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## Types of Linear UniSlide Assemblies for

M ovement without Position Indication*
\(\left.\left.\left.$$
\begin{array}{|l|l|}\hline & \begin{array}{l}\text { Free Sliding, a linear } \\
\text { bearing.................. } 11\end{array} \\
\hline \text { bearing + lead screw.. } 12\end{array}
$$ \right\rvert\, $$
\begin{array}{l}\text { M odel D Rapid } \\
\text { Advance with limited } \\
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$$\right] \begin{array}{l}M odel H Rapid <br>
Advance, with unlimited <br>

fine adjustment..... 20\end{array}\right]\)| Left-Right Screw |
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Types of Linear UniSlide Assemblies for M ovement with Position Indication

| $-F^{9}=$ | Graduated Knob, <br> easy-to-read $\qquad$ .14 |
| :---: | :---: |
| $\cdots \cdots \cdots \frac{1}{1}$ | Scale/Vernier Screw <br> D rive $\qquad$ |
|  | M odel D Rapid Advance with Scale and Vernier..... 18 |
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## Actual Size Cross Sections of

## UniSlide Assemblies

## A15 SERIES



See pages 5 for dimensions

## A25 SERIES

See pages 5 for dimensions


Drive nut diameter will vary.

## A40 SERIES

See pages 6 for dimensions

## A60 SERIES

See pages 6 for dimensions


B90 SERIES
See pages 7 for dimensions


## Selecting the Right Size UniSlide

Load and slide size are major variables to consider when choosing your UniSlide. This page gives general guidelines on load handling for horizontal, vertical and cantilevered loads.

D etailed dimensional information for each series is provided on the following pages.

## Load Configurations







Theta
Horizontal


Theta
Vertical


Nominal load capacity for single $(X)$ and $Y$ or $Z$ axis

| Series | Load Normal ( $\left.\mathrm{L}_{\boldsymbol{N}}\right)^{*}$ |  | Load Thrust ( $\left.\mathrm{L}_{\mathrm{T}}\right)^{*}$ |  |
| :---: | :--- | :--- | :--- | :--- |
| A15 | $0-5 \mathrm{lbs}$. | $0-2.27 \mathrm{~kg}$. | $0-1 \mathrm{lbs}$. | $0-0.45 \mathrm{kgs}$. |
| A25 | $0-10 \mathrm{lbs}$. | $0-4.54 \mathrm{~kg}$. | $0-3 \mathrm{lbs}$. | $0-1.36 \mathrm{kgs}$. |
| A40 | $0-40 \mathrm{lbs}$. | $0-18.14 \mathrm{kgs}$. | $0-20 \mathrm{lbs} .{ }^{*}$ | $0-9.07 \mathrm{kgs}$. |
| A60 | $0-80 \mathrm{lbs}$. | $0-36.29 \mathrm{kgs}$. | $0-40 \mathrm{lbs} .{ }^{*}$ | $0-18.14 \mathrm{kgs}$. |
| B90 | $0-140 \mathrm{lbs}$. | $0-63.5 \mathrm{kgs}$. | $0-70 \mathrm{lbs}$. | $0-31.75 \mathrm{kgs}$. |

* Values are less than maximum; refer to the engineering specifications on page 10 for operational limits. \# 5 lbs max for Rapid Advance models.


## Load capacity for low deflection on the $X$ axis of $X Y$ and $X Y Z$ or other cantilever loads

| Series | Cantilever Side ( $\left.\mathrm{L}_{\mathrm{cs}}\right)^{*}$ | Cantilever Inline ( $\left.\mathrm{L}_{\mathrm{c})}\right)^{*}$ |
| :---: | :---: | :---: |
| A15 | $0-5 \mathrm{lb}-\mathrm{in}$ | $0-10 \mathrm{lb}-\mathrm{in}$ |
| A25 | $0-10 \mathrm{lb}-\mathrm{in}$ | $0-20 \mathrm{lb}-\mathrm{in}$ |
| A40 | $0-32 \mathrm{lb}-\mathrm{in}$ | $0-64 \mathrm{lb}-\mathrm{in}$ |
| A60 | $0-80 \mathrm{lb}-\mathrm{in}$ | $0-160 \mathrm{lb}-\mathrm{in}$ |
| B90 | $0-120 \mathrm{lb}-\mathrm{in}$ | $0-204 \mathrm{lb}-\mathrm{in}$ |

* Values are less than maximum; refer to the engineering specifications on page 10 for operational limits.


## Working With C antilever Loads in XY and XYZ

The $X$ axis carries the weight of the $Y$ axis, the $Z$ axis and the attached load. For good stability, the $X$ axis should be one model larger when the $Y$ axis length $(\mathrm{L})$ is longer than three times (3x) the width of the $X$.

Example 1: Two A4012B-S4 UniSlides would be suitable in an $X$ and $Y$ configuration. These A40 models are 4" wide and 12 " long.


## Common Dimensions for A15 and A25 UniSlides

Refer to UniSlide Price List for UniSlide M odel Numbers. See page 8 for lengths and weights.

## A15 Series



## Common Dimensions for A40 and A60 UniSlides

Refer to UniSlide Price List for UniSlide M odel N umbers. See page 8 for lengths and weights.

## A40 Series




32" DIA. CSK FOR 5/16" FLHD

|  | SLIDER LENGTH |  | M2 | M3 | M4 | T1 | T2 | T3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| S1 | STANDARD | 6.00" | 3.250" | 5.000" |  | 10-32 | 1/4-20 |  |
| S2 | OPTIONAL | 8.00" | 3.250" | 5.000" | 7.000" | 10-32 | 1/4-20 | 1/4-20 |

## Common Dimensions for B90 UniSlides

Refer to UniSlide Price List for UniSlide M odel N umbers. See page 8 for lengths and weights.

## B90 Series




| SLIDER LENGTH |  | M2 | M3 | T1 |
| :---: | :---: | :---: | :---: | :---: |
| T2 |  |  |  |  |
| STANDARD $9.00^{\prime \prime}$ | $5.000^{\prime \prime}$ | $7.000 "$ | $5 / 16-18$ | $1 / 4-20$ |
| OPTIONAL $12.00^{\prime \prime}$ | $5.000^{\prime \prime}$ | $10.0000^{\prime \prime}$ | $5 / 16-18$ | $1 / 4-20$ |

# UniSlide Basic Specifications <br> Model Numbers, Travel, Dimensions \& Weights By Series 

## A15 Series $1.5 "$ Wide

1.5" standard sider (S); 2" \& 3" optional

| UNISLIDE <br> M odel No. | Base Length (L) | Travel with Std. <br> 1.5" slider | Weight |
| :---: | :---: | :---: | :---: |
| A1503 | $3 \mathrm{in} / 7.62 \mathrm{~cm}$ | $1.5 \mathrm{in} / 3.81 \mathrm{~cm}$ | $500 / 0.14 \mathrm{~kg}$ |
| A1506 | $6 \mathrm{in} / 15.24 \mathrm{~cm}$ | $4.5 \mathrm{in} / 11.43 \mathrm{~cm}$ | $70 \mathrm{oz} / 0.20 \mathrm{~kg}$ |
| A 1509 | $9 \mathrm{in} / 22.86 \mathrm{~cm}$ | $7.5 \mathrm{in} / 19.05 \mathrm{~cm}$ | 10 oz/ 0.28 kg |
| A1512 | $12 \mathrm{in} / 30.48 \mathrm{~cm}$ | $10.5 \mathrm{in} / 26.67 \mathrm{~cm}$ | 13 oz/0.37 kg |
| A1515 | $15 \mathrm{in} / 38.10 \mathrm{~cm}$ | $13.5 \mathrm{in} / 34.29 \mathrm{~cm}$ | $1 \mathrm{lb} / 0.45 \mathrm{~kg}$ |
| A1518 | $18 \mathrm{in} / 45.72 \mathrm{~cm}$ | $16.5 \mathrm{in} / 41.91 \mathrm{~cm}$ | $1 \mathrm{lb} 30 \mathrm{z} / 0.54 \mathrm{~kg}$ |
| A1521 | $21 \mathrm{in} / 53.34 \mathrm{~cm}$ | $19.5 \mathrm{in} / 49.53 \mathrm{~cm}$ | 1 lb 7 oz/ 0.65 kg |
| $27 \mathrm{in} / 68.58 \mathrm{~cm}$ max base length available in $3 \mathrm{in} / 7.62 \mathrm{~cm}$ incremnets. |  |  |  |

## A25 Series $2.5^{\prime \prime}$ Wide

## 2.5" standard sider (S); 3" \& 4" optional

| UniSlide <br> Model No. | Base Length (L) | Travel with Std. <br> $\mathbf{2 . 5 " ~ s l i d e r ~}$ | Weight |
| :---: | :---: | :---: | :---: |
| A2504 | $4 \mathrm{in} / 10.16 \mathrm{~cm}$ | $1.5 \mathrm{in} / 3.81 \mathrm{~cm}$ | $1 \mathrm{lb} 2 \mathrm{oz} / 0.51 \mathrm{~kg}$ |
| A2506 | $6 \mathrm{in} / 15.24 \mathrm{~cm}$ | $3.5 \mathrm{in} / 8.89 \mathrm{~cm}$ | $1 \mathrm{lb} 60 \mathrm{oz} / 0.62 \mathrm{~kg}$ |
| A2509 | $9 \mathrm{in} / 22.86 \mathrm{~cm}$ | $6.5 \mathrm{in} / 16.51 \mathrm{~cm}$ | $1 \mathrm{lb} 11 \mathrm{oz} / 0.77 \mathrm{~kg}$ |
| A2512 | $12 \mathrm{in} / 30.48 \mathrm{~cm}$ | $9.5 \mathrm{in} / 24.13 \mathrm{~cm}$ | $2 \mathrm{lb} 1 \mathrm{oz} / 0.94 \mathrm{~kg}$ |
| A2515 | $15 \mathrm{in} / 38.10 \mathrm{~cm}$ | $12.5 \mathrm{in} / 31.75 \mathrm{~cm}$ | 2 lb 7 oz/1.11 kg |
| A2518 | $18 \mathrm{in} / 45.72 \mathrm{~cm}$ | $15.5 \mathrm{in} / 39.37 \mathrm{~cm}$ | $2 \mathrm{lb} 7 \mathrm{oz} / 1.11 \mathrm{~kg}$ |
| A2521 | 21 in/53.34 cm | $18.5 \mathrm{in} / 46.99 \mathrm{~cm}$ | $2 \mathrm{lb} 12 \mathrm{oz} / 1.25 \mathrm{~kg}$ |
| $36 \mathrm{in} / 91.44 \mathrm{~cm}$ max base Ingth available in $3 \mathrm{in} / 7.62 \mathrm{~cm}$ increments. |  |  |  |

