



Valve gate systems



Needle actuator

GÜNTHER needle actuators enable precise and intelligent needle control with simple installation and connection technology. Uniform opening of the individual valve gate nozzles enables a reliable injection moulding process, even with the smallest shot weights.

- 1 Fast and powerful servo drive**
For valve gate systems, up to 24 drops per sliding mechanism. Needle adjustment in the μ range. Needles close in less than 0.2 s. Can be used in clean rooms.
- 2 Sliding components with special coating**
Protected against wear, can be replaced by the customer.

ANES SLIDING MECHANISM

If a large number of closely positioned nozzles are being operated, a sliding mechanism is to be provided as the drive. Design of moulds with a high number of drops with small mould dimensions. High product quality, as all cavities are filled evenly through the synchronised opening and closing of the needles. Adjustment of the needle position when mounted on the machine.

Possible drive types:



Electrical



Hydraulic



Pneumatic

THE ADVANTAGES AT A GLANCE

- + Precise opening and closing
- + Reliable injection process
- + Individual cavities can be shut off
- + Optimally adjusted needle
- + Precise and intelligent needle control
- + All moving parts can be replaced by the customer
- + Saves time





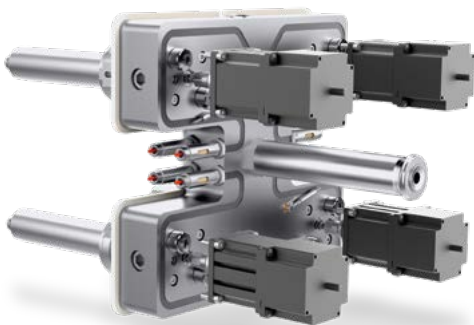
ENV AND EEV SINGLE-NEEDLE VALVE

Single-needle actuation on single- and multi-drop nozzle systems. Cascade injection moulding through the sequential opening and closing of needles is possible. Single-needle valve is mounted with the housing in the clamping plate.

ENV single-needle valve: Minimum cavity spacing with hydraulic drive: 48 mm, with pneumatic drive: 69 mm. Needle adjustment or needle replacement without removing the mould.

EEV single-needle valve: Minimum cavity spacing with hydraulic drive: 40 mm, with pneumatic drive: 57 mm. Due to a fixed needle length, needle adjustment is only possible with the mould disassembled.

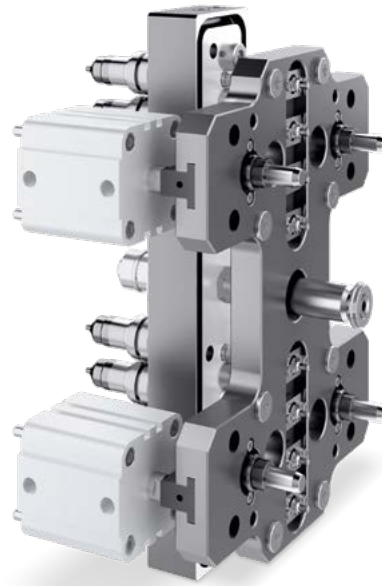
Possible drive types:  Hydraulic  Pneumatic



SMA 10 STEPPER MOTOR

Electric drive for complex applications with up to four different needle positions per cycle. Up to 16 SMA 10 stepper motors can be controlled with extreme precision using the DPE control unit. Using the DPE control unit, the position of each individual shut-off needle in the mould can be set individually. Needle adjustment in the range of 1/100 mm. Can be used in clean rooms.

Drive type:  Electrical



ANEH STROKE MECHANISM

Reliable injection process, even with small shot weights thanks to uniform opening and closing of the needles. Replacement of the external cylinder without removal of the mould. Adjustment of the needle position in the assembled mould.

Possible drive types:  Hydraulic  Pneumatic  Electrical



NEST SINGLE VALVE GATE NOZZLE

The pneumatically driven NEST valve gate nozzle offers optimum process reliability when processing high-quality, demanding materials. Melt channel diameters from 5 to 12 mm and a length of up to 250 mm enable a variety of different injection moulded part and mould designs.

Drive type:  Pneumatic



3.5 Needle actuator

SINGLE-NEEDLE DRIVE

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Single-needle valve ENV2/ENV3
Pneumatic drive, with housing

