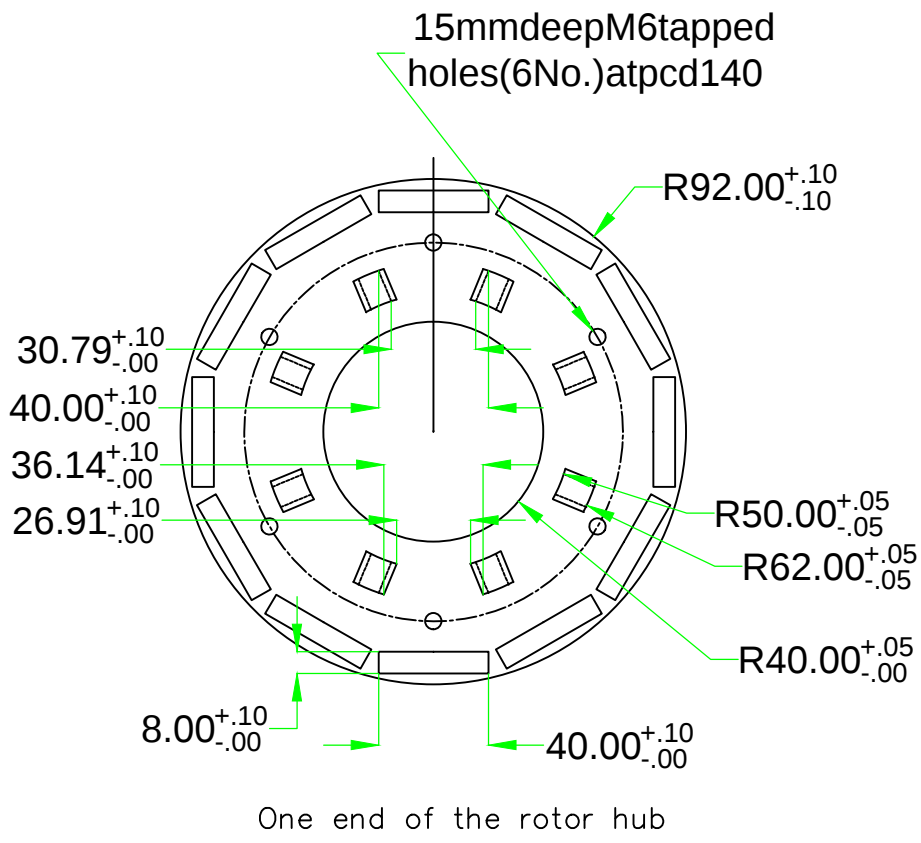
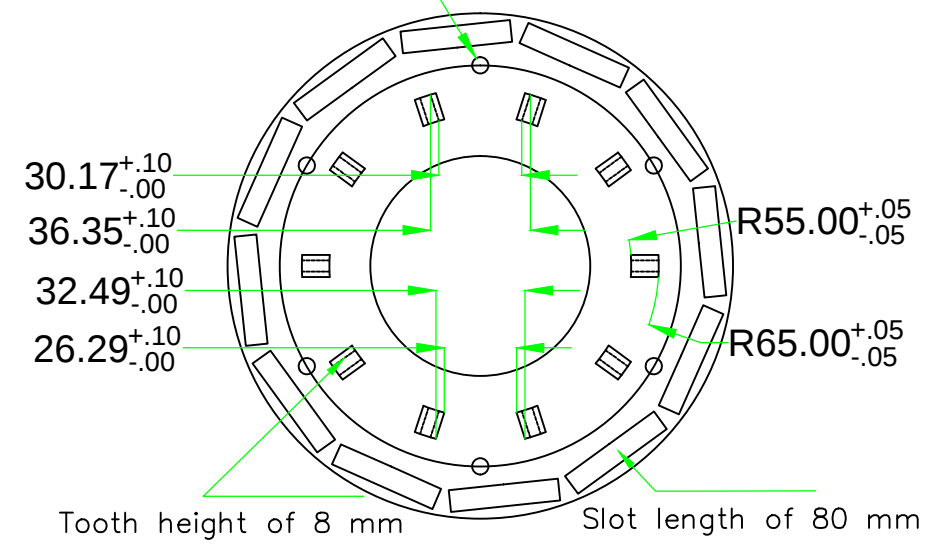


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One end of the rotor hub

15mm deep M6 tapped holes (6 No.) at pcd 146



Other end of the rotor hub

Technical details(Notes):

- (1) Required Quantity: 1 No.
- (2) SS end ring of thickness 8 mm, ID-124 mm and OD-184 mm to be provided.
- (3) Another SS end ring of thickness 8 mm, ID-130 mm and OD-184 mm to be provided.

Note: This drawing contains information, confidential to BHEL. It is to be used solely for the purpose for which it is furnished. This drawing and such information is not to be reproduced, transmitted, disclosed or used otherwise in whole or part. Vendor has to return the drawing to BHEL along with quotation. If any party is not quoting, drawing has to be returned to BHEL immediately.

Material: EN 24

REV.	DATE	ALTERED	CHECKED	APPD.
ZONE				

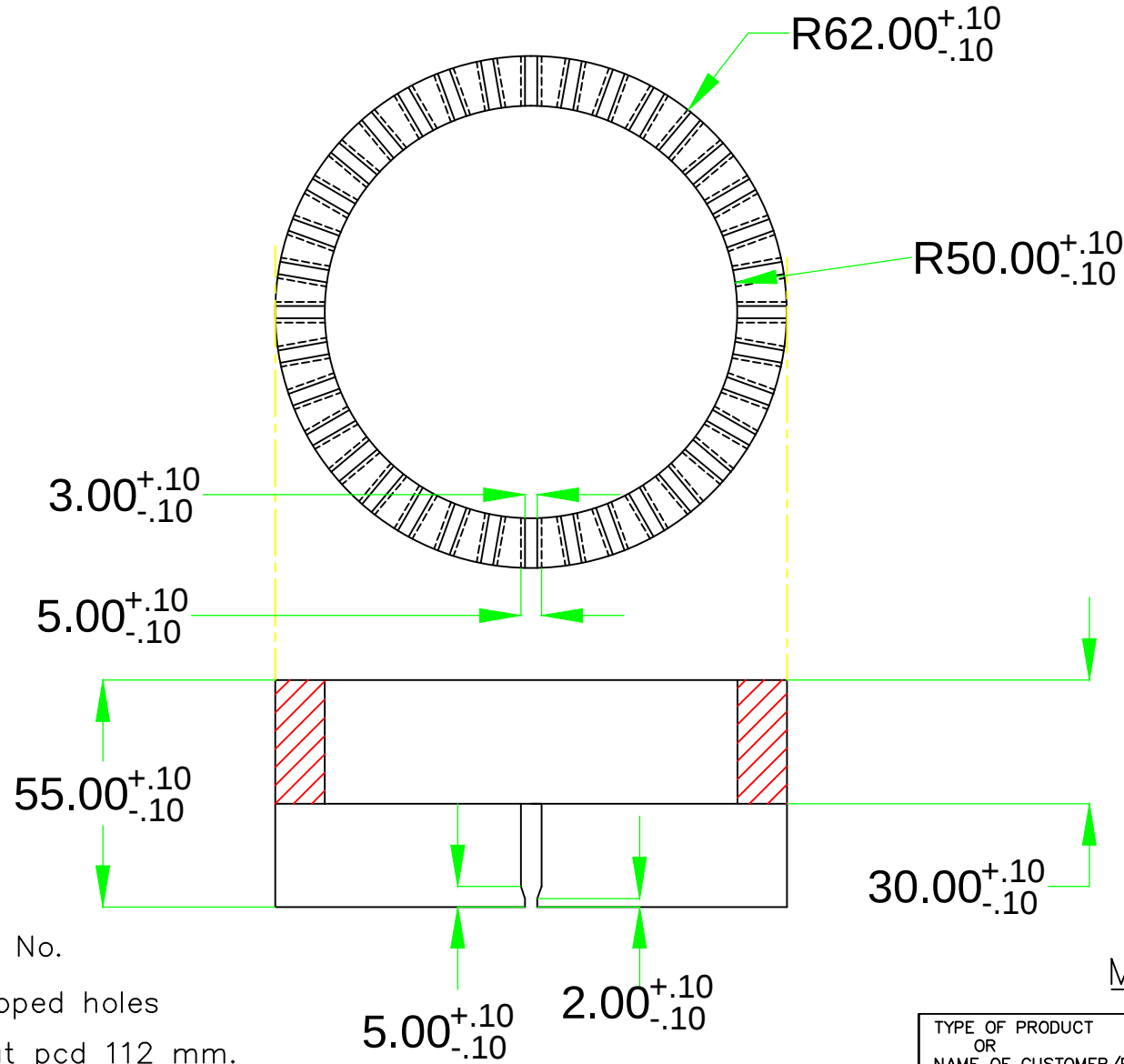
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid flux PMG				
 BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division, Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO. OF VAR.	
		DRN.	UdayKumarM			
		CHD.	SK			
DEPT.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
CODE		NTS				
TITLE				DRAWING NO.		REV.
Rotor hub				LS16RD29001		00
				SHEET NO.		NO OF SHEETS

