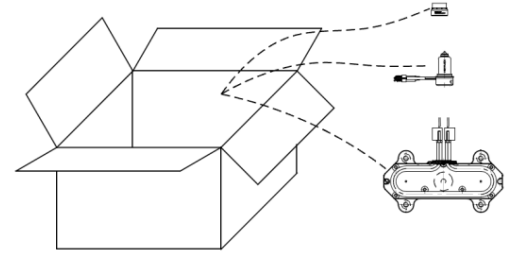


## Step 1: Unpack

Take out of the system from box with care.



(pic1)

## Step 2: Be familiar with all components

Make sure all the components on the list are provided.(refer to pic 2)

HEATLOCK		Customer name:xxxxx Customer Ref No:xxxxx HEATLOCK Ref No:HE101-xxxx	
No.	Item Code	Part List Component Description	Qty/Kit
1	MANFOLD04	Complete manifold for pressed in heaters	1
2	MHC00000	Tubular heater 1200° 600W 230V	2
3	MHC00001	Ceramic connectors for tubular heaters	4
4	MHR00000	Wires for heaters L=1M 1.5gauge RH#1	4
5	DISP00000	Manifold heater air 3000mm 140mm#1	1
7	HEAD00000	Ceramic center location spacer 400x20mm	1
10	HEAD00010	Ceramic back spacer 400x10mm	2
14	TC0004000	Thermocouple L=10mm	1
15	DW000130	Downer for center line location	1
20	A3M000001-1	A3 Inlet/Outlet Heater L=60mm 230W	2
21	MHC-000-000	Spacer Metal	2
22	DISP0000000	Feed back heater 404 600W 230V	1
24	DISP0000014	Titanium bottom spacer 400x14mm	2
25	HEAD00014	Ceramic back spacer 400x14mm	2
27	MHR00000	Wires for heaters L=1M 1.5gauge RH#1	1
28	MHC-000-000	Spacer Metal	1

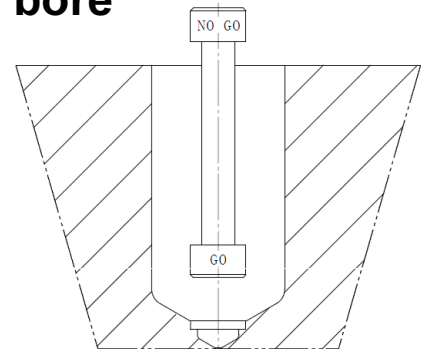
(pic2)

## Step 3: Check dimensions

Measure mold plate thickness .Compare the measurements with those dimensions on the GA drawing ,make sure they match requirements on HEATLOCK GA drawing.

## Step 4: Check sealing dimension of nozzle bore

Use GO and NO GO gauge to measure the sealing dimension of nozzle bore ,make sure nozzle fit into the bore.(refer to pic 3)



(pic3)

## Step 5: Check TB dimension

Use digital micrometer to measure TB dimension, compare with the TB dimension on the drawing, and make a record. (refer to pic 4)



(pic4)

**Step 6: Install nozzle**

Nozzle should be placed in the center of nozzle bore.

**Step 7: Measure nozzle**

Use digital micrometer to measure height of nozzle, on the top of nozzle, choose three datum points, compare measure result to make sure the top of nozzle is on the same horizontal plane to avoid leakage during operation.

