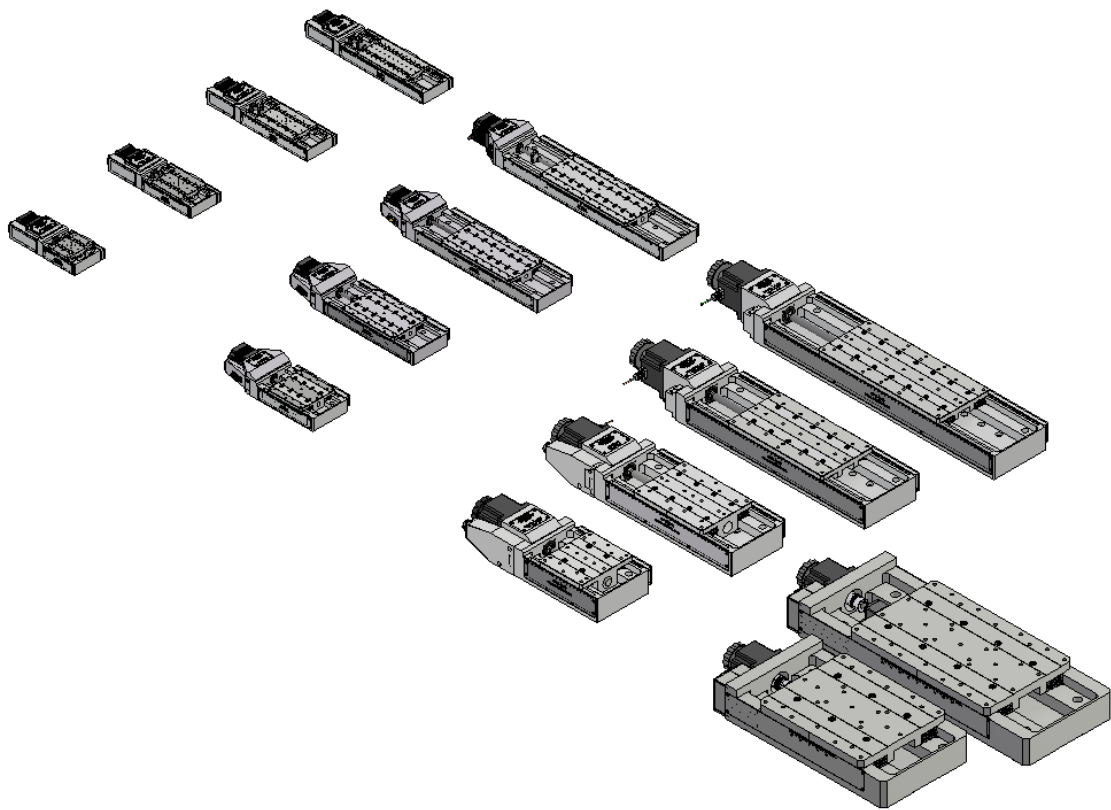




High Precision Linear Stages

DS Series



August 2023



SPECIFICATIONS

The linear slides are driven by a high quality preloaded ballscrew coupled to a high torque electric motor. Resolution requirements may be met using a gearbox. Maximum rigidity is assured using high quality crossed roller linear bearings. Each slide also features two fully adjustable, normally closed mechanical limit switches to define the extents of travel.

MECHANICAL

| Specification | 210 Series | 310 Series | 410 Series | 510 Series |
|-----------------------------------|-----------------|-------------------|-------------------|------------|
| Travel (mm) | 30, 50, 75, 100 | 50, 100, 150, 200 | 75, 150, 225, 300 | 100, 200 |
| Lead Accuracy (um/25mm) | 2.5 | 5 | 6 | 6 |
| Trajectory Straightness (um/25mm) | 2.5 | 4 | 5 | 5 |
| Travel Resolution (mm/rev) | 1 | 1 | 2 | 5 |
| Maximum Speed (mm/sec) | 50 | 25 | 40 | 100 |
| Load Capacity (kg) | 10.5 | 46 | 280 | 575 |

