

Midland Technologies, Inc.

Hydro Coolers



2018 Catalog

Hydro Coolers



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.

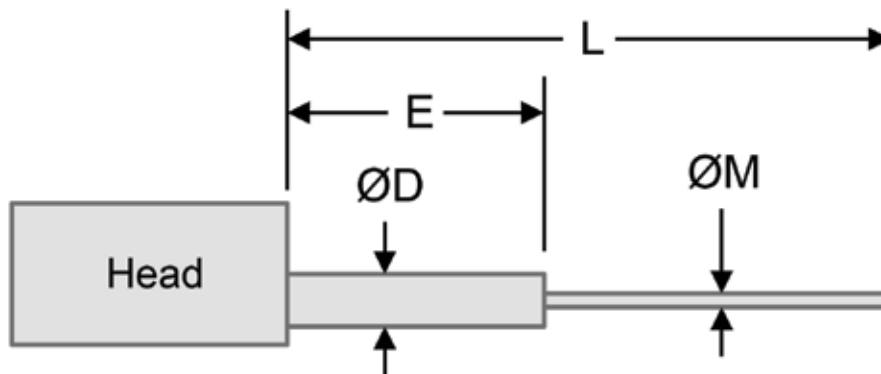
OPERATION

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


Hydro Cooler Nomenclature





1 Outer Tube ØD
xxx= "xx.xmm"

3 Inner Tube ØM
xxx= "xx.xmm"

2 Outer Tube Connection

T= Threaded 

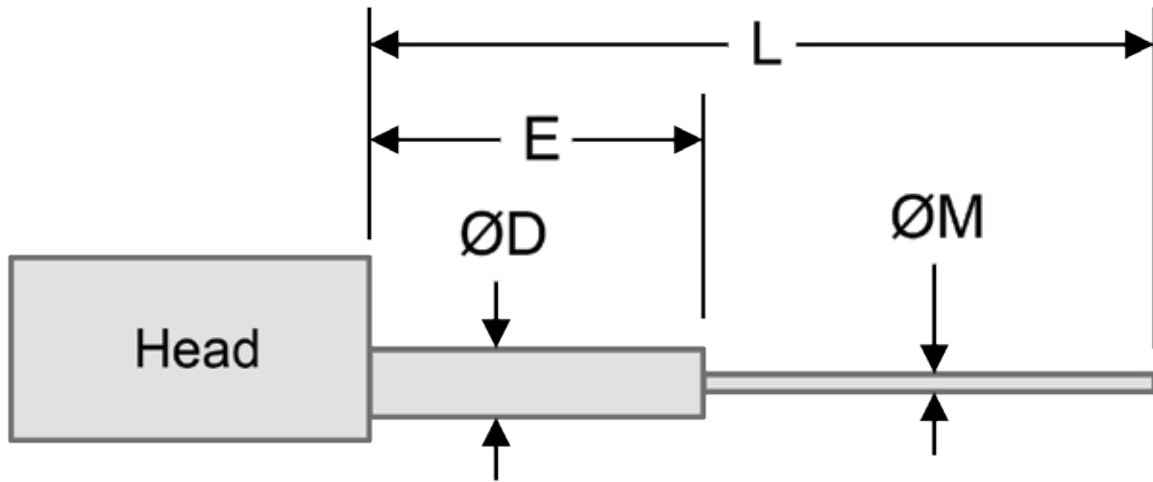
R= O-rings 

G= Grommet 

4 Head Type
S= Stationary
R= Rotating

5 Head Shape
Q= Square
H= Hexagonal
C= Circular

Hydro Cooler Nomenclature



6 THD Standard

N = NPT (English)
B = BSPT (Metric)

8 E-dimension

xxx = "xxxmm"

7 Water Line Connection

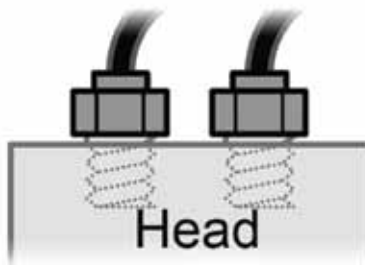
T=Threaded

BT = 1/8 BSPT
 NT = 1/8 NPT



P=Push-Lock

BP = Push-Lock (4mm)
 B6 = Push-Lock (6mm)
 B8 = Push-Lock (8mm)
 NP = Push-Lock (5/32)



