

MEMO TO: Distribution

FROM: Jim Strait

SUBJECT: Yoke, Skin, and Magnet End Dimensions

The following are proposed dimensions for selected yoke components, the skin, and the magnet ends. (See also the attached figures.) Please evaluate these dimensions with respect to subsystems for which you are responsible and forward comments to me by 7/12/90. At this point these dimensions are for comment only and may be revised before final dimensions are set.

Skin thickness	5.00 mm	(0.197")
Yoke outer radius[1]	165.00 mm	(6.496")
End yoke inner radius[2]	146.00 mm	(5.748")
Radius of inner edge of bus slot[3]	116.00 mm	(4.567")
Bus slot height	26.92 mm	(1.060")
Bus slot half width	22.99 mm	(0.905")
Maximum outer radius of end clamp (minimum radius for expansion joint, ect.)[4]	110.00 mm	(4.331")

## Notes

- [1] The hole near the outer radius for yoke pack stacking pins and the notches for the fiducial bar have been moved radially inwards by approximately 0.25 mm (0.010") to accommodate the slightly smaller yoke O.D.
- [2] The end yoke is 19 mm in radial thickness and extends from the end of the body yoke to the end plate. It is included principally as a mechanical element to support the skin and eliminate the large bending stress where the skin would otherwise "fall" off the end of the yoke. It is not decided yet whether it will be made of low carbon steel or high manganese stainless steel. David Orrell has made a preliminary estimate that if it were magnet steel, the field in the magnet end would increase by about 7%.

- [3] The cooling channels have been moved down about 9 mm (0.354") to clear the end yoke. The yoke stacking holes and yoke-yoke alignment key slots have been moved down to maintain the same relationship to the bus slot.
- [4] The actual radius of the current design for the end clamp is 99 mm (3.9"). Additional radial space is reserved for the possibility of making the end clamp of aluminum which requires it to have a greater radial thickness.

