

Hand in hand for tomorrow



Technical Product Guide AGM | Accessories

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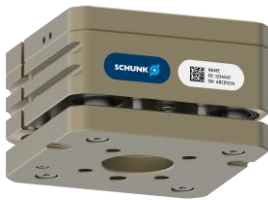
AGM-Z – 10 sizes

„Ausgleichen Modular“ Compensation Modular

AGM-Z 031



AGM-Z 040



AGM-Z 050



AGM-Z 063



AGM-Z 080



AGM-Z 100



AGM-Z 125



AGM-Z 160



AGM-Z 160L



AGM-Z 200



AGM-XY – 10 sizes

„Ausgleichen Modular“ Compensation Modular

AGM-XY 031



AGM-XY 040



AGM-XY 050



AGM-XY 063



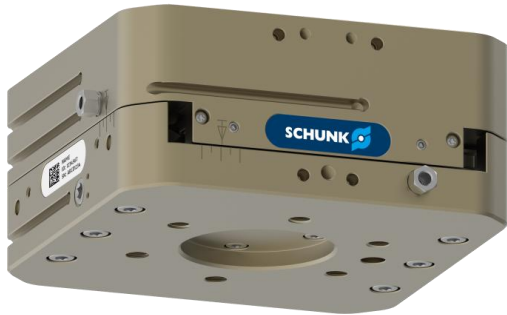
AGM-XY 080



AGM-XY 100



AGM-XY 125



AGM-XY 160



AGM-XY 160L



AGM-XY 200



AGM-W – 3 sizes

„Ausgleichen Modular“ Compensation Modular

AGM-W 050



AGM-W 063



AGM-W 080



Naming systematic AGM



AGM-Z 160L

AGM	Z	160L	
Product family	series	size	
		L stands for „large“	

“Ausgleichen Modular”
Compensation Modular



AGM-XY 080-P

AGM	XY	080	P
Product family	series	size	version with position memory



AGM-W 050

AGM	W	050	
Product family	series	size	



Note:
The sizes are named by ISO flange. There are two AGM units with 160 ISO flange, size 160 and 160L. L stands for “Large”
Accessories such as sensors or spring and air cartridges must be ordered separately and are delivered to the customer unassembled.

Naming systematic AGM



AGM-XYZ o80-P

AGM	XYZ	o80	P
Product family	series	size	version with position memory

“Ausgleichen Modular”
Compensation Modular

Examples:

- | | |
|----------------|--|
| AGM-XYZ 160L-P | Combined compensation unit XYZ in size 160L, L stands for „Large“ with position memory |
| AGM-WZ 050 | Combined compensation unit WZ , W stands for angular |
| AGM-XY 160 | Compensation unit XY in der size 160 without position memory |
| AGM-W 080 | Compensation unit W (angular) in size 080 |
| AGM-Z 160L | Compensation unit Z in size 160L |

AGM – Characteristics

AGM vs. AGE

AGM	AGE
More Sensor Options AGM-Z: 7 Options AGM-XY: 6 Options AGM-W: 3 Options	AGE-Z2: 4 Options AGE-XY: 1 Option AGE-W: Did not exist before
Standardized Adapter plates One flange size (ISO) smaller and larger for each unit	No Adapter plates in standard portfolio
Data Matrix Code (DMC) Customer can scan this with a phone like a QR code -> Customer receives further information	Did not exist before
Serialization Advantage for after-sales, customer can provide service serial number	Did not exist before
Larger load capacity range AGM-Z: 2 – 430 kg AGM-XY: 2 – 400 kg AGM-W: 5,5 – 32 kg	AGE-Z 2 / AGE-S-Z: 5 – 160 kg AGE-XY / AGE-S-XY: 1,5 – 160 kg –
Adjustable position measuring system Coming soon (from size 80 AGM Z & XY) High-precision measurement of height differences in mm, e.g. for process monitoring IPD (inductive position detection) often used by the automotive industry	AGE-Z 2: only min. and max.-position can be monitored AGE-XY: only centric position can be monitored
AGM-Z: fixed end stop Fixed end position in extended state – therefore better repeat accuracy (0.02 mm)	AGE-Z 2 was loose/had play
AGM-Z: Reduceable spring force Springs can be removed by customer	Different spring versions; the desired variant had to be ordered; readjustment was not possible

AGM – Characteristics

AGM vs. AGE

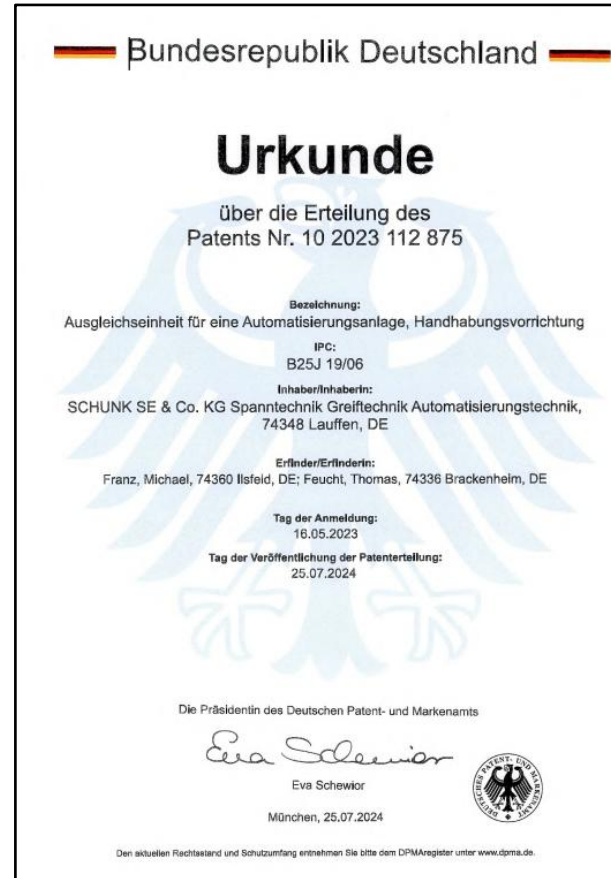


AGM	AGE
AGM-XY: Guidance system Cross roller guide (and needle roller guide (from size 80): More robust than the previous sliding guides for applications with high payloads and torques, no jamming, lower internal shifting force (smooth running), guides on one level (patented), lower overall height	AGE-XY Sliding guides: Lower load capacity, slower running, max. distance to joining center must be considered due to jamming. AGE-S: Guides on two levels, therefore more overall height
AGM-XY: Spring- and air cartridge Standard retrofit option: weight/gravitational force can be absorbed in one direction (AGM remains in 0-position) spring cartridge: acts purely via spring force. Can be adjusted manually using an Allen key air cartridge: works via pneumatic and spring force. Adjustment/control possible during the process using compressed air	only retrofitted by modification (customized engineering)
AGM-XY: Stroke limitation Continuously mechanically adjustable stroke or limitation / blocking of an entire compensation direction (e.g. Y-direction) possible	only retrofitted by modification (customized engineering)
Combinatorics (AGM-XYZ and AGM-WZ) Pre-assembled combined units available. Combinations are possible without an additional adapter plate if the same size is combined. The tool flange (between XY and Z) is omitted, saving weight and height.	only possible by combining standard units, not matched to each other

Patented technology for AGM

SCHUNK ensures unique selling points through international patents (Germany, Europe, USA, China, South Korea).

- **Patented AGM-XY:**
including Guidance system on one level and
- **Patented AGM-W:**
Control and locking piston for angle compensation
- **Combined units AGM-XYZ and AGM-WZ:**
Patent pending



Adjustment of Spring force AGM-Z

- No different spring versions anymore (as with AGE-Z 2)
- AGM-Z is delivered with 4 springs (small sizes) or 6 springs (large sizes)
- The spring force can be adjusted by reducing the number of springs.
- For precise spring force reduction when adjusting the springs, refer to the assembly and operating manual chapter "Adjustment of spring tension"

OLD

Technical data

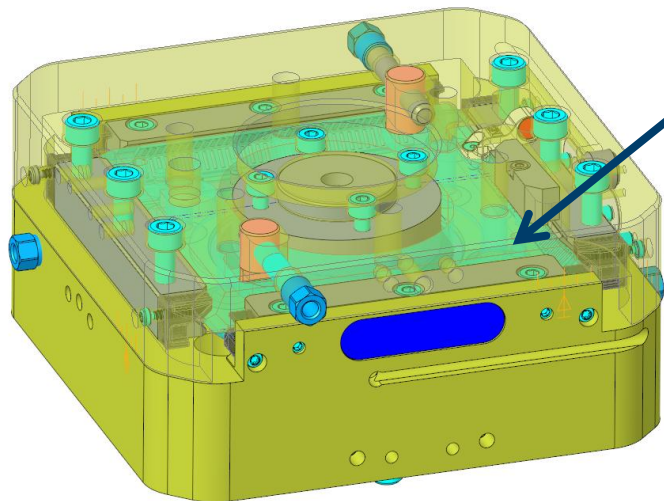
Description		AGE-Z 2-050-1	AGE-Z 2-050-2
ID		0324453	0324454
Compensation Z	[mm]	8	8
Recommended handling weight	[kg]	5	5
Locking force retracted at 6 bar	[N]	300	280
Locking force extended at 6 bar	[N]	500	500
Min. spring force	[N]	20	40
Max. spring force	[N]	40	60
Min./nom./max. operating pressure	[bar]	2.5/-/6	2.5/-/6
Repeat accuracy	[mm]	0.02	0.02
Robot-side connection		ISO 9409-1-50-4-M6	ISO 9409-1-50-4-M6
Weight	[kg]	0.55	0.55
Min./max. ambient temperature	[°C]	5/60	5/60
Dimensions X x Y x Z	[mm]	64 x 64 x 53	64 x 64 x 53

NEW

Technical data

Description		AGM-Z 050
ID		1575965
Compensation Z	[mm]	6
Recommended handling weight, vertical	[kg]	8.5
Recommended handling weight, horizontal	[kg]	6
Locking force retracted at 6 bar	[N]	550
Locking force extended at 6 bar	[N]	700
Min. spring force	[N]	29
Max. spring force	[N]	65
Min./nom./max. operating pressure	[bar]	2.5/6/6.5
Repeat accuracy	[mm]	0.02
Robot-side connection		ISO 9409-1-50-4-M6
Tool-side connection		ISO 9409-1-50-4-M6
Weight	[kg]	1
Min./max. ambient temperature	[°C]	5/60
Dimensions X x Y x Z	[mm]	85 x 85 x 50.5

Guidance system AGM-XY

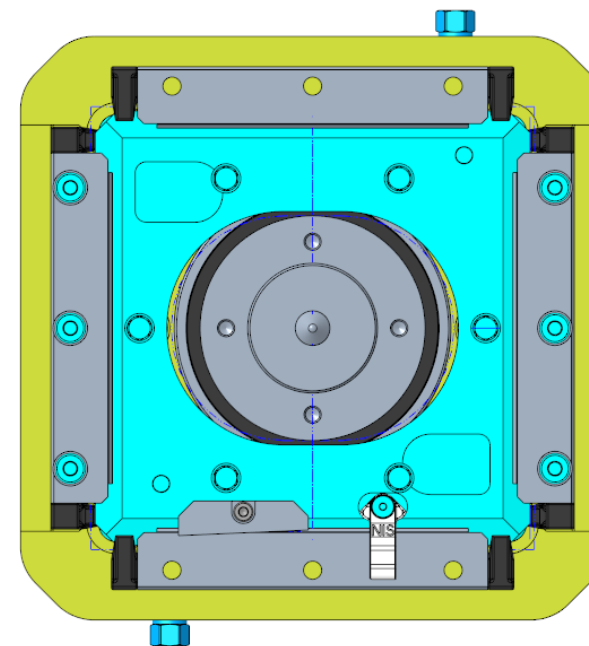
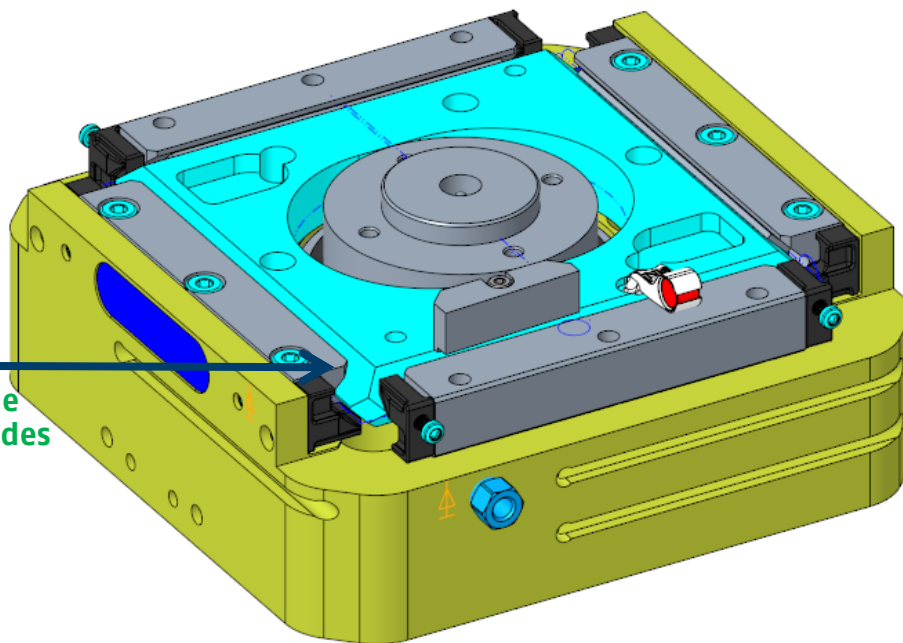


