# SR03 Rod type

CE compliance | Origin on the non-motor side is selectable


SR03-S


SR03-R

## Ordering method

**SR03** - [Lead] - [Model] - [Brake] - [Origin position] - [Bracket plate] - [Stroke] - [Cable length Note 3]

| Model | Lead | Model | Brake | Origin position | Bracket plate | Stroke | Cable length Note 3 |
|---|---|---|---|---|---|---|---|
| | 12: 12mm<br>06: 6mm | S: Straight model<br>R: Space-saving model Note 1 (motor installed on right)<br>L: Space-saving model Note 1 (motor installed on left)<br>U: Space-saving model Note 1 (motor installed on top) | N: With no brake<br>B: With brake | N: Standard Note 2<br>Z: Non-motor side | N: No plate<br>H: With plate<br>V: With flange | 50 to 200 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

**S2**

| Robot positioner | I/O |
|---|---|
| S2: TS-S2 Note 4 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 5 |

**SH**

| Robot positioner | I/O | Battery |
|---|---|---|
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 5 | B: With battery (Absolute)<br>N: None (Incremental) |

**SD** — **1**

| Robot driver | I/O cable |
|---|---|
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 3. The robot cable is flexible and resists bending.
Note 4. See P.522 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function. For details, see P.66.

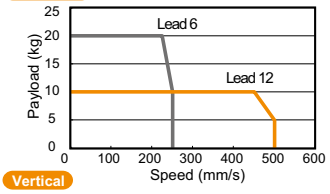
## Basic specifications

| | | | |
|---|---|---|---|
| Motor | | 42 □ Step motor | |
| Resolution (Pulse/rotation) | | 20480 | |
| Repeatability (mm) | | +/-0.02 | |
| Deceleration mechanism | | Ball screw ϕ8 | |
| Ball screw lead (mm) | | 12 | 6 |
| Maximum speed Note 1 (mm/sec) | | 500 | 250 |
| Maximum payload (kg) | Horizontal | 10 | 20 |
| | Vertical | 4 | 8 |
| Max. pressing force (N) | | 75 | 100 |
| Stroke (mm) | | 50 to 200 (50pitch) | |
| Lost motion | | 0.1mm or less | |
| Rotating backlash (°) | | +/-1.0 | |
| Overall length (mm) | Horizontal | Stroke+236.5 | |
| | Vertical | Stroke+276.5 | |
| Maximum outside dimension of body cross-section (mm) | | W48 × H56.5 | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | |

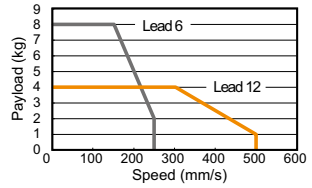
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right.
For details, see P. 152.

## Speed vs. payload

Horizontal



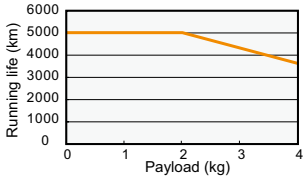

Vertical




## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

Vertical — Lead 12




Note. See P.153 for running life distance to life time conversion example.

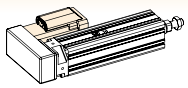
## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

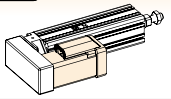
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

## Motor installation (Space-saving model)

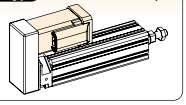
R type Motor installed on right



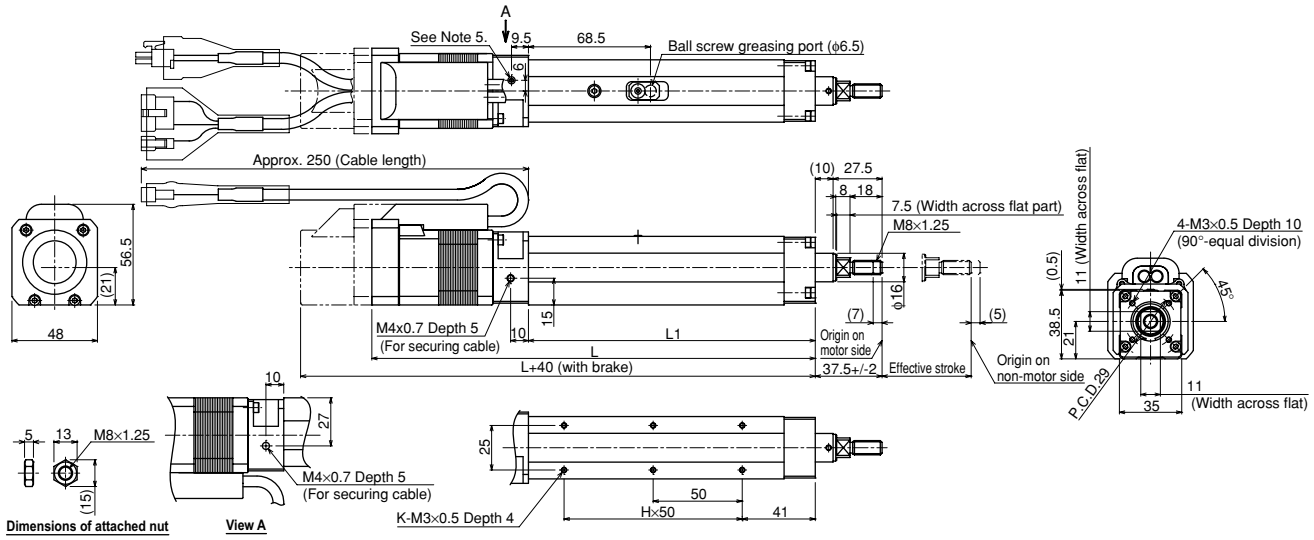
L type Motor installed on left



U type Motor installed on top

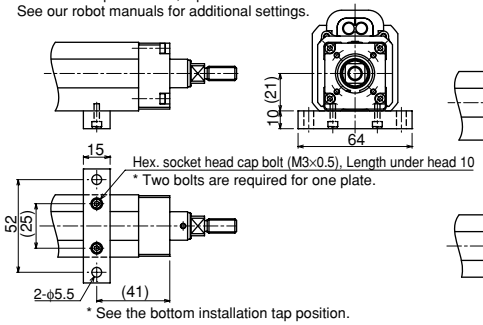


## SR03 Straight model S



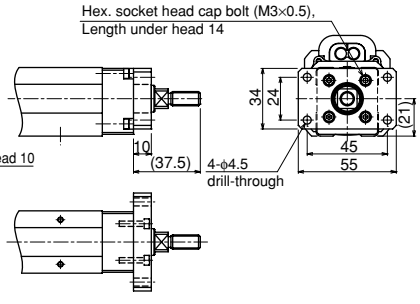

### Option: Horizontal installation plate (foot)

* Contents of option: Plate, 2 pcs.
See our robot manuals for additional settings.




* See the bottom installation tap position.

### Option: Vertical installation plate (flange)

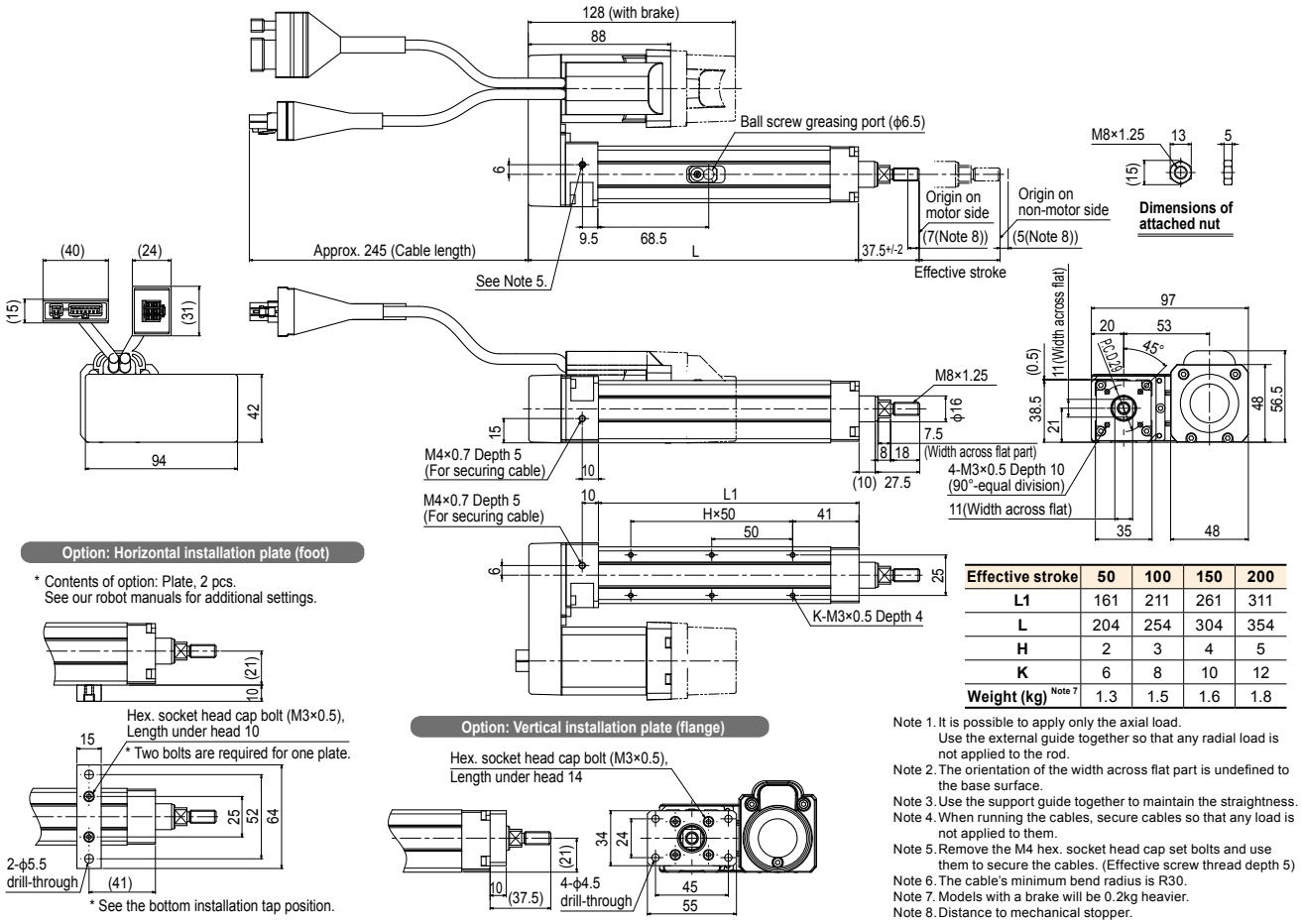



| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 249 | 299 | 349 | 399 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 7 | 1.1 | 1.3 | 1.4 | 1.6 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.


