

## High flow rate. Cost effective. Compliant. Gripper with GSW-B Shaft Interface and Compensation Unit

PGN-plus / PZN-plus universal gripper with shaft interface GSW-B and AGE compensation unit

### Field of Application

Unit for fully automated loading and unloading of machining centres

### Advantages – Your benefit

**Low-price module** from a universal gripper PGN- / PZN-plus and a shaft interface

**Fast, automated gripper changeover** from the gripper to the storage rack

**Fully automated workpiece changeover** without robot- or gantry system

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

**Solid guides** 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



Sizes  
Quantity: 4



suitable for  
PGN-plus ..  
PZN-plus



Shaft diameter  
20 mm



Compensation XY  
1.5 mm

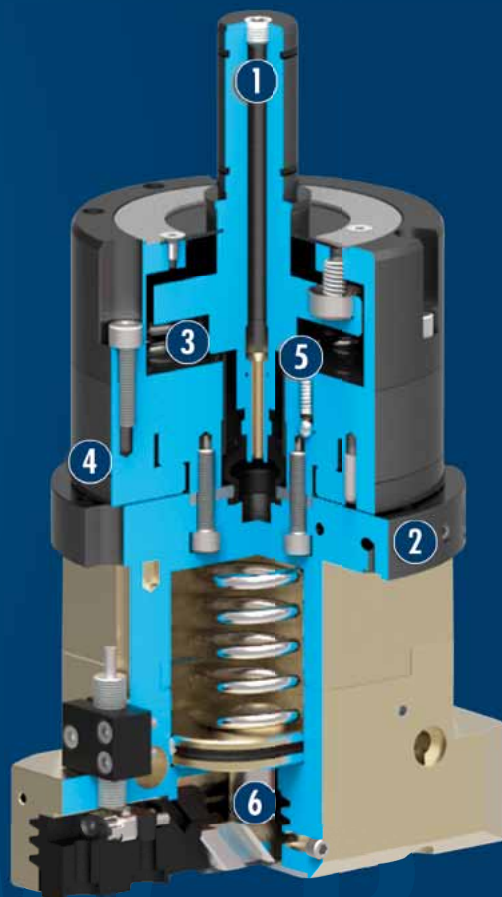


Compensation Z  
2.7 mm

## Functional Description

The pressure provided by the central machine coolant supply is reduced by the pressure distributor integrated in the adapter plate. The gripper can be pressurised and the piston and wedge-hook can actuate the base jaw.

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



- ① **Taper shaft**  
for 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
- ④ **Planar compensation**  
for preserving the spindles or axes
- ⑤ **Angular compensation**  
for higher flexibility and compliance
- ⑥ **Gripper kinematics**  
for high power transmission and centric gripping

CAD data, operating manuals and other current product documents are available at [www.schunk.com](http://www.schunk.com)

## General Notes about the Series

**Operating principle:** Pressure distributor and wedge-hook kinematics

**Housing material:** Aluminum alloy, anodized

**Base jaw material:** Blackened steel

**Actuation:** hydraulically with machine coolant (filtered, max. particle size of 30 µm) or pneumatically with filtered compressed air in accordance with DIN ISO 8573-1: 7 4 4.

**Warranty:** 24 months (details, general terms and conditions and operating manuals can be downloaded at [www.schunk.com](http://www.schunk.com))

**Scope of delivery:** Centering elements, assembly and operating instruction

**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 upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion.

**Repeat accuracy:** is defined as the spread of the limit position after 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 gears in a milling center

① GSW-V Vacuum Gripper

② GSW-M Magnetic Gripper

③ Gripper with shaft diameter GSW-B and PGN-plus

④ Gripper with shaft diameter GSW-B and PZN-plus

⑤ RGG Cleaning Unit

⑥ RSS Radio Sensor System

## 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 controlled production.



Centering Sleeves



Protection Cover



Jaw Quick-change System



Finger Blanks



Universal Intermediate Jaw



Cylindrical Reed Switches



RSS Radio Sensor System



Reed Switches for C-Nut



Cleaning Unit



Vacuum Gripper



Toolholder



Magnetic Gripper

① Further information regarding the products can be found on the following product pages or at [www.schunk.com](http://www.schunk.com). Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

## Options and special Information

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

Further shaft diameters on request.