ELECTRICAL

| Specification | DS210 Series | DS310 Series | DS410 Series | DS510 Series |
|-----------------|------------------------------|--------------|--------------|--------------|
| Motor | 2-Phase; 5-Phase Stepper; DC | | | |
| Limit Switches | Mechanical, Normally Closed | | | |
| Optical Encoder | Renishaw Tonic Series | | | |

LOAD CHARACTERISTICS

| Model | Fx (N) | Fy (N) | Fz (N) | Mxz (Nm) | Myz (Nm) | Mxy (Nm) |
|-----------|--------|--------|--------|----------|----------|----------|
| DS210-30 | 512 | 297 | 1029.5 | 39.5 | 2 | 1 |
| DS210-50 | 827 | 495 | 1663 | 64 | 3.5 | 1.5 |
| DS210-75 | 945 | 569 | 1900 | 73 | 4.5 | 2 |
| DS210-100 | 1260 | 767 | 2534 | 97.5 | 6 | 3 |

*Loads are not simultaneous.

| Model | Fx (N) | Fy (N) | Fz (N) | Mxz (Nm) | Myz (Nm) | Mxy (Nm) |
|-----------|--------|--------|--------|----------|----------|----------|
| DS310-50 | 3005.5 | 2441.5 | 6048 | 314 | 28 | 14 |
| DS310-100 | 4508.5 | 2827 | 9072 | 471.5 | 43 | 21.5 |
| DS310-150 | 5152.5 | 2827 | 10368 | 539 | 49.5 | 24.5 |
| DS310-200 | 6440.5 | 2827 | 12960 | 673.5 | 62 | 31 |

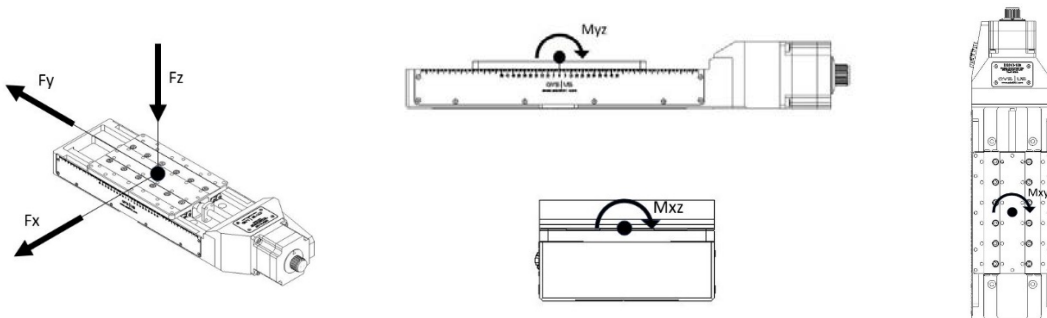
*Loads are not simultaneous.

| Model | Fx (N) | Fy (N) | Fz (N) | Mxz (Nm) | Myz (Nm) | Mxy (Nm) |
|-----------|---------|--------|--------|----------|----------|----------|
| DS410-75 | 6860 | 5157 | 13804 | 1218.5 | 100.5 | 50 |
| DS410-150 | 12740.5 | 5654.5 | 25636 | 2263.5 | 210 | 100.5 |
| DS410-225 | 15680.5 | 5654.5 | 31552 | 2786 | 251 | 125.5 |
| DS410-300 | 22541 | 5654.5 | 45356 | 4004.5 | 368.5 | 184 |

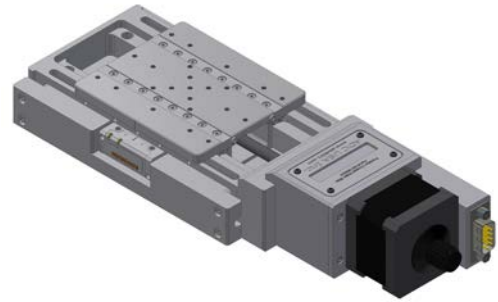
*Loads are not simultaneous.

