# AGFS14/AGFS14H

Advanced model | Single-axis robots | Long-stroke type

## Ordering method

| Model | Lead | Shape | Motor specification | OP.1 | Stroke | Note 1 Cable length | Cable entry location | Robot positioner | Driver: Power capacity | Note 2 Regenerative unit | I/O | Battery Note 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AGFS14 | 30: 30mm | S: Straight | S: Standard/With no brake | No entry: Standard | 100 to 1050 (50mm pitch) | R3: 3m | R: From rear of motor | EP-01 | A10: 200W or less | No entry: None | EP: EtherNet/IP™ | B: With battery |
| AGFS14H | 20: 20mm | R: Right attachment | BK Standard/With brake | M: Centeraized lubrication | | R5: 5m | F: From front of motor | | A30: 400W/750W | R: With EP-RU | PT: PROFINET | N: None |
| | 10: 10mm | L: Left attachment | BL: Battery-less absolute/ With no brake | | | R10: 10m | | | | | ES: EtherCAT | |
| | 5: 5mm | | BKL: Battery-less absolute/With brake | | | | | | | | NS: NPN | |
| | | | | | | | | | | | CC: CC-Link | |

Note 1. The robot cable is flexible and resists bending.
Note 2. [For AGFS14]
When the actuator is used vertically, ①lead 30 is selected, and the stroke is 250 mm or more ②lead 20 is selected, and the stroke is 250mm or more ,the regenerative unit is needed.
When the actuator is used horizontally, ①lead 30 is selected, and the stroke is 200 to 1000 mm, ②lead 20 is selected, and the stroke is 250 to 750 mmthe regenerative unit is needed.
[For AGFS14H]
When the actuator is used vertically, ①lead 30 is selected, and the stroke is 250 mm or more ②lead 20 is selected, and the stroke is 200mm or more ③lead 10 is selected, and the stroke is 550mm or more, the regenerative unit is needed.
When the actuator is used horizontally, ①lead 30 is selected, and the stroke is 450 to 850 mm, ②lead 20 is selected, and the stroke is 350 to 700 mm ,the regenerative unit is needed.
Note 3. When the motor specification is the standard (S, BK), whether to use the battery needs to be selected.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)

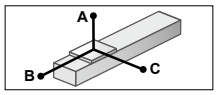
## AGFS14(200W)

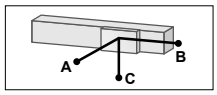
### Specifications

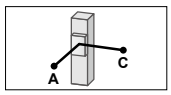
| | | | | | |
|---|---|---|---|---|---|
| AC servo motor output | | 200 W | | | |
| Repeatability Note 1 | | ±0.01 mm | | | |
| Deceleration mechanism | | Rolled ball screw ϕ 15 (C7 class) | | | |
| Stroke | | 100 to 1050 (50 mm pitch) | | | |
| Maximum speed Note 2 | | 1800 mm/sec | 1200 mm/sec | 600 mm/sec | 300 mm/sec |
| Ball screw lead | | 30 mm | 20 mm | 10 mm | 5 mm |
| Maximum payload | Horizontal | 30 kg | 45 kg | 90 kg | 120 kg |
| | Vertical | 3 kg | 6 kg | 16 kg | 30 kg |
| Rated Thrust | | 113 N | 170 N | 341 N | 683 N |
| Maximum dimensions of cross section of main unit | | W 140 mm × H 83 mm | | | |
| Overall length | Straight | ST + 469.5 mm | | | |
| | Bending | ST + 439.5 mm | | | |
| Degree of cleanliness Note 3 | | Equivalent to ISO Class 3 (ISO 14644-1) | | | |
| Intake air Note 4 | | 90 Nℓ/min to 100 Nℓ/min | | | |
| Position detector | | Absolute Encoder Batteryless Absolute Encoder | | | |
| Resolution | | 23 bits | | | |
| Using ambient temperature and humidity Note 5 | | 0 to 40 °C, 35 to 80 %RH (no condensation) | | | |

Note 1. Positioning repeatability in one direction.
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed. If the effective stroke exceeds 600 mm, the ball screw may resonate. (Critical speed) At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.
Note 3. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.
Note 4. The required suction amount will vary according to the operating conditions and operating environment.
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

