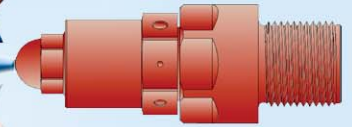
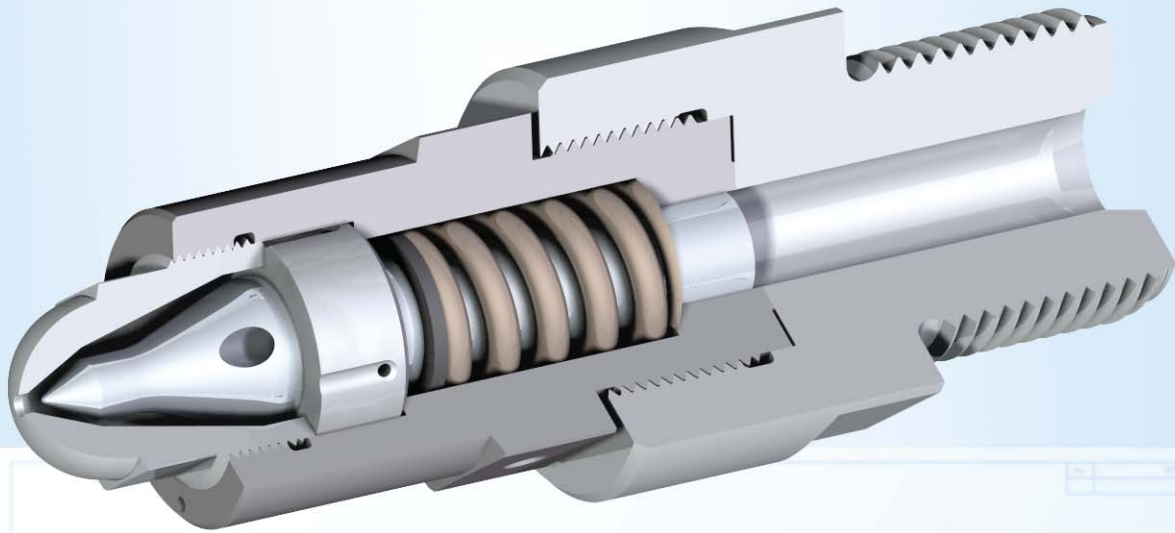


SHOT MASTER



The Shut-off Nozzle That You Can Control
With Adjustable Spring Tension and Adaptive Flexibility



- Optimized Heat Transfer
- No Shearing of Melt
- Controlled, Clean Shut-off of the Melt Stream
- Reduced Cycle Time
- No Drooling
- Improved Sprue Break
- Minimal Pressure Drop

 **Plasti~Co**
Equipment Company



Shut-off Nozzle Systems

The Shot Master nozzle systems are a professional, highly reliable shut-off system that meets all requirements for dependable, trouble free production of injection molded parts. Shot Master Systems are used to process thermoplastics and liquids. They provide clean shut-off of melt and reliable closing during metering. Available in two model sizes and a variety of configurations, we can put together a system to fit the specific needs of your application.