| Model | Fx (N) | Fy (N) | Fz (N) | Mxz (Nm) | Myz (Nm) | Mxy (Nm) |
|-----------|---------|--------|--------|----------|----------|----------|
| DS510-100 | 39878.5 | 2261.5 | 80240 | 11474 | 1057 | 528.5 |
| DS510-200 | 46916 | 2261.5 | 94400 | 13499 | 1255.5 | 627.5 |

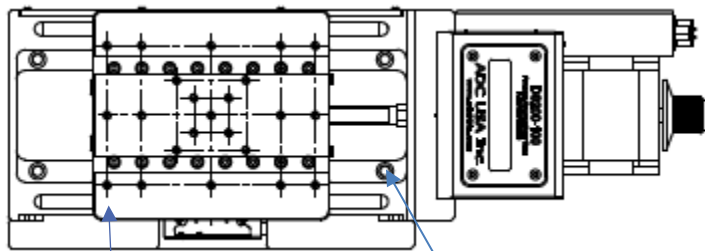
*Loads are not simultaneous.



DS210



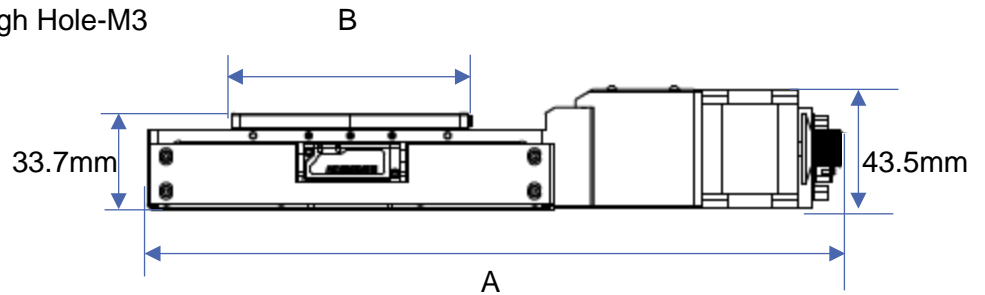
Top View



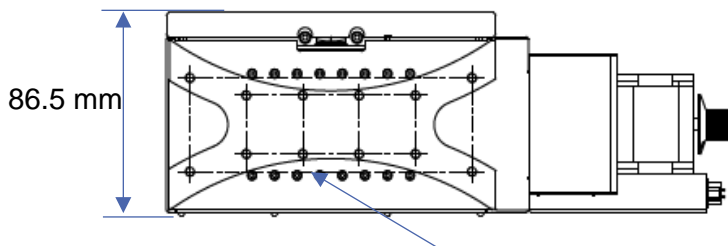
Mounting Through Hole-M3

Tapped Hole-M3x0.5

Side View



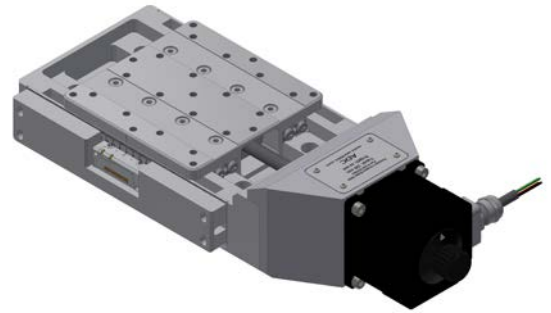
Bottom View



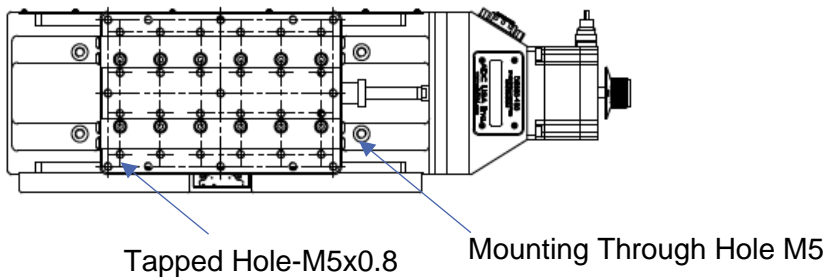
Tapped Hole-M4x0.7

| Model | 30 | 50 | 75 | 100 |
|----------------------|-----|-----|-----|-----|
| A- Total Length (mm) | 202 | 252 | 302 | 352 |
| B- Stage Length (mm) | 55 | 85 | 105 | 135 |