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PROPERTY NO. _____
DATE AND DATE _____
COMPUTER FILE NAME _____

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



Technical details(Notes):

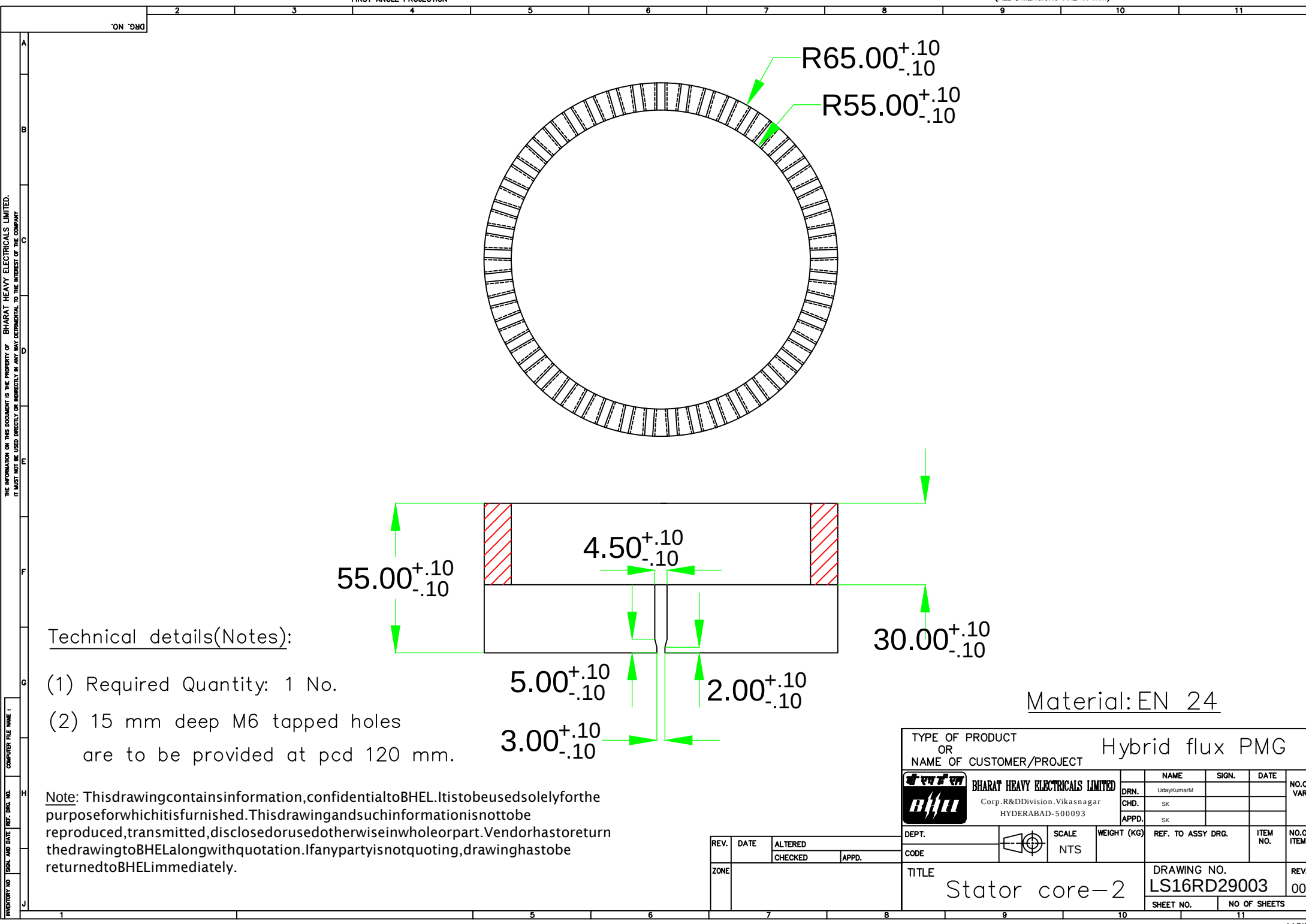
- (1) Required Quantity: 1 No.
- (2) 15 mm deep M6 tapped holes are to be provided at pcd 112 mm.

Note: This drawing contains information, confidential to BHEL. It is to be used solely for the purpose for which it is furnished. This drawing and such information is not to be reproduced, transmitted, disclosed or used otherwise in whole or part. Vendor has to return the drawing to BHEL along with quotation. If any party is not quoting, drawing has to be returned to BHEL immediately.

Material: EN 24

REV.	DATE	ALTERED	CHECKED	APPD.
ZONE				

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid flux PMG				
 BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division, Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO. OF VAR.	
		DRN.	UdayKumarM			
		CHD.	SK			
DEPT.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
CODE		NTS				
TITLE		Stator core-1				
DRAWING NO.		LS16RD29002				
SHEET NO.		NO. OF SHEETS				



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PROPERTY NO. _____

DATE AND DATE _____

COMPUTER FILE NAME _____

Technical details(Notes):

- (1) Required Quantity: 1 No.
- (2) 15 mm deep M6 tapped holes are to be provided at pcd 120 mm.

Note: This drawing contains information, confidential to BHEL. It is to be used solely for the purpose for which it is furnished. This drawing and such information is not to be reproduced, transmitted, disclosed or used otherwise in whole or part. Vendor has to return the drawing to BHEL along with quotation. If any party is not quoting, drawing has to be returned to BHEL immediately.

Material: EN 24

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid flux PMG				
 BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division, Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO. OF VAR.	
		DRN.	UdayKumarM			
		CHD.	SK			
DEPT.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
CODE		NTS				
TITLE		DRAWING NO. LS16RD29003				REV. 00
		SHEET NO.				NO. OF SHEETS

REV.	DATE	ALTERED
		CHECKED
ZONE		APPD.