30



Single-needle valve ENV2/ENV3
Hydraulic drive, with housing

40



Single-needle valve ENV5
Pneumatic drive, with housing

50



Single-needle valve ENV5
Hydraulic drive, with housing

60



Single-needle valve EEV2/EEV3
Pneumatic drive, with housing

70



Single-needle valve EEV2/EEV3
Hydraulic drive, with housing

80



Stepper motor SMA 10
Electric drive

100

MULTI-NEEDLE DRIVE

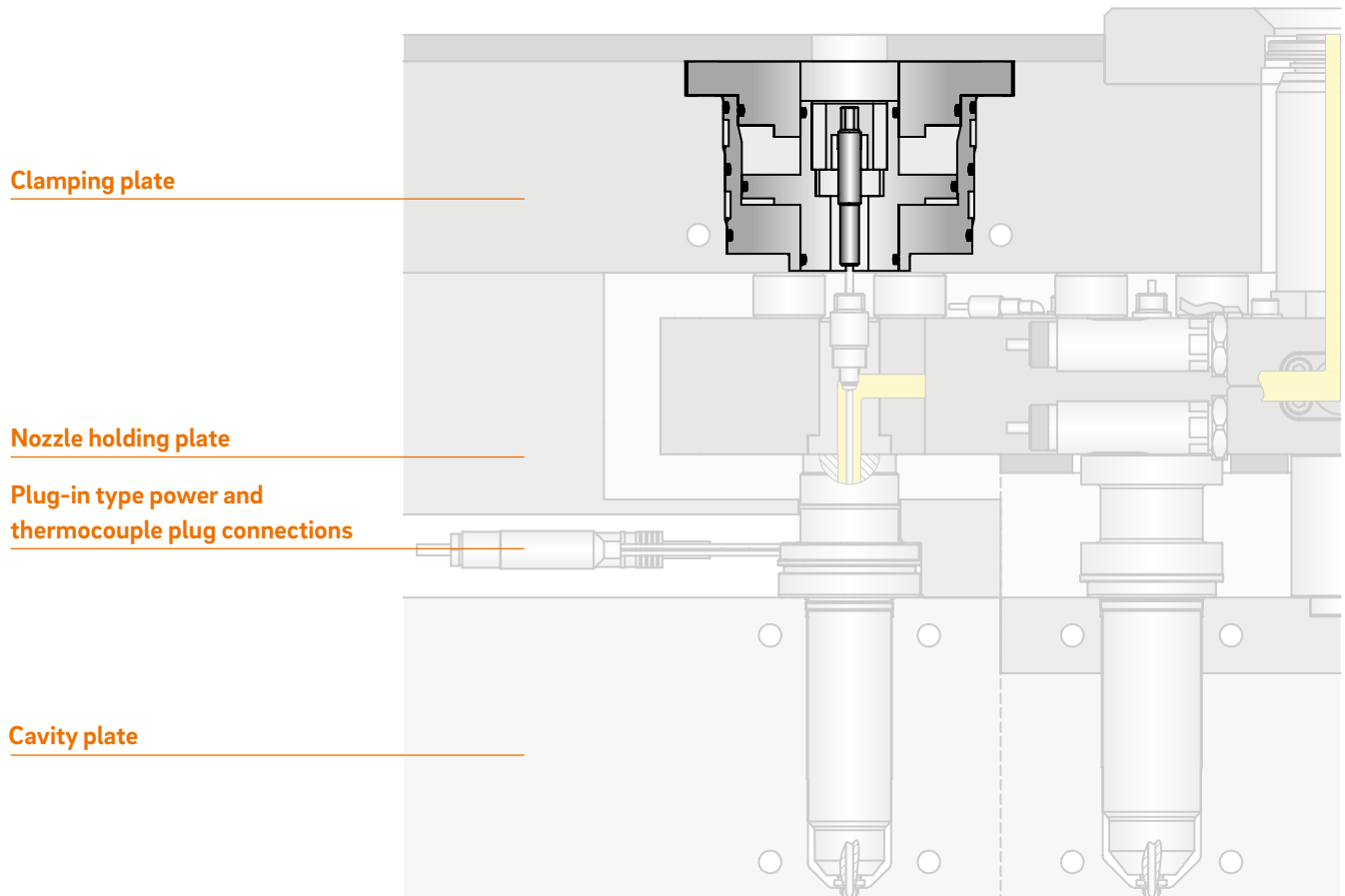


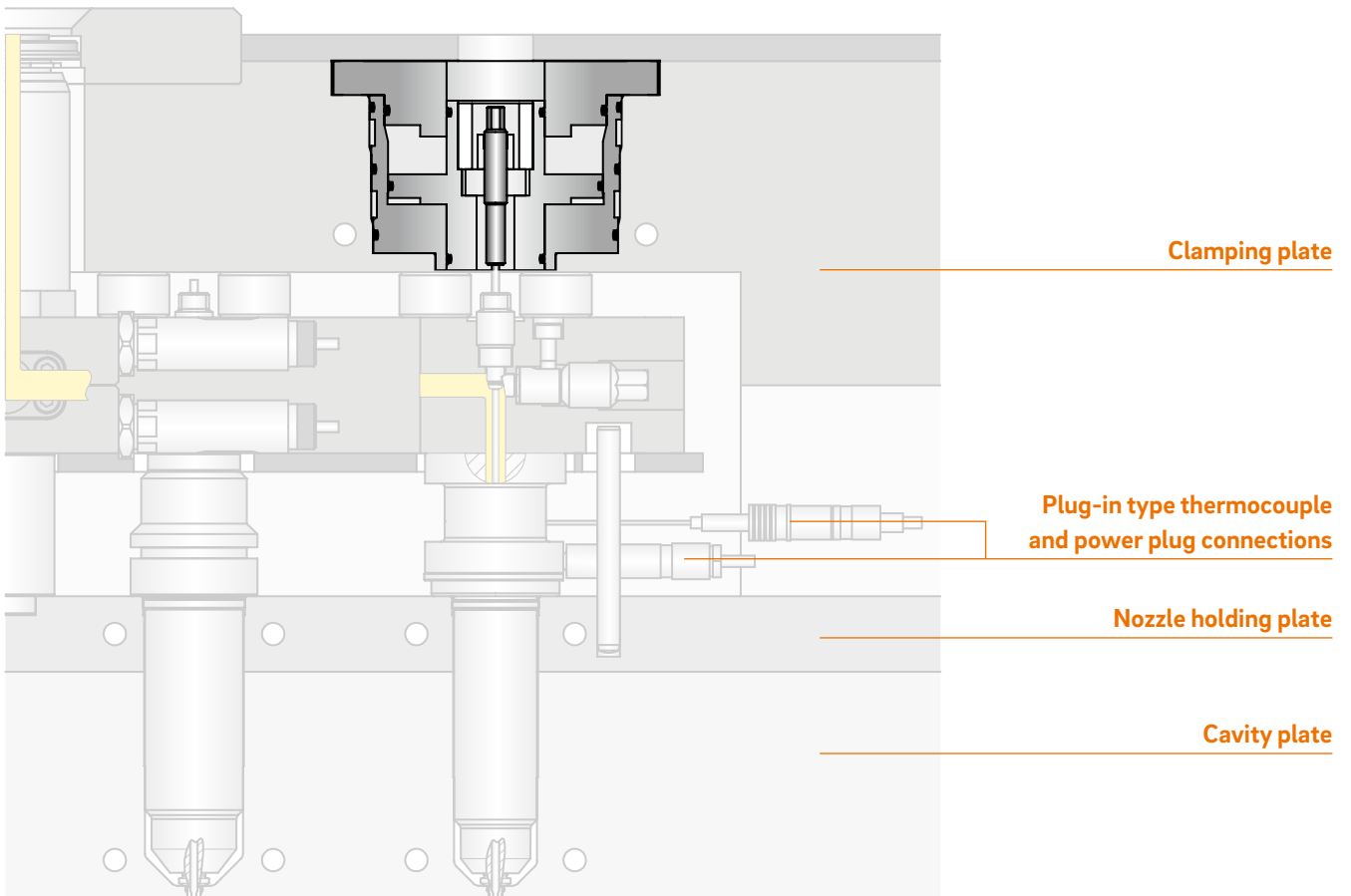
Sliding mechanism ANES
Electric/pneumatic/hydraulic drive

