

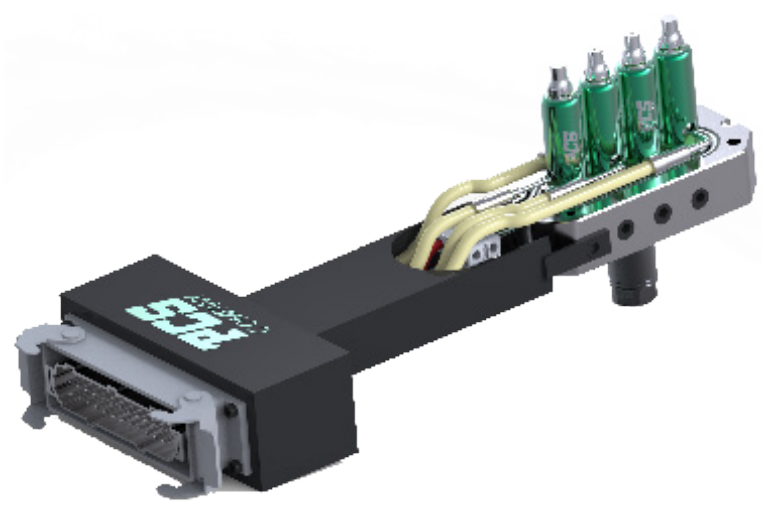
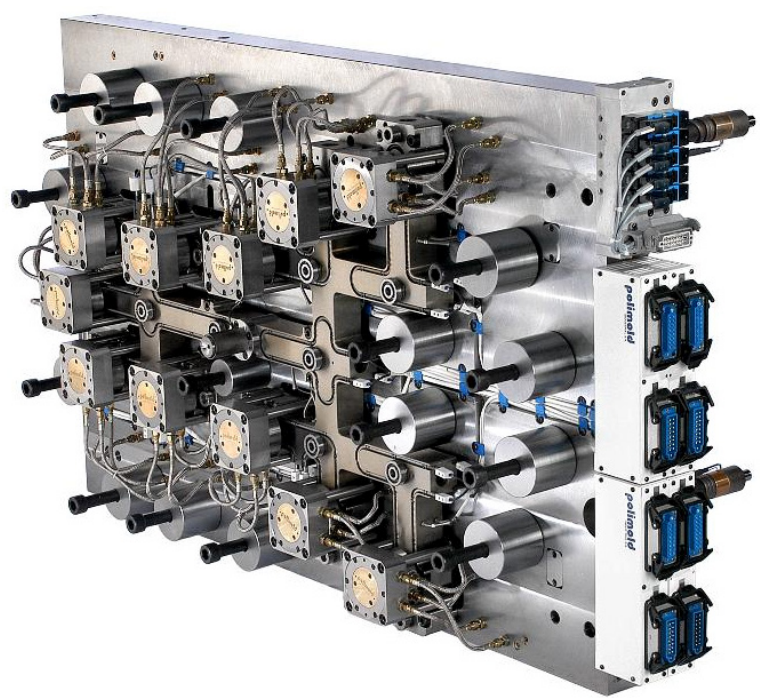
HOT RUNNER SYSTEMS

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Complete line of Hot Runner Systems

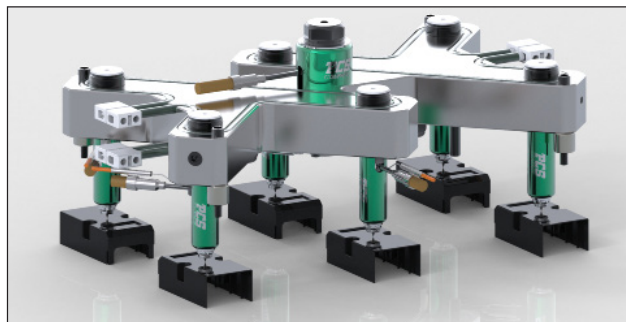
PCS Company offers both Thermal Gate and Valve Gate Hot Runner Systems. For superior gate cosmetics and sequential part filling when surface quality is important, choose a Valve Gate System. For easy maintenance and reliability PCS Company Thermal Gate Systems provide dependable performance. Both Thermal Gate and Valve Gate Systems are available at a complete Hot Half, Manifold & Components, or as a Facility System.



Emerald Hot Runner Systems

PCS Company hot runner systems are developed to offer the customer a competitive option to meet today's demanding delivery requirements. Every system is designed and constructed to ensure that customers have years of reliable performance.

