Technical data

Pressed-in 230V heating elements ensure optimal heat transfer in the manifold providing for an even temperature profile.
The thermocouple is mounted closely to the material tube for precise temperature control.

The conventional 230V manifold offers the best prerequisites for hydraulic balancing.

Technical data	
Type	Straight manifold H-manifold Cross manifold Star manifold T-manifold
Heating element	230 Volt pressed-in.
Material tube	Material tube ⌀ 2.5 mm up to ⌀ 20 mm.
Thermocouple	Surface mounted thermocouple with flexible cable.
Power connection	Screwing with flexibel cable.
Accessories	1 support piece Electrical connections with flexible cable PE-ground cable
max. permissible pressure	2000 bar.
Controller	Single zone controls: DP1 / 2 Multi zone controls: DP3 / 5, DPT5 - 15, DPT20 - 45 DPT multizone
High temperature insulating plate	To protect the electrical connections.

Order code

C = 36 mm
D = 46 mm
E = 56 mm

G = Straight manifold
H = H-manifold
K = Cross manifold
S = Star manifold
T = T-manifold

N = *Valve gate*

P = Pressed-in heating element
8 = Number of nozzles
B = Balanced
T = Partially balanced
-- = Unbalanced
Ød0 = Material tube ⌀ entrance
Ød = Material tube ⌀ cross bore
Ød1 = Material tube ⌀ nozzle exit

Manifold order code: ***N*** **H C P 8 B 8 6 5 H100 50/50/50 120**

Distances between the nozzle rows
H = H-manifold
Tk = Star manifold
T = T- manifold

Distances between the nozzles
Straight manifold

Distances between the nozzles
Cross manifold

Order code sub-manifold: **UV 4 6 / 50/60**

UV = Sub-manifold
4 = Number of nozzles/bores
ød = Nozzle exit ⌀
S = Pitch center

Notes

① Hot runner nozzles
Open nozzle, chapter 2.1
Valve gate nozzle, chapter 2.3
The screw connections of the hot runner nozzles depend on the nozzle type.

② Tempering
For the area around the gate, near the nozzle and on the ejector side, sufficient cooling is recommended to dissipate additional heat caused by the shearing. It is essential that these cooling circuits be operated separately from the other tempering circuits.

③ Cable channel
The recess for the cable channel has to be constructed according to the nozzle type, chapter 2.1.

④ Support piece
Support pieces and nozzle heads have the same height, chapter 7.

⑤ Height of the nozzle head, chapter 6

⑥ Surface mounted thermocouple, chapter 6

⑦ Sealing assembly, chapter 7

⑧ Pressure pads, chapter 7

⑨ Connection elements, chapter 5

⑩ Heat expansion gap " K "
The "K" dimension required to allow for heat expansion must be ensured by grinding the pressure pads (12 mm)!
Determine the difference between the height of the manifold system and the height of the frame plate when mounted.

ΔT indicates the difference between the processing temperature and the mold temperature.

Manifold height	ΔT(°C)	100	150	200	250	300	350
36 mm	K (mm)	0.021	0.059	0.098	0.137	0.177	0.217
46 mm	K (mm)	0.033	0.078	0.124	0.170	0.218	0.264
56 mm	K (mm)	0.046	0.097	0.150	0.203	0.258	0.311

⑪ Installation height of the hot runner
Tolerance -0.05 mm
Dependent on K = head height nozzle type, chapter 2.1
VH = manifold height, chapter 3

⑫ Close-to-manifold screw connection
The clamping plate should be screwed to the mold plate as follows:
a. Min. 2 x M10 per hot runner nozzle, 2 x M10 per 80 mm.
b. The screw connection should be made as close to the manifold as possible. We recommend the 12.9 property class.

⑬ Bores in the clamping plate
The through borehole in the clamping plate allows the mounting screws for the nozzle (types _FT, _HT and _LT) to be tightened once the mold has been assembled.

⑭ Needle actuation, chapter 4

⑮ Assembly depth in the cavity plate
Dimension L $^{+0,02}$ depends on the gate point.

