

DESCRIPTION

AMAND HB is a premium quality carbon-bonded silicon carbide crucible designed to provide optimised performance exclusively for the melting of aluminium alloys.

APPLICATIONS

AMAND HB provides superior performance for aluminium melting in both fuel-fired and dual energy furnaces for non-fluxed applications.

TYPICAL METAL CASTING TEMPERATURE

700°C — 900°C

PERFORMANCE CHARACTERISTICS

- Excellent thermal shock resistance
- Superior oxidation resistance to promote longer life
- High thermal conductivity and faster heat transfer for optimised productivity
- Fast consistent melting speed for reduced costs
- Optimised structural integrity - maximised durability to resist mechanical stresses
- Very low dross adhesion - Easier cleaning and less down time
- High resistance to erosion by solid and liquid metal

IDENTIFICATION

AMAND HB crucibles are finished black and are identified with the suffix HB following the pattern number e.g. TPX587HB

PATTERN RANGE

AMAND HB crucibles are available in a comprehensive range of shapes and sizes to suit the full spectrum of aluminium melting furnaces.

Crucibles can be made available with pyrometer pocket configuration to facilitate accurate measurement of metal temperature where required.

A selection of fixed pouring spouts with optimised profiles is offered to ensure accurate and controlled pouring.

QUALITY

AMAND HB crucibles are manufactured from premium grade raw materials under an ISO 9001:2000 quality management system.



PREHEATING / FIRST USE

Crucibles should be preheated empty. A new crucible should initially be heated slowly to 200°C and held at this temperature for 30 minutes in order to remove any moisture that might be present. The temperature should then be increased at the full heating rate until the whole crucible reaches a bright red condition (circa 900°C) and should be held at this temperature for a minimum of 30 minutes in order to fully develop the glaze. The crucible should then be charged and the furnace controller adjusted to achieve the desired operating temperature.

CHARGING

As soon as the crucible has been preheated as specified, charge and melt immediately. Charge light scrap and returns first in order to form a cushion for heavier material. Use tongs to charge ingots and place large pieces and ingots vertically allowing space for expansion.

FULL LINE OF CRUCIBLES TO MEET EVERY APPLICATION



EXCEL, HIMELT
Roller-Formed SiC



EXCEL E
Roller-Formed SiC



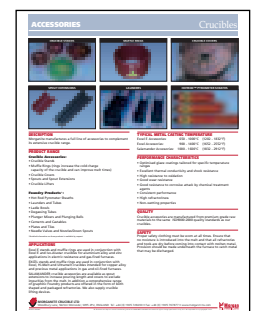
INDUX
Clay Graphite



SALAMANDER SUPER
Clay Graphite



ULTRAMELT
ISO-Pressed SiC

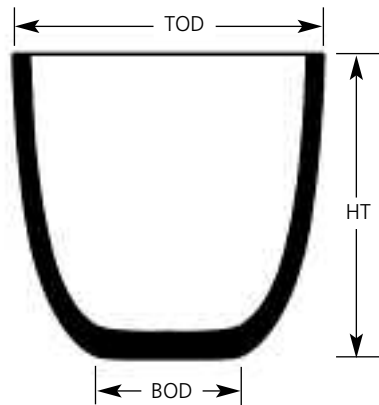
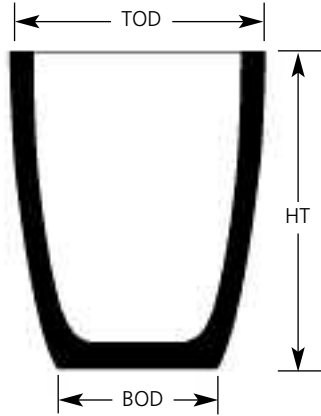


ACCESSORIES



For additional information on Morgan MMS' products & services or to find a location nearest to you, please visit:

www.morganmms.com



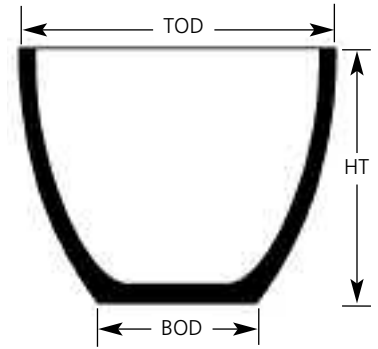
Crucibles for Lift Out and Bale Out Furnaces

