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1. Graphic representation

The graphic representation in tool-installation drawings is normally as seen from the operator's side, from the foil inlet and from above. In both illustrations, the observer's viewing angles (➔) are shown for the KMD.

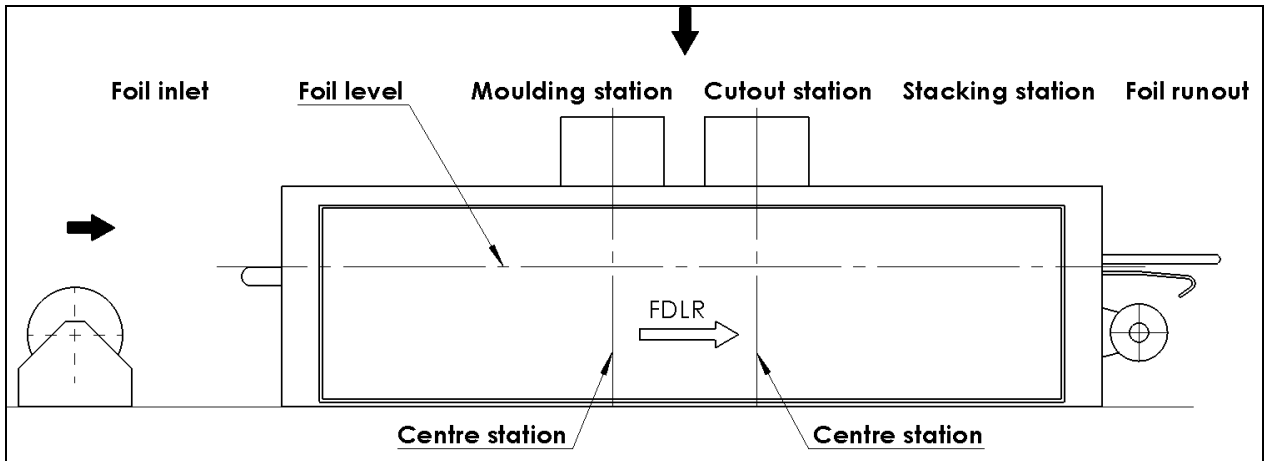


Fig. 1: Operator's side KMD

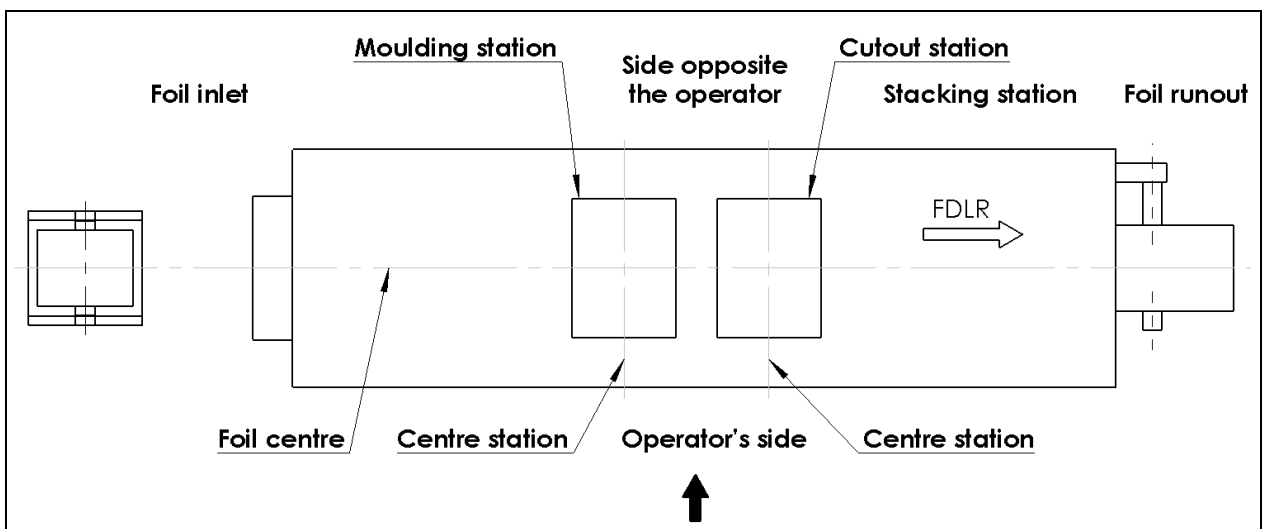


Fig. 2: Top view KMD

2. Moulding and stamping tool

2.1 General accuracy regarding dimensions, shape and position

The precision of contact surfaces and connection points with respect to the platten and the tool seat are important to ensure fast adjustment tasks and tool changes, while minimising tool wear and preventing damage to the tool. Use of the following guide values for accuracy regarding dimensions, shape and position is recommended when the tool is being made. Further details are included in the tool-installation drawings.

2.2 Tool-data and guide values

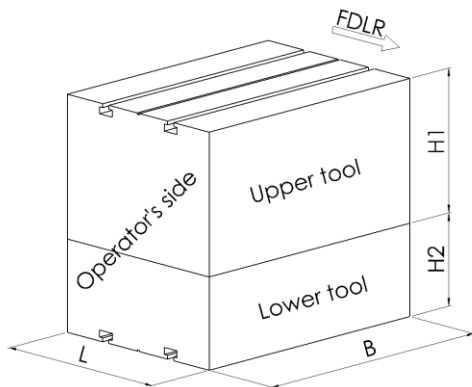
Ranges Dimensions	KMD52	KMD60	KMD64	KMD78	KMD85
B_{max} [mm]	540	600	640	780, 730 ¹⁾	850
B_{min} [mm]	280	280	280	395	395
H1_{max} [mm]	420	420	420	450	495
H1_{min} [mm]	205	205	205	195	335
H2 [mm]	200	200	200	290	335
H3_{max} [mm]	255	330	255	295	295
H3_{min} [mm]	205	205	205	220	220
H4 [mm]	200	200	200	255	255
L_{max} [mm]	420	460	460	560	700
L_{min} [mm]	270	270	270	370	370
W [mm]	275	310, 275 ²⁾	310, 275 ²⁾	425	Tool-centring mechanism ³⁾
V1 [mm]	10	10	10	10	Tool-centring mechanism ³⁾
V2 [mm]	14	14	14	14	Tool-centring mechanism ³⁾
U [mm]	3.3	6	6	3.3	Tool-centring mechanism ³⁾
T [mm]	210	210	210	274	520
S [mm]	18	18	18	26	26
R [mm]	12	12	12	12	12
Q [mm]	42	46	46	54	54
P [mm]	18	14.6	14.6	22	22
N [mm]	40	60	40	55	Tool-centring mechanism ³⁾
M [mm]	150	90	90	90	Tool-centring mechanism ³⁾
K [mm]	8	8	8	8	Tool-centring mechanism ³⁾

