

DockLock

Zero-point clamping system



QUICK CHANGE-OVER SYSTEMS

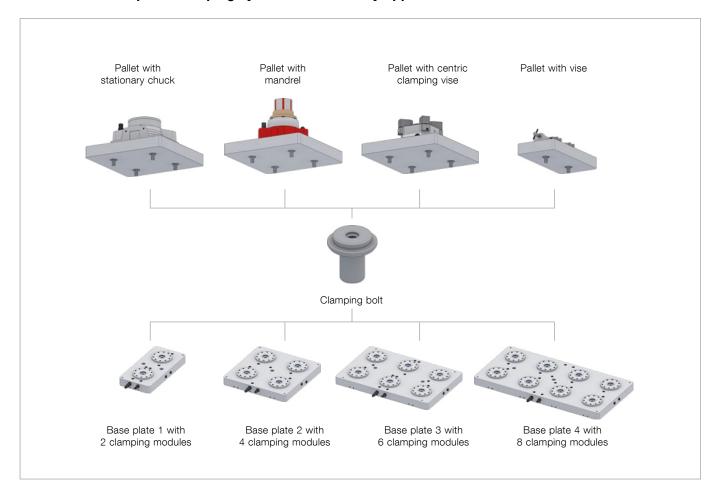
DockLock zero-point clamping system

DockLock types

	DockLock	DockLock AC
	III go	
Applications	Manual clamping device change-over	Automated clamping device change-over
Sizes	20, 30, 50	20, 30
Actuation	Spring force	Spring force
Release	Hydraulic, pneumatic	Hydraulic, pneumatic
Draw-in forces of all sizes [kN]	12,5 – 30	9 – 20
Repeatability ≤ [mm]	0,005	0,005
Advantages	 Suitable for every application due to maximum draw-in and holding forces Easy handling, since there is no jamming of the clamping bolts Fast hydraulic or pneumatic release of clamping 	 Suitable for robot loading Control and cleanliness concept ensures process-reliable removal of contamination Suitable for every application due to maximum draw-in and holding forces Easy handling, since there is no jamming of the clamping bolts
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DockLock zero-point clamping system

DockLock - zero-point clamping system for stationary applications





QUICK CHANGE-OVER SYSTEMS

DockLock zero-point clamping system

Savings potentials

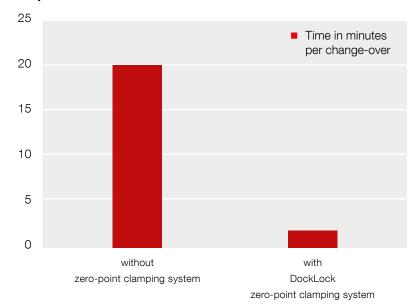
Initial conditions:

- 2x clamping device change-over / day
- Conventional clamping device change-over incl. alignment = 20 minutes
- Clamping device change-over with DockLock = 2 minutes
- Hourly rate including machine: 80.- EUR

Clamping device change-over	Costs per month	Costs per year	Savings per year*
without zero-point clamping system	1,120 EUR [40 min. x 21 workdays]	13,440 EUR [1,120 EUR x 12 months]	_
with DockLock zero-point clamping system	112.– EUR [4 min. x 21 workdays]	1,344,- EUR [112 EUR x 12 months]	12,096 EUR + 151 additional work hours [>18 shifts]

^{*} Based on 2 clamping device change-overs per day. The more the change-overs the greater the savings!

Comparison



QUICK CHANGE-OVER SYSTEMS

DockLock zero-point clamping system

Selecting the right DockLock zero-point clamping system

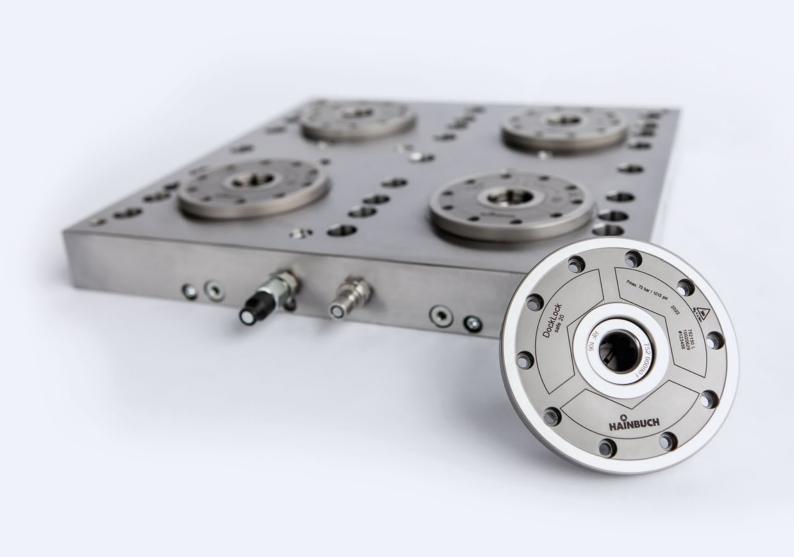
Do you require automated set-up of your machine tool by a robot?		
Yes	No	
DockLock AC Page 18	DockLock Page 6	





What is the required draw-in force for each zero-point clamping module?				
12.5 kN 20 kN 30 kN				
Size 20	Size 30	Size 50		

DockLock



DockLock

Are you tired of losing so much time due to change-over on your machining center? Then we have something for you. The DockLock zero-point clamping system in the hydraulic or pneumatic version. One clamping device quick change-over system for stationary applications. It allows you to change your clamping devices in two minutes. And with repeatability of ≤ 0.005 mm, without alignment.