Stator core-2

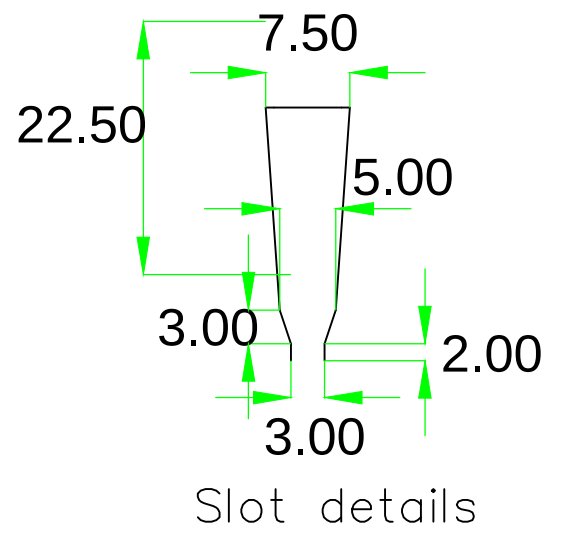
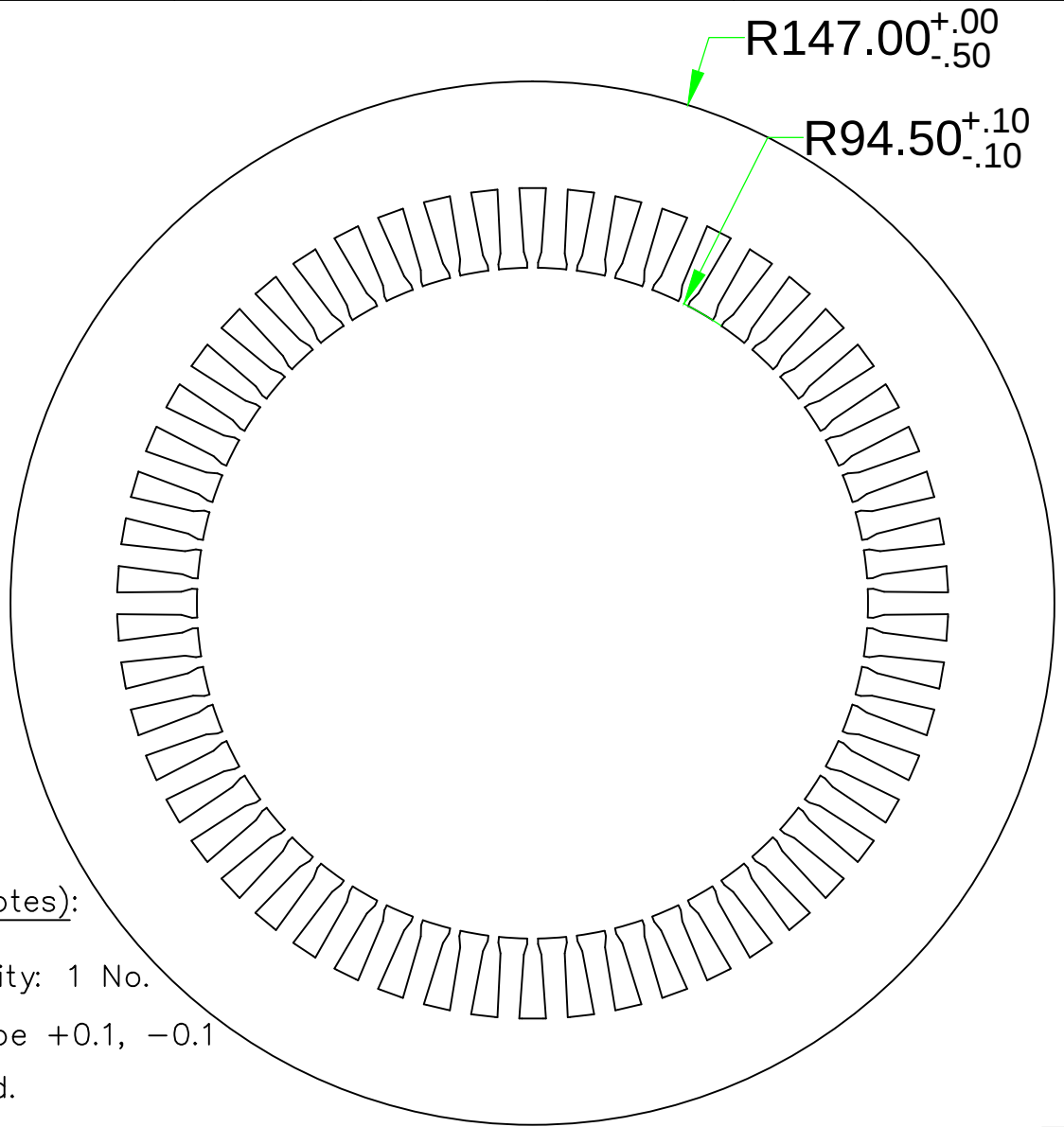
DRG. NO.

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COMPUTER FILE NAME :

DATE AND DATE :

REVISION NO :



Technical details(Notes):

- (1) Required Quantity: 1 No.
- (2) Tolerance will be +0.1, -0.1 if not specified.
- (3) length = 80 mm

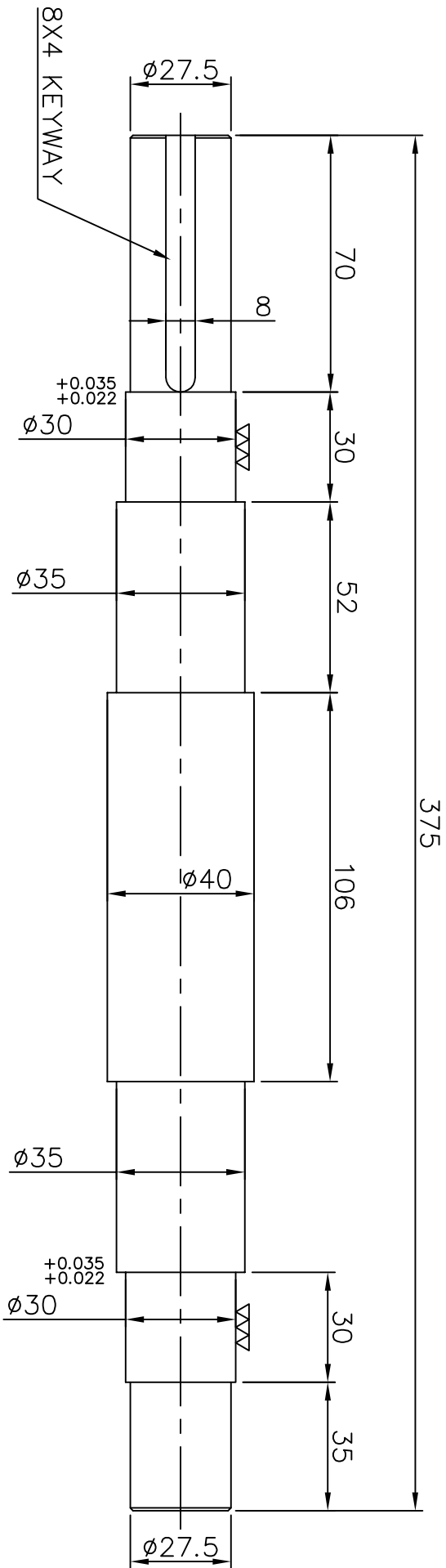
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Material: EN 24

REV.	DATE	ALTERED
		CHECKED
ZONE		APPD.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid flux PMG				
 BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division, Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO. OF VAR.	
		DRN.	UdayKumarM			
		CHD.	SK			
DEPT.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO. OF ITEMS
CODE		NTS				
TITLE		DRAWING NO.				REV.
Stator core-3		LS16RD29004				00
		SHEET NO.		NO OF SHEETS		
				11		

CON'D



Material: EN8

Technical Notes:
1. Tolerance will be +0.1, -0.1 if not specified

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INVENTORY NO.	REF.DRG.NO.	COMP. FILE NAME
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REV.	DATE	ALTERED	APPD.
CHECKED			

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid Flux PMG			
DEPT.	EMC	SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.
CODE	29	NTS			



BHARAT HEAVY ELECTRICALS LIMITED
Corp. R&D Division, Vikasnagar
HYDERABAD - 500 093

