



Pin Retracting and Positioning Cylinder for Body in White

Precise guiding and positioning of a locator pin or a NC-block, with which the positions of the part in the fixture is defined.

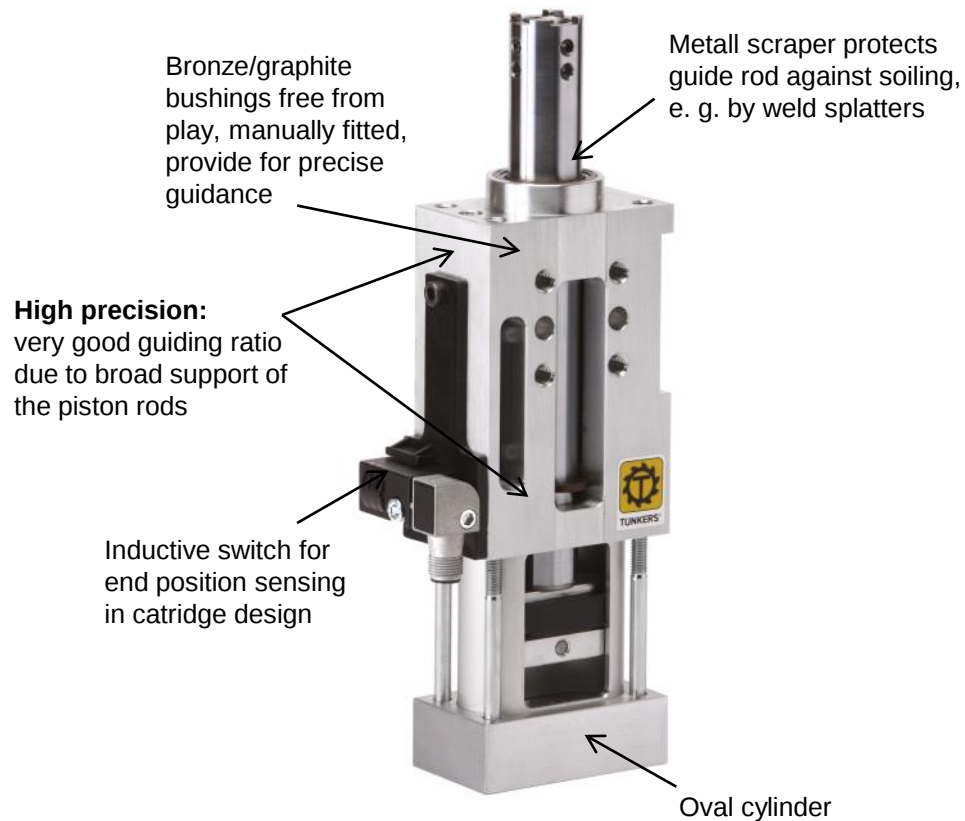
After the welding process, the pin or NC-block is retracted and the part is ready to be unloaded.



- precise end positioning tolerances
- high resistance against side loads during the welding process
- strong pulling force to overcome the high side loads while retracting the locating pin
- anti-rotating system to allow for offset pins and side mounted NC-blocks