## A40 Series 4" Wide

4" standard sider (S); 6" optional

| UniSlide Model No. | Base Length (L) | Travel with Std. 4" sider | Weight |
| :---: | :---: | :---: | :---: |
| A4006 | $6 \mathrm{in} / 15.24 \mathrm{~cm}$ | $2 \mathrm{in} / 5.08 \mathrm{~cm}$ | $2 \mathrm{lb} 6 \mathrm{oz} / 1.08 \mathrm{~kg}$ |
| A4009 | $9 \mathrm{in} / 22.86 \mathrm{~cm}$ | $5 \mathrm{in} / 12.70 \mathrm{~cm}$ | $3 \mathrm{lb} 302 / 1.45 \mathrm{~kg}$ |
| A4012 | $12 \mathrm{in} / 30.48 \mathrm{~cm}$ | $8 \mathrm{in} / 20.32 \mathrm{~cm}$ | $4 \mathrm{lb} 202 / 1.87 \mathrm{~kg}$ |
| A4015 | $15 \mathrm{in} / 38.10 \mathrm{~cm}$ | $11 \mathrm{in} / 27.94 \mathrm{~cm}$ | $5 \mathrm{lb} 102 / 2.30 \mathrm{~kg}$ |
| A4018 | $18 \mathrm{in} / 45.72 \mathrm{~cm}$ | $14 \mathrm{in} / 35.56 \mathrm{~cm}$ | $6 \mathrm{lb} / 2.72 \mathrm{~kg}$ |
| A4021 | $21 \mathrm{in} / 53.34 \mathrm{~cm}$ | $17 \mathrm{in} / 43.18 \mathrm{~cm}$ | $6 \mathrm{lb} 150 \mathrm{z} / 3.15 \mathrm{~kg}$ |
| A4024 | $24 \mathrm{in} / 60.96 \mathrm{~cm}$ | $20 \mathrm{in} / 50.80 \mathrm{~cm}$ | $7 \mathrm{lb} 802 / 3.40 \mathrm{~kg}$ |
| A4027 | $27 \mathrm{in} / 68.58 \mathrm{~cm}$ | $23 \mathrm{in} / 58.42 \mathrm{~cm}$ | $8 \mathrm{lb} 602 / 3.80 \mathrm{~kg}$ |
| A4030 | $30 \mathrm{in} / 76.2 \mathrm{~cm}$ | $26 \mathrm{in} / 66.04 \mathrm{~cm}$ | $9 \mathrm{lb} 90 \mathrm{z} / 4.34 \mathrm{~kg}$ |
| $93 \mathrm{in} / 236.22 \mathrm{~cm}$ max base length available in $3 \mathrm{in} / 7.62 \mathrm{~cm}$ increments |  |  |  |

## Lead Screws

## A Few Words About Lead Screws

The lead screws in our UniSlide Assemblies are formed by rolling through precision dies, rather than cut on a screw machine. This results in higher quality and accuracy. M ost of our lead screws are 303 stainless steel. W 2 and P5 lead screws are electroless nickel plated cold rolled steel. N onmagnetic brass lead screws are availableplease refer to the Engineering D ata on page 10.

## Lead Screw D iameters

| Series | Type Code | Diameter |
| :--- | :--- | :---: |
| A15 \& A25 | C, B, P40, P20 | $1 / 4^{\prime \prime}$ |
| A15 \& A25 | K1, K2, Q 1, Q 2 | 7 mm |
| A25 | W 1, P10 | $3 / 8^{\prime \prime}$ |
| A40 | C, B, W 1, W 2, P40, P20, P10, P5 | $3 / 8^{\prime \prime}$ |
| A40 | K1, K2, Q 1, Q 2 | 10 mm |
| A60 \& B90 | C, B, W 1, W 2, P40, P20, P10, P5 | $1 / 2 \prime$ |
| A60 \& B90 | K1, K2, Q1, Q 2 | 14 mm |

## Accuracy

The linear accuracy of standard lead screws is $0.007{ }^{\prime \prime} / 10$ " of screw motion. The linear accuracy of precision lead screws is $0.0015 " / 10$ " or $0.033 \mathrm{~mm} / 20$ cm of screw motion, and is checked to not exceed this value.

## Preload

A15 and A25 lead screws use pre-loaded Delrin® thrust bearings except A25 W 1, and P10, which have pre-loaded ball bearings. A40, A60 and B90 lead screws have pre-loaded ball bearings.

## Backdriving

Because of the steep helix angle of the threads in W 2 and P5 lead screws, they may backdrive (coast back down) when supporting a load traversing vertical or, if horizontal and a linear thrust load is applied, the slider will move away until the thrust has been equalized. If you want the slide to stay where you put it, be aware of this characteristic and design accordingly.

Lead Screw Code Letters for Series Numbers
U se these code letters when constructing model numbers as shown on product pages 11 through 21

| Series | Turns per inch English Thread | Advance per revolution | Screw M otion type code letter for standard accuracy | Scale and Vernier Type code letter | G raduated Knob code letter for precision accuracy | Divisions on G raduated Knob |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A15, A25, A40, A60, B90 | 40 | 0.025" | C | CE* | P40 | 25 |
| A15, A25, A40, A60, B90 | 20 | 0.050" | B | BE* | P20 | 50 |
| A25, A40, A60, B90 | 10 | 0.100 " | W 1 | W 1E* | P10 | 100 |
| A40, A60, B90 | 5 | 0.200" | W 2 | W 2E* | P5 | 200 |
| Turns per cm Metric Thread |  |  |  |  |  |  |
| A15, A25, A40, A60, B90 | 10 | 1 mm | K1 | K1M* | Q1 | 100 |
| A15, A25, A40, A60, B90 | 5 | 2 mm | K2 | K2M * | Q2 | 200 |

[^1]
## Engineering Data

## D esign Advantages

UniSlide Assemblies are the fast, versatile, economical way to put motion into your product or research project. They provide:

- A compact design that delivers maximum travel in the shortest amount of work space
- A simple, reliable design thats been time-tested over three decades in hundreds of thousands of applications
- A modular design that allows easy construction of multi-axis systems
- A broad range of standard lengths, sizes and features to insure compatibility with most requirements
- Customizing to accommodate special circumstances or uses


## Construction

UniSlides begin as an extrusion of aluminum alloy with a straightness tolerance of half the normal commercial tolerance. Subsequent machining and lapping operations produce a very high degree of straightness and parallelism in the dovetail ways.

## B-Type Base

Available For increased base stiffness, several of our $A$-series bases - A25, A40 and A60 - are also available in the deeper B-series style shown on page 41. This extra stiffness is particularly useful when the full length of the base cannot be adequately supported. Typical stiffness of the Bseries base is two to four times greater than the A-series. Refer to the price sheet for current prices.

## Deviations from Straightness

There are three types of deviations from straightness than can occur: $\mathrm{X}, \mathrm{Y}$ and Z. Picture a UniSlide resting base down on a flat surface, with its linear motion in the X or longitudinal direction. A departure from straightress in the upward direction-the Z axis-is designated as the bow error. A deviation in the horizontal direction-the Y axis-is horizontal run out, often referred to simply as run out And a twist in the direction of the slide-the X axis-is called twist.

The upper limits for these deviations from straightness, as determined by our manufacturing processes, are:

Bow* 0.002" per foot
Run Out 0.001" per foot
Twist 1 milliradian per foot

* As installed, bow can be affected by the degree of flatness of the supporting surface and the
relative tension of the mounting screws.


## Wear Resistance

The standard aluminum alloy dovetail base and low friction polymer pads of the slider provide excellent performance as a bearing material combination. Unlike ball screw slide mechanisms, no lubrication is required. Under light to moderate loads, sideways play caused by wear during the first 30,000 cycles of operation will be approximately 0.00015 inches. Wear after that is reduced, to approximately 0.00005 inches over the next 50,000 cycles. Sliders are equipped with adjustment screws to compensate for wear, if necessary.

For harsh environments and/or a higher number of cycles, UniSlide Assemblies with hard coat anodized ways are available. For clean room environments we recommend electroless nickel plating.

## Magnetic Properties

UniSlide base and slider assemblies are made from nonmagnetic aluminum alloy. Most lead screws are 303 stainless steel and considered to be antimagnetic to a high degree. W2 and P5 lead screws are cold rolled steel electroless nickel plated. We can supply fasteners and lead screws-in limited pitch selections-in brass for maximum nonmagnetic properties. Brass lead screws are only offered in standard grade accuracy. Some UniSlide models may contain small magnetic parts for which no nonmagnetic replacement is available. For further information please contact the factory.

## Base and Slider Lengths

Standard and maximum base lengths for all models are listed in the specifications for each model. Custom base lengths are available on special order. Slider lengths available are only those listed in the model specifications.

## Vacuum Applications

With modifications, UniSlides can be used in vacuum environments. To create a vacuum-capable UniSlide, we need to know the operating temperature of the environment and the vacuum (in Torr) that the slide will be subjected to. Necessary substitutions of materials will be based on this information.

## Backdriving

UniSlides with W2 or P5 lead screws can backdrive under certain conditions. See page 9 for additional details.

