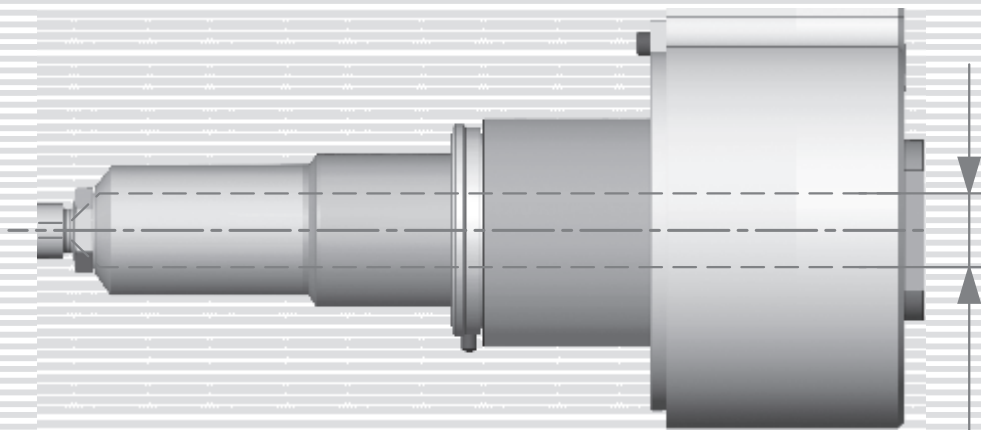
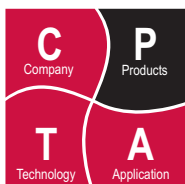


Series GB N ... S

Single Nozzles, Valve Gate



Ø16



Product type

Hot runner nozzles in the **GB N ... S** range; this series belongs to nozzle class¹⁾ **16 S**.
 → Nozzle size **16**: Flow bore-Ø 16 mm²⁾
 → Nozzle style **S**: Single nozzle

With the nozzle tips in the form of screw-in parts, different nozzle types can be implemented (type = shape and gating of nozzle tip), see table at right.

Available gating types
 → valve gate (**V**)

Major dimensions (mm)

J	Flow bore Ø	Ø16 ²⁾
L	Nozzle length	48...297 ³⁾⁴⁾
D	Ø of cut out, front	Ø48
Dt	Centring Ø tip	see right
H	Hot runner exit Ø	see right ³⁾
L1	Length of cut out, back	0...170 ³⁾⁵⁾
D1	Ø of cut out, back	Ø56 ⁵⁾
K	Head height	156
Dk	Head Ø	Ø144
Ls	Depth of head centring	9
Ds	Ø of head centring	Ø130
R	Nozzle contact radius	0...40 ³⁾
AD	Nozzle contact angle	90°/120°

Heating

- externally heated, 230 V AC
- 2...3 Zonen, 1080...1810 W
- Fe/CuNi thermocouple, DIN 43710

Application

For all usual thermoplastics
 Max. shot weight per nozzle (g)
 → 1500 (low viscosity)

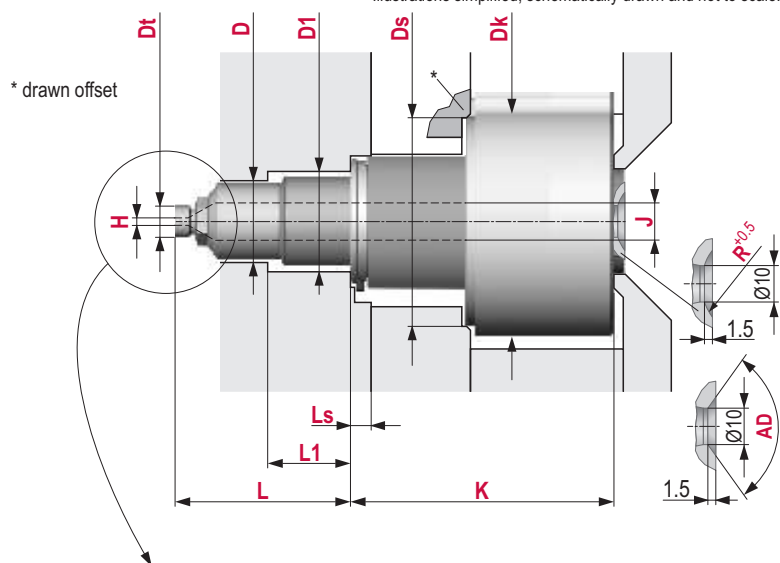
Without being directly cooled the nozzle can be used up to a mould temperature of 80°C. For higher temperatures the associated cooling unit has to be used.

For further information about the cooling unit and also about details on the needle actuator (pressure, stroke etc.) please see section "Flow Control - Valve Gate Components"







☞ page no. of related data sheets

- 1) Enhanced classification for improved ease of selection. Part of the nozzle type No. for later nozzle series.
- 2) Standard value resp. average diameter of nozzle range, can be different depending on nozzle series and application.
- 3) Raster dimensions. Intermediate values can be found from the prescribed dimensional raster.
- 4) Minimum and maximum value of nozzle length depend on the selected tip shape.
- 5) depending on nozzle length

Illustrations simplified, schematically drawn and not to scale.