Please note:

1. Positive sealing
There is no positive sealing between the nozzles and the manifold when the hot runner system is cold. The system is sealed when the operating temperature is reached.

2. Pitch centers
a. The min. pitch center depends on the nozzle type.
The restrictive function of the support piece can be assumed by the nozzle heads with tight pitches.
b. *Please note the dimensions of the needle actuation in the valve gate nozzle system.*

3.1. Edge distance for **"Straight Manifold"** (DS min.)
a. DS min. 35.0 mm channel-Ø ≤ 6 mm
b. DS min. 42.5 mm channel-Ø ≥ 8 mm, ≤ 10 mm
c. DS min. 45.0 mm channel-Ø ≥ 12 mm

3.2. Edge distance for **"H-/ Cross-/ Star-/ T-Manifold"** (DS min.)
a. DS min. 35.0 mm channel-Ø ≤ 10 mm
b. DS min. 45.0 mm channel-Ø ≥ 12 mm

4. Receptacles
Due to heat convection, do not mount the receptacle directly onto the mold. We recommend using spacer sleeves of a sufficient length.

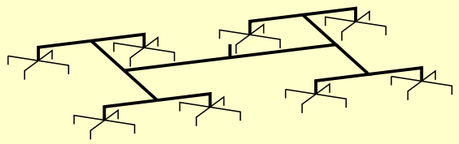
5. High temperature application
In the case of high temperature applications >320°C, we recommend that you consult our design department.

6. Manifold length (VL)
The manifold length (VL) depends on the defined pitch distance, the nozzle type used and the runner diameter selected (Dimension DS min.).

7. *Clamping plate / lifting plate*
The nozzle exit bore in the clamping plate / lifting plate depends on the needle Ø.
a. Needle Ø 2 mm => nozzle exit bore min. Ø 4 mm
b. Needle Ø 3 mm => nozzle exit bore min. Ø 5 mm
c. Needle Ø 5 mm => nozzle exit bore min. Ø 7 mm

8. Sub-manifold
The use of sub-manifolds makes it possible to increase the number of possible cavities in each manifold.
The sub-manifolds are small manifold plates without their own heating which are screwed under the manifolds and heated by them.
The max. height for the sub-manifold plate is 20 mm for channels with diameters of 6 mm and 8 mm. If the channel diameter is larger than 8 mm, the sub-manifold plate must be heated separately.

Example: 8-drop H-manifold with 4-drop sub-manifolds. This combination makes a balanced 32-drop configuration.



9. Dimensions and tolerances
All measurements and tolerances indicated refer to the mold.

If you have any questions please call our technical consulting at +49 (0) 6451 - 50 08-0.

10. Maximum tightening torque

Threads	Property class 10.9	12.9
M4	3,8 Nm	4,6 Nm
M5	8,0 Nm	9,5 Nm
M6	13,0 Nm	16,0 Nm
M8	32,0 Nm	39,0 Nm
M10	64,0 Nm	77,0 Nm
M12	110,0 Nm	135,0 Nm

Ordering notes

Following parts must be ordered separately:

1. Connecting piece, chapter 5

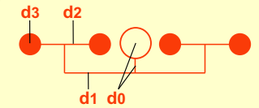
2. Surface mounted thermocouple, chapter 6