A special feature: form fit clamping with a collet or clamping segments. That means a rigid clamping set-up and higher repeatability. This also prevents clamping marks on the clamping bolt as opposed to zero-point clamping systems with balls or sliders, which lead to inaccuracies and consequently to replacement of the clamping bolts. Likewise, no contamination and chips can get through, which ensures low-wear operation and reduces maintenance expenses.

DockLock - the time-proven zero-point clamping system for high machine utilization.

Key advantages

- Suitable for every application due to maximum drawin and holding forces
- Easy handling, since there is no jamming of the clamping bolts
- Fast hydraulic or pneumatic release of clamping
- Repeatability ≤ 0.005 mm, without alignment

Your benefits

- Enormous reduction in clamping device change-over
- Higher machine availability due to external set-up
- Job-oriented manufacturing
- Shorter machine downtimes
- Shorter piece rates and throughput times

DockLock

DockLock types

	safe	airline
Description	Zero-point clamping system, hydraulically actuated	Zero-point clamping system, pneumatically actuated
Sizes	20, 30, 50	20
Product variants	Built-in cylinder Flanged cylinder Built-up cylinder Base plates	Flanged cylinder Base plates
Draw-in force per clamping module [kN]	12,5 – 30	12,5
Clamping element	Collet	Clamping segments
Advantages	 High draw-in forces in a compact design Disc spring clamping creates a vibration-dampening effect All that is needed to generate the release force is a standard hydraulic unit 	 Process-reliable draw-in and holding forces due to pneumatic re-clamping with turbo function Release force is generated by the machine's compressed air supply Easy implementation in an existing machine, since no separate media supply has to be installed

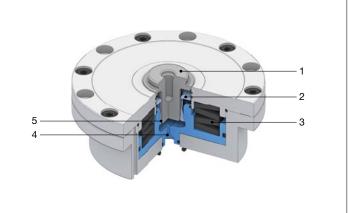
DockLock clamping module types

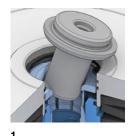
	Built-in cylinder	Flanged cylinders	Built-up cylinder	Base plates
Description	For installation in base plates	For installation in machine tables	For installation on machine, set-up or measuring tables	Plate with integrated clamping modules
Sizes	20	20, 30, 50	20, 30, 50	20
Release	Hydraulic	Hydraulic, pneumatic	Hydraulic	Hydraulic, pneumatic
Draw-in force per clamping module [kN]	12,5	12,5 – 30	12,5 – 30	12,5
Advantages	Low installation depthEasy integration in diverse applications	Easy retrofitting is possible	 No holes in the machine table are required Easy retrofitting is possible 	 Entry level solution – easy to mount on the machine table Available with 2, 4, 6 or 8 clamping modules

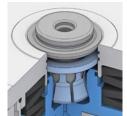
DockLock safe in detail

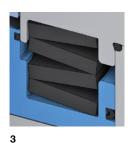
Designation

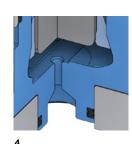
- Clamping bolts for mounting on the plate / clamping device. Inclined raising of the plate is possible without damage to the clamping modules
- 2 Form fit clamping through collet
- 3 Maximum draw-in and holding force due to disc springs: mechanical clamping, hydraulic release
- Central air-blast cleaning
- 5 Push-up function of the clamping bolt prevents damage to the centering bore

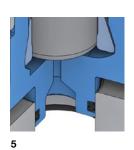












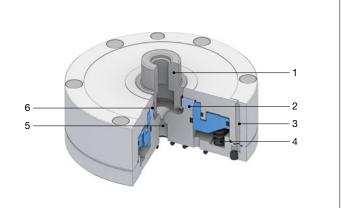
DockLock airline in detail

Designation

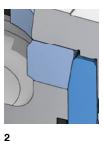
1 Clamping bolts for mounting on the plate / clamping device. Inclined raising of the plate is possible without damage to the clamping modules

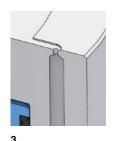
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- 2 3-face contact through clamping segments ensures self-locking clamping
- 3 Air sensing control is standard
- 4 Maximum draw-in and holding force due to a combination of springs and pneumatic re-clamping
- 5 Central air-blast cleaning
- 6 Form fit clamping with clamping segments

