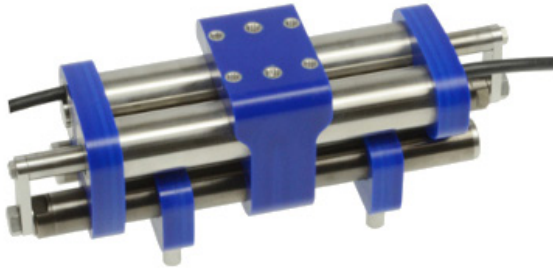


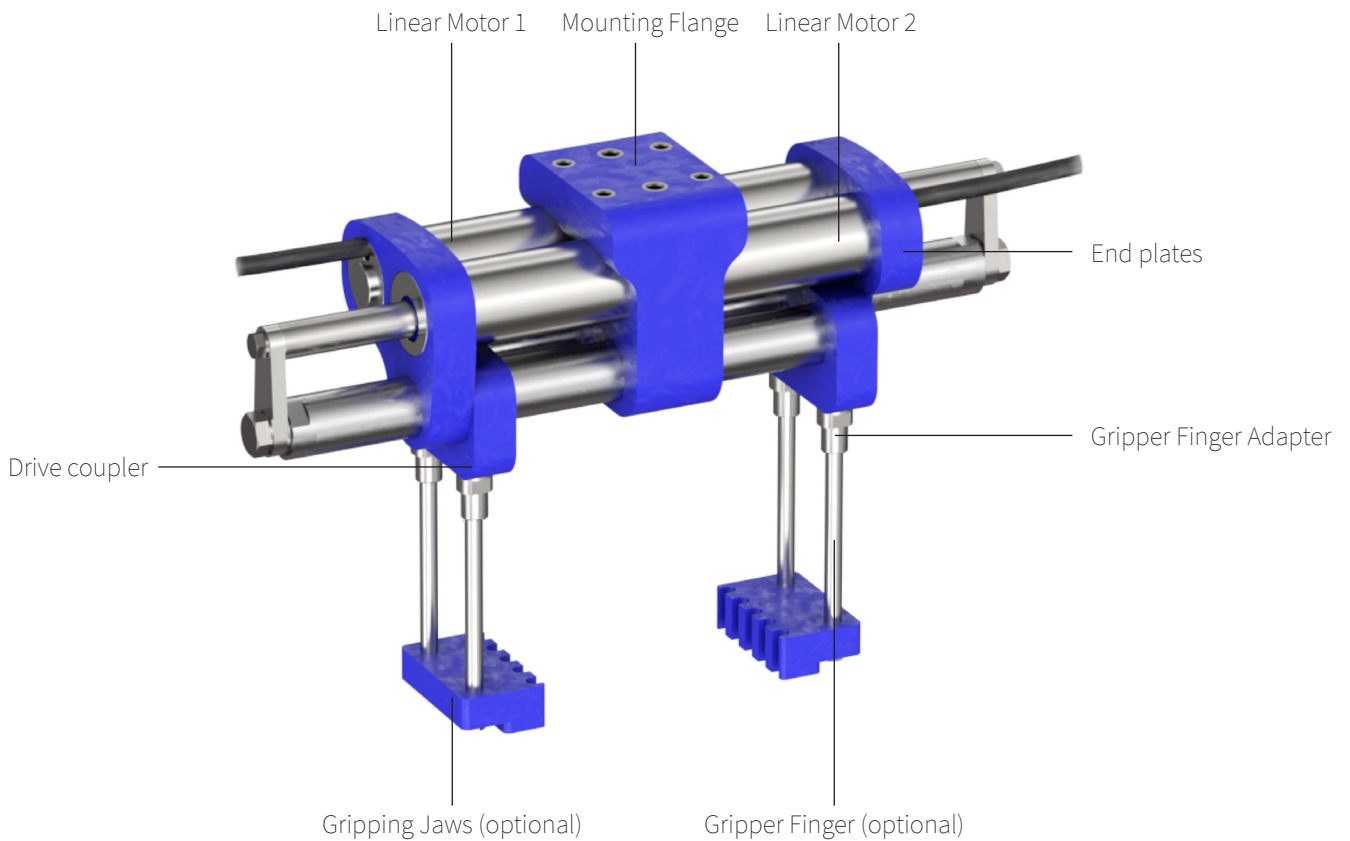
GRIPPER MODULES GM01



- ✓ Consistent opening and closing times with extremely high dynamics
- ✓ High reliability of clamping for uniform and non-uniform products
- ✓ Used in industries with high requirements, such as the pharmaceutical, food and automation industry
- ✓ High process reliability through monitoring data such as press force, distance, temperature and capacity utilisation
- ✓ „Washdown safe“
- ✓ Easy integration and adaptation to individual product and packaging formats
- ✓ Stainless steel EN 1.4404 and light materials (FDA)

