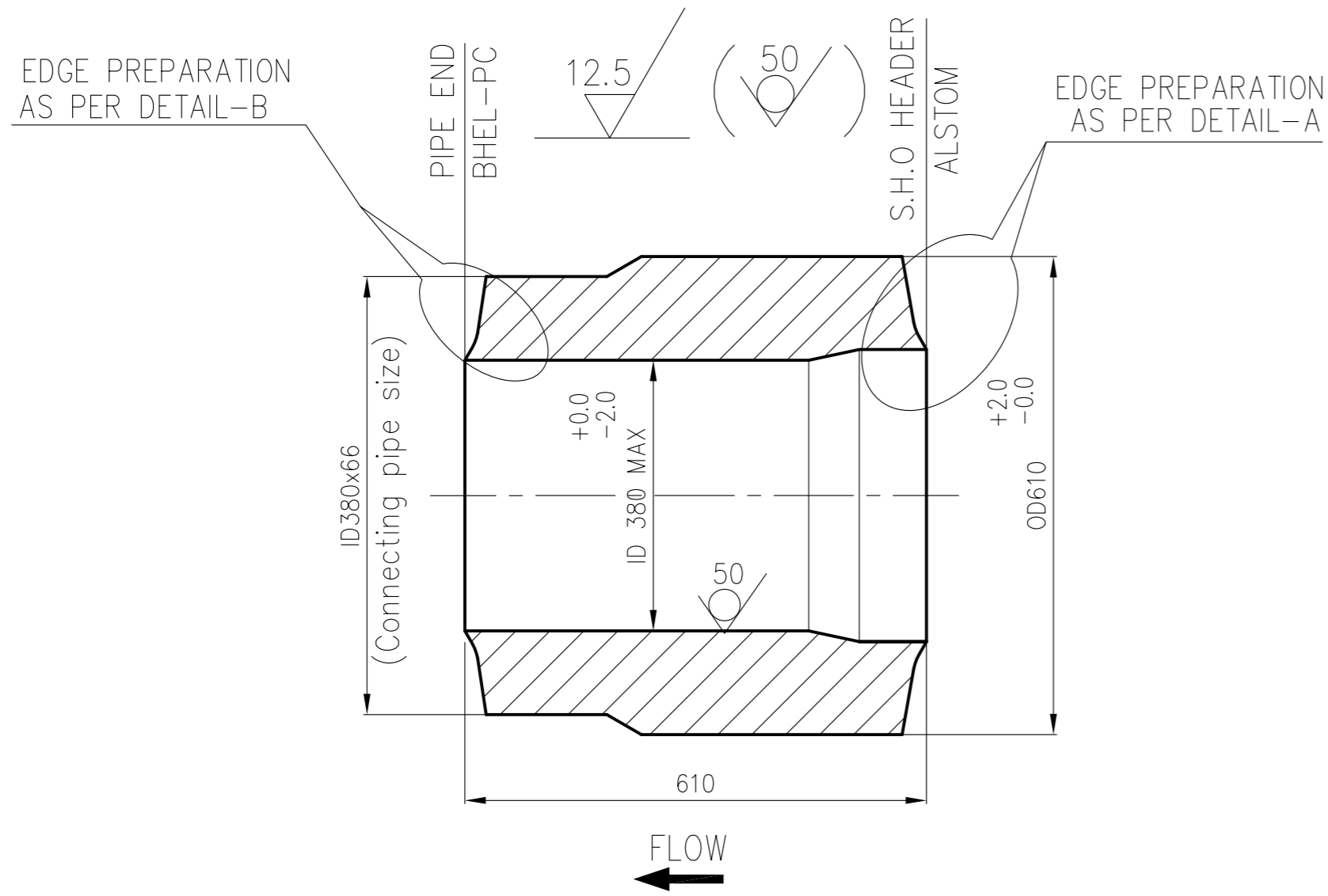


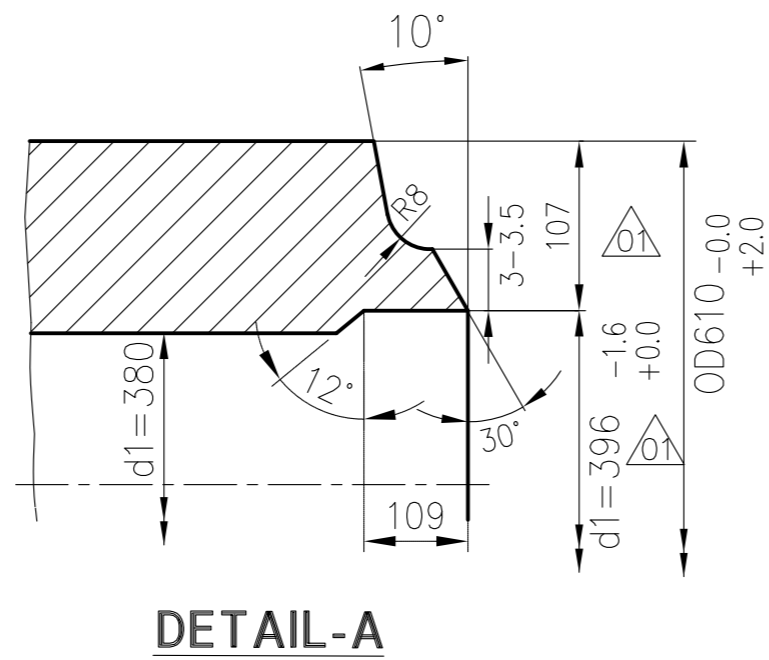
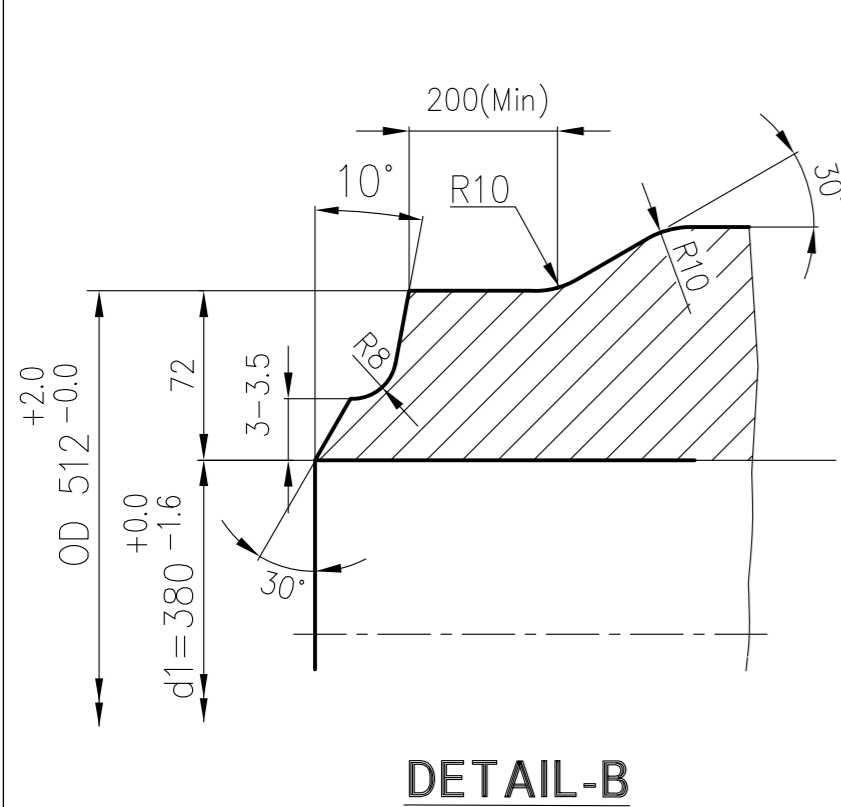
3-80-300-31136  
DRAWING No