AGM-XY o80
Position of the guides on one level
Guidance system is patented

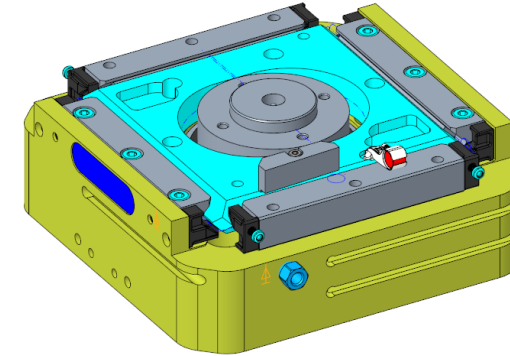
Guide rail for
needle roller guide



size 031 to 063 Cross roller guide
From size 080 Needle roller guides



Guidance system AGM-XY vs. AGE-XY



Advantage in installation height

AGM has guide rails for X and Y compensation on one level

AGM size	SCHUNK AGM-XY Dimensions: L/W x H [in mm]	SCHUNK AGE-XY Dimensions: d x H [in mm]	AGE size	Overall height Savings in [mm]	Overall height Savings in [%]
AGM-XY 031	65 ² x 39				
AGM-XY 040	75 ² x 46	Ø65 x 48	AGE-XY-050	2	4,3
AGM-XY 050	85 ² x 48,5	Ø80 x 56	AGE-XY-063	7,5	15,5
AGM-XY 063	105 ² x 55	Ø100 x 62	AGE-XY-080	7	12,7
AGM-XY 080	135 ² x 61	160 x 175 x 76,5	AGE-S-XY-125	15,5	25,4
AGM-XY 100	165 ² x 70	200 x 215 x 97	AGE-S-XY-160	27	38,6
AGM-XY 125	205 ² x 85	200 x 215 x 97	AGE-S-XY-160	12	14,1
AGM-XY 160	260 ² x 101	250 x 270 x 118	AGE-S-XY-200	17	16,8
AGM-XY 160L	285 ² x 122				
AGM-XY 200	285 ² x 135				

Guidance system AGM-XY vs. AGE-XY

Due to the new **cross** or **needle roller guide** of the AGM-XY prevents jamming at large shifting distance.

Previously with AGE-XY:

Max. distance shifting force Z

- AGE-XY-50: 120 mm
- AGE-XY-63: 160 mm
- AGE-XY-080: 200 mm

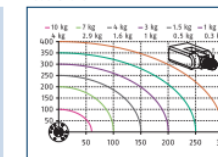
Note: The maximum shifting force in the Z direction is no longer specified in the catalog for the AGM product family. However, if you are interested in this value, you can find it on our website at [schunk.com](https://www.schunk.com).

AGE-XY 080

Compensation unit XY

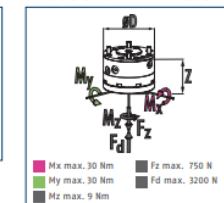


Load chart



④ Position of the allowable center of mass as a function of the payload for horizontal applications. A higher value of mass is valid for central locking, and a lower value of mass for position storage.

Dimensions and maximum loads



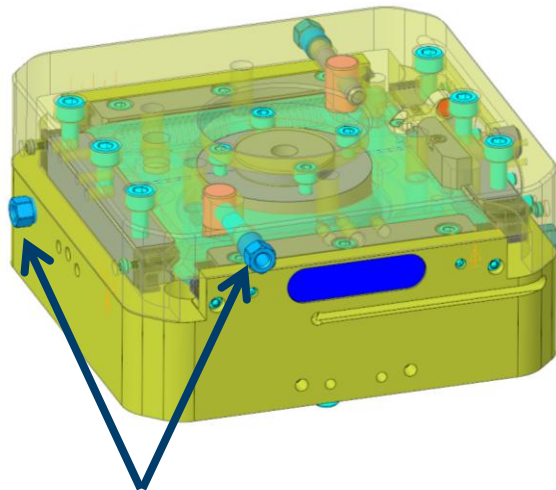
④ This is the max. total of all moments and loads (acceleration forces and torques, process forces etc.), which can affect a compensation unit, in order to ensure error-free function.

Technical data

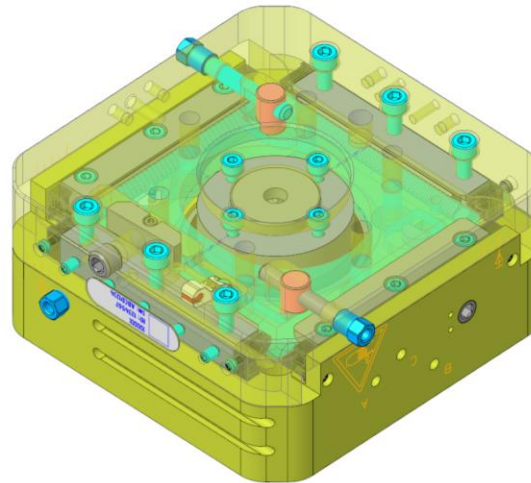
Description	AGE-XY-080	AGE-XY-080-P
ID	0324480	0324481
Compensation XY	[mm] ±4	±4
Deflection rotatory	[°] ±16	±16
Recommended handling weight, vertical	[kg] 15	15
Recommended handling weight, horizontal	[kg] 10	10
Recommended handling weight position storage	[kg]	4
Locking force	[N] 580	580
Max. load force locked	[N] 310	310
Position memory piston force	[N]	580
Max. radial force, position storage	[N]	145
Rotation moment position storage	[Nm]	4
Max. distance shifting force Z	[mm] 200	200
Min./nom./max. operating pressure	[bar] 2.5/6/8	2.5/6/8
Repeat accuracy	[mm] 0.1	0.1
Robot-side connection	ISO 9409-1-80-6-M8	ISO 9409-1-80-6-M8
Weight	[kg] 1.49	1.5
Min./max. ambient temperature	[°C] 5/60	5/60
Dimensions Ø D x Z	[mm] 100 x 62	100 x 62

Stroke limitation AGM-XY vs. AGE-XY

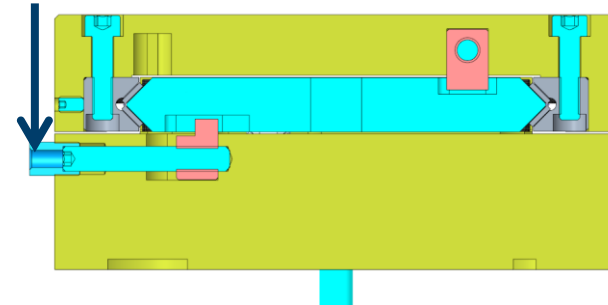
- The stroke can be adjusted using the integrated stroke limitation.
- It is also possible to block an entire compensation direction, e.g., the Y direction.
- The screw of the stroke limitation is screwed in or out to match the required compensation path



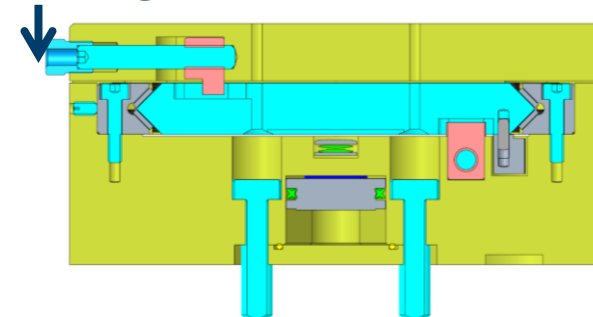
Screw for Stroke limitation



Setting the stroke in the X-axis:



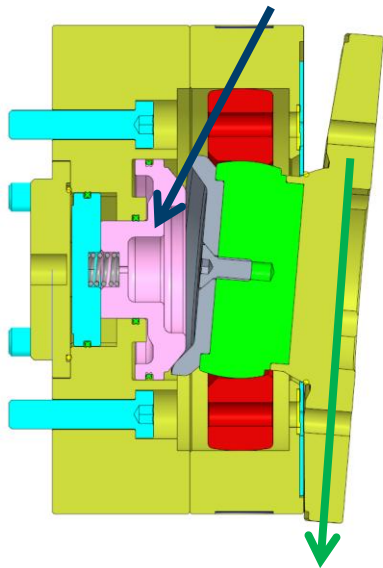
Setting the stroke in the Y-axis:



Control piston AGM-W

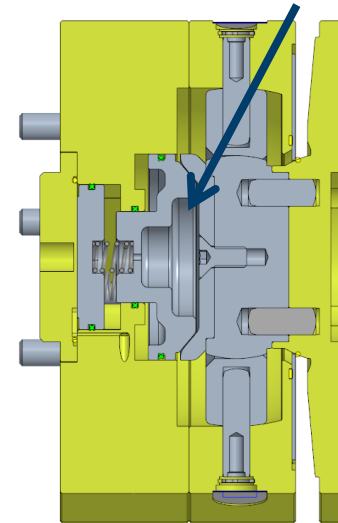
- Adjustable compensation force with compressed air
- For horizontal applications or free spatial orientation, the **control piston** can be activated via the air connection (B) to prevent the unlocked compensation unit from tilting due to the weight/gravitational force.

Control piston inactiv



When unlocking the AGM, the tool side tilts downwards according to the **weight force** (green arrow)

Control piston activ



By pressurizing the control piston, the weight force can be absorbed, and the unit held in the centric position.

Modularity: Combinable series



Advantage in installation height

size	SCHUNK AGM stacked Overall height in [mm]	SCHUNK AGM Combined Unit Overall height in [mm]	Overall height Savings in [mm]	Overall height Savings in [%]
031	81	72	9	11
040	91	81,3	9,7	11
050	99	89,5	9,5	10
063	115	103	12	10
080	137	122,5	14,5	11
100	158,4	141	17,4	11
125	180	162,5	17,5	10
160	208*	187,2*	20,8*	10*
160L	255,4	230,6	24,8	10
200	295*	265,5*	29,5*	10*

* Technical data may change. Sizes are in the design phase.

Modularity: Combinable series



Advantage in Weight

size	SCHUNK AGM stacked Weight in [kg]	SCHUNK AGM Combined Unit Weight in [kg]	Weight saving in [kg]	Weight saving in [%]
031	1,03	0,9	0,13	13
040	1,47	1,4	0,07	5
050	1,95	1,9	0,05	3
063	3,90	3,7	0,2	5
080	7,20	6,7	0,5	7
100	11,80	11	0,8	7
125	20,60	20	0,6	3
160	41,10*	36,9*	4,11*	10*
160L	56,90	53	3,9	7
200	79,00*	75,5*	3,95*	5*

* Technical data may change. Sizes are in the design phase.

Modularity: Combinable series



Advantage in installation height

size	SCHUNK AGM stacked Overall height in [mm]	SCHUNK AGM Combined Unit Overall height in [mm]	Overall height Savings in [mm]	Overall height Savings in [%]
050	115,5	107	8,5	7
063	135	123	12	9
080	164	147,5	16,5	10



Note:
If a combination of AGM-XY and AGM-W is required, the two series must be stacked.
No combined unit pre-assembled.

Modularity: Combinable series



Advantage in Weight

size	SCHUNK AGM stacked Weight in [kg]	SCHUNK AGM Combined Unit Weight in [kg]	Weight saving in [kg]	Weight saving in [%]
050	2,15	2,11	0,04	2
063	3,8	3,6	0,2	5
080	6,8	6	0,8	11



Note:
If a combination of AGM-XY and AGM-W is required, the two series must be stacked.
No combined unit pre-assembled.

Matching List: AGE-Z 2 vs. AGM-Z vs. competition

Payload	Ident.-No. AGE	Description	Ident.-No. AGM	Description	ZIMMER	IPR
<8kg			1575899	AGM-Z 031		ZN-50 ZN-80
	0324453	AGE-Z 2-050-1	1575933	AGM-Z 040	ZR1040-A	ZN-100
	0324454	AGE-Z 2-050-2				
	0324466	AGE-Z 2-063-1	1575965	AGM-Z 050	ZR1050-A	ZN-125
	0324467	AGE-Z 2-063-2				
<32kg	0324501	AGE-S-Z-100-0				
	0324483	AGE-Z 2-080-1	1575971	AGM-Z 063	ZR1063-A	ZN-160
	0324484	AGE-Z 2-080-2				
	0324526	AGE-S-Z-125-0				
<80kg			1575977	AGM-Z 080	ZR1080-A	ZN-200
	0324561	AGE-S-Z-160-0	1575979	AGM-Z 100	ZR1100-A	
<180kg	0324601	AGE-S-Z 200	1575990	AGM-Z 125	ZR1125-A ZR1160-A	ZN-250
					ZR1200-A	
>180kg			1575992	AGM-Z 160		
			1575993	AGM-Z 160L		ZN-300
			1575995	AGM-Z 200		

Recommended AGM ID number as the preferred choice over the AGE variants.

