High Flow Rate. Cost-efficient. Powerful. Gripper with Shank Interface GSW-B

Universal gripper PGN-plus/PZN-plus with shank interface GSW-B

Field of Application

Unit for fully automated loading and unloading of machining centers.

Advantages – Your benefits

Price-attractive module consisting of a universal gripper PGN-plus/PZN-plus and a shank interface

Fast, automated exchange of the gripper from the storage rack

Fully automated workpiece change without robot or gantry system











Functional Description

The pressure generated by the central machine coolant supply is reduced by the pressure distributor, which is integrated in the adapter plates. The gripper can then be actuated and can actuate the base jaws correspondingly

via the piston and wedge hook.

During the gripping operation the gripper continuously supplies coolant or compressed air via the lateral pressure control valve.

























For automatically exchanging and inserting the spindle (not included in the scope of delivery)

- 2 Adapter plate with integrated pressure distributor For a large pressure range
- **3** Multi-tooth guidance Highly loadable, nearly backlash-free base jaw guidance for long finger lenghts
- **4** Base jaw

6

For the connection of workpiece-specific gripper fingers

5 Wedge-hook principle

For high force transmission and centric gripping

6 Housing

Is weight-optimized due to the use of high-strength aluminum alloy











Detailed Functional Description

Gripper versions



The gripper with shank interface GSW-B is available as a parallel and centric gripper in the versions AS and IS. Due to the integrated spring, the gripper moves back to its original position in the depressurized condition. In the version AS, the spring acts as closing force in the depressurized state; and in the version IS as an opening force.

- Adapter plate with mounting for toolholder
- 2 Pressure relief valve
- 3 Piston chamber with spring support
- Wedge-hook principle

Gripper monitoring



On option, the gripper can be equipped with a wireless sensor system. Therefore monitoring of the gripper and the wireless transmission of the signals from the machine room are possible.

- Adapter plate with spindle Interface GSW-B
- End position monitoring with cylindrical reed switches RMS 80
- **3** Transmitter module RSS-T2 for radio sensor system

Notes































General Notes about the Series

Operating principle: Pressure distributor and wedge-hook kinematics

Housing material: Aluminum alloy, anodized

Base jaw material: Blackened steel

Spindle interface material: Aluminum alloy

Actuation: Hydraulically with machine coolant (filtered, max. particle size of 30 μ m) or pneumatically with filtered compressed air in accordance with ISO 8573–1:2010 [7:4:4]

Warranty: 24 months

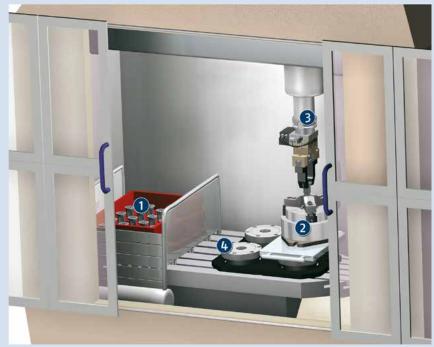
Scope of delivery: Centering elements, assembly instructions (operating manual with declaration of incorporation is available online), the gripper is not included in the scope of delivery and must be ordered separately

Gripping force: Refers to the combination of a GSW-B with a correspondingly named gripper, and represents the minimum sufficient gripping force.

Finger length: Is measured from the reference surface as the distance P in direction to the main axis.

Repeat accuracy: Is defined as a distribution of the end position for 100 consecutive strokes.

Closing and opening times: The indicated times depend on the flow rate and pressure of the drive medium and the therefrom resulting electrical resistances.



Application Example

Use of a gripper with spindle interface in a machine tool for automated loading of raw parts and unloading of finished parts.

- Workpiece rack
- Quick-change pallet system VERO-S with lathe chuck ROTA TPS
- Gripper with spindle interface PGN-plus on GSW-B, and with wireless sensor system, RSS
- Machine table



SCHUNK offers more ...

The following components make the product GSW-B even more productive – the suitable addition for the highest functionality, flexibility, reliability, and process safety.











Magnetic gripper

Vacuum gripper

Cleaning unit

Toolholder









Finger blank

Universal intermediate jaw

Jaw quick-change system

Protection cover



Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

Air connections: Please note that the connection A of IS version grippers or grippers of AS version should not be sealed air-tight.

