PROCESS COOLING

Efficient Heat Transfer by Design

ENGINEERING PROCESS WATER SYSTEMS SINCE 1963

BRIDLE LOOP SKID STANDARD SYSTEMS

Point-of-Use Flow & Pressure Control for Injection Molding.



150–900	78 PSI	3°F
GPM RANGE	DIFFERENTIAL PRESSURE	MIN. APPROACH TEMP

Process Cooling Systems engineers the Bridle Loop Skid as a temperature-controlled, point-of-use flow and pressure boosting device that reduces the amount of flow required from a central cooling system. Each skid can be considered a custom designed industrial mold temperature controller, and it is capable of design flows that serve a wider range of applications. Pumps use a variable frequency drive to directly match the flow or pressure demand of each machine it serves.

ZERO WASTED ENERGY

The Bridle Loop pump is of premium efficiency and operates using direct feedback from the process, so the cumulative output flow always equals the demand placed on it.

STANDARD FEATURES

- Suction guide comes standard to maintain suction pressure and flow velocity.
- Two-way actuator valve proportionally distributes chilled water for flow efficiency by delivering stable, highly predictable modulation for process loops.
- Stainless steel zero-leakage shutoff on the actuator valve provides bubble-tight closure that prevents fluid leakage and energy waste when the process line is fully closed.
- Programmable actuator control accepts programmable or selectable control signals, customized scaling, and feedback outputs to match the dynamic response of the process.
- PID controller and pump variable frequency drive maintain consistent flow and pressure to the mold, which reduces process variability caused by heat transfer.
- Pump and control cabinet ship fully assembled and arrive on-site ready for rapid installation and startup.
- Structural pipe supports are welded throughout the skid for structural integrity. Structural steel electrical cabinet stand is included on all sizes, with a NEMA-12 electrical enclosure.
- Engineered pump trim on suction, discharge, and check valve piping optimizes water flow velocity and minimizes pressure loss, and all pipes, check valves, and pump trim are insulated.
- Robust system controls allow flow to be controlled based on supply pressure or on optional PLC feedback.
- Low approach temperatures reach a minimum of 3°F, and typically 5°F to 7°F, relative to the central chilled water system.
- Easy transfer between molding machines is possible without extensive setup or reinstallation.
- Demand-based flow improves consistency of water supply and temperature through individual feedback per skid.

BUILT FOR HIGH-THROUGHPUT MOLDING

- Low delta-T, high-flow performance meets the demands of high-through-put injection molding.
- Increased turbulence through mold channels optimizes heat rejection into the water.
- Flow at the point of use reduces central pumping demand and the size of piping infrastructure required.
- Half-inch closed-cell foam insulation comes standard on every skid.
- Simple retrofits let existing headers expand production with minimal to no plant wide interruption.

AVAILABLE OPTIONS

- Bag filter assembly with bypass piping maintains water flow during operation.
- High temperature and low pressure alarms provide process visibility.
- Single-zone or dual-zone systems connect multiple process loops.
- Non-fused disconnect isolates the system during maintenance.
- PLC option with touchscreen HIM, ethernet ports, communicating delta-T and delta-P feedback to the process control system.



TECHNICAL DATA — BRIDLE LOOP SKID (BLS)

BLS	SZBLS150	SZBLS300	SZBLS450	SZBLS600	SZBLS750	SZBLS900
Flow Rate (GPM)	150	300	450	600	750	900
Number of Pumps	1	1	1	1	1	1
Bridle Pump hp	10	20	25	30	40	50
Process Pump Pressure (psi)	78	78	78	78	78	78
Chilled Water Demand (GPM)[1]	43	86	129	172	215	258
Cv of Modulating Valve	19	46	65	85	110	130
Mold Cooling Connection Size	3"	4"	6"	6"	6"	8"
Chilled Water Tie-In Piping	2"	2 ½"	2 ½"	3"	4"	4"
ELECTRICAL DATA (460V / 60Hz / 3ø)						
Cabinet Size (in)	24 x 24 x 12	24 x 24 x 12	24 x 24 x 12	24 x 24 x 12	24 x 24 x 12	24 x 24 x 12
Cabinet Size w/ PLC Option (in)	36 x 30 x 12	36 x 30 x 12	36 x 30 x 12	36 x 30 x 12	36 x 30 x 12	36 x 30 x 12
DIMENSIONS & WEIGHT						
Est. Skid Dimensions (in)[2]	48 x 36 x 66	64 x 36 x 66	66 x 36 x 66	66 x 36 x 68	66 x 36 x 72	66 x 36 x 90
Est. Skid Dimensions w/ PLC (in)[2]	48 x 42 x 66	64 x 42 x 66	66 x 42 x 66	66 x 42 x 68	66 x 42 x 72	66 x 42 x 90
Est. Base Unit Ship Weight (lb)	900	1,300	1,500	1,700	2,100	2,300

[1] Chilled water demand calculated at 10°F ΔT. [2] Skid dimensions are for reference only.

SCHEMATIC