1) In case of a tool change in the block 2) In case of KMD52 clamping plates 3) See tool-installation drawing

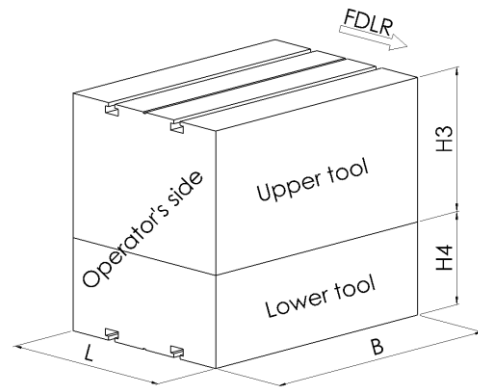
Key: B: Tool width/ L: Tool length/ H: Tool heights/ W: Foil centre distance – end-stop on the side opposite the operator/ V: Width of rectangular groove/ U: Height of rectangular groove/ T: T-groove distance/ S: T-groove shaft width/ R: Clamping height/ Q: T-groove head width/ P: T-groove head height/ N: End-stop surface clearance/ M: Length of end-stop surface/ K: Height of end-stop surface

2.3 Design data

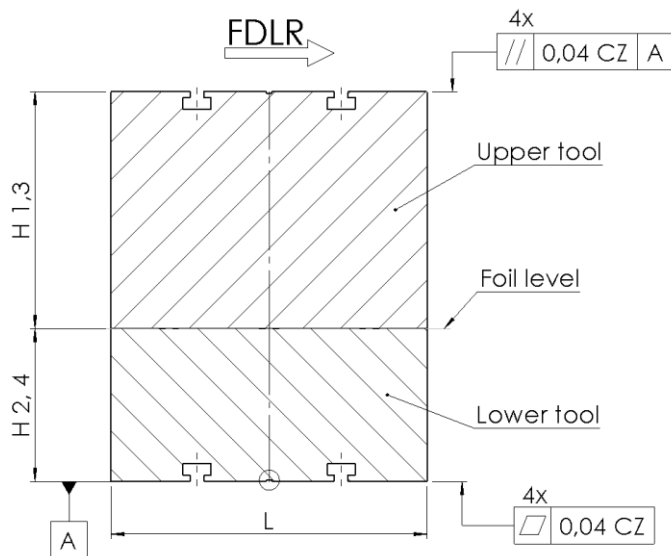
a) Moulding and moulding/stamping tool in the block



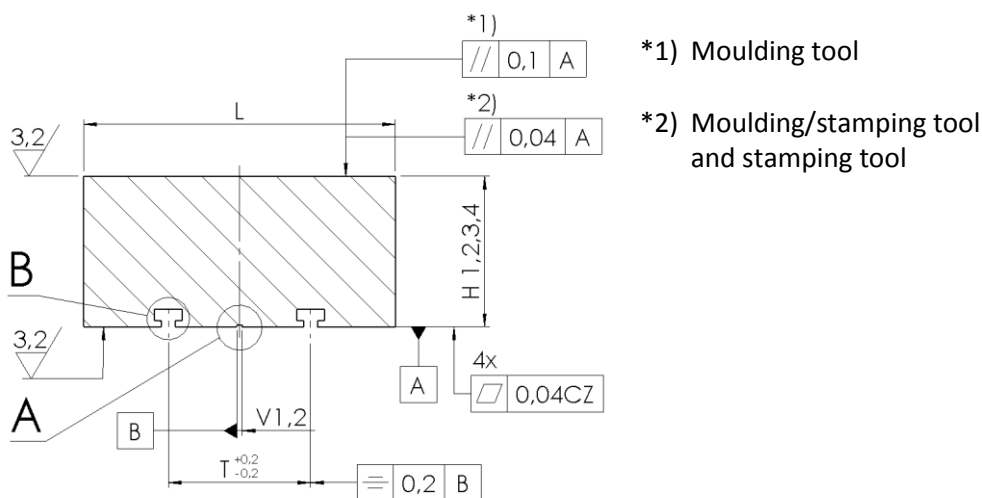
b) Stamping tool in the block



c) Moulding, moulding/stamping and stamping tool in the block



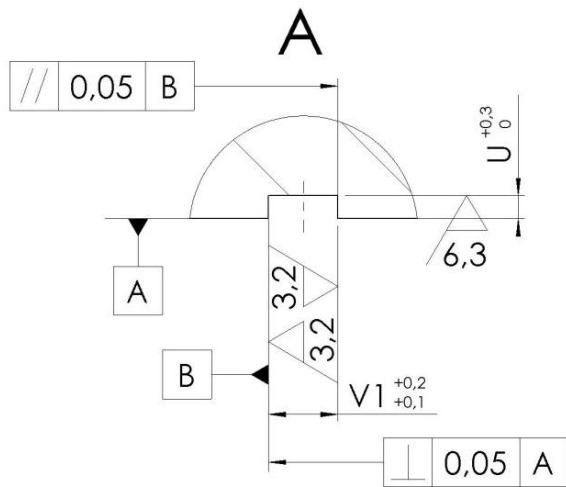
d) Upper/lower element of moulding, moulding/stamping and stamping tool