## Permissible Loading

The size of the slide selected for a given application will depend on user requirements. The chart below provides maximum dynamic load capacities for each model for three different load positions. Page 4 provides more information.

|  | Horizontal <br> Central $\mathbf{L}_{\mathbf{N}}$ |  | Cantilevered <br> Load $\mathrm{L}_{\text {cs }}$ |  | Vertical <br> Central $\mathrm{L}_{\mathbf{T}}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Series | $\mathbf{l b}$ | $\mathbf{k g}$ | $\mathrm{lb}-\mathrm{in}$ | kg-cm | $\mathbf{l b}$ | $\mathbf{k g}$ |
| A15 | 15 | 6.8 | 20 | 23 | 10 | 4.5 |
| A25 | 30 | 13.6 | 40 | 46 | $10^{*}$ | $4.5^{*}$ |
| A40 | 100 | 45.5 | 130 | 150 | 50 | 22.7 |
| A60 | 240 | 109.0 | 320 | 369 | 100 | 45.5 |
| B90 | 400 | 182.0 | 480 | 550 | 100 | 45.5 |

*A25 Series with W1 or P10 leadsgrews: LT $=$
30 lbs .13 .5 kg . Static
loads are
twice the dynamic load values given above.

## Up, Down, Left and Right

The reference position for linear UniSlide Assemblies is with the base down, the slider up, and the knob, if any, facing the user.

## Standard Accessory Mounting Positions

The control lever for Rapid Advance units is on the right hand side. Printed and engraved scales are on the lett side as shown in the drawings and photos in this catalog. Scale numbering always progresses toward the knob end of the uniti.i.e., the largest numbers on the scale are closest to the knob. Control levers, top plates, thumbscrew locks and verniers can be mounted on the alternate side on special request. If requested, the scale can be mounted on the right side of the UniSlide, with the largest numbers going away from the operator. For models with the base mounting holes located off the center line, holes begin at the bearing block end with the first hole to the right of the lead screw. See Common Dimensions, pages 5-7.

## Alternate Materials

Some Unislide components can be special ordered to be made from other than standard materials. Drive nuts are available in brass, oilimpregnated bronze, and, for high temperature or radiation applications, in Vespel. Bearings can be manufactured from Delrin. Brass lead screws are available in a limited pitch selection.

## Free Sliding UniSlides

## Available 0 ptions (se pp 22-23)

- Black anodizing on all surfaces
- H ard anodized or electroless nickel plated
- Left and right slider locks
- Way covers- not available on A15 Series
- Traveling Slider Lock

These are the most basic assemblies. The slider operates manually in the linear dovetail bearing-they have no lead screw. M odels are available to handle dynamic horizontal loads up to 400 pounds and horizontal cantilevered loads to 480 pound-inches.

These simple slides are good choices for applications where exact positional accuracy is not a major consideration.

The slide can be moved by hand, or by hydraulic or pneumatic actuators, and the dovetail slide functions as a precision guide for linear thrusters.

Free sliding UniSlides offer excellent economy, good load handling ability, and the quality that all Velmex slides are noted for. NOTE: These units are not recommended for vertically mounted applications.

## Total Travel $=$ dovetail length $(L)-$ slider length $(S)$



Four Series of Free Sliding UniSlides

## Order Informations

## 0 ptions

Z ard Anodize Base
(hard-coat and dyed black)


D ovetail and Slider Lengths by Series

| Series | D ovetail Base Length (L) | Slider Length (S) |
| :---: | :---: | :---: |
| A15 | $3^{\prime \prime}$ to $27^{\prime \prime} \mathrm{L}$ | $1.5^{\prime \prime}$ std., $2.0^{\prime \prime}$ and $3.0^{\prime \prime}$ optional |
| $A 25$ | $4^{\prime \prime}$ to $36^{\prime \prime} \mathrm{L}$ | $2.5^{\prime \prime}$ std., $3.0^{\prime \prime}$ and $4.0^{\prime \prime}$ optional |
| A40 | $6^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $4.0^{\prime \prime}$ std., $6.0^{\prime \prime}$ optional |
| A60 | $9^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $6.0^{\prime \prime}$ std., $8.0^{\prime \prime}$ optional |
| B90 | $12^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $9.0^{\prime \prime}$ std., $12.0^{\prime \prime}$ optional |

Options Available
BK Black Anodized (all surfaces)
SLR Slider Lock on right side, S must be greater than $\mathrm{L} / 2$ (S>-/2)
SLL Slider Lock on left side, S must be greater than $\mathrm{L} / 2$ (S>1/2)
TSL Traveling Slider Lock
WC Way Covers (N ot available on A15 Series nor available in combination with SLL, SLR or TSL)

This series of UniSlides uses a standard accuracy lead screw to control the position of the slider. Features include countersunk mounting holes in the dovetail base, large, easily-grasped knobs, and high resolution positioning accuracy. M odels are available to handle up to 400 pounds of horizontal load.

## Available 0 ptions (æe pp 22-23)

- Inch or metric lead screws
- Black, hard anodized or electroless nickel plated
- Left and right slider locks
- Thumb screw lead screw lock
- Traveling Slider Lock
- Way covers - not available on A15 Series
- Revolution counter

See pages 5 through 10 for dimensions and technical data. See separate Price List for available M oded Numbers.

Total Travel $=$ dovetail length $(L)-$ slider length $(S)$

## Knobs



Ordering Information
Available Lead Screws

| Inch Lead Screw | Advance/Rev |
| :---: | :---: |
| C | $0.025^{\prime \prime}$ |
| B | $0.050^{\prime \prime}$ |
| W 1* | $0.100^{\prime \prime}$ |
| W 2* | $0.200^{\prime \prime}$ |
| M etric Lead Screw | Advance/Rev |
| K1 | 1 mm |
| K2 | 2 mm |

*N ot available on A15 Series


Options Available
BK Black Anodized (all surfaces)
TL Thumbscrew-on-leadscrew lock
SLR Slider Lock on right side, S must be greater than $\mathrm{L} / 2(\mathrm{~S} \times \mathrm{L} / 2)$
SLL Slider Lock on left side, S must be greater than $\mathrm{L} / 2(\mathrm{~S} \times \mathrm{L} / 2)$
TSL Traveling Slider Lock
WC Way Covers (N ot available on A15 Series nor available in combination with SLL, SLR or TSL)
RC Revolution Counter (For W 1 or K 1 Lead Screws)


D ovetail and Slider Lengths by Series

| Series | D ovetail Base Length (L) | Slider Length (S) |
| :---: | :---: | :---: |
| A15 | $3^{\prime \prime}$ to $27^{\prime \prime} \mathrm{L}$ | $1.5^{\prime \prime}$ std., $2.0^{\prime \prime}$ and $3.0^{\prime \prime}$ optional |
| A25 | $4^{\prime \prime}$ to $36^{\prime \prime} \mathrm{L}$ | $2.5^{\prime \prime}$ std., $3.0^{\prime \prime}$ and $4.0^{\prime \prime}$ optional |
| A40 | $6^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $4.0^{\prime \prime}$ std., $6.0^{\prime \prime}$ optional |
| A60 | $9^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $6.0^{\prime \prime}$ std., $8.0^{\prime \prime}$ optional |
| B90 | $12^{\prime \prime}$ to $93^{\prime \prime} \mathrm{L}$ | $9.0^{\prime \prime}$ std., $12.0^{\prime \prime}$ optional |


2.75" DIA.

## Graduated Knob UniSlides

These highly precise UniSlides provide readout of position to 0.001 " or 0.01 mm , depending on mode, and feature lead screw accuracy of $0.0015^{\prime \prime} / 10^{\prime \prime}$ or $0.033 \mathrm{~mm} / 20 \mathrm{~cm}$ or better. The screen printed scales have 0.025 " or 0.1 mm increments, while the engraved drum dials or knobs are graduated in $0.001^{\prime \prime}$ or 0.01 mm . All models except the A15 include a tension adjustment screw in the lead screw nut to minimize the already very small backlash.

All of the standard features are here too, of course: countersunk mounting holes in the dovetail base plus fixture mounting holes in the slider, polymer pads to reduce friction, load handling up to 400 pounds, and that rugged, durable Velmex quality you can count on cycle after cycle.

See pages 5 through 10 for dimensions and technical data. See separate Price List for available lengths and M odel N umbers.

## Available 0 ptions (æpp 22-23)

- Inch or metric lead screws
- Black, hard anodized or electroless nickel plated
except the scale cannot be anodized
- Left and right slider locks
- Thumb screw lead screw lock
- Traveling Slider Lock
- Revolution counter

Total Travel $=$ dovetail length $(L)-$ slider length $(S)$


## Knobs


$0.47{ }^{\prime \prime}$

## Ordering Information

Lead Screws and Knobs. Lead Accuracy within 0.0015 "/10" ( $0.033 \mathrm{~mm} / 20 \mathrm{~cm}$ )

| Inch Lead Screw | Advance/Rev | Divisions on Knob |
| :---: | :---: | :---: |
| P40 | $0.025^{\prime \prime}$ | $25\left(0.001{ }^{\prime \prime} / \mathrm{div}.\right)$ |
| P20 | $0.050^{\prime \prime}$ | $50\left(0.001{ }^{\prime \prime} / \mathrm{div}.\right)$ |
| P10* | $0.100^{\prime \prime}$ | $100\left(0.001^{\prime \prime} / \mathrm{div}.\right)$ |
| P5* | $0.200^{\prime \prime}$ | $200\left(0.001^{\prime \prime} / \mathrm{div}.\right)$ |
| Metric Lead Screw | Advance/Rev | Divisions on Knob |
| Q1 | 1 mm | $100(0.01 \mathrm{~mm} /$ div. $)$ |
| Q2 | 2 mm | $200(0.01 \mathrm{~mm} /$ div. $)$ |

*N ot available on A15 Series

## Options

Z H ard Anodize Base
(hard-coat and dyed black) N Electroless N ickel Plate
(

A15, A25, A40 with P5, P10, Q1, Q2 Lead Screws


## Scale/Vernier Screw Drive UniSlides

This model UniSlide adds a precision engraved scale and vernier with standard accuracy lead screw....ideal for applications where position must be known accurately. Slider position can be read to 0.001 " or 0.05 mm . The vernier position on the slider is offset to allow placement of a Y -axis cross slide without obscuring the view of the lower unit.

N ote that the B90 series is not available in this model.