Matching List: AGE-XY vs. AGM-XY vs. competition

Payload	Ident.-No. SCHUNK AGE	Description	Ident.-No. SCHUNK AGM	Description	Ident.-No. spring cartridge	Description	ZIMMER	IPR
<8kg	0324900	AGE-F-XY-031-1						
	0324901	AGE-F-XY-031-2						
	0324902	AGE-F-XY-031-3	1577130	AGM-XY 031	1601825	FP1-AGM-031/040		
	0324920	AGE-F-XY-040-1	1582575	AGM-XY 031-P		(spring cartridge)		
	0324921	AGE-F-XY-040-2						
	0324922	AGE-F-XY-040-3						
	0324450	AGE-XY-050	1577137	AGM-XY 040	1601825	FP1-AGM-031/040	XYR1040-B	KA-65-ZV/DV
	0324451	AGE-XY-050-P	1582588	AGM-XY 040-P		(spring cartridge)		
	0324940	AGE-F-XY-063-1						
	0324941	AGE-F-XY-063-2						
	032494	AGE-F-XY-063-3	1577153	AGM-XY 050	1601828	FP1-AGM-050	XYR1050-B	KA-80-ZV/DV
	0324463	AGE-XY 063	1582589	AGM-XY 050-P		(spring cartridge)		KA-100-ZV/DV
	0324464	AGE-XY 063-P						
	0324500	AGE-S-XY-100-0						
	0324503	AGE-S-XY-100-P						
<32kg	0324960	AGE-F-XY-080-1						
	0324961	AGE-F-XY-080-2						
	0324962	AGE-F-XY-080-3	1577159	AGM-XY 063	1601841	FP1-AGM-063	XYR1063-B	KA-125-ZV/DV
	0324480	AGE-XY 080	1582600	AGM-XY 063-P		(spring cartridge)		
	0324481	AGE-XY 080-P						
	0324525	AGE-S-XY-125-0	1577181	AGM-XY 080	1610655	FP1-AGM-080	XYR1080-B	KA-160-ZV/DV
	0324528	AGE-S-XY-125-P	1582603	AGM-XY 080-P		(spring cartridge)		

Recommended AGM ID number as the preferred choice over the AGE variants.

If the function of the AGE-F is to be replaced, a spring cartridge (accessory) must be ordered in addition to the AGM

Matching List: AGE-XY vs. AGM-XY vs. competition

Payload	Ident.-No. AGE	Description	Ident.-No. AGM	Description	Ident.-No. spring cartridge	Description	ZIMMER	IPR
<80kg	0324525 0324528	AGE-S-XY-125-0 AGE-S-XY-125-P	1577181 1582603	AGM-XY 080 AGM-XY 080-P	1610655	FP1-AGM-080 (spring cartridge)	XYR1080-B	
	0324560 0324563	AGE-S-XY 160 AGE-S-XY 160-P	1577185 1582605	AGM-XY 100 AGM-XY 100-P	1601843 1601844	FP1-AGM-100 FP2-AGM-100 (spring cartridge)	XYR1100-B XYR1125-B	KA-200-ZV/DV
			1577187 1582607	AGM-XY 125 AGM-XY 125-P	1610682 1610683	FP1-AGM-125 FP2-AGM-125 (spring cartridge)	XYR1125-B	KA-250-ZV/DV
<180kg	0324600 0324603	AGE-S-XY-200-0 AGE-S-XY-200-P	1577191 1582610	AGM-XY 160 AGM-XY 160-P	1629643 1629644	FP1-AGM-160 FP2-AGM-160	XYR1160-B	KA-300-light
>180kg	-	-	1577193 1582611	AGM-XY 160L AGM-XY 160L-P	1601849 1601850	FP1-AGM-160L FP2-AGM-160L (spring cartridge)	XYR1200-B	KA-300-ZV/DV
			1577195 1582612	AGM-XY 200 AGM-XY 200-P	1629649 1629650	FP1-AGM-200 FP2-AGM-200 (spring cartridge)	XYR9050CL-00-A	(KA-300-S-ZV/DV)

Recommended AGM ID number as the preferred choice over the AGE variants.

If the function of the AGE-F is to be replaced, a spring cartridge (accessory) must be ordered in addition to the AGM

Matching List: AGE-U vs. AGM-WZ

Payload	Ident.-No. AGE	Description	Ident.-No. AGM	Description
<8kg	1312860	AGE-U 050	1591347	AGM-WZ 050
<32kg	-	-	1591354	AGM-WZ 063
<80kg	-	-	1591355	AGM-WZ 080

Recommended AGM ID number as the preferred choice over the AGE variants

AGM-WZ is not 1:1 functionally comparable, as the WZ cannot rotatory and XY compensation.

AGM – Accessories

Sensors



Coming soon

series	MMS22	MMS22-PI1	MMS22-PI2	MMS22-IOL	MMS22-A	IN	IPD
AGM-Z	X	X	X	X	X	X	X
AGM-XY	X	X	X	X	X		X
AGM-W	X	X				X	
AGM-XYZ	X	X	X	X	X	-	-
AGM-WZ	X	X	X	X	X	-	-



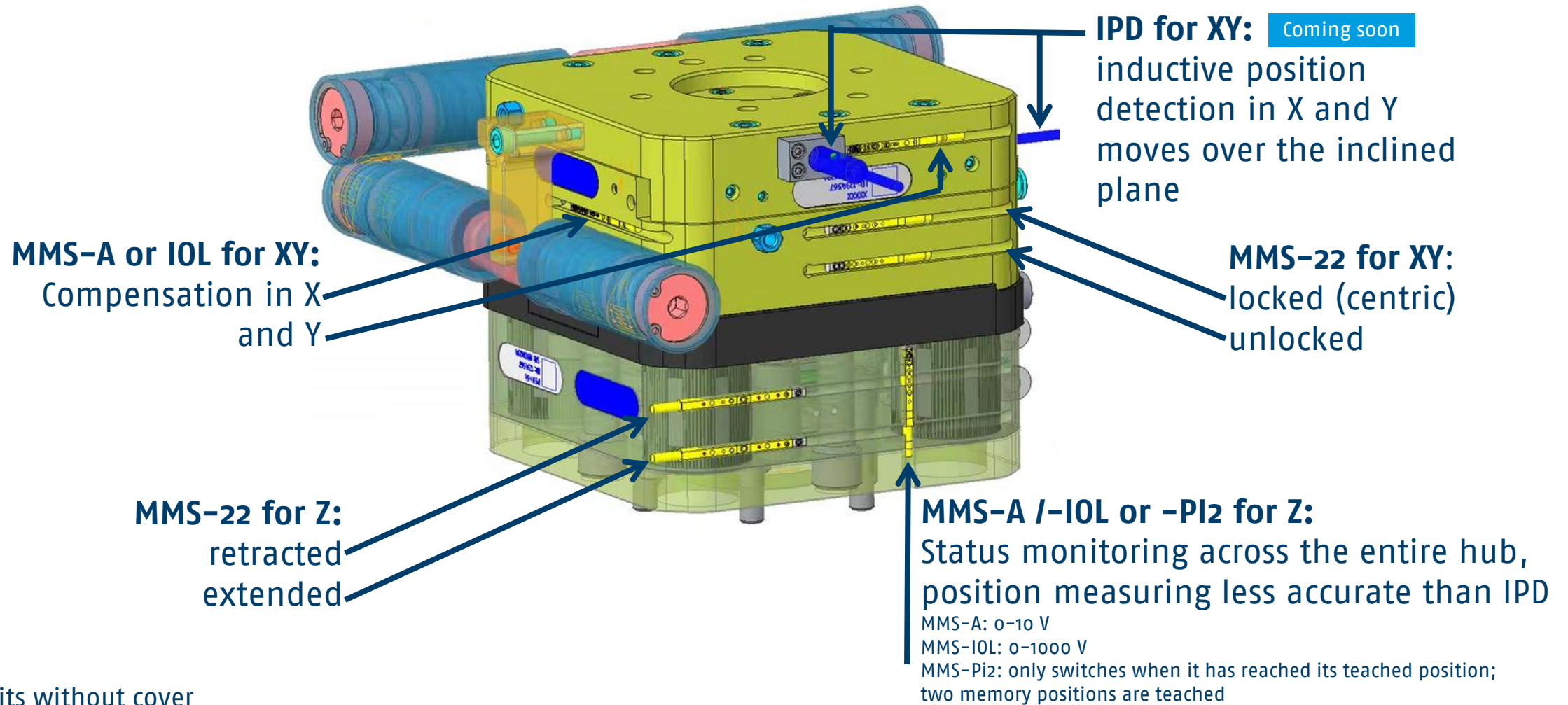
Note:
AGM-W has two different IN sizes:
AGM- W 050 → IN40
AGM- W 063 and 080 → IN80

Mounting kits: IN-Sensor



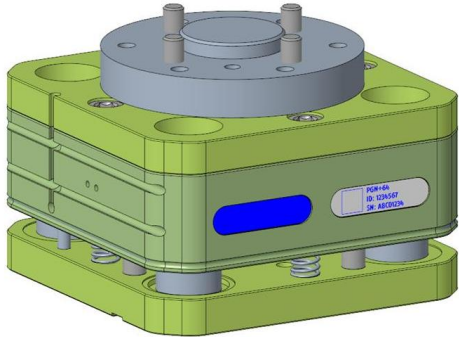
series	size	Type of sensor	Ident.-No. Mounting kit	Description Mounting kit
AGM-Z	031	IN	1601727	AS-AGM-Z-031-IN80
	040	IN	1601728	AS-AGM-Z-040-IN80
	050/063	IN	1601729	AS-AGM-Z-050/63-IN80
	080	IN	1601731	AS-AGM-Z-080-IN80
	100/125	IN	1601732	AS-AGM-Z-100/125-IN80
	160	IN	1601733	AS-AGM-Z-160-IN80
	160L	IN	1601734	AS-AGM-Z-160L-IN80
	200	IN	1601735	AS-AGM-Z-200-IN80
AGM-W	050	IN	1601739	AS-AGM-W-050-IN40
	063	IN	1601745	AS-AGM-W-063-IN80
	080	IN	1601746	AS-AGM-W-080-IN80

Mounted sensors AGM-XYZ

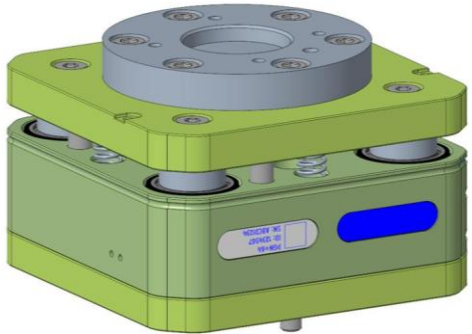


New units without cover
(AGM-Z and AGM-XYZ)

Adapter plates



Robot side Adapter plate
using the example of AGM-Z 080



Tool side Adapter plate
using the example of AGM-Z 080

A		ISO050		ISO040	
Adapter		Robot Flansch Typ ISO 9409-1-50-4-M6		Size of the compensation unit 040	
AGM size	Tool – and Robot side	Robot side (optional)			
AGM	Integriert in AGM	Ident.–No.	One size smaller	Ident.–No.	One size larger
031	ISO 31,5	–	–	1600680	ISO 40
040	ISO 40	1601226	ISO 31,5	1601228	ISO 50
050	ISO 50	1601229	ISO 40	1601240	ISO 63
063	ISO 63	1601241	ISO 50	1601243	ISO 80
080	ISO 80	1601244	ISO 63	1601245	ISO 100
100	ISO 100	1601246	ISO 80	1601248	ISO 125
125	ISO 125	1601249	ISO 100	1601250	ISO 160
160	ISO 160	1601252	ISO 125	1601254	ISO 200
160L	ISO 160	–	–	1601254	ISO 200
200	ISO 200	1601255	ISO 160	1601256	ISO 200–12xM16



Note:
For each AGM-size there is an adapter plate with a smaller ISO-flange and a larger ISO-flange.
The adapter plates are compatible with the ISO flange robot side of the DDF-2

Description Spring- / air cartridge



FP1-AGM-031/040

FP1	AGM	031/040
"Federpatrone" spring cartridge	Accessories for the Product family	size

1 stands for force range
5-45 N

LP1-AGM-031/040

LP1	AGM	031/040
"Luftpatrone" air cartridge	Accessories for the Product family	size

1 stands for force range
5-50 N

Examples:

FP2-AGM -160L	spring cartridge with force range 1500 – 2750 N for the size 160L
LP2-AGM-100	air cartridge 2 with force range 300-640 N for the size 100
LP1-AGM-063	air cartridge 1 with force range 50-200 N for the size 063

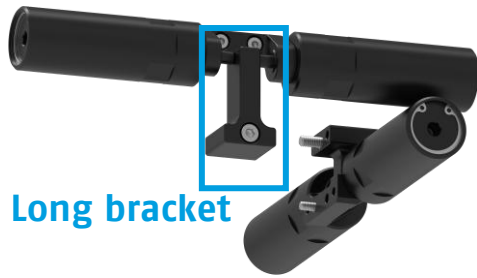


Accessories for
AGM-XY and AGM-XYZ



The same spring and air
cartridges can be used for sizes
031 and 040.