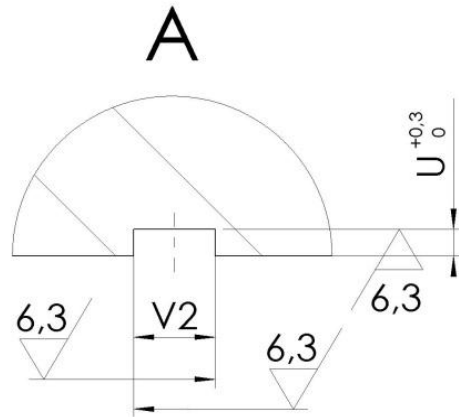
*1) Moulding tool

*2) Moulding/stamping tool and stamping tool

e) Rectangular groove tools



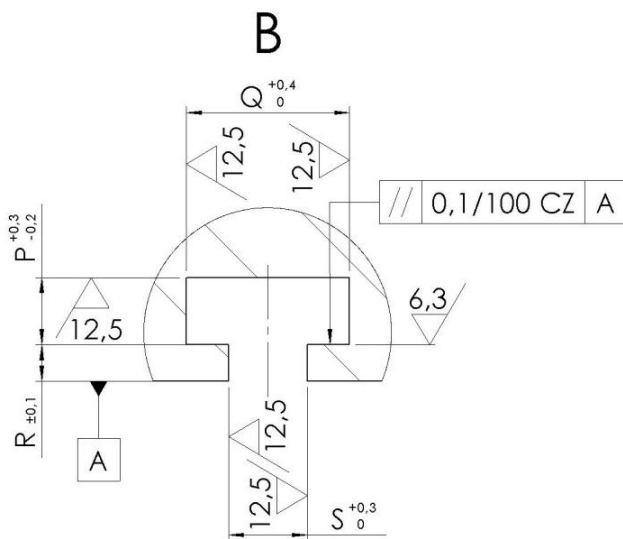
f) Rectangular groove in the case of with integrated guide



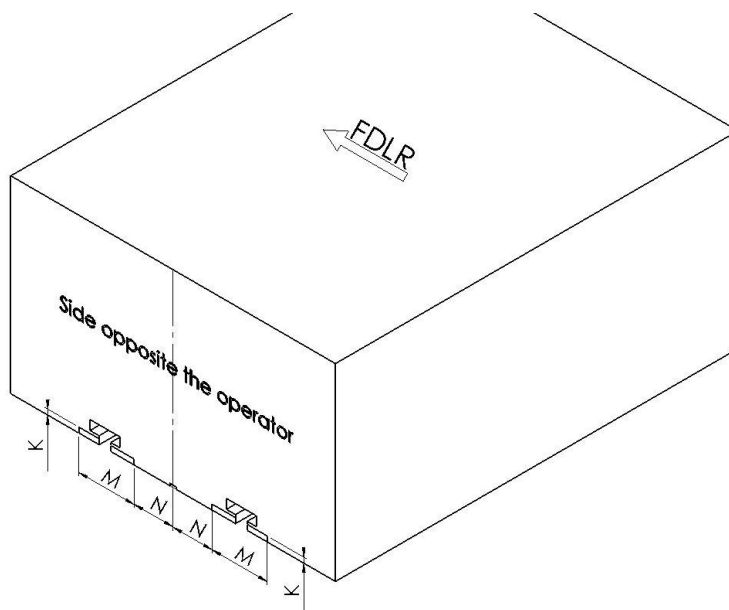
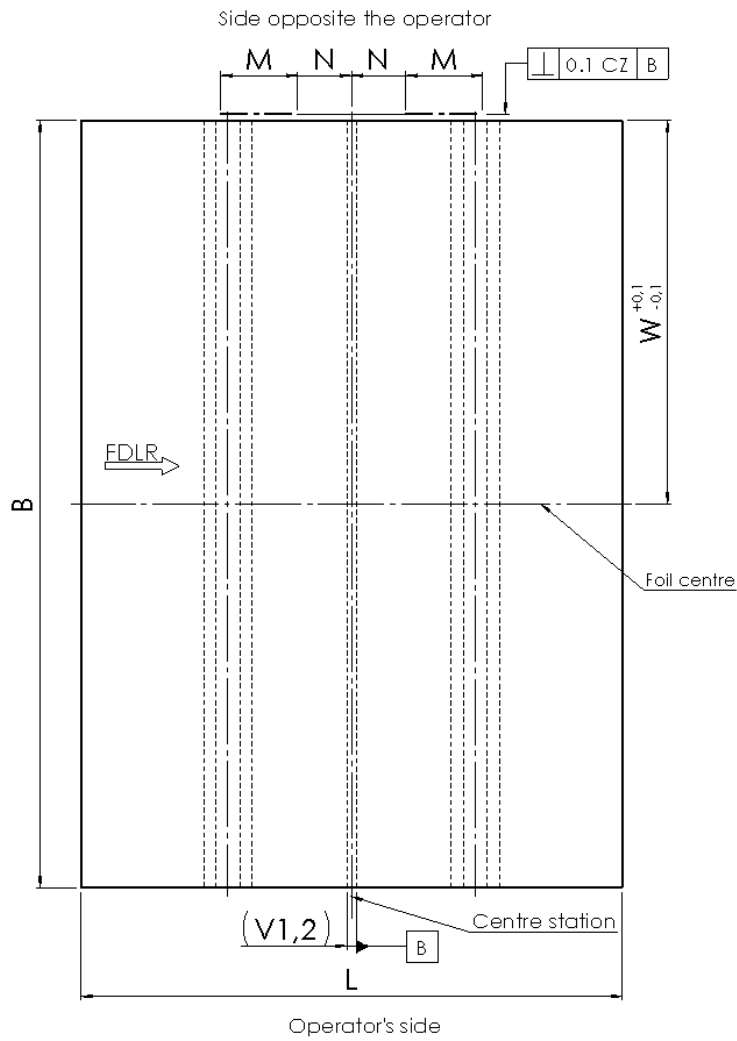
Note:

In the case of moulding/stamping tools with integrated guide and/or centring mechanism, rectangular groove on a tool, upper or lower, as per illustration for configuration.

g) Clamping groove



h) End-stop surfaces on the upper and lower tool, on the side opposite the operator



k) Bevelled and rounded edges

The contact surfaces of the tools must be burr-free. The edge surfaces are to be bevelled and rounded accordingly.

The facing edges of rectangular and clamping grooves are to be finished with a 15° bevel.