Please note that connection A of grippers in IS-version should not be sealed air-tight. The same applies for connection B of grippers in AS-version.

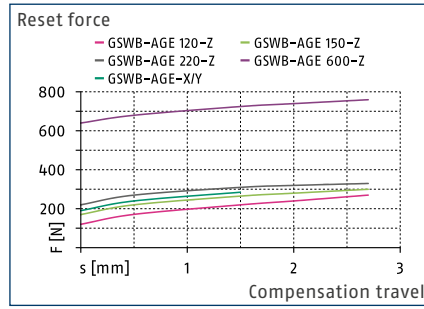
**Precondition:** If the spindles do not rotate, then machines have to provide compressed air or coolant.

# GSW-B-AGE 50-100

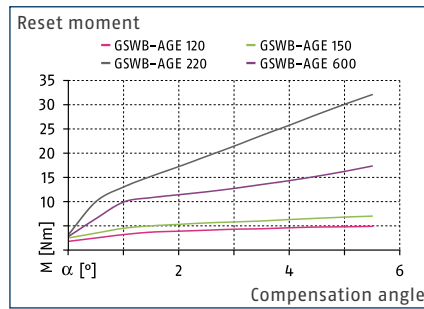
Special Grippers | Gripper with Shaft Interface



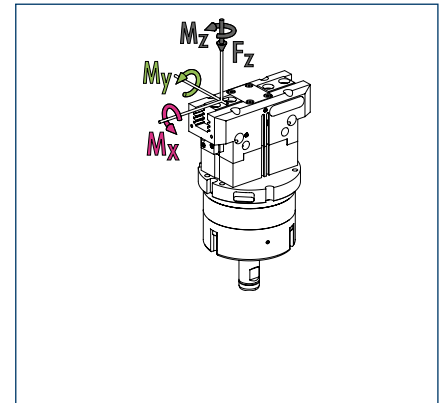
## Compensation force diagram



## Compensation angle moment diagram



## Forces and moments



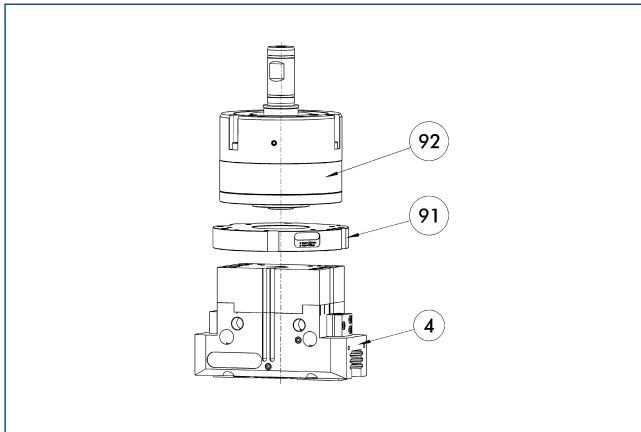
① Refer to the respective size of the gripper for the forces and torques.

## 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
<b>General technical data</b>					
Weight	[kg]	1.1	1.1	1.1	1.1
max. admissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
min. / max. compressed air operating pressure	[bar]	4/8	4/8	4/8	4/8
Nominal operating pressure coolant	[bar]	40	40	40	40
min. / max. coolant operating pressure	[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
Compensation angle	[°]	5.5	5.5	5.5	5.5
Rotary compensation	[°]	3.5	3.5	3.5	3.5
Compensation moment rotary	[Nm]	0.2	0.2	0.2	0.2
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

Location of the center of mass depending on the payload at horizontal application. A higher value of mass is valid for central locking, and a lower value of mass for position storage.