Precision cylinder in fully enclosed design

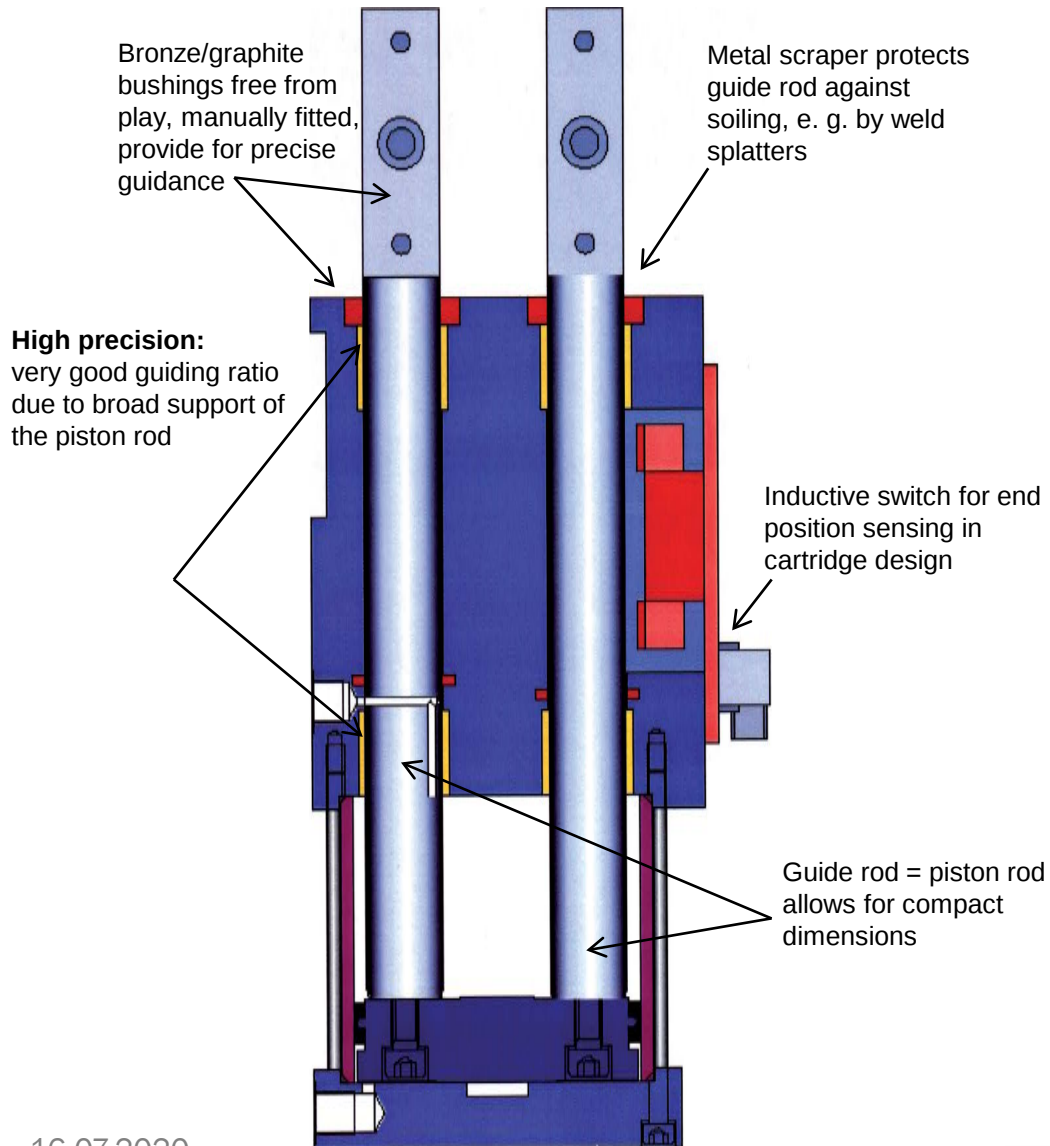
SZK 40



SZK 63



Design Features of Double-Rod-Cylinder



Design Features of Toggle-Lock-Cylinder

high shear and tensile forces
by toggle translation
up to 4 kN in the end position

compact pneumatic cylinder
Ø 40 mm

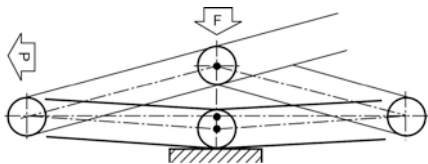
double guided push rod with optimal
guiding ratio bronze / graphite
bushings

flat package in
monoblock way from
high-strength
aluminum material



mechanical non-rotate
design with additional
roller guide

hand delivery option for
manual feeding and
pneumatic close



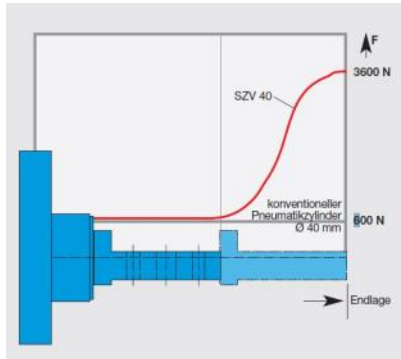
robust toggle mechanism with
needle bearing rollers

