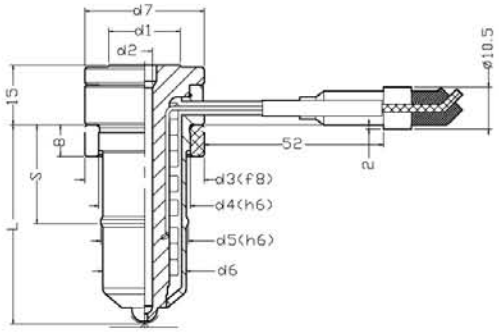
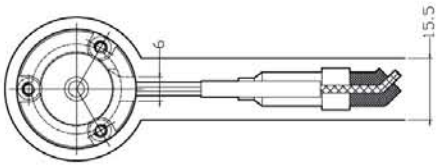
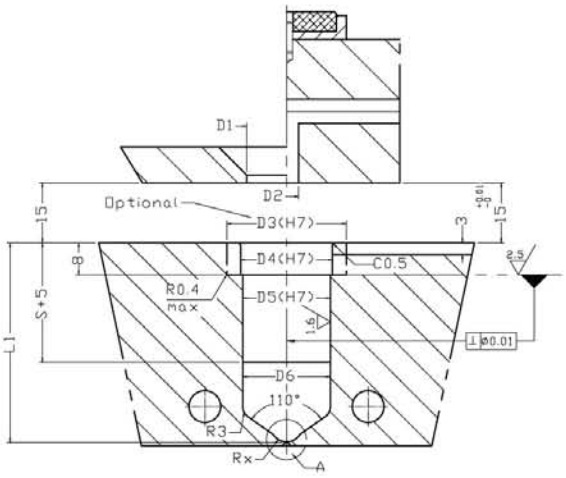
HEATLOCK®

A1PPT Assembly Instruction



(Pic 1)





(Pic 2)

Features :

The Maximum permitted pressure from injection machine is 4Mpa.The A1PPT series can be designed for a single nozzle application,or a multi-drop application utilizing a hot runner manifold. (Pic 1)

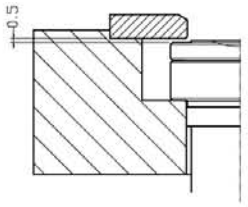
The coil heater is designed to provide uniform heat distribution along the length of the nozzle.A concentration of heater windings at both ends of the nozzle compensate for heat losses that occur between the nozzle and mould steel.

Assembly method :

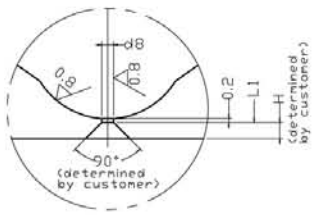
Please refer to the dimension of Pic 2 before you machine the mould nozzle bore.Pay attention to length L1. L1=L+heat expansion (Table 1).

When using the A1PPT in a single drop application, make sure that the back of the nozzle does not touch the locating ring. Otherwise the heat will be dissipated. (Pic 3)

If the force that the cylinder pressed at the sprue bushing is greater than the counterforce of injection machine, no any medium is effected to keep the bushing located axially.



(Pic 3)



DETAIL A

A1PPT Series (mm)

Size	L	L1	S	d1	d2	d3	d4	d5	d6	d7	d8	Rx	D1	D2	D3	D4	D5	D6
A1PPT104022	40	40.11	15	18	4	30	23	22	21	30	≥0.6	4	22	23	30	20	22	22
A1PPT105022	50	50.13	25															
A1PPT106022	60	60.15	25															
A1PPT108022	80	80.19	35															
A1PPT110022	100	100.23	45															
A1PPT112022	120	120.26	55															
A1PPT204026	40	40.08	15	25	6	40	27	26	24.5	35	≥0.8	5.5	27	6	40	27	26	26
A1PPT205026	60	60.16	25															
A1PPT208026	60	80.20	35															
A1PPT210026	100	100.24	45															
A1PPT212026	120	120.28	55															
A1PPT214026	140	140.31	65															
A1PPT216026	160	160.35	75															