3. Pressure pad, chapter 7

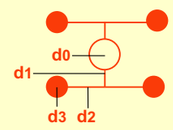
Design examples

Allocation the material tube-Ø

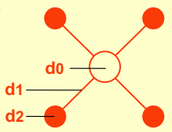
N G_P4B



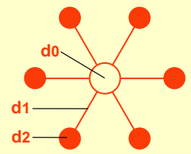
N H_P4B



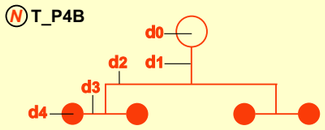
N K_P4B



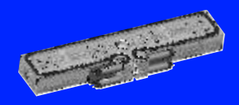
N S_P4B



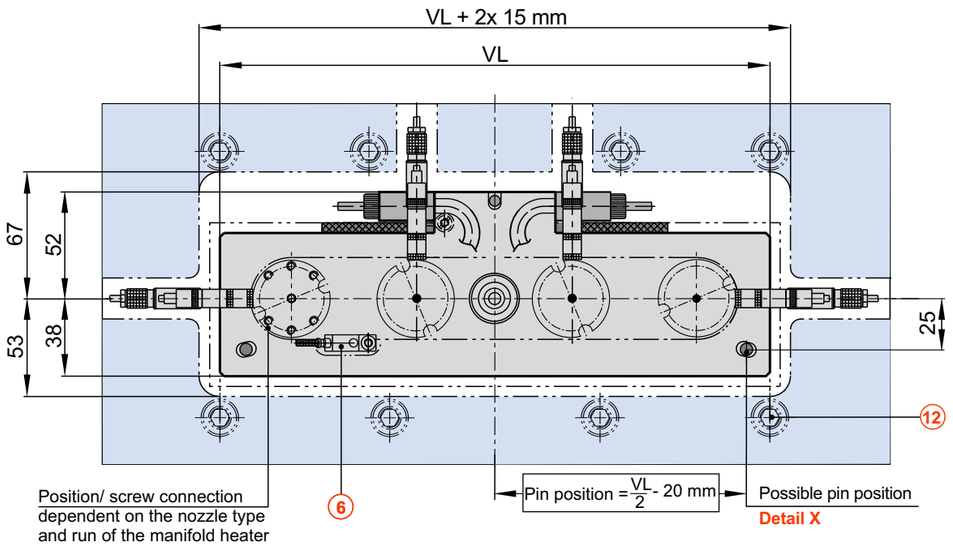
N T_P4B



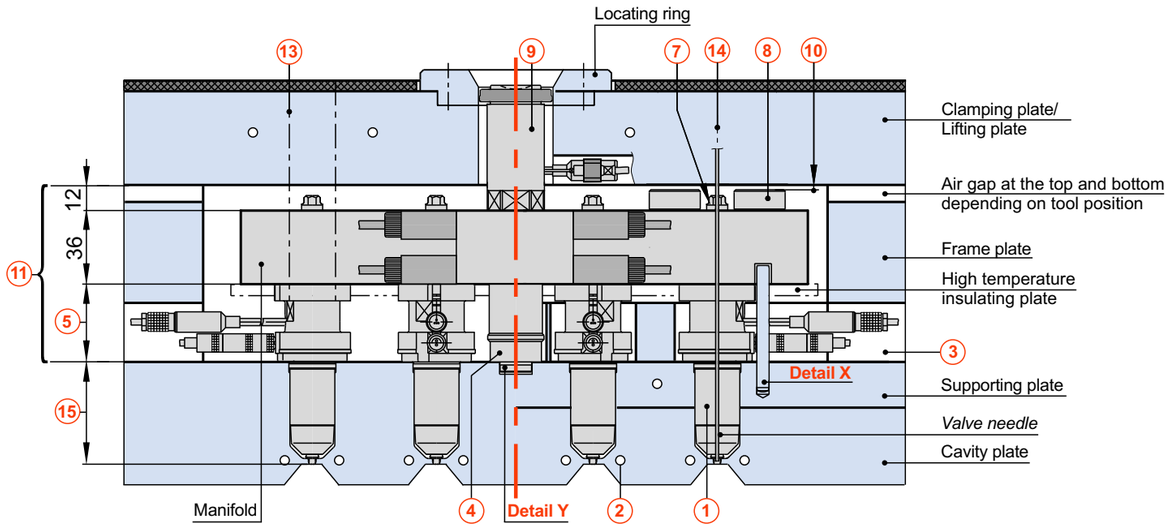
Straight manifold type NGCP



Assembly: View on the nozzle tip



Assembly: View on the support rail /..... frame plate



Signs and symbols, see the yellow page for details:

1. Hot runner nozzle
2. Tempering
3. Cable channel
4. Support piece
5. Height of the nozzle head
6. Surface mounted thermocouple
7. *Sealing assembly,* only for valve gate nozzles
8. Pressure pad
9. Connection element
10. Heat expansion gap “K”
11. Installation height of the hot runner
12. Close-to-manifold screw connection
13. Bore in the clamping plate
14. *Needle actuation*
15. Installation depth in the cavity plate