Available nozzle types for this series

Shape of nozzle tip	Gating of nozzle tip		
	N (open)	T (open with torpedo)	V (valve gate)
Y			 YV H: 5.0 Dt: Ø 20 ³⁾
U			
F			
P			
K			
L			 LV H: 5.0 Dt: Ø 20 ⁴⁾
S			 SV H: 5.0 Dt: Ø 20 ⁵⁾
V			 VV H: 5.0 Dt: Ø 20 ⁶⁾
W			 WV H: 5.0 Dt: Ø 22 ⁷⁾
X			 XV H: 4.0 / 5.0 Dt: Ø 20 ⁸⁾

S

C

E

Cut out in mould plate for nozzle and connections

1. Cut out for the nozzle

L Nozzle length
L1 Length of cut out, back

General tolerances: DIN ISO 2768-mK

Surfaces: $\nabla 3.2 / \left(\nabla 1.6 / \nabla 0.8 \right)$

Values of the dimensions L and L1 can be found in the data sheet for the selected nozzle type.

2. Cut out for connections

→ electrical power
→ thermocouple

3. Groove for locking pin

The locking pin secures the nozzle against rotation.

4. Cut out for the nozzle tip

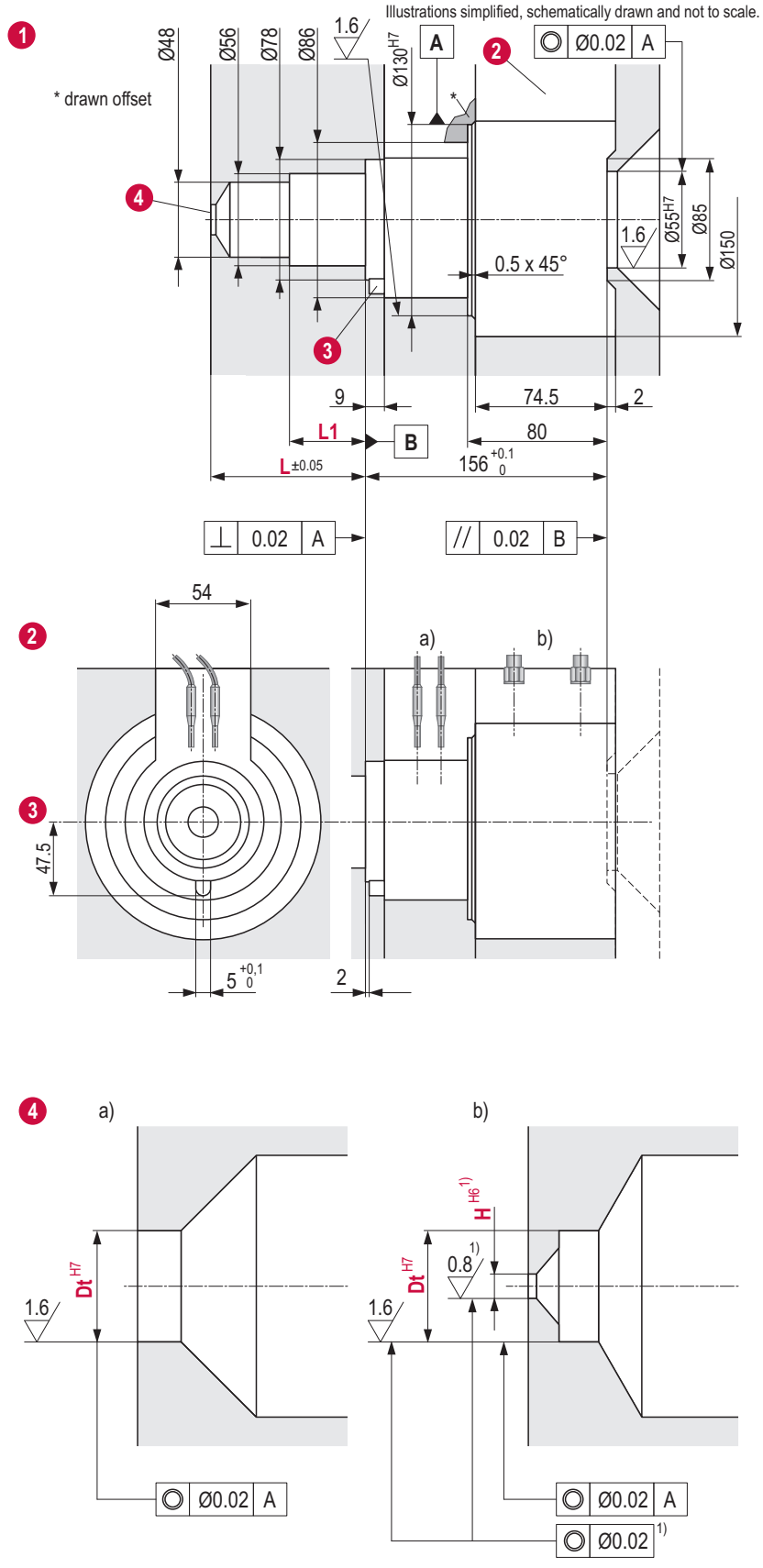
- a) Through bore nozzle tip (Y...V)
- b) Blind bore nozzle tip (W, X)

Dt Tip Ø
H Hot runner gate Ø

Depending on the selected nozzle type, different cut outs are required for the nozzle tip.

