

YRG Series

Three fingers type

YRG-2004T



Basic specifications

| | | |
|--|----------------------------|--------------|
| Model name | | YRG-2004T |
| Model number | | KCF-M2015-A0 |
| Holding power | Max. continuous rating (N) | 2.5 |
| | Min. setting (% (N)) | 30 (0.75) |
| | Resolution (% (N)) | 1 (0.025) |
| Open/close stroke (mm) | | 3.5 |
| Speed | Max. rating (mm/sec) | 100 |
| | Min. setting (% (mm/sec)) | 20 (20) |
| | Resolution (% (mm/sec)) | 1 (1) |
| | Holding speed (Max.) (%) | 50 |
| Repetitive positioning accuracy (mm) | | +/-0.03 |
| Guide mechanism | | Linear guide |
| Max. holding weight ^{Note 1} (kg) | | 0.02 |
| Weight (g) | | 90 |

• Holding power control: 30 to 100% (1% steps) • Speed control: to 100% (1% steps)
 • Acceleration control : 1 to 100% (1% steps) • Multipoint position control: 10,000 max.

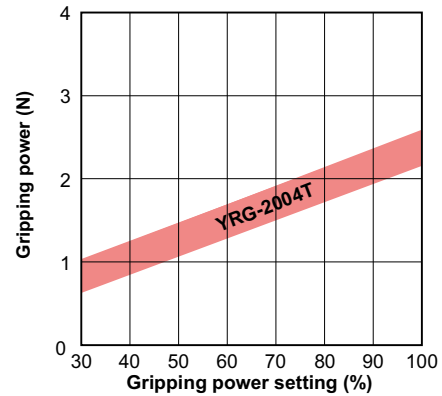
Note. Design the finger as short and lightweight as possible.
 Note. Set the parameters and holding power (%) of the holding movement command so that any excessive shock is not applied to the finger during operation.

Note. When installing or uninstalling the finger, tighten the bolts while the finger is being held securely so that any excessive force or shock is not applied to the guide block.

Note. Workpiece weight that is able to be held may greatly vary depending on the material, shape, and/or holding surface conditions of the finger.

Note 1. Design the weight of a workpiece to be held so that it is approximately 1/10 to 1/20 of the holding power. (Consider further allowance when moving and swinging the gripper that keeps holding a workpiece.)

Gripping power vs. gripping power setting (%)



• Graph shows a general guide to gripping power versus gripping power setting (%). Variations will appear in the actual gripping power.

Allowable load and load moment

| | | YRG-2004T | |
|--------|---------------------------|-----------|------|
| Finger | Allowable load | N | 6 |
| | Allowable pitching moment | N·m | 0.02 |
| | Max. weight (1 pair) | g | 10 |
| | Max. holding position | L mm | 15 |

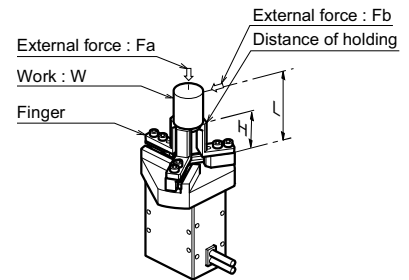
• When the external forces F_a and F_b are applied to a portion the distance (L) apart from the finger installation surface, the load (F) and moment (M) are calculated from the formulas shown below.