GRIPPER MODULES GM01

| | |
|----------------------|---|
| Description | 3 |
| Technical Data | 5 |
| Accessories | 8 |



Grippers GM01

The electric gripper is used for precise clamping and moving of products in demanding environments. Due to the high flexibility of the settings, dry, moist, solid or soft products can be gently clamped and transported without leaving noticeable marks. With its hygienic design and high IP69 protection rating, the gripper can be easily cleaned and is designed for use in the food industry. Thanks to the detection of the gripper position

and the control of the clamping force, even uneven products can be gripped reliably. Due to the large number of monitoring options, faulty gripping or even defective parts can be detected "on the fly" and sorted out accordingly. The intelligent GM01 gripper includes a wide range of monitoring options, which are indispensable for applications with a high degree of automation.

Mode of use and coupling to the SM01 linear modules

Due to the easy coupling and the standardisation of the materials, the G01 parallel gripper complements another element of the stainless steel line from LinMot. In combination with the SM01 guide, a complete pick and place application can be realised in stainless steel EN 1.4404. A combination that is extremely resistant to chemicals and has an enormous service life even under difficult conditions. Further information on the SM01 modules can be found at <https://linmot.com/products/linear-guides-linear-modules/linear-modules-stainless-steel-sm01/>



Calculation of the necessary clamping force

The calculation of the required clamping force depends on the coefficient of friction (μ) between the attachment parts (gripper jaws) and the gripped goods. The different product shapes represent a further degree of freedom when designing the required clamping force. In principle, the force can be set

If large accelerations or impact forces occur while driving, appropriate measures must be taken.

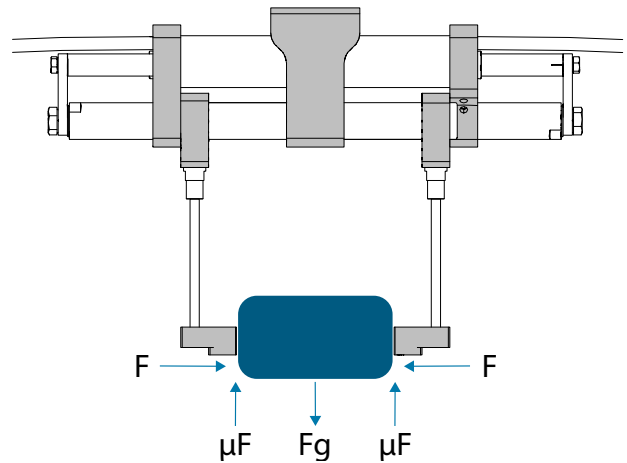
anywhere between 10 N and 130 N in order to achieve an optimum clamping process. For the normal transport of a product (taking shocks and vibrations into account), a clamping force of at least 10 to 20 times the weight of the product to be gripped should be expected.