Description Mounting kit for Spring- / air cartridge



AS-AGM-031/040-FP/LP-K

AS	AGM	031/040	FP/LP	K
"Anbausatz" Mounting kit	Accessories for the Product family	size	"Federpatrone Luftpatrone" spring cartridge air cartridge	"shorter Halter" Short bracket

AS-AGM-031/040-FP/LP-L

AS	AGM	031/040	FP/LP	L
"Anbausatz" Mounting kit	Accessories for the Product family	size	"Federpatrone Luftpatrone" spring cartridge air cartridge	"longer Halter" Long bracket

Examples:

AS-AGM-050-FP/LP-K
AS-AGM-160L-FP/LP-L

| Mounting kit for Spring- and air cartridge short for the size 050
| Mounting kit for Spring- and air cartridge long for the size 160L

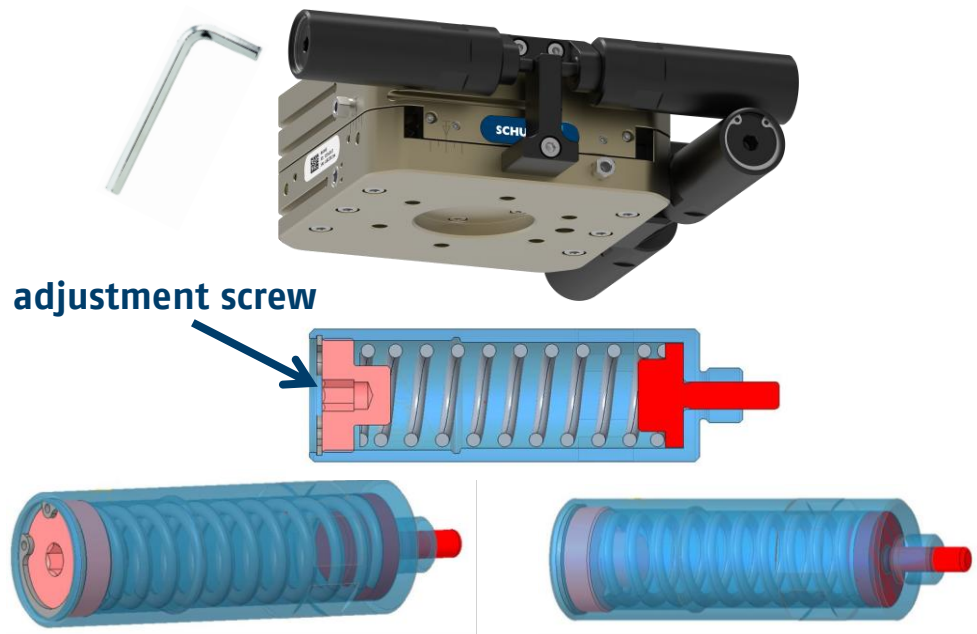


Each mounting kit consists of a bracket, stop and screws. The same mounting kits can be used for spring and air cartridges. If cartridges are required on Tool side and Robot side, a long and a short mounting kit must be used!

Comparison Spring- and air cartridge

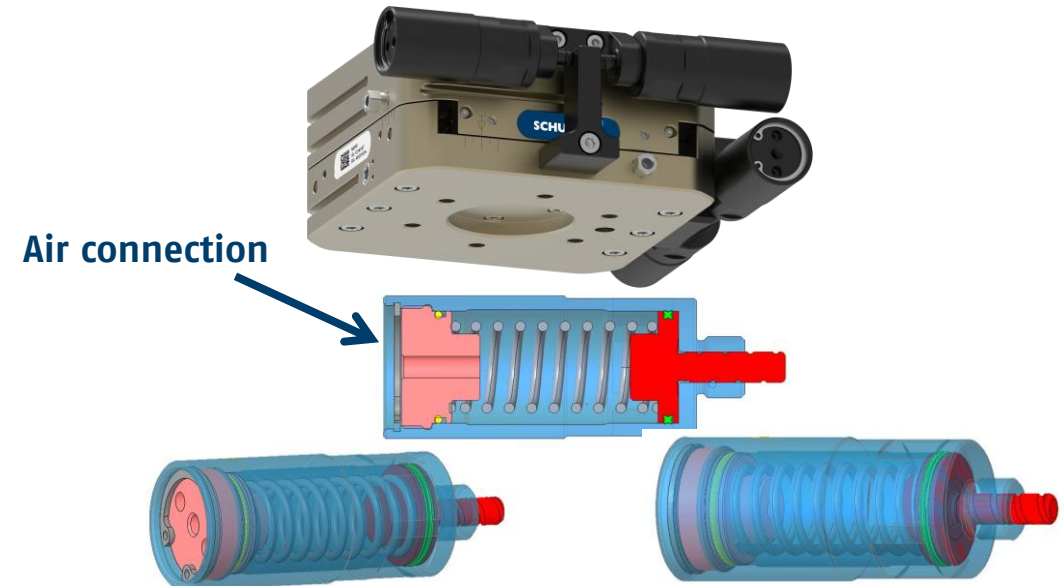
spring cartridges:

- Principle: Functions purely through the force of the integrated spring.
- Setting: The spring force can be individually preloaded using the adjustment screw on the spring cartridge



air cartridge:

- Principle: Spring pneumatic – combines spring force with optional compressed air
- Setting: Force is continuously adjustable via air pressure (max. 6 bar). The higher the pressure, the greater the force. Adjustment during process is possible. The spring also covers a specific force range without compressed air. To release pressure, switch off the compressed air.



Overview spring cartridges

AGM size	Payload horizontal in [kg]	Ident.-No. spring cartridge	Description	force range spring cartridge in [N]	Ident.-No. bracket long	Description	Ident.-No. bracket short	Description
031	1,4	1601825	FP1-AGM-031/040	5-45	1602230	AS-AGM-031/040-FP/LP-L	1602229	AS-AGM-031/040-FP/LP-K
040	2,8							
050	5,5	1601828	FP1-AGM-050	22-90	1602232	AS-AGM-050-FP/LP-L	1602231	AS-AGM-050-FP/LP-K
063	11	1601841	FP1-AGM-063	50-190	1602234	AS-AGM-063-FP/LP-L	1602233	AS-AGM-063-FP/LP-K
080	22	1610655	FP1-AGM-080	100 - 370	1610681	AS-AGM-080-FP/LP-L	1610659	AS-AGM-080-FP/LP-K
100	44	1601843	FP1-AGM-100	200-420	1602237	AS-AGM-100-FP/LP-L	1602235	AS-AGM-100-FP/LP-K
		1601844	FP2-AGM-100	320-700				
125	70	1610682	FP1-AGM-125	375 - 700	1610689	AS-AGM-125-FP/LP-L	1610687	AS-AGM-125-FP/LP-K
		1610683	FP2-AGM-125	600 - 1150				
160	100	1629643	FP1-AGM-160	650 - 1175	1629648	AS-AGM-160-FP/LP-L	1629647	AS-AGM-160-FP/LP-K
		1629644	FP2-AGM-160	1000 - 1800				
160L	150	1601849	FP1-AGM-160L	900 - 1630	1602239	AS-AGM-160L-FP/LP-L	1602238	AS-AGM-160L-FP/LP-K
		1601850	FP2-AGM-160L	1500 - 2750				
200	200	1629649	FP1-AGM-200	900 - 1630	1629654	AS-AGM-200-FP/LP-L	1629653	AS-AGM-200-FP/LP-K
		1629650	FP2-AGM-200	1500 - 2750				



The same spring cartridges can be used for the sizes 031 and 040.
From size 100 to 200 there are two spring cartridges per size.

Overview air cartridge

AGM size	Payload horizontal in [kg]	Ident.-No. air cartridge	Description	Force range air cartridge in [N]	Ident.-No. bracket long	Description	Ident.-No. bracket short	Description
031	1,4	1601827	LP1-AGM-031/040	5-45	1602230	AS-AGM-031/040-FP/LP-L	1602229	AS-AGM-031/040-FP/LP-K
040	2,8							
050	5,5	1601840	LP1-AGM-050	25-100	1602232	AS-AGM-050-FP/LP-L	1602231	AS-AGM-050-FP/LP-K
063	11	1601842	LP1-AGM-063	50-200	1602234	AS-AGM-063-FP/LP-L	1602233	AS-AGM-063-FP/LP-K
080	22	1610658	LP1-AGM-080	110 - 330	1610681	AS-AGM-080-FP/LP-L	1610659	AS-AGM-080-FP/LP-K
100	44	1601846	LP1-AGM-100	150-490	1602237	AS-AGM-100-FP/LP-L	1602235	AS-AGM-100-FP/LP-K
		1601847	LP2-AGM-100	300-640				
125	70	1610684	LP1-AGM-125	400 - 920	1610689	AS-AGM-125-FP/LP-L	1610687	AS-AGM-125-FP/LP-K
		1610685	LP2-AGM-125	620 - 1130				
160	100	1629645	LP1-AGM-160	650 - 1350	1629648	AS-AGM-160-FP/LP-L	1629647	AS-AGM-160-FP/LP-K
		1629646	LP2-AGM-160	1100 - 1800				
160L	150	1601852	LP1-AGM-160L	790 - 1789	1602239	AS-AGM-160L-FP/LP-L	1602238	AS-AGM-160L-FP/LP-K
		1601853	LP2-AGM-160L	1460 - 2460				
200	200	1629651	LP1-AGM-200	790 - 1789	1629654	AS-AGM-200-FP/LP-L	1629653	AS-AGM-200-FP/LP-K
		1629652	LP2-AGM-200	1460 - 2460				

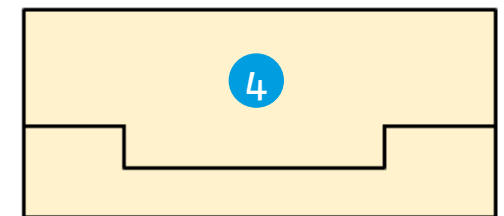
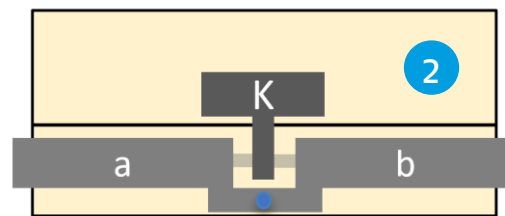
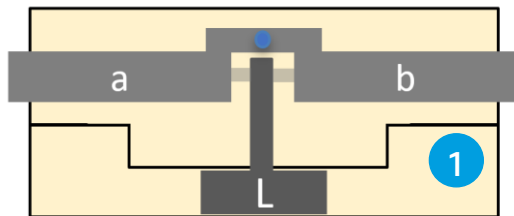


The same spring cartridges can be used for the sizes 031 and 040.
From size 100 to 200 there are two air cartridges per size.

Screwing surfaces Spring- / air cartridge

Spring- and air cartridges can only be mounted on side ① and side ②

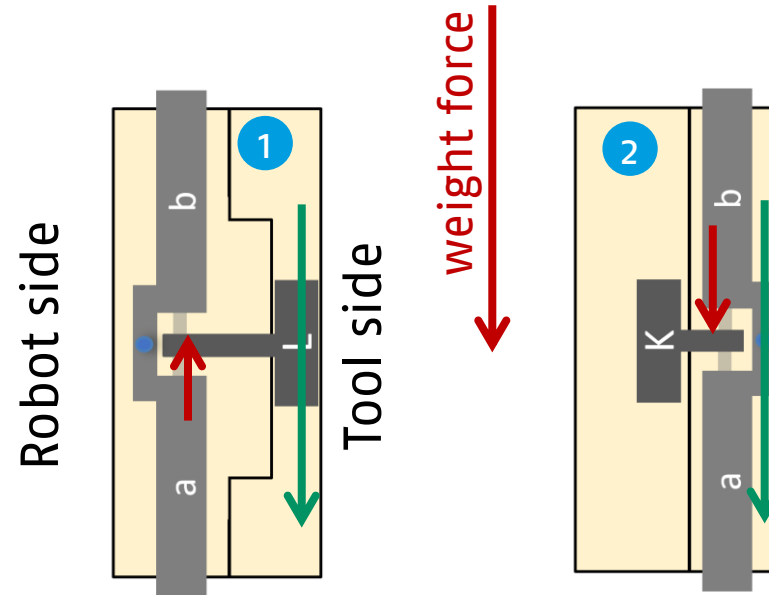
- ① Tool flange side: only the **long** bracket (L) can be mounted
- ② Robot flange side: only the **short** bracket (K) can be used here
 - A maximum of four spring or air cartridges can be mounted on an AGM unit
 - A maximum of two (a+b) cartridges can be fitted per side
 - Also, only one cartridge possible (e.g. a)



Screwing surfaces Spring- / air cartridge

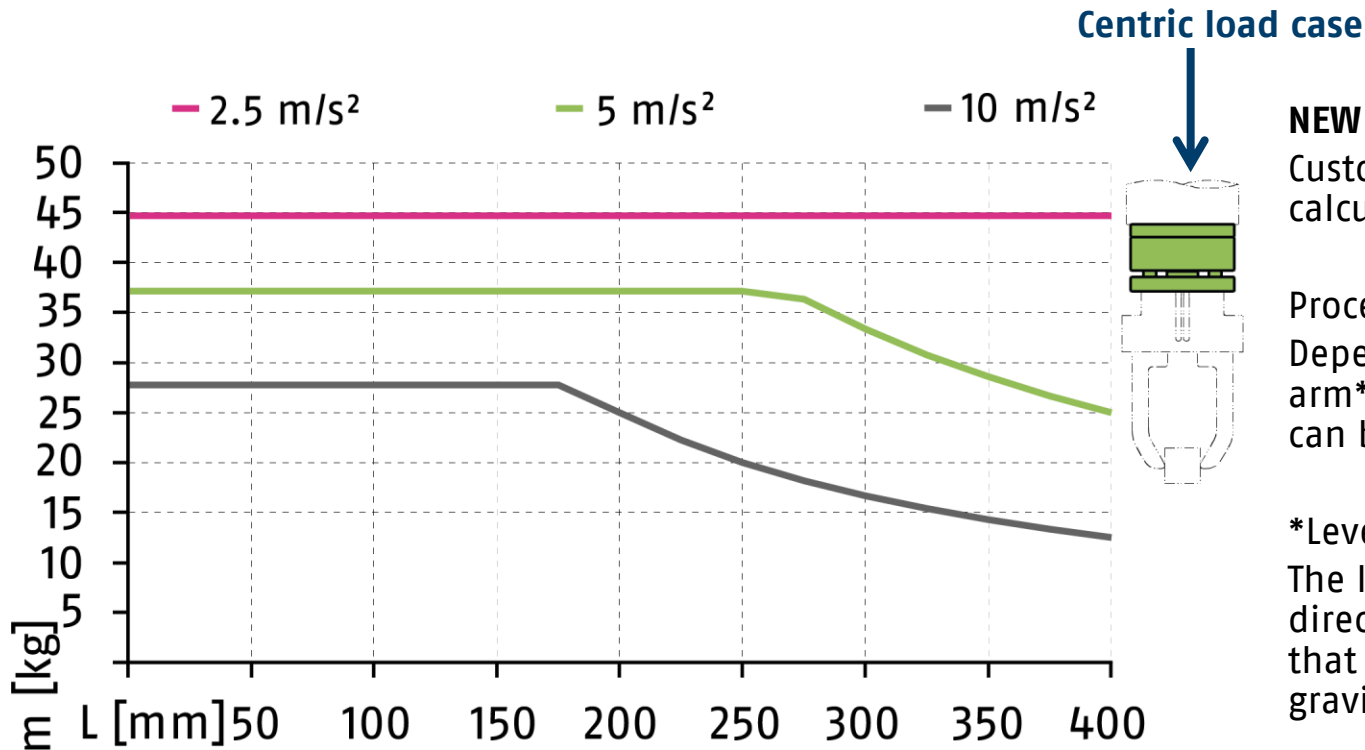
Which cartridge is required for weight compensation?