#### Distribution

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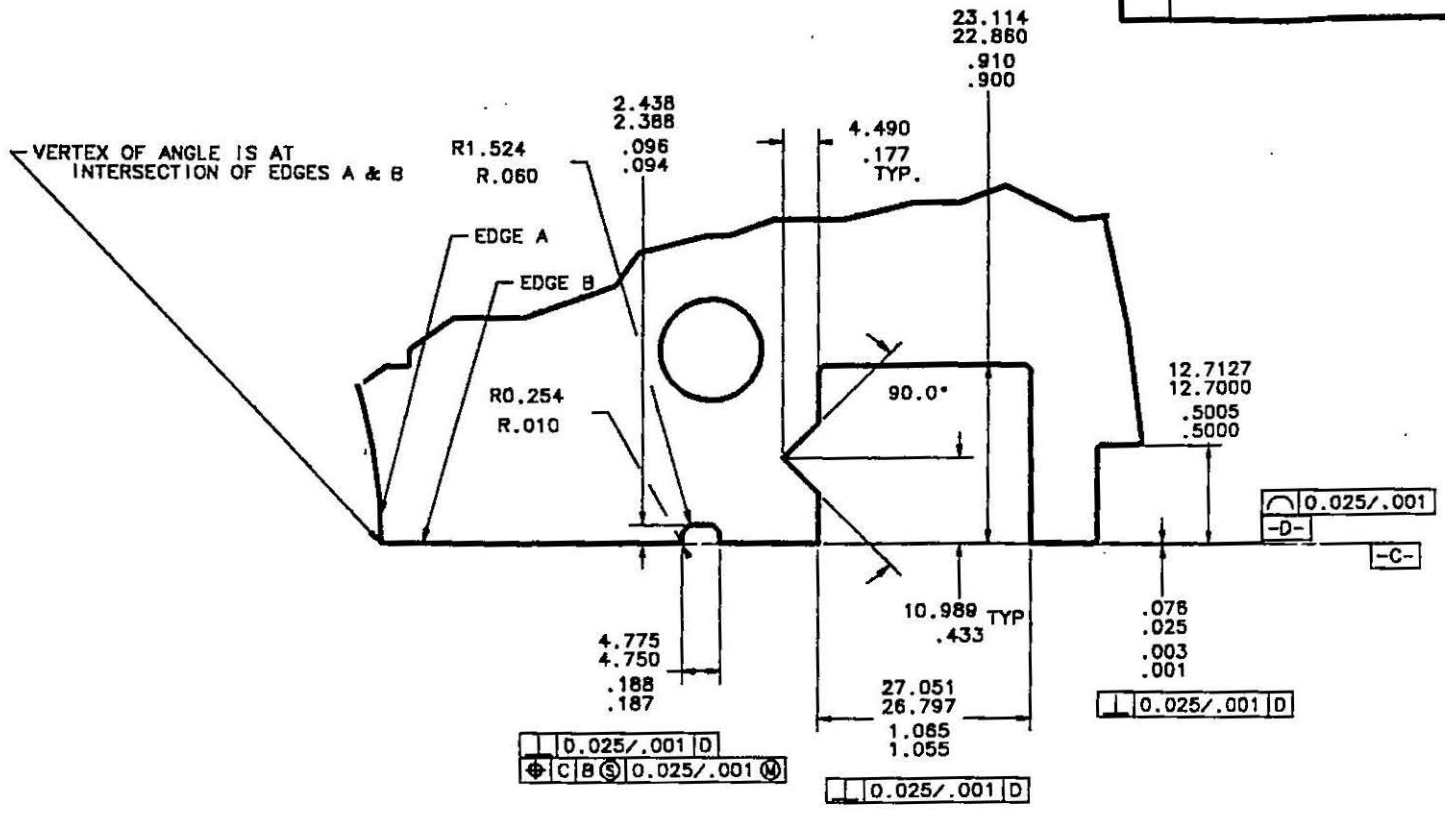
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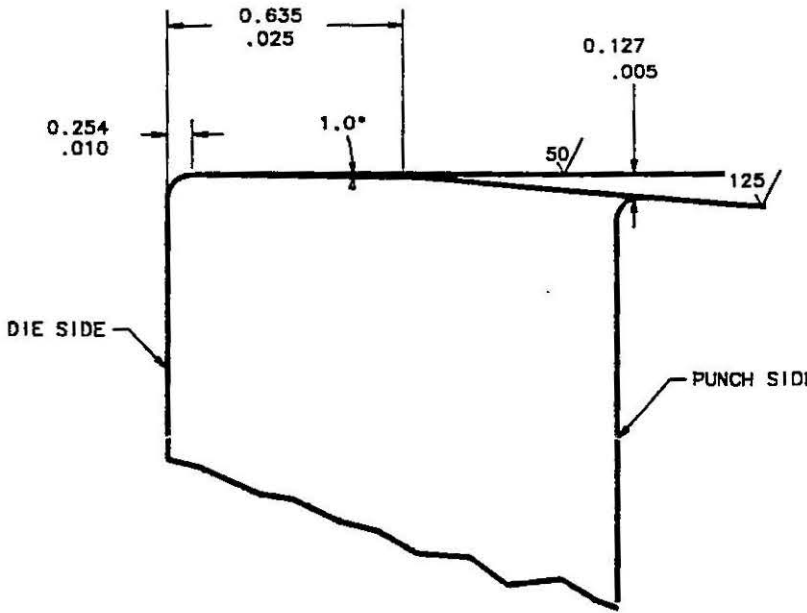
R. Gupta  
S. Kahn  
G. Morgan