Calculation

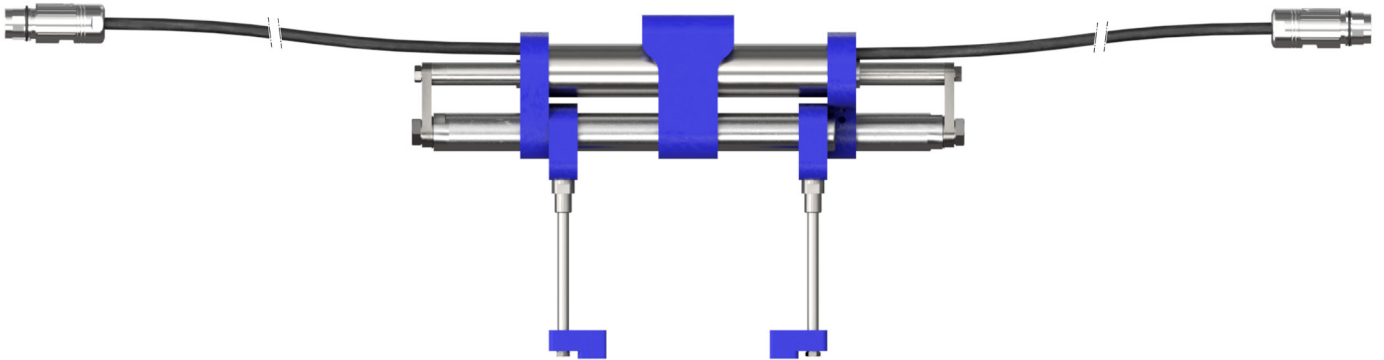
$$X_{\text{arm}} \cdot \mu F > mg \Rightarrow 2 \cdot \mu F > mg$$

$$F = \frac{mg}{2 \cdot \mu} \cdot X_{\text{res}} \Rightarrow F = \frac{mg}{2 \cdot \mu} \cdot X_{\text{res}}$$

- X_{arm} = Number of gripper fingers (default 2)
- X_{res} = Safety factor (default 4)
- F = Clamping force
- μ = Coefficient of friction (z.B. 0.1 / 0.2)
- m = Workpiece weight (kg)
- g = Gravitational constant (= 9.8 m/s²)
- Fg = Workpiece weight force (N)



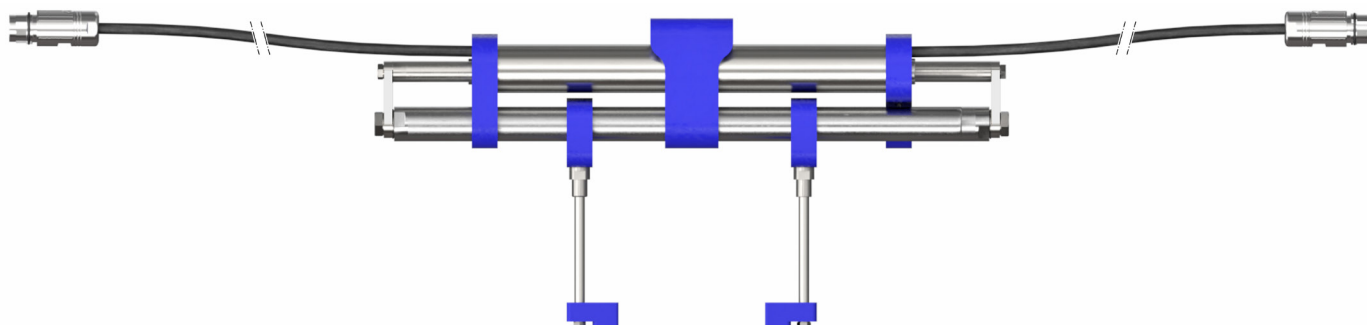
PERFORMANCE DATA GM01-23X80F-HP-82-SSCP



| Performance Data Gripper Module GM01-23x80F-HP-82-SSCP | | | | |
|--|-----|----------|--|------------------------|
| Stroke | | | | |
| Max. Opening/Closing Stroke Range | mm | (in) | | ≤ 82 (≤ 3.23) |
| Force | | | | |
| Max. Clamping Force @ 48VDC | N | (lbf) | | 67.1 (15.08) |
| Max. Clamping Force @ 72VDC | N | (lbf) | | 67.1 (15.08) |
| Max. Continuous Clamping Force | N | (lbf) | | 12 (2.69) |
| Velocity | | | | |
| Max. Gripper Speed (Close/Open) | m/s | (in/s) | | 3.5 (137.79) |
| Position Detection | | | | |
| Position Resolution | mm | (in) | | 0.005 (0.0002) |
| Repeatability | mm | (in) | | ±0.05 (±0.002) |
| Electrical Data | | | | |
| Max. Current per Gripper Arm @ 48VDC | | A_{pk} | | 7.4 |
| Max. Current per Gripper Arm @ 72VDC | | A_{pk} | | 7.4 |
| Mechanical Data | | | | |
| Gripper Width | mm | (in) | | 70 (2.76) |
| Gripper Length | mm | (in) | | 434 (17.09) |
| Gripper Height (without / with Gripper Finger) | mm | (in) | | 85 / 165 (3.35 / 6.50) |
| Gripper Mass | g | (lb) | | 2000 (4.41) |
| Cable Length | mm | (in) | | 1500 (59.06) |
| Coupling of Clamping Jaws | | | | M5 |
| Material (Motor Support / Clamping jaws / mounting flange) | | | | POM |
| Material (Stator / Slider / Guide) | | | | 1.4404 316L |
| Material (Cable Sheath) | | | | PUR |
| IP Protection Class | | | | IP 69* |