The Emerald systems offers two thermal gate options: Classic & Threaded. Either option is ideal for eight drops or less.



PCS Company Emerald Hot Runner Systems provide ease of design and ease of service. The Emerald Classic and the Emerald Threaded systems are designed to share common components, reducing replacement part inventory.

Affordability, reliability, & delivery; the three most critical success factors in any hot runner system. From initial design to daily use and routine maintenance, PCS Company Emerald Hot Runner Systems perform.

Classic Design



Threaded Design



Classic & Threaded Nozzle Selection Guide

Tip Style		NOS		NOX		NPS		NPX		POS		PPS		PPX		ENX	
Flow Channel Diameter (mm)		5	7	5	7	5	7	5	7	5	7	5	7	5	7	5	7
Gate Diameter (mm)		0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	0.6-2.0	0.8-3.0	1.5-3.0	2.0-4.0
Resin / Nozzle Selection Guide	Low Viscosity																
	Part Weight (grams)	200	420	200	420	200	420	200	420	350	620	350	620	350	620	350	620
	PP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	PS/PE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Medium Viscosity																
	Part Weight (grams)	120	260	120	260	120	260	120	260	150	310	150	310	150	310	150	310
ABS/SAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
POM	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PA6/PA66	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PBT	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	
High Viscosity																	
Part Weight (grams)	40	110	40	110	40	110	40	110	80	200	80	200	80	200	80	200	
PC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PMMA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
PPO	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	
PES/PEK	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	
PPS/PEI	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	Call	

Call PCS Company

A technical discussion with a PCS Company Hot Runner Specialist will determine the appropriate nozzle/resin combination for your specific application.

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Classic & Threaded Nozzle Selection Guide

Emerald Classic

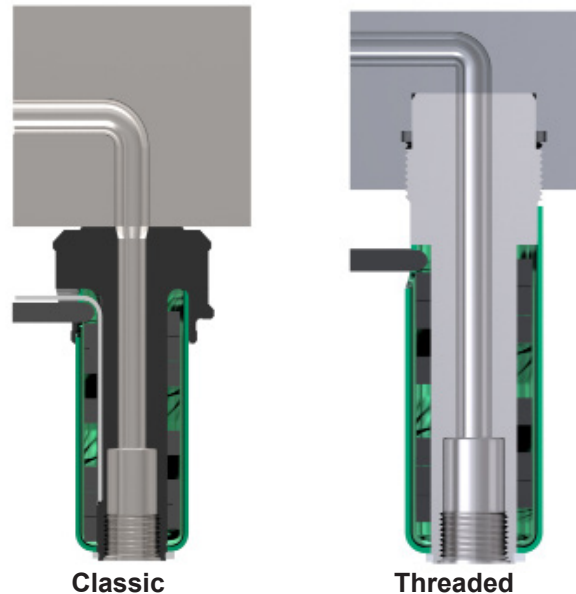
- Available Construction:
 - Complete Hot Half
 - Manifold and Components

Emerald Threaded

- Available Construction:
 - Complete Hot Half
 - Pre-Wired

Each Emerald System is supplied with:

- User manual
- 2D & 3D CAD files
- Customer specified connectors
- Nozzles offered with 5 mm or 7 mm flow channels
- Choice of tips for filled or unfilled resins
- Ceramic insulation technology used on all support pads
- Stainless Steel manifolds
- P20 or Stainless Steel hot half plates



Tip Styles:

NOS: Open Nut point tip style. Used for minimal gate vestige. TZM tip option for abrasive resins.

NOX: Open Nut style with extended point tip. Standard style only. Used for minimal gate vestige.

NPS: Bush Nut style with a point tip. TZM tip option for abrasive resins.

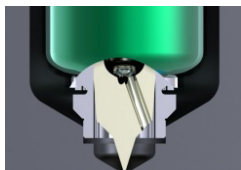
NPX: Extended Bush Nut style with point tip. Applications for gating on a contour or sprue. TZM tip option.

POS: Open Nut style with flow through tip. Open flow for minimal shear and good for recycled resins.

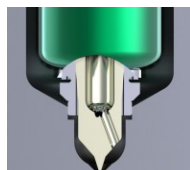
PPS: Bush Nut style with flow through tip. Open flow for minimal shear and good for recycled resins.