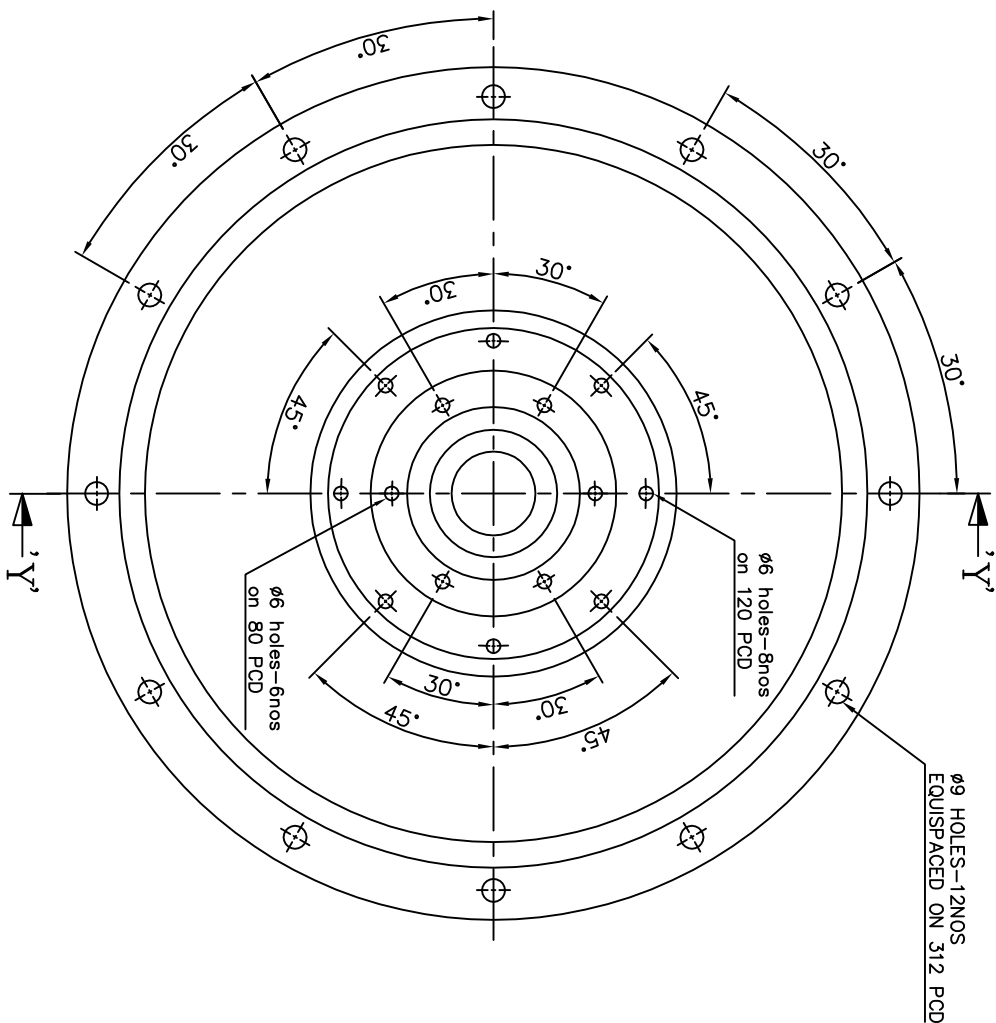
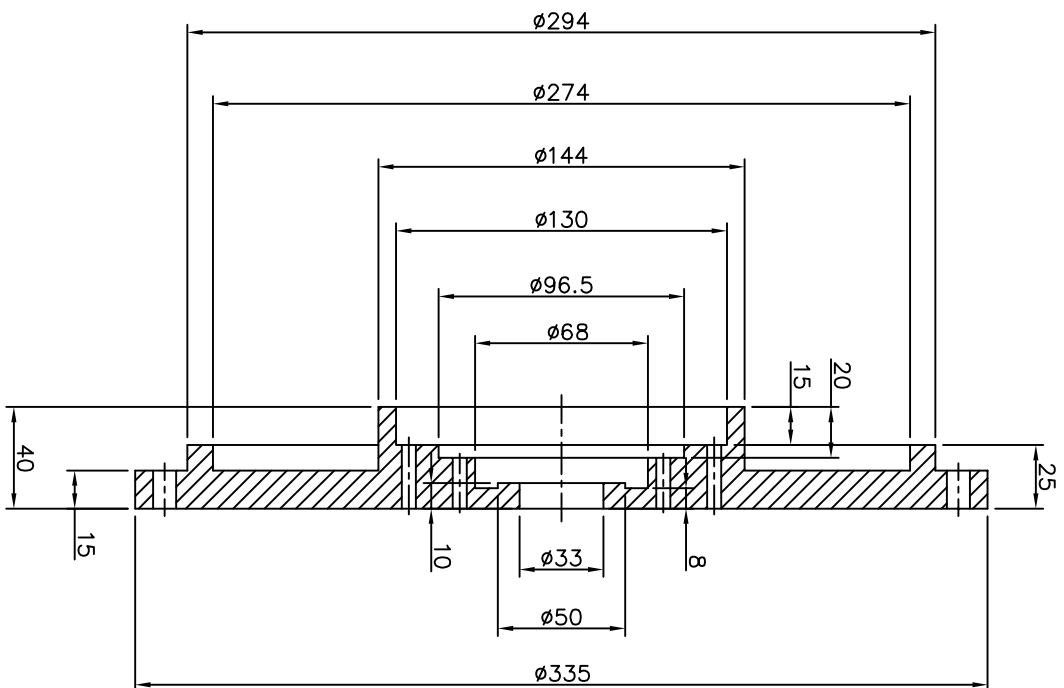
DRN.	NAME	SIGN.	DATE	NO. OF VAR.
CHD.	T. Ramesh		17.08.16	
APPD.	Uday Kumar			

TITLE	DRAWING NO.	REV.
SHAFT	LS16RD29006	00
SHEET NO.	NO OF SHEETS	

[illegible]

Technical Notes:

1. Tolerance will be $+0.1, -0.1$ if not specified



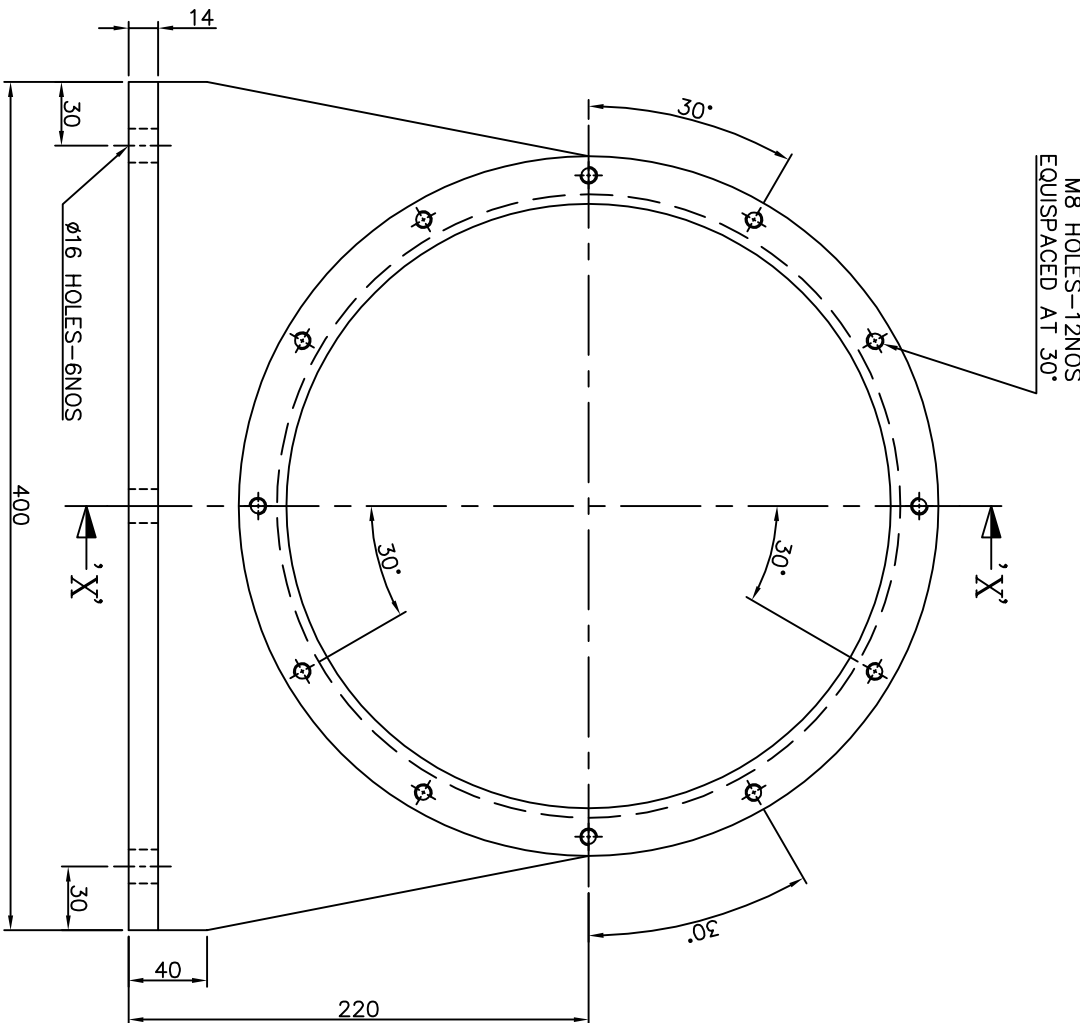
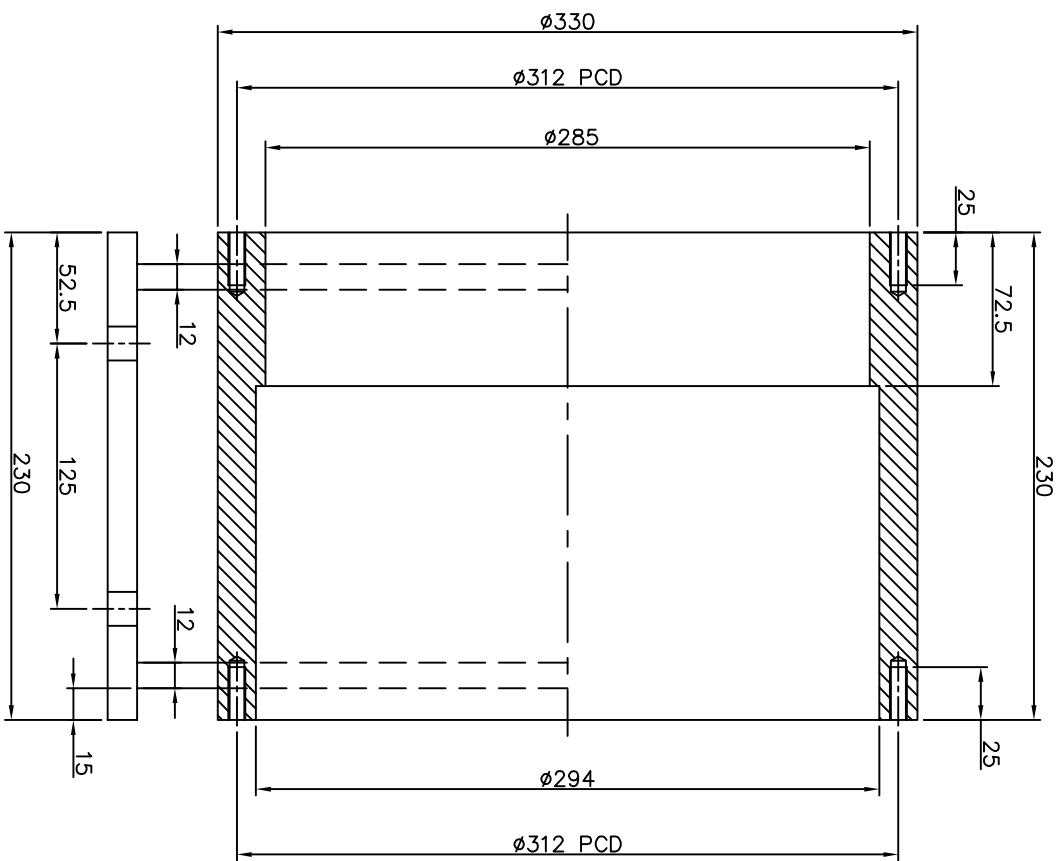
Material: MS