* Protection Class Motor Connection IP67S

PERFORMANCE DATA GM01-23X160H-HP-162-SSCP

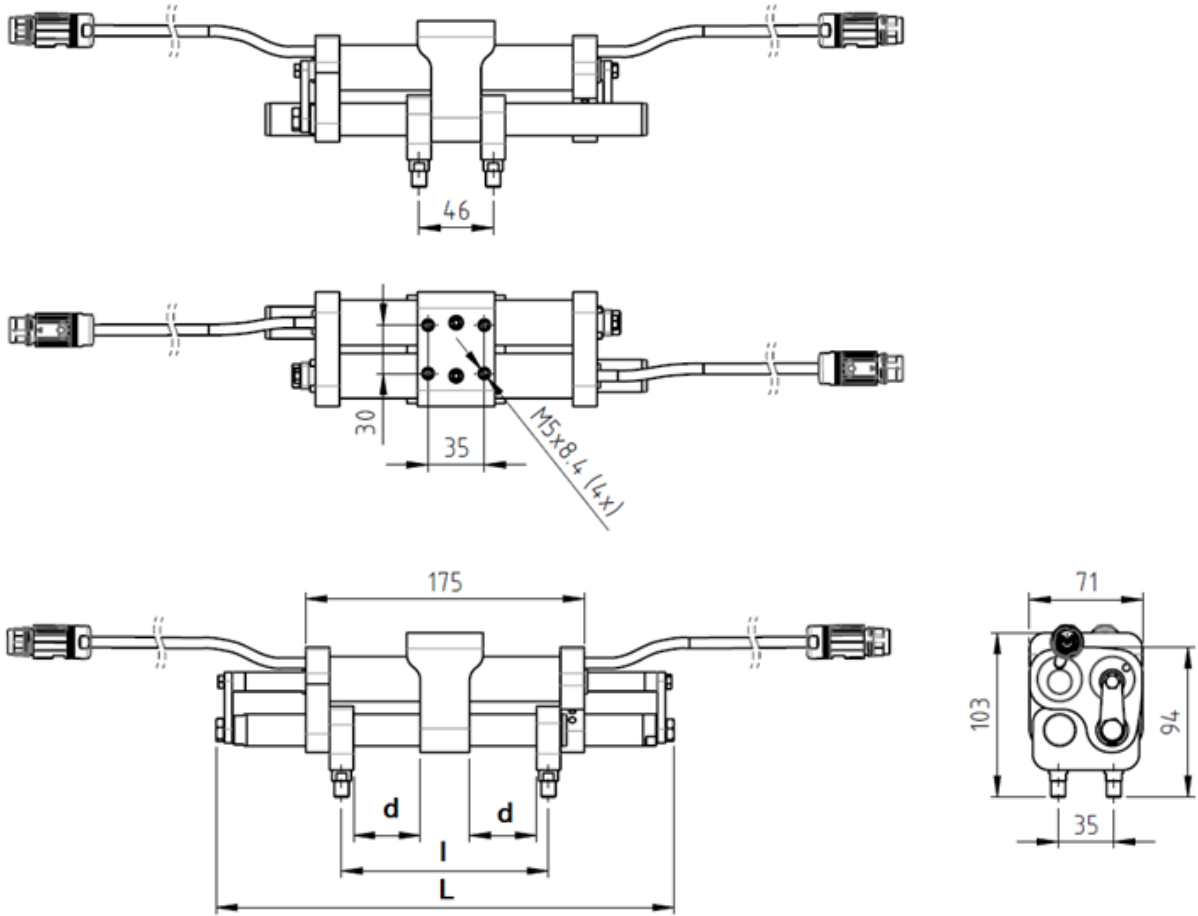


Performance Data Gripper Module GM01-23x160H-HP-162-SSCP

| Performance Data Gripper Module GM01-23x160H-HP-162-SSCP | | | |
|--|------------|--|------------------------|
| Stroke | | | |
| Max. Opening/Closing Stroke Range | mm (in) | | ≤ 162 (≤ 6.38) |
| Force | | | |
| Max. Clamping Force @ 48VDC | N (lbf) | | 116 (26.08) |
| Max. Clamping Force @ 72VDC | N (lbf) | | 138 (31.01) |
| Max. Continuous Clamping Force | N (lbf) | | 23.5 (5.28) |
| Velocity | | | |
| Max. Gripper Speed (Close/Open) | m/s (in/s) | | 3.1 (122.05) |
| Position Detection | | | |
| Position Resolution | mm (in) | | 0.005 (0.0002) |
| Repeatability | mm (in) | | ±0.05 (±0.002) |
| Electrical Data | | | |
| Max. Current per Gripper Arm @ 48VDC | A_{pk} | | 10 |
| Max. Current per Gripper Arm @ 72VDC | A_{pk} | | 10 |
| Mechanical Data | | | |
| Gripper Width | mm (in) | | 70 (2.76) |
| Gripper Length | mm (in) | | 288 (11.34) |