PPX: Extended Bush Nut style with flow through tip. Open flow for minimal shear and good for recycled resins.

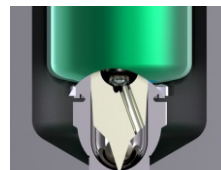
ENX: Extended Sprue Nut style. Open flow design for less stress. Used for gating into runners



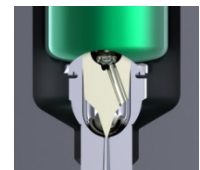
NOS



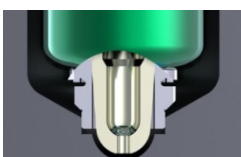
NOX



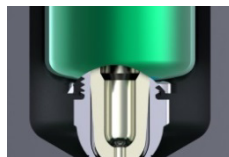
NPS



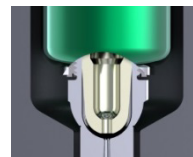
NPX



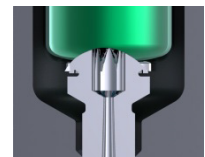
POS



PPS



PPX



ENX

Needles:

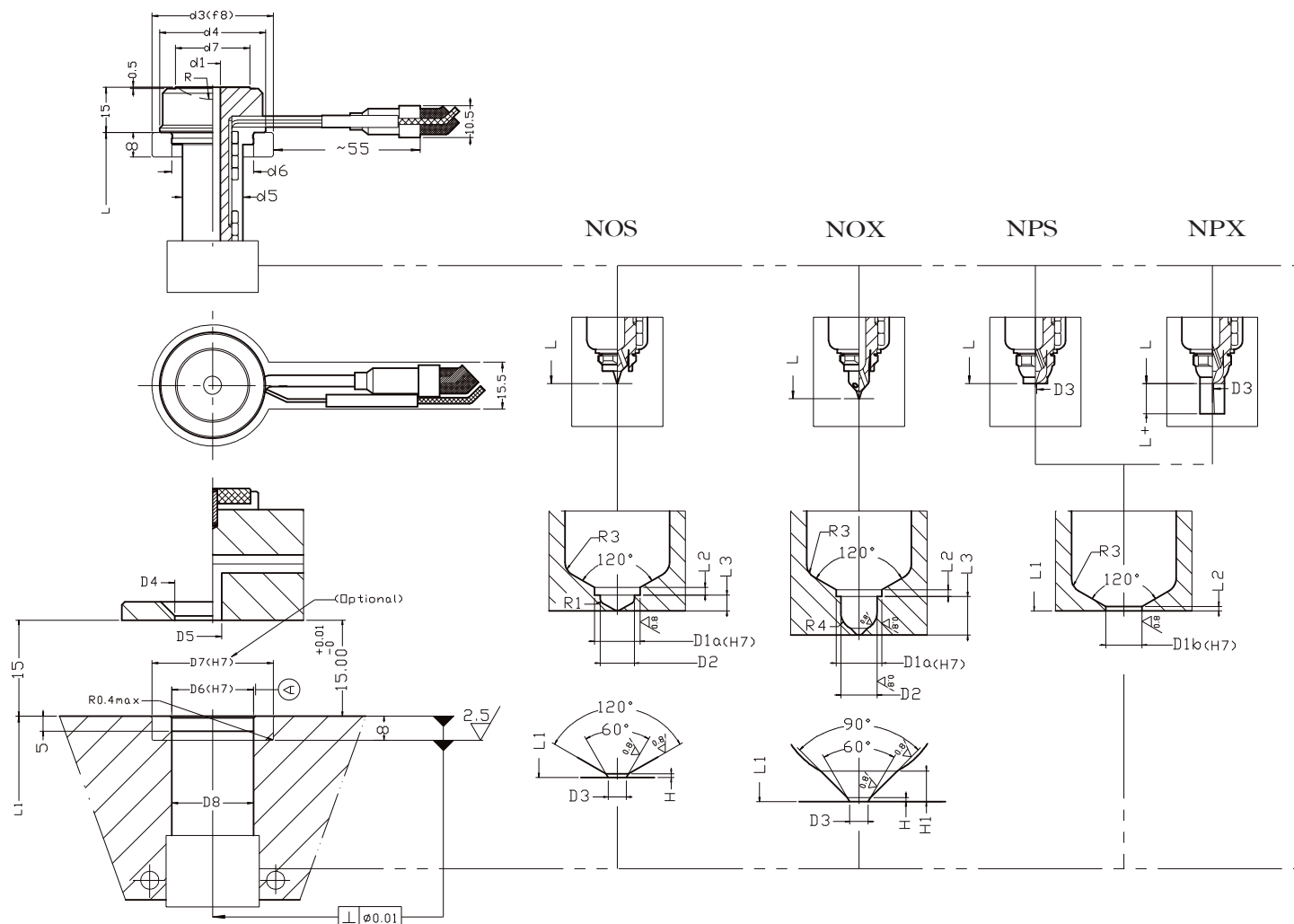
Our standard hardened copper alloy tips are suitable for all non-filled resins. The TZM needle is a wear resistant needle with excellent heat conductivity, and should be used with abrasive resins such as glass filled or mineral filled resins.

