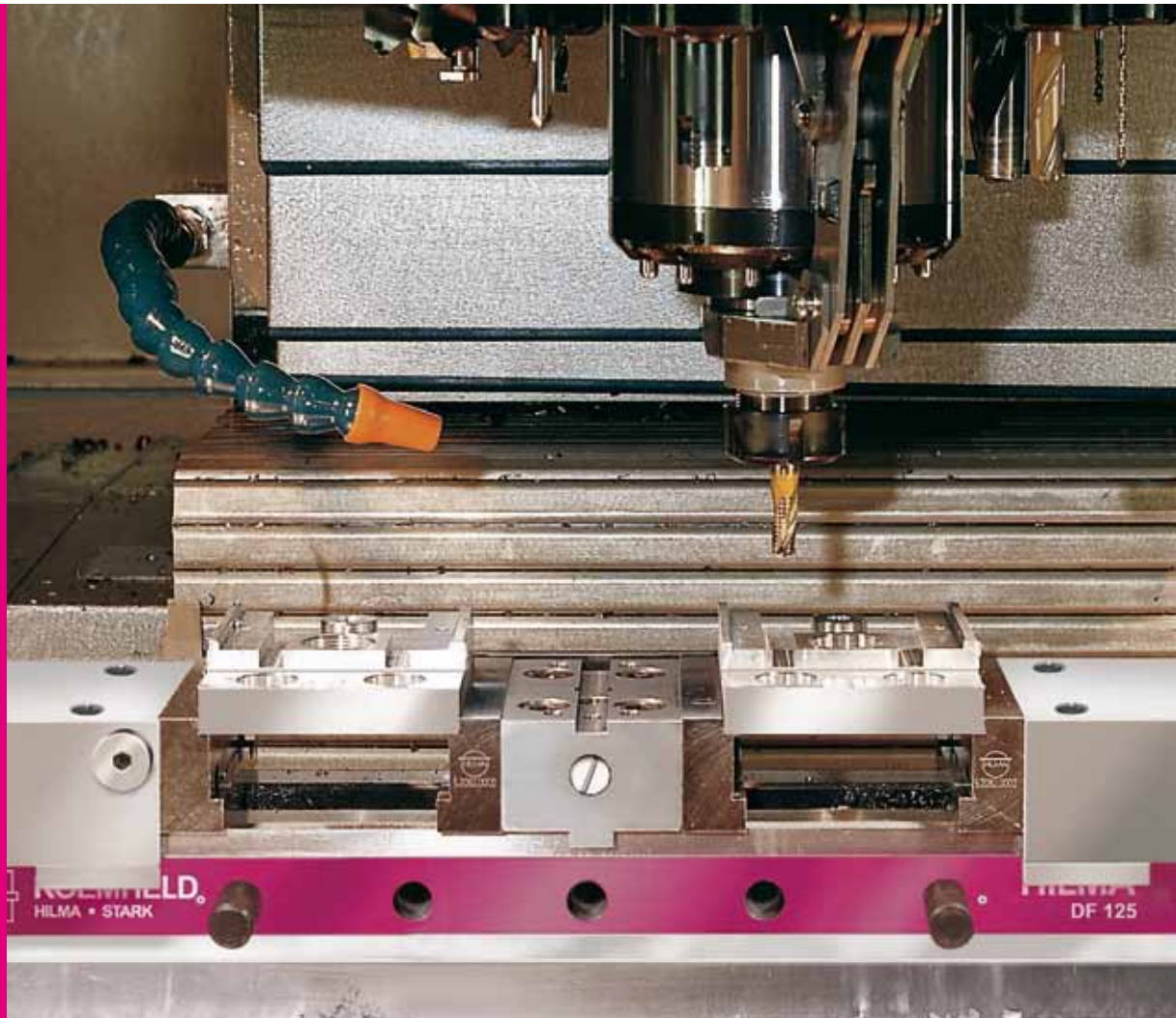




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**Workholding Systems**

# **Double clamping system DF**



## Flexible double clamping system DF, mechanical-hydraulic and hydraulic

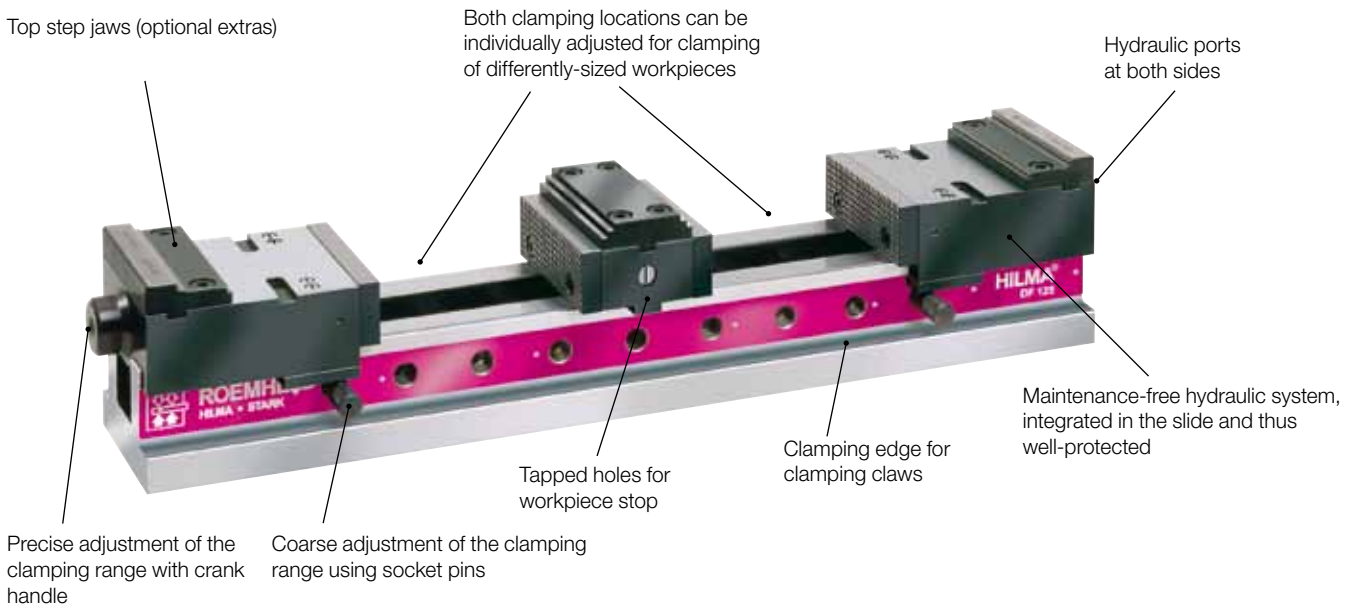


### Your benefits at a glance:

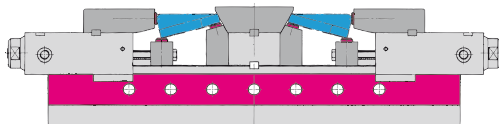
- ★ Double machining
- ★ Series arrangement
- ★ Individual control variants
- ★ Adaptation to the machine tool
- ★ Clamping jaws



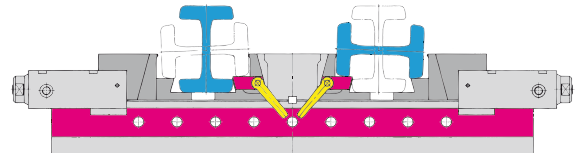
## Hydraulic design



## Application examples:



Double clamping system with hydraulically operated compensation jaws and special jaw inserts for clamping casing covers to suit the machining operation.



Double clamping system with QIS special jaws and attachments for clamping differently sized mast profiles. Set-up times are reduced to a minimum.

Flexible double clamping systems allow the efficient double machining of workpieces with the same or different dimensions. Both clamping locations work independently of each other.

