

Midland Technologies, Inc.

Components for High Pressure Die Casting



HYDRO COOLER

DIE COMPONENTS

SHOT END COMPONENTS



Custom Die and Shot End Components

LET MIDLAND SUPPLY YOUR CUSTOM DIE AND SHOT END COMPONENTS TO SAVE TIME AND MONEY.

CHOOSE FROM 3 EASY WAYS TO USE MIDLAND COMPONENTS IN YOUR NEXT DIE DESIGN AND BUILD OR REPAIR PROJECT.

FULLY CUSTOMIZABLE SOLIDS

Midland offers fully customizable solids free of charge for many components to save you time and money on design! Simply visit the product page for the component that you need and click on the FULLY CUSTOMIZABLE SOLID tab. Download the solid file of our base part and incorporate it into your design. Alter the part however you require and send it back to us for a quote!

EASY CUSTOM DIAGRAM



Can you use a Midland standard design with custom dimensions for your mold and die components? If so, you can save time and money during the design and build phases of your project by using Easy Custom Diagrams. Simply visit the web page of the component that you require and click on the Easy Custom Diagrams tab. Fill out your needed dimensions and submit to receive a quote. When you issue a purchase order for the item, we will supply a part file and print for your confirmation prior to manufacture.

MIDLAND STANDARD SIZES

Midland provides a range of pre-designed and stocked sizes for many of our mold and die components. You can find links to download parasolid files and prints for each standard size offering under the Midland Standard Sizes tab on the specific web page of the component that you require.

**SEND YOUR CUSTOM PART REQUESTS TO
QUOTES@MIDLANDTECHNOLOGIES.COM**



IDENTIFIES A COMPONENT WITH AN EASY CUSTOM DIAGRAM OPTION



PRODUCT OVERVIEW

High Pressure Hydro Coolers™ from Midland Technologies are durable, high-quality, domestically manufactured cascades for use with High Velocity Jet Cooling Units. High Pressure Hydro Coolers are available with rotating or stationary heads and outer pipes can be ordered with threads or O-rings to seal with the core pin. Threads can be specified by customer as NPT or BSPT. All major sub-components of the Hydro Coolers have been designed in-house to support long-life and easy installation for the end-user.

APPLICATION

High Pressure Hydro Coolers are utilized with High Velocity Jet Cooling in small diameter core pins to combat shrink porosity, core pin solder and core pin washout. High Velocity Jet Cooling utilizes high pressure water and air injection cycles to manage core pin temperature.

OPERATION

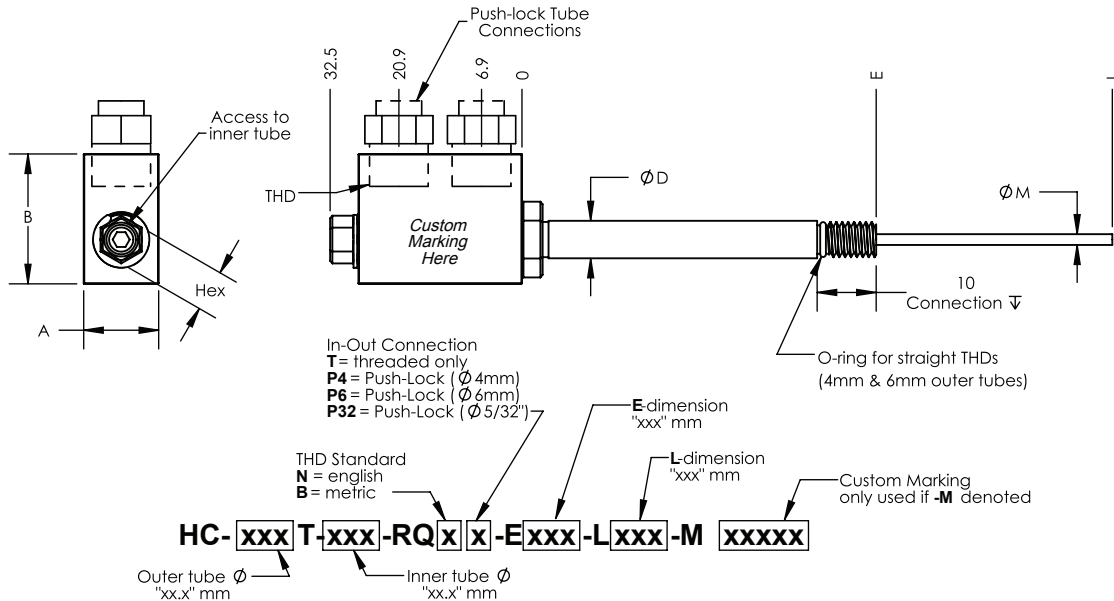
The inner tube of the Hydro Cooler is inserted into a cooling channel within the core pin to within 10 – 15 mm of the core pin tip. Hydro Coolers insert and seal with core pins via threaded connection or O-ring located on the OD of the outer pipe. The head of the Hydro Cooler is fitted with two push-lock fittings for 4mm OD tubing or 5/32 OD tubing that provide the inlet and outlet for water and air to the cascade tube. As necessary, inner tubes can be removed from the Hydro Cooler and replaced through the bottom of the head.

FEATURES

- Domestically designed and produced
- Rotating or stationary heads
- Threaded or O-ring connections
- NPT or BSPT threads
- 4mm or 5/32” push-lock for inlet and outlet tubing
- Quick access port for removal and replacement of inner tube

For more information about Hydro Coolers, please reference pages E1-E14.

Hydro Coolers



Callout Options

Base Part #	Outer Pipe OD
HC-040	4mm
HC-060	6mm
HC-080	8mm
HC-100	10mm

Head Style
Rotating
Stationary

Inner Pipe OD
1.2 mm
1.8 mm
2.3 mm
2.8 mm

Tube Lengths
Inner Pipe - Dimension L
Outer Pipe Length - Dimension E

Connection Type
Threaded
O-ring

Replacement Parts Available

Hydro Cooler Refurbishment Kit (only for use with Midland Technologies' High Pressure Hydro Cooler) ¹	Includes Core O-rings, Retainer Clip, Inner Tube Access Screw, Outer Pipe O-ring if applicable, and Replacement Inner Tube
Outer Pipe O-Ring ²	Pack of 10 for M4 or M6 threaded outer pipe connection
Core O-Ring Small	Pack of 10 for rotating head internal core position 1
Core O-Ring Medium	Pack of 10 for rotating head internal core position 2
Core O-Ring Large	Pack of 10 for rotating head internal core position 3
Inner Tube Access Screw	Pack of 5
Retainer Clip	Pack of 5
Replacement Inner Tube	Specify inner tube OD and total L-dimension length

