

LOCKED PN

Rod clamping with maximum clamping force

Pneumatic Rod Clamping

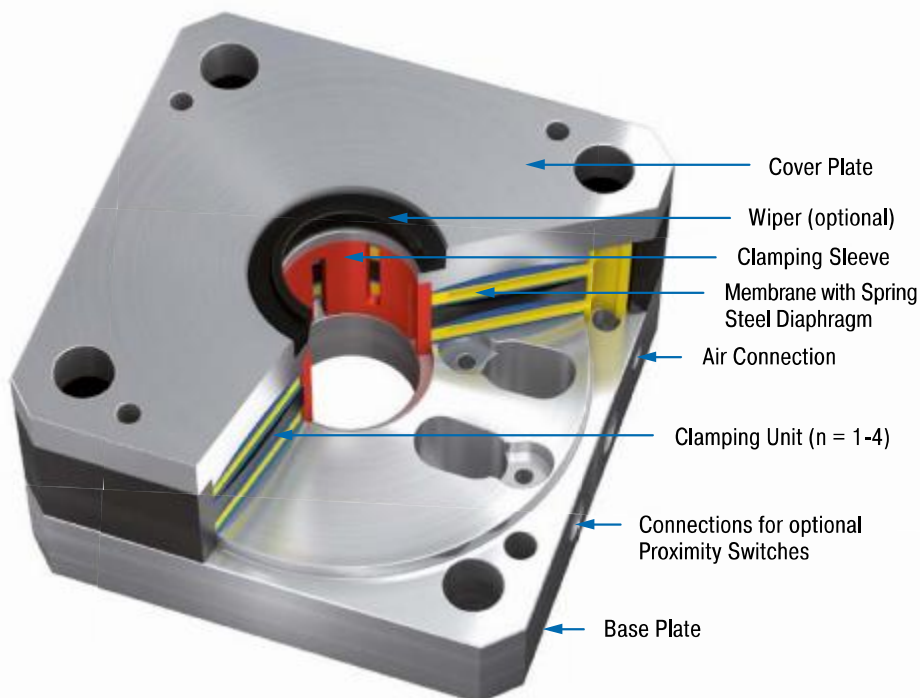
Holding forces 1,400 N to 36,000 N

Holding torques 15 Nm to 720 Nm

Immediate clamping in case of loss of pneumatics: Suitable for rods with diameters of 20 mm to 40 mm, the clamping elements LOCKED PN absorb the forces axially and rotationally. With holding forces of up to 36,000 N, they reach or exceed the levels of hydraulic clamps. The system costs are however lower.

Alongside clamping in both directions of motion, the LOCKED-PN also surprises with its compact design. They need less installation space and enable short rod lengths. Many users appreciate the modular system. It allows several segments to be stacked so that the necessary clamping force can be attained for every application.

The areas of application for the ACE product family LOCKED PN are mechanical engineering and machine tools.



Technical Data

Holding torques: 15 Nm to 720 Nm

Holding forces: 1,400 N to 36,000 N

Rod diameter: Ø 20 mm to Ø 40 mm

Clamping cycles: 1,000,000

Mounting: In any position

Operating pressure: 4 bar (automotive) or 6 bar

Material: Outer body: Tool steel

Pneumatic medium: Dried, filtered air

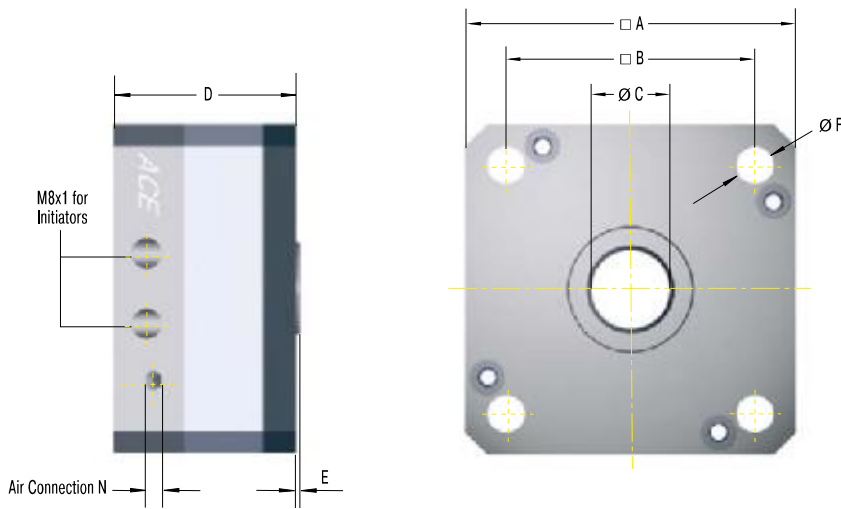
Operating temperature range: 10 °C to 45 °C

