

# ABFS03

Basic model

Single-axis robots

Low-profile type

## Ordering method

|        |                            |                                                          |                                                                                                                                          |                           |                                 |                                                 | <b>EP-01</b>     |                        |                                                                            |                            |
|--------|----------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------------------------|------------------|------------------------|----------------------------------------------------------------------------|----------------------------|
| Model  | Lead                       | Shape                                                    | Motor specification                                                                                                                      | Stroke                    | Cable length<br>Note 1          | Cable entry location                            | Robot positioner | Driver: Power capacity | I/O                                                                        | Battery<br>Note 2          |
| ABFS03 | 8: 8mm<br>4: 4mm<br>2: 2mm | S: Straight<br>R: Right attachment<br>L: Left attachment | S: Standard/With no brake<br>BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake | 50 to 300<br>(50mm pitch) | R3: 3 m<br>R5: 5 m<br>R10: 10 m | R: From rear of motor<br>F: From front of motor | EP-01            | A10: 200W or less      | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |

Note 1. The robot cable is flexible and resists bending.

Note 2. 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.)

## Specifications

|                                                  |            |                                                   |            |            |
|--------------------------------------------------|------------|---------------------------------------------------|------------|------------|
| AC servo motor output                            |            | 50 W                                              |            |            |
| Repeatability<br>Note 1                          |            | ±0.005 mm                                         |            |            |
| Deceleration mechanism                           |            | Rolled ball screw $\phi 6$ (C7 class)             |            |            |
| Stroke                                           |            | 50 mm to 300 mm (50 mm pitch)                     |            |            |
| Maximum speed<br>Note 2                          |            | 480 mm/sec                                        | 240 mm/sec | 100 mm/sec |
| Ball screw lead                                  |            | 8 mm                                              | 4 mm       | 2 mm       |
| Maximum payload                                  | Horizontal | 10 kg                                             | 10 kg      | 13 kg      |
|                                                  | Vertical   | 2 kg                                              | 4 kg       | 5 kg       |
| Rated Thrust                                     |            | 88 N                                              | 143 N      | 352 N      |
| Dynamic loading moment (MY,MP,MR)                |            | 8.1 / 8.1 / 9.3                                   |            |            |
| Maximum dimensions of cross section of main unit |            | W 42.2 mm × H 30 mm                               |            |            |
| Overall length                                   | Straight   | ST + 220.5 mm                                     |            |            |
|                                                  | Bending    | ST + 143 mm                                       |            |            |
| Degree of Cleanliness<br>Note 3                  |            | Equivalent to ISO Class 4 (ISO 14644-1)           |            |            |
| Intake air<br>Note 4                             |            | 50 Nℓ/min~                                        |            |            |
| Position detector                                |            | Absolute encoder<br>Battery-less absolute encoder |            |            |
| Resolution                                       |            | 23 bits                                           |            |            |
| Using ambient temperature and humidity           |            | 0 to 40 °C, 35 to 80 %RH<br>(no condensation)     |            |            |

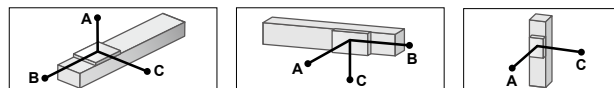
Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.

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.

## Allowable overhang



### ABFS03-8

| Horizontal installation | (Unit: mm) |     |     |
|-------------------------|------------|-----|-----|
|                         | A          | B   | C   |
| 4kg                     | 785        | 113 | 116 |
| 7kg                     | 492        | 60  | 61  |
| 10kg                    | 360        | 38  | 39  |

| Wall installation | (Unit: mm) |     |     |
|-------------------|------------|-----|-----|
|                   | A          | B   | C   |
| 4kg               | 116        | 113 | 785 |
| 7kg               | 61         | 60  | 492 |
| 10kg              | 39         | 38  | 360 |

| Vertical installation | (Unit: mm) |     |
|-----------------------|------------|-----|
|                       | A          | C   |
| 1kg                   | 493        | 493 |
| 2kg                   | 248        | 248 |

### ABFS03-4

| Horizontal installation | (Unit: mm) |     |     |
|-------------------------|------------|-----|-----|
|                         | A          | B   | C   |
| 4kg                     | 1877       | 128 | 141 |
| 7kg                     | 1202       | 68  | 75  |
| 10kg                    | 912        | 44  | 49  |

| Wall installation | (Unit: mm) |     |      |
|-------------------|------------|-----|------|
|                   | A          | B   | C    |
| 4kg               | 141        | 128 | 1877 |
| 7kg               | 75         | 68  | 1202 |
| 10kg              | 49         | 44  | 912  |

| Vertical installation | (Unit: mm) |     |
|-----------------------|------------|-----|
|                       | A          | C   |
| 2kg                   | 279        | 279 |
| 4kg                   | 140        | 140 |

### ABFS03-2

| Horizontal installation | (Unit: mm) |     |     |
|-------------------------|------------|-----|-----|
|                         | A          | B   | C   |
| 5kg                     | 4769       | 126 | 142 |
| 9kg                     | 3117       | 65  | 73  |
| 13kg                    | 2415       | 41  | 46  |

| Wall installation | (Unit: mm) |     |      |
|-------------------|------------|-----|------|
|                   | A          | B   | C    |
| 5kg               | 142        | 126 | 4769 |
| 9kg               | 73         | 65  | 3117 |
| 13kg              | 46         | 41  | 2415 |

| Vertical installation | (Unit: mm) |     |
|-----------------------|------------|-----|
|                       | A          | C   |
| 3kg                   | 230        | 230 |
| 5kg                   | 138        | 138 |

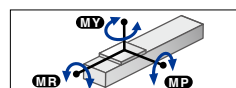
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 300 mm stroke models.

## Controller

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

## Static loading moment

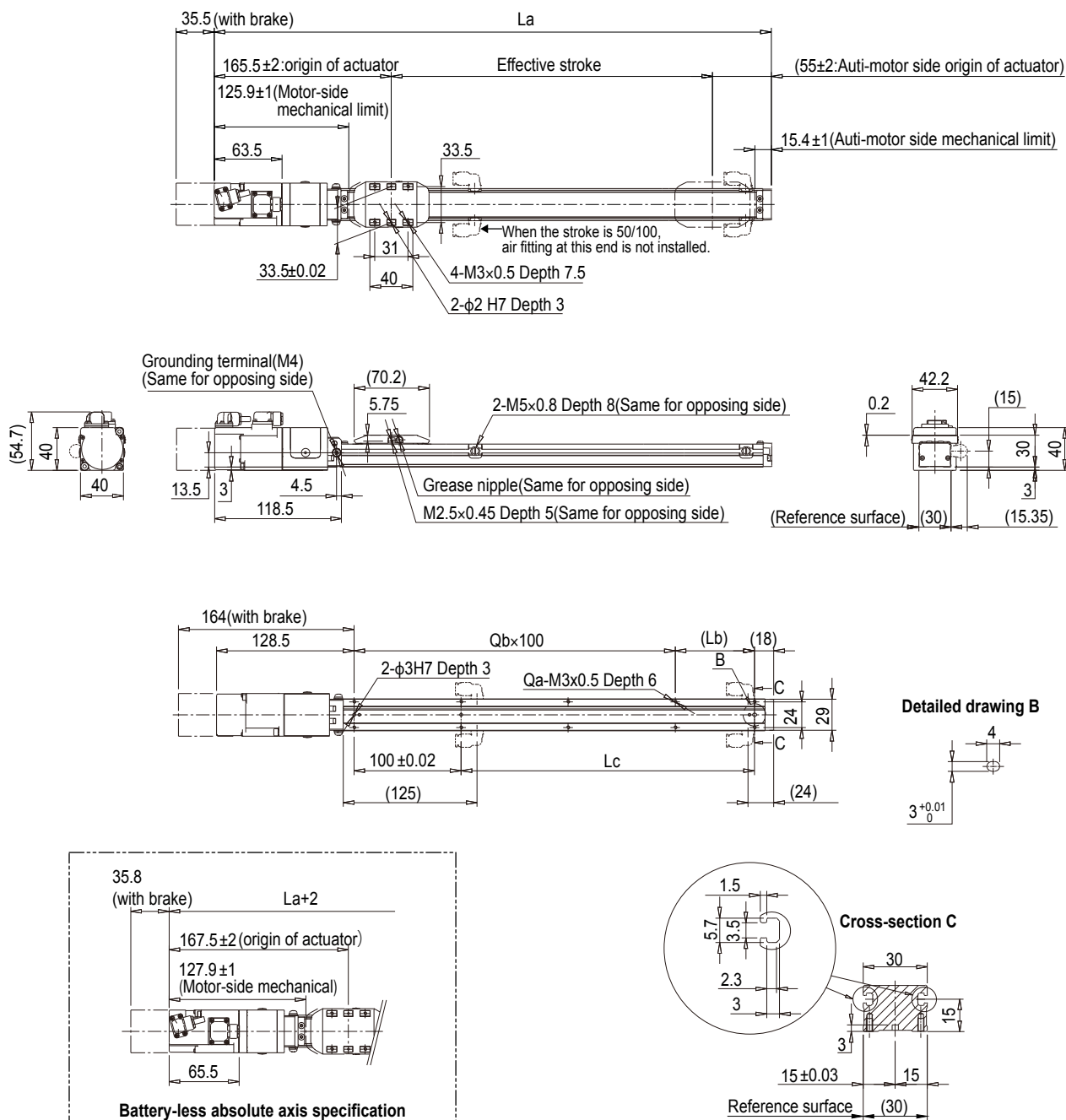


| (Unit: N·m) |    |    |
|-------------|----|----|
| MY          | MP | MR |
| 13          | 13 | 15 |



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

# ABFS03 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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.)

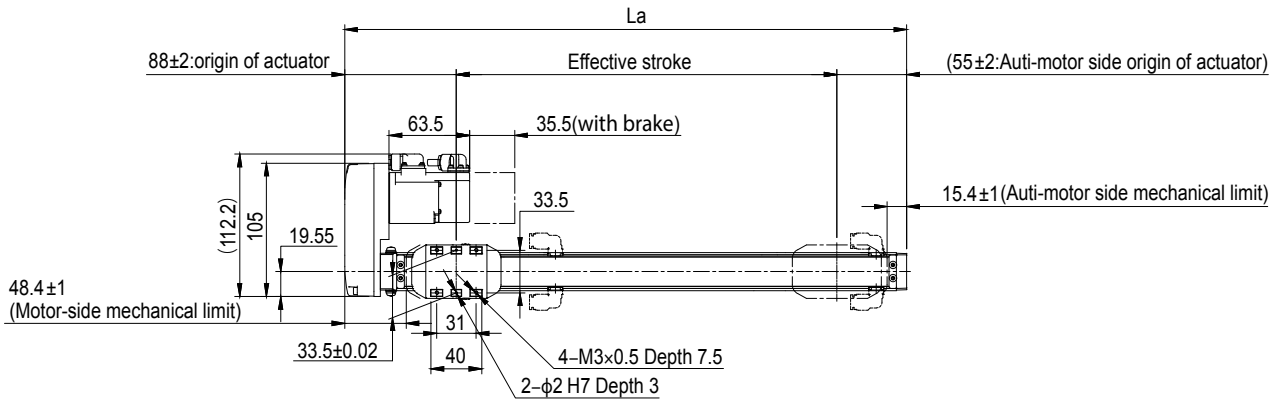
Note. In the installation tap hole, the length under head <<thickness of stand +6mm or less>> is recommended for the hex socket head bolts <M3×0.5> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

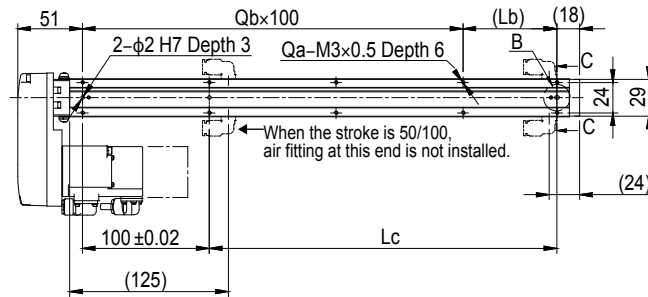
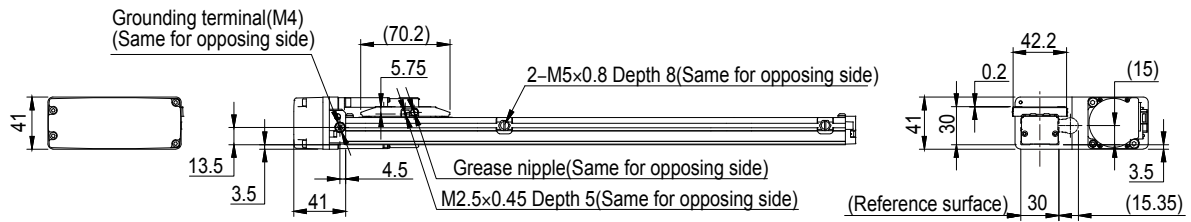
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke              | 50              | 100   | 150   | 200   | 250   | 300   |
|-------------------------------|-----------------|-------|-------|-------|-------|-------|
| La                            | 270.5           | 320.5 | 370.5 | 420.5 | 470.5 | 520.5 |
| Lb                            | 24              | 74    | 24    | 74    | 24    | 74    |
| Lc                            | 24              | 74    | 124   | 174   | 224   | 274   |
| Qa                            | 6               | 6     | 8     | 8     | 10    | 10    |
| Qb                            | 1               | 1     | 2     | 2     | 3     | 3     |
| Weight (kg) <sup>Note 1</sup> | 0.69            | 0.75  | 0.82  | 0.88  | 0.95  | 1.01  |
| Maximum speed (mm/sec)        | Lead 8 480      |       |       |       |       |       |
|                               | Speed setting - |       |       |       |       |       |
|                               | Lead 4 240      |       |       |       |       |       |
|                               | Speed setting - |       |       |       |       |       |
|                               | Lead 2 100      |       |       |       |       |       |
|                               | Speed setting - |       |       |       |       |       |

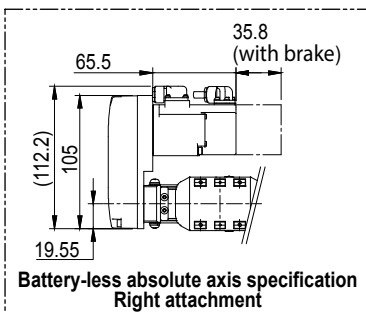
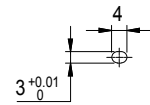
## ABFS03 Bending type (R/L)



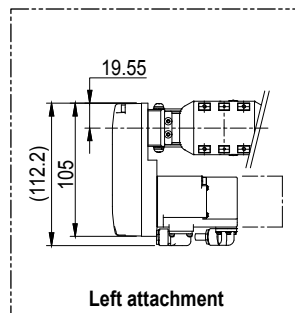
Right attachment



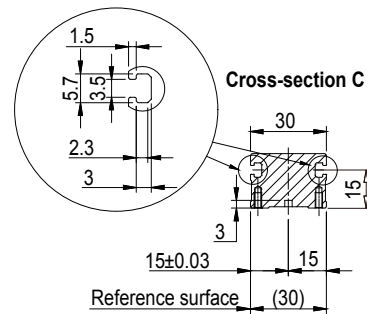
Detailed drawing B



Battery-less absolute axis specification  
Right attachment



Left attachment



Cross-section C

Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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 +6mm or less> is recommended for the hex socket head bolts <M3×0.5> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFJ-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50              | 100  | 150  | 200  | 250  | 300  |
|------------------------|-----------------|------|------|------|------|------|
| La                     | 193             | 243  | 293  | 343  | 393  | 443  |
| Lb                     | 24              | 74   | 24   | 74   | 24   | 74   |
| Lc                     | 24              | 74   | 124  | 174  | 224  | 274  |
| Qa                     | 6               | 6    | 8    | 8    | 10   | 10   |
| Qb                     | 1               | 1    | 2    | 2    | 3    | 3    |
| Weight (kg) Note 1     | 0.91            | 0.96 | 1.01 | 1.06 | 1.11 | 1.16 |
| Maximum speed (mm/sec) | Lead 8 480      |      |      |      |      |      |
|                        | Speed setting - |      |      |      |      |      |
|                        | Lead 4 240      |      |      |      |      |      |
|                        | Speed setting - |      |      |      |      |      |
|                        | Lead 2 100      |      |      |      |      |      |
|                        | Speed setting - |      |      |      |      |      |

## Ordering method

|        |                              |                                                          |                                                                                                                                          |                           |                                 |                                                 | EP-01            |                        |                                                                            |                            |
|--------|------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------------------------|------------------|------------------------|----------------------------------------------------------------------------|----------------------------|
| Model  | Lead                         | Shape                                                    | Motor specification                                                                                                                      | Stroke                    | Cable length<br>Note 1          | Cable entry location                            | Robot positioner | Driver: Power capacity | I/O                                                                        | Battery<br>Note 2          |
| ABFS04 | 12: 12mm<br>6: 6mm<br>2: 2mm | S: Straight<br>R: Right attachment<br>L: Left attachment | S: Standard/With no brake<br>BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake | 50 to 500<br>(50mm pitch) | R3: 3 m<br>R5: 5 m<br>R10: 10 m | R: From rear of motor<br>F: From front of motor | EP-01            | A10: 200W or less      | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |

Note 1. The robot cable is flexible and resists bending.