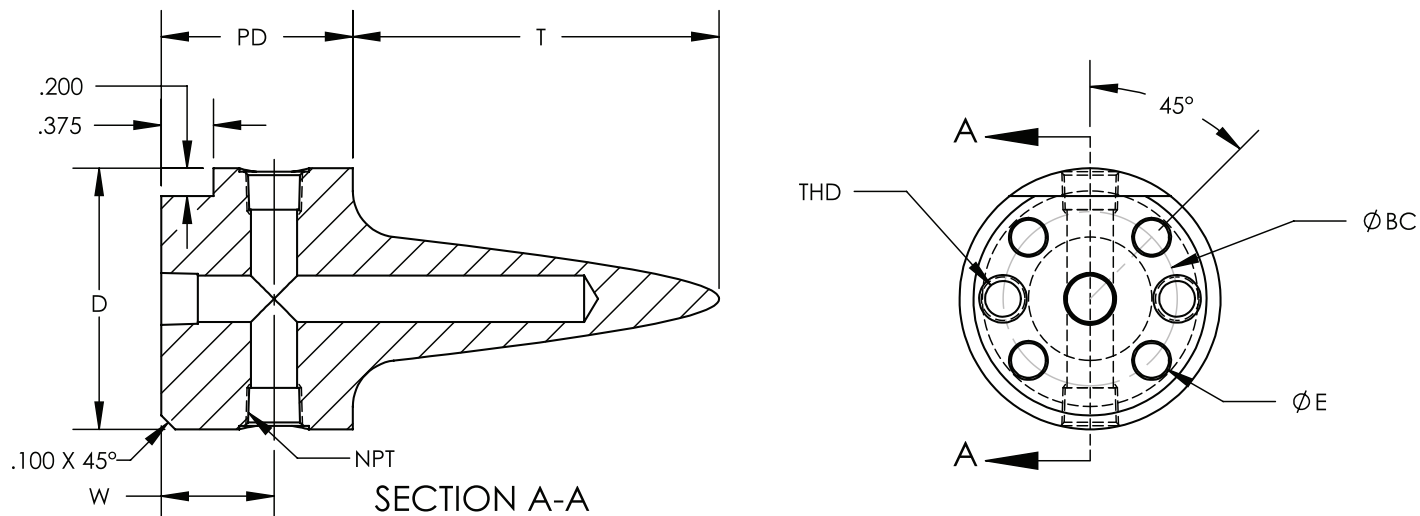
- Specify outer pipe OD, connection type, stationary or rotating head and inner tube L-dimension to ensure receipt of proper kit
- Specify outer pipe OD when ordering replacement Outer Pipe O-Rings

Additional Parts Available

4mm OD inlet/outlet tubing	Burst Pressure 2500 PSI @ 72F; Working Pressure 500 PSI @ 72F
4mm Push-Lock Fitting	For 4mm OD inlet/outlet tubing; nickel plated brass; 1/8 BSPT male threaded connection
5/32" OD inlet/outlet tubing	Burst Pressure 1950 PSI @ 72F; Working Pressure 390 PSI @ 72F
5/32" Push-Lock Fitting	For 5/32" OD inlet/outlet tubing; nickel plated brass; 1/8 NPT male threaded connection

Constant Area Spreaders

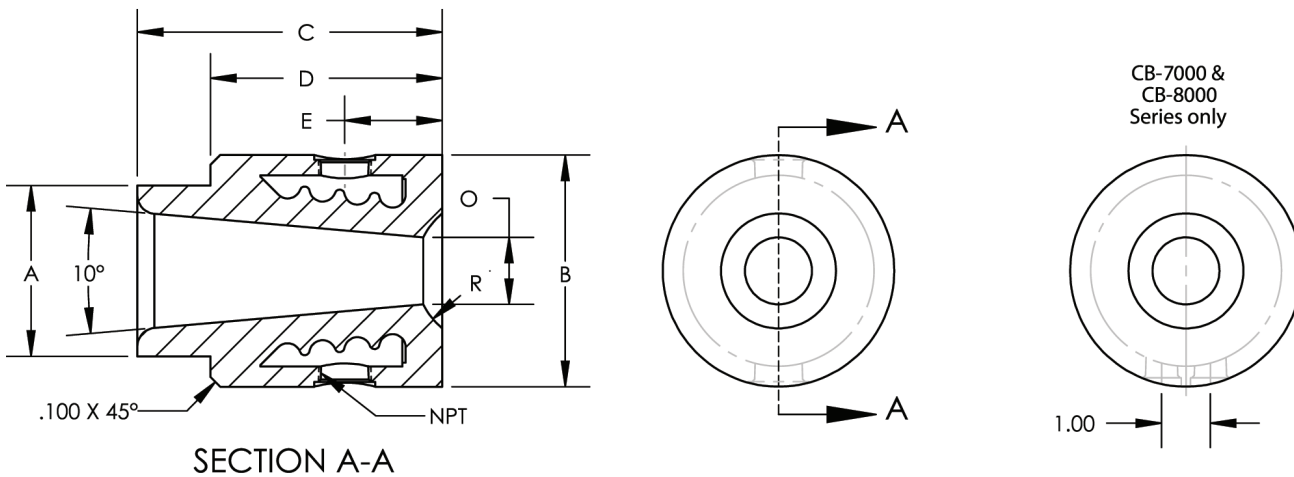
PREMIUM H-13, 44-46 HRC



Catalog No.	D	PD	T	W	NPT	THD	ØBC	ØE
CS-30	1.6240	1.25	1.370	0.750	1/8-27	1/4-20	1.000	0.250
CS-40	1.6240	1.25	1.900	0.750	1/8-27	1/4-20	1.000	0.250
CS-50	1.8740	1.375	2.163	0.810	1/8-27	5/16-18	1.250	0.250
CS-60	1.8740	1.375	2.643	0.810	1/8-27	5/16-18	1.250	0.250
CS-70	2.4990	1.375	2.048	0.810	1/4-18	3/8-16	1.500	0.375
CS-80	2.4990	1.375	3.798	0.810	1/4-18	3/8-16	1.500	0.375