Controller TS-S2 ▸ 514 TS-SH ▸ 514 TS-SD ▸ 524

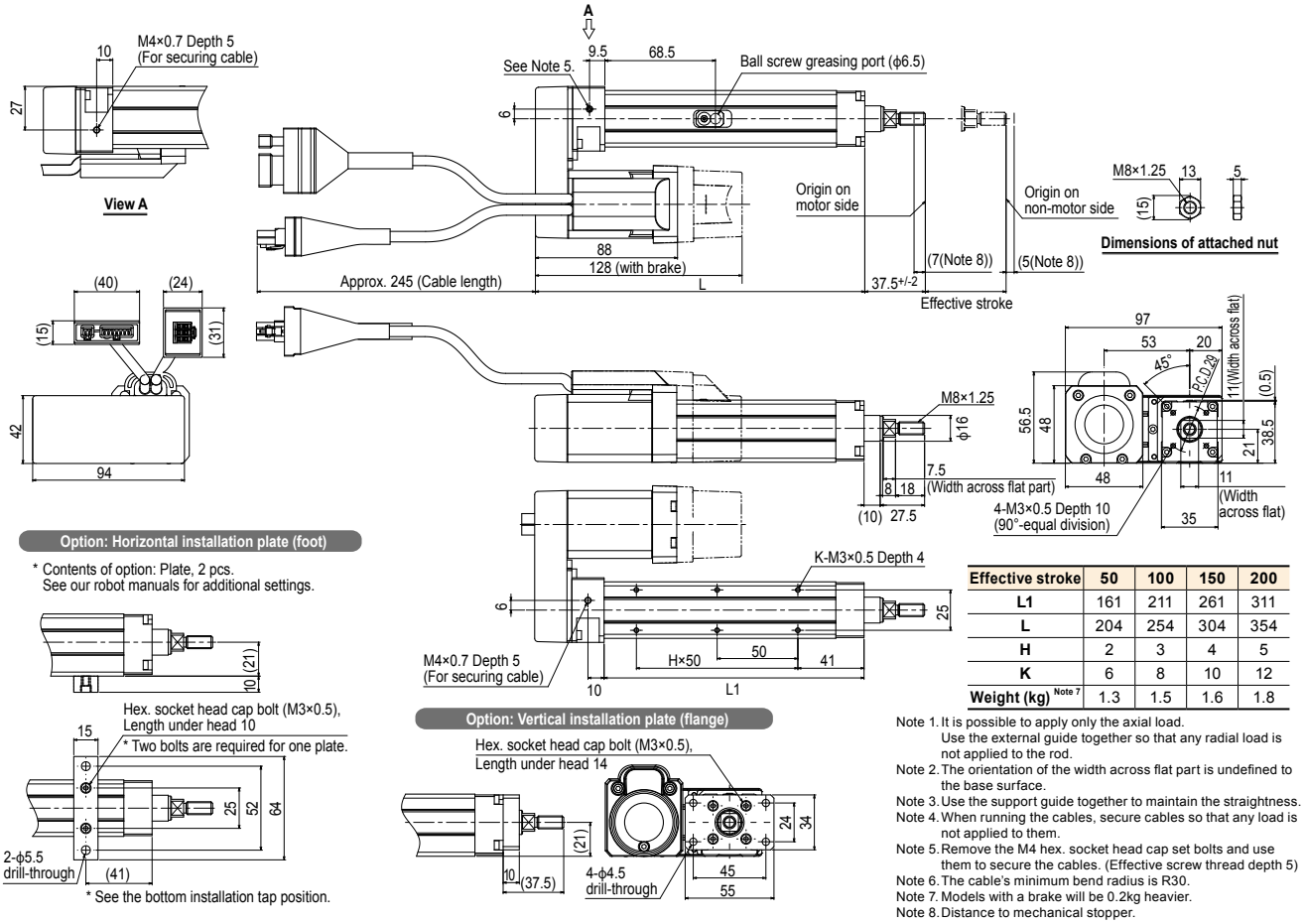
## SR03 Space-saving model (motor installed on right) R




| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 204 | 254 | 304 | 354 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 7 | 1.3 | 1.5 | 1.6 | 1.8 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.

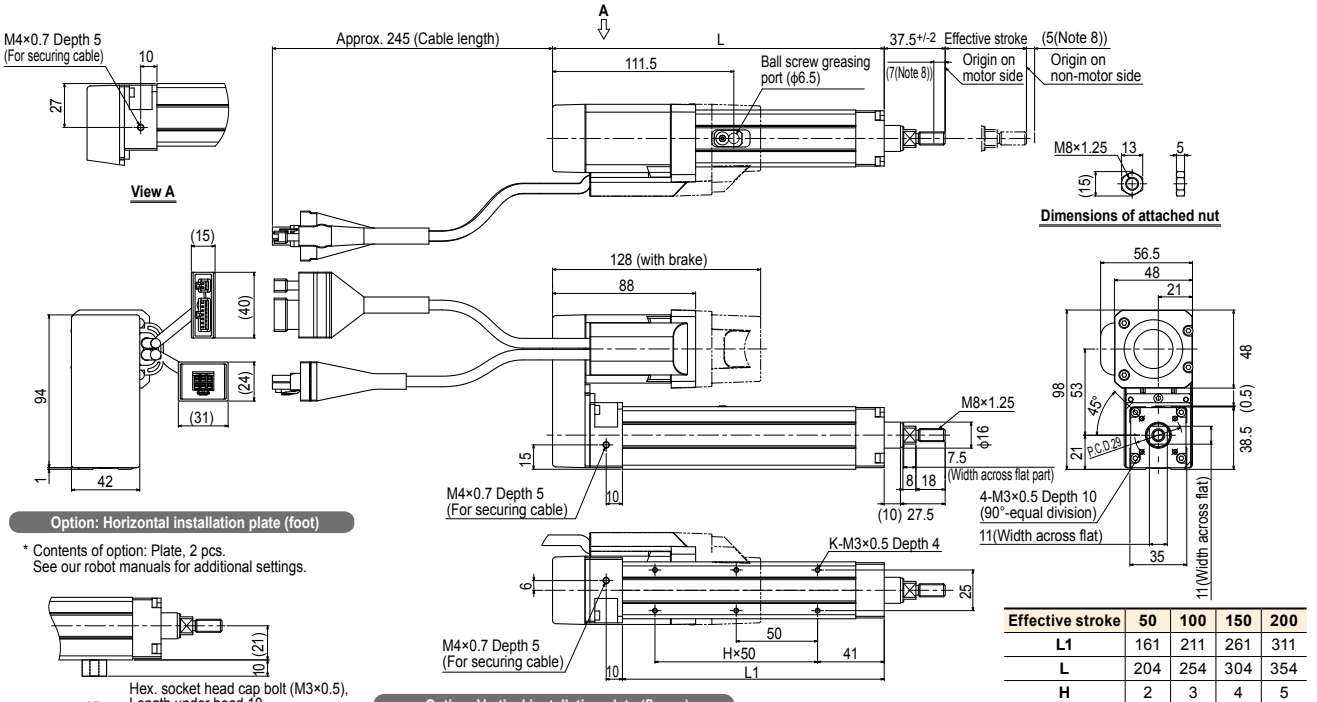
## SR03 Space-saving model (motor installed on left) L




| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 204 | 254 | 304 | 354 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 7 | 1.3 | 1.5 | 1.6 | 1.8 |

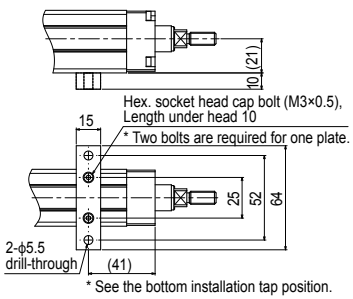
Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.

## SR03 Space-saving model (motor installed on top) U



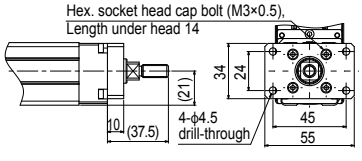

**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs.
See our robot manuals for additional settings.




* See the bottom installation tap position.

**Option: Vertical installation plate (flange)**




| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 204 | 254 | 304 | 354 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 7 | 1.3 | 1.5 | 1.6 | 1.8 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables.
(Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.

# SRD03

**Rod type (With support guide)**

CE compliance

Origin on the non-motor side is selectable: Lead 6, 12


## Ordering method

**SRD03** – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ] – [ ]

| Model | Lead | Model | Brake | Origin position | Bracket plate | Stroke | Cable length Note 3 |
|---|---|---|---|---|---|---|---|
| | 12: 12mm<br>06: 6mm | S: Straight model<br>U: Space-saving model Note 1 (motor installed on top) | N: With no brake<br>B: With brake | N: Standard Note 2<br>Z: Non-motor side | N: No plate<br>H: With plate | 50 to 200 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

**S2**

| Robot positioner | I/O |
|---|---|
| S2: TS-S2 Note 4 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 5 |

**SH**

| Robot positioner | I/O | Battery |
|---|---|---|
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 5 | B: With battery (Absolute)<br>N: None (Incremental) |

**SD** – **1**

| Robot driver | I/O cable |
|---|---|
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 3. The robot cable is flexible and resists bending.
Note 4. See P.522 for DIN rail mounting bracket.
Note 5. Select this selection when using the gateway function. For details, see P.66.

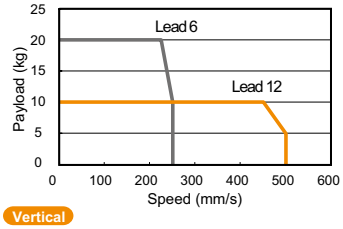
## Basic specifications

| | | | |
|---|---|---|---|
| Motor | | 42 □ Step motor | |
| Resolution (Pulse/rotation) | | 20480 | |
| Repeatability (mm) | | +/-0.02 | |
| Deceleration mechanism | | Ball screw ϕ8 | |
| Ball screw lead (mm) | | 12 | 6 |
| Maximum speed Note 1 (mm/sec) | | 500 | 250 |
| Maximum payload (kg) | Horizontal | 10 | 20 |
| | Vertical | 3.5 | 7.5 |
| Max. pressing force (N) | | 75 | 100 |
| Stroke (mm) | | 50 to 200 (50pitch) | |
| Lost motion | | 0.1mm or less | |
| Rotating backlash (°) | | +/-0.05 | |
| Overall length (mm) | Horizontal | Stroke+236.5 | |
| | Vertical | Stroke+276.5 | |
| Maximum outside dimension of body cross-section (mm) | | W48 × H56.5 | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | |

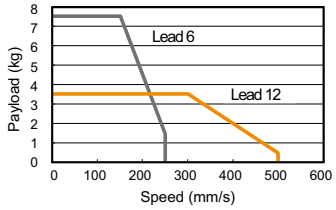
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right.
For details, see P. 152.