$$F = F_a + W \times g$$

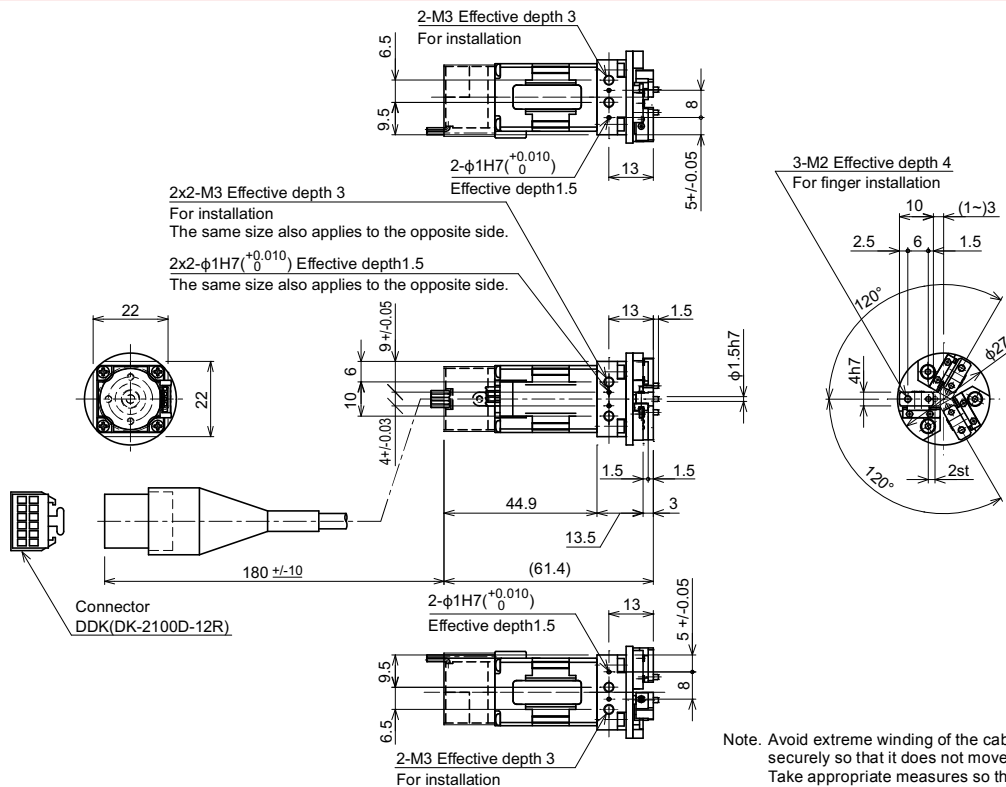
$$M = F_b \times L$$

F_a : External force [N]
 F_b : External force [N]
 W : Workpiece weight [Kg]
 g : Gravity acceleration [m/s^2]
 H : Distance of holding point [m]

F : Load [N]
 M : Moment [N·m]
 L : Distance of point of external force application [m]



YRG-2004T



Note. Avoid extreme winding of the cable and fix the cable securely so that it does not move. Take appropriate measures so that any excessive force is not applied to the root of the cable.

Three fingers type

YRG-2013T/2820T/4230T



Basic specifications

| Model name | YRG-2013T | YRG-2820T | YRG-4230T | |
|--|----------------------------|--------------|--------------|---------|
| Model number | KCF-M2015-B0 | KCF-M2015-C0 | KCF-M2015-D0 | |
| Holding power | Max. continuous rating (N) | 2 | 10 | 2 |
| | Min. setting (% (N)) | 30 (0.6) | 30 (3) | 30 (6) |
| | Resolution (% (N)) | 1 (0.02) | 1 (0.1) | 1 (0.2) |
| Open/close stroke (mm) | 13 | 20 | 30 | |
| Speed | Max. rating (mm/sec) | 100 | | |
| | Min. setting (% (mm/sec)) | 20 (20) | | |
| | Resolution (% (mm/sec)) | 1 (1) | 1 (1) | 1 (1) |
| | Holding speed (Max.) (%) | 50 | 50 | 50 |
| Repetitive positioning accuracy (mm) | +/-0.03 | | | |
| Guide mechanism | Linear guide | | | |
| Max. holding weight ^{Note 1} (kg) | 0.02 | 0.1 | 0.2 | |
| Weight (g) | 190 | 340 | 640 | |

- Holding power control : 30 to 100% (1% steps) Speed control : 20 to 100% (1% steps)
- Acceleration control : 1 to 100% (1% steps) • Multipoint position control : 10,000 max.

Note. Design the finger as short and lightweight as possible.
 Note. Set the parameters and holding power (%) of the holding movement command so that any excessive shock is not applied to the finger during operation.
 Note. When installing or uninstalling the finger, tighten the bolts while the finger is being held securely so that any excessive force or shock is not applied to the guide block.
 Note. Workpiece weight that is able to be held may greatly vary depending on the material, shape, and/or holding surface conditions of the finger.

Note 1. Design the weight of a workpiece to be held so that it is approximately 1/10 to 1/20 of the holding power. (Consider further allowance when moving and swinging the gripper that keeps holding a workpiece.)

