MES LINEAR SLIDE

60mm - 3720mm STROKE
115kg [250lb.] MAX LOAD

CARRIAGE PLATE FOR
CUSTOMER SUPPLIED
TOOLING

COMPACT ALUMINUM EXTRUSION FRAME
WITH 15-SERIES LINEAR BEARINGS

ALIGNMENT PIN
FOR HOMING
VERIFICATION

NYLON BRUSH

MOUNTING PLATE:
(2 EA) 60mm - 1740mm INDEX
(3 EA) 1800mm - 3720mm INDEX,
CENTERED MIDDLE PLATE

INTEGRATED SERVO
MOTOR STANDARD.
NO EXTERNAL DRIVES
REQUIRED (CUSTOMER-
SPECIFIED MOTORS
OPTIONAL)

ZERK LUBE ACCESS
(2) PER SIDE

SERVO MOTOR
WITH GEARBOX:
UP POSITION

ALIGNMENT PIN
IN-POSITION

ORDERING INFORMATION

| M E S | | | | | B | S | | | | | | A |

Index
0060 60mm to 3720mm
In 60mm Increments
(0060 Index shown)

Motor
100 Welker Standard Motor
101 Welker Standard Motor with Adaptors
102 Welker Standard Motor with Cables
XXX Customer Spec (Contact Welker)

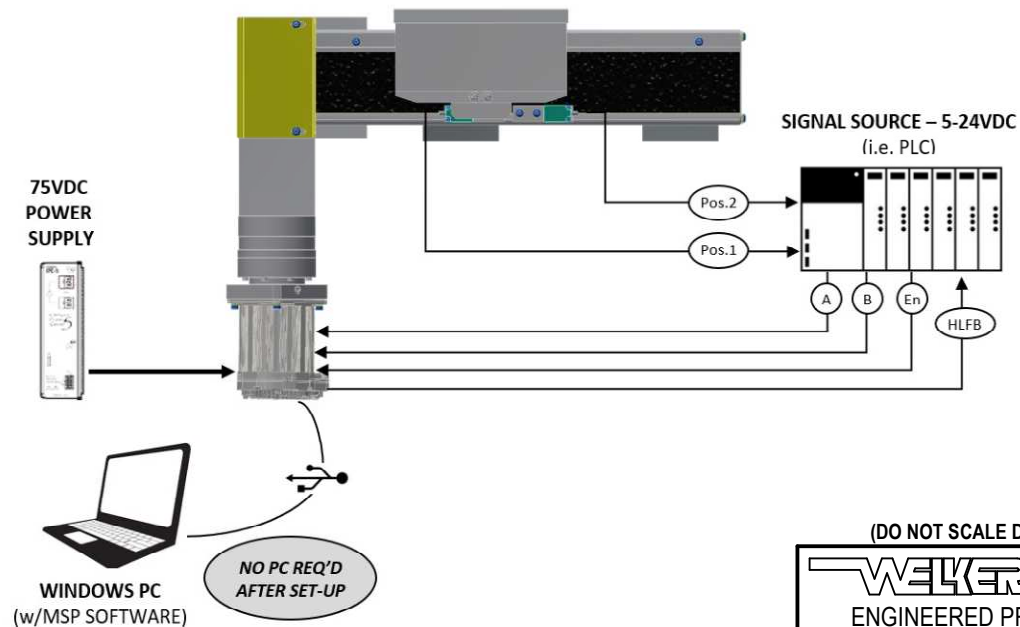## Motor Position
1 Motor Up
3 Motor Down

Switches
0 None (Customer Supplied)
W Welker Supplied for Standard Motor
V Welker Supplied for VFD (6 switches: accel/decel, in-position, overtravel)
Note: 350mm minimum index required for V Switch option

Standard Motor Overview

The standard motor for the Welker MES is a NEMA34 brushless 75VDC servo with integrated motion controller. The motor is pre-programmed from the factory and requires no additional set-up.
The figure below provides an overview of the basic system set-up. Once the motor is initially programmed at the factory it requires (3) low voltage discrete input signals from a PLC, switches, or similar. For more detailed information, see the MES Operation Manual
Alternative motors may be specified upon request. Contact Welker for more information.
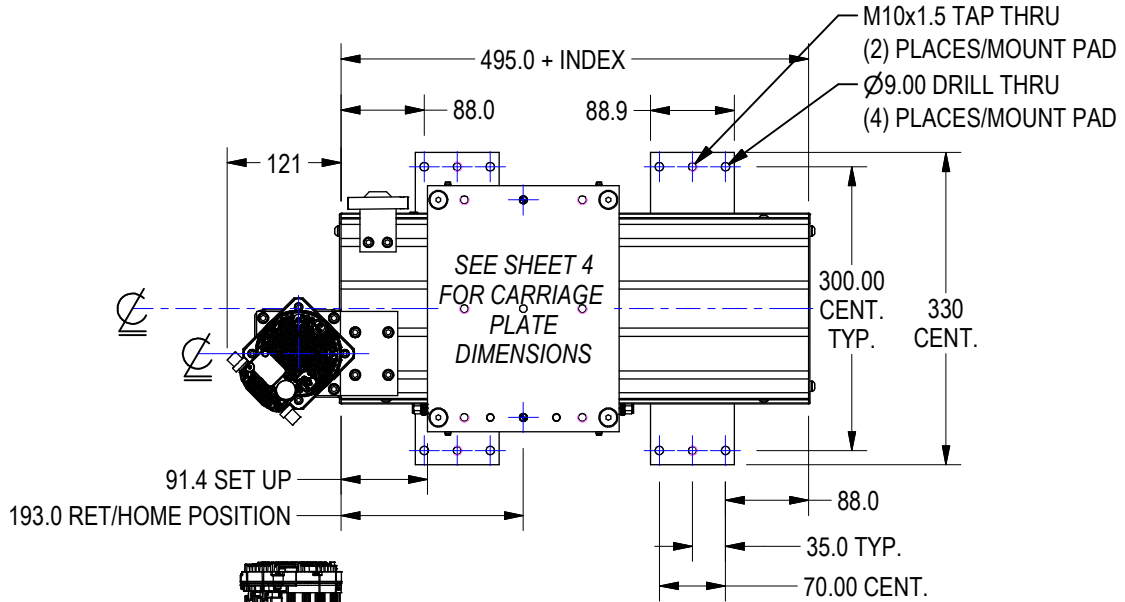

