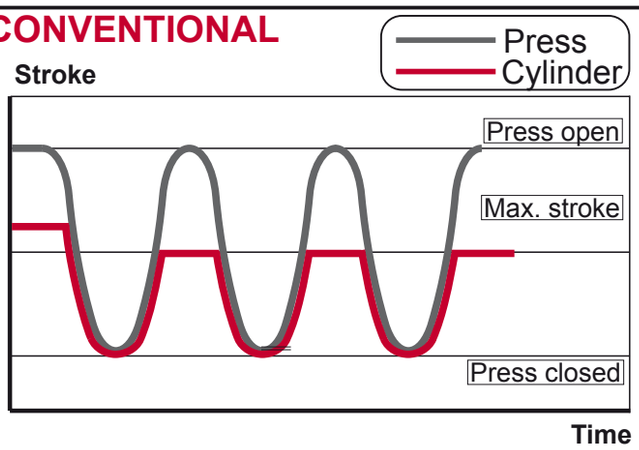
AZOL GAS

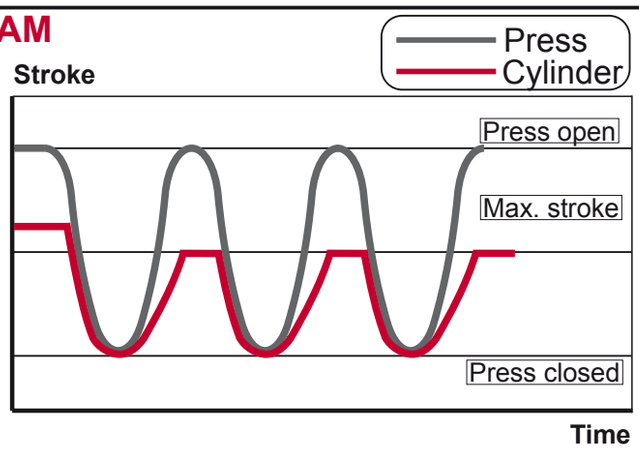
VAM SLOWED RETURN

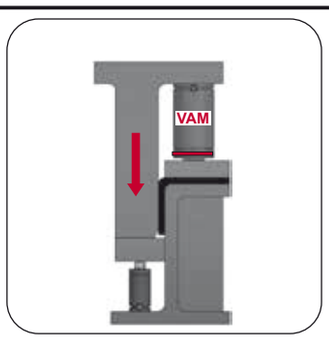
MODEL	F_0	Ø	S	L1	Pmax	Charge Port		
VAM 300 V1	300	Ø45	25 - 100	135 - 285	150	G1/8”	✔	✔
VAM 750	750	Ø75	25 - 125	160 - 360	75	G1/8”	✔	✔
VAM 1500	1500	Ø95	25 - 125	170 - 370	75	G1/8”	✔	✔
VAM 3000	3000	Ø120	25 - 125	190 - 390	90	G1/8”	✔	✔
VAM 5000	5000	Ø150	25 - 125	205 - 405	100	G1/8”	✔	✔
VAM 7500	7500	Ø195	25 - 125	210 - 410	105	G1/8”	✔	✔

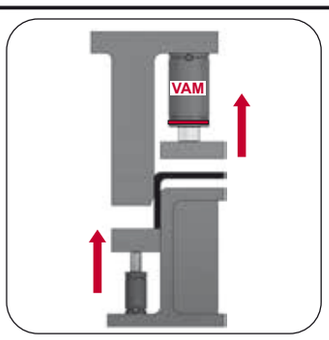
CONVENTIONAL



VAM







VAM gas spring meets the needs of applications requiring a **delayed return** of the rammer about the matrix.
VAM gas spring when returns to its initial position, the first mm backs at the same speed as a conventional gas spring, and subsequently slowed.

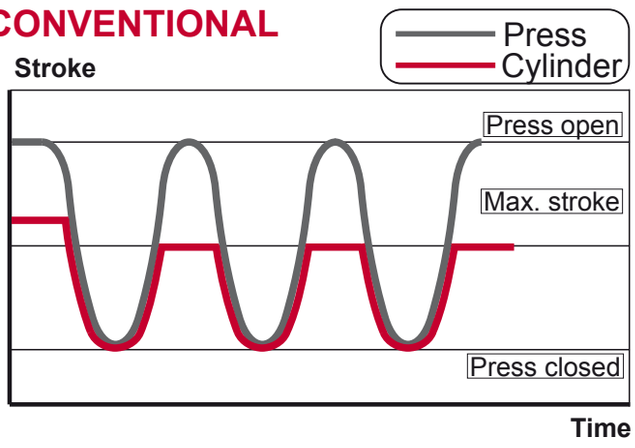
ADVANTAGES

- Prevents blank holder **bounce**.
- Increases **productivity**.
- **Easy** implementation.
- Use **self-contained** or **hosed**.
- Compatible with **ISO** dimensions.
- **Cost savings** to alternatives.

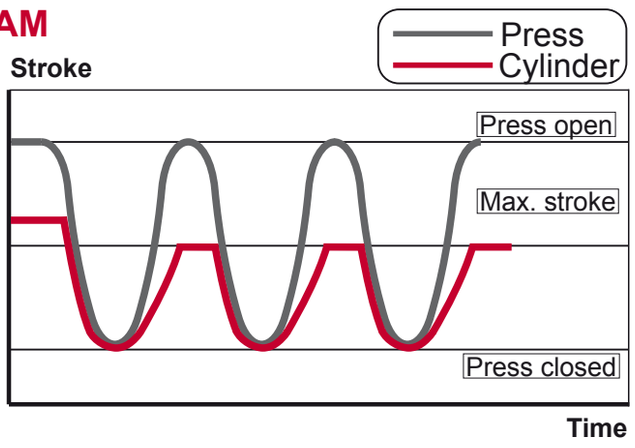
VAM SLOWED RETURN

AZOL GAS

CONVENTIONAL

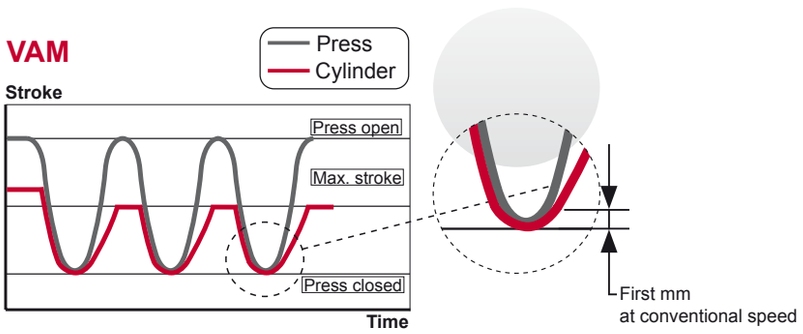


VAM



VAM gas springs are designed to return stroke at a constant slowed speed.

HOW IT WORKS



NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
300	0.015	$t_{max} = k \times S_U$

EXAMPLE: VAM 300 080 (300 daN)

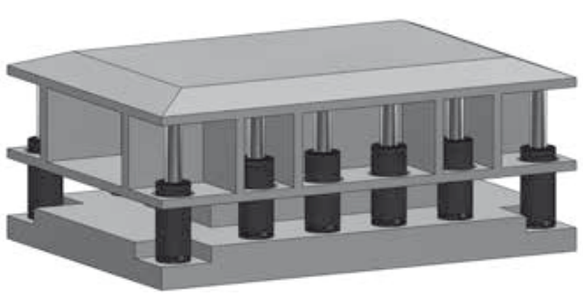
$t_{max} = k \times S_U = 0.015 \times 80 = 1,2$ seconds

Stroke used (S_U)

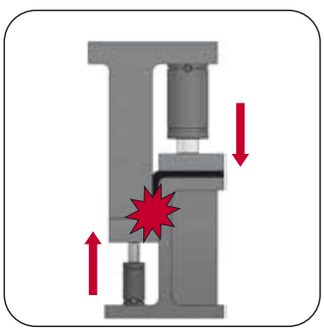
VAM gas spring when return to its initial position, the first mm backs at the same speed as a conventional gas spring and subsequently slowed.

Maximum slowed return stroke is defined to every model depending on used stroke.

APPLICATIONS



BLANK HOLDER BOUNCE



RAMMER RISE & MATRIX REMOVE

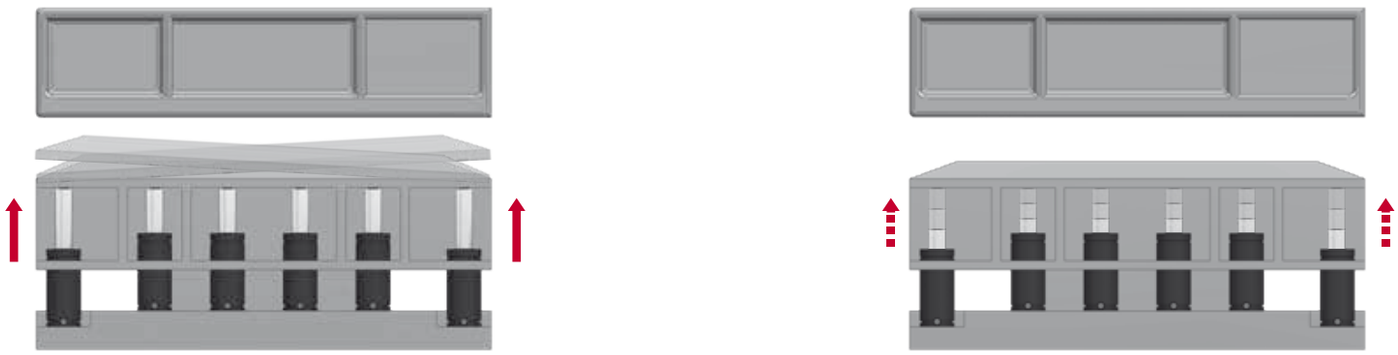
A) Increasing return speed in high speed presses (e.g. link drive presses) cause blank holder bounce back.

B) The ejector part starts working when the rammer is still holding it.

AZOL GAS

VAM SLOWED RETURN

CHALLENGE AND SOLUTION

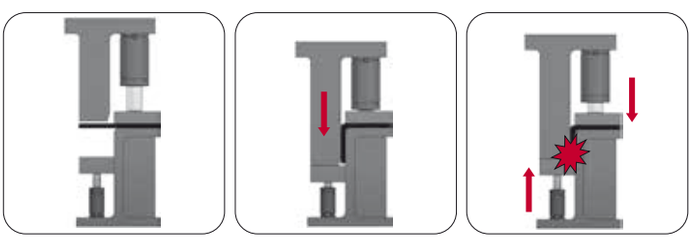


CHALLENGE: Blank holder bounce, difficult part transfer.

SOLUTION: VAM slow return piston rod eliminates blank holder bounce.

CHALLENGE AND SOLUTION

CHALLENGE



SOLUTION

CHALLENGE: Synchronized movement of rammer rise and removal of matrix causes deformation of metal part.

SOLUTION: VAM slowed return piston rod makes possible the removal of metal part without being deformed.

ADVANTAGES

- Prevents blank holder **bounce**.

- Increases **productivity**.

- **Easy** implementation.

- Use **self-contained** or **hosed**.

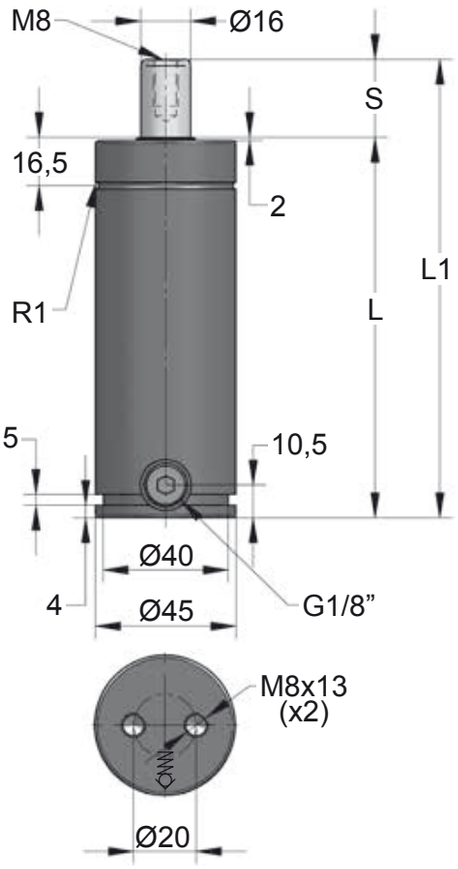
- Compatible with **ISO** dimensions.

- **Cost savings** to alternatives.

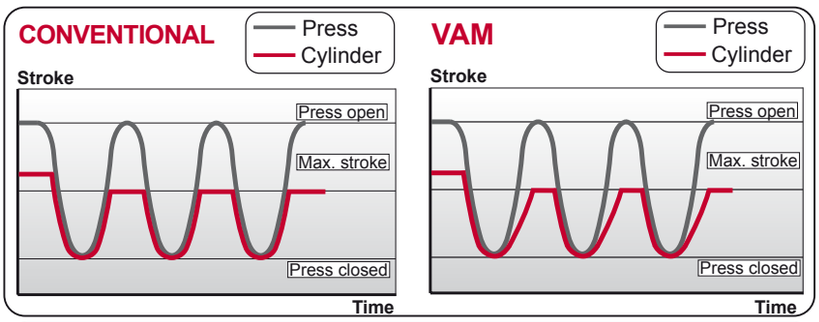
VAM 300 V1

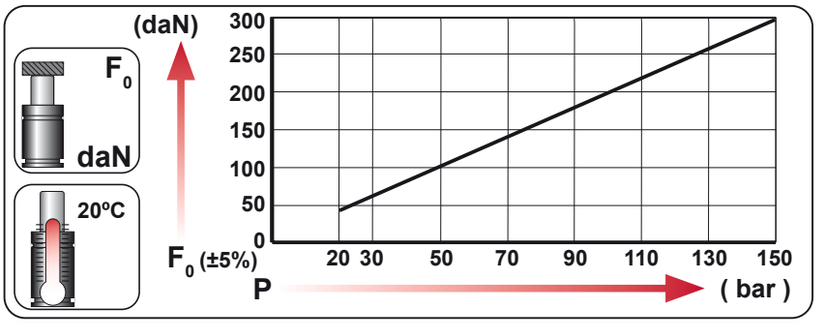
Slowed Return

AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 300 025 V1	25	135	110	1.04
VAM 300 038 V1	38	161	123	1.11
VAM 300 050 V1	50	185	135	1.17
VAM 300 063 V1	63.5	212	148.5	1.24
VAM 300 080 V1	80	245	165	1.33
VAM 300 100 V1	100	285	185	1.43

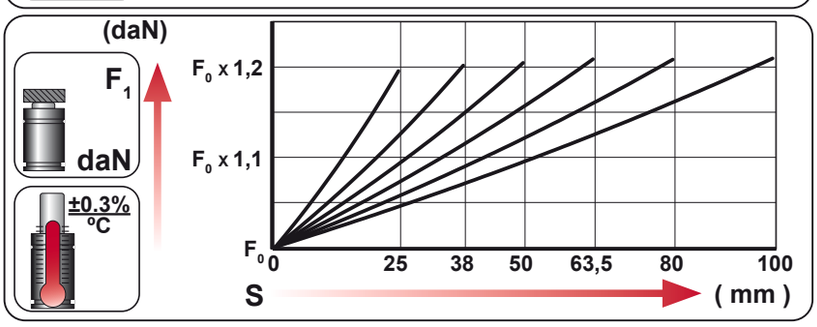




CODE	bar	psi	F_0 daN	F_1 daN
VAM 300 V1	150	2175	300	360

-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

WARNING!

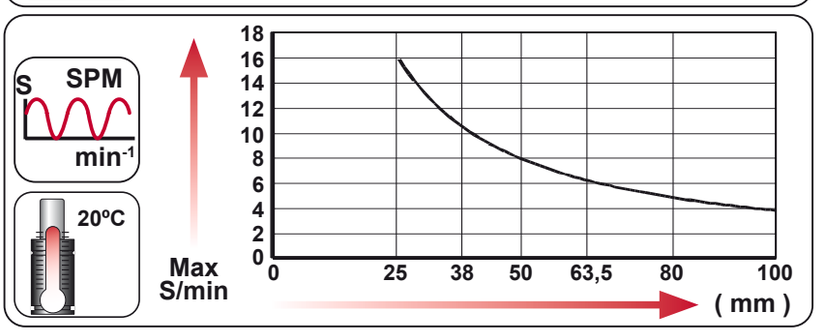


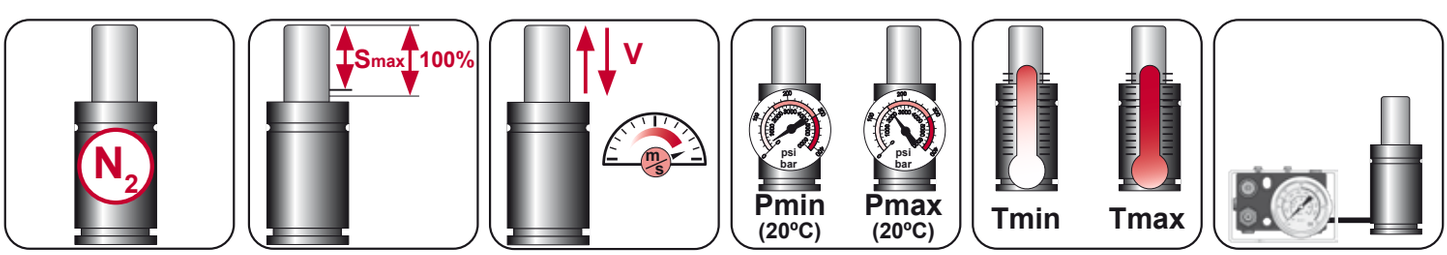
ENG	ORDER
DEU	BESTELLUNG
FRA	COMMANDE
ITA	ORDINE
ESP	PEDIDO
POR	PEDIDO

F_0 daN — S mm

VAM 300 50

VAM 300 050 V1





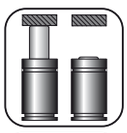
N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 150 2175	ºC ºF 0 32	ºC ºF 80 176	600 CP-

AZOL GAS

VAM 300 V1

Slowed Return

REQUIRED DATA

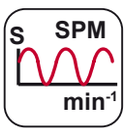


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
300	0.015	$t_{max} = k \times S_U$

EXAMPLE: VAM 300 080 (300 daN)

$t_{max} = k \times S_U = 0.015 \times 80 = 1,2$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

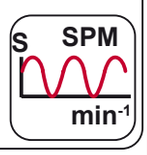
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

