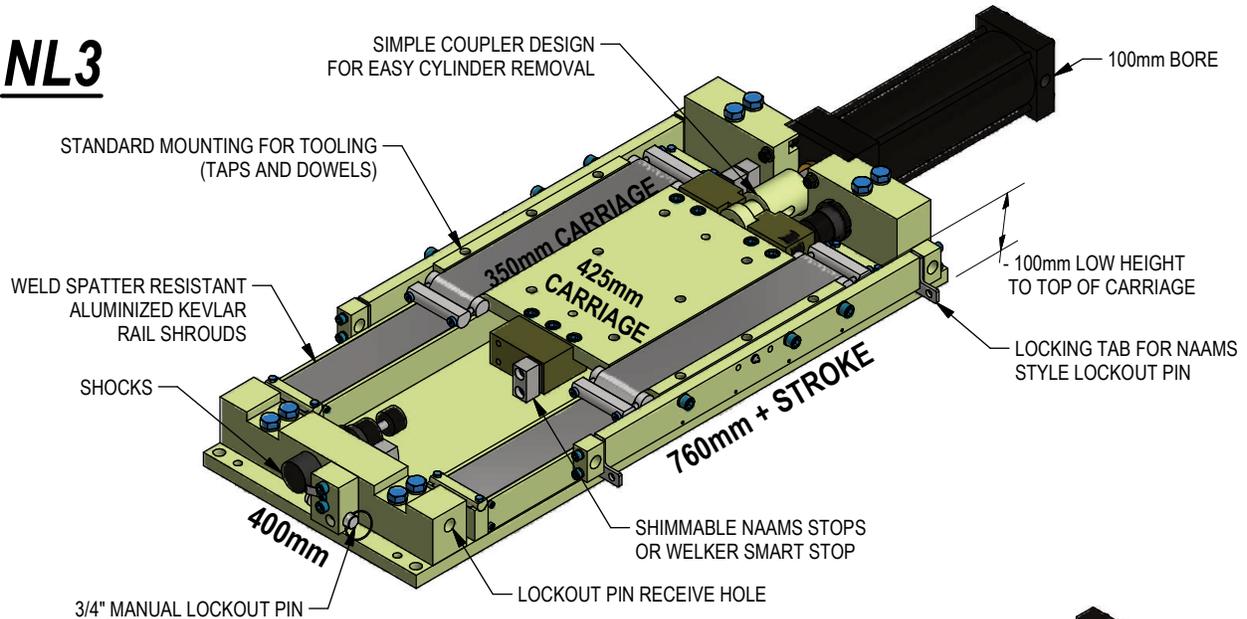


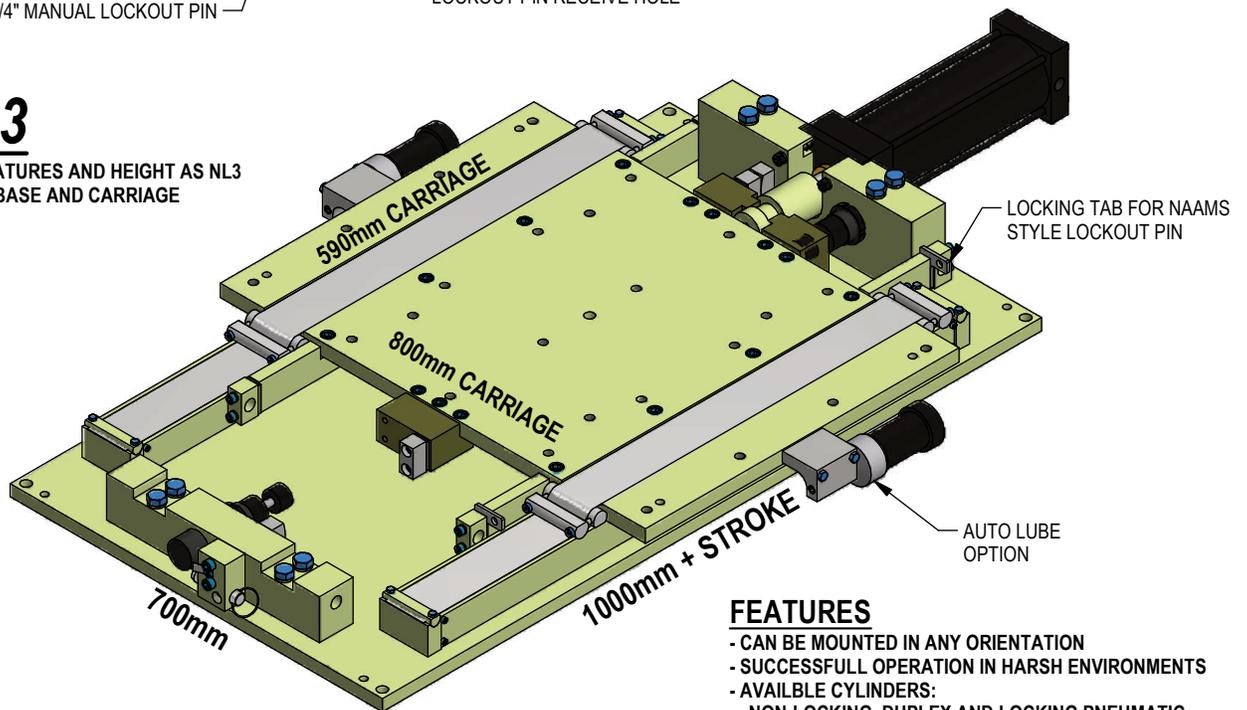
LOW PROFILE RAIL SLIDES

NL3



WL3

SAME FEATURES AND HEIGHT AS NL3
LARGER BASE AND CARRIAGE



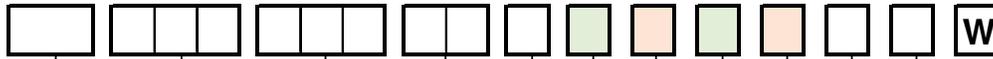
FEATURES

- CAN BE MOUNTED IN ANY ORIENTATION
- SUCCESSFULL OPERATION IN HARSH ENVIRONMENTS
- AVAILBLE CYLINDERS:
 - NON-LOCKING, DUPLEX AND LOCKING PNEUMATIC
 - HYDRAULIC AND ELECTRO-SERVO POWERED
- HIGH CAPACITY 35mm SQUARE RAILS

RELEASED: 1/10/22

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

*Stroke Note: Standard unit strokes are 80mm to 480mm at increments of 80mm. The sum of the 1st & 2nd stroke of the duplex must equal a standard stroke. If necessary, stops can be shimmed back to achieve the required travel.