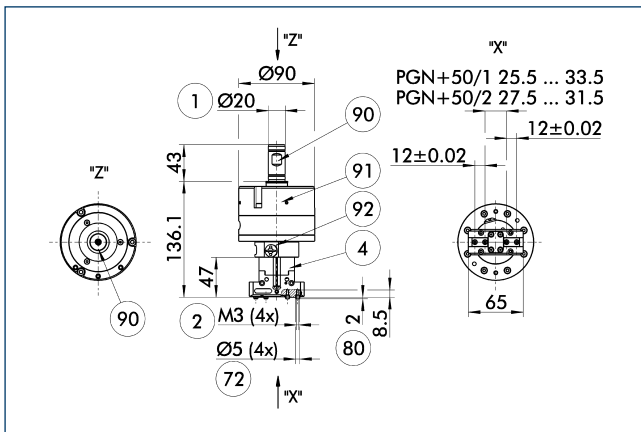
## Adapter plate



- ④ Gripper
- ⑨① Adapter plate
- ⑨② GSW-B-AGE

Description	ID
Adapter plate	
A-GSW-B-AGE 50-P	0308425
A-GSW-B-AGE 64-PZ	0308427
A-GSW-B-AGE 80-PZ	0308428
A-GSW-B-AGE 100-PZ	0308429

## GSW-B-AGE-XYZ with PGN-plus 50



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part
- ⑨① Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

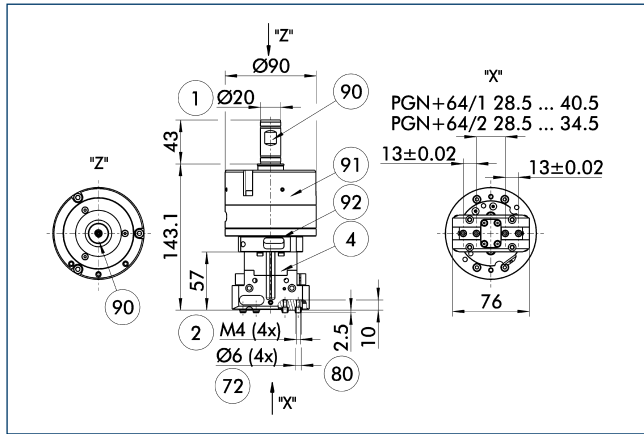
Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
Adapter plate						
A-GSW-B-AGE 50-P	0308425					
PGN-plus 2-Finger Parallel Gripper						
50-1-AS	0371399	4	45	75	68	I.D. gripping
50-1-IS	0371459	4	70	45	68	O.D. gripping
50-2-AS	0371449	2	95	160	64	I.D. gripping
50-2-IS	0371469	2	140	95	64	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

# GSW-B-AGE 50-100

Special Grippers | Gripper with Shaft Interface

## GSW-B-AGE-XYZ with PGN-plus 64

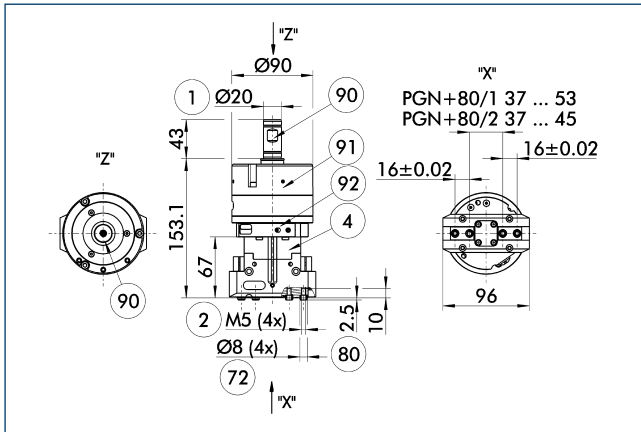


- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the mating part
- ⑨⑩ Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 64-PZ	0308427					
<b>PGN-plus 2-finger parallel gripper</b>						
64-1-AS	0371092	6	90	115	85	I.D. gripping
64-1-IS	0371094	6	115	90	85	O.D. gripping
64-2-AS	0371093	3	190	285	80	I.D. gripping
64-2-IS	0371095	3	240	190	80	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