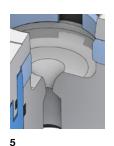








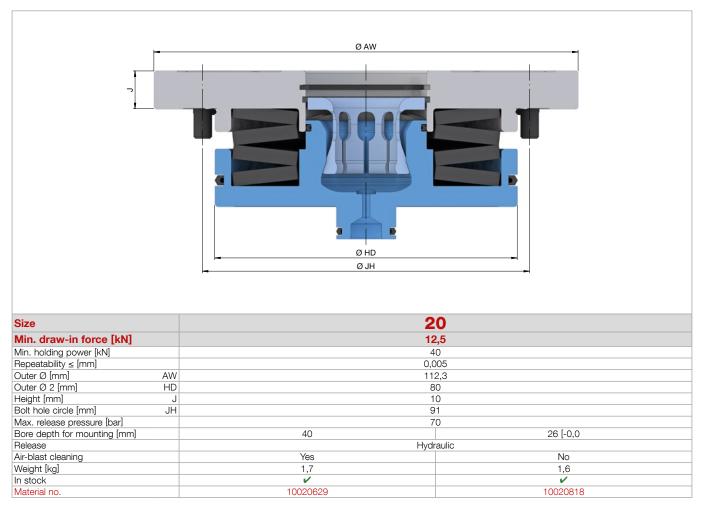






DockLock

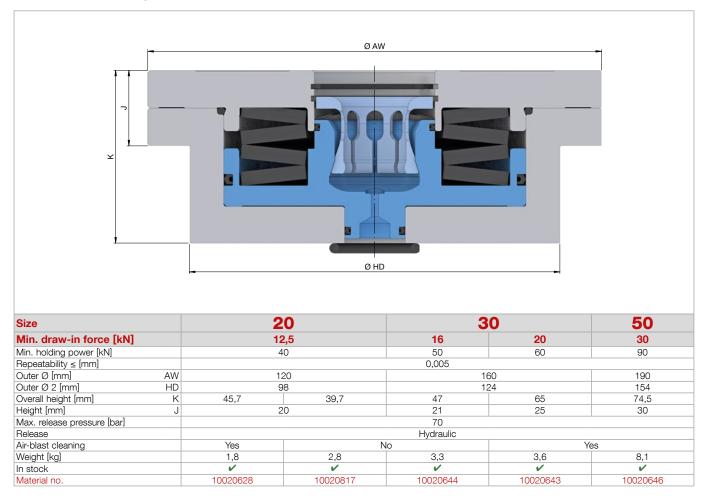
DockLock safe built-in cylinder. Technical data



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	Clamping bolts	Pressure generator	Accessories
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DockLock

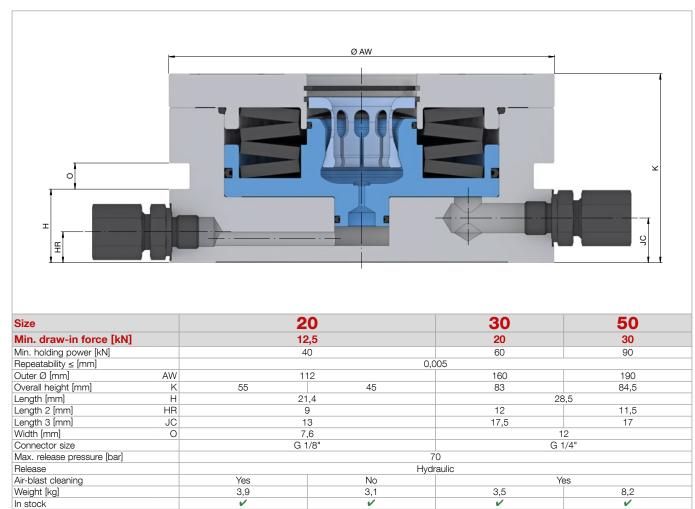
DockLock safe flanged cylinder. Technical data





DockLock

DockLock safe built-up cylinder. Technical data

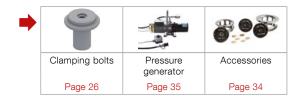


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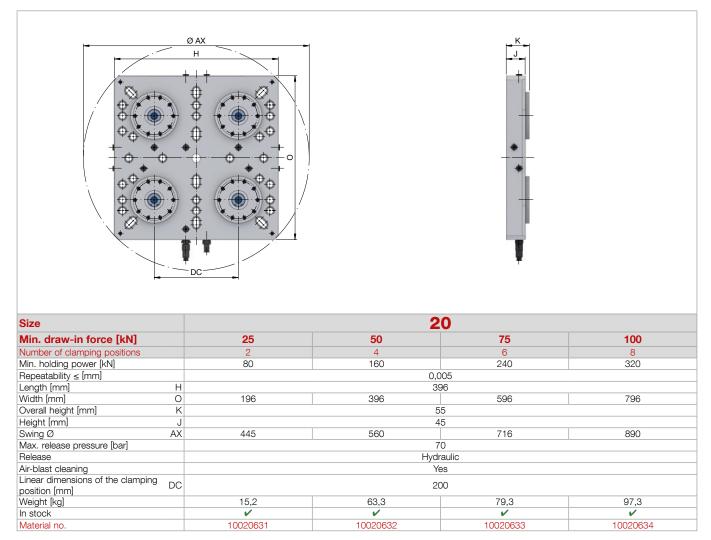
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Material no.