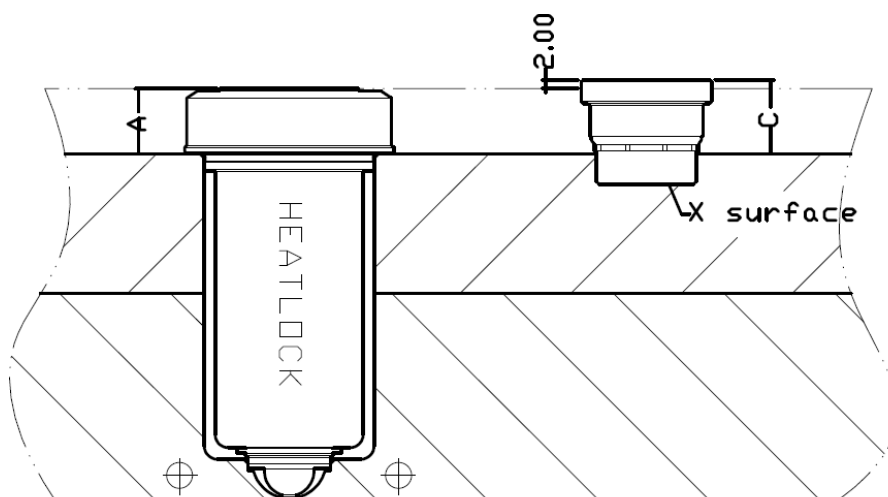
**Step 8: Set up nozzle wire**

According to ID card, bind each zone's power wires and T/C with tape, number each power wire and T/C, which is related to the numbers on connector(s), next lay the wires along the groove then hold wires with clamp sheet.

Remark: Never cut wires before you assemble the rest of components.

**Step 9: Install dowel pin and center location ring**

1. Put dowel pin in the mold. (make sure the height match requirement)
2. When location ring is in the mold, refer to drawing to measure nozzle head height A and height of center location ring C Grind X surface to keep  $A=C-2\text{mm}$  (-0.05m is acceptable) to make manifold placed horizontally.(refer to Pic5)



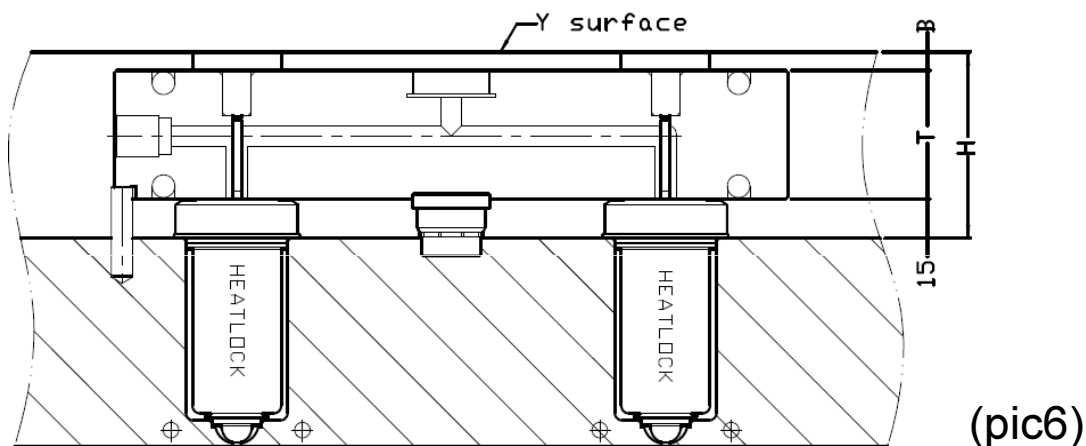
(pic5)

**Step 10: Install manifold**

- a. Before assembling manifold, according to Check List to check content and tick on the related item.
- b. Place valve seal on manifold.
- c. Install other components on manifold including feed bush, tubular heater, T/C and screws, etc. If there is feed bush heater, make sure wire connection joint shall face to the Top.
- d. When assembling manifold, make sure parallelity.