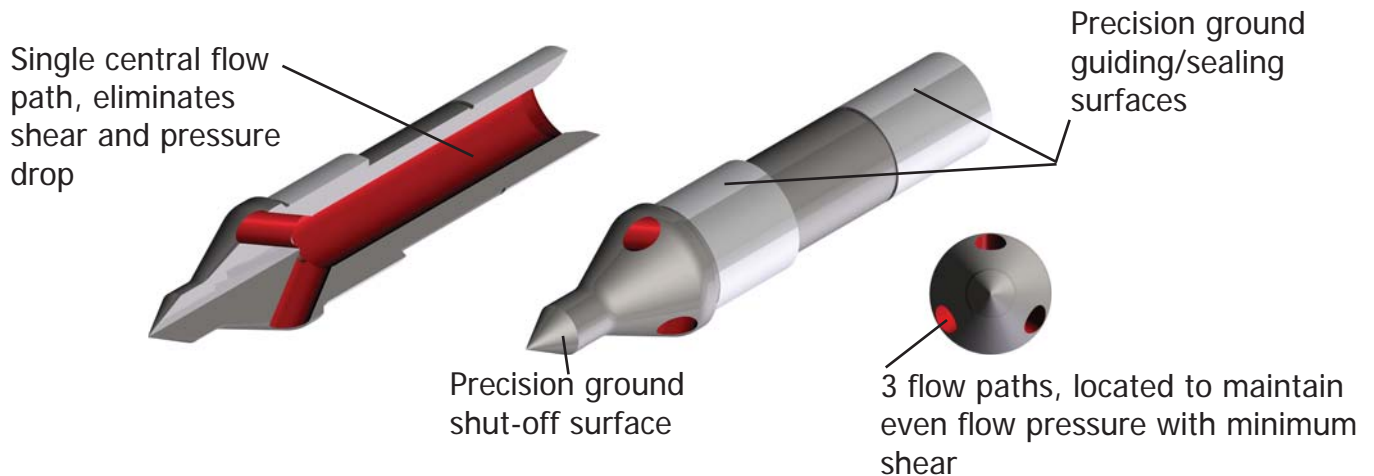


ST-10 Series



ST-20 Series

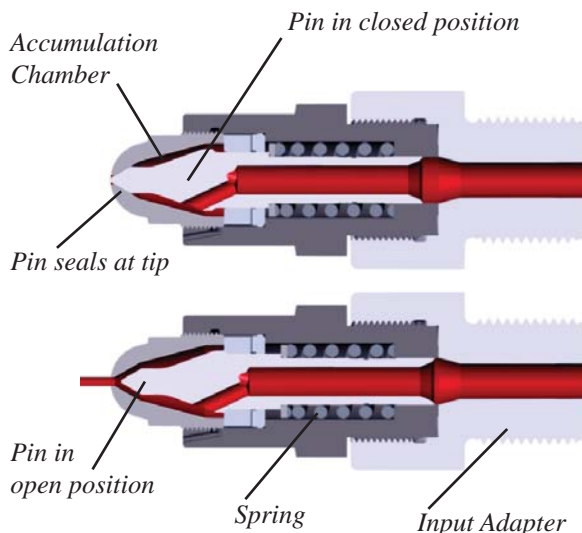
Shut-off Pin Technology



The Shot Master Series shut-off nozzles use a very unique system. The melt is channeled directly through the center of the pin instead of "around" a shut-off mechanism. This simple but effective design decreases pressure drop and virtually eliminates shear. This, combined with high precision manufacturing tolerances, provides what we feel to be the absolute best shut-off system the industry has to offer.



Shut-off Nozzle Operation



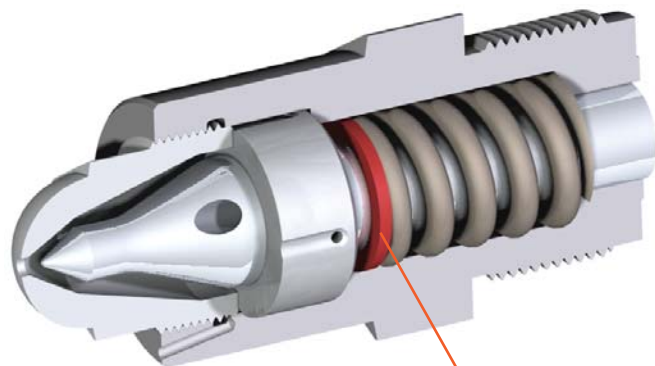
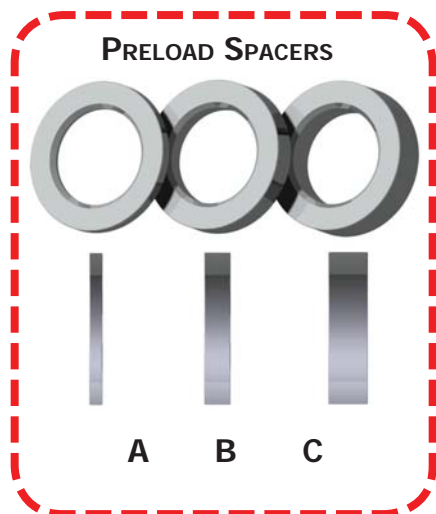
The spring operated nozzles maintain a normally closed position, held in place by the force of the spring. The melt from the injection machine is forced through the center of the pin and accumulates in the chamber in front of the pin. Once the injection pressure exceeds the force of the spring. The pin moves back away from the seating surface and opens the valve.

After the injection process, the pressure drops which allows the spring to force the pin forward and close the valve. The springs are manufactured of a high temperature, high strength alloy to provide a long trouble-free life. The nozzle input adapters will be specifically designed for your application.

Adjustable Spring Tension

The ST10 and ST20 series nozzle systems are provided with an adjustable spring pre-load, via interchangeable spacers (shown in red). This gives them the flexibility to be dialed into the operating characteristics you require.

Varying the spring preload will adjust the pressure required to overcome the spring and open the valve. This can be especially useful with higher back pressures.



