# POROUS MEDIA®
# AIR BEARING
# SOLUTIONS

## BONDED BEARINGS

NEWWAY®
air bearings

NEWWAY® air bearings

# Porous Media® Air Bearing Solutions

Bonded Bearings

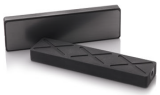
# A COMPLETE LINE OF BONDED POROUS MEDIA ® AIR BEARINGS

## BONDED BEARINGS OFFER VACUUM REPLICATION FOR ACCURATE EPOXY BONDING

New Way's bonded bearings are ideal for space constrained linear applications which require the ability to precisely bond the bearing to a fixture surface. The standard product line is available made-to-order, with custom designed bearings available to meet your needs.


147mm Nominal Width


122mm Nominal Width


97mm Nominal Width


72mm Nominal Width


48mm Nominal Width


38mm Nominal Width


23mm Nominal Width


18mm Nominal Width


15mm Nominal Width


12mm Nominal Width

# NEW WAY POROUS MEDIA® TECHNOLOGY OFFERS YOU SIGNIFICANT ADVANTAGES

| FEATURES | BENEFITS |
|---|---|
| Standard component | Anyone can use |
| Rectangular configuration | Maximizes bearing surface area for guideway width |
| Porous carbon media | Eliminates damage to the guide surface |
| Non-contact | Zero friction and no stiction for infinite resolution and repeatability |
| Non-contact | Zero wear, for consistent machine characteristics |
| Non-contact | Smooth, silent motion without vibration |
| Non-contact | 10x the speed |
| Non-contact without moving parts | High, consistent acceleration |
| No lubrication | Virtually maintenance free |
| High air film stiffness | Reduced probability of contact |
| High air film stiffness | High natural frequency |
| High air film stiffness | High damping for faster settling time |
| High air film stiffness | High precision positioning |
| Porous carbon media | Lower air consumption |
| Gimbaled mount | Easy to apply, adjust, achieve parallelism |

## APPLICATIONS

- Fast Tool Servos
- High Speed Applications
- Linear Stages
- Coordinate Measuring Machines

## MARKETS

- Metrology
- Semiconductor
- Flat Panel Display
- Solar
- Medical
- Machine Tools

NEWWAY® air bearings

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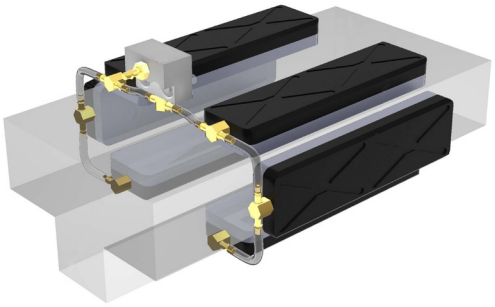
Bonded Bearings

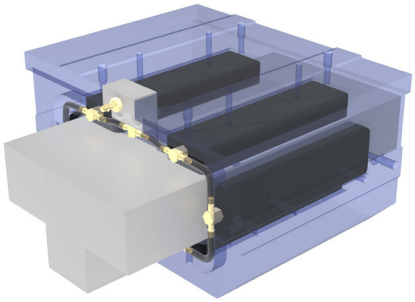
# HOW THE VACUUM REPLICATION PROCESS WORKS

Air bearing vacuum replication allows you to securely fix the bearing surface against the guide while you position and epoxy the bearing against the stage.