Examples of application:

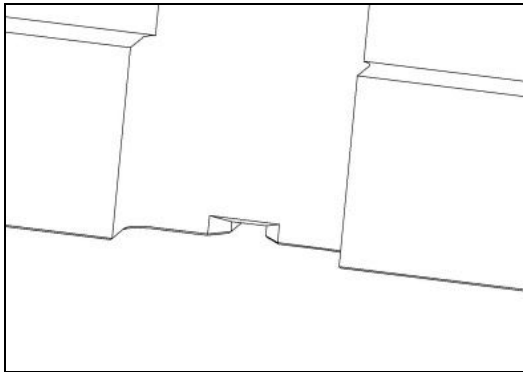


Fig. 5: Rectangular groove

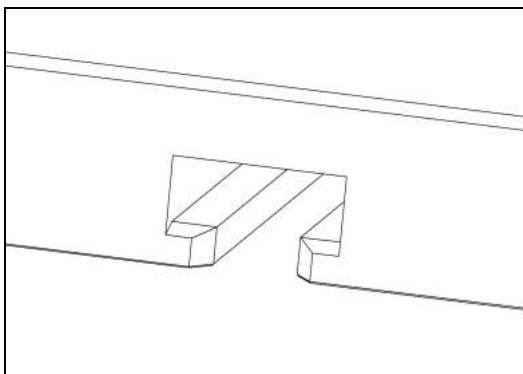
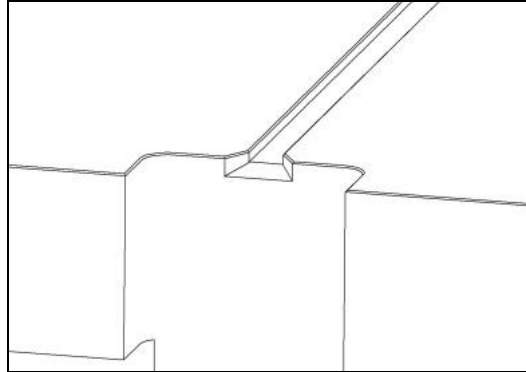
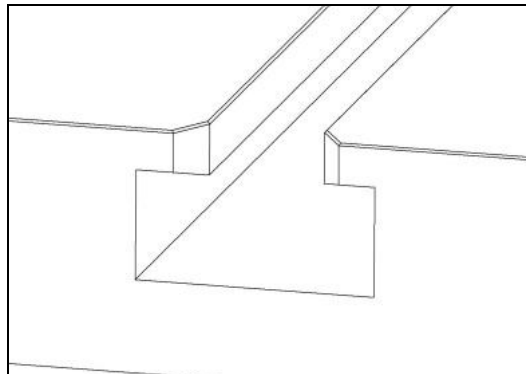