## Speed vs. payload

Horizontal



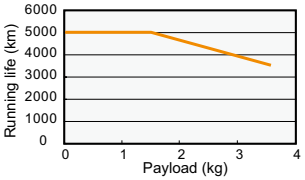

Vertical




## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

Vertical Lead 12



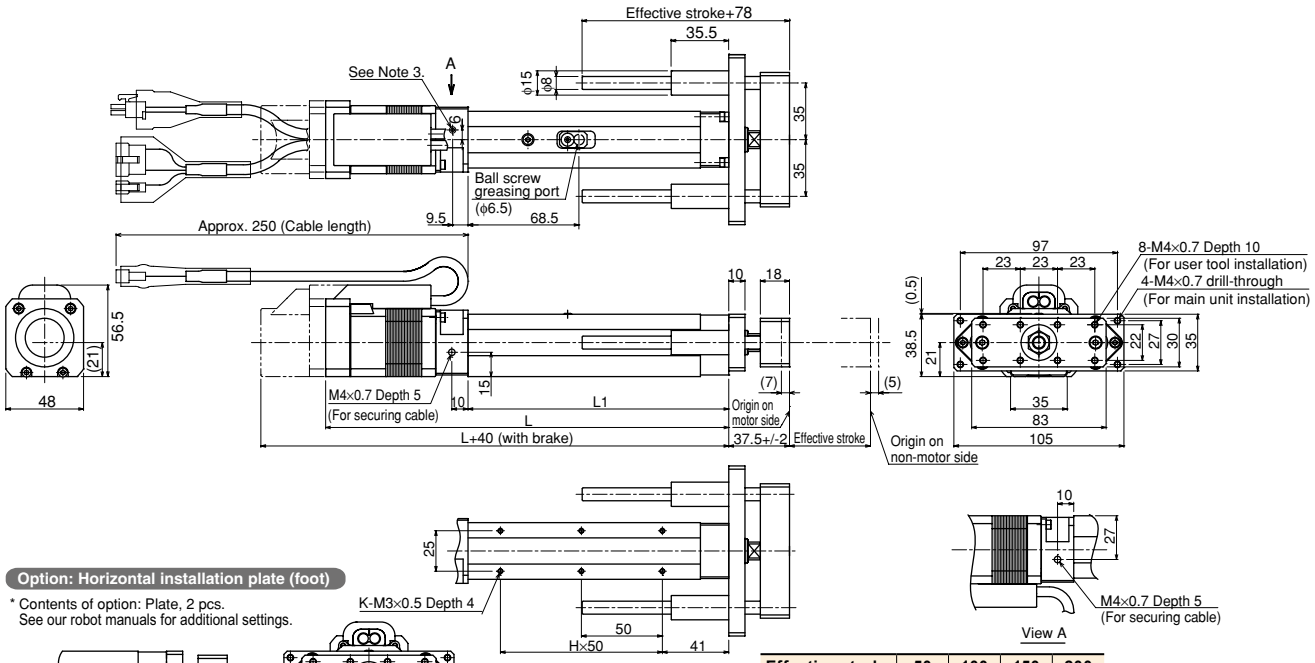

Note. See P.153 for running life distance to life time conversion example.

## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

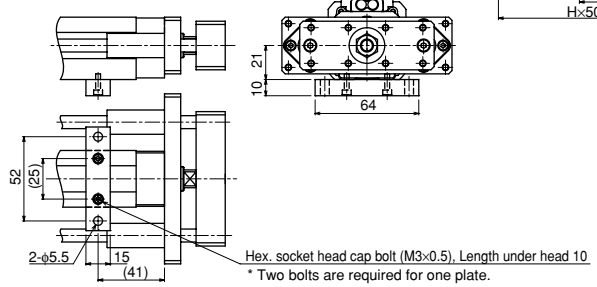
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

## SRD03 Straight model S




**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs.
See our robot manuals for additional settings.




* See the bottom installation tap position.

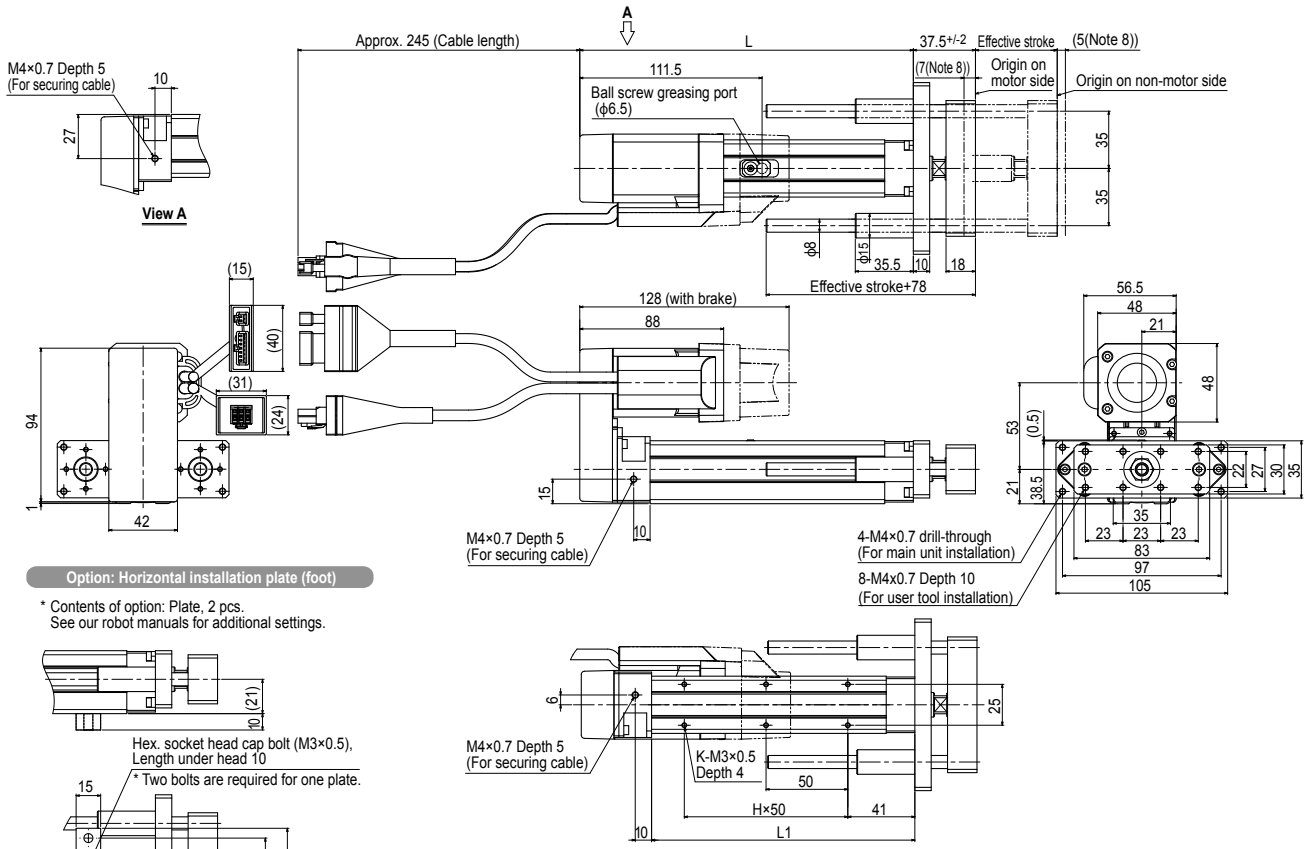
| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 249 | 299 | 349 | 399 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 5 | 1.5 | 1.7 | 1.9 | 2.1 |

Note 1.It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2.When running the cables, secure cables so that any load is not applied to them.
Note 3.Remove the M4 hex. socket head cap set bolts and use them to secure the cables.
(Effective screw thread depth 5)
Note 4.The cable's minimum bend radius is R30.
Note 5.Models with a brake will be 0.2kg heavier.
Note 6.Distance to mechanical stopper.



Controller TS-S2 ▸ 514 TS-SH ▸ 514 TS-SD ▸ 524

## SRD03 Space-saving model (motor installed on top) U




| Effective stroke | 50 | 100 | 150 | 200 |
|---|---|---|---|---|
| L1 | 161 | 211 | 261 | 311 |
| L | 204 | 254 | 304 | 354 |
| H | 2 | 3 | 4 | 5 |
| K | 6 | 8 | 10 | 12 |
| Weight (kg) Note 7 | 1.7 | 1.9 | 2.1 | 2.3 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.

# SR04 Rod type

CE compliance | Origin on the non-motor side is selectable: Lead 6, 12


## Ordering method

SR04 - [Lead] - [Model] - [Brake] - [Origin position Note 2] - [Bracket plate] - [Stroke] - [Cable length Note 4] - [S2 / SH / SD]

| Model | Lead | Model | Brake | Origin position Note 2 | Bracket plate | Stroke | Cable length Note 4 |
|---|---|---|---|---|---|---|---|
| SR04 | 12: 12mm<br>06: 6mm<br>02: 2mm | S: Straight model<br>R: Space-saving model Note 1 (motor installed on right)<br>L: Space-saving model Note 1 (motor installed on left) | N: With no brake<br>B: With brake | N: Standard Note 3<br>Z: Non-motor side | N: No plate<br>H: With plate<br>V: With flange | 50 to 300 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

**S2**

| Robot positioner | I/O |
|---|---|
| S2: TS-S2 Note 5 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 |

**SH**

| Robot positioner | I/O | Battery |
|---|---|---|
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 | B: With battery (Absolute)<br>N: None (Incremental) |

**SD**

| Robot driver | I/O cable |
|---|---|
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. When "2mm lead" is selected, the origin position cannot be changed (to non-motor side).
Note 3. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 4. The robot cable is flexible and resists bending.
Note 5. See P.522 for DIN rail mounting bracket.
Note 6. Select this selection when using the gateway function. For details, see P.66.