Note 2. 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.)

## Specifications

|                                                  |            |                                                   |            |            |
|--------------------------------------------------|------------|---------------------------------------------------|------------|------------|
| AC servo motor output                            |            | 50 W                                              |            |            |
| Repeatability <small>Note 1</small>              |            | ±0.005 mm                                         |            |            |
| Deceleration mechanism                           |            | Rolled ball screw φ 10 (C7 class)                 |            |            |
| Stroke                                           |            | 50 mm to 500 mm (50 mm pitch)                     |            |            |
| Maximum speed <small>Note 2</small>              |            | 720 mm/sec                                        | 360 mm/sec | 120 mm/sec |
| Ball screw lead                                  |            | 12 mm                                             | 6 mm       | 2 mm       |
| Maximum payload                                  | Horizontal | 12 kg                                             | 20 kg      | 25 kg      |
|                                                  | Vertical   | 3 kg                                              | 5 kg       | 8 kg       |
| Rated Thrust                                     |            | 71 N                                              | 141 N      | 424 N      |
| Dinamic loading moment (MY,MP,MR)                |            | 17.2 / 17.2 / 23.3                                |            |            |
| Maximum dimensions of cross section of main unit |            | W 49.7 mm × H 40 mm                               |            |            |
| Overall length                                   | Straight   | ST + 284 mm                                       |            |            |
|                                                  | Bending    | ST + 204 mm                                       |            |            |
| Degree of Cleanliness <small>Note 3</small>      |            | Equivalent to ISO Class 4 (ISO 14644-1)           |            |            |
| Intake air <small>Note 4</small>                 |            | 80 Nℓ/min~                                        |            |            |
| Position detector                                |            | Absolute encoder<br>Battery-less absolute encoder |            |            |
| Resolution                                       |            | 23 bits                                           |            |            |
| Using ambient temperature and humidity           |            | 0 to 40 °C, 35 to 80 %RH<br>(no condensation)     |            |            |

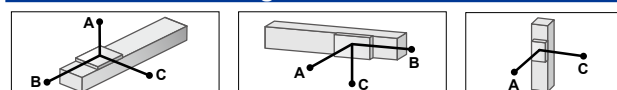
Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

Note 2. When a moving distance is short and depending on an operation condition, it may not reach the maximum speed.

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.

## Allowable overhang



### ABFS04-12

| Horizontal installation (Unit: mm) |     |     |     | Wall installation (Unit: mm) |     |     |     | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|----------------------------------|-----|-----|--|
|                                    | A   | B   | C   |                              | A   | B   | C   |                                  | A   | C   |  |
| 4kg                                | 896 | 228 | 259 | 4kg                          | 256 | 228 | 864 | 1kg                              | 913 | 913 |  |
| 8kg                                | 596 | 107 | 125 | 8kg                          | 130 | 107 | 691 | 3kg                              | 316 | 316 |  |
| 12kg                               | 465 | 67  | 78  | 12kg                         | 84  | 67  | 619 |                                  |     |     |  |

### ABFS04-6

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|--|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |  |
| 5kg                                | 1867 | 209 | 272 | 5kg                          | 272 | 209 | 1867 | 3kg                              | 369 | 369 |  |
| 10kg                               | 1181 | 98  | 127 | 10kg                         | 127 | 98  | 1181 | 5kg                              | 222 | 222 |  |
| 20kg                               | 748  | 42  | 55  | 20kg                         | 55  | 42  | 748  |                                  |     |     |  |

### ABFS04-2

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|--|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |  |
| 10kg                               | 4004 | 128 | 172 | 10kg                         | 172 | 128 | 4004 | 4kg                              | 354 | 354 |  |
| 18kg                               | 2635 | 65  | 87  | 18kg                         | 87  | 65  | 2635 | 8kg                              | 177 | 177 |  |
| 25kg                               | 2088 | 43  | 58  | 25kg                         | 58  | 43  | 2088 |                                  |     |     |  |

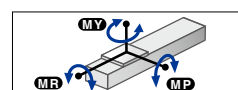
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.

## Controller

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

## Static loading moment

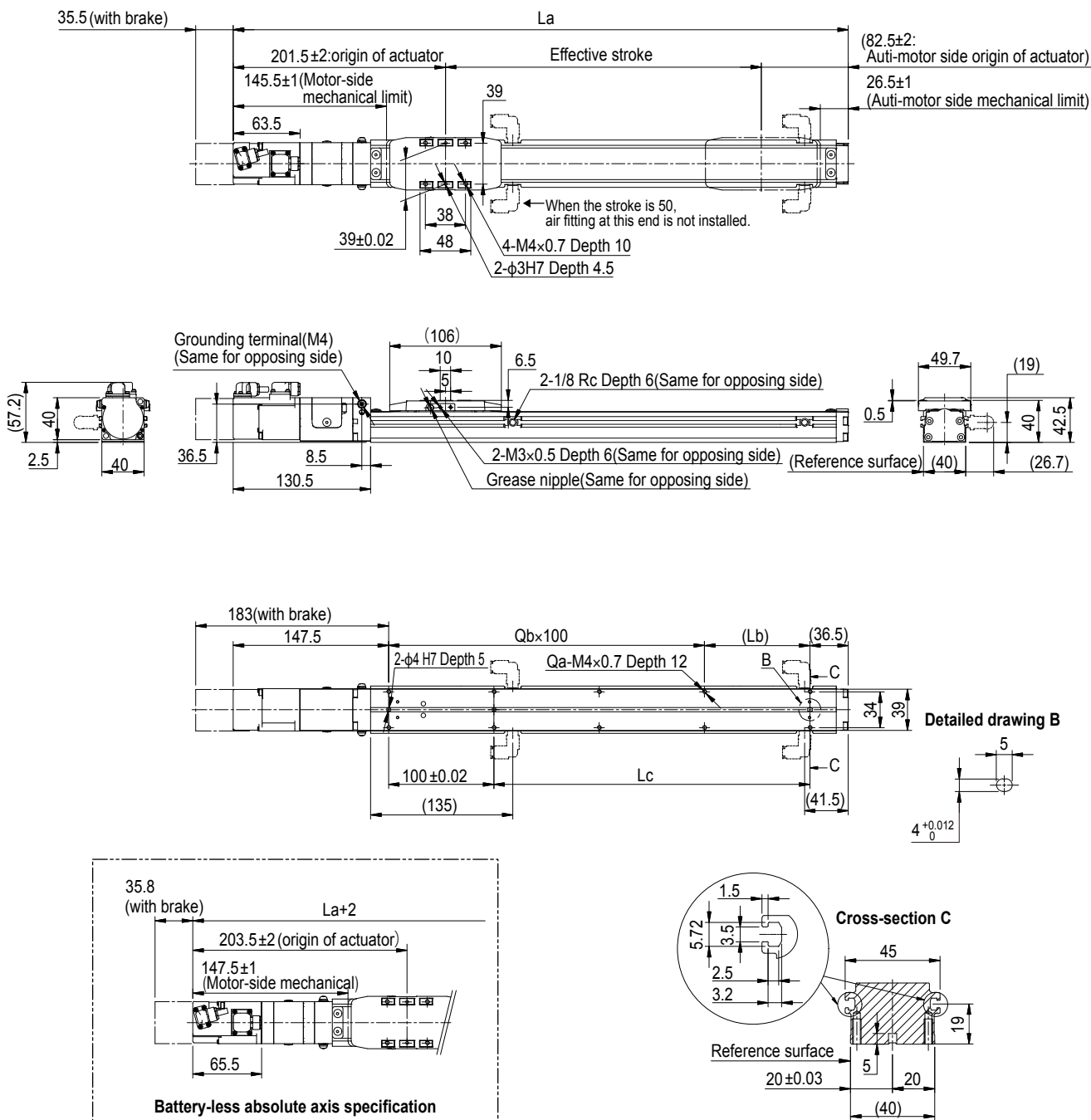


| (Unit: N·m) |    |    |
|-------------|----|----|
| MY          | MP | MR |
| 47          | 47 | 64 |



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

## ABFS04 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.  
 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 +12mm or less>> is recommended for the hex socket head bolts <M4×0.7> used to install the main unit.  
 Note. Grease gun nozzle (recommended) Part number: KFJ-M3861-00  
 Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100 | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
|------------------------|---------------|-----|------|------|------|------|------|------|------|------|
| La                     | 334           | 384 | 434  | 484  | 534  | 584  | 634  | 684  | 734  | 784  |
| Lb                     | 50            | 100 | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  |
| Lc                     | 50            | 100 | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  |
| Qa                     | 6             | 6   | 8    | 8    | 10   | 10   | 12   | 12   | 14   | 14   |
| Qb                     | 1             | 1   | 2    | 2    | 3    | 3    | 4    | 4    | 5    | 5    |
| Weight (kg) Note 1     | 1.29          | 1.4 | 1.52 | 1.64 | 1.76 | 1.89 | 1.99 | 2.11 | 2.23 | 2.35 |
| Maximum speed (mm/sec) | Lead 12       | 720 |      |      |      |      |      |      |      |      |
|                        | Speed setting | -   |      |      |      |      |      |      |      |      |
|                        | Lead 6        | 360 |      |      |      |      |      |      |      |      |
|                        | Speed setting | -   |      |      |      |      |      |      |      |      |
|                        | Lead 2        | 120 |      |      |      |      |      |      |      |      |
|                        | Speed setting | -   |      |      |      |      |      |      |      |      |

## 241

# ABFS05

Basic model

Single-axis robots

Low-profile type

## Ordering method

|        |                                          |                                                          |                                                                                                                                          |                           |                                 |                                                 | <b>EP-01</b>     |                        |                                                                            |                            |
|--------|------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------------------------|------------------|------------------------|----------------------------------------------------------------------------|----------------------------|
| Model  | Lead                                     | Shape                                                    | Motor specification                                                                                                                      | Stroke                    | Cable length<br>Note 1          | Cable entry location                            | Robot positioner | Driver: Power capacity | I/O                                                                        | Battery<br>Note 2          |
| ABFS05 | 20: 20mm<br>12: 12mm<br>6: 6mm<br>2: 2mm | S: Straight<br>R: Right attachment<br>L: Left attachment | S: Standard/With no brake<br>BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake | 50 to 800<br>(50mm pitch) | R3: 3 m<br>R5: 5 m<br>R10: 10 m | R: From rear of motor<br>F: From front of motor | EP-01            | A10: 200W or less      | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |

Note 1. The robot cable is flexible and resists bending.

Note 2. 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.)

## Specifications

|                                                  |            |                                                   |            |            |            |
|--------------------------------------------------|------------|---------------------------------------------------|------------|------------|------------|
| AC servo motor output                            |            | 100 W                                             |            |            |            |
| Repeatability<br>Note 1                          |            | ±0.005 mm                                         |            |            |            |
| Deceleration mechanism                           |            | Rolled ball screw φ 10 (C7 class)                 |            |            |            |
| Stroke                                           |            | 50 mm to 800 mm (50 mm pitch)                     |            |            |            |
| Maximum speed<br>Note 2                          |            | 1200 mm/sec                                       | 800 mm/sec | 400 mm/sec | 120 mm/sec |
| Ball screw lead                                  |            | 20 mm                                             | 12 mm      | 6 mm       | 2 mm       |
| Maximum payload                                  | Horizontal | 10 kg                                             | 22 kg      | 25 kg      | 30 kg      |
|                                                  | Vertical   | 3 kg                                              | 4 kg       | 6 kg       | 10 kg      |
| Rated Thrust                                     |            | 85 N                                              | 142 N      | 285 N      | 854 N      |
| Dynamic loading moment (MY,MP,MR)                |            | 24.6 / 24.6 / 39.4                                |            |            |            |
| Maximum dimensions of cross section of main unit |            | W 58 mm × H 40 mm                                 |            |            |            |
| Overall length                                   | Straight   | ST + 288.5 mm                                     |            |            |            |
|                                                  | Bending    | ST + 195 mm                                       |            |            |            |
| Degree of Cleanliness<br>Note 3                  |            | Equivalent to ISO Class 4 (ISO 14644-1)           |            |            |            |
| Intake air<br>Note 4                             |            | 80 Nℓ/min~                                        |            |            |            |
| Position detector                                |            | Absolute encoder<br>Battery-less absolute encoder |            |            |            |
| Resolution                                       |            | 23 bits                                           |            |            |            |
| Using ambient temperature and humidity           |            | 0 to 40 °C, 35 to 80 %RH<br>(no condensation)     |            |            |            |

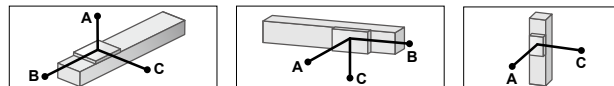
Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

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 (A) mm, the ball screw may resonate. (Critical speed) (A):700 mm for lead 20; 600 mm for lead 2, 6, and 12.

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.

## Allowable overhang



### ABFS05-20

| Horizontal installation (Unit: mm) |     |     |     | Wall installation (Unit: mm) |     |     |     | Vertical installation (Unit: mm) |     |     |
|------------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|----------------------------------|-----|-----|
|                                    | A   | B   | C   |                              | A   | B   | C   |                                  | A   | C   |
| 3kg                                | 637 | 348 | 330 | 3kg                          | 330 | 348 | 637 | 1kg                              | 941 | 941 |
| 6kg                                | 330 | 165 | 161 | 6kg                          | 161 | 165 | 330 | 3kg                              | 327 | 327 |
| 10kg                               | 234 | 92  | 95  | 10kg                         | 95  | 92  | 234 |                                  |     |     |

### ABFS05-12

| Horizontal installation (Unit: mm) |     |     |     | Wall installation (Unit: mm) |     |     |     | Vertical installation (Unit: mm) |     |     |
|------------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|----------------------------------|-----|-----|
|                                    | A   | B   | C   |                              | A   | B   | C   |                                  | A   | C   |
| 8kg                                | 511 | 151 | 186 | 8kg                          | 186 | 151 | 511 | 2kg                              | 640 | 640 |
| 15kg                               | 353 | 73  | 93  | 15kg                         | 93  | 73  | 353 | 4kg                              | 322 | 322 |
| 22kg                               | 268 | 44  | 57  | 22kg                         | 57  | 44  | 268 |                                  |     |     |

### ABFS05-6

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |
| 10kg                               | 1178 | 140 | 208 | 10kg                         | 208 | 140 | 1178 | 3kg                              | 520 | 520 |
| 15kg                               | 830  | 88  | 130 | 15kg                         | 130 | 88  | 830  | 6kg                              | 260 | 260 |
| 25kg                               | 566  | 46  | 68  | 25kg                         | 68  | 46  | 566  |                                  |     |     |

### ABFS05-2

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |
| 10kg                               | 9257 | 186 | 293 | 10kg                         | 293 | 186 | 9257 | 5kg                              | 406 | 406 |
| 20kg                               | 6043 | 84  | 133 | 20kg                         | 133 | 84  | 6043 | 10kg                             | 203 | 203 |
| 30kg                               | 4746 | 50  | 79  | 30kg                         | 79  | 50  | 4746 |                                  |     |     |

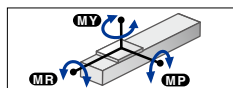
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.