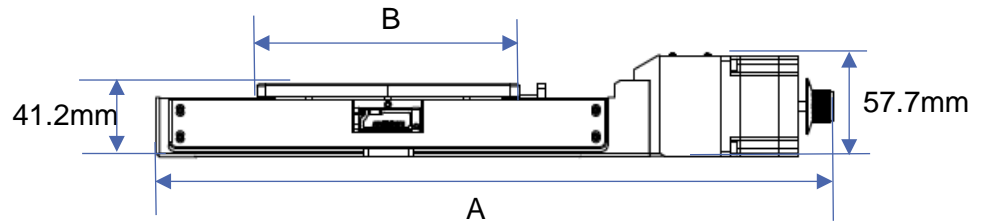
DS310



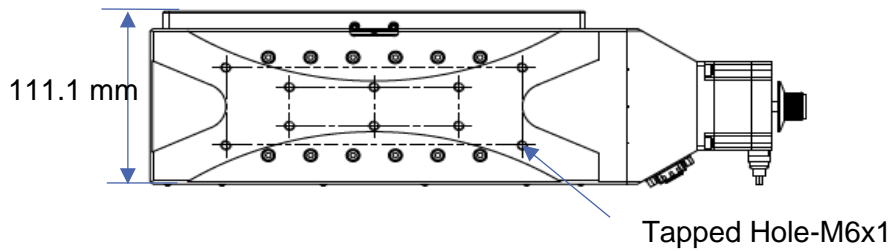
Top View



Side View



Bottom View

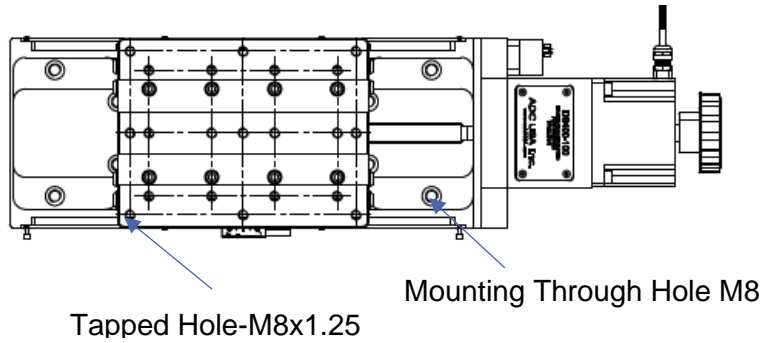


| Model | 50 | 100 | 150 | 200 |
|----------------------|-----|-----|-----|-----|
| A- Total Length (mm) | 283 | 387 | 483 | 587 |
| B- Stage Length (mm) | 100 | 150 | 200 | 250 |