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT										Hybrid Flux PMG									
										BHAKTI HEAVY ELECTROMECHANICALS LIMITED Corp. R&D Division, Vikasnagar HYDERABAD - 500 093									
DEPT.	EMC				SCALE	NTS		WEIGHT(G)		REF. TO ASSY DRG.		ITEM NO.		NO.OF ITEMS					
CODE	29																		
TITLE										DRAWING NO.									
NON DRIVE END COVER										LS16RDP29007									
SHEET NO.										NO OF SHEETS									
7										8									

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED																																																																
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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. Material: EN8 Quantity: 2nos 1. Tolerance will be +0.1, -0.1 if not specified																																																																								
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT																																																																								
Hybrid Flux PMG																																																																								
<table><tr><td rowspan="4">REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.</td><td rowspan="4"></td><td colspan="2">BHARAT HEAVY ELECTRICALS LIMITED</td><td></td><td>NAME</td><td>SIGN</td><td>DATE</td><td rowspan="4">NO.OF VAR.</td></tr><tr><td colspan="2">Corp. R&D Division. Vikasnagar</td><td>DRN.</td><td>T.Ramesh</td><td></td><td>18.08.16</td></tr><tr><td colspan="2">HYDERABAD - 500 093</td><td>CKD.</td><td>Uday Kumar</td><td></td><td></td></tr><tr><td colspan="2"></td><td>APPD.</td><td></td><td></td><td></td></tr><tr><td>DEPT.</td><td>EMC</td><td rowspan="2"></td><td rowspan="2">SCALE NTS</td><td rowspan="2">WEIGHT(K.G.)</td><td colspan="2" rowspan="2">REF.TO ASSY.DRG.</td><td rowspan="2">ITEM NO.</td><td rowspan="2">NO.OF ITEM</td></tr><tr><td>CODE</td><td>29</td></tr><tr><td colspan="5">TITLE</td><td colspan="3">DRAWING NO.</td><td rowspan="2">REV.</td></tr><tr><td colspan="5">BEARING HOUSING</td><td colspan="3">LS16RD29008</td></tr><tr><td colspan="5"></td><td colspan="2">SHT.NO.</td><td colspan="2">NO.OF SHT.</td></tr></table>									REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.		BHARAT HEAVY ELECTRICALS LIMITED			NAME	SIGN	DATE	NO.OF VAR.	Corp. R&D Division. Vikasnagar		DRN.	T.Ramesh		18.08.16	HYDERABAD - 500 093		CKD.	Uday Kumar					APPD.				DEPT.	EMC		SCALE NTS	WEIGHT(K.G.)	REF.TO ASSY.DRG.		ITEM NO.	NO.OF ITEM	CODE	29	TITLE					DRAWING NO.			REV.	BEARING HOUSING					LS16RD29008								SHT.NO.		NO.OF SHT.	
REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.		BHARAT HEAVY ELECTRICALS LIMITED			NAME	SIGN	DATE	NO.OF VAR.																																																																
		Corp. R&D Division. Vikasnagar		DRN.	T.Ramesh		18.08.16																																																																	
		HYDERABAD - 500 093		CKD.	Uday Kumar																																																																			
				APPD.																																																																				
DEPT.	EMC		SCALE NTS	WEIGHT(K.G.)	REF.TO ASSY.DRG.		ITEM NO.	NO.OF ITEM																																																																
CODE	29																																																																							
TITLE					DRAWING NO.			REV.																																																																
BEARING HOUSING					LS16RD29008																																																																			
					SHT.NO.		NO.OF SHT.																																																																	

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)



Technical Notes:
1. Tolerance will be $+0.1, -0.1$ if not specified

SECTION-'XX'

Material: MS



BHARAT HEAVY ELECTRICALS LIMITED
Corp. R&D Division, Vikasnagar
HYDERABAD - 500 093

TYPE OF PRODUCT
OR
NAME OF CUSTOMER/PROJECT
Hybrid Flux PMG

DEPT. **EMC**
CODE **29**
SCALE **NTS**
WEIGHT(KG)
REF. TO ASSY DRG.
ITEM NO.
NO. OF ITEMS

DRN. **T. Ramesh**
CHKD. **Uday Kumar**
SIGN. **18.08.16**
DATE **18.08.16**
VAR.

TITLE
FRAME

DRAWING NO.
LS16RD29009
REV. **00**

SHEET NO. **1** NO. OF SHEETS **1**

INVENTORY NO.

REF.DRG.NO.

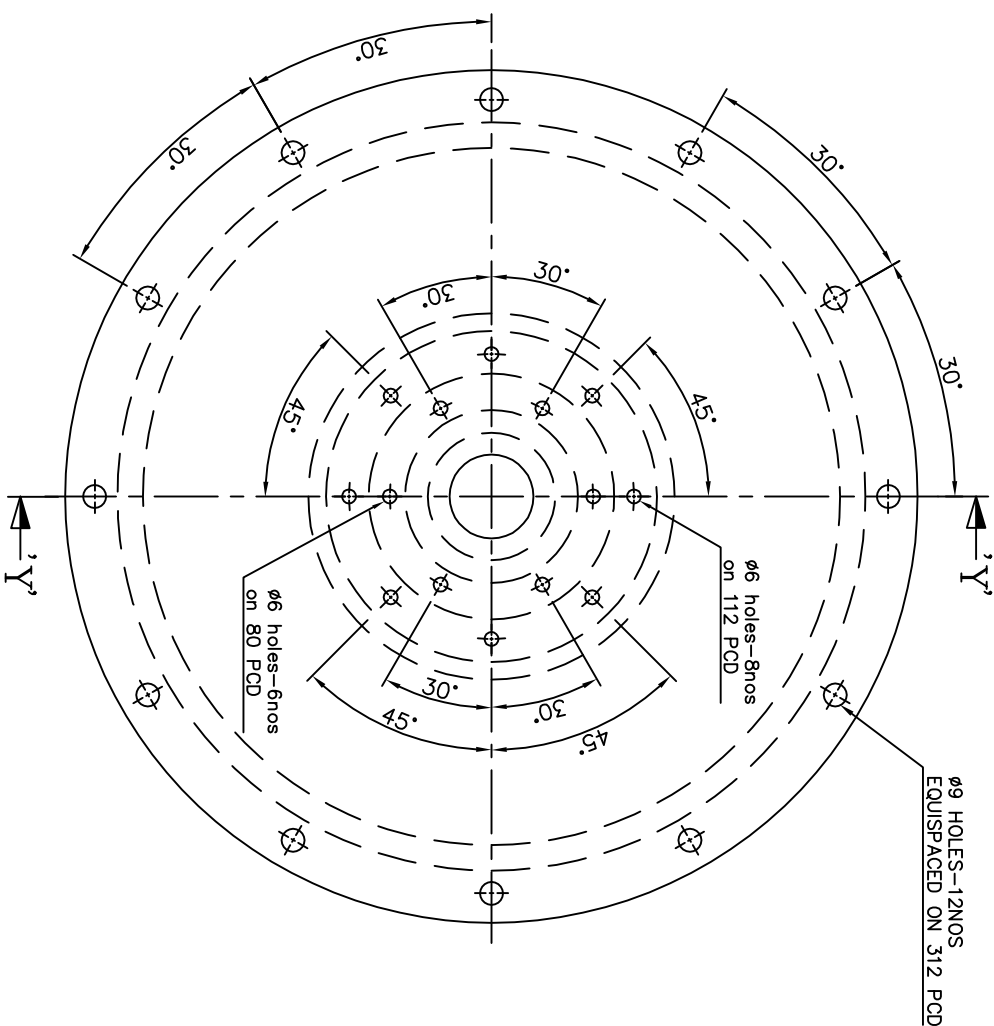
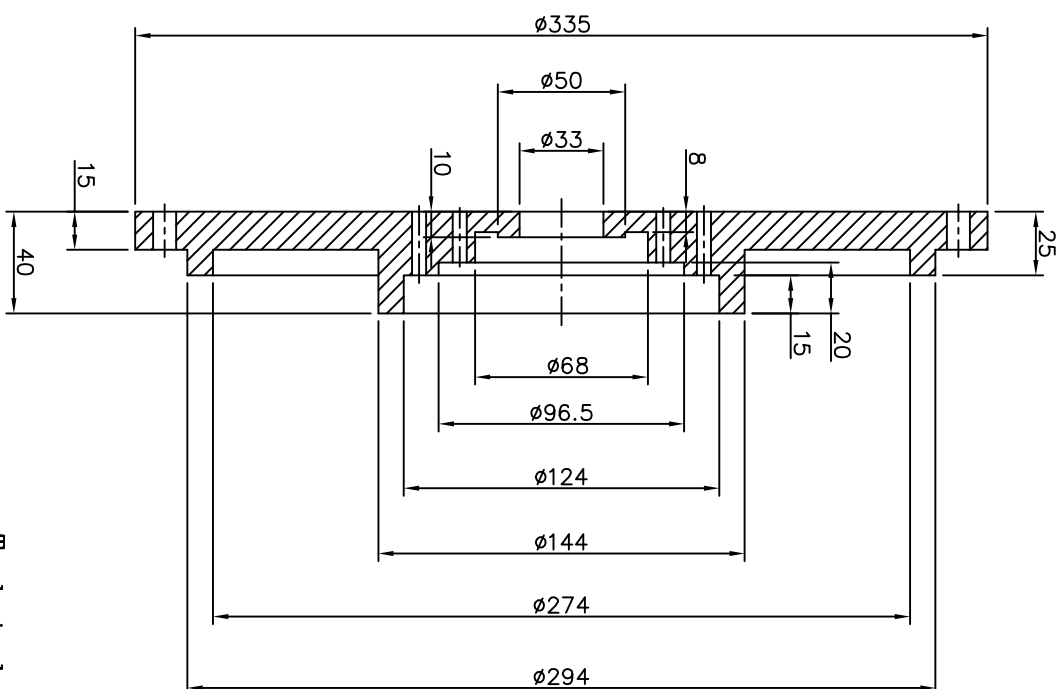
COMP. FILE NAME

