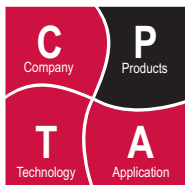
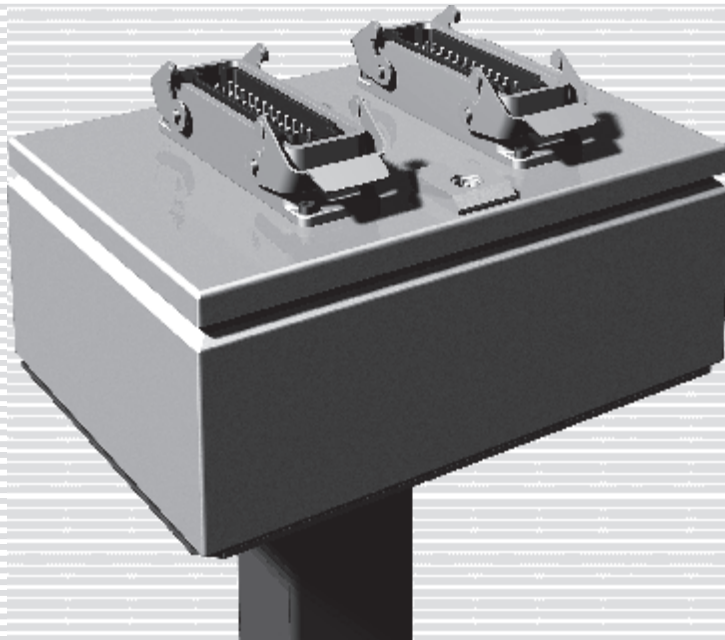
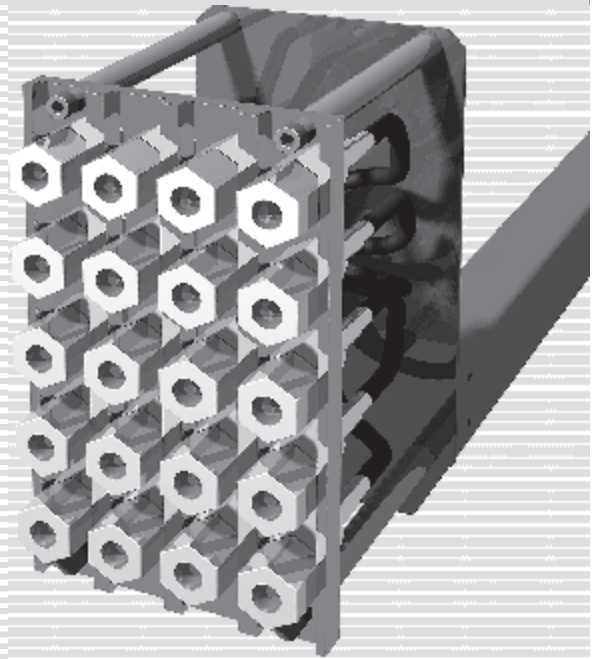


# Connections and Supply Lines for Hot Runner Systems



Illustrations simplified, schematically drawn and not to scale.

**Product type**

Connections and supply lines for hot runner systems with the following functions and installation types:

**1. Wiring**

- Power
- Signals

**2. Piping**

- Compressed air supply
- Hydraulic oil supply
- Cooling water supply

**3. Installation inside mould**

All wires and hoses are installed in grooves and cut outs inside the mould.

