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Quotation 024884-00

Quotation for Carat 280L Cooling Water & Plunger Tip Seizure Monitoring

August 6, 2018



Gerald Craycraft
Shiloh Industries
901 Alfred Thun Road
Clarksville, TN 37040

Dear Gerald,

With reference to your request, we are pleased to quote the requested controls / software modifications and hope that our offer matches your expectations. Please do not hesitate to contact us if you have any questions.

1. Machines

Model	Control	Machine #	SN / Year
Carat 280L	Datanet	10556564	BB7002
Carat 280L	Datanet	700075005	BB8002
Carat 280L	Datanet	700085153	BB8003

2. Description

The above mentioned machines can have the option for die mold and plunger tip water cooling added as described below. Shiloh to provide three solenoid water valves along with all piping, wiring, and installation.

The plunger seizure monitor option is also available as described on page 5.

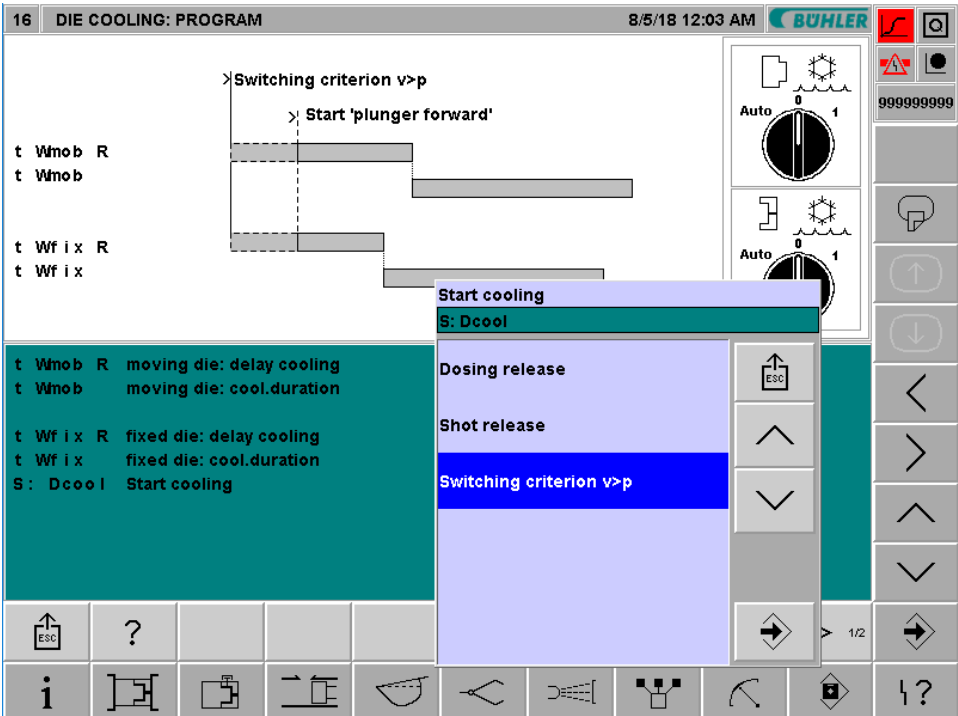
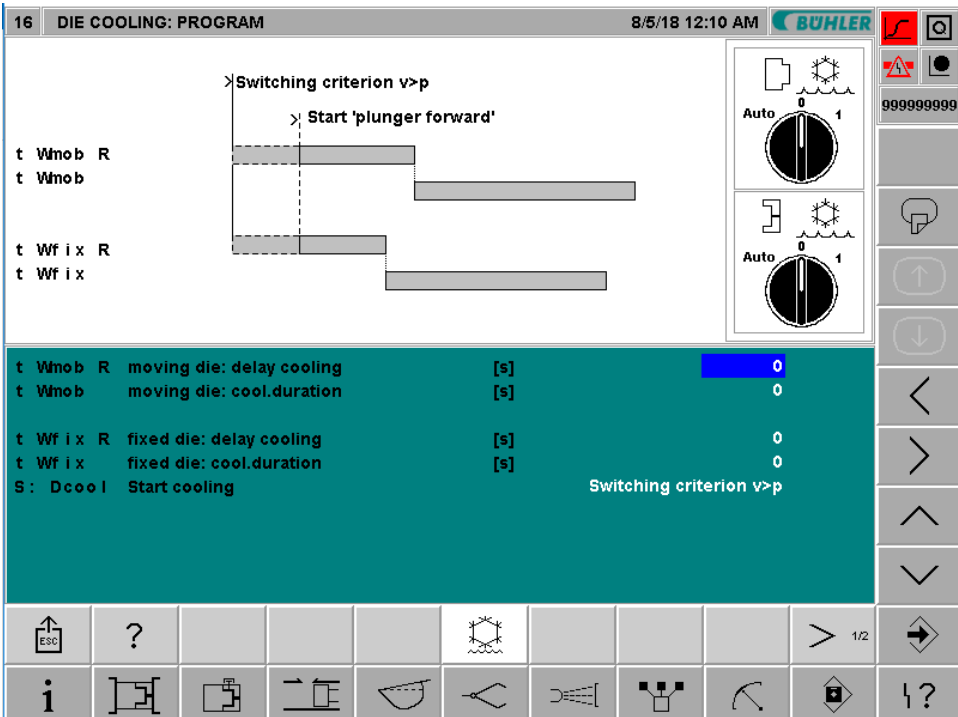
3. Water Cooling for the Die and Plunger Tip

