LOW PROFILE RAIL SLIDES

**NL3**
- Simple coupler design for easy cylinder removal
- 100mm BORE
- 400mm CARRIAGE
- 760mm + STROKE
- 3/4" Manual lockout pin
- Standard mounting for tooling (taps and dowels)
- Weld spatter resistant aluminized kevlar rail shrouds
- Locking tab for NAAMS style lockout pin
- Shimmable NAAMS stops or Welker Smart Stop
- Lockout pin receive hole
- Shocks

**WL3**
- Same features and height as NL3
- Larger base and carriage
- 590mm CARRIAGE
- 800mm CARRIAGE
- 1000mm + STROKE
- Auto lube option
- Locking tab for NAAMS style lockout pin

**FEATURES**
- Can be mounted in any orientation
- Successful operation in harsh environments
- Available cylinders: non-locking, duplex and locking pneumatic, hydraulic and electro-servo powered
- High capacity 35mm square rails

**RELEASED: 8/30/21**
ORDERING INFORMATION

NOTE: ALL BOXES MUST BE FILLED IN FOR A COMPLETE PART NUMBER

Series
NL3 Narrow Low Profile Slide
WL3 Wide Low Profile Slide

1st Stroke
000-475 ("000" for Non-Duplex)

*2nd (or Total) Stroke
080 080, 160, 240, 320, 400 or 480 Total Stroke
(005-475 2nd Stroke of Duplex)

Cylinder Options (100mm Bore Pneumatic)
01 Double Acting (NPT Ports)
03 Double Acting ("G" Ports)
04 Double Acting with Rod Lock (NPT Ports)
06 Double Acting with Rod Lock ("G" Ports)
07 Duplex (NPT Ports)
09 Duplex ("G" Ports)

Switch Dog Location
X No Switch Dogs
J Switch Dogs RH Side
K Switch Dogs LH Side

**Retract Shim ~ Whole mm
**Retract Shim ~ Quarter mm
**Extend Shim ~ Whole mm
**Extend Shim ~ Quarter mm

Shroud & Lube Option
1 Shroud/No Lube
3 Shroud & Lube

Stop Options
X NAAMS Stops
P Welker Smart Stops

**Shim Note: When ordering the shim option, shim packs/grind spacers are added to the specified stops and it will shorten the total working stroke.

Welker NL3 & WL3 slides utilize size 35 square rail bearings, manual lockouts both ends, aluminized kevlar shrouds and 100mm bore cylinders (locking and duplex cylinders available, see chart on Cylinder Options sheet).

SHIM CHART

<table>
<thead>
<tr>
<th>WHOLE MILLIMETER CODES</th>
<th>QUARTER MM CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>THK (mm) CODE THK (mm) CODE THK (mm) CODE THK (mm) CODE THK (mm) CODE</td>
<td></td>
</tr>
<tr>
<td>0 0 8 8 16 G 24 R 0.00 0</td>
<td></td>
</tr>
<tr>
<td>1 1 9 9 17 H 25 S 0.25 A</td>
<td></td>
</tr>
<tr>
<td>2 2 10 A 18 J 26 T 0.50 B</td>
<td></td>
</tr>
<tr>
<td>3 3 11 B 19 K 27 U 0.75 C</td>
<td></td>
</tr>
<tr>
<td>4 4 12 C 20 L 28 V</td>
<td></td>
</tr>
<tr>
<td>5 5 13 D 21 M 29 W</td>
<td></td>
</tr>
<tr>
<td>6 6 14 E 22 N 30 X</td>
<td></td>
</tr>
<tr>
<td>7 7 15 F 23 P 35 Y</td>
<td></td>
</tr>
</tbody>
</table>

Ordering examples:
For an NL3 slide with 160mm stroke (160mm total stroke), double acting air cylinder, Welker Smart Stop switch, no additional shims, shroud, order as: NL300016001X0000P1W

For an NL3 slide with 80mm 1st stroke and 160mm 2nd stroke (240mm total stroke), duplex air cylinder, switch dogs on the LH side, 5.25 additional shims in the retract and 10.75mm additional shims in the extend, Welker smart stops, shroud, order as: NL308016007K5ACP1W

WEIGHT IN LBS (WEIGHTS ARE APPROXIMATE AND VARY WITH OPTIONS)

| STROKE (mm): 80 160 240 320 400 480 |
|-------------|--------|--------|--------|--------|--------|
| NL3 411 432 435 472 495 516 |
| WL3 729 738 758 824 855 887 |
### General Dimensions