Allowable load and load moment

| Finger | | Unit | YRG-2013T | YRG-2820T | YRG-4230T |
|---------------------------|------|------|----------------|-----------|-----------|
| | | | Allowable load | N | 20 |
| Allowable pitching moment | N·m | 0.1 | 0.2 | 0.4 | |
| Max. weight (1 pair) | g | 20 | 30 | 50 | |
| Max. holding position | L mm | 20 | 30 | 40 | |

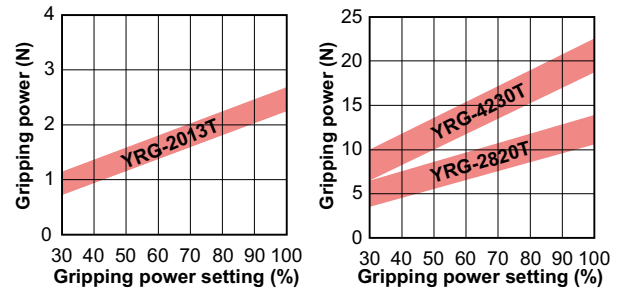
• When the external forces Fa and Fb are applied to a portion the distance (L) apart from the finger installation surface, the load (F) and moment (M) are calculated from the formulas shown below.

$$F = Fa + W \times g$$

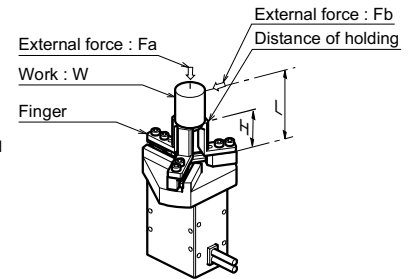
$$M = Fb \times L$$

Fa : External force [N]
 Fb : External force [N]
 W : Workpiece weight [Kg]
 g : Gravity acceleration [m/s²]
 L : Distance of holding point [m]

Gripping power vs. gripping power setting (%)



• Graph shows a general guide to gripping power versus gripping power setting (%). Variations will appear in the actual gripping power.



YRG-2013T/2820T/4230T

4-U Effective depth V For installation

2x4-Q Effective depth R For installation (Also installable on the opposite side.)

4-K Effective depth L For installation

BF Effective depth BG For attachment installation

Connector DDK (DK-2100D-12R)

Note. Avoid extreme winding of the cable and fix the cable securely so that it does not move. Take appropriate measures so that any excessive force is not applied to the root of the cable.

| | A | B | C | D | E | F | G | H | HA | HB | J | K | L | N |
|-----------|----|----|----|----|----|----|----|----|----|----|----|----|---|----|
| YRG-2013T | 50 | 19 | 34 | 24 | 50 | 19 | 42 | 17 | 13 | 13 | 17 | M3 | 6 | 17 |
| YRG-2820T | 58 | 19 | 46 | 32 | 66 | 25 | 40 | 24 | 16 | 16 | 24 | M4 | 8 | 14 |
| YRG-4230T | 59 | 25 | 60 | 46 | 86 | 34 | 45 | 25 | 18 | 18 | 36 | M5 | 8 | 13 |

| | NA | NB | P | Q | R | S | T | U | V | W | WA | AA | BA |
|-----------|----|----|----|----|----|----|----|----|-----|-------------|--------|----|----------------------------------|
| YRG-2013T | 17 | 72 | 27 | M3 | 6 | 17 | 17 | M3 | 5 | 11.4 to 4.6 | 6.8st | 12 | 10 ⁰ _{-0.02} |
| YRG-2820T | 21 | 80 | 38 | M4 | 8 | 24 | 24 | M4 | 6 | 15.9 to 5.6 | 10.3st | 15 | 10 ⁰ _{-0.02} |
| YRG-4230T | 24 | 88 | 50 | M5 | 10 | 36 | 36 | M5 | 7.5 | 21.9 to 6.6 | 15.3st | 20 | 14 ⁰ _{-0.02} |

| | BB | BC | BD | BE | BF | BG | BH | BJ | BK | BL |
|-----------|------|-----|----|-----|--------|----|----|-----------------------------------|----------|------|
| YRG-2013T | 16 | 2.5 | 10 | *** | 3x1-M3 | 8 | 2 | φ3 ⁰ _{-0.01} | 165+/-10 | 8.3 |
| YRG-2820T | 19.5 | 2.5 | 6 | 8 | 3x2-M3 | 6 | 2 | φ3 ⁰ _{-0.01} | 140+/-10 | 9.3 |
| YRG-4230T | 22.5 | 2.5 | 6 | 10 | x2-M4 | 8 | 3 | φ4 ⁰ _{-0.012} | 235+/-10 | 10.8 |

Articulated robots
YA

Linear conveyor modules
LCM100

Motor-less single axis actuator
Robonity

Compact single-axis robots
TRANSERVO

Single-axis robots
FLIP-X

Linear motor single-axis robots
PHASER

Cartesian robots
XY-X

SCARA robots
YK-X

Pick & place robots
YP-X

CLEAN

CONTROLLER

INFORMATION

Robot positioner

Pulse string driver

Robot controller

Electric gripper

Option