Application field: Jacking systems, Light presses, Punching/stamping machines, Stacking units

Note: When mounting, use hardened piston rod.

On request: Special designs as for example special diameters and accessories available on request. Versions matching to ISO pneumatic cylinders including base plates coordinated to the dimensions of the flange sizes of standard cylinders according to ISO 15552 are also available.

PN



The calculation and selection of the most suitable clamping element should be carried out or be approved by ACE.

Complete details required when ordering

Operating pressure: 4 bar or 6 bar

Ordering Example

Rod Clamping Standard Model PN80-25-3-4B
 ISO Cylinder Nominal Diameter 80 mm
 Rod Diameter 25 mm
 Number of Clamping Units 3
 6B = 6 bar Type
 4B = 4 bar Type

Performance and Dimensions

TYPES	¹ Holding force N	Holding torque Nm	Operating pressure bar	A mm	B mm	C mm	D mm	E mm	F mm	N	Weight kg
PN63-20-1-4B	1,400	15	4	75	56.5	20	41.5	2.1	8.5	M5	0.70
PN63-20-1-6B	2,000	20	6	75	56.5	20	41.5	2.1	8.5	M5	0.70
PN63-20-2-4B	2,520	25	4	75	56.5	20	59.5	2.1	8.5	M5	1.13
PN63-20-2-6B	3,600	35	6	75	56.5	20	59.5	2.1	8.5	M5	1.13
PN63-20-3-4B	3,780	35	4	75	56.5	20	77.5	2.1	8.5	M5	1.56
PN63-20-3-6B	5,400	50	6	75	56.5	20	77.5	2.1	8.5	M5	1.56
PN80-25-1-4B	2,100	25	4	96	72	25	43.5	2.14	10.5	G1/8	1.30
PN80-25-1-6B	3,000	35	6	96	72	25	43.5	2.14	10.5	G1/8	1.30
PN80-25-2-4B	3,780	40	4	96	72	25	63.5	2.14	10.5	G1/8	2.20
PN80-25-2-6B	5,400	60	6	96	72	25	63.5	2.14	10.5	G1/8	2.20
PN80-25-3-4B	5,670	65	4	96	72	25	83.5	2.14	10.5	G1/8	3.10
PN80-25-3-6B	8,100	95	6	96	72	25	83.5	2.14	10.5	G1/8	3.10
PN125-40-1-4B	7,000	140	4	145	110	40	51.6	3	13	G1/8	3.65
PN125-40-1-6B	10,000	200	6	145	110	40	51.6	3	13	G1/8	3.65
PN125-40-2-4B	12,600	250	4	145	110	40	75.2	3	13	G1/8	5.85
PN125-40-2-6B	18,000	360	6	145	110	40	75.2	3	13	G1/8	5.85
PN125-40-3-4B	18,900	375	4	145	110	40	98.8	3	13	G1/8	8.05
PN125-40-3-6B	27,000	540	6	145	110	40	98.8	3	13	G1/8	8.05
PN125-40-4-4B	25,200	500	4	145	110	40	122.4	3	13	G1/8	10.25
PN125-40-4-6B	36,000	720	6	145	110	40	122.4	3	13	G1/8	10.25

¹ The listed holding forces are reached under optimum conditions. We recommend a safety factor of > 10 %. Please note that surface, material and cleanliness of the rod as well as wear and tear and the use of rod wipers lead to different holding forces. Test the clamping needed for series production or safety applications in its specific application environment and measure the actual values.