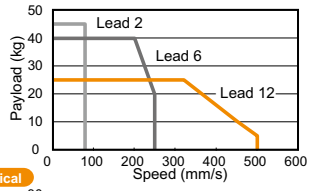
## Basic specifications

| | | | | |
|---|---|---|---|---|
| Motor | | 42 □ Step motor | | |
| Resolution (Pulse/rotation) | | 20480 | | |
| Repeatability (mm) | | +/-0.02 | | |
| Deceleration mechanism | | Ball screw ϕ8 | | Ball screw ϕ10 |
| Ball screw lead (mm) | | 12 | 6 | 2 |
| Maximum speed Note 1 (mm/sec) | | 500 | 250 | 80 |
| Maximum payload (kg) | Horizontal | 25 | 40 | 45 |
| | Vertical | 5 | 12 | 25 |
| Max. pressing force (N) | | 150 | 300 | 600 |
| Stroke (mm) | | 50 to 300 (50pitch) | | |
| Lost motion | | 0.1mm or less | | |
| Rotating backlash (°) | | +/-1.0 | | |
| Overall length (mm) | Horizontal | Stroke+263 | | |
| | Vertical | Stroke+303 | | |
| Maximum outside dimension of body cross-section (mm) | | W48 × H58 | | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | | |

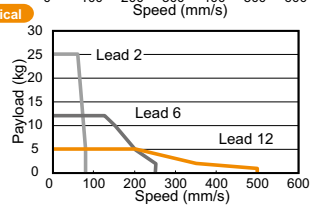
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right. For details, see P. 152. Additionally, when the stroke is long, the maximum speed is decreased due to the critical speed of the ball screw. See the maximum speed table shown at the lower portion of the drawing.

## Speed vs. payload

Horizontal



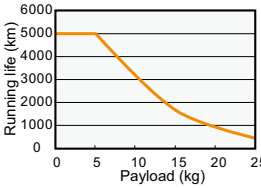

Vertical



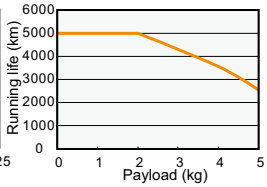

## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

Vertical Lead 2



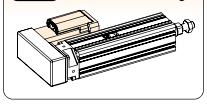

Vertical Lead 12



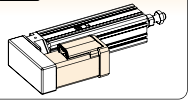

Note. See P.153 for running life distance to life time conversion example.

## Motor installation (Space-saving model)

R type Motor installed on right



L type Motor installed on left

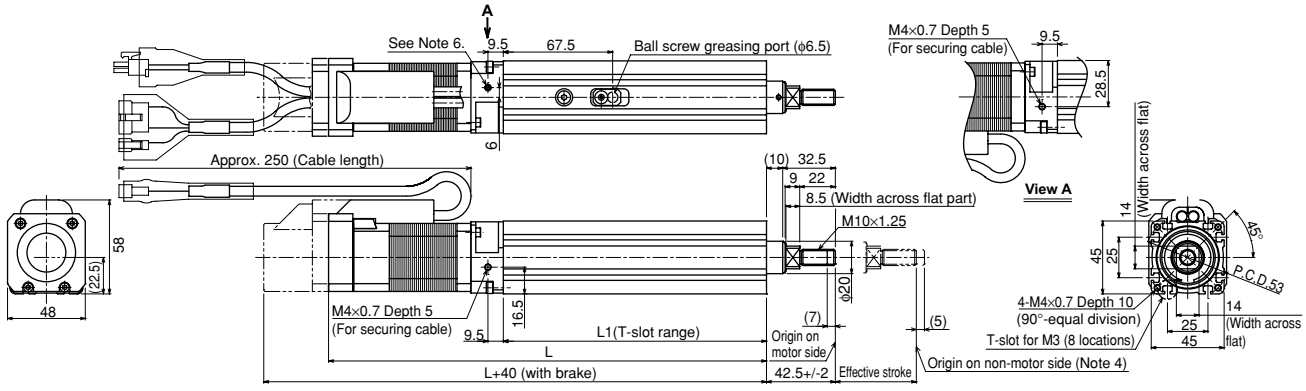


## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

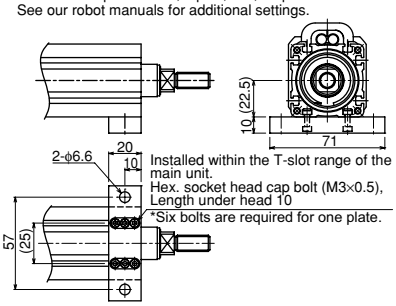
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

## SR04 Straight model S



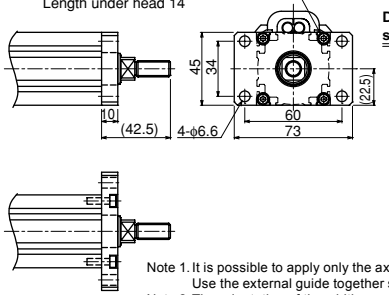

**Option: Horizontal installation plate (foot)**

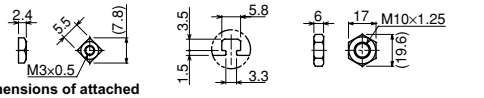
* Contents of option: Plate, 2 pcs., Nut, 12 pcs.
See our robot manuals for additional settings.




**Option: Vertical installation plate (flange)**

Hex. socket head cap bolt (M4×0.7), Length under head 14




Dimensions of attached square nut for T-slot (6 pcs.) | Details of T-slot | Dimensions of attached nut

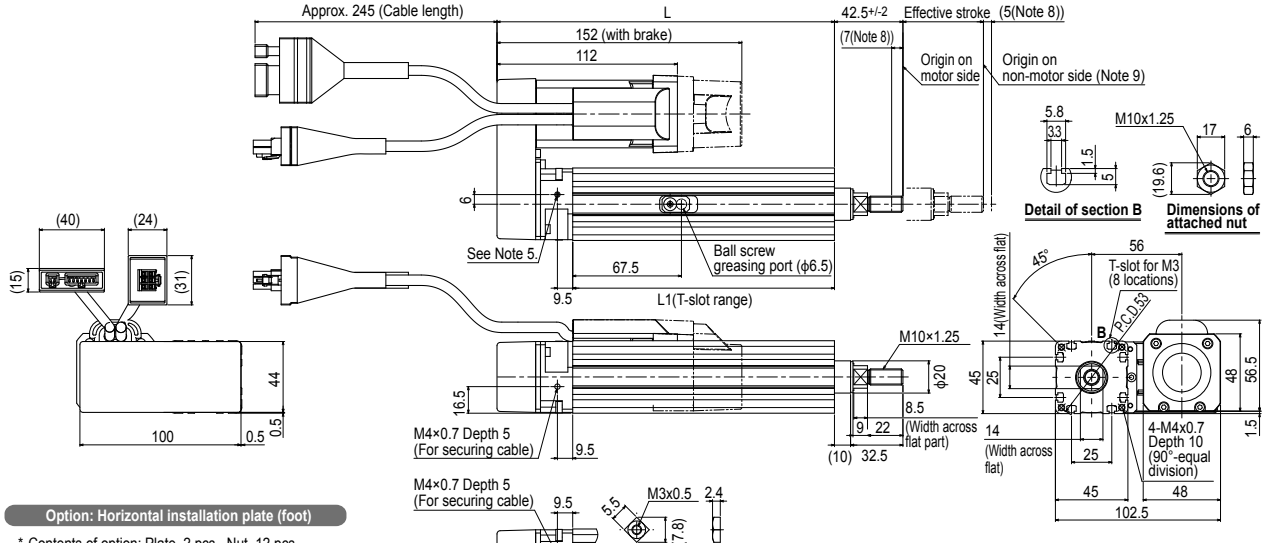
| Effective stroke | | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| L1 | | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 | 412.5 |
| L | | 270.5 | 320.5 | 370.5 | 420.5 | 470.5 | 520.5 |
| Weight (kg) Note 8 | | 1.4 | 1.7 | 1.9 | 2.2 | 2.4 | 2.7 |
| Maximum speed for each stroke (mm/sec) | Lead 12 | 500 | | | | 440 | 320 |
| | Lead 6 | 250 | | | | 220 | 160 |
| | Lead 2 | 80 | | | | 72 | 53 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 5. When running the cables, secure cables so that any load is not applied to them.
Note 6. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 7. The cable's minimum bend radius is R30.
Note 8. Models with a brake will be 0.2kg heavier.
Note 9. Distance to mechanical stopper.



Controller TS-S2 ▶ 514 | TS-SH ▶ 514 | TS-SD ▶ 524

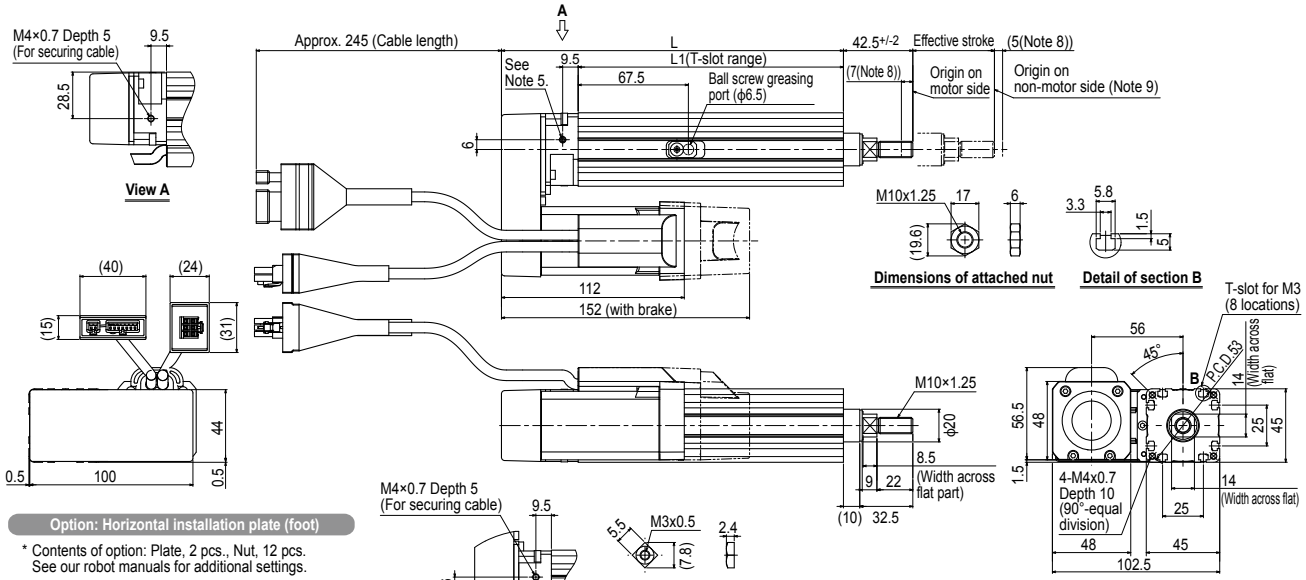
## SR04 Space-saving model (motor installed on right) R




| Effective stroke | | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| L1 | | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 | 412.5 |
| L | | 209.5 | 259.5 | 309.5 | 359.5 | 409.5 | 459.5 |
| Weight (kg) Note 7 | | 1.6 | 1.9 | 2.1 | 2.4 | 2.6 | 2.9 |
| Maximum speed for each stroke (mm/sec) | Lead 12 | 500 | | | | 440 | 320 |
| | Lead 6 | 250 | | | | 220 | 160 |
| | Lead 2 | 80 | | | | 72 | 53 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 10. This unit can be installed with the motor facing up (turned 90 degrees from the position in this drawing).