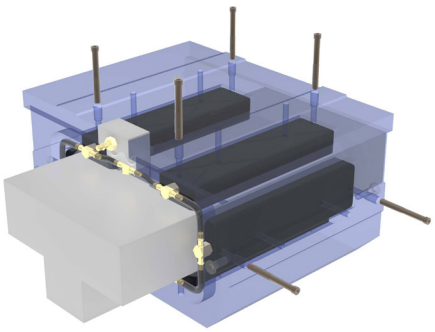
## Step 1: Apply Vacuum

Application of Vacuum suctions the bearing to the rail or guide surface



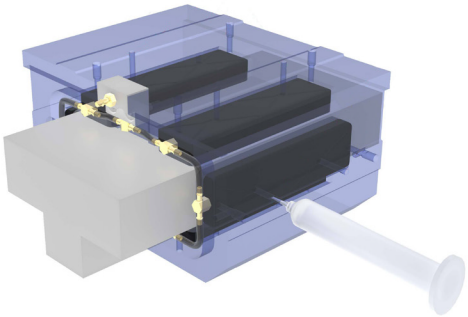
## Step 2: Arrange bearings

Move the stage over the bearing with a positioning screw



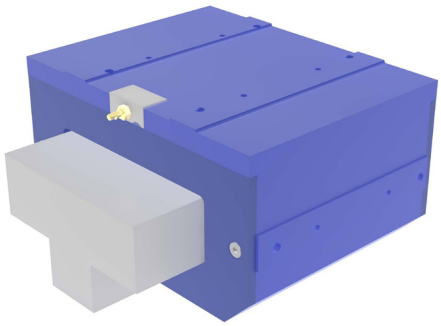
## Step 3: Calibrate

Use jacking screws to align the stage with respect to pitch, yaw and roll



## Step 4: Inject Epoxy

While under vacuum, inject epoxy into the bearing slots and let cure for 24 hours



## Step 5: Switch to pressure

Change from vacuum to positive pressure

# BONDED BEARINGS SPECIFICATIONS

| NOMINAL BEARING WIDTH | PART NUMBER | IDEAL LOAD (N) | FLOW (SLPM) | BEARING WEIGHT (GM) |
|---|---|---|---|---|
| 12 | S17012110 | 18 | 0.1 | 3.1 |
| | S17012210 | 36 | 0.2 | 6.2 |
| | S17012310 | 53 | 0.3 | 9.3 |
| | S17012410 | 71 | 0.4 | 12.4 |
| 15 | S17015110 | 31 | 0.2 | 4.9 |
| | S17015210 | 62 | 0.5 | 9.8 |
| | S17015310 | 93 | 0.7 | 14.8 |
| | S17015410 | 125 | 0.9 | 19.7 |
| 18 | S17018110 | 56 | 0.4 | 6.9 |
| | S17018210 | 111 | 0.7 | 14.7 |
| | S17018310 | 167 | 1.1 | 22.6 |
| | S17018410 | 222 | 1.4 | 29.1 |
| 23 | S17023110 | 93 | 0.5 | 11.4 |
| | S17023210 | 187 | 0.9 | 23.9 |
| | S17023310 | 280 | 1.4 | 36.5 |
| | S17023410 | 374 | 1.9 | 49.0 |
| 38 | S17038110 | 311 | 0.9 | 30.1 |
| | S17038210 | 623 | 1.9 | 63.8 |
| | S17038312.5 | 934 | 2.8 | 120.1 |
| | S17038412.5 | 1246 | 3.8 | 162.0 |
| 48 | S17048112.5 | 556 | 1.1 | 58.6 |
| | S17048212.5 | 1112 | 2.1 | 120.3 |
| | S17048312.5 | 1668 | 3.2 | 182.1 |
| | S17048412.5 | 2224 | 4.2 | 243.8 |
| 72 | S17072115 | 1290 | 0.8 | 164.5 |
| | S17072215 | 2580 | 1.7 | 337.5 |
| | S17072315 | 3870 | 2.5 | 510.4 |
| | S17072415 | 5160 | 3.3 | 683.0 |
| 97 | S17097115 | 2448 | 0.9 | 312.2 |
| | S17097215 | 4893 | 1.9 | 635.0 |
| | S17097315 | 7340 | 2.8 | 1038.0 |
| | S17097415 | 9786 | 3.8 | 1280.7 |
| 122 | S17122119 | 3892 | 1.5 | 651.1 |
| | S17122219 | 7784 | 3.1 | 1320.0 |
| | S17122319 | 11677 | 4.6 | 1988.9 |
| 147 | S17147119 | 5560 | 2.1 | 947.5 |
| | S17147219 | 11121 | 4.2 | 1916.4 |