300



Overview of overall design for needle actuator







Single-needle valve ENV2/ENV3

Pneumatic drive, with housing

TECHNICAL DATA

ENV2/10/L/G

Nozzle Ød	4–5 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

ENV3/10/L/G

Nozzle Ød	5–10 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

NOTE

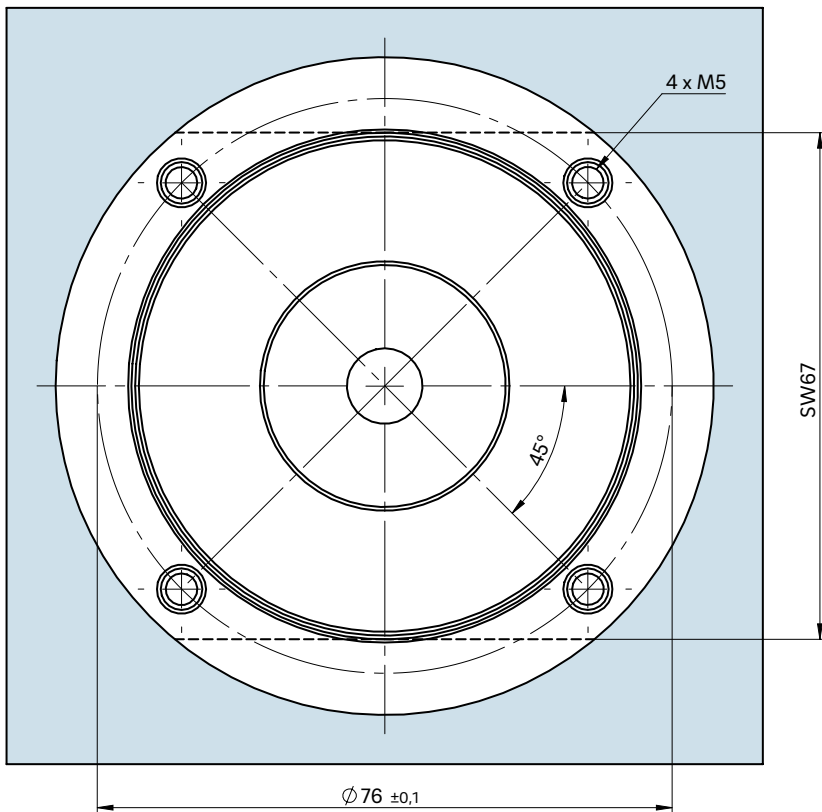
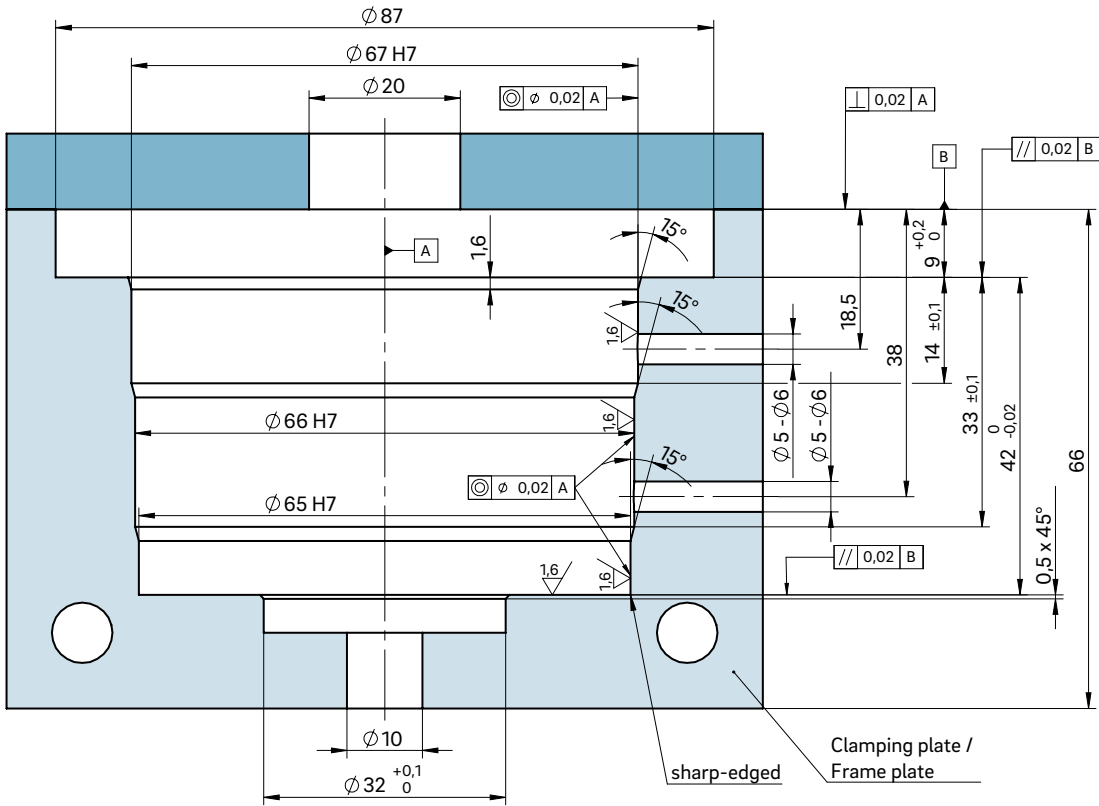
- Adjustable needle
- Maximum usage temperature: 100 °C