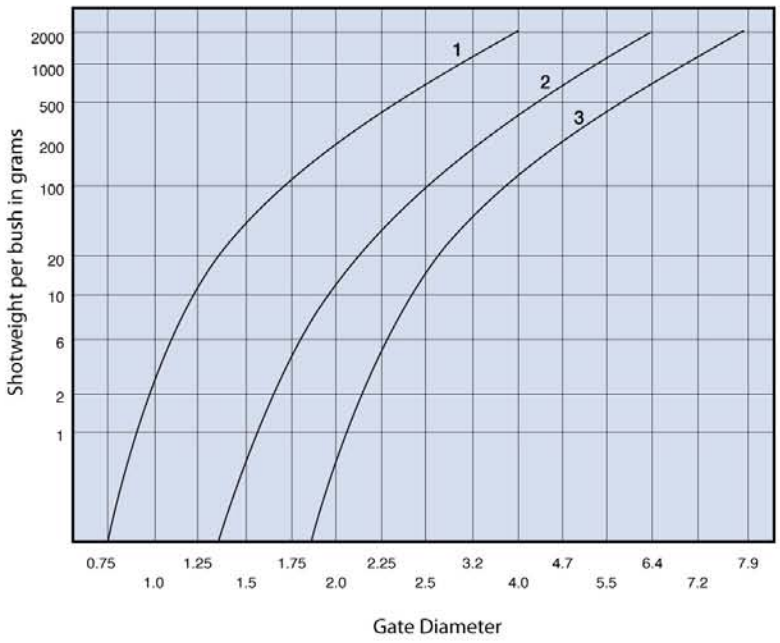
The length of nozzle

Heat expansion of the nozzle must be considered in order to ensure minimum residue on the part.
The heat expansion parameter(X.xx) varies at various temperature and nozzle length (table 1).

Length Expansion (L1=L+X.XX) (mm)

Temperature \ Nozzle Length	40	50	60	80	100	120	140	160
200	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3
250	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4
300	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.5
350	0.2	0.2	0.2	0.3	0.4	0.5	0.5	0.6

(Table 1)



1. Low viscosity materials, PS, PE, PP
2. Medium viscosity materials ABS, SAN, PA, POM
3. High viscosity materials PC, PMMA, Noryl, PUR, re-inforced materials

Note: When increace additive, gate diameter should increase 20%.
The diagram above is a guideline for gate diameters needed for various plastics and shot weights.

Note :

If the gate diameter is too small, an high bushing temperature will have to be set for the gate not to freeze between shots. Gate dimensions may be influenced by the shape of the part and the design of the mould, etc.

The shot weight, injection speed, mould temperature ,cooling around the gate, and injection pressure are all factors that affect gate size. A small gate freezes quicker than larger one.

When injection moulding with very short cycle times,it may be necessary to design gate cooling so that the gate area does not overheat.

If the nozzle goes into a cavity directly,it may be suitable to make bushing gate larger than actual necessary in order to reduce pressure drop and shear.

If the gate is used in a runner, the sprue is reduced and has the same length with gate. The transverse section can be made smaller than that in common use. This is very important in order to reduce the cycle time.

*Start with a smaller gate diameter than that indicated in the table.

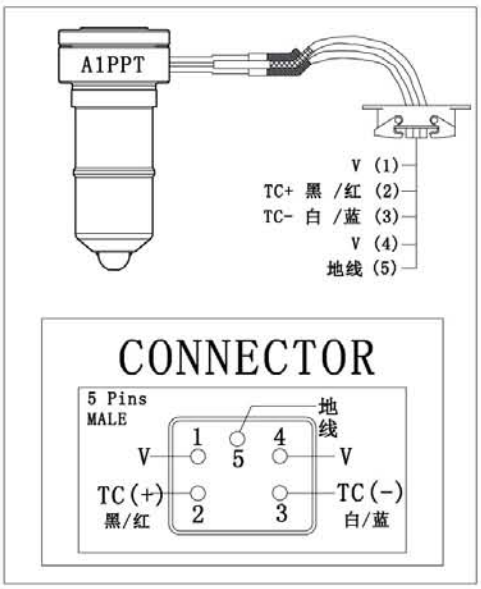
A1PPT Assembly Instruction

Wiring instruction

Attention : This element can only be used when it's matched with a temperature controller.
Heater and T/C wiring should not be connected in parallel.