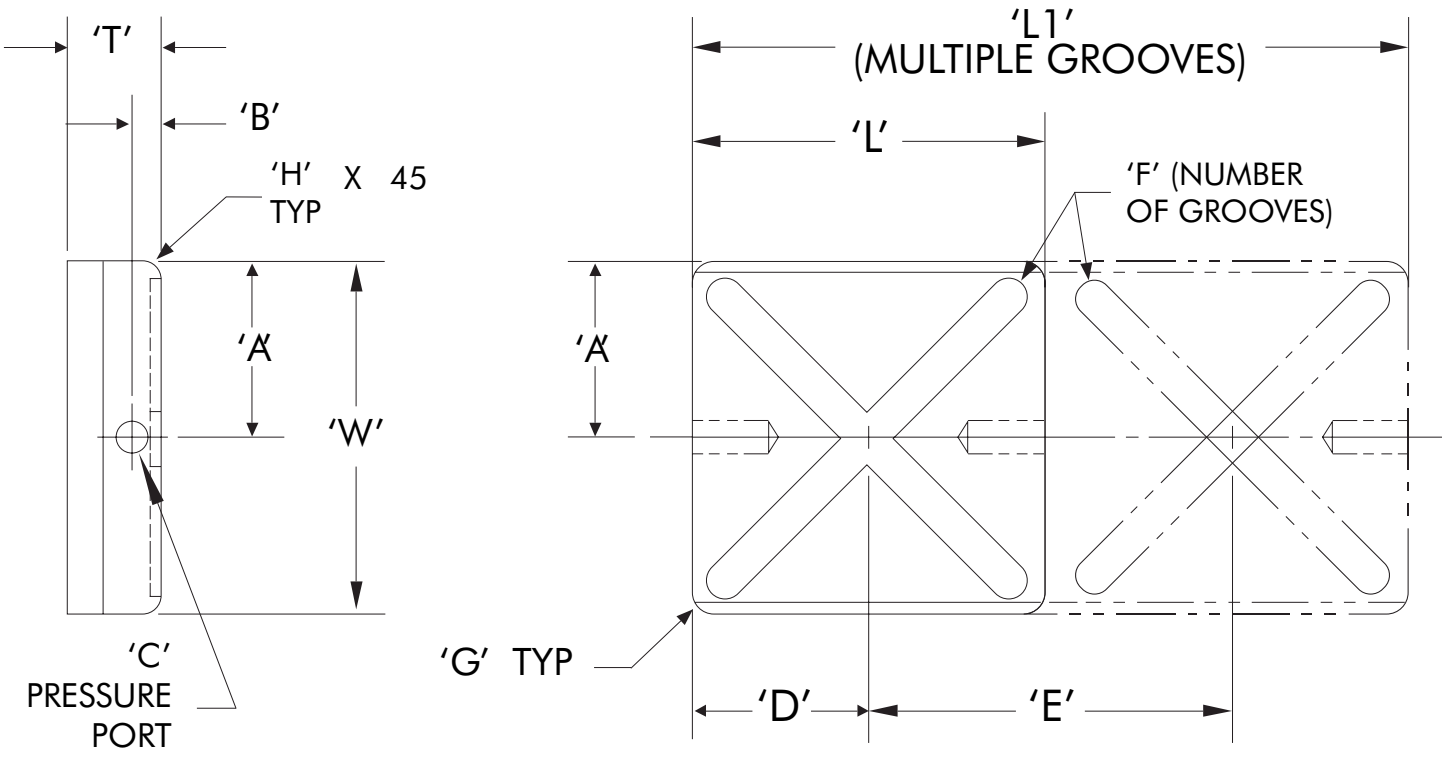
# BONDED BEARING DIMENSIONS

| NOMINAL BEARING WIDTH | PART NUMBER | DIMENSIONS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 'W' | 'L' | 'L1' | 'T' | 'A' | 'B' | 'C' TAP | 'D' | 'E' | 'F' | 'G' | 'H' |
| 12 | S17012110 | 12.0 | 12 | N/A | 10 | 6.00 | 3.8 | M3 X 0.5 | 6.00 | N/A | 1 | 2.5 | 1.25 |
| | S17012210 | | 24 | | | | | | 12.00 | | 1 | | |
| | S17012310 | | 36 | | | | | | 18.00 | | 1 | | |
| | S17012410 | | N/A | 48 | | | | | 12.00 | 24 | 2 | | |
| 15 | S17015110 | 15.0 | 15 | N/A | | 7.50 | | | 7.50 | N/A | 1 | | |
| | S17015210 | | 30 | | | | | | 15.00 | | 1 | | |
| | S17015310 | | 45 | | | | | | 22.50 | | 1 | | |
| | S17015410 | | N/A | 60 | | | | | 15.00 | 30 | 2 | | |
| 18 | S17018110 | 18.1 | 18.1 | N/A | | 9.05 | | | 9.05 | N/A | 1 | 3.175 | |
| | S17018210 | | 38.1 | | | | | | 19.05 | | 1 | | |
| | S17018310 | | 58.1 | | | | | | 29.05 | | 1 | | |
| | S17018410 | | N/A | 78.1 | | | | | 19.05 | 40 | 2 | | |
| 23 | S17023110 | 23.1 | 23.1 | N/A | | 11.55 | | | 11.55 | N/A | 1 | | |
| | S17023210 | | 48.1 | | | | | | 24.05 | | 1 | | |
| | S17023310 | | N/A | 73.1 | | | | | 17.80 | 37.5 | 2 | | |
| | S17023410 | | | 98.1 | | | | | 24.05 | 50 | 2 | | |
| 38 | S17038110 | 38.1 | 38.1 | N/A | | 19.05 | | | 19.05 | N/A | 1 | | |
| | S17038210 | | N/A | 78.1 | | | | | | 40 | 2 | | |
| | S17038312.5 | | | 118.1 | 12.5 | | 5.8 | | | | 3 | | 1.5 |
| | S17038412.5 | | | 158.1 | | | | | | | 4 | | |
