

# GRIPPER WITH THREE PARALLEL JAWS, SERIES P12

Parallel double-acting three-jaw gripper, with either internal or external clamping.

Also available in the double-acting with spring version, normally open (NO) for internal grip and normally closed (NC) for external grip.

Aluminum alloy body coated with surface hardening treatment; jaws made of wear-resistant coated steel.

The jaw-guiding system and precision in coupling with the body make the gripper extremely stable.

The ceramic-coated body reduces friction and wear, and enhances the movement of the jaws on the body.

All sizes are available in the version with standard stroke and clamping force, while only some in the version with reduced stroke but with higher clamping torque.

The gripper is equipped with a magnet and grooves for sensors.

A version designed to house inductive sensors is also available (**the inductive sensors are not supplied by Metal Work**).



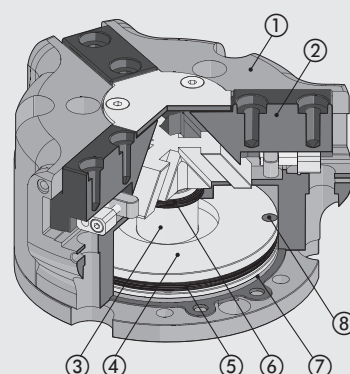
TECHNICAL DATA		P12-40			P12-64			P12-80		P12-100		
		DA	NO	NC	DA	NO	NC	Standard DA	Increased force DA	Standard DA	Increased force DA	
Minimum operating pressure	bar	2			2			2		2		
	MPa	0.2			0.2			0.2		0.2		
	psi	29			29			29		29		
Maximum operating pressure	bar	8			8			8		8		
	MPa	0.8			0.8			0.8		0.8		
	psi	116			116			116		116		
Temperature range	°C	-10 to 80										
Fluid		20 µm filtered, lubricated or unlubricated air; lubrication if used, it must be continuous										
Gripping force at 6.3 bar *	opening	N	130	151	-	310	353	-	435	860	840	1450
	closing	N	117	-	138	279	-	322	774	756	1305	
Minimum gripping force produced by the spring *		N	-	21	21	-	43	43	-	-	-	
Maximum movable weight	kg	1.3			2.9			4.5		9		
Stroke of each jaw	mm	2.5			6			8		10		
Minimum time	opening	s	0.05	0.05	0.1	0.05	0.05	0.1	0.05			
	closing	s	0.05	0.1	0.05	0.05	0.1	0.05	0.05			
Repeatability	mm	0.01								0.05		
Moment of inertia as regards the piston axis	kg cm <sup>2</sup>	0.33	0.38	0.38	1.57	2.96	2.96	6.5		19		
Weight	kg	0.12	0.14	0.14	0.28	0.49	0.49	0.75		1.4		

DA: Double-acting; NO: Double acting with spring, normally open; NC: Double acting with spring, normally closed.

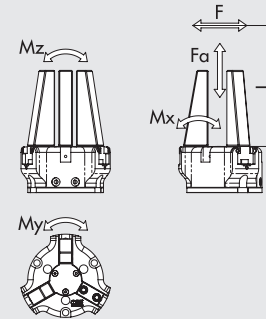
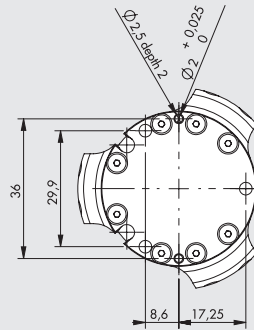
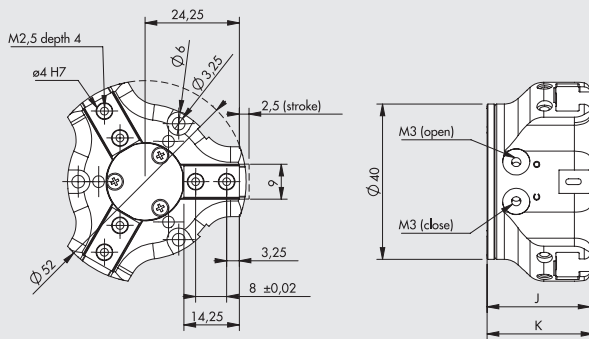
\* Referred to a single jaw 20 mm from the upper surface. The total force is obtained by multiplying the reported value by 3.