## GSW-B-AGE-XYZ with PGN-plus 80



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the mating part
- ⑨⑩ Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 80-PZ	0308428					
<b>PGN-plus 2-finger parallel gripper</b>						
80-1-AS	0371401	8	155	230	105	Innengreifen
80-1-IS	0371461	8	180	155	105	Außengreifen
80-2-AS	0371451	4	320	470	100	Innengreifen
80-2-IS	0371471	4	370	320	100	Außengreifen

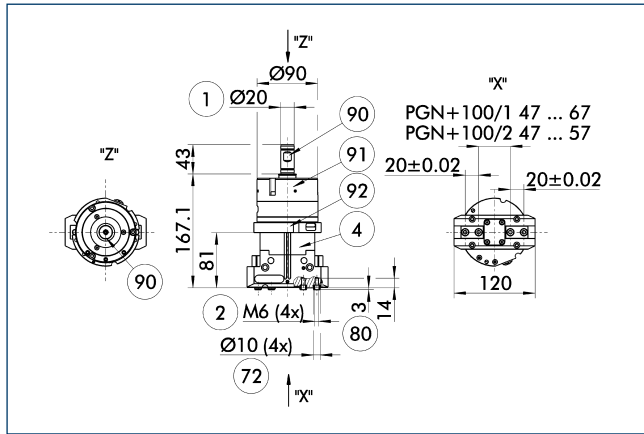
① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.