**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

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

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: NL308016007K5AACP1W



| 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 | 759 | 824 | 855 | 887 |

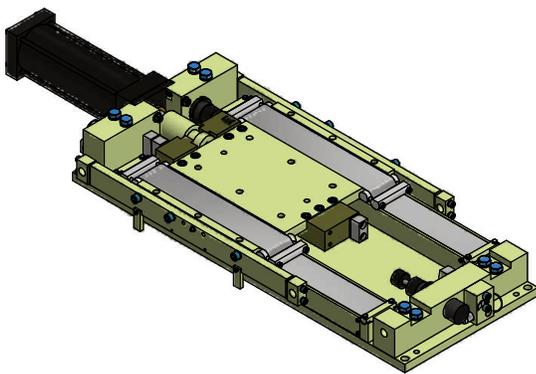
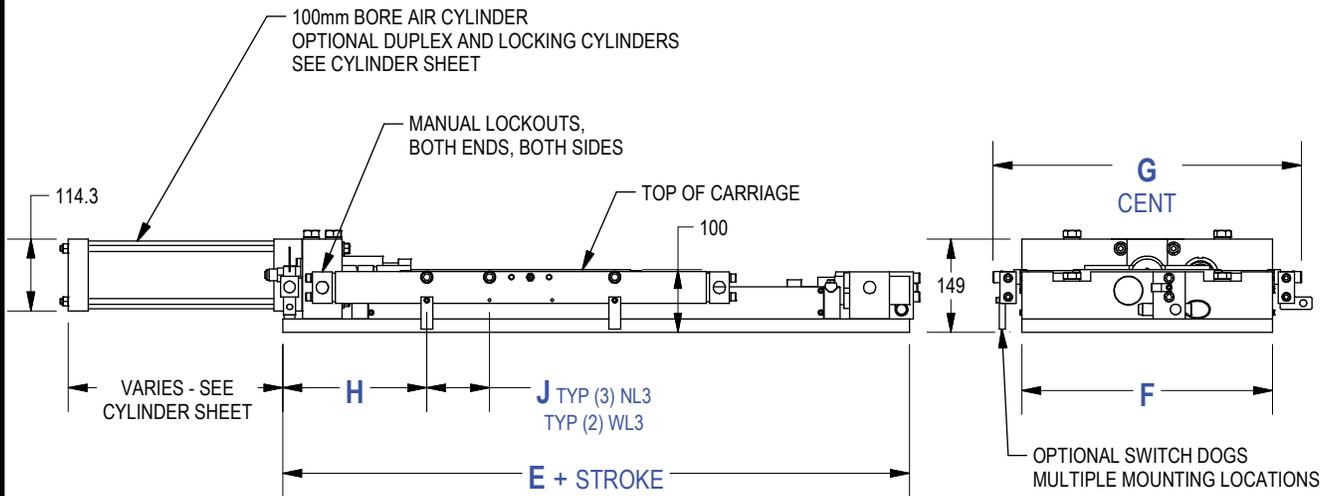
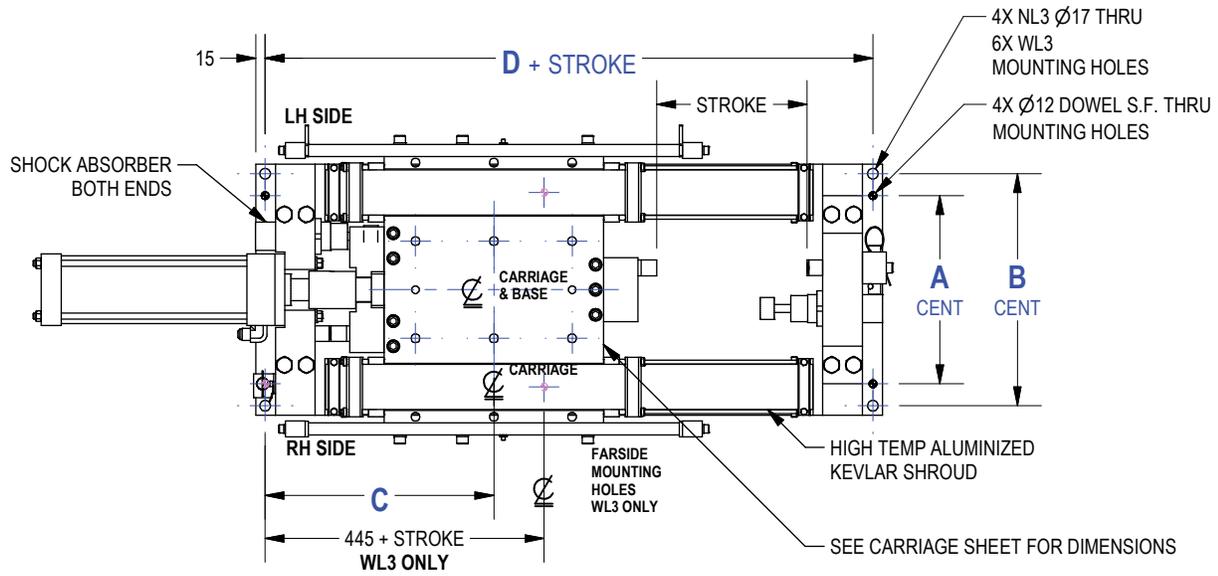
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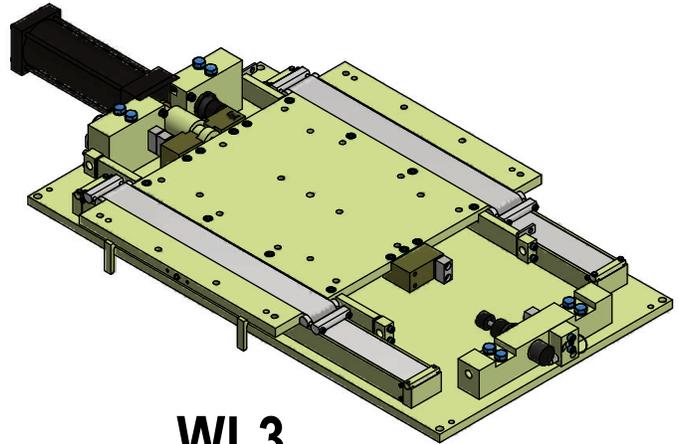
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GENERAL DIMENSIONS



NL3



WL3

| | A | B | C | D | E | F | G | H | J |
|------------|-----|-----|-----|-----|------|-----|-----|-----|-----|
| NL3 | 300 | 370 | 365 | 730 | 760 | 400 | 492 | 230 | 100 |
| WL3 | 600 | 670 | 485 | 970 | 1000 | 700 | 820 | 300 | 200 |

CYLINDER OPTIONS

SERIES NL3, WL3

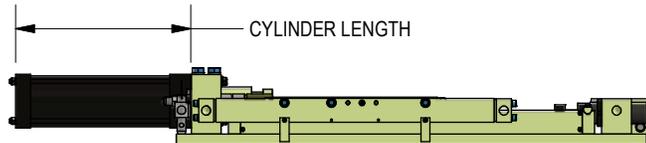
| | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NL3 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | X | 0 | 0 | 0 | 0 | P | 1 | W |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Cylinder Options (Pneumatic)

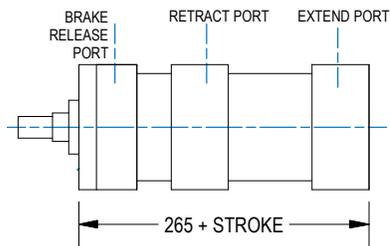
| | CYLINDER OPTION | *CYLINDER LENGTH | CYL PORTS | CYL TYPE | BRAKE PORTS |
|-----------|---|--|-----------------|----------|-----------------|
| 01 | Double Acting (NPT Ports) | 150 + STROKE | 1/2" NPT | NON-LOCK | N/A |
| 03 | Double Acting ("G" Ports) | 150 + STROKE | 1/2 G | NON-LOCK | N/A |
| 04 | Double Acting with Rod Lock (NPT Ports) | 265 + STROKE | 1/2" NPT | LOCK | 1/4" NPT |
| 06 | Double Acting with Rod Lock ("G" Ports) | 265 + STROKE | 1/2 G | LOCK | 1/4 G |
| 07 | Duplex (NPT Ports) | 265 + **TOTAL STROKE + 1ST STROKE | 1/2" NPT | DUPLEX | N/A |
| 09 | Duplex ("G" Ports) | 265 + **TOTAL STROKE + 1ST STROKE | 1/2 G | DUPLEX | N/A |