## Controller

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

## Static loading moment

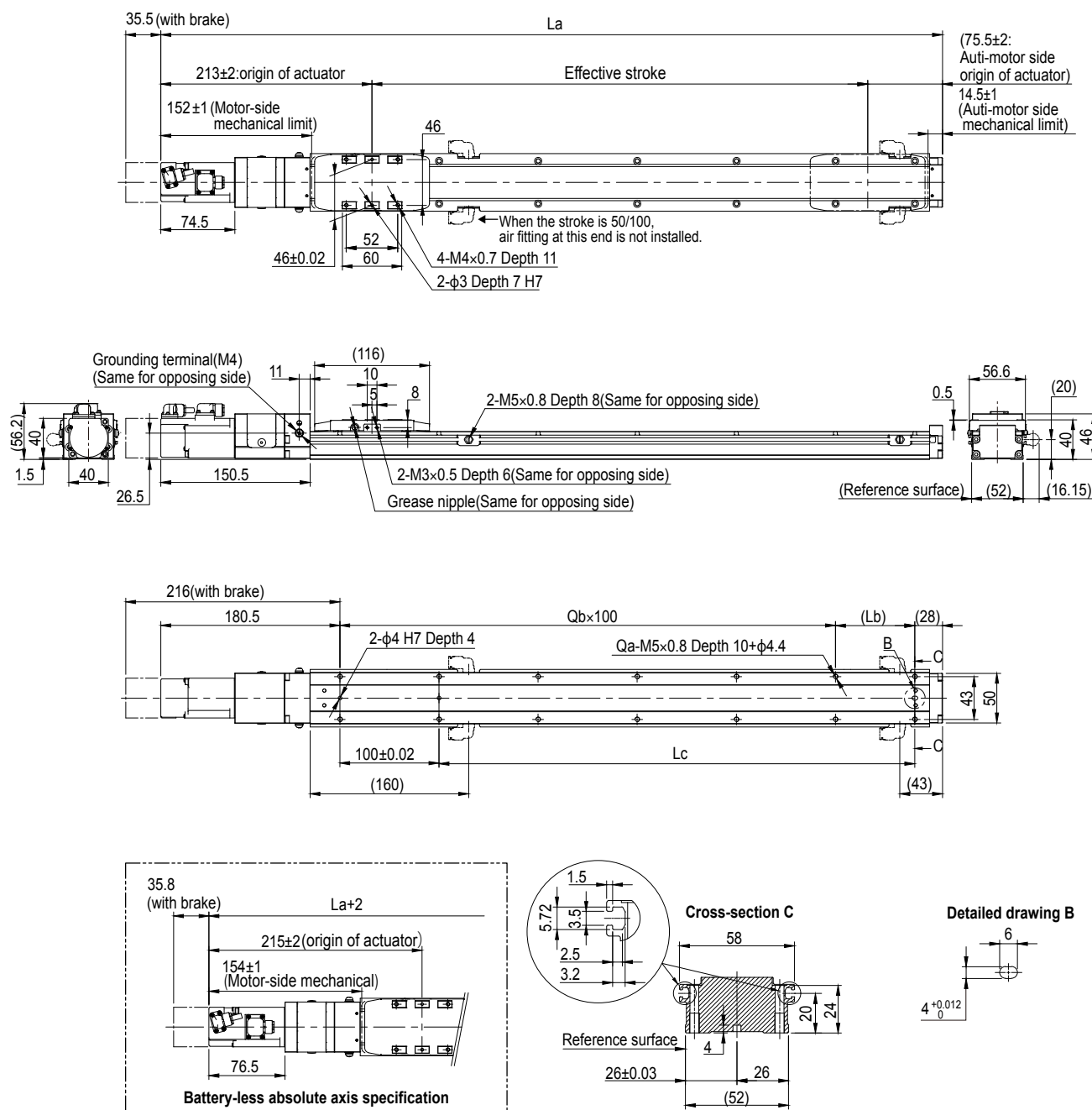


| (Unit: N·m) |    |     |
|-------------|----|-----|
| MY          | MP | MR  |
| 73          | 73 | 115 |



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

## ABFS05 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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.)

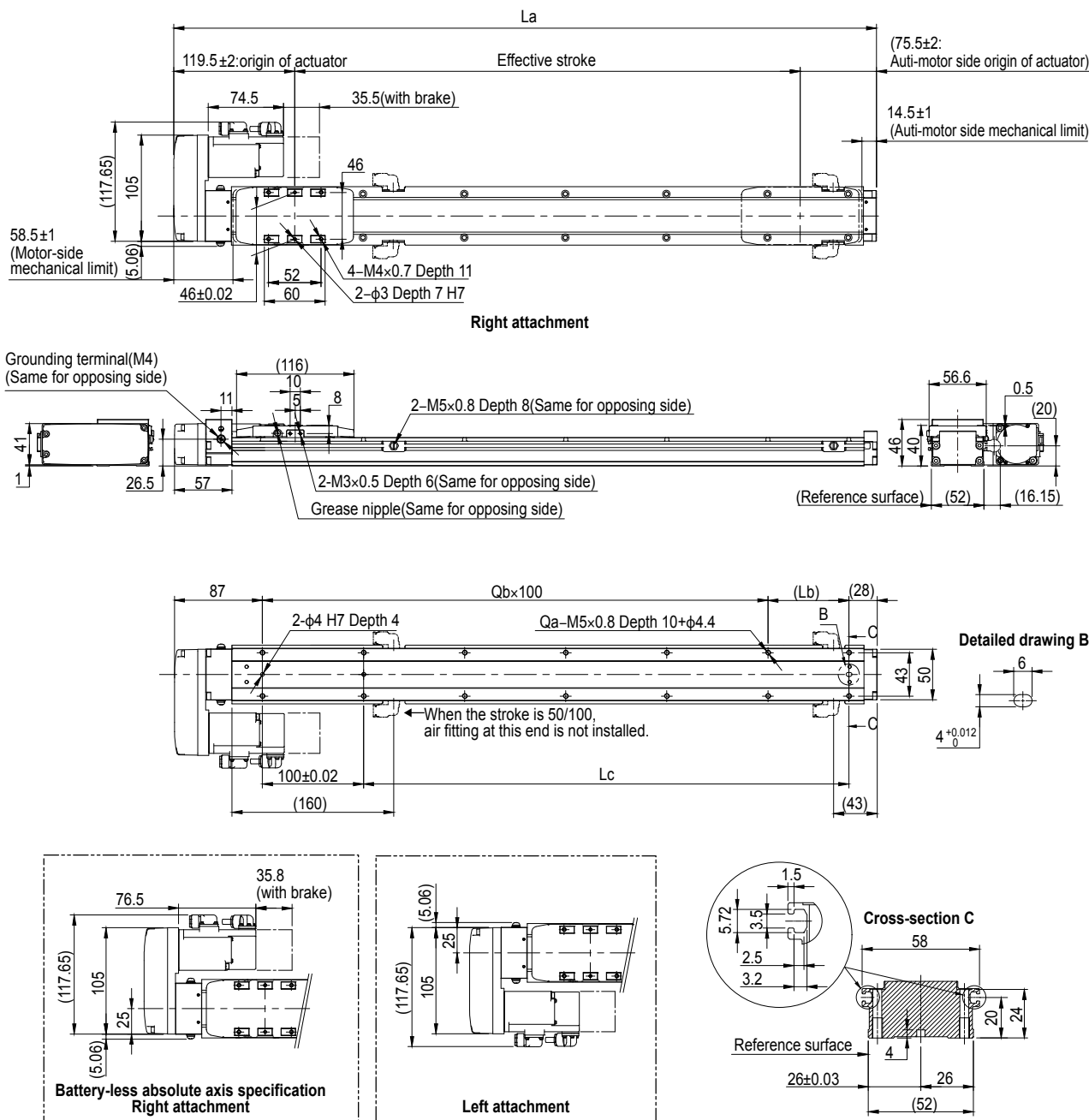
Note. For the installation through hole, the length under head <<35mm or more>> is recommended for the hex socket head bolts <M4×0.7>. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M5×0.8> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke              | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    |
|-------------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| La                            | 338.5         | 388.5 | 438.5 | 488.5 | 538.5 | 588.5 | 638.5 | 688.5 | 738.5 | 788.5 | 838.5 | 888.5 | 938.5 | 988.5 | 1038.5 | 1088.5 |
| Lb                            | 30            | 80    | 30    | 80    | 30    | 80    | 30    | 80    | 30    | 80    | 30    | 80    | 30    | 80    | 30     | 80     |
| Lc                            | 30            | 80    | 130   | 180   | 230   | 280   | 330   | 380   | 430   | 480   | 530   | 580   | 630   | 680   | 730    | 780    |
| Qa                            | 6             | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20     | 20     |
| Qb                            | 1             | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7     | 8      | 8      |
| Weight (kg) <sup>Note 1</sup> | 1.33          | 1.57  | 1.82  | 2.06  | 2.30  | 2.55  | 2.79  | 3.03  | 3.28  | 3.52  | 3.76  | 4.00  | 4.25  | 4.49  | 4.73   | 4.98   |
| Maximum speed (mm/sec)        | Lead 20       | 1200  |       |       |       |       |       |       |       |       |       |       |       |       | 780    | 600    |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       |       | 65%    | 50%    |
|                               | Lead 12       | 800   |       |       |       |       |       |       |       |       |       |       |       |       | 480    | 360    |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       |       | 60%    | 45%    |
|                               | Lead 6        | 400   |       |       |       |       |       |       |       |       |       |       |       |       | 240    | 180    |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       |       | 50%    | 45%    |
|                               | Lead 2        | 120   |       |       |       |       |       |       |       |       |       |       |       |       | 78     | 60     |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       |       | 55%    | 50%    |

## ABFS05 Bending type (R/L)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<35mm or more>> is recommended for the hex socket head bolts <M4×0.7>. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M5×0.8> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke              | 50            | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  |
|-------------------------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| La                            | 245           | 295  | 345  | 395  | 445  | 495  | 545  | 595  | 645  | 695  | 745  | 795  | 845  | 895  | 945  | 995  |
| Lb                            | 30            | 80   | 30   | 80   | 30   | 80   | 30   | 80   | 30   | 80   | 30   | 80   | 30   | 80   | 30   | 80   |
| Lc                            | 30            | 80   | 130  | 180  | 230  | 280  | 330  | 380  | 430  | 480  | 530  | 580  | 630  | 680  | 730  | 780  |
| Qa                            | 6             | 6    | 8    | 8    | 10   | 10   | 12   | 12   | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   |
| Qb                            | 1             | 1    | 2    | 2    | 3    | 3    | 4    | 4    | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    |
| Weight (kg) <sup>Note 1</sup> | 1.24          | 1.41 | 1.57 | 1.74 | 1.91 | 2.08 | 2.24 | 2.41 | 2.58 | 2.75 | 2.91 | 3.08 | 3.25 | 3.42 | 3.58 | 3.75 |
| Maximum speed (mm/sec)        | Lead 20       | 1200 |      |      |      |      |      |      |      |      |      |      |      |      | 780  | 600  |
|                               | Speed setting | -    |      |      |      |      |      |      |      |      |      |      |      |      | 65%  | 50%  |
|                               | Lead 12       | 800  |      |      |      |      |      |      |      |      |      |      |      |      | 480  | 360  |
|                               | Speed setting | -    |      |      |      |      |      |      |      |      |      |      |      |      | 60%  | 45%  |
|                               | Lead 6        | 400  |      |      |      |      |      |      |      |      |      |      |      |      | 240  | 180  |
|                               | Speed setting | -    |      |      |      |      |      |      |      |      |      |      |      |      | 50%  | 45%  |
|                               | Lead 2        | 120  |      |      |      |      |      |      |      |      |      |      |      |      | 78   | 60   |
|                               | Speed setting | -    |      |      |      |      |      |      |      |      |      |      |      |      | 65%  | 50%  |

## Ordering method

|           |                                   |                                                          |                                                                                                                                          |                           |                                 |                                                 |                         |                               |                                 |                                                                            |                            |
|-----------|-----------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------|-------------------------------------------------|-------------------------|-------------------------------|---------------------------------|----------------------------------------------------------------------------|----------------------------|
|           |                                   |                                                          |                                                                                                                                          |                           |                                 |                                                 | <b>EP-01</b>            |                               |                                 |                                                                            |                            |
| <b>本体</b> | <b>Lead</b>                       | <b>Shape</b>                                             | <b>Motor specification</b>                                                                                                               | <b>Stroke</b>             | <b>Cable length</b>             | <b>Cable entry location</b>                     | <b>Robot positioner</b> | <b>Driver: Power capacity</b> | <b>Regenerative unit</b>        | <b>I/O</b>                                                                 | <b>Battery</b>             |
| ABFS06    | 20: 20 mm<br>12: 12 mm<br>6: 6 mm | S: Straight<br>R: Right attachment<br>L: Left attachment | S: Standard/With no brake<br>BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake | 50 to 800<br>(50mm pitch) | R3: 3 m<br>R5: 5 m<br>R10: 10 m | R: From rear of motor<br>F: From front of motor | EP-01                   | A10: 200W or less             | No entry: None<br>R: With EP-RU | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |

Note 1. The robot cable is flexible and resists bending.

Note 2. When the actuator is used vertically, ①lead 12 is selected, and the stroke is 250 mm or more ②lead 6 is selected, and the stroke is 200mm or more, the regenerative unit is needed.  
When the actuator is used horizontally, lead 20 is selected, and the stroke is 550 to 650 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.)

## Specifications

|                                                  |            |                                                   |            |            |
|--------------------------------------------------|------------|---------------------------------------------------|------------|------------|
| AC servo motor output                            |            | 100 W                                             |            |            |
| Repeatability <small>Note 1</small>              |            | ±0.005 mm                                         |            |            |
| Deceleration mechanism                           |            | Rolled ball screw φ 10 (C7 class)                 |            |            |
| Stroke                                           |            | 50 mm to 800 mm (50 mm pitch)                     |            |            |
| Maximum speed <small>Note 2</small>              |            | 1333 mm/sec                                       | 800 mm/sec | 400 mm/sec |
| Ball screw lead                                  |            | 20 mm                                             | 12 mm      | 6 mm       |
| Maximum payload                                  | Horizontal | 18 kg                                             | 30 kg      | 45 kg      |
|                                                  | Vertical   | 6 kg                                              | 9 kg       | 12 kg      |
| Rated Thrust                                     |            | 85 N                                              | 142 N      | 285 N      |
| Dinamic loading moment (MY,MP,MR)                |            | 40.6 / 40.6 / 60.2                                |            |            |
| Maximum dimensions of cross section of main unit |            | W 65 mm × H 44 mm                                 |            |            |
| Overall length                                   | Straight   | ST + 315 mm                                       |            |            |
|                                                  | Bending    | ST + 224 mm                                       |            |            |
| Degree of Cleanliness <small>Note 3</small>      |            | Equivalent to ISO Class 4 (ISO 14644-1)           |            |            |
| Intake air <small>Note 4</small>                 |            | 80 Nℓ/ min~                                       |            |            |
| Position detector                                |            | Absolute encoder<br>Battery-less absolute encoder |            |            |
| Resolution                                       |            | 23 bits                                           |            |            |
| Using ambient temperature and humidity           |            | 0 to 40 °C, 35 to 80 %RH<br>(no condensation)     |            |            |

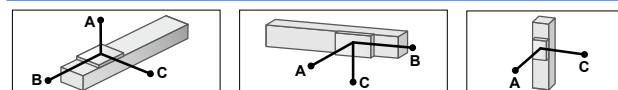
Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

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 (A) mm, the ball screw may resonate. (Critical speed) (A):550 mm for lead 20; 650 mm for lead 6, and 12.

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.

## Allowable overhang <sup>Note</sup>



### ABFS06-20

| Horizontal installation (Unit: mm) |     |     |     | Wall installation (Unit: mm) |     |     |     | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|-----|-----|-----|------------------------------|-----|-----|-----|----------------------------------|-----|-----|--|
|                                    | A   | B   | C   |                              | A   | B   | C   |                                  | A   | C   |  |
| 6kg                                | 471 | 255 | 226 | 6kg                          | 226 | 255 | 471 | 3kg                              | 477 | 477 |  |
| 12kg                               | 299 | 117 | 112 | 12kg                         | 112 | 117 | 299 | 6kg                              | 255 | 255 |  |
| 18kg                               | 267 | 79  | 81  | 18kg                         | 81  | 79  | 267 |                                  |     |     |  |

### ABFS06-12

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|--|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |  |
| 10kg                               | 1055 | 201 | 245 | 10kg                         | 245 | 201 | 1055 | 5kg                              | 429 | 429 |  |
| 20kg                               | 618  | 90  | 111 | 20kg                         | 111 | 90  | 618  | 9kg                              | 218 | 218 |  |
| 30kg                               | 457  | 54  | 68  | 30kg                         | 68  | 54  | 457  |                                  |     |     |  |

### ABFS06-6

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |  |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|--|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |  |
| 15kg                               | 1830 | 152 | 213 | 15kg                         | 213 | 152 | 1830 | 6kg                              | 429 | 429 |  |
| 30kg                               | 1016 | 65  | 92  | 30kg                         | 92  | 65  | 1016 | 12kg                             | 215 | 215 |  |
| 45kg                               | 691  | 37  | 52  | 45kg                         | 52  | 37  | 691  |                                  |     |     |  |

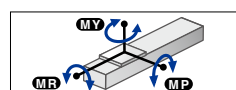
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.