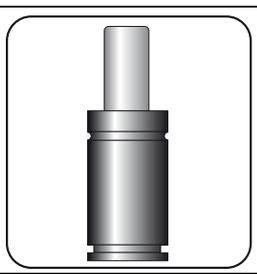
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
300	$f_{max} = \frac{144000}{S_U \times F_U}$

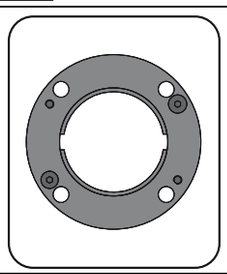
EXAMPLE: VAM 300 080 (300 daN)

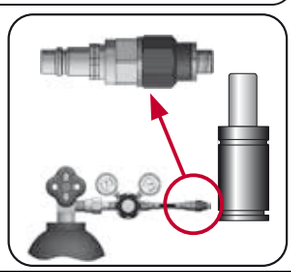
$f_{max} = \frac{144000}{S_U \times F_U} = \frac{144000}{80 \times 300} = 6$ cycles/minute

Stroke used (S_U) *Force used (F_U)*









CODE		VAM 300 050 V1	KIT S-XXXXXXX KIT C-XXXXXXX	A14-045	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

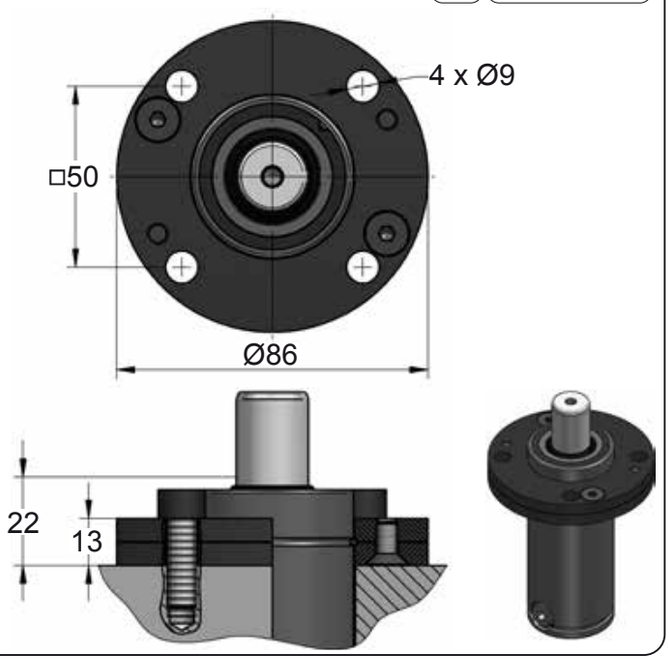
VAM 300 V1 *MOUNTS*

Slowed Return

AZOL GAS

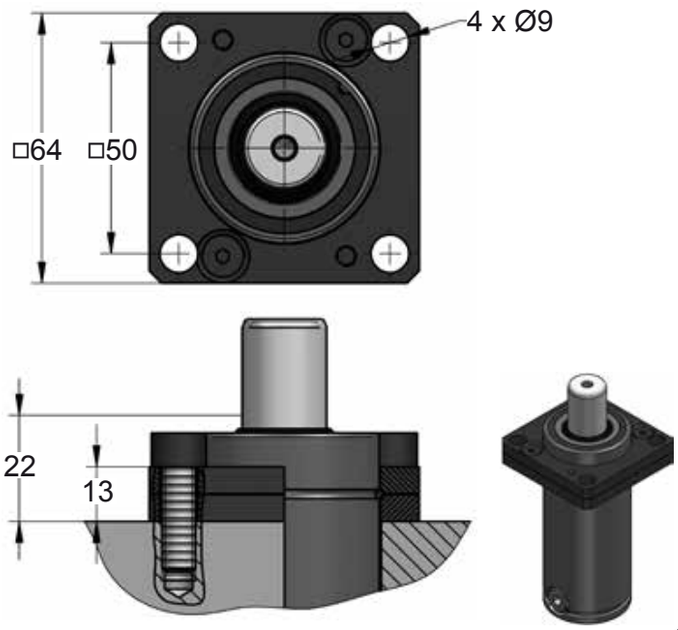
A14-045

ISO · CNOMO E24.54.815.G EM24.54.700/F

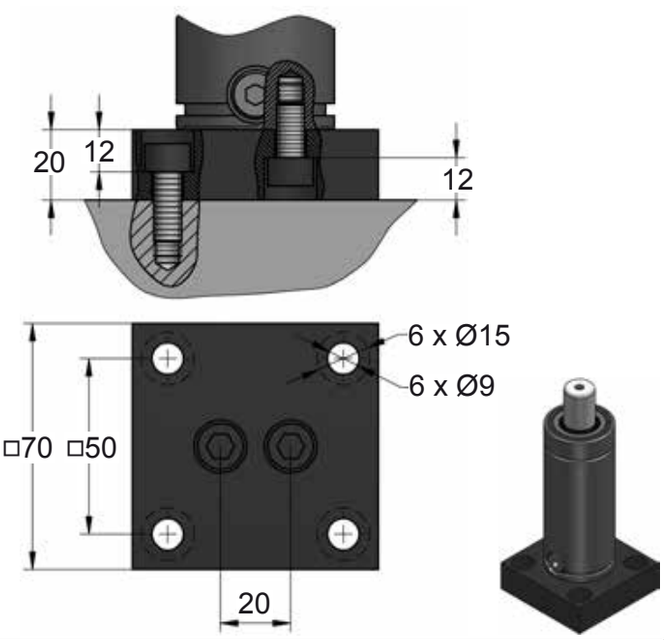


A34-045

ISO · VDI

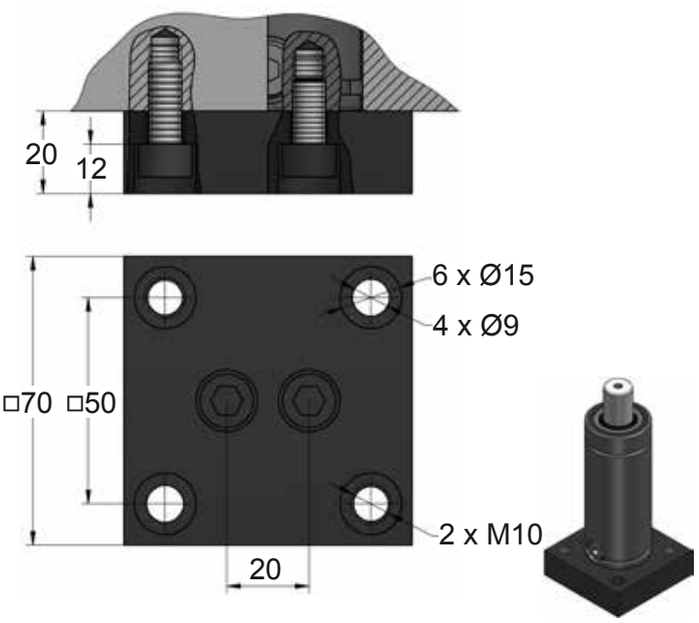


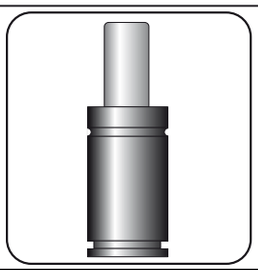
B21-045



B76-045

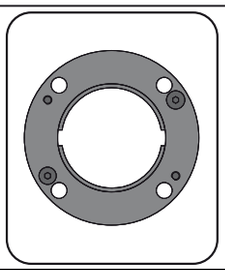
ISO · CNOMO E24.54.815.G

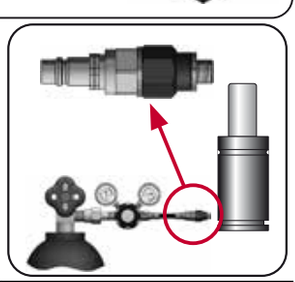




SEAL
KIT S-XXXXXXX

CARTRIDGE
KIT C-XXXXXXX





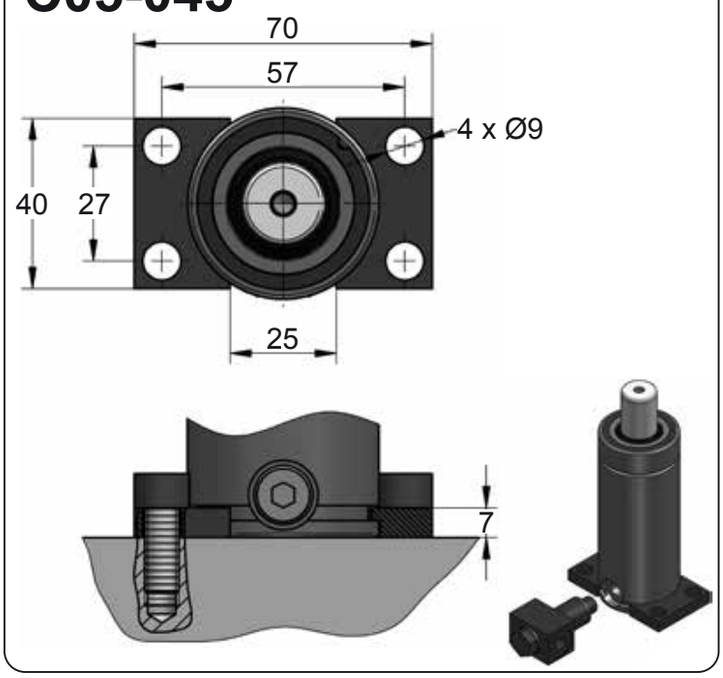
CODE		VAM 300 050 V1	KIT S-XXXXXXX KIT C-XXXXXXX	A14-045	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 300 V1 MOUNTS

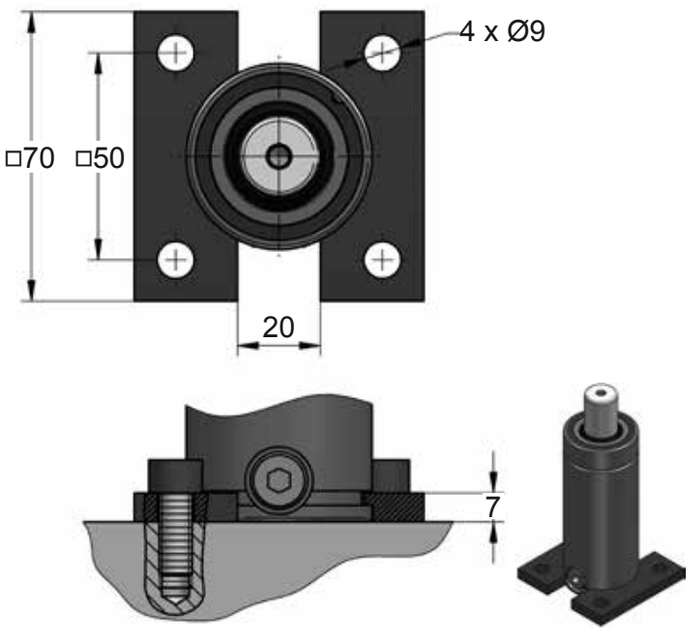
Slowed Return

C05-045

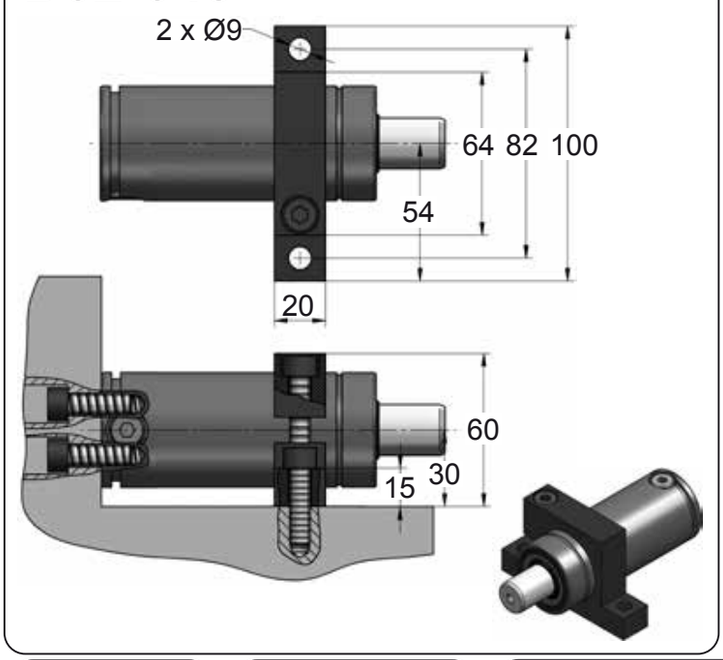


C20-045

ISO VDI E24.54.815.G EM24.54.700/F

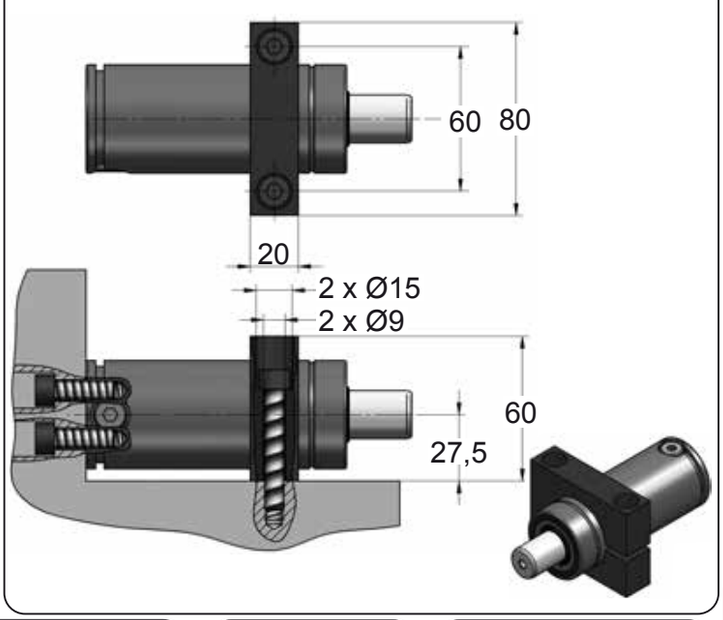


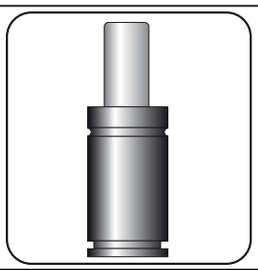
D02-045



D67-045

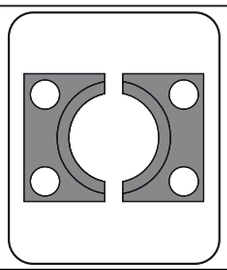
VDI

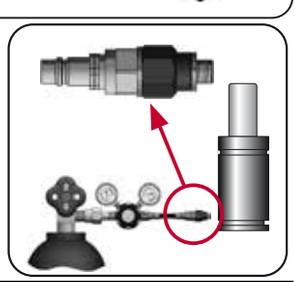




SEAL
KIT S-XXXXXXX

CARTRIDGE
KIT C-XXXXXXX



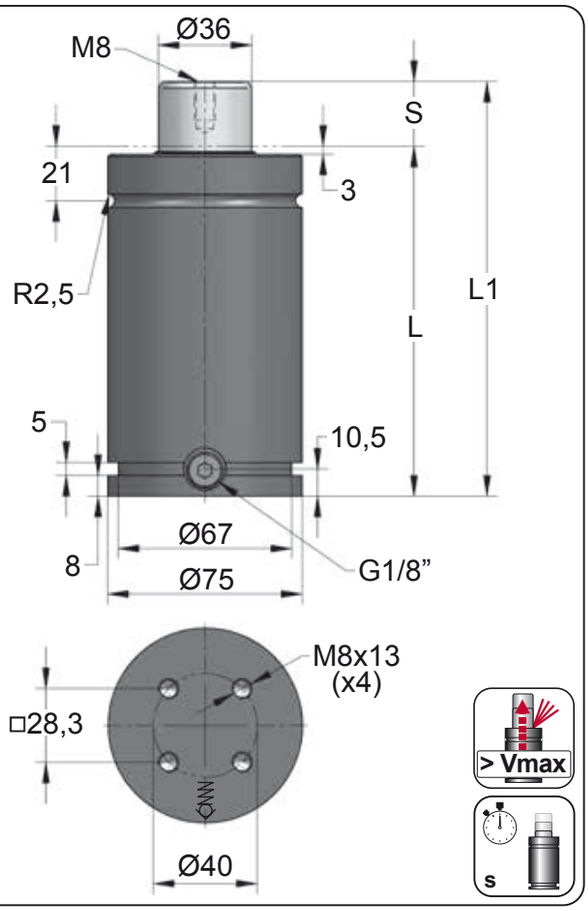


CODE		VAM 300 050 V1	KIT S-XXXXXXX KIT C-XXXXXXX	C05-045	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

VAM 750

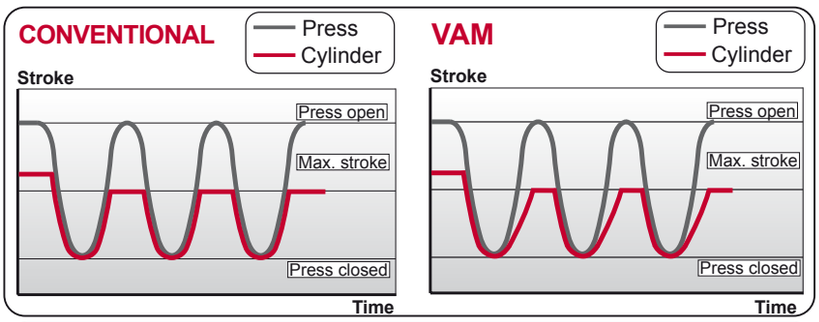
Slowed Return

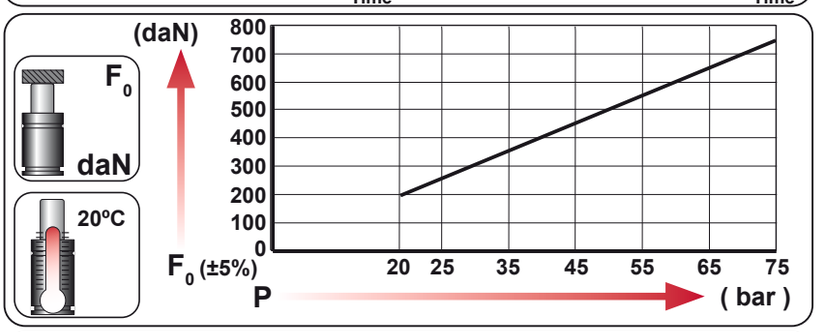
AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 750 025	25	160	135	3.75
VAM 750 038	38	186	148	3.99
VAM 750 050	50	210	160	4.21
VAM 750 063	63.5	237	173.5	4.45
VAM 750 080	80	270	190	4.75
VAM 750 100	100	310	210	5.12
VAM 750 125	125	360	235	5.57