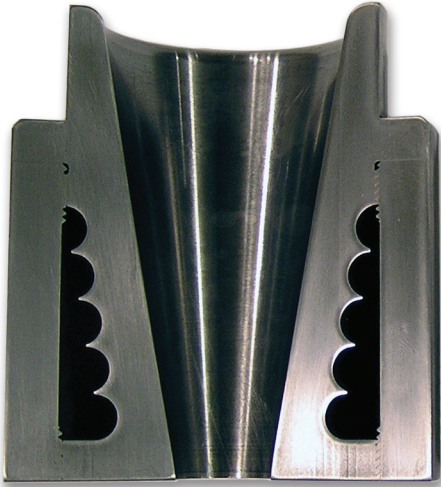
Constant Area Bushings

PREMIUM H-13, 44-46 HRC



Catalog No.	A	B	C	D	NPT	E	R	O
CB-3075	1.500	2.123	1.750	1.250	1/8-27	0.560	0.750	0.687
CB-3100	1.500	2.123	1.750	1.250	1/8-27	0.560	1.000	0.687
CB-3150	1.500	2.123	1.750	1.250	1/8-27	0.560	1.515	0.687
CB-4075	1.500	2.123	2.125	1.625	1/8-27	0.680	0.750	0.625
CB-4100	1.500	2.123	2.125	1.625	1/8-27	0.680	1.000	0.625
CB-4150	1.500	2.123	2.125	1.625	1/8-27	0.680	1.515	0.625
CB-5075	1.750	2.373	2.500	1.750	1/4-18	0.880	0.750	0.718
CB-5100	1.750	2.373	2.500	1.750	1/4-18	0.880	1.000	0.718
CB-5150	1.750	2.373	2.500	1.750	1/4-18	0.880	1.515	0.718
CB-6075	1.750	2.373	3.125	2.375	1/4-18	1.000	0.750	0.687
CB-6100	1.750	2.373	3.125	2.375	1/4-18	1.000	1.000	0.687
CB-6150	1.750	2.373	3.125	2.375	1/4-18	1.000	1.515	0.687
CB-7100	2.500	3.123	2.500	1.875	1/4-18	1.000	1.000	1.031
CB-7125	2.500	3.123	2.500	1.875	1/4-18	1.000	1.250	1.031
CB-7150	2.500	3.123	2.500	1.875	1/4-18	1.000	1.515	1.031
CB-7175	2.500	3.123	2.500	1.875	1/4-18	1.000	1.750	1.031
CB-7188	2.500	3.123	2.500	1.875	1/4-18	1.000	1.875	1.031
CB-8100	2.500	3.123	4.000	3.000	1/4-18	1.000	1.000	1.000
CB-8125	2.500	3.123	4.000	3.000	1/4-18	1.000	1.250	1.000
CB-8150	2.500	3.123	4.000	3.000	1/4-18	1.000	1.515	1.000
CB-8175	2.500	3.123	4.000	3.000	1/4-18	1.000	1.750	1.000
CB-8188	2.500	3.123	4.000	3.000	1/4-18	1.000	1.875	1.000

Runner Spreaders and Bushings



Available in small medium and large sizes,
or we can customize to your specs

PRODUCT OVERVIEW

Die casting zinc is faster and easier with runner spreaders and bushings from Midland. Made from premium H-13 steel and heat-treated to 44-46 HRC, these components are built to last. Choose from a range of pre-designed sizes or request your own custom design.

Runner spreaders can accommodate either baffle or cascade cooling. Spreaders can be purchased as blanks, or Midland can cut your custom spreaders for an additional fee.

Midland runner bushings are manufactured with unique internal ridges that provide a large surface area to achieve faster cooling than other bushings. Midland bushings are threaded together and hermetically sealed to prevent leakage.

APPLICATION

Midland runner spreaders and bushings are ideal for casting thin-wall parts with zinc.

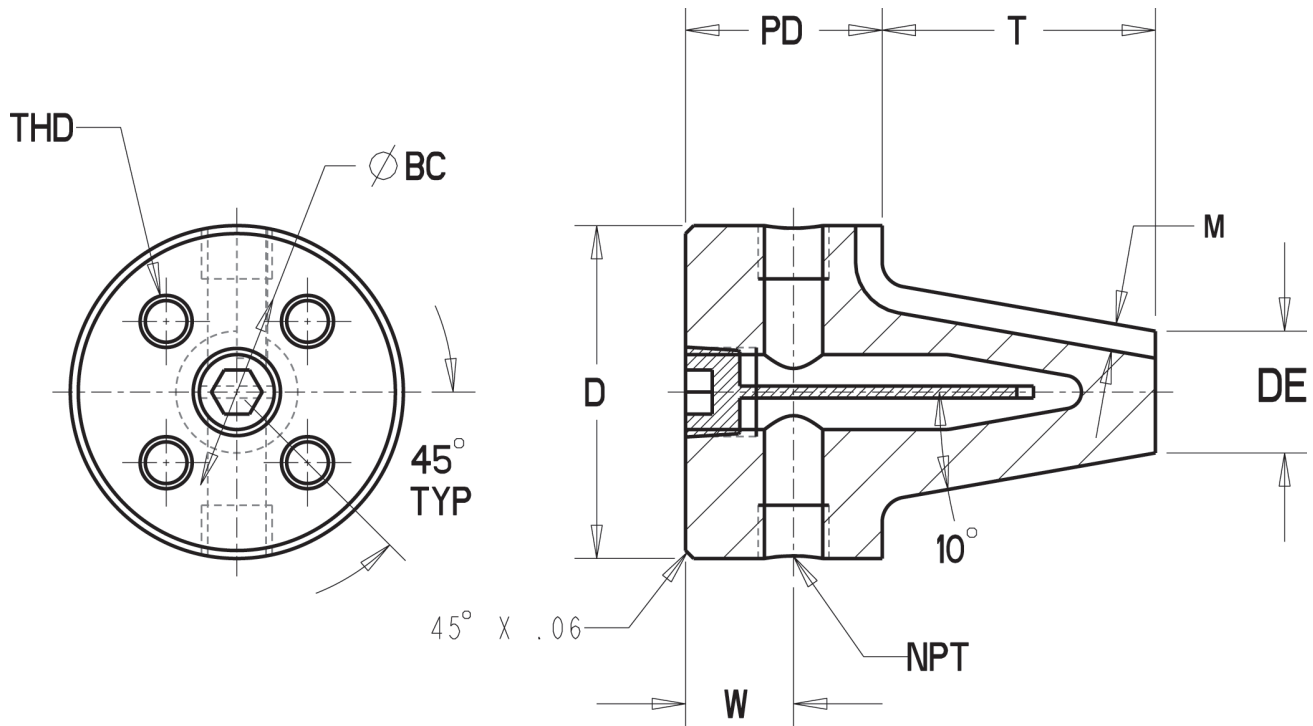
FEATURES

- Small, medium and large sizes
- Short and long styles
- Designs customized to your specifications
- Use with either baffle or cascade cooling
- Allows faster cavity fill and sprue cooling
- Premium H-13 steel, 44-46 HRC