DockLock

DockLock safe base plates. Technical data



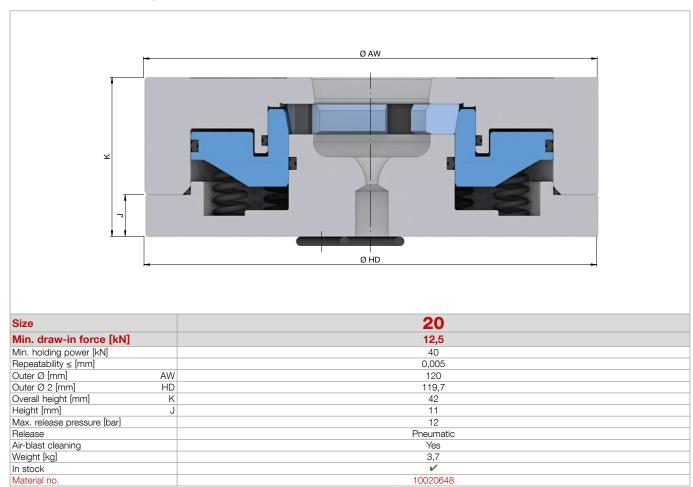


Scope of delivery

- Base plate
- Built-in cylinder
- Cover bolt

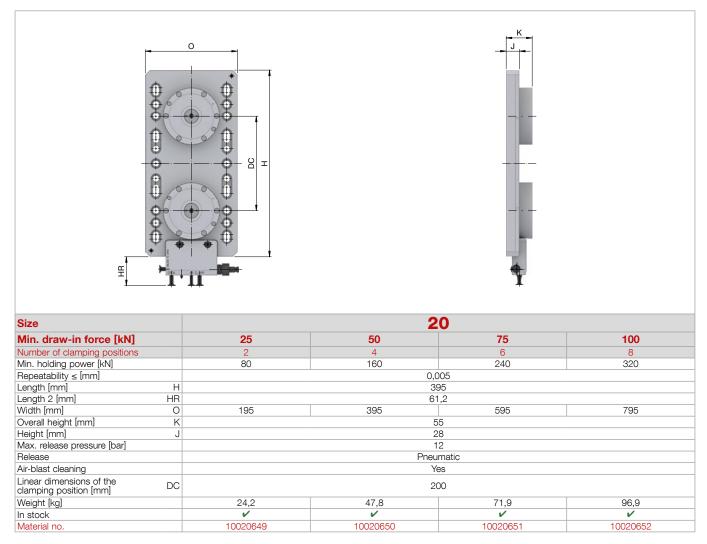
DockLock

DockLock airline flanged cylinder. Technical data





DockLock airline base plates. Technical data





Scope of delivery

- Base plate
- Built-in cylinder
- Cover bolt

DockLock

Starter-sets

Product	Figure	Description	In stock	Material no.
DockLock safe		1x base plate safe 20 with 4 clamping modules with air-blast cleaning 4x clamping bolts safe 20 with centering function 4x clamping bolts safe 20 with compensating function 8x clamping bolts safe 20 without centering function	V	10020906
DockLock airline		1x base plate airline 20 with 4 clamping modules with air-blast cleaning 4x clamping bolts airline 20 with centering function 4x clamping bolts airline 20 with compensating function 8x clamping bolts airline 20 without centering function	V	10020907

Pallets or pressure generators can be ordered separately as needed.



DockLock

DockLock AC



DockLock AC

You are short of personnel, but have to process your orders, preferably 24/7? Then the DockLock AC zero-point clamping system for automated fixture change-over, in either the hydraulic or pneumatic version, is perfect for you. The clamping device quick changeover system for stationary applications allows automated change-over of your clamping devices in two minutes. And with repeatability of \leq 0.005 mm, without alignment.

The design of the form fit clamping and power transmission is identical to the DockLock for manual set-up. In addition, it is equipped with a closure at the clamping position as protection against contamination and chips. That ensures even less wear and reduces maintenance expenses. In addition, standard features include an air sensing control, air-blast support isles and a piston position control for a safe and reliable automated process.

DockLock AC - the zero-point clamping system for automated production.

Key advantages

- Suitable for robot loading
- Control and cleanliness concept ensures process-reliable removal of contamination
- Suitable for every application due to maximum draw-in and holding forces
- Easy handling, since there is no jamming of the clamping bolts
- Can also be used as a tool change interface for robots
- Repeatability ≤ 0.005 mm, without alignment

Your benefits

- High flexibility and long autonomous machine run times due to automated fixture change-over
- High machine availability due to unattended production
- Ensures reliable automation processes
- Less contamination thanks to protection at the clamping position
- Shorter piece rates and throughput times

DockLock AC

DockLock AC types

	autosafe	autoairline
Description	Zero-point clamping system for automation, hydraulically actuated	Zero-point clamping system for automation, pneumatically actuated
Sizes	20, 30	20
Product variants	Built-in cylinder Flanged cylinder Flanged cylinders with tapered center	Flanged cylinder
Draw-in force per clamping module [kN]	9 – 20	12,5
Clamping element	Collet	Clamping segments
Advantages	 High draw-in forces in a compact design Disc spring clamping creates a vibration-dampening effect All that is needed to generate the release force is a standard hydraulic unit 	 Process-reliable draw-in and holding forces due to pneumatic re-clamping with turbo function Release force is generated by the machine's compressed air supply Easy implementation in an existing machine, since no separate media supply has to be installed

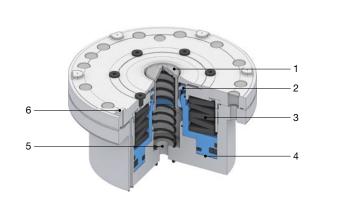
DockLock AC clamping module types

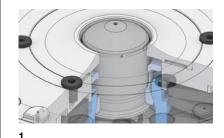
	Built-in cylinder	Flanged cylinders	Flanged cylinders with tapered center
Description	For installation in base plates	For installation in machine tables	For installation in machine tables
Sizes	20	20, 30	30
Release	Hydraulic	Hydraulic, pneumatic	Hydraulic
Draw-in force per clamping module [kN]	9	9 – 20	20
Advantages	Low installation depthEasy integration in diverse applications	■ Easy retrofitting is possible	 Precentering of clamping bolts Collets can be changed without removing the cover