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

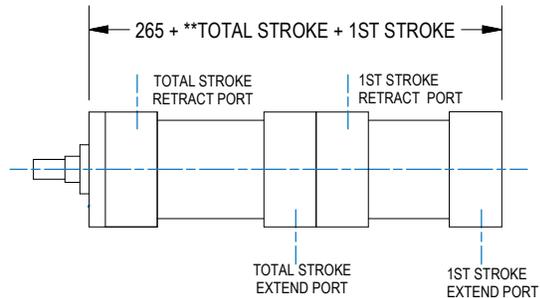
**TOTAL STROKE = 1ST STROKE + 2ND STROKE. 1ST STROKE STARTS FROM CARRIAGE IN RETRACTED POSITION AS SHOWN



CYLINDER OPTIONS 01, 03



CYLINDER OPTIONS 04, 06



CYLINDER OPTIONS 07, 09

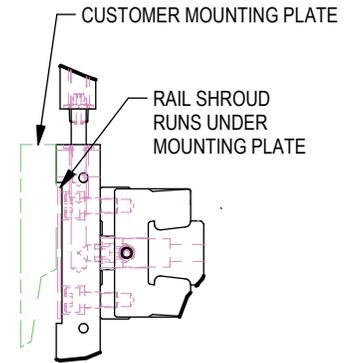
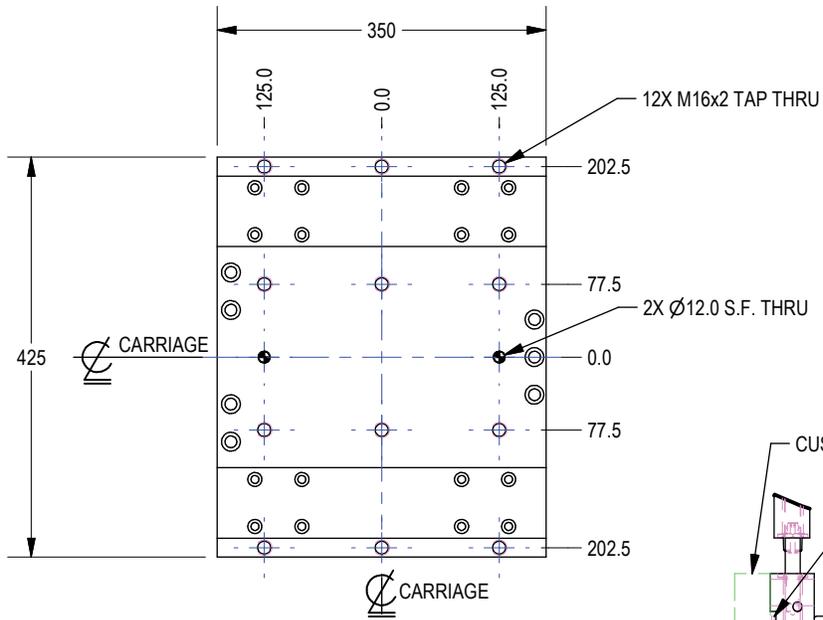
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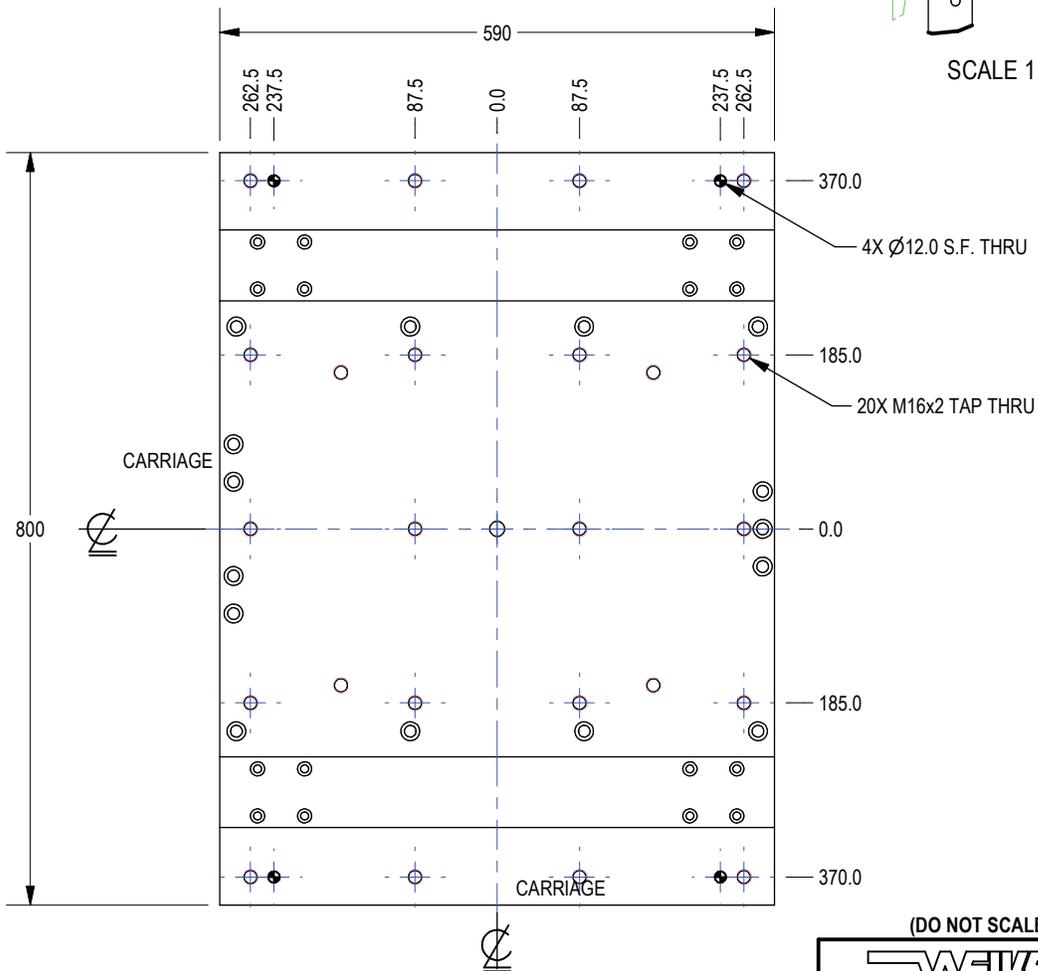
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NL3 CARRIAGE