This Series of UniSlides is one of our most popular. In addition to the versatility that the scale and vernier design delivers, these also include standard features like the rugged dovetail base and slider, permanent lubrication and polymer slider pads, convenient mounting holes in the base and in the slider, and a variety of options and accessories.

Available 0 ptions (æepp 22-23)

- Inch or metric lead screws
- H ard anodized or electroless nickel plated
- Black anodizing on all surfaces
- Left and right slider locks
- Thumb screw lead screw lock

For Rapid Advance Scale and Vernier M odels, see pp 18-21.

Total Travel $=$ dovetail length $(L)-$ slider length $(S)$

See pages 5 through 10 for dimensions and technical data. See separate Price


## Knobs



A40


Ordering Information
Lead Screws

| Inch Lead Screw | Advance/Rev | Scale and Vernier |
| :---: | :---: | :---: |
| CE | $0.025^{\prime \prime}$ |  |
| BE | $0.050^{\prime \prime}$ | All units. |
| W1E* | $0.100^{\prime \prime}$ | scale $=0.025^{\prime \prime} /$ div. |
| W2E* | $0.200^{\prime \prime}$ | vernier $=0.001{ }^{\prime \prime}$ resolution. |
| Metric Lead Screw | Advance/Rev | Scale and Vernier |
| K1M | 1 mm | scale $=1 \mathrm{~mm} /$ div. |
| K2M | 2 mm | vernier $=0.05 \mathrm{~mm}$ resolution |

*N ot available on A15 Series

## Options Available

BK Black Anodized (all surfaces)
TL Thumbscrew-on-leadscrew lock
SLR Slider Lock on right side, S must be greater than $\mathrm{L} / 2(\mathrm{~S}>\mathrm{L} / 2)$
SLL Slider Lock on left side, S must be greater than $\mathrm{L} / 2(\mathrm{~S}>\mathrm{L} / 2)$
RC Revolution Counter (For W 1 or K1 Lead Screws)


D ovetail and Slider Lengths by Series

| Series | D ovetail Base Length (L) | Slider Length (S) |
| :---: | :---: | :---: |
| A15 | $3^{\prime \prime}$ to $18^{\prime \prime} \mathrm{L}$ | $1.5^{\prime \prime}$ std., $3.0^{\prime \prime}$ optional |
| A25 | $4^{\prime \prime}$ to $18^{\prime \prime} \mathrm{L}$ | $2.5^{\prime \prime}$ std., $4.0^{\prime \prime}$ optional |
| A40 | $6^{\prime \prime}$ to $21^{\prime \prime} \mathrm{L}$ | $4.0^{\prime \prime}$ std., $6.0^{\prime \prime}$ optional |
| A60 | $9^{\prime \prime}$ to $27^{\prime \prime} \mathrm{L}$ | $6.0^{\prime \prime}$ std., $8.0^{\prime \prime}$ optional |



M odd A4009BE-S4 Screw Drive UniSlide with Scale and Vernier

## Full Travel, Limited Fine Adjust

## Rapid Advance UniSlides

These UniSlides save you time. They are the right choice if you'll be frequently repositioning the slider. Rapid Advance models allows you to quickly reposition the slider by uncoupling the drive system. A15, A25 and A40 Series sizes are available, and three models within each Series offer a choice of movement alone or measured movement.

O peration is quick and simple. Just move the control lever to the "D isengage" position, move the slider manually to the desired position, move the control lever into the Engage position, and use the knob to fine adjust slider position.

D-prefix units provide about $1 / 2^{\prime \prime}$ of
See pages 5 through 10 for dimensions and technical data. See separate Price List for available M odel lengths.

## Model D

fine adjust control with 0.025 " of advance per turn. M oving the control lever secures the slider to the central mandrel, which is a $1 / 4$ " stainless steel rod with a 6-40 threaded insert in the end of the mandrel. Turning the knob rotates a short, 6-40 threaded screw into this threaded insert.
$D E$ and $D M$ versions work on the same principle as the D-M odel, and add an engraved scale and vernier in either English or metric calibration.

GE or GM M odels provides mea-

Available Options (se pp 22-23)

- Black anodizing on all surfaces except micrometer, and locking lever.
sured movement and a moveable zero reference point. They feature an English or M etric micrometer coupled to a $1 / 4$ " 303 stainless steel rod. Rotating the micrometer produces the linear motion of the slider. M icrometer resolution is $0.001^{\prime \prime}$ or 0.01 mm . N OTE: These units are not recommended for vertically mounted applications.

Total Travel $=$ dovetail length $(L) —$ slider length $(S)$


When lever is in the "D isengaged" position Slider can be pushed end to end by hand. When lever is in the "Engaged" position fine adjustment is possible by the knob. Caution: Payload will drop if slide is disengaged when vertical. M ax. thrust load is 5 lbs .

## Vernier Top Plate Thickness

A15 = ${ }^{3 / 16}{ }_{16}$
A25 $=1 /{ }_{4}{ }^{16}$
A40 $=1 / 4$

Model GM


## Knobs

A15
Ordering Information
M ode types fine adjust lengths, and resolution


D ovetail and Slider Lengths by Series


| Series | D ovetail Base Length (L) | Slider Length (S) |
| :---: | :---: | :---: |
| A15 | $3^{\prime \prime}$ to $18^{\prime \prime} \mathrm{L}$ | $1.5^{\prime \prime}$ std., $3.0^{\prime \prime}$ optional |
| A25 | $4^{\prime \prime}$ to $18^{\prime \prime} \mathrm{L}$ | $2.5{ }^{\prime \prime}$ std., $4.0^{\prime \prime}$ optional |
| A40 | $6^{\prime \prime}$ to $21^{\prime \prime} \mathrm{L}$ | $4.0^{\prime \prime}$ std., $6.0^{\prime \prime}$ optional |



Front to back: M odel DE, M ode GM , and M odel D

## Full Travel, Unlimited Fine Adjust Rapid Advance UniSlides

These UniSlides save you time. They are the right choice if you'll be frequently repositioning the slider. Rapid Advance models allows you to quickly reposition the slider by uncoupling the drive system. A25, A40 and A60 Series sizes are available, and two models within each Series offer a choice of movement alone or measured movement.

O peration is quick and simple. Just move the control lever to the Disengage position, move the slider manually to the desired position, move the control lever into the Engage position, and use the knob to fine adjust slider position.

H-prefix units provide fine adjust control over the full travel length, using
a standard lead screw. Fine motion is accomplished using a unique system that applies a brake on two threaded brass pinions secured in a Delrin ${ }^{\circledR}$ carrier and delivers a smooth, quiet linear motion.

HE and HM versions add an engraved scale and vernier to the H model above, and feature measured movement and a fixed zero reference point.

## Available 0 ptions (se pp 22-23)

- Black anodizing on all surfaces except micrometer

NOTE: These units are NOT recommended for vertically mounted applications. A60 Series load capacity is limited to 50 pounds horizontal or 12 pounds vertical.

## Top Plate or Vernier Thickness

A25 $=1 /{ }_{4}{ }^{\prime \prime}$
A40 $=1 /{ }_{4}{ }^{\prime \prime}$
$\mathrm{A} 60=1 /{ }^{\prime \prime}$

## Total Travel $=$ dovetail length $(L)-$ slider length $(S)$



W hen lever is in the "D isengaged" position Slider can be pushed end to end by hand. When lever is in the "Engaged" position fine adjustment is possible by the knob. Caution: Payload will drop if slide is disengaged when vertical. M ax. thrust load is 5 lbs .

## Knobs



## Ordering Information

M odel types, advance/rev., and resolution

| M odel | Calibration | Advance/Rev | Divisions (Resolution) |
| :---: | :---: | :---: | :---: |
| H 20 | N one | $0.0500^{\prime \prime}$ | N one |
| HE | Inch | $0.0500^{\prime \prime}$ | scale $=0.025^{\prime \prime} /$ div. <br> vernier $=$ resolution $0.001 "$ |
| H 1 | N one | 1.0 mm | N one |
| H M | M etric | 1.0 mm | scale $=1.0 \mathrm{~mm} /$ div. <br> vernier $=0.05$ resolution |



| Series | Dovetail Base Length (L) | Slider Length (S) |
| :---: | :---: | :---: |
| A25 | $4^{\prime \prime}$ to $18^{\prime \prime}$ L | 2.5" std., $4.0^{\prime \prime}$ optional |
| A40 | $6^{\prime \prime}$ to $21^{\prime \prime}$ L | $4.0^{\prime \prime}$ std., $6.0^{\prime \prime}$ optional |
| A60 | $9^{\prime \prime}$ to $27^{\prime \prime}$ L | $6.0^{\prime \prime}$ std., $8.0^{\prime \prime}$ optional |

## Lead Screws.

A25 Series: H 20 is $1 / 4$ dia.; H 1 is 7 mm dia.
A40 Series: H2O is $3 / \mathrm{s}^{\prime \prime}$ dia.; H 1 is 10 mm dia.
A60 Series: H 20 is $3 / 8^{\prime \prime}$ dia.; H 1 is 10 mm dia.


Two Series A25 Rapid Advance M odels. M ode H , in background, and M odel H M in foreground.

## UniSlide Options

Velmex offers the most versatile slide of any manufacturer in N orth America. O ne of the reasons for that amazing versatility is the range of options and
accessories that can be added to your UniSlide, allowing you to customize it to your exact application. H ere are some of the options available....

## Thumbscrew-on-Lead-Screw Lock (-TL)

This is the most common lock, and is an easy method for fixing the position of the slider. This uses a simple thumb screw to secure the lead screw near the end bearing block. N ote that the overall length of the UniSlide is increased.
Series A15 end block (W) is $0.78^{\prime \prime}$;
Series A25 and A40 end block is 1.00 ".

Series A60 and B90 have a $13 / 8^{\prime \prime}$ thick end block. This lock type is not available on Rapid Advance Style UniSlides. To order a UniSlide with Lead Screw Lock, add "-TL" to the end of the model number.