sensing system in
catridge design

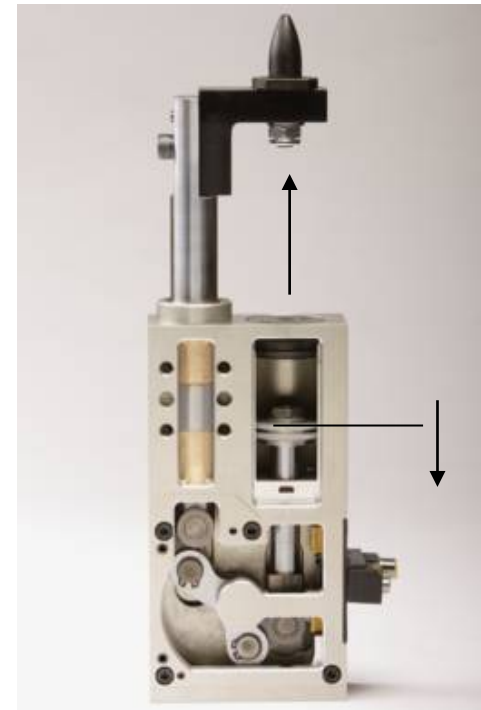


Advantages of Toggle-Lock-Cylinders

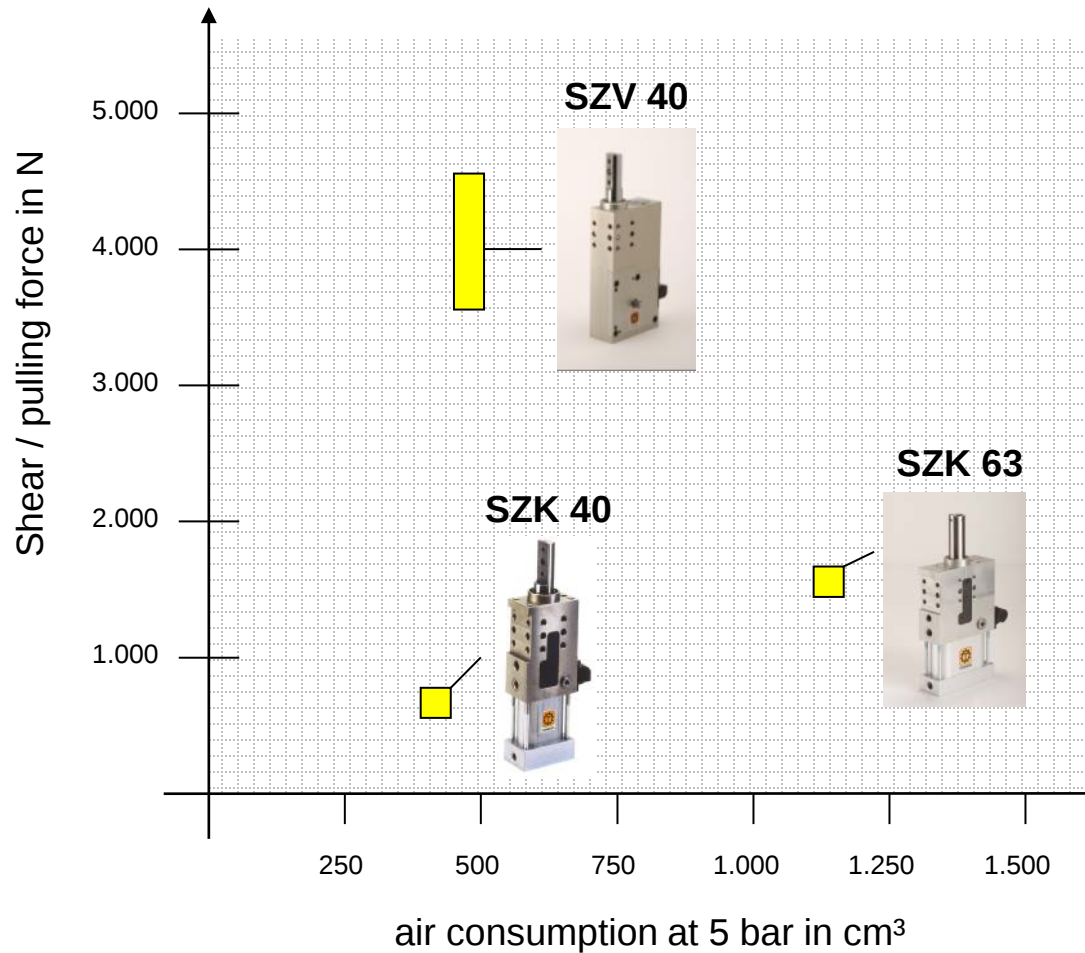
- The pneumatic cylinder actuates the push rod via a toggle joint.
- Result: higher push and pull forces compared with the standard pneumatic cylinders.