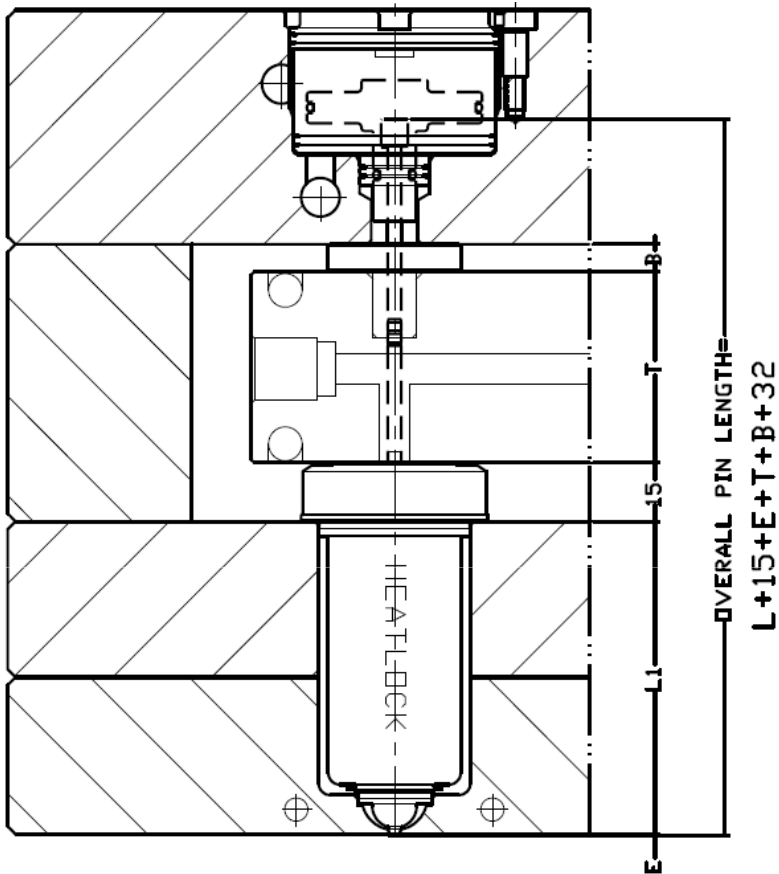
**Step 11: Check the dimension of valve seal**

according to Valve seal calculation formula  $B=H-T-15-\Delta t$ , check height B. If necessary, grind surface Y. ( Height can be reduced by what is equal to heat expansion), refer to Pic 6. In the formula, "15" is nozzle head height,  $\Delta t$  is heat expansion.

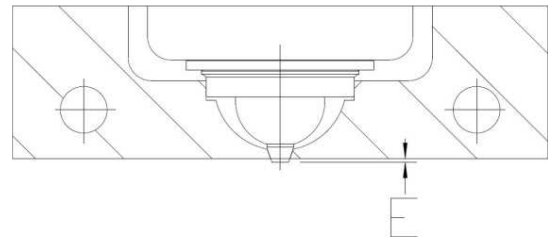
**Step 12: Calculate the valve pin length**

1. Valve pin provided is over length and without chamfer.  
Use formula :

OVERALL PIN LENGTH= $L1+14+E+T+B+32$  to calculate the necessary valve pin Length(refer to Pic7)

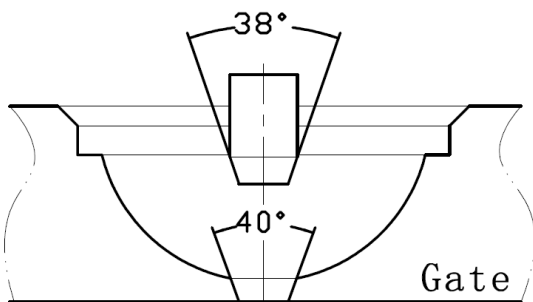


\*E is the pin length out of parting line decided by customer.