## Traveling Slider Lock (-TSL)

This lock attaches to the slider; the thumb screw presses against the outside edge of the base. It can be mounted for use on right or left side of the base. The lock is available in all Series but

## Slider Lock (-SLR or -SLL)

For short units, if slider length S is greater than $1 / 2$ the base length $L$, a Slider Lock is available. This is a thumbscrew located at the midpoint of the base length. The screw tightens against a $90^{\circ}$ step milled into the side of the slider, parallel to the side,
limited to Free Sliding, Screw M otion, Graduated Knob. Slider height is increased by $3 / 16^{\prime \prime}$ Series A15, $1 / 4^{\prime \prime}$ Series A25, and $3 / 8$ " Series A40 and A60.

## Way Covers (-WC)

Way covers are a convenient method to protect the slider and dovetail from dust, dirt and grit that may be in the working environment. These consist of Estane bellows and attaching plates, and are available for Free Sliding, Screw Drive and Graduated Knob (requires P10 or Q 1 screw and Revolution Counter) UniSlides. Way covers are not available for A15 Series.

Adding way covers will increase slider height and reduce the travel of a standard UniSlide. See the graph right for travel with way covers. When building an XY system with way covers, a special, thicker XY adapter plate is necessary.
preventing movement of the slider. To order lock on the right side, append "-SLR" to the model number. For a lock on the left side, add "-SLL". Se page 10, Engineering D ata, to identify right and left sides.


Thumbscrew Screw Lock, SeriesA25


Traveling Slider Lock, Series A40

Slider Lock, SeriesA40


| Series | H | W |
| :---: | :---: | :---: |
| A25 | $0.5^{\prime \prime}$ | $4.5^{\prime \prime}$ |
| A40 | $0.75^{\prime \prime}$ | $7.0^{\prime \prime}$ |
| A60 | $1.0^{\prime \prime}$ | $8.25^{\prime \prime}$ |
| B90 | $0.62^{\prime \prime}$ | $11.50^{\prime \prime}$ |



Optional Finishes (-BK, Z, N)

Standard UniSlide components have a brushed aluminum finish; aluminum knobs have a clear anodized finish.

The aluminum components can be anodized black, as shown here. To order black anodizing, add "-BK" to the end of the model number.

In addition, the dovetail base can be hard coat anodized and dyed black.

This increases the surface hardness to Rockwell 70C. To order, add " $Z$ " to the beginning of the mode number. If all remaining parts are to be black, add "BK" as well.

UniSlides are also available with all aluminum parts plated with electroless nickel. To order, add " N " to the beginning of the model number.


## Revolution counter (-RC)

This modestly priced mechanical rev counter provides a convenient digital readout of either 0.01 " or 0.1 mm . It increments every $1 / 10$ revolution, and is available on all models equipped with W 1, P10, K 1 or Q 1 lead screws. Zero position is at the counter end of the UniSlide and is not re-setable.

C ounters can replace the linear scale on Graduated Knob Drive models when the linear scale is obscured by the payload or way covers.

To order the Revolution Counter, add the letters "-RC" to the end of the model number.

## Gear box O rdering Information

| Knob Orientation | M odel Number |
| :---: | :---: |
| D own | $5005 B-A 3-D$ |
| Up | 5005B-A3-U |
| Left | $5005 B-A 3-$ L |
| Right | 5005B - A3-R |

See Engineering D ata, Up, D own, Left, Right, on page 10 for orientation.

## Gearbox (Part No. 5005B-A3-L Shown)

This 1:1 ratio gearbox fits on A25 and A40 Series UniSlides which use 3/8" dia. Iead screws. Provides a way to remotely move the slide - ideal for
tight spaces or applications where access to the slide is limited. See page 46 for photo of gearbox.


## Rotary Tables



Rotary Tables are a convenient, accurate method of positioning a load radially. These tables use a rugged worm and gear drive design with a central rotating ball bearing. Four models are available, each with a different gear ratio. Features include a hollow spindle or clear aperture in the center, $360^{\circ}$ scale, graduated knob, and, in A48 Series, a readily accessible adjustment to minimize gear backlash. They can also be motorized by simply removing the knob and shaft and attaching a size NEM A 23 motor to A48 M odels or a NEM A 17 for the A5990 as shown on page 42.

N ote: G ear ratios 18:1, (M odel A4818TS) and 36:1 (M odel A4836T S) will backdrive when sufficient rotational torque is applied to the table top.

To attach any A48 table to the slider of an A40 or A60 Series UniSlide, use the A6000T X adapter plate (page 35).

See also Turntables on page 40.

## Model A48 Series Rotary Tables



1/4-20 UNC EQUALLY SPACED ON 4.000" B.C. FOR MOUNTING FROM BOTTOM



Rotary table orientation


H orizontal

Vertical

$$
\text { 0.197" DIA. FOR MOUNTING TO } 40
$$ SERIES UNISLIDE (2 PLCS)

## Rotary Table Specifications

|  | A4818TS A4836TS A4872TS | A5990TS |
| :---: | :---: | :---: |
| Central H orizontal Load C apacity | $200 \mathrm{lbs} / 90.7 \mathrm{~kg}$ | $50 \mathrm{lbs} / 22.6 \mathrm{~kg}$ |
| Central Vertical Load C apacity | $25 \mathrm{lbs} / 11.3 \mathrm{~kg}$ | $5 \mathrm{lbs} / 2.3 \mathrm{~kg}$ |
| C antilever Load-H orizontal | $500 \mathrm{in}-\mathrm{lbs}$ | $20 \mathrm{in-lb}$ |
| Table Top Axial Runout | 0.00025 " TIR | $0.00011{ }^{\prime \prime}$ TIR |
| Table Top Radial Runout | 0.0005 " TIR | 0.00008 " TIR |
| Accuracy | 100 arc - second | 100 arc - second |
| Table Weight | $5.5 \mathrm{lbs} / 2.5 \mathrm{~kg}$ | $2.7 \mathrm{lbs} / 1.23 \mathrm{~kg}$ |



## Model Details

| Model <br> Number | Gear <br> Ratio | Table Top Rotation <br> per Turn of Knob | Typical Backlash | Calibration on <br> Drum Dial | Adapter Plate |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A4818TS | $18: 1$ | 20 degrees | 600 arc - second | 0.1 | A6000TX |
| A4836TS | $36: 1$ | 10 degrees | 400 arc - second | 0.1 | A6000TX |
| A4872TS | $72: 1$ | 5 degrees | 200 arc - second | 0.1 | A6000TX |
| A5990TS | $90: 1$ | 4 degrees | 200 arc - second | 0.1 | B5990TXZ |



25

Two A5990TS tables joined with A5990TXZ adapter plate.

## Elevating Tables

UniSlide Series B29, B49, and B69
Although most UniSlide Assemblies can be used in a vertical position, some applications require greater strength and rigidity, and more overall versatility. UniSlide Elevating Tables are designed for these applications.

Because the dovetail base is free standing, B29, B49 and B69 Series Elevating Tables use the deeper "B"-type cross sections for greater rigidity. See page 41. The standard lead screw is the W 1, with 0.100 " revolution. Each Elevating Table features a convenient


1.27 " -
-2.50"


B69 ELEVATING TABLE

Elevating Table Models and Specifications (see drawing on previous page) All dimensions are in inches.

| B29 Series |  |  |  | B49 Series |  |  | B69 Series |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| M odel No. | B2904W 1 | B2906W 1 | B2909W 1 | B4906W 1 | B4909W 1 | B4912W 1 | B6909W 1 | B6912W 1 | B6915W 1 |
| Travel D istance | $11 / 2$ | 3 1/2 | 6 1/2 | 2 | 5 | 8 | 3 | 6 | 9 |
| Height | $67 / 8$ | $83 / 4$ | 11 7/8 | $87 / 8$ | $117 / 8$ | $147 / 8$ | $123 / 4$ | 15 3/4 | $183 / 4$ |


| Series | Load <br> Capacity | Min. <br> Platform <br> Height | Bare <br> Cliear- <br> ance Holes | A | B | C | D | E | F | G | T |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| B29 | 30 lbs | 3.375 | 0.196 | 4 | $31 / 4$ | $3 / 8$ | $211 / 16$ | $11 / 8$ | $35 / 8$ | 4 | $3 / 8$ |
| B49 | 50 lbs | 4.5 | 0.25 | 6 | 5 | $5 / 16$ | $321 / 32$ | $111 / 16$ | $55 / 16$ | $75 / 16$ | $1 / 2$ |
| B69 | 100 lbs | 6.5 | 0.25 | 8 | 7 | $5 / 16$ | $47 / 8$ | $17 / 8$ | $75 / 16$ | $93 / 4$ | $1 / 2$ |

## UniSlide A39 Series Elevating Tables

With these tables, the space above and around the table top is unobstructed. Our design provides a stable platform with a large thumb wheel for moving small loads. Central load capacity is 25 lbs. The standard lead screw is $3 / 8-20$
double lead Acme, with a lead of 0.100 ". O ther lead screws are availableplease consult factory. O ptions include dual locking screw and black anodized finish.

| M odel <br> Number | Retracted <br> Height | Vertical <br> Travel |
| :---: | :---: | :---: |
| A3901W 1 | $2.25^{\prime \prime}$ | $1.00^{\prime \prime}$ |
| A3903W 1 | $4.50^{\prime \prime}$ | $3.25^{\prime \prime}$ |



## Assembled UniSlide XY Tables

## AXY40 and AXY60 Series

Although any two UniSlide Assemblies in combination offer a very wide variety of $X Y$ possibilities, we also have these assembled XY tables to meet common applications. These tables feature a large top work surface combined with a stable base, and can provide load

Series AXY40
handling from 25 to 100 pounds. Tables are designed with crossed and inverted (slider down) A40 or A60 UniSlides and XY plates. O verall height is $3 / 4^{\prime \prime}$ on the $A X Y 40$, and $51 / 2^{\prime \prime}$ on the AXY60. The standard lead screw is the W 1 with a lead of $0.100 \%$ /revolution.