### Allowable overhang Note








**AGFS14-30**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 5kg | 4905 | 3005 | 2651 |
| 15kg | 2257 | 988 | 954 |
| 30kg | 2045 | 558 | 627 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 5kg | 2683 | 2966 | 4862 |
| 15kg | 971 | 949 | 2185 |
| 30kg | 632 | 519 | 1930 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 1kg | 11158 | 11158 |
| 3kg | 3983 | 3983 |

**AGFS14-20**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 3254 | 1258 | 1400 |
| 30kg | 2079 | 614 | 714 |
| 45kg | 1637 | 400 | 474 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 1400 | 1219 | 3197 |
| 30kg | 704 | 575 | 1993 |
| 45kg | 459 | 361 | 1523 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 2kg | 8093 | 8093 |
| 4kg | 4175 | 4175 |
| 6kg | 2872 | 2872 |

**AGFS14-10**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 30kg | 4186 | 855 | 1158 |
| 60kg | 2619 | 413 | 566 |
| 90kg | 2042 | 266 | 367 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 30kg | 1124 | 816 | 4112 |
| 60kg | 525 | 374 | 2511 |
| 90kg | 322 | 227 | 1897 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 5kg | 5041 | 5041 |
| 10kg | 2519 | 2519 |
| 16kg | 1572 | 1572 |

**AGFS14-5**

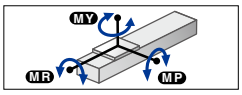
| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 40kg | 7737 | 681 | 982 |
| 80kg | 4818 | 326 | 471 |
| 120kg | 3749 | 208 | 301 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 40kg | 932 | 641 | 7609 |
| 80kg | 418 | 287 | 4627 |
| 120kg | 246 | 169 | 3487 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 10kg | 2781 | 2781 |
| 20kg | 1374 | 1374 |
| 30kg | 905 | 905 |

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.

### Static loading moment




(Unit: N·m)

| MY | MP | MR |
|---|---|---|
| 441 | 543 | 478 |

### Controller

| Controller | Operation method |
|---|---|
| EP-01 | I/O point trace/ Remote command |

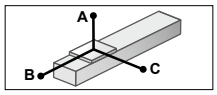
## AGFS14H (400W)

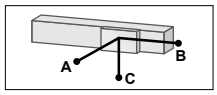
### Specifications

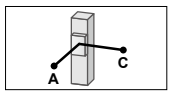
| | | | | | |
|---|---|---|---|---|---|
| AC servo motor output | | 400 W | | | |
| Repeatability Note 1 | | ±0.01 mm | | | |
| Deceleration mechanism | | Rolled ball screw ϕ 15 (C7 class) | | | |
| Stroke | | 100 to 1050 (50 mm pitch) | | | |
| Maximum speed Note 2 | | 1800 mm/sec | 1200 mm/sec | 600 mm/sec | 300 mm/sec |
| Ball screw lead | | 30 mm | 20 mm | 10 mm | 5 mm |
| Maximum payload | Horizontal | 50 kg | 70 kg | 110 kg | 140 kg |
| | Vertical | 10 kg | 15 kg | 30 kg | 45 kg |
| Rated Thrust | | 225 N | 339 N | 678 N | 1360 N |
| Maximum dimensions of cross section of main unit | | W 140 mm × H 83 mm | | | |
| Overall length | Straight | ST + 485.5 mm | | | |
| | Bending | ST + 439.5 mm | | | |
| Degree of cleanliness Note 3 | | Equivalent to ISO Class 3 (ISO 14644-1) | | | |
| Intake air Note 4 | | 90 Nℓ/min to 100 Nℓ/min | | | |
| Position detector | | Absolute Encoder Batteryless Absolute Encoder | | | |
| Resolution | | 23 bits | | | |
| Using ambient temperature and humidity Note 5 | | 0 to 40 °C, 35 to 80 %RH (no condensation) | | | |

Note 1. Positioning repeatability in one direction.
Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed. If the effective stroke exceeds 600 mm, the ball screw may resonate. (Critical speed) At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.
Note 3. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness level achieved when using at 1000 mm/sec or less.
Note 4. The required suction amount will vary according to the operating conditions and operating environment.
Note 5. When operating in low-temperature environments, a deviation error may occur when starting from a stopped state. In such cases, reduce the speed to 50% or less and run the unit for at least one full cycle before setting it to the desired operating speed.