SCALE 1 / 4

WL3 CARRIAGE



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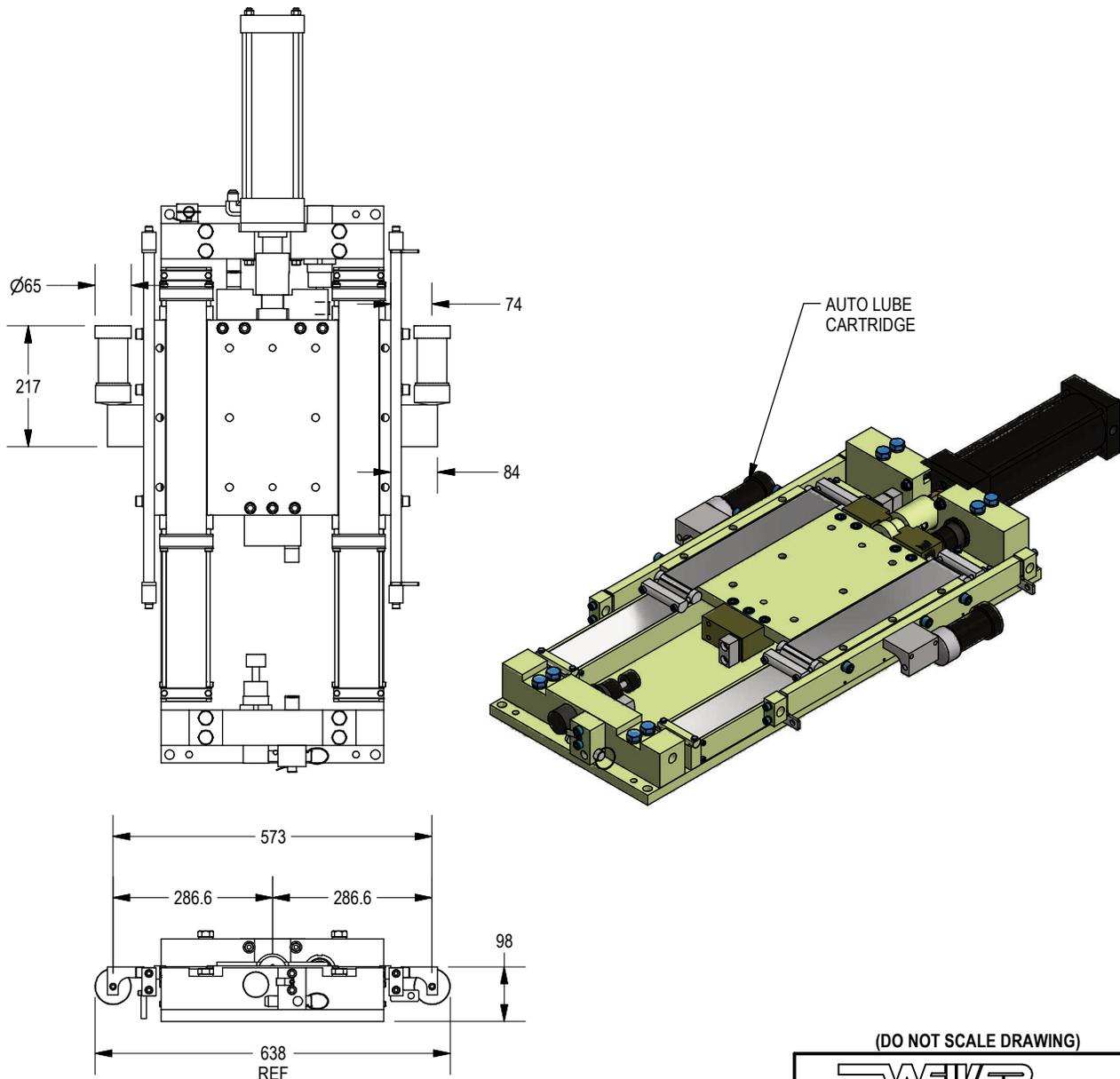
NL3 AUTO LUBE OPTION

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.



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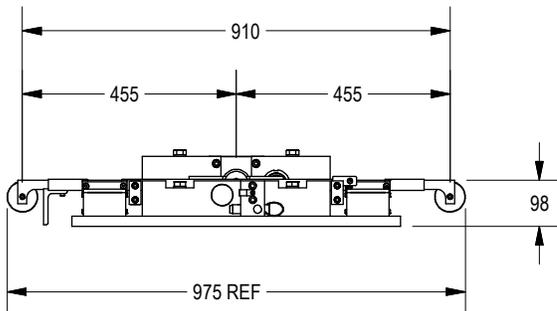
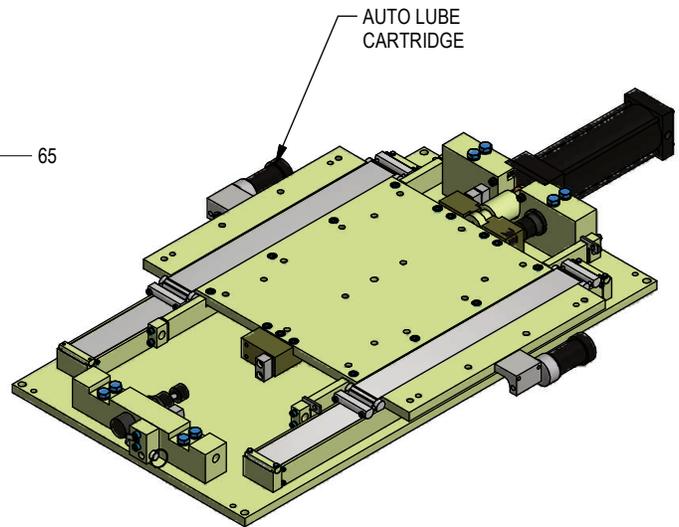
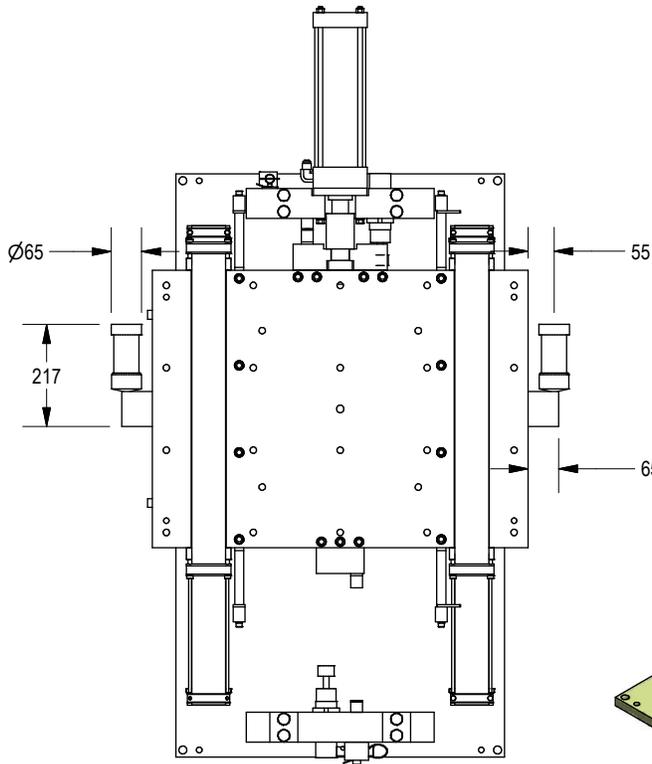
WL3 AUTO LUBE OPTION

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.