- 1 Tool flange side: Cartridge "a" is required here
- 2 Robot flange side: Cartridge "b" is needed



When unlocking the AGM, the tool side drops down according to the **weight force** (green arrow)

Load diagrams – Description

**NEW illustration:**

Customer can quickly find a suitable size without detailed calculation of maximum moments and forces.

Procedure:

Depending on the additional robot acceleration and the lever arm*, the maximum payload that can be attached to the AGM can be determined.

***Lever arm:**

The lever arm shown is the center of gravity distance in the Z direction (extension of the last robot axis). This diagram assumes that the load is mounted centrally and that the center of gravity of the load is not shifted in the X and Y directions.

! As soon as an off-center center of gravity load is present: calculate M_{xyz} dynamically and compare it with the dynamic moment values given in the catalog

Load diagrams – selection

Examples AGM-Z o8o

Details:

Lever arm in Z-direction: 300 mm

robot acceleration: $5 \frac{m}{s^2}$

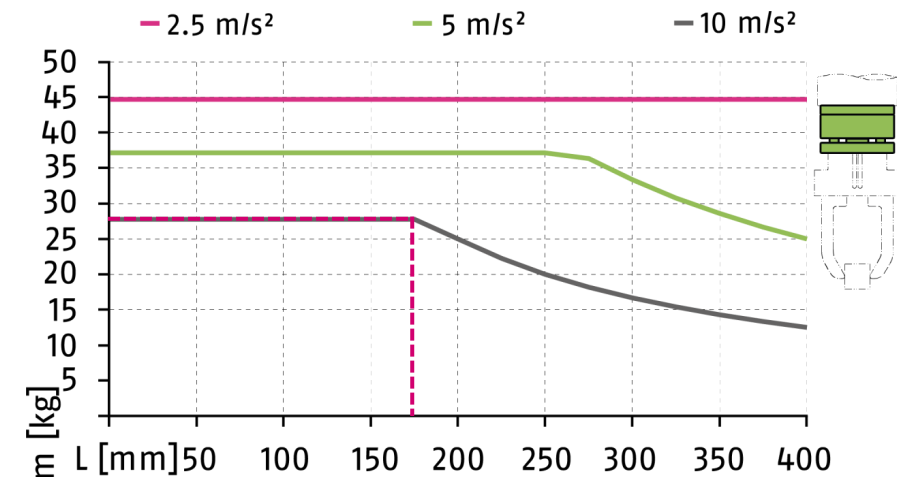
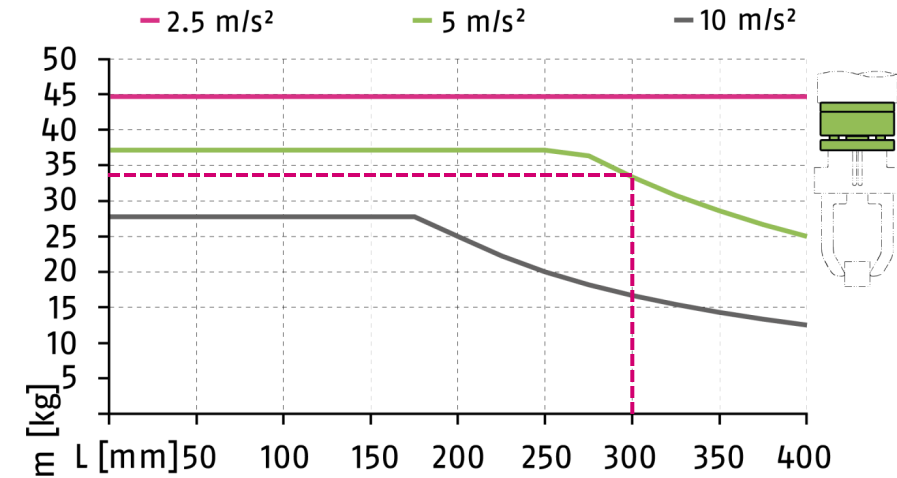
Result: **34 kg**

Details:

Lever arm in Z-direction: 175 mm

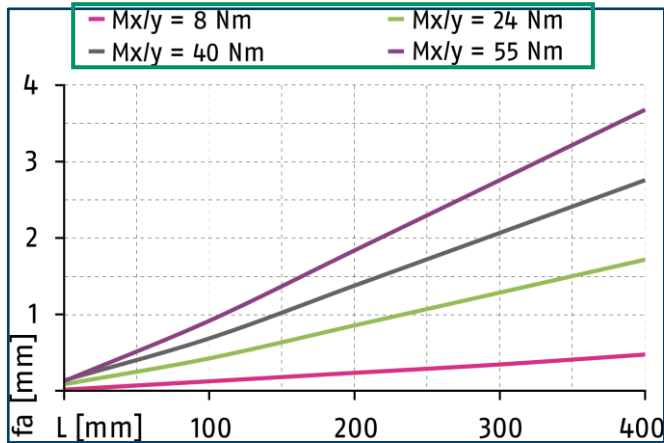
robot acceleration: $10 \frac{m}{s^2}$

Result: **27 kg**



Deflection diagrams – Horizontal setup

AGM-Z o8o **NEW**



NEW illustration:

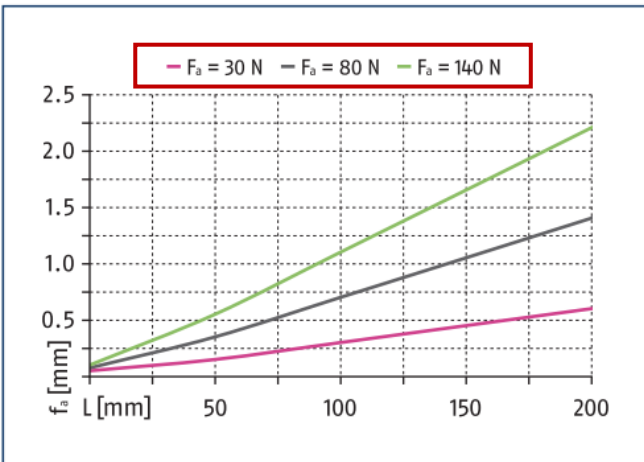
The customer can use the new diagram and the **torque/loads ($M_{x/y}$)** to calculate the correct force application point depending on the lever arm (L) (reverse calculation: $M = F * L$). This allows the customer to better evaluate how many millimeters the compensation unit deflects or tilts in their application in an unpressurized state with the respective attachment mass (maximum payload).

*Lever arm:

The lever arm shown is the center of gravity distance in the Z direction (extension of the last robot axis). This diagram assumes that the load is mounted centrally and that the center of gravity of the load is not shifted in the X and Y directions.

* Attachment mass: Is the load that is attached to the compensation unit (from the tool flange) (weight of the gripping unit + workpiece weight)

AGE-Z 2 o8o **OLD**



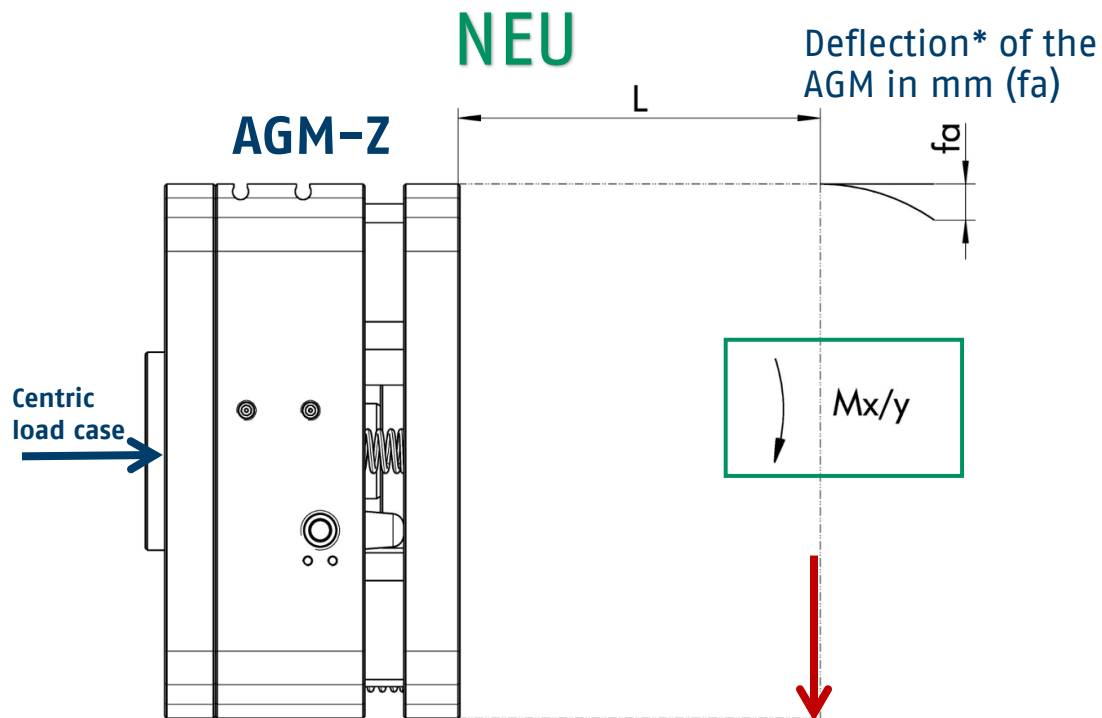
PREVIOUSLY:

In the previous diagram, the tilting of the unit (f_a) is shown as a function of the **acting force (F_a)** and the lever arm (L). However, the acting force always refers to the center of gravity of the attached mass (with the attached mass) and not to the actual force application point!

Drawing for deflection diagram

NEW illustration:

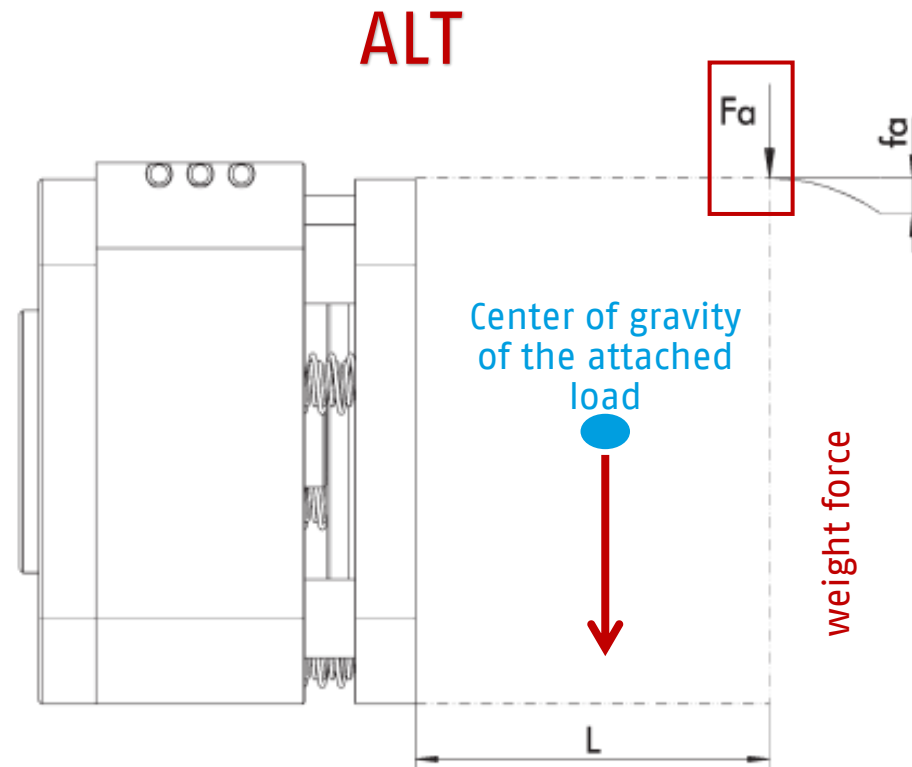
Torque specification ($M_{x/y}$) to determine the correct force application point and thus the deflection (f_a) on the face of the workpiece.