## COMPONENTS

- ① BODY: hard-anodized aluminium
- ② JAWS: nitrided steel
- ③ PISTON ROD + GUIDE: nitrided steel
- ④ PISTON: hard-anodized aluminium
- ⑤ PISTON GASKET: NBR
- ⑥ PISTON ROD GASKET: NBR / polyurethane
- ⑦ BASE GASKET: reinforced SBR / NBR
- ⑧ MAGNET: neodymium



**GRIPPER P12-40**



- Fa** 250 N
- Mx** 12 Nm
- My** 5 Nm
- Mz** 10 Nm

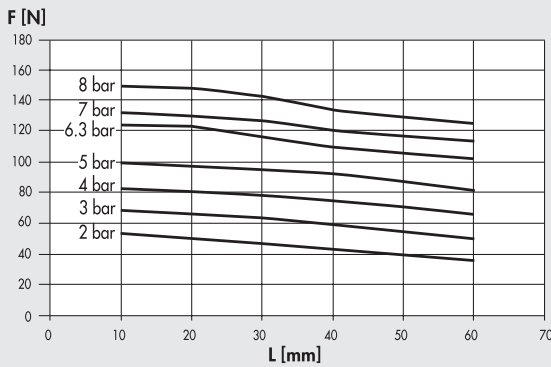
	K	J
DA	27.2	26.5
NO /NC	35.2	34.5

**F** gripping force for each jaw  
**Fa** maximum admissible static axial force  
**Mx, My, Mz** maximum admissible static moments

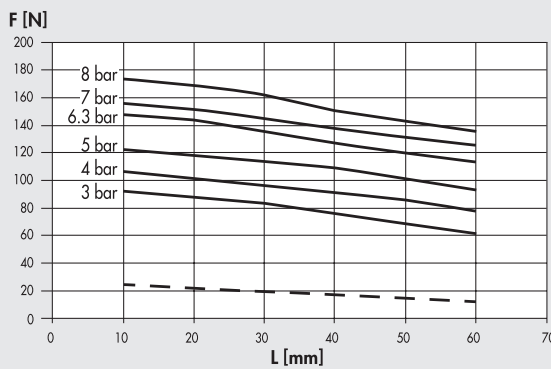
**GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"**