Emerald Classic Nozzle

Size	5 mm					
L	40	50	60	80	100	120
L1	40.11	50.13	60.15	80.18	100.22	120.26
L (NOX)	45	55	65	85	105	125
L1 (NOX)	40.11	50.13	60.15	80.18	105.22	125.26
d1	5					
d3	C30,T30					
d4	29					
d5	20					
d6	23					
d7	18					
D4	20					
D5	5					
D6	23					
D7	C30,T30					
D8	23					

Size	7 mm						
L	40	60	80	100	120	140	160
L1	40.12	60.15	80.19	100.23	120.27	140.31	160.34
L (NOX)	45	65	85	105	125	145	165
L1 (NOX)	45.12	65.15	80.19	105.23	125.27	145.31	165.34
d1	7						
d3	C40,T36						
d4	35						
d5	24						
d6	27						
d7	24.5						
D4	26.5						
D5	7						
D6	27						
D7	C40,T36						
D8	27						

C=Ceramic;T=Titanium



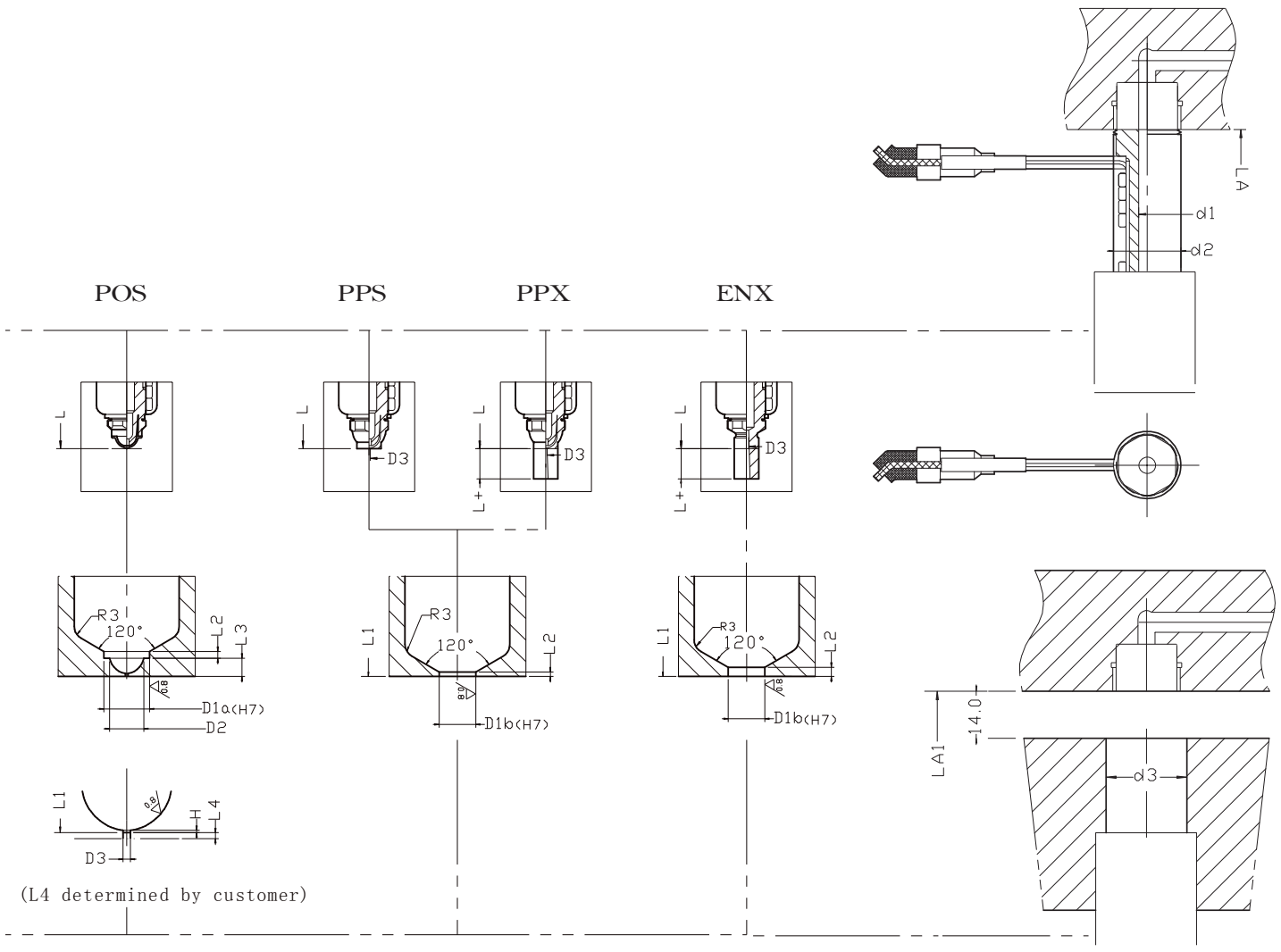
Tip Style	ALL		NOS					NOX					NPS		NPX			
Dimension	D1a	D1b	L2	L3	D2	D3	H	L2	L3	D2	D3	H	H1	L2	D3	L2	LA+	D3
5 mm	10	8	2	3.5	7.5	2 ≥ 0.6	0.2	2	8.5	8	2 ≥ 0.6	0.2	1.5	1	2 ≥ 0.6	1	10	2 ≥ 0.6
7 mm	12	10	2.5	3.5	9	3 ≥ 0.8	0.2	2.5	8.5	9	3 ≥ 0.8	0.2	1.5	1.5	3 ≥ 0.8	1.5	15	3 ≥ 0.8