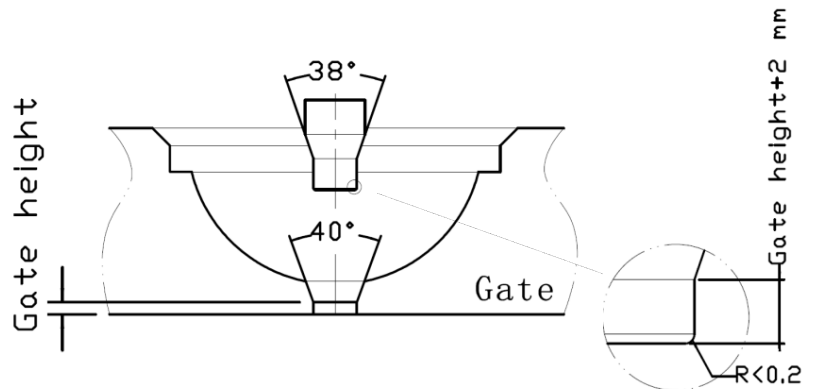


(pic7)

2. Grind valve pin. There are two options, one is to grind a 38 degrees chamfer at the bottom directly (refer to Pic8); the other one is to grind a straight section first, then grind a transition chamfer 38 degrees. (refer to Pic9). After that, applying grinding oil at the front of pin and put it into nozzle, further grind together with gate well to make sure valve pin chamfer suits gate well perfectly.



(pic8)

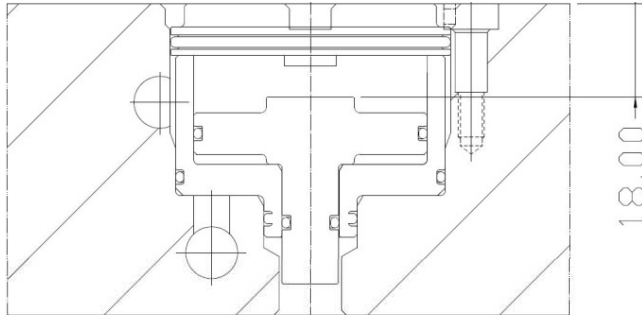


(pic9)

\* Gate well no sharp corner.

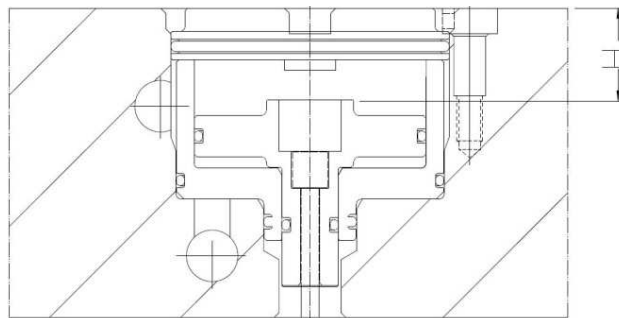
### 3. Check up length of valve pin

Step 1. Install piston in cylinder without valve pin, press the piston and measure the distance between cylinder and piston, our standard distance is 18.00mm. (refer to Pic10)



(pic10)

Step 2. Take out piston. Install valve pin in it. Then install piston in cylinder again. Measure the distance between Clamp and cylinder H, refer to Pic 11. Adjust to 18.00- $H=0.1\sim 0.2$ mm.



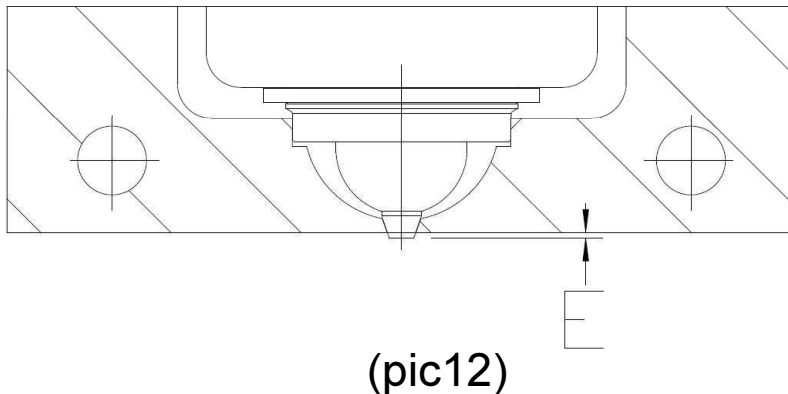
(pic11)