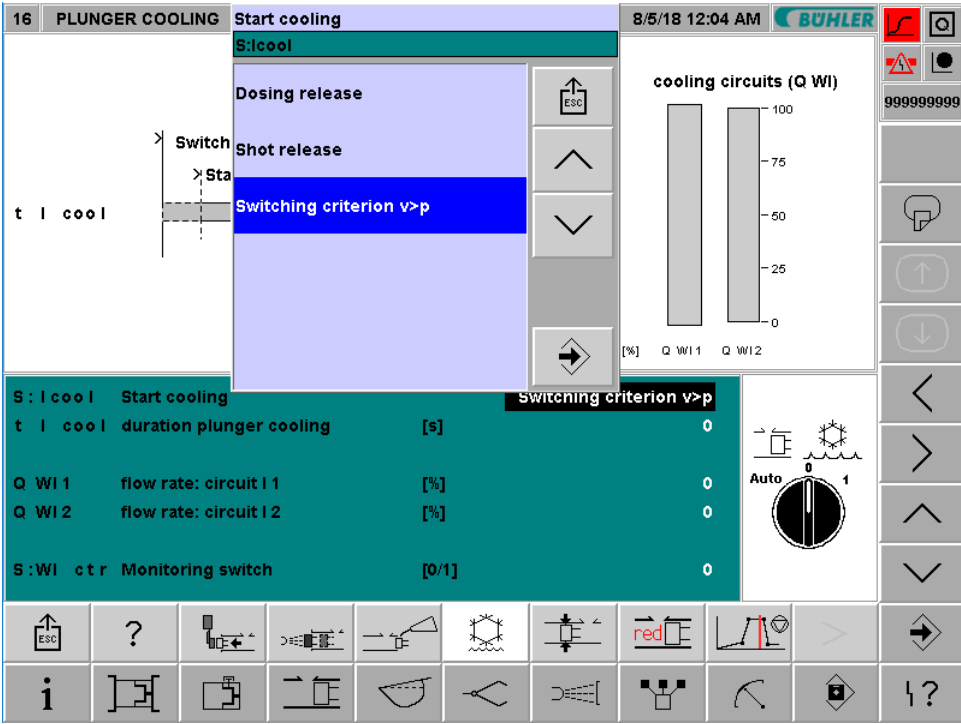
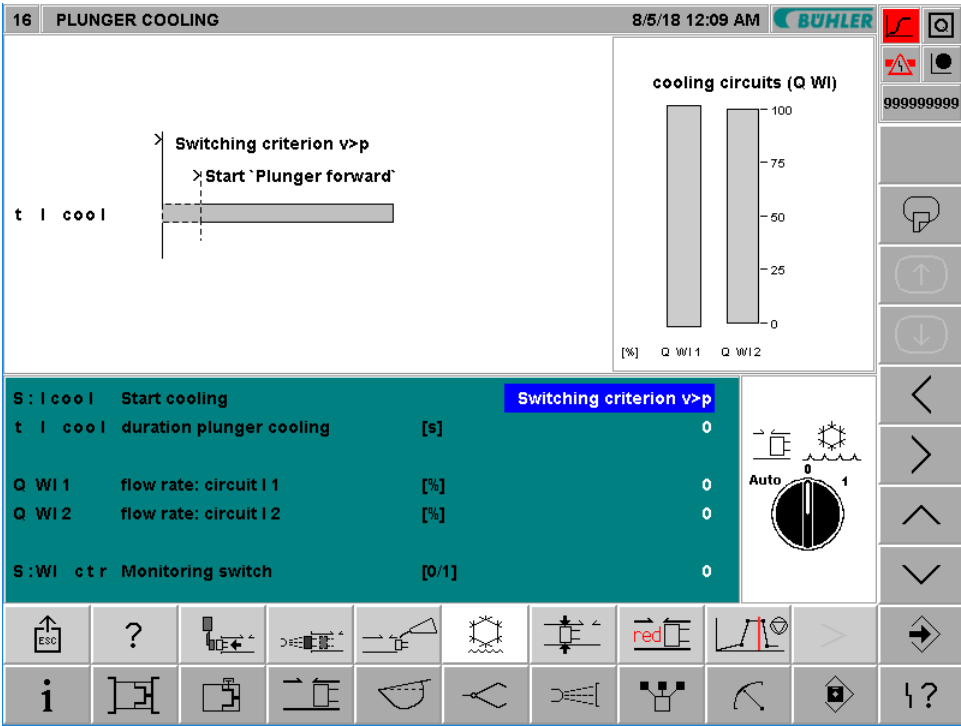
The following description provides details on the additional hardware required and operation of the die and plunger water cooling.

