



TECHNICAL SPECIFICATION FOR GRAPHITE ALLOY BUSHINGS/BEARINGS TFS:1001A/REV.00

1.0 Scope:

Design, manufacture and supply of Graphite alloy bushings/bearings used in low speed rotating shafts of tilt mechanism and damper assembly of windboxes / burners. Bushings shall be supplied in machined condition to meet the dimensional requirements as per the Variant or Style # indicated in the enquiry.

2.0 Purpose

Graphite alloy bushings are used in shafts, where maintenance of bushings/bearings is remote.

3.0 Technical parameters

Material	Graphite alloyed with metal to enhance bearing property
Mechanical properties	Tensile strength: 31.0MPa; Compressive strength: 138.0MPa; Hardness: 207-715(BHN)
Working temperature	400 ⁰ C
Features	Self-lubricating, dimensionally stable at all working temperature conditions, low coefficient of friction, shall work without any lubrication
Dimensions	Shall be as per the specified variant of BHEL drawing 3-45-000-01273A, 4-45-320-01618A or 3-45-000-01283A as mentioned in enquiry.

4.0 Packing

Vendor shall use liberal packing material for shipment with proper handling instructions.

5.0 Documents required

Vendor shall submit point-wise confirmation to the specification.

6.0 Inward Inspection

Visual inspection

Dimensional check

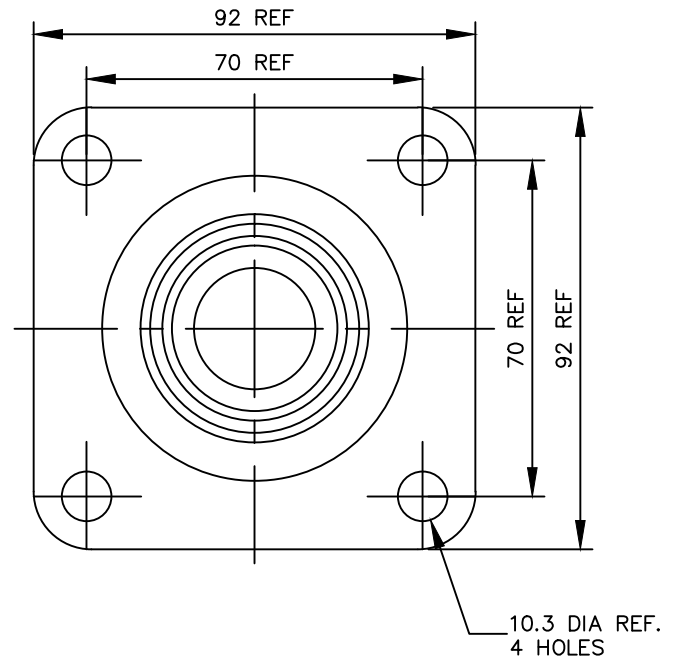
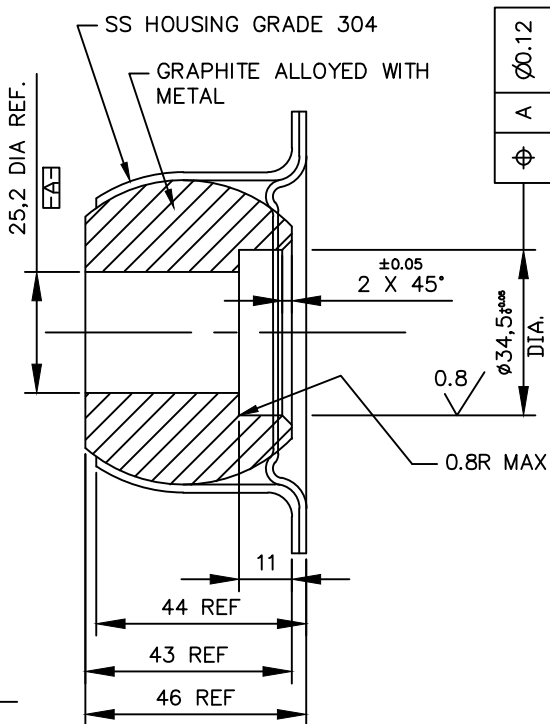
Check for any damages

Prepared	Checked	Approved

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REV	DATE	ALTERED :
01		CHD & APPD :

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD. NO TP 023 0299



NOTE:

1. ALL DIMENSIONS ARE MILLIMETERS
2. UNSPECIFIED TOLS : DIMS ± 0.8
3. REFER ASSLY DRAWING NO 2-45-000-01392
4. TECHNICAL SPECIFICATION REFER TFS:1001A