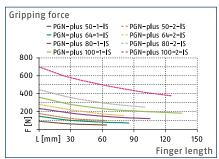
Diversity of variants: When using the GSW-B with the PGN-plus/-P and PZN-plus grippers, nearly all variants and accessories of these grippers can be used. For more information see the chapter gripper series. Further shaft diameters on request.

Precondition: If the spindles do not rotate, then the machines have to provide compressed air or coolant.

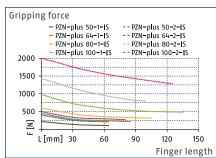




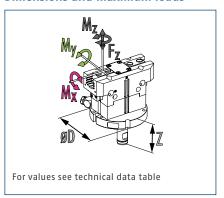
Gripping force O.D. gripping



Gripping force O.D. gripping



Dimensions and maximum loads



Refer to the respective size of the gripper for the forces and torques.

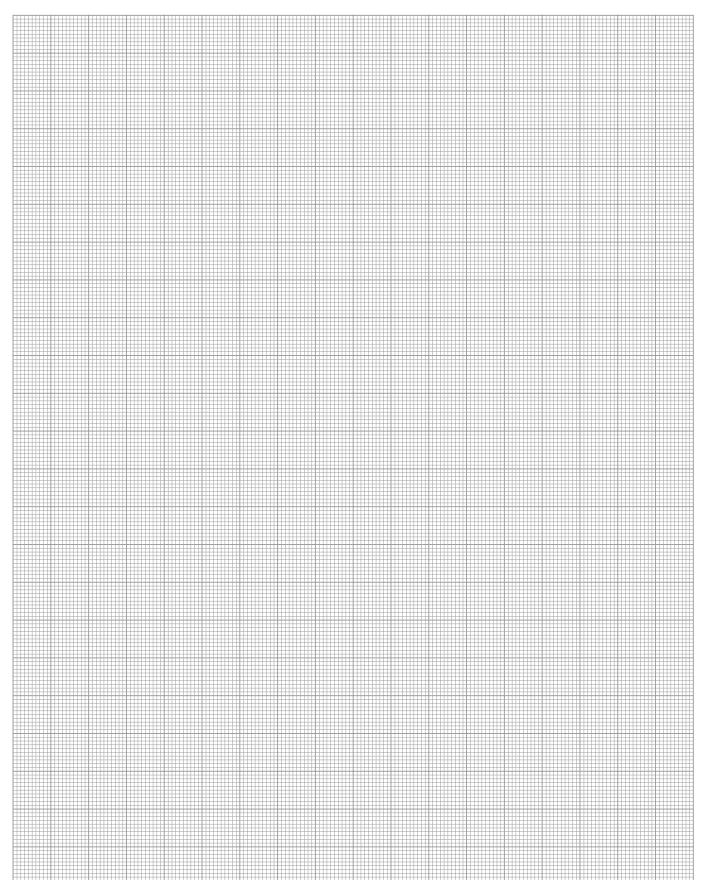
Technical data

Description		GSW-B 50-P	GSWB 50-Z	GSW-B 64-PZ	GSW-B 80-PZ	GSW-B 100-PZ
ID		0308420	0308421	0308422	0308423	0308424
General technical data						
Weight	[kg]	0.2	0.2	0.23	0.31	0.42
Max. permissible speed	[1/min]	20	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6	6
Min./max. operating pressure, compressed air	[bar]	4/8	4/8	4/8	4/8	4/8
Nominal operating pressure coolant	[bar]	40	40	40	40	40
Min./max. operating pressure, coolant	[bar]	20/50	20/50	20/50	20/50	20/50
Protection class IP		40	40	40	40	40
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90	5/90
Dimensions Ø D x Z	[mm]	52 x 66	52 x 66	64 x 63	80 x 63	100 x 63
Prepared for parallel grippers		Yes	No	Yes	Yes	Yes
Prepared for centric grippers		No	Yes	Yes	Yes	Yes

The values only relate to the adapter GSW-B.
 The suitable gripper can be ordered separately.
 You will find gripper-specific values on the following catalog pages.

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/gsw-b

Notes

































High flow rate. Cost-efficient. Compliant. Gripper with Shank Interface GSW-B and Compensation Unit

Universal gripper PGN-plus/PZN-plus with GSW-B shank interface and compensation unit AGE

Field of Application

Unit for fully automated loading and unloading of machining centers.