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**NOTES**

- DESIGN PRESSURE : 275 Kg/Cm2(g)
- DESIGN TEMPERATURE : 568 °C
- PIPE 'SA 335 P91'(A) CAN ALSO BE USED IN PLACE OF 'SA 182 F91'(A)
- THE FINISHED MATERIAL SPECIFICATION IS 'SA 182 F91'(A)
- FOLLOW TDC No. : TDG-104 (LATEST REVISION)



01	FORGING OD610 / ID380 L=610	3-80-300-31136	92 117 995 0000	A	680,000
ITEM NO.	DESCRIPTION	DRAWING NO.	MATERIAL CODE	A	UNIT WT.
			MATERIAL SPEC.	C	QTY.

SPACE FOR IBR APPL.

	BHARAT HEAVY ELECTRICALS LTD., PIPING CENTRE, CHENNAI 600 017			NAME	SIGN	DATE	NO OF ITEMS
	DRN	KONDAPA				03.12.13	-
	CHD	KONDAPA				03.12.13	-
	APPD	R.SESHAGIRI				03.12.13	-

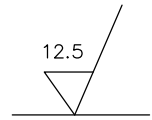
REV 01	DATE 05.12.14	ALTD: KONDAPA APPD: R.SESHAGIRI	REV 01	DATE 16.09.14	ALTD: KONDAPA APPD: R.SESHAGIRI
ZONE	WELD END DIA REVISED		ZONE	DIMENSION REVISED	

DEPT.	GRADE OF UN TOL. DIM		SCALE	WEIGHT (Kg).	BHEL PO REF.NO:	ITEM No.
CODE	C/M/F		N.T.S.	680	-	-
TITLE	MATCHING PIECE (OD610X114/ID380x66)			CARD CODE	DRAWING No.	REV
				U 01	3-80-300-31136	02

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REV	DATE	ALTERED
01		APPROVED