	DAMPER BEARING		SUBDELIVERY			0.500
VARIANT NUMBER	DESCRIPTION	STD	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT
			MATERIAL SPECN			QUANTITY



355-056

Bharat Heavy Electricals Ltd
UNIT: HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620014

DRN	NAME	SIGNATURE	DATE
CHD	BIMAL.C	-sd-	15-03-2011
APPD	GSK	-sd-	15-03-2011
	MTP	-sd-	15-03-2011

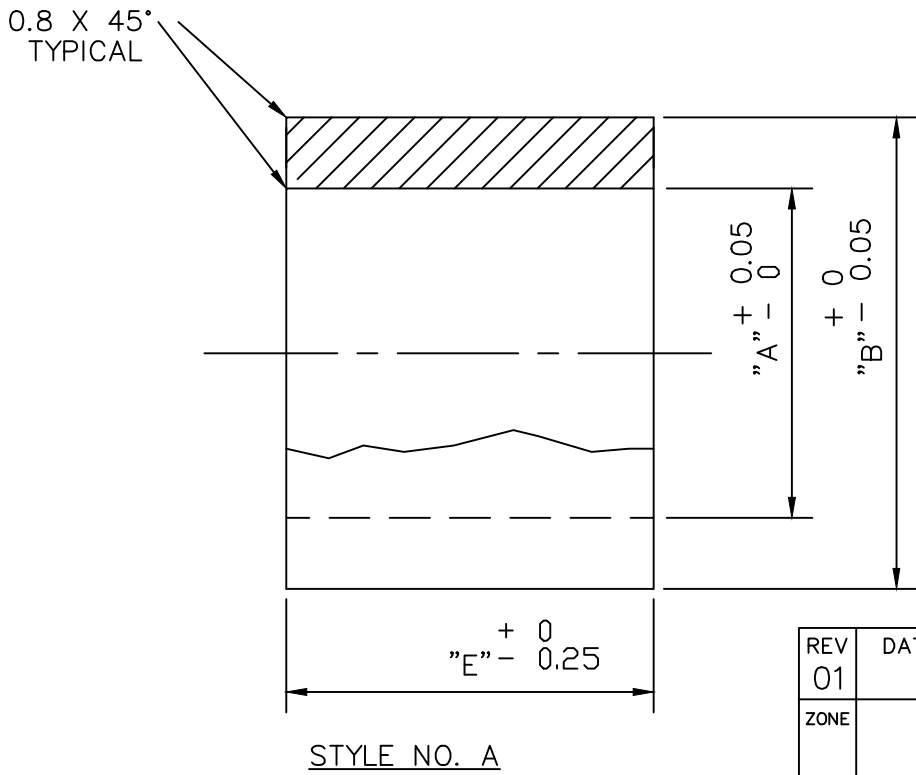
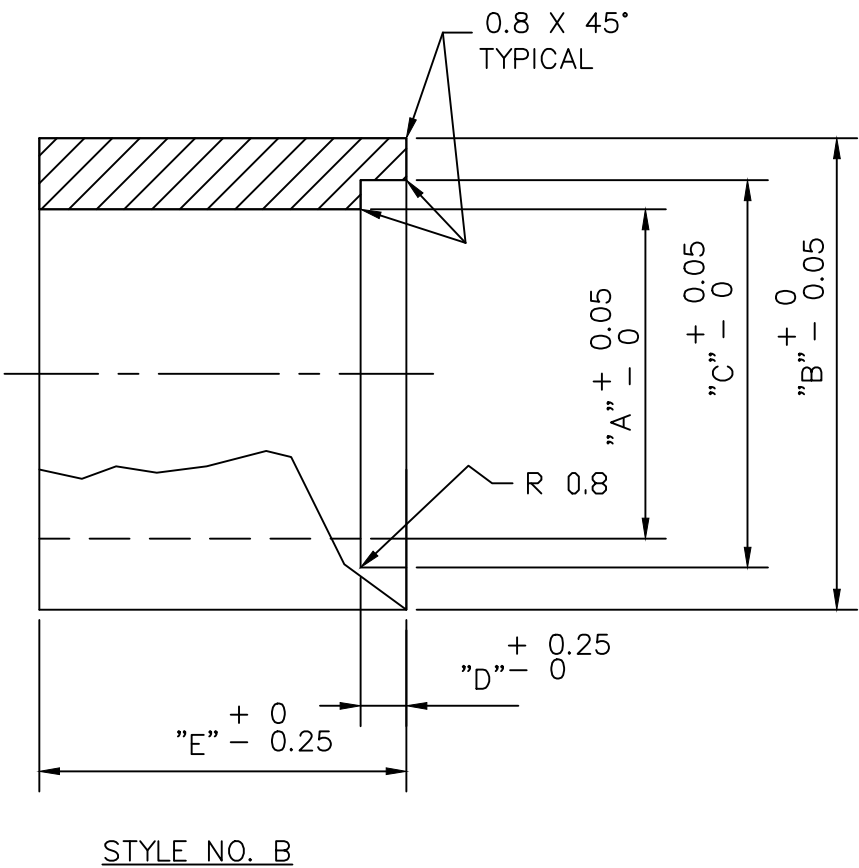
DEPT	FS	ALL DIMENSIONS ARE IN MM	PROJECTION	SCALE	WEIGHT (Kg)	REF TO ASSY / OLD DWG
CODE	129			N.T.S		
TITLE						DRAWING NO : 4-45-320-01618A
SELF ALIGNING FLANGE DAMPER BEARING						REV