The dimensions of the cut out for the nozzle tip used can be found in the nozzle data sheet.

1) These data apply for valve gate nozzles.



You can configure your nozzle here

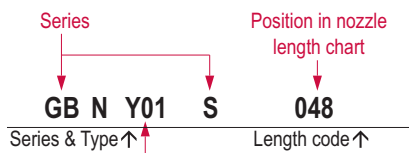
1. Complete the nozzle description ¹⁾

GB N Y01 S
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ R=↑ AD=↑
*equal to the value of the length code for this series

Example and explanations



- Y Nozzle tip shape Y
- 01 → for materials with narrow to medium process window
- N Gating type: valve gate (V) ¹⁾

48 5.0 16 -
L=↑ H=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

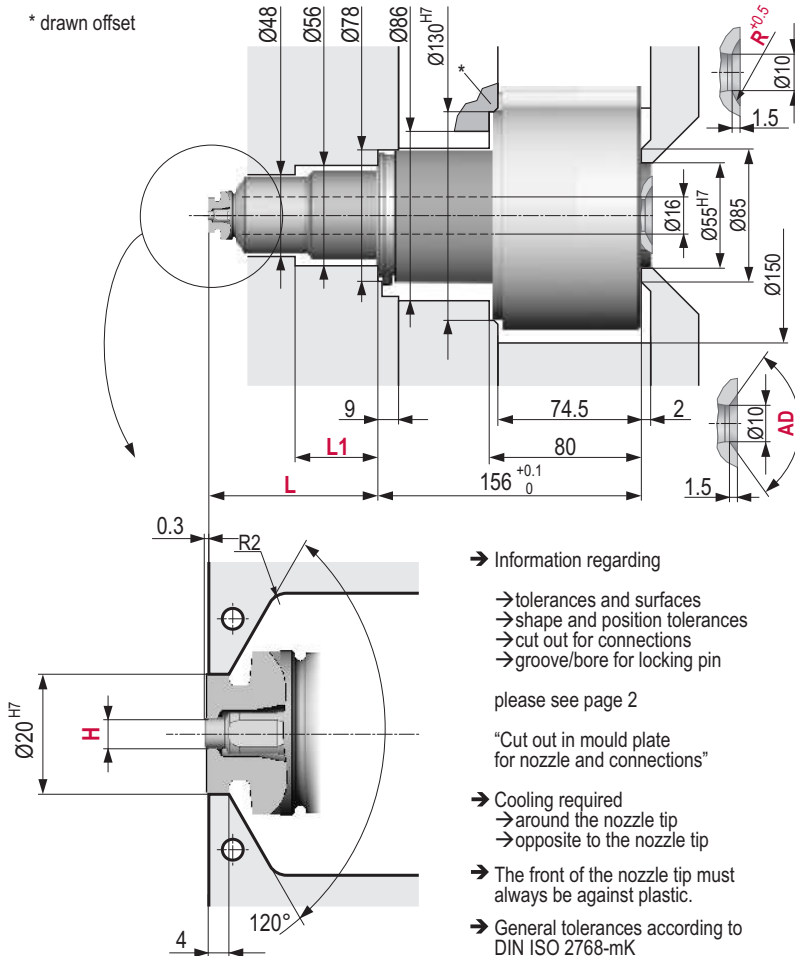
H (mm)
5.0

R (mm)
0 7.5 12.7 15.5 16 19 20 40

AD (°)
90 120

- 1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
- 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
- 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.

Illustrations simplified, schematically drawn and not to scale.



- Information regarding
 - tolerances and surfaces
 - shape and position tolerances
 - cut out for connections
 - groove/bore for locking pin

please see page 2

"Cut out in mould plate for nozzle and connections"

- Cooling required
 - around the nozzle tip
 - opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.
- General tolerances according to DIN ISO 2768-mK

Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
048	48	-	-	400	680	-	-	-	1080
078	78	-	-	500	680	-	-	-	1180
108	108	-	-	630	680	-	-	-	1310
138	138	60	-	500	400	680	-	-	1580
166	166	60	-	500	400	680	-	-	1580
196	196	80	-	500	400	680	-	-	1580
226	226	110	-	500	400	680	-	-	1580
256	256	140	-	500	500	680	-	-	1680
286	286	170	-	630	500	680	-	-	1810

You can configure your nozzle here

1. Complete the nozzle description ¹⁾

GB N L01 S

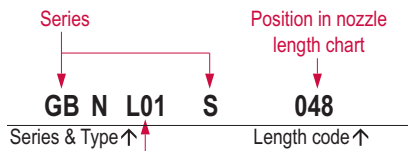
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ F=↑ R=↑ AD=↑