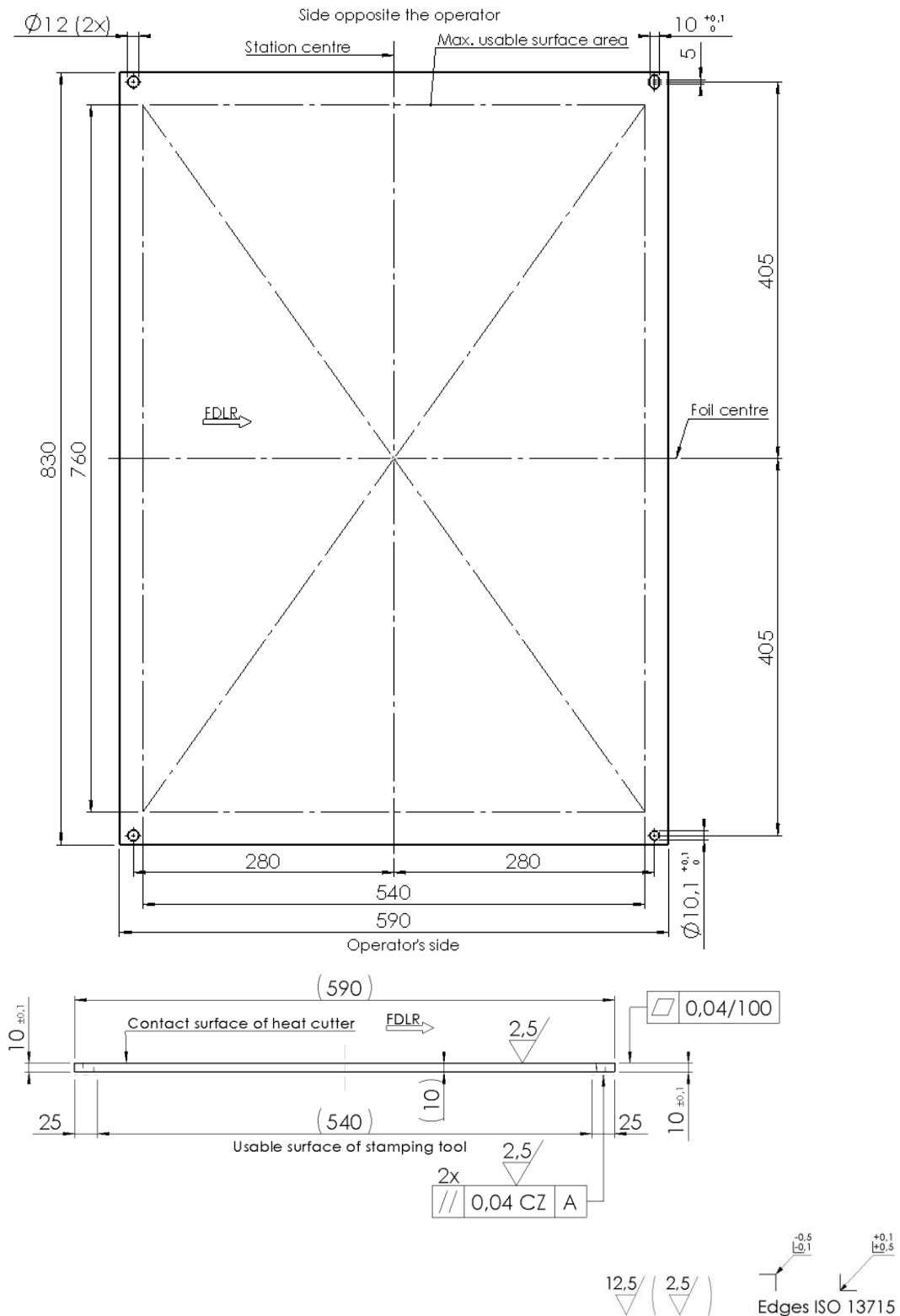
Fig. 6: Clamping groove



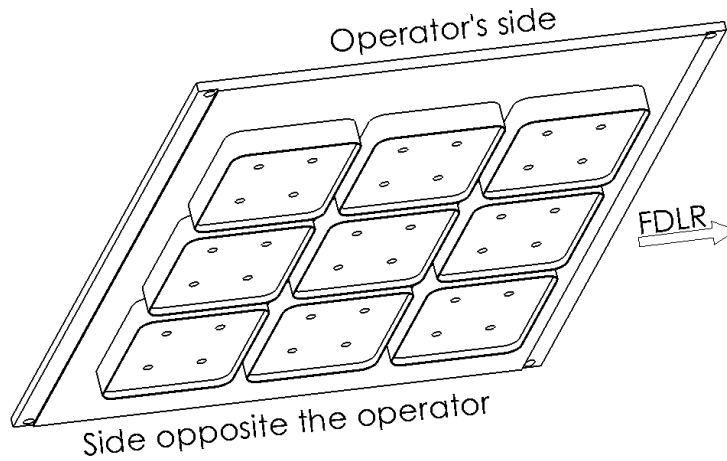
2.4 Stamping tool KMD78

2.4.1 Stamping tool mounting plate

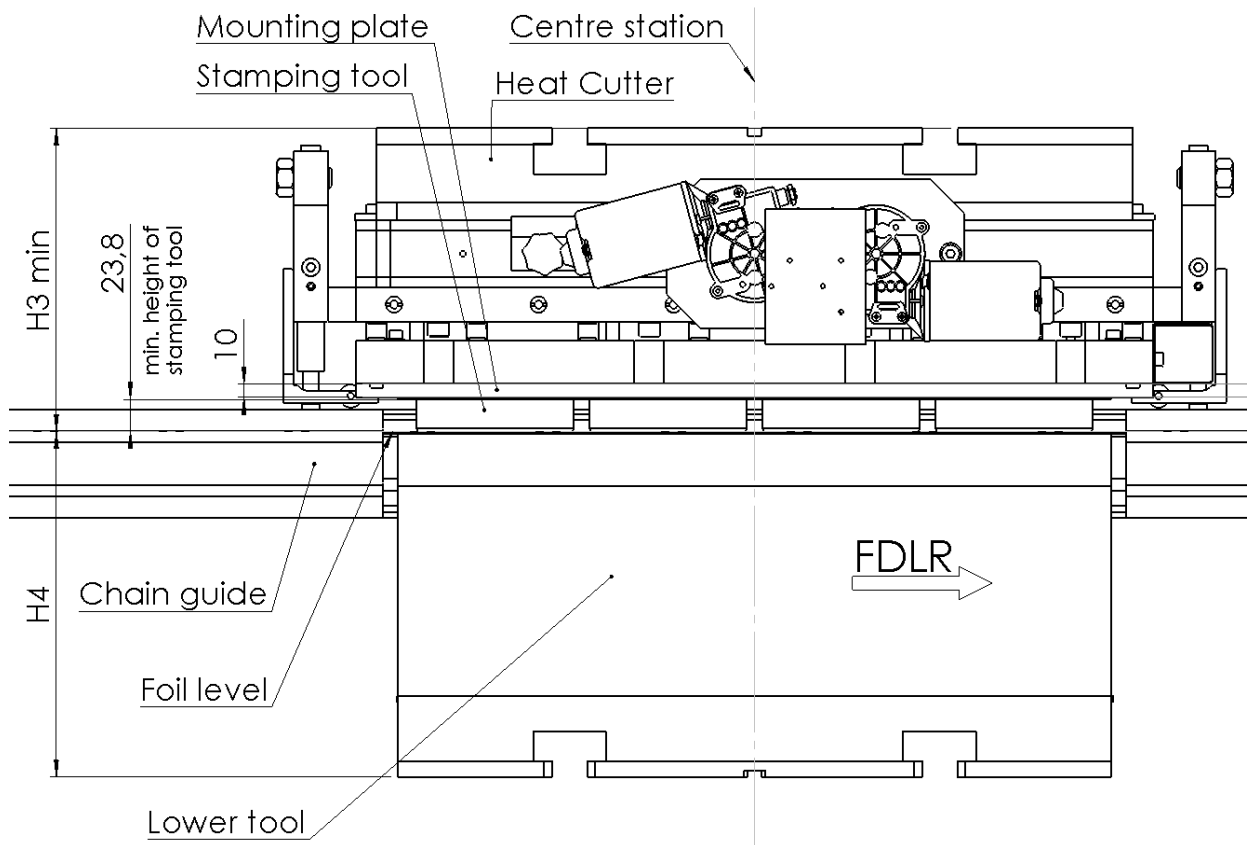
a) Design data and guide values



b) Example of configuration



2.4.2 Minimum height of stamping tool



2.5 Weight of tool: forming – form-punch-tool – punching tool – hole-punching tool

Max. weight of tool [kg]	Ranges	KMD52	KMD60 Speed	KMD64	KMD78	KMD78 Speed	KMD85 Speed
Forming tool							
- Upper tool		250	300	200	300	400	750
- Lower tool		250	300	200	300	400	750
- Tool in the block		-	600	-	-	700	1500
Form-punch tool							
- Upper tool		250	300	250	300	400	750
- Werkzeug unten		250	300	250	300	400	750
- Tool in the block		-	600	-	-	700	1500
Punching tool							
- Upper tool		250	300	200	300	400	750
- Lower tool		250	300	200	300	400	750
- Tool in the block		-	600	-	-	700	1500
- Stamping tool			70	70	80	80	
Hole-punching tool							
- Upper tool		150	300	200	300	400	750
- Lower tool		150	300	200	300	400	750
- Tool in the block		-	600	-	-	700	1500

4. Stacking tool

In its standard configuration, the stacking unit operates from bottom to top. A clamping frame and AB ejector can be selected as options for this purpose.

Special stacking systems (e.g. stacking from top to bottom, or the use of a removal system) can be deployed instead of standard stacking.

Overview with brief description of stacking variants:

No.	Stacking variants	Brief description	Observation
1	Standard	Stacking from bottom to top and ejection onto the conveyor belt.	
2	Clamping frame	Stacking from bottom to top and ejection onto the conveyor belt.	Option: Only in conjunction with no. 1.
3	AB ejector	Stacking from bottom to top and ejection onto the conveyor belt.	Option: Only in conjunction with no. 1.
4	Direct stacking	Stacking from top on conveyor belt. Outward conveying to operator's side.	Option
5	Ejection bar	Stacking from top on the ejection bar ejection onto the conveyor belt. Outward conveying to operator's side.	Option
6	Removal system with rotational axis	Depositing on the conveyor belt on the side opposite the operator.	Option

Special configurations or options, such as special stacking heights and feed lengths, are not taken into account in the above overview.