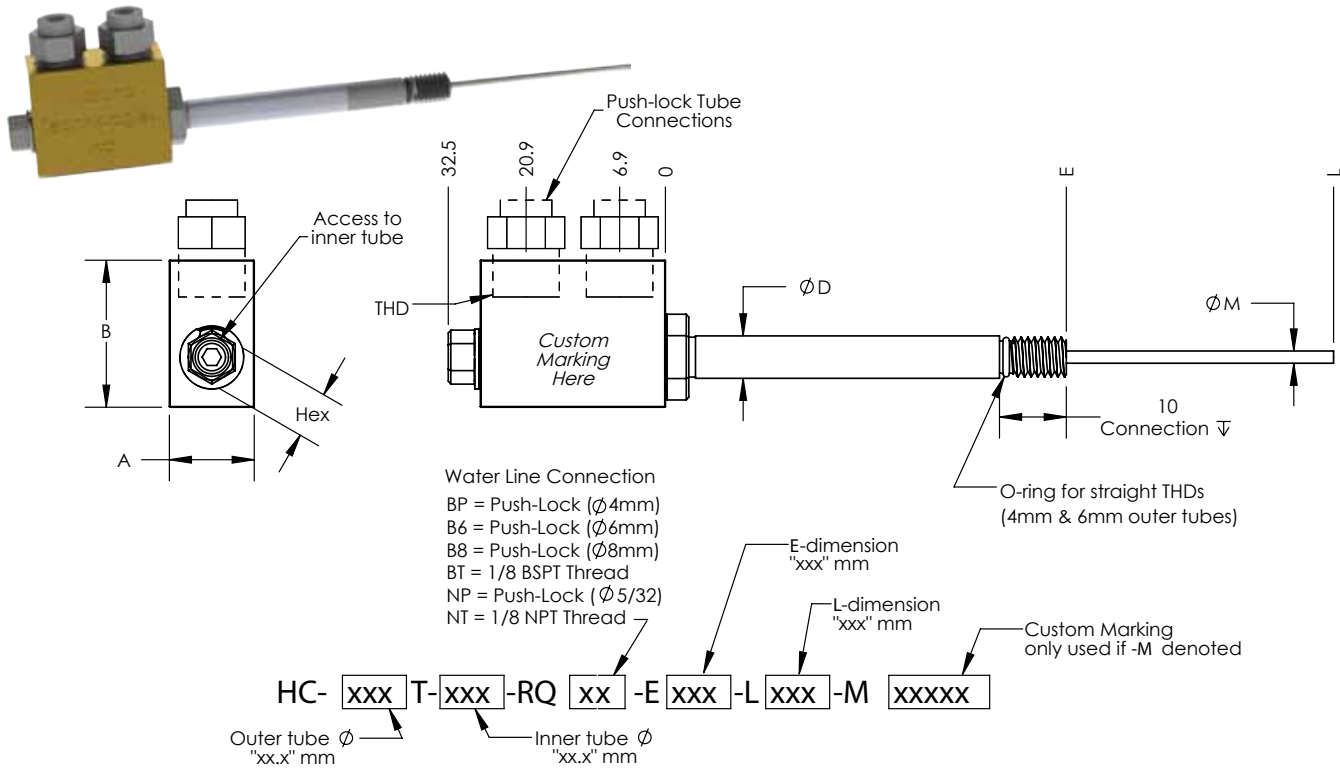
9 L-dimension

xxx = "xxxmm"

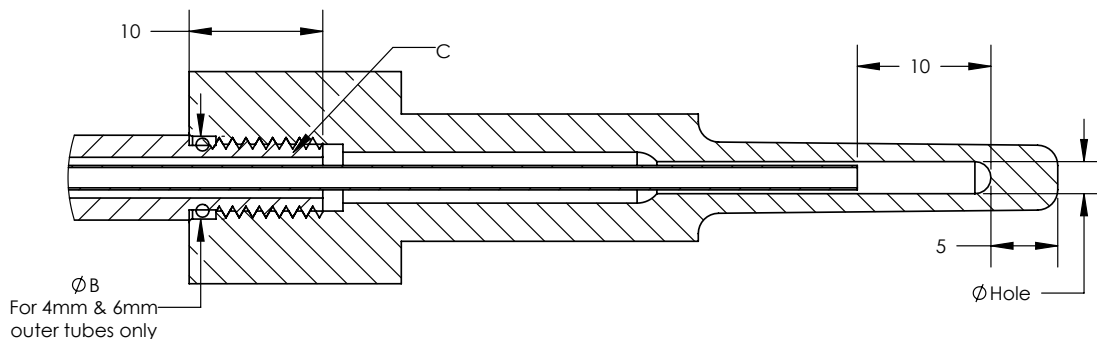
10 Custom Marking

xxxxx = marking
 (only if **-M** denoted)