Tip detail for both Classic and Threaded Nozzles

Emerald Threaded Nozzle

Size	5 mm				
LA	64	74	94	114	134
LA1	64.15	74.17	94.21	114.25	134.29
LA (NOX)	69	79	99	119	139
LA1 (NOX)	69.15	79.17	99.21	119.25	139.29
d1	5				
d2	20				
d3	23				

Size	7 mm					
LA	74	94	114	134	154	174
LA1	74.18	94.22	114.26	134.29	154.33	174.37
LA (NOX)	79	99	119	139	159	179
LA1 (NOX)	79.18	99.22	119.26	139.29	159.33	179.37
d1	7					
d2	23					
d3	27					



Tip Style	ALL		POS					PPS		PPX			ENX		
Dimension	D1a	D1b	L2	L3	D2	D3	H	L2	D3	L2	LA+	D3	L2	LA+	D3
5 mm	10	8	2	3.5	7.5	3 ≥ 0.6	0.2	1	3 ≥ 0.6	1	10	3 ≥ 0.6	2	10	3 ≥ 1.5
7 mm	12	10	2.5	3.5	9	4 ≥ 0.8	0.2	1.5	4 ≥ 0.8	1.5	15	4 ≥ 0.8	2	15	4 ≥ 2

Tip detail for both Classic and Threaded Nozzles

Emerald Ceramic Technology



With only 7% of the heat conductivity of steel, ceramic spacers make an exceptional insulator, which reduces heat loss and mold start up time. When used in manifold designs, ceramic insulation is superior to other materials, and provides incredible strength and support to ensure mold stability.