**Power and signals**

- a) Heaters and thermocouples of the nozzles
- b) Heaters and thermocouples of the manifold and the inlet bushing

**Hoses**

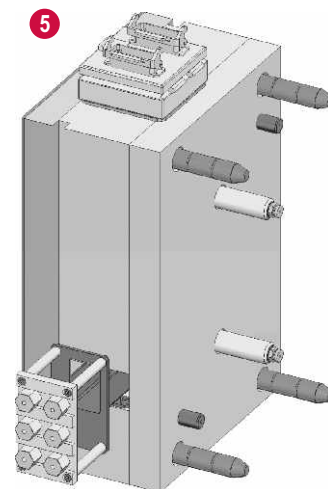
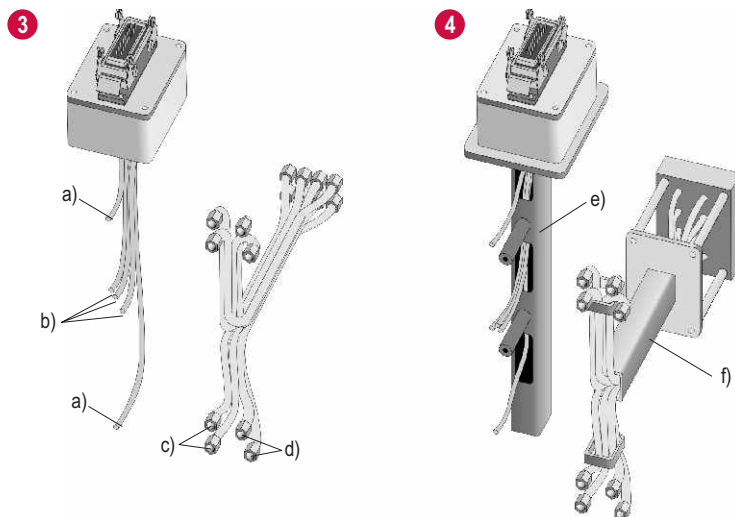
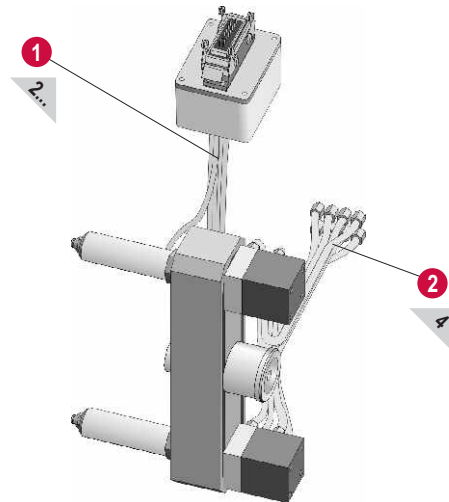
- c) Cooling water supply to cool the actuators
- d) Pressure supply to the actuators

**4. Installation inside wire and hose guards**

All wires and hoses are installed inside guards which are attached to the hot runner system.

- e) Wire guard with retainer plate for the connection box
- f) Hose guard with connection plate for the hoses

**5. Application example**



☞ page no. of related data sheets

When hot runner systems are wired the selection of the connectors as well as the pin assignment and the heater zone numbering are done according to customer specification.

**1. Connectors**

Shown on the right there are examples for connector inserts and housing as they are used for hot runner systems.

- a) Pin insert
- b) Socket insert

For power supply e.g. at the temperature controller socket inserts have to be used in order to avoid danger of electric shock as it is the case when pin inserts are used.

**2. Standard pin assignment**

If no customer specification is available the pin assignment can be done according to Synventive standard as shown for a 24 pin connector on the right.

- 1, 2, 3** Number of heater zones
- 230 V AC** Heater zone power supply
- TC** Signal line to the thermocouples, several colour codings shown below
- 1) Standard