Advantages – Your benefits

Price-attractive module consisting of a universal gripper PGN-plus/PZN-plus and a shank interface

Fast, automated changeover from the gripper to the storage rack

Fully automated workpiece change without robot or gantry system

Three compensation directions in one unit compact design for minimum installation height

Robust sliding guidance for high moment load at minimum space

Compensation of workpiece-related tolerances and position inaccuracies reduced risk of jamming, necessary assembly forces are reduced and wear of the workpiece and handling device is minimized













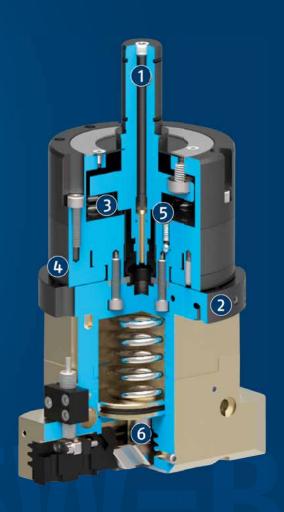


Functional Description

The pressure generated by the central machine coolant supply is reduced by the pressure distributor, which is integrated in the adapter plates. The gripper can then be actuated and can actuate the base jaws correspondingly

via the piston and wedge hook.

During the gripping operation the gripper continuously supplies coolant or compressed air via the lateral pressure control valve.



- Taper shankFor universal assembly of the gripper
- ② Adapter plate with integrated pressure distributor For a large pressure range
- 3 Axial compensation
 Spring-loaded, for pressing workpieces into place
- Planar compensation
 For preventing the spindle or axes from wear
- ⑤ Angular compensation
 For higher flexibility and compliance
- Gripper kinematicsFor high force transmission and centric gripping



























General Notes about the Series

Operating principle: Pressure distributor and wedge-hook kinematics

Housing material: Aluminum alloy, anodized

Base jaw material: Blackened steel

Spindle interface material: Aluminum alloy

Actuation: Hydraulically with machine coolant (filtered, max. particle size of 30 μ m) or pneumatically with filtered compressed air in accordance with ISO 8573–1:2010 [7:4:4]

Warranty: 24 months

Scope of delivery: Centering elements, assembly instructions (operating manual with declaration of incorporation is available online), the gripper is not included in the scope of delivery and must be ordered separately

Gripping force: Refers to the combination of a GSW-B with a correspondingly named gripper, and represents the minimum sufficient gripping force.

Finger length: Is measured from the reference surface as the distance P in direction to the main axis.

Repeat accuracy: Is defined as a distribution of the end position for 100 consecutive strokes.

Closing and opening times: The indicated times depend on the flow rate and pressure of the drive medium and the therefrom resulting electrical resistances.



Application Example

Handling of pinions in a milling center.

- Vacuum gripper GSW-V
- Magnetic gripper GSW-M
- Gripper with shank interface GSW-B and PGN-plus
- Gripper with shank interface GSW-B and PZN-plus
- G Cleaning unit RGG
- **6** Wireless sensor system RSS

SCHUNK offers more ...

The following components make the product GSW-B-AGE even more productive - the suitable addition for the highest functionality, flexibility, reliability, and process safety.











Magnetic gripper

Vacuum gripper

Cleaning unit

Toolholder









Finger blank

Universal intermediate jaw

Jaw quick-change system

Protection cover



Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline

Options and special Information

Please note that use under extreme conditions (e.g. with coolant, casting or abrasive dust) will considerably reduce the service life of this product.

Further shaft diameters on request.

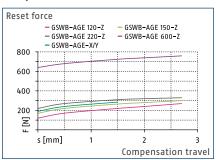
Please note that the connection A of IS version grippers or grippers of AS version should not be sealed air-tight. Precondition: If the spindles do not rotate, then the machines have to provide compressed air or coolant.



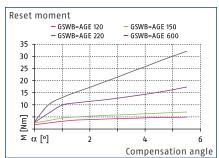




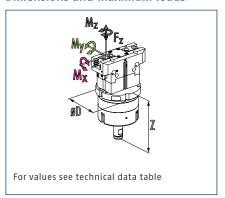
Compensation travel



Compensation angle



Dimensions and maximum loads



Refer to the respective size of the gripper for the forces and torques.