Order code

Example: **GCP4B-8/6/5-100/150/100**

- G = Straight manifold
- C = VH (manifold height) 36 mm
- 4 = 4 nozzles type 5SHT
- B = Balanced
- 8 = Ød0 material tube Ø of the manifold 8 mm
- 6 = Ød1 material tube Ø of the manifold 6 mm
- 5 = Ød2 material tube Ø of the manifold 5 mm
- 5 = Ød3 material tube to nozzles 5 mm
- Nozzle pitches
  S2 = 100 mm, S3 = 150 mm

Manifold length calculation example

The manifold length (VL) is the distance between outmost nozzle drop centers plus twice the distance to outer edge “DS min.” (example 35 mm).

S1	350 mm
DS min. (2x 35 mm)	+ 70 mm
VL	= 420 mm
With VL 420 please select the next larger manifold length	= 460 mm

Notes

36: The manifold height (VH) depends on the channel Ø, number of nozzles and balanced architecture.

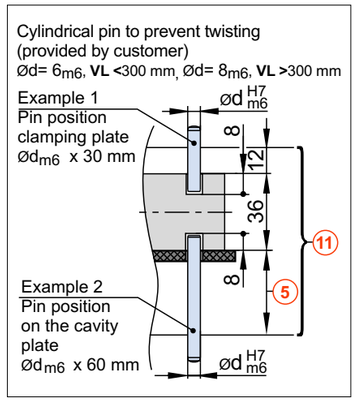
DS: Edge distance, see yellow page.

The position of heating connections is not variable.

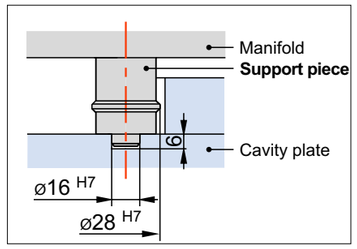
The position of surface mounted thermocouple is not variable.

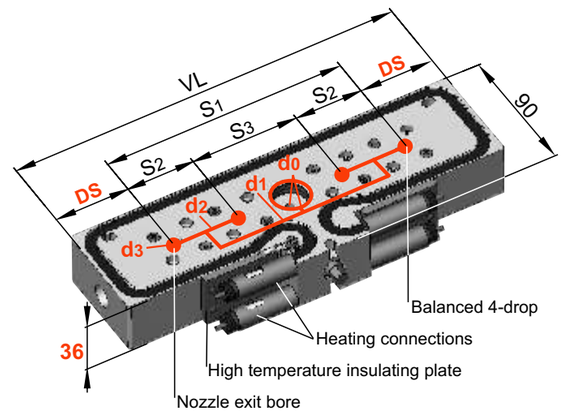
More manifold lengths (VL) and balanced architectures on request.

Detail X



Detail Y





GCP = **VH 36 mm**
GDP = **VH 46 mm,** page 3.1. 11
NG_P = ***Valve gate***

CADHOC® GÜNTHER System-Designer 3D model online

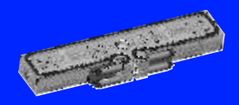
VL	160	210	260	310	360	410	460	510	560
Control zone	1	1	1	1	1	1	1	1	1
Power (watt) per zone	2x 450	2x 650	2x 850	2x 1000	2x 1100	2x 1300	2x 1500	2x 1500	2x 1500