Interchangeable Spring Preload Spacer

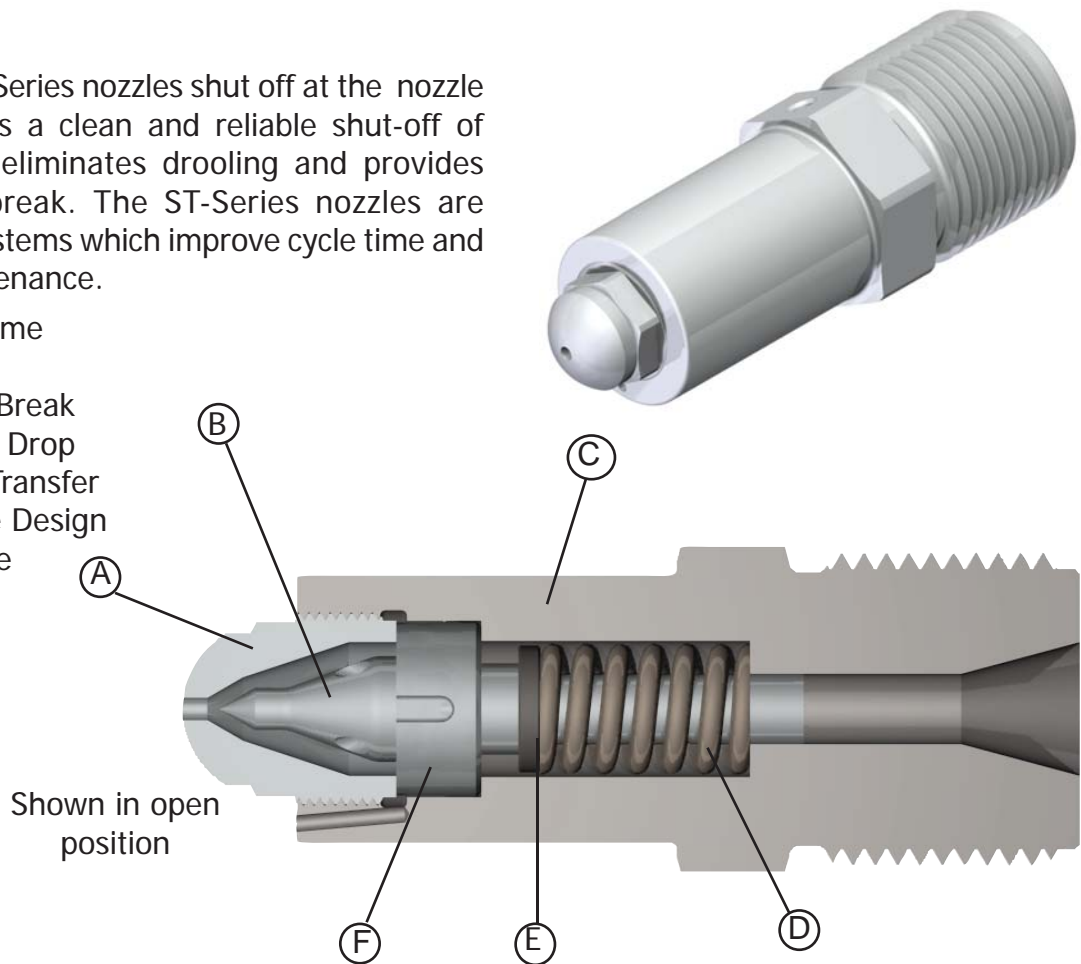


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800.521.0704 / 810.227.2266

ST-10 Series

Shot Master ST10-Series nozzles shut off at the nozzle tip, which provides a clean and reliable shut-off of the melt stream, eliminates drooling and provides improved sprue break. The ST-Series nozzles are spring operated systems which improve cycle time and simplicity of maintenance.

- Reduced Cycle Time
- No Drooling
- Improved Sprue Break
- Minimal Pressure Drop
- Optimized Heat Transfer
- Compact Reliable Design
- Easy Maintenance



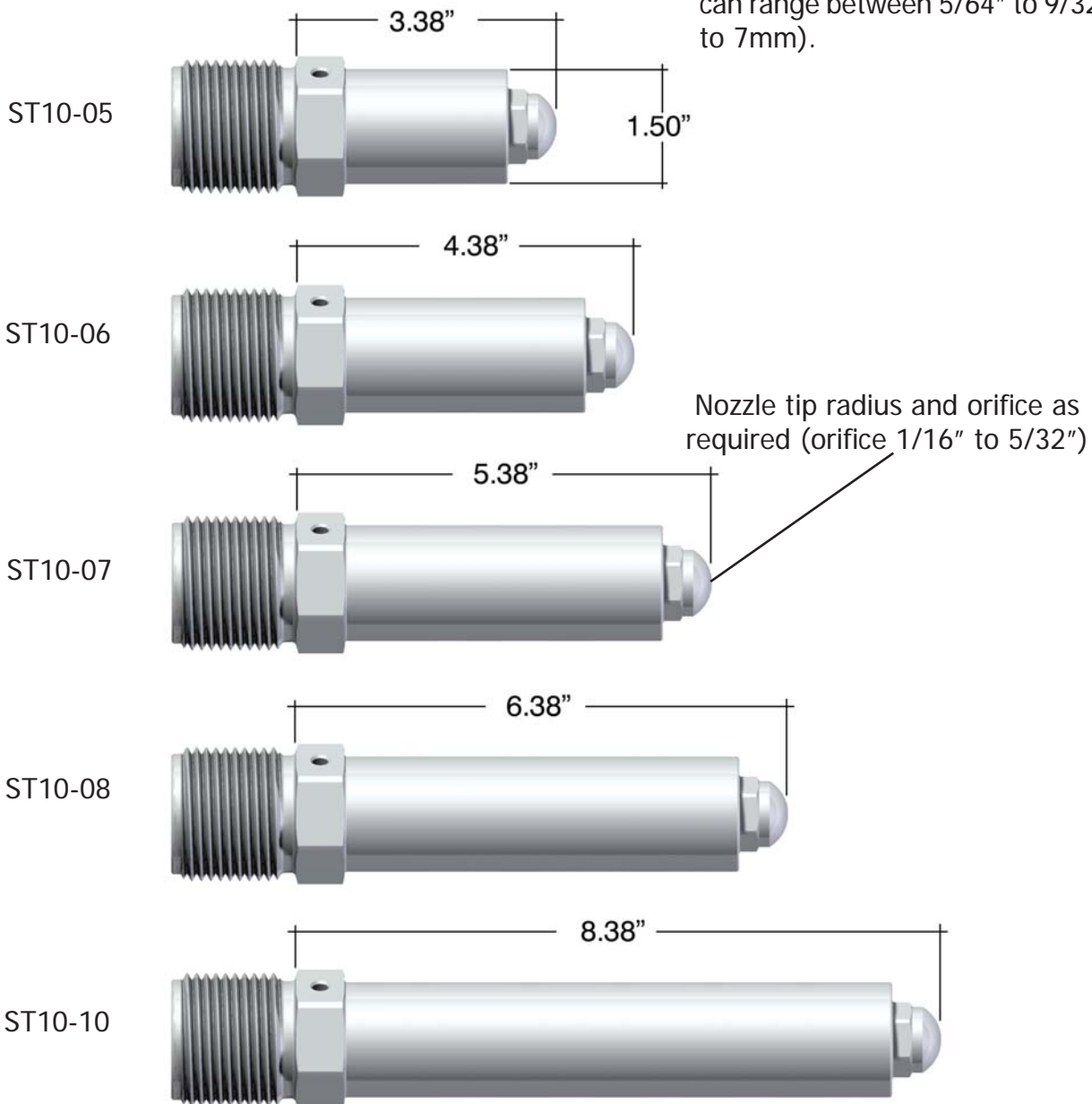
The needle moves axially within the nozzle and is held in the closed position by the spring. The melt pressure passes through the needle, building up in front of it. It then forces the needle back, which opens at the tip for flow. After injection the needle returns to the closed position and the cycle repeats.