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Runner Spreader

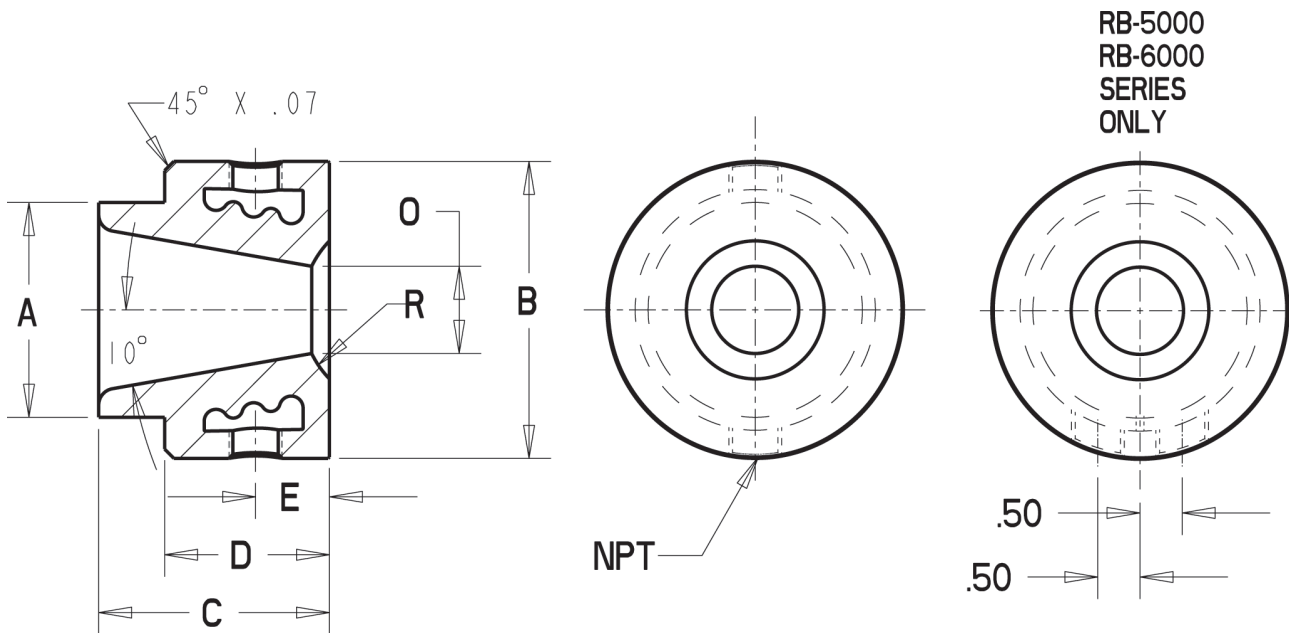
PREMIUM H-13 STEEL, 44-46 HRC



Catalog No.	D	PD	T	DE	W	NPT	THD	ØBC	M
	+0.000 -0.001	±0.001	±0.005	+0.000 -0.005	+0.000 -0.005			±0.015	Maximum Runner Depth
RS-10	1.624	1.350	1.485	0.648	0.750	1/8-27	1/4-20	1.00	0.150
RS-20	1.624	1.350	1.860	0.587	0.750	1/8-27	1/4-20	1.00	0.150
RS-30	1.874	1.475	2.060	0.731	0.810	1/8-27	1/4-20	1.25	0.225
RS-40	1.874	1.475	2.685	0.731	0.810	1/8-27	1/4-20	1.25	0.225
RS-50	2.499	1.475	2.050	0.914	0.810	1/4-18	3/8-16	1.50	0.300
RS-60	2.499	1.475	3.550	0.914	0.810	1/4-18	3/8-16	1.50	0.300

Runner Bushing

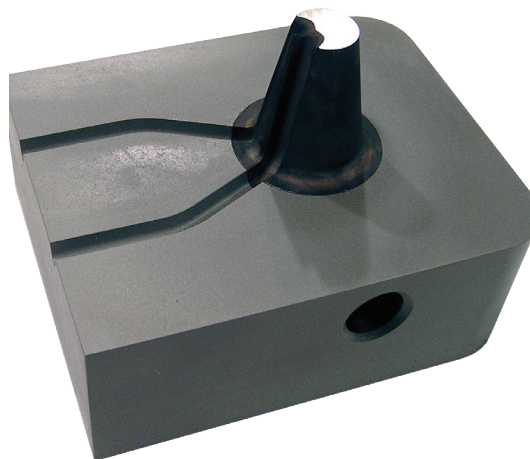
PREMIUM H-13 STEEL, 44-46 HRC



Catalog No.	A	B	C	D	E	NPT	R	O
	+ .000 - .002	± .005	± .001	± .001	± .015			+ .005 - .000
RB-1075	1.625	2.247	1.750	1.250	0.56	1/8-27	.750	0.660
RB-1100	1.625	2.247	1.750	1.250	0.56	1/8-27	1.000	0.660
RB-1150	1.625	2.247	1.750	1.250	0.56	1/8-27	1.515	0.660
RB-2075	1.625	2.247	2.125	1.625	0.68	1/8-27	.750	0.600
RB-2100	1.625	2.247	2.125	1.625	0.68	1/8-27	1.000	0.600
RB-2150	1.625	2.247	2.125	1.625	0.68	1/8-27	1.515	0.600
RB-3075	2.000	2.623	2.500	1.750	0.88	1/4-18	.750	0.700
RB-3100	2.000	2.623	2.500	1.750	0.88	1/4-18	1.000	0.700
RB-3150	2.000	2.623	2.500	1.750	0.88	1/4-18	1.515	0.700
RB-4075	2.000	2.623	3.125	2.375	1.00	1/4-18	.750	0.700
RB-4100	2.000	2.623	3.125	2.375	1.00	1/4-18	1.000	0.700
RB-4150	2.000	2.623	3.125	2.375	1.00	1/4-18	1.515	0.700
RB-5100	2.750	3.623	2.500	1.875	1.00	1/4-18	1.000	0.900
RB-5125	2.750	3.623	2.500	1.875	1.00	1/4-18	1.250	0.900
RB-5150	2.750	3.623	2.500	1.875	1.00	1/4-18	1.515	0.900
RB-6100	2.750	3.623	4.000	3.000	1.00	1/4-18	1.000	0.900
RB-6125	2.750	3.623	4.000	3.000	1.00	1/4-18	1.250	0.900
RB-6150	2.750	3.623	4.000	3.000	1.00	1/4-18	1.515	0.900

Patent # 7,044,192

Retainer and Runner Blocks



PRODUCT OVERVIEW

Retainer and Runner Blocks for spreaders and bushings are available in multiple pre-designed sizes for single and double unit sets, or Midland can quickly and affordably custom build to your specifications. Midland can machine your custom runner pattern for an additional nominal cost when a 3D model is provided.