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SECTION- 'YY'

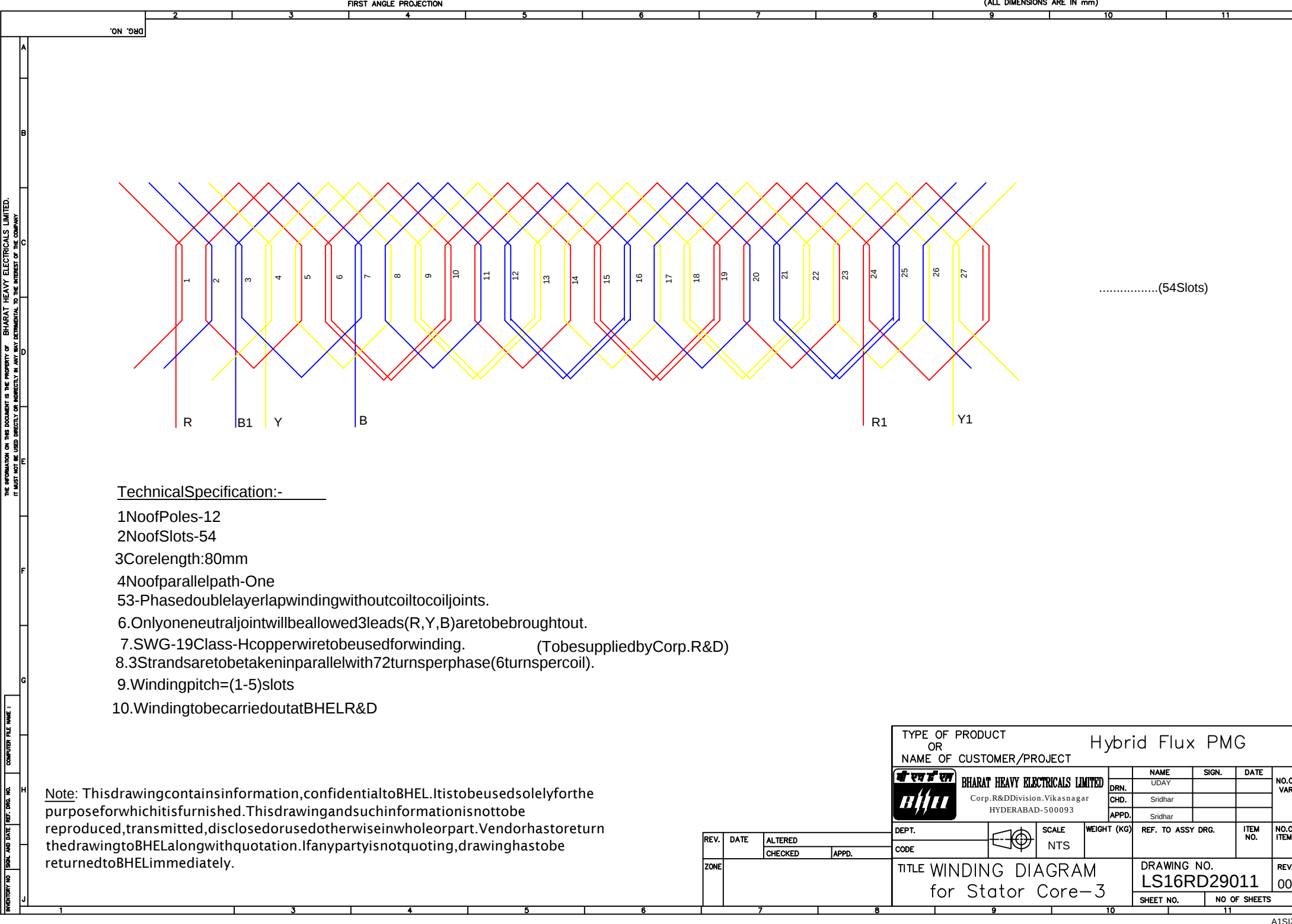
1. Tolerance will be $+0.1, -0.1$ if not specified

Hybrid Flux PMG



INVENTORY NO.					
REV.	DATE	ALTERED	REV.	DATE	ALTERED
	CHECKED	APPRO.		CHECKED	APPRO.
ZONE		ZONE		ZONE	

TYPE OF PRODUCT OR						Hybrid Flux PMG					
NAME OF CUSTOMER /PROJECT											
						BHARAT HEAVY ELECTRICALS LIMITED					
DEPT. EMC						Corp. R&D Division, Vikasnagar HYDERABAD - 500 093					
CODE 29				SCALE MTS		WEIGHT(Kg)					
TITLE DRIVE END COVER						NAME		SIGN.		DATE	
						T. Ramnesh				22.08.12	
						O.H.		Uday Kumar			
						APPR.					
REF. TO ASSY DRG.						ITEM NO.		NO.OF ITEMS			
DRAWING NO. LS16RDP29010						REV.		00			
SHEET NO.				NO OF SHEETS							