**3. Numbering of heater zones**

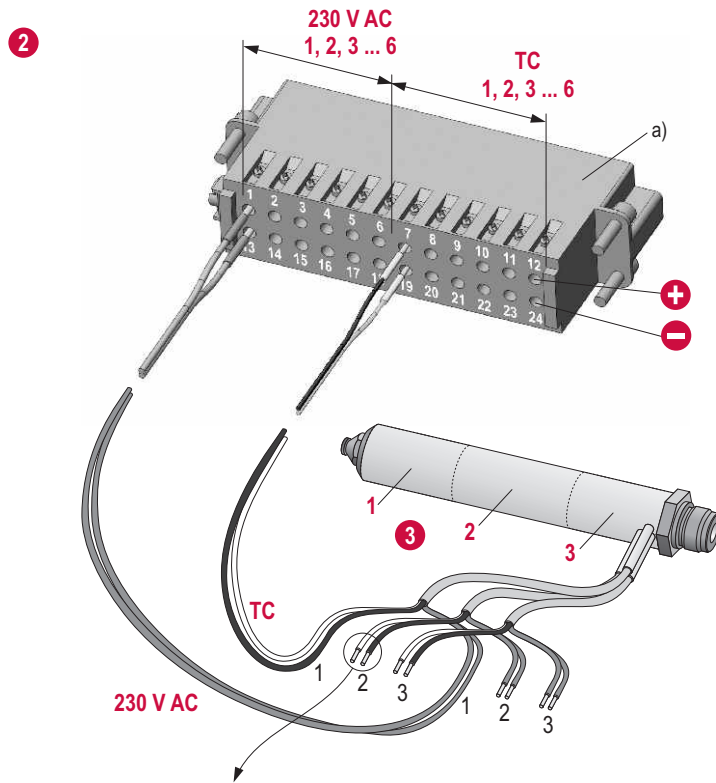
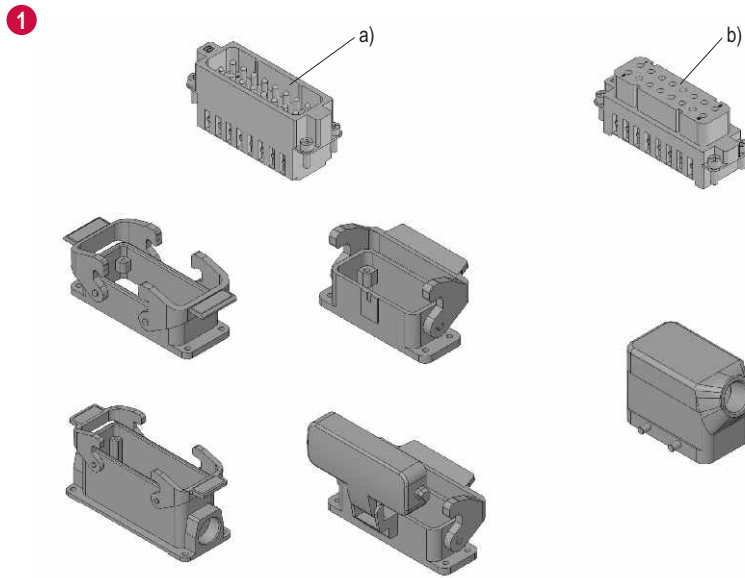
If no customer specification is available the heater zones can be numbered according to Synventive standard:

- Heater zone numbering is done opposite to melt flow direction.
- Heater zones of similar components are numbered together.

This means concretely:

- 1). **Nozzles**
  - from tip to nozzle head
  - in the same order as nozzle numbering
- 2). **Manifold**
  - starting at nozzle no. 1
  - in the same order as nozzle numbering
- 3). **Inlet bushing**
  - starting at the manifold
  - to direction of machine nozzle

Illustrations simplified, schematically drawn and not to scale.



Typ	DIN 43722	DIN 43714	ANSI MC 96.1	NF C 42 - 324	BS4937 / 1843
Fe / CuNi	black    black J    + 1)    - white	blue    red L    + blue    -	black    white J    + red    -	black    yellow J    + black    -	black    yellow J    + blue    -
NiCr / Ni	green    green K    + white    -	green    red K    + green    -	yellow    yellow K    + red    -	magenta    yellow K    + magenta    -	red    brown K    + blue    -

When hot runner systems are wired the selection of the connection box and the design of the wire guards are done according to customer specification.

**1. Connection box**

Shown on the right there are two examples for connection boxes as they are used for hot runner systems.

