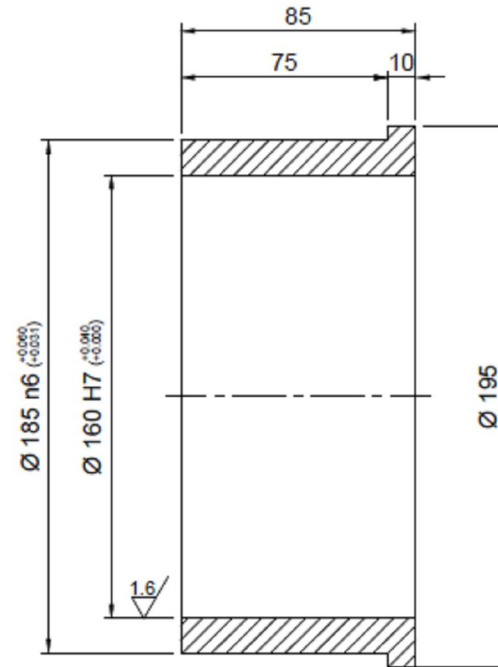
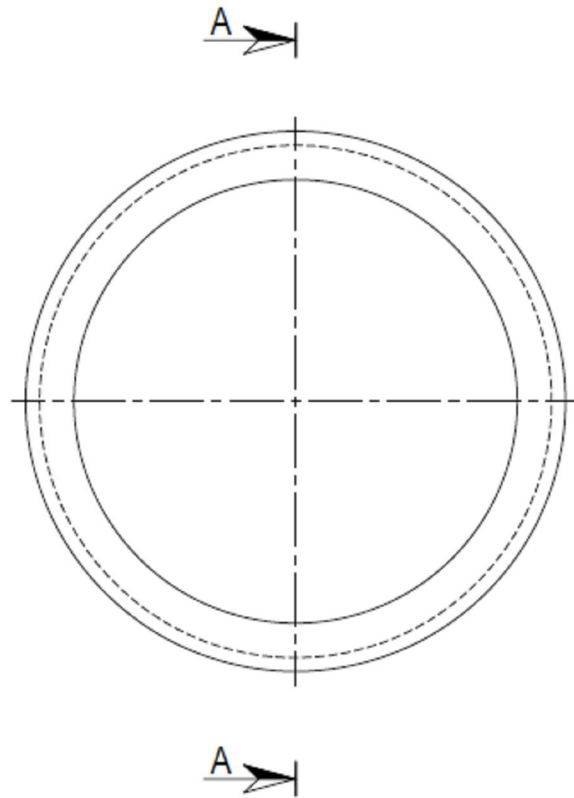


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A4-SIZE

Please Do Not Scale. If in Doubt, ASK.

3.2/1.6/



SECTION A-A

WEIGHT- 5.330 kg

BHEL DRG NO:4-9-1124-00-00370

CONNECTED DRAWINGS :- 4209-04

Mechanical Note:
 (01) Remove the sharp corner & edges with 1mm chamfered & draft fillets to be 1mm radius unless otherwise specified.
 (02) All dimension are in millimeter (mm) unless otherwise specified.

All dimensions are in Millimeters unless otherwise stated. Do not Scale. If in doubt, please ask.

SURFACE FINISH	
SYMBOL	VALUE
$\sqrt{}$	12.5
$\sqrt{}$	6.3
$\sqrt{}$	3.2
$\sqrt{}$	1.6
$\sqrt{}$	0.8
$\sqrt{}$	0.4
$\sqrt{}$	0.2
$\sqrt{}$	0.1

Intoleranced dimensions should confirm to IS:2102 (Part1):1993 Medium.

Permissible deviations for Linear dimensions (medium)									for Angular dimensions (medium)				
over (mm)	-	6	30	120	400	1000	2000	4000	over (mm)	1	6	30	120
up to (mm)	6	30	120	400	1000	2000	4000	-	up to (mm)	6	30	120	400
value (mm)	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2.0	±3.0	value (Deg)	±5'	±10'	±20'	±30'