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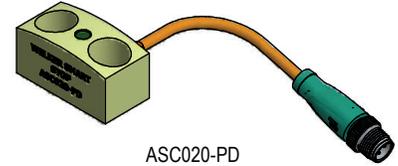
WELKER SMART STOP

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

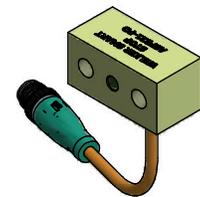
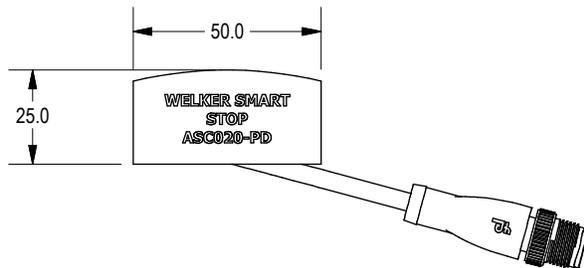
WELKER SMART STOP eliminates:

- 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 proxies 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



ASC020-PD



ASF021-PD

General Specifications

| | |
|----------------------------------|--------------------|
| Switching function | Normally Open (NO) |
| Output type | PNP |
| Rated operating distance, s_n | 1.75mm |
| Output polarity | DC |
| Assured operating distance s_a | 0 - 1.42 mm |
| Output type | 3-wire |

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 | ≤ 1.5 V |
| Operating current, I_L | 0 - 100 mA |
| Off-state current, I_r | 0 - 0.2 mA |
| No-load supply current, I_0 | ≤ 15 mA |

Indicators/Operating Means

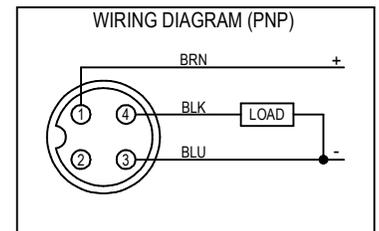
| | |
|-----------------------------|------------|
| Operating voltage indicator | LED green |
| Switching state indicator | LED yellow |

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 |



(DO NOT SCALE DRAWING)



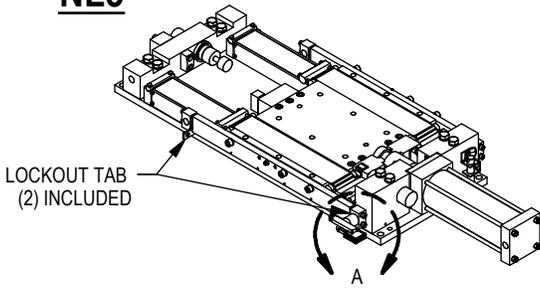
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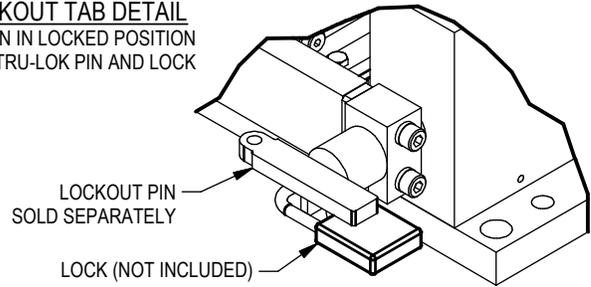
LOCKOUT ~ NOT INCLUDED ~ ORDER SEPARATELY

SEE FOLLOWING SHEET FOR TRU-LOK DETAILS

NL3



LOCKOUT TAB DETAIL
SHOWN IN LOCKED POSITION
WITH TRU-LOK PIN AND LOCK



NL3 TRU-LOK ORDERING INFORMATION

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

| | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|--|--|---|---|--|--|
| S | P | 1 | 9 | | 0 | 6 | 5 | | | 0 | 0 | | |
|---|---|---|---|--|---|---|---|--|--|---|---|--|--|

Saddle Color*

- Y Yellow
- R Red

Handle Style

- T T-Handle
- S Straight

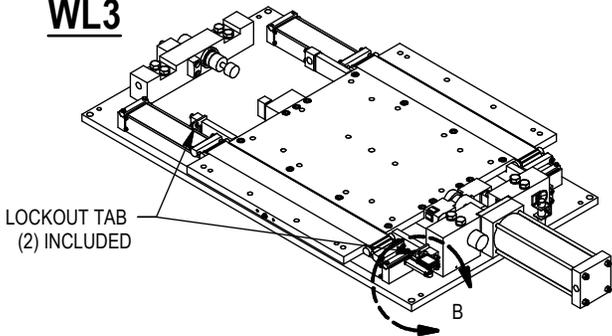
Handle Color*

- Y Yellow
- R Red

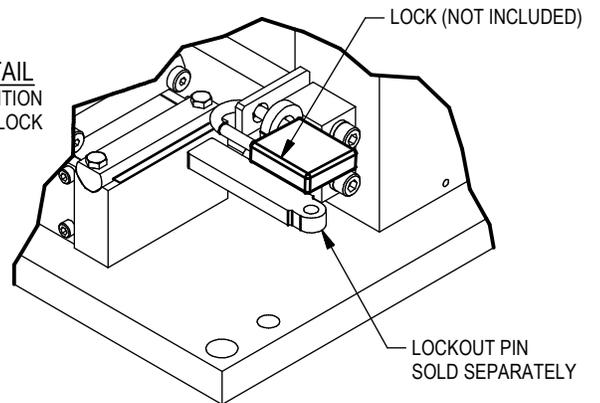
Switch

- 000 No Switch
- 200 Pepperl & Fuchs
Cube Switch [GM]
NBB20-L3M-A2-C3-V1
- 201 Turck Cube Switch
1627297 [FCA, Ford]

WL3



LOCKOUT TAB DETAIL
SHOWN IN LOCKED POSITION
WITH TRU-LOK PIN AND LOCK



WL3 TRU-LOK ORDERING INFORMATION

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

| | | | | | | | | | | | | | |
|---|---|---|---|--|---|---|---|--|--|---|---|--|--|
| S | P | 1 | 9 | | 0 | 6 | 0 | | | 0 | 0 | | |
|---|---|---|---|--|---|---|---|--|--|---|---|--|--|

Saddle Color*

- Y Yellow
- R Red

Handle Style

- T T-Handle
- S Straight

Handle Color*

- Y Yellow
- R Red

Switch

- 000 No Switch
- 200 Pepperl & Fuchs
Cube Switch [GM]
NBB20-L3M-A2-C3-V1
- 201 Turck Cube Switch
1627297 [FCA, Ford]

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

(DO NOT SCALE DRAWING)