AMAND HB A-SHAPES (AX_HB)	TOD (mm)	HT (mm)	BOD (mm)	Aluminium Capacity (Kg)	Brimful Capacity (Litres)
AX150HB	362	452	250	60	25
AX200HB	400	491	285	77	32
AX250HB	421	546	255	89	37
AX300HB	443	543	310	104	43
AX325HB	445	584	310	115	47
AX350HB	464	606	295	123	51
AX400HB	515	650	300	155	64
AX450HB	517	675	300	163	67
AX500HB	520	700	300	172	71
AX600HB	543	760	315	202	83
AX800HB	550	800	350	249	102
AX1000HB	616	822	420	346	142

Crucibles for Bale Out Furnaces

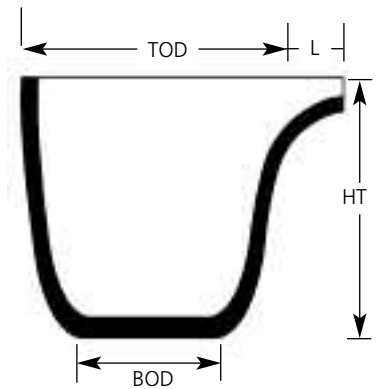
AMAND HB BASINS (BX_HB)	TOD (mm)	HT (mm)	BOD (mm)	Aluminium Capacity (Kg)	Brimful Capacity (Litres)
BX173HB	397	343	215	42	22
BX174HB	397	394	215	50	25
BX176HB	397	432	215	58	28
BX164HB	464	375	280	65	34
BX166HB	527	402	315	85	44
BX167HB	527	451	315	105	51
BX168HB	527	492	315	119	56
BX169HB	527	551	315	144	65
BX171HB	527	600	315	165	73
BX177HB	527	620	315	172	76
BX178HB	527	710	315	207	89
BX179HB	527	762	315	230	97
BX202HB	616	500	355	163	77
BX302HB	616	630	355	233	103
BX401HB	616	700	355	271	117
BX402HB	616	800	355	327	138
BX502HB	616	900	355	382	158
BX712HB	720	600	380	316	141
BX713HB	720	670	380	370	161
BX714HB	720	695	380	389	168
BX715HB	720	730	380	416	178
BX716HB	720	765	380	442	187
BX721HB	720	785	380	457	193
BX724HB	720	800	380	469	197
BX718HB	720	885	380	534	221
BX719HB	720	950	380	584	240
BX720HB	720	975	380	603	247
BX1264HB	769	600	460	310	142
BX847HB	775	750	338	441	191
BX247HB	775	750	460	444	192
BX263HB	775	890	460	575	241
BX262HB	775	950	460	635	263
BX264HB	775	1000	460	700	287
BX850HB	850	750	450	595	254
BX855HB	850	890	450	749.0	311
BX851HB	850	950	450	815	336
BX854HB	850	980	450	848	348
BX857HB	850	1000	450	870.0	356
BX2100HB	850	1140	300	964	391
BX852HB	850	1140	450	1130	453
BX853HB	850	1240	450	1252	498

AMAND HB BOWLS (BX_HB)	TOD (mm)	HT (mm)	BOD (mm)	Aluminium Capacity (Kg)	Brimful Capacity (Litres)
BX300HB	570	305	475	136	65
BX400HB	700	450	305	161	83
BX500HB	715	525	305	216	104
BX600HB	725	585	305	262	122
BX700HB	726	630	305	298	136
BX800HB	726	690	305	347	154
BX890HB	850	603	350	328	156
BX900HB	850	650	350	386	178
BX1000HB	850	690	350	431	194
BX1100HB	850	750	350	500	220
BX1300HB	850	813	350	560	242
BX1500HB	850	850	350	611	261
BX1600HB	850	890	350	656	278
BX1800HB	850	980	350	757	315
BX2600HB	850	1244	350	1025	414
BXB900HB	885	650	350	409	188
BXB1000HB	885	690	350	455	205