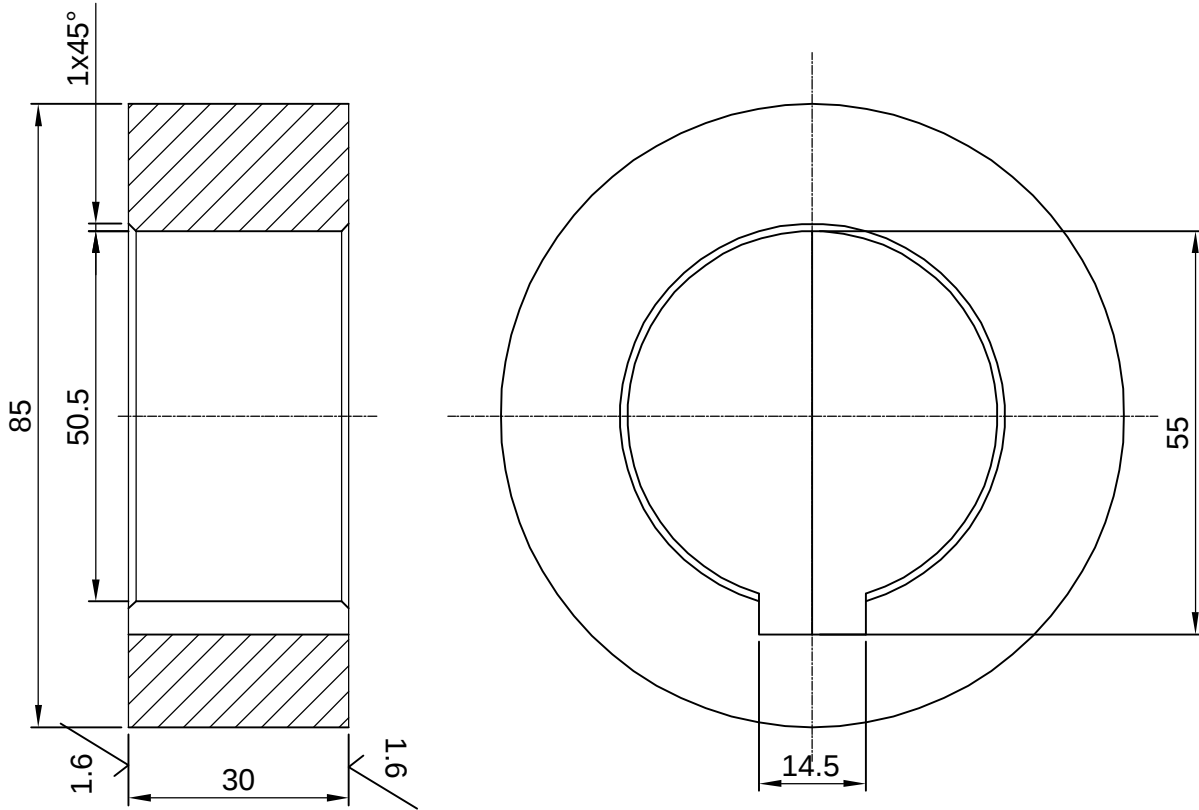
Key Characteristics:		Material PBZ	Heat Treatment -	Hardness -
Client BHEL		JOB No. 000133/11-12		
Drawn By / Date S. JAIN / 11/05/2011	RAHUL / 11/05/2011	Equipment CRIMPING LINE		
Chkd. By / Date SMT / 11/05/2011		CAD/A4		
Appr. By / Date		Scale 1:2.5	Title BUSH	
P.P. Rolling Mills Mfg. Co. Pvt. Ltd. Plot No. 142, DLF Ind. Area, Phase-I, Faridabad (Haryana) Phone +91-11-26030340, 26048885, 26012774 Fax: +91-11-26030335, website www.pprm.co		Drawing No.:- 4209-05 Plot Date :- 12/1/2011		
		Revision		Sheet 1

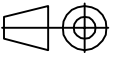
ALL DIMENSIONS ARE IN MM

REV 01	DATE 30.01.12	ALTERED	S.KIRUBAHARAN
		CHECKED	SSN.KUMAR
		APPROVED	R.RAGHUVEER

1.6 // 3.2 //

DRAWING CONVERTED TO
ACAD



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	ITEM NO	DESCRIPTION	DRAWING NO	MATL CODE	UNIT WT	
				MATL SPEC	QTY	
	EQPT: RC IN FRONT OF COLD SAW I					
	Bharat Heavy Electricals Ltd SEAMLESS STEEL TUBE PLANT TIRUCHIRAPALLI - 620014		DRN	NAME	SIGNATURE	DATE
			CHD	A.AROCKIAM	A.AROCKIAM	22.02.92
			APPD	S.S.SUNDHARAM	S.S.SUNDHARAM	22.02.92
DEPT SSTP	GRADE OF UNTOL. DIM		SCALE	WEIGHT (Kg)	REF TO ASSY DWG NO	ITEM
CODE 456	 IS: 2102		1:1	0.95	REF TO OLD DWG NO 0301163 11.004	
TITLE			CARD CODE U 01	DRAWING NO : 4-7-1166-05-02050		REV 01
CS2 - SPACER RING						