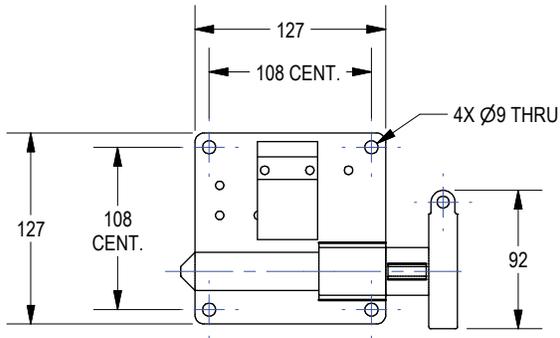
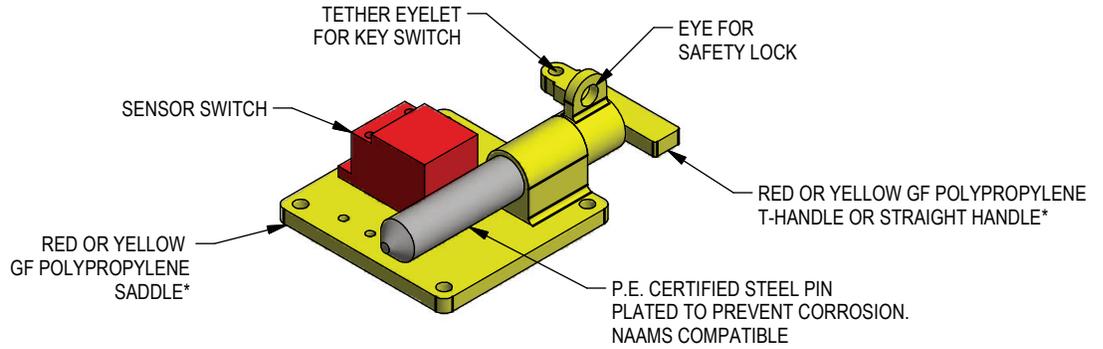
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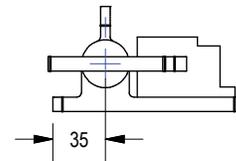
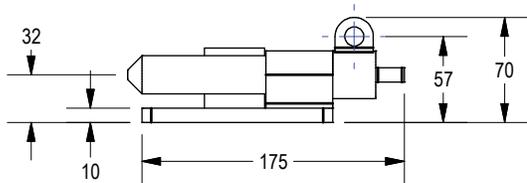
TRU-LOK-OUT ASSEMBLY

NOT INCLUDED WITH SLIDE: ORDER SEPARATELY

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



| | |
|-------------|-----------------|
| MATERIAL | 4140 PHT, Rc 33 |
| YIELD | 95000 |
| SHEAR YIELD | 55100 |



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

(DO NOT SCALE DRAWING)



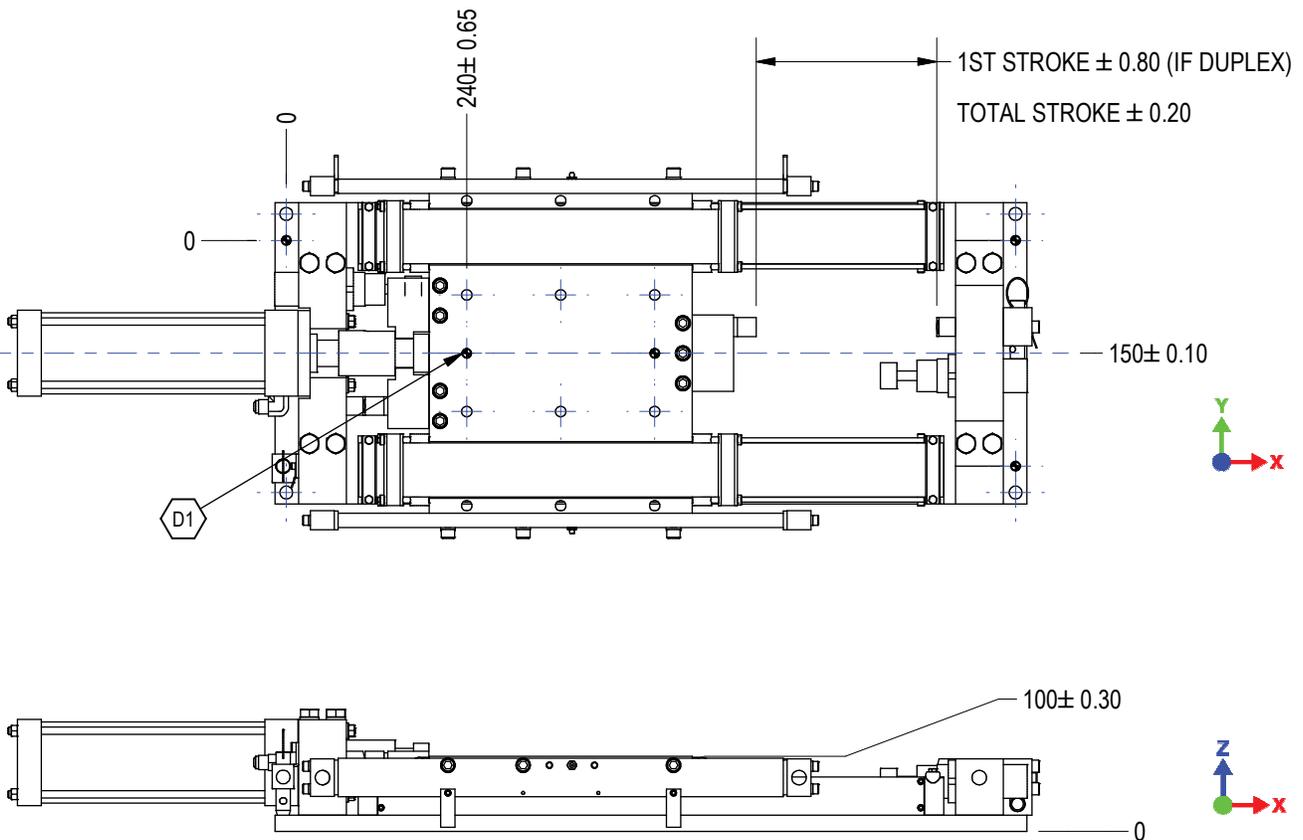
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NL3 SLIDE ACCURACY

POSITIONAL ACCURACY specifies the allowable deviation between the nominal position of a reference point on the carriage (D1 as shown) to the actual position that is achieved.

TRAVEL ACCURACY specifies the allowable deviation along the plane of motion of a reference point on the carriage (D1 as shown) to the actual position *during movement* - in other words, the allowable side-to-side movement (in the direction of Y) and up-and-down movement (in the direction of Z) as the unit travels.