DRAWING NO: 3-45-000-01283



FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD.NO TP 023 0299

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. UNSPECIFIED TOLERANCES: DIMS ± 0.8 ; ANGLES $\pm 0^{\circ}-15^{\circ}$
3. TECHNICAL SPECIFICATION AS PER TFS:1001A

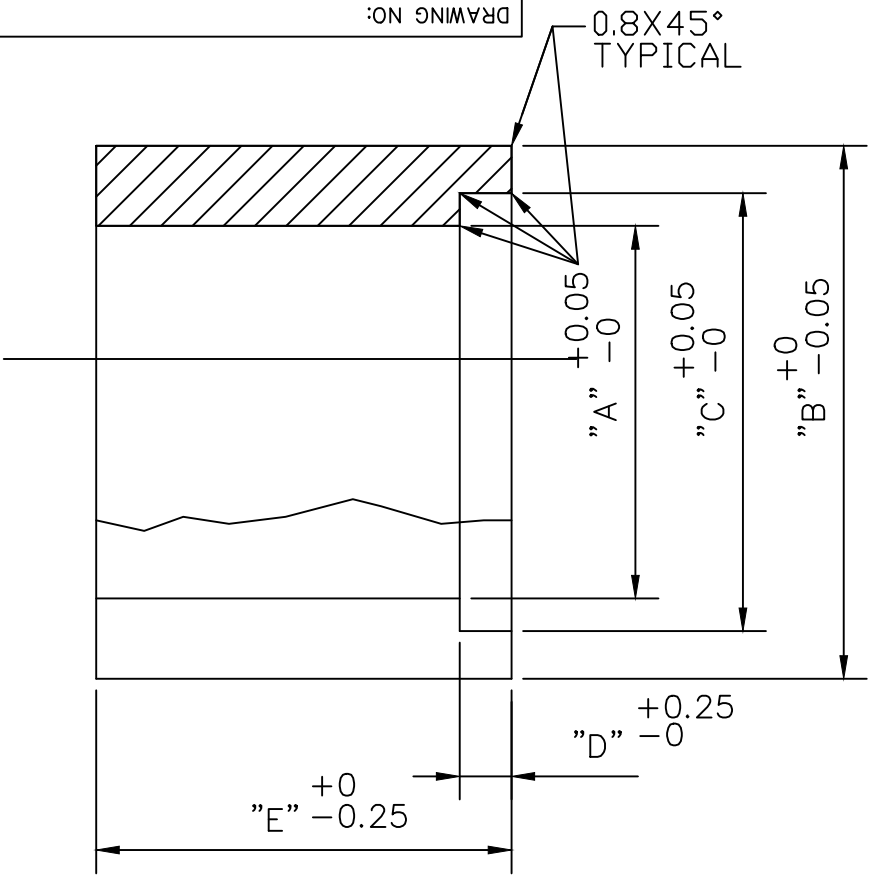


VARIANT NO.	STY. NO.	DIM. "A"	DIM. "B"	DIM. "C"	DIM. "D"	DIM. "E"
01	A	36.7	52.7	----	----	50.3
02	A	51.3	73.4	----	----	50.8
03	B	51.3	73.4	60.2	7.1	57.1
04	A	25.3	35.1	----	----	44.5
05	A	38.6	60.7	----	----	50.3
06	B	38.6	60.7	47.5	7.1	50.3
07	A	38.6	60.7	----	----	69.3
08	A	45	63.8	----	----	63.5
09	B	45	63.8	53.9	7.1	63.5