| 48 | S17048112.5 | 48.1 | 48.1 | N/A | | 24.05 | 4 | M5 X 0.8 | 24.05 | N/A | 1 | | |
| | S17048212.5 | | N/A | 98.1 | | | | | | 50 | 2 | | |
| | S17048312.5 | | | 148.1 | | | | | | | 3 | | |
| | S17048412.5 | | | 198.1 | | | | | | | 4 | | |
| 72 | S17072115 | 71.7 | 71.7 | N/A | 15 | 35.85 | 6.5 | | 35.85 | N/A | 1 | | |
| | S17072215 | | N/A | 146.7 | | | | | | 75 | 2 | | |
| | S17072315 | | | 221.7 | | | | | | | 3 | | |
| | S17072415 | | | 296.7 | | | | | | | 4 | | |
| 97 | S17097115 | 96.9 | 96.9 | N/A | | 48.45 | | | 48.45 | N/A | 1 | | |
| | S17097215 | | N/A | 196.9 | | | | | | 100 | 2 | | |
| | S17097315 | | | 296.9 | | | | | | | 3 | | |
| | S17097415 | | | 396.9 | | | | | | | 4 | | |
| 122 | S170122119 | 121.9 | 121.9 | N/A | 19 | 60.95 | 7.5 | | 60.95 | N/A | 1 | | 1.75 |
| | S170122219 | | N/A | 246.9 | | | | | | 125 | 2 | | |
| | S170122319 | | | 371.9 | | | | | | | 3 | | |
| 147 | S170147119 | 146.9 | 146.9 | N/A | | 73.45 | | | 73.45 | N/A | 1 | | |
| | S170147219 | | N/A | 296.9 | | | | | | 150 | 2 | | |

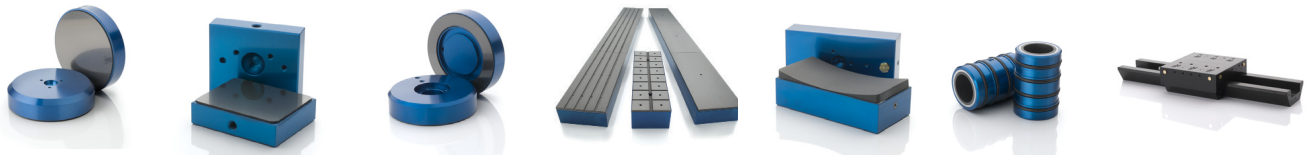
NEWWAY air bearings

# Porous Media® Air Bearing Solutions

## Bonded Bearings




## COMPLETE NEW WAY POROUS MEDIA® AIR BEARING PRODUCT LINE



Flat Round Air Bearings | Flat Rectangular Air Bearings | Vacuum Preloaded Air Bearings | Conveyor Air Bearings | Radial Air Bearings | Air Bushings | Air Sliders

NEWWAY

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