DockLock AC autosafe in detail

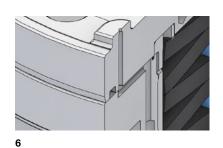
Designation

- 1 Spring-loaded cap prevents penetration of chips
- 2 Form fit clamping through collet
- 3 Maximum draw-in and holding force due to disc springs: mechanical clamping, hydraulic release
- 4 Piston position control
- 5 Central air-blast cleaning
- 6 Air-blast support isles with integrated air sensing control





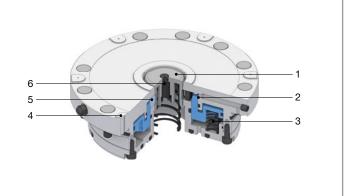


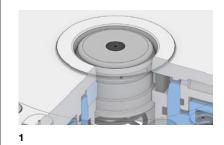


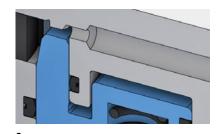
DockLock AC autoairline im Detail

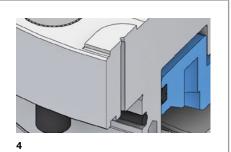
Designation

- 1 Spring-loaded cap prevents penetration of chips
- 2 Piston position control
- 3 Maximum draw-in and holding force due to a combination of springs and pneumatic re-clamping
- 4 Air-blast support isles with integrated air sensing control
- 5 3-face contact through clamping segments ensures self-locking form fit clamping
- 6 Central air-blast cleaning



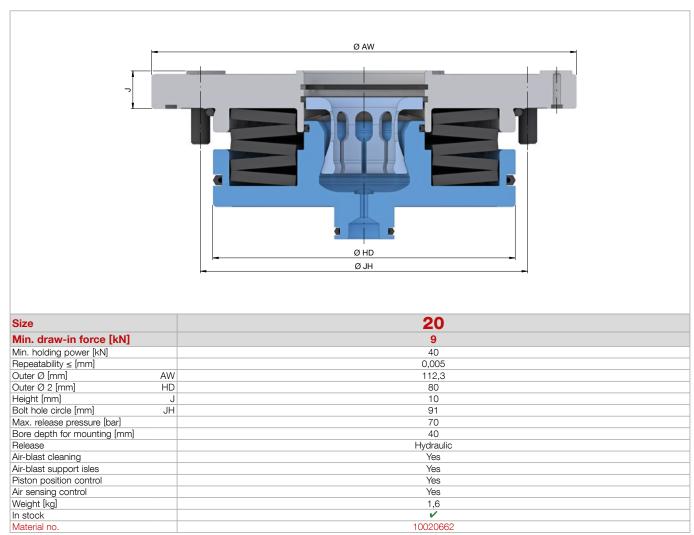






DockLock AC

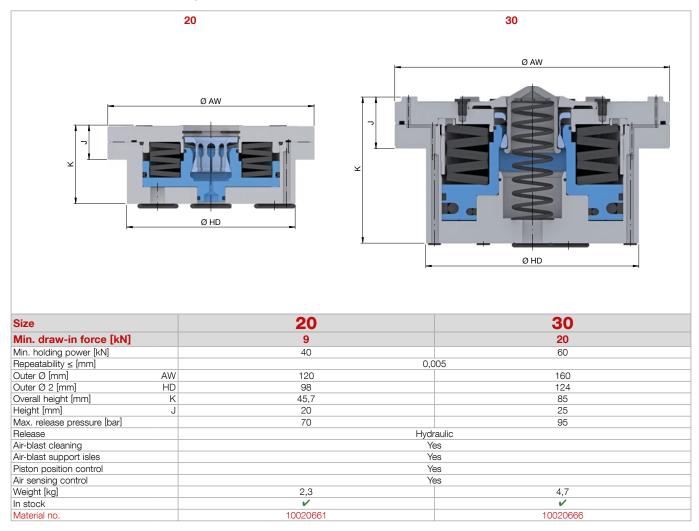
DockLock AC autosafe built-in cylinder. Technical data



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	Clamping bolts	Pressure generator	Accessories
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DockLock AC