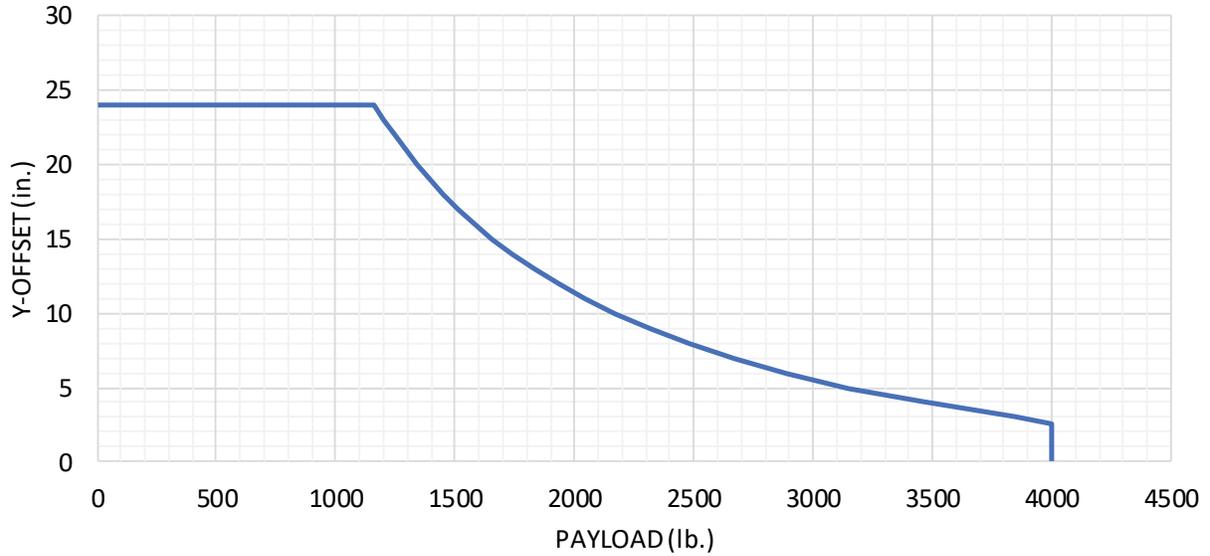


| TRAVEL ACCURACY (RUNOUT) | |
|--------------------------|-------------|
| Y-DIRECTION | Z-DIRECTION |
| 0.15 | 0.15 |

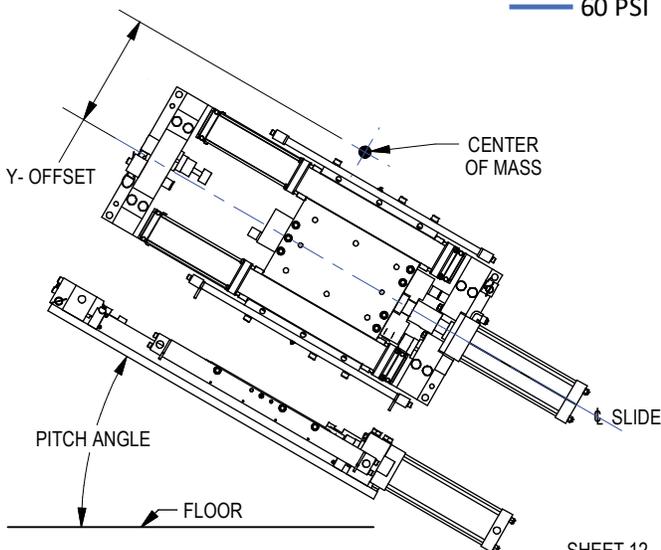
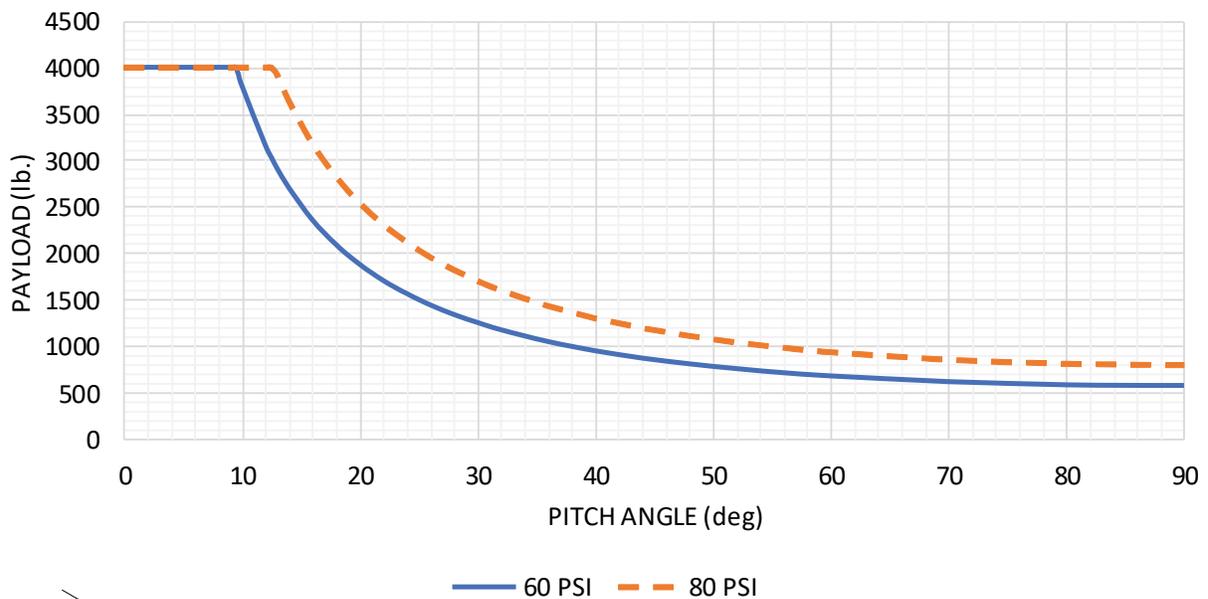
(DO NOT SCALE DRAWING)

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NL3 PAYLOAD v. Y-OFFSET CAPACITY



NL3 PITCH ANGLE v. PAYLOAD CAPACITY



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.

(DO NOT SCALE DRAWING)