# GSW-B-AGE 50-100

Special Grippers | Gripper with Shaft Interface

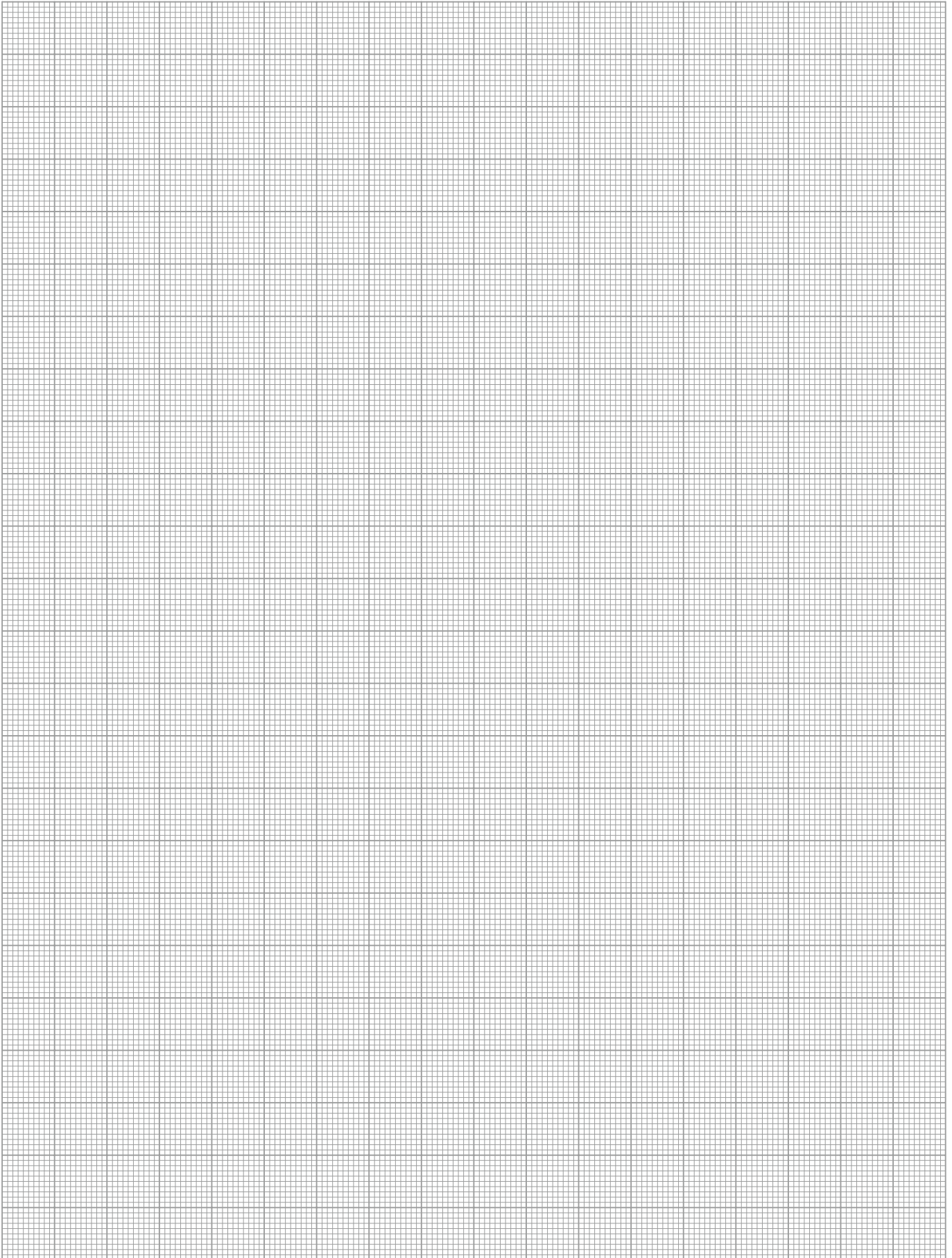
## GSW-B-AGE-XYZ with PGN-plus 100



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part
- ⑨① Weldon clamping surface
- ⑨② Compensation unit
- ⑨③ Adapter plate

Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 100-PZ	0308429					
<b>PGN-plus 2-finger parallel gripper</b>						
100-1-AS	0371402	10	240	345	135	I.D. gripping
100-1-IS	0371462	10	280	240	135	O.D. gripping
100-2-AS	0371452	5	500	710	125	I.D. gripping
100-2-IS	0371472	5	580	500	125	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

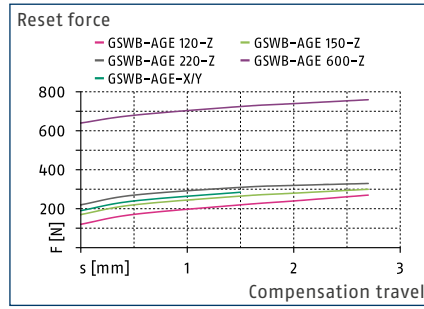


# GSW-B-AGE 50-100

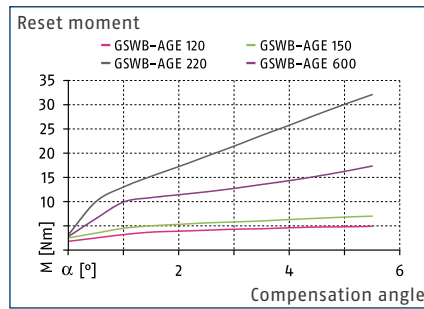
Special Grippers | Gripper with Shaft Interface



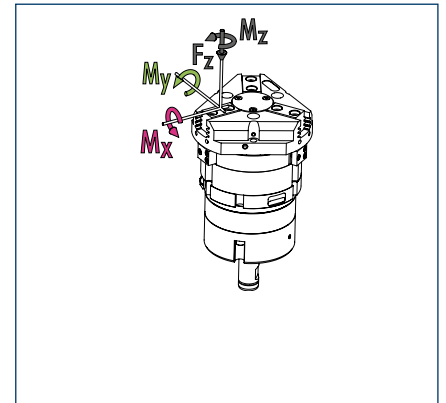
## Compensation force diagram



## Compensation angle moment diagram



## Forces and moments



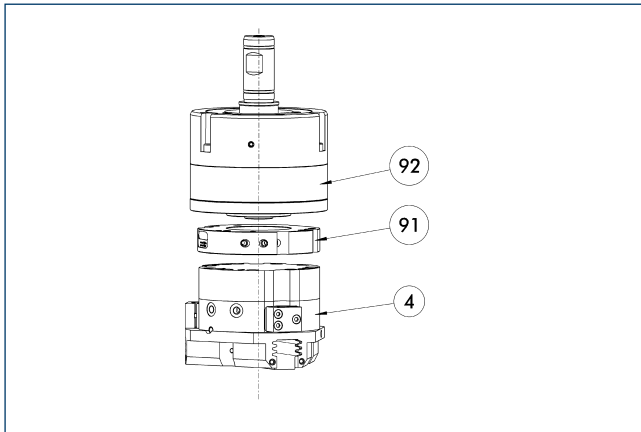
① Refer to the respective size of the gripper for the forces and torques.