LOCKED PRK

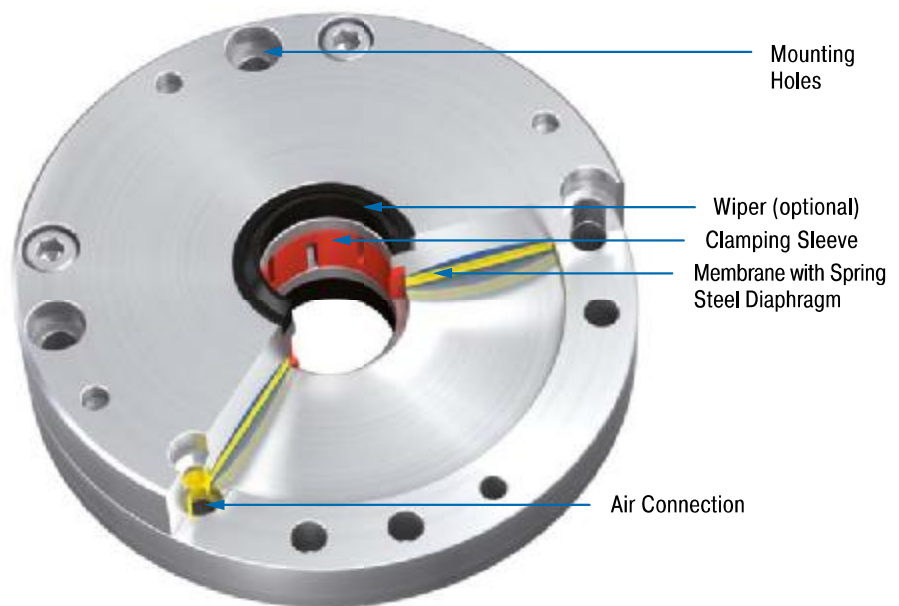
Rod clamping with maximum clamping force in a compact size

Pneumatic Rod Clamping, Compact Holding forces 700 N to 5,000 N Holding torques 7 Nm to 100 Nm

Compact and safe: when space becomes restricted, the compact LOCKED PRK clamping elements come into their own. As pneumatic rod clamping with low heights of 28 mm to 34 mm, they provide clamping forces of up to 5,000 N.

Clamping is carried out by a diaphragm spring-plate system and is released when compressed air is applied. Clamping elements from the LOCKED PRK product family absorb the forces on rods with diameters between 20 mm and 40 mm both axially and rotationally. The function makes them suitable for use as static clamping without pressure, because the failure or drop of pneumatic pressure triggers immediate clamping. High clamping forces with low system costs compared with hydraulic and electric solutions make these clamping elements particularly interesting.

LOCKED PRK models are used in mechanical engineering and customised machine tools.



Technical Data

Holding torques: 7 Nm to 100 Nm

Holding forces: 700 N to 5,000 N

Rod diameter: Ø 20 mm to Ø 40 mm

Clamping cycles: 1,000,000

Mounting: In any position

Operating pressure: 4 bar (automotive) or 6 bar

Material: Outer body: Tool steel

Pneumatic medium: Dried, filtered air

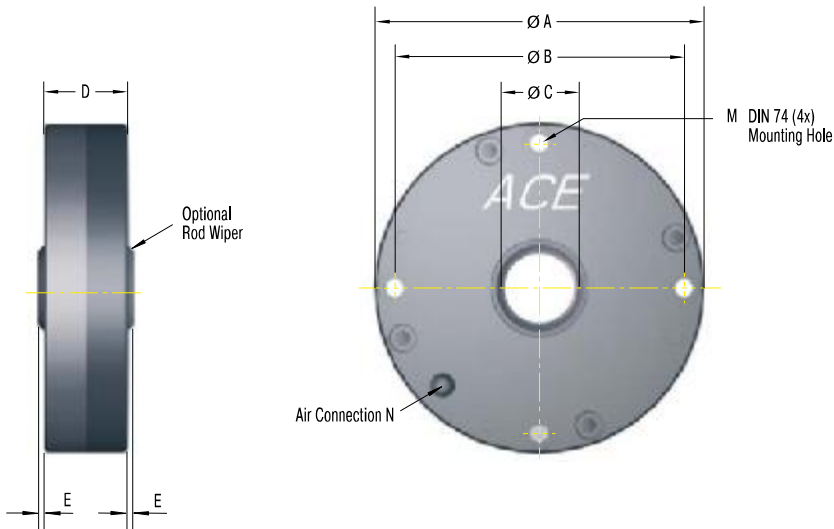
Operating temperature range: 10 °C to 45 °C

Application field: Jacking systems, Light presses, Punching/stamping machines, Stacking units

Note: When mounting, use hardened piston rod.