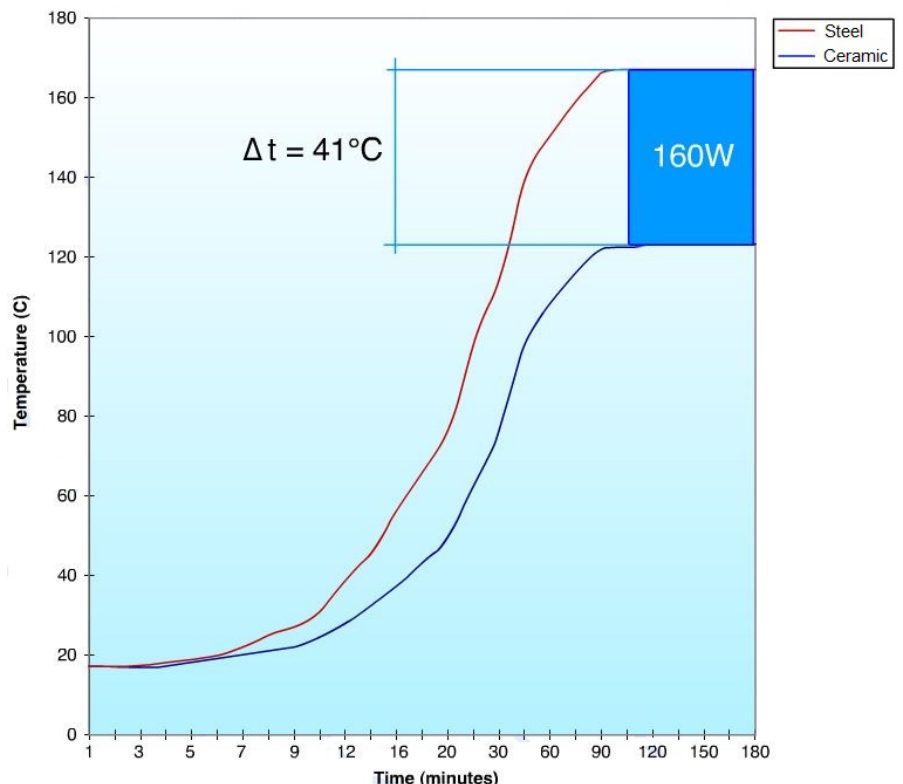
The Ceramic Difference

Comparison of heat loss between Steel & Ceramic manifold spacers.

Ceramic spacers insulate the manifold from the hot runner plates. The reduced heat loss provides increased temperature control of the hot runner system, locking heat into the mold.

The diagram at the right shows the difference between the heat that is transferred from the hot runner manifold to the clamp plate when using steel spacers versus ceramic spacers.

One side of the test manifold used 4 steel spacers and the other side used 4 ceramic spacers.



Hot Runner Systems

Policosmetic™

Policosmetic is the ideal solution for medium sized parts requiring high production levels. Hot half systems are engineered for low heat transfer, excellent thermal stability and uniform balance.

- 4 nozzle series with capacities up to 180 grams and over 1000 grams
- Nozzle flow channels ranges are 6mm, 10mm, 14mm and 18mm
- Tip options are point gate, flow through, ring gate and sprue gate
- Systems can be design as a complete hot half or facility systems
- 13 nozzle lengths up to 300mm
- Multiple thermal tip options such as point gate, flow through, ring gate and sprue gate



Hot Runner Systems

Polifast™

Polifast systems are specifically designed for small parts. The Polifast system is the ideal solution for products that require quick cycles and repeatability.

- Ideal for multi cavity molds
- Uniform manifold balancing
- Manifold and hot half plates constructed of stainless steel
- Polished manifold flow channels
- Multiple thermal gate solutions (point gate, extended point gate, flow through, sprue gate and ring gate tips) to accommodate various gating options
- Nozzles with 4mm flow channels and 6 length options for parts up to 30 grams
- Nozzles with 5mm flow channels and 13 length options for parts up to 80 grams



Hot Runner Systems

Polimax™

Polimax has been developed for a wide range of products. Ideal for both engineered and commodity resins.

- 5 nozzle series with capacities up to 30 grams and over 1000 grams
- Nozzle flow channels range from 5mm to 18mm
- 13 nozzle lengths to accommodate various designs
- Thermal gate tip options for engineered and commodity resins
- Tip options range from point gate, sprue gate or ring gate
- Complete Hot half, Facility and Manifold / Component system options
- Wear resistant needles available for filled resins



Hot Runner Systems

Polivalve™

Polivalve is the best choice for superior gate cosmetics and the ability to sequentially control the valve gate pins. Zero gate vestige on the molded product which improves part appearance and the need for any secondary trimming of the gate.

- Side entry to the nozzle body from the manifold to ensure minimum flow disturbance, improves system reliability and less pressure loss.
- 12 nozzle lengths that range from 52mm to 500mm
- Full body and bodiless tips options
- 6 nozzle series with valve gate pins that range from 2mm to 8mm diameter molding over 1000 gram parts
- 500 series and up can be designed as a complete hot half or facility systems