![Diagram of equipment with dimensions](image)

<table>
<thead>
<tr>
<th></th>
<th>NL3</th>
<th>WL3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>300</td>
<td>600</td>
</tr>
<tr>
<td>B</td>
<td>370</td>
<td>670</td>
</tr>
<tr>
<td>C</td>
<td>365</td>
<td>485</td>
</tr>
<tr>
<td>D</td>
<td>730</td>
<td>970</td>
</tr>
<tr>
<td>E</td>
<td>760</td>
<td>1000</td>
</tr>
<tr>
<td>F</td>
<td>400</td>
<td>700</td>
</tr>
<tr>
<td>G</td>
<td>492</td>
<td>820</td>
</tr>
<tr>
<td>H</td>
<td>230</td>
<td>300</td>
</tr>
<tr>
<td>J</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

**Remarks:**
- See cylinder sheet for dimensions.
- Optional switch dogs, multiple mounting locations.
- Manual lockouts, both ends, both sides.
- 100mm bore air cylinder.
- Optional duplex and locking cylinders.
- Shock absorber both ends.
- 4x NL3 Ø17 thru 6x WL3 mounting holes.
- 4x Ø12 dowel S.F. thru mounting holes.
- High temp aluminized Kevlar shroud.
- See carriage sheet for dimensions.

**Engineered Products**

(800) 229-0890 www.welkerproducts.com

**Sheet 3**

(DO NOT SCALE DRAWING)
Cylinder Options (Pneumatic)

<table>
<thead>
<tr>
<th>CYLINDER OPTION</th>
<th>*CYLINDER LENGTH</th>
<th>CYL PORTS</th>
<th>CYL TYPE</th>
<th>BRAKE PORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>150 + STROKE</td>
<td>1/2&quot; NPT</td>
<td>NON-LOCK</td>
<td>N/A</td>
</tr>
<tr>
<td>03</td>
<td>150 + STROKE</td>
<td>1/2 G</td>
<td>NON-LOCK</td>
<td>N/A</td>
</tr>
<tr>
<td>04</td>
<td>265 + STROKE</td>
<td>1/2&quot; NPT</td>
<td>LOCK</td>
<td>1/4&quot; NPT</td>
</tr>
<tr>
<td>06</td>
<td>265 + STROKE</td>
<td>1/2 G</td>
<td>LOCK</td>
<td>1/4 G</td>
</tr>
<tr>
<td>07</td>
<td>265 + **TOTAL STROKE + 1ST STROKE</td>
<td>1/2&quot; NPT</td>
<td>DUPLEX</td>
<td>N/A</td>
</tr>
<tr>
<td>09</td>
<td>265 + **TOTAL STROKE + 1ST STROKE</td>
<td>1/2 G</td>
<td>DUPLEX</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*CYLINDER LENGTH MAY INCLUDE OVERSTROKE, SPACERS OR OTHER VARIABLES. FOR MOUNTINGS AND LENGTHS OF NON-STANDARD CYLINDERS, CONSULT WELKER.

**TOTAL STROKE = 1ST STROKE + 2ND STROKE. 1ST STROKE STARTS FROM CARRIAGE IN RETRACTED POSITION AS SHOWN.

**DO NOT SCALE DRAWING**

ENGINEERED PRODUCTS
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SHEET 4
NL3 CARRIAGE

WL3 CARRIAGE

CARRIAGE

CARRIAGE

CARRIAGE

CARRIAGE

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**NL3 AUTO LUBE OPTION**

**Rail Slides**

Bearing assemblies in rail slides must be lubricated to maintain proper slide function and avoid rail damage. The auto lube option is a cost effective alternative to scheduled manual lubrication. Maintenance requires no tools or assembly - simply replace cartridge when empty. When ordered as an option for a new slide, it must be turned on by customer after final installation. Recommended setting is 12 months. Rail slides require one unit for each bearing side. Replace every 12 months.

**Servo Slides**

Ball screws must be lubricated monthly. Insufficient lubrication shortens the life of the ball screw and may cause failure. A lubrication port is provided for manual application or installation of an auto lube unit. When ordered as an option for a new slide, it must be turned on by customer after final installation. Recommended setting is 12 months. Servo slides require one auto lube unit. Replace every 12 months.
WL3 AUTO LUBE OPTION

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WELKER SMART STOP

WELKER SMART STOP does all stopping & sensing functions in one part. SMART STOP minimizes engineering, field set up and operator adjustment time.