APPROVED PED 2014/68/EU

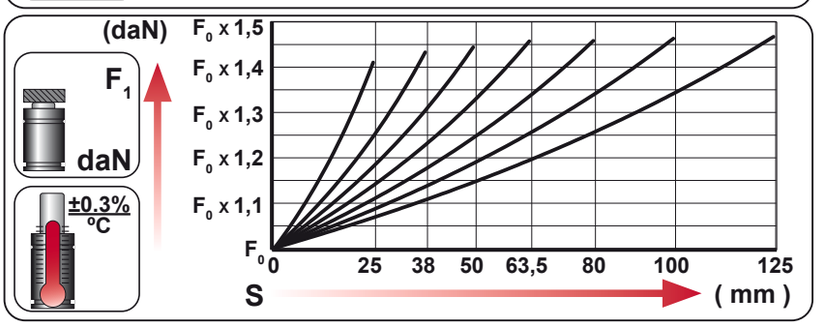




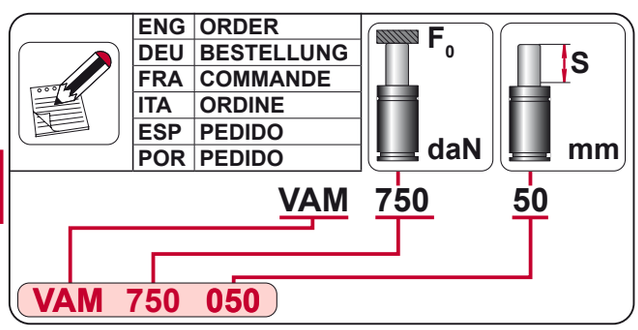
CODE	bar	psi	F_0 daN	F_1 daN
VAM 750	75	1088	760	1100

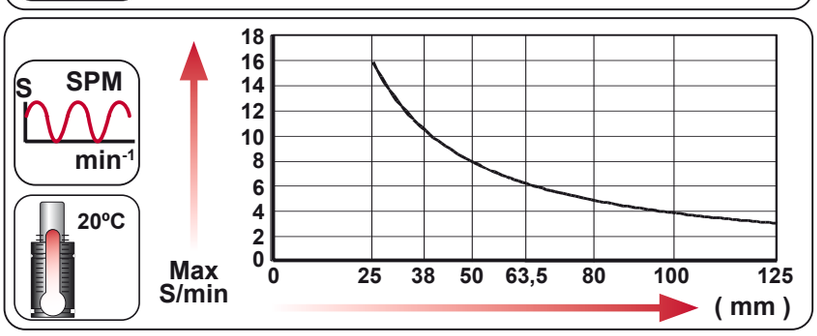
-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

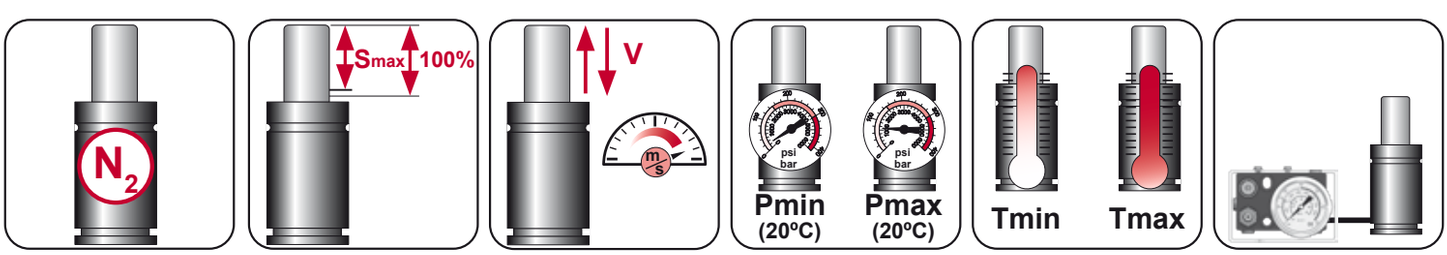
WARNING!



ENG	ORDER
DEU	BESTELLUNG
FRA	COMMANDE
ITA	ORDINE
ESP	PEDIDO
POR	PEDIDO





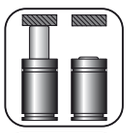


N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 75 1088	ºC ºF 0 32	ºC ºF 80 176	600 CP-

AZOL GAS

VAM 750
Slowed Return

REQUIRED DATA

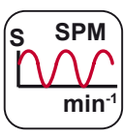


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
760	0.062	$t_{max} = k \times S_U$

EXAMPLE: VAM 750 080 (760 daN)

$t_{max} = k \times S_U = 0.062 \times 80 = 4.9$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

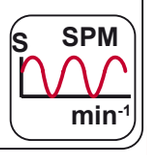
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

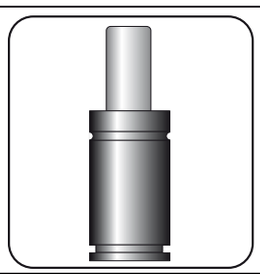
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
760	$f_{max} = \frac{360000}{S_U \times F_U}$

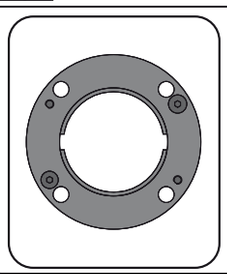
EXAMPLE: VAM 750 080 (760 daN)

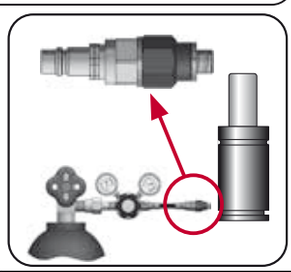
$f_{max} = \frac{360000}{S_U \times F_U} = \frac{360000}{80 \times 760} = 6$ cycles/minute

Stroke used (S_U) *Force used (F_U)*









CODE		VAM 750 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-075	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

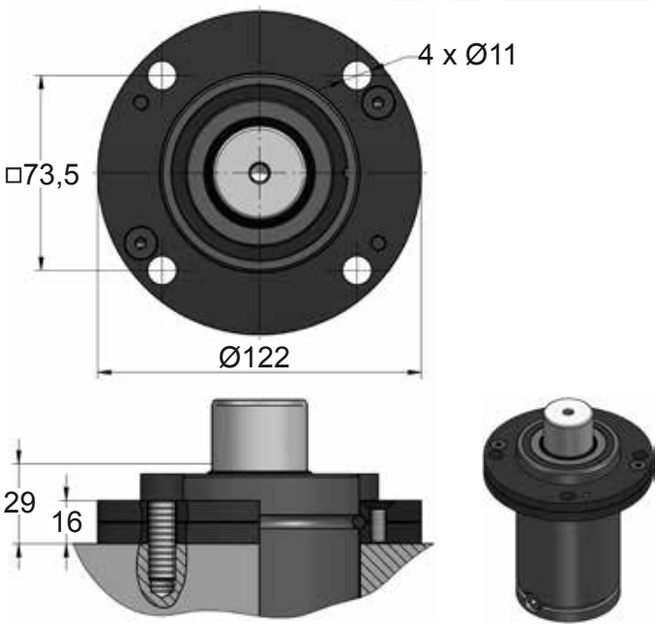
VAM 750 MOUNTS

Slowed Return

AZOL GAS

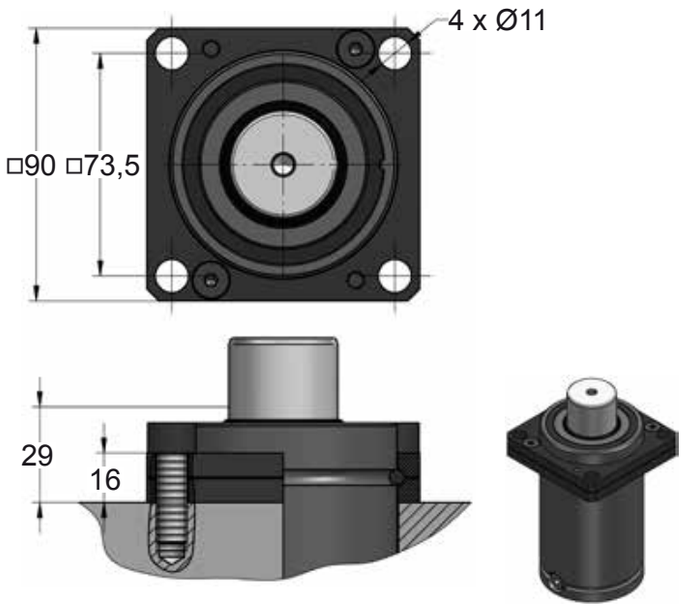
A14-075

ISO · E24.54.815.G · EM24.54.700/F



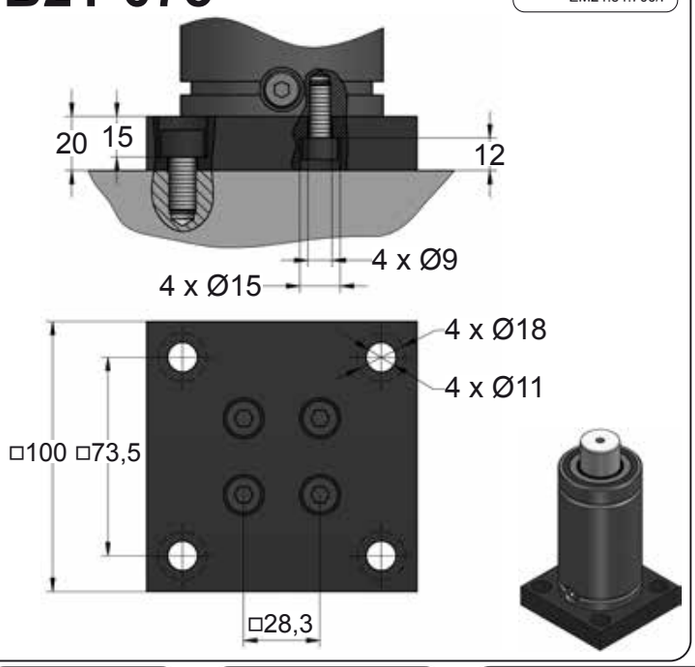
A34-075

ISO · VDI



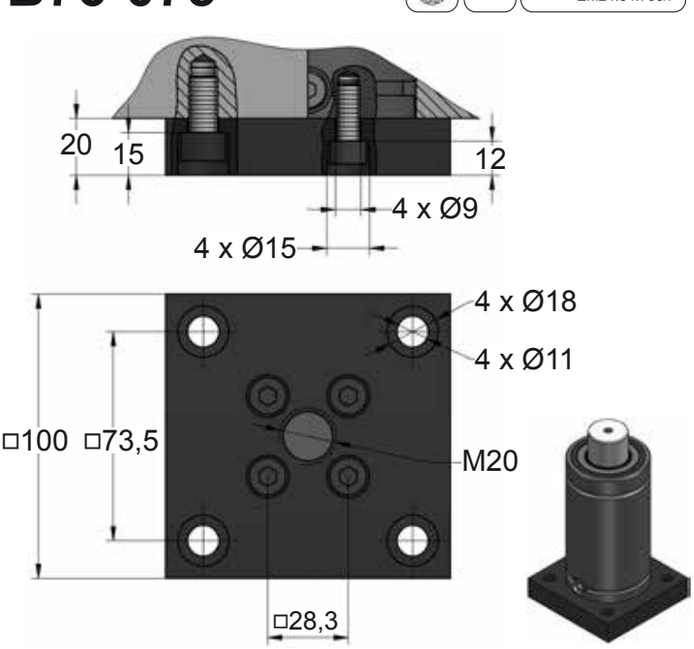
B21-075

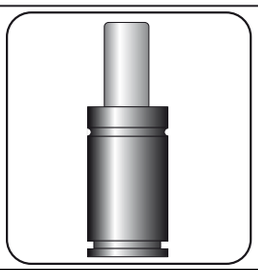
CNOMO · EM24.54.700/F

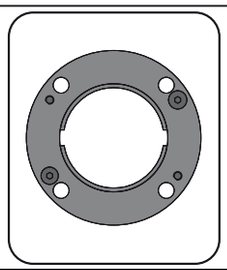


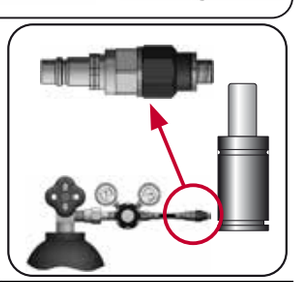
B76-075

ISO · CNOMO · E24.54.815.G · EM24.54.700/F









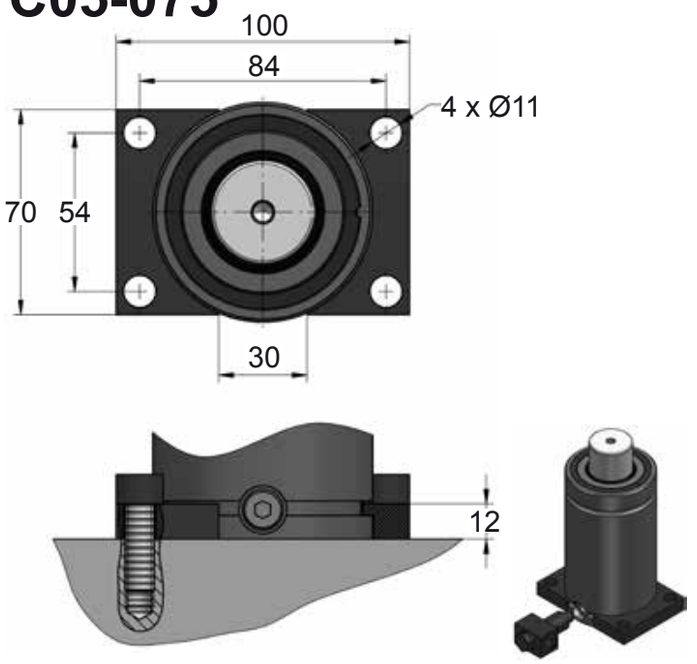
CODE		VAM 750 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-075	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 750 MOUNTS

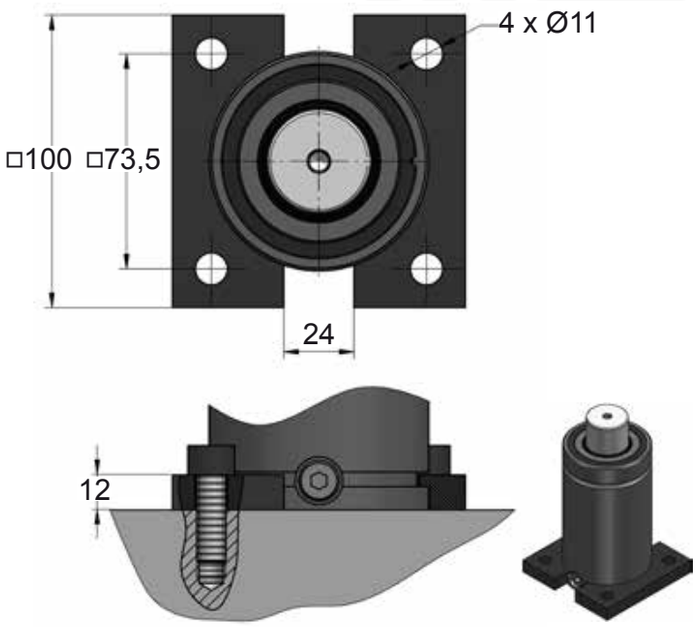
Slowed Return

C05-075



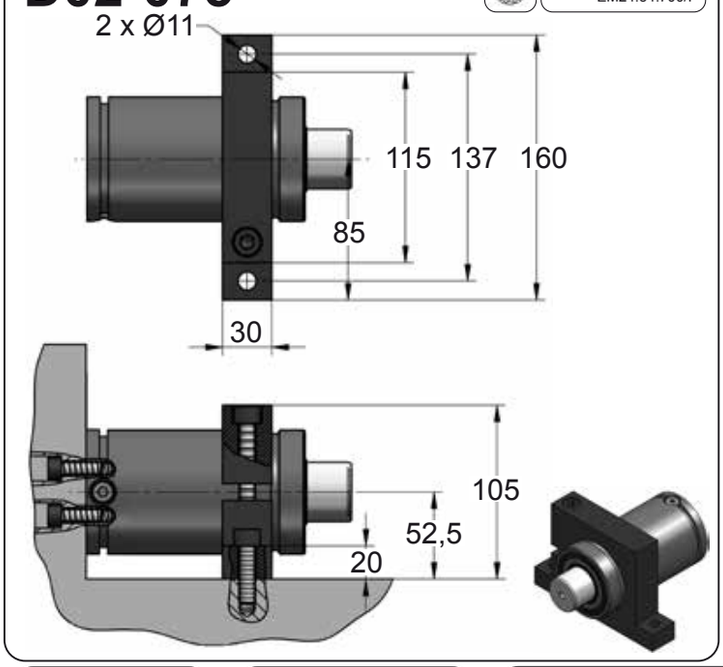
C20-075

ISO VDI E24.54.815.G EM24.54.700/F



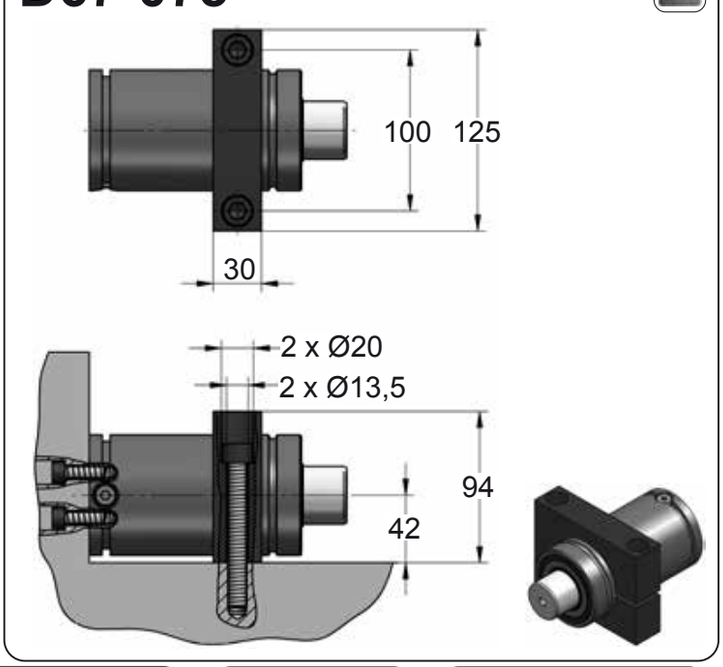
D02-075

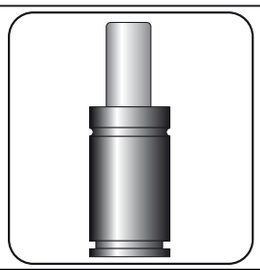
ISO E24.54.815.G EM24.54.700/F

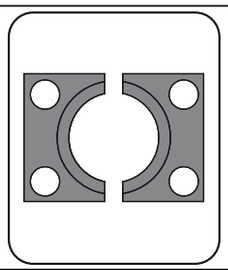


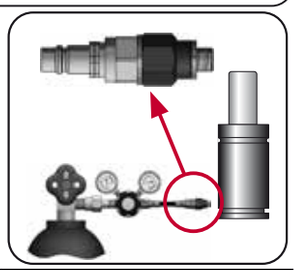
D67-075

VDI







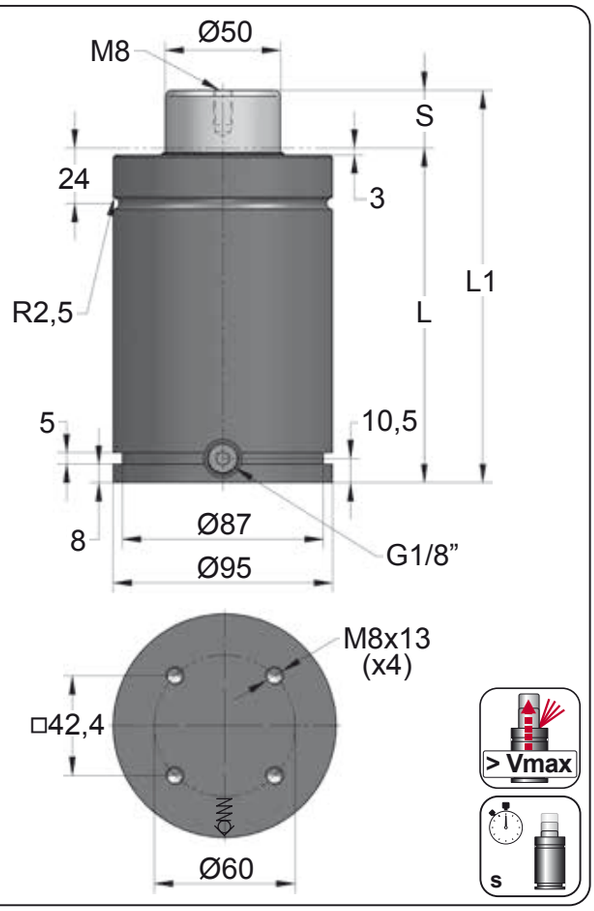


CODE		VAM 750 050	KIT S-XXXXXXX KIT C-XXXXXXX	C05-075	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