Details		
A	Nozzle Tip	Available in a variety of radii and orifice configurations.
B	Shut-off Pin	Provides a seal at the orifice via precision machined mating surfaces.
C	Nozzle Body	Compact one-piece design machined from a high strength alloy provided with thermocouple threads in the hex. 1 3/4-8 thread standard, custom threads available
D	Actuating Spring	Provides force to the needle for shut-off. Constructed of a high temp alloy stable to 900 °F (500 °C)
E	Spring Spacer	Interchangeable spacer provides adjustable spring preload.
F	Guide Ring	Precision ground shut-off pin guide ring.

ST-10 Series

ST10-Series Specifications	
Max Injection Flow	18.0 in ³ /sec (300 cm ³ /sec)
Max Operating Temp	750°F (400°C)
Max Injection Pressure	36,250 psi (2500 bar)
Max Back Pressure	2900 psi (200 bar)
Orifice Range	1/16" - 5/32" (1.5mm-4mm)
Shot Size	2oz to 43oz
Approx. Screw Diameter	Up to 1-1/8" (30mm) Dia
Thermocouple Thread	1/4 - 28 Thread

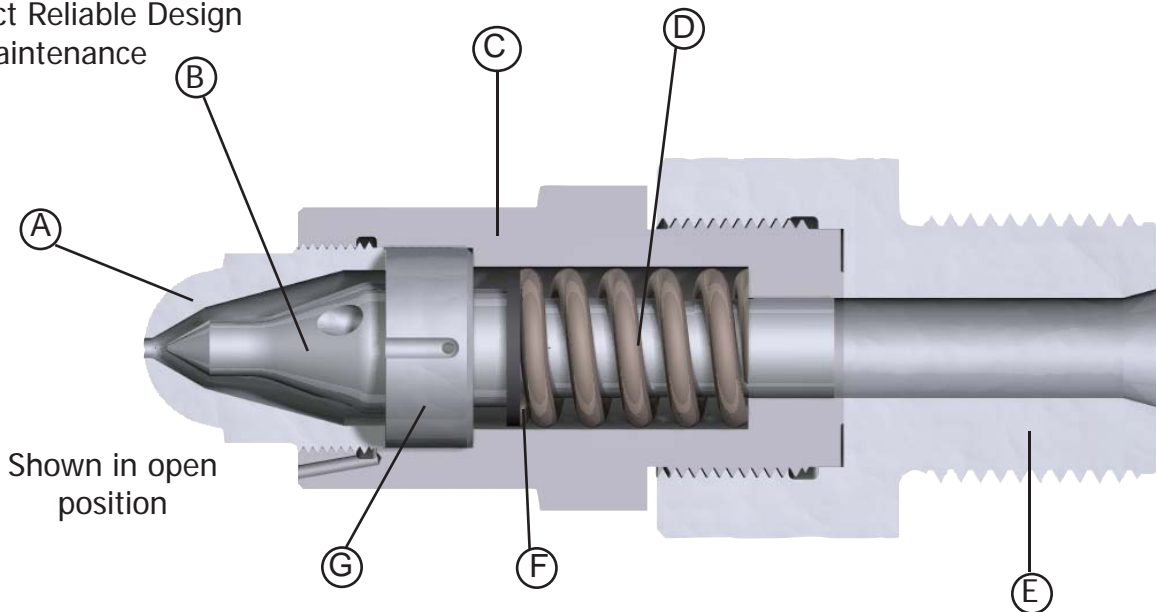
The Shot Master ST10 series shut-off nozzles are a one-piece nozzle body housing design. Provided in an array of standard lengths to accommodate your machine's requirements. The nozzles are standard with a 1 3/4" - 8 input thread. Custom threads to match your machine are also available. The nozzle tips are proprietary to the Shot Master but are available in nearly any radius configuration. The orifice of the ST10 can range between 5/64" to 9/32" (2mm to 7mm).