*equal to the value of the length code for this series

Example and explanations



- L Nozzle tip shape L
- 01 → for materials with narrow to medium process window
- N Gating type: valve gate (V) ¹⁾

48 5.0 15 16 -
L=↑ H=↑ F=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)	
5.0	

F (mm)	
15	50

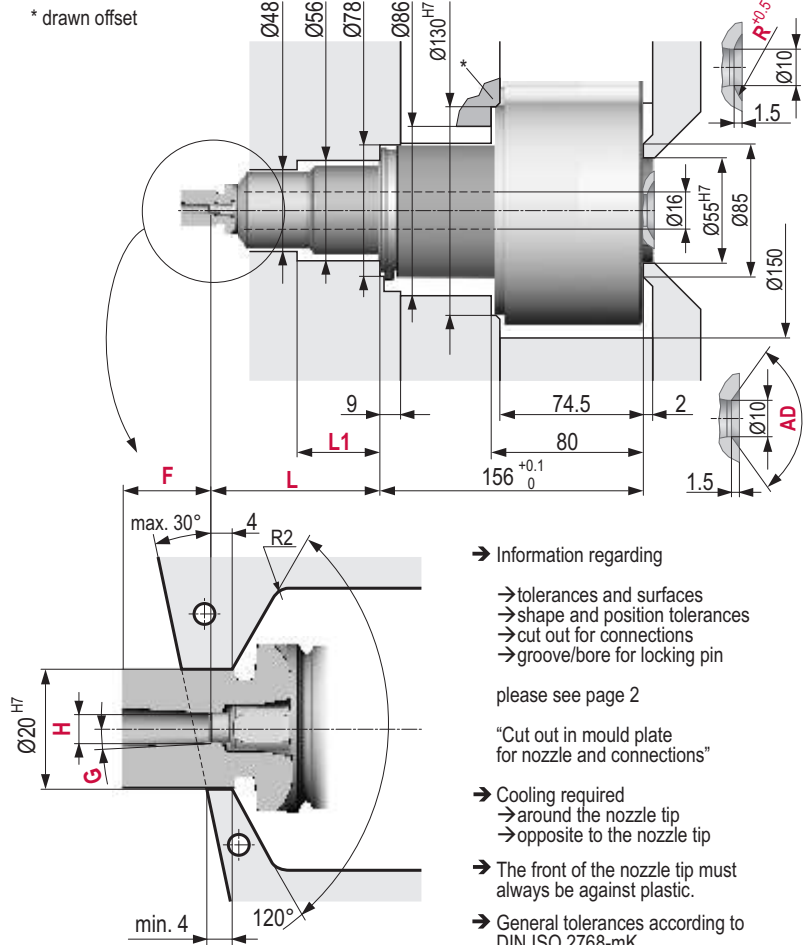
G (°)	
3	

R (mm)							
0	7.5	12.7	15.5	16	19	20	40

AD (°)	
90	120

- 1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
- 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
- 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.

Illustrations simplified, schematically drawn and not to scale.



→ Information regarding

- tolerances and surfaces
- shape and position tolerances
- cut out for connections
- groove/bore for locking pin

please see page 2

"Cut out in mould plate for nozzle and connections"

- Cooling required
 - around the nozzle tip
 - opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.
- General tolerances according to DIN ISO 2768-mK

Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
048	48	-	-	400	680	-	-	-	1080
078	78	-	-	500	680	-	-	-	1180
108	108	-	-	630	680	-	-	-	1310
138	138	60	-	500	400	680	-	-	1580
166	166	60	-	500	400	680	-	-	1580
196	196	80	-	500	400	680	-	-	1580
226	226	110	-	500	400	680	-	-	1580
256	256	140	-	500	500	680	-	-	1680
286	286	170	-	630	500	680	-	-	1810

You can configure your nozzle here

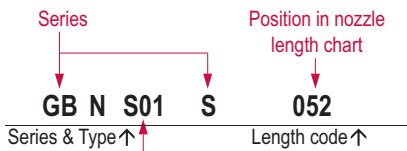
1. Complete the nozzle description ¹⁾

GB N S01 S
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ F=↑ R=↑ AD=↑
*equal to the value of the length code for this series

Example and explanations



- S** Nozzle tip shape S
- 01** →for materials with medium to wide process window
- N** Gating type: valve gate (V) ¹⁾

52 5.0 15 16 -
L=↑ H=↑ F=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)
5.0