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34010



INSTALLATION WITH HOUSING





Single-needle valve ENV2/ENV3

Hydraulic drive, with housing

TECHNICAL DATA

ENV2/10/0/G

Nozzle Ød	4–5 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

ENV3/10/0/G

Nozzle Ød	5–10 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

NOTE

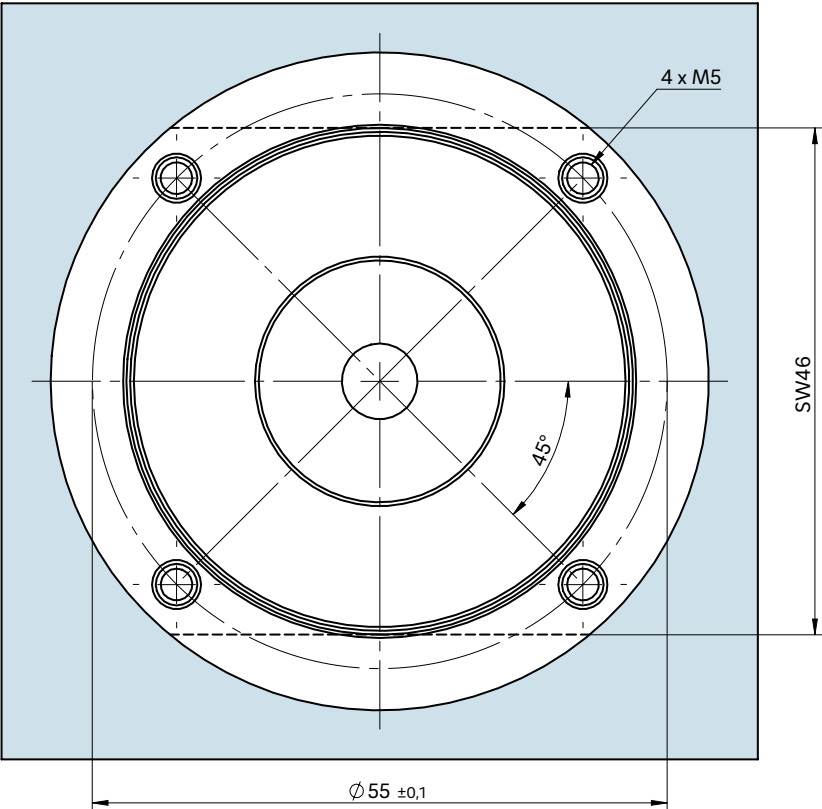
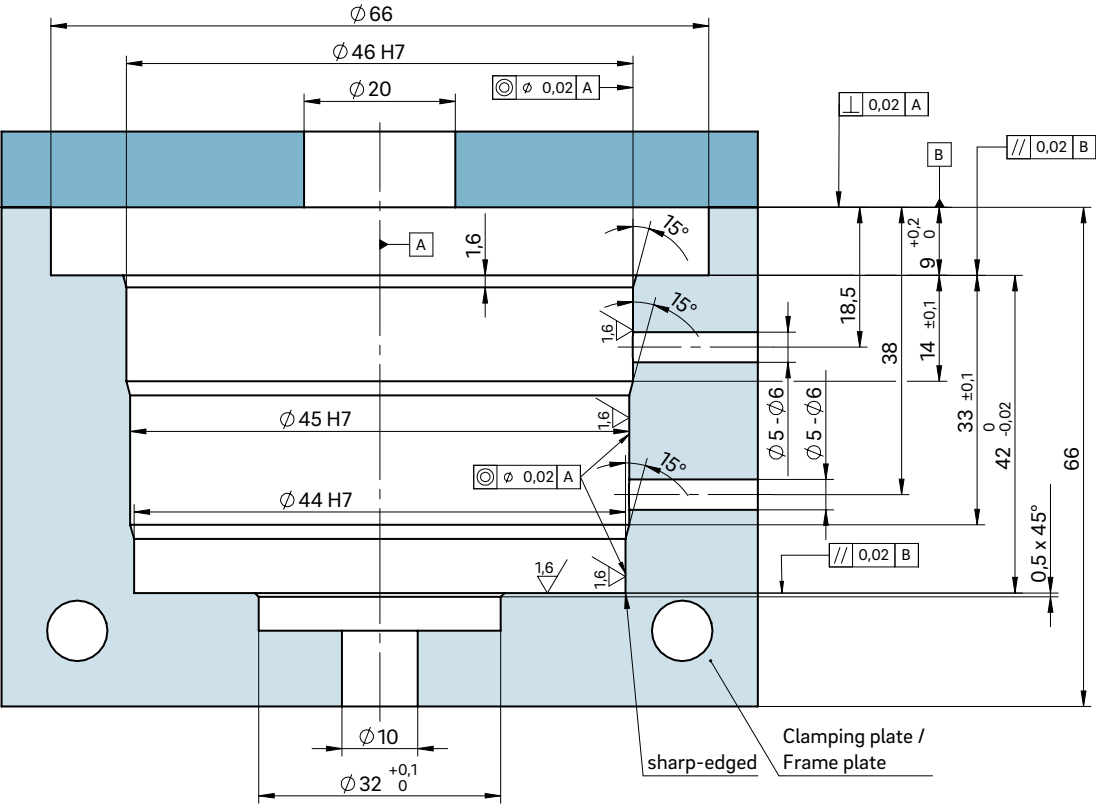
- Adjustable needle
- Maximum usage temperature: 60 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning



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34020



INSTALLATION WITH HOUSING





Single-needle valve ENV5

Pneumatic drive, with housing

TECHNICAL DATA

ENV5/10/L/G

Nozzle Ød	10–12 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

NOTE

- Adjustable needle
- Maximum usage temperature: 100 °C



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34030



Single-needle valve ENV5

Hydraulic drive, with housing

TECHNICAL DATA

ENV5/10/0/G

Nozzle Ød	10–12 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

NOTE

- Adjustable needle
- Maximum usage temperature: 60 °C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning



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34040



Single-needle valve EEV2/EEV3

Pneumatic drive, with housing

TECHNICAL DATA

EEV2/10/L/G

Nozzle Ød	4–5 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

EEV3/10/L/G

Nozzle Ød	5–10 mm
Drive type	pneumatic
Operating pressure	min. 6 bar air intake at ENV

NOTE

- Non-adjustable needle
- Maximum usage temperature: 100 °C



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34050



Single-needle valve EEV2/EEV3

Hydraulic drive, with housing

TECHNICAL DATA

EEV2/10/O/G

Nozzle Ød	4–5 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

EEV3/10/O/G

Nozzle Ød	5–10 mm
Drive type	hydraulic
Operating pressure	40–60 bar oil intake at ENV