DockLock AC autosafe flanged cylinder. Technical data

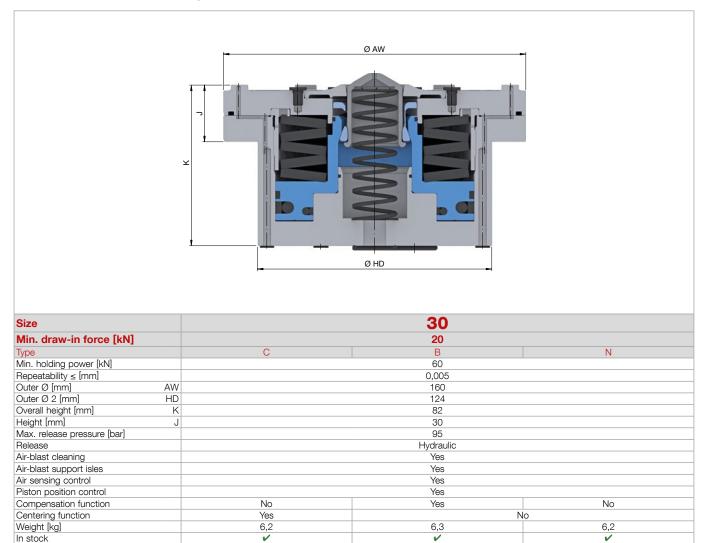




DockLock AC

DockLock AC autosafe flanged cylinder with tapered center. Technical data

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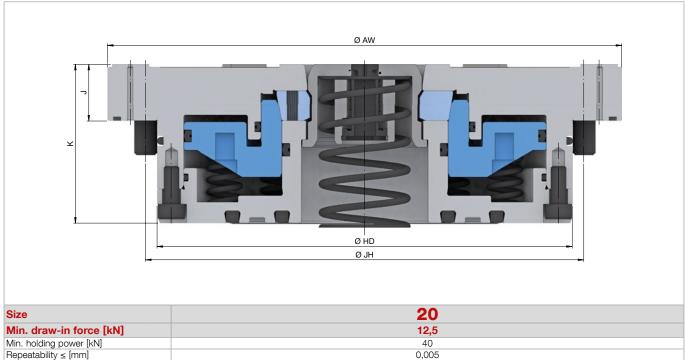
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	Clamping bolts	Pressure generator	Accessories
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Material no.

DockLock AC

DockLock AC autoairline flanged cylinder. Technical data



Size	20
Min. draw-in force [kN]	12,5
Min. holding power [kN]	40
Repeatability ≤ [mm]	0,005
Outer Ø [mm] AW	136
Outer Ø 2 [mm] HD	110
Overall height [mm] K	42
Height [mm] J	15
Bolt hole circle [mm] JH	120
Max. release pressure [bar]	12
Release	Pneumatic
Air-blast cleaning	Yes
Air-blast support isles	Yes
Piston position control	Yes
Air sensing control	Yes
Weight [kg]	3,5
In stock	\checkmark
Material no.	10020667



Clamping bolts



The clamping bolts are an important component of the DockLock system; they create the connection between the clamping module and the changing part. They are universal and can be inserted in the pallet, the clamping device or directly in the workpiece. Centering clamping bolts feature a high-precision collar for alignment in the clamping position of the clamping module. That ensures repeatability of \leq 0.005 mm.

Form fit clamping of the collet or the clamping segments prevents clamping marks on the clamping bolts. Such marks would result in inaccuracies and consequently to replacement of the clamping bolts. The clamping bolts are available in three versions: centering clamping bolts, compensating clamping bolts, and clamping bolts without centering function.

Key advantages

- Clamping bolts are screwed into the pallet, the clamping device or directly into the workpiece
- Long service life due to form fit clamping in the collet or in the clamping segments
- Centering clamping bolts ensure high accuracy
- Compensating clamping bolts compensate offset in the X or Y axis
- Clamping bolts without centering function increase the clamping force

Your benefits

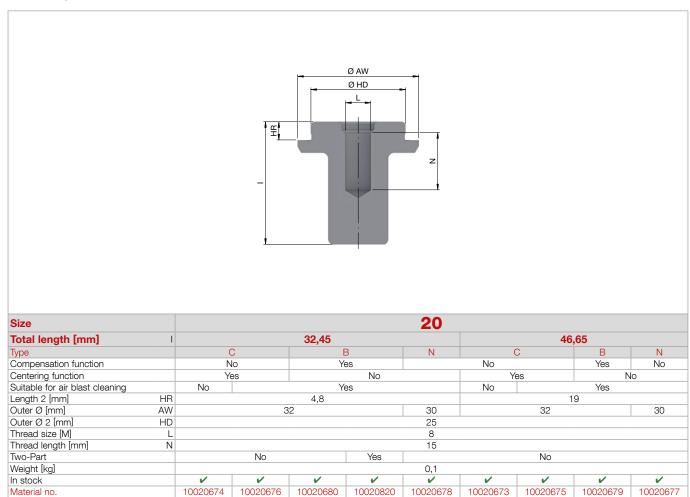
- High repeatability
- Inexpensive
- Universally applicable
- Long service life

Recommended layout of clamping bolts for maximum precision

Designation Type C Centering clamping bolt [defines the zero point] Type B Compensating clamping bolt [positions the plate in the X or Y axis] Type N Clamping bolt without centering function [for additional clamping force]