Technical data

Description		GSW-B-AGE-XYZ 120	GSW-B-AGE-XYZ 150	GSW-B-AGE-XYZ 220	GSW-B-AGE-XYZ 600
ID		0308435	0308436	0308437	0308438
General technical data					
Weight	[kg]	1.1	1.1	1.1	1.1
Max. permissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
Min./max. operating pressure, compressed air	[bar]	4/8	4/8	4/8	4/8
Nominal operating pressure coolant	[bar]	40	40	40	40
Min./max. operating pressure, coolant	[bar]	20/50	20/50	20/50	20/50
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Compensation XY	[mm]	1.5	1.5	1.5	1.5
Compensation Z	[mm]	2.7	2.7	2.7	2.7
Angular deflection	[°]	5.5	5.5	5.5	5.5
Deflection rotatory	[°]	3.5	3.5	3.5	3.5
Rotary compensation torque	[Nm]	0.2	0.2	0.2	0.2
Dimensions Ø D x Z	[mm]	90 x 132.1	90 x 129.1	90 x 129.1	90 x 129.1
Moments M _x max./M _y max./M _z max.	[Nm]	20.00/25.00/10.00	40.00/60.00/40.00	60.00/95.00/55.00	80.00/115.00/70.00
Forces F _z max.	[N]	500.00	1100.00	1500.00	2000.00

The values only refer to the adapter GSW-B-AGE with compensation unit. The suitable gripper can be ordered separately. You will find gripper-specific values on the following catalog pages.

Position of the allowable center of mass as a function of the payload for horizontal applications. A higher value of mass is valid for centrical locking, and a lower value of mass for position storage.

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/gsw-b-age



























Compact. Cost-efficient. Productive. Vacuum Gripper with Shank Interface GSW-V

Vacuum gripper for spindle interfaces are ideal for handling flat components

Field of Application

Unit for automatic loading and unloading of machining centers by their own axis, which provides compressed air and coolant supply via the tool mounting.

Advantages - Your benefits

Price-attractive module for flexible automation in your machine

Fast, automated exchange and insertion of the gripper from the storage rack

Fully automated workpiece changeover without robot or gantry system

Universally suitable for many different workpieces















Functional Description

The gripper can be used in any machine which provides compressed air or coolant supply via the toolholder mounting.

The vacuum gripper is equipped with an integrated

Venturi nozzle, and therefore does not require a vacuum connection to generate negative pressure. During the gripping operation the gripper continuously supplies coolant or compressed air.



- **1** Vacuum suction cup For a flexible range of parts
- ② Intake duct For producing suction power

- 3 Media supply Via spindle interface
- **4** Venturi nozzle For producing negative pressure
- **5** Outlet opening For diverting the overpressure





























General Notes about the Series

Operating principle: Venturi nozzle

Housing material: Aluminum

Spindle interface material: Aluminum alloy

Material of the suction cups: NBR-60

Actuation: Hydraulically with machine coolant (filtered, max. particle size of 30 μ m) or pneumatically with filtered compressed air in accordance with ISO 8573–1:2010 [7:4:4]

Warranty: 24 months

Scope of delivery: Assembly and operating manual

Suction pad: Perfectly adaptable to smooth surfaces, with damping effect during attachment, and stroke effect during the suction phase. Special suction cups on request.

Times: The indicated times depend on the flow rate and pressure of the drive medium and the therefrom resulting electrical resistances.

Workpiece weight: Is calculated for force-fit gripping, specified rated flow rate and pressure, as well as a confidence coefficient of 2 against the gravitational force of the earth's acceleration.



Application Example

Handling of pinions in a milling center.

- Vacuum gripper GSW-V
- Magnetic gripper GSW-M
- Gripper with shank interface GSW-B and PGN-plus
- Gripper with shank interface GSW-B and PZN-plus
- G Cleaning unit RGG
- **6** Wireless sensor system RSS



SCHUNK offers more ...

The following components make the product GSW-V even more productive - the suitable addition for the highest functionality, flexibility, reliability, and process safety.











Cleaning unit

Toolholder

Stationary workholding

① Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

Please note that use under extreme conditions (e.g. with coolant, casting or abrasive dust) will considerably reduce the service life of this product.

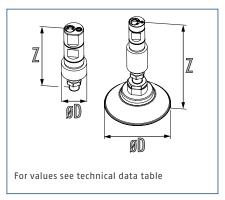
Further shaft diameters on request.