## 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
<b>General technical data</b>					
Weight	[kg]	1.1	1.1	1.1	1.1
Max. admissible speed	[1/min]	20	20	20	20
Nominal operating pressure compressed air	[bar]	6	6	6	6
min. / max. compressed air operating pressure	[bar]	4/8	4/8	4/8	4/8
min. / max. coolant operating pressure	[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
Compensation angle	[°]	5.5	5.5	5.5	5.5
Rotary compensation	[°]	3.5	3.5	3.5	3.5
Compensation moment rotary	[Nm]	0.2	0.2	0.2	0.2
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

Location of the center of mass depending on the payload at horizontal application. A higher value of mass is valid for central locking, and a lower value of mass for position storage.

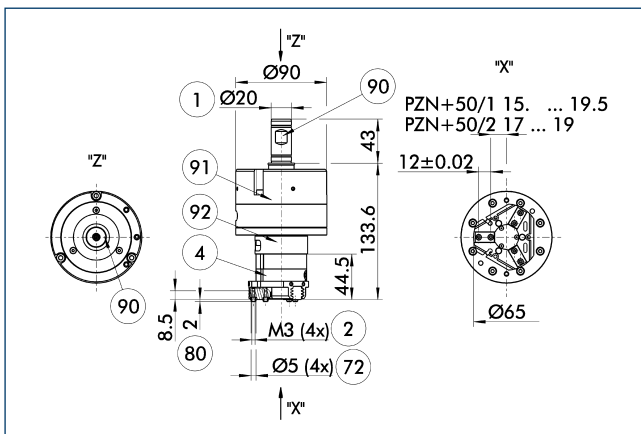
## Adapter plate



- ④ Gripper
- ⑨② GSW-B-AGE
- ⑨① Adapter plate

Description	ID
Adapter plate	
A-GSW-B-AGE 50-Z	0308426
A-GSW-B-AGE 64-PZ	0308427
A-GSW-B-AGE 80-PZ	0308428
A-GSW-B-AGE 100-PZ	0308429
A-GSW-B-AGE 50-P	0308425

## GSW-B-AGE-XYZ with PZN-plus 50



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part
- ⑨① Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

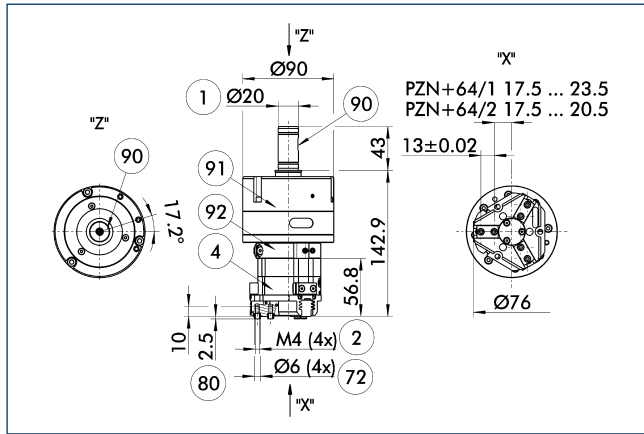
Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
Adapter plate						
A-GSW-B-AGE 50-Z	0308426					
3-finger centric gripper PZN-plus						
50-1-AS	0303509	4	120	165	68	I.D. gripping
50-1-IS	0303539	4	160	150	68	O.D. gripping
50-2-AS	0303609	2	245	340	64	I.D. gripping
50-2-IS	0303639	2	335	310	64	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