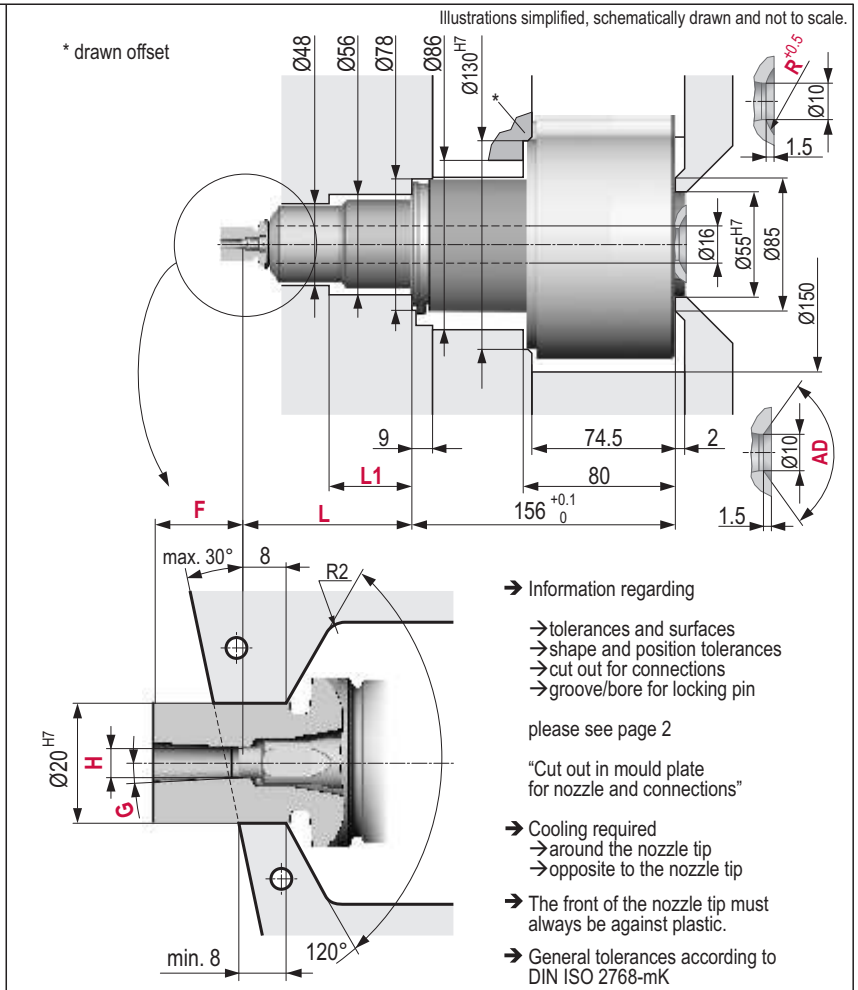
F (mm)
15 50

G (°)
3

R (mm)
0 7.5 12.7 15.5 16 19 20 40

AD (°)
90 120

- 1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
- 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
- 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.



Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
052	52	-	-	400	680	-	-	-	1080
082	82	-	-	500	680	-	-	-	1180
112	112	-	-	630	680	-	-	-	1310
142	142	60	-	500	400	680	-	-	1580
170	170	60	-	500	400	680	-	-	1580
200	200	80	-	500	400	680	-	-	1580
230	230	110	-	500	400	680	-	-	1580
260	260	140	-	500	500	680	-	-	1680
290	290	170	-	630	500	680	-	-	1810

You can configure your nozzle here

1. Complete the nozzle description ¹⁾

GB N V01 S

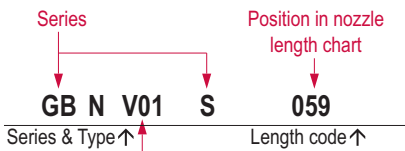
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ F=↑ R=↑ AD=↑

*equal to the value of the length code for this series

Example and explanations



- V Nozzle tip shape V
- 01 → for materials with medium to wide process window
- N Gating type: valve gate (V) ¹⁾

59 5.0 15 16 -
L=↑ H=↑ F=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)	
5.0	

F (mm)			
0	15	30	50

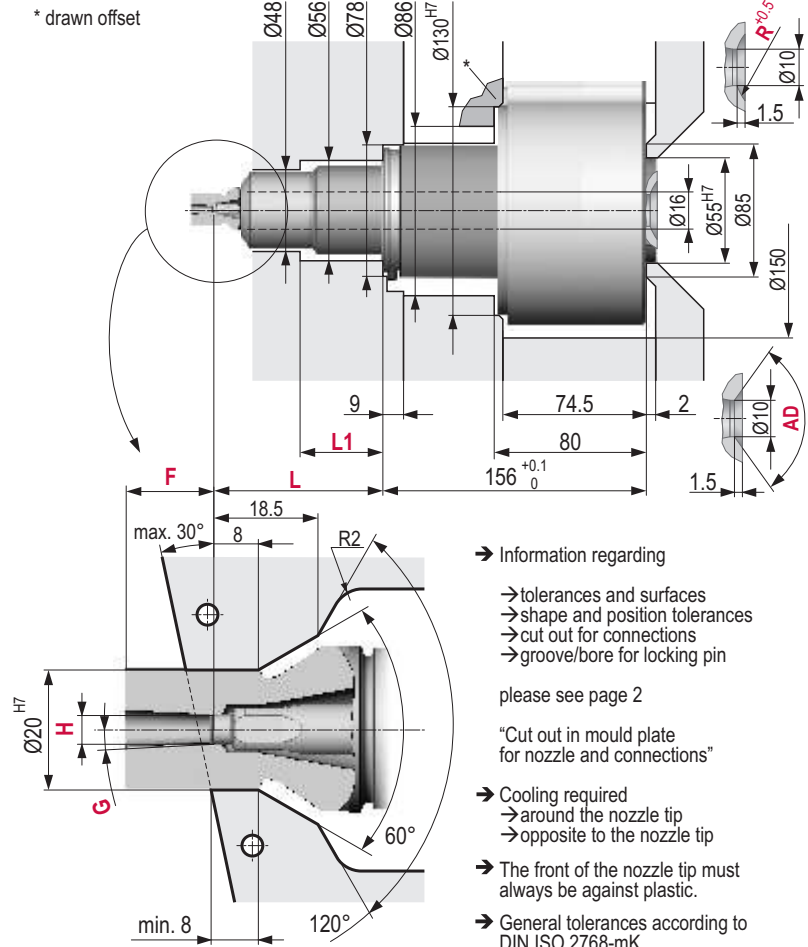
F = 0 / 15 / 30		G (°)		F = 50 / 90	
3		1.5			