Design examples, see yellow page

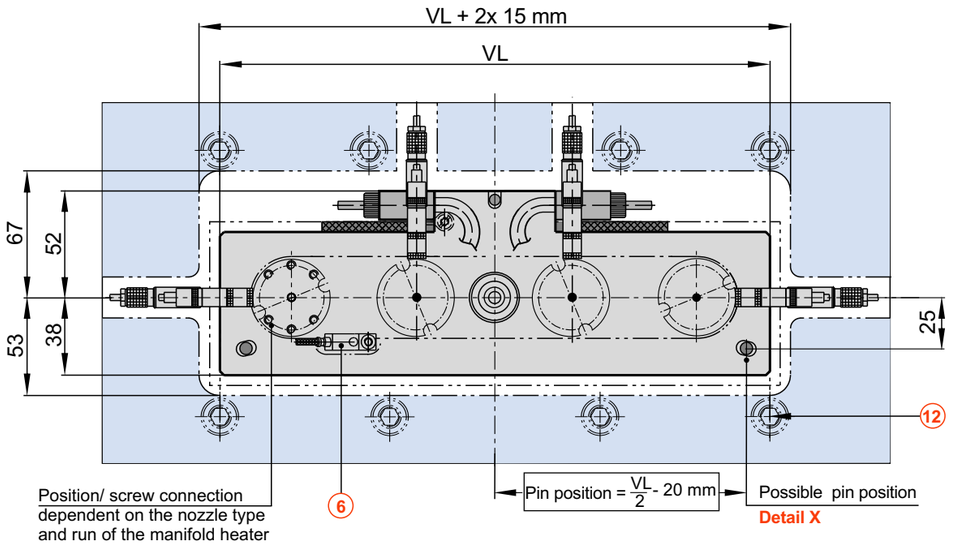
Type		Channel-Ød.... mm	Number ...-drop
GCP1B *NGCP1B*	d...	≤ 10 ≤ 8	1
GCP2B *NGCP2B*	d...	≤ 10 ≤ 8	2
GCP3--	d...	≤ 10	3
GCP4B *NGCP4B*	d...	≤ 8 ≤ 8	4
GCP5--	d...	≤ 10	5
GCP8T *NGCP8T*	d...	≤ 8 ≤ 8	8

B = balanced, T = partially balanced, -- = unbalanced

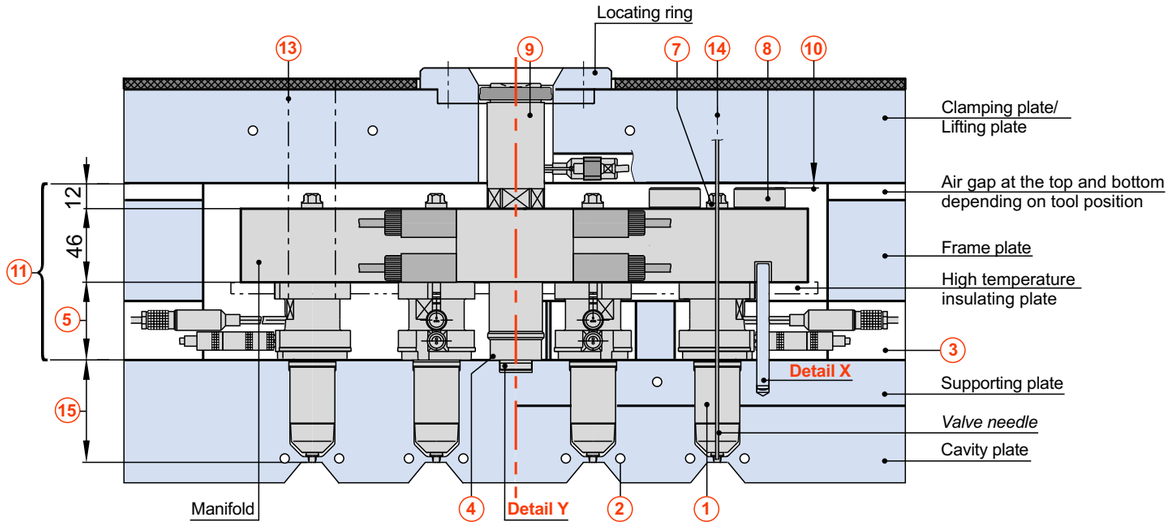
Straight manifold type NGDP



Assembly: View on the nozzle tip



Assembly: View on the support rail /..... frame plate



Signs and symbols, see the yellow page for details:

1. Hot runner nozzle
2. Tempering
3. Cable channel
4. Support piece
5. Height of the nozzle head
6. Surface mounted thermocouple
7. *Sealing assembly,* only for valve gate nozzles
8. Pressure pad
9. Connection element
10. Heat expansion gap “K”
11. Installation height of the hot runner
12. Close-to-manifold screw connection
13. Bore in the clamping plate
14. *Needle actuation*
15. Installation depth in the cavity plate