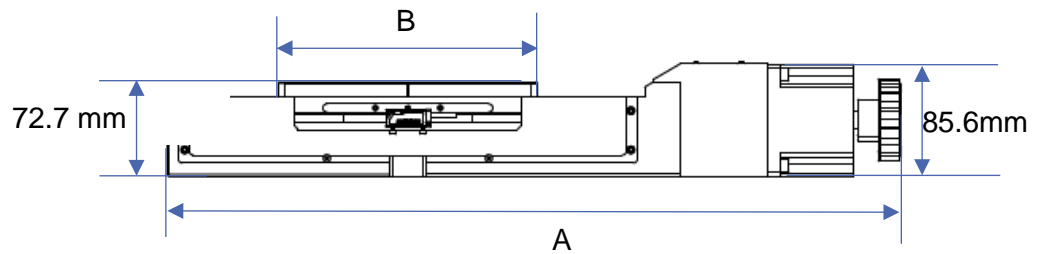
DS410



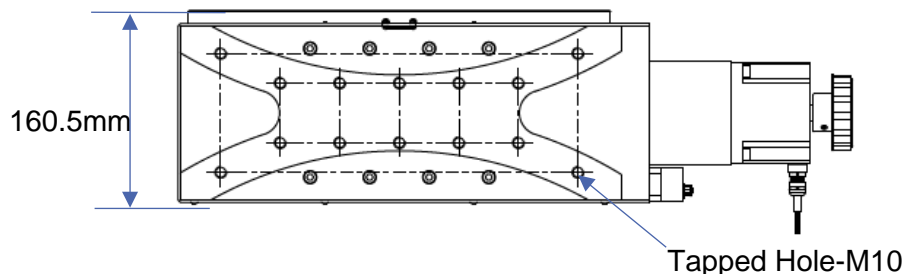
Top View



Side View



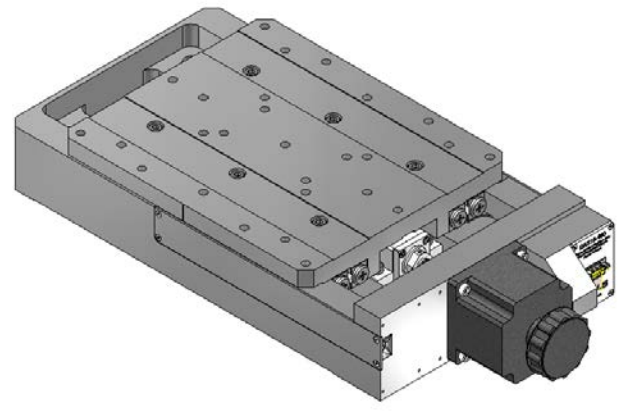
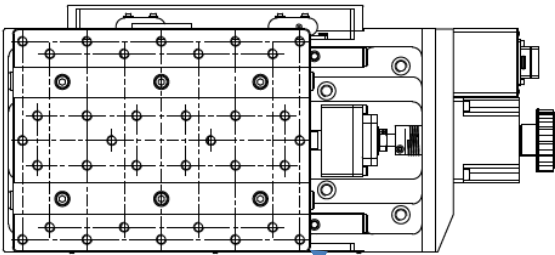
Bottom View



| Model | 75 | 150 | 225 | 300 |
|----------------------|-----|-----|-----|-----|
| A- Total Length (mm) | 411 | 567 | 724 | 875 |
| B- Stage Length (mm) | 125 | 200 | 275 | 350 |

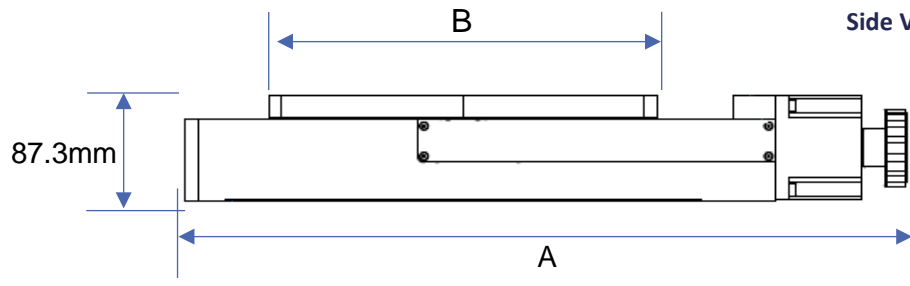
DS510

Top View

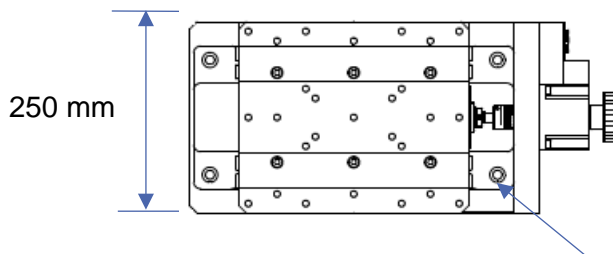


M10 Mounting Tapped Hole x27

Side View



Bottom View



Tapped Hole M14
Or Pass Through M12

| Model | 100 | 200 |
|----------------------|-----|-----|
| A- Total Length (mm) | 557 | 758 |
| B- Stage Length (mm) | 300 | 400 |