Spouted Basins for Tilting Furnaces

AMAND HB SPOUTHBD BASINS (TBX_HB / TPX_HB)	TOD (mm)	HT (mm)	BOD (mm)	L (mm)	Aluminium Capacity (Kg)	Brimful Capacity (Litres)
TPX287HB	527	600	315	146	150	56
TBX171HB	527	600	315	280	151	56
TBX177HB	527	621	315	280	158	59
TPX178HB	527	710	315	146	192	71
TBX178HB	527	710	315	280	193	71
TPX387HB	616	630	355	146	213	79
TBX401HB	616	700	355	290	253	94
TPX401HB	616	700	355	146	254	94
TBX402HB	616	800	355	290	308	114
TPX412HB	616	800	355	146	310	115
TPX512HB	616	900	355	146	361	134
TBX512HB	616	900	355	324	362	134
TPX847HB	775	750	338	184	803	297
TPX487HB	775	750	460	184	399	148
TPX587HB	775	890	460	184	530	196
TPX584HB	775	1000	380	184	655	243
TPX1500HB	850	850	350	184	555	206
TPX1600HB	850	890	350	184	600	222
TPX1800HB	850	980	350	184	700	259
TPX851HB	850	950	450	184	752	279
TPX852HB	850	1140	450	184	1067	395



Aluminium capacity is calculated as follows:

- A-Shapes - 90% of brimful
- Basins and Bowls - With a freeboard of 75mm
- Spouted Basins - With a freeboard of 75mm measured from the bottom of the spout

All dimensions are subject to normal manufacturing tolerances

Pyrometer pocket and hole in wall configurations are available to facilitate measurement of metal temperature

Alternative sizes to those listed can be made available by request

Morgan MMS also supplies a complete range of crucible stands to provide uniform heating and appropriate mechanical support of the crucible base

INSTALLATION

The stand should be made from the same material as the crucible to ensure uniform heating of the crucible base and provide sufficient mechanical support. The diameter of the stand should be at least the same as the base of the crucible and the height should be such that the base of the crucible is level with the centre line of the burner in fuel-fired furnaces. The stand and crucible should be installed centrally in the furnace.

BALE OUT FURNACES

The crucible should be installed with an 8mm gap between the upper wall of the crucible and the furnace lining to allow for expansion. Failure to leave a sufficient gap can lead to cracking.

A layer of ceramic fibre insulating material should be placed across the top of the furnace lining and the top surface of the crucible rim in order to seal the chamber and insulate the metal top plates. Ceramic fibre material must not be pushed down between the furnace lining and crucible wall as this would insulate the crucible, prevent the glaze from functioning, and lead to a rapid weakening by oxidation.

Where a flanged metal top ring is fitted to the furnace a 9mm gap should be present between the top ring and crucible wall to allow for expansion. Too small a gap can result in cracking of the crucible.

TILTING FURNACES

Cement the stand on the floor of the furnace and ensure that it is central and level. Place the crucible centrally on the stand and use a thin layer of Morcem 900 cement to bond the crucible and stand together.

Use three equi-spaced grip bricks positioned 75mm below the rim of the crucible, leaving a 6-10mm gap between these and the crucible wall for expansion. Insert cardboard spacers in the gap.

Leave a clear 38mm space under the spout to prevent the crucible from "hanging up" on the spout. After the crucible and accessories have been installed, initially fire the furnace slowly in order to release moisture and to set the cement.

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CLEANING OUT

Crucibles should be cleaned out carefully between melts while hot in order to remove build-up of oxide dross. In tilting furnaces crucibles should be cleaned in the horizontal position where possible.

SAFETY

Proper safety clothing must be worn at all times. Ensure that no moisture is introduced into the melt. Provision should be made underneath the furnace to catch metal that may be discharged.

CRUCIBLE CARE



Store crucibles off the floor in a dry, warm area.



Do not nest one inside another. Separate layers with hardboard.



Do not roll crucibles. Move using a sack truck with padding.



Check thoroughly for cracks or damage before use.



Use the correct crucible stand which must be central and support the whole base.



Allow space for expansion between crucible and furnace lining/cover.



Use correctly positioned grip bricks in tilting furnaces, leaving gaps for expansion. Do not hang crucible on spout.



The flame path must be tangential to the crucible



Ingots should be loaded carefully into the crucible using tongs.



First charge with light returns, as a cushion, then add ingots vertically.



Only add flux after metal is molten.



Avoid ingress of cold air by ensuring that the drain hole is sealed.



Lift-out tongs should hold crucible on its lower third and fit evenly on both sides.



The crucible must be emptied before switching off the furnace.



The crucible should be cleaned out carefully every day while still red hot.



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