## Controller

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

## Static loading moment

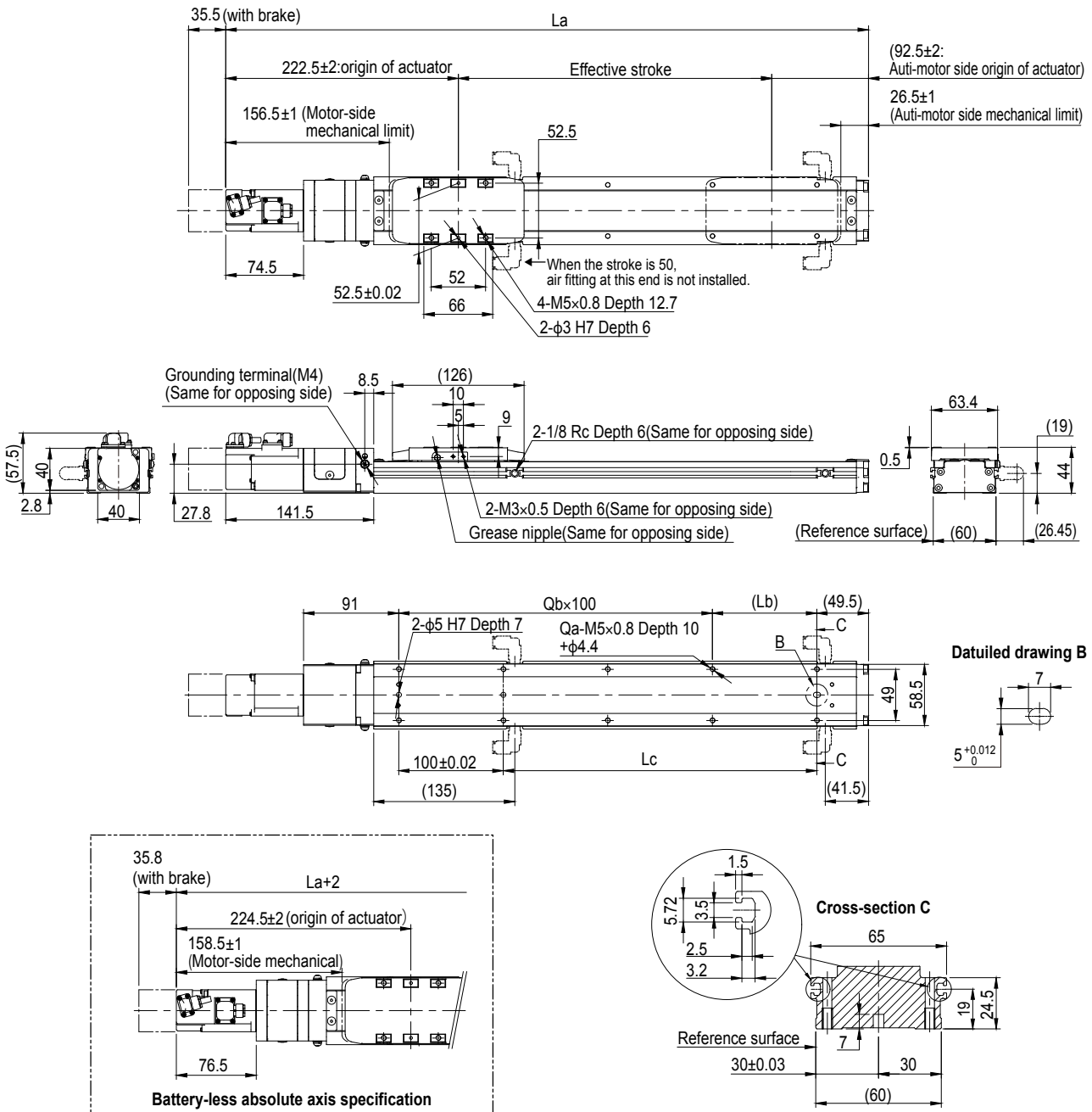


| (Unit: N·m) |    |     |
|-------------|----|-----|
| MY          | MP | MR  |
| 99          | 99 | 176 |



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

## ABFS06 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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.)

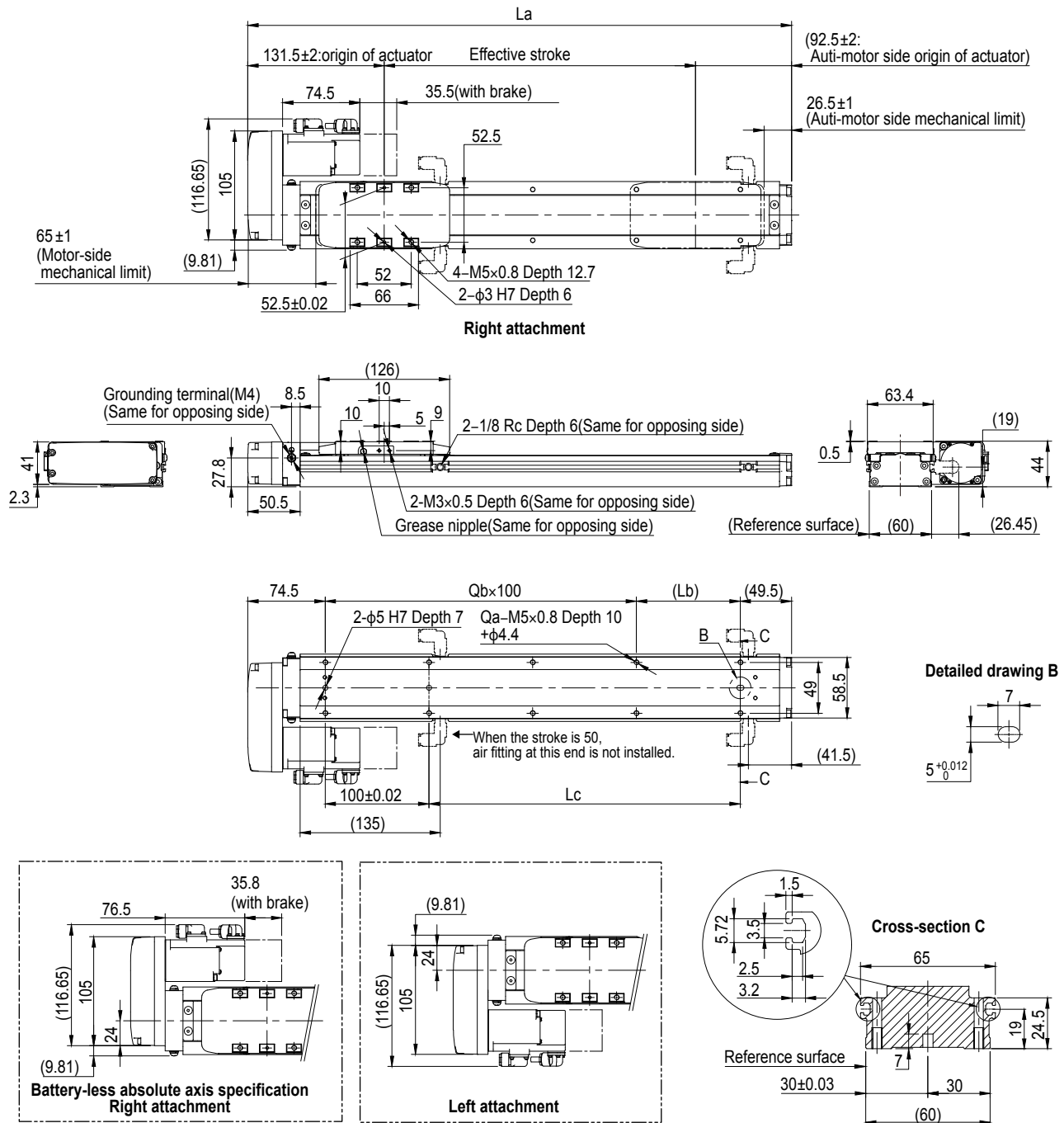
Note. For the installation through hole, the length under head <<35mm or more >> is recommended for the hex socket head bolts <M4×0.7>. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M5×0.8> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFUM3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke   | 50   | 100  | 150  | 200  | 250  | 300  | 350  | 400 | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  |
|--------------------|------|------|------|------|------|------|------|-----|------|------|------|------|------|------|------|------|
| La                 | 365  | 415  | 465  | 515  | 565  | 615  | 665  | 715 | 765  | 815  | 865  | 915  | 965  | 1015 | 1065 | 1115 |
| Lb                 | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100 | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  |
| Lc                 | 50   | 100  | 150  | 200  | 250  | 300  | 350  | 400 | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  |
| Qa                 | 6    | 6    | 8    | 8    | 10   | 10   | 12   | 12  | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   |
| Qb                 | 1    | 1    | 2    | 2    | 3    | 3    | 4    | 4   | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    |
| Weight (kg) Note 1 | 1.91 | 2.07 | 2.22 | 2.38 | 2.54 | 2.69 | 2.85 | 3.0 | 3.16 | 3.32 | 3.47 | 3.63 | 3.78 | 3.94 | 4.1  | 4.26 |
| Lead 20            | 1333 |      |      |      |      |      |      |     |      |      |      |      | 933  | 733  | 667  | 533  |
| Speed setting      |      |      |      |      |      |      |      |     |      |      |      |      | 70%  | 55%  | 50%  | 40%  |
| Lead 12            | 800  |      |      |      |      |      |      |     |      |      |      |      | 680  | 560  | 480  | 320  |
| Speed setting      |      |      |      |      |      |      |      |     |      |      |      |      | 85%  | 70%  | 60%  | 45%  |
| Lead 6             | 400  |      |      |      |      |      |      |     |      |      |      |      | 340  | 280  | 240  | 160  |
| Speed setting      |      |      |      |      |      |      |      |     |      |      |      |      | 85%  | 70%  | 60%  | 45%  |

## ABFS06 Bending type (R/L)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<35mm or more>> is recommended for the hex socket head bolts <M4×0.7>. In the installation tap hole, the length under head <<thickness of stand +10mm or less>> is recommended for the hex socket head bolts <M5×0.8> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  |
|------------------------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| La                     | 274           | 324  | 374  | 424  | 474  | 524  | 574  | 624  | 674  | 724  | 774  | 824  | 874  | 924  | 974  | 1024 |
| Lb                     | 50            | 100  | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  | 50   | 100  |
| Lc                     | 50            | 100  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  |
| Qa                     | 6             | 6    | 8    | 8    | 10   | 10   | 12   | 12   | 14   | 14   | 16   | 16   | 18   | 18   | 20   | 20   |
| Qb                     | 1             | 1    | 2    | 2    | 3    | 3    | 4    | 4    | 5    | 5    | 6    | 6    | 7    | 7    | 8    | 8    |
| Weight (kg) Note 1     | 2.2           | 2.34 | 2.48 | 2.62 | 2.76 | 2.90 | 3.04 | 3.18 | 3.32 | 3.46 | 3.60 | 3.74 | 3.88 | 4.02 | 4.16 | 4.30 |
| Maximum speed (mm/sec) | Lead 20       | 1333 |      |      |      |      |      |      |      |      |      |      | 933  | 733  | 667  | 533  |
|                        | Speed setting | -    |      |      |      |      |      |      |      |      |      |      | 70%  | 55%  | 50%  | 40%  |
|                        | Lead 12       | 800  |      |      |      |      |      |      |      |      |      |      | 680  | 560  | 480  | 320  |
|                        | Speed setting | -    |      |      |      |      |      |      |      |      |      |      | 85%  | 70%  | 60%  | 45%  |
|                        | Lead 6        | 400  |      |      |      |      |      |      |      |      |      |      | 340  | 280  | 240  | 160  |
|                        | Speed setting | -    |      |      |      |      |      |      |      |      |      |      | 85%  | 70%  | 60%  | 45%  |

## Ordering method

|           |                                   |                                                          |                                                                                                                                          |                            |                                 |                                                 |                         |                               |                                 |                                                                            |                            |
|-----------|-----------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------|-------------------------------------------------|-------------------------|-------------------------------|---------------------------------|----------------------------------------------------------------------------|----------------------------|
|           |                                   |                                                          |                                                                                                                                          |                            |                                 |                                                 | <b>EP-01</b>            |                               |                                 |                                                                            |                            |
| <b>本体</b> | <b>Lead</b>                       | <b>Shape</b>                                             | <b>Motor specification</b>                                                                                                               | <b>Stroke</b>              | <b>Cable length</b>             | <b>Cable entry location</b>                     | <b>Robot positioner</b> | <b>Driver: Power capacity</b> | <b>Regenerative unit</b>        | <b>I/O</b>                                                                 | <b>Battery</b>             |
| ABFS07    | 20: 20 mm<br>10: 10 mm<br>5: 5 mm | S: Straight<br>R: Right attachment<br>L: Left attachment | S: Standard/With no brake<br>BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake | 50 to 1050<br>(50mm pitch) | R3: 3 m<br>R5: 5 m<br>R10: 10 m | R: From rear of motor<br>F: From front of motor | EP-01                   | A10: 200W or less             | No entry: None<br>R: With EP-RU | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |

Note 1. The robot cable is flexible and resists bending.

Note 2. Note 2. When the actuator is used vertically, ①lead 20 is selected, and the stroke is 600 mm or more ②lead 10 is selected, and the stroke is 300mm or more ③lead 5 is selected, and the stroke is 250mm or more, 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.)

## Specifications

|                                                  |            |                                                   |            |            |
|--------------------------------------------------|------------|---------------------------------------------------|------------|------------|
| AC servo motor output                            |            | 100 W                                             |            |            |
| Repeatability <sup>Note 1</sup>                  |            | ±0.005 mm                                         |            |            |
| Deceleration mechanism                           |            | Rolled ball screw φ 12 (C7 class)                 |            |            |
| Stroke                                           |            | 50 mm to 1050 mm (50 mm pitch)                    |            |            |
| Maximum speed <sup>Note 2</sup>                  |            | 1333 mm/sec                                       | 666 mm/sec | 333 mm/sec |
| Ball screw lead                                  |            | 20 mm                                             | 10 mm      | 5 mm       |
| Maximum payload                                  | Horizontal | 25 kg                                             | 45 kg      | 85 kg      |
|                                                  | Vertical   | 4 kg                                              | 10 kg      | 16 kg      |
| Rated Thrust                                     |            | 84 N                                              | 169 N      | 339 N      |
| Dinamic loading moment (MY,MP,MR)                |            | 50.4 / 50.4 / 79.4                                |            |            |
| Maximum dimensions of cross section of main unit |            | W 75 mm × H 48 mm                                 |            |            |
| Overall length                                   | Straight   | ST + 315.5 mm                                     |            |            |
|                                                  | Bending    | ST + 224 mm                                       |            |            |
| Degree of Cleanliness <sup>Note 3</sup>          |            | Equivalent to ISO Class 4 (ISO 14644-1)           |            |            |
| Intake air <sup>Note 4</sup>                     |            | 80 Nℓ/min~                                        |            |            |
| Position detector                                |            | Absolute encoder<br>Battery-less absolute encoder |            |            |
| Resolution                                       |            | 23 bits                                           |            |            |
| Using ambient temperature and humidity           |            | 0 to 40 °C, 35 to 80 %RH<br>(no condensation)     |            |            |

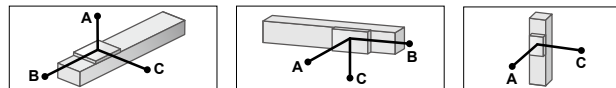
Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

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 550 mm, the ball screw may resonate. (Critical speed)

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.

## Allowable overhang <sup>Note</sup>



### ABFS07-20

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |      |      |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|------|------|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A    | C    |
| 10kg                               | 1330 | 239 | 290 | 10kg                         | 290 | 239 | 1330 | 2kg                              | 1275 | 1275 |
| 18kg                               | 955  | 129 | 166 | 18kg                         | 166 | 129 | 955  | 4kg                              | 653  | 653  |
| 25kg                               | 800  | 89  | 118 | 25kg                         | 118 | 89  | 800  |                                  |      |      |

### ABFS07-10

| Horizontal installation (Unit: mm) |      |     |     | Wall installation (Unit: mm) |     |     |      | Vertical installation (Unit: mm) |     |     |
|------------------------------------|------|-----|-----|------------------------------|-----|-----|------|----------------------------------|-----|-----|
|                                    | A    | B   | C   |                              | A   | B   | C    |                                  | A   | C   |
| 15kg                               | 1199 | 169 | 228 | 15kg                         | 228 | 169 | 1199 | 5kg                              | 571 | 571 |
| 30kg                               | 561  | 73  | 98  | 30kg                         | 98  | 73  | 561  | 10kg                             | 287 | 287 |
| 45kg                               | 339  | 41  | 55  | 45kg                         | 55  | 41  | 339  |                                  |     |     |

### ABFS07-5

| Horizontal installation (Unit: mm) |      |    |     | Wall installation (Unit: mm) |     |    |      | Vertical installation (Unit: mm) |     |     |
|------------------------------------|------|----|-----|------------------------------|-----|----|------|----------------------------------|-----|-----|
|                                    | A    | B  | C   |                              | A   | B  | C    |                                  | A   | C   |
| 30kg                               | 1187 | 86 | 129 | 30kg                         | 129 | 86 | 1187 | 8kg                              | 412 | 412 |
| 60kg                               | 565  | 31 | 47  | 60kg                         | 47  | 31 | 565  | 16kg                             | 206 | 206 |
| 85kg                               | 344  | 15 | 23  | 85kg                         | 35  | 23 | 485  |                                  |     |     |

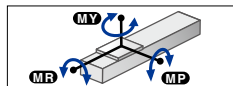
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.