ORDERING INFORMATION

Slides can be ordered with different configurations. Please use the codes provided below when ordering. Please call or e-mail to ask about any other customization required.

| DS (Linear Slide) | 210 Series | 310 Series | 410 Series | 510 Series |
|-------------------------|---|-----------------------------|-----------------------------|---------------|
| Travel Options (mm) | -30 -50 -75 -100 | -50 -100 -150 -200 | -75 -150 -225 -300 | -100 -200 |
| Air Preparation Options | -A (Standard Air Stage) -V (Vacuum Stage; ask about options when placing order) | | | |
| Encoder Options | -R (With Incremental Optical Encoder) -A (With Absolute Optical Encoder) -N (Without Encoder) | | | |
| Brake Options | -B (With Brake, 24VDC) -N (Without Brake) | | | |
| Motor Options | -2PH (Standard 2 Phase Bi-Polar Stepper Motor) -5PH (5 Phase Stepper Motor) -DC (DC Motor) | | | |
| Gearbox Option | -G (customer to enter desired ratio; 3:1 to 100:1 available) | | | |

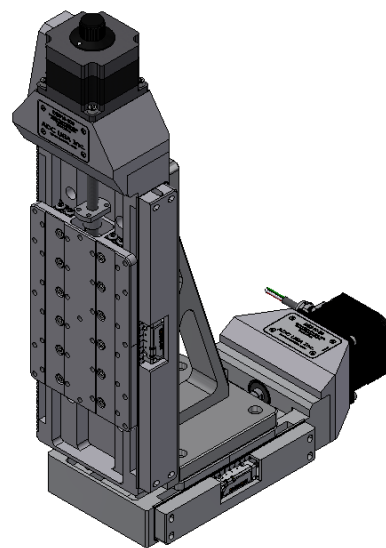
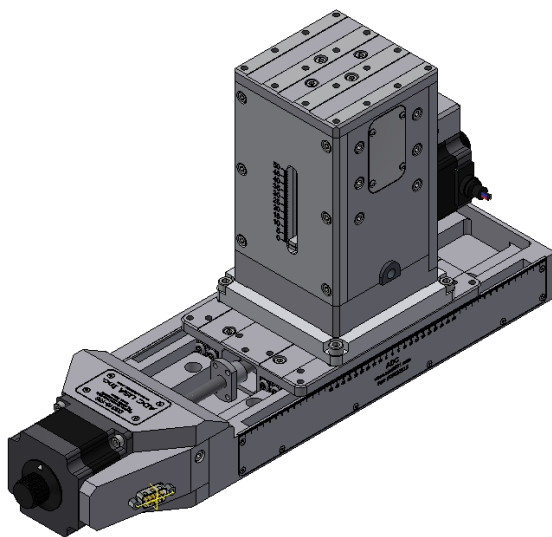
Example Order:
DS210-30-A-N-N-2PH

This is an order for a DS210 Precision Crossed Roller Slide with 30 mm travel, in air, no encoder, no brake, a 2-phase motor, and no gearbox.

MOUNTING PLATES AND BRACKETS

The chart below shows the corresponding part number per slide and jack combination.