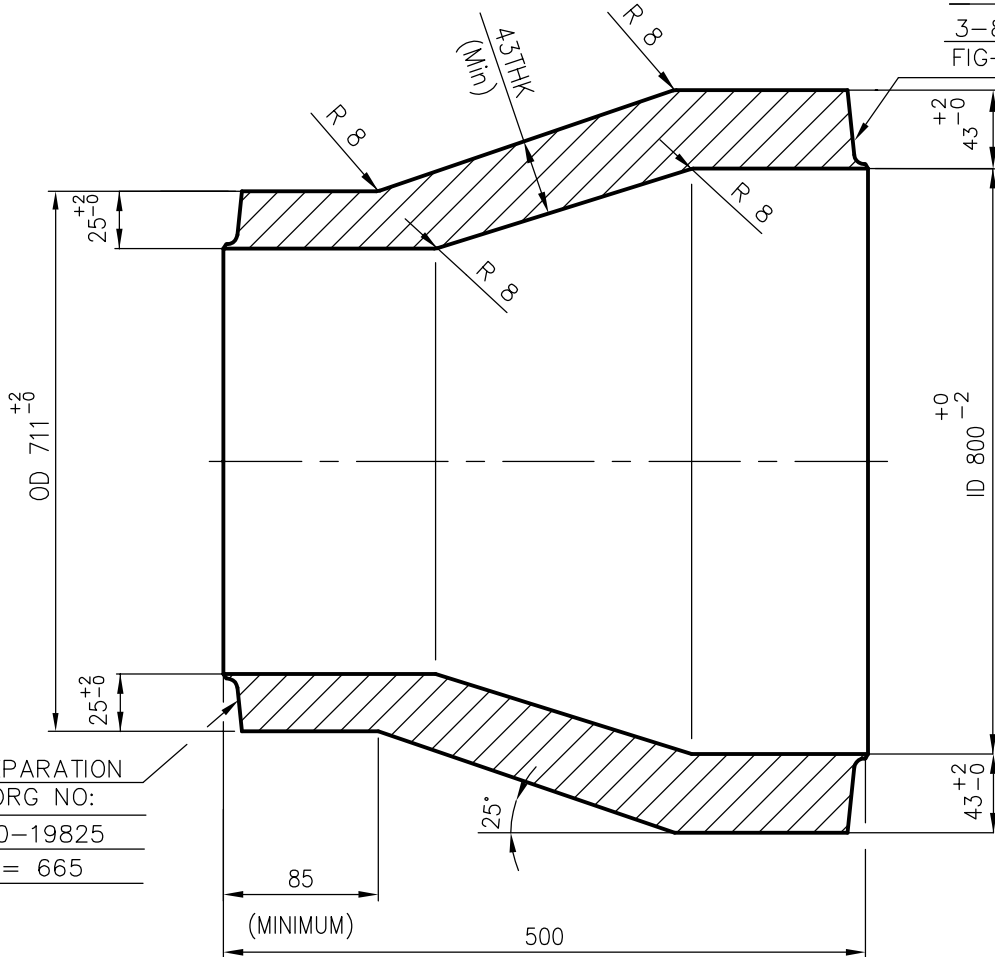
ALL DIMENSIONS ARE IN MILLIMETRES



**NOTES :-**


- DESIGN PRESSURE : 48.4 Kg/Cm<sup>2</sup> (g)
- DESIGN TEMPERATURE : 568° C

EDGE PREPARATION  
AS PER DRG NO:  
3-80-300-19825  
FIG-X, d1=800



EDGE PREPARATION  
AS PER DRG NO:  
3-80-300-19825  
FIG-X, d1 = 665

	MATCHING PIECE L=500 ID800max x thk43min/ OD 711X25	92 117 443 0000	A	450 000
VAR NO.	DESCRIPTION	MATL. CODE	UNIT	UNIT.WT.(Kg)
		MATL. SPECN.	DI	QTY.

		<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE CHENNAI 600 017		DRN	NAME	SIGN	DATE	NO.OF VAR
				CHD	A. AMALRAJ		30.12.06	
				APPD	M.SRINIVASAN		30.12.06	
DEPT	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	BHEL PO REF.NO:			ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	450.000					
TITLE				CARD CODE	DRAWING NO.			REV
<b>MATCHING PIECE</b> (ID800maxXthk43min/OD711X25)				U 01	<b>4-80-310-63822</b>			<b>00</b>

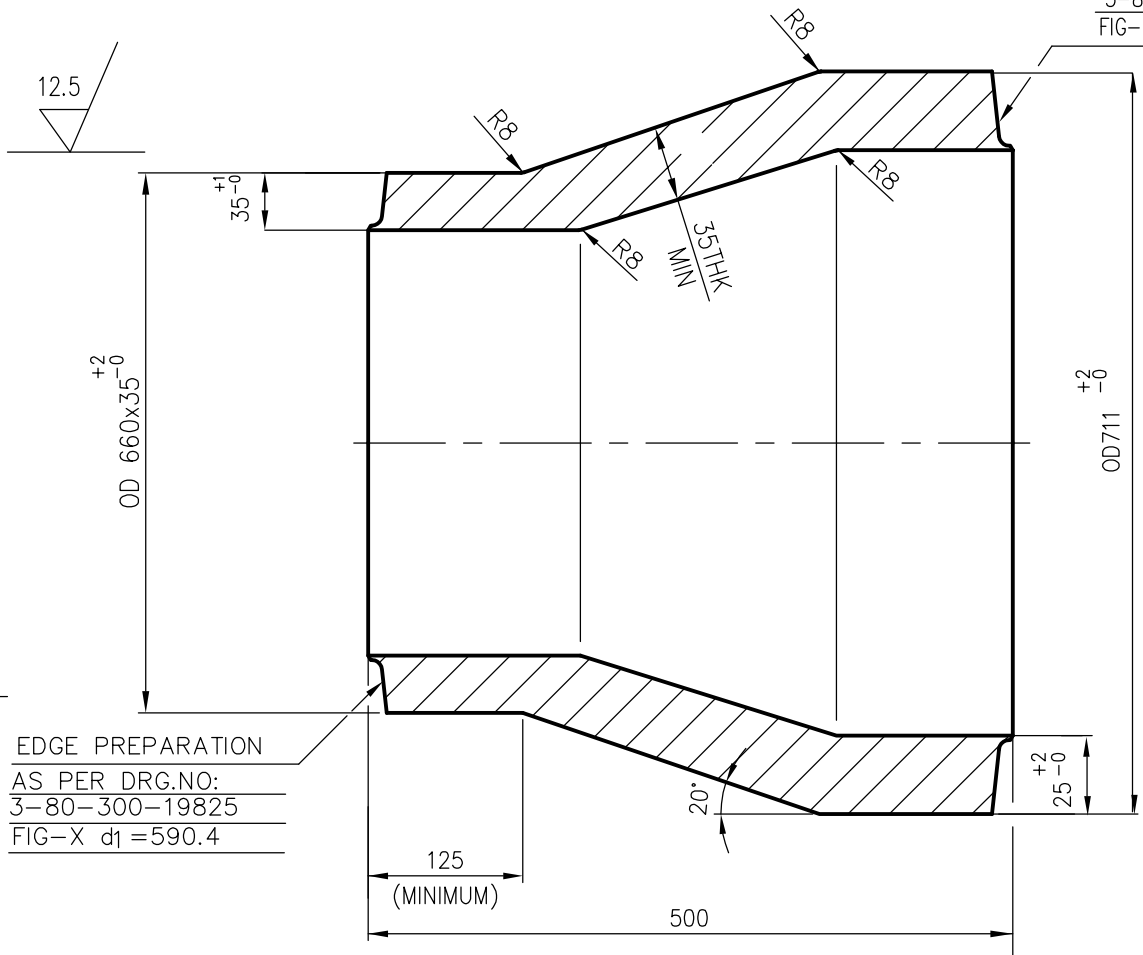
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REV	DATE	ALTERED	S.SANTHOSH
01	08.04.08	APPROVED	M.MANO