NOTE

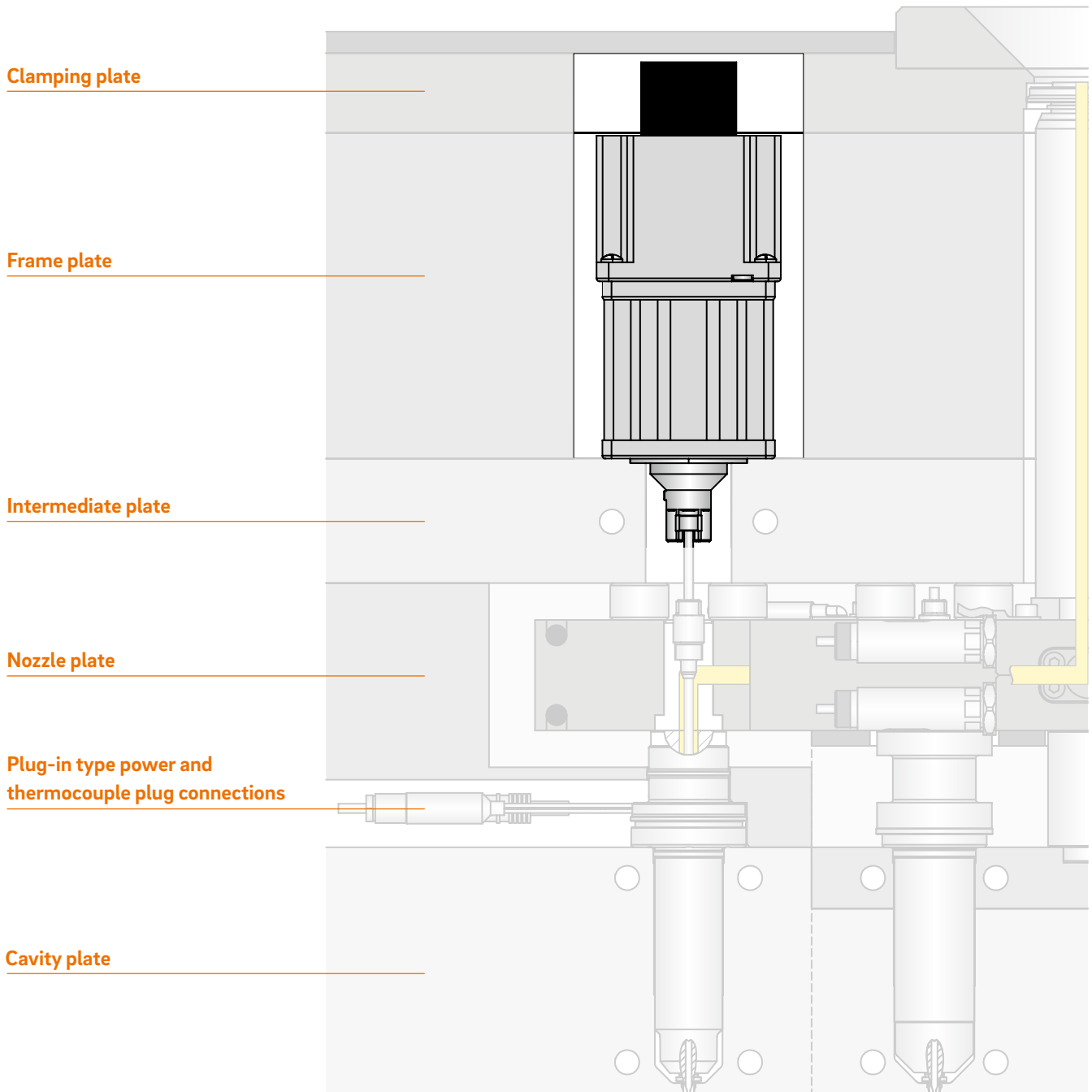
- Non-adjustable needle
- Maximum usage temperature: 60°C
- Hydraulic cylinders and the entire hydraulic system are to be carefully vented before commissioning

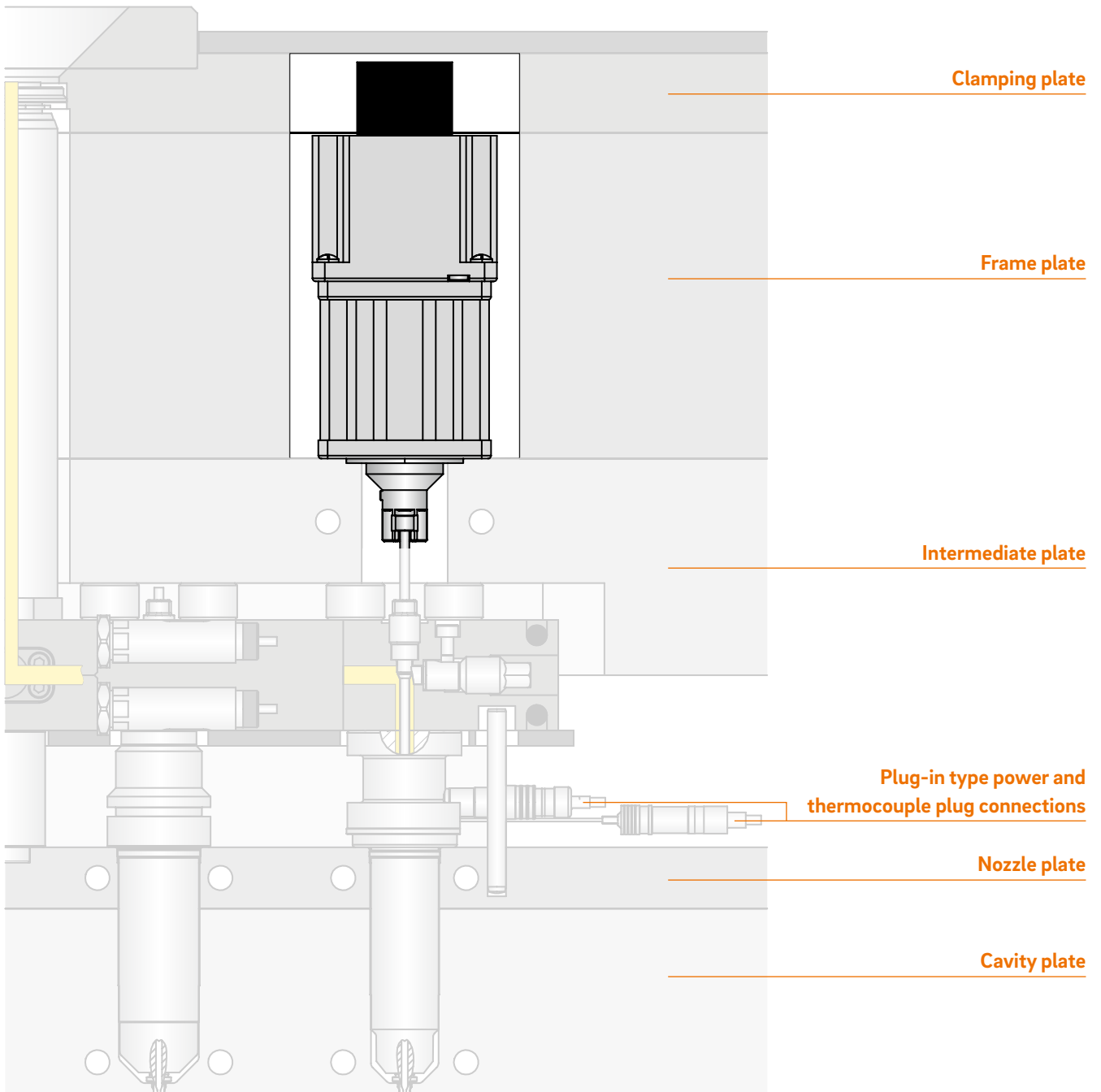


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Overview of overall design for needle actuator – stepper motor SMA 10