VAM 1500

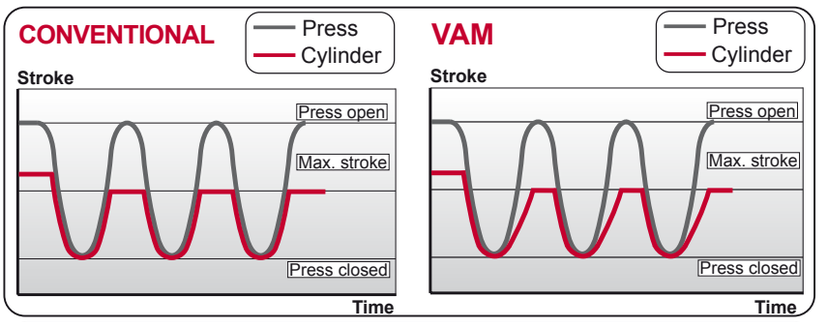
Slowed Return

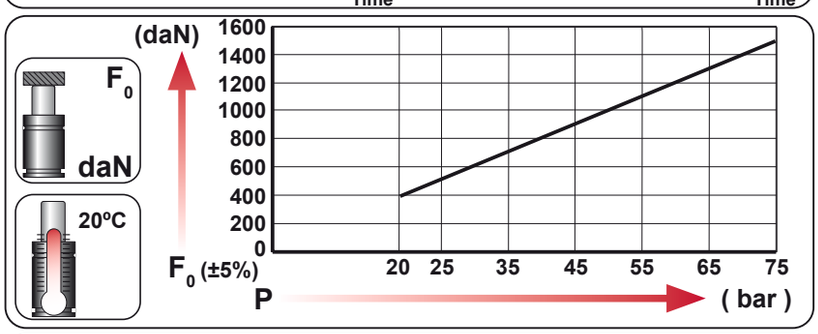
AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 1500 025	25	170	145	6.67
VAM 1500 038	38	196	158	7.08
VAM 1500 050	50	220	170	7.46
VAM 1500 063	63.5	247	183.5	7.89
VAM 1500 080	80	280	200	8.41
VAM 1500 100	100	320	220	9.04
VAM 1500 125	125	370	245	9.83

APPROVED PED 2014/68/EU

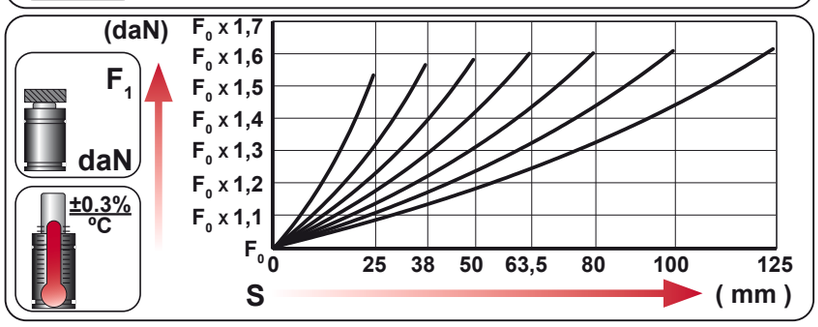




CODE	bar	psi	F_0 daN	F_1 daN
VAM 1500	75	1088	1470	2330

-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

WARNING!

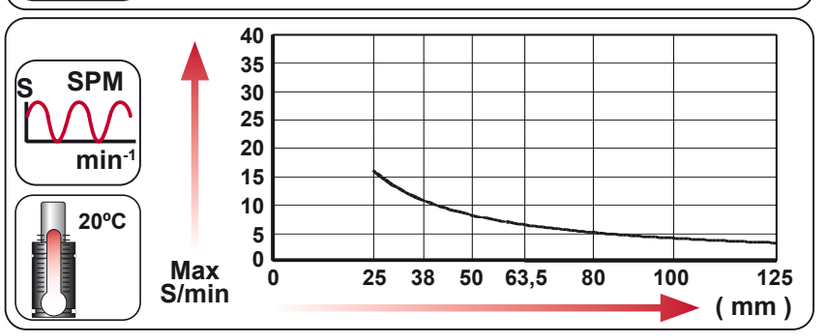


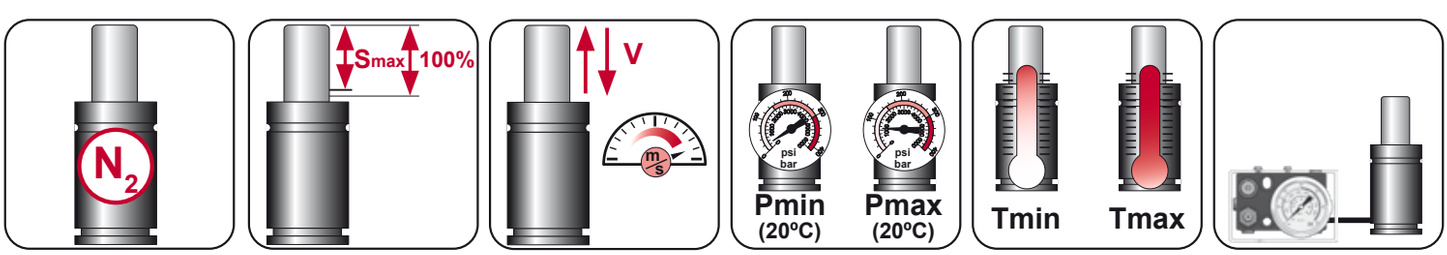
	ENG	ORDER
	DEU	BESTELLUNG
	FRA	COMMANDE
	ITA	ORDINE
	ESP	PEDIDO
	POR	PEDIDO

F_0 daN — S mm

VAM 1500 50

VAM 1500 050



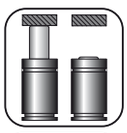


N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 75 1088	°C °F 0 32	°C °F 80 176	600 CP-

AZOL GAS

VAM 1500
Slowed Return

REQUIRED DATA

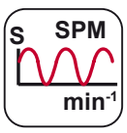


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
1470	0.09	$t_{max} = k \times S_U$

EXAMPLE: VAM 1500 080 (1470 daN)

$t_{max} = k \times S_U = 0.09 \times 80 = 7.2$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

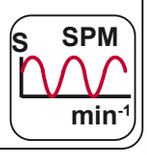
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

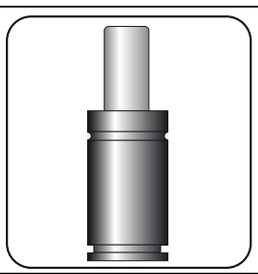
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
1470	$f_{max} = \frac{720000}{S_U \times F_U}$

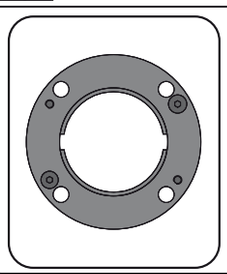
EXAMPLE: VAM 1500 080 (1470 daN)

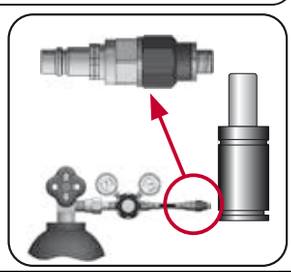
$f_{max} = \frac{720000}{S_U \times F_U} = \frac{720000}{80 \times 1470} = 6$ cycles/minute

Stroke used (S_U) *Force used (F_U)*









CODE		VAM 1500 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-095	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

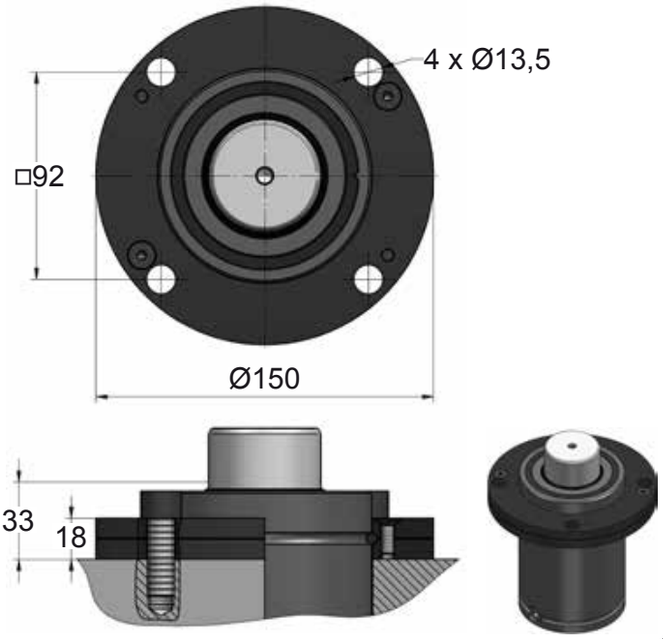
VAM 1500 MOUNTS

Slowed Return

AZOL GAS

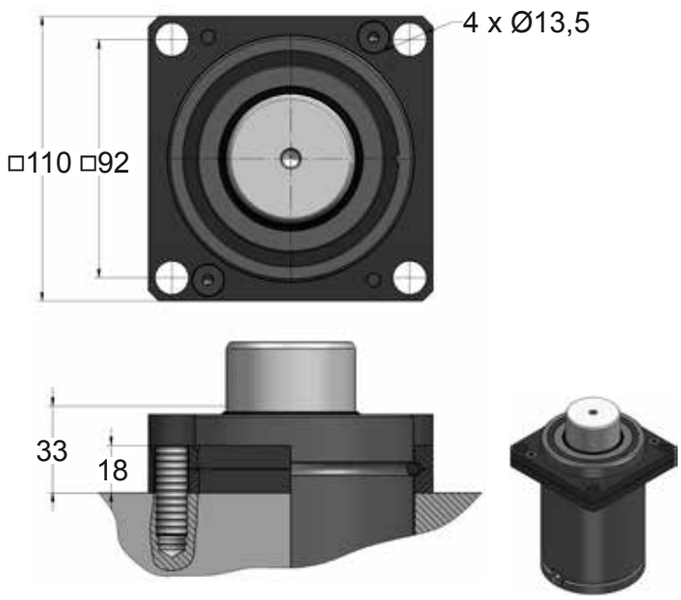
A14-095

ISO · E24.54.815.G · EM24.54.700/F



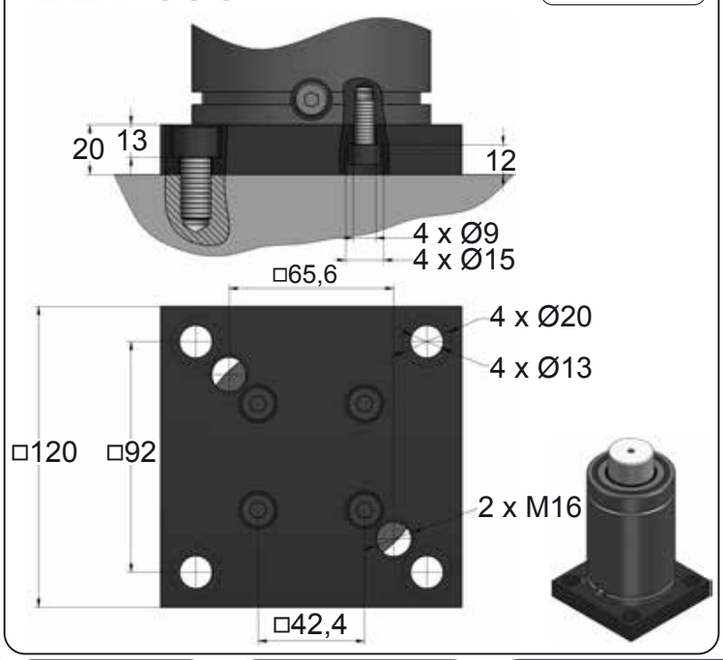
A34-095

ISO · VDI



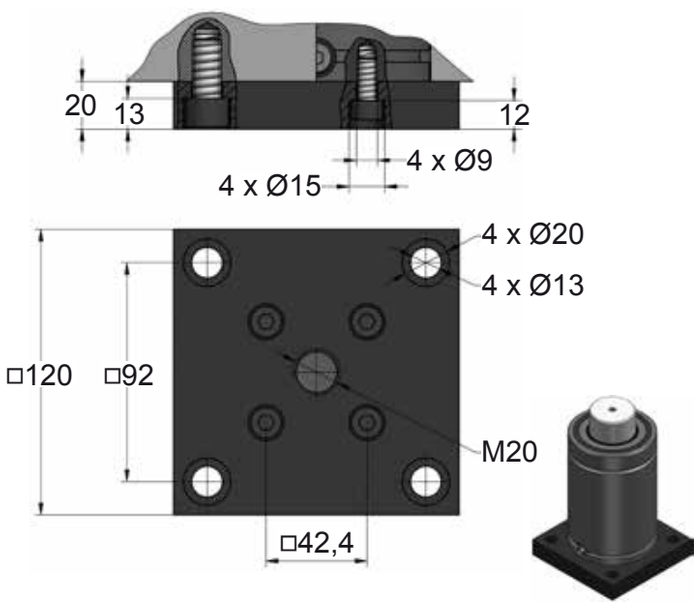
B21-095

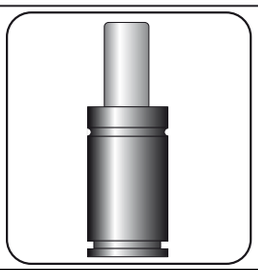
EM24.54.700/F

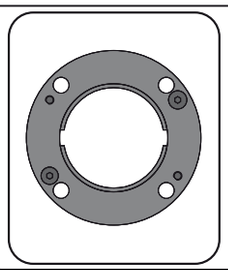


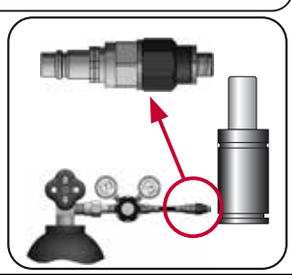
B76-095

ISO · EM24.54.700/F









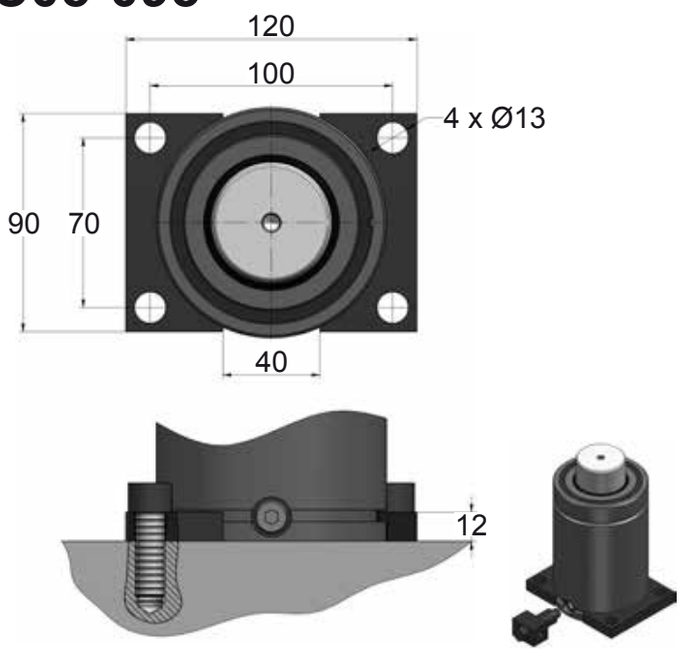
CODE		VAM 1500 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-095	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 1500 MOUNTS