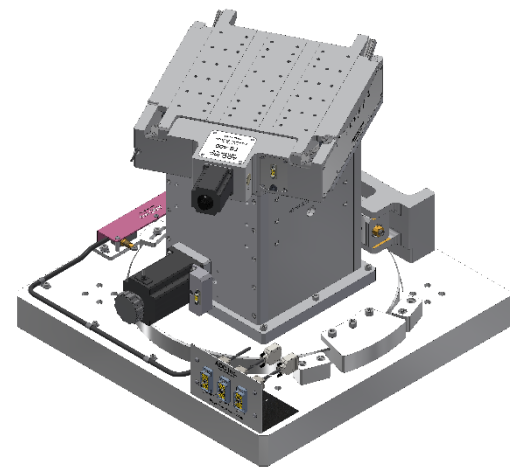
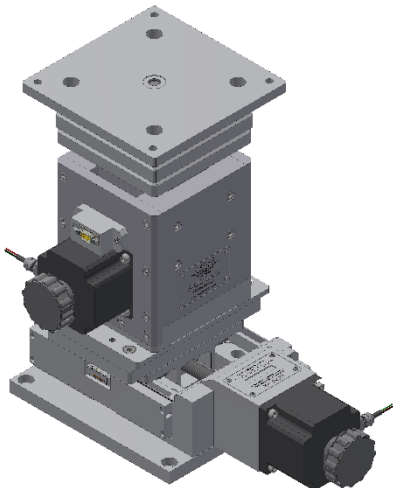
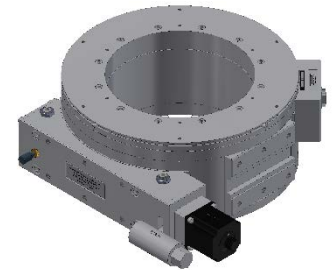
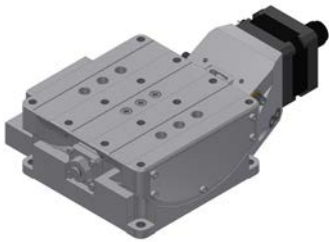
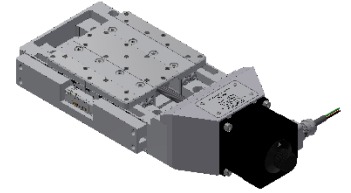
| | Mounting Bracket | | | | Mounting Plate |
|------------------|------------------|------------------|------------------|------------------|----------------|
| | DS210-30 | DS210-50 | DS210-75 | DS210-100 | DJ210-X |
| DS210-30 | MB-200-1 | MB-200-2 | N/A | N/A | MP-200-6 |
| DS210-50 | MB-200-1 | MB-200-3 | N/A | N/A | MP-200-7 |
| DS210-75 | MB-200-1 | MB-200-3 | MB-200-4 | MB-200-5 | MP-200-8 |
| DS210-100 | MB-200-1 | MB-200-3 | MB-200-4 | MB-200-5 | MP-200-7 |
| | DS310-50 | DS310-100 | DS310-150 | DS310-200 | DJ310-X |
| DS310-50 | MB-300-1 | MB-300-2 | N/A | N/A | MP-300-5 |
| DS310-100 | MB-300-1 | MB-300-2 | N/A | N/A | MP-300-5 |
| DS310-150 | MB-300-1 | MB-300-2 | MB-300-3 | MB-300-4 | MP-300-5 |
| DS310-200 | MB-300-1 | MB-300-2 | MB-300-3 | MB-300-4 | MP-300-5 |
| | DS410-75 | DS410-150 | DS410-225 | DS410-300 | DJ410-X |
| DS410-75 | MB-400-1 | MB-400-2 | N/A | N/A | MP-400-5 |
| DS410-150 | MB-400-1 | MB-400-2 | N/A | N/A | MP-400-6 |
| DS410-225 | MB-400-1 | MB-400-2 | MB-400-3 | MB-400-4 | MP-400-7 |
| DS410-300 | MB-400-1 | MB-400-2 | MB-400-3 | MB-400-4 | MP-400-7 |



OTHER STAGES



| Linear Stages | Lift Stages |
|-----------------------------|-----------------|
| DS210 | DJ210 |
| DS310 | DJ310 |
| DS410 | DJ410 |
| DS510 | BJ10 |
| | BJ25 |
| Tilt Stages/ Goniometers | Rotation Stages |
| TS-50 | RS-100 |
| TS-90 | RS-200 |
| TS-160 | RS-300 |
| TS-300 | RS-400 |
| TS-400 | RS-500 |
| TS-565 | |
| TS-700 | |



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