APPLICATION

Retainer and Runner Blocks for spreaders and bushings help to protect against excessive maintenance and die repairs caused by sprue drips, or “drool,” in hot chamber zinc die casting machines. Retainer and Runner Blocks provide a solid H-13 surface and runner pattern to guide the flow of liquid zinc and help prevent holder block and parting line damage from peening or flash. This will help the caster to protect against excessive metal loss, increased scrap castings, and sprue damage.

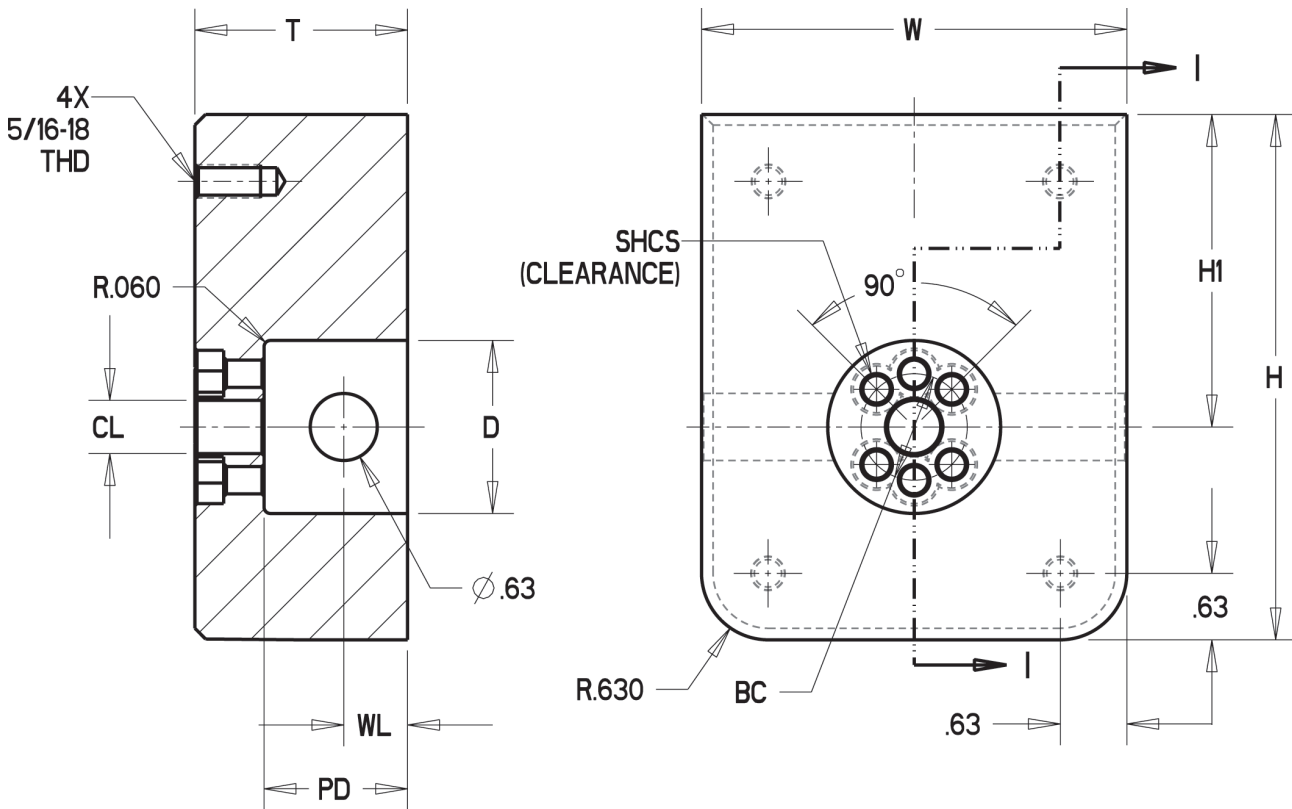
FEATURES

- Fits all sizes of DME style sprue spreaders and sprue bushings
- Premium H-13 steel, 44-46 HRC
- Clearance holes for water-cooled bushings and spreaders
- Fits in stand-alone molds or DME unit sets
- Midland can produce custom blocks to your needed specifications

**NEED A CUSTOM? SEND YOUR REQUIREMENTS TO
QUOTES@MIDLANDTECHNOLOGIES.COM**

Spreader Runner Block (SINGLE UNIT)

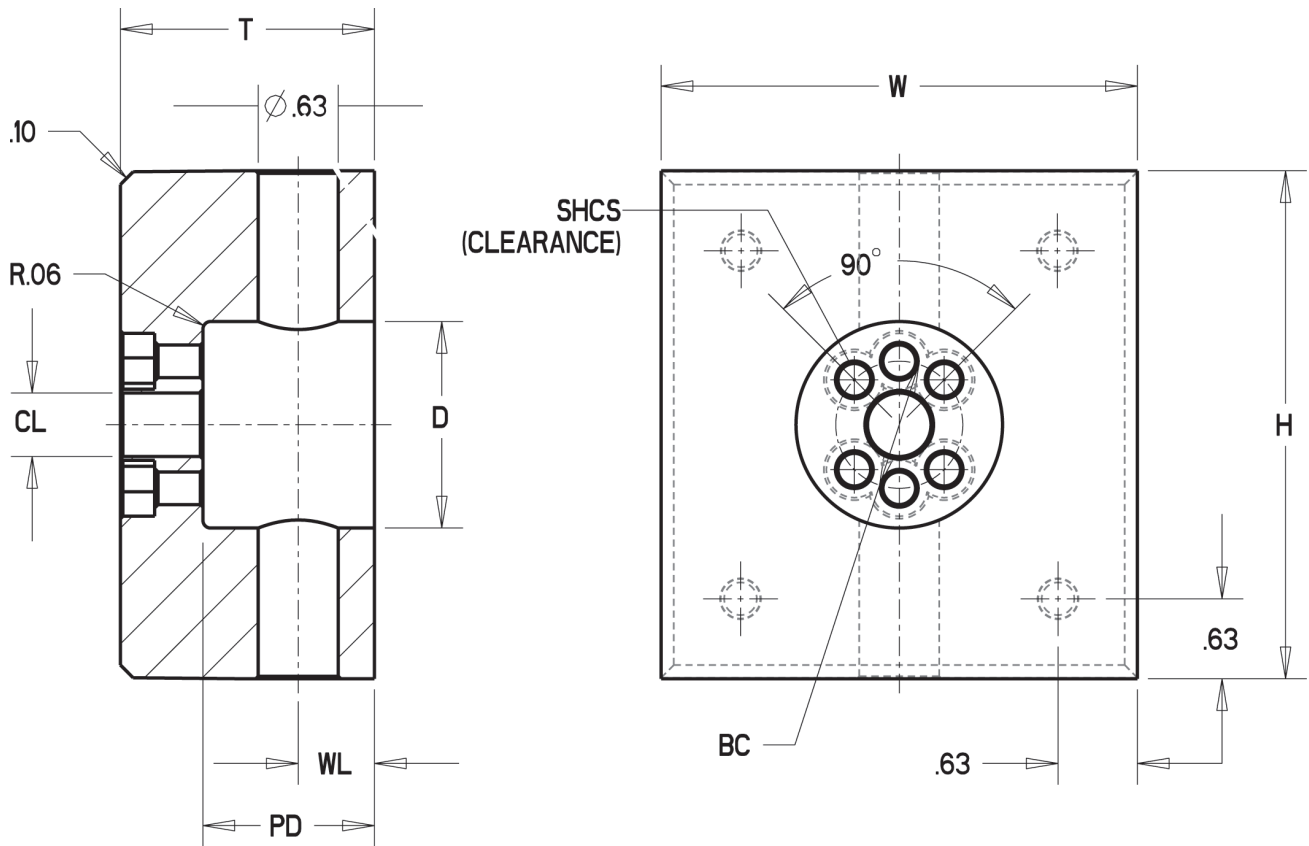
FOR CONSTANT AREA AND RUNNER SPREADERS
 FOR SINGLE UNIT SETS AND STANDARD MOLD SETS
 PREMIUM H-13, 44-46 HRC