**External grip\*\*\* (closing jaws)**

**Version DA**

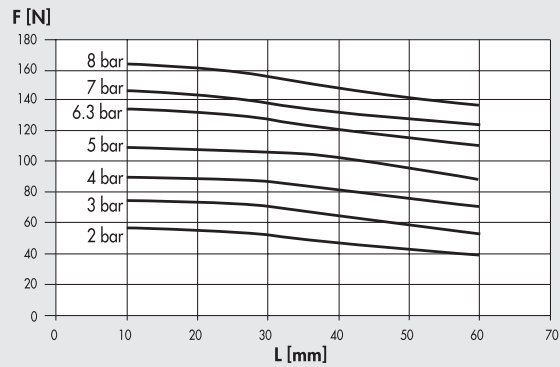


**Version NC**

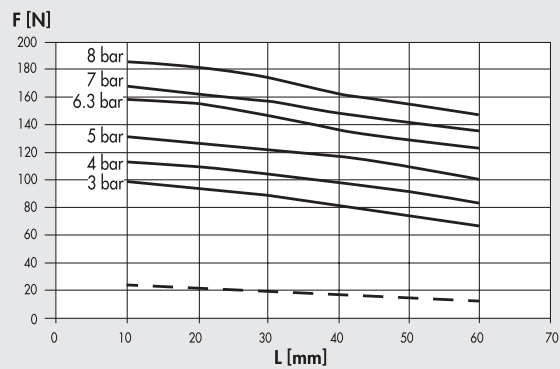


**Internal grip\*\*\* (opening jaws)**

**Version DA**



**Version NO**

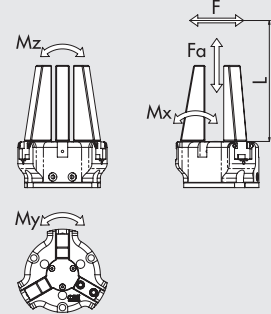
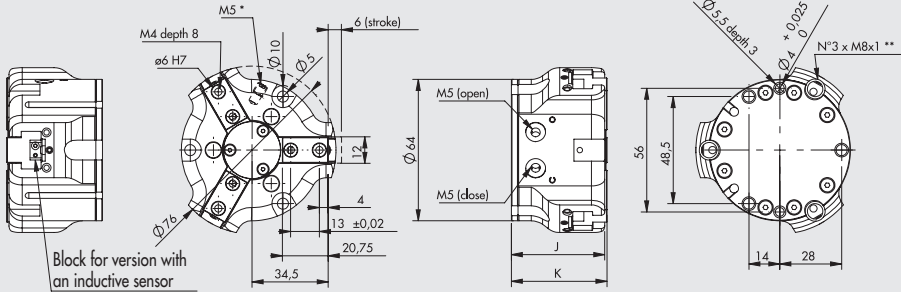


\*\*\* Referred to a single jaw. The total force is obtained by multiplying the value by 3.

— — — Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

Code	Description
W1560400300	Gripper with 3 parallel jaws P12-40
W1560402300	Gripper with 3 parallel jaws P12-400 NO
W1560403300	Gripper with 3 parallel jaws P12-40 NC

**GRIPPER P12-64**



- Fa** 1100 N
- Mx** 60 Nm
- My** 40 Nm
- Mz** 40 Nm

- \* Discharge pressurization connection
- \*\* Inductive sensor slot

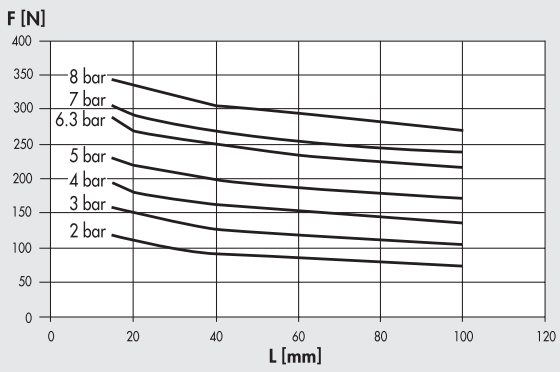
	K	J
DA	42.3	43.3
NO /NC	55.8	56.8

**F** gripping force for each jaw  
**Fa** maximum admissible static axial force  
**Mx, My, Mz** maximum admissible static moments