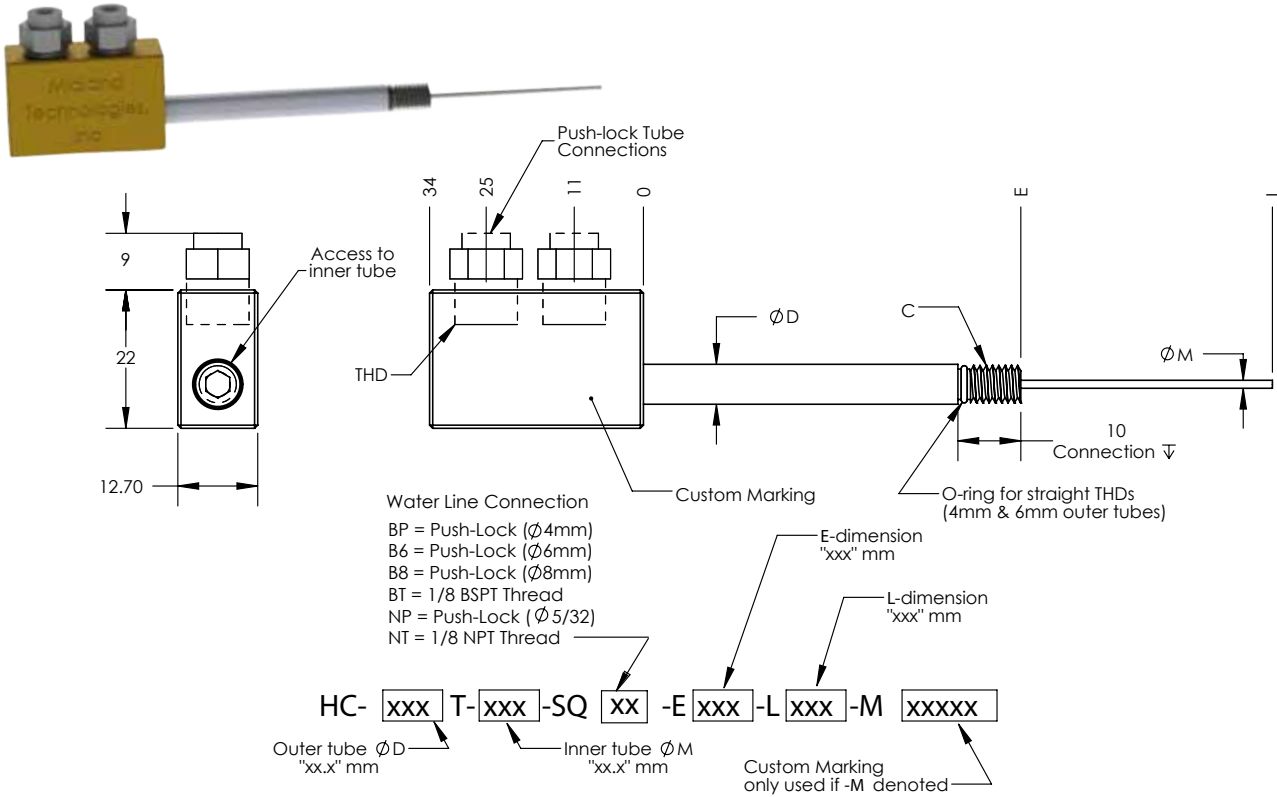
Rotating Head Hydro Cooler With Threaded Connection