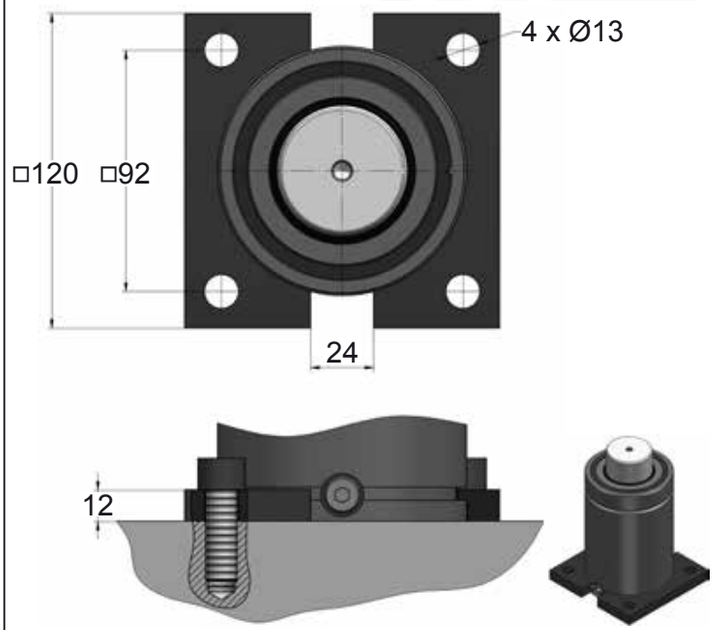
Slowed Return

C05-095



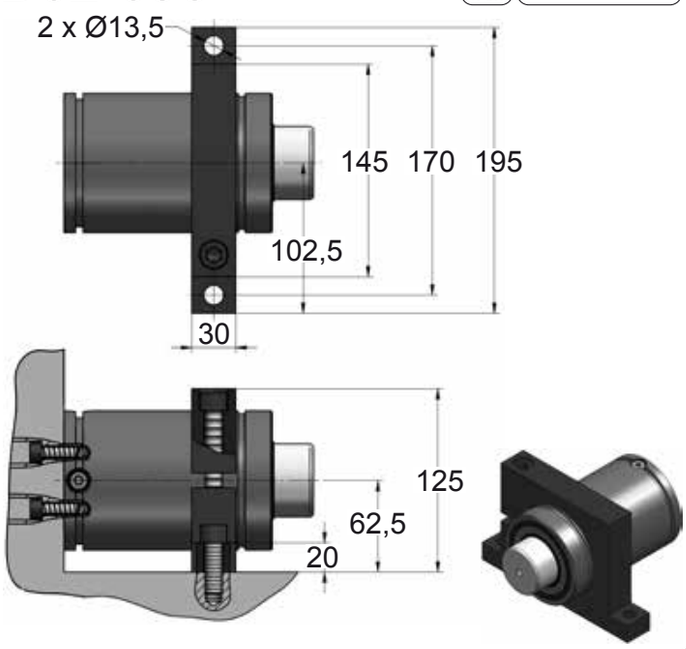
C20-095

ISO VDI E24.54.815.G EM24.54.700/F



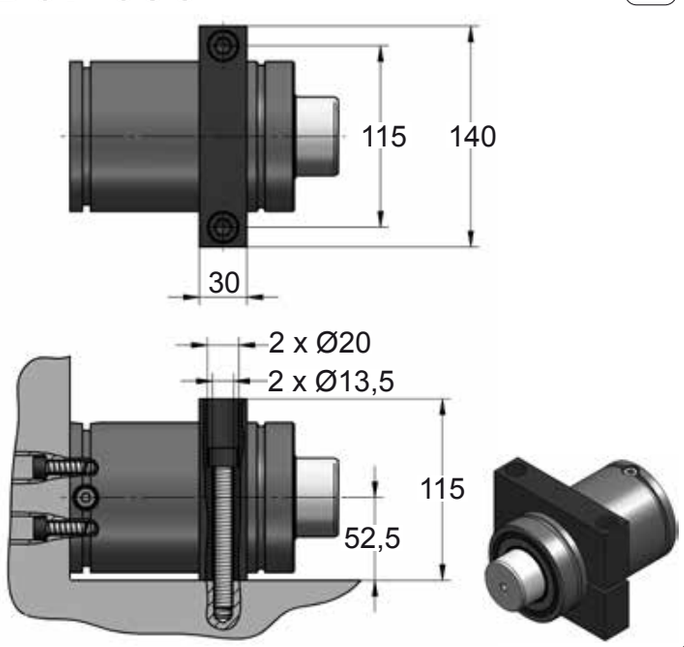
D02-095

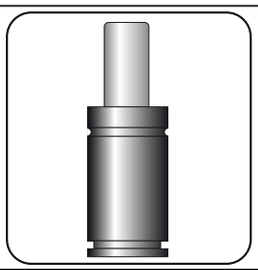
ISO E24.54.815.G EM24.54.700/F



D67-095

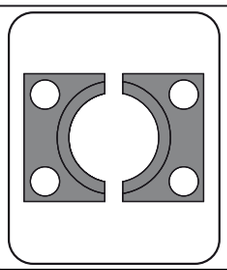
VDI

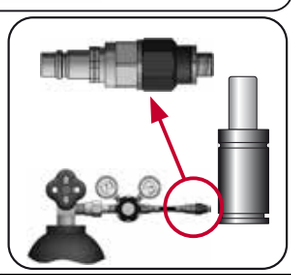




SEAL
KIT S-XXXXXXX

CARTRIDGE
KIT C-XXXXXXX



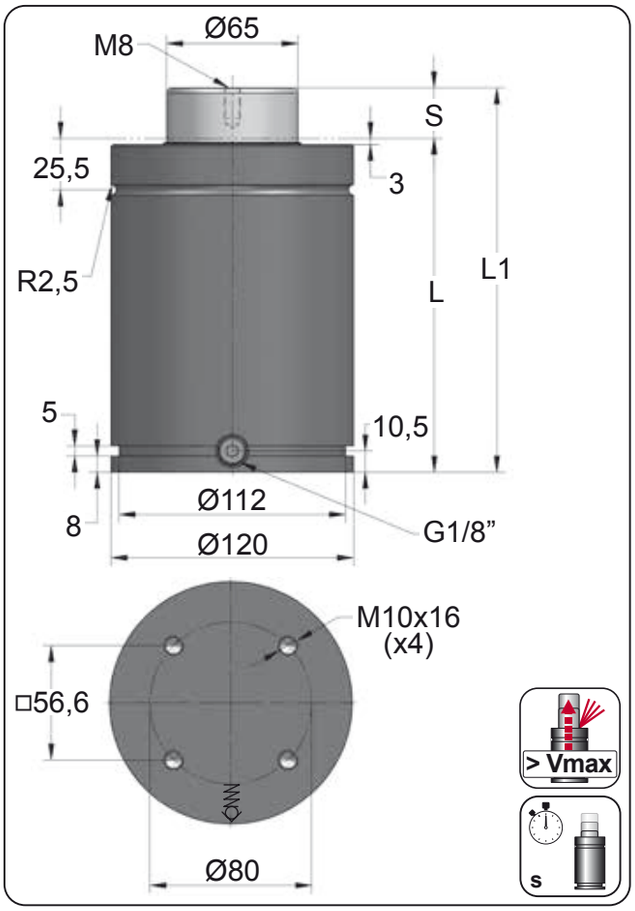


CODE		VAM 1500 050	KIT S-XXXXXXX KIT C-XXXXXXX	C05-095	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

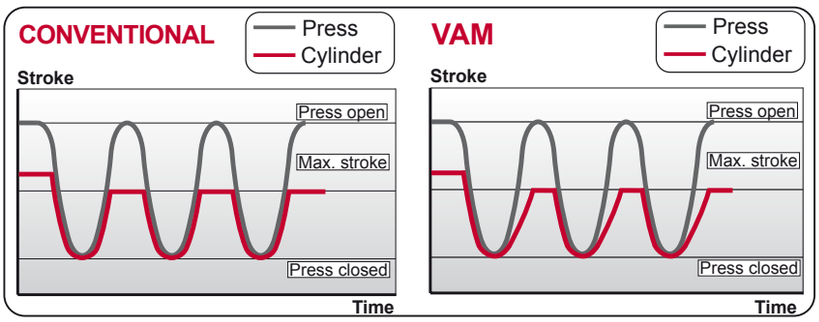
VAM 3000

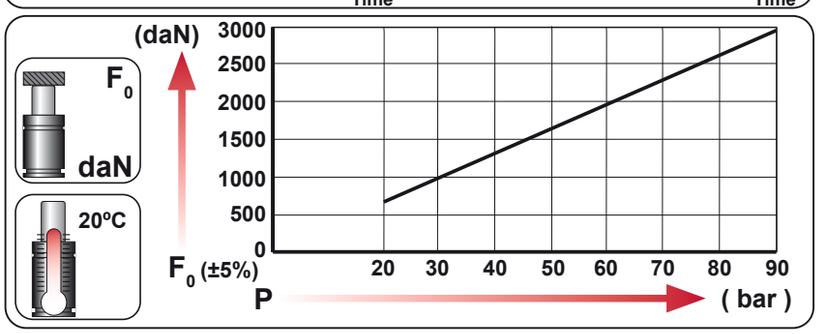
Slowed Return

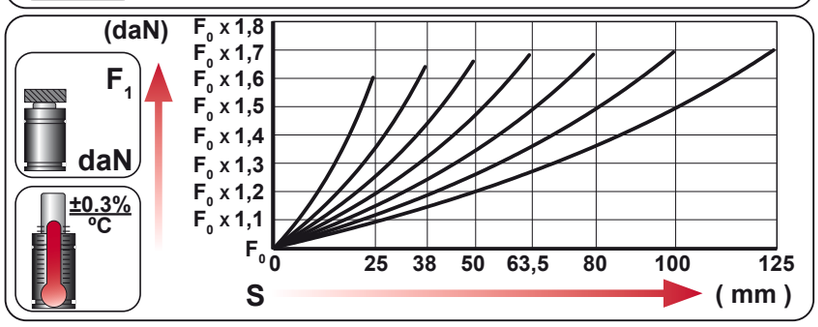
AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 3000 025	25	190	165	12.60
VAM 3000 038	38	216	178	13.29
VAM 3000 050	50	240	190	13.93
VAM 3000 063	63.5	267	203.5	14.64
VAM 3000 080	80	300	220	15.52
VAM 3000 100	100	340	240	16.59
VAM 3000 125	125	390	265	17.91







CODE	bar	psi	F_0 daN	F_1 daN
VAM 3000	90	1305	2985	4965

-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

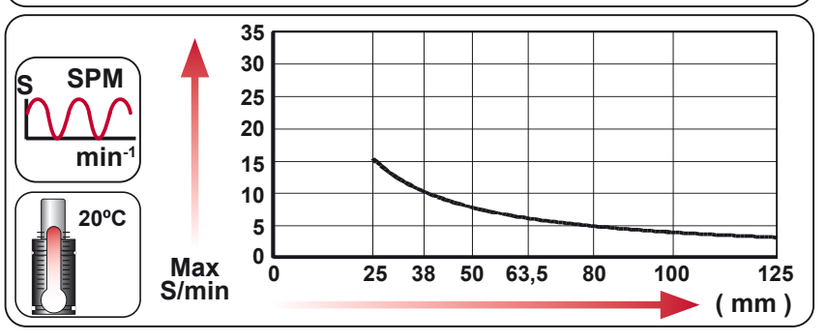
WARNING!

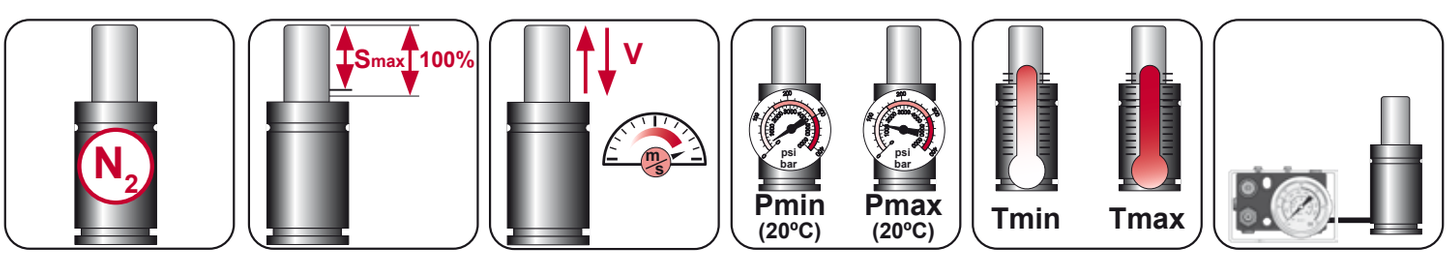
ENG	ORDER
DEU	BESTELLUNG
FRA	COMMANDE
ITA	ORDINE
ESP	PEDIDO
POR	PEDIDO

F_0 daN — S mm

VAM 3000 50

VAM 3000 050



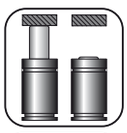


N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 90 1305	°C °F 0 32	°C °F 80 176	600 CP-

AZOL GAS

VAM 3000
Slowed Return

REQUIRED DATA

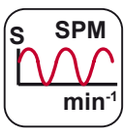


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
2985	0.131	$t_{max} = k \times S_U$

EXAMPLE: VAM 3000 080 (2985 daN)

$t_{max} = k \times S_U = 0.131 \times 80 = 10$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

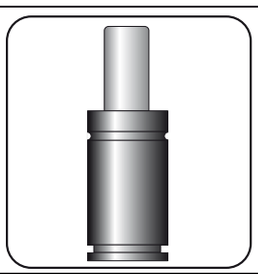
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

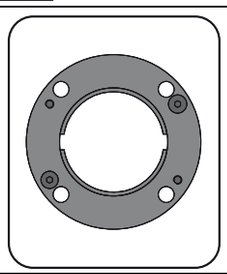
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
2985	$f_{max} = \frac{1368000}{S_U \times F_U}$

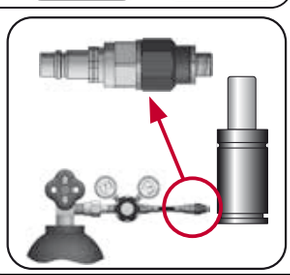
EXAMPLE: VAM 3000 080 (2985 daN)

$f_{max} = \frac{1368000}{S_U \times F_U} = \frac{1368000}{80 \times 2985} = 5$ cycles/minute

Stroke used (S_U) *Force used (F_U)*







CODE		VAM 3000 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-120	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