Clamping bolts

Clamping bolt size 20 safe / autosafe. Technical data



Clamping bolts

Clamping bolt size 20 airline / autoairline. Technical data

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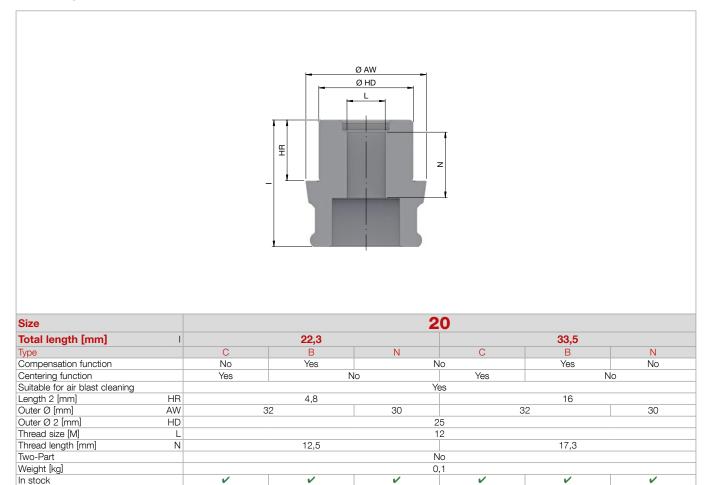
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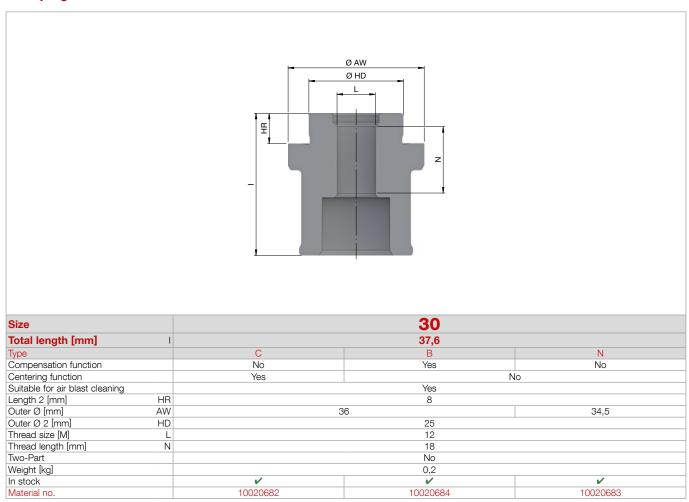
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Material no.