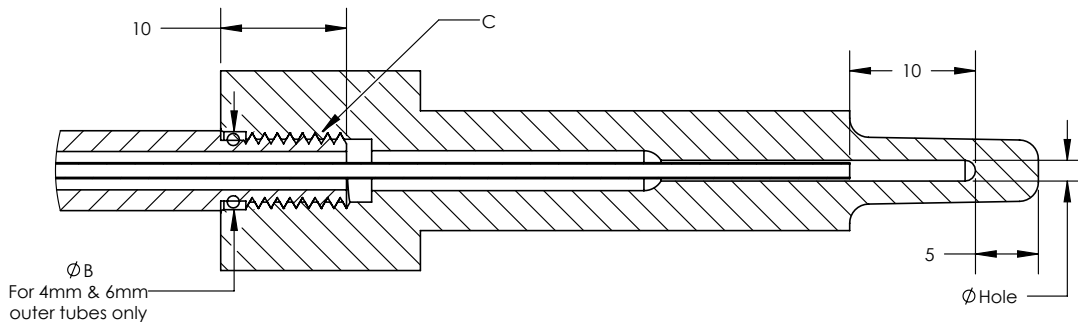
Part Number		ϕD	ϕM	C	ϕB	ϕ Hole	Hex	A	B
HC-040T	012	4	1.2	M4x0.7	4.2	1.7			
	015		1.5			2.0			
HC-060T	012	6	1.2	M6x1.0 {1/4-20}	6.2	1.7	7	12.7	22
	015		1.5			2.0			
	018		1.8			2.4			
	023		2.3			3.0			
HC-080T	015	8	1.5	1/16 BSPT {1/16 NPT}	NA	2.0			
	018		1.8			2.4			
	023		2.3			3.0			
HC-080T	028	8	2.8	1/16 BSPT {1/16 NPT}	NA	3.6			
HC-100T	018	10	1.8	1/8 BSPT {1/8 NPT}	NA	2.4	10	15.9	25.4
	023		2.3			3.0			
	028		2.8			3.6			
	032		3.2			4.2			



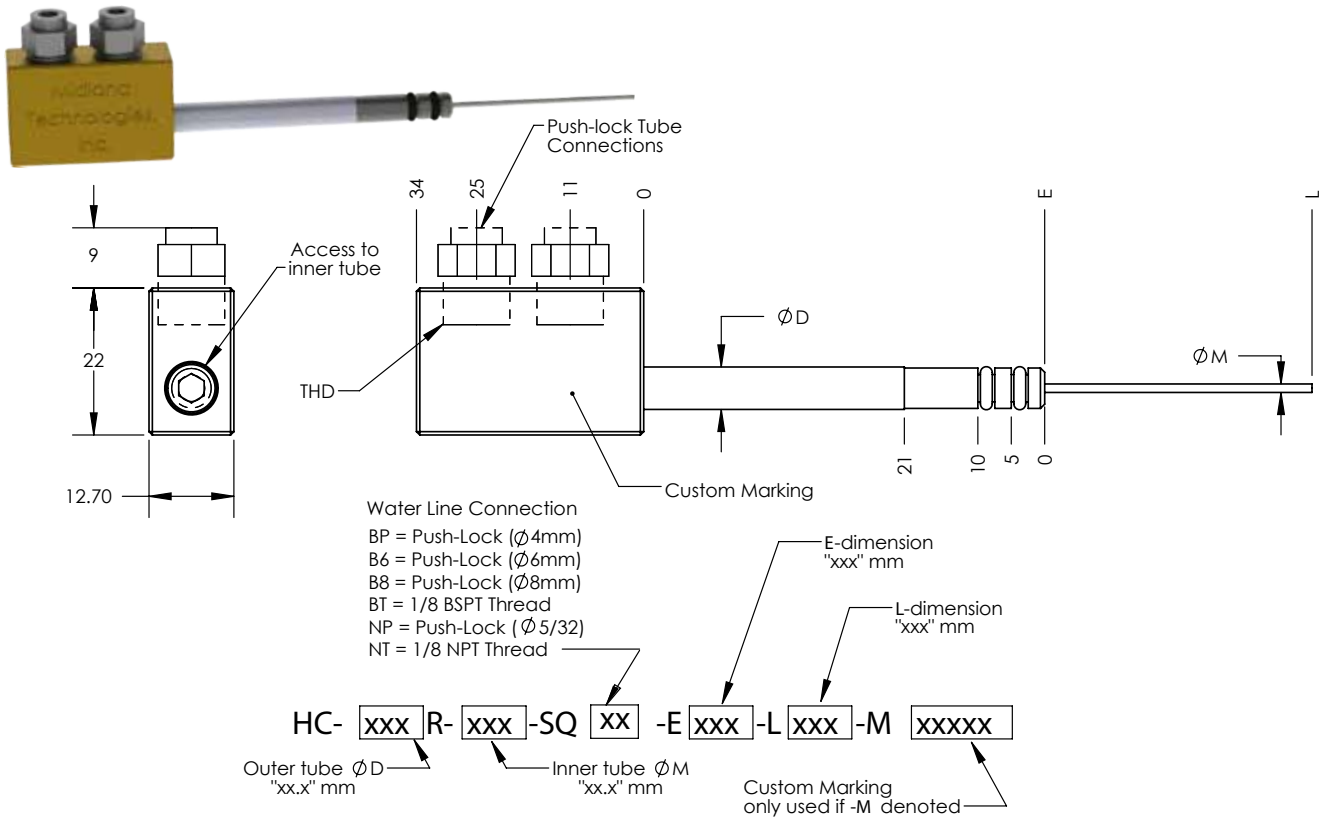
Stationary Head Hydro Cooler With Threaded Connection