| Gripper Height (without / with Gripper Finger) | mm (in) | | 85 / 165 (3.35 / 6.50) |
| Gripper Mass | g (lb) | | 2500 (5.51) |
| Cable Length | mm (in) | | 1500 (59.06) |
| Coupling of Clamping Jaws | | | M5 |
| Material (Motor Support / Clamping jaws / mounting flange) | | | POM |
| Material (Stator / Slider / Guide) | | | 1.4404 316L |
| Material (Cable Sheath) | | | PUR |
| IP Protection Class | | | IP 69* |

* Protection Class Motor Connection IP67S

GRIPPER



Dimensions mm

| Gripper | d [mm (inch)] | l [mm (inch)] | L [mm (inch)] |
|---------------------------------|------------------|------------------|------------------|
| GM01-23x80F-HP-82-SSCP | 42 (1.65) | 130 (5.12) | 288 (11.34) |
| GM01-23x160H-HP-162-SSCP | 81 (3.19) | 210 (8.27) | 448 (17.64) |

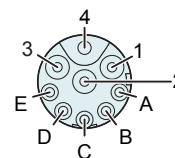
| Item | Description | Item-No. |
|--------------------------------------|---|---------------------------|
| GM01-23x80F-HP-R150-82-SSCP | Gripper Module SSCP, max. stroke 82mm, max. Force 67N | 0150-5308 |
| GM01-23x160H-HP-R150-162-SSCP | Gripper Module SSCP, max. stroke 162mm, max. force 138N | 0150-5595 |