Clamping of large workpieces that require several clamping locations can be realised economically and user-friendly with series arrangement.

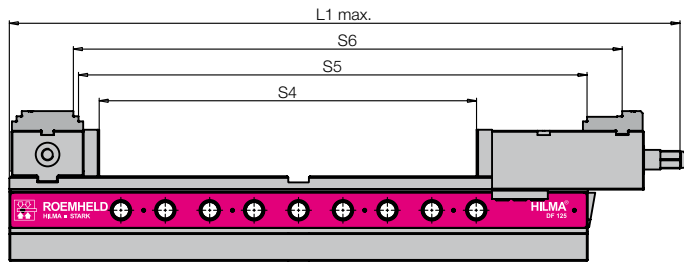
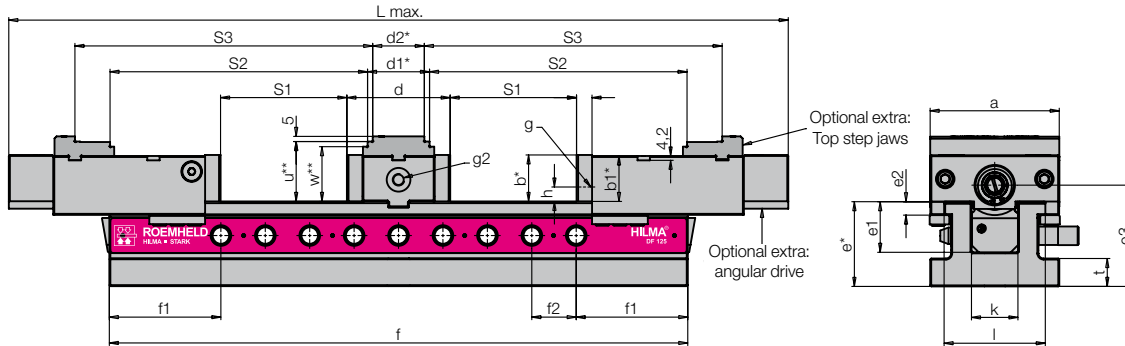
Mechanical-hydraulic design for manual clamping / unclamping or hydraulic design with individual control variants and separate pressure transducer. (Individual control variants in combination with hydraulic power unit)

The machine-specific design (planned variants) guarantees the optimum utilization of the existing workspace.

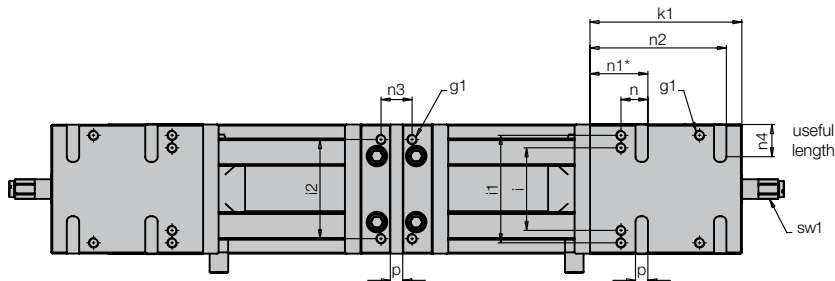
The central jaw for large jaw openings can be displaced to the exterior (planned variant).  
Adaptation to the clamping task with a variety of standard and special jaws.



**DF-M, mechanical-hydraulic**



Jaw opening see parameters  
Fixed jaw and outside slot for large clamping ranges (option)



\* = Tolerance ± 0.01 mm  
\*\* = Tolerance ± 0.02 mm

Scope of supply:  
Standard reversible jaws  
smooth/serrated  
Crank handle  
Operating manual