Please note that the product is not suitable for heat shrink toolholders.

Precondition: If the spindles do not rotate, then the machines have to provide compressed air or coolant.







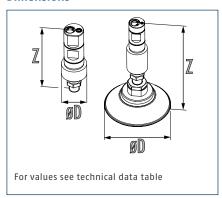
Technical data

Description		GSW-V20	GSW-V20-SND030	GSW-V20-SND080	GSW-V20-SND125
ID		0309120	0309121	0309122	0309123
Weight	[kg]	0.12	0.14	0.19	0.28
Recommended workpiece weight	[kg]		0.28	2	4.9
Time evacuation	[s]		1	1.1	1.2
Time for putting down	[s]		0.7	0.7	0.7
Suction force	[N]		55	400	980
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Max. permissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
Nominal flow rate compressed air	[l/min]	300	300	300	300
Min./max. operating pressure, compressed air	[bar]	4/8	4/8	4/8	4/8
Min. flow rate compressed air	[l/min]	220	220	220	220
Nominal operating pressure coolant	[bar]	40	40	40	40
Nominal flow rate coolant	[l/min]	25	25	25	25
Min./max. operating pressure, coolant	[bar]	20/60	20/60	20/60	20/60
Nominal vaccuum	[bar]	-0.8	-0.8	-0.8	-0.8
Min. vacuum	[bar]	-0.6	-0.6	-0.6	-0.6
Noise pressure level	[dB(A)]	90	90	90	90
Dimensions Ø D x Z	[mm]	26 x 100	34 x 110	89 x 130	135 x 138

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/gsw-v







Technical data

Description		GSW-V25	GSW-V25-SND030	GSW-V25-SND080	GSW-V25-SND125
ID		0309125	0309126	0309127	0309128
Weight	[kg]	0.15	0.17	0.22	0.31
Recommended workpiece weight	[kg]		0.28	2	4.9
Time evacuation	[s]		1	1.1	1.2
Time for putting down	[s]		0.7	0.7	0.7
Suction force	[N]		55	400	980
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Max. permissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
Nominal flow rate compressed air	[l/min]	300	300	300	300
Min./max. operating pressure, compressed air	[bar]	4/8	4/8	4/8	4/8
Min. flow rate compressed air	[l/min]	200	200	200	200
Nominal operating pressure coolant	[bar]	40	40	40	40
Nominal flow rate coolant	[l/min]	25	25	25	25
Min./max. operating pressure, coolant	[bar]	20/60	20/60	20/60	20/60
Nominal vaccuum	[bar]	-0.8	-0.8	-0.8	-0.8
Min. vacuum	[bar]	-0.6	-0.6	-0.6	-0.6
Noise pressure level	[dB(A)]	94	94	94	94
Dimensions Ø D x Z	[mm]	32 x 100	34 x 110	89 x 130	135 x 138



















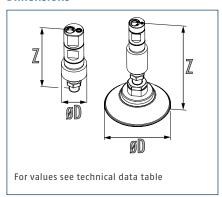












Technical data

Description		GSW-V32	GSW-V32-SND030	GSW-V32-SND080	GSW-V32-SND125
ID		0309130	0309131	0309132	0309133
Weight	[kg]	0.23	0.24	0.3	0.39
Recommended workpiece weight	[kg]		0.28	2	4.9
Time evacuation	[s]		1	1.1	1.2
Time for putting down	[s]		0.7	0.7	0.7
Suction force	[N]		55	400	980
Min./max. ambient temperature	[°C]	5/90	5/90	5/90	5/90
Max. permissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
Nominal flow rate compressed air	[l/min]	350	350	350	350
Min./max. operating pressure, compressed air	[bar]	4/8	4/8	4/8	4/8
Min. flow rate compressed air	[l/min]	250	250	250	250
Nominal operating pressure coolant	[bar]	40	40	40	40
Nominal flow rate coolant	[l/min]	25	25	25	25
Min./max. operating pressure, coolant	[bar]	20/60	20/60	20/60	20/60
Nominal vaccuum	[bar]	-0.8	-0.8	-0.8	-0.8
Min. vacuum	[bar]	-0.6	-0.6	-0.6	-0.6
Noise pressure level	[dB(A)]	98	98	98	98
Dimensions Ø D x Z	[mm]	40 x 105	34 x 115	89 x 135	135 x 143

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/gsw-v

Notes





























Cost-efficient. Productive. Compliant. Magnetic Gripper with Shank Interface GSW-M

Magnetic gripper for spindle interfaces is excellently suitable for handling flat components

Field of Application

Unit for automatic loading and unloading of machining centers by their own axis, which provides compressed air and coolant supply via the tool mounting.