**2. Wire guard**

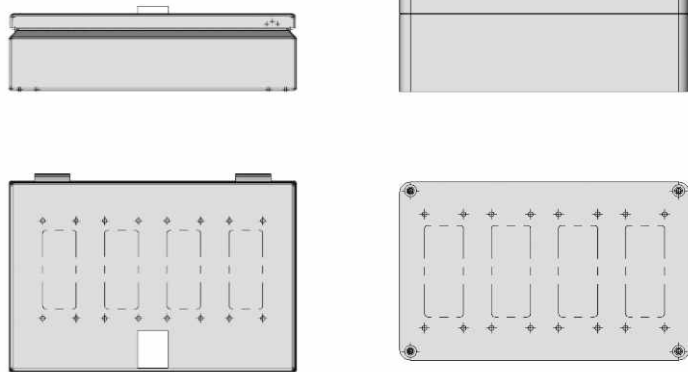
Shown on the right there are the basic components of wire guards which are mounted to the hot runner system.

- a) Retainer plate for connection box
- b) Wire guard

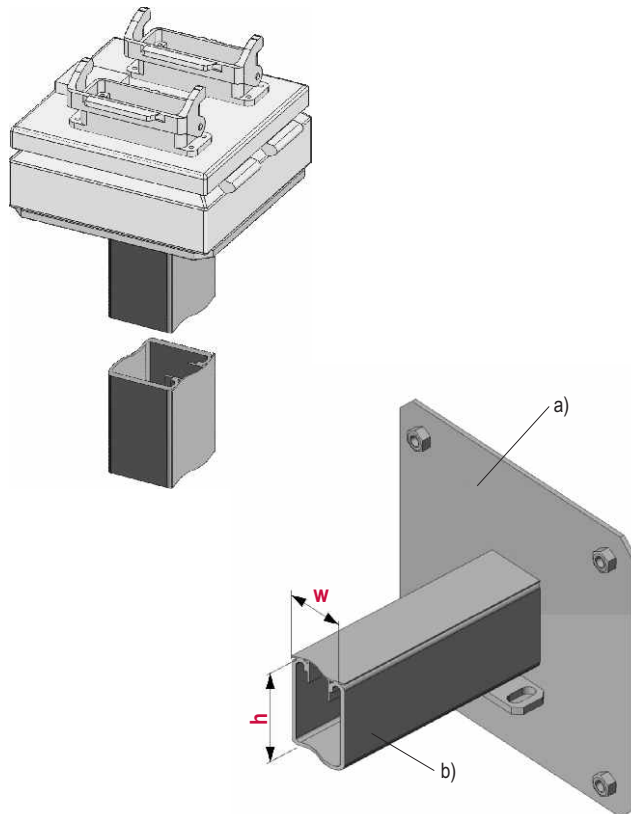
w 41 mm  
h 41 / 62 / 83 mm

Illustrations simplified, schematically drawn and not to scale.

1



2



When hot runner systems are piped the installation of hoses and the design of the hose guard are done according to customer specification.

Shown on the right there are the basic hose guard components which are mounted to the hot runner system.

**1. Connection plate**

The plate with room for 6 fittings as shown on the right is the basic element for all connection plates. The assignment of the connections is done according to customer specification.