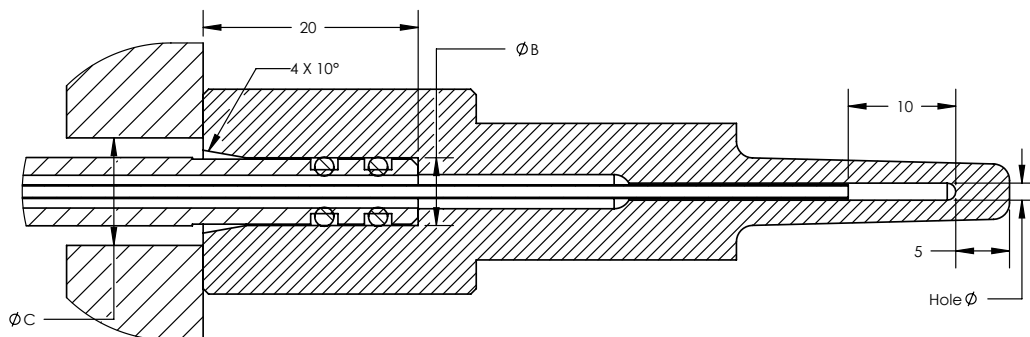
Part Number		Ø D	Ø M	C	Ø B	Ø Hole
HC-040T-	013	4	1.3	M4x0.7	4.2	1.7
	013		1.3			1.7
HC-060T-	018	6	1.8	M6x1.0 {1/4-20}	6.2	2.4
	023		2.3			3.0
	018		8			1.8
HC-080T-	023	2.3		3.0		
	028	2.8		3.6		
HC-100T-	018	10	1.8	1/8 BSPT {1/8 NPT}	NA	2.4
	023		2.3			3.0
	028		2.8			3.6
	032		3.2			4.2



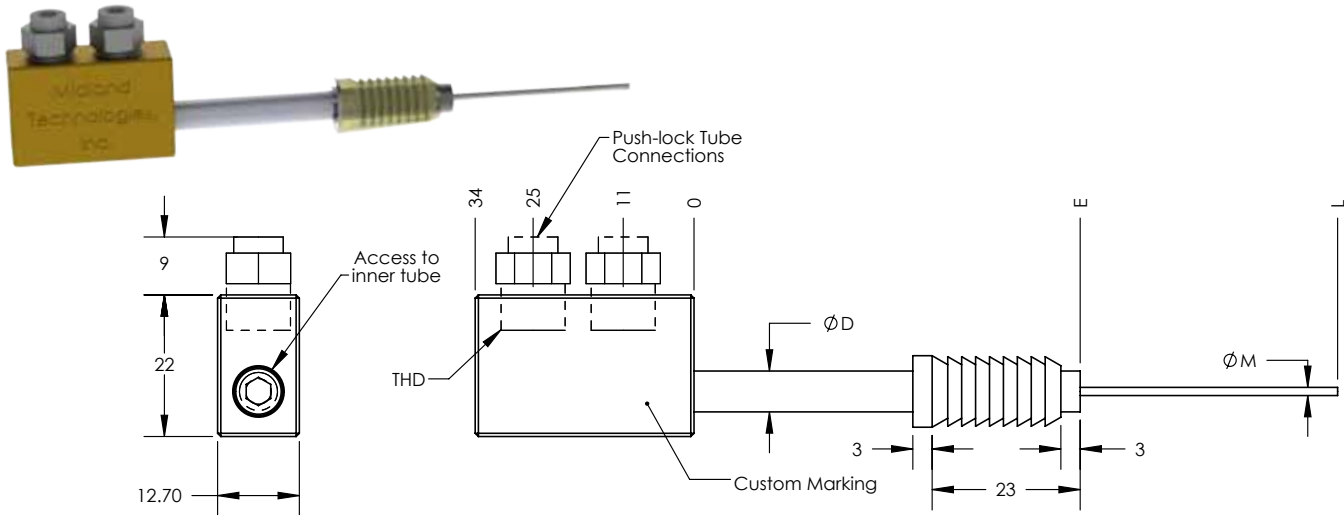
Stationary Head Hydro Cooler with O-ring Connection