13

CONNECTOR

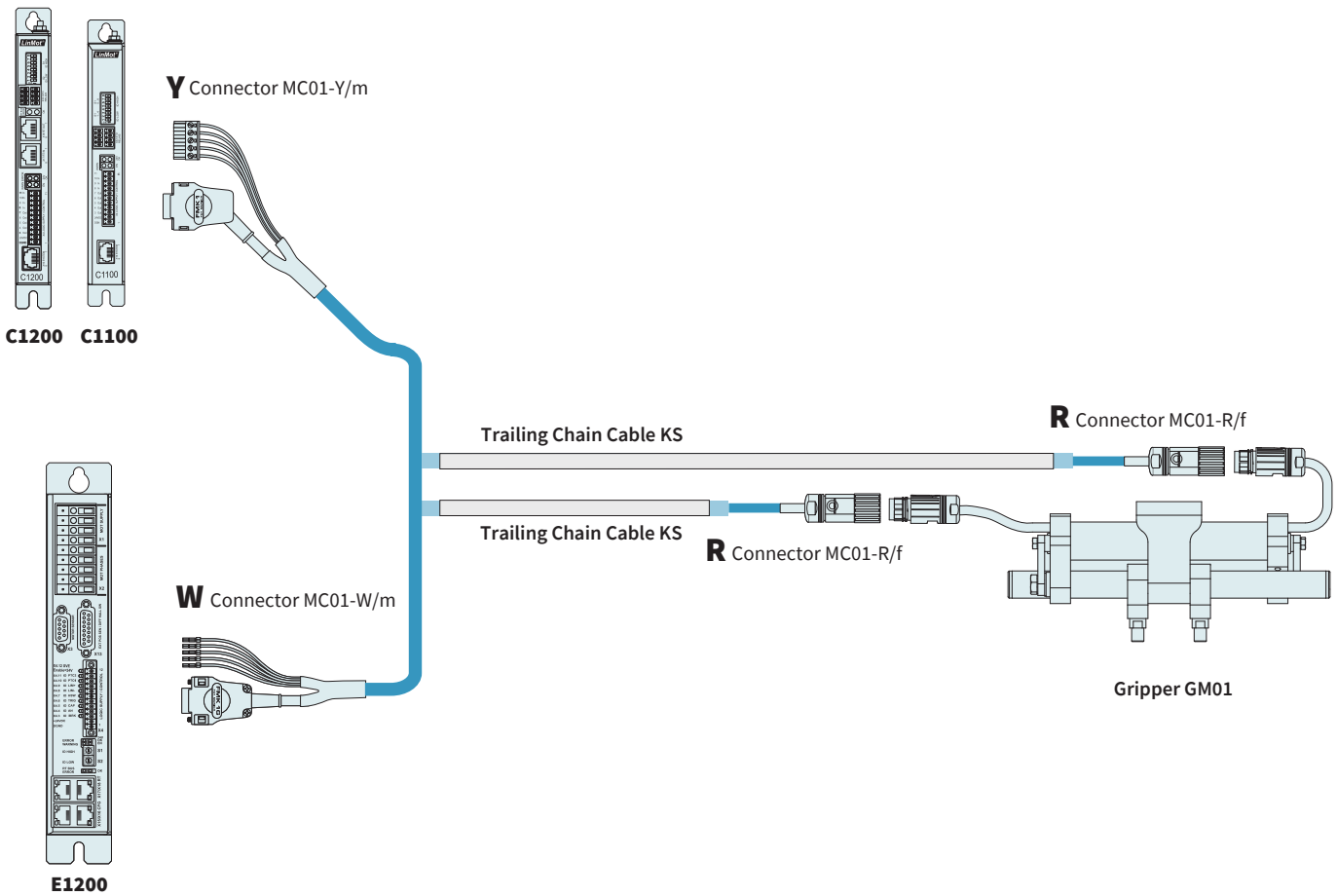
| Motor Connector Wiring | R-Connector | Wire Color Motor Cable |
|------------------------|-------------|------------------------|
| Ph 1+ | 1 | red |
| Ph 1- | 2 | pink |
| Ph 2+ | 3 | blue |
| Ph 2- | 4 | grey |
| +5VDC | A | white |
| GND | B | inner Shield |
| Sinus | C | yellow |
| Cosinus | D | green |
| Temp. | E | black |
| Shield | Case | outer Shield |

R-Connector



View: Motor connector, plug side
 Mat. Motor Connector: Nickel-plated
 Max. Torque: 0.6 Nm

MOTOR CABLES



TRAILING CHAIN CABLES

| Item | Description | Item-No. |
|-------------------|---|---------------------------|
| KS05-W/R-4 | Trailing Chain Cable W/R, 4 m | 0150-2106 |
| KS05-W/R-6 | Trailing Chain Cable W/R, 6 m | 0150-2131 |
| KS05-W/R-8 | Trailing Chain Cable W/R, 8 m | 0150-2107 |
| KS05-W/R- | Trailing Chain Cable W/R, Custom length | 0150-3256 |
| KS05-Y/R-4 | Trailing Chain Cable Y/R, 4 m | 0150-2433 |
| KS05-Y/R-6 | Trailing Chain Cable Y/R, 6 m | 0150-2434 |
| KS05-Y/R-8 | Trailing Chain Cable Y/R, 8 m | 0150-2435 |
| KS05-Y/R- | Trailing Chain Cable Y/R, Custom length | 0150-3507 |

FURTHER ACCESSORIES

Further accessories are available on request.

Area with horizontal dotted lines for notes.

ALL LINEAR MOTION FROM A SINGLE SOURCE

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