ST-20 Series

Shot Master ST20-Series nozzles shut off at the nozzle tip, which provides a clean and reliable shut-off of the melt stream, eliminates drooling and provides improved sprue break. The ST-Series nozzles are spring operated systems which improve cycle time and simplicity of maintenance.

- Reduced Cycle Time
- No Drooling
- Improved Sprue Break
- Minimal Pressure Drop
- Optimized Heat Transfer
- Compact Reliable Design
- Easy Maintenance



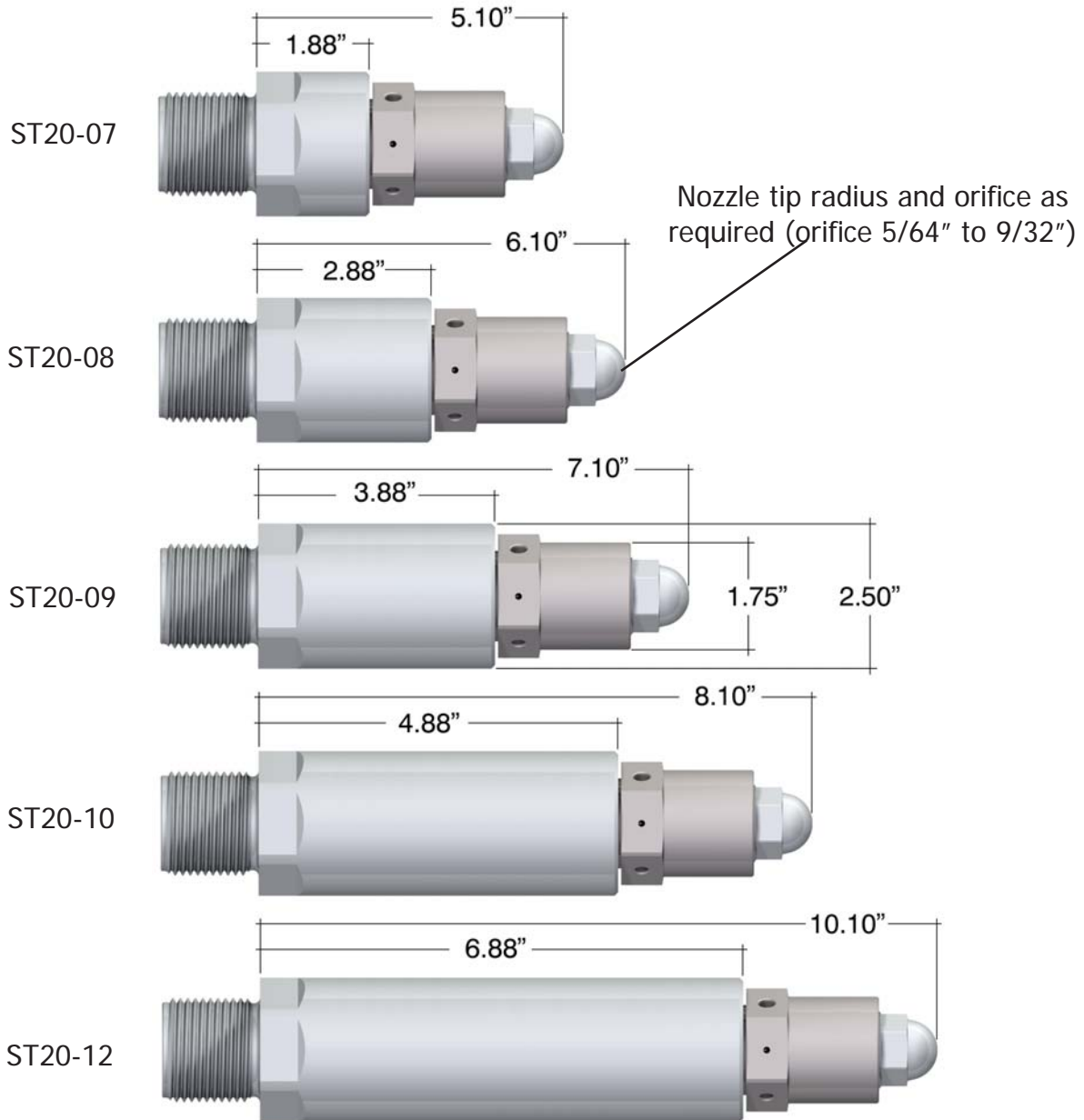
The needle moves axially within the nozzle and is held in the closed position by the spring. The melt pressure passes through the needle, building up in front of it. It then forces the needle back, which opens at the tip for flow. After injection the needle returns to the closed position and the cycle repeats.