REV.	DESCRIPTION



DET C 2XSIZE SHOWN OUT OF POSITION

7.779  
 7.754 317.26  
 1.511  
 1.510  
 .001 A B C



ENLARGED VIEW OF MAXIMUM MATERIAL CONDITIONS FROM DIE OPERATIONS

DET.B 2XSIZE

SEE DET.C

SEE DET.B

SEE DET.A  
&NOTE 5

142.00

280.774  
280.248  
10.247  
10.246

10.058  
9.931  
.396  
.391

82.550  
82.525  
3.250  
3.249

82.40

82.550  
82.525  
3.250  
3.249

SEE DET.A  
&NOTE 2,3,&4

221.336  
221.285  
8.714  
8.712

⊕ 0.050 / .002 ⊗ A ⊗ B ⊗ C

39.0°

10.0°

F

110.888  
110.642  
4.357  
4.356

10.058  
9.931  
.396  
.391

91.485  
91.440  
3.801  
3.800

70.485  
70.409  
2.775  
2.772

50.000  
50.000  
50.00

.076  
.025  
.003  
.001

24.994  
.984

110.097  
109.982  
102.17  
4.330

317.778  
317.754  
12.511  
12.510  
317.26

⊕ 0.025 / .001 ⊗ A ⊗ B ⊗ C ⊗

247.880  
9.150  
232.00

⊕ 0.127 / .005 ⊗ A ⊗ B ⊗ C

67.183  
67.158  
2.645  
2.644

135.836  
135.585  
5.340  
5.338

⊕ 0.025 / .001 ⊗ A ⊗ B ⊗ C

TYP. ACROSS  
2 FLATS

206.60  
222.230  
8.749

⊕ 0.025 / .001 ⊗ A ⊗ B ⊗ C

330.539  
330.00  
13.013  
13.011

⊕ 0.025 / .001 ⊗ A ⊗ B ⊗ C

4X ⌀ 13.106  
13.005  
⌀ .516  
⌀ .512

⊕ ⌀ 0.076 / .003 ⊗ A ⊗ B ⊗ C

127.80  
128.016  
127.991  
5.040  
5.039

2X ⌀ 29.337  
29.083

E

D

H

G

P

M

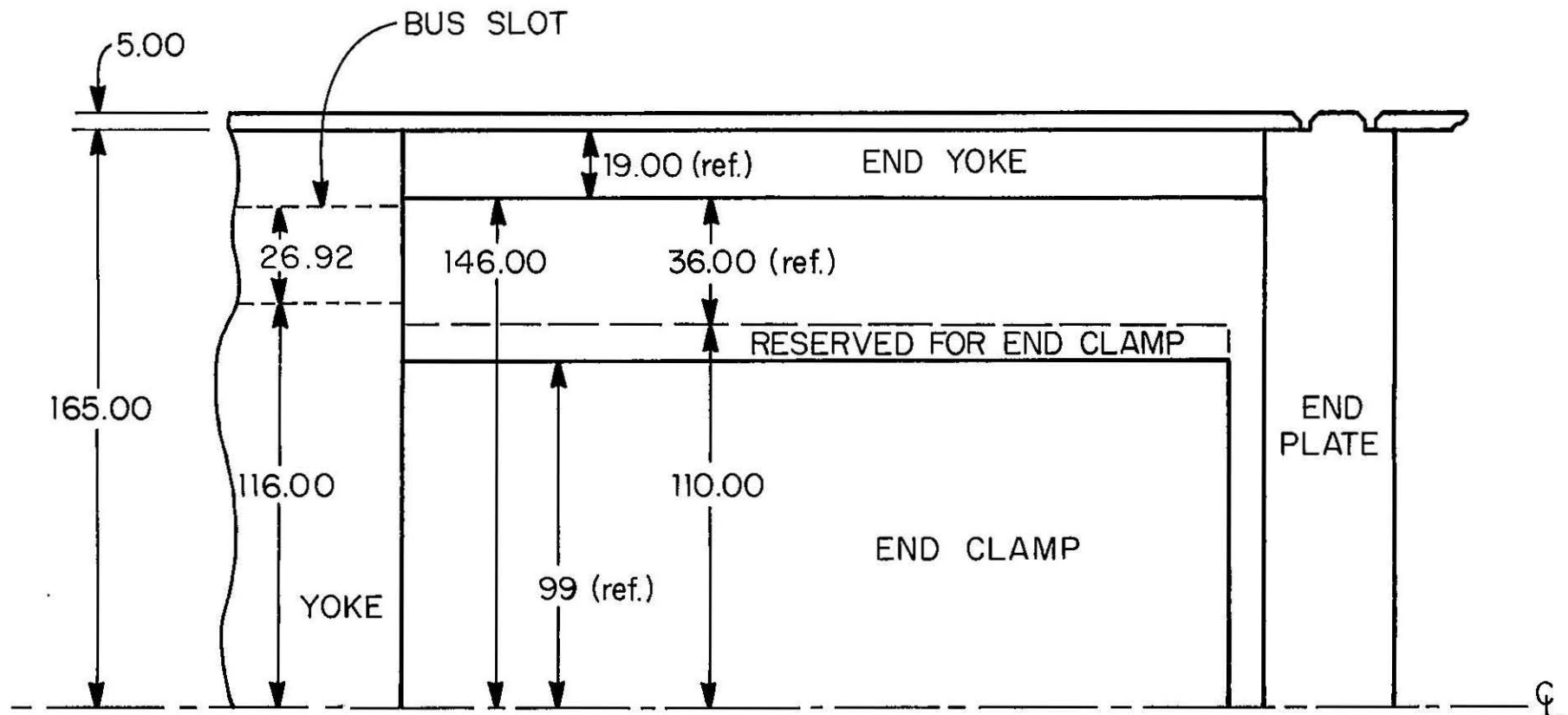
N

U

V

W

X



PROPOSED MAGNET END  
 RADIAL DIMENSIONS (mm)  
 J. STRAIT 6-28-90

100.00