### Step 13: Install clamp plate and valve nozzle components

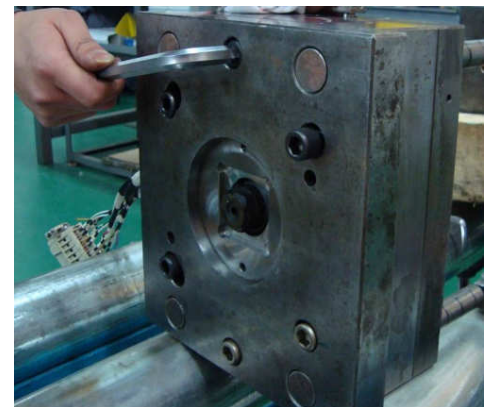
1. Install valve gate viton o-ring, use grease on o-ring during assembly.
2. Put piston inside cylinder, next fix the assembled cylinder on the clamp plate, after that locate clamp plate.
3. Put the well examined valve pin inside piston, then use grub screw to fasten pin.
4. Put cylinder lid on the top of cylinder and fasten it with screws.

**Step 14: Test valve pin**

Pump low pressure air into cylinder, move pin to the end. Measure the distance between the top of pin and gate well and adjust this length to make it equal to E which is decided by customer ( refer to pic 12)

**Step 15: Tighten the claim plate screws**

(refer to pic 13)



(pic13)

**Step 16: Install location ring**

Use screw to fix location ring onto clamp plate.

**Step 17: Set up wiring**

Connect power wire and T/C referring to ID card.( Note: Mold must be connected to earth)

\*Change Coil heater and thermocouple notice: For fear that the function of HRS may be affected, you must use Heatlock original accessories.

**Step 18: System wiring check**

Use multimeter to check if there is short cut and leakage in the circuit.

1. Check short circuit of grounding, check edge continuity between earth pin of power supply wire of mould (with metal label on sideways) and manifold body shall be  $1\Omega$ .

2. Check open circuit to the ground.

Measure resistance between each pin of mold power socket and earth (mold base). Display should be infinity. Some times, electronic heater will accumulate thick dust layer which may reduce resistance to  $10K\Omega$ - $250K\Omega$ . Controller should have a function of removing dust when starting up. If insulated, resistance should be lower than.

3. Check T/C circuit.

Check resistance between mould T/C power supply wires, resistance shall be between  $1\Omega$ - $20\Omega$ .

4. Check heater circuit.

when check resistance between heater power supply wires, resistance shall be within of actual resistance.

**Step 19: Heating-up test**

Connect temperature controller, rise temperature per each zone and check the temperature. Be sure to do heating up test one zone by one zone; When the temperature keep stable, turn off and turn to test another zone.

## Hot Runner Valve Gate maintenance

When you use valve gate systems do you have mechanical movements in your hot runner system. These parts, valve pin and valve seal must like all other mechanical moving parts in your mould be regularly checked and included in scheduled preventive maintenance.

How frequent this maintenance should be depends on moulding parameters and resin used.

Valve pin is located by the valve seal. These have a very tightly controlled clearance, to allow movement and prevent resin leaking thru.

Your process might create gases or other deposits that can over time make the pin to get stuck.

Remedy is normally to take pin out and clean the back end, removing deposits. Cleaning have to be done with care not using and sharp to in order not to damage the surfaces. The valve seals might also need to be clean with care, any damage to the ID surface might cause leakage.

Like all mechanical moving parts will they wear and needs to be replaced once wear causes problems. These spare parts is stock items. When re-order please always state our project No which is engraved in the plaque placed on the side or your mould or on the top surface of the manifold.

**Remark: When starting up injection, use low pressure to fully fill runner to protect valve pin from being bent due to high pressure.**

If you have any question , please call: 0757-29915868.