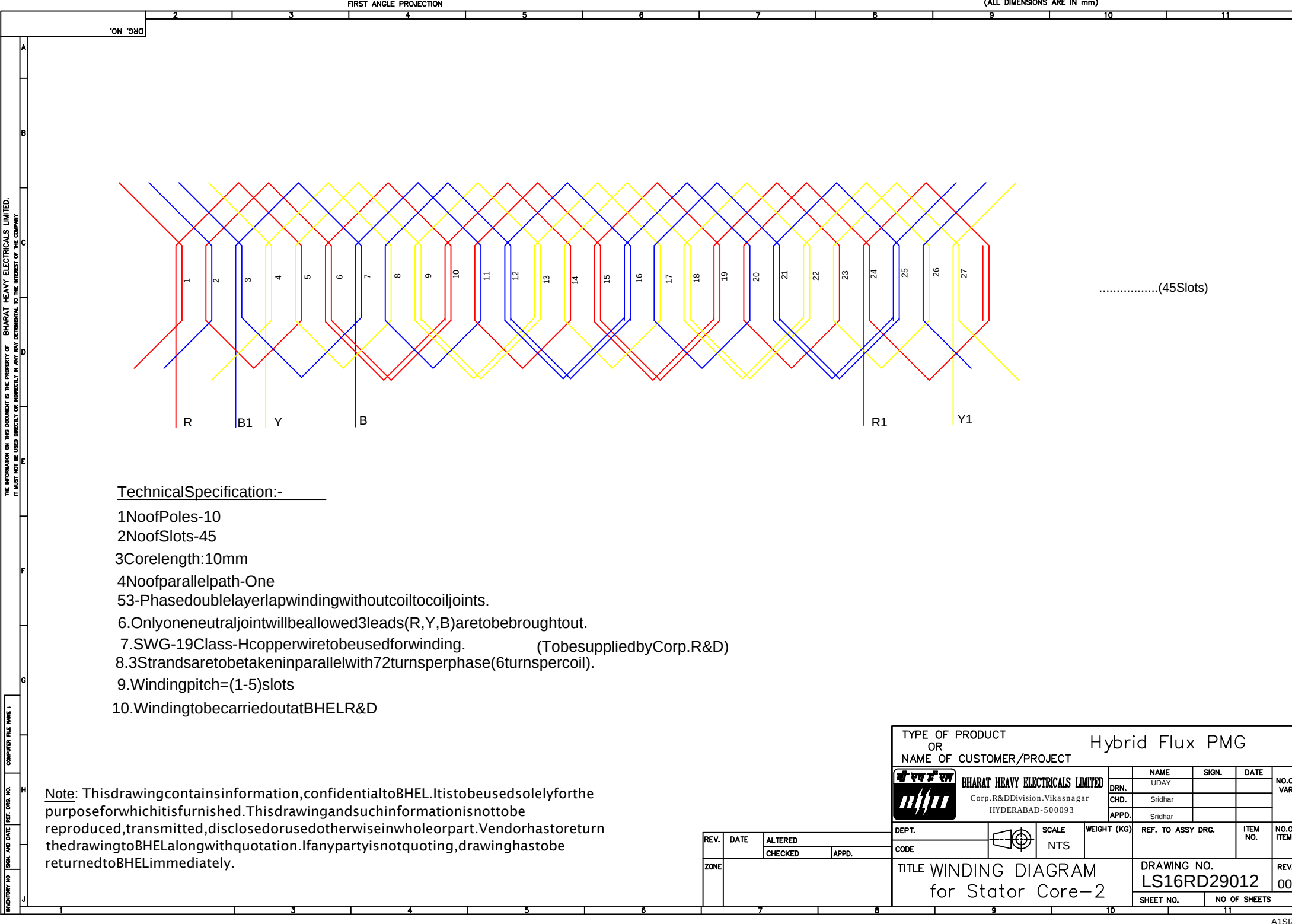
Technical Specification:-

- 1.No of Poles-12
- 2.No of Slots-54
- 3.Core length:80mm
- 4.No of parallel path-One
- 5-3-Phased double layer lap winding without coil to coil joints.
- 6.Only one neutral joint will be allowed 3 leads (R, Y, B) are to be brought out.
- 7.SWG-19 Class-H copper wire to be used for winding. (To be supplied by Corp.R&D)
- 8.3 Strands are to be taken in parallel with 72 turns per phase (6 turns per coil).
- 9.Winding pitch=(1-5) slots
- 10.Winding to be carried out at BHEL R&D

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TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid Flux PMG					
 BHARAT HEAVY ELECTRICALS LIMITED Corp.R&D Division,Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO.OF VAR.		
		DRN.	UDAY				
		CHD.	Sridhar				
		APPD.	Sridhar				
DEPT.		SCALE	NTS	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO.OF ITEMS
CODE							
TITLE WINDING DIAGRAM for Stator Core-3		DRAWING NO. LS16RD29011		REV. 00			
SHEET NO.		NO OF SHEETS					

REV.	DATE	ALTERED
ZONE		CHECKED APPD.



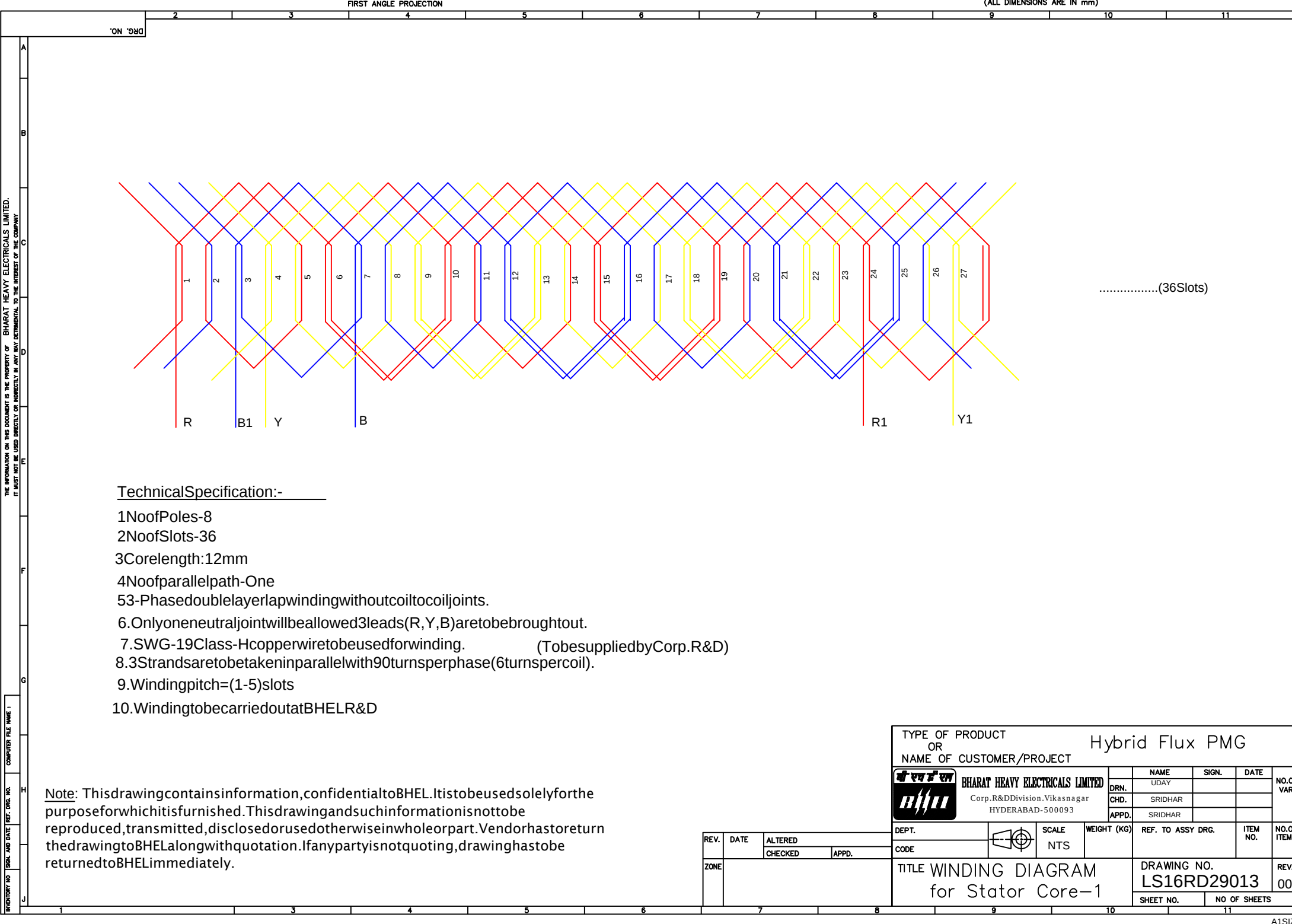
Technical Specification:-

- 1.No of Poles-10
- 2.No of Slots-45
- 3.Core length:10mm
- 4.No of parallel path-One
- 5-3-Phased double layer lap winding without coil to coil joints.
- 6.Only one neutral joint will be allowed 3 leads (R, Y, B) are to be brought out.
- 7.SWG-19 Class-H copper wire to be used for winding. (To be supplied by Corp.R&D)
- 8.3 Strands are to be taken in parallel with 72 turns per phase (6 turns per coil).
- 9.Winding pitch=(1-5) slots
- 10.Winding to be carried out at BHEL R&D

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TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid Flux PMG					
 BHARAT HEAVY ELECTRICALS LIMITED Corp.R&D Division,Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO.OF VAR.		
		DRN.	UDAY				
		CHD.	Sridhar				
		APPD.	Sridhar				
DEPT.		SCALE	NTS	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO.OF ITEMS
CODE							
TITLE WINDING DIAGRAM for Stator Core-2		DRAWING NO. LS16RD29012		REV. 00			
SHEET NO.		NO OF SHEETS					

REV.	DATE	ALTERED
		CHECKED
ZONE		APPD.