## SR04 Space-saving model (motor installed on left) L




| Effective stroke | | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| L1 | | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 | 412.5 |
| L | | 209.5 | 259.5 | 309.5 | 359.5 | 409.5 | 459.5 |
| Weight (kg) Note 7 | | 1.6 | 1.9 | 2.1 | 2.4 | 2.6 | 2.9 |
| Maximum speed for each stroke (mm/sec) | Lead 12 | 500 | | | | 440 | 320 |
| | Lead 6 | 250 | | | | 220 | 160 |
| | Lead 2 | 80 | | | | 72 | 53 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 10. This unit can be installed with the motor facing up (turned 90 degrees from the position in this drawing).

# SRD04

**Rod type (With support guide)**

CE compliance

Origin on the non-motor side is selectable: Lead 6, 12


## Ordering method

**SRD04** – [Lead] – [Model] – [Brake] – [Origin position Note 2] – [Bracket plate] – [Stroke] – [Cable length Note 4] – [S2 / SH / SD] – [I/O] – [Battery] – [1]

| Model | Lead | Model | Brake | Origin position Note 2 | Bracket plate | Stroke | Cable length Note 4 |
|---|---|---|---|---|---|---|---|
| | 12: 12mm<br>06: 6mm<br>02: 2mm | S: Straight model<br>U: Space-saving model Note 1 (motor installed on top) | N: With no brake<br>B: With brake | N: Standard Note 3<br>Z: Non-motor side | N: No plate<br>H: With plate | 50 to 300 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

**S2**

| Robot positioner | I/O |
|---|---|
| S2: TS-S2 Note 5 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 |

**SH**

| Robot positioner | I/O | Battery |
|---|---|---|
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 | B: With battery (Absolute)<br>N: None (Incremental) |

**SD** – **1**

| Robot driver | I/O cable |
|---|---|
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. When "2mm lead" is selected, the origin position cannot be changed (to non-motor side).
Note 3. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 4. The robot cable is flexible and resists bending.
Note 5. See P.522 for DIN rail mounting bracket.
Note 6. Select this selection when using the gateway function. For details, see P.66.

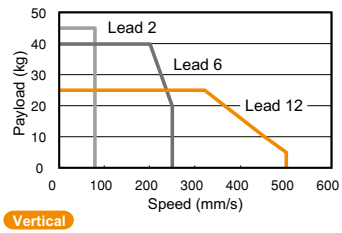
## Basic specifications

| | | | | |
|---|---|---|---|---|
| Motor | | 42 □ Step motor | | |
| Resolution (Pulse/rotation) | | 20480 | | |
| Repeatability (mm) | | +/-0.02 | | |
| Deceleration mechanism | | Ball screw ϕ8 | | Ball screw ϕ10 |
| Ball screw lead (mm) | | 12 | 6 | 2 |
| Maximum speed Note 1 (mm/sec) | | 500 | 250 | 80 |
| Maximum payload (kg) | Horizontal | 25 | 40 | 45 |
| | Vertical | 4 | 11 | 24 |
| Max. pressing force (N) | | 150 | 300 | 600 |
| Stroke (mm) | | 50 to 300 (50pitch) | | |
| Lost motion | | 0.1mm or less | | |
| Rotating backlash (°) | | +/-0.05 | | |
| Overall length (mm) | Horizontal | Stroke+263 | | |
| | Vertical | Stroke+303 | | |
| Maximum outside dimension of body cross-section (mm) | | W48 × H58 | | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | | |

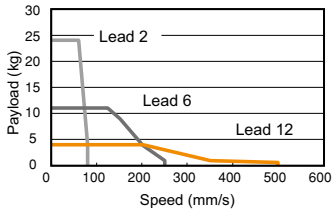
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right. For details, see P. 152.
Additionally, when the stroke is long, the maximum speed is decreased due to the critical speed of the ball screw.
See the maximum speed table shown at the lower portion of the drawing.

## Speed vs. payload

Horizontal



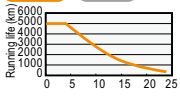

Vertical



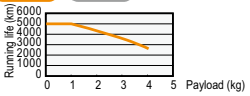

## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

Vertical Lead 2




Vertical Lead 12



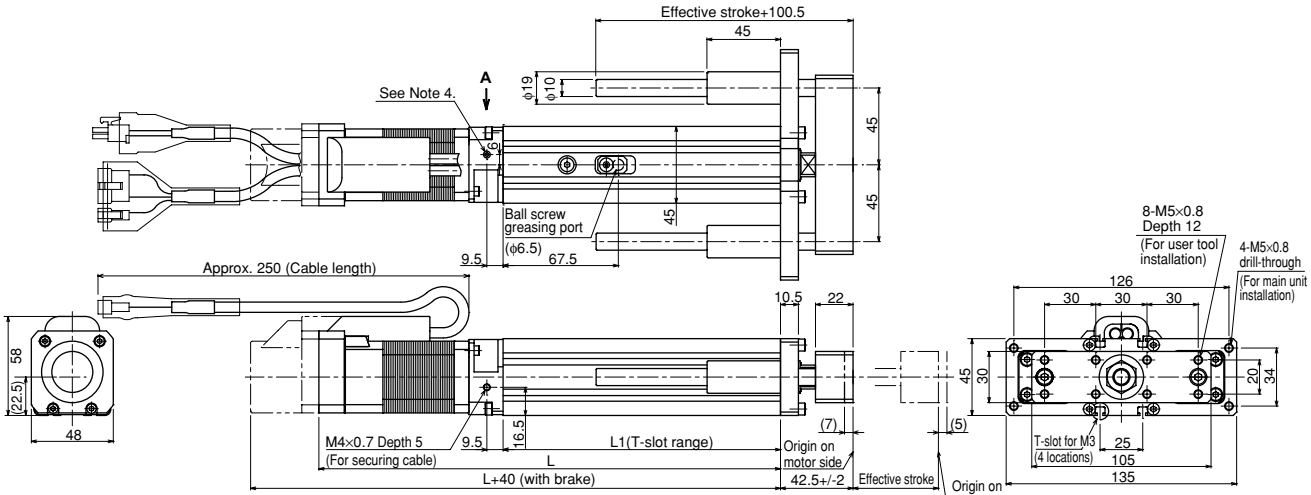

Note. See P.153 for running life distance to life time conversion example.

## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

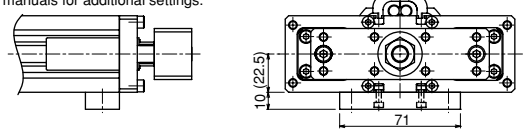
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

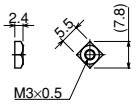
## SRD04 Straight model S



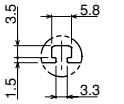

**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs., Nut, 12 pcs.
See our robot manuals for additional settings.

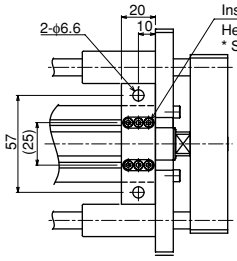



Dimensions of attached square nut for T-slot (6 pcs.)




Details of T-slot




Installed within the T-slot range of the main unit.
Hex. socket head cap bolt (M3×0.5), Length under head 10
* Six bolts are required for one plate.

| Effective stroke | | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| L1 | | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 | 412.5 |
| L | | 270.5 | 320.5 | 370.5 | 420.5 | 470.5 | 520.5 |
| Weight (kg) Note 6 | | 2.0 | 2.4 | 2.7 | 3.0 | 3.3 | 3.7 |
| Maximum speed for each stroke (mm/sec) | Lead 12 | 500 | | | | 440 | 320 |
| | Lead 6 | 250 | | | | 220 | 160 |
| | Lead 2 | 80 | | | | 72 | 53 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 3. When running the cables, secure cables so that any load is not applied to them.
Note 4. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 5. The cable's minimum bend radius is R30.
Note 6. Models with a brake will be 0.2kg heavier.
Note 7. Distance to mechanical stopper.