On request: Special designs as for example special diameters and accessories available on request. Versions matching to ISO pneumatic cylinders including base plates coordinated to the dimensions of the flange sizes of standard cylinders according to ISO 15552 are also available.

PRK



The calculation and selection of the most suitable clamping element should be carried out or be approved by ACE.

Complete details required when ordering

Operating pressure: 4 bar or 6 bar

Ordering Example

Rod Clamping Compact _____
 ISO Cylinder Nominal Diameter 80 mm _____
 Rod Diameter 25 mm _____
 6B = 6 bar Type _____
 4B = 4 bar Type _____

PRK80-25-6B

Performance and Dimensions

TYPES	¹ Holding force N	Holding torque Nm	Operating pressure bar	A mm	B mm	C mm	D mm	E mm	M	N	Weight kg
PRK63-20-4B	700	7	4	92	80	20	28	2.1	M5	G1/8	1.15
PRK63-20-6B	1,000	10	6	92	80	20	28	2.1	M5	G1/8	1.15
PRK80-25-4B	1,050	12	4	118	104	25	28.6	2.14	M6	G1/8	2.10
PRK80-25-6B	1,500	17	6	118	104	25	28.6	2.14	M6	G1/8	2.10
PRK125-40-4B	3,500	70	4	168	152	40	28.6	3	M6	G1/8	4.90
PRK125-40-6B	5,000	100	6	168	152	40	28.6	3	M6	G1/8	4.90

¹ The listed holding forces are reached under optimum conditions. We recommend a safety factor of > 10 %. Please note that surface, material and cleanliness of the rod as well as wear and tear and the use of rod wipers lead to different holding forces. Test the clamping needed for series production or safety applications in its specific application environment and measure the actual values.

LOCKED R

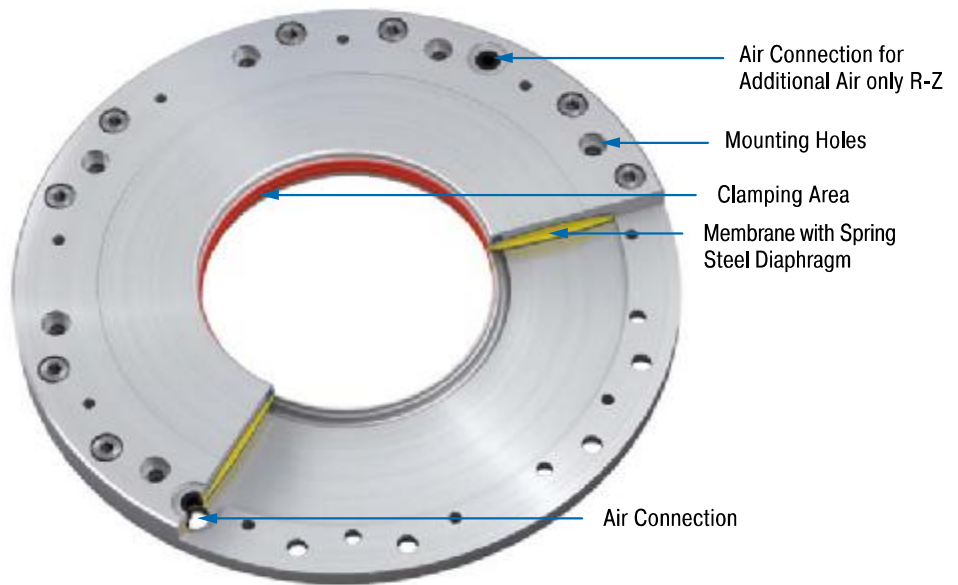
Strong holding force on the shaft

Pneumatic Rotational Clamping Holding torques 42 Nm to 4,680 Nm

Direct clamping on the shaft: Rotation motions are prevented by the ACE models LOCKED R. Their clamping elements are available for shaft diameters of 50 mm to 340 mm and ensure maximum holding forces.