Catalog No.	W	H	H1	T	D	PD	WL	BC	CL	SHCS
	+0.001 -0.000	+0.001 -0.000	± 0.001	+0.001 -0.000	± 0.001	+0.002 -0.000	± 0.020	± 0.020	± 0.020	
RSB16x20-S	4.000	4.938	2.938	2.000	1.626	1.350	0.75	1.00	0.50	1/4-20
RSB18x21-S	4.375	5.313	3.125	2.125	1.876	1.475	0.81	1.25	0.63	1/4-20
RSB25x25-S	5.375	6.313	3.625	2.500	2.501	1.475	0.81	1.50	0.63	3/8-16

Spreader Runner Block (DOUBLE UNIT)

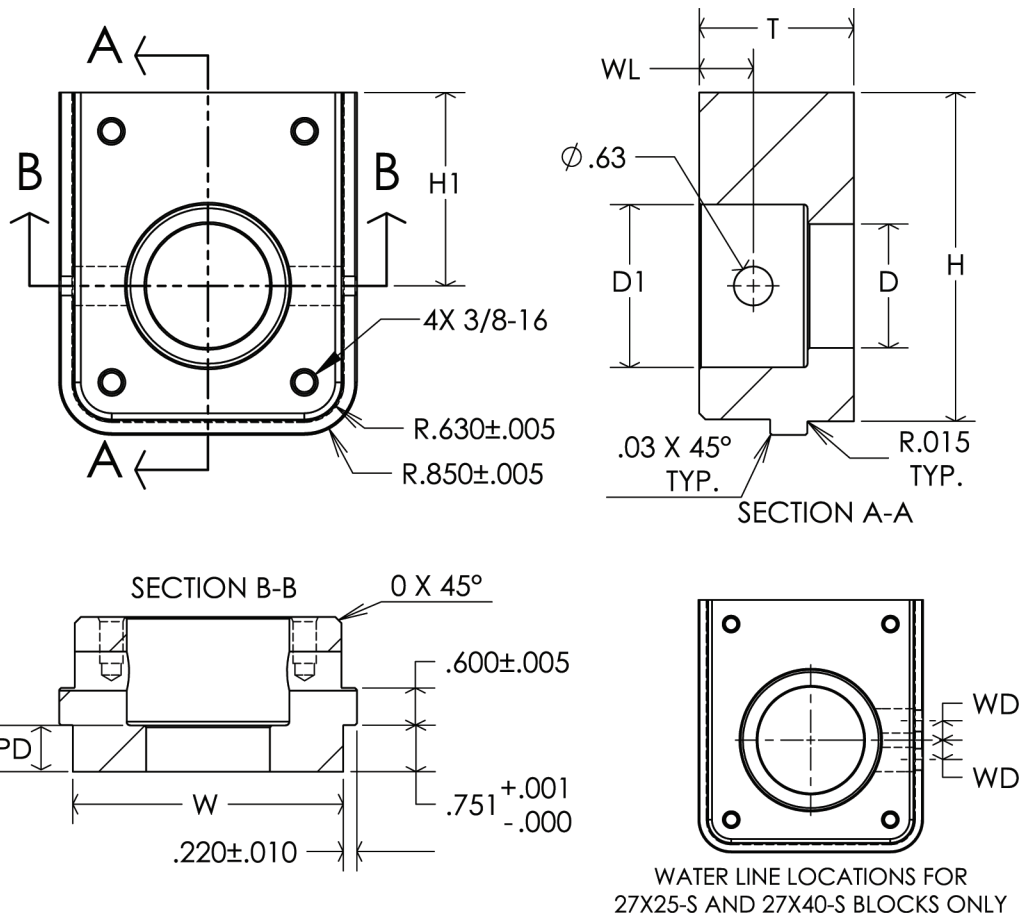
FOR CONSTANT AREA AND RUNNER SPREADERS
 FOR DOUBLE UNIT SETS
 PREMIUM H-13, 44-46 HRC



Catalog No.	W	H	T	D	PD	WL	BC	CL	SHCS
	+0.001 -0.000	+0.001 -0.000	+0.001 -0.000	$\pm .001$	+0.002 -0.000	$\pm .020$	$\pm .020$	$\pm .020$	
RSB16x20-D	3.750	4.000	2.000	1.626	1.350	0.75	1.00	0.50	1/4-20
RSB18x21-D	5.313	5.563	2.125	1.876	1.475	0.81	1.25	0.63	1/4-20
RSB25x25-D	6.000	6.250	2.875	2.501	1.475	0.81	1.50	0.63	3/8-16

Bushing Runner Block (SINGLE UNIT)

