



ADVANCE BRONZE INC.

CENTRIFUGAL
CASTINGS AND
CONTINUOUS
CAST TUBE
AND PLATE

... bronze products
manufactured to your
specifications



Advance BRONZE INC.

139 Ohio Street, P.O. Box 280, Lodi, Ohio 44254
Telephone (330) 948-1231 • Fax (330) 948-2736

www.advancebronze.com



Advance
BRONZE INC.

YOUR SINGLE SUPPLY SOURCE

From semi-finished maintenance bars to bushings and bearings

ADVANCE BRONZE centrifugal cast SUPERIOR QUALITY AND SERVICE IN

- Our modern foundry and manufacturing facility is outfitted with the finest Manual and CNC production machinery. Almost any size or shape bearing product can be economically and promptly made to exacting individual requirements and specifications.
- We specialize in CENTRIFUGAL castings for extremely uniform, fine-grained metal structure. Cast in all commercially available alloys.

*See alloy chart provided.

- Systematic and careful inspection procedures assure that the products shipped meet the highest standards for material and workmanship.
- Complete chemical analysis and physical test reports can be furnished when required.
- We also stock a full size range of continuous cast bar and plate.



Centrifugal castings are extremely close grained and uniform in molecular structure – entirely free of blow holes, hard spots, sand particles, and other impurities.

Knowledge of bronze alloys, their machining characteristics and behavioral patterns provides us with the capability to produce hard to machine configurations.



Modern Electrical Induction Melting Furnaces and Spectrographic Chemical Analysis Equipment.



CE

ings machined to close tolerances, single units or production runs!

ONE SOURCE

BUSHINGS

Finish machined and ready for installation
- plain bushings, flanged, split and full
half bearings - all manufactured to
engineering specifications.



SPECIALS

Our shop is appropriately equipped with machinery for drilling, countersink and counterboring, thread cutting and grooving all standard or special oil groove configurations. Graphited bushings either plugged or grooved are available.

LINERS, WEAR PLATES

Washers, spacers, seal rings, wear plates, liners, gibs - from a fraction of an inch to several inches thick are economically cast and accurately machined to specified shapes and tolerances.



BAR STOCK

Continuous cast and centrifugally cast. We have the flexibility to ship continuous cast bar from stock, or produce centrifugally cast in our foundry for rapid response.



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LETTER OF INTRODUCTION

We centrifugally cast and machine bushings and bearings to print specifications. These products are available in all the standard alloys including manganese and aluminum bronze to a maximum of 100" OD. We can go up to 60" long on special sizes. In our machine shop, we can finish machine up to 74" diameter, to drawing specifications.

We distribute the full range of continuous cast C932 and C954 tube and solid sizes. Special alloys and shapes are available either in barstock form or finish machined ready to use.

We also stock SAE 64 (C937) plate in the following sizes: 1/2 x 14 x 120, 3/4 x 17 x 120, and 1 x 20 x 120. We have the capability to finish machine these plates to drawing specifications and can cut to any width or length desired. Our planer will finish machine plates up to 14'6" long.

Along with offering years of experience, one of our biggest assets is that we provide quick service for your requirements in the event of a breakdown. We have provided this special service, in specific instances, within hours of receiving the order.

In most cases, given proper information, we can give you a quote on your first call. For further information, please call (330) 948-1231 or Fax (330) 948-2736.

Advance Bronze Inc.