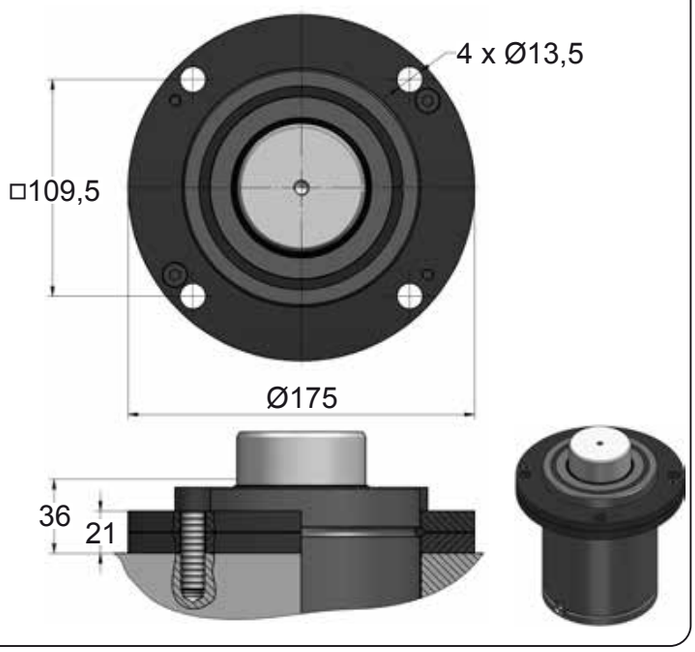
VAM 3000 MOUNTS

Slowed Return

AZOL GAS

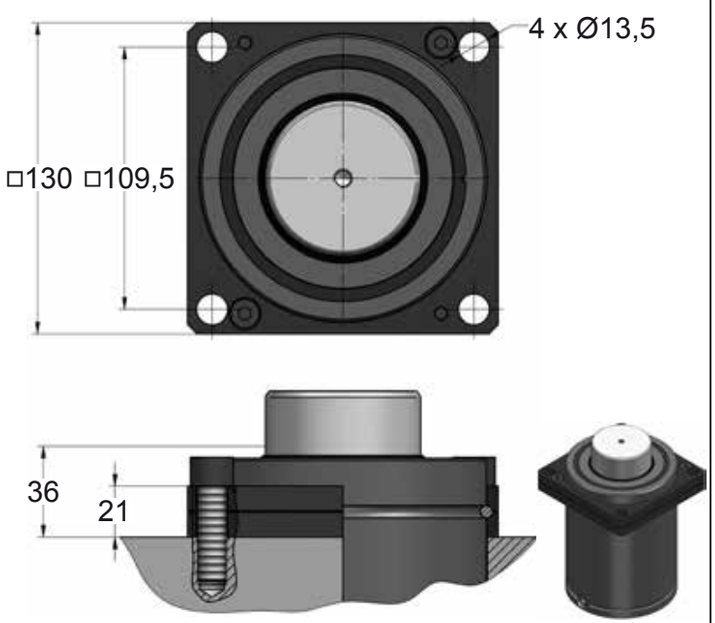
A14-120

ISO · E24.54.815.G · EM24.54.700/F



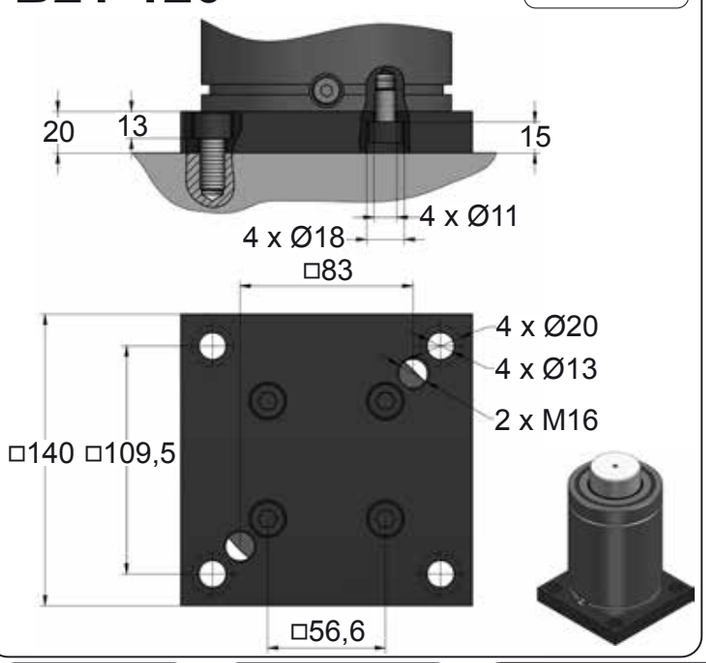
A34-120

ISO · VDI



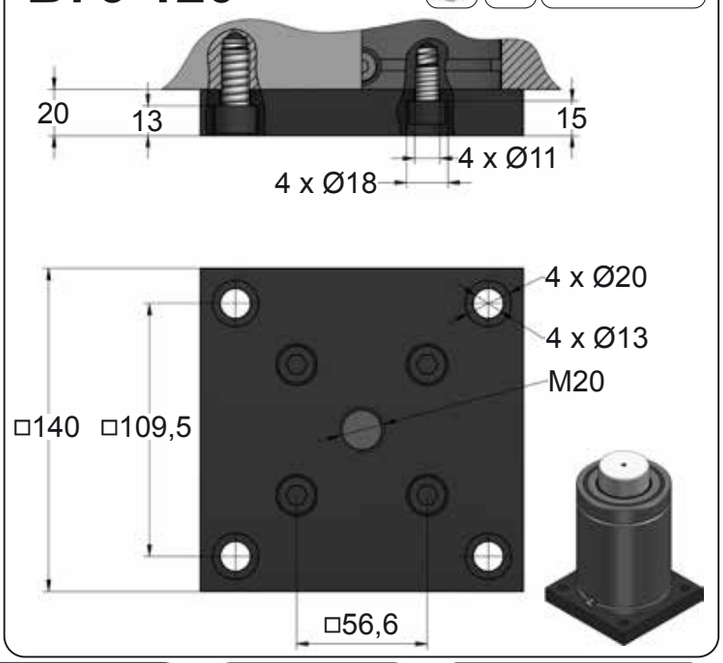
B21-120

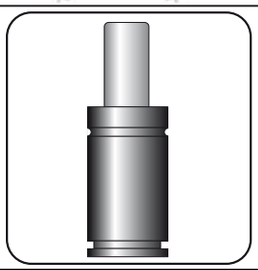
EM24.54.700/F

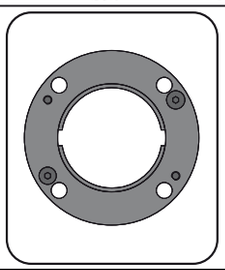


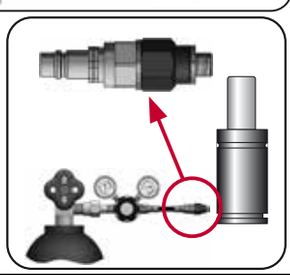
B76-120

ISO · EM24.54.700/F









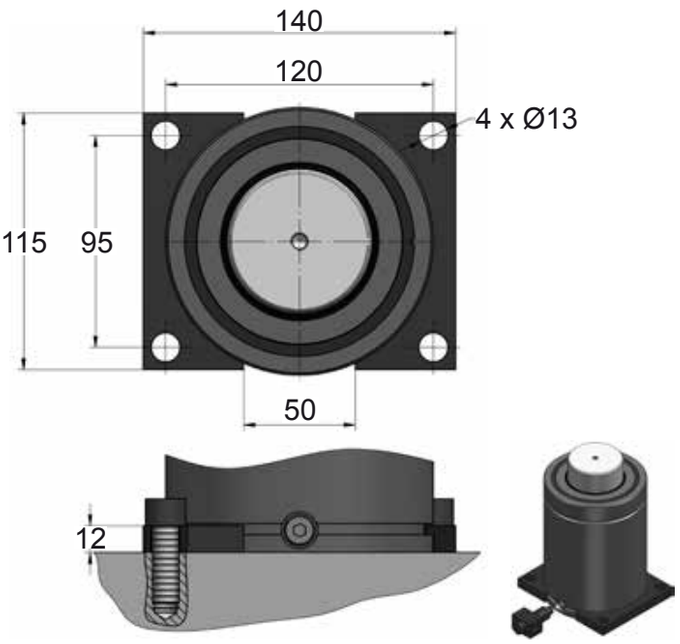
CODE		VAM 3000 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-120	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 3000 MOUNTS

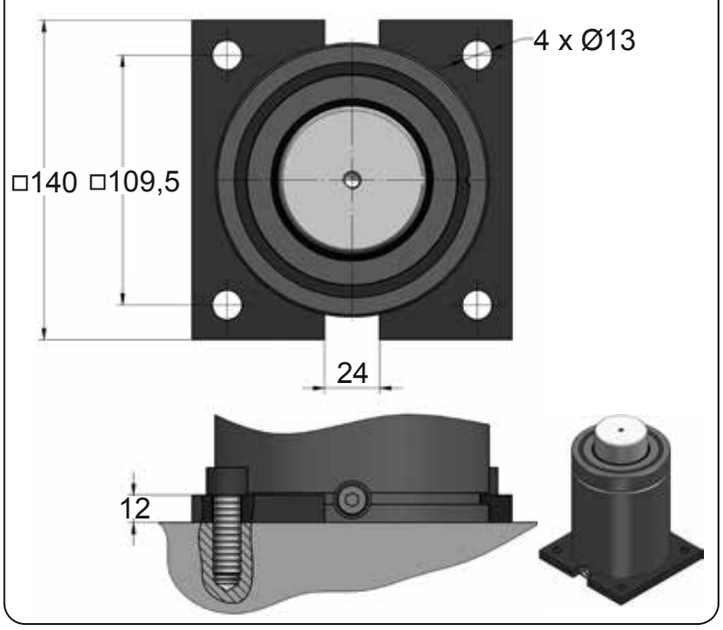
Slowed Return

C05-120



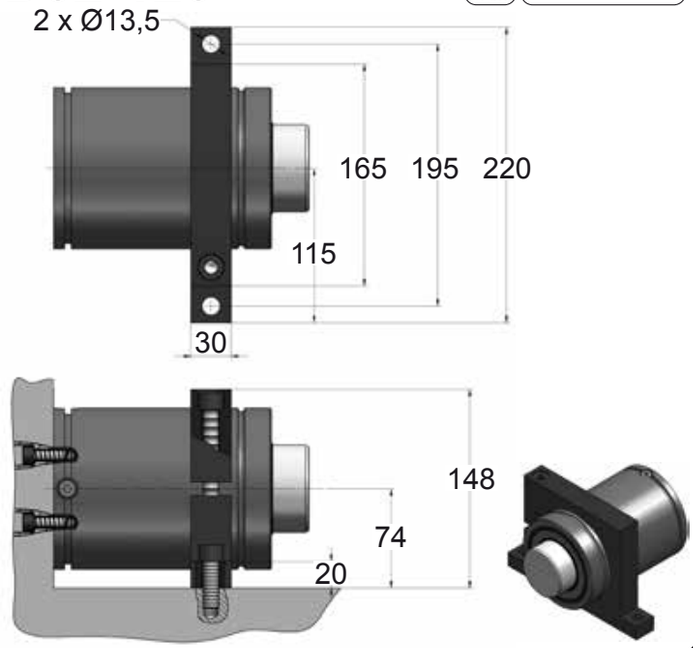
C20-120

ISO VDI CNOMO E24.54.815.G EM24.54.700/F



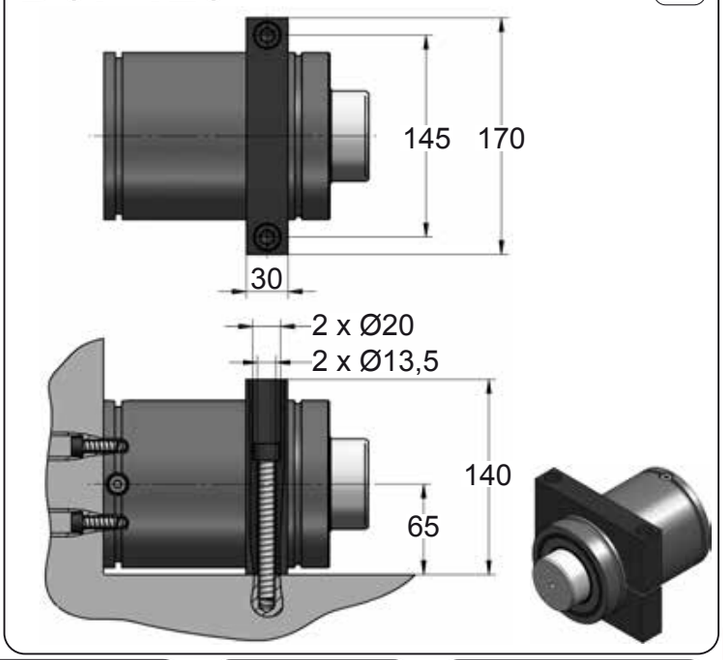
D02-120

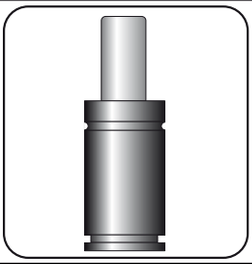
ISO CNOMO E24.54.815.G EM24.54.700/F

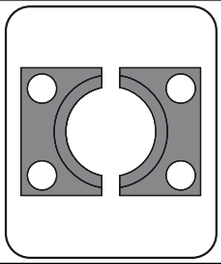


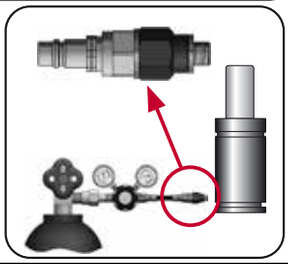
D67-120

VDI







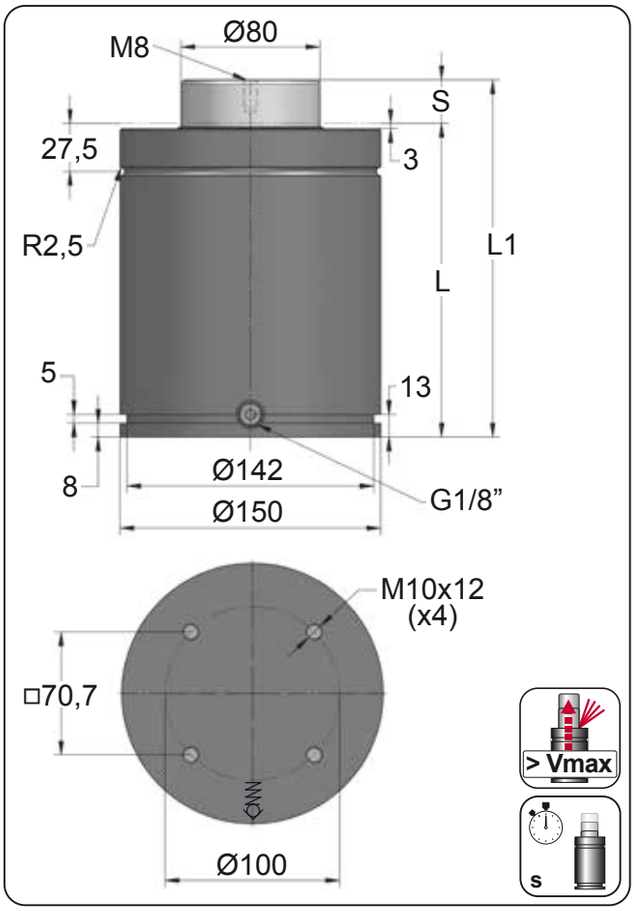


CODE		VAM 3000 050	KIT S-XXXXXXX KIT C-XXXXXXX	C05-120	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

VAM 5000

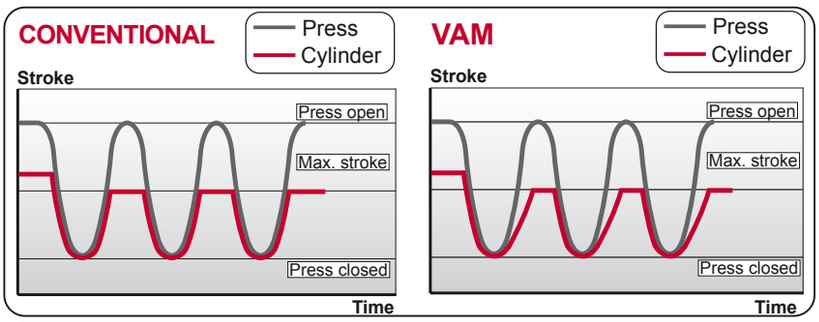
Slowed Return

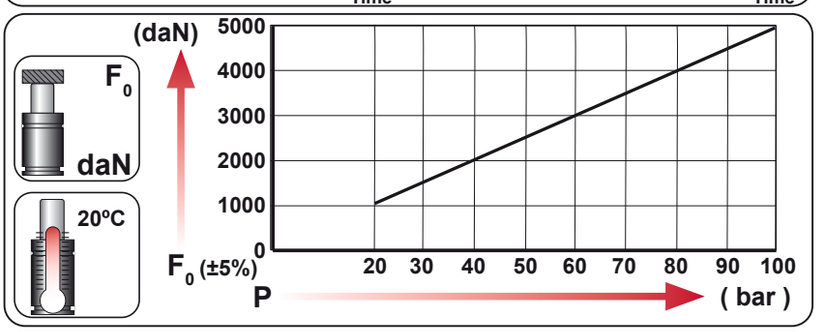
AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 5000 025	25	205	180	21.54
VAM 5000 038	38	231	193	22.61
VAM 5000 050	50	255	205	23.59
VAM 5000 063	63.5	282	218.5	24.70
VAM 5000 080	80	315	235	26.05
VAM 5000 100	100	355	255	27.68
VAM 5000 125	125	405	280	29.73

APPROVED PED 2014/68/EU

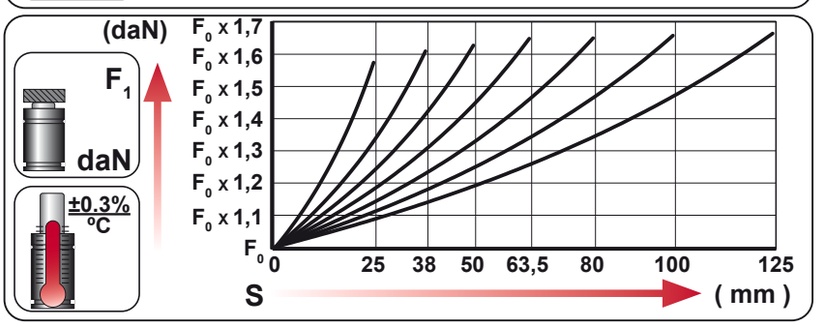




CODE	bar	psi	F_0 daN	F_1 daN
VAM 5000	100	1450	5025	8190

-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

WARNING!

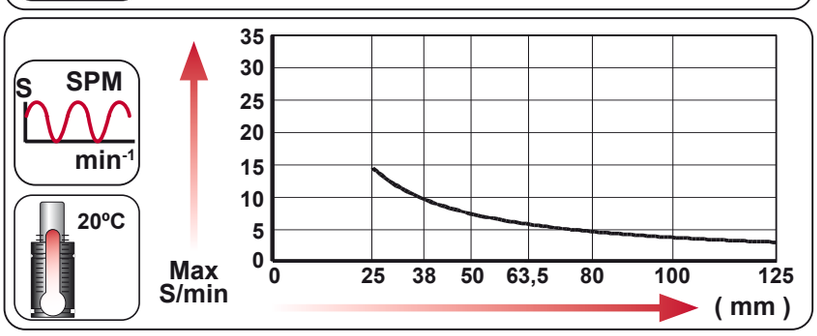


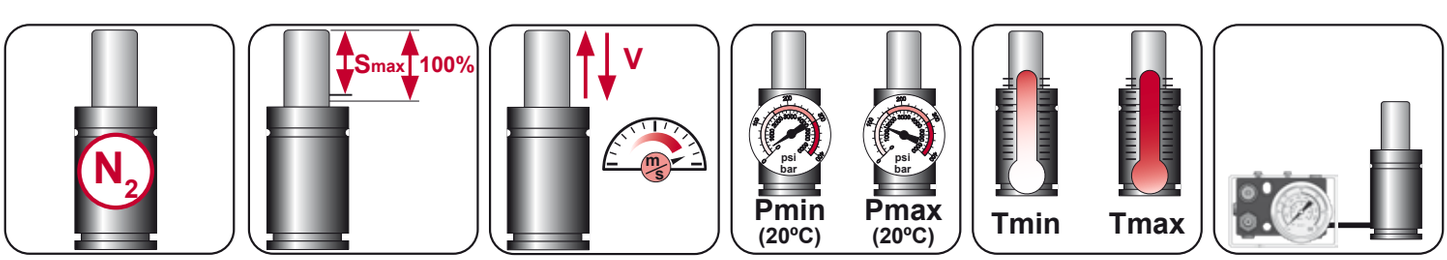
	ENG	ORDER
	DEU	BESTELLUNG
	FRA	COMMANDE
	ITA	ORDINE
	ESP	PEDIDO
	POR	PEDIDO

F_0 daN — S mm

VAM 5000 50

VAM 5000 050



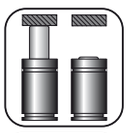


N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 100 1450	ºC ºF 0 32	ºC ºF 80 176	600 CP-

AZOL GAS

VAM 5000
Slowed Return

REQUIRED DATA

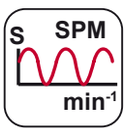


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
5025	0.214	$t_{max} = k \times S_U$

EXAMPLE: VAM 5000 080 (5025 daN)

$t_{max} = k \times S_U = 0.214 \times 80 = 17$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

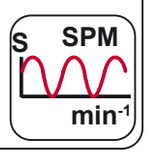
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

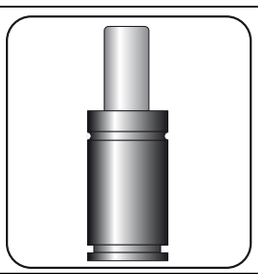
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
5025	$f_{max} = \frac{2160000}{S_U \times F_U}$

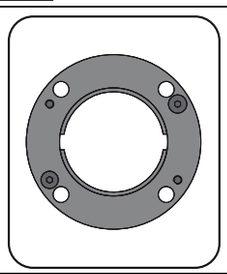
EXAMPLE: VAM 5000 080 (5025 daN)

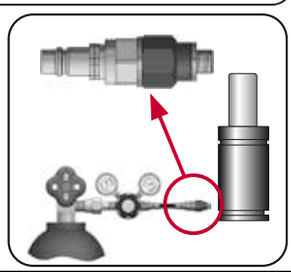
$f_{max} = \frac{2160000}{S_U \times F_U} = \frac{2160000}{80 \times 5025} = 5$ cycles/minute

Stroke used (S_U) *Force used (F_U)*









CODE		VAM 5000 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-150	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