Part no.	Type	Jaw width [mm]	Clamping force [kN]	Effort on the crank [N]	Crank radius [mm]	Jaw opening [mm]						Overall length [mm]		Weight [kg]
						S1	S2	S3	S4	S5	S6	L max.	L1 max.	
9.3422.7003	DF 100 M	100	25	50	80	130	248	279	369	487	518	700	620	29.5
9.3423.7003	DF 125 M	125	40	75	100	122	249	288	365	492	531	746	649	44
9.3423.7003	DF 125 M	125	40	75	100	205	332	371	525	652	691	912	809	50
9.3424.7003	DF 160 M	160	50	95	125	188	357	397	516	685	725	1010	880	86

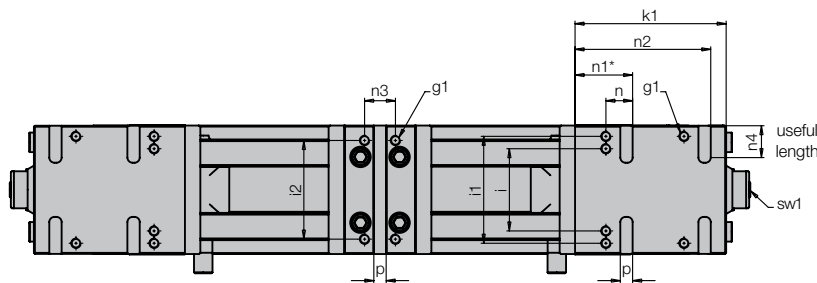
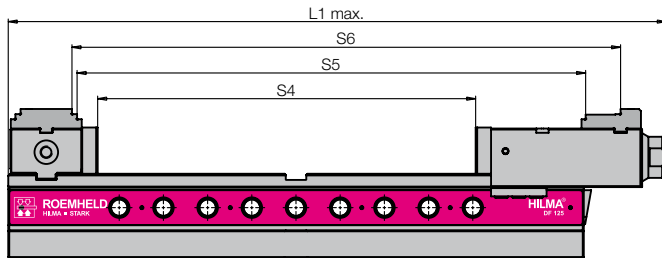
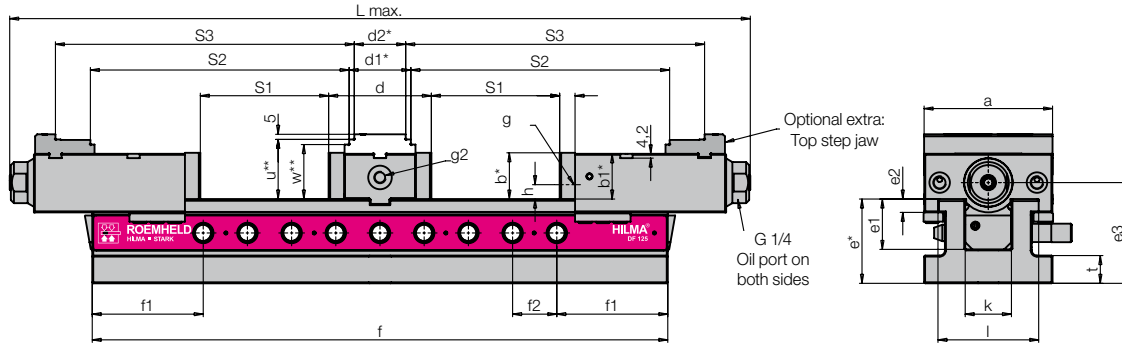
Dimensions [mm]										
a	b	b1	c	d	d1	d2	e	e1	e2	
100	34	33,5	13	84	44	50	70	39	10	
125	45	44	15	100	50	60	82	49	13	
125	45	44	15	100	50	60	82	49	13	
160	54	53	18	126	70	80	95	57	15	

Part no.	Type	e3	f	f1	f2	g	g1	g2	h	i	i1	i2	k	k1	l	n	n1	n2	n3	n4	p	sw1	t	u	w
9.3423.7003	DF 125 M	98	560	108	43	M 8x10	M10x13	M12x18	14	80	104	96	45	147	98g6	26	56	132	30	31	12H7	17	27	58	53
9.3423.7003	DF 125 M	98	720	105	51	M 8x10	M10x13	M12x18	14	80	104	96	45	147	98g6	26	56	132	30	31	12H7	17	27	58	53
9.3424.7003	DF 160 M	115	750	123	63	M10x11	M12x16	M20x27	17	100	130	130	60	189	125g6	28	73	171	38	37	18H7	19	27	70	65