The clamp is immediately applied by the diaphragm and spring-plate system when pressure is lost. Pneumatic quick-switch valves reduce the reaction times. The costs are low in comparison with hydraulic clamping systems. Their performance is, however, achieved or exceeded despite the compact and easy to assemble design. Special versions for YRT bearings as well as active clamping elements are additionally available. ACE recommends the use of the optional shaft flange as wear protection. The clamping force can be increased considerably by the use of the additional air function.

Models from the LOCKED R product family are used in mechanical engineering and customised machine tools.



Technical Data

Holding torques: 42 Nm to 4,680 Nm

Shaft diameter: Ø 50 mm to Ø 340 mm

Clamping cycles: 1,000,000

Mounting: In any position

Operating pressure: 4 bar (automotive) or 6 bar

Material: Outer body: Hardened fine-grain structural steel, inner bore ground

Pneumatic medium: Dried, filtered air

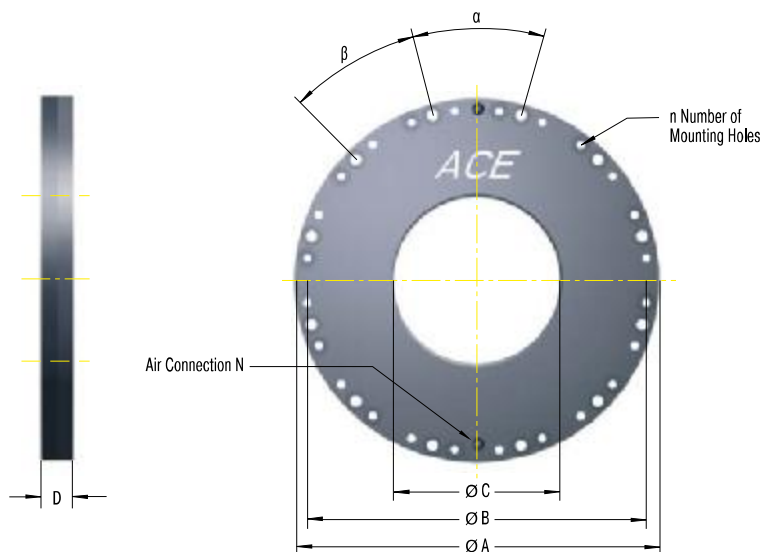
Operating temperature range: 10 °C to 45 °C

Application field: Drive shafts, Torque motors, Conveyor systems

Note: If requested installation drawings of the respective types are provided.

On request: Special designs and customised solutions e.g. YRT bearing up to Ø 460 mm and shaft flange available on request.

R



The calculation and selection of the most suitable clamping element should be carried out or be approved by ACE.

Complete details required when ordering

Operating pressure: 4 bar or 6 bar

Ordering Example

Rotational Clamping _____ **R80-6B**
 Shaft Nominal Diameter 80 mm _____
 6B = 6 bar Type _____
 4B = 4 bar Type _____