Order code

Example: **GDP4B-12/10/8-100/150/100**

- G = Straight manifold
- D = VH (manifold height) 46 mm
- 4 = 4 nozzles type 8SHT
- B = Balanced
- 12 = Ød0 material tube Ø of the manifold 12 mm
- 10 = Ød1 material tube Ø of the manifold 10 mm
- 8 = Ød2 material tube Ø of the manifold 8 mm
- 8 = Ød3 material tube to nozzles 8 mm
- Nozzle pitches S2 = 100 mm S3 = 150 mm

Manifold length calculation example

The manifold length (VL) is the distance between outmost nozzle drop centers plus twice the distance to outer edge “DS min.” (example 42.5 mm).

S1	350 mm
DS min. 2x 42.5 mm	+ 85 mm
VL	= 435 mm
With VL 435 please select the next larger manifold length	= 440 mm

Notes

DS: Edge distance, see yellow page.

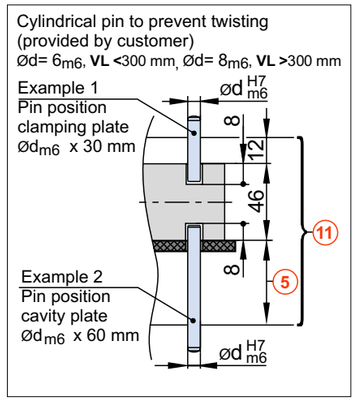
46: The manifold height (VH) depends on the channel Ø, number of nozzles and balanced architecture.

The position of heating connections is not variable.

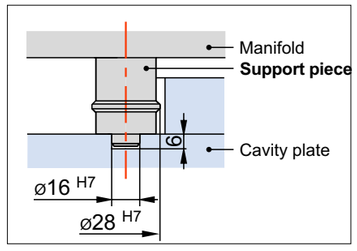
The position of surface mounted thermocouple is not variable.

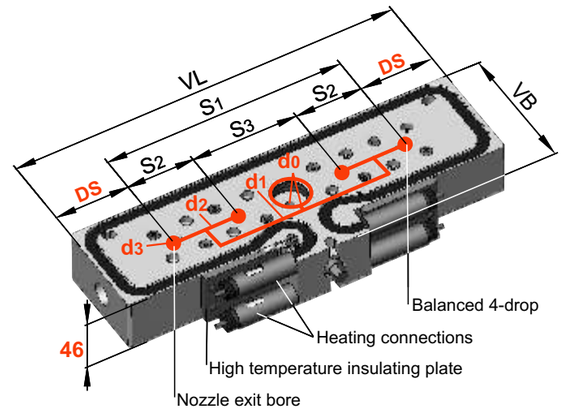
More manifold lengths (VL) and balanced architectures on request.

Detail X



Detail Y





GCP = **VH 36 mm,** page 3.1. 10
GDP = **VH 46 mm**
NG_P = ***Valve gate***

CADHOC® GÜNTHER System-Designer 3D model online

VL	160	210	260	310	360	410	460	510	560
VB	90			120					
Control zone	1	1	1	1	1	1	1	1	1
Power (watt) per zone	2x 450	2x 650	2x 850	2x 1000	2x 1200	2x 1500	2x 1500	2x 1500	2x 1500

Design examples, see yellow page

		Channel ød... mm	Number ...-drop	VB
GDP1B *NGDP1B*	d...	≥ 12 ... 16 ≥ 10 ... 14	1	90
GDP2B *NGDP2B*	d...	≥ 12 ... 16 ≥ 10 ... 14	2	90
GDP3--	d...	≥ 12 ... 16	3	90
GDP3T	d...	≤ 6	3	90
GDP4B *NGDP4B*	d...	≥ 12 ... 16 ≥ 10 ... 14	4	120
GDP6T *NGDP6T*	d...	≤ 8 ≤ 8	6	120

B = balanced, T = partially balanced, -- = unbalanced