**GRAPHS OF GRIPPING FORCE AS A FUNCTION OF DISTANCE "L"**

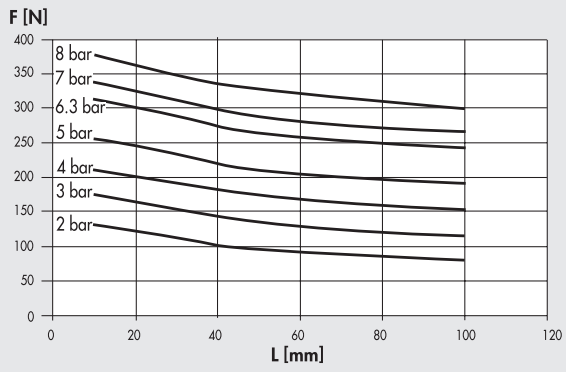
**External grip\*\*\* (closing jaws)**

**Version DA**

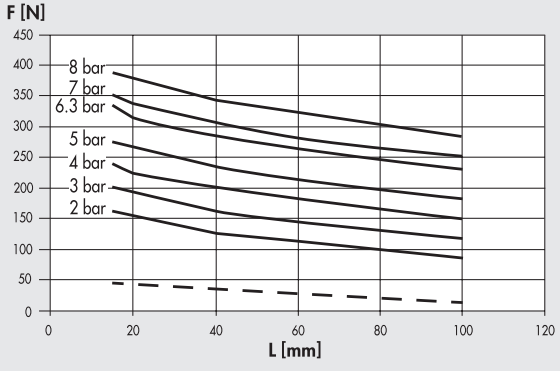


**Internal grip\*\*\* (opening jaws)**

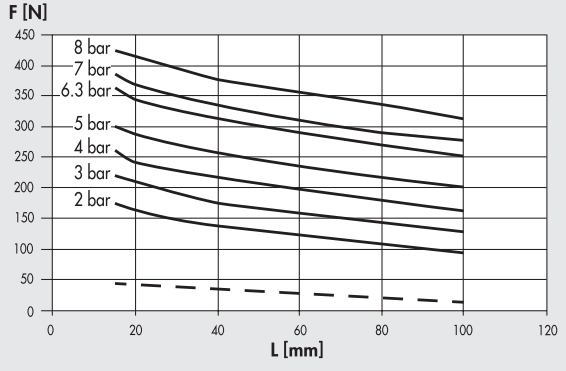
**Version DA**



**Version NC**



**Version NO**

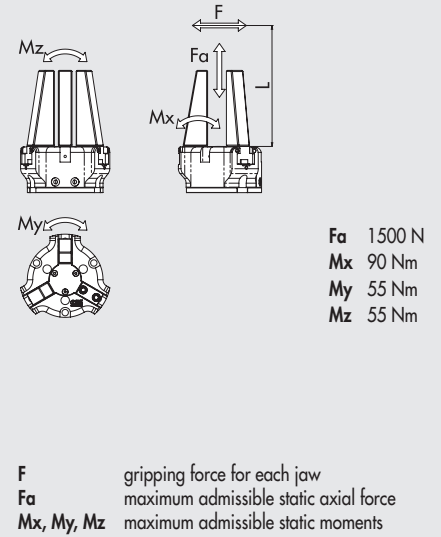
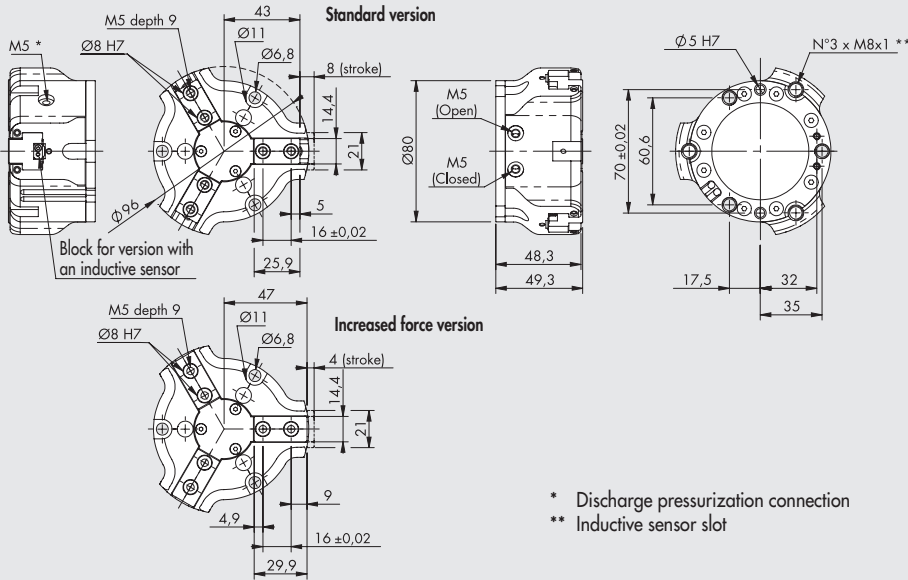


\*\*\* Referred to a single jaw. The total force is obtained by multiplying the value by 3.

— — — Minimum gripping force generated by the spring alone (NO and NC versions only). Actual force varies with stroke.

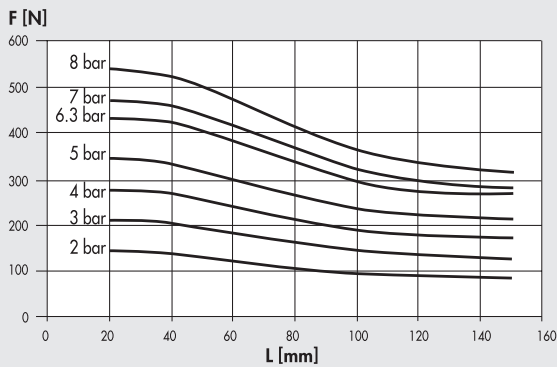
Code	Description
W1560640300	Gripper with 3 parallel jaws P12-64
W1560640301	Gripper with 3 parallel jaws P12-64 for inductive sensors
W1560642300	Gripper with 3 parallel jaws P12-64NO
W1560642301	Gripper with 3 parallel jaws P12-64 NO for inductive sensors
W1560643300	Gripper with 3 parallel jaws P12-64 NC
W1560643301	Gripper with 3 parallel jaws P12-64 NC for inductive sensors