*Deflection= how many mm the AGM-Z with attached load deflects or deforms

Previous illustration:

Effective force (F_a) The effective force always referred to the center of gravity of the attached load (center of the mounted load) and not to the actual force application point!



Deflection diagrams

Examples AGM-Z 160L

Details:

Lever arm in Z-direction: 400 mm

Moment acting on attached load: 300 Nm

Calculation method::

$$300 \text{ Nm} \div 0,4 \text{ m} = 750 \text{ N}$$

$$750 : 10 (9,81 \text{ Gravitational force}) = \mathbf{75\text{kg}}$$

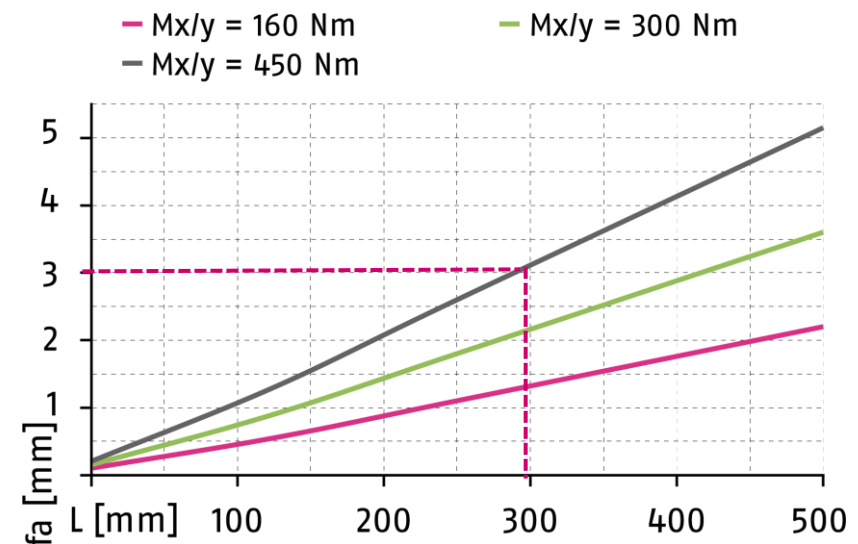
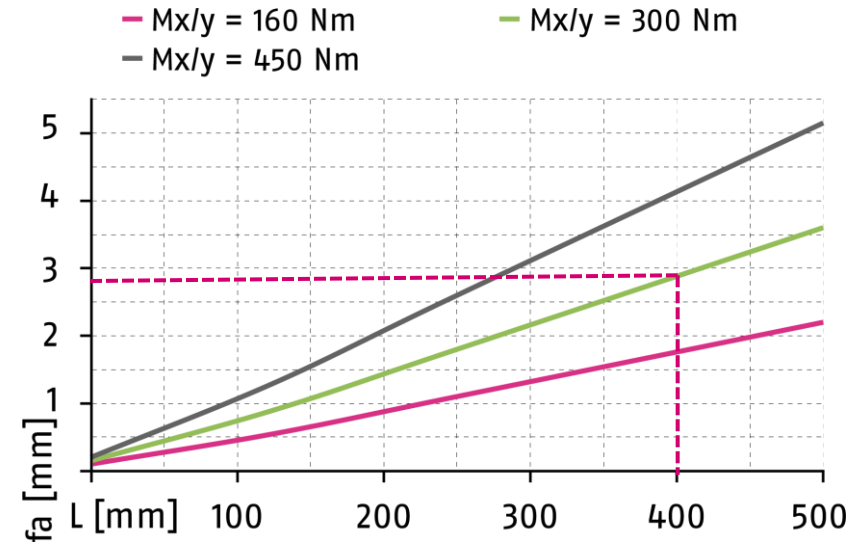
For 300 Nm and a lever arm of 400 mm, the maximum load is 75 kg.
In the unpressurized state, the AGM deflects by 2.7 mm with the attachment mass (tilts by 2.7 mm)

Details:

Lever arm in Z-direction: 300 mm

Moment acting on attached load: 450 Nm

Result: 3 mm



Competitive comparison Compensation

NEW :

- An Excel file for any competition comparisons (e.g., at the size level) is available for download in the Sales Toolbox under Internal Documentation.
- In the next chapter, you will find a competition comparison at the load capacity level.

 Documentation for internal use only (1)

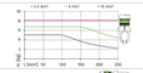
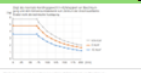
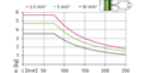
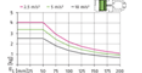
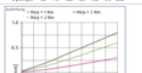
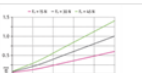
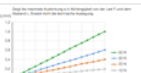


Technical Product Guide AGM



Competitive comparison COMPENSATE



	Reference Product	Comparable Product 1	Comparable Product 2	Comparable Product 3	Comparable Product 4	
Brand						
Unit	AGM-Z 040	AGM-Z 031	AGE-Z 2 050	ZR 1040-A	ZN-50	Please select the units from the drop-down menu
Image						
Max. vertical handling weight	8 kg	4 kg	5 kg	6 kg	1 kg	Performance
Max. horizontal handling weight, centered	6 kg	4 kg	-	6 kg	-	worse compared to reference product
Vertical load diagram			-		-	same as reference product
Horizontal load diagram			-		-	better compared to reference product
Deflection diagram					-	
Static analysis						
Max. moment Mx (locked/pressurized)	14 Nm	12 Nm	10 Nm	-	-	
Max. moment My	14 Nm	12 Nm	10 Nm	-	-	
Max. moment Mz (at room temperature Mr)	30 Nm	20 Nm	20 Nm	20 Nm	-	
Superimposed moment Mxy (at room temperature)	30 Nm	17 Nm	14 Nm	10 Nm	-	
Max. Pull (tensile) force Fz	200 N	100 N	200 N	250 N	-	
Max. Pressure (compressive) force Fd	450 N	200 N	800 N	250 N	-	
Max. shear force Fq	200 N	100 N	-	-	-	
Mass moment of inertia around z-axis Jz	-	-	-	4 kgcm ²	-	
Compensation						
Max. compensation ±z	4 mm	4 mm	8 mm	8 mm	8 mm	
Repeat accuracy	0,02 mm	0,02 mm	0,02 mm	0,01 mm	0,03 mm	
Locking & position retention						
Locking force retracted (at 6 bar)	390 N	170 N	300 N	250 N	-	
Locking force extended (at 6 bar)	490 N	270 N	500 N	-	-	
Min. spring force	24 N	28 N	20 N	22 N	9 N	
Max. spring force	45 N	50 N	40 N	29 N	23 N	

Competitive comparison Z-compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-Z 040	SCHUNK AGM-Z 031	SCHUNK AGE-Z 2 050	ZIMMER ZR1040	IPR ZN-50	IPR ZN-80	IPR ZN-100
<8 kg	Max. Moment / Payload	Mx/Mz: 14/30 Nm, 8 kg	Mx/Mz: 12/20 Nm, 4 kg	Mx/Mz: 10/20 Nm, 5 kg	Mx/Mz: 10/20 Nm, 5 kg	No info available, 1 kg	No info available, 2 kg	No info available, 3 kg
	Compensation / Direction	4 mm in Z	4 mm in Z	8 mm in Z	8 mm in Z	8 mm in Z	8 mm in Z	8 mm in Z
	Min./Max. Spring force	24/45 N	28/50N	20/40 N 40/60 N	22/29 N	9/23 N	24/83 N	60/124 N
	Permissible joining distance	high, Ball bearing guide		low, Ball guides	middle, Linear guides	low, Ball guides	low, Ball guides	low, Ball guides
	Mounting pattern ISO 9409	ISO 40	ISO 31,5	ISO 050		No info available	No info available	No info available
	Interference contour / weight / Combinatorics	75 X7 5 x 45 0,7 kg XYZ/WZ	65 x 65 x 42 mm 0,5 kg XYZ/WZ	64 x 64 x 53 mm 0,55 kg via ISO	Ø65.5 x 57,8 mm 0,52 kg via ISO	No info available 0,2 kg	No info available 0,55 kg	No info available 1,05 kg
	Lifetime / number of cycles	6Mio Operating cycles		1,5 Mio. maintenance	max. 1 Mio. maintenance-free	No info available	No info available	No info available
	Repeat accuracy	0,02mm			±0,01 mm	0,03 mm	0,03 mm	0,03 mm
	Locking monitoring	magnetic & inductive						
	Position monitoring	magnetic & inductive		magnetic (Switching points)	magnetic (Switching points)	Inductive	Inductive	Inductive
	IP protection class	50						

Red = bad performance compared to reference product

Orange = Performance equally

Green = better performance compared to reference product

Only for internal use

Competitive comparison Z-compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-Z 063	SCHUNK AGM-Z 050	SCHUNK AGE-Z 2 063	SCHUNK AGE-Z 2 080	SCHUNK AGE-S-Z 100	SCHUNK AGE-S-Z 125	Zimmer ZR1050	Zimmer ZR1063	IPR ZN-125	IPR ZN-160
<32 kg	Max. Moment / Payload	Mx/Mz: 55/100 Nm, 24 kg	Mx/Mz: 35/60 Nm, 9 12 kg	Mx/Mz: 20/50 Nm 9 kg	Mx/Mz: 30/80 Nm, 12 kg	Mx/Mz: 30/30 Nm, 9 kg	Mx/Mz: 55/55 Nm, 18 kg	Mx/Mz: 20/40 Nm, 11 kg	Mx/Mz: 60/120 Nm, 17 kg	No info available, 8 kg	No info available, 20 kg
	Compensation / Direction	8 mm in Z	6 mm in Z	8 mm in Z	10 mm in Z	10 mm in Z	12 mm in Z	8 mm in Z	10 mm in Z	12 mm in Z	12 mm in Z
	Min./Max. Spring force	80/125 N	29/65 N	40/60 N 60/100 N	70/90 N 100/120 N	Min. 240 N	Min. 360 N	25/37 N	50/62 N	15/40 N	239/357 N
	Permissible joining distance	high, Ball bearing guide		low, Ball guides	low, Ball guides	middle, Linear guides	middle, Linear guides	middle, Linear guides	middle, Linear guides	Ball guides	Ball guides
	Mounting pattern ISO 9409	ISO 63	ISO 50	ISO 63	ISO 80	ISO 100	ISO 125	ISO 50	ISO 63	No info available	No info available
	Interference contour / weight / Combinatorics	110 x 110 x 60 mm 1,9kg XYZ/WZ	85 x 85 x 50,5 mm 1 kg XYZ/WZ	80 x 80 x 59,5 mm 0,8 kg via ISO	105 x 105 x 65 mm 1,7 kg via ISO	142 x 125 x 79 mm 3,2 kg via ISO	175 x 160 x 96,5 mm 6 kg via ISO	Ø77,5 x 60,3 mm 0,67 kg via ISO	Ø96,5 x 61 mm 1,1 kg via ISO	No info available 1,9 kg	No info available 3,6 kg
	Lifetime / number of cycles	5,25 Mio. Operating cycles		1,5Mio maintenance	1,5Mio maintenance	No info available	No info available	max. 1 Mio maintenance-free	max. 1 Mio maintenance-free	No info available	No info available
	Repeat accuracy	0,02 mm				0,1 mm	0,1 mm	±0,01 mm	±0,01 mm	0,03 mm	0,03 mm
	Locking monitoring	magnetic & inductive		magnetic	magnetic	magnetic	magnetic	no locking	no locking		
	Position monitoring	magnetic & inductive		magnetic (Switching points)	magnetic (Switching points)			magnetic (Switching points)	magnetic (Switching points)	Inductive	Inductive
	IP protection class	50									

Red = bad performance compared to reference product

Orange = Performance equally

Green = better performance compared to reference product

Only for internal use

Competitive comparison Z-compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-Z 100	SCHUNK AGM-Z 080	SCHUNK AGE-S-Z 160	Zimmer ZR1080	Zimmer ZR1100	Zimmer ZR1125	IPR ZN200
≤85 kg	Max. Moment / Payload	Mx/Mz: 200/350 Nm, 85 kg	Mx/Mz: 110/250 Nm, 45 kg	Mx/Mz: 200/100Nm, 60 kg	Mx/Mz: 100/200 Nm, 34 kg	Mx/Mz: 125/250 Nm, 62 kg	Mx/Mz: 200/400 Nm, 95 kg	No info available, 40 kg
	Compensation / Direction	15 mm in Z	10 mm in Z	14 mm in Z	10 mm in Z	15 mm in Z	15 mm in Z	12 mm in Z
	Min./Max. Spring force	230/700 N	200/300 N	Min. 640 N	60/70 N	75/97 N	125 / 160 N	203 / 457 N
	Permissible joining distance	high, Ball bearing guide	middle, Linear guides	middle, Linear guides	middle, Linear guides	middle, Linear guides	middle, Linear guides	Ball guides
	Mounting pattern ISO 9409	ISO 100	ISO 80	ISO 160	ISO 080	ISO 100	ISO 125	No info available
	Interference contour / weight / Combinatorics	165 x 165 x 88,4 mm 6 kg XYZ/WZ	135 x 135 x 76 mm 3,6 kg XYZ/WZ	215 x 200 x 123 mm 11,8 kg via ISO	Ø113 x 75,9 mm 1,8 kg via ISO	Ø140 x 98,9 mm 3,1 kg via ISO	Ø171 x 107,1 mm 5,1 kg via ISO	Ø198 x 80 mm 6 kg No info available
	Lifetime / number of cycles	4,5 Mio. Operating cycles				max. 1 Mio maintenance-free	max. 1 Mio maintenance-free	No info available
	Repeat accuracy	0,02mm		0,1 mm	0,01 mm	±0,01mm	±0,01 mm	0,03 mm
	Locking monitoring	magnetic & inductive		magnetic		no locking	no locking	
	Position monitoring	magnetic & inductive				magnetic (Switching points)	magnetic (Switching points)	Inductive
	IP protection class	50				40	40	