R (mm)					
0	7.5	12.7	15.5	16	19 20 40

AD (°)	
90	120

- 1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
- 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
- 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.

Illustrations simplified, schematically drawn and not to scale.



→ Information regarding

- tolerances and surfaces
- shape and position tolerances
- cut out for connections
- groove/bore for locking pin

please see page 2

"Cut out in mould plate for nozzle and connections"

- Cooling required
 - around the nozzle tip
 - opposite to the nozzle tip
- The front of the nozzle tip must always be against plastic.
- General tolerances according to DIN ISO 2768-mK

Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
059	59	-	-	400	680	-	-	-	1080
089	89	-	-	500	680	-	-	-	1180
119	119	-	-	630	680	-	-	-	1310
149	149	60	-	500	400	680	-	-	1580
177	177	60	-	500	400	680	-	-	1580
207	207	80	-	500	400	680	-	-	1580
237	237	110	-	500	400	680	-	-	1580
267	267	140	-	500	500	680	-	-	1680
297	297	170	-	630	500	680	-	-	1810

You can configure your nozzle here

1. Complete the nozzle description ¹⁾

GB N W01 S

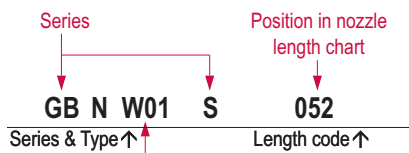
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ R=↑ AD=↑

*equal to the value of the length code for this series

Example and explanations



- W Nozzle tip shape W
- 01 Version 01: for materials with medium to wide process window
- N Gating type: valve gate (V) ¹⁾

52 5.0 16 -
L=↑ H=↑ R=↑ AD=↑

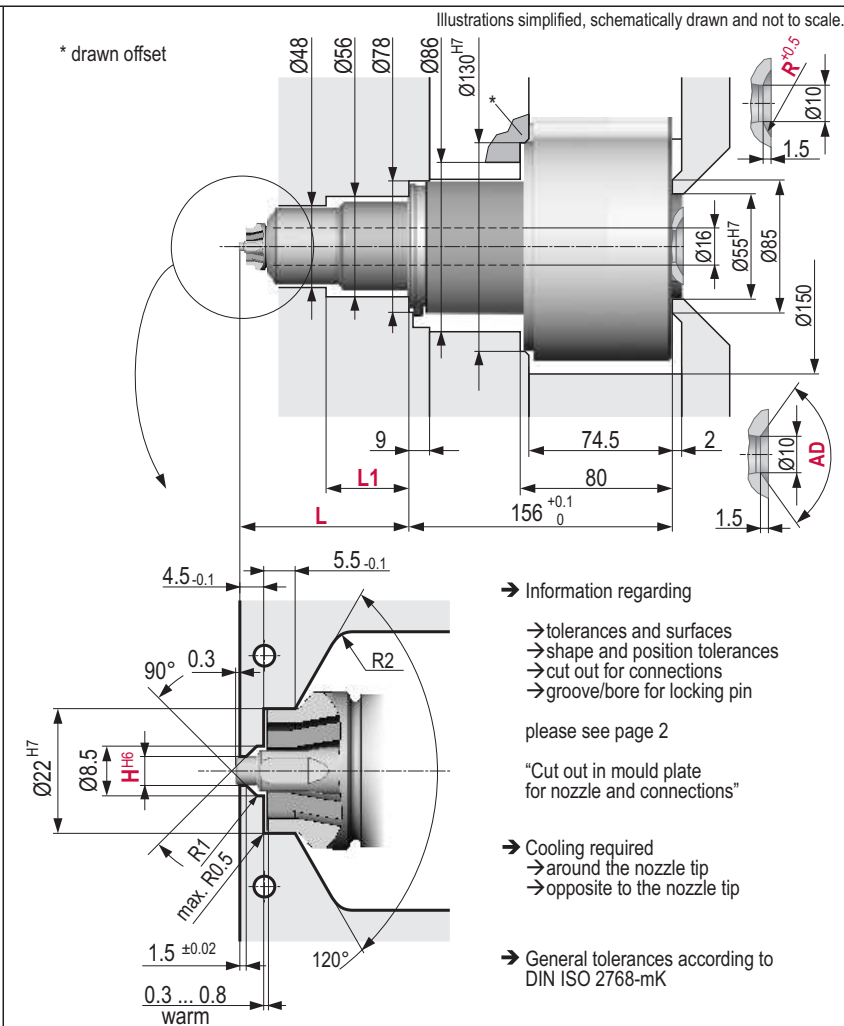
↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)	
5.0	