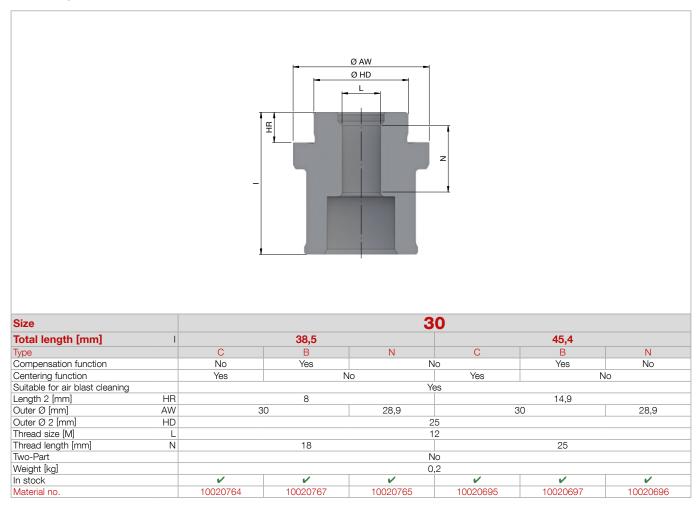
Clamping bolts

Clamping bolt size 30 safe. Technical data



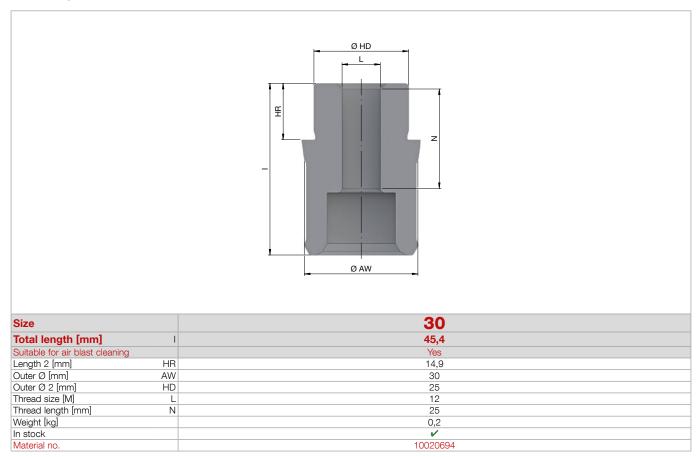
Clamping bolts

Clamping bolt size 30 autosafe. Technical data



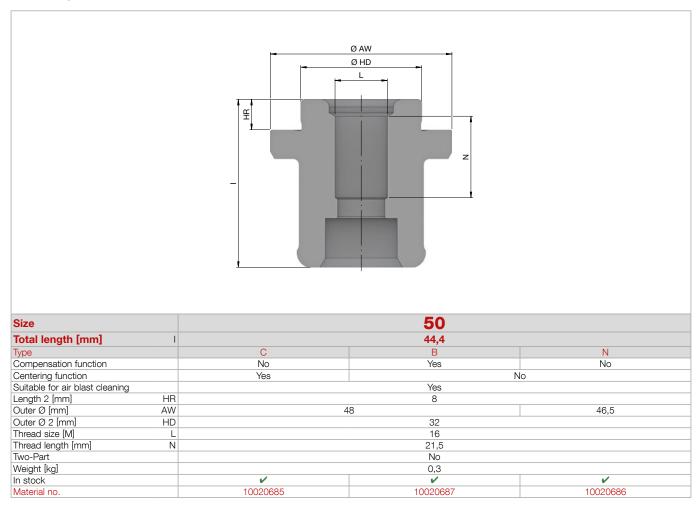
Clamping bolts

Clamping bolt size 30 autosafe tapered. Technical data



Clamping bolts

Clamping bolt size 50 safe. Technical data



Accessories



Accessories

Pallets for mounting of clamping devices

Suitable for	Figure	Number of clamping positions	Length [mm] H	Width [mm] O	Height [mm] J	Material	Weight [kg]	In stock	Material no.
airline				195	40	Steel	24	'	10020653
		2			38	Aluminum	8,2	~	10020654
					40	Steel	48,5	~	10020655
		4	005	395	38	Aluminum	18	~	10020656
			395		45	Steel	82	~	10020657
		6		595	48	Aluminum	32	~	10020658
		8		795	45	Steel	110	/	10020659
	1.				48	Aluminum	42	~	10020660
safe	1	2		196	36	Steel	22	~	10020635
					40	Aluminum	8,5	~	10020636
		4		396	36	Steel	44	~	10020637
					40	Aluminum	17,5	~	10020638
			396	596	46	Steel	67	~	10020639
		6			50	Aluminum	33	~	10020640
					46	Steel	113	/	10020641
		8		796	50	Aluminum	44	~	10020642

Clamping bolts are not included and must be ordered separately.

Pressure generator

Product	Figure	Description	Suitable for	In stock	Material no.
Hydraulic unit		Pressure generator with 2.3 l/min oil delivery rate and 65 bar / 950 psi outlet pressure, 110 V input voltage	safe	V	10020745
		Pressure generator with 2.3 l/min oil delivery rate and 65 bar / 950 psi outlet pressure, 230 V input voltage	autosafe	V	10020744

Accessories

Screws

Product	Size	Description	Suitable for	Packaging unit	In stock	Material no.
Cylindrical screw	20	M8x25 for mounting of the clamping bolt from above	safe autosafe	1	V	10020715
		M12x35 for mounting of the bracket	safe		V	10020716
		M5x12 with low head for support ring	autosafe	autosafe 10		10020699
	20/30	M12x50 for mounting of the clamping bolt from above	safe autosafe airline autoairline		V	10020701
		M10x40 for mounting of the clamping bolt from below			V	10020700
	30	M6x25 with low head for flange mounting			V	10020702
		M6x30 with low head for flange mounting			V	10020703
	30/50	M16x45 for mounting of the bracket			V	10020727
	50	M8x30 with low head for flange mounting	safe	2	V	10020737
		M8x40 with low head for flange mounting	Sale	6	V	10020738
		M16x60 for mounting of the clamping bolt from above		1	V	10020734
Threaded pin	20	M8x30 for mounting of the clamping bolt from below	safe autosafe	1	V	10020714

Accessories

Various accessories

Product	Figure	Size	Description	Suitable for	In stock	Material no.
Cover bolt	polit		For protection of clamping modules	airline	~	10020760
		20		safe autosafe	V	10020717
	100	30	when not in use	safe	✓	10020728
		50			V	10020735
Cover plate		20	Ø8.5 mm made of brass for protecting screw counterbores against contamination	safe autosafe safe	V	10020726
		20/30	Ø10.5 mm made of brass for protecting screw counterbores against contamination		V	10020708
		50	Ø13.5 mm made of brass for protecting screw counterbores against contamination		V	10020743
Support ring		20	For height adjustment of flanged cylinders	safe autosafe	V	10020725
		30			~	10020704
		50	-	safe	V	10020742
Washer		20		safe autosafe	V	10020722
		30	For inclined extension		✓	10020730
		50		safe	V	10020736
Screw-in adapter		20	Mounting aid for mounting of the clamping bolt from below	safe autosafe	V	10020720
Hydraulic hose			Replacement hose, 2 m, without coupling	safe	V	10020746

Accessories

Product	Figure	Size	Description	Suitable for	In stock	Material no.
Coupling sleeve			Connection dimension G 1/4" oil		V	10020752
			Connection dimension G 1/8" air	safe	V	10020749
Coupling plug			Connection dimension NW6 AIR	airline	V	10020759
			Connection dimension G 1/8" air	oofo	V	10020747
			Connection dimension G 1/4" oil	safe	V	10020750
Positioning bushing		20	For pallet, for prepositioning	airline	V	10020763
Reducing adapter	_		For screwing in, for connection dimensions 1/8" to 3/8"		V	10020757
			Long, for connection dimensions G 3/8" to G 1/4"	safe	✓	10020756
			Long, for connection dimensions G 1/8" to G 1/4"		V	10020754
Set-up plugs		20			V	10020721
		30	For positioning of built-up cylinders	safe	V	10020731
		50			V	10020739
Bracket		20	For mounting of built-up cylinders	safe	V	10020718
		30/50	To mounting of built-up cylinders	sale	V	10020729
Dust cap			For coupling plug G 1/4" oil	safe	~	10020751
	anta)		For coupling plug G 1/8" air		~	10020748
			For coupling sleeve G 1/4" oil		V	10020753

Accessories

Product	Figure	Size	Description	Suitable for	In stock	Material no.
Support ring	oport ring	20	Hardened, for pallets in automation	autosafe	~	10020698
				autoairline	~	10020761
	• • •	30	Hardened, for pallets in automation	autosafe	V	10020707
Precentering bolt		20	For base plate, for prepositioning of pallets	safe airline	V	10020762