Advantages - Your benefits

Price-attractive module for flexible automation in your machine

Fast, automated exchange and insertion of the gripper from the storage rack

Fully automated workpiece change without robot or gantry system

Universally suitable for many different workpieces













Functional Description

The gripper can be used in any machine which provides compressed air or coolant supply via the toolholder mounting.

The magnetic gripper GSW-M is placed on the workpiece and pressed 20 mm deep. The spring force (Fc) of the ejector must be overcome. (In addition, there is a reserve or compensation stroke of 9 mm.)

The stroke causes the permanent magnet to approach the workpiece and the workpiece is firmly held by the magnet. To place the workpiece, the gripper is actuated with compressed air or coolant. During the placement, the gripper continuously supplies coolant or compressed air via the outlet port.



- Permanent magnet
 For holding of magnetic materials
- ② **Media supply**Via spindel interface
- ③ Overpressure valve For a large pressure range

- **Drain valve**For coolant operation
- (3) **Rubber friction ring**For absorbing shear forces and protecting the workpiece
- Thread For customer-specific attachments/supports





























General Notes about the Series

Operating principle: Permanent magnet

Housing material: Aluminum

Spindle interface material: Aluminum alloy

Actuation: Hydraulically with machine coolant (filtered, max. particle size of 30 μm) or pneumatically with filtered compressed air in accordance with ISO 8573–1:2010 [7:4:4]

Warranty: 24 months

Scope of delivery: Assembly and operating manual



Application Example

Handling of pinions in a milling center.

- Vacuum gripper GSW-V
- Magnetic gripper GSW-M
- Gripper with shank interface GSW-B and PGN-plus
- Gripper with shank interface GSW-B and PZN-plus
- G Cleaning unit RGG
- **6** Wireless sensor system RSS



SCHUNK offers more ...

The following components make the product GSW-M even more productive - the suitable addition for the highest functionality, flexibility, reliability, and process safety.











Vacuum gripper Cleaning unit

Toolholder



① Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

Please note that use under extreme conditions (e.g. with coolant, casting or abrasive dust) will considerably reduce the service life of this product.

Further shaft diameters on request.

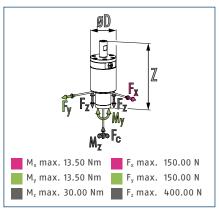
Please note that the product is not suitable for heat shrink toolholders.

Precondition: If the spindles do not rotate, then the machines have to provide compressed air or coolant.



SCHAR(S)

Dimensions and maximum loads



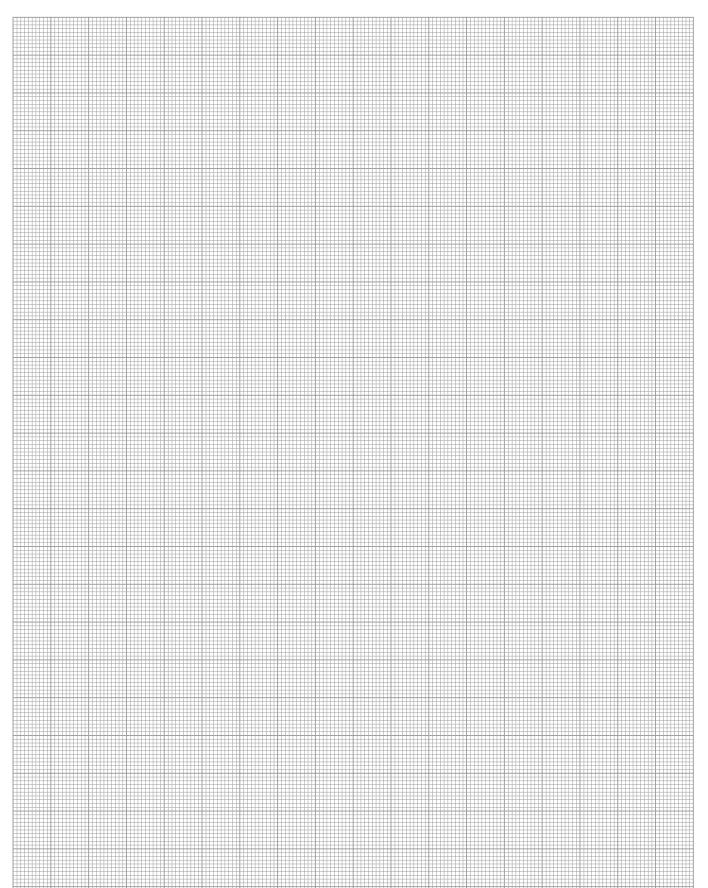
The indicated moments and forces are statical values and should not appear simultaneously.