Dimensions [mm]



DF-H, hydraulic



Jaw opening see parameters  
Fixed jaw and outside slot for large clamping ranges (option)

\* = Tolerance ± 0.01 mm  
\*\* = Tolerance ± 0.02 mm

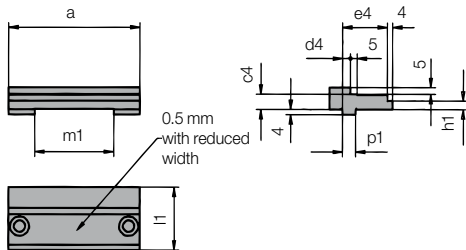
Scope of supply:  
Standard reversible jaws  
smooth/serrated  
Crank handle  
Operating manual

Part no.	Type	Jaw width [mm]	Clamping force [kN]	Operating pressure [N]	Power stroke [mm]	Oil volume [cm³]	Jaw opening [mm]						Overall length [mm]		Weight [kg]	Dimensions [mm]									
							S1	S2	S3	S4	S5	S6	Lmax.	L1 max.		a	b	b1	c	d	d1	d2	e	e1	
9.3422.7003	DF 100H	100	25	350	5	5	134	252	283	373	491	522	686	613	29,5	100	34	33,5	13	84	44	50	70	39	
9.3423.7003	DF 125H	125	40	350	5	7	125	252	291	368	495	534	736	640	44	125	45	44	15	100	50	60	82	49	
9.3423.7003	DF 125H	125	40	350	5	7	208	335	374	528	655	694	896	800	50	125	45	44	15	100	50	60	82	49	
9.3424.7003	DF 160H	160	63	350	7	14	193	362	402	521	690	730	994	872	86	160	54	53	18	126	70	80	95	57	

Part no.	Type	e2	e3	f	f1	f2	g	g1	g2	h	i	i1	i2	k	k1	l	n	n1	n2	n3	n4	p	sw1	t	u	w
9.3422.7003	DF 100H	10	82	540	90	45	M 6x 8	M 8x12	M12x18	11	65	83	80	34	133	78g6	20	45	122	26	22	10H7	8	24	45	40
9.3423.7003	DF 125H	13	98	560	108	43	M 8x10	M10x13	M12x18	14	80	104	96	45	147	98g6	26	56	132	30	31	12H7	8	27	58	53
9.3423.7003	DF 125H	13	98	720	105	51	M 8x10	M10x13	M12x18	14	80	104	96	45	147	98g6	26	56	132	30	31	12H7	8	27	58	53
9.3424.7003	DF 160H	15	115	750	123	63	M10x11	M12x16	M20x27	17	100	130	130	60	189	125g6	28	73	171	38	37	18H7	10	27	70	65

Dimensions [mm]

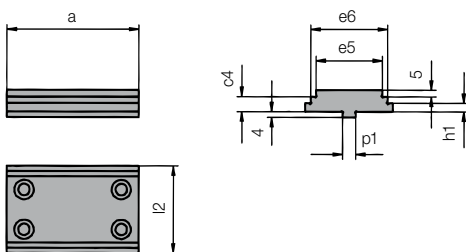
You will find further clamping jaws and jaw systems for the use with double clamping systems DF in group 1.



### Top step jaws for slide

to obtain very large jaw openings Including fixing screws.