FOR CONSTANT AREA AND RUNNER BUSHINGS
 FOR SINGLE UNIT SETS AND STANDARD MOLD SETS
 PREMIUM H-13, 44-46 HRC

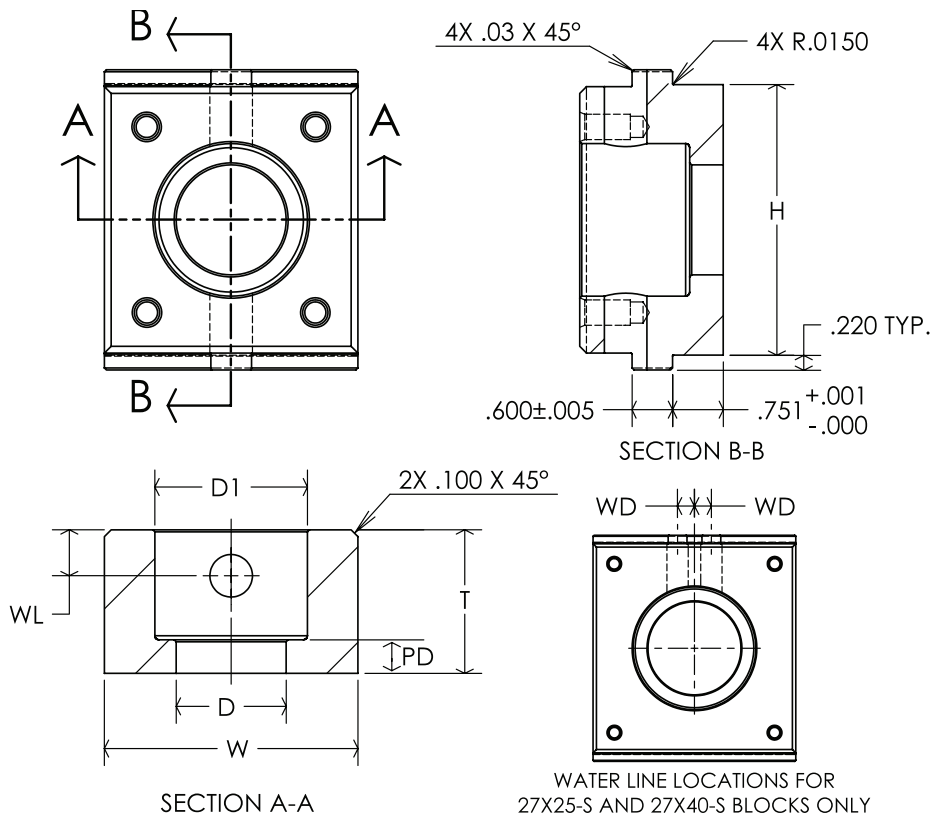


WATER LINE LOCATIONS FOR
 27X25-S AND 27X40-S BLOCKS ONLY

Catalog No.	W	H	H1	T	D	D1	PD	WL	WD
	±.001	±.001	±.001	±.001	±.002	±.001	+0.003 -.000	±.015	±.015
RBB16x17-S	4.000	4.938	2.938	1.750	1.627	2.260	0.500	0.560	-
RBB16x21-S	4.000	4.938	2.938	2.125	1.627	2.260	0.500	0.680	-
CBB16x17-S	4.000	4.938	2.938	1.750	1.502	2.125	0.500	0.560	-
CBB16x21-S	4.000	4.938	2.938	2.125	1.502	2.125	0.500	0.680	-
RBB20x25-S	4.375	5.313	3.125	2.500	2.002	2.635	0.750	0.880	-
RBB20x31-S	4.375	5.313	3.125	3.125	2.002	2.635	0.750	1.000	-
CBB20x25-S	4.375	5.313	3.125	2.500	1.752	2.375	0.750	0.880	-
CBB20x31-S	4.375	5.313	3.125	3.125	1.752	2.375	0.750	1.000	-
RBB27x25-S	5.375	6.313	3.625	2.500	2.752	3.635	0.625	1.000	0.500
RBB27x40-S	5.375	6.313	3.625	4.000	2.752	3.635	1.000	1.000	0.500
CBB27x25-S	5.375	6.313	3.625	2.500	2.502	3.125	0.625	1.000	0.500
CBB27x40-S	5.375	6.313	3.625	4.000	2.502	3.125	1.000	1.000	0.500

Bushing Runner Block (DOUBLE UNIT)

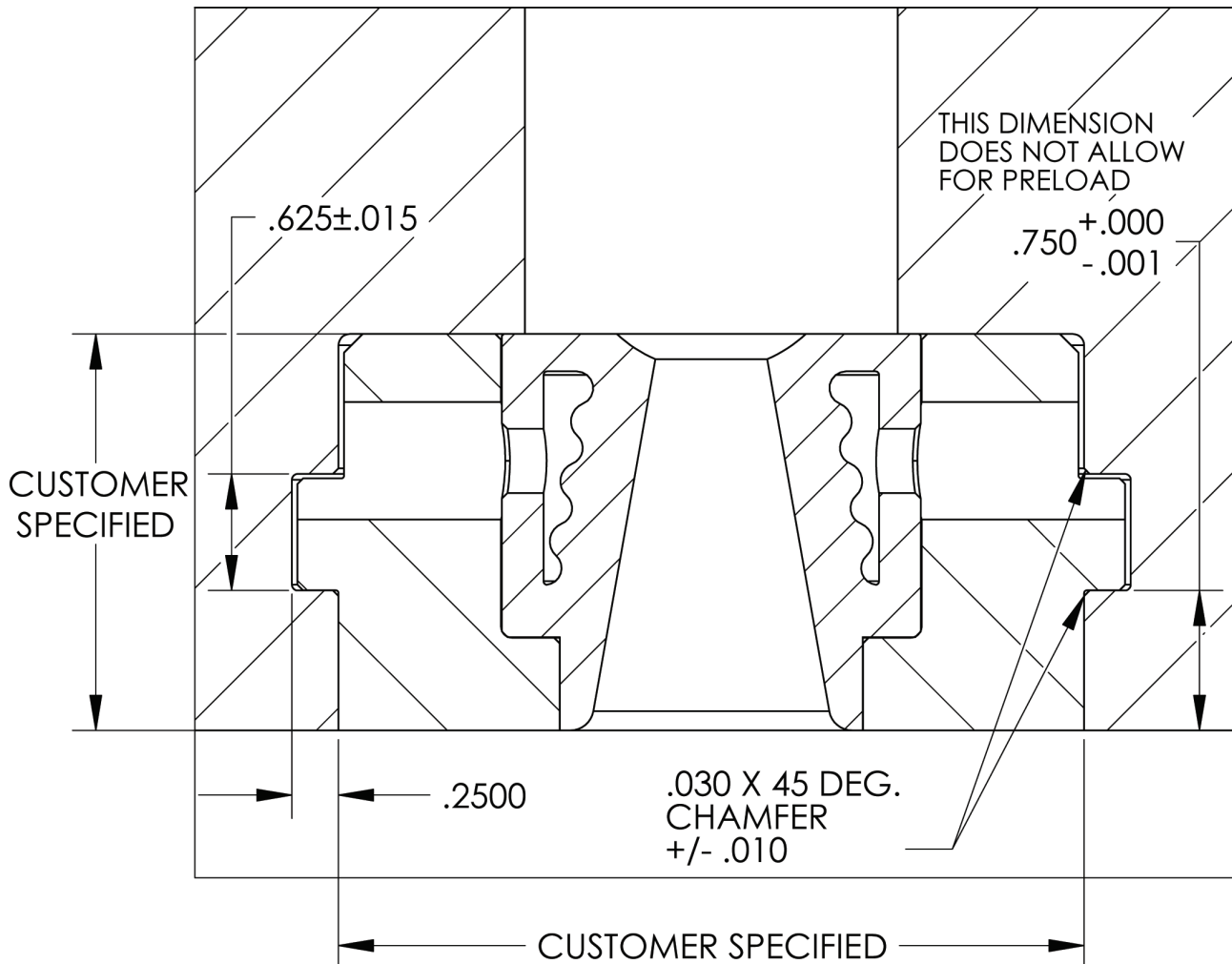
FOR CONSTANT AREA AND RUNNER BUSHINGS
FOR DOUBLE UNIT SETS
PREMIUM H-13, 44-46 HRC