### Allowable overhang Note








**AGFS14H-30**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 1923 | 982 | 912 |
| 30kg | 1614 | 527 | 562 |
| 50kg | 1658 | 349 | 416 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 913 | 943 | 1866 |
| 30kg | 562 | 488 | 1518 |
| 50kg | 403 | 310 | 1509 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 3kg | 3663 | 3663 |
| 5kg | 2243 | 2243 |
| 10kg | 1160 | 1160 |

**AGFS14H-20**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 2756 | 1258 | 1347 |
| 30kg | 1780 | 614 | 696 |
| 70kg | 1100 | 247 | 294 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 15kg | 1336 | 1219 | 2711 |
| 30kg | 680 | 575 | 1712 |
| 70kg | 268 | 208 | 969 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 5kg | 3206 | 3206 |
| 10kg | 1627 | 1627 |
| 15kg | 1093 | 1093 |

**AGFS14H-10**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 30kg | 3732 | 855 | 1148 |
| 50kg | 2742 | 502 | 683 |
| 110kg | 1781 | 212 | 293 |

| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 30kg | 1112 | 816 | 3670 |
| 50kg | 642 | 462 | 2655 |
| 110kg | 247 | 173 | 1615 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 10kg | 2499 | 2499 |
| 15kg | 1664 | 1664 |
| 30kg | 823 | 823 |

**AGFS14H-5**

| Horizontal installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 50kg | 5089 | 539 | 775 |
| 100kg | 3425 | 255 | 368 |
| 140kg | 2863 | 174 | 252 |

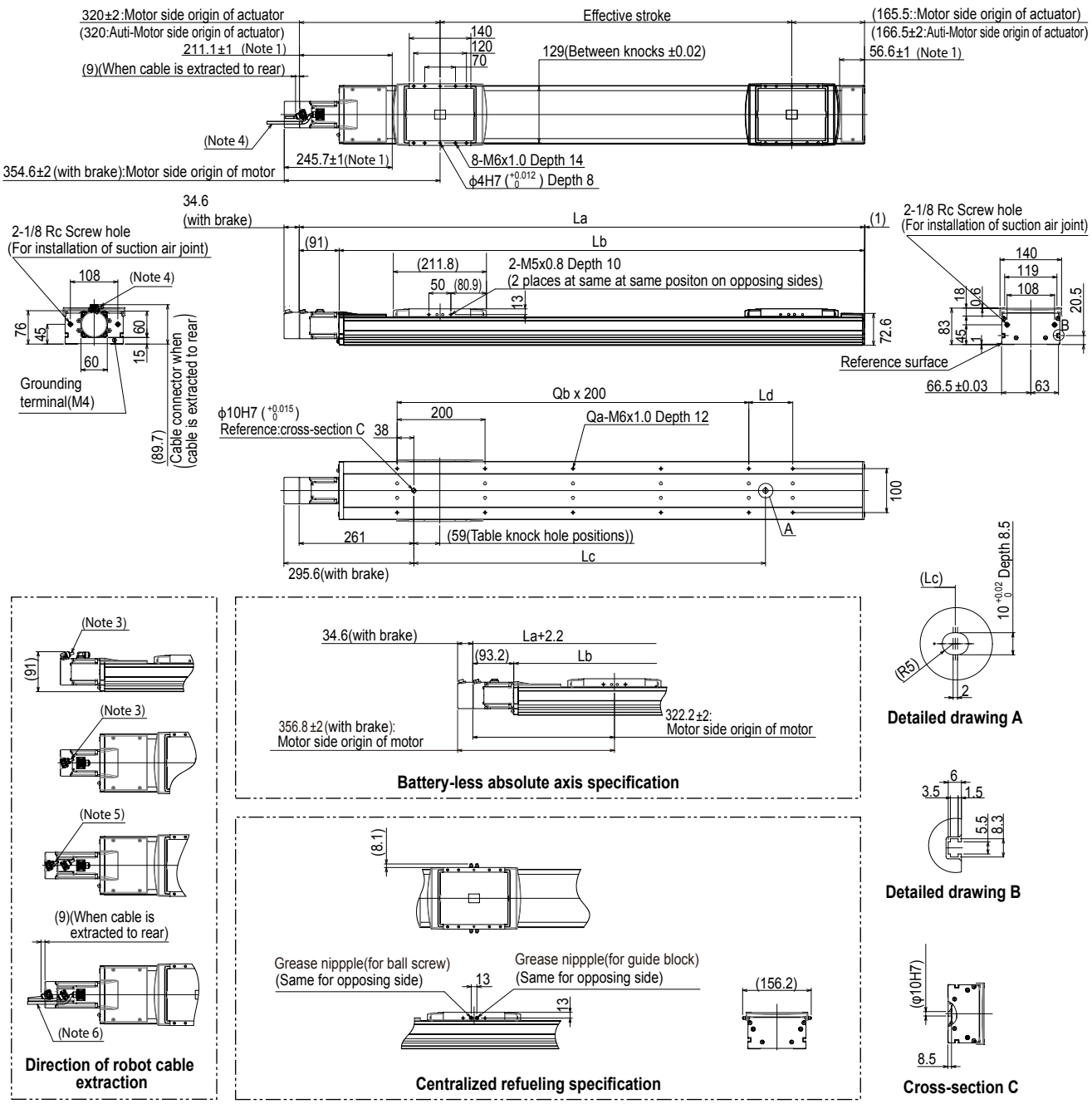
| Wall installation (Unit: mm) | A | B | C |
|---|---|---|---|
| 50kg | 724 | 500 | 4991 |
| 100kg | 314 | 216 | 3257 |
| 140kg | 197 | 135 | 2630 |