1. Three solenoid water valves need to be added to the machine, these would be supplied by Shiloh.
 - 8-EY1A - water valve for mold cooling on the movable mold half
 - 8-EY2A - water valve for mold cooling on the fixed mold half
 - 8-EY3A - water valve for casting piston cooling
2. Three selector switches are required on the machines operator control column, the switches that are missing for each machine, would be supplied by BuhlerPrince along with the engineering package.
 - 61-ES36 - Hand control for control column for mold cooling on the moving side
 - 61-ES37 - Hand control for control column for the mold cooling on the fixed side
 - 61-ES38 - Hand control for control column for casting piston tip cooling
3. Provide cooling water option FK09. Cooling start would include the standard delay timer settings as shown on the following screens, then an injection plunger position would ensure the water would not start until reaching the shot position setting.

Cooling water option FK09 engineering and hardware, price per machine \$2,250.00

HMI Screens:





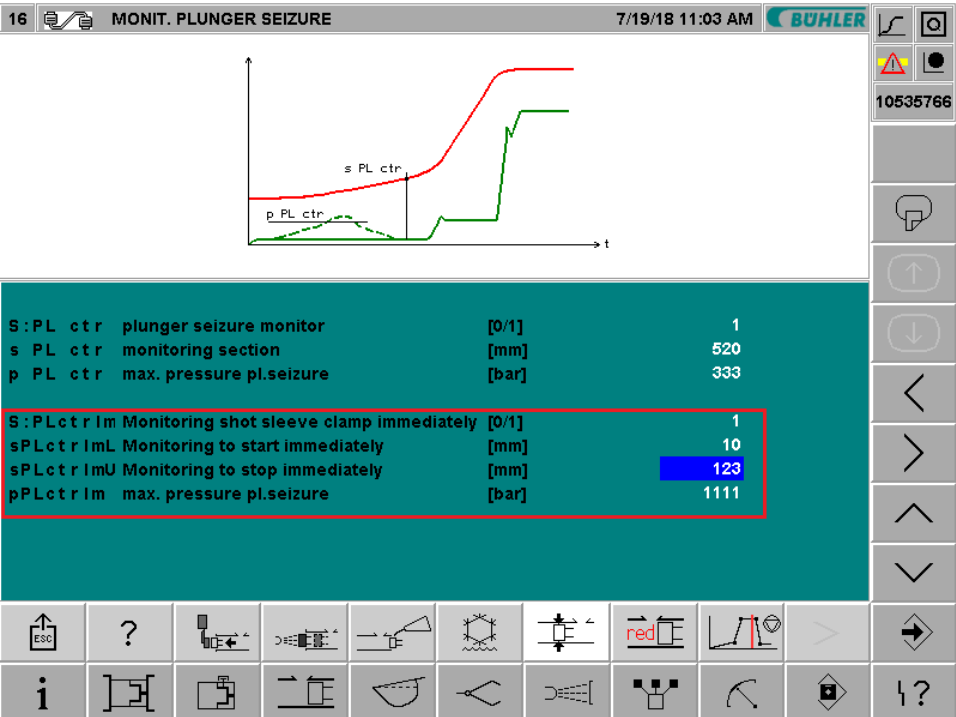
4. Plunger Seizure Monitoring With 2 Waypoints

Functional Description of special option RE16_01A:

This function works additional to the standard monitoring plunger seizure. If both function are selected, both functions will work simultaneously. If “plunger seizure monitor immediately” (S:PLctrIm) is selected, you'll can program a start-waypoint “monitoring start”, a stop-waypoint “monitoring stop” and a “max. pressure pl.seizure”. The function is the same as by standard monitoring plunger seizure but alarm 14891 will appear and stop immediately. If the waypoint “monitoring start” is less than 10mm it will be set to 10mm. If the waypoint “monitoring stop” is less or equal than “monitoring start” the alarm 14892 appears.