**GRIPPER P12-80**

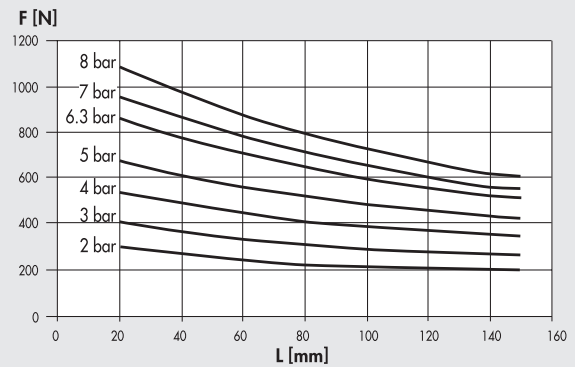


\* Discharge pressurization connection  
 \*\* Inductive sensor slot

**Standard version**

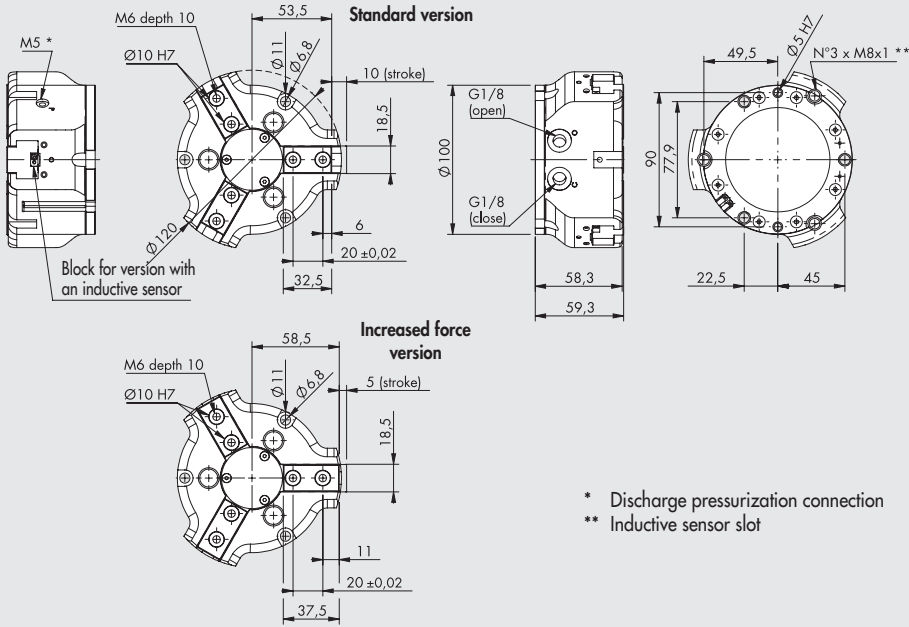


**Increased force version**

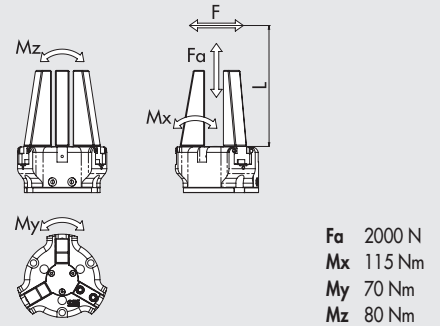


Code	Description
W1560800300	Gripper with 3 parallel jaws P12-80
W1560800301	Gripper with 3 parallel jaws P12-80 for inductive sensors
W1560800320	Gripper with 3 parallel jaws P12-80 increased force
W1560800321	Gripper with 3 parallel jaws P12-80 increased force for inductive sensors