| Vertical installation (Unit: mm) | A | C |
|---|---|---|
| 15kg | 1833 | 1833 |
| 30kg | 900 | 900 |
| 45kg | 589 | 589 |

Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.
Note. Service life is calculated for 600 mm stroke models.
Note. When using it suspended from the ceiling, the overhang will be the same as when used horizontally.


▶ The cycle time simulation and service life calculation can be performed easily from our member site.

## AGFS14H Straight type (S)



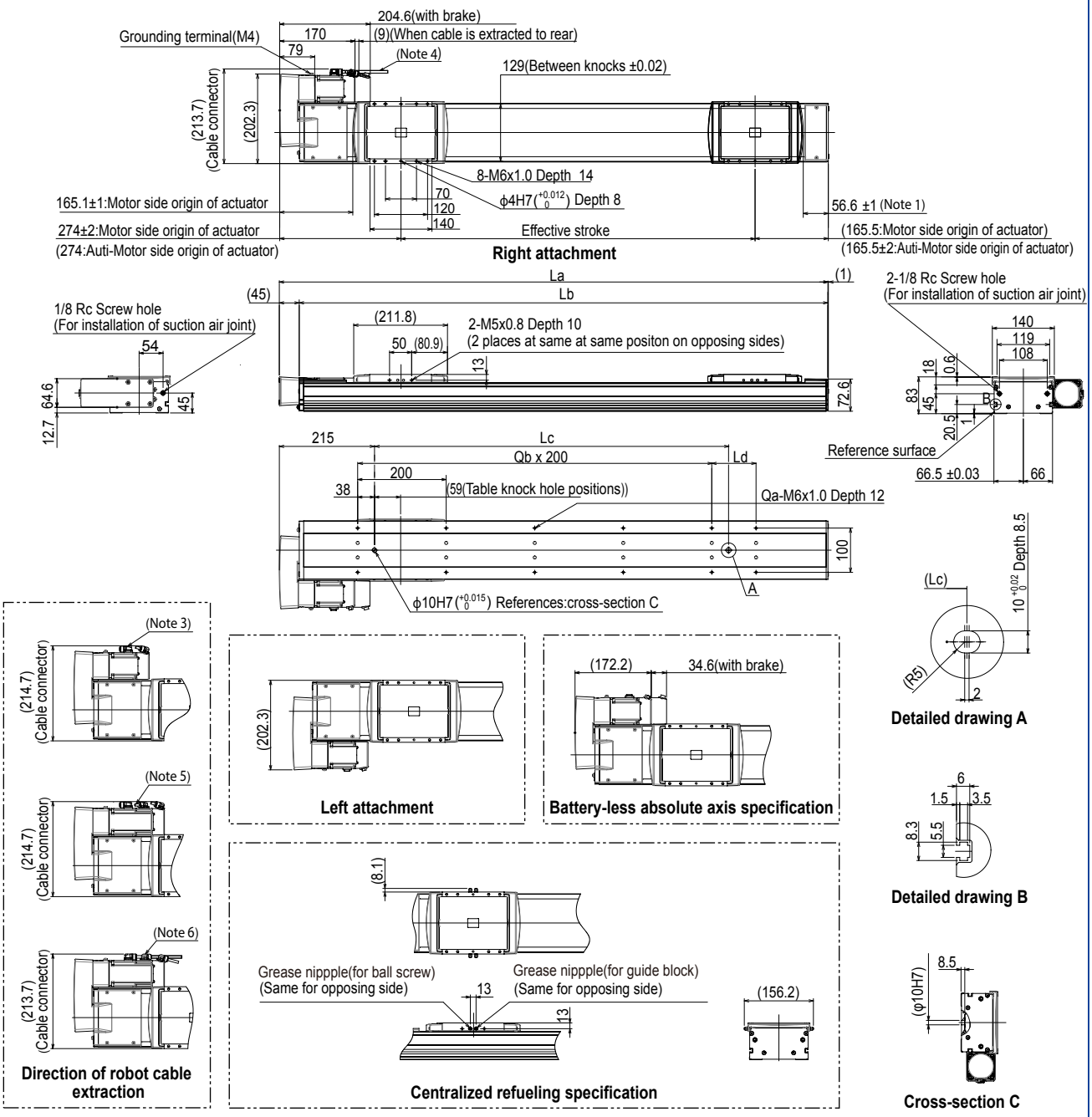

Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
Note. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

| Effective stroke | | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| La | | 585.5 | 635.5 | 685.5 | 735.5 | 785.5 | 835.5 | 885.5 | 935.5 | 985.5 | 1035.5 | 1085.5 | 1135.5 | 1185.5 | 1235.5 | 1285.5 | 1335.5 | 1385.5 | 1435.5 | 1485.5 | 1535.5 |
| Lb | | 494.5 | 544.5 | 594.5 | 644.5 | 694.5 | 744.5 | 794.5 | 844.5 | 894.5 | 944.5 | 994.5 | 1044.5 | 1094.5 | 1144.5 | 1194.5 | 1244.5 | 1294.5 | 1344.5 | 1394.5 | 1444.5 |
| Lc | | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 |
| Ld | | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 |
| Qa | | 4 | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 |
