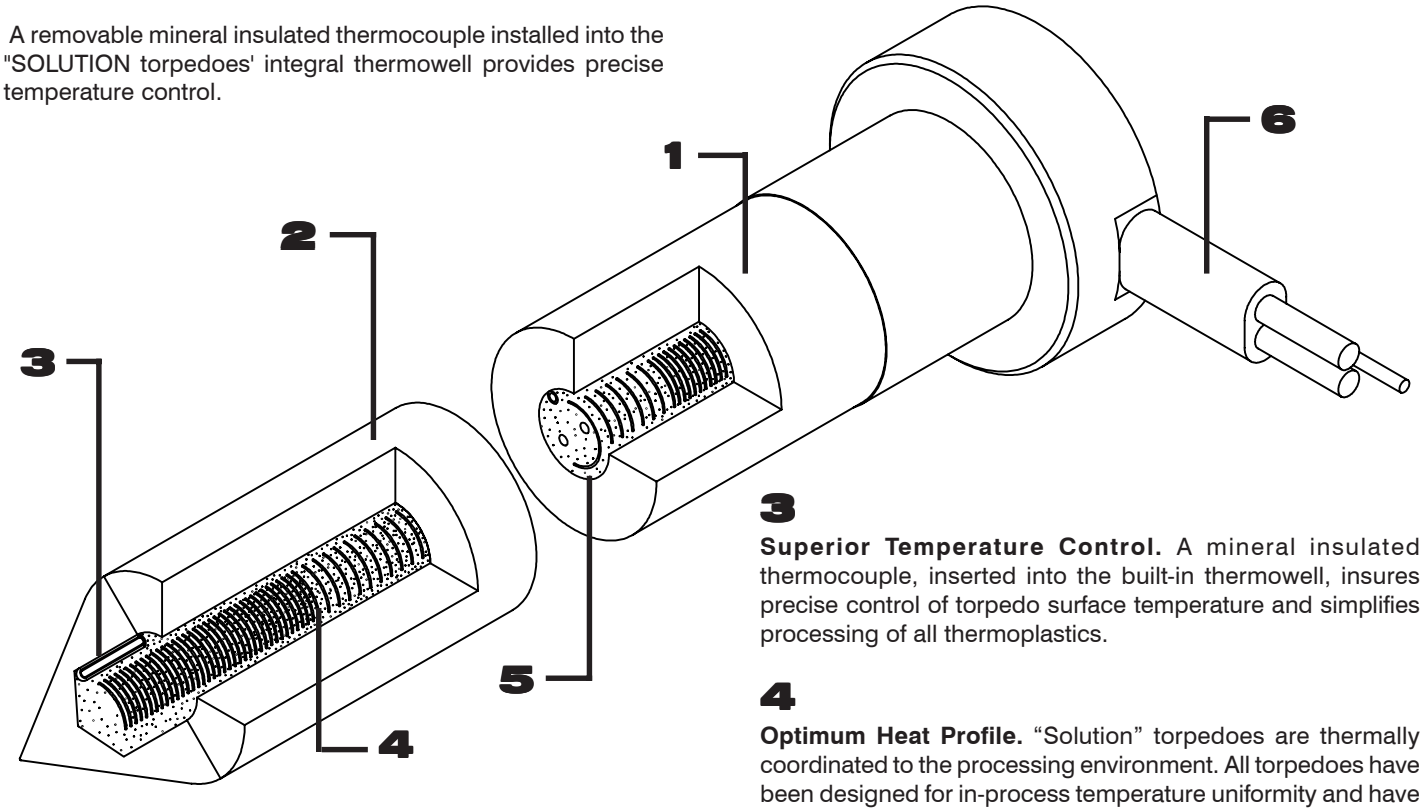
"SOLUTION" Side-Feed Torpedoes.....For Superior Runnerless Processing

Our impressive "SOLUTION" torpedo construction has established a level of durability, performance and versatility surpassing all others in the industry. This integral heated construction results in an incredibly reliable torpedo capable of peak performance under the most severe operating conditions.

"SOLUTION" torpedo thermal characteristics are coordinated to the actual mold environment. This thermal coordination establishes the optimum temperature profile for actual mold operating conditions and provides the temperature uniformity essential to quality molding of all thermoplastic resins.

A removable mineral insulated thermocouple installed into the "SOLUTION torpedoes' integral thermowell provides precise temperature control.



"SOLUTION" torpedo performance has been extensively evaluated in a variety of molding applications. Our years of consistently superior results have shown the "SOLUTION" torpedo to be the highest performance torpedo ever manufactured. Our system coordinated heat profiles have made the "SOLUTION" torpedo the logical choice for processing both commodity and engineering resins.

Standard "SOLUTION" torpedo components are offered in a variety of configurations and sizes designed to accommodate most common runnerless molds utilizing gating torpedoes, runner torpedoes or distribution bar components.

Custom “SOLUTION” torpedo components are readily available and can be supplied in configurations designed to satisfy special dimensional requirements in new molds or to retrofit existing components in problem molds.

1

Machined To Precision Dimensions. “SOLUTION” torpedoes are machined to precision tolerances using both CNC turning and precision grinding operations. Each torpedo is subjected to a rigorous final inspection process prior to shipment.

2

Premium Heat-treated Tool Steel. Standard torpedoes are machined from AISI H13 tool steel and hardened to 54-56 RC. Other tool steel type and/or special coatings can be supplied to meet the requirements of glass and mineral filled resins.

3

Superior Temperature Control. A mineral insulated thermocouple, inserted into the built-in thermowell, insures precise control of torpedo surface temperature and simplifies processing of all thermoplastics.

4

Optimum Heat Profile. “Solution” torpedoes are thermally coordinated to the processing environment. All torpedoes have been designed for in-process temperature uniformity and have been tested in the actual mold environment for conformance to our strict standards.

5

Reliable Integral Heat. Swaged, integral heated construction insures maximum heat transfer efficiency. The element wire is wound to precise computer designed gauge and pitch requirements and is metallurgically bonded to the pins during swaging for optimum connection performance.

6

Superior Lead Systems. Standard lead systems feature duplex, teflon insulated, stranded nickel wire. Leads are silver soldered to the terminal pins and sealed with a high temperature silicone RTV potting material. A strain relief bracket secures and stabilizes the lead system.

"SOLUTION" Torpedo Component Selection

Ordering Standard Torpedo Components

Our extensive listing of standard torpedo components was developed to satisfy the majority of mechanical and thermal system requirements with stock component configurations. The wide assortment of tip, head and lead exit options facilitate retrofit of components in existing runnerless systems. These standard runnerless components can be utilized in the processing of virtually all thermoplastics resins, including high temperature, heat sensitive varieties.

The selection process consists of establishing the physical configuration of the component and defining the required thermal characteristics. Standard components are available in both insulated and hot runner heat profiles, but must be applied to the appropriate system for optimum performance. Our insulated runner heat profile will meet the requirements of all common insulated runner system designs, including those with internal runner heating components, such as runner torpedoes and distribution bars. The hot runner heat profile differs substantially from those supplied for insulated runner designs and must only be used in the externally heated, hot runner system designs. Several basic runnerless system designs are illustrated at the right to clarify our terminology.

Ordering Modified Standard Torpedo Components.

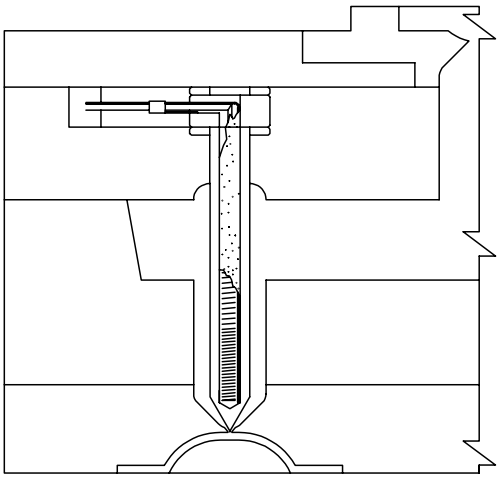
Processing of mineral and glass filled resins or resins containing corrosive additives may dictate the use of torpedo body materials other than our standard H13 tool steel. Common material variations include D2 and S7 as well as the more exotic particle metallurgy created alloys. We can recommend an appropriate body material for your application or will manufacture to your specific material requirements.

Ordering Custom Torpedo Components.

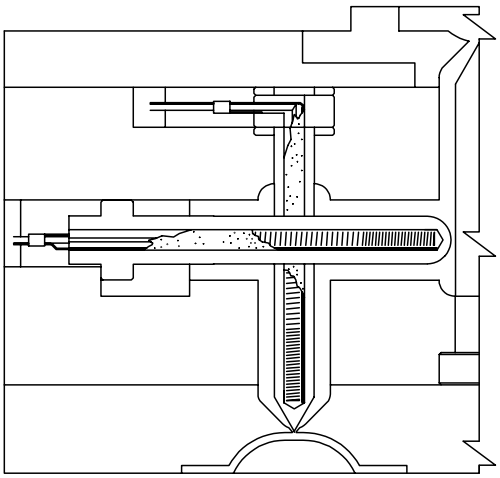
Some applications will require special mechanical or electrical component configurations. We supply significant quantities of custom components and would welcome the opportunity to quote on your special requirements. If your application requires a custom configuration, please submit a drawing to our sales office, detailing your exact requirements.

Special Thermal Requirements

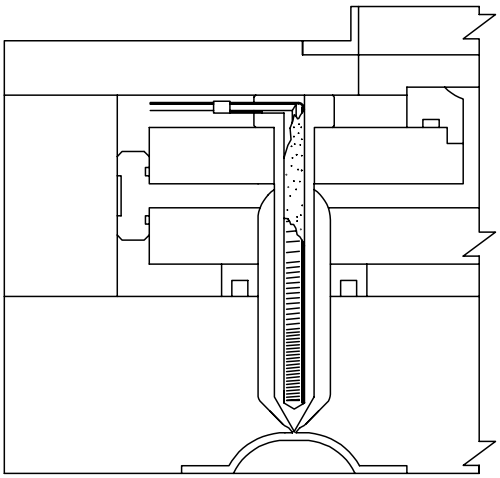
Special thermal designs may be required when mold design features radically alter the system's heat transfer characteristics. Additional information on system thermal coordination and various design features which significantly affect heat transfer and torpedo temperature profiles is presented in the runnerless application guide on page 1-53 and 1-54. We have compiled extensive test data regarding these features and can readily compensate for their effects. To properly review an application, we require a dimensioned part drawing indicating resin type with a top and side view of your system. This review is particularly crucial in applications involving heat sensitive resins, long cycles or low resin throughput rates.



Insulated Runner Mold With Unheated Runner



Insulated Runner Mold With Torpedo Heated Runner



Hot Runner Mold With Externally Heated Manifold