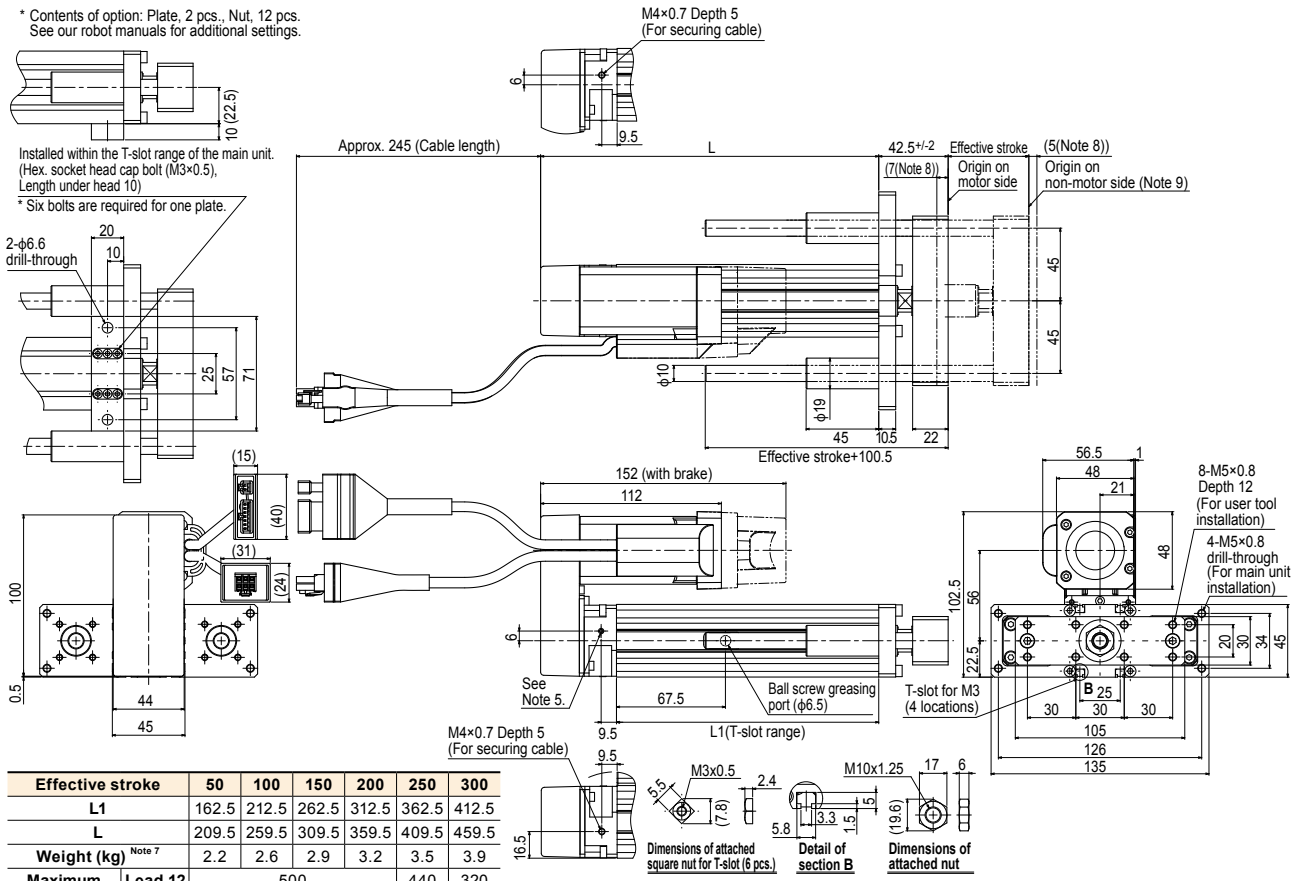


Controller TS-S2 ▸ 514 | TS-SH ▸ 514 | TS-SD ▸ 524

## SRD04 Space-saving model (motor installed on top) U

**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs., Nut, 12 pcs.
See our robot manuals for additional settings.




| Effective stroke | | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| L1 | | 162.5 | 212.5 | 262.5 | 312.5 | 362.5 | 412.5 |
| L | | 209.5 | 259.5 | 309.5 | 359.5 | 409.5 | 459.5 |
| Weight (kg) Note 7 | | 2.2 | 2.6 | 2.9 | 3.2 | 3.5 | 3.9 |
| Maximum speed for each stroke (mm/sec) | Lead 12 | 500 | | | | 440 | 320 |
| | Lead 6 | 250 | | | | 220 | 160 |
| | Lead 2 | 80 | | | | 72 | 53 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.

# SR05 Rod type

CE compliance | Origin on the non-motor side is selectable: Lead 6, 12


## Ordering method

**SR05** – [Lead] – [Model] – [Brake] – [Origin position Note 2] – [Bracket plate] – [Stroke] – [Cable length Note 4] – [S2 / SH / SD] – [I/O] – [Battery] – [1]

| Model | Lead | Model | Brake | Origin position Note 2 | Bracket plate | Stroke | Cable length Note 4 |
|---|---|---|---|---|---|---|---|
| | 12: 12mm<br>06: 6mm<br>02: 2mm | S: Straight model<br>R: Space-saving model Note 1 (motor installed on right)<br>L: Space-saving model Note 1 (motor installed on left) | N: With no brake<br>B: With brake | N: Standard Note 3<br>Z: Non-motor side | N: No plate<br>H: With plate<br>V: With flange | 50 to 300 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

| S2 | | |
|---|---|---|
| Robot positioner | I/O | |
| S2: TS-S2 Note 5 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 | |

| SH | | |
|---|---|---|
| Robot positioner | I/O | Battery |
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 | B: With battery (Absolute)<br>N: None (Incremental) |

| SD | 1 |
|---|---|
| Robot driver | I/O cable |
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. When "2mm lead" is selected, the origin position cannot be changed (to non-motor side).
Note 3. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 4. The robot cable is flexible and resists bending.
Note 5. See P.522 for DIN rail mounting bracket.
Note 6. Select this selection when using the gateway function. For details, see P.66.

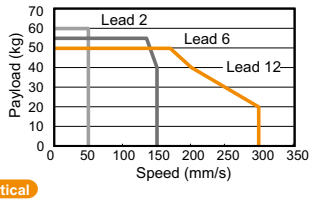
## Basic specifications

| | | | | |
|---|---|---|---|---|
| Motor | | 56 □ Step motor | | |
| Resolution (Pulse/rotation) | | 20480 | | |
| Repeatability (mm) | | +/-0.02 | | |
| Deceleration mechanism | | Ball screw ϕ12 | | |
| Ball screw lead (mm) | | 12 | 6 | 2 |
| Maximum speed Note 1 (mm/sec) | | 300 | 150 | 50 |
| Maximum payload (kg) | Horizontal | 50 | 55 | 60 |
| | Vertical | 10 | 20 | 30 |
| Max. pressing force (N) | | 250 | 550 | 900 |
| Stroke (mm) | | 50 to 300 (50pitch) | | |
| Lost motion | | 0.1mm or less | | |
| Rotating backlash (°) | | +/-1.0 | | |
| Overall length (mm) | Horizontal | Stroke+276 | | |
| | Vertical | Stroke+316 | | |
| Maximum outside dimension of body cross-section (mm) | | W56.4 × H71 | | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | | |

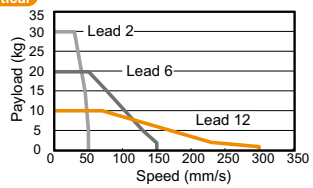
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right.
For details, see P. 152.

## Speed vs. payload

Horizontal



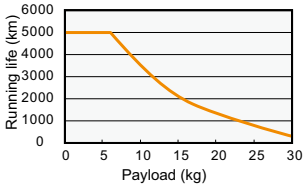

Vertical




## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

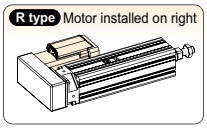
Vertical | Lead 2



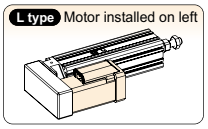

Note. See P.153 for running life distance to life time conversion example.

## Motor installation (Space-saving model)

R type Motor installed on right



L type Motor installed on left

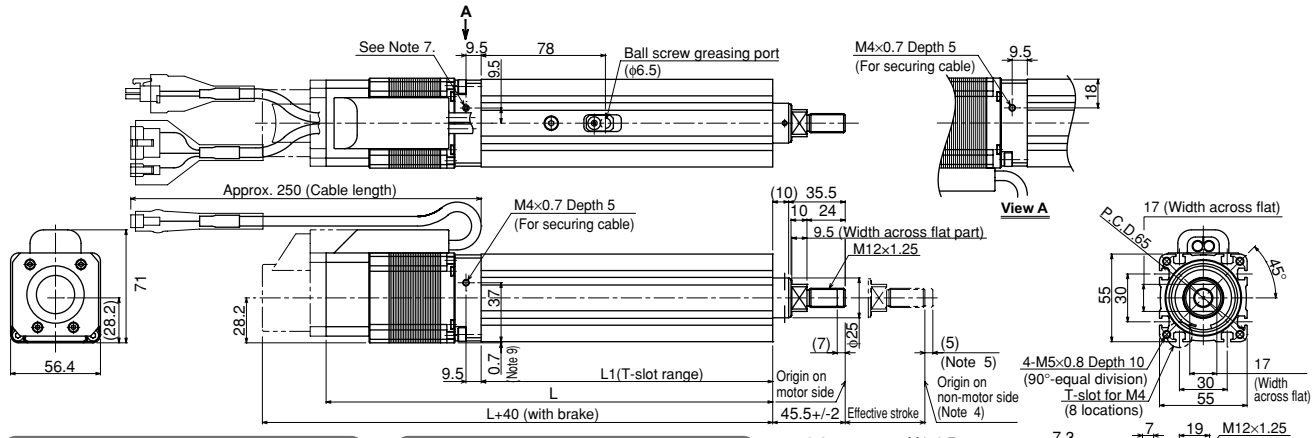


## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

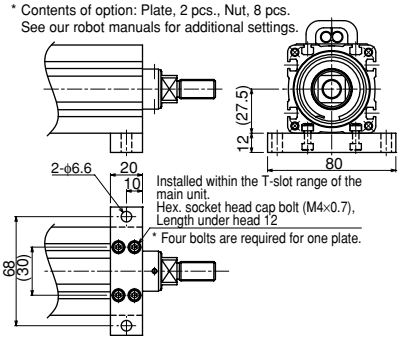
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

## SR05 Straight model S



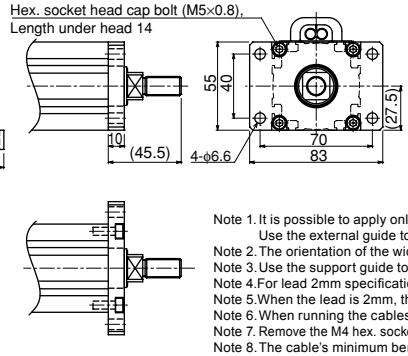

**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs., Nut, 8 pcs.
See our robot manuals for additional settings.

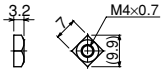



**Option: Vertical installation plate (flange)**

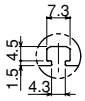
Hex. socket head cap bolt (M5×0.8), Length under head 14



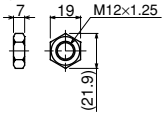



Dimensions of attached square nut for T-slot (6 pcs.)