## Controller

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

## Static loading moment

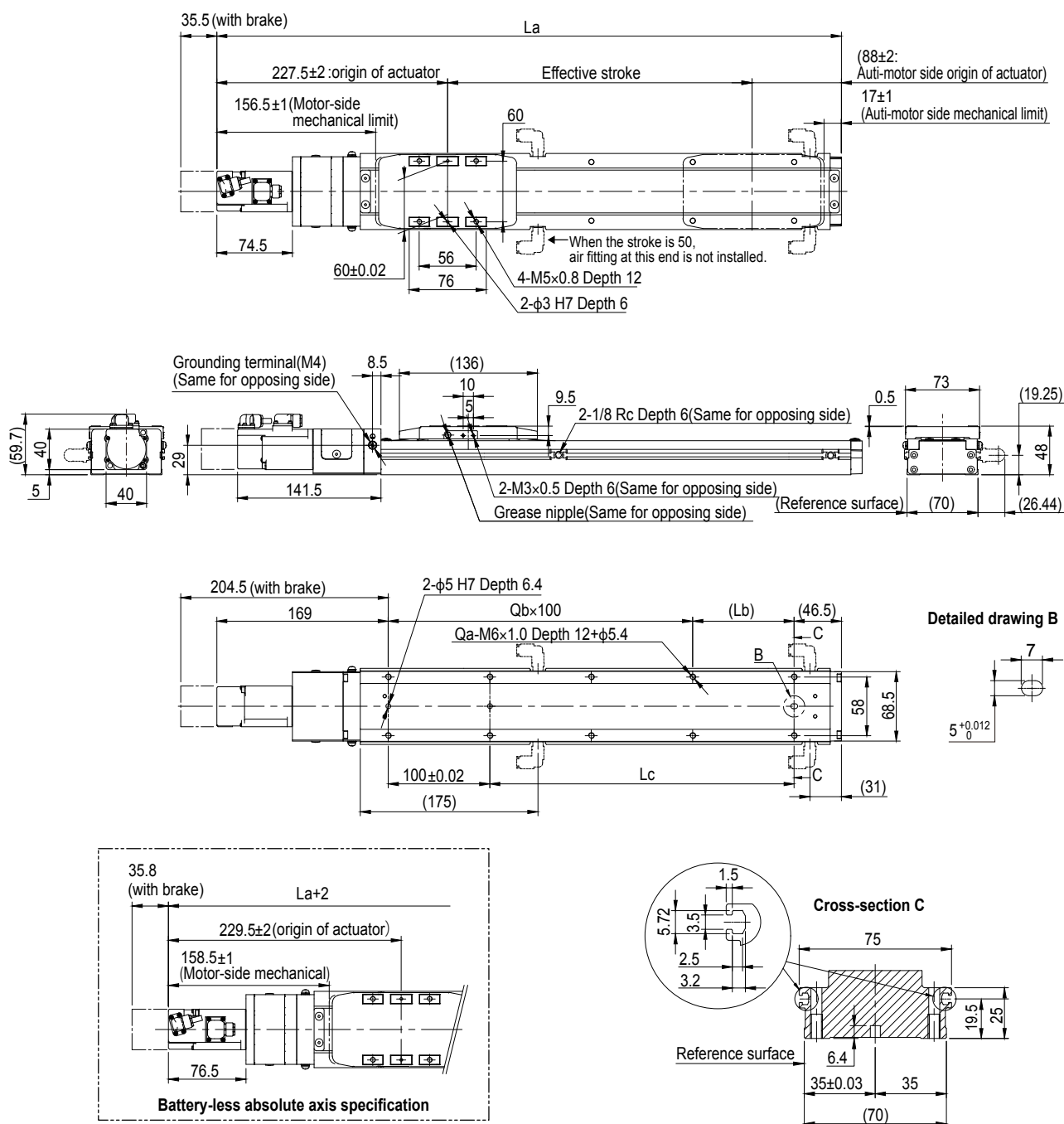


| (Unit: N·m) |     |     |
|-------------|-----|-----|
| MY          | MP  | MR  |
| 130         | 130 | 278 |



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

## ABFS07 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.2 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<35mm or more>> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +12mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   |
|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                     | 365.5         | 415.5 | 465.5 | 515.5 | 565.5 | 615.5 | 665.5 | 715.5 | 765.5 | 815.5 | 865.5 | 915.5 | 965.5 | 1015.5 | 1065.5 | 1115.5 | 1165.5 | 1215.5 | 1265.5 | 1315.5 | 1365.5 |
| Lb                     | 50            | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     |
| Lc                     | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   |
| Qa                     | 6             | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18     | 20     | 20     | 22     | 22     | 24     | 24     | 26     |
| Qb                     | 1             | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7      | 8      | 8      | 9      | 9      | 10     | 10     | 11     |
| Weight (kg) Note 1     | 2.56          | 2.74  | 2.92  | 3.10  | 3.28  | 3.46  | 3.64  | 3.82  | 4.00  | 4.18  | 4.36  | 4.54  | 4.72  | 4.90   | 5.08   | 5.26   | 5.44   | 5.62   | 5.80   | 5.98   | 6.16   |
| Maximum speed (mm/sec) | Lead 20       | 1333  |       |       |       |       |       |       |       |       |       | 1262  | 1064  | 932    | 800    | 664    | 600    | 532    | 466    | 400    | 332    |
|                        | Speed setting | -     |       |       |       |       |       |       |       |       |       | 95%   | 80%   | 70%    | 60%    | 50%    | 45%    | 40%    | 35%    | 30%    | 25%    |
|                        | Lead 10       | 666   |       |       |       |       |       |       |       |       |       | 632   | 532   | 466    | 400    | 332    | 300    | 266    | 232    | 200    | 166    |
|                        | Speed setting | -     |       |       |       |       |       |       |       |       |       | 95%   | 80%   | 70%    | 60%    | 50%    | 45%    | 40%    | 35%    | 30%    | 25%    |
|                        | Lead 5        | 333   |       |       |       |       |       |       |       |       |       | 316   | 266   | 233    | 200    | 166    | 150    | 133    | 116    | 100    | 83     |
|                        | Speed setting | -     |       |       |       |       |       |       |       |       |       | 95%   | 80%   | 70%    | 60%    | 50%    | 45%    | 40%    | 35%    | 30%    | 25%    |



# ABFS08/ABFS08H

Basic model ● Single-axis robots  
● Low-profile type

## Ordering method

| 本体      | Lead                 | Shape                                     | Motor specification                                                                                         | Stroke                  | Note 1<br>Cable length | Cable entry location   | Robot positioner | Driver: Power capacity | Note 2<br>Regenerative unit | I/O                                                                        | Battery Note 3             |
|---------|----------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|------------------------|------------------------|------------------|------------------------|-----------------------------|----------------------------------------------------------------------------|----------------------------|
| ABFS08  | 24: 24 mm            | S: Straight                               | S: Standard/With no brake                                                                                   | 50 to 1250 (50mm pitch) | R3: 3 m                | R: From rear of motor  | EP-01            | A10: 200W or less      | No entry: None              | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |
| ABFS08H | 12: 12 mm<br>6: 6 mm | R: Right attachment<br>L: Left attachment | BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake |                         | R5: 5 m<br>R10: 10 m   | F: From front of motor |                  | A30: 400W/750W         | R: With EP-RU               |                                                                            |                            |

Note 1. The robot cable is flexible and resists bending.

Note 2. [For ABFS08]

When the actuator is used vertically, ①lead 24 is selected, and the stroke is 350 mm or more ②lead 12 is selected, and the stroke is 150mm or more ③lead 6 is selected, and the stroke is 150mm or more, the regenerative unit is needed.

When the actuator is used horizontally, ①lead 24 is selected, and the stroke is 300 to 850 mm, ②lead 12 is selected, and the stroke is 450 to 600 mm, the regenerative unit is needed.

When the actuator is used vertically, ①lead 24 is selected, and the stroke is 150 mm or more ②lead 12 is selected, and the stroke is 150mm or more ③lead 6 is selected, and the stroke is 200mm or more, the regenerative unit is needed.

When the actuator is used horizontally, ①lead 24 is selected, and the stroke is 400 to 650 mm, ②lead 12 is selected, and the stroke is 400 mm or more ③lead 6 is selected, and the stroke is 200mm or more, 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.)

## ABFS08 (200W)

### Specifications

|                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| AC servo motor output                            | 200 W                                           |
| Repeatability Note 1                             | ±0.005 mm                                       |
| Deceleration mechanism                           | Rolled ball screw $\phi$ 14 (C7 class)          |
| Stroke                                           | 50 mm to 1250 mm (50 mm pitch)                  |
| Maximum speed Note 2                             | 1440 mm/sec<br>720 mm/sec<br>360 mm/sec         |
| Ball screw lead                                  | 24 mm<br>12 mm<br>6 mm                          |
| Maximum payload                                  | Horizontal 40 kg<br>Vertical 8 kg               |
| Rated Thrust                                     | 142 N<br>284 N<br>569 N                         |
| Dynamic loading moment (MY,MP,MR)                | 99.4 / 99.4 / 158.3                             |
| Maximum dimensions of cross section of main unit | W 83 mm × H 56 mm                               |
| Overall length                                   | Straight ST + 362.5 mm<br>Bending ST + 268.5 mm |
| Degree of cleanliness Note 3                     | Equivalent to ISO Class 4 (ISO 14644-1)         |
| Intake air Note 4                                | 130 Nl/min~                                     |
| Using ambient temperature and humidity           | 0 to 40 °C, 35 to 80 %RH (no condensation)      |

Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

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 650 mm, the ball screw may resonate. (Critical speed)

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.

### Allowable overhang Note

| ABFS08-24 | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|-----------|------------------------------------|------------------------------|----------------------------------|
|           | A B C                              | A B C                        | A C                              |
| 15kg      | 505 228 213                        | 213 228 505                  | 810 810                          |
| 25kg      | 557 154 169                        | 169 154 557                  | 461 461                          |
| 40kg      | 1089 113 154                       | 154 113 1089                 |                                  |
| ABFS08-12 | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|           | A B C                              | A B C                        | A C                              |
| 30kg      | 739 160 208                        | 208 160 739                  | 543 543                          |
| 50kg      | 531 85 113                         | 113 85 531                   | 304 304                          |
| 80kg      | 339 43 58                          | 58 43 339                    |                                  |
| ABFS08-6  | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|           | A B C                              | A B C                        | A C                              |
| 30kg      | 2623 188 284                       | 284 188 2623                 | 428 428                          |
| 60kg      | 1436 81 122                        | 122 81 1436                  | 214 214                          |
| 100kg     | 936 38 57                          | 57 38 936                    |                                  |

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 500 mm stroke models.

### Static loading moment

| MY  | MP  | MR  |
|-----|-----|-----|
| 249 | 249 | 393 |

### Controller

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

## ABFS08H (400W)

### Specifications

|                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| AC servo motor output                            | 400 W                                           |
| Repeatability Note 1                             | ±0.005 mm                                       |
| Deceleration mechanism                           | Rolled ball screw $\phi$ 14 (C7 class)          |
| Stroke                                           | 50 mm to 1250 mm (50 mm pitch)                  |
| Maximum speed Note 2                             | 1440 mm/sec<br>720 mm/sec<br>360 mm/sec         |
| Ball screw lead                                  | 24 mm<br>12 mm<br>6 mm                          |
| Maximum payload                                  | Horizontal 50 kg<br>Vertical 15 kg              |
| Rated Thrust                                     | 289 N<br>578 N<br>1156 N                        |
| Dynamic loading moment (MY,MP,MR)                | 99.4 / 99.4 / 158.3                             |
| Maximum dimensions of cross section of main unit | W 83 mm × H 56 mm                               |
| Overall length                                   | Straight ST + 378.5 mm<br>Bending ST + 268.5 mm |
| Degree of cleanliness Note 3                     | Equivalent to ISO Class 4 (ISO 14644-1)         |
| Intake air Note 4                                | 130 Nl/min~                                     |
| Using ambient temperature and humidity           | 0 to 40 °C, 35 to 80 %RH (no condensation)      |

Note 1. Positioning repeatability in one direction. ±0.01 for the Bending configuration.

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 650 mm, the ball screw may resonate. (Critical speed)

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.

### Allowable overhang Note

| ABFS08H-24 | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|------------|------------------------------------|------------------------------|----------------------------------|
|            | A B C                              | A B C                        | A C                              |
| 15kg       | 407 228 201                        | 201 228 407                  | 400 400                          |
| 30kg       | 422 121 132                        | 128 131 336                  | 240 240                          |
| 50kg       | 961 87 121                         | 121 87 961                   |                                  |
| ABFS08H-12 | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|            | A B C                              | A B C                        | A C                              |
| 30kg       | 616 160 205                        | 205 160 616                  | 386 386                          |
| 60kg       | 386 66 88                          | 88 66 386                    | 195 195                          |
| 95kg       | 245 32 43                          | 43 32 245                    |                                  |
| ABFS08H-6  | Horizontal installation (Unit: mm) | Wall installation (Unit: mm) | Vertical installation (Unit: mm) |
|            | A B C                              | A B C                        | A C                              |
| 40kg       | 1538 134 202                       | 202 134 1538                 | 356 356                          |
| 80kg       | 988 54 81                          | 81 54 988                    | 174 174                          |
| 115kg      | 702 29 44                          | 44 29 702                    |                                  |

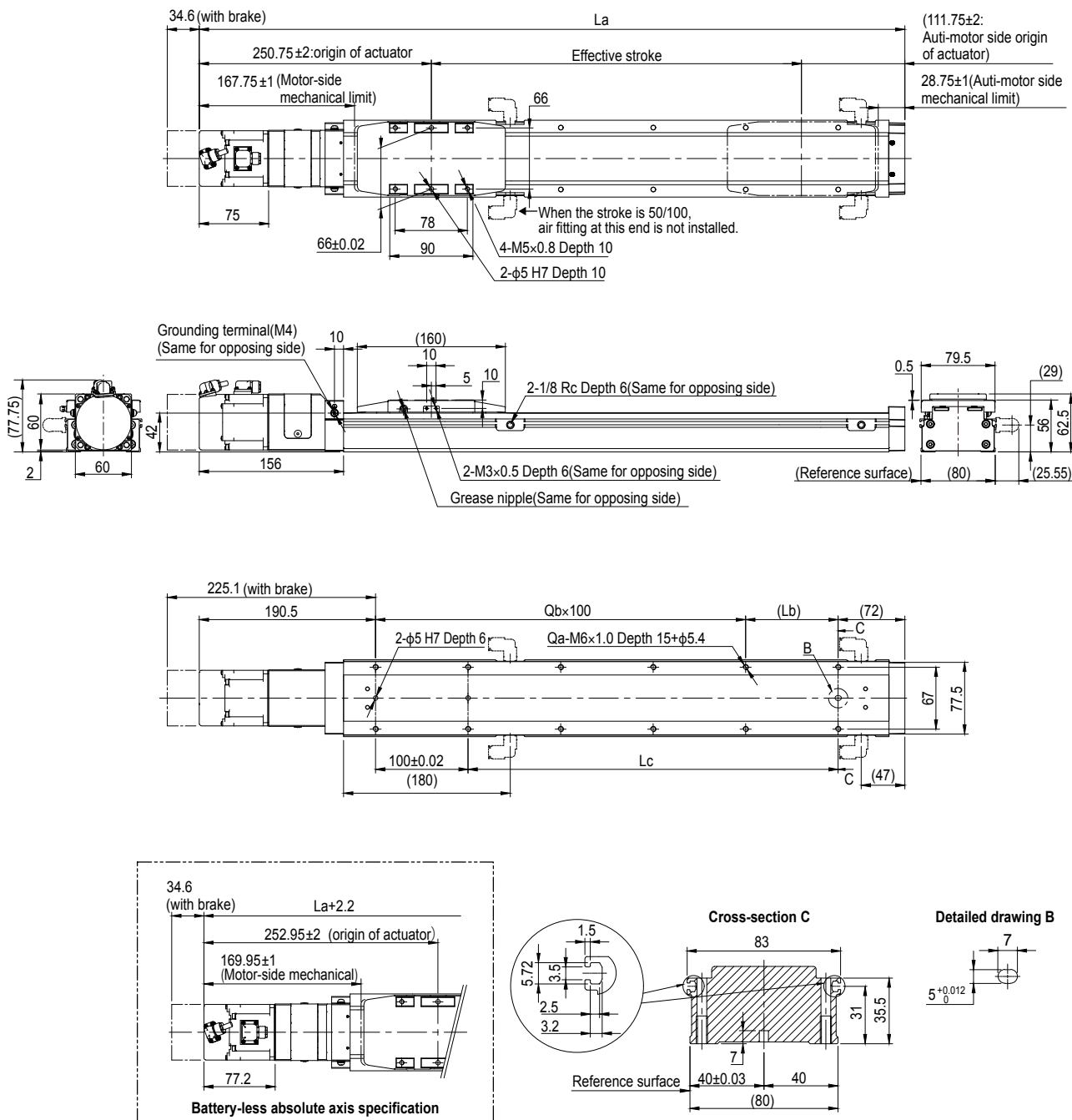
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.