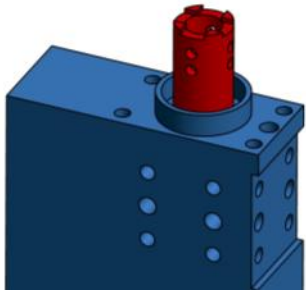
- very compact design due to smaller pneumatic cylinder, which replaces heavy duty versions, but with the same performance
- can also be used as a linear clamping device with an over-center locked end position
- defined and secured end position due to a toggle lock function
 - position is held even if the pressure of the system drops
 - this is an advantage if any kind of weight or force is acting on the locator pin or on the NC-block



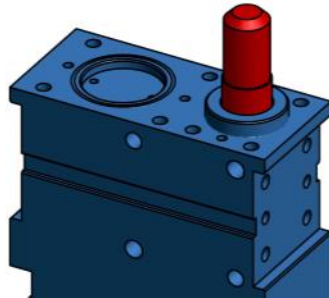
Comparison of Locating Pin Cylinders



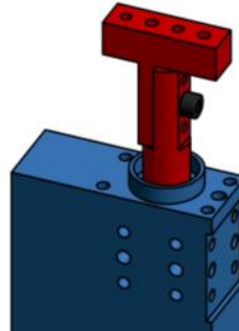
Conclusion:
Toggle Lock-Cylinder
SZV 40 with highest
performance data and
lowest air consumption



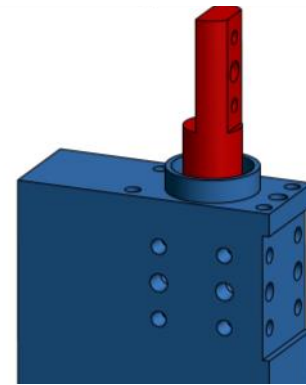
standard slot
for locating pins



shot pin
application



design for
side mounting



layout with
adapter for
contour
pieces

					
Type	SZK 30	SZK 30.5	SZK 30.7	SZK 40.1	SZK 63.1
Tensile/thrust force in end position N	250	250	250	470	1300
Power transmission N	350	350	350	620	1500
Stroke	20	60	40	60	60
Lock	No	No	No	No	No
Weight kg	0.8	0.8	0.8	2.1	2.9
Dimensions mm	124x45x45	124x45x45	124x45x45	235x75x45	235x120x45

Range of Dual-Rod-Cylinder



Type	SZKD 40	SZKD 63.5	SZKD 80
Thrust force	600 N	1.500 N	1.150 N
Tractive force	400 N	1.400 N	1.300 N
Stroke	40	60/40	60/100
Lock	No	No	No
Weight	1.3 kg	4.5 kg	34 kg
Dimensions	195x70x43	340x128x45	430x224x80

Range of Toggle-Lock-Cylinders



Type	SZVD 32	SZVD 50	SZV.1 40	SZV 60
Thrust force	600	2000	3000	7500
Tractive force	200	640	420	800
Stroke	25	40	40	60
Lock	yes	yes	yes	yes
Weight	2	7	3,4	9,2
Dimensions	210x126x50	328x186x64	280x148x45	365x185x80

SZU 60/70



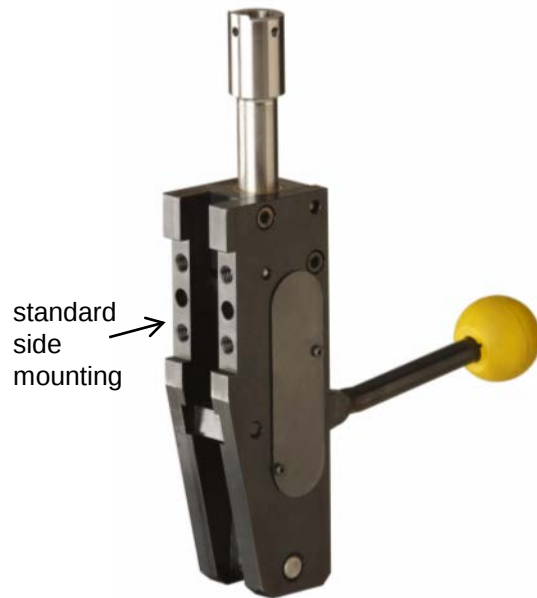
- Round cylinder
- NAAMS mounting hole pattern
- Piston rod adapter according to U.S. standard

SZUQ 63-75



- Round cylinder
- NAAMS mounting hole pattern
- Piston rod adapter in square design

SZM 40



fully manual version –
toggle-lock-function

MSZK 40



Fully manual version
- base unit interchangeable
to pneumatic series
- same mounting package

SZVD 50 Z



operation pneumatically and manually
toggle lock function application:
- closing manually
- opening pneumatically

➤ A. Diameter of centring pin

Even though the diameter is not a direct measurement of the tensile force to be expected, it can be assumed that lower lateral forces and therewith tensile forces are generated with smaller diameters:

