Attachment

- Use the lightest and shortest attachment possible. If it is long or heavy, the inertial force during opening and closing will be large, which may cause the fingers to become loose or accelerate the wear of the finger sliding portion, which can have a negative impact on the lifespan.
- When mounting an L-shaped attachment, select length as shown below.

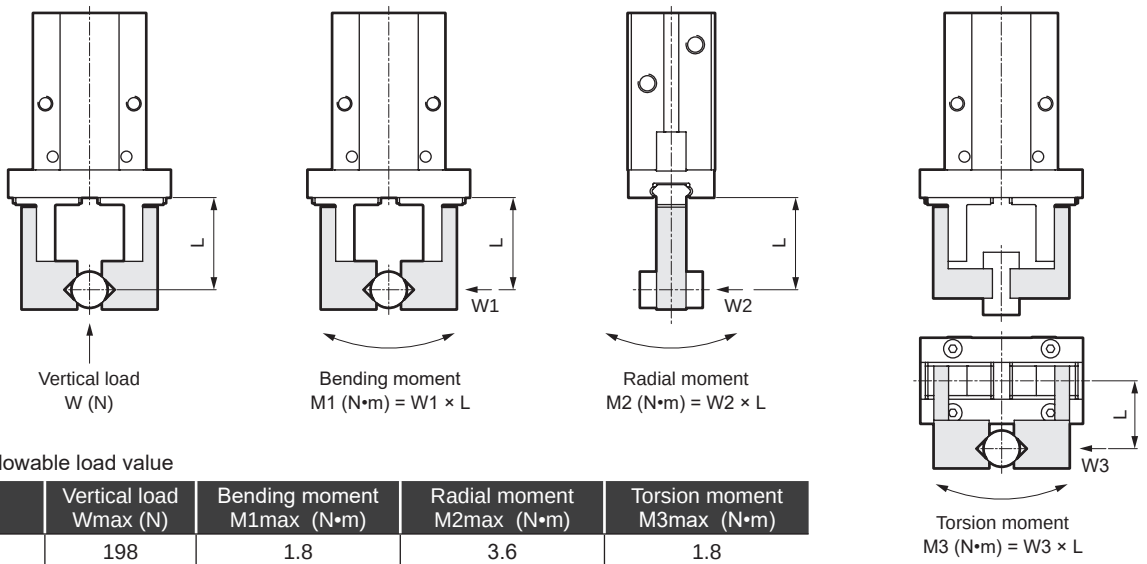
Ex.: If the L-shape is 30 mm in the finger direction and 90 mm at a 30° angle, assume the attachment length is 60 mm.

- Length of attachment should be within the numerical values of gripping power performance data.
- The weight of the attachment affects durability, so check that the weight is in accordance with the table below.

Model	Weight W per attachment
RLSH	W < 80 g
RHLF	W < 100 g
RCKL	W < 95 g

External forces applied to finger

When external force such as workpiece transport or insertion is applied to the finger, use it within the range in [Table 1].
(*For use during transport, be careful of impacts applied to the end.)



[Table 1] Allowable load value

Model	Vertical load Wmax (N)	Bending moment M1max (N•m)	Radial moment M2max (N•m)	Torsion moment M3max (N•m)
RLSH	198	1.8	3.6	1.8
RHLF	164	0.94	2	1.1

L: Distance to the point where load is applied

• Calculation example of external forces applied to finger

Calculation example (1): Workpiece transport
When gripping a workpiece (weight m = 0.07 kg, center of gravity distance L = 40 mm) with model No. RLSH-A20D1N, attachment (weight m_k = 0.4 kg, center of gravity distance L_k = 30 mm) for transport
(When g: gravity acceleration = 9.8 m/s^2 and α: coefficient of impact on end = 3)
$M_1 = \alpha \times W_1 \times L = \alpha \times (m_k \times g \times L_k \times 2 + m \times g \times L)$
$= 3 \times (0.07 \times 9.8 \times 30 \times 10^{-3} \times 2 + 0.7 \times 9.8 \times 40 \times 10^{-3}) \approx 0.95$ N•m, M1max = 1.8 N•m or less, use is possible

Calculation example (2): Workpiece insertion
Model No.: RLSH-A20D1N, where load W_1 of 30 N is applied to L: 40 mm
$M_1 = W_1 \times L = 30 \times 40 \times 10^{-3} = 1.2$ N•m, M1max =1.8 N•m or less, use is possible

Repeatability

The repeatability here indicates the displacement of the workpiece position deviation in the case of repeated clamping and unclamping under the same conditions (gripper fixed, same workpiece used, etc. Refer to right).

Conditions
- Workpiece dimensions, shape, weight
- Workpiece transfer position
- Clamp method, length
- Workpiece and workpiece receiving surface resistance
- Fluctuation of gripping power (air pressure), etc.