Technical Specification:-

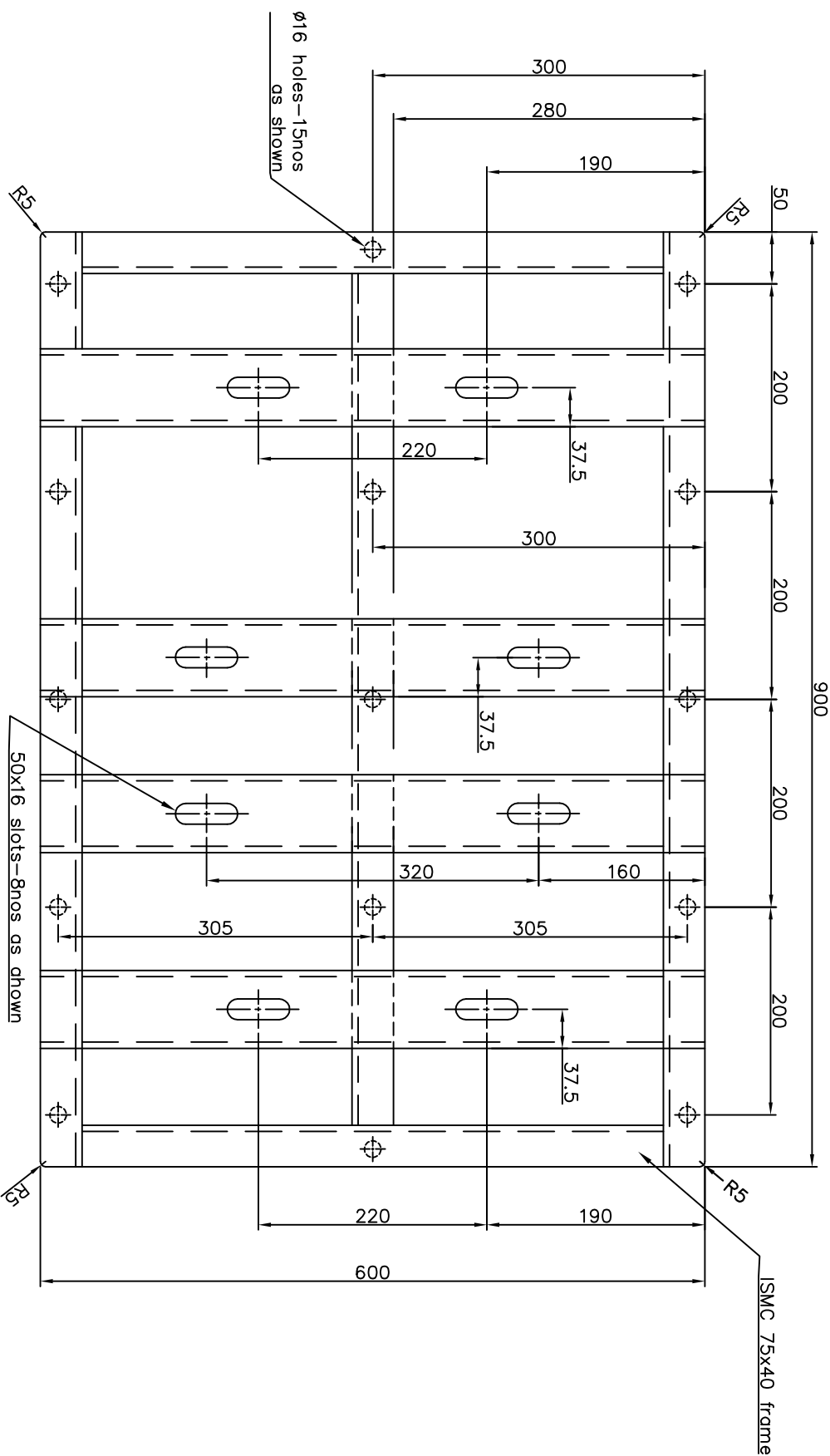
- 1.No of Poles-8
- 2.No of Slots-36
- 3.Core length:12mm
- 4.No of parallel path-One
- 5-3-Phased double layer lap winding without coil to coil joints.
- 6.Only one neutral joint will be allowed 3 leads (R, Y, B) are to be brought out.
- 7.SWG-19 Class-H copper wire to be used for winding. (To be supplied by Corp.R&D)
- 8.3 Strands are to be taken in parallel with 90 turns per phase (6 turns per coil).
- 9.Winding pitch=(1-5) slots
- 10.Winding to be carried out at BHEL R&D

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TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		Hybrid Flux PMG				
 BHARAT HEAVY ELECTRICALS LIMITED Corp.R&D Division,Vikasnagar HYDERABAD-500093		NAME	SIGN.	DATE	NO.OF VAR.	
		DRN.	UDAY			
		CHD.	SRIDHAR			
DEPT.		SCALE	WEIGHT (KG)	REF. TO ASSY DRG.	ITEM NO.	NO.OF ITEMS
CODE		NTS				
TITLE WINDING DIAGRAM for Stator Core-1		DRAWING NO. LS16RD29013		REV. 00		
SHEET NO.		NO OF SHEETS				

REV.	DATE	ALTERED
		CHECKED
		APPD.
ZONE		

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED																																																					
		CHECKED			CHECKED			CHECKED																																																					
		APPROVED			APPROVED			APPROVED																																																					
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. COMPUTER NO. REF. DRG. NO. SIGN. & DATE INVENTORY NO. Material: MS Quantity: 1 no Technical Notes: 1.Tolerance will be +0.1,−0.1 if not specified TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT Hybrid Flux PMG <table><tr><td rowspan="4">REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.</td><td rowspan="4"> बी एच ई एल BH BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division. Vikasnagar HYDERABAD - 500 093 </td><td colspan="2">NAME</td><td>SIGN</td><td>DATE</td><td rowspan="4">NO.OF VAR.</td></tr><tr><td>DRN.</td><td>T.Ramesh</td><td></td><td>22.08.16</td></tr><tr><td>CKD.</td><td>Uday Kumar</td><td></td><td></td></tr><tr><td>APPD.</td><td></td><td></td><td></td></tr><tr><td>DEPT.</td><td>EMC</td><td rowspan="2"></td><td>SCALE</td><td rowspan="2">WEIGHT(K.G.)</td><td rowspan="2">REF.TO ASSY.DRG.</td><td rowspan="2">ITEM NO.</td><td rowspan="2">NO.OF ITEM</td></tr><tr><td>CODE</td><td>29</td><td>NTS</td></tr><tr><td colspan="5">TITLE</td><td colspan="2">DRAWING NO.</td><td rowspan="2">REV.</td></tr><tr><td colspan="5">STATOR CORE END PLATE</td><td colspan="2">LS16RD29014</td></tr><tr><td colspan="5"></td><td>SHT.NO.</td><td colspan="2">NO.OF SHT.</td></tr></table>									REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.	बी एच ई एल BH BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division. Vikasnagar HYDERABAD - 500 093	NAME		SIGN	DATE	NO.OF VAR.	DRN.	T.Ramesh		22.08.16	CKD.	Uday Kumar			APPD.				DEPT.	EMC		SCALE	WEIGHT(K.G.)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM	CODE	29	NTS	TITLE					DRAWING NO.		REV.	STATOR CORE END PLATE					LS16RD29014							SHT.NO.	NO.OF SHT.	
REF. TO HY0230261 FOR UNSPECIFIED TOLERANCES.	बी एच ई एल BH BHARAT HEAVY ELECTRICALS LIMITED Corp. R&D Division. Vikasnagar HYDERABAD - 500 093	NAME		SIGN	DATE	NO.OF VAR.																																																							
		DRN.	T.Ramesh		22.08.16																																																								
		CKD.	Uday Kumar																																																										
		APPD.																																																											
DEPT.	EMC		SCALE	WEIGHT(K.G.)	REF.TO ASSY.DRG.	ITEM NO.	NO.OF ITEM																																																						
CODE	29		NTS																																																										
TITLE					DRAWING NO.		REV.																																																						
STATOR CORE END PLATE					LS16RD29014																																																								
					SHT.NO.	NO.OF SHT.																																																							



TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		DATE		REV.		DRAWING NO.		REV.	
 NBS NIST NATIONAL BUREAU OF STANDARDS NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY 100 BUREAU DRIVE GAITHERSBURG, MD 20899		DATE		REV.		DRAWING NO.		REV.	
DATE 20		TIME 20		DATE 20		REV. 00		DRAWING NO. 1516RD29015	