## Available Options

B ( 0.050 "/rev), C ( 0.025 "/rev) or K 1 (1 $\mathrm{mm} /$ rev) lead screws can be substituted for the standard W 1. A Graduated Knob 0.001" resolution and/or revolution counter providing 0.01 " resolution are also available. Refer to the 0 ptions pages for additional information on rev counters.

| Model Number | Travel |
| :---: | :---: |
| AXY4006W 1 | $2^{\prime \prime} \times 2^{\prime \prime}$ |
| AXY4009W 1 | $5^{\prime \prime} \times 5^{\prime \prime}$ |


| M odel Number | Travel |
| :---: | :---: |
| AXY6009W 1 | $3^{\prime \prime} \times 3^{\prime \prime}$ |
| AXY6012W 1 | $6^{\prime \prime} \times 6^{\prime \prime}$ |
| AXY6015W 1 | $9^{\prime \prime} \times 9^{\prime \prime}$ |

## Available Options

B ( 0.050 "/rev), C ( $0.025^{\prime \prime} /$ rev) and K1 lead screws can be substituted for the standard W 1. Black Anodizing (-BK).

| M odel Number | Travel |
| :---: | :---: |
| AXY2506W 1 | $2^{\prime \prime} \times 2{ }^{\prime \prime}$ |
| AXY2509W 1 | $3^{\prime \prime} \times 3^{\prime \prime}$ |
| AXY2512W 1 | $4^{\prime \prime} \times 4$ " |




AXY6012


AXY2506

| MODEL NUMBER | TRAVEL | HEIGHT (H) | LOAD | XL MAX | YL MAX |
| :--- | :---: | :---: | :---: | :---: | :---: |
| AXY2506W1 | $2 " \times 2 "$ | $2.40 "$ | 25 lbs | $13^{\prime \prime}$ | $13 "$ |
| AXY2509W1 | $3 " \times 3 "$ | $2.40 "$ | 25 lbs | $18^{\prime \prime}$ | $18 "$ |
| AXY2512W1 | $4 " \times 4 "$ | $2.40 "$ | 25 lbs | $23.38^{\prime \prime}$ | $23.38 "$ |


| AXY4006W1 | $2 " \times 2 "$ | $3.78^{\prime \prime}$ | 60 lbs | $12.53^{\prime \prime}$ | $12.53 "$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| AXY4009W1 | $5^{\prime \prime} \times 5 "$ | $3.78^{\prime \prime}$ | 25 lbs | $18.53^{\prime \prime}$ | $18.53^{\prime \prime}$ |
| AXY6009W1 | $3 " \times 3 "$ | $5.50 "$ | 100 lbs | $17.03^{\prime \prime}$ | $17.03^{\prime \prime}$ |
| AXY6012W1 | $6 " \times 6{ }^{\prime \prime}$ | $5.50 "$ | 60 lbs | $23.03^{\prime \prime}$ | $23.03^{\prime \prime}$ |
| AXY 6015W1 | $9 " \times 9 "$ | $5.50 "$ | 30 lbs | $29.03^{\prime \prime}$ | $29.03^{\prime \prime}$ |

## AXY Table Plates

T1-8-32 ON A 2.062 DIA BOLT CIRCLE ACCEPTS A25 ADAPTERS \& A2505TS TURNTABLES
T2-10-32 ON A 3.250 DIA BOLT CIRCLE ACCEPTS A40 ADAPTERS, A4007TS, AND *A4800 ROTARY TABLES
T3-1/4-20 ON A 5.000 DIA BOLT CIRCLE ACCEPTS A60 ADAPTERS AND * A4800 ROTARY TABLE *A6000TX ADAPTER PLATE USED TO MOUNT A4800 ROTARY TABLE


BOTTOM PLATE FOR AXY2506, AXY4006 \& AXY4009 SERIES TABLES

B1- CLEARANCE AND CSK FOR $1 / 4$ FLHD MACHINE SCREWS FOR MOUNTING ON A60 SERIES SLIDER OR OTHER SURFACE

B2- CLEARANCE FOR 1/4 DIA CPHD AND FOR MOUNTING ON ANY CUSTOMER SURFACE


TOP PLATE FOR ALL AXY SERIES TABLES


BOTTOM PLATE FOR AXY2509, AXY2512, AXY6009, AXY6012 \& AXY6015 SERIES TABLES

B1- CLEARANCE AND CSK FOR 1/4 FLHD MACHINE SCREWS FOR MOUNTING ON A60 SERIES SLIDER OR OTHER SURFACE

C2- CLEARANCE AND CSK FOR 5/16 FLHD MACHINE SCREW FOR MOUNTING ON B90 SERIES SLIDER OR OTHER SURFACE

| MODEL NUMBER | PLATE SIZE <br> TOP \& BOTTOM | TOP PLATE <br> MTG. HOLES | BOTTOM PLATE <br> MTG. HOLES | D | E | G | H |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| AXY2506W1 | $1 / 4 " \times 6.75^{\prime \prime} \times 6.75^{\prime \prime}$ | T1 \& T2 | B1 | $2.500 "$ | ON CTR. LINE |  |  |
| AXY2509W1 | $1 / 4 " \times 9.75^{\prime \prime} \times 9.75^{\prime \prime}$ | T2 \& T3 | C2 |  |  | $3.500 "$ | $2.250 "$ |
| AXY2512W1 | $1 / 4^{\prime \prime} \times 12.75^{\prime \prime} \times 12.75^{\prime \prime}$ | T2 \& T3 | C2 |  |  | $5.000 "$ | $2.250 "$ |


| AXY4006W1 | $3 / 8 " \times 6 " \times 6 "$ | T1 \& T2 | B1 \& B2 | $2.500 "$ | $2.500 "$ |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| AXY4009W1 | $3 / 8 " \times 9 " \times 9 "$ | T1 \& T2 | B1 \& B2 | $2.500 "$ | $2.500 "$ |  |  |
| AXY6009W1 | $3 / 8^{\prime \prime} \times 9 " \times 9 "$ | T2 \& T3 | CTR. LINE |  |  | $3.500 "$ | ON CTR. LINE |
| AXY6012W1 | $3 / 8^{\prime \prime} \times 12^{\prime \prime} \times 12^{\prime \prime}$ | T2 \& T3 | CTR. LINE \& B2 |  |  | $5.000 "$ | $2.250 "$ |
| AXY6015W1 | $3 / 8 " \times 12^{\prime \prime} \times 12^{\prime \prime}$ | T2 \& T3 | C2 |  |  | $5.000 "$ | $2.250 "$ |

## XY Adapter Plates for A15, A25, and A40 Series

These aluminum XY Plates allow you to configure an XY motion system using two UniSlides. Each plate has a hole pattern that mates the slider of the lower (X) UniSlide, and at right angles to that, a pattern matching the base of the top (Y) UniSlide.

Select the adapter plate to match the lower UniSlide Series you will be using. For example, use the A4000XY Adapter Plate with A40 Series UniSlides. Typical examples are illustrated on the back cover of this catalog.

If the moment on the supporting ( $X$ axis) unit is significant, you will want to combine two different Series, using the larger Series for the supporting unit. To accommodate this, all adapter plates include a hole pattern for the base of the next smaller UniSlide Series.
Therefore, the A2500XY Adapter Plate will also accept A15 Series using the base hole pattern. Similarly, the A4000XY Plate accepts both A40 and A25 Series UniSlides, the A6000XY Plate accepts both A60 and A40

UniSlides, and the B9000XY Plate accepts both B90 and A60 UniSlides. The A1500XY Plate accepts only A15 Series UniSlides.

There are other uses for these plates too. They can be used as auxiliary payload mounting plates or as intermediate plates between the load and the slider. This provides more mounting surface area, and is also a quick way to change loads while maintaining their alignment to the UniSlide. And they provide an easy way to mount a UniSlide upside (slider) down.



A = FOR MOUNTING TO LOWER "X" UNISLIDE
B = FOR MOUNTING TO UPPER "Y" UNSLIDE OF NEXT SMALLER SERIES
$C=F O R$ MOUNTING TO UPPER "Y" UNISLIDE OF THE SAME SERIES

XZ Adapter Plates and Brackets (beginning on page 38) allow UniSlide Assemblies to be positioned vertically, facing any one of four directions, all of which are perpendicular to the $X$ or $Y$
planes. Please look at back cover examples, Combinations of UniSlides, now. The XZ Plate Adapter is used to end-mount the UniSlide and attaches using the two holes in the nameplate
end of the base. It is for light loads and short slides, while the bracket designs are used to provide more rigidity to handle heavier loads.


# A= (4) C'BORE FOR 6-32 PNHD SCREW. FOR MOUNTING A15 SERIES UNISLIDE VERTICALLY <br> B= (2) C'BORE FOR 6-32 PNHD SCREW. FOR MOUNTING PLATE TO A15 SERIES UNISLIDE (OPPOSITE SIDE) 



A= (4) C'BORE FOR 8-32 PNHD SCREW. FOR MOUNTING A25 SERIES UNISLIDE VERTICALLY $\mathrm{B}=(3)$ C'BORE FOR 6-32 PANHEAD. FOR MOUNTING A15 SERIES UNISLIDE VERTICALLY C= (2) C'BORE FOR 8-32 PNHD SCREW. FOR MOUNTING PLATE TO 25 SERIES UNISLIDE (OPPOSITE SIDE)


A2500XZ

## XZ Adapter Plates for A40 and A60 Series



## XZ Adapter Plates for B90 Series



Adapter Plate A6000TX for A4800 Series Rotary Tables

A: (2) C'SINK FOR 1/4" FLHD SCREW. FOR MOUNTING A60 SERIES UNISLIDE

B: (2) C'SINK FOR \#10 FLHD SCREW. FOR MOUNTING TO A40 SERIES UNISLIDE

C: (6) TAP 10-32 ON A 4" BOLT CIRCLE. FOR MOUNTING 4800 SERIES ROTARY TABLE


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## XZ Adapter Brackets for A15, A25, and A40 Series

XZ Adapter Brackets and Plates (beginning on page 33) allow UniSlide Assemblies to be positioned vertically, facing any one of four directions, all of which are perpendicular to the $X$ or $Y$ planes. Please look at back cover examples, Combinations of UniSlides, now. The XZ plates are for light loads
and short slides, while brackets support the dovetail base, provide more rigidity and handle heavier loads.

Similar to the XY adapter plan, a bracket for a given Series will accept the base of that Series and the next smaller Series. Those brackets with the " $B$ "
prefix, such as B4004XZ, are designed for dual use: they accept both manual "A" UniSlides or motor drive "B" bases.