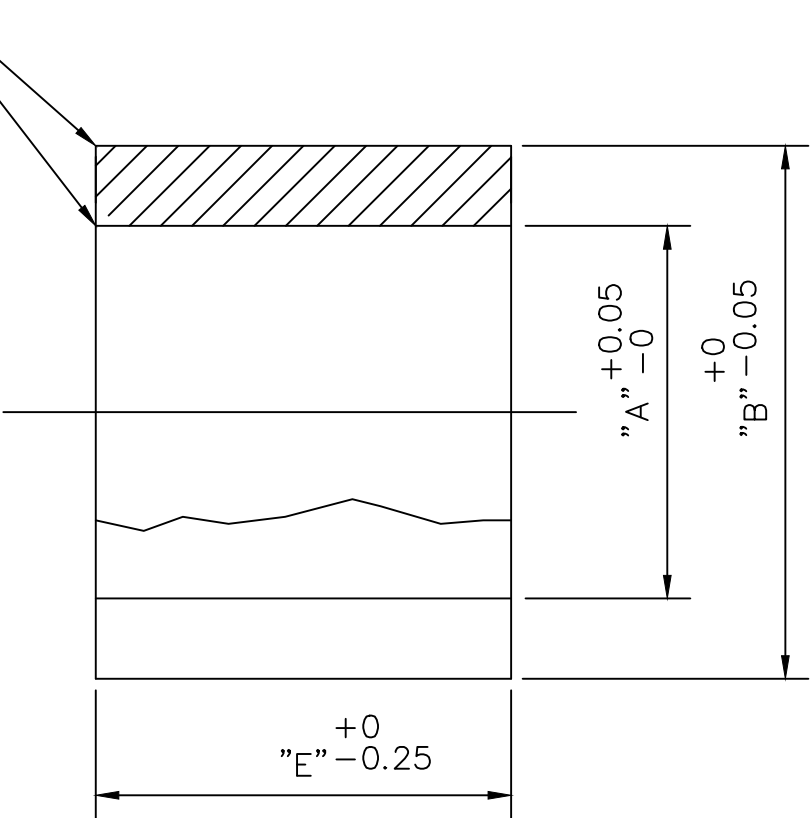
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		 355-055		Bharat Heavy Electricals Ltd		DRN	NAME G S K	SIGNATURE -sd-	DATE 13/01/2011
				UNIT: HIGH PRESSURE BOILER PLANT		CHD	G S K	-sd-	13/01/2011
				TIRUCHIRAPALLI - 620014		APPD	M T P	-sd-	13/01/2011
DEPT FS	ALL DIMENSIONS ARE IN MM	PROJECTION 	SCALE NTS	WEIGHT (Kg) ---	REF TO ASSY / OLD DWG B-903-1938/02				
CODE 129	TITLE BUSHING (GRAPHALLOY)				DRAWING NO : 3-45-000-01283				REV 00

3-45-000-01273A
DRAWING NO:

FOR TOLERANCES OF UNTOLERANCED
DIMENSIONS DURING MANUFACTURE
REFER PLANT STD.NO TP 023 0299



VAR. NO. 01





VAR. NO. 02 & 03

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. UNSPECIFIED TOLERANCES: DIMS ± 0.8 ; ANGLES $\pm 0^\circ-15'$
3. TECHNICAL SPECIFICATION AS PER TFS:1001A

VAR. NO.	"A"	"B"	"C"	"D"	"E"
01	38.5	57.4	47.5	7	59
02	38.5	57.4	-----	-----	50
03	64	89.3	-----	-----	50

VARIANT NUMBER	ITEM NUMBER	DESCRIPTION	STD	DRAWING NUMBER	ITEM NO	MATERIAL CODE	A/C/P	UNIT	UNIT WEIGHT	QTY
03		GRAPHITE ALLOY BUSHING; OD89.3 / ID64							0.003	
02		GRAPHITE ALLOY BUSHING; OD57.4 / ID38.5							0.002	
01		GRAPHITE ALLOY BUSHING; W/SEAL; OD57.4/ID38.5							0.002	

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										 355-055				Bharat Heavy Electricals Ltd UNIT: HIGH PRESSURE BOILER PLANT TIRUCHIRAPALLI - 620014				DRN		NAME G S K		SIGNATURE -sd-		DATE 31.12.2010	
																		CHD		G S K		-sd-		31.12.2010	
										DEPT FS		ALL DIMENSIONS ARE IN MM		PROJECTION 		SCALE N T S		WEIGHT (Kg)		REF TO ASSY / OLD DWG					
CODE 129												APPD		M T P		-sd-		31.12.2010							
TITLE IDLER BUSHING										DRAWING NO : 3-45-000-01273A										REV 00					