| Qb | | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 |
| Weight (kg) Note 2 | | 9.0 | 9.6 | 10.1 | 10.6 | 11.2 | 11.7 | 12.2 | 12.7 | 13.3 | 13.8 | 14.3 | 14.9 | 15.4 | 15.9 | 16.5 | 17.0 | 17.5 | 18.0 | 18.6 | 19.1 |
| Maximum speed (mm/sec) | Lead 30 | 1800 | | | | | | | | | | | | | 1710 | 1530 | 1170 | 990 | 900 | 810 | 720 |
| | Speed setting | - | | | | | | | | | | | | | 95% | 85% | 65% | 55% | 50% | 45% | 40% |
| | Lead 20 | 1200 | | | | | | | | | | | 1140 | 1020 | 900 | 780 | 660 | 600 | 540 | 480 | 420 |
| | Speed setting | - | | | | | | | | | | | 95% | 85% | 75% | 65% | 55% | 50% | 45% | 40% | 35% |
| | Lead 10 | 600 | | | | | | | | | | | 570 | 480 | 420 | 360 | 330 | 300 | 270 | 240 | 210 |
| | Speed setting | - | | | | | | | | | | | 95% | 80% | 70% | 60% | 55% | 50% | 45% | 40% | 35% |
| | Lead 5 | 300 | | | | | | | | | | | 270 | 240 | 210 | 180 | 165 | 150 | 135 | 120 | 105 |
| | Speed setting | - | | | | | | | | | | | 90% | 80% | 70% | 60% | 55% | 50% | 45% | 40% | 35% |
| Stroke restriction | Horizontal・Vertical | No stroke restrictions | | | | | | | | | | | | | | | | | | | |
| | Wall hanging | No stroke restrictions | | | | | | | | | | | | | | | | | | | |
| | Ceiling-mounted | No stroke restrictions | | | | | | | | | | | | | | | | | | | |