WELKER SMART STOP eliminates:
- Need for separate mounts, brackets & flags.
- Need for switch adjustments when shimming.
- Improper adjustment of outboard switches.
- Outboard switch vibrating loose in bracket.
- Protecting outboard proxes from being stepped on or bent in tools.

MODEL NO:
ASC020-PD FOR CROWNED, DRILL & C’BORE FOR M10 SHCS + DC SWITCH
ASC021-PD FOR CROWNED, M10X1.5 TAP + DC SWITCH
ASF020-PD FOR FLAT, DRILL & C’BORE FOR M10 SHCS + DC SWITCH
ASF021-PD FOR FLAT, M10X1.5 TAP + DC SWITCH

WIRING DIAGRAM (PNP)

<table>
<thead>
<tr>
<th>General Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching function</td>
<td>Normally Open (NO)</td>
</tr>
<tr>
<td>Output type</td>
<td>PNP</td>
</tr>
<tr>
<td>Rated operating distance, sn</td>
<td>1.75mm</td>
</tr>
<tr>
<td>Output polarity</td>
<td>DC</td>
</tr>
<tr>
<td>Assured operating distance sa</td>
<td>0 - 1.42 mm</td>
</tr>
<tr>
<td>Output type</td>
<td>3-wire</td>
</tr>
</tbody>
</table>

Nominal Ratings

| Operating voltage, \( U_B \) | 5 - 30 V DC |
| Switching frequency, \( f \) | 0 - 6000 Hz |
| Reverse polarity protection | Reverse polarity protected |
| Short-circuit protection    | Pulsing |
| Voltage drop, \( U_d \)     | \( \leq 1.5 \text{ V} \) |
| Operating current, \( I_L \) | 0 - 100 mA |
| Off-state current, \( I_r \) | 0 - 0.2 mA |
| No-load supply current, \( I_0 \) | \( \leq 15 \text{ mA} \) |

Indicators/Operating Means

| Operating voltage indicator | LED green |
| Switching state indicator   | LED yellow |

Ambient Conditions

| Ambient temperature | -40 - 85 °C (-40 - 185 °F) |
| Storage temperature  | -40 - 85 °C (-40 - 185 °F) |

Mechanical Specifications

| Connection type Connector plug | M12 x 1, 4-pin |
| Cable length                   | 255mm |
| Degree of protection           | IP67 |
| Cable material                 | Weld spatter resistant, robotic quality POC |
| Cable color                    | Orange |

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Indicators/Operating Means

| Operating voltage indicator | LED green |
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| Connection type Connector plug | M12 x 1, 4-pin |
| Cable length                   | 255mm |
| Degree of protection           | IP67 |
| Cable material                 | Weld spatter resistant, robotic quality POC |
| Cable color                    | Orange |
**NL3 TRU-LOK ORDERING INFORMATION**

NOTE: ALL BOXES MUST BE FILLED IN FOR A COMPLETE PART NUMBER

- **Saddle Color***
  - Y Yellow
  - R Red

- **Handle Style***
  - T T-Handle
  - S Straight

- **Handle Color***
  - Y Yellow
  - R Red

---

**WL3 TRU-LOK ORDERING INFORMATION**

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  - R Red

- **Handle Style***
  - T T-Handle
  - S Straight

- **Handle Color***
  - Y Yellow
  - R Red

---

* SPEC COLORS:
  - FCA: YELLOW SADDLE, YELLOW T-HANDLE
  - FORD: YELLOW SADDLE, YELLOW T-HANDLE
  - GM: YELLOW SADDLE, RED T-HANDLE

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ENGINEERED PRODUCTS

SHEET 9
TRU-LOK-OUT ASSEMBLY

NOT INCLUDED WITH SLIDE: ORDER SEPARATELY

NOTE: TRU-LOK-OUT ASSEMBLY IS SHIPPED LOOSE. CUSTOMER TO LOCATE AND MOUNT

* SPEC COLORS:
  FCA: YELLOW SADDLE, YELLOW T-HANDLE
  FORD: YELLOW SADDLE, YELLOW T-HANDLE
  GM: YELLOW SADDLE, RED T-HANDLE

MATERIAL
4140 PHT, Rc 33
YIELD 95000
SHEAR YIELD 55100

(DO NOT SCALE DRAWING)
When using these graphs, applications are evaluated on two separate criteria: payload v. offset and pitch angle v. payload. An approved application meets both criteria. For applications outside the graph safety zone, contact Welker.
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