R (mm)					
0	7.5	12.7	15.5	16	40

AD (°)	
90	120

- 1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
- 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
- 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.



Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
052	52	-	-	400	680	-	-	-	1080
082	82	-	-	500	680	-	-	-	1180
112	112	-	-	630	680	-	-	-	1310
142	142	60	-	500	400	680	-	-	1580
170	170	60	-	500	400	680	-	-	1580
200	200	80	-	500	400	680	-	-	1580
230	230	110	-	500	400	680	-	-	1580
260	260	140	-	500	500	680	-	-	1680
290	290	170	-	630	500	680	-	-	1810

You can configure your nozzle here

1. Complete the nozzle description ¹⁾

GB N W02 S

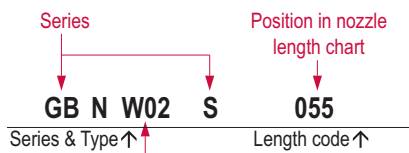
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ R=↑ AD=↑

*equal to the value of the length code for this series

Example and explanations



- W** Nozzle tip shape W
- 02** Version 02:
→for wide process window
→when installation space is limited
- N** Gating type: valve gate (V) ¹⁾

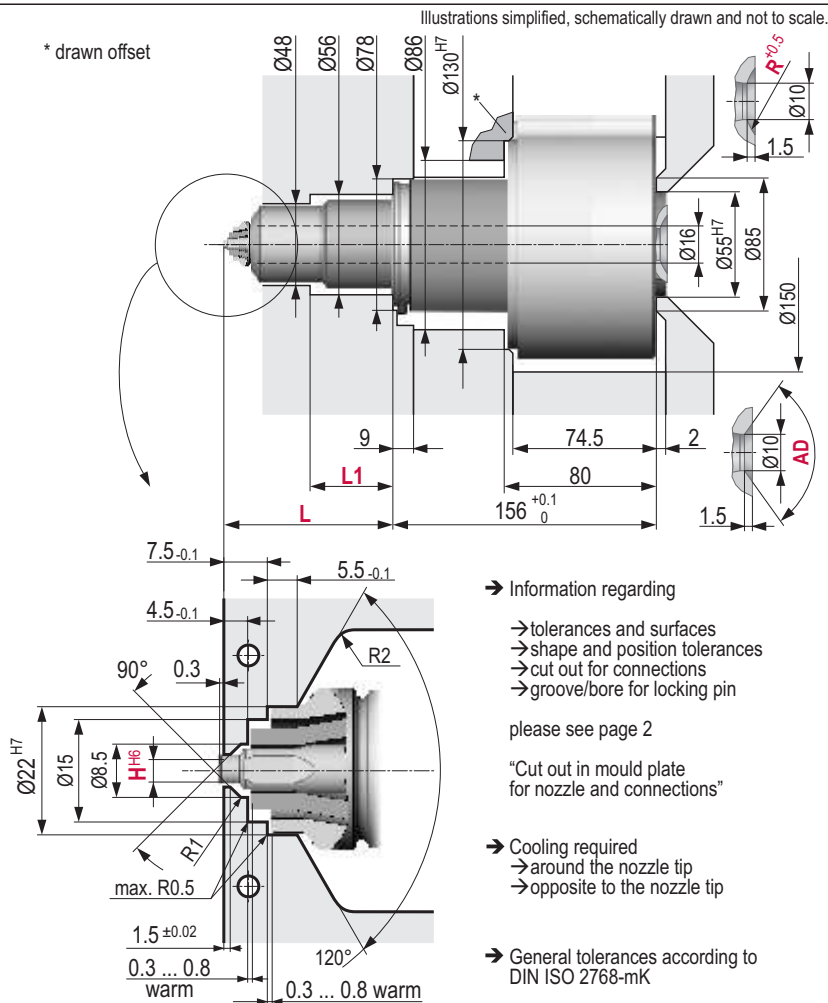
55 5.0 16 -
L=↑ H=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)	
5.0	

R (mm)					
0	7.5	12.7	15.5	16	40

AD (°)	
90	120



Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
055	55	-	-	400	680	-	-	-	1080
085	85	-	-	500	680	-	-	-	1180
115	115	-	-	630	680	-	-	-	1310
145	145	60	-	500	400	680	-	-	1580
173	173	60	-	500	400	680	-	-	1580
203	203	80	-	500	400	680	-	-	1580
233	233	110	-	500	400	680	-	-	1580
263	263	140	-	500	500	680	-	-	1680
293	293	170	-	630	500	680	-	-	1810

1) Nomenclature differences between older and newer nozzle series result from the revision of the nozzle range.
 2) Depending on the nozzle series, the length code corresponds either to a particular nozzle length or to a range of lengths.
 3) The numbering of the heating zones starts at the nozzle tip and ends at the nozzle head.