DESIGN PARAMETERS DELETED  
REVISION ARE INDICATED AS  $\triangle 01$


ALL DIMENSIONS ARE IN MILLIMETRES

EDGE PREPARATION  
AS PER DRG.NO:  
3-80-300-19825  
FIG-X  $d_1 = 665$



EDGE PREPARATION  
AS PER DRG.NO:  
3-80-300-19825  
FIG-X  $d_1 = 590.4$

	MACHINED REDUCER L=500 OD711x25/OD660x35	92 117 438 0000	A	180 000
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT
		MATL. SPECN.	C	DI
				UNIT.WT.(Kg)
				QTY.

	BHARAT HEAVY ELECTRICALS LIMITED		DRN	NAME	SIGN	DATE	NO.OF VAR
	PIPING CENTRE		CHD	M.CHAKKARA		30.12.06	
	CHENNAI 600 017		APPD	A.AMALRAJ		30.12.06	
DEPT	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	BHEL PO REF.NO:		ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	180.000				
TITLE			CARD CODE	DRAWING NO.		REV	
MACHINED REDUCER (OD711x25/OD660x35)			U 01	4-80-310-63827		01	

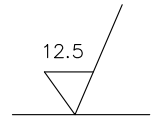
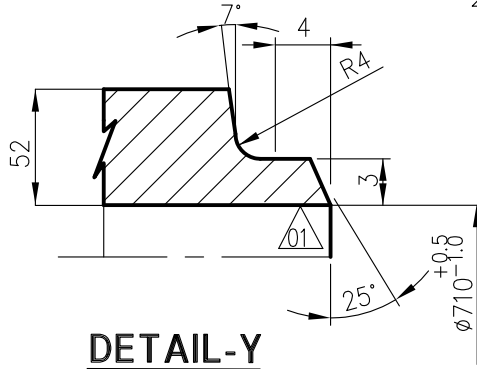
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REV	DATE	ALTERED	A.AMALRAJ
01	25.09.12	APPROVED	A.P.M.KUTTY
DETAIL-Y REVISED FOR X-STYLE.			
REVISION MARKED AS $\Delta 01$			

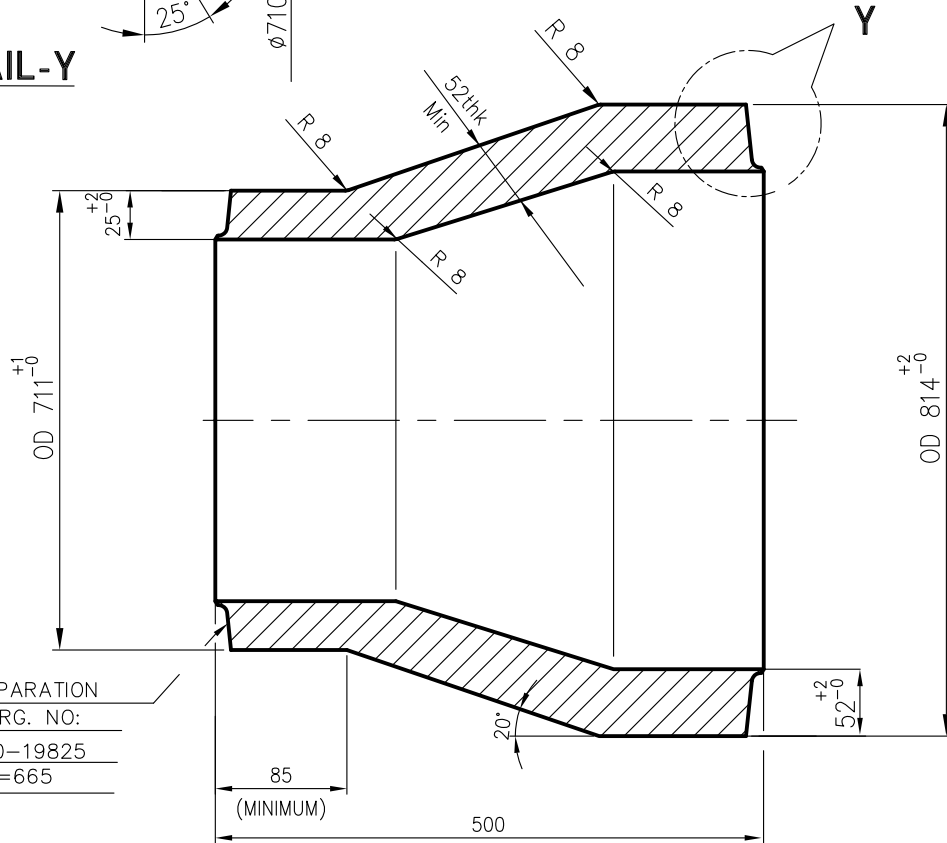
ALL DIMENSIONS ARE IN MILLIMETRES

**NOTES :-**

- DESIGN PRESSURE : 48.4 Kg/Cm<sup>2</sup> (g)
- DESIGN TEMPERATURE : 568° C




**DETAIL-Y**



EDGE PREPARATION  
AS PER DRG. NO:  
3-80-300-19825  
FIG-X, d1 =665

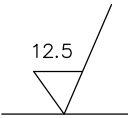
	REDUCER L=500 OD 814x52/OD711x25	92 117 441 0000	A	390 000
VAR NO.	DESCRIPTION	SA 182 F91	A/C	UNIT.WT.(Kg)
		MATL. SPECN.	DI	QTY.