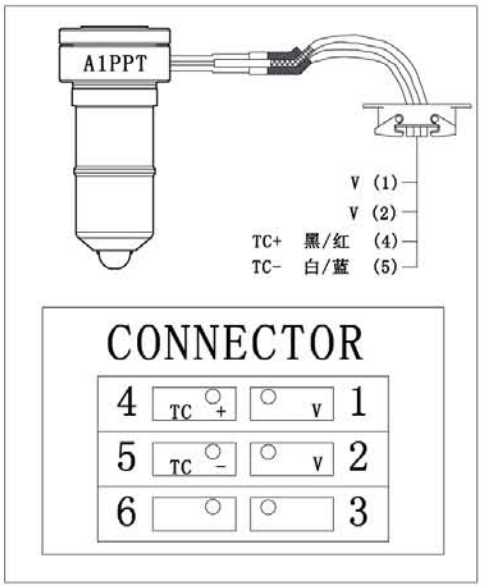
If matched with 5-pin connector, the HEATLOCK connection is as below :

1. Connect (1) (4) with heater
2. Connect T/C wire(black/red) with (2)
3. Connect T/C wire (white/blue)with (3)
4. Connect mould with ground wire & socket



If matched with 6-pin connector, the HEATLOCK connection is as below :

1. Connect (1) (2) with heater
2. Connect T/C wire(black/red) with (4)
3. Connect T/C wire (white/blue)with (5)
4. Connect mould with ground wire & socket



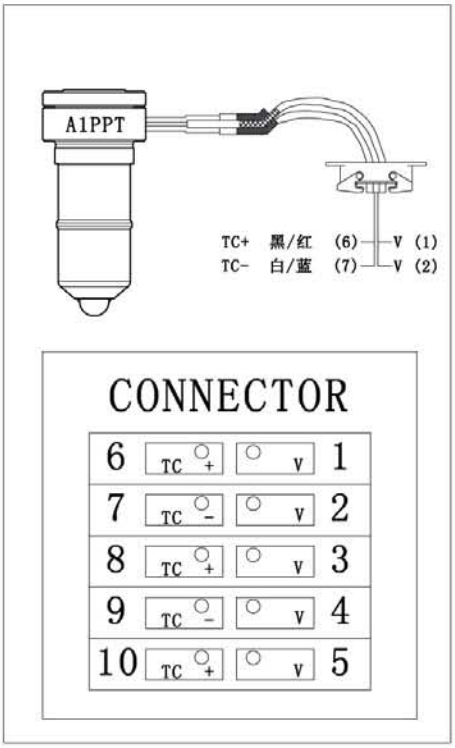
A1PPT Assembly Instruction

Wiring instruction

Attention : This element can only be used when it's matched with a temperature controller.
Heater and T/C wiring should not be connected in parallel.

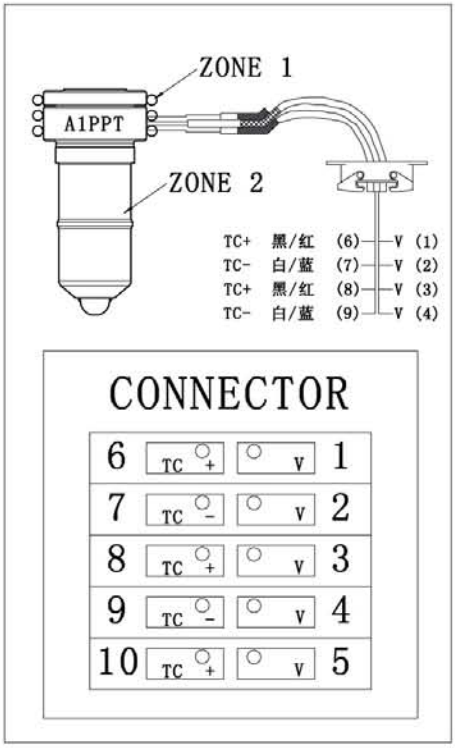
If matched with 10-pin connector, the HEATLOCK connection is as below :