Technical data

Description		GSW-M 20
ID		0308355
General technical data		
Weight	[kg]	1
Holding force	[N]	70
Recommended workpiece weight	[kg]	3.5
Max. permissible speed	[1/min]	0
Nominal operating pressure compressed air	[bar]	6
Min./max. operating pressure, compressed air	[bar]	2/8
Nominal operating pressure coolant	[bar]	40
Min./max. operating pressure, coolant	[bar]	10/50
Min./max. ambient temperature	[°C]	5/90
Dimensions Ø D x Z	[mm]	67 x 177.1
Broach spring force F _c	[N]	80.00

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/gsw-m

Notes































Reliable. Productive. Cost-efficient. General Accessories RGG

For cleaning of clamping devices and automation of machine tools. The cleaning unit can be used in any machine, which provides compressed air or coolant supply via the tool mounting

Field of Application

Every machine with conventional tool mountings and compressed air or coolant supply by the spindle.

Advantages - Your benefits

Price-attractive module for flexible automation in your machine

Fast, automatic cleaning for a maximum machine utilization

Idle times reduced to a minimum

Increased safety for the machine operators









Functional Description

The cleaning unit is operated hydraulically with machine coolant (filtered, max. particle size of 30 μ m) or pneumatically with filtered compressed air in accordance with ISO 8573-1:2010 [7:4:4].

Cleanliness made simple – a total of six nozzles on the ballhead blow out a powerful jet of air or coolant, which is

forced from the toolholder taper into the shaft of the cleaning unit via a bore.

The head can also rotate with the machine tool spindle when it moves, and can reach all corners of the working area



- ① Locking screws and restrictor inserts For changing the cleaning jet
- ② **Center bore**For introduction of cleaning medium

- ③ Outlet openings
 For producing cleaning jets
- Clamping diameter
 For mounting in any toolholding system



























General Notes about the Series

Spindle interface material: Aluminum alloy

Actuation: Hydraulically with machine coolant (filtered, max. particle size of 30 μ m) or pneumatically with filtered compressed air in accordance with ISO 8573–1:2010 [7:4:4]

Warranty: 24 months

Scope of delivery: Scope of delivery with locking screws, set-screws, assembly and operating instructions



Application Example

Handling of pinions in a milling center.

- Vacuum gripper GSW-V
- Magnetic gripper GSW-M
- Gripper with shank interface GSW-B and PGN-plus
- Gripper with shank interface GSW-B and PZN-plus
- G Cleaning unit RGG
- **6** Wireless sensor system RSS



SCHUNK offers more ...

The following components make the product RGG even more productive - the suitable addition for the highest functionality, flexibility, reliability, and process safety.











Magnetic gripper

Toolholder



Stationary workholding

① Further information on these products can be found on the following product pages or at schunk.com. Please contact us: SCHUNK technical hotline +49-7133-103-2696

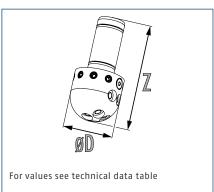
Options and special Information

Please note that use under extreme conditions (e.g. with coolant, casting or abrasive dust) will considerably reduce the service life of this product.

Please note that the product is not suitable for heat shrinking toolholders.







Technical data

Description		RGG 20
ID		0308590
Weight	[kg]	0.10
Min./max. ambient temperature	[°C]	-10/90
Max. permissible speed	[1/min]	100
Max. operating pressure	[bar]	80
Dimensions Ø D x Z	[mm]	37 x 78

More detailed, up-to-date information on the SCHUNK product including drawings, CAD data, and operating manuals are available online at: schunk.com/rgg