Cast-In Heaters

Air-Cooled Extruder Systems

4 Turnkey State-Of-The-Art Systems to Improve Operating Efficiencies in Plastic Extrusion Equipment

Designed for Durability, Ease of Installation and Trouble-Free Service . . .

These highly engineered heating and cooling systems are an innovative concept in product design, offering a very efficient means to heat and cool the barrels of plastic extruders. They provide cooling efficiencies equal to or better than conventional liquid cooled cast-in aluminum band heaters.

These shroud designs are made with stainless steel sheet metal, cast aluminum, or an aluminum sheet metal/cast aluminum hybrid construction.

These systems are self-contained and can be supplied as turnkey ready-to-go, requiring minimum labor and installation cost, and drastically reducing downtime and maintenance upkeep compared to conventional liquid cooling and heating cast-in band heaters.

Experience all the advantages offered by Tempco's exclusive Cool TO-THE Touch High-Efficiency shroud and aluminum finned cast-in band heater designed system.

The engineering of these two components is perfectly matched to work in tandem, offering thermally efficient heating and air cooling characteristics and eliminating the shortcomings of liquid cool cast-in aluminum band heaters

Improve Efficiencies in Extrusion Processing.

Need Assistance Selecting a System? We Welcome Your Inquiries.

If you have a special application requiring a custom manufactured system or need assistance selecting one of our standard systems for a new or existing installation, consult Tempco with your requirements. We offer complete engineering services and support, working with you every step of the way, to ensure customer satisfaction.

Selection Guide — Plastic Extruder Heating and Cooling Shroud Design Systems

	Shroud Style Construction	Recommended Heater Types	Barrel Diameter Range Min.	Barrel Diameter Range Max.	Zone Length Range Min.	Zone Length Range Max.
 1	**Cool TO-THE Touch™, Page 3-23** Inner Stainless Steel Solid Layer; Outer Stainless Steel Perforated Layer	Tempco Finned Cast Aluminum Heaters, Vented Ceramic Band or Maxiband Heaters	3" 76 mm	16" 406 mm	5" 127mm	30-1/2" 775 mm
 2	**Multi-Versal, Page 3-29** Single Stainless Steel Solid Layer	Tempco Finned Cast Aluminum Heaters, Vented Ceramic Band or Maxiband Heaters	3" 76 mm	16" 406 mm	3-3/4" 95 mm	30-1/2" 775 mm
 3	**Polar Cast, Page 3-36** Inner Stainless Steel Solid Layer; Outer Cast Aluminum Vented Layer	Tempco Finned Cast Aluminum Heaters	4" 102 mm	16" 406 mm	8" 203 mm	30-1/2" 775 mm
 4	**Arctic Cast®, Page 3-39** Single Cast Aluminum Solid Layer	Tempco Finned Cast Aluminum Heaters	4" 102 mm	16" 406 mm	6-1/2" 165 mm	30-1/2" 775 mm

Cast-In Heaters

Polar Cast Shroud System

Polar Cast Extruder Heat/Cool System

We took our original single layer Arctic Cast concept and modified it, creating the more efficient dual layer Polar Cast shroud system. The Polar Cast features the same 1/4" thick outer aluminum shroud as the Arctic Cast, but the similarities end there.
The Polar Cast features finned cast-in heaters that allow for quick thermal response during heat-up and cool-down cycles. The Cool Touch outer layer is vented to improve cooling and provide personnel safety. A reflective inner layer has been added to this shroud design to decrease the heat-up cycle and reduce energy consumption. The unrestricted blower port directs inlet air to the hottest part of the heater and distributes it evenly over the entire cross section of the zone.

3 – Polar Cast Construction

Polar Cast shown with Tempco's Exclusive High-Efficiency Finned Aluminum Cast-In Band Heater

Polar Cast Extruder

Dual Layer Shroud with an Inner Solid Stainless Steel Layer and an Outer Vented Cast Aluminum Layer that are thermally isolated from the heater and extruder barrel by Stainless Steel End Plates

Usage Requirements

This rugged shroud design is recommended for installations where the shroud system could be exposed to physical damage, such as instances where the extruder barrel is low to the ground. It is suited to work with Tempco's High-Efficiency Cast-In Heaters and cannot be used on any existing finned cast-in heaters.

Heater Type and Components

- *Recommended Heater Types – Tempco Finned Cast-In Heaters with standard 1/4" gap between heater halves*
- *Heater Strap Clamping is available*
- *Power Input through Cast Terminal Box with 7/8" dia. K.O. for 1/2" conduit:*
  - *Standard 10-32 stud termination with ceramic or mica insulator*
  - *Bus Wiring between halves is optional*

Sensing and Controlling

- *Existing Zone Control Probe – Shroud System can be designed per customer specifications*
- *Tempco supplied Zone Control Probe*
- *Tempco customized Power Control Panel designed to complete Your Thermal Loop System*

Polar Cast Construction Details

Dual Layer Shroud

- *Inner Solid Aluminum Sheet Metal layer – radiation shield that directs the cooling air flow over the heater*
- *Outer 1/4" thick Vented Cast Aluminum layer – isolates hot surfaces from contact (cool touch) and provides structural integrity for the shroud*

Shroud Assembly Features

- *Two Individual Halves bolted together (Two-Piece) with integrally cast terminal box*
- *Stainless Steel End Plates – support outer layer and thermally isolate the shroud from the heater and extruder barrel*
- *Anti-Rotate Tabs – prevent shroud from radial and axial movement around the barrel*
  - *Tabs are cast as part of the heater*
- *Blower Options – See Pages 3-43 through 3-45 for complete details*
  - *Single or Dual Tempco Recommended Blowers available from 148 CFM up to 1210 CFM at 115V or 230V*
  - *Customer Specified blower*
- *Blower Location*
  - *Vertical Orientation– at the bottom of the shroud*
  - *Custom location achieved only by rotating entire shroud system*
- *Top Combination Air Outlet/Terminal Box with Stainless Steel Perforated Cover*
  - *Custom location achieved only by rotating entire shroud system*
- *Shroud Air-Inlet Baffle Optional*

Polar Cast Extruder Heat/Cool System

Dual Layer Cast Aluminum Vented Outer Shell Shroud System with Stainless Steel Outer Layer Supports and Reflective Aluminum Internal Liner.
This shroud design is not suited for any other finned cast-in heater.

Polar Cool Touch Cast Aluminum Shroud System Specifications for Finned Cast Aluminum Heaters

Shroud Part Number	Barrel OD (Shroud ID) in	Shroud OD in	Shroud Width in	Blower CFM	Heater OD in	Heater Part Number	Wattage per Shroud	Heater Voltage
ASF01179	7.38	13.38	22.00	550	10.38	CBH10017	8320	230 3ø
ASF01124	7.50	13.44	23.00	550	10.50	CBH08128	8000	230 3ø
ASF01169	8.25	14.25	23.00	550	11.25	CBH09707	18000	230 3ø
ASF01105	9.31	15.31	24.00	550	12.31	CBH07492	15000	230 3ø
ASF01104	9.31	15.31	29.00	550	12.31	CBH07491	15000	230 3ø
ASF01150	13.00	19.00	29.00	550	16.00	CBH08813	30000	230 3ø