		<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE CHENNAI- 600 017		DRN	NAME	SIGN	DATE	NO.OF VAR
				CHD	A.AMALRAJ		30.12.06	
				APPD	M.SRINIVASAN		30.12.06	
DEPT	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	BHEL PO REF.NO:			ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	390.000					
TITLE				CARD CODE	DRAWING NO.			REV
<b>MACHINED REDUCER</b> (OD814x52/OD711x25)				U 01	<b>4-80-311-63824</b>			<b>01</b>

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REV	DATE	ALTERED
01		APPROVED

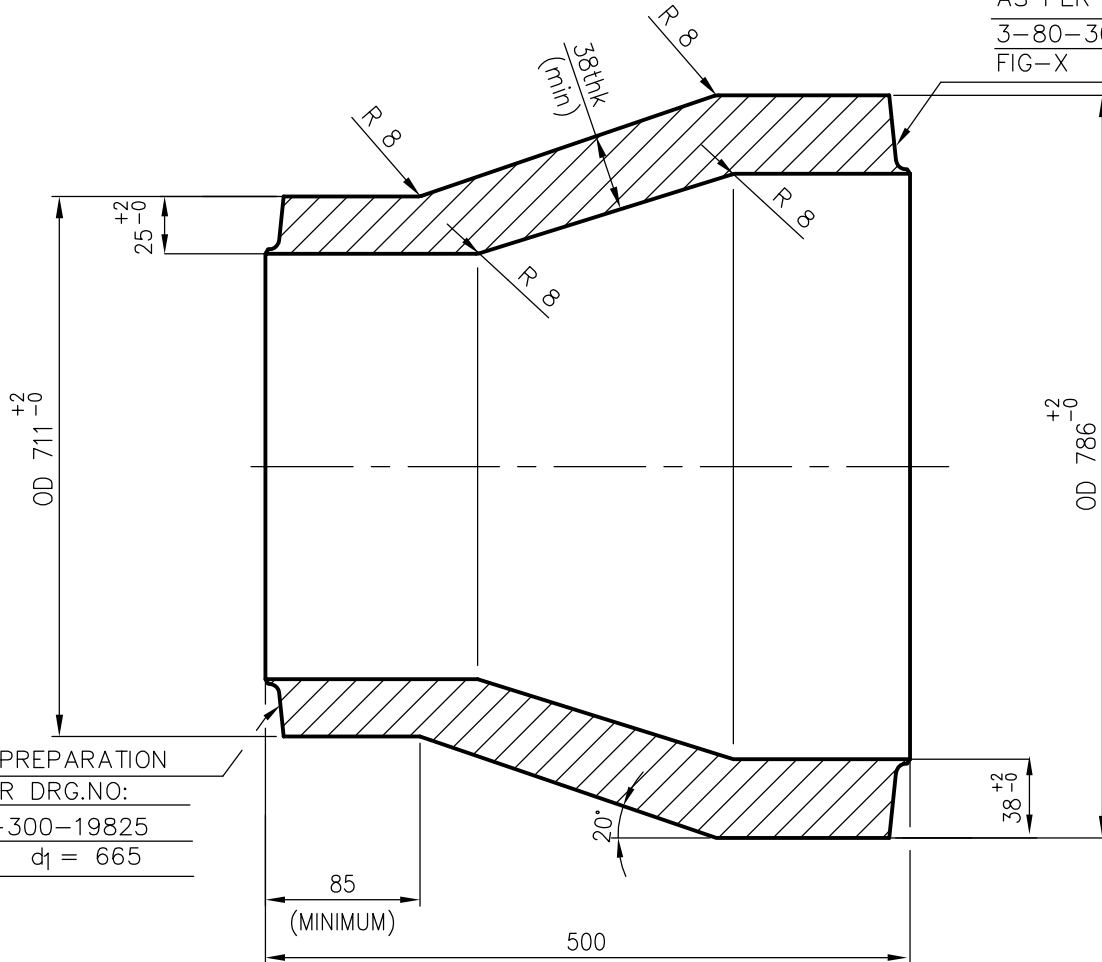
ALL DIMENSIONS ARE IN MILLIMETRES



**NOTES :-**

- DESIGN PRESSURE : 48.4 Kg/Cm<sup>2</sup> (g)
- DESIGN TEMPERATURE : 568° C

EDGE PREPARATION  
AS PER DRG.NO:  
3-80-300-19825  
FIG-X d<sub>1</sub> = 710



EDGE PREPARATION  
AS PER DRG.NO:  
3-80-300-19825  
FIG-X, d<sub>1</sub> = 665

	REDUCER L=500 OD 786x38/OD 711x25	92 117 440 0000 SA 182 F91	A	300 000
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT.WT.(Kg)
		MATL. SPECN.	C	QTY.