a) Example: Connections for a 2-port valve gate system

**2. XAP ...**

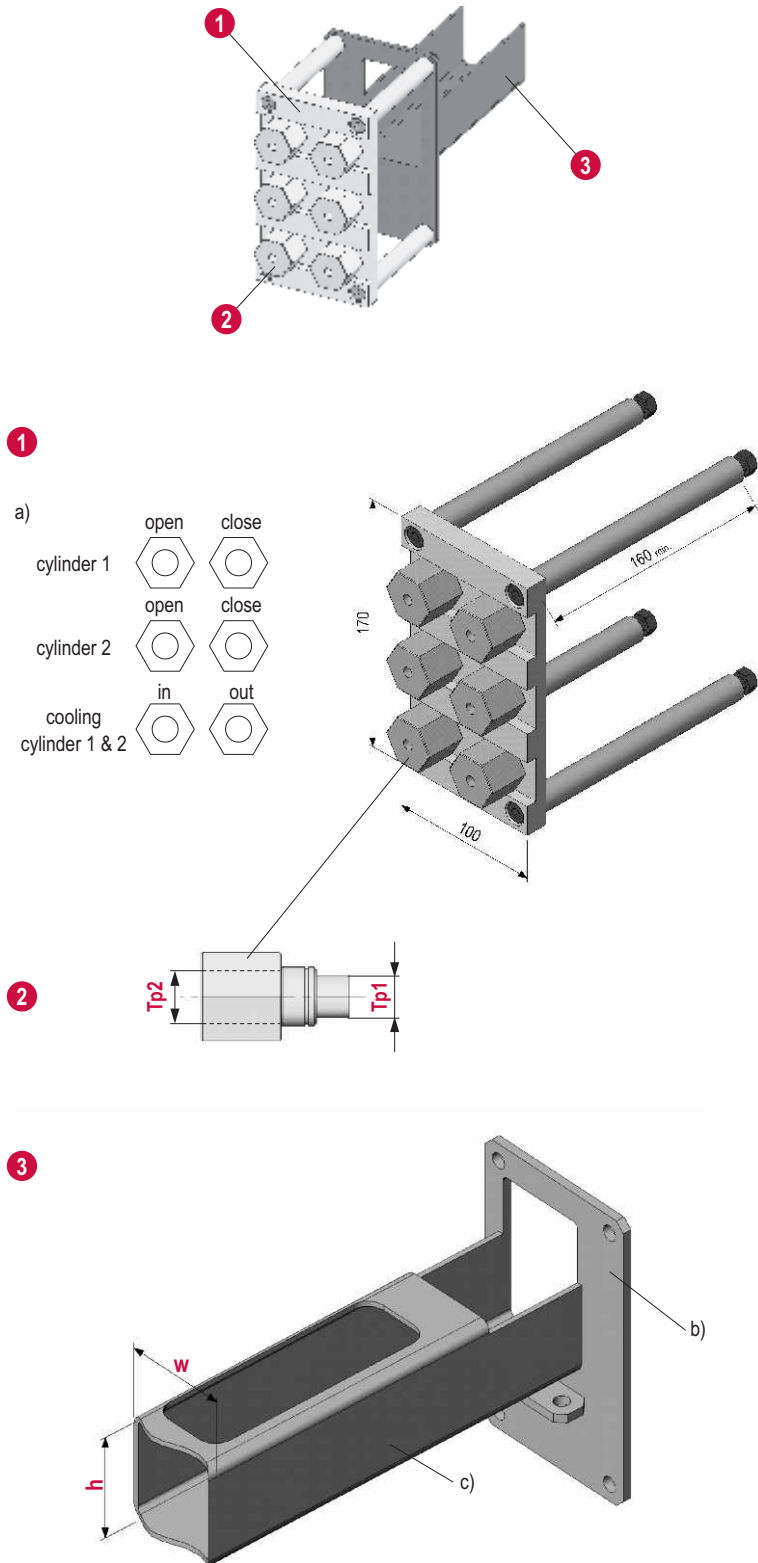
Fitting	TP1 (mm)	TP2 (mm)
XAP 014 014	M14	M14
XAP 014 104	M14	G1/4
XAP 014 106	M14	G3/8
XAP 014 108	M14	G1/2
XAP 016 016	M16	M16
XAP 016 104	M16	G1/4
XAP 016 106	M16	G3/8
XAP 016 108	M16	G1/2

**3. Hose guard**

b) Retainer plate for the connection plate  
c) Hose guard

- w x h**
- 40 x 40 mm
  - 60 x 40 mm
  - 60 x 60 mm
  - 60 x 80 mm
  - 60 x 100 mm
  - 60 x 120 mm
  - 80 x 80 mm
  - 80 x 100 mm
  - 80 x 120 mm

Illustrations simplified, schematically drawn and not to scale.



[www.synventive.com](http://www.synventive.com)

MK-PRM.BRM.GB-P.CONCTN 2009-05-01

 **Synventive**  
molding solutions