Red = bad performance compared to reference product

Orange = Performance equally

Green = better performance compared to reference product

Only for internal use

Competitive comparison Z-compensation

Data for AGM-Z 160 refer to specifications.
These are not yet final catalog values!
 Changes and adjustments in development are possible



Reference product

Comparison product

Payload	Feature	SCHUNK AGM-Z 160	SCHUNK AGM-Z 125	SCHUNK AGE-S-Z 200	Zimmer ZR1160	Zimmer ZR1200	IPR ZN-250
≤250 kg	Max. Moment / Payload	Mx/Mz: 550/750 Nm, 230 kg	Mx/Mz: 320/500 Nm, 135 kg	Mx/Mz: 500/250 Nm, 160 kg	Mx/Mz: 300/600 Nm, 100 kg	Mx/Mz: 600/1200 Nm, 185 kg	No info available, 160 kg
	Compensation / Direction	15 mm in Z	15 mm in Z	14 mm in Z	20 mm in Z	20 mm in Z	12 mm in Z
	Min./Max. Spring force	720/1100 N	680/1000 N	Min. 1100 N	150/220 N	250/320 N	318/476 N
	Permissible joining distance	high, Ball bearing guide		middle, Linear guides	middle, , Linear guides	middle, Linear guides	Ball guides
	Mounting pattern ISO 9409	ISO 160	ISO 125	ISO 200	ISO 160	ISO 200	No info available
	Interference contour / weight / Combinatorics	260 x 260 x 107 mm 19,3 kg XYZ/WZ	205 x 205 x 95 mm 9,7 kg XYZ/WZ	270 x 250 x 146 mm 23,5 kg via ISO	Ø211 x 119,8 mm 8,9 kg via ISO	Ø257 x 125,4 mm 13 kg via ISO	Ø249 x 80 mm 12,5 kg No info available
	Lifetime / number of cycles	3,75 Mio. Operating cycles			max. 1 Mio maintenance-free	max. 1 Mio maintenance-free	No info available
	Repeat accuracy	0,02 mm		0,1 mm	±0,01 mm	±0,01 mm	0,03 mm
	Locking monitoring	magnetic & inductive		magnetic	no locking	no locking	
	Position monitoring	magnetic & inductive			magnetic (Switching points)	magnetic (Switching points)	Inductive
	IP protection class	50			40	40	

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Competitive comparison Z-compensation

Payload	Feature	Reference product	Comparison product	
		SCHUNK AGM-Z 160L	SCHUNK AGM-Z 200	IPR ZN-300
>250kg	Max. Moment / Payload	Mx/Mz: 1000/1100 Nm, 275 kg	Mx/Mz: 1600/1800 Nm, 500 kg	No info available, 300 kg
	Compensation / Direction	20 mm in Z	20 mm in Z	12 mm in Z
	Min./Max. Spring force	900/1400 N	1200/1550 N	478/714 N
	Permissible joining distance	high, Ball bearing guide		Ball guides
	Mounting pattern ISO 9409	ISO 160	ISO 200	No info available
	Interference contour / weight / Combinatorics	285 x 285 x 133,4 mm 25,2 kg XYZ/WZ	320 x 320 x 160 mm 37,8 kg XYZ/WZ	Ø298 mm 18,3 kg via ISO
	Lifetime / number of cycles	3,0 Mio. Operating cycles		No info available
	Repeat accuracy	0,02 mm		0,03 mm
	Locking monitoring	magnetic & inductive		no
	Position monitoring	magnetic & inductive		Inductive
	IP protection class	50		

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Competitive comparison XY-compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-XY 040	SCHUNK AGM-XY 031	SCHUNK AGE-XY 050	SCHUNK AGE-F 031	SCHUNK AGE-F 040	ZIMMER XYR1040	Zimmer FGR-1040	IPR KA 65	IPR KA 80
<8 kg	Max. Moment / Payload	Mx/Mz: 12/12 Nm, 10 kg	Mx/Mz: 6/6 Nm, 5 kg	Mx/Mz: 16/3,5 Nm, 6 kg	Mx/Mz: 3,5/6 Nm, 1,5 kg	Mx/Mz: 4,4/8 Nm, 4 kg	Mx/Mz: 10/10 Nm, 7 kg	Mx/Mz: 10/5 Nm, 7 kg	10 Nm, 4 kg	20Nm, 7 kg
	Compensation / Direction	±3 mm in XY	±2 mm in XY	±2,5 mm in XY 12° rotation	±1,5 mm in XY	±2 mm in XY	±3 mm in XY	±2 mm in XY 12° rotation	±1,5 mm in XY	±2 mm in XY
	Permissible joining distance			low, Sliding guide				low, Sliding guide	Ball guides	Ball guides
	Mounting pattern ISO 9409	ISO 40	ISO 31,5	ISO 50	ISO via Adapter plate Gripper specific	ISO via Adapter plate Gripper specific	ISO 040	ISO 040		
	Interference contour / weight / Combinatorics	75 x 75 x 46 mm 0,76 kg XYZ	65 x 65 x 39 mm 0,5 kg XYZ	Ø65 x 48 mm 0,47 kg via ISO	Ø45 x 27 mm 0,12 kg none Kombi	Ø55 x 32 mm 0,23 kg none	65 x 65 x 42 mm 0,5 kg via ISO	Ø79 x 52 mm 0,84 kg via ISO	Ø65 mm 0,35 kg	Ø79 x 42 mm 0,55 kg
	Lifetime / number of cycles	6 Mio. Operating cycles	6 Mio. Operating cycles							
	Repeat accuracy	0,03 mm		0,1 mm	±0,01 mm	±0,01 mm	0,02 mm		0,02 mm	0,02 mm
	Locking monitoring	magnetic			no locking	no locking				
	Position monitoring	MMS-A / MMS-IO-Link		magnetic (Switching points)	magnetic (Switching points)	magnetic (Switching points)				
	Stroke limitation	yes								
	position memory	yes								
	Weight compensation	optional		none	via Integrated springs	via Integrated springs	only via Integrated Elastomers (friction)	none	none	none
	IP protection class	20					40			

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Competitive comparison XY-compensation

Reference product

Comparison product

Payload-bereich	Feature	SCHUNK AGM-XY 063	SCHUNK AGM-XY 050	SCHUNK AGE-XY 063	SCHUNK AGE-XY 080	SCHUNK AGE-F 063	SCHUNK AGE-F 080	SCHUNK AGE-S-XY 100	SCHUNK AGE-S-XY 125	Zimmer XYR1063	IPR KA 100	IPR KA 125	IPR KA 160
≤32 kg	Max. Moment / Payload	Mx/Mz: 55/45 Nm 32,5 kg	Mx/Mz: 25/20 Nm, 18 kg	Mx/Mz: 26/6 Nm 9 kg	30/9 Nm 15 kg	10/21 Nm 12,5 kg	50/150 Nm 32 kg	Mx/Mz: 30/30 Nm 9 kg	55/55 Nm 18 kg	60/60 Nm 30kg	30 /30 Nm 10 kg	70/70 Nm 16 kg	110/110 Nm 30 kg
	Compensation / Direction	±5 mm in XY	±4 mm in XY	±3 mm in XY 12° um Z	±4 mm in XY 16° um Z	±4 mm in XY	±5 mm in XY	±4 mm in XY	±7 mm in XY	±4,5 mm in XY	±2 mm in XY	±3 mm in XY	±4 mm in XY
	Permissible joining distance	hoch, Linearführung	high, Linear guides	low, Sliding guide	low, Sliding guide						Linear roller guide	Linear roller guide	Linear roller guide
	Mounting pattern ISO 9409	ISO 63	ISO 50	ISO 63		ISO via Adapter plate Gripper specific	ISO via Adapter plate Gripper specific	ISO 100	ISO 125	ISO 63	ISO 50		
	Interference contour / weight / Combinatorics	110 x 110 x 55 mm 1,8 kg XYZ	85x85x47,5- 0,99kg, XYZ	Ø80 x 56 mm 0,85 kg via ISO	Ø100 x 62 mm 1,5 kg via ISO	Ø85 x 47 mm 0,78 kg	Ø135 x 75 mm 3,13 kg	142 x 125 x 59 mm 2,6 kg via ISO	175 x 160 x 76,5 mm 5,3 kg via ISO	105 x 105 x 55,8 mm 1,7kg via ISO	Ø99 x 42 mm 1,2kg	Ø125 x 50 mm 2,3 kg	Ø159 x 50 mm 3,5 kg
	Lifetime / number of cycles	5,25 Mio. Operating cycles	5,25 Mio. Operating cycles										
	Repeat accuracy	0,03mm	0,03mm	0,1 mm	0,1 mm	0,01 mm	0,01 mm	0,1 mm	0,1 mm	0,02 mm	0,02 mm	0,02 mm	0,02 mm
	Locking monitoring	magnetic	magnetic	magnetic	magnetic			magnetic	magnetic	magnetic			
	Position monitoring	MMS-A / MMS-I0-Link	MMS-A / MMS-I0-Link	magnetic (Switching points)	magnetic (Switching points)	magnetic (Switching points)	magnetic (Switching points)						
	Stroke limitation	yes	yes										
	position memory	yes	yes										
	Weight compensation	optional	optional	none	none	via Integrated springs	via Integrated springs	none	none	only via Integrated Elastomers (friction)	none	none	none
	IP protection class	20								40			

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Competitive comparison XY-compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-XY 080	SCHUNK AGE-S-XY 125	SCHUNK AGE-S-XY 160	Zimmer XYR1080	IPR KA 200	IPR KA 250
≤85 kg	Max. Moment / Payload	Mx/Mz: 110/90 Nm, 68 kg	Mx/Mz: 55/55 Nm, 18 kg	Mx/Mz: 200/100 Nm, 60 kg	100/100 Nm 62 kg	Mx: 150/150 Nm, 40 kg	Mx: 250 Nm, 80 kg
	Compensation / Direction	±7 mm in XY	±7 mm in XY	±10 mm in XY	±5,5 mm in XY	±12 mm in XY	±14 mm in XY
	Permissible joining distance	high, Linear guides				Linear roller guide	Linear roller guide
	Mounting pattern ISO 9409	ISO 80	ISO 125	ISO 160	ISO 80		
	Interference contour / weight / Combinatorics	135 x 135 x 61 mm 3,6 kg XYZ	175 x 160 x 76,5 mm 5,3 kg via ISO	215 x 200 x 97 mm 10,5 kg via ISO	130 x 130 x 57,8 mm 2,7 kg via ISO	Ø198 x 65 mm 8,5 kg	Ø249 x 72 mm 17 kg
	Lifetime / number of cycles	4,5 Mio. Operating cycles					
	Repeat accuracy	0,03 mm	0,1 mm	0,1 mm	0,02 mm	0,02 mm	0,02 mm
	Locking monitoring	magnetic			magnetic		
	Position monitoring	MMS-A / MMS-IO-Link					
	Stroke limitation	yes					
	position memory	yes					
	Weight compensation	optional	none	none	only via Integrated Elastomers (friction)	none	none
	IP protection class	20					

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Competitive comparison XY-compensation

All Data for AGM-XY 160 refer to specifications.
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 Changes and adjustments in development are possible



Reference product

Comparison product

Payload	Feature	SCHUNK AGM-XY 160	SCHUNK AGM-XY 100	SCHUNK AGM-XY 125	SCHUNK AGE-S-XY 200	Zimmer XYR1100	Zimmer XYR1125	Zimmer XYR1160	IPR KA 300 light
≤250 kg	Max. Moment / Payload	Mx/Mz: 550/420 Nm, 250 kg	Mx/Mz: 200 / 160 Nm, 130 kg	Mx/Mz: 320/250 Nm, 190 kg	Mx/Mz: 500/250 Nm, 160 kg	Mx/Mz: 125/125 Nm, 118 kg	Mx/Mz: 200/200 Nm, 180 kg	300/300 Nm, 225 kg	300/300 Nm / 180 kg
	Compensation / Direction	±12 mm in XY	±9 mm in XY	±10 mm in XY		±6 mm in XY	±8 mm in XY	±10 mm in XY	±25 mm in XY
	Permissible joining distance	high, Linear guides							
	Mounting pattern ISO 9409	ISO 160	ISO 100	ISO 125	ISO 200	ISO 100	ISO 125	ISO 160	
	Interference contour / weight / Combinatorics	260 x 260 x 101 mm 21,8 kg via ISO	165 x 165 x 70 mm 5,8 kg XYZ	205 x 205 x 85 mm 10,9 kg via ISO	270 x 250 x 118 mm 21 kg via ISO	164,7 x 164,7 x 66,8 mm 4,6 kg via ISO	203 x 203 x 73,8 mm 7,9 kg via ISO	235 x 235 x 75,8 mm 10 kg via ISO	300 x 300 x 96 mm 38 kg
	Lifetime / number of cycles	1,3 Mio. Operating cycles	4,5 Mio. Operating cycles						
	Repeat accuracy	0,05 mm			0,1 mm	0,02 mm	0,02 mm	0,02 mm	0,02 mm
	Locking monitoring	magnetic							
	Position monitoring	MMS-A / MMS-I0-Link							
	Stroke limitation	yes							
	position memory	yes							
	Weight compensation	optional			none	only via Integrated Elastomers (friction)	only via Integrated Elastomers (friction)	only via Integrated Elastomers (friction)	none
	IP protection class								