Stepper motor SMA 10

Electric drive

TECHNICAL DATA

Stepper motor SMA 10

Nozzle Ød 4–10 mm

Drive type electrical

Operating voltage 230 V_{AC}*

*Volts alternating current

NOTE

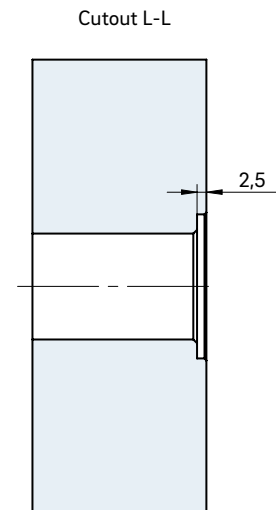
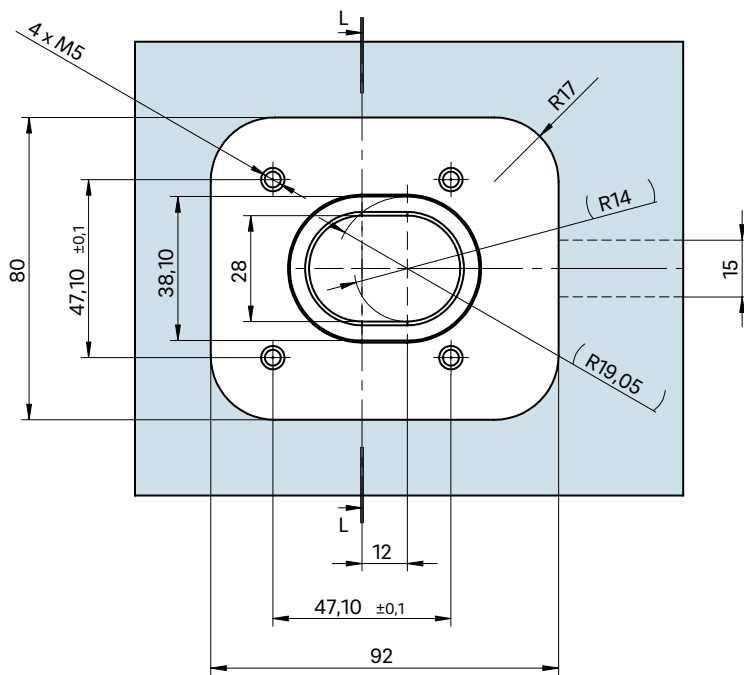
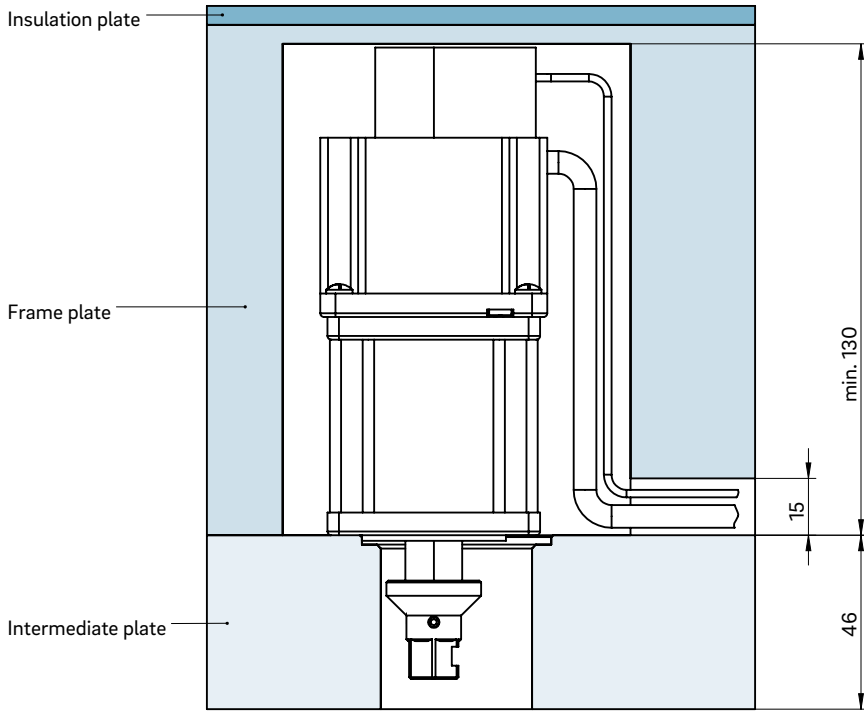
- Adjustable needle