The tools with design data, of the above-mentioned variants, are described in sections 4.1 to 4.7. The illustrations shown are designed to provide examples of configuration only. Further design details can be found in the tool-installation drawings, see overview in section 5.

4.1 Standard

Standard stacking includes the following:

- Ejector
- Stacking channel
- Pusher
- AB ejector (optional)
- Clamping frame (optional)

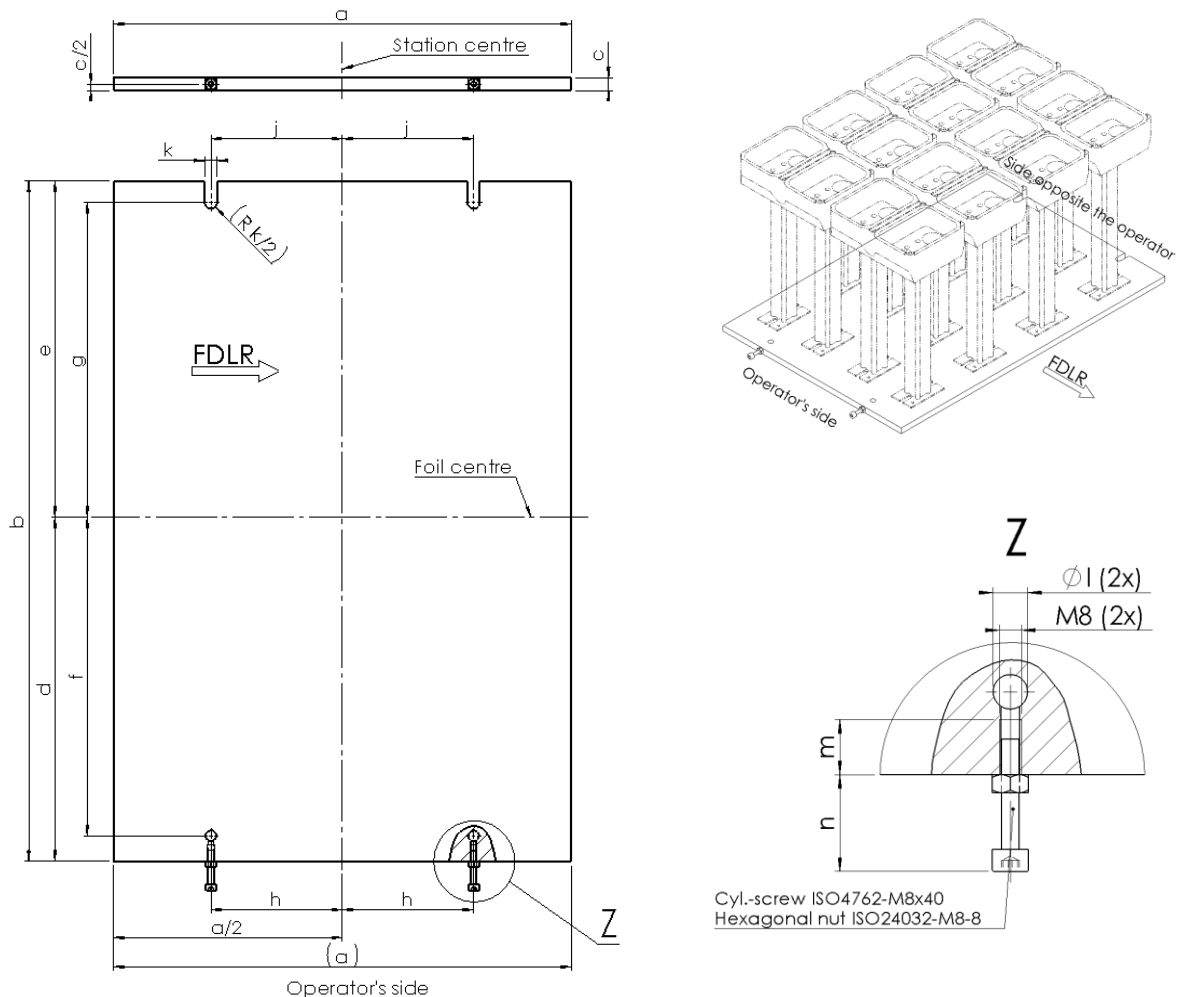
Sections 4.1 to 4.2 refer to important design characteristics, as an addition to the tool-installation drawings (see section 6).

4.1.1 Ejector mounting plate

a) Design guide values

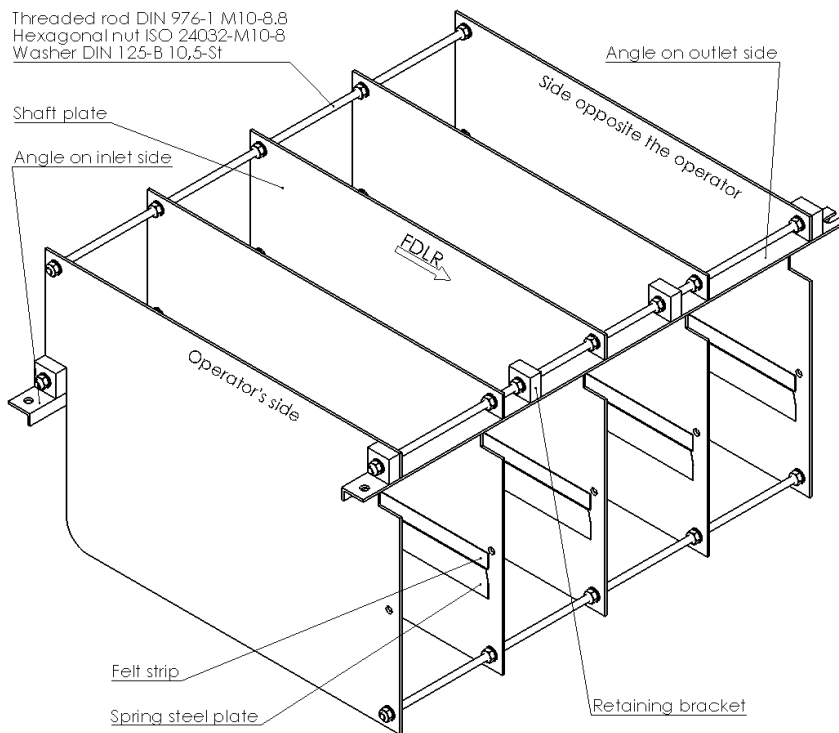
Ranges	KMD52	KMD60	KMD64	KMD78	KMD85
Distances, lengths					
a [mm]	350	350	440	540	780
b [mm]	500	500	620	800	880
c [mm]	15	15	15	15	15
d [mm]	250	250	310	405	442.5
e [mm]	250	250	310	395	437.5
f [mm]	230	230	290	375	412.5
g [mm]	230	230	290	370	412.5
h [mm]	155	155	155	155	202.5
j [mm]	155	155	200	155	155
k [mm]	14.1	14.1	14.1	14.5	14.5
l [mm]	12.1	12.1	12.1	12.5	12.5
m [mm]	Drilled through	Drilled through	Drilled through	20	20
n [mm]	19	19	32	19	19
Max. weight of ejector [kg]	50	50	50	50	80