Controller EP-01 ▶ 582

# AGFS14H

## AGFS14H Bending type (R/L)




Note 1. Stop positions are determined by the mechanical stoppers at both ends.
Note 2. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.
Note 3. The robot cable is extracted from the front.
Note 4. The robot cable is extracted from the rear.
Note 5. The robot cable (with brake) is extracted from the front.
Note 6. The robot cable (with brake) is extracted from the rear.
Note. The return-to-origin direction can be changed by changing the parameter. (The standard is that the origin is located on the motor side. For details about how to change the return-to-origin direction, see the instruction manual for EP-01.)
Note. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables.

| Effective stroke | | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| La | | 539.5 | 589.5 | 639.5 | 689.5 | 739.5 | 789.5 | 839.5 | 889.5 | 939.5 | 989.5 | 1039.5 | 1089.5 | 1139.5 | 1189.5 | 1239.5 | 1289.5 | 1339.5 | 1389.5 | 1439.5 | 1489.5 |
| Lb | | 494.5 | 544.5 | 594.5 | 644.5 | 694.5 | 744.5 | 794.5 | 844.5 | 894.5 | 944.5 | 994.5 | 1044.5 | 1094.5 | 1144.5 | 1194.5 | 1244.5 | 1294.5 | 1344.5 | 1394.5 | 1444.5 |
| Lc | | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 | 1050 |
| Ld | | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 | 200 | 50 | 100 | 150 |
| Qa | | 4 | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | 10 | 12 | 12 | 12 | 12 | 14 | 14 | 14 |
| Qb | | 0 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 5 | 5 | 5 |
| Weight (kg) Note 2 | | 10.1 | 10.7 | 11.2 | 11.7 | 12.3 | 12.8 | 13.3 | 13.8 | 14.4 | 14.9 | 15.4 | 16.0 | 16.5 | 17.0 | 17.6 | 18.1 | 18.6 | 19.1 | 19.7 | 20.2 |
| Maximum speed (mm/sec) | Lead 30 | 1800 | | | | | | | | | | | | | 1710 | 1530 | 1170 | 990 | 900 | 810 | 720 |
| | Speed setting | - | | | | | | | | | | | | | 95% | 85% | 65% | 55% | 50% | 45% | 40% |
| | Lead 20 | 1200 | | | | | | | | | | | 1140 | 1020 | 900 | 780 | 660 | 600 | 540 | 480 | 420 |
| | Speed setting | - | | | | | | | | | | | 95% | 85% | 75% | 65% | 55% | 50% | 45% | 40% | 35% |
| | Lead 10 | 600 | | | | | | | | | | | 570 | 480 | 420 | 360 | 330 | 300 | 270 | 240 | 210 |
| | Speed setting | - | | | | | | | | | | | 95% | 80% | 70% | 60% | 55% | 50% | 45% | 40% | 35% |
| | Lead 5 | 300 | | | | | | | | | | | 270 | 240 | 210 | 180 | 165 | 150 | 135 | 120 | 105 |
| | Speed setting | - | | | | | | | | | | | 90% | 80% | 70% | 60% | 55% | 50% | 45% | 40% | 35% |
| Stroke restriction | Horizontal・Vertical | No stroke restrictions | | | | | | | | | | | | | | | | | | | |
| | Wall hanging | No stroke restrictions | | | | | | | | | | | | | | | | | | | |
| | Ceiling-mounted | No stroke restrictions | | | | | | | | | | | | | | | | | | | |



Controller EP-01 ▶ 582