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

## ABFS08 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<45mm or more>> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +15mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFJ-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke              | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |     |
|-------------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| La                            | 412.5         | 462.5 | 512.5 | 562.5 | 612.5 | 662.5 | 712.5 | 762.5 | 812.5 | 862.5 | 912.5 | 962.5 | 1012.5 | 1062.5 | 1112.5 | 1162.5 | 1212.5 | 1262.5 | 1312.5 | 1362.5 | 1412.5 | 1462.5 | 1512.5 | 1562.5 | 1612.5 |     |
| Lb                            | 50            | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     |     |
| Lc                            | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |     |
| Qa                            | 6             | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18     | 18     | 20     | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     |     |
| Qb                            | 1             | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7      | 7      | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     |     |
| Weight (kg) <sup>Note 1</sup> | 4.05          | 4.32  | 4.59  | 4.86  | 5.13  | 5.40  | 5.67  | 5.94  | 6.21  | 6.48  | 6.75  | 7.02  | 7.29   | 7.56   | 7.82   | 8.09   | 8.36   | 8.63   | 8.90   | 9.17   | 9.44   | 9.71   | 9.98   | 10.25  | 10.52  |     |
| Maximum speed (mm/sec)        | Lead 24       | 1440  |       |       |       |       |       |       |       |       |       |       |        | 1224   | 1080   | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360 |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |        | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25% |
|                               | Lead 12       | 720   |       |       |       |       |       |       |       |       |       |       |        | 612    | 540    | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180 |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |        | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25% |
|                               | Lead 6        | 360   |       |       |       |       |       |       |       |       |       |       |        | 306    | 270    | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90  |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |        | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25% |

**Front View:**

- Effective stroke: La
- (111.75±2: Anti-motor side origin of actuator)
- 28.75±1 (Anti-motor side mechanical limit)
- 156.75±2: origin of actuator
- 75
- 34.6(with brake)
- 66
- 4-M5×0.8 Depth 10
- 2-φ5 H7 Depth 10
- 78
- 90
- 66±0.02
- 148
- (160.22)
- 30.5
- (5.06)
- 73.75±1 (Motor-side mechanical limit)

**Right attachment**

- Grounding terminal(M4) (Same for opposing side)
- 10
- (160)
- 10
- 5
- 10
- 2-1/8 Rc Depth 6(Same for opposing side)
- 2-M3×0.5 Depth 6(Same for opposing side)
- Grease nipple(Same for opposing side)
- 62
- 42
- 1.5
- 61
- 62.5
- 56
- 0.5
- 79.5
- (29)
- (Reference surface)
- (80)
- (25.55)

**Detailed drawing B**

- Qb×100
- (Lb)
- (72)
- 96.5
- 2-φ5 H7 Depth 6
- Qa-M6×1.0 Depth 15+φ5.4
- B
- C
- 67
- 77.5
- When the stroke is 50/100, air fitting at this end is not installed.
- (47)
- C
- Lc
- (180)
- 100±0.02

**Battery-less absolute axis specification Right attachment**

- 77.2
- 34.6 (with brake)
- 148
- (160.22)
- 30.5
- (5.06)

**Left attachment**

- (5.06)
- 30.5
- 148
- (160.22)

**Cross-section C**

- 83
- 31
- 35.5
- 7
- 40±0.03
- (80)
- Reference surface
- 5.72
- 3.5
- 2.5
- 3.2
- 1.5

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. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +15mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

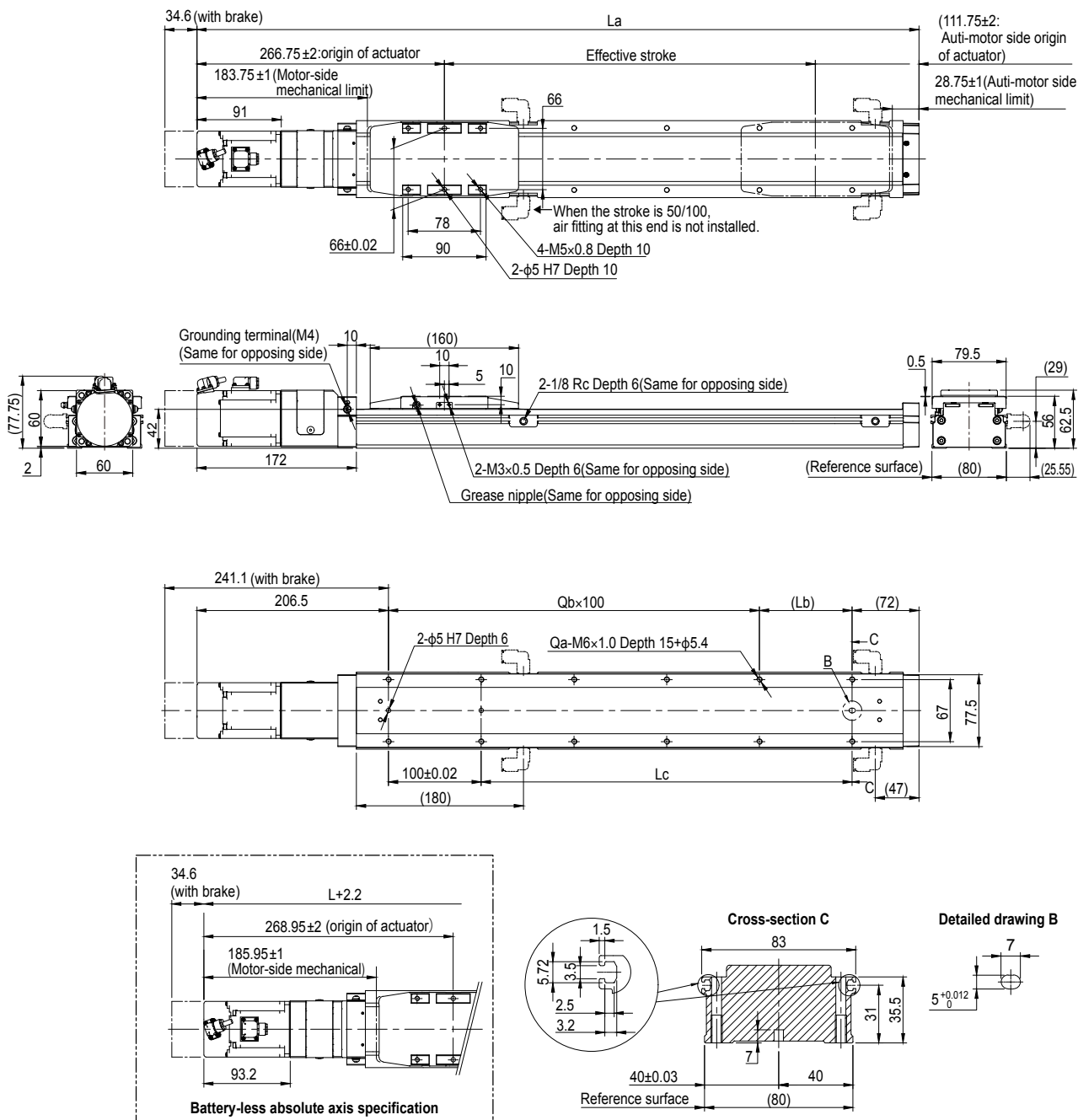
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the

Note: The minimum bending radius for robot cables should be 100x of the specifications.

specifications:

| Effective stroke              | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |     |
|-------------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|
| La                            | 318.5         | 368.5 | 418.5 | 468.5 | 518.5 | 568.5 | 618.5 | 668.5 | 718.5 | 768.5 | 818.5 | 868.5 | 918.5 | 968.5 | 1018.5 | 1068.5 | 1118.5 | 1168.5 | 1218.5 | 1268.5 | 1318.5 | 1368.5 | 1418.5 | 1468.5 | 1518.5 |     |
| Lb                            | 50            | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     |     |
| Lc                            | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |     |
| Qa                            | 6             | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20     | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     |     |
| Qb                            | 1             | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7     | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     |     |
| Weight (kg) <sup>Note 1</sup> | 3.86          | 4.15  | 4.43  | 4.72  | 5.01  | 5.30  | 5.58  | 5.87  | 6.16  | 6.45  | 6.73  | 7.02  | 7.31  | 7.60  | 7.88   | 8.17   | 8.46   | 8.75   | 9.03   | 9.32   | 9.61   | 9.90   | 10.18  | 10.47  | 10.76  |     |
| Maximum speed (mm/sec)        | Lead 24       | 1440  |       |       |       |       |       |       |       |       |       |       |       | 1224  | 1080   | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360 |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25% |
|                               | Lead 12       | 720   |       |       |       |       |       |       |       |       |       |       |       | 612   | 540    | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180 |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25% |
|                               | Lead 6        | 360   |       |       |       |       |       |       |       |       |       |       |       | 306   | 270    | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90  |
|                               | Speed setting | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25% |

## ABFS08H Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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.)

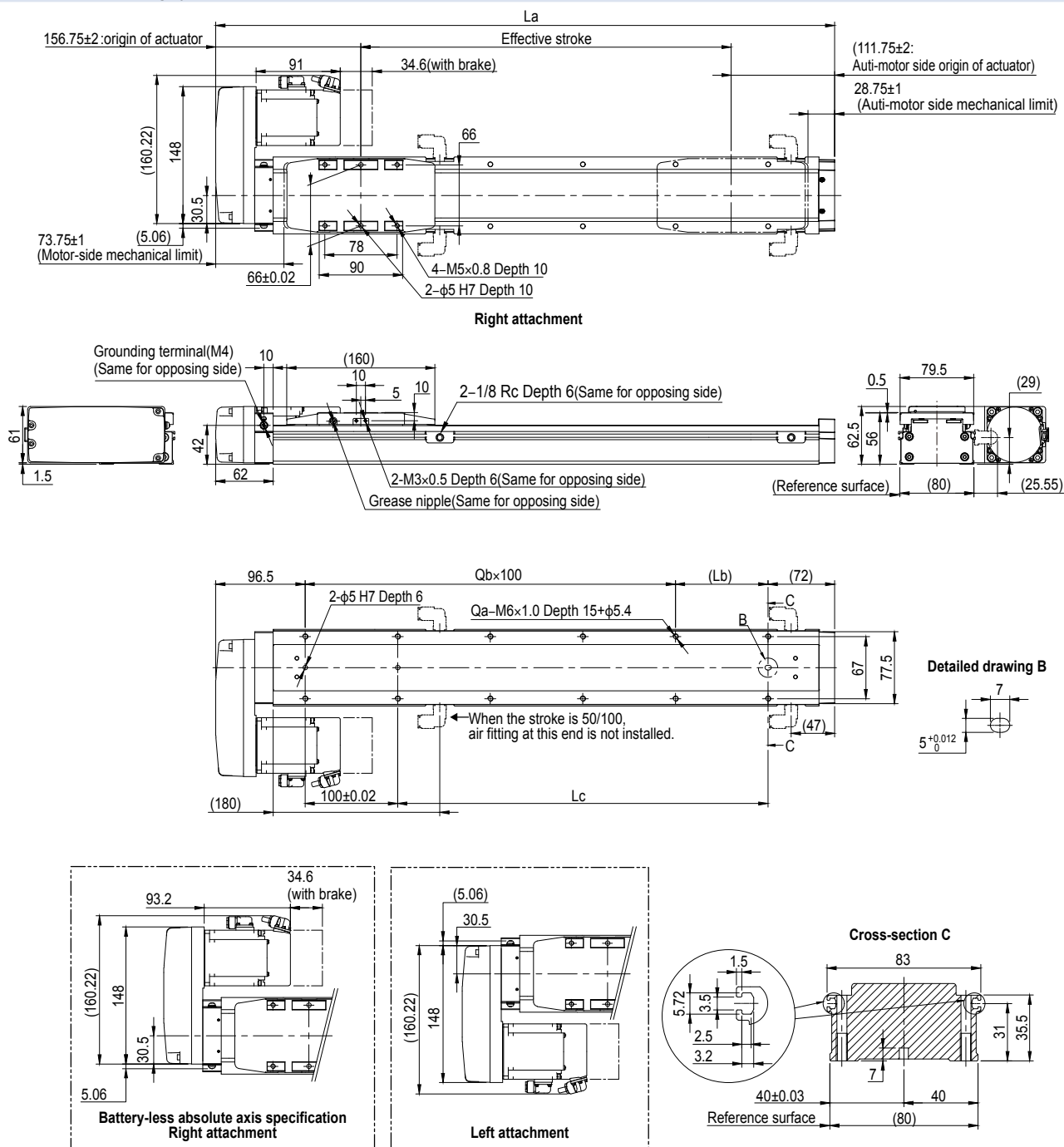
Note. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +15mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFJ-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke              | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                            | 428.5 | 478.5 | 528.5 | 578.5 | 628.5 | 678.5 | 728.5 | 778.5 | 828.5 | 878.5 | 928.5 | 978.5 | 1028.5 | 1078.5 | 1128.5 | 1178.5 | 1228.5 | 1278.5 | 1328.5 | 1378.5 | 1428.5 | 1478.5 | 1528.5 | 1578.5 | 1628.5 |
| Lb                            | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     |
| Lc                            | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
| Qa                            | 6     | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18     | 18     | 20     | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     |
| Qb                            | 1     | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7      | 7      | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     |
| Weight (kg) <sup>Note 1</sup> | 4.35  | 4.62  | 4.89  | 5.16  | 5.43  | 5.70  | 5.97  | 6.24  | 6.51  | 6.78  | 7.05  | 7.32  | 7.59   | 7.86   | 8.12   | 8.39   | 8.66   | 8.93   | 9.20   | 9.47   | 9.74   | 10.01  | 10.28  | 10.55  | 10.82  |
| Lead 24                       | 1440  |       |       |       |       |       |       |       |       |       | 1224  | 1080  | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |        |        |
| Speed setting                 | -     |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |        |        |
| Lead 12                       | 720   |       |       |       |       |       |       |       |       |       | 612   | 540   | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180    |        |        |
| Speed setting                 | -     |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |        |        |
| Lead 6                        | 360   |       |       |       |       |       |       |       |       |       | 306   | 270   | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90     |        |        |
| Speed setting                 | -     |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25%    |        |        |

## ABFS08H Bending type (R/L)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +15mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                     | 318.5         | 368.5 | 418.5 | 468.5 | 518.5 | 568.5 | 618.5 | 668.5 | 718.5 | 768.5 | 818.5 | 868.5 | 918.5 | 968.5 | 1018.5 | 1068.5 | 1118.5 | 1168.5 | 1218.5 | 1268.5 | 1318.5 | 1368.5 | 1418.5 | 1468.5 | 1518.5 |
| Lb                     | 50            | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50    | 100   | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     | 100    | 50     |
| Lc                     | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
| Qa                     | 6             | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20     | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     |
| Qb                     | 1             | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7     | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     |
| Weight (kg) Note 1     | 4.16          | 4.45  | 4.73  | 5.02  | 5.31  | 5.60  | 5.88  | 6.17  | 6.46  | 6.75  | 7.03  | 7.32  | 7.61  | 7.90  | 8.18   | 8.47   | 8.76   | 9.05   | 9.33   | 9.62   | 9.91   | 10.20  | 10.48  | 10.77  | 11.06  |
| Maximum speed (mm/sec) | Lead 24       |       |       |       |       |       |       |       |       |       |       |       | 1224  | 1080  | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 25%    | 25%    |        |
|                        | Lead 12       |       |       |       |       |       |       |       |       |       |       |       | 612   | 540   | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 180    | 180    |        |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 25%    | 25%    |        |
|                        | Lead 6        |       |       |       |       |       |       |       |       |       |       |       | 306   | 270   | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 90     | 90     |        |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 25%    | 25%    |        |

# ABFS10/ABFS10H

Basic model

Single-axis robots

Low-profile type

## Ordering method

| 本体      | Lead                 | Shape                                     | Motor specification                                                                                         | Stroke                  | Cable length         | Cable entry location   | Robot positioner | Driver: Power capacity              | Regenerative unit               | I/O                                                                        | Battery                    |
|---------|----------------------|-------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|----------------------|------------------------|------------------|-------------------------------------|---------------------------------|----------------------------------------------------------------------------|----------------------------|
| ABFS10  | 24: 24 mm            | S: Straight                               | S: Standard/With no brake                                                                                   | 50 to 1250 (50mm pitch) | R3: 3 m              | R: From rear of motor  | EP-01            | A10: 200W or less<br>A30: 400W/750W | No entry: None<br>R: With EP-RU | EP: EtherNet/IP™<br>PT: PROFINET<br>ES: EtherCAT<br>NS: NPN<br>CC: CC-Link | B: With battery<br>N: None |
| ABFS10H | 12: 12 mm<br>6: 6 mm | R: Right attachment<br>L: Left attachment | BK: Standard/With brake<br>BL: Battery-less absolute/With no brake<br>BKL: Battery-less absolute/With brake |                         | R5: 5 m<br>R10: 10 m | F: From front of motor |                  |                                     |                                 |                                                                            |                            |

Note 1. The robot cable is flexible and resists bending.

Note 2. [For ABFS10]

When the actuator is used vertically, ①lead 24 is selected, and the stroke is 350 mm or more ②lead 12 is selected, and the stroke is 200mm or more ③lead 6 is selected, and the stroke is 150mm or more, the regenerative unit is needed.

[For ABFS10H]

When the actuator is used vertically, ①lead 24 is selected, and the stroke is 150 mm or more ②lead 12 is selected, and the stroke is 150mm or more ③lead 6 is selected, and the stroke is 250mm or more, the regenerative unit is needed.

When the actuator is used horizontally, ①lead 24 is selected, and the stroke is 450 to 600 mm, ②lead 12 is selected, and the stroke is 400 mm or more ③lead 6 is selected, and the stroke is 200mm or more, 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.)