b) Design details



4.1.2 Stacking channel

4.1.2.1 Example of configuration of KMD78

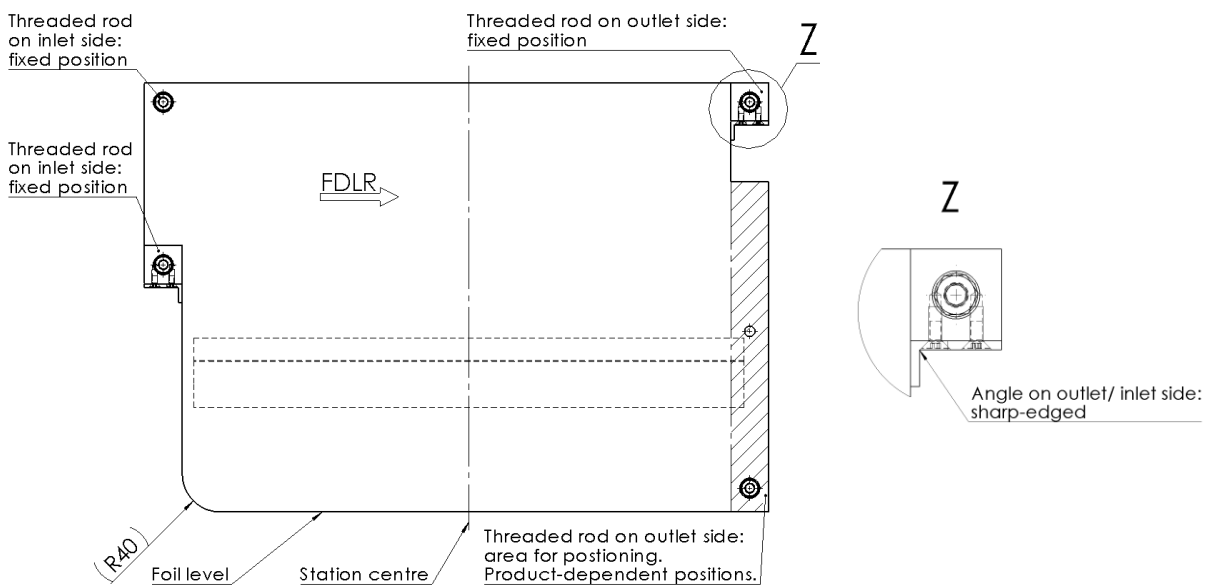


4.1.2.2 Design characteristics

a) Max. weights of stacking channel

Ranges	KMD52	KMD60	KMD64	KMD78	KMD85
Max. weight [kg]		30	30	30	

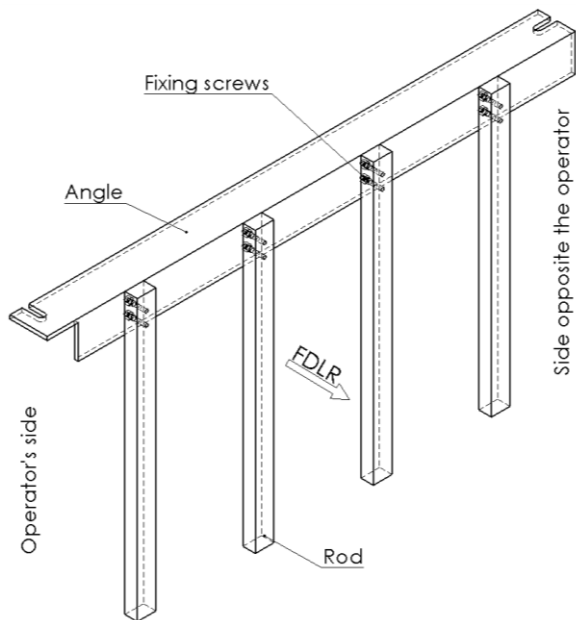
b) Design characteristics



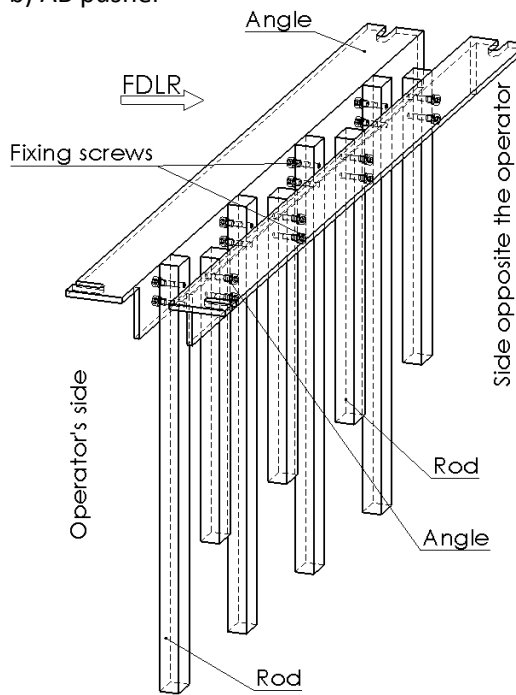
4.1.3 Ejector and AB-ejector

4.1.3.1 Example of configuration of KMD78

a) Pusher



b) AB pusher



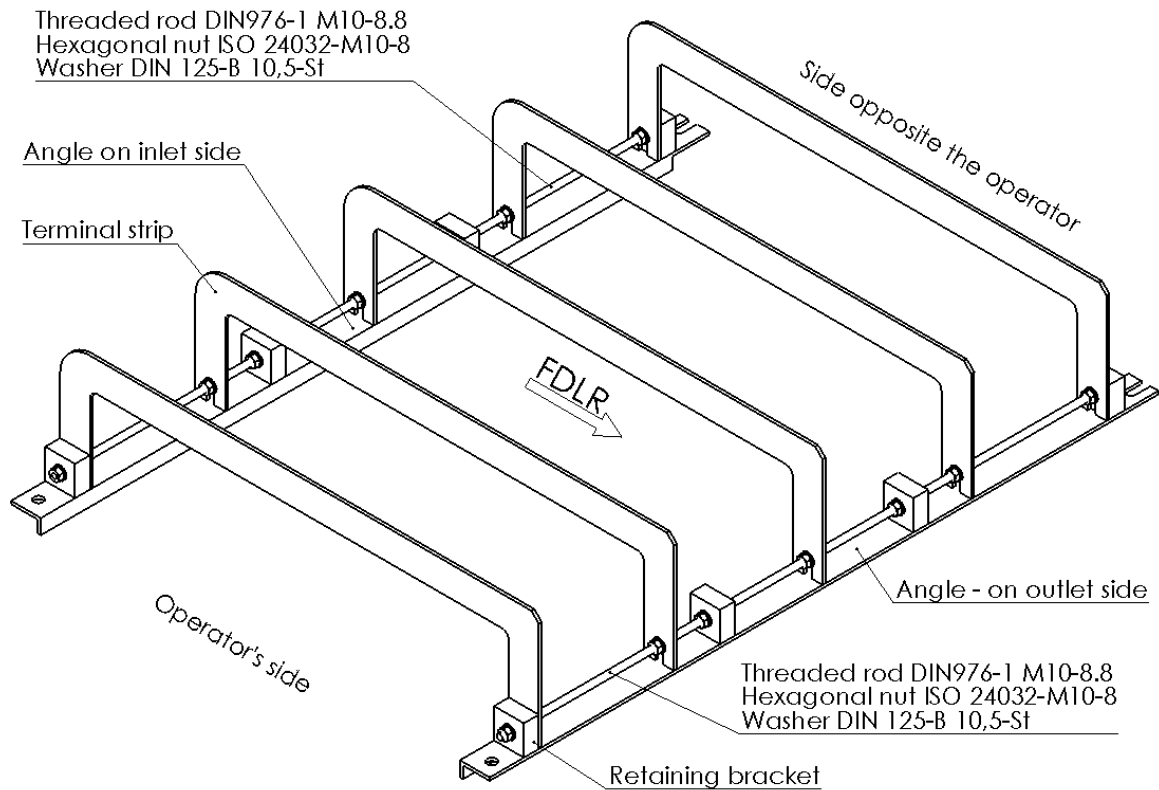
4.1.3.2 Design characteristics

a) Max. weights of pusher

Ranges	KMD52	KMD60	KMD64	KMD78	KMD85
Max. weight [kg]				8	

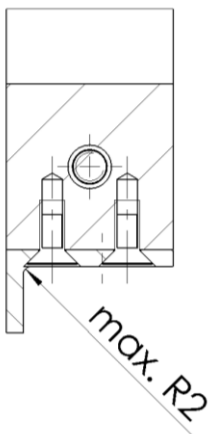
4.2 Clamping frame

4.2.1 Example of configuration of KMD78



4.2.2 Design characteristics

a) Configuration of inner edge with angle on the inlet and outlet side



6. Overview of tool-installation drawings

Range	Denomination	Description	Document	
KMD52	Moulding unit B		7202330990003 001 - 002	
			7202330990002 001 - 002	
	Moulding unit BFS		7202331990004 001 - 003	
			7202331990005 001 - 003	
	Cutout station		7202380990003 001 - 002	
			7202380990007 001 - 002	
	Hole-punch unit		7202390990001 001 - 003	
	Stacking unit	Standard	7202570990001 001 - 002	
KMD60 Speed	Moulding unit B		7274331916001 001	
	Moulding unit BFS		7274331916001 001	
	Cutout station		7274380916001 001	
		Tool-change (WW/TC) block	7274380916002 001	
	Hole-punch unit	With WW/TC block + blow-out function with blow-out function		