Optional longer length sliders for the support UniSlide are recommended to increase stability when using medium or long XZ brackets.


A=(4) COUNTER BORE FOR \#10 PANHEAD.
FOR MOUNTING TO 40 SERIES SLIDER, 60 SERIES SLIDERS, A4007TS,

A4800 ROTARY TABLE, AXY40 AND AXY60

B=10-32 THREAD FOR MOUNTING 25 SERIES UNISLIDE
$\mathrm{C}=1 / 4-20$ THREAD FOR MOUNTING 40 SERIES UNISLIDE



A6001XZ


B6003XZ


B6004XZ

A $=(4)$ COUNTERBORE FOR 1/4" PANHEAD, FOR MOUNTING TO 60 SERIES SLIDERS, B90 SERIES SLIDERS AND AXY60
$B=1 / 4-20$ THREAD FOR MOUNTING 40 SERIES UNISLIDE
$C=5 / 16-18$ THREAD FOR MOUNTING 60 SERIES UNISLIDE


A =(8) COUNTERBORE FOR 5/16 CPHD , FOR MOUNTING TO B90 SERIES SLIDERS
B $=5 / 16-18$ THREAD FOR MOUNTING 60 SERIES UNISLIDE
C $=3 / 8-16$ THREAD FOR MOUNTING B90 SERIES UNISLIDE

## Left-Right Screw Motion UniSlides

These unique UniSlides incorporate two sliders driven by a single right and left-hand threaded standard accuracy lead screw. When the crank is turned the sliders simultaneously move toward or away from each other. These slides are very useful for applications where two load objects must share a common

A15 Series: 1.5" slider, $0.60^{\prime \prime}$ dia knob, lead screw dia. $1 / 4^{\prime \prime}$


Available Options (see pages 22-23)

- Hard anodized or electroless nickel base
- Black anodizing on all surfaces
- Optional length sliders per page 8
- Lead screw lock
- Independent (separate) lead screws

A40 Series: $4^{\prime \prime}$ slider, $1^{3 / 4 "}$ dia knob, lead screw dia $3 / 8^{\prime \prime}$

| M odel Number | Slider <br> separati- <br> on T | Advancel <br> revolution |
| :---: | :---: | :---: |
| A4009B-S4-LR | $0-1^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4009C-S4-LR | $0-1^{\prime \prime}$ | $0.025^{\prime \prime}$ |
| A4012B-S4-LR | $0-4^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4012C-S4-LR | $0-4^{\prime \prime}$ | $0.025^{\prime \prime}$ |
| A4015B-S4-LR | $0-7^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4015C-S4-LR | $0-7^{\prime \prime}$ | $0.025^{\prime \prime}$ |
| A4018B-S4-LR | $0-10^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4018C-S4-LR | $0-10^{\prime \prime}$ | $0.025^{\prime \prime}$ |
| A4021B-S4-LR | $0-13^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4021C-S4-LR | $0-13^{\prime \prime}$ | $0.025^{\prime \prime}$ |
| A4024B-S4-LR | $0-16^{\prime \prime}$ | $0.050^{\prime \prime}$ |
| A4024C-S4-LR | $0-16^{\prime \prime}$ | $0.025^{\prime \prime}$ |

MODEL A2512B-S2.5-LR (RIGHT HAND / LEFT HAND LEADSCREW)


Turntables differ from Rotary Tables in that Turntables can be spun freely by hand. They also feature a $12^{\circ}$ range of fine position adjustment. Typical applications include mounting and rotation of test specimens, cameras, transducers, sensors, mirrors and other optical components.
Unlike the Rotary Tables on page 24,
Turntables do not use a worm and gear
Unlike the Rotary Tables on page 24,
Turntables do not use a worm and gear design. These tables use a spring-loaded tangent screw drive for fine adjustments. W ith the clamping knob released, the turntable can be freely rotated into position by hand. Tightening the clamping knob engages a tangent screw driven against a springloaded yoke, allowing fine motion control. The spring will resist up to 14 oz-in of rotational torque.

Table features include an easy to read
Table features include an easy to r
engraved $360^{\circ}$ scale, 6 minute ( 0.1 degree) resolution, maximum horizontal load capacity of 200 pounds, and rugged black finish. These tables cannot be motor-driven and are not recommended for tensile (pulling) loads or vertical loads greater than 6 oz .

| Model | D ia. | Height |
| :---: | :---: | :---: |
| A2505TS | $3.15^{\prime \prime}$ | $1.3^{\prime \prime}$ |
| A4007TS | $4.13^{\prime \prime}$ | $1.3^{\prime \prime}$ |



Base M ounting
M odel A2505T S: This table will mount on an A15 Series 3 " slider using holes. the C holes, and A25 or B25 2 1/2" sliders using the D holes. If the A25 Series unit has a $2.5^{\prime \prime}$ slider and thumbscrew lock, 0.650 " travel will be relinquished.

M odel A4007TS: This turntable will mount on A40 or B40 sliders using the C
$\left.\begin{array}{|r|c|c|c|}\hline \text { Model Number } & \text { Thread } & \text { Ctr to Ctr } & \text { Accepts } \\ \hline \text { A2505TS } & \text { A } & 8-32 & 2.062^{\prime \prime} \\ \text { A } & \text { All A2500 Adapters } \\ & \text { B } & \text { A } & \text { N/A }\end{array}\right]-$--

## B Series Dovetail Base

The A25, A40 and A60 Series dovetail base shown on pages 2 through 7 are also available in the B25, B40 and B90 Series cross sections illustrated here. This design has the same width but greater depth providing more rigidity and strength, and in general will allow greater loads to be carried. This is the preferred base to use when the full length of the base cannot be adequately supported.

Please see the last page of the price list for additional cost of ordering standard UniSlide with "B"-Series bases.



## Motor-Driven UniSlide and BiSlide Assemblies

M any of the UniSlide Assemblies in this catalog can be provided in motordriven versions. We offer complete, ready-to-work systems, plus individual components such as motor-ready UniSlides, controls, and more. We'll work with you to specify, design and manufacture positioning equipment suited to your application.

Visit www.velmex.com and www.bislide.com for more examples.


A parallel coupled (both slides driven) UniSlide Assembly

Two B4800 Rotary Tables for tilt/pan type

movement

## System Components Available

- One, two or three axis systems
- Rotary motion systems
- Combination linear/rotary systems
- Tilt/pan systems (as shown below)
- Parallel-coupled and left-right systems
- Load handling to 400 pounds
- Positioning speeds to 400 inches/minute
- AC motors
- DC motors
- Stepper motors
- Gear boxes
- Internal limit switches
- Rotary and linear encoders
- Electronic position readouts
- Controls including simple on-off switches, speed controls, joysticks, auto-reversing, programmable controllers, etc.
- IBM-compatible hardware/software for computer-controlled applications
- RS-232 and IEEE-488 interfaces available


## Available Options

- Longer sliders
- Multiple sliders
- Anodizing in black or electroless nickel
- Hard coated ways
- Way covers
- Outboard limit switches
- Choice of inch or metric lead screws in a variety of leads and accuracies


B5990TS Rotary Table

Examples of Motorized UniSlide and BiSlide Versatility


Motorized Left-Right UniSlide for together-apart motion with two sliders. See page 39. Also, manual UniSlide with two independently driven sliders in a common dovetail base.


Motorized XY table with Velmex NF90 Stepper Motor Programmable Controller


A compact XYZ positioning system


## FREE Motor-Drive Positioning Systems Catalogs

Complete information on how to order a motor-driven positioning system, including hundreds of standard products, detailed specifications and photos of dozens of systems. Ask for $C$ atalogs $M$ and $B$.

# TA Rapid Advance UniSlide with Linear Encoder 

Several years ago a customer came to us with an unusual request. He needed a very high accuracy system to observe and measure tree rings. The require ments were high resolution readout, computer interface for data acquisition, fine motion control with rapid release for quick repositioning, a selection of


The above schematic illustrates the components of a complete "TA" System. They are:
"TA" Rapid Advance UniSlide with Linear Encoder
Quick-Chek Digital Readout, CE-compliant, QC1100-AR
TAB2 Two-Button Remote (print or reset of Quick-Chek)
TAC-PC 10' connecting cable from Quick-Chek to PC computer, or
TAC-MAC 10' connecting cable from Quick-Chek to Mac computer; free software
travels, and modest cost. Although we had never designed anything for a dendrochronology application such as this, we soon discovered that we did, indeed, have what this scientist was looking for. Working with him, we developed the TA4000 measurement system detailed below.

This single axis system consists of a TA40 Series UniSlide in any of a number of travel distances, an ACU-RITE Linear Encoder in one of three resolutions, a M etronics QC1100-AR Quick-Chek ${ }^{\text {m }}$ digital readout with resolution down to $0.000004 " / 0.0001 \mathrm{~mm}$, and a Tab2 remote zero reset/print control. The user supplies the computer (PC or Mac ), microscope, video system, and miscellaneous electrical and mechanical hardware, as shown in the drawing.

This UniSlide configuration uses a $10 \times 1 \mathrm{~mm}$ lead screw with a unique rapid advance system that allows the user to disengage the lead screw, move rapidly to another area of the specimen to be studied, engage the lead screw and begin to take accurate measurements.