Details of T-slot

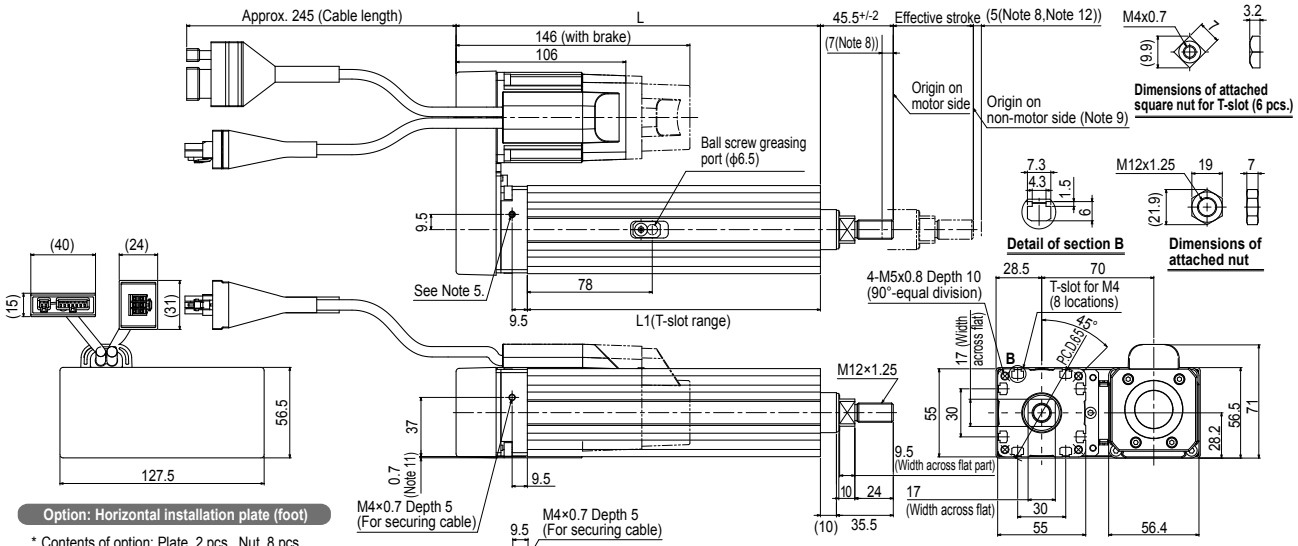



Dimensions of attached nut

| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| L1 | 183 | 233 | 283 | 333 | 383 | 433 |
| L | 280.5 | 330.5 | 380.5 | 430.5 | 480.5 | 530.5 |
| Weight (kg) Note 10 | 2.2 | 2.6 | 3.0 | 3.3 | 3.7 | 4.1 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 5. When the lead is 2mm, this dimension is 27mm.
Note 6. When running the cables, secure cables so that any load is not applied to them.
Note 7. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 8. The cable's minimum bend radius is R30.
Note 9. Take great care as the outer case of the motor projects from the bottom of the main unit.
Note 10. Models with a brake will be 0.2kg heavier.
Note 11. Distance to mechanical stopper.

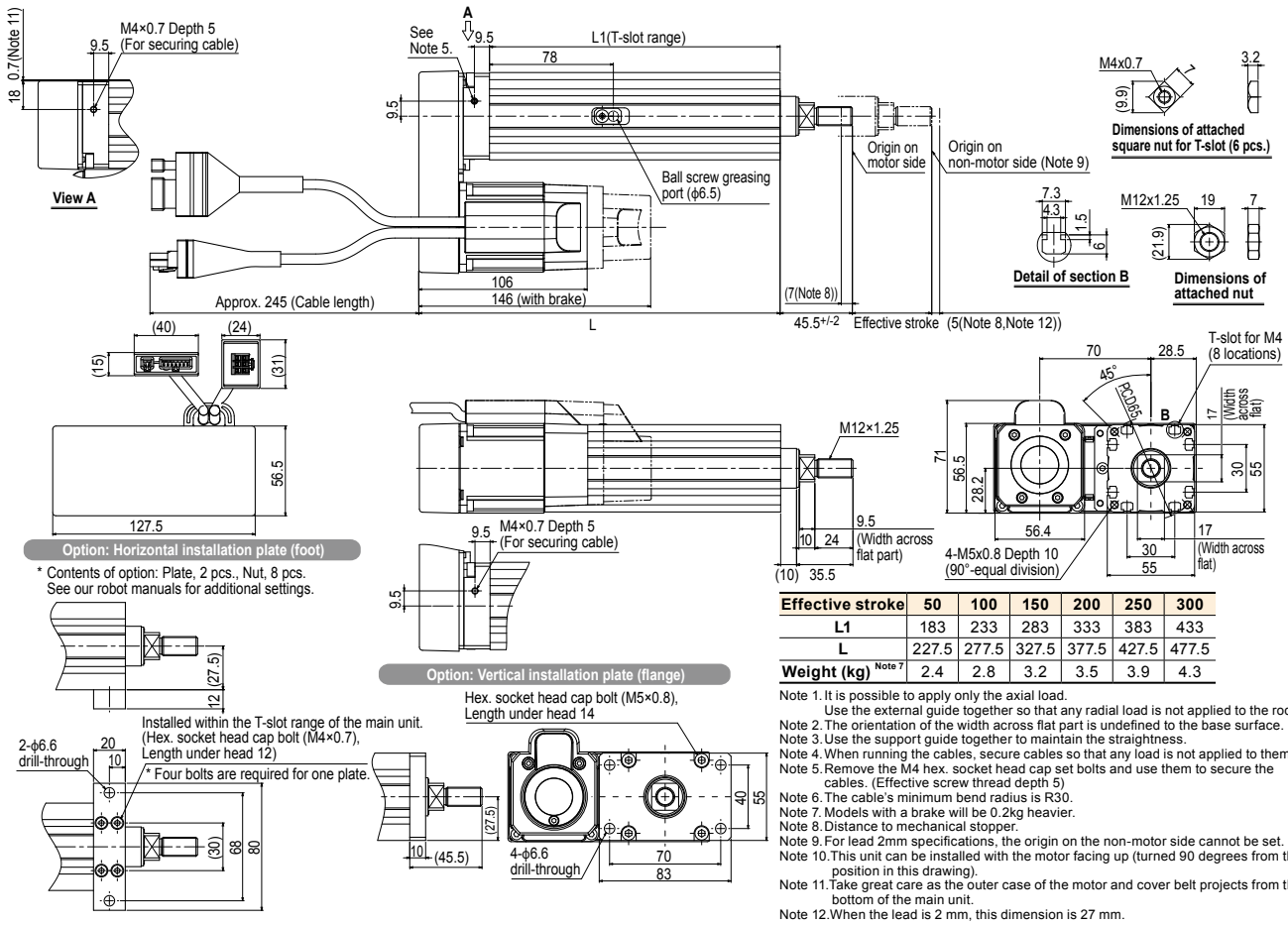
## SR05 Space-saving model (motor installed on right) R




| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| L1 | 183 | 233 | 283 | 333 | 383 | 433 |
| L | 227.5 | 277.5 | 327.5 | 377.5 | 427.5 | 477.5 |
| Weight (kg) Note 7 | 2.4 | 2.8 | 3.2 | 3.5 | 3.9 | 4.3 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 10. This unit can be installed with the motor facing up (turned 90 degrees from the position in this drawing).
Note 11. Take great care as the outer case of the motor and cover belt projects from the bottom of the main unit.
Note 12. When the lead is 2mm, this dimension is 27mm.

## SR05 Space-saving model (motor installed on left) L




| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| L1 | 183 | 233 | 283 | 333 | 383 | 433 |
| L | 227.5 | 277.5 | 327.5 | 377.5 | 427.5 | 477.5 |
| Weight (kg) Note 7 | 2.4 | 2.8 | 3.2 | 3.5 | 3.9 | 4.3 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 10. This unit can be installed with the motor facing up (turned 90 degrees from the position in this drawing).
Note 11. Take great care as the outer case of the motor and cover belt projects from the bottom of the main unit.
Note 12. When the lead is 2 mm, this dimension is 27 mm.

# SRD05

**Rod type (With support guide)**

CE compliance

Origin on the non-motor side is selectable: Lead 6, 12


## Ordering method

**SRD05** – [Model] – [Lead] – [Model] – [Brake] – [Origin position Note 2] – [Bracket plate] – [Stroke] – [Cable length Note 4]

| Model | Lead | Model | Brake | Origin position Note 2 | Bracket plate | Stroke | Cable length Note 4 |
|---|---|---|---|---|---|---|---|
| | 12: 12mm<br>06: 6mm<br>02: 2mm | S: Straight model<br>U: Space-saving model Note 1 (motor installed on top) | N: With no brake<br>B: With brake | N: Standard Note 3<br>Z: Non-motor side | N: No plate<br>H: With plate | 50 to 300 (50mm pitch) | 1K: 1m<br>3K: 3m<br>5K: 5m<br>10K: 10m |

**S2**

| Robot positioner | I/O |
|---|---|
| S2: TS-S2 Note 5 | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 |

**SH**

| Robot positioner | I/O | Battery |
|---|---|---|
| SH: TS-SH | NP: NPN<br>PN: PNP<br>CC: CC-Link<br>DN: DeviceNet™<br>EP: EtherNet/IP™<br>PT: PROFINET<br>GW: No I/O board Note 6 | B: With battery (Absolute)<br>N: None (Incremental) |

**SD** – **1**

| Robot driver | I/O cable |
|---|---|
| SD: TS-SD | 1: 1m |

Note 1. See P.153 for grease gun nozzles.
Note 2. When "2mm lead" is selected, the origin position cannot be changed (to non-motor side).
Note 3. If changing from the origin position at the time of purchase, the machine reference amount must be reset. For details, refer to the manual.
Note 4. The robot cable is flexible and resists bending.
Note 5. See P.522 for DIN rail mounting bracket.
Note 6. Select this selection when using the gateway function. For details, see P.66.

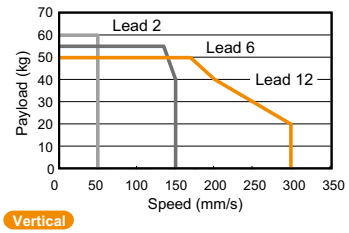
## Basic specifications

| | | | | |
|---|---|---|---|---|
| Motor | | 56 □ Step motor | | |
| Resolution (Pulse/rotation) | | 20480 | | |
| Repeatability (mm) | | +/-0.02 | | |
| Deceleration mechanism | | Ball screw ϕ12 | | |
| Ball screw lead (mm) | | 12 | 6 | 2 |
| Maximum speed Note 1 (mm/sec) | | 300 | 150 | 50 |
| Maximum payload (kg) | Horizontal | 50 | 55 | 60 |
| | Vertical | 8.5 | 18.5 | 28.5 |
| Max. pressing force (N) | | 250 | 550 | 900 |
| Stroke (mm) | | 50 to 300 (50pitch) | | |
| Lost motion | | 0.1mm or less | | |
| Rotating backlash (°) | | +/-0.05 | | |
| Overall length (mm) | Horizontal | Stroke+276 | | |
| | Vertical | Stroke+316 | | |
| Maximum outside dimension of body cross-section (mm) | | W56.4 × H71 | | |
| Cable length (m) | | Standard: 1 / Option: 3, 5, 10 | | |

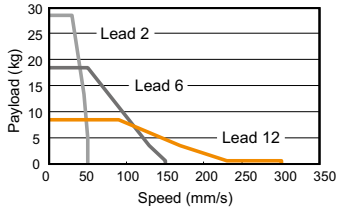
Note 1. The maximum speed needs to be changed in accordance with the payload.
See the "Speed vs. payload" graph shown on the right.
For details, see P. 152.