## ABFS10 (200W)

### Specifications

|                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| AC servo motor output                            | 200 W                                           |
| Repeatability <sup>Note 1</sup>                  | ±0.005 mm                                       |
| Deceleration mechanism                           | Rolled ball screw $\phi 14$ (C7 class)          |
| Stroke                                           | 50 mm to 1250 mm (50 mm pitch)                  |
| Maximum speed <sup>Note 2</sup>                  | 1440 mm/sec<br>720 mm/sec<br>360 mm/sec         |
| Ball screw lead                                  | 24 mm<br>12 mm<br>6 mm                          |
| Maximum payload                                  | Horizontal 40 kg<br>Vertical 8 kg               |
| Rated Thrust                                     | 142 N<br>284 N<br>569 N                         |
| Dynamic loading moment (MY,MP,MR)                | 132.9 / 132.9 / 237.4                           |
| Maximum dimensions of cross section of main unit | W 100.3 mm × H 60 mm                            |
| Overall length                                   | Straight ST + 372.5 mm<br>Bending ST + 278.5 mm |
| Degree of cleanliness <sup>Note 3</sup>          | Equivalent to ISO Class 4 (ISO 14644-1)         |
| Intake air <sup>Note 4</sup>                     | 130 Nl/min~                                     |
| Using ambient temperature and humidity           | 0 to 40 °C, 35 to 80 %RH (no condensation)      |

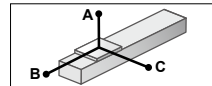
Note 1. Positioning repeatability in one direction, ±0.01 for the Bending configuration.

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 650 mm, the ball screw may resonate. (Critical speed)

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.

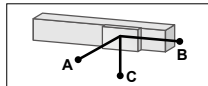
Note 4. The required suction amount will vary according to the operating conditions and operating environment.

### Allowable overhang <sup>Note</sup>

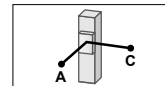


ABFS10-24

| Horizontal installation (Unit: mm) | A    | B   | C   |
|------------------------------------|------|-----|-----|
| 15kg                               | 684  | 308 | 309 |
| 25kg                               | 759  | 210 | 251 |
| 40kg                               | 1496 | 156 | 235 |



| Wall installation (Unit: mm) | A   | B   | C    |
|------------------------------|-----|-----|------|
| 15kg                         | 309 | 308 | 684  |
| 25kg                         | 251 | 210 | 759  |
| 40kg                         | 235 | 156 | 1496 |



| Vertical installation (Unit: mm) | A    | C    |
|----------------------------------|------|------|
| 4kg                              | 1083 | 1083 |
| 8kg                              | 617  | 617  |

### Static loading moment

| MY  | MP  | MR  |
|-----|-----|-----|
| 349 | 349 | 625 |

ABFS10-12

| Horizontal installation (Unit: mm) | A    | B   | C   |
|------------------------------------|------|-----|-----|
| 30kg                               | 1000 | 218 | 312 |
| 50kg                               | 730  | 118 | 174 |
| 80kg                               | 481  | 62  | 92  |

| Wall installation (Unit: mm) | A   | B   | C    |
|------------------------------|-----|-----|------|
| 30kg                         | 312 | 218 | 1000 |
| 50kg                         | 174 | 118 | 730  |
| 80kg                         | 92  | 62  | 481  |

| Vertical installation (Unit: mm) | A   | C   |
|----------------------------------|-----|-----|
| 10kg                             | 726 | 726 |
| 18kg                             | 406 | 406 |

ABFS10-6

| Horizontal installation (Unit: mm) | A    | B   | C   |
|------------------------------------|------|-----|-----|
| 30kg                               | 3539 | 256 | 434 |
| 60kg                               | 1965 | 112 | 190 |
| 100kg                              | 1326 | 54  | 93  |

| Wall installation (Unit: mm) | A   | B   | C    |
|------------------------------|-----|-----|------|
| 30kg                         | 434 | 256 | 3539 |
| 60kg                         | 190 | 112 | 1965 |
| 100kg                        | 93  | 54  | 1326 |

| Vertical installation (Unit: mm) | A   | C   |
|----------------------------------|-----|-----|
| 15kg                             | 573 | 573 |
| 30kg                             | 287 | 287 |

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 500 mm stroke models.

### Controller

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

## ABFS10H (400W)

### Specifications

|                                                  |                                                 |
|--------------------------------------------------|-------------------------------------------------|
| AC servo motor output                            | 400 W                                           |
| Repeatability <sup>Note 1</sup>                  | ±0.005 mm                                       |
| Deceleration mechanism                           | Rolled ball screw $\phi 14$ (C7 class)          |
| Stroke                                           | 50 mm to 1250 mm (50 mm pitch)                  |
| Maximum speed <sup>Note 2</sup>                  | 1440 mm/sec<br>720 mm/sec<br>360 mm/sec         |
| Ball screw lead                                  | 24 mm<br>12 mm<br>6 mm                          |
| Maximum payload                                  | Horizontal 50 kg<br>Vertical 15 kg              |
| Rated Thrust                                     | 289 N<br>578 N<br>1156 N                        |
| Dynamic loading moment (MY,MP,MR)                | 132.9 / 132.9 / 237.4                           |
| Maximum dimensions of cross section of main unit | W 100.3 mm × H 60 mm                            |
| Overall length                                   | Straight ST + 388.5 mm<br>Bending ST + 278.5 mm |
| Degree of cleanliness <sup>Note 3</sup>          | Equivalent to ISO Class 4 (ISO 14644-1)         |
| Intake air <sup>Note 4</sup>                     | 130 Nl/min~                                     |
| Using ambient temperature and humidity           | 0 to 40 °C, 35 to 80 %RH (no condensation)      |

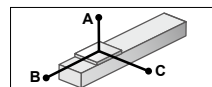
Note 1. Positioning repeatability in one direction, ±0.01 for the Bending configuration.

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 650 mm, the ball screw may resonate. (Critical speed)

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.

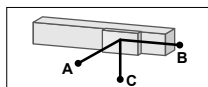
Note 4. The required suction amount will vary according to the operating conditions and operating environment.

### Allowable overhang <sup>Note</sup>

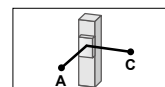


ABFS10H-24

| Horizontal installation (Unit: mm) | A    | B   | C   |
|------------------------------------|------|-----|-----|
| 15kg                               | 550  | 308 | 290 |
| 30kg                               | 579  | 166 | 197 |
| 50kg                               | 1330 | 121 | 186 |



| Wall installation (Unit: mm) | A   | B   | C    |
|------------------------------|-----|-----|------|
| 15kg                         | 290 | 308 | 550  |
| 30kg                         | 189 | 179 | 460  |
| 50kg                         | 186 | 121 | 1330 |



| Vertical installation (Unit: mm) | A   | C   |
|----------------------------------|-----|-----|
| 8kg                              | 713 | 713 |
| 15kg                             | 321 | 321 |

ABFS10H-12

| Horizontal installation (Unit: mm) | A   | B   | C   |
|------------------------------------|-----|-----|-----|
| 30kg                               | 833 | 218 | 305 |
| 60kg                               | 533 | 93  | 136 |
| 95kg                               | 354 | 47  | 70  |

| Wall installation (Unit: mm) | A   | B   | C   |
|------------------------------|-----|-----|-----|
| 30kg                         | 305 | 218 | 833 |
| 60kg                         | 136 | 93  | 533 |
| 95kg                         | 70  | 47  | 354 |

| Vertical installation (Unit: mm) | A   | C   |
|----------------------------------|-----|-----|
| 14kg                             | 516 | 516 |
| 28kg                             | 261 | 261 |

ABFS10H-6

| Horizontal installation (Unit: mm) | A    | B   | C   |
|------------------------------------|------|-----|-----|
| 40kg                               | 2079 | 184 | 311 |
| 80kg                               | 1367 | 76  | 129 |
| 115kg                              | 1009 | 43  | 74  |

| Wall installation (Unit: mm) | A   | B   | C    |
|------------------------------|-----|-----|------|
| 40kg                         | 311 | 184 | 2079 |
| 80kg                         | 129 | 76  | 1367 |
| 115kg                        | 74  | 43  | 1009 |

| Vertical installation (Unit: mm) | A   | C   |
|----------------------------------|-----|-----|
| 18kg                             | 476 | 476 |
| 37kg                             | 232 | 232 |

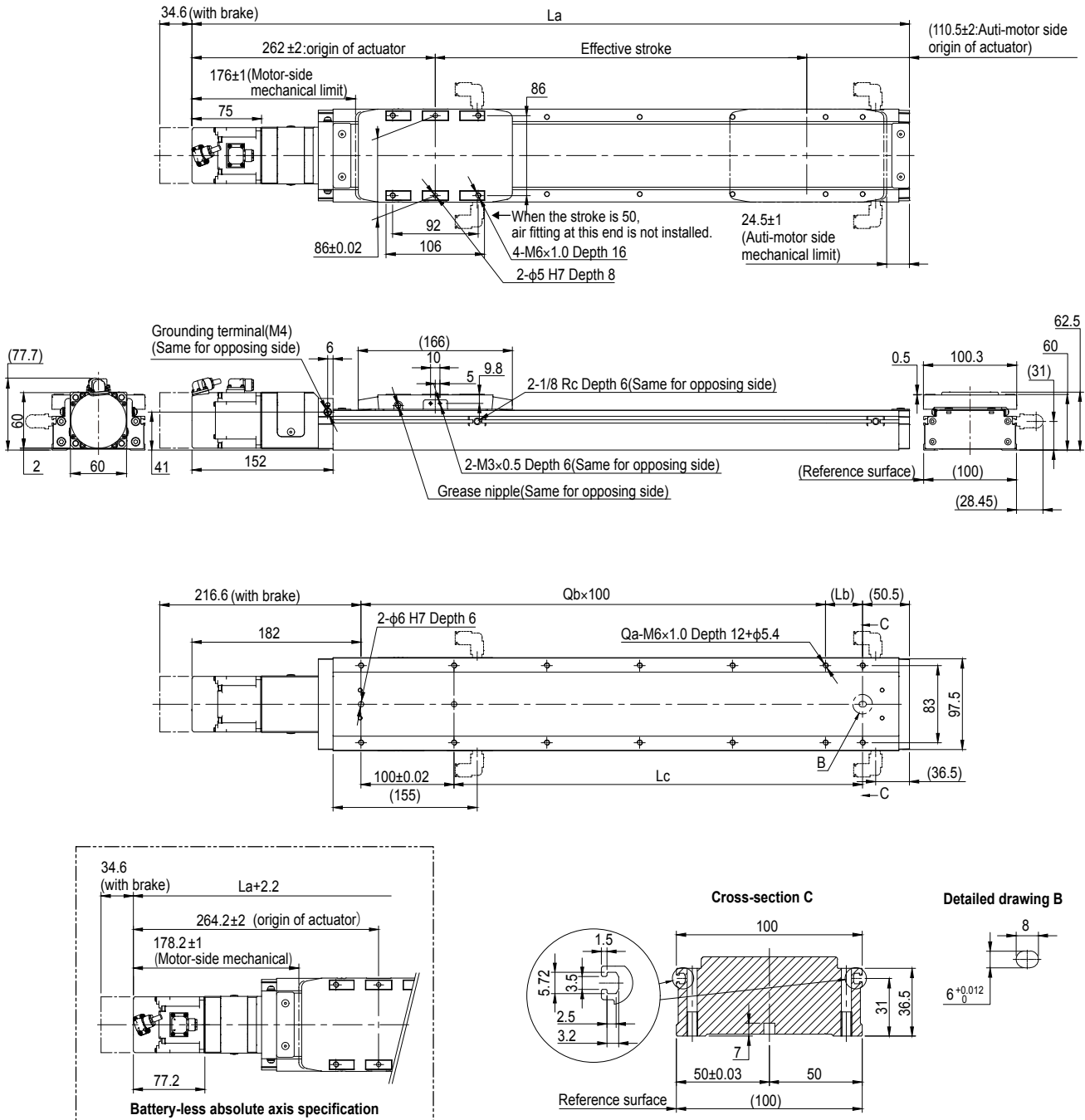
Note. Distance from center of slider top to center of gravity of object being carried at a guide service life of 10,000 km.

Note. Service life is calculated for 500 mm stroke models.



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

## ABFS10 Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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.)

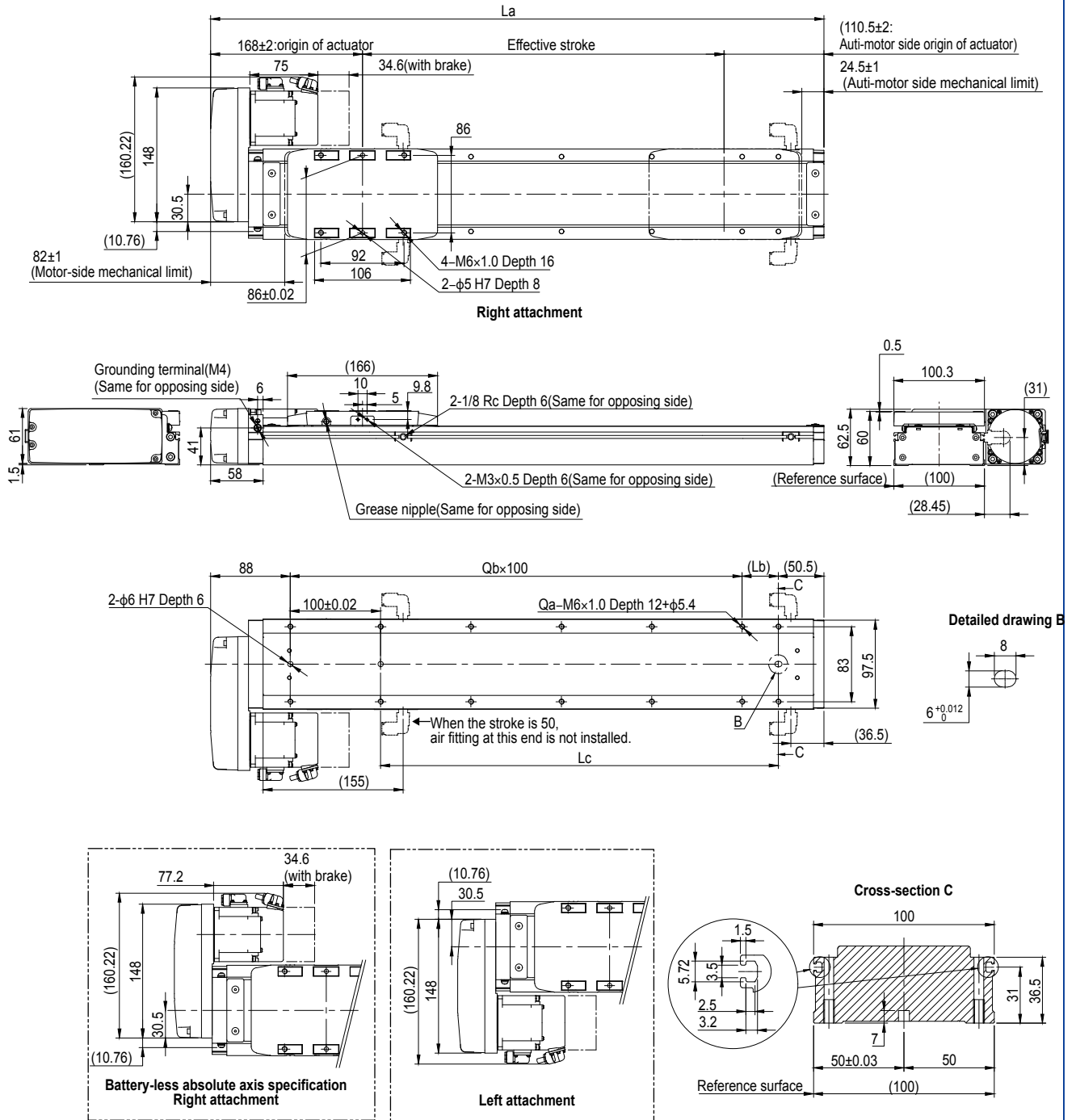
Note. For the installation through hole, the length under head <<45mm or more>> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +12mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                     | 422.5         | 472.5 | 522.5 | 572.5 | 622.5 | 672.5 | 722.5 | 772.5 | 822.5 | 872.5 | 922.5 | 972.5 | 1022.5 | 1072.5 | 1122.5 | 1172.5 | 1222.5 | 1272.5 | 1322.5 | 1372.5 | 1422.5 | 1472.5 | 1522.5 | 1572.5 | 1622.5 |
| Lb                     | 90            | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     |
| Lc                     | 90            | 140   | 190   | 240   | 290   | 340   | 390   | 440   | 490   | 540   | 590   | 640   | 690    | 740    | 790    | 840    | 890    | 940    | 990    | 1040   | 1090   | 1140   | 1190   | 1240   | 1290   |
| Qa                     | 6             | 8     | 8     | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 20    | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     | 30     | 30     | 30     | 30     |
| Qb                     | 1             | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7      | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     | 13     |
| Weight (kg) Note 1     | 4.19          | 4.50  | 4.82  | 5.14  | 5.46  | 5.78  | 6.09  | 6.41  | 6.73  | 7.05  | 7.37  | 7.68  | 8.01   | 8.33   | 8.65   | 8.97   | 9.29   | 9.60   | 9.92   | 10.24  | 10.56  | 10.88  | 11.19  | 11.51  | 11.83  |
| Maximum speed (mm/sec) | Lead 24       |       |       |       |       |       |       |       |       |       |       |       | 1224   | 1080   | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
|                        | Lead 12       |       |       |       |       |       |       |       |       |       |       |       | 612    | 540    | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180    |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
|                        | Lead 6        |       |       |       |       |       |       |       |       |       |       |       | 306    | 270    | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90     |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25%    |

## ABFS10 Bending type (R/L)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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.)

