ALLOY C37700

Data Sheet

Typical Chemistry & Mechanical Properties

Alloy Number	Name	Nominal Chemical Composition	Tensile Strength (KSI)	Yield Strength (KSI)	Elongation %	Rockwell B Hardness	Remarks
UNS C37700	Forging Brass	Cu: 58.0~61.0% Pb: 1.5~2.5% Fe: 0.30% max Zn: Rem	52	20	45%	78	General forging applications

Straightness Tolerances

Round	All Sizes	1.000" in any 10' portion

Shapes & Sizes: Rounds Only

12' Mill Lengths:	10' to 12'
14' Mill Lengths:	12' to 14'
Random Mill Lengths:	8' to 14'

Drawn Length Tolerances

0.375" to 2.000" (Inclusive)	+/-0.500
2.000" to 3.000" (Inclusive)	+/-0.500"
3.000" to 4.000" (Inclusive)	+/-0.500"

Shapes & Sizes: Rounds Only

Drawn to Size	0.375" to 3.000"
As Extruded	1.000" to 4.000"

Diameter Tolerances: As Drawn

	RND	HEX/OCT
0.250" to 0.500"	+/- 0.002"	+/- 0.004"
0.500" to 1.000" (Inclusive)	+/- 0.003"	+/- 0.005"
1.000" to 2.000" (Inclusive)	+/- 0.004"	+/- 0.006"
2.000" to 2.500" (Inclusive)	0.20% of Specified Diameter	0.40% of Specified Diameter

Diameter Tolerances: As Extruded

	RND/HEX/OCT
Up to 1.000"	+/- 0.010"
1.000" to 2.000"	+/- 0.015"
2.000" to 3.000"	+/- 0.025"
3.000" to 3.500"	+/- 0.035"
3.500" to 4.00"	+/- 0.060

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Machinability: Alloy C37700 possesses excellent machining characteristics. The machinability rating for C37700 is 90% of free cutting brass. The recommended tool design, feeds & speeds for machining this material is as follows:

	Speed (sfpm)	Feed (ipr)	Back Rake Angle (degrees)	Clearance Angle (degrees)
Lathe Turning Tools:	300~1,000	0.002~0.015	0~5	6
Drills (118°):	300~1,000	0.003~0.020	0	12~15
Milling Cutters:	200~500	0.015~0.030	0~3	5~10
Form Tools (1/2°):	300~1,000	0.001~0.003	7~12	7~12
Taps:	100~200 (lineal)		2~4	

Use maximum speeds & minimum feeds for finish cuts. Light mineral (paraffin) oil or water soluble oil (20/1) should be used as a cutting lubricant & coolant. Sulfurized oils will stain parts & should be avoided.

Workability: Alloy C37700 exhibits an excellent capacity for being hot worked. Best results are obtained between 1200°F to 1300°F. This alloy has a poor capacity to be cold worked. If cold working is required, it is recommended that this be followed by stress relieving at 500°F to reduce the possibility of stress corrosion cracking.

Spec. Equal.:
UNS No. C37700
ASTM B124 No. C37700
AMS 4614D
SAE J463, C37700

Applications: Alloy C37700 is used as rod base stock for press & hammer forgings requiring the excellent corrosion resistance & machinability of brass.

Typical applications include valve bodies, hardware, fittings & miscellaneous brass forgings.

Port Huron Mill
2199 Lapeer Avenue • Port Huron, MI 48060
(P) 800-553-3336 • (P) 810.987.7770
(F) 810-987-9108

Belding Mill
302 Ashfield Street • Belding, MI 48809
(P) 800-553-3336 • (P) 616.794.1200
(F) 616-794-1214

www.muellerindustriesipd.com

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