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HIGH LEADED TIN BRONZE:

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION.				MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	TIN	LEAD	ZINC	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 500 KG
C93800	319	67	(E6)	3D	78	7	15		25000	16000	5	60
C94000	296		(E2)		72	13	15					50
C94100	325		(E5)		75	5	20		25000	17000	7	50
C94300	322		(E1)	3E	70	5	25		21000	15000	7	48

LEADED TIN BRONZE:

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION.				MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	TIN	LEAD	ZINC	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 500 KG
C83600	115	40	(B5)	4A	85	5	5	5	36000	19000	15	60
C84400	123				81	3	7	9	30000	15000	16	55
C92800	295				79	16	5		40000	30000	1	130
C93200	315	660	A-932	3B	83	7	7	3	35000	20000	10	65
C93400	310		(E8)		84	8	8		34000	20000	8	60
C93500	326	66	(E9)	3C	85	5	9	1	30000	16000	12	60
C93600					80	7	12	1	32000	16000	15	60
C93700	305	64	(E10)	3A	80	10	10		35000	20000	6	60

TIN BRONZE

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION					MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Sn	Pb	Zn	Ni	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 500 KG
C90300	225	620	(D5)	1B	88	8		4		44000	22000	18	70
C90500	210	62	(D6)	1A	88	10		2		44000	25000	10	75
C90700	205	65			89	11				40000	25000	10	80
C90900	199				87	13				40000	20000	15	90
C91000	197		(D2)		85	15				30000	25000	1	105
C91100					84	16				35000	25000	2	135**
C91300	194		(D1)		81	19				35000	30000	0.5	160**
C91600			(F1)		88	10.5			1.5	35000	17000	10	65
C91700					86.5	12			1.5	35000	17000	10	65
C92200	245	622	(D4)	2A	88	6	1.5	4.5		38000	19000	18	65
C92300	230	621	(D3)	2B	87	8	1	4		40000	19000	16	70
C92500	250	640			87	11	1	2	1	40000	24000	10	80
C92700	206	63			88	10	2			38000	20000	8	77
C92900	206W/Ni				84	10	2.5		3.5	45000	25000	8	75

**BHN @ 3000 KG

YELLOW BRASS

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION					MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Sn	Pb	Zn	Al	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 500 KG
C85200	400		A-852	B584-852	72	1	3	24		35000	12000	25	45
C85300	407				70			30		35000	11000	40	
C85400	403	41	A-854	B584-854	67	1	3	29		30000	11000	20	50
C85700	405.2		A-857	B584-857	63	1	1	34.7	0.3	40000	14000	15	75

MANGANESE BRONZE:

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION					MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Zn	Al	Fe	Mn	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 3000 KG
C86200	423	430A	(B) & (E)	8B	64	26	4	3	3	90000	45000	18	180
C86300	424	430B	(C)	8C	63	25	6	3	3	110000	62000	14	225
C86500	421	43	(A)	8A	58	39	1	1	1	70000	25000	25	130

NICKEL SILVER

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION					MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Sn	Pb	Zn	Ni	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 500 KG
C97300	410				56	2	10	20	12	30000	15000	8	50
C97600	412				64	4	4	8	20	30000	17000	8	75

LEADED MANGANESE BRONZE:

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION				MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Sn	Pb	ZINC	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 3000 KG
864	420		C2	7A	59		1	40	60000	20000	15	105
867	422				58		1	41	80000	32000	15	155

ALUMINUM BRONZE:

CROSS INDEX					NOMINAL CHEMICAL COMPOSITION					MINIMUM MECHANICAL REQUIREMENTS			
CDA	INGOT	FORMER SAE	FORMER FEDERAL	FORMER ASTM	COPPER	Al	Fe	Ni	Mn	TENSILE (psi)	YIELD (psi)	ELONGATION %	BHN @ 3000 KG
C95200	415A	68A	G6	9A	88	9	3			68000	26000	20	125
C95300	415B	68B	G7	9B	89	10	1			70000	26000	25	140
C95300HT			G7-HT	9B-HT						80000	40000	12	174
C95400	415C		A-954	9C	85	11	4			85000	32000	12	170
C95400-HT			G5-HT	9C-HT						95000	45000	10	195
C95500	415D		G3	9D	81	11	4	4		95000	42000	10	195
C95500-HT			G3-HT	9D-HT						110000	62000	8	230
C95800					81	9	4	5	1	85000	35000	15	159
C95900					82	13	4		1	90000	52000	0.5	286