1. Connect (1) (2) with heater
2. Connect T/C wire(black/red) with (6)
3. Connect T/C wire (white/blue)with (7)
4. Connect mould with ground wire & socket



If matched with 10-pin connector, the HEATLOCK connection is as below : (with heater at nozzle head)

1. Connect the heater in zone 1 with(1)(2)
2. Connect T/C wire(black/red) in zone 1 with (6)
3. Connect T/C wire (white/blue)in zone 1 with (7)
4. Connect (3)(4)with heater in zone 2
5. Connect T/C wire(black/red) in zone 2 with (8)
6. Connect T/C wire (white/blue)in zone 2 with (9)
7. Connect mould with ground wire & socket



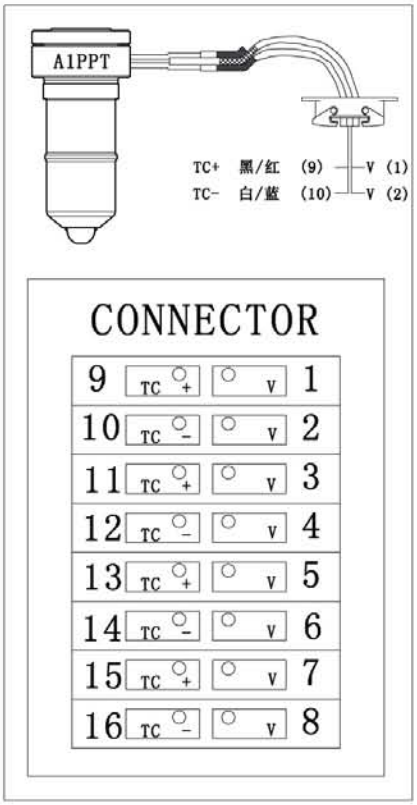
A1PPT Assembly Instruction

Wiring instruction

Attention : This element can only be used when it's matched with a temperature controller.
Heater and T/C wiring should not be connected in parallel.

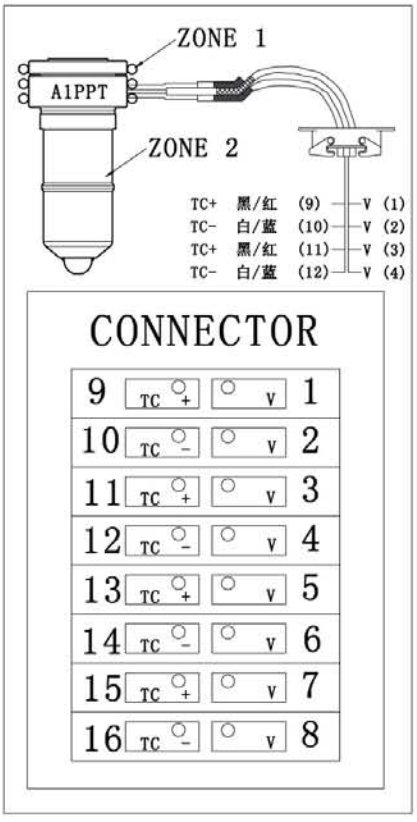
If matched with 16-pin connector, the HEATLOCK connection is as below :

1. Connect (1) (2) with heater
2. Connect T/C wire(black/red) with (9)
3. Connect T/C wire (white/blue)with (10)
4. Connect mould with ground wire & socket



If matched with 16-pin connector,the HEATLOCK connection is as below : (with heater at nozzle head)

1. Connect the heater in zone 1 with(1)(2)
2. Connect T/C wire(black/red) in zone 1 with (9)
3. Connect T/C wire (white/blue)in zone 1 with (10)
4. Connect (3)(4)with heater in zone 2
5. Connect T/C wire(black/red) in zone 2 with (11)
6. Connect T/C wire (white/blue)in zone 2 with (12)
7. Connect mould with ground wire & socket