Details		
A	Nozzle Tip	Available in a variety of radii and orifice configurations.
B	Shut-off Pin	Provides a seal at the orifice via precision machined mating surfaces.
C	Nozzle Body	Compact one-piece design machined from a high strength alloy provided with thermocouple threads in the hex.
D	Actuating Spring	Provides force to the needle for shut-off. Constructed of a high temp alloy stable to 900 °F (500 °C)
E	Input Adapter	Available in nearly any configurations to suit your specific needs.
F	Spring Spacer	Interchangeable spacer provides adjustable spring preload.
G	Guide Ring	Precision ground shut-off pin guide ring.

ST-20 Series

ST20- Series Specifications	
Max Injection Flow	61.0 in ³ /sec (1000 cm ³ /sec)
Max Operating Temp	750° (400°)
Max Injection Pressure	36,250 psi (200 bar)
Orifice Range	5/64" - 9/32" (2mm-7mm)
Shot Size	300z to 180oz
Approx. Screw Diameter	3/4" to 2-3/8" (20mm-60mm)
Thermocouple Thread	1/4-28 & 1/8-27 Thread

The Shot Master ST20 series shut-off nozzles assemblies are available in configurations to accommodate a variety of length requirements. Through the combination of fixed length modular shut-off nozzles and a variety of input adapters nearly any length requirements can be met. Input adapter threads a standard 1 3/4" - 8. Custom threads top match your machine are also available.



* Lengths shown are standard assemblies. Additional lengths can be achieved with custom adapter designs.

machine and applications specifications

Contact Information

Company	Name
Address	Phone
City	Fax
State/Zip	E-mail

Machine Information

Make:	Model:	
Tonnage:	Shot Size:	Screw Dia:
Materials Run:		

Shut-Off Requirements

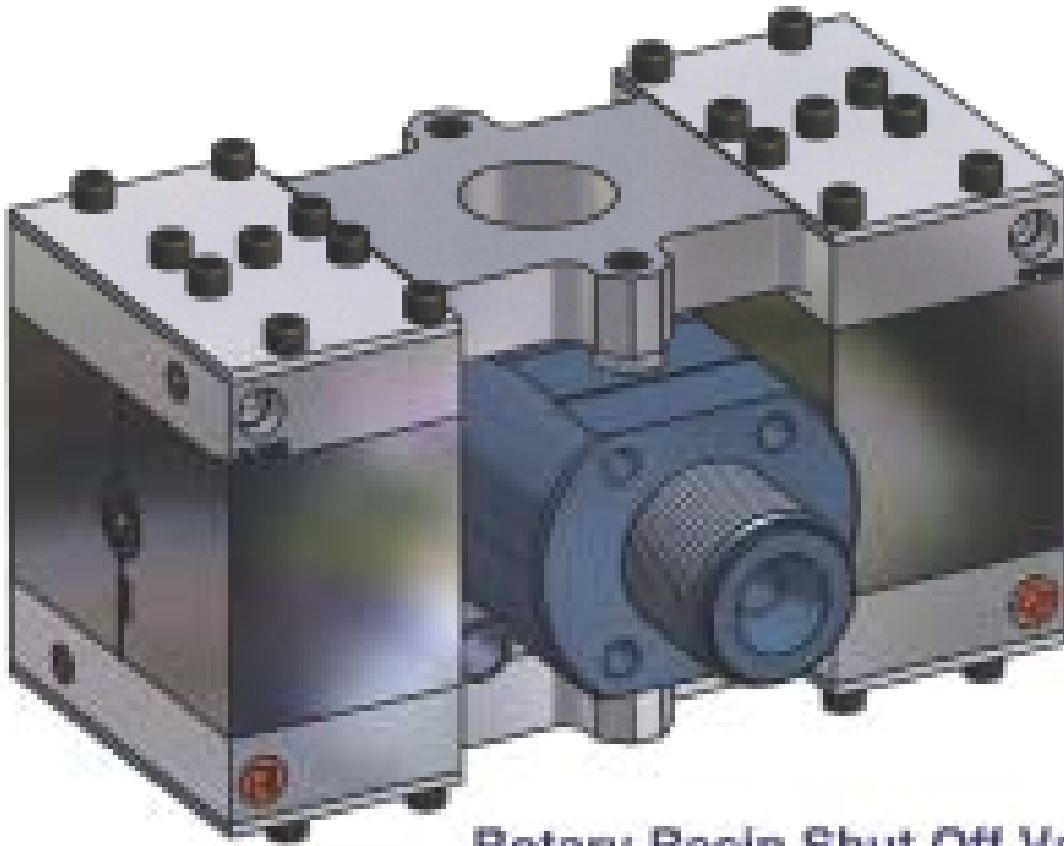
Size:	<input type="checkbox"/> 10 Series	<input type="checkbox"/> 20 Series
Approximate length forward of endcap:		
Nozzle Tip Radius:	Orifice:	
Heater Voltage:	Thermocouple Type:	

Input Thread Specifications

Thread length (A):	
Thread size & pitch (B):	
Rear Opening (C):	
Pilot length (D):	
Pilot diameter (E):	



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Rotary Resin Shut Off Valve-III

PAT. NO. 3,880,284



Rotary Resin Shut Off Valve-IV

PAT. NO. 3,880,284

TAKE A REVOLUTIONARY
TYPICAL

Rotary Resin Shut Off Valves-III & IV

DESCRIPTION:

The JDL Rotary Resin Shut Off Valve installs easily between the injection barrel and nozzle. The standard model has a 1-3/4"-8 male threaded end to engage in the barrel and a 1-3/4"-8 female thread on the opposite end to accept the nozzle. Other threads are available upon request. Minimum swing clearance of 12" is required.