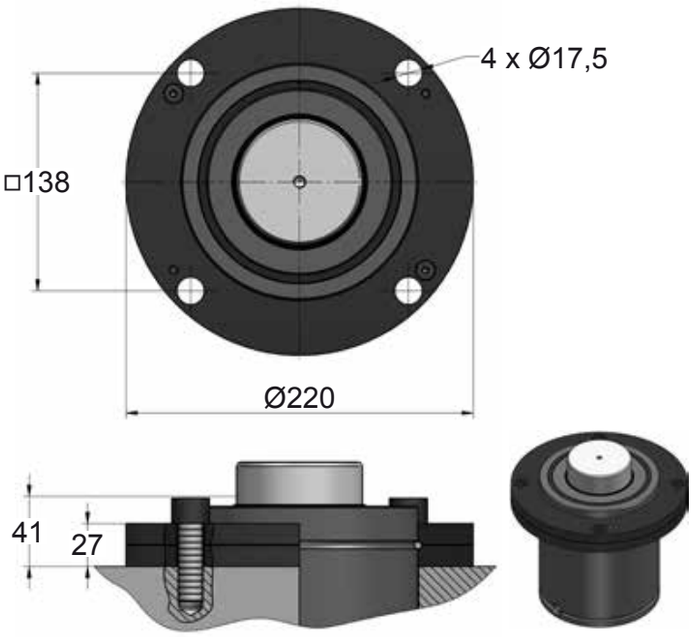
VAM 5000 MOUNTS

Slowed Return

AZOL GAS

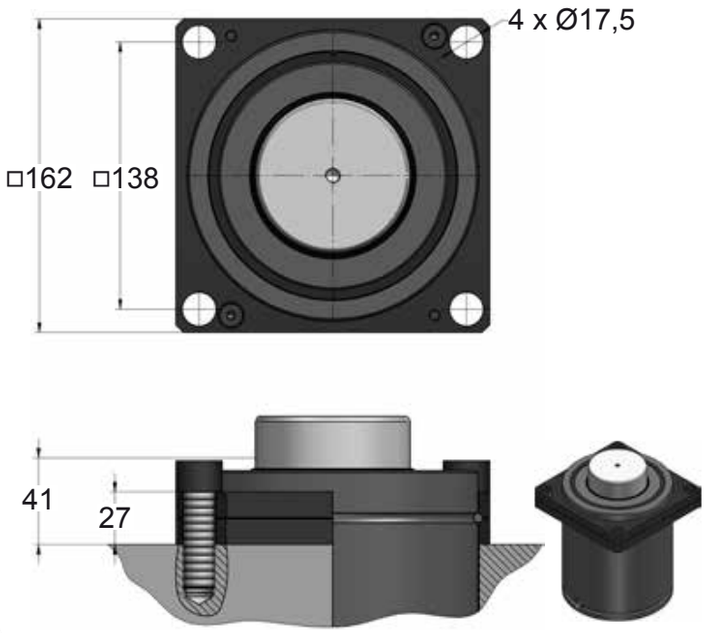
A14-150

ISO · NAASRO · CNOMO E24.54.815.G EM24.54.700/F

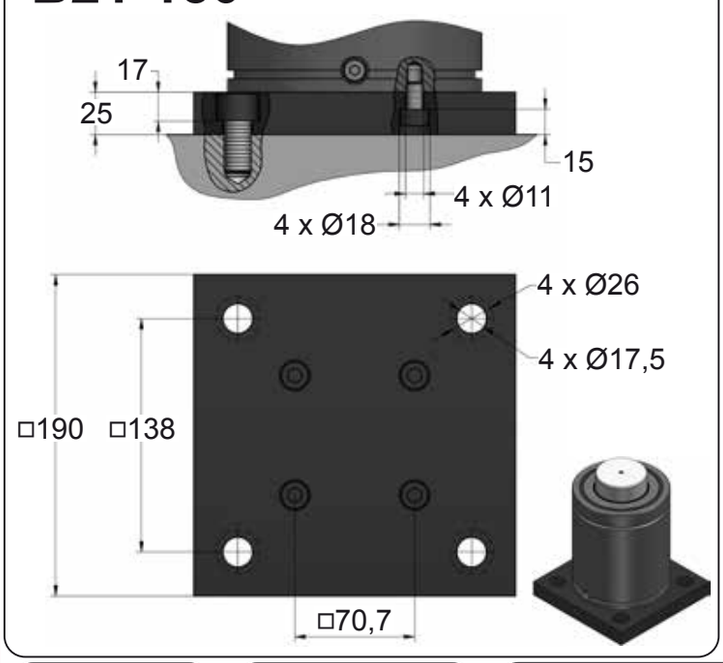


A34-150

ISO · VDI

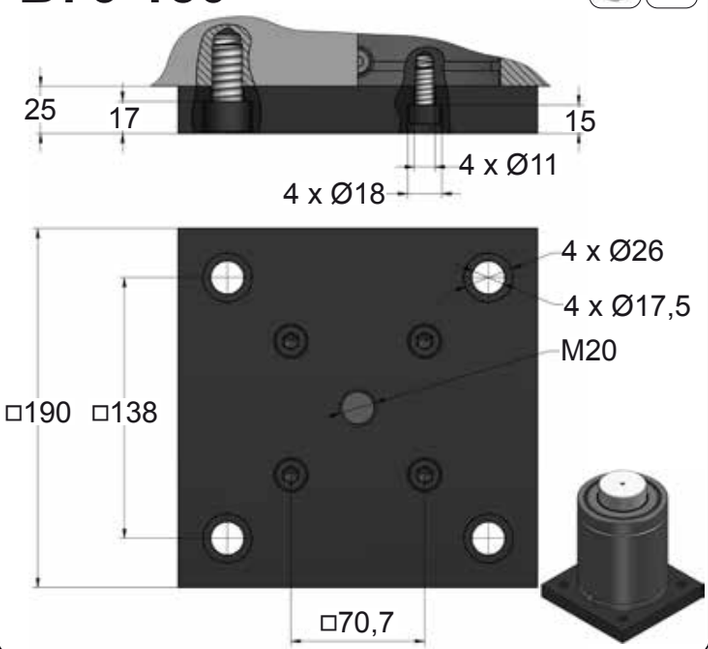


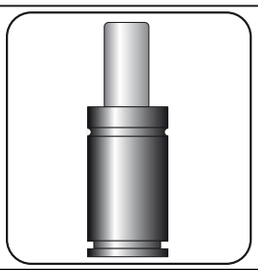
B21-150

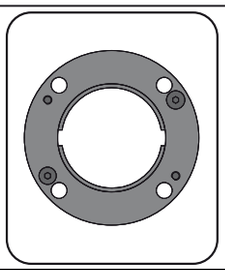


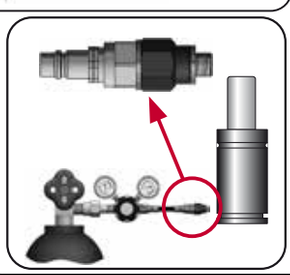
B76-150

ISO · NAASRO









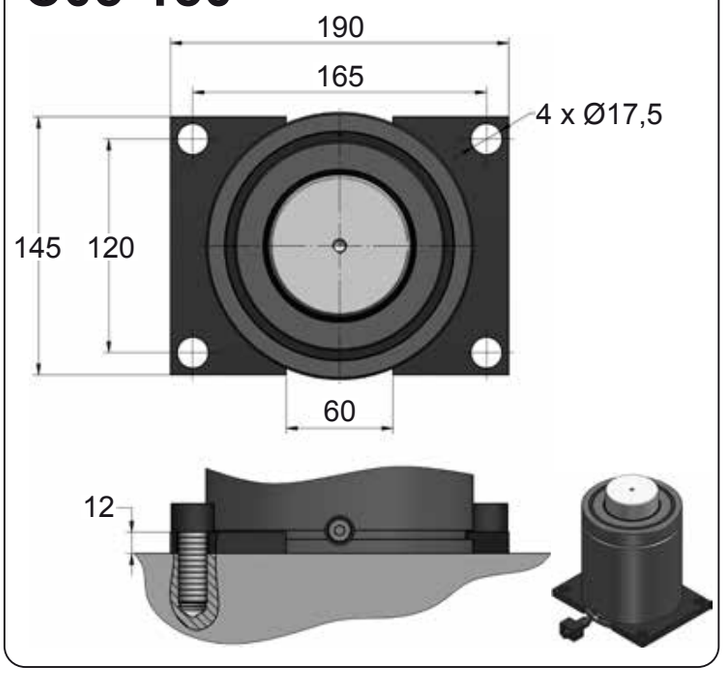
CODE		VAM 5000 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-150	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 5000 MOUNTS

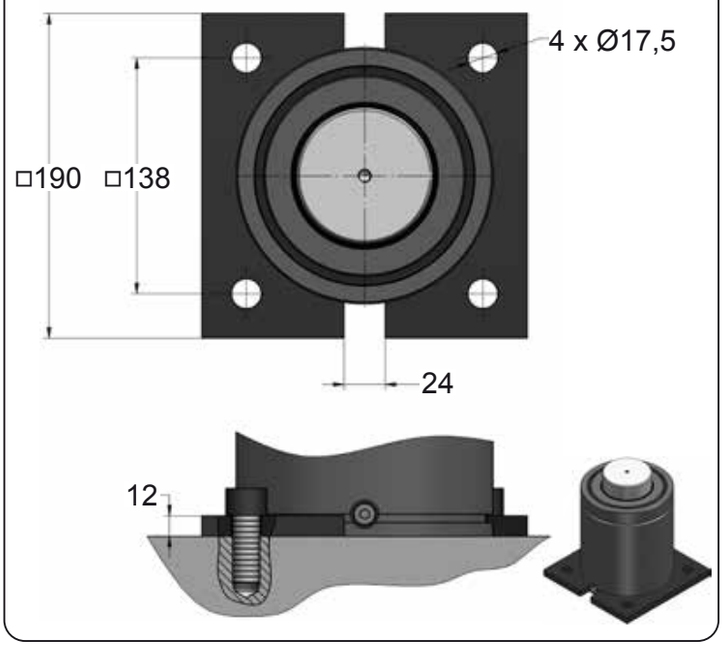
Slowed Return

C05-150



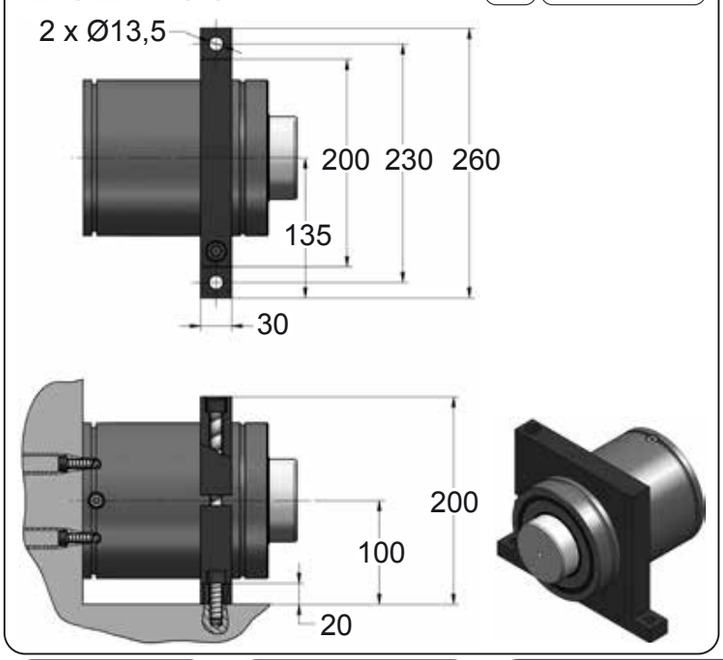
C20-150

ISO · VDI · CNOMO E24.54.815.G EM24.54.700/F



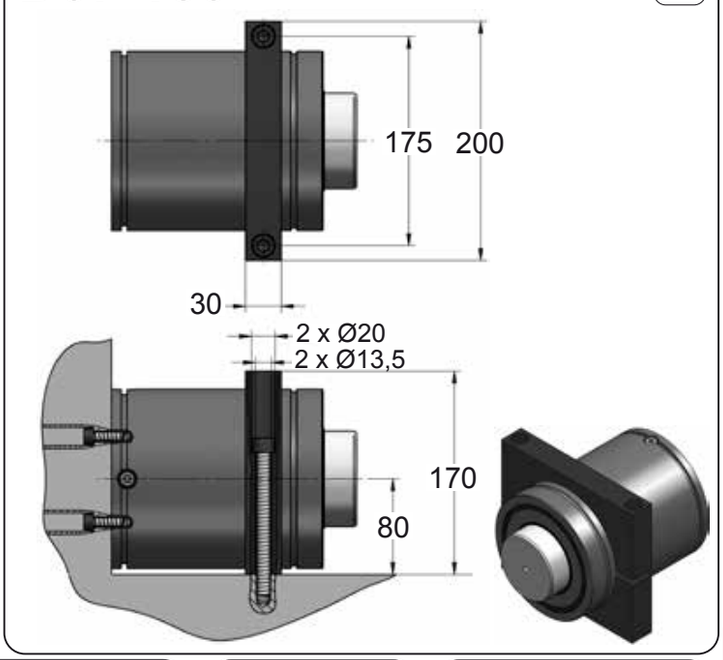
D02-150

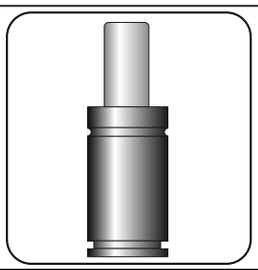
ISO · CNOMO E24.54.815.G

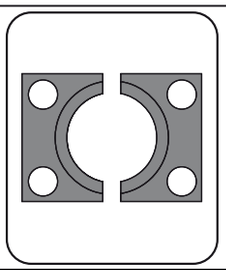


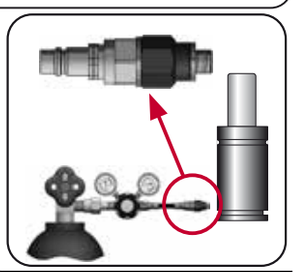
D67-150

VDI







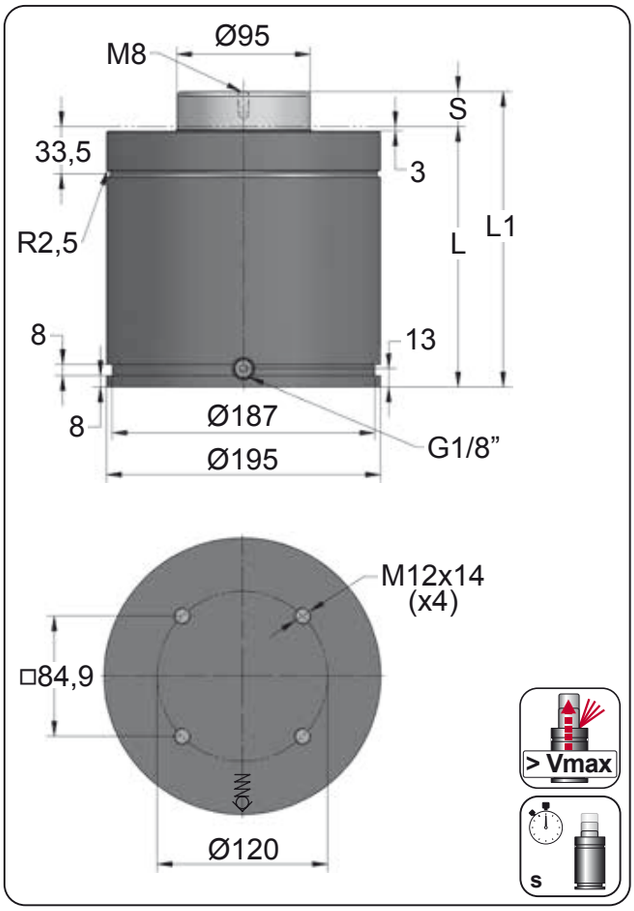


CODE		VAM 5000 050	KIT S-XXXXXXX KIT C-XXXXXXX	C05-150	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

VAM 7500

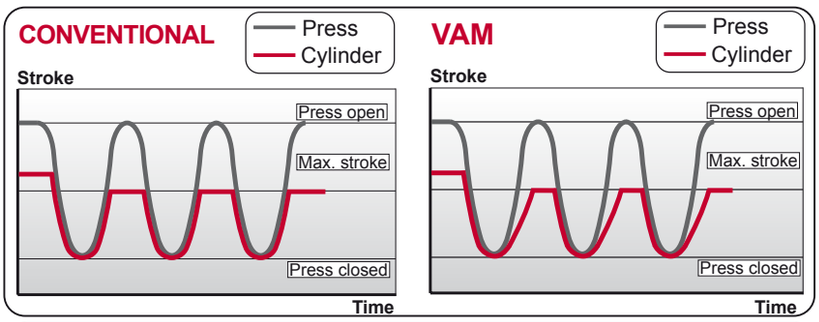
Slowed Return

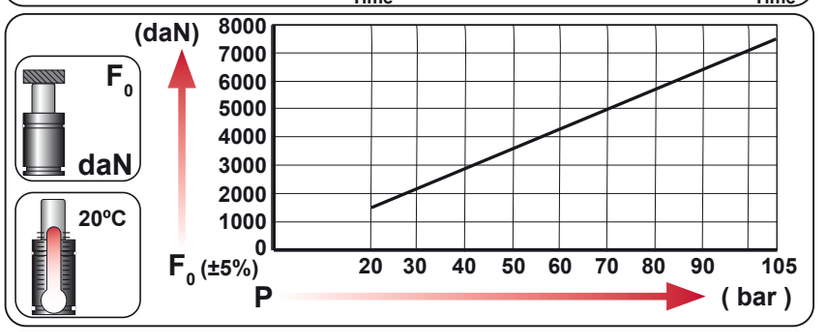
AZOL GAS



ORDER	S (mm)	L1 ±0,25 (mm)	L (mm)	Kg.
VAM 7500 025	25	210	185	37.02
VAM 7500 038	38	236	198	38.74
VAM 7500 050	50	260	210	40.33
VAM 7500 063	63.5	287	223.5	42.12
VAM 7500 080	80	320	240	44.30
VAM 7500 100	100	360	260	46.94
VAM 7500 125	125	410	285	50.25

APPROVED PED 2014/68/EU

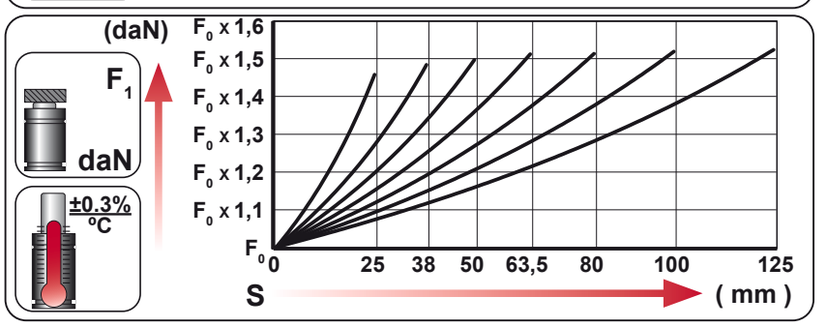




CODE	bar	psi	F_0 daN	F_1 daN
VAM 7500	105	1520	7440	11150

-Spring-back depending on used stroke.
-Return stroke at constant slowed speed.
-Prevent over-heating by limiting SPM.