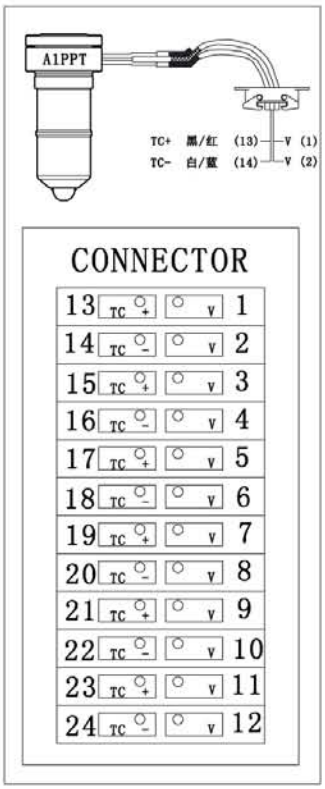
A1PPT Assembly Instruction

Wiring instruction

Attention : This element can only be used when it's matched with a temperature controller.
Heater and T/C wiring should not be connected in parallel.

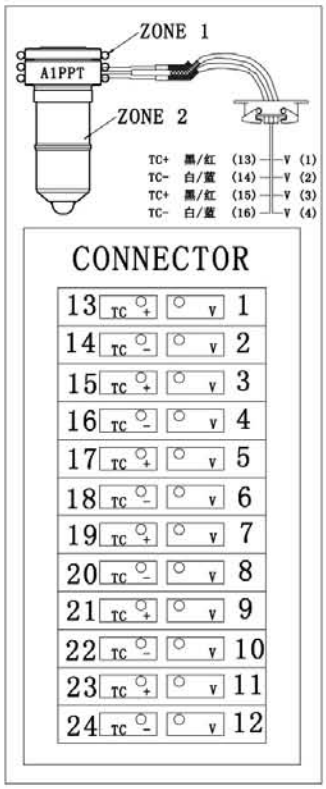
If matched with 24-pin connector, the HEATLOCK connection is as below :

1. Connect (1) (2) with heater
2. Connect T/C wire(black/red) with (13)
3. Connect T/C wire (white/blue)with (14)
4. Connect mould with ground wire & socket



If matched with 24-pin connector,the HEATLOCK connection is as below : (with heater at nozzle head)

1. Connect the heater in zone 1 with(1)(2)
2. Connect T/C wire(black/red) in zone 1 with (13)
3. Connect T/C wire (white/blue)in zone 1 with (14)
4. Connect (3)(4)with heater in zone 2
5. Connect T/C wire(black/red) in zone 2 with (15)
6. Connect T/C wire (white/blue)in zone 2 with (16)
7. Connect mould with ground wire & socket



A1PPT Assembly Instruction

Instruction for replacement of heater or T/C

Attention : For best performance, please use HEATLOCK original components.

Disassembly :

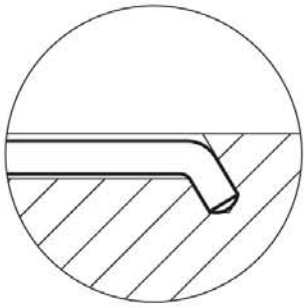
1. Release screw
2. Take out nozzle body and the heater
3. Remove the adhesive tape from heater & T/C
4. Take out the coil heater according the tightness.When you push the coil heater, you can open the screw at end utilizing a tool. It's easy to take out the coil heater. Pay attention not to take out the T/C. The diameter of T/C is only 1mm, be careful.

Assembly :

The reverse process of disassembly. If you want to replace T/C,insert the new T/C into small hole at the end of slot.Ensure that the tip is in full contact with the bottom of the bore.Stick on slot tightly and bent to the outside of nozzle.

Bundle the heater and T/C together using high temperature resistance adhisive tape.Use a torque when assemble nozzle tip and body. Look at the table below FYI.

After the assemble we need re-measure the height of the shoulder.



Torque force for nozzle	
Type	Torque force(N.m)
size1	15
size2	20
size3	25
size4	30

(Table 2)

* If there is any problem during assembly,please call : (86) 769-8382 5600