Performance and Dimensions

TYPES	Holding torque Nm	Operating pressure bar	A mm	B mm	C opened mm	Shaft Diameter mm	D mm	N	n	α °	β °	Weight kg
R50-4B	42	4	145	134	50+0.03/+0.05	50-0.01/-0.025	15	M5	8	45	45	1.7
R50-6B	60	6	145	134	50+0.03/+0.05	50-0.01/-0.025	15	M5	8	45	45	1.7
R60-4B	59	4	155	144	60+0.03/+0.05	60-0.01/-0.025	15	M5	8	45	45	1.9
R60-6B	84	6	155	144	60+0.03/+0.05	60-0.01/-0.025	15	M5	8	45	45	1.9
R70-4B	80	4	165	154	70+0.03/+0.05	70-0.01/-0.025	15	M5	12	30	30	2.1
R70-6B	114	6	165	154	70+0.03/+0.05	70-0.01/-0.025	15	M5	12	30	30	2.1
R80-4B	105	4	175	164	80+0.03/+0.05	80-0.01/-0.025	15	M5	12	30	30	2.3
R80-6B	150	6	175	164	80+0.03/+0.05	80-0.01/-0.025	15	M5	12	30	30	2.3
R90-4B	132	4	185	174	90+0.03/+0.05	90-0.01/-0.025	15	M5	12	30	30	2.5
R90-6B	189	6	185	174	90+0.03/+0.05	90-0.01/-0.025	15	M5	12	30	30	2.5
R100-4B	168	4	228	210	100+0.04/+0.06	100-0.01/-0.025	16	G1/8	12	40	20	4.1
R100-6B	240	6	228	210	100+0.04/+0.06	100-0.01/-0.025	16	G1/8	12	40	20	4.1
R120-4B	235	4	248	230	120+0.04/+0.06	120-0.01/-0.025	16	G1/8	12	40	20	4.6
R120-6B	336	6	248	230	120+0.04/+0.06	120-0.01/-0.025	16	G1/8	12	40	20	4.6
R140-4B	319	4	268	250	140+0.04/+0.06	140-0.01/-0.025	16	G1/8	12	40	20	5.1
R140-6B	456	6	268	250	140+0.04/+0.06	140-0.01/-0.025	16	G1/8	12	40	20	5.1
R160-4B	420	4	288	270	160+0.04/+0.06	160-0.01/-0.025	16	G1/8	12	40	20	5.6
R160-6B	600	6	288	270	160+0.04/+0.06	160-0.01/-0.025	16	G1/8	12	40	20	5.6
R180-4B	525	4	308	290	180+0.04/+0.06	180-0.01/-0.025	20	G1/8	16	30	15	7.7
R180-6B	750	6	308	290	180+0.04/+0.06	180-0.01/-0.025	20	G1/8	16	30	15	7.7
R200-4B	651	4	328	310	200+0.05/+0.07	200-0.01/-0.03	20	G1/8	16	30	15	8.3
R200-6B	930	6	328	310	200+0.05/+0.07	200-0.01/-0.03	20	G1/8	16	30	15	8.3
R220-4B	777	4	348	330	220+0.05/+0.07	220-0.01/-0.03	20	G1/8	16	30	15	8.9
R220-6B	1,110	6	348	330	220+0.05/+0.07	220-0.01/-0.03	20	G1/8	16	30	15	8.9
R240-4B	945	4	368	350	240+0.05/+0.07	240-0.01/-0.03	20	G1/8	24	20	10	9.5
R240-6B	1,350	6	368	350	240+0.05/+0.07	240-0.01/-0.03	20	G1/8	24	20	10	9.5
R260-4B	1,092	4	388	370	260+0.05/+0.07	260-0.01/-0.03	22	G1/8	24	20	10	11.2
R260-6B	1,560	6	388	370	260+0.05/+0.07	260-0.01/-0.03	22	G1/8	24	20	10	11.2
R280-4B	1,260	4	408	390	280+0.05/+0.07	280-0.01/-0.03	22	G1/8	24	20	10	11.9
R280-6B	1,800	6	408	390	280+0.05/+0.07	280-0.01/-0.03	22	G1/8	24	20	10	11.9
R300-4B	1,470	4	428	410	300+0.05/+0.07	300-0.01/-0.03	22	G1/8	24	20	10	12.6
R300-6B	2,100	6	428	410	300+0.05/+0.07	300-0.01/-0.03	22	G1/8	24	20	10	12.6
R320-4B	1,638	4	448	430	320+0.05/+0.07	320-0.01/-0.03	22	G1/8	24	20	10	13.1
R320-6B	2,340	6	448	430	320+0.05/+0.07	320-0.01/-0.03	22	G1/8	24	20	10	13.1
R340-4B	1,806	4	468	450	340+0.05/+0.07	340-0.01/-0.03	22	G1/8	24	20	10	14.0
R340-6B	2,580	6	468	450	340+0.05/+0.07	340-0.01/-0.03	22	G1/8	24	20	10	14.0

Application Examples

SL

Special LOCKED SL elements for emergency stops

In order to secure the processing position of a special lathe in both the horizontal and the vertical axis, ACE LOCKED elements of the type SL35-1-6B are installed. They have the further advantage of preventing slippage through the vertical axis in the case of a malfunction. The products used in the SL-series not only have the correct track width and offer very high process clamping forces of up to 10,000 N, but can also apply the same force as an emergency-stop braking function. This is due to the specially integrated brake linings made of low-wear sintered metal.