# GSW-B-AGE 50-100

Special Grippers | Gripper with Shaft Interface

## GSW-B-AGE-XYZ with PZN-plus 64

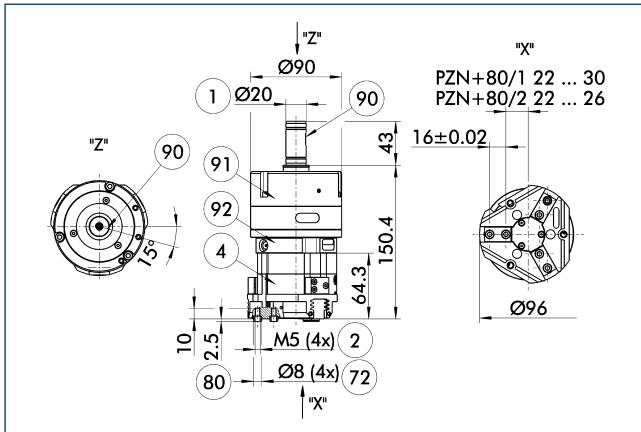


- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧⑩ Depth of the centering sleeve hole in the mating part
- ⑨⑩ Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 64-PZ	0308427					
<b>3-finger centric gripper PZN-plus</b>						
64-1-AS	0303510	6	185	360	85	I.D. gripping
64-1-IS	0303540	6	305	220	85	O.D. gripping
64-2-AS	0303610	3	315	495	80	I.D. gripping
64-2-IS	0303640	3	335	460	80	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

## GSW-B-AGE-XYZ with PZN-plus 80



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part
- ⑨① Weldon clamping surface
- ⑨① Compensation unit
- ⑨② Adapter plate

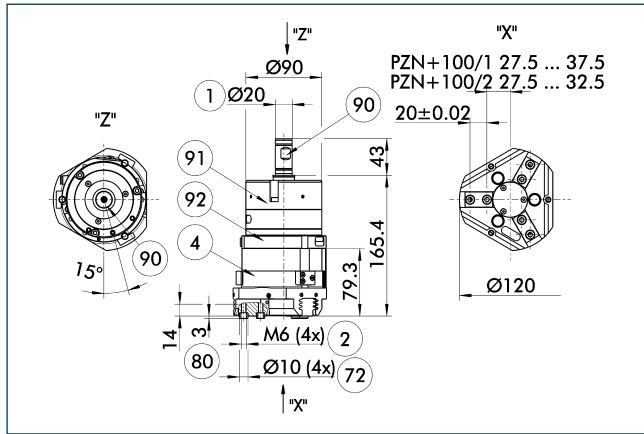
Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 80-PZ	0308428					
<b>3-finger centric gripper PZN-plus</b>						
80-1-AS	0303511	8	350	555	105	I.D. gripping
80-1-IS	0303541	8	460	370	105	O.D. gripping
80-2-AS	0303611	4	730	1390	100	I.D. gripping
80-2-IS	0303641	4	1200	760	100	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

# GSW-B-AGE 50-100

Special Grippers | Gripper with Shaft Interface

## GSW-B-AGE-XYZ with PZN-plus 100



- ① Gripper connection
- ② Finger connection
- ④ Gripper
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the mating part
- ⑨① Weldon clamping surface
- ⑨② Compensation unit
- ⑨③ Adapter plate

Description	ID	Stroke per jaw [mm]	min. closing force [N]	min. opening force [N]	max. permitted finger length [mm]	Types of gripping
<b>Adapter plate</b>						
A-GSW-B-AGE 100-PZ	0308429					
<b>3-finger centric gripper PZN-plus</b>						
100-1-AS	0303512	10	720	850	135	I.D. gripping
100-1-IS	0303542	10	710	780	135	O.D. gripping
100-2-AS	0303612	5	1500	2070	125	I.D. gripping
100-2-IS	0303642	5	1740	1620	125	O.D. gripping

① For detailed information, see the corresponding gripper. See the views at the end of the respective gripper size for suitable gripper accessories.