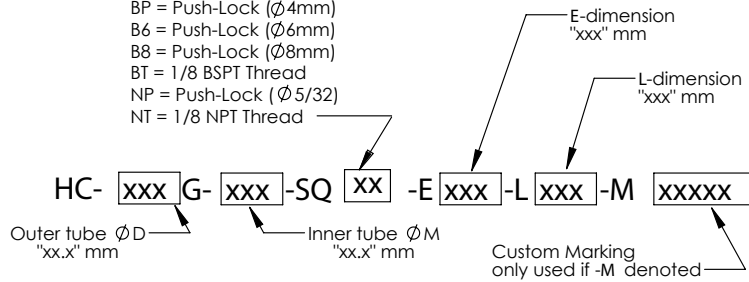
Part Number		ϕD	ϕM	ϕC	ϕB	ϕ Hole
HC-060R-	013	6	1.3	10	6.3	1.7
	018		1.8			2.4
	023		2.3			3.0
HC-080R-	018	8	1.8	12	8.2	2.4
	023		2.3			3.0
	028		2.8			3.6
HC-100R-	018	10	1.8	13	10	2.4
	023		2.3			3.0
	028		2.8			3.6
	032		3.2			4.2



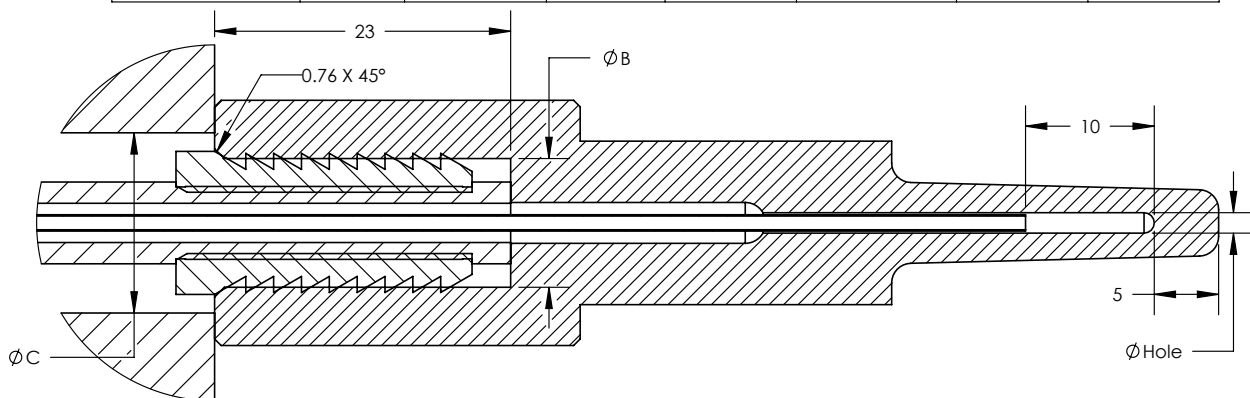
Stationary Head Hydro Cooler With Grommet