WARNING!

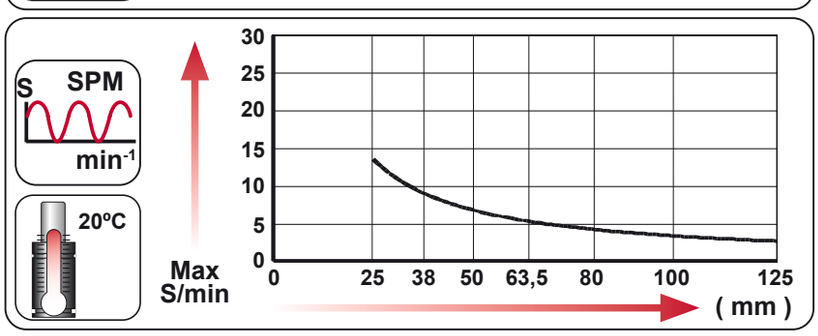


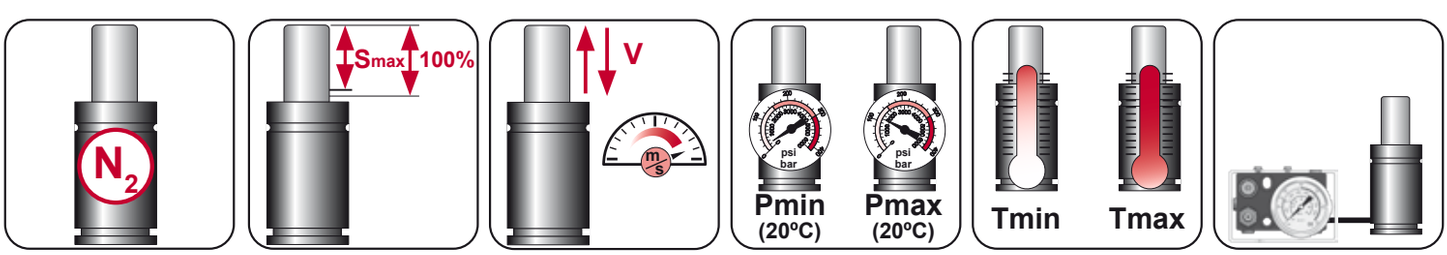
	ENG	ORDER
	DEU	BESTELLUNG
	FRA	COMMANDE
	ITA	ORDINE
	ESP	PEDIDO
	POR	PEDIDO

F_0 daN — S mm

VAM 7500 50

VAM 7500 050



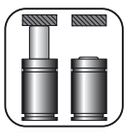


N_2	Smax < 90%	Vmax 0,5 m/s	bar psi 20 290	bar psi 105 1520	°C °F 0 32	°C °F 80 176	600 CP-

AZOL GAS

VAM 7500
Slowed Return

REQUIRED DATA

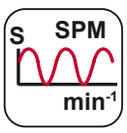


- Do piston rod have to keep locked down? **(yes / no)**.....

- Desired force **(daN)**.....

- Total stroke **(mm)**.....

- Stroke used **(mm)**.....



- Number of cycles per minute.....

- Desired slowed return **(eg. 1 second)**.....

MAXIMUM SLOWED RETURN

VAM gas springs are designed to return stroke at a constant slowed speed.
Maximum slowed return is defined to every model as per stroke used.

NOMINAL FORCE (daN)	CONSTANT (k)	MAXIMUM SLOWED RETURN (t_{max})
7440	0.289	$t_{max}= k \times S_U$

EXAMPLE: VAM 7500 080 (7440 daN)

$t_{max}= k \times S_U = 0.289 \times 80 = 23$ seconds

Stroke used (S_U)

MAXIMUM WORKING FREQUENCY

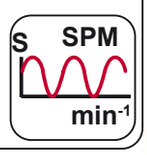
The energy provided by the press to the gas spring to compress it in every press cycle is greater than the energy used by the gas spring to return to its extended position. The difference in energy (transmitted from press and used by gas spring) is transformed into heat inside the gas spring. Consequently, to avoid overheating in slowed return gas springs, heat generation must be limited (SPM strokes per minute).

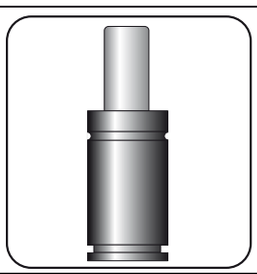
NOMINAL FORCE (daN)	MAXIMUM WORKING FREQUENCY (f_{max})
7440	$f_{max}= \frac{3060000}{S_U \times F_U}$

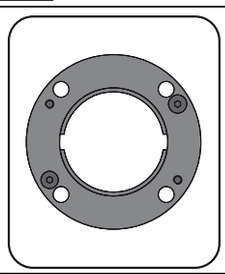
EXAMPLE: VAM 7500 080 (7440 daN)

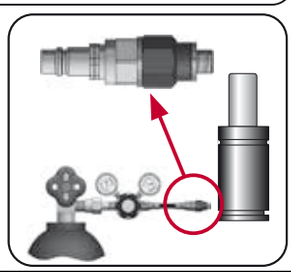
$f_{max}= \frac{3060000}{S_U \times F_U} = \frac{3060000}{80 \times 7440} = 5$ cycles/minute

Stroke used (S_U) *Force used (F_U)*









CODE		VAM 7500 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-195	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

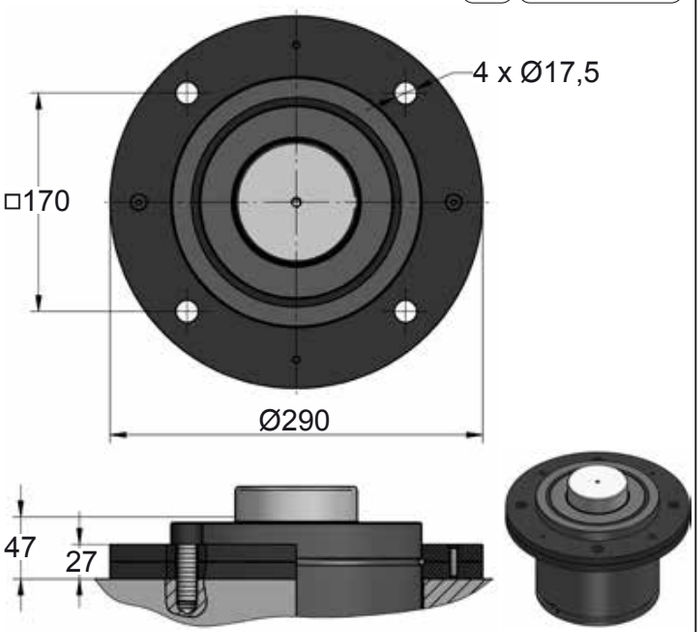
VAM 7500 MOUNTS

Slowed Return

AZOL GAS

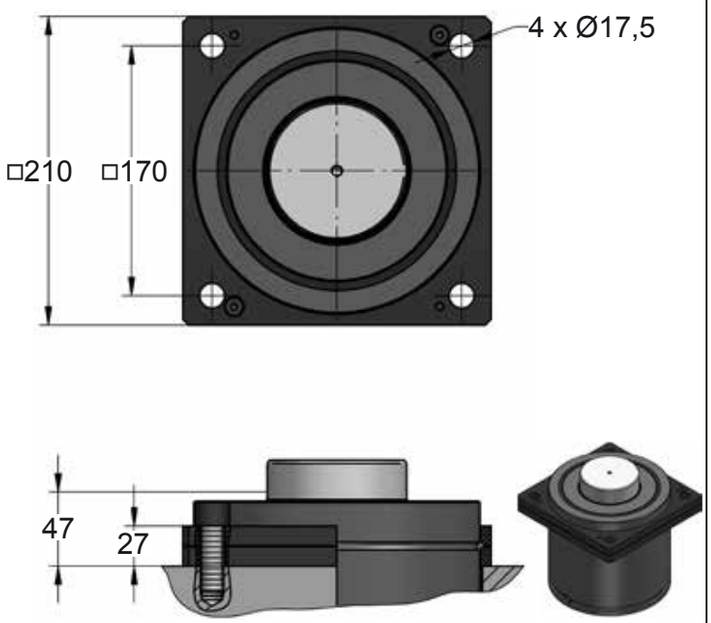
A14-195

ISO CNOMO EM24.54.700/F

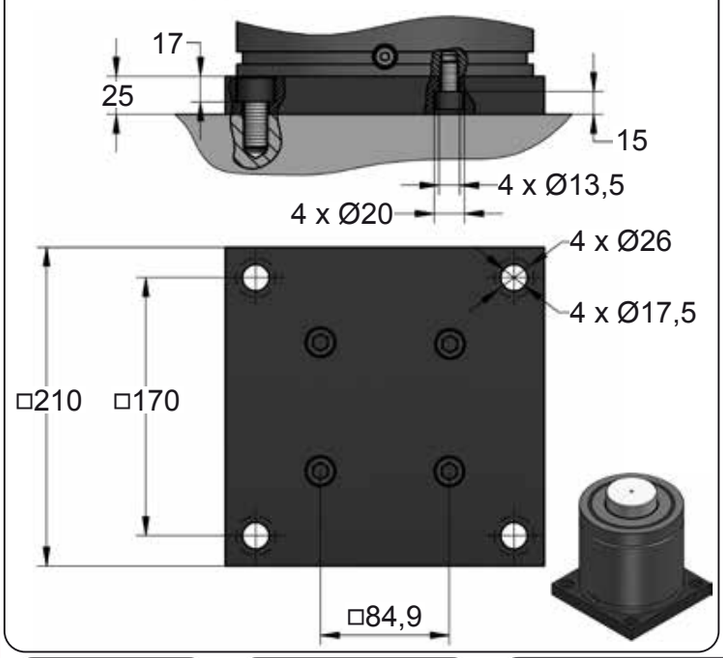


A34-195

ISO VDI

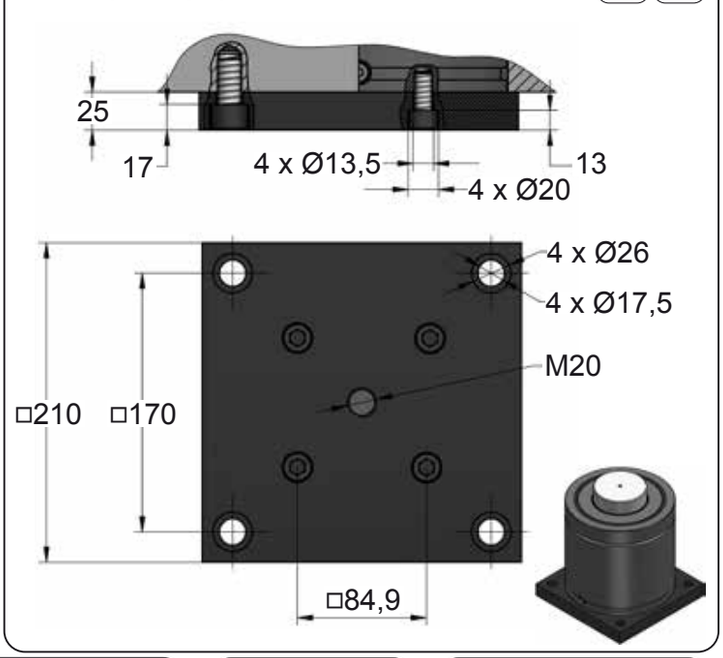


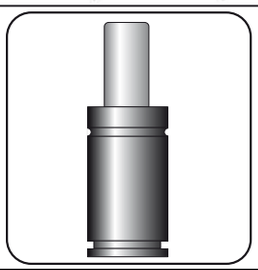
B21-195



B76-195

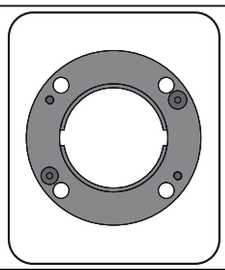
ISO

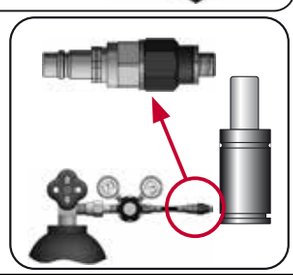




SEAL
KIT S-XXXXXXX

CARTRIDGE
KIT C-XXXXXXX





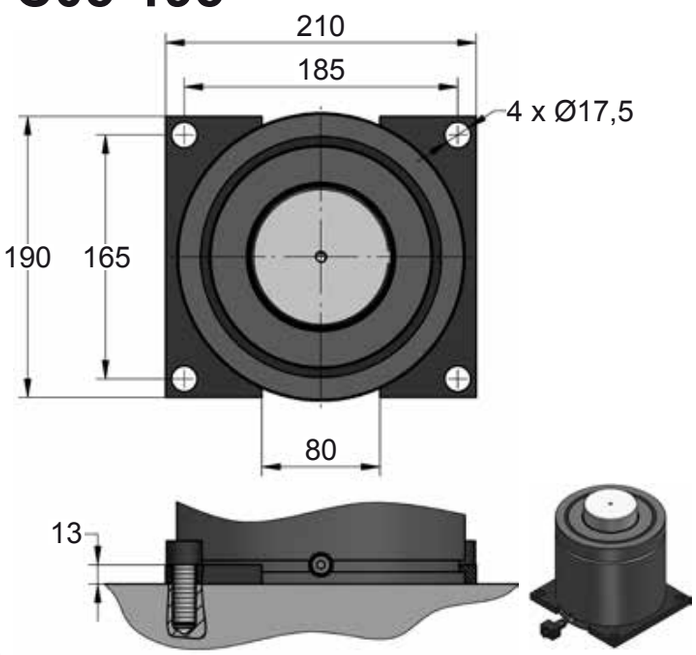
CODE		VAM 7500 050	KIT S-XXXXXXX KIT C-XXXXXXX	A14-195	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA

AZOL GAS

VAM 7500 MOUNTS

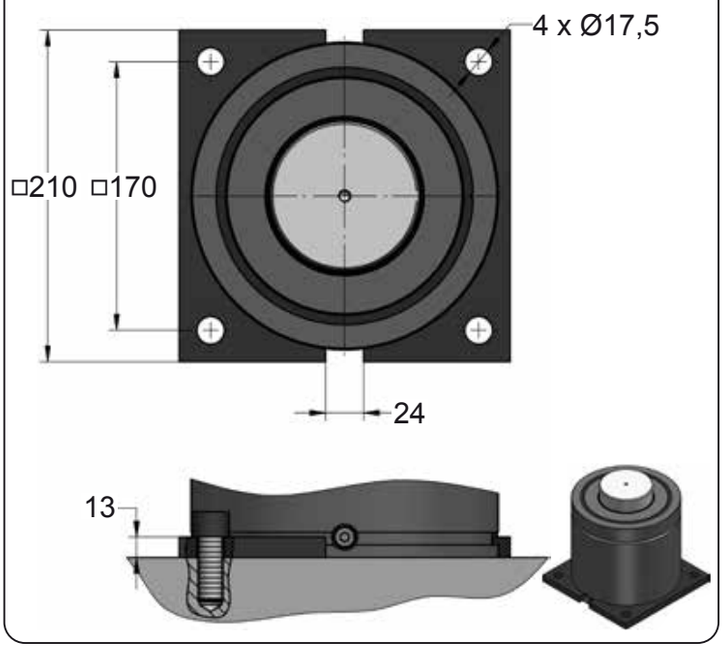
Slowed Return

C05-195

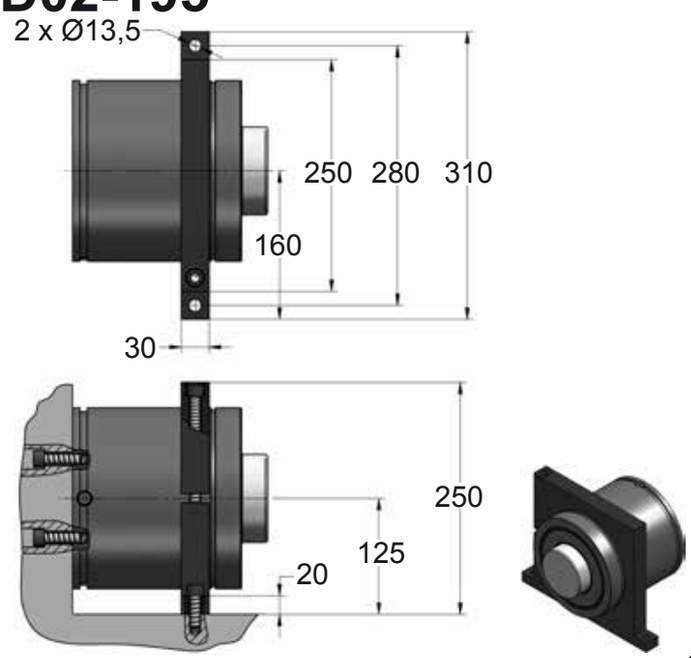


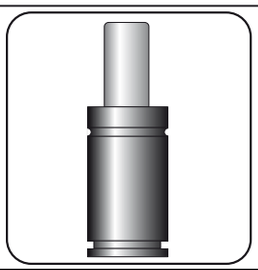
C20-195

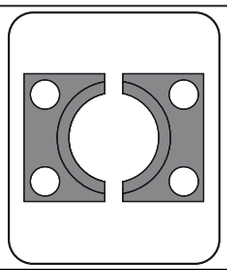
ISO VDI EM24.54.700/F

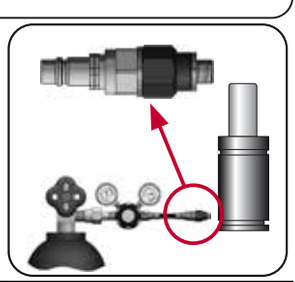


D02-195









CODE		VAM 7500 050	KIT S-XXXXXXX KIT C-XXXXXXX	C05-195	18 CG 1-Q
ENG	ORDER	GAS SPRING	REPAIR KIT	FLANGE	CHARGING ADAPTER
DEU	BESTELLUNG	GASDRUCKFEDER	ERSATZTEILSATZ	FLANSCHE	LADEADAPTER
FRA	COMMANDE	RESSORT À GAZ	KIT DE RÉPARATION	BRIDE	RACCORD DE CHARGE
ITA	ORDINE	CILINDRO AD AZOTO	KIT DI MANUTENZIONE	FLANGE	ADATTATORE DI CARICO
ESP	PEDIDO	RESORTE DE GAS	KIT DE REPARACION	BRIDA	ADAPTADOR DE CARGA
POR	PEDIDO	CILINDRO DE GÁS	KIT DE MANUTENÇÃO	FLANGE	ADAPTADOR DE CARGA