You can configure your nozzle here

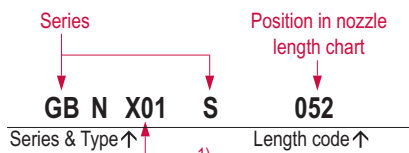
1. Complete the nozzle description ¹⁾

GB N X01 S
Series & Type ↑ Length code ↑

2. Selection of variables

L=↑* H=↑ R=↑ AD=↑
*equal to the value of the length code for this series

Example and explanations



- X Nozzle tip shape X
- 01 Version 01: for materials with medium to wide process window
- N Gating type: valve gate (V) ¹⁾

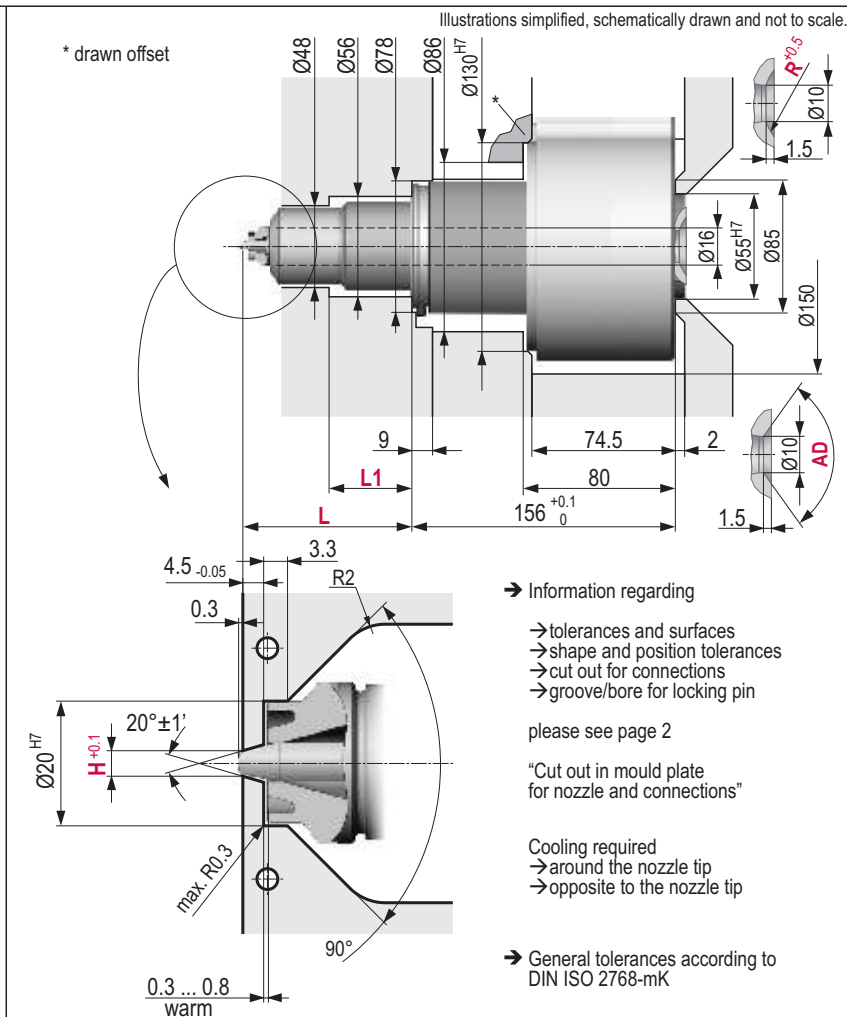
52 5.0 16 -
L=↑ H=↑ R=↑ AD=↑

↑ Variables for precise nozzle specification from the drawings and tables shown here

H (mm)	
4.0	5.0

R (mm)					
0	7.5	12.7	15.5	16	19 20 40

AD (°)	
90	120



Length code	L (mm)	L1 (mm)	L2 (mm)	Heater zones power ³⁾ (Watt)					
				1	2	3	4	5	1...5
052	52	-	-	400	680	-	-	-	1080
082	82	-	-	500	680	-	-	-	1180
112	112	-	-	630	680	-	-	-	1310
142	142	60	-	500	400	680	-	-	1580
170	170	60	-	500	400	680	-	-	1580
200	200	80	-	500	400	680	-	-	1580
230	230	110	-	500	400	680	-	-	1580
260	260	140	-	500	500	680	-	-	1680
290	290	170	-	630	500	680	-	-	1810

www.synventive.com

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

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