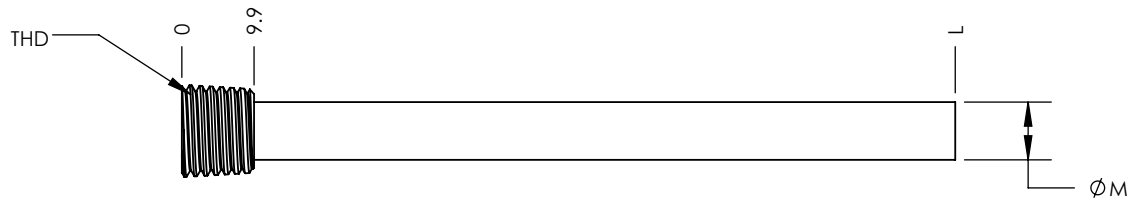
Water Line Connection
 BP = Push-Lock (Ø4mm)
 B6 = Push-Lock (Ø6mm)
 B8 = Push-Lock (Ø8mm)
 BT = 1/8 BSPT Thread
 NP = Push-Lock (Ø5/32)
 NT = 1/8 NPT Thread



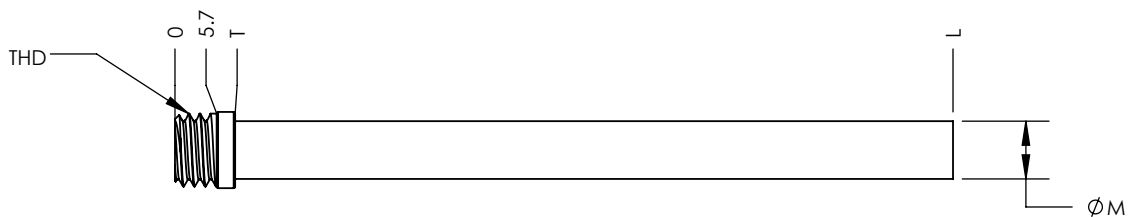
Part Number		Ø D	Ø M	Ø C	Ø B	Ø Hole
HC-060G-	013	6	1.3	14	10	1.7
	018		1.8			2.4
	023		2.3			3.0
HC-080G-	018	8	1.8	17	13	2.4
	023		2.3			3.0
	028		2.8			3.6



Hydro Cooler Replacement Tubes



Part Number	THD	T	Ø M
HC-IT-040-1/16NPT	1/16 NPT	7.9	3.2
HC-IT-060-1/16NPT	1/16 NPT	7.9	4.6
HC-IT-080-1/8NPT	1/8 NPT	8.3	8.0
HC-IT-100-1/8NPT	1/8 NPT	8.3	9.5



Part Number	THD	T	Ø M
HC-IT-040-M5	M5 x 0.8	7.9	3.2
HC-IT-060-M7	M7 x 1.0	7.9	4.6
HC-IT-080-M10	M10 x 1.5	8.3	8.0
HC-IT-100-M12	M12 x 1.75	8.3	9.5



Part Number	THD	Ø M
HC-IT-012-M4	M4 x 0.7	1.2
HC-IT-015-M4		1.5
HC-IT-018-M4		1.8
HC-IT-023-M4		2.3
HC-IT-012-M5	M5 x 0.8	1.2
HC-IT-015-M5		1.5
HC-IT-018-M5		1.8
HC-IT-023-M5		2.3
HC-IT-028-M5		2.8
HC-IT-032-M5		3.2

Ecosystem for HPDC

From porosity reduction to temperature control, we've got you covered.



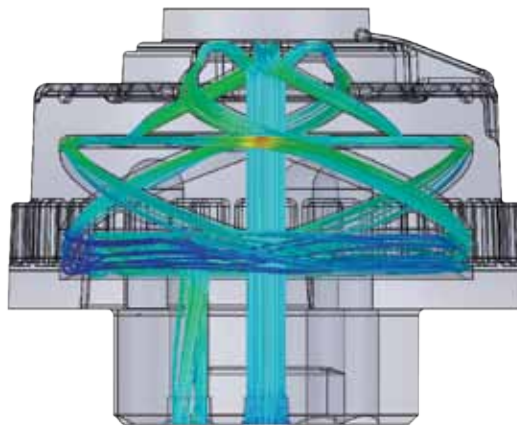
Vacuum Assist and Venting

- Structural or Cosmetic Castings
- World Class Pumps
- Customizable



High Velocity Hydro Cooling

- Rotating or Stationary
- Flat Pricing
- Fast Delivery



Conformally Cooled Inserts

- Premium H-13
- No 3D Printing
- No Weld

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