Although the system illustrated here is most suited for tree ring measurement - and we have sold well over 100 of them for just that purpose - there are a variety of other applications for comparable systems in Q C/QA, manufacturing and research. If you have the need to make precise one or two axis measurements based on the position of a camera, sensor or other device, please give us a call. We can help you design an accurate, versatile system.
"TA" Rapid Advance UniSlide with Linear Encoder Specifications

| Travel D istance w/standard 6" slider | UniSlide P/N | UniSlide Weight | $\begin{aligned} & 0.01 \mathrm{~mm} \text { or } \\ & 0.000051 " \\ & \text { resolution } \\ & \text { ACU-Rite } \\ & \text { encoder } \\ & \text { P/N } \end{aligned}$ | $\begin{aligned} & 0.002 \mathrm{~mm} \text { or } \\ & 0.00001^{\text {II }} \\ & \text { resolution } \\ & \text { ACU-Rite } \\ & \text { encoder } \\ & \text { P/N } \end{aligned}$ | 0.001 mm or $0.00005^{\prime \prime}$ resolution ACU-Rite encoder $\mathrm{P} / \mathrm{N}$ | Nominal Scale Length | Maximum Usable Trave | Scale Length |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $3 "$ | TA4009H 1-S6 | 6 lbs | 38525107-02 | 38525127-02 | 38525117-02 | 2 " | 3.75 " | 7.437" |
| $6 "$ | TA4012H 1-S6 | 7 lbs | 38525107-06 | 38525127-06 | 38525117-06 | $6 "$ | 7.75" | 11.437" |
| $9 "$ | TA4015H 1-S6 | 8 lbs | 38525107-08 | 38525127-08 | 38525117-08 | 8" | $9.75{ }^{\prime \prime}$ | 13.437" |
| 12 " | TA4018H 1-S6 | 9 lbs | 38525107-12 | 38525127-12 | 38525117-12 | 12 " | 13.75" | 17.437" |
| 15 " | TA4021H 1-S6 | 10 lbs | 38525107-14 | 38525127-14 | 38525117-14 | 14 " | 15.75" | 19.437" |
| 18 " | TA4024H 1-S6 | 11 lbs | 38525107-18 | 38525127-18 | 38525117-18 | 18 " | 19.75" | 23.437" |
| 21 " | TA4027H 1-S6 | 12 lbs | 38525107-20 | 38525127-20 | 38525117-20 | $20 "$ | 21.75" | 25.437" |
| 24 " | TA4030H 1-S6 | 13 lbs | 38525107-24 | 38525127-24 | 38525117-24 | $24 "$ | 25.75" | 29.437" |

## High Resolution Position Readout

## Linear Encoders

For high resolution position readout, we can mount ACU-RITE glass scales encoders to most linear UniSlide Assemblies except Series A15 and A25. Mounting an encoder directly to the slider gives a true and accurate reading eliminating lead screw and backlash errors. Typically, encoders are mounted to Screw Drive type UniSlides however they can be used with most types of UniSlides as shown on the previous TA page. See the table on TA page 44 for ACU-RITE part numbers. Please call us for help in selecting the proper encoder.

## Encoder Specifications

Resolutions: $0.0005 " / 0.010 \mathrm{~mm}$; $0.0001 " / 0.002 \mathrm{~mm}$; $0.00005 " / 0.001 \mathrm{~mm}$
Repeatability: W ithin one resolution count
Scale M edium: Chromecoated glass
O utput: Two line TTL quadrature signal Cable Length: 10 ft .

## UniSlide Specifications when equipped with Linear Encoder:

B25 Series (see page 41): 4" slider required. H eight increased by $3 / 4$ ". M ax length of $36^{\prime \prime}$ with travel of $32^{\prime \prime}$
A40 Series: 6 " slider required. Height increased by $1^{\prime \prime}$. M ax length of $30^{\prime \prime}$ with travel of $24^{\prime \prime}$
A60 Series: Uses standard 6" slider. H eight increased by ${ }^{3} / 4^{\prime \prime}$. M ax length of 66 " with travel of $60^{\prime \prime}$

## Digital Readout (DRO)

The M etronics Quick-Chek ${ }^{\text {TM }}$ is a compact ( $2.74^{\prime \prime} \times 6.64^{\prime \prime} \times 9.06^{\prime \prime}$ HWD ), powerful, easy to use DRO that's compatible with a wide variety of input signals, including those from optical comparators, microscopes, multi-axis measurement systems and, of course, ACU-RITE linear encoders.

Readout systems
One Axis: QC1100-AR
Two Axis: QC120
Three Axis: QC130
Remote Zero Reset \& Print Button Control w/ 10 ft. cable PN \#TAB2 QC to PC Interface Cable, 10 ft PN \# TAC-PC QC to M ac Interface Cable, 10 ft PN \#TAC-M AC

M etronics Q uick-Chek ${ }^{T n}$ features:

- Selectable encoder resolution down to $0.000004 " / 0.0001 \mathrm{~mm}$
- Linear error compensation
- Selectable angular or linear readout
- Incremental offset
- Reversible axis count direction
- Absolute and incremental datum
- Instant inches to mm conversion
- Reference mark capability
- TTL square wave input for compatibility with most linear encoders
- RS-232 port allows printing out data or sending it to your PC
- Tracks position even when in Sleep mode


## Optical Rotary Encoder

This encoder has quadrature output using 5 V logic and delivers 0.001 " or 0.01 mm resolution. The encoder is attaches to a lead screw shaft extension at the nameplate end. It can be used with the A40, A60 and B90 series UniSlides, and is available with or without a remote LCD for readout. To
order the Rotary Encoder with LCD readout, specify part number 3-919. To order the Encoder only with no readout, specify part number 3-919E. Price is listed on the last page of the Price List.


Rotary Encoder mounted to A40 Series

## UniSlide Modifications

N early 1000 standard UniSlide models are available. But sometimes, the standard versions just won't suit your application.

We understand. That's why we offer a wide range of custom modification capabilities, including these:

- Additional holes in base, slider or plates
- Additional sliders or multiple sliders
- Different knobs
- Special length dovetail bases

- Deeper bases, using the " $B$ " base crosssections - see page 32
- Lead screw shaft extensions
- Detent strip in base for rapid incrementing
- Milled slots
- Optional finishes
- Choice of lead screw materials, including brass
- Choice of drive nut materials, including


Shorter than standard dovetail base
brass, oil-impregnated bronze and Vespel

- Gearbox
- Right and left-hand threads on the same lead screw, allowing a pair of sliders to move together or apart - see page 39

Still don't see what you want? Give us a call. If it can be done with UniSlides, we can do it.

Special B29 Elevating Table and Right angle gearbox on cross-slide. This fixture operates inside an enclosure.


Five Rapid Advance sliders on a stationary central rod


## Rack \& Pinion Motion UniSlide Assemblies

This model delivers precision motion without backlash. A side knob rotates a pinion engaging a helical rack; advance per turn is 0.737". D epth from the bottom of the $1 / 4 / 4$ base plate to the top of the slider is ${ }^{13} / 16$ ". Slider holes are tapped for 6-32 thread and are $13 / 16^{\prime \prime}$ apart. A pair of base mounting holes for 8-32 flat head mounting screws are centered $11 / 2 "$ apart.


Two A1503R UniSlides in $X Z$ configuration. Note: knob style may vary.


The model A1512R includes two extra mounting holes ${ }^{31} / 32^{\prime \prime}$ from each end of the slider.

Two Rack \& Pinion units may be connected together using an A1500XZ

| Model No. | Travel | Length | Slider Length S | Weight |
| :---: | :---: | :---: | :---: | :---: |
| A1503R | $13 / 8^{\prime \prime}$ | $3^{\prime \prime}$ | $15 / 8^{\prime \prime}$ | 6 oz. |
| A1506R | $27 / 8^{\prime \prime}$ | $6^{\prime \prime}$ | $31 / 8^{\prime \prime}$ | 9 oz. |
| A1512R | $57 / 8^{\prime \prime}$ | $12^{\prime \prime}$ | $61 / 8^{\prime \prime}$ | 15 oz. |

## Warranty and Policies

## Warranty

Velmex Inc. warrants all manual UniSlide Assemblies supplied by Velmex Inc. to be free from defects in materials and workmanship for one year from date of invoice. Velmex's sole obligation under this warranty is limited to furnishing, without additional charge, a replacement for, or at its option, repairing or issuing credit for, any product which is returned freight prepaid. This warranty shall not apply to any unit which has been subjected to misuse, improper operating conditions, or any alterations. The seller makes no claim that its products are intended for every use or purpose to which they may be put by the buyer. IN NO EVENT SH ALL VELMEX INC. BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

## Notice

Failure, improper selection or improper use of the products described herein or related items can cause personal injury and property damage. This catalog from Velmex Inc. provides product options for further investigation by users having technical expertise. It is important that you thoroughly analyze all aspects of your application and review the information in this catalog. Due to the variety of operating conditions and applications for these products, the user, through his own analysis and testing, is solely responsible for making the final selection of products and determining that all performance, safety and warning requirements of the application are met. The products, including, without limitation, product features, specifications, designs, availability and pricing, are subject to change by Velmex Inc. at any time without notice.

## Cancellation Policy

C ancellation of orders consisting of standard products, for any reason, is subject to a $15 \%$ cancellation charge. C ancellation of orders for special products and nonstandard UniSlide Assemblies are subject to a cancellation charge to be determined by Velmex Inc.

## Repair Return Policy

If you need to return a product to us for repair, please contact us for an RM A number before returning the product. Include a written explanation of the problem. We will inspect the unit and notify you of the cost, if any, before any work is performed or if we determine it is not cost-effective to repair the unit. The charge for non-warranty work will be billed at the current hourly rate.

## VFLMEXX, inc.

Request for Q uotation
Please copy and fill in this form for help in selecting your UniSlide Assembly
Name $\qquad$ Phone $\qquad$
Company FAX
Address $\square$ City $\qquad$
State ZIP
E-mail $\qquad$
Application 0 bjective $\qquad$
$\qquad$
$\qquad$
$\qquad$
Have you used UniSlide Assemblies before? Y N
$O$ perating environment is
D o you need UniSlide Assembly options? See pages 22,23, 43. $\qquad$
I I need nonmagnetic or low magnetic slides
A sketch or drawing of your application is helpful.

| Axis* | Travel D istance | Payload Weight | M eausre <br> Travel or Position? | Position Readout Resolution | 0 ther Requirements |
| :---: | :---: | :---: | :---: | :---: | :---: |
| X |  |  | Yes No |  |  |
| Y |  |  | Yes No |  |  |
| Z |  |  | Yes No |  |  |
| Rotary |  |  |  |  |  |

[^2]FAX form to us at 585 657-6153


[^0]:    * Some of these models may read position with the addition of an optional encoders, scale or revolution counter

[^1]:    * N ot available in B90

[^2]:    * See page 3 for orientation of XYZ axes