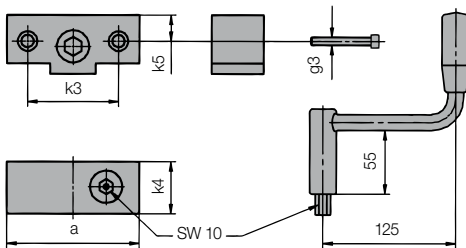
Part no.	Dimensions in mm							
	a	c4	d4	e4	h1	l1	m1	p1
<b>9.3284.1201</b>	100	11.5	6	34	6,5	48	60	10h6
<b>9.3284.1301</b>	125	14	6	40	9	58	65	12h6
<b>9.3284.1401</b>	160	17	8	43	12	64	88	18h6



### Top step jaws for fixed jaw

Use for double and simple clamping to obtain very large jaw openings Including fixing screws.

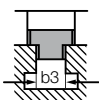
Part no.	Dimensions in mm						
	a	c4	e5	e6	h1	l2	p1
<b>9.3284.2201</b>	100	11.5	44	50	6.5	57	10h6
<b>9.3284.2301</b>	125	14	50	60	9	69	12h6
<b>9.3284.2401</b>	160	17	70	80	12	89	18h6



### Angle drive

Including crank handle and fixing screws. Maintenance-free. May be used when normal operation is difficult or even impossible. Ideal for retrofitting.

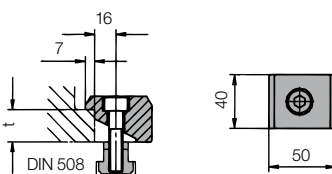
Part no.	for type	Dimensions in mm					Weight [kg]
		a	g3	k3	k4	k5	
<b>9.3294.0505</b>	<b>DF100M</b>	100	M 6	82	39	19.5	1.6
<b>9.3294.0605</b>	<b>DF125M</b>	125	M 10	96	43	23	2.3
<b>9.3294.0705</b>	<b>DF160M</b>	160	M 10	126	46	29	3.4



### Set of key blocks DIN 6323 (2 off = 1 set)

Part no.	Table slot b3
<b>9.3917.4121</b>	14 mm
<b>9.3917.4141</b>	18 mm

For precise alignment of the double clamping system on the machine table the key blocks are inserted laterally.



### Set of clamping claws with screws

For safe clamping on the machine table.

Part number for 4 off = 1 set	Table slot [mm]	t [mm]	Screw
<b>9.3777.2011</b>	14	24	M12x45 DIN 912
<b>9.3777.3011</b>	14	27	M12x45 DIN 912
<b>9.3777.3021</b>	18	27	M16x50 DIN 912



### Hydraulic power unit for flexible double clamping system DF on request hydraulically operated

**1-circuit design** for simultaneous clamping and unclamping of one or several double clamping systems. With plug-in remote control.

**2-circuit design** for individual control of two separate circuits (pendulum machining). With two remote controls.

**Basic unit without directional control valves and remote control.** The control of the double clamping system is made externally by valves with turning knob.



This page may be used as a pattern for copying

## Planned variant DF

Customers' requests concerning design, positioning and fixation are met using basic standard versions. Please determine parameters and advise us accordingly together with your enquiry or order.

Inquiry  Order  Quantity = \_\_\_\_\_

### Parameter - size

9.3422.7003 DF 100 (Jaw width 100 mm)  9.3423.7003 DF 125 (Jaw width 125 mm)  9.3424.7003 DF 160 (Jaw width 160 mm)

### Parameter - length of base

540 long (DF 100)  560 long (DF 125)  720 long (DF 125)  750 long (DF 160)

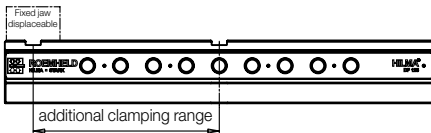
### Parameter - slide 1 + 2 with upper slot (2 off)

mechanical-hydraulic without pressure gauge  mechanical-hydraulic Pressure gauge right-hand  mechanical-hydraulic Pressure gauge left-hand  hydraulically operated

Viewing direction: Lead screw direction towards the fixed jaw!

