

Barrel heating and cooling system for your Uniloy Reciprocating Screw Machine



High Performing AND Energy Efficient!

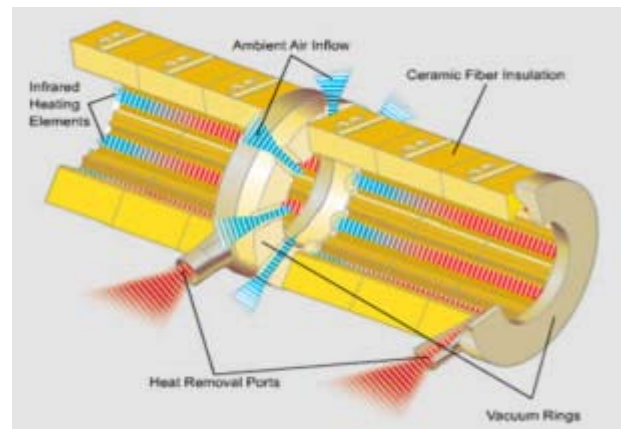


Uniloy TCS: A Revolutionary and Energy Efficient Method to Barrel Heating and Cooling

The Uniloy Thermal Control Solution (TCS) contains radiant heating elements embedded in high temperature ceramic fiber insulation. The well insulated TCS System covers the entire barrel, ensuring that all the heat goes directly into the barrel, and not in your plant. During operation, the outside of the insulation is only warm to the touch. When cooling is needed, ambient air is drawn through the end ring, across the barrel, and the hot air is exhausted either into the plant by a forced air blower, or outside via a vacuum blower. Each half of the prewired heaters are held together by stainless steel fastening bands. Each pair of clamshell heaters constitutes a controllable temperature zone that has its own cooling-air inlets and outlets.

Each Uniloy TCS kit includes:

- TCS Ceramic Heater Bands
- Blowers (Vacuum or Forced Air)
- Front Barrel Shrouds & Covers
- Thermocouple Adapters
- Safety Signs
- Miscellaneous Mounting Hardware
- Transformer (Vacuum Blowers only)
- Electrical Components to wire into existing cabinet





Delivery & Installation

- Packages are in stock for immediate delivery. (if temporarily out of stock, please allow 4 to 6 weeks to fill order)
- Uniloy Service Technicians are available to install packages.
- Estimated 2-3 days of machine down-time required for installation of package

TCS Features	Benefits
Simple Design	- Easy Installation - Easy Repair
Bonded Ceramic Fiber Insulation	- Superior Energy Efficiency - Less Radiant Heat Loss - Touch Safe External Temp - Tighter Temperature Control
Radiant Heating Elements	- Long Heater Life - Tighter Temperature Control - Low Maintenance - Up to 55% Faster Heat Up Time
Heavy Gauge High Temp Wire	- Long Life - High Temperature Capability
Vacuum Blower (option)	- Waste Heat can be Reclaimed or Exhausted Outside - Tighter Temperature Control
Cooling Air Flow	- No Maintenance of Water Cooled Systems - Increased Worker Comfort - Uniform Cooling

Detailed Cost Savings Example

The calculations performed to generate the energy savings tables below are based on the following assumptions:

- 3 ½" Extruders (2 ½" Extruders where indicated by an asterix)
- Electrical Energy cost of \$.08 per kilowatt hour
- Annual machine run time of 6000 hours

The savings below include:

- Maintenance costs
- Chiller costs
- Electrical Energy costs

Total TCS Savings Vs. Finned Aluminum Air Cooled With Air Conditioning In The Room				
New R2000 Screw	Over 2 year old R2000 Screw	New GP or Gen 1 HO Screw	Over 2 year old GP or Gen 1 HO Screw	LBS PER HR
\$947	\$947	\$896	\$754	100*
\$947	\$896	\$612	\$378	200*
\$947	\$761	\$384	\$302	300*
\$1,812	\$1,703	\$1,275	\$901	300
\$1,812	\$1,568	\$991	\$753	400
\$1,812	\$1,422	\$820	\$652	500
\$1,812	\$1,275	\$753	\$556	600
\$1,812	\$1,132	\$687	\$532	700
\$1,812	\$991	\$618	\$443	800