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Competitive comparison XY- compensation

Reference product

Comparison product

Payload	Feature	SCHUNK AGM-XY 160L	SCHUNK AGM-XY 200	Zimmer XYR1200	ZIMMER XYR9050	IPR KA 300	IPR KA 300S
>250kg	Max. Moment / Payload	Mx/Mz: 930/700 Nm 350 kg	Mx/Mz: 1600/1100 Nm 500 kg	600/600 Nm, 350 kg	Mx/Mz: 1400/1400 Nm 450 kg	Mx/Mz: 300/300 Nm 250kg	300Nm / 800kg
	Compensation / Direction	±15 mm in XY	±15 mm in XY	±12,5 mm in XY	±15 mm in XY	±25 mm in XY	±25mm in XY
	Permissible joining distance	high, da Linear guides					
	Mounting pattern ISO 9409	ISO 160	ISO 200	ISO 200	ISO 200		
	Interference contour / weight / Combinatorics	285 x 285 x 122 mm 31,7 kg via ISO	320 x 320 x 135 mm 41,8 kg via ISO	275 x 275 x 90 mm 18 kg via ISO	350 x 350 x 125 mm 40 kg	300 x 300 x 96 mm 45 kg	300 x 300 x 96 mm 52 kg
	Lifetime / number of cycles	1,3 Mio. Operating cycles	1 Mio		max. 1 Mio maintenance-free		
	Repeat accuracy	0,05 mm	0,05 mm	0,02 mm	0,02mm	0,05mm	0,05mm
	Locking monitoring	magnetic			magnetic & inductive		
	Position monitoring	MMS-A / MMS-IO-Link			magnetic & inductive		
	Stroke limitation	yes					
	position memory	yes					
	Weight compensation	optional		only via Integrated Elastomers (friction)		none	none
	IP protection class	20			IP40		

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Competitive comparison XYZ-compensation

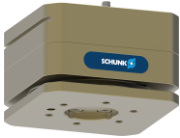
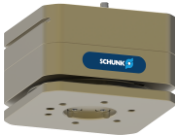
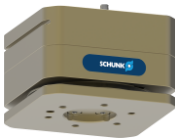
								SCHUNK vs. ZIMMER	
size	AGM-Z	AGM-XY	AGM-XYZ	XYR + ZR	XYR	ZR	size	Overall height Savings in [mm]	Overall height Savings in [%]
031	65 ² x 42 mm 0,5 kg	65 ² x 39 mm 0,5 kg	65 ² x 72 mm 0,9 kg						
040	75 ² x 45 mm 0,7 kg	75 ² x 46 mm 0,77 kg	75 ² x 81,3 mm 1,4 kg	65,5 x 102,3 mm 1,2 kg	65 ² x 42 mm 0,5 kg	Ø65.5 x 60,3 mm 0,52 kg	1040	21	25,8
050	85 ² x 50,5 mm 1 kg	85 ² x 48,5 mm 1,0 kg	85 ² x 89,5 mm 1,9 kg	77.5 x 103,3 mm 1,33 kg	75 ² x 43 mm 0,66 kg	Ø77.5 x 60,3 mm 0,67 kg	1050	13,8	25,4
063	110 ² x 60 mm 1,9 kg	110 ² x 55 mm 2,0 kg	110 ² x 103 mm 3,7 kg	105 x 116,8 mm 2,8 kg	105 x 55,8 mm 1,7 kg	Ø96,5 x 61 mm 1,1 kg	1063	13,8	13,4
080	135 ² x 76 mm 3,6 kg	135 ² x 61 mm 3,6 kg	135 ² x 122,5 mm 6,7 kg	130 x 133,7 mm 4,5 kg	130 x 57,8 mm 2,7 kg	Ø108 x 75,9 mm 1,8 kg	1080	11,2	9,1
100	165 ² x 88,4 mm 6 kg	165 ² x 70 mm 5,9 kg	165 ² x 141 mm 11 kg	164,7 x 165,7 mm 7,7 kg	164,7 ² x 66,8 mm 4,6 kg	Ø140 x 98,9 mm 3,1 kg	1100	24,7	17,5
				203 x 181 mm 13,6 kg	203 ² x 73,9 mm 7,9 kg	Ø171 x 107,1 mm 5,1 kg	1125	18,5	11,4
125	205 ² x 95 mm 9,7 kg	205 ² x 85 mm 10,9 kg	205 ² x 162,5 mm 20 kg	235 x 202,7 mm 18,9 kg	235 ² x 75,8 mm 10 kg	Ø211 x 126,9 mm 8,9 kg	1160	15,5	8,3
160	260 ² x 107 mm 19,32 kg *	260 ² x 101 mm 21,8 kg *	260 ² x 187,2 mm 36,9 kg *	275 x 220,9 mm 31 kg	275 ² x 90 mm 18 kg	Ø257 x 130,9 mm 13 kg	1200	-9,7	- 4,2
160L	285 ² x 133,4 mm 25,2 kg	285 ² x 122 mm 31,7 kg	285 ² x 230,6 mm 53 kg						
200	320 ² x 160 mm 40 kg*	320 ² x 135 mm 40 kg *	320 ² x 283,5 mm 65,5 kg *						

* Technical data may change. sizes are in the design phase.

Competitive comparison Angular-compensation

There are currently no comparable competing products

→ **SCHUNK unique selling point**

				
size	AGM-W	AGM-WZ	none	none
050			×	×
063			×	×
080			×	×

Technical questions

Do the units have to be locked during the robot travel/movement? Can the AGM be “driven”/operated without pressure? (AGM Z)

- Yes, we generally recommend locking the unit during movement (see assembly and operating manual).
If you want to use the unlocked (extended) unit (only possible with AGM-Z), the reduced torques and forces must be taken into account.

Which unit do I recommend if an application without pneumatics is required?

- An AGM-XY or XYZ with spring cartridge/s. If the force range of the spring cartridge/s is sufficient for the application, pneumatic control of the compensation unit is not required

Can the spring cartridges cover the functionality of the AGE-F?

- Yes, if the force range of the spring cartridge/s is sufficient for the application. However, units are not 1:1 interchangeable.

Can an AGM (Z, XY, W) with a reduced operating pressure be used?

- Yes, but the minimum operating pressure should not be undercut and it must be ensured that the mounting load can be centrally locked (adjust max. torque load if necessary).

Can the AGM-XY be combined with the AGM-W?

- Yes, the units must be placed on top of each other. There are no pre-assembled combination units XYW with Ident.-No.

Technical questions

Can the AGM-W also be used as Anti-collision and overload protection sensor?

- Not recommended, as the AGM-W does not meet the technical requirements for a collision / overload protection sensor.

Can the compensation force of the AGM-W be adjusted via the air pressure?

- Yes, via control piston (air connection B). Pressure range up to 6 bar. If both air connections: Locking piston (A) plus control piston (B) are pressurized simultaneously, the locking force centric increases.

Does the AGM-W have a position memory for angular compensation?

- No. The control piston is form-fit, the deflected position cannot be locked. There is no friction-locking mechanism as it is the case with AGM-XY (piston presses against friction lining).

How does the AGM-W behave in unpressurized/unlocked resting state purely hanging (vertical position)?

- For eccentric loading, the unit tilts to the side of the center of gravity (depending on the center of gravity).
By activating the control pistons, the unit can be realigned centrically.

Can dropping of the unit for pressure failure be avoided (machine safety)?

- Yes, for AGM-Z and AGM-XY a (SDVP) = pressure maintenance valve can be installed.
For AGM-W this is not possible as the piston is single-acting.

Will there also be an AGM with rotary compensation?

- On request, SCHUNK Engineering.

Technical questions

For the assembly of the combination units (AGM-XYZ and AGM-WZ), a longer tool is required to attach the unit to the robot side. How can SCHUNK help if the customer does not have a suitable tool?

- From size 160L, an Allen key is included in the scope of delivery.

Is it possible for the customer to retrofit a combination unit? Can our customer retrofit (assemble) this himself?

- Yes, by the customer placing the units one on top of the other. Precondition: same size with the same ISO mounting pattern. SCHUNK recommends sending in the units for this purpose. Also because of the tracking (DMC code etc).

What is the temperature resistance of the friction pad for the AGM-XY with position memory?

- Same maximum temperature specifications as the unit itself (see catalog).

Which complementary product from the AGM-XY standard series could replace the AGE-XY 90 (Customized)?

- Must be checked on a case-by-case basis

Does the AGM-Z have a stroke limitation or a position memory?

- No

Validations in the technical laboratory at SCHUNK Hausen

Dynamic long-term test

AGM is mounted stationary with the corresponding handling weight.
The attachment load is centric or eccentric depending on the application.
The unit is locked and unlocked.
Release and operating cycles between 1 million and 6 million depending on size.

Static continuous test (axis)

Units are accelerated centrically or eccentrically with the help of a linear axis in the locked state with attachment load, depending on the application. This results in additional acceleration forces acting on the unit.
Number of cycles: 1 million M_x/y (centric mounting mass) and 1 million M_z (eccentric mounting mass)

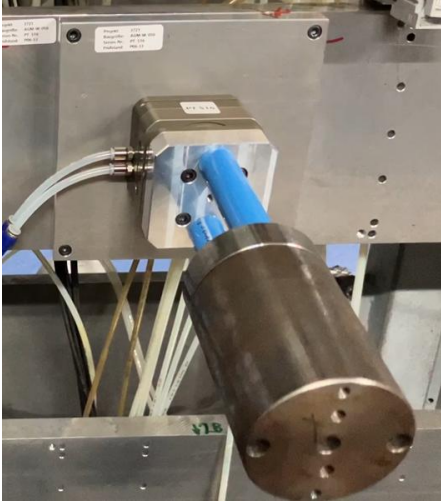
Maximum torque load test in ("Zwick-Röll" Machine)

Destruction test by increasing the torques with the following measurements:

1. Measurement: Pacification Load until deformation.
2. Measurement: Cyclic load. Repeated pressing (100x) with 80% load force from the 1st measurement

Validations in the technical laboratory at SCHUNK Hausen

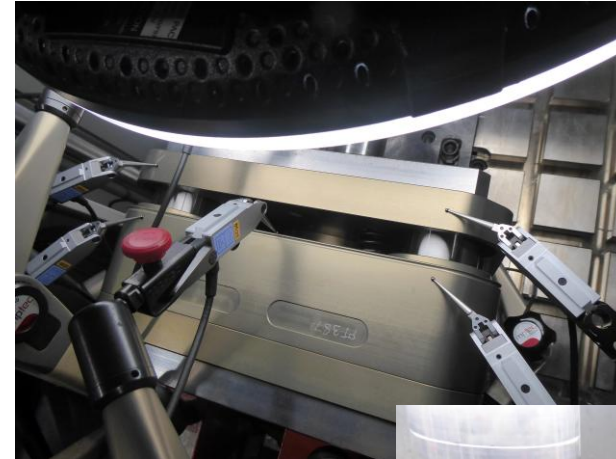
Dynamic long-term test



Static continuous test (axis)



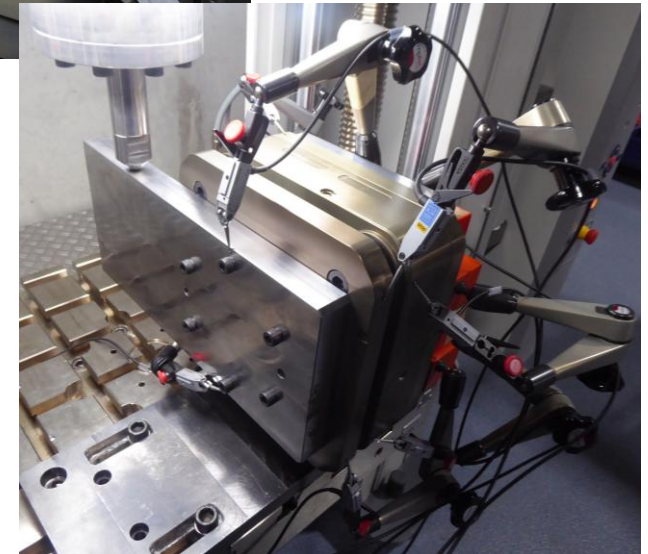
Maximum torque load (test (Zwick-Rölll)



Mx test

- **Strict testing** in the technical laboratory
- **Comprehensive testing processes and evaluations**

Mz test



Feedback

Do you have suggestions for improvement or other input?

If so, please send an E-Mail with the subject line and include the relevant details to:

automationsolution@de.schunk.com

Suggestions for improvement „Technical Product Guide Compensation“



Hand in hand for tomorrow