ACE clamping and safety elements maintain a rock-solid hold on the axes in special lathes and secure the predetermined positions both horizontally and vertically

RASOMA Werkzeugmaschinen GmbH, 04720 Döbeln, Germany

SLK

Secure rail clamping

ACE clamping elements secure machines in the tyre industry. The goods accumulator/compensator of a material dispenser carries meandering, coiled, highly tear resistant material strips, which are fed at high speed to a tyre-manufacturing machine. To prevent damaging the machine, innovative type SLK25-1-6B clamping elements are employed.

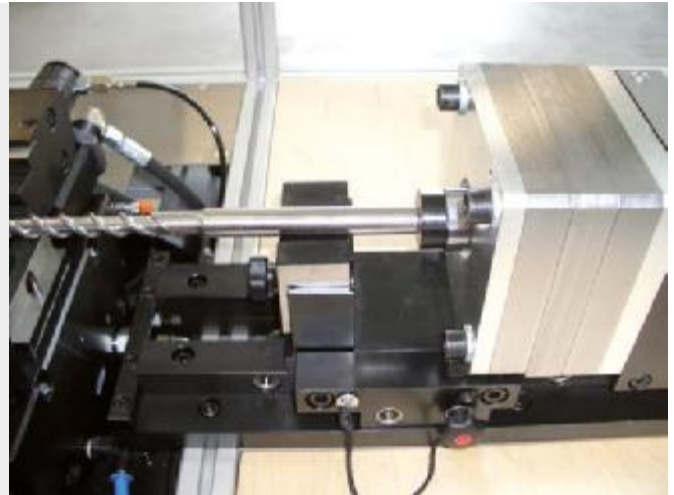


Secure material accumulator

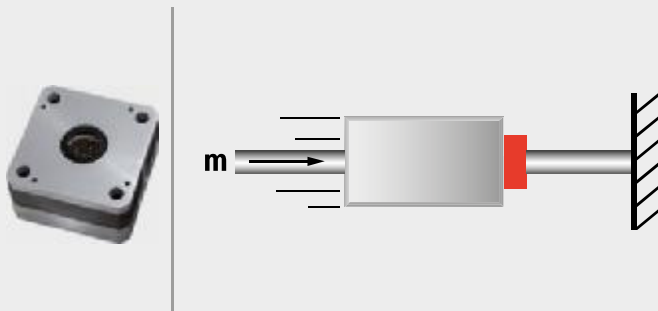
PN

Clamping elements as a variable stop

ACE clamping elements are inserted, as a variable stop, during a joining process for the production of drilling tools. They meet the requirements for a precise positioning of the workpiece head and an adaptation of the length tolerance of up to 3 mm, ideally. ACE was awarded the contract because the clamping element is attached on a bar and its PN LOCKED series is specifically designed for this purpose. For clamping on linear guides, rails, axles and shafts, ACE offers a great range of high-performance models.



ACE clamping elements assist in the production of drilling tools: the LOCKED-P system clamps and at the same time absorbs the opposing forces of the joining process without difficulty
GRAF automation GmbH, 88214 Ravensburg, Germany



PN

Secure rod clamping

Pneumatic rod clamping allows hydraulic presses to be used for any application. With the help of hydraulic presses, cut ceramic parts are manufactured during the week. So that the rods of the upper and lower stamping plate do not sag when the press is at a standstill over the weekend or during holidays and therefore have to be setup again on the next working day, PN80-25-2-6B type rod clamps are used.



Pneumatic rod clamping allows hydraulic presses to be used for any application
KOMAGE Gellner Maschinenfabrik KG, 54427 Kell am See, Germany