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34070



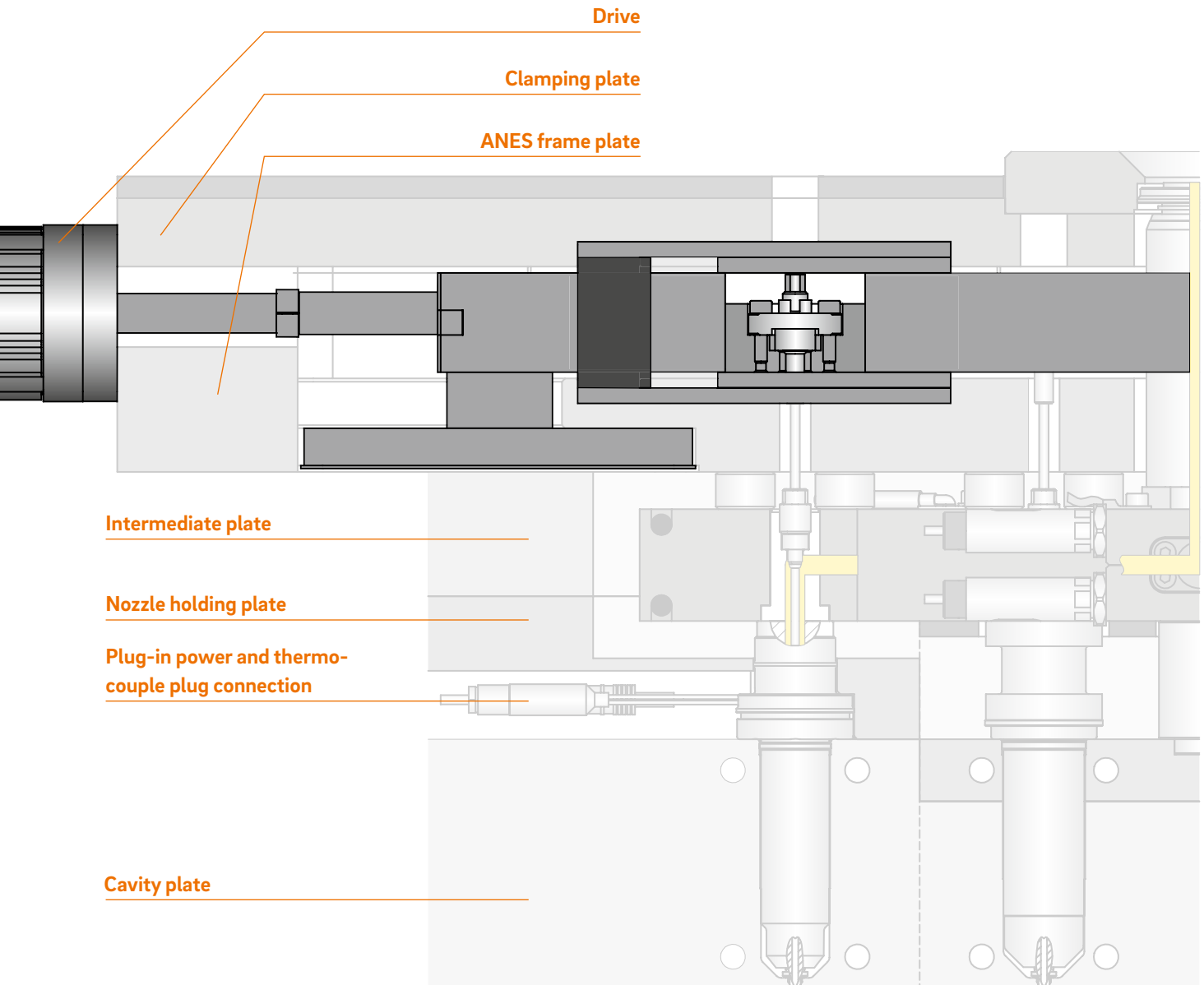
INSTALLATION

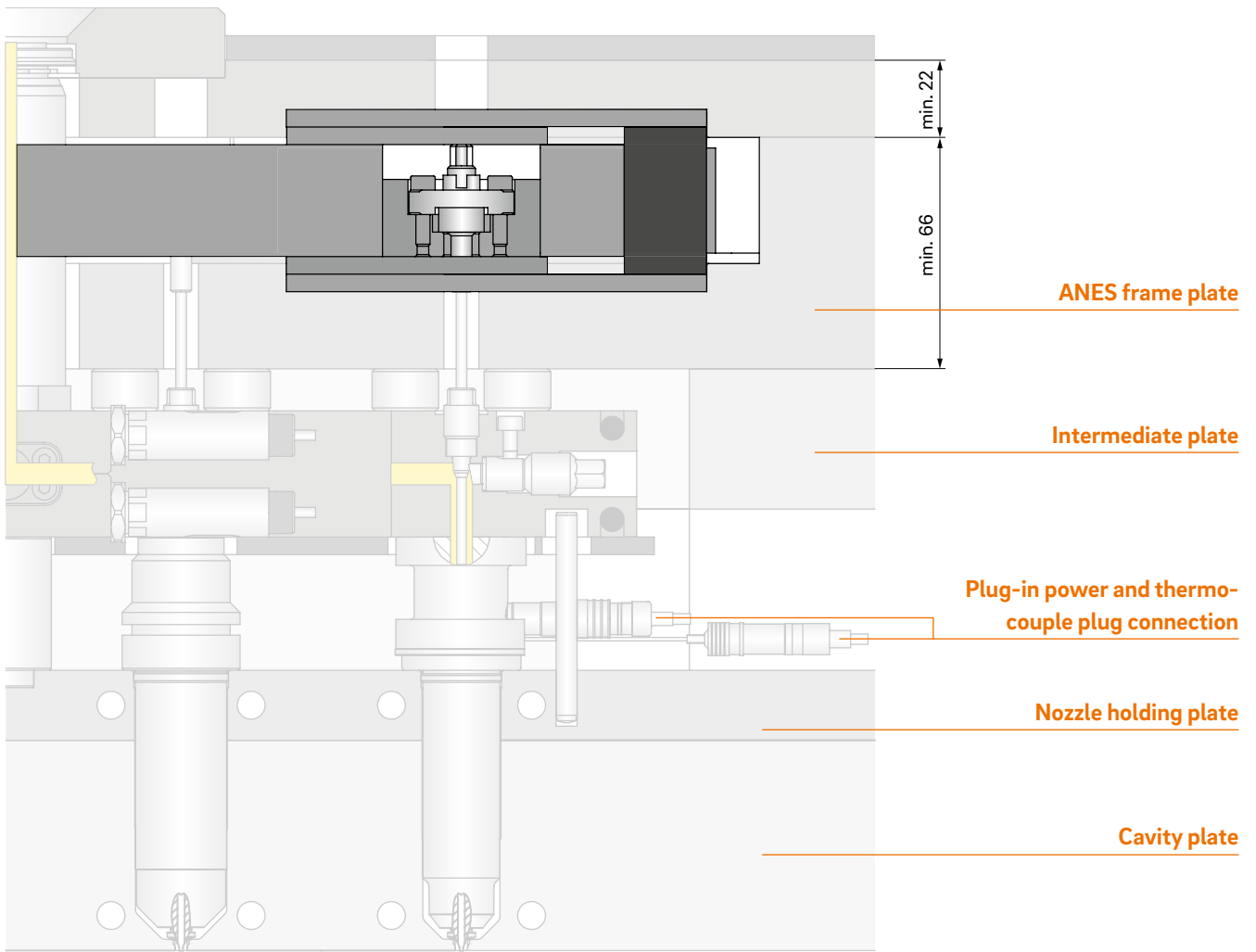




Configuration in overall structure

of needle actuator – ANES multi-needle drive sliding mechanism

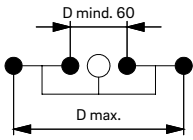






Nozzle arrangement, single row (SR)

Sample nozzle arrangement

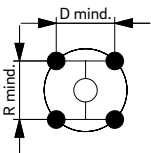


Drive type for nozzle arrangement (SR)

Number of nozzles/ cavities	Model	Drive type			Chapter	Page
		pneumatic	hydraulic	electric		
4	ANES-111/ ANES-121	•	•	•	3.5	320
8		•	•	•		
12		•	•	•		
16			•	•		

Nozzle arrangement, multi-row (MR)

Sample nozzle arrangement



Drive type for nozzle arrangement (MR)

Number of nozzles/ cavities	Model	Drive type			Chapter	Page
		pneumatic	hydraulic	electric		
4	ANES-111/ ANES-121	•	•	•	3.5	330
8		•	•	•		
12		•	•	•		
16			•	•		

ANES multi-needle drive sliding mechanism

Page



ANES-111 sliding mechanism / ANES-121 sliding mechanism
Single row

320



ANES-111 sliding mechanism / ANES-121 sliding mechanism
Multi-row

330



ANES-111, -121 multi-needle drive sliding mechanism

Single row

TECHNICAL DATA

WEBCODE

34710

ANES-111

Number of stroke element rows	1
Number of stroke elements	1
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)