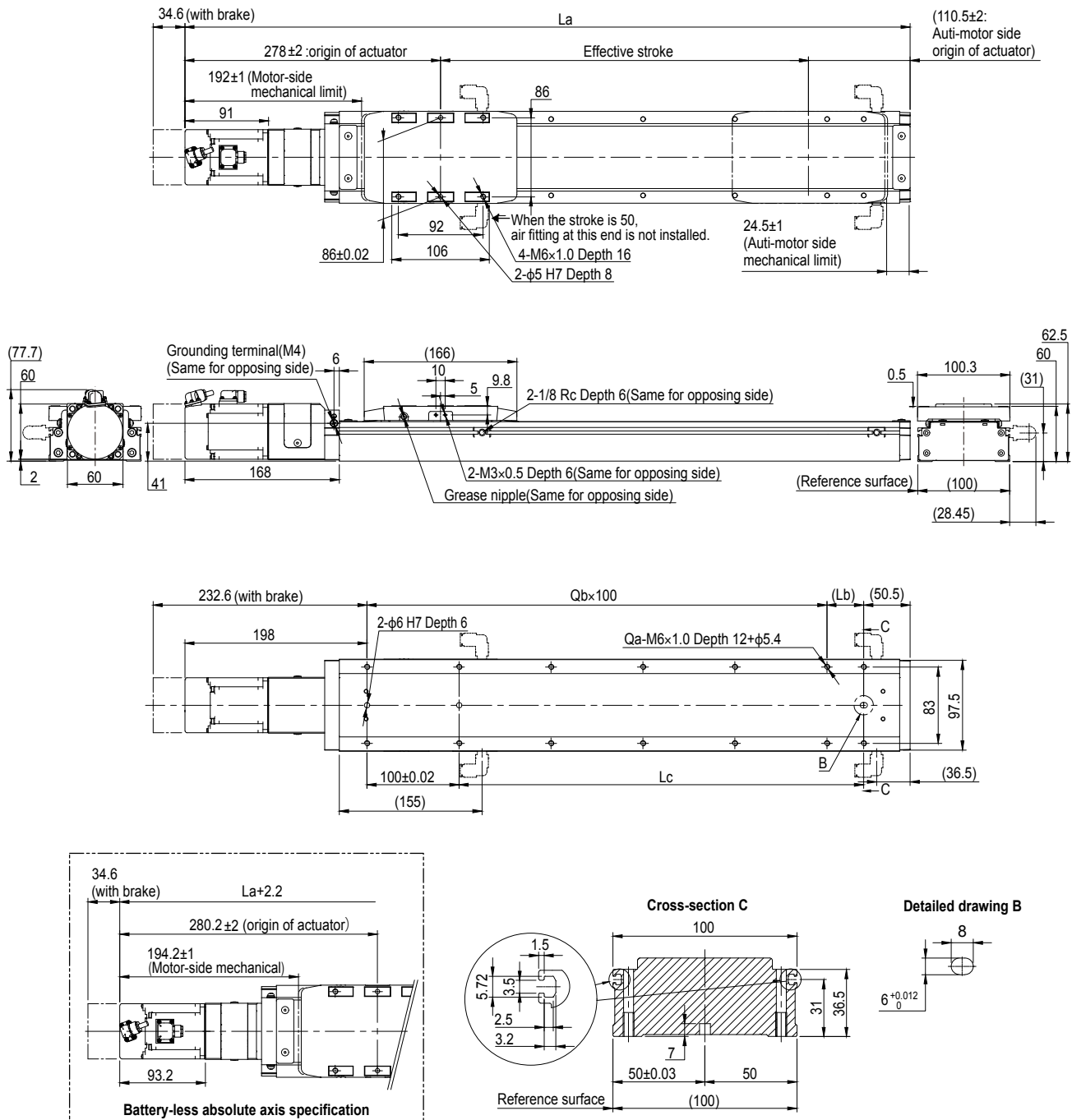
Note. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +12mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFUM3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke   | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                 | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 | 578.5 | 628.5 | 678.5 | 728.5 | 778.5 | 828.5 | 878.5 | 928.5 | 978.5 | 1028.5 | 1078.5 | 1128.5 | 1178.5 | 1228.5 | 1278.5 | 1328.5 | 1378.5 | 1428.5 | 1478.5 | 1528.5 |
| Lb                 | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     |
| Lc                 | 90    | 140   | 190   | 240   | 290   | 340   | 390   | 440   | 490   | 540   | 590   | 640   | 690   | 740   | 790    | 840    | 890    | 940    | 990    | 1040   | 1090   | 1140   | 1190   | 1240   | 1290   |
| Qa                 | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20    | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     | 30     |
| Qb                 | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7     | 8     | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     | 13     |
| Weight (kg) Note 1 | 4.16  | 4.50  | 4.84  | 5.18  | 5.52  | 5.86  | 6.20  | 6.54  | 6.88  | 7.22  | 7.56  | 7.90  | 8.24  | 8.58  | 8.92   | 9.26   | 9.60   | 9.94   | 10.28  | 10.62  | 10.96  | 11.30  | 11.64  | 11.98  | 12.32  |
| Lead 24            | 1440  |       |       |       |       |       |       |       |       |       |       |       | 1224  | 1080  | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |
| Speed setting      | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
| Lead 12            | 720   |       |       |       |       |       |       |       |       |       |       |       | 612   | 540   | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180    |
| Speed setting      | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
| Lead 6             | 360   |       |       |       |       |       |       |       |       |       |       |       | 306   | 270   | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90     |
| Speed setting      | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25%    |

## ABFS10H Straight type (S)



Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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.)

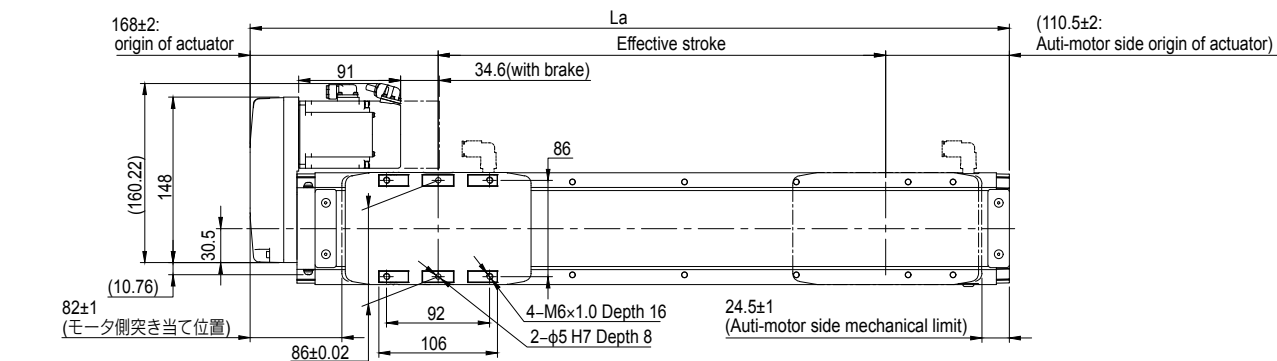
Note. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +12mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFU-M3861-00

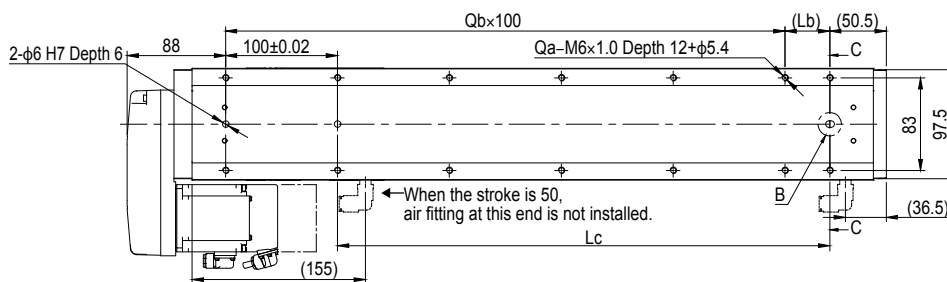
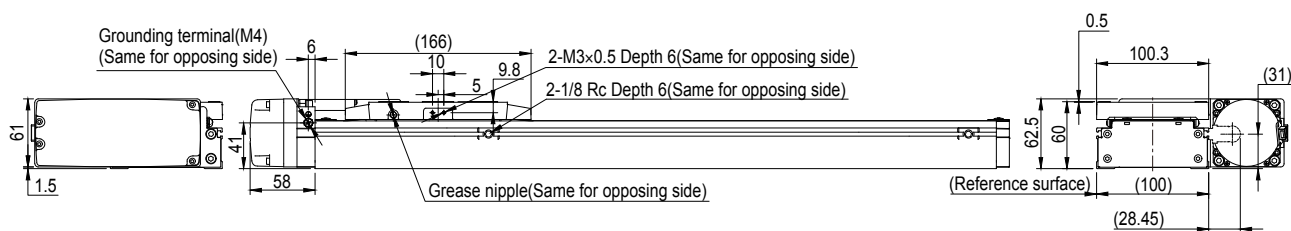
Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke       | 50            | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650    | 700    | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La                     | 438.5         | 488.5 | 538.5 | 588.5 | 638.5 | 688.5 | 738.5 | 788.5 | 838.5 | 888.5 | 938.5 | 988.5 | 1038.5 | 1088.5 | 1138.5 | 1188.5 | 1238.5 | 1288.5 | 1338.5 | 1388.5 | 1438.5 | 1488.5 | 1538.5 | 1588.5 | 1638.5 |
| Lb                     | 90            | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     |
| Lc                     | 90            | 140   | 190   | 240   | 290   | 340   | 390   | 440   | 490   | 540   | 590   | 640   | 690    | 740    | 790    | 840    | 890    | 940    | 990    | 1040   | 1090   | 1140   | 1190   | 1240   | 1290   |
| Qa                     | 6             | 8     | 8     | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 20    | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     | 30     | 30     | 30     |
| Qb                     | 1             | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7      | 8      | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     | 13     |
| Weight (kg) Note 1     | 4.49          | 4.80  | 5.12  | 5.44  | 5.76  | 6.08  | 6.39  | 6.71  | 7.03  | 7.35  | 7.67  | 7.98  | 8.31   | 8.63   | 8.95   | 9.27   | 9.59   | 9.90   | 10.22  | 10.54  | 10.86  | 11.18  | 11.49  | 11.81  | 12.13  |
| Maximum speed (mm/sec) | Lead 24       |       |       |       |       |       |       |       |       |       |       |       | 1224   | 1080   | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
|                        | Lead 12       |       |       |       |       |       |       |       |       |       |       |       | 612    | 540    | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180    |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
|                        | Lead 6        |       |       |       |       |       |       |       |       |       |       |       | 306    | 270    | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90     |
|                        | Speed setting |       |       |       |       |       |       |       |       |       |       |       | 85%    | 75%    | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25%    |

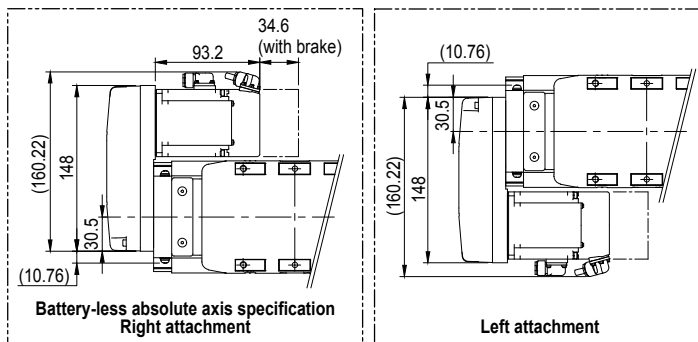
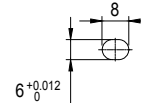
## ABFS10H Bending type (R/L)



Right attachment

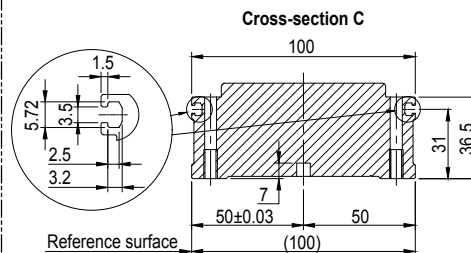


Detailed drawing B



Battery-less absolute axis specification  
Right attachment

Left attachment



Cross-section C

Reference surface

Note 1. Weight without brake. The weight with the brake is 0.4 kg heavier than the value in the weight column.

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. For the installation through hole, the length under head <<45mm or more >> is recommended for the hex socket head bolts <M5×0.8>. In the installation tap hole, the length under head <<thickness of stand +12mm or less>> is recommended for the hex socket head bolts <M6×1.0> used to install the main unit.

Note. Grease gun nozzle (recommended) Part number: KFJ-M3861-00

Note. The minimum bending radius for robot cables should be R30 or more for fixed cables / R50 or more for movable cables. The cable exit direction varies depending on the specifications.

| Effective stroke | 50    | 100   | 150   | 200   | 250   | 300   | 350   | 400   | 450   | 500   | 550   | 600   | 650   | 700   | 750    | 800    | 850    | 900    | 950    | 1000   | 1050   | 1100   | 1150   | 1200   | 1250   |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| La               | 328.5 | 378.5 | 428.5 | 478.5 | 528.5 | 578.5 | 628.5 | 678.5 | 728.5 | 778.5 | 828.5 | 878.5 | 928.5 | 978.5 | 1028.5 | 1078.5 | 1128.5 | 1178.5 | 1228.5 | 1278.5 | 1328.5 | 1378.5 | 1428.5 | 1478.5 | 1528.5 |
| Lb               | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90    | 40    | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     | 40     | 90     |
| Lc               | 90    | 140   | 190   | 240   | 290   | 340   | 390   | 440   | 490   | 540   | 590   | 640   | 690   | 740   | 790    | 840    | 890    | 940    | 990    | 1040   | 1090   | 1140   | 1190   | 1240   | 1290   |
| Qa               | 6     | 8     | 8     | 10    | 10    | 12    | 12    | 14    | 14    | 16    | 16    | 18    | 18    | 20    | 20     | 22     | 22     | 24     | 24     | 26     | 26     | 28     | 28     | 30     | 30     |
| Qb               | 1     | 2     | 2     | 3     | 3     | 4     | 4     | 5     | 5     | 6     | 6     | 7     | 7     | 8     | 8      | 9      | 9      | 10     | 10     | 11     | 11     | 12     | 12     | 13     | 13     |
| Weight (kg)**    | 4.46  | 4.80  | 5.14  | 5.48  | 5.82  | 6.16  | 6.50  | 6.84  | 7.18  | 7.52  | 7.86  | 8.20  | 8.54  | 8.88  | 9.22   | 9.56   | 9.90   | 10.24  | 10.58  | 10.92  | 11.26  | 11.60  | 11.94  | 12.28  | 12.62  |
| Lead 24          | 1440  |       |       |       |       |       |       |       |       |       |       |       | 1224  | 1080  | 936    | 864    | 792    | 720    | 648    | 576    | 512    | 432    | 432    | 360    | 360    |
| Speed setting    | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
| Lead 12          | 720   |       |       |       |       |       |       |       |       |       |       |       | 612   | 540   | 468    | 432    | 396    | 360    | 324    | 288    | 256    | 216    | 216    | 180    | 180    |
| Speed setting    | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 36%    | 30%    | 30%    | 25%    | 25%    |
| Lead 6           | 360   |       |       |       |       |       |       |       |       |       |       |       | 306   | 270   | 234    | 216    | 198    | 180    | 162    | 144    | 126    | 108    | 108    | 90     | 90     |
| Speed setting    | -     |       |       |       |       |       |       |       |       |       |       |       | 85%   | 75%   | 65%    | 60%    | 55%    | 50%    | 45%    | 40%    | 35%    | 30%    | 30%    | 25%    | 25%    |

|                                    |                          |                                   |                      |                                |                                           |                              |                                        |                          |                             |       |            |             |        |      |      |      |      |      |
|------------------------------------|--------------------------|-----------------------------------|----------------------|--------------------------------|-------------------------------------------|------------------------------|----------------------------------------|--------------------------|-----------------------------|-------|------------|-------------|--------|------|------|------|------|------|
| Linear conveyor modules<br>LCMR200 | Single-axis robots<br>GX | Linear conveyor modules<br>LCM100 | SCARA robots<br>YK-X | Single-axis robots<br>Robonity | Linear motor single-axis robots<br>PHASER | Single-axis robots<br>FLIP-X | Compact single-axis robots<br>TRANSERO | Cartesian robots<br>XY-X | Pick & place robots<br>YP-X | CLEAN | CONTROLLER | INFORMATION | LBAS   | LBAR | LGFS | ABAS | ABAR | AGFS |
|                                    |                          |                                   |                      |                                |                                           |                              |                                        |                          |                             |       |            |             | LBFS   | LGXS | LGBS | ABFS | AGXS | AGBS |
|                                    |                          |                                   |                      |                                |                                           |                              |                                        |                          |                             |       |            |             | Option |      |      |      |      |      |