## Speed vs. payload

Horizontal



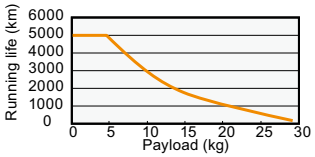

Vertical




## Running life

5000 km on models other than shown below.
Running life of only the model shown below becomes shorter than 5000 km depending on the payload, so check the running life curve.

Vertical Lead 2



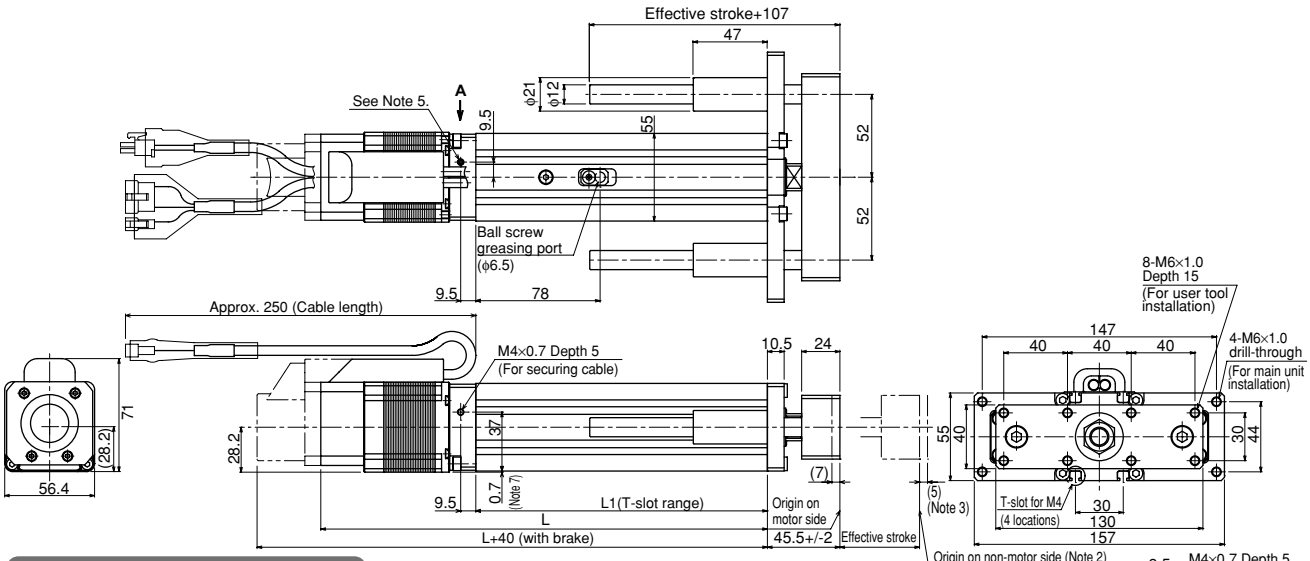

Note. See P.153 for running life distance to life time conversion example.

## Controller

| Controller | Operation method |
|---|---|
| TS-S2<br>TS-SH | I/O point trace /<br>Remote command |

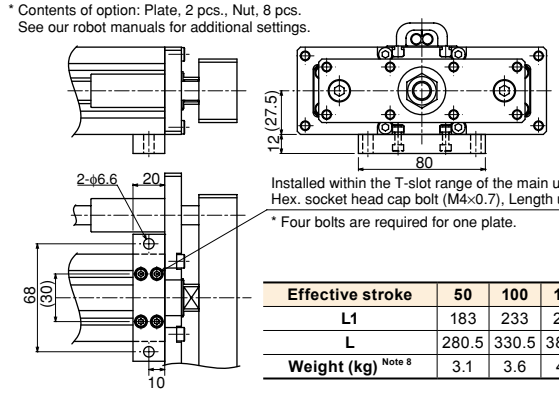
| Controller | Operation method |
|---|---|
| TS-SD | Pulse train control |

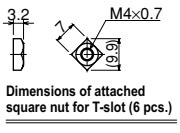
## SRD05 Straight model S

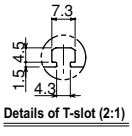


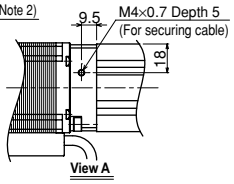

**Option: Horizontal installation plate (foot)**

* Contents of option: Plate, 2 pcs., Nut, 8 pcs.
See our robot manuals for additional settings.



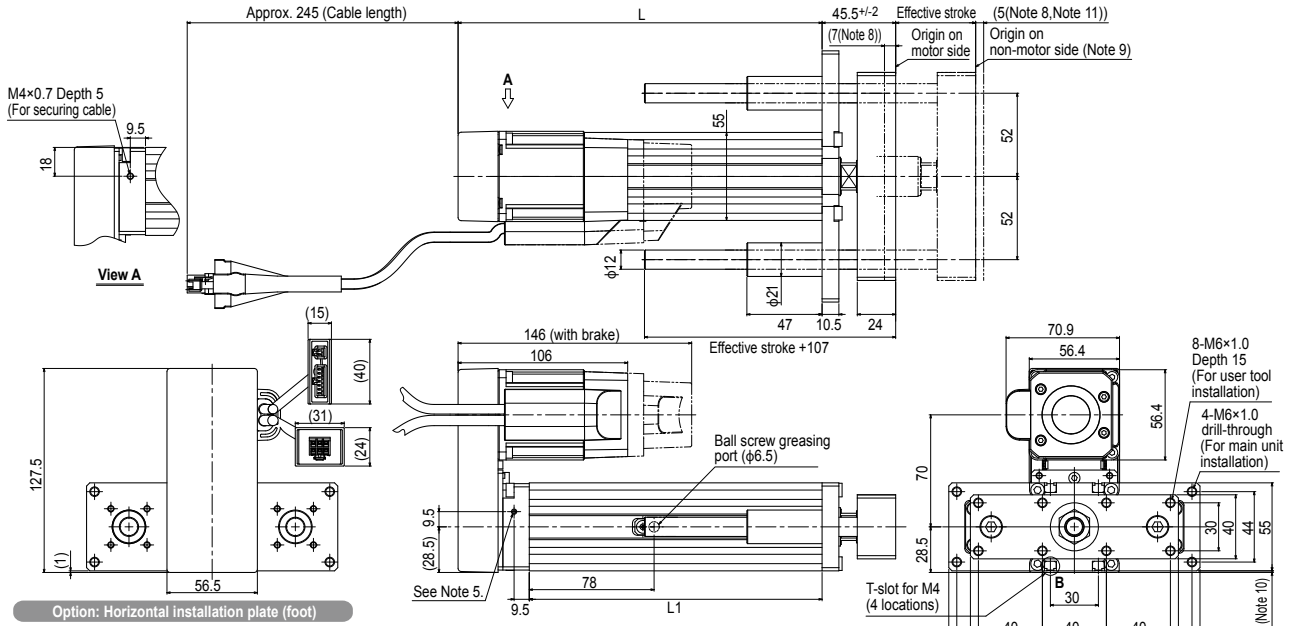

| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| L1 | 183 | 233 | 283 | 333 | 383 | 433 |
| L | 280.5 | 330.5 | 380.5 | 430.5 | 480.5 | 530.5 |
| Weight (kg) Note 8 | 3.1 | 3.6 | 4.1 | 4.5 | 5.0 | 5.5 |

Note 1. It is possible to apply only the axial load.
Use the external guide together so that any radial load is not applied to the rod.
Note 2. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 3. When the lead is 2mm, this dimension is 27mm.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables.
(Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Take great care as the outer case of the motor projects from the bottom of the main unit.
Note 8. Models with a brake will be 0.2kg heavier.
Note 9. Distance to mechanical stopper.



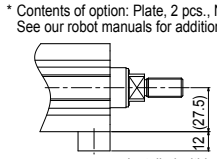
Controller TS-S2 ▸ 514 TS-SH ▸ 514 TS-SD ▸ 524

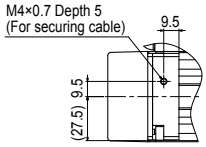
## SRD05 Space-saving model (motor installed on top) U

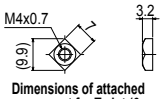



Option: Horizontal installation plate (foot)

* Contents of option: Plate, 2 pcs., Nut, 8 pcs.
See our robot manuals for additional settings.

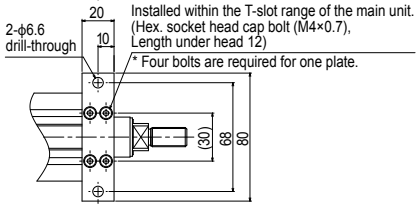



Dimensions of attached square nut for T-slot (6 pcs.)

Detail of section B




| Effective stroke | 50 | 100 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| L1 | 183 | 233 | 283 | 333 | 383 | 433 |
| L | 227.5 | 277.5 | 327.5 | 377.5 | 427.5 | 477.5 |
| Weight (kg) Note 7 | 3.3 | 3.8 | 4.3 | 4.7 | 5.2 | 5.7 |

Note 1. It is possible to apply only the axial load. Use the external guide together so that any radial load is not applied to the rod.
Note 2. The orientation of the width across flat part is undefined to the base surface.
Note 3. Use the support guide together to maintain the straightness.
Note 4. When running the cables, secure cables so that any load is not applied to them.
Note 5. Remove the M4 hex. socket head cap set bolts and use them to secure the cables. (Effective screw thread depth 5)
Note 6. The cable's minimum bend radius is R30.
Note 7. Models with a brake will be 0.2kg heavier.
Note 8. Distance to mechanical stopper.
Note 9. For lead 2mm specifications, the origin on the non-motor side cannot be set.
Note 10. Take great care as the outer case of the cover belt projects from the bottom of the main unit.
Note 11. When the lead is 2 mm, this dimension is 27 mm.