SIGNAL SOURCE – 5-24VDC
(i.e. PLC)

Pos.2
Pos.1

A   B   En   HLFB

75VDC
POWER
SUPPLY

WINDOWS PC
(w/MSP SOFTWARE)

NO PC REQ'D
AFTER SET-UP

(DO NOT SCALE DRAWING)

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SHEET 2

GENERAL DIMENSIONS

("0" INDEX UNIT SHOWN)

M10x1.5 TAP THRU
(2) PLACES/MOUNT PAD

Ø9.00 DRILL THRU
(4) PLACES/MOUNT PAD

495.0 + INDEX

88.0

88.9

121

SEE SHEET 4
FOR CARRIAGE
PLATE
DIMENSIONS

300.00
CENT.
TYP.

330
CENT.

91.4 SET UP

193.0 RET/HOME POSITION

88.0

35.0 TYP.

70.00 CENT.
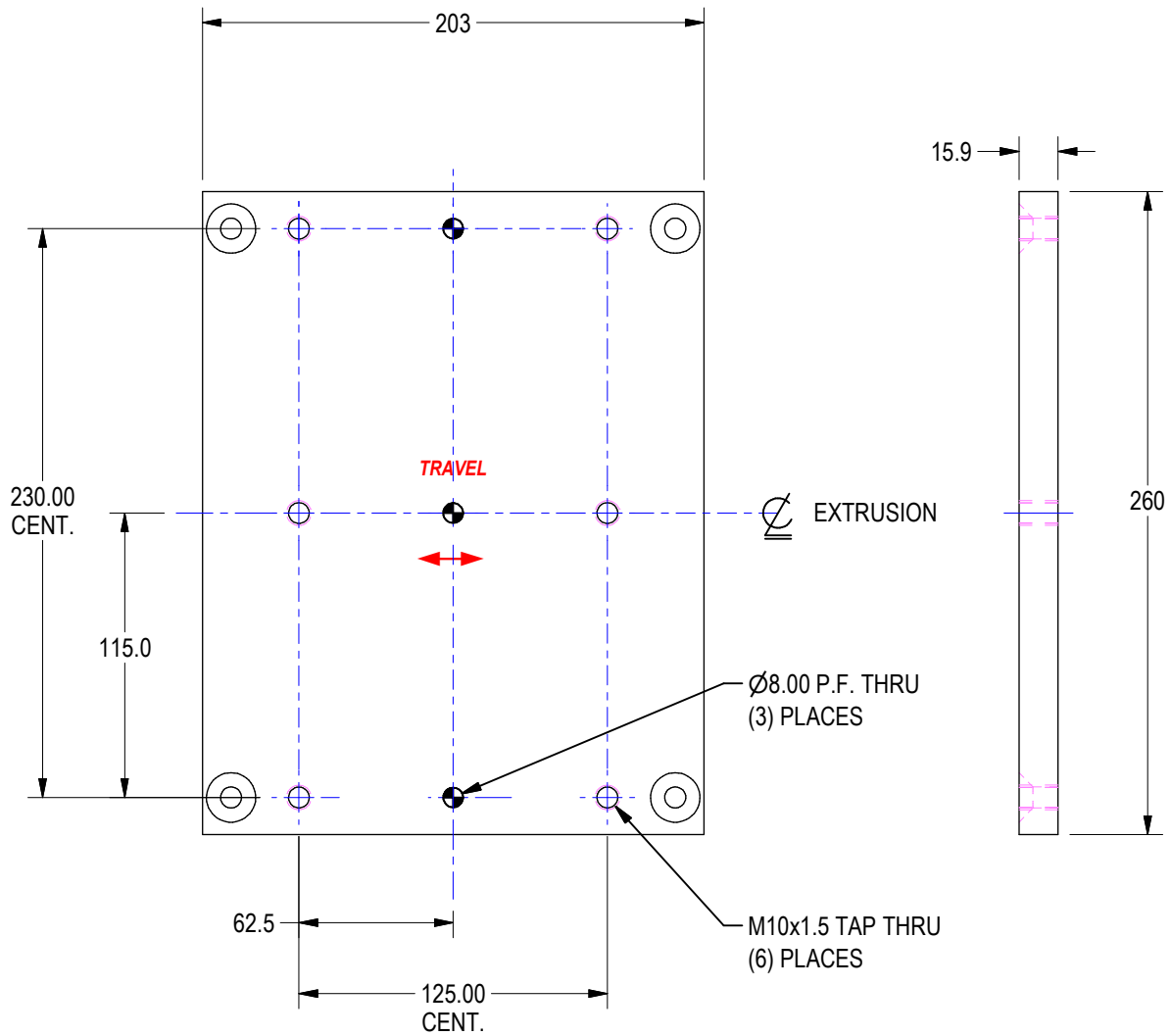
NOTE:
10mm TRAVEL CLEARANCE
AT EACH END OF STROKE
FOR HOMING/OVER TRAVEL

SEE SHEET 5 FOR HOMING PIN INFORMATION