WELKER

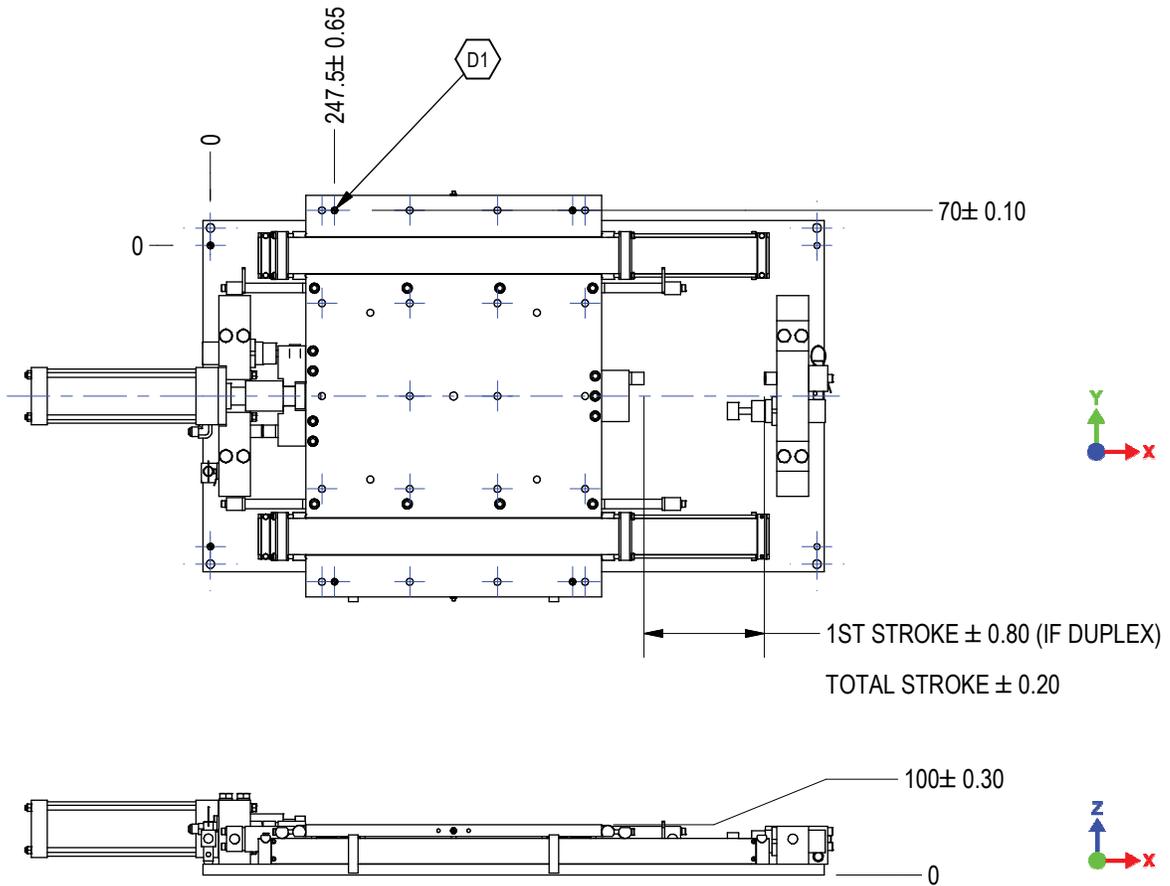
ENGINEERED PRODUCTS

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WL3 SLIDE ACCURACY

POSITIONAL ACCURACY specifies the allowable deviation between the nominal position of a reference point on the carriage (D1 as shown) to the actual position that is achieved.

TRAVEL ACCURACY specifies the allowable deviation along the plane of motion of a reference point on the carriage (D1 as shown) to the actual position *during movement* - in other words, the allowable side-to-side movement (in the direction of Y) and up-and-down movement (in the direction of Z) as the unit travels.



| TRAVEL ACCURACY (RUNOUT) | |
|--------------------------|-------------|
| Y-DIRECTION | Z-DIRECTION |
| 0.15 | 0.15 |

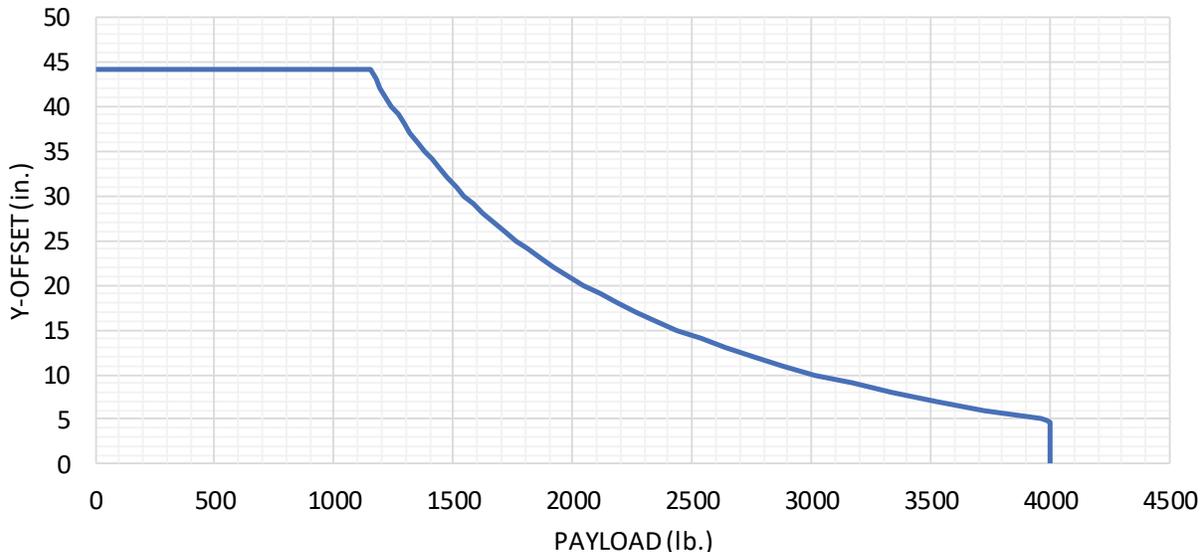
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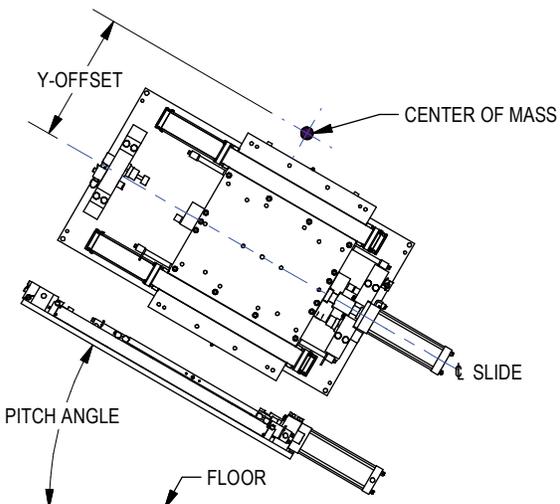
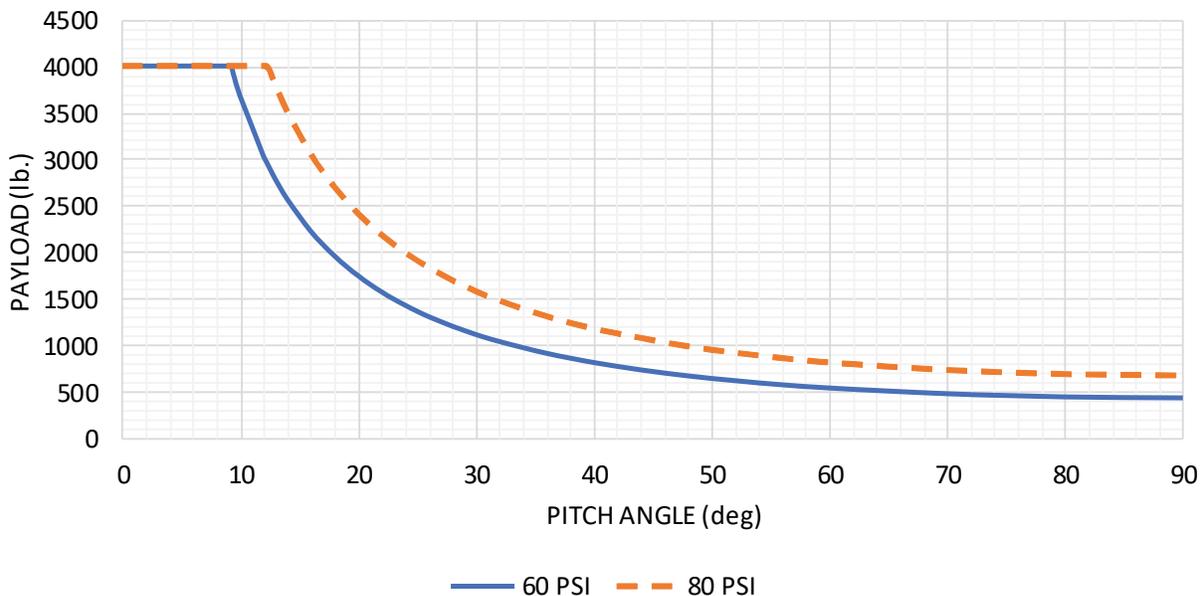
ENGINEERED PRODUCTS

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WL3 PAYLOAD v. Y-OFFSET CAPACITY



WL3 PITCH ANGLE v. PAYLOAD CAPACITY



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.

(DO NOT SCALE DRAWING)

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