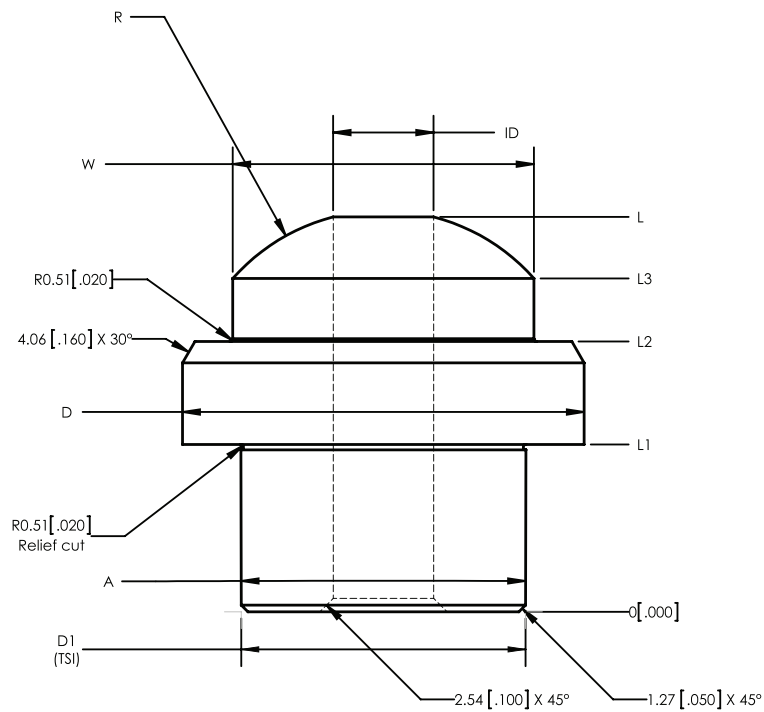
Catalog No.	W	H	T	D	D1	PD	WL	WD
	±.001	±.001	±.001	±.002	±.001	+0.003 -0.000	±.015	±.015
RBB16x17-D	3.750	4.000	1.750	1.627	2.260	0.500	0.560	-
RBB16x21-D	3.750	4.000	2.125	1.627	2.260	0.500	0.680	-
CBB16x17-D	3.750	4.000	1.750	1.502	2.125	0.500	0.560	-
CBB16x21-D	3.750	4.000	2.125	1.502	2.125	0.500	0.680	-
RBB20x25-D	5.313	5.563	2.500	2.002	2.635	0.750	0.880	-
RBB20x31-D	5.313	5.563	3.125	2.002	2.635	0.750	1.000	-
CBB20x25-D	5.313	5.563	2.500	1.752	2.375	0.750	0.880	-
CBB20x31-D	5.313	5.563	3.125	1.752	2.375	0.750	1.000	-
RBB27x25-D	6.000	6.250	2.500	2.752	3.635	0.625	1.000	0.500
RBB27x40-D	6.000	6.250	4.000	2.752	3.635	1.000	1.000	0.500
CBB27x25-D	6.000	6.250	2.500	2.502	3.125	0.625	1.000	0.500
CBB27x40-D	6.000	6.250	4.000	2.502	3.125	1.000	1.000	0.500

Bushing Runner Block Manufacturer Instructions

CUTTER RECOMMENDED (INGERSOLL)
(15T1F-1401580R01) SLOTMAX T-SLOT END MILL



Male Gooseneck Nose



PRODUCT OVERVIEW

Midland can supply your custom gooseneck noses made from annealed H-13 steel. Send your print to quotes@midlandtechnologies.com for a quote on cost and delivery.

Cast Iron Ladles



Item #	Cup Size (LxWxH)	15°	50°	Weight
1VML	3.250 x 4.250 x 4.000	1.16 lbs.	0.44 lbs.	5.00 lbs.
1.5VML	4.875 x 4.750 x 5.000	3.12 lbs.	1.04 lbs.	7.25 lbs.
2VML	4.875 x 4.750 x 5.000	4.28 lbs.	1.78 lbs.	7.50 lbs.
4VML	6.875 x 6.000 x 5.375	7.61 lbs.	2.14 lbs.	9.00 lbs.
6VML	6.500 x 6.000 x 6.250	9.45 lbs.	3.49 lbs.	12.00 lbs.
6VMLU*	10.000 x 6.500 x 6.750	6.32 lbs.	1.71 lbs.	11.0 lbs.
6VMLS**	10.000 x 6.500 x 6.750	6.32 lbs.	1.71 lbs.	11.0 lbs.
8VML	8.000 x 6.625 x 7.875	15.26 lbs.	6.43 lbs.	15.0 lbs.
12VML	9.125 x 7.000 x 9.000	19.68 lbs.	9.85 lbs.	18.75 lbs.
16VML	10.000 x 7.000 x 10.125	26.89 lbs.	12.55 lbs.	22.50 lbs.
25VML	10.000 x 7.000 x 11.500	33.70 lbs.	18.00 lbs.	24.00 lbs.

Plunger Rods



Custom Plunger Rods to Match Your Print or Model

Focus on your most value-added activities and let Midland take care of the rest!

Midland Technologies, Inc.

14800 James Road
Rogers, MN 55374

Tel: (763) 428-4229
Fax: (763) 428-4720

www.midlandtechnologies.com
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CORPORATE MEMBER