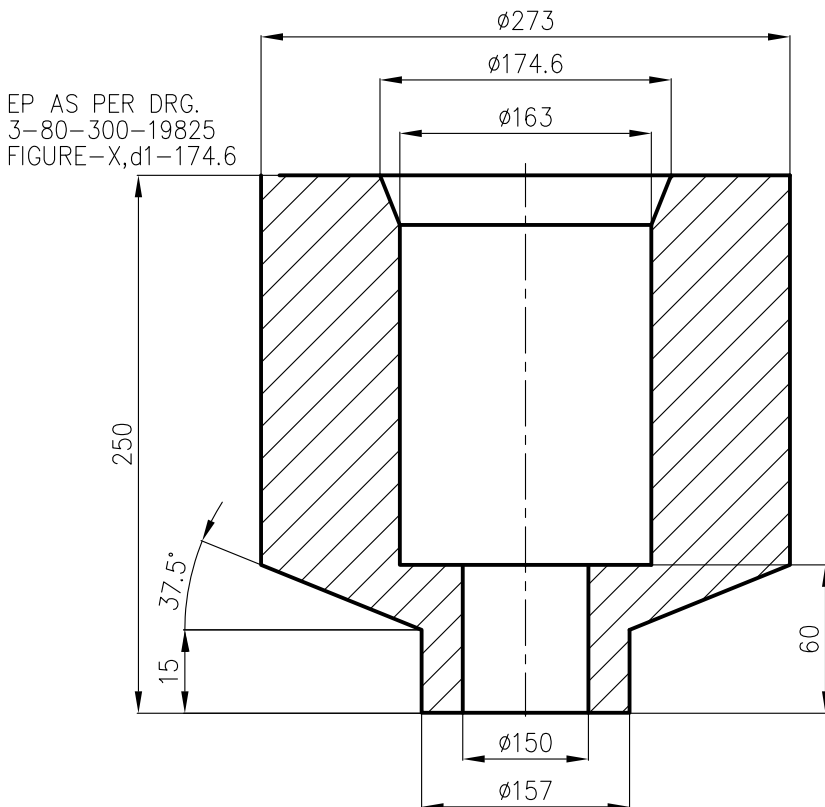
		<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE CHENNAI- 600 017		DRN	NAME	SIGN	DATE	NO.OF VAR
				CHD	M.CHAKKARA		30.12.06	
				APPD	A.AMALRAJ		30.12.06	
					M.SRINIVASAN		30.12.06	
DEPT	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	BHEL PO REF.NO:			ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	300.000					
TITLE				CARD CODE	DRAWING NO.			REV
<b>MACHINED REDUCER</b> (OD786x38/OD711x25)				U 01	<b>4-80-311-63825</b>			<b>00</b>

ALL DIMENSIONS ARE IN MILLIMETRES


REV	DATE	ALTERED
		APPROVED

DESIGN PRESSURE : 275kg/sq.cm(g)  
 DESIGN TEMPERATURE : 570 ° C

12.5



01	STUB OD275/ID150 L=250 SA182F91	92 516 779 0000 SA182F91	A	63	500
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT	UNIT.WT.(Kg)
		MATL. SPECN.	C	DI	QTY.

	BHARAT HEAVY ELECTRICALS LIMITED PIPING CENTRE CHENNAI 600 017		DRN	KONDAPA	SIGN	DATE	NO.OF VAR
			CHD	KONDAPA		17.06.14	
			APPD	R.SESHAGIRI		17.06.14	
DEPT	GRADE OF TOL.DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.		ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	63.5				
TITLE			CARD CODE	DRAWING NO.			REV
<b>STUB 273 L=250 SA182F91</b>			U 01	<b>4-80-300-78100</b>			<b>00</b>

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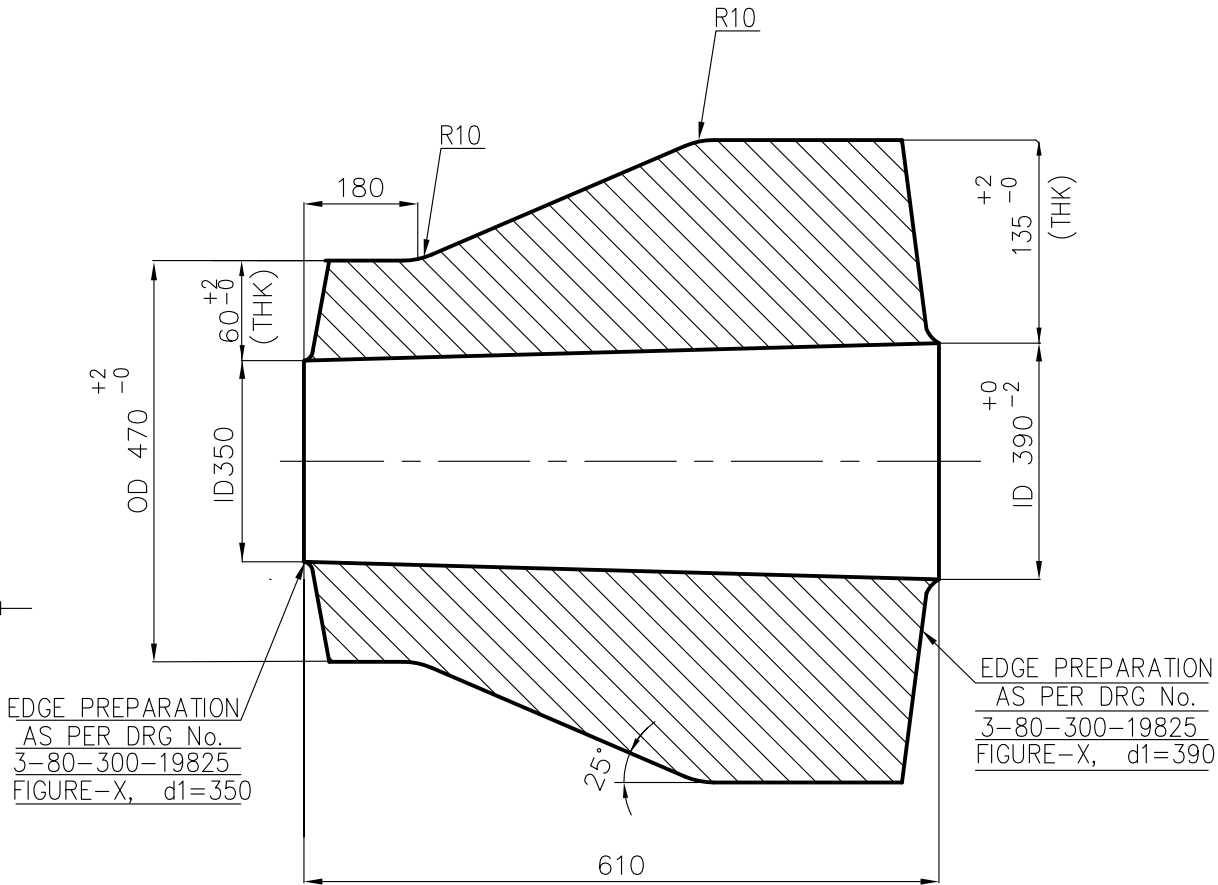
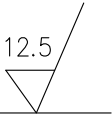
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REV	DATE	ALTD : K.BOOPALAN -SD.-
01	14.08.2012	APPD : S.PANDA -SD.-
DESIGN PRESSURE ALTERED REVISION INDICATED AS $\triangle 01$		