Plunger seizure monitoring option RE16.01A_en.SRS, price per machine \$2,340.00

HMI Screen:



Faults:

- XQ **14891** Monitoring plunger seizure immediately
- NQ **14892** Monitoring plunger seizure stop point before start point

Alarms:

- Q = Alarm can be cancelled only at the HMI
- NQ = Alarm can be cancelled only by software
- XQ = Alarm can be cancelled either by software or at the HMI

5. Service Support for Installation

Additional cost to provide one week of service support for the installation and testing of the cooling water and plunger seizure options on the three machines listed above. Shiloh is responsible to supply and install all water valves and piping before the service technician arrives. This is an estimate, you will be billed for the actual hours worked including travel time, plus expenses at standard BuhlerPrince service rates.

Estimated price for a five day service visit to install the options above **\$10,500.00**

6. Commercial

Delivery time: Approximately 2 weeks after receipt of order
Delivery: FCA BuhlerPrince (Incoterms 2010)
Validity: 3 Months
Installation: By customer or available at an additional cost
Warranty: 12 months for new parts of readiness for delivery
Payment conditions: 100% within 30 days after date of invoice

The rights and duties of the parties are exhaustively covered in the "General Terms and Conditions of Sale", "General Delegations and Erection Conditions", provided they are not modified by other individual written contractual agreements.

Thank you for your inquiry, we are looking forward to receiving your order.

Yours faithfully

BuhlerPrince, Inc.

Steve Spierenburg

Sales Manager, Rebuilds & Retrofits

PC: Jeff Walters, Tim McKee, Luis Quintana, Ben DeJong, Alain Gonzalez, BuhlerPrince, Inc.