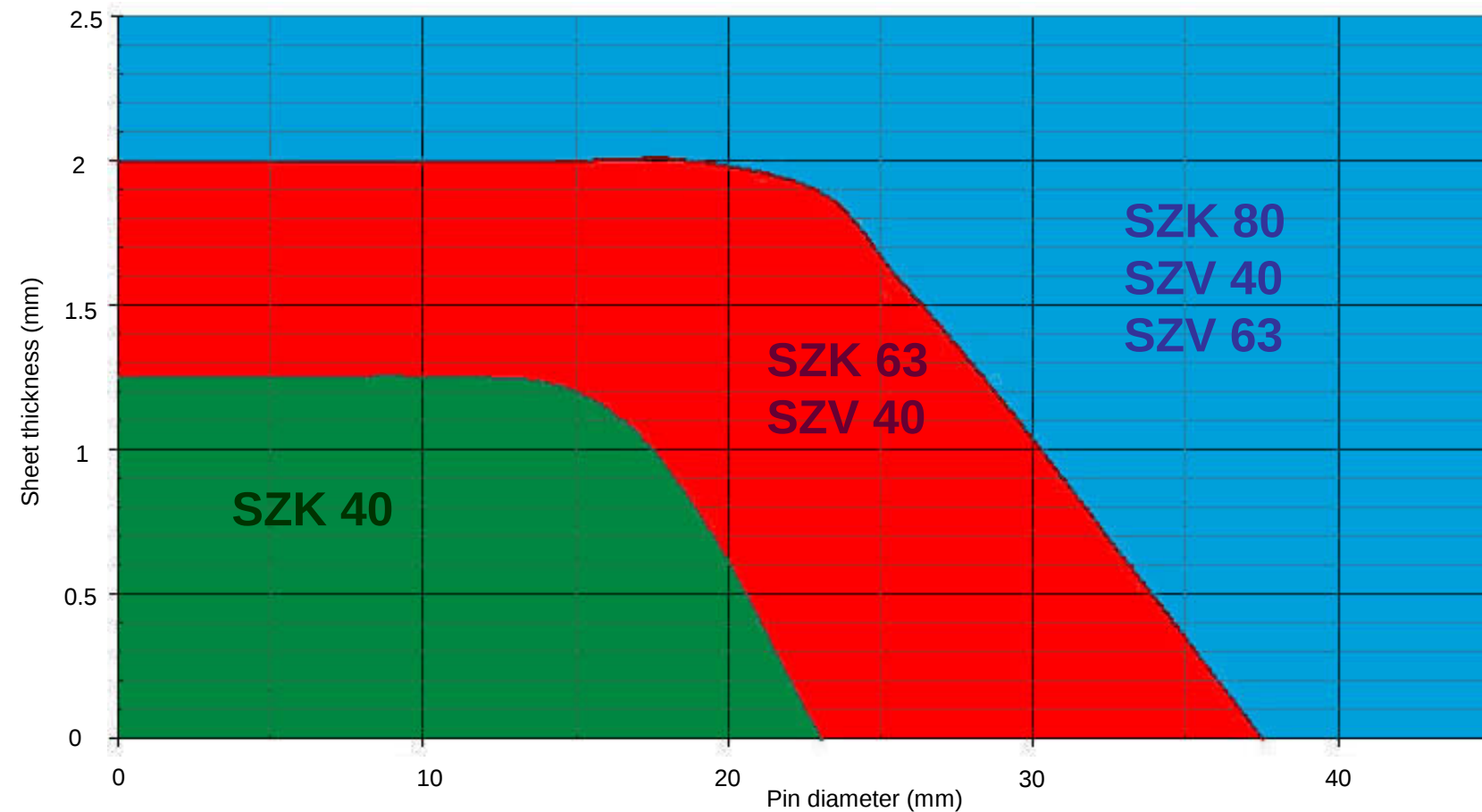
Rule:	$\varnothing \leq 20\text{mm}$	Tensile forces $\leq 20\text{kg}$
	$\varnothing > 20\text{mm}$	Tensile forces $> 20\text{kg}$

➤ B. Sheet thickness

The distorting forces generated after welding of components with thinner sheet thickness are smaller than with thicker sheets.

Also with a view to the dimensions of the piston rod, the respectively large cylinder series is to be recommended for sheet thicknesses from 1,5mm.

Selection of Retractable Locating Pin Cylinder on the Basis of Pin Diameter and Sheet Thickness



Contact:

TÜNKERS Maschinenbau GmbH
Am Rosenkothen 4-12
D-40880 Ratingen
Mr. Pascal Stöters

Telephone: +49 (0) 2102 4517-188

E-Mail Pascal.Stoeters@tuenkers.de
Internet www.tuenkers.de