ALL DIMENSIONS ARE IN MILLIMETRES

**NOTES:-**

- $\triangle 01$  01. DESIGN PRESSURE : 272 Kg/Cm<sup>2</sup>(g)
- 02. DESIGN TEMPERATURE : 568° C
- 03. FITTING SHALL CONFORM TO ALL THE REQUIREMENTS OF ASME B16.9 & A 234(LATEST).
- 04. THIS DRAWING IS FOR INDICATING THE OVER ALL DIMENSIONS, CONNECTING PIPE SIZE AND MATERIAL SPECIFICATION.



	MATCHING PIECE ID 390 Max x Thk 135 min ID350 x 60 L=610	92 117 569 0000	A	1010	000
VAR NO.	DESCRIPTION	STD	MATL. CODE	UNIT	UNIT.WT.(Kg)
			MATL. SPECN.	DI	QTY.

		<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE CHENNAI 600 017		NAME	SIGN	DATE	NO. OF VAR
DEPT	GRADE OF UNTOL. DIM		SCALE	DRN		16.05.10	
CODE	C / M / F			CHD	C.SARAVANAN	16.05.10	
		APPD	C.SARAVANAN	16.05.10			
		WEIGHT (KG).	1010.000	BHEL PO REF.NO:		ITEM NO.	NO. OF ITEMS
TITLE			CARD CODE		DRAWING NO.		REV
<b>MATCHING PIECE</b> (ID390 x Thk 135 min/ID350x60)SA182F91			U 01		<b>4-80-301-70711</b>		<b>01</b>

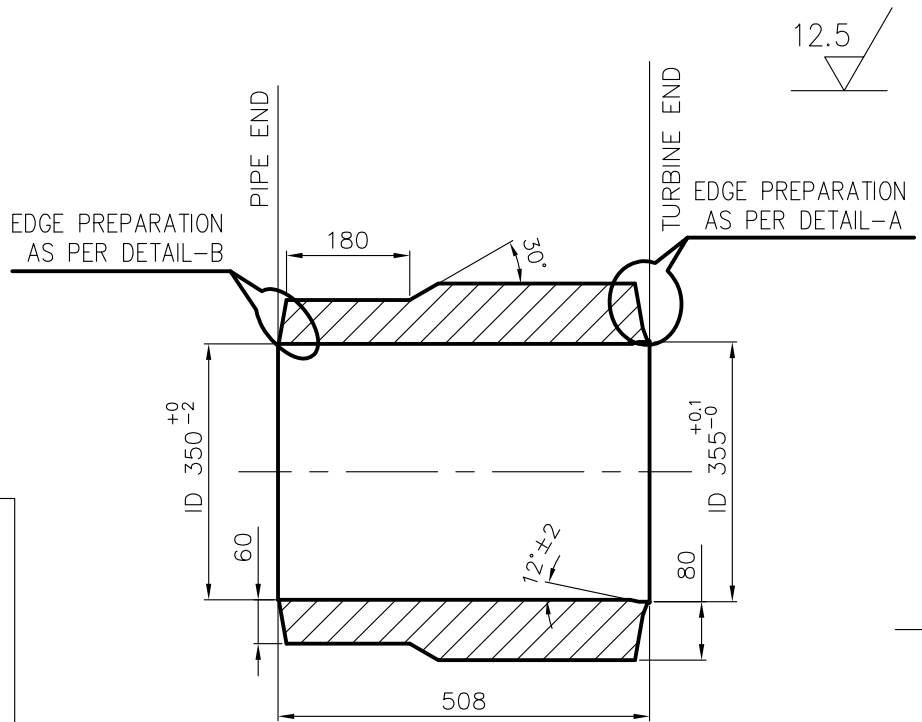
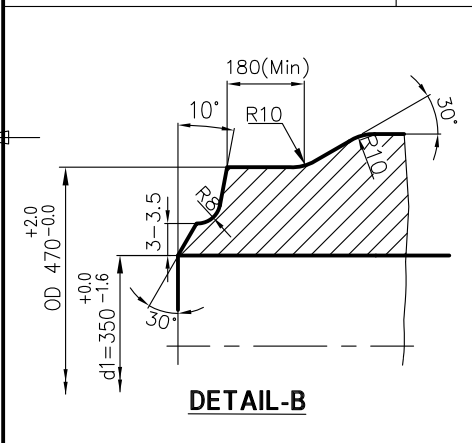
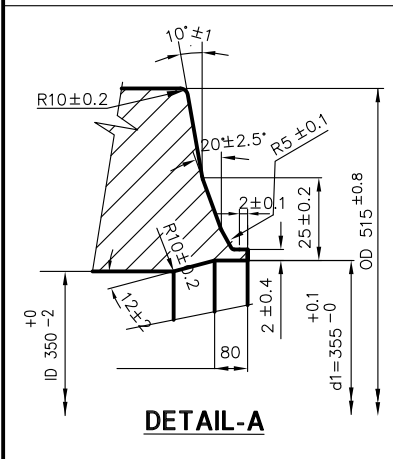
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REV 01	DATE	ALTERED
		APPROVED

### NOTES

ALL DIMENSIONS ARE IN MILLIMETRES

- 1) DESIGN PRESSURE : 269 Kg/Cm<sup>2</sup>(g)
- 2) DESIGN TEMPERATURE : 568 °C
- 3) FOLLOW TDC No. : TDG-104 (LATEST REVISION)
- 4) THE FINISHED MATERIAL CODE IS '92 117 840 0000'



—	FORGING OD515/ID350 L=508	—	A	380	000
VAR NO.	DESCRIPTION	STD	MATL. CODE MATL. SPECN.	UNIT	UNIT.WT.(Kg) QTY.