		Stacking unit	Standard	7274570916001 001
		Stacking unit	Part-removal mechanism	7274550916002 001
KMD64	Moulding station		7283330916001 001	
	Cutout station		7283380916001 001	
	Stacking unit	Standard	7283570916002 001	
KMD78	Moulding station		7282330916000 001 - 003	
	Cutout station		7282380916000 001 - 003	
	Hole-punch unit		7282390916001 001 - 002	
	Stacking unit	Standard	7282570916000 001	
KMD78 Speed	Moulding unit B		7246330916000 001 - 003	
	Moulding unit BFS		7246331916000 000 - 003	
	Cutout station		7246380916000 001 - 003	
	Hole-punch unit		7246390916000 001 - 002	
	Stacking unit	Standard	7246570990001 000	
		Stacking from top onto conveyor belt and outward conveying to operator's side.	7246570990007 001	
		Useful length 700mm	7246570990003 001	
		Stacking height 700mm and useful length 700mm	7246570990004 001	
		Stacking from top on the ejection bar ejection onto the conveyor belt. Outward conveying to operator's side.	7246570990002 001	
		Part-removal mechanism	7246550916002 001	
KMD85 Speed	Moulding unit B		7248330916003 001 - 004	
	Moulding unit BFS		7248331916001 001 - 003	
	Cutout station		7248380916001 001 - 004	
	Hole-punch unit		7248390916001 001 - 004	
		Adaptation KMD75/85	7248390916002 001 - 004	
	Stacking unit	Standard	7248570916008 001/ 002	
		Stacking from top on the ejection bar ejection onto the conveyor belt. Outward conveying to operator's side.	7248570916024 001	
	Part-removal mechanism	7248570916022 001		