**GRIPPER P12-100**



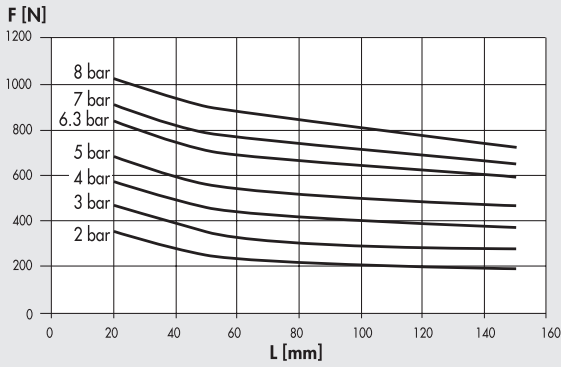
\* Discharge pressurization connection  
 \*\* Inductive sensor slot



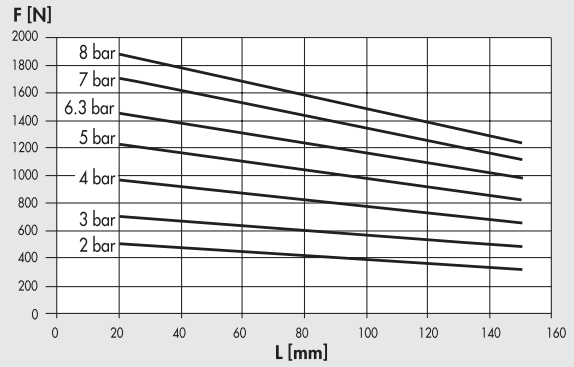
**F** 2000 N  
**Fa** 115 Nm  
**My** 70 Nm  
**Mz** 80 Nm

**F** gripping force for each jaw  
**Fa** maximum admissible static axial force  
**Mx, My, Mz** maximum admissible static moments

**Standard version**



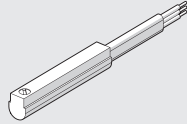
**Increased force version**



Code	Description
W1561000300	Gripper with 3 parallel jaws P12-100
W1561000301	Gripper with 3 parallel jaws P12-100 for inductive sensors
W1561000320	Gripper with 3 parallel jaws P12-100 increased force
W1561000321	Gripper with 3 parallel jaws P12-100 increased force for inductive sensors

ACCESSORIES

SENSOR Ø 4



For codes and technical data, see chapter A6.

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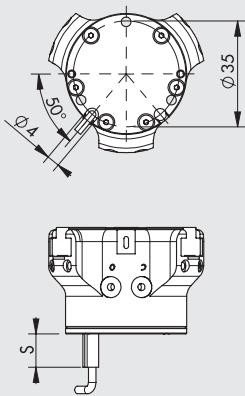
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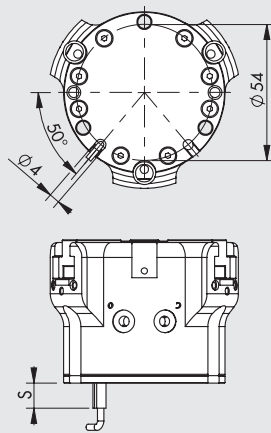
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SENSOR MOUNTING IN THE NO AND NC GRIPPERS SLOTS

P12-40

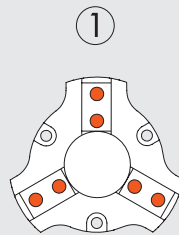
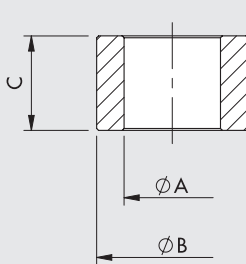


P12-64



	S	
	P12-40	P12-64
NO	-	10
NC	12	10

CENTRING RING



Code	Size	ØA	ØB <sup>17</sup>	C	QUANTITY OF KITS NEEDED
					① - Use with jaws
W1560409201	40	3 <sup>0.1</sup>	4	4 <sup>0.1</sup>	3 code W1560409201
W1560649201	64	4.5 <sup>0.1</sup>	6	5 <sup>0.1</sup>	3 code W1560649201
W1560809201	80	5.1 <sup>0.1</sup>	8	5 <sup>0.05</sup>	3 code W1560809201
W1561009201	100	6.2 <sup>±0.1</sup>	10	6.9 <sup>0.1</sup>	3 code W1561009201

Note: 2-pieces pack

NOTES

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