BHARAT HEAVY ELECTRICALS LIMITED  
PIPING CENTRE  
CHENNAI 600 017

	NAME	SIGN	DATE	NO. OF VAR
DRN	POONGKODI.V	—sd—	15/06/2013	—
CHD	SUKUMAR.B	—sd—	15/06/2013	—
APPD	C.V.NATHAN	—sd—	15/06/2013	—

DEPT CODE	GRADE OF UNTOL.DIM C / M / F	SCALE N.T.S	WEIGHT (KG). 380.000	BHEL PO REF.NO: —	ITEM NO —	NO. OF ITEMS —
TITLE <b>MATCHING PIECE</b> (ID350x60/ID355x80)				CARD CODE U 01	DRAWING NO. <b>4-80-301-77056</b>	
						REV 00

Size A4

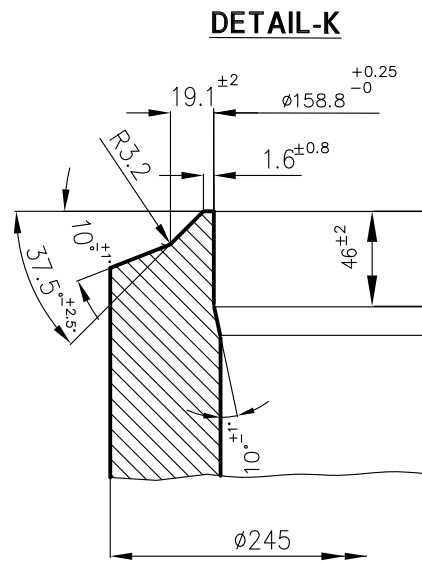
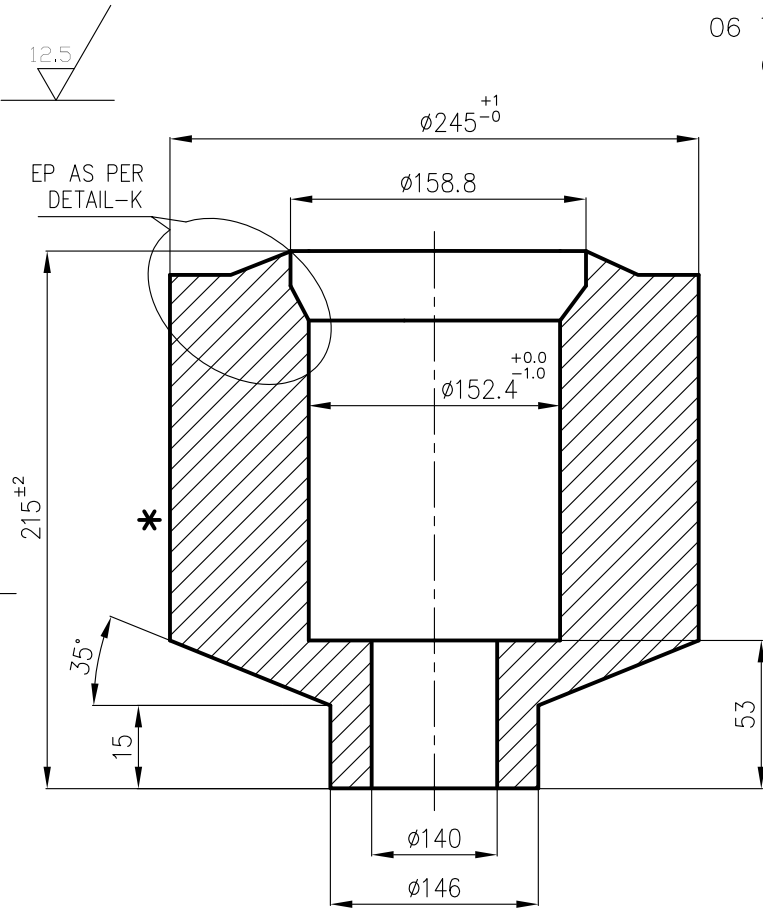
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REV	DATE	ALTERED
01		APPROVED

ALL DIMENSIONS ARE IN MILLIMETRES

**NOTES:**

- 01 DESIGN PRESSURE : 68kg/sq.cm(g)
- 02 DESIGN TEMPERATURE : 601°C
- 03 HARD PUNCH "F91" AT PLACE MARKED WITH \*
- 04 ALTERNATE/SUITABLE SIZE OF SA182 F91 FORGING CAN ALSO BE USED.
- 05 FOLLOW TDC: TDG:104, REV.04
- 06 THIS STUB IS REQUIRED FOR HRH SYSTEM OF OTSC BOILERS



	SV STUB L=215 OD245	92 516 777 0000		38	000
		SA182F91	A		
VAR NO.	DESCRIPTION	MATL. CODE	A	UNIT	UNIT.WT.(Kg)
		MATL. SPECN.	C	DI	QTY.

		<b>BHARAT HEAVY ELECTRICALS LIMITED</b> PIPING CENTRE CHENNAI 600 017		DRN	NAME	SIGN	DATE	NO.OF VAR
				CHD	M.MANO		14.05.14	
				APPD	CKN		14.05.14	
DEPT	GRADE OF UNTOL.DIM	SCALE	WEIGHT (KG).	REF. TO ASSY./OLD DRG.			ITEM NO.	NO. OF ITEMS
CODE	C / M / F	N.T.S	38.000					
TITLE				CARD CODE	DRAWING NO.			REV
<b>SAFETY VALVE STUB OD 245</b> <b>SA182F91</b>				U 01	<b>4-80-310-77988</b>			<b>00</b>