The valve body is 3.5" in diameter and accepts four 3/8" dia. X 6" heater rods with a 1/4-28 thermocouple hole. The valve operates on hydraulic power at 500 PSI maximum and its unique push-push design results in 88.9 foot-lbs. torque at pressure. The latest technology in high temperature seals is used for top performance over the life of the valve. The **Rotary Resin Shut Off Valve-III** withstands temperatures of 800°F continuous for **GAS ASSIST** applications. The **Rotary Resin Shut Off Valve-IV** withstands temperatures of 600°F continuous for **GAS ASSIST** or **CONVENTIONAL** applications.

Both models have an internal manifold and do not require external piping. One inlet port and one outlet port are required. Manifolds have sized orifices that allow hydraulic fluid to circulate back to the tank and help cool the cylinders. The body is heat-isolated by using free air between it and the manifold plates. Seal kits and parts are available off the shelf.

REQUIREMENTS: (Items Not Supplied)

- 1) Hydraulic power unit capable of providing 2 GPM flow and set at 500 PSI maximum.
- 2) Hydraulic hoses rated at 1000 PSI with fittings for 1/4-18 NPT ports.
- 3) Hydraulic 4-way spring return solenoid-operated control valve.

INSTALLATION:

Connect the pressurized hose from the hydraulic power unit's open position port to the control valve's open position port. Install the heater rods and nozzle. Screw the Rotary Resin Shut Off Valve into the barrel. Connect two hoses from the 4-way solenoid control valve to the respective "OPEN" and "CLOSE" ports on the Rotary Resin Shut Off Valve. Wire the control valve's solenoid. Attach and wire the thermocouple and heater rods.

Heat these zones until the temperature required is stabilized.

Operate the valve until air bleeding is complete.

Test for hydraulic leaks. If satisfactory, proceed with injection and processing.

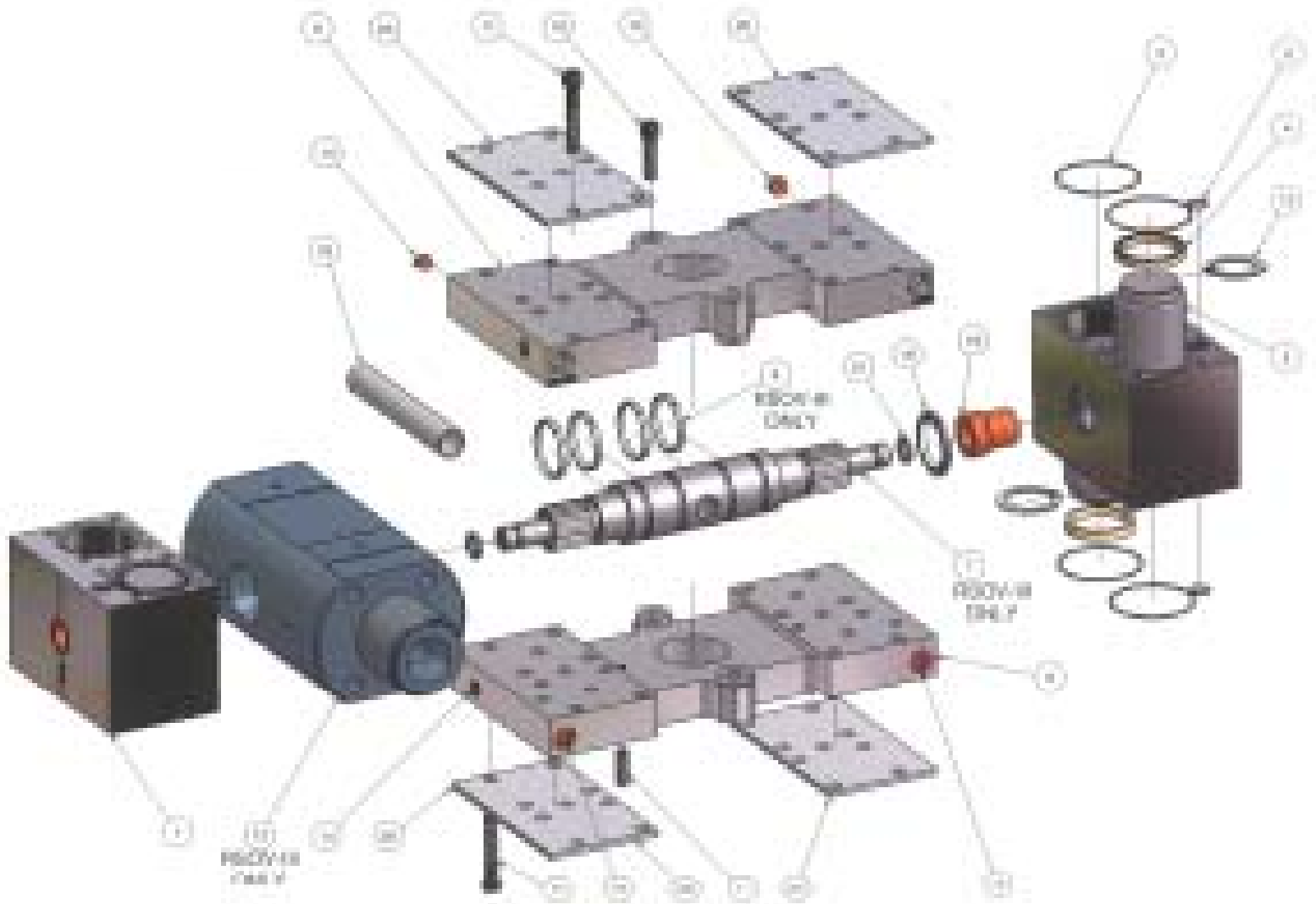
OPERATION for GAS ASSIST:

The **TIMING** of the Rotary Resin Shut Off Valve and **INJECTION** of the resin **MUST BE SYNCHRONIZED** using the following procedure.

- 1) COMPLETE RESIN INJECTION
- 2) CLOSE VALVE
- 3) INJECT GAS

THE ROTARY VALVE-III SHOULD NOT BE USED WITH CONVENTIONAL MOLDING.

Rotary Resin Shut Off Valve-III



Part No.	Part Name	Material	Qty
1	Motor	Cast Iron	1
2	Motor Mounting Bracket	Cast Iron	1
3	Motor Mounting Bolt	Steel	1
4	Motor Mounting Nut	Steel	1
5	Motor Mounting Washer	Steel	1
6	Motor Mounting Seal	Steel	1
7	Motor Mounting Gasket	Steel	1
8	Motor Mounting O-ring	Steel	1
9	Motor Mounting Pin	Steel	1
10	Motor Mounting Spring	Steel	1
11	Motor Mounting Nut	Steel	1
12	Motor Mounting Washer	Steel	1
13	Motor Mounting Seal	Steel	1
14	Motor Mounting Gasket	Steel	1
15	Motor Mounting O-ring	Steel	1
16	Motor Mounting Pin	Steel	1
17	Motor Mounting Spring	Steel	1
18	Motor Mounting Nut	Steel	1
19	Motor Mounting Washer	Steel	1
20	Motor Mounting Seal	Steel	1
21	Motor Mounting Gasket	Steel	1
22	Motor Mounting O-ring	Steel	1
23	Motor Mounting Pin	Steel	1
24	Motor Mounting Spring	Steel	1
25	Motor Mounting Nut	Steel	1
26	Motor Mounting Washer	Steel	1
27	Motor Mounting Seal	Steel	1

Part No.	Part Name	Material	Qty
1	Motor	Cast Iron	1
2	Motor Mounting Bracket	Cast Iron	1
3	Motor Mounting Bolt	Steel	1
4	Motor Mounting Nut	Steel	1
5	Motor Mounting Washer	Steel	1
6	Motor Mounting Seal	Steel	1
7	Motor Mounting Gasket	Steel	1
8	Motor Mounting O-ring	Steel	1
9	Motor Mounting Pin	Steel	1
10	Motor Mounting Spring	Steel	1
11	Motor Mounting Nut	Steel	1
12	Motor Mounting Washer	Steel	1
13	Motor Mounting Seal	Steel	1
14	Motor Mounting Gasket	Steel	1
15	Motor Mounting O-ring	Steel	1
16	Motor Mounting Pin	Steel	1
17	Motor Mounting Spring	Steel	1
18	Motor Mounting Nut	Steel	1
19	Motor Mounting Washer	Steel	1
20	Motor Mounting Seal	Steel	1
21	Motor Mounting Gasket	Steel	1
22	Motor Mounting O-ring	Steel	1
23	Motor Mounting Pin	Steel	1
24	Motor Mounting Spring	Steel	1
25	Motor Mounting Nut	Steel	1
26	Motor Mounting Washer	Steel	1
27	Motor Mounting Seal	Steel	1

Rotary Resin Shut Off Valve-III
The Economical Solution
for
Gas Assist
UP TO 300°F CONTINUOUS

Rotary Resin Shut Off Valve-IV

RSDV-IV is the same unit as RSDV-III with modifications as shown below:

Modified: Body (see 1), Pinion (see 2)
Added: Side Plates (see 3), Seal (see 4 & 5)



Notes		
ITEM NUMBER	DESCRIPTION	QTY
1	VALVE BODY	1
2	PINION	1
3	SIDE PLATE	2
4	SEAL	2
5	SEAL	2

SPEC. INFO		
ITEM NO.	DESCRIPTION	QTY
1	VALVE BODY	1
2	PINION	1
3	SIDE PLATE	2
4	SEAL	2
5	SEAL	2

Rotary Resin Shut Off Valve-IV
Gas Assist

OR
Conventional
UP TO 650°F CONTINUOUS