### Parameter - jaw displaceable

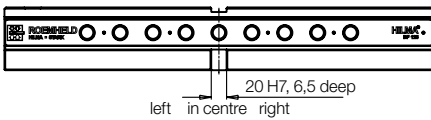
without outside slot



with outside slot for large clamping ranges (jaw openings see pages 4 + 5)

### Parameter - crosswise keyway

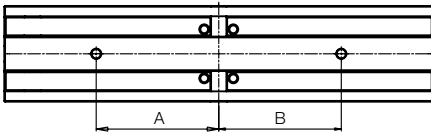
without crosswise keyway



in centre  $\pm 0.02$   
 left side \_\_\_\_\_ mm  $\pm 0.02$   
 right side \_\_\_\_\_ mm  $\pm 0.02$

### Parameter - mounting holes

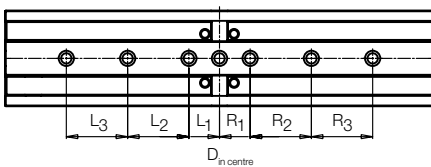
without mounting holes



12 H7  
 16 H7 A = \_\_\_\_\_ mm  $\pm 0.01$   
 18 G7 (for press fit bush 1.0179.0014)  
 26 G7 (for press fit bush 1.0179.0017) B = \_\_\_\_\_ mm  $\pm 0.01$

### Parameter - mounting grid

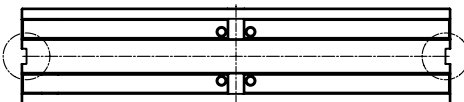
without mounting grid



KM 12  KM 16 (DIN 74) R<sub>1</sub> = \_\_\_\_\_ mm  
 L<sub>1</sub> = \_\_\_\_\_ mm R<sub>2</sub> = \_\_\_\_\_ mm  
 L<sub>2</sub> = \_\_\_\_\_ mm R<sub>3</sub> = \_\_\_\_\_ mm  
 L<sub>3</sub> = \_\_\_\_\_ mm D<sub>0</sub> =  with  without

### Parameter - longitudinal keyway

without longitudinal keyway



with longitudinal keyway 20 H7 6.5 mm deep

### Parameter - angle drive (2 off)

without angle drive

(separate sales item)

9.3294.0505 (DF 100)  9.3294.0605 (DF 125)  9.3294.0705 (DF 160)

### Parameter - top jaws

without top jaws

(separate sales item)

9.3284.1201 (2 pc.)  9.3284.1301 (2 pc.)  9.3284.1401 (2 pc.)  
 9.3284.2201 (DF 100)  9.3284.2301 (DF 125)  9.3284.2401 (DF 160)

Date

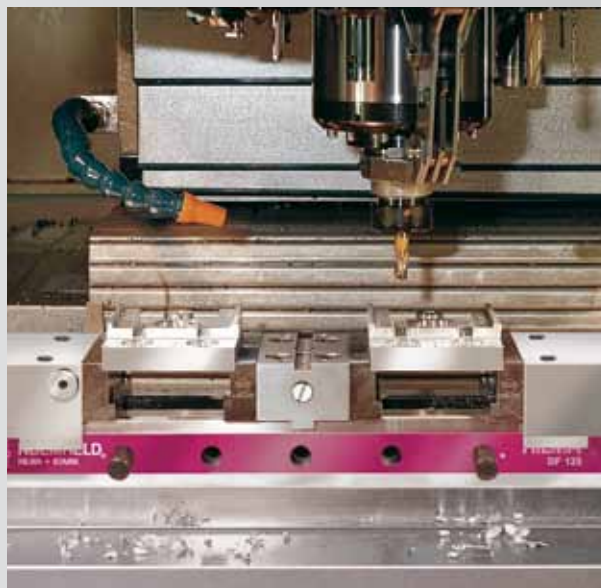
Stamp

Signature



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Large parts production of aircraft components    Multiple clamping of thin-walled workpieces



Hydraulic clamping of guide rails

Economic double clamping of standard parts

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