TECHNICAL DATA

WEBCODE

34750

ANES-121

Number of stroke element rows	1
Number of stroke elements	2
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)

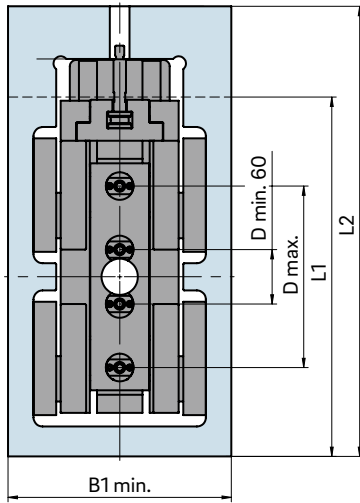


DESCRIPTION

- Maximum operating temperature 100 °C

If you have any questions, please contact the Application Technology Consulting Service:
Tel. +49 6451 5008-510




INSTALLATION



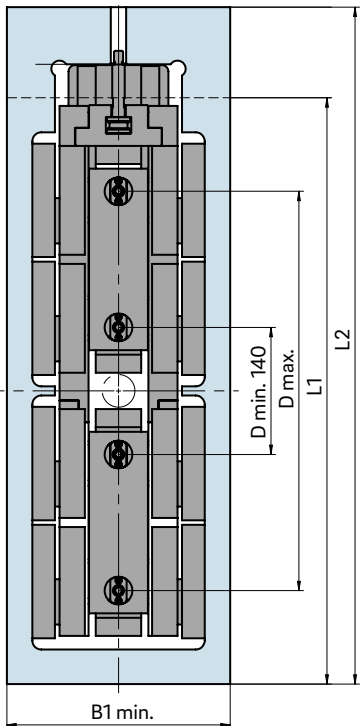
1 drive up to 16 nozzles

D max.	W1 x L1	L2
150	246 x 346	446
200	246 x 396	496
250	246 x 446	546
300	246 x 496	596
350	246 x 546	646

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles




INSTALLATION



1 drive up to 16 nozzles

D max.	W1 x L1	L2
440	246 x 646	746
490	246 x 696	796
540	246 x 746	846
590	246 x 796	896
640	246 x 846	946
690	246 x 896	996
740	246 x 946	1046

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles



ANES-111, -121 multi-needle drive sliding mechanism

Multi-row

TECHNICAL DATA

WEBCODE

34720

ANES-111

Number of stroke element rows	1
Number of stroke elements	1
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)



TECHNICAL DATA

WEBCODE

34760

ANES-121

Number of stroke element rows	1
Number of stroke elements	2
Number of drives	1
Drive type	pneumatic (L) hydraulic (O) electric (E)

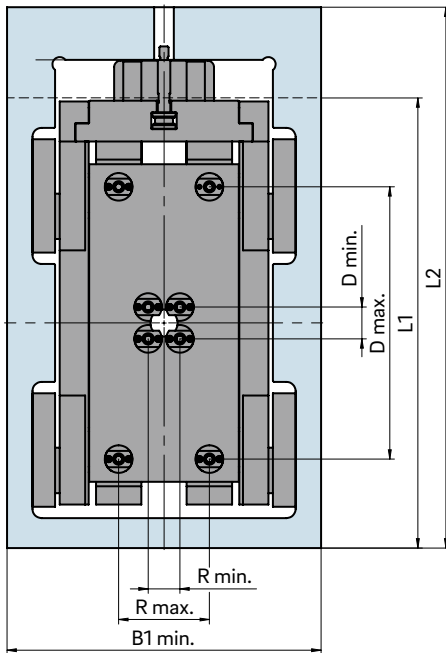


DESCRIPTION

- Maximum operating temperature 100 °C

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INSTALLATION



1 drive up to 16 nozzles

D max.	W1 x L1					L2
	R. max					
	100	150	200	250	300	
150	346 x 346	396 x 346	-	-	-	446
200	346 x 396	396 x 396	446 x 396	-	-	496
250	346 x 446	396 x 446	446 x 446	496 x 446	-	546
300	346 x 496	396 x 496	446 x 496	496 x 496	546 x 496	596
350	346 x 496	396 x 496	446 x 496	496 x 496	546 x 546	646

All table dimensions in mm

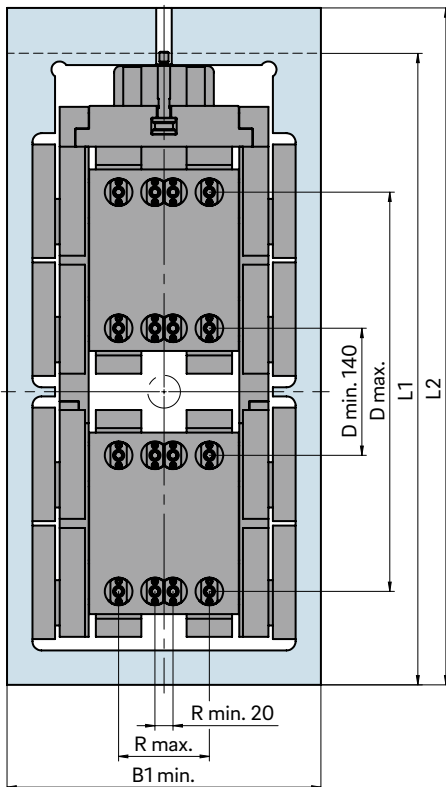
-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles

Minimum distances R min./D min.:

- For cross pitch: R min. = 35 mm/D min. = 35 mm
- For asymmetrical pitch: R min. = 20 mm/D min. = 70 mm or R min. = 70 mm/D min. = 20 mm

* The thickness of the tool plates varies according to their size




INSTALLATION



1 drive up to 16 nozzles

D max.	W1 x L1					L2
	R. max					
	100	150	200	250	300	
440	346 x 646	396 x 646	-	-	-	746
490	346 x 696	396 x 696	-	-	-	796
540	346 x 746	396 x 746	446 x 746	-	-	846
590	346 x 796	396 x 796	446 x 796	-	-	896
640	346 x 846	396 x 846	446 x 846	496 x 846	-	946
690	346 x 896	396 x 896	446 x 896	496 x 896	-	996
740	346 x 946	396 x 946	446 x 946	496 x 946	546 x 946	1046

All table dimensions in mm

-  pneumatic (6 bar) for up to 12 nozzles
-  hydraulic (100 bar) for up to 16 nozzles
-  electric for up to 16 nozzles