Total TCS Savings Vs. Liquid Cooled With Air Conditioning In The Room				
New R2000 Screw	Over 2 year old R2000 Screw	New GP or Gen 1 HO Screw	Over 2 year old GP or Gen 1 HO Screw	LBS PER HR
\$6,252	\$6,252	\$6,201	\$6,059	100*
\$6,252	\$6,201	\$5,923	\$5,852	200*
\$6,252	\$6,066	\$5,854	\$5,790	300*
\$6,923	\$6,814	\$6,400	\$6,178	300
\$6,923	\$6,679	\$6,223	\$6,042	400
\$6,923	\$6,533	\$6,132	\$5,949	500
\$6,923	\$6,400	\$6,042	\$5,882	600
\$6,923	\$6,306	\$5,972	\$5,817	700
\$6,923	\$6,223	\$5,927	\$5,684	800

Total TCS Savings Vs. Finned Aluminum Air Cooled With No Air Conditioning In The Room				
New R2000 Screw	Over 2 year old R2000 Screw	New GP or Gen 1 HO Screw	Over 2 year old GP or Gen 1 HO Screw	LBS PER HR
\$904	\$904	\$853	\$711	100*
\$904	\$853	\$569	\$336	200*
\$904	\$719	\$342	\$260	300*
\$1,351	\$960	\$359	\$190	500
\$1,351	\$814	\$292	\$95	600
\$1,351	\$671	\$225	\$71	700
\$1,351	\$529	\$156	(\$18)	800

Total TCS Savings Vs. Liquid Cooled With No Air Conditioning In The Room				
New R2000 Screw	Over 2 year old R2000 Screw	New GP or Gen 1 HO Screw	Over 2 year old GP or Gen 1 HO Screw	LBS PER HR
\$6,095	\$6,095	\$6,044	\$5,902	100*
\$6,095	\$6,044	\$5,766	\$5,696	200*
\$6,095	\$5,910	\$5,698	\$5,634	300*
\$6,608	\$6,218	\$5,817	\$5,634	500
\$6,608	\$6,085	\$5,727	\$5,567	600
\$6,608	\$5,991	\$5,657	\$5,502	700
\$6,608	\$5,908	\$5,612	\$5,364	800

Contact your Uniloy Aftermarket representative today to calculate your potential savings for your specific application!

Reduce the Heat Energy in your Blowmold Room

The heat radiated and exhausted into the blowmold room is different for each barrel cooling solution. The following information demonstrates the superiority of the Uniloy TCS w/Vacuum in terms of resultant heat in the room from a 350R2 producing 700 lbs of plastic per hour with a new GP screw.

	TCS w/ Vacuum Blower	TCS w/ Forced Air	Finned Alum	Liquid
Heat Radiated into Room	2,028 btu/hr.	2,028 btu/hr.	11,640 btu/hr.	8,592 btu/hr.
Heat Exhausted into Room	0 btu/hr.	10,153 btu/hr.	3,589 btu/hr.	0 btu/hr.
Total Heat into Room	2,028 btu/hr.	12,181 btu/hr.	15,229 btu/hr.	8,592 btu/hr.

At running temperature, an extruder screw typically generates enough shear heat to process 700 lbs of plastic per hour. When using the finned aluminum heater the extra shear heat from the screw is either radiated or blown into the blowmold room. In the case of the TCS w/Vacuum Blower, the radiant heat is minimized and the exhausted heat is directed out of the room.

Extruder Barrel and Screw Condition

The amount of heat generated in an extruder increases over the useful life of a barrel and screw. This extra heat must be removed requiring an increased cooling capacity from the cooling blowers. It is important to know the type, age, and condition of the existing barrel and screw when selecting the cooling option for this package. If the barrel and screw are

- More than five years old
- Demonstrate more than 15% reduction in throughput
- Are any screw type other than Uniloy GP or High output

They must be replaced with a new GP or High output screw or the Vacuum cooling option must be selected.



Sales and Service and Engineering

For more information including pricing on a new reducer gearbox or any other machine upgrade, please contact your local Uniloy Parts Sales Representative. Trained Uniloy Service Representatives are available to assist in the installation of these packages at your facility. All Uniloy retrofit packages are engineered to suit your individual machine specifications.

Get Paid for Saving Energy!

You may be able to receive more than 50% off the installed cost through rebates, credits, and incentives that are available in your area through various state Energy Incentive Plans. Eligible participants have included commercial buildings, industrial facilities, and public-sector facilities.

Link to the following web page - www.dsireusa.org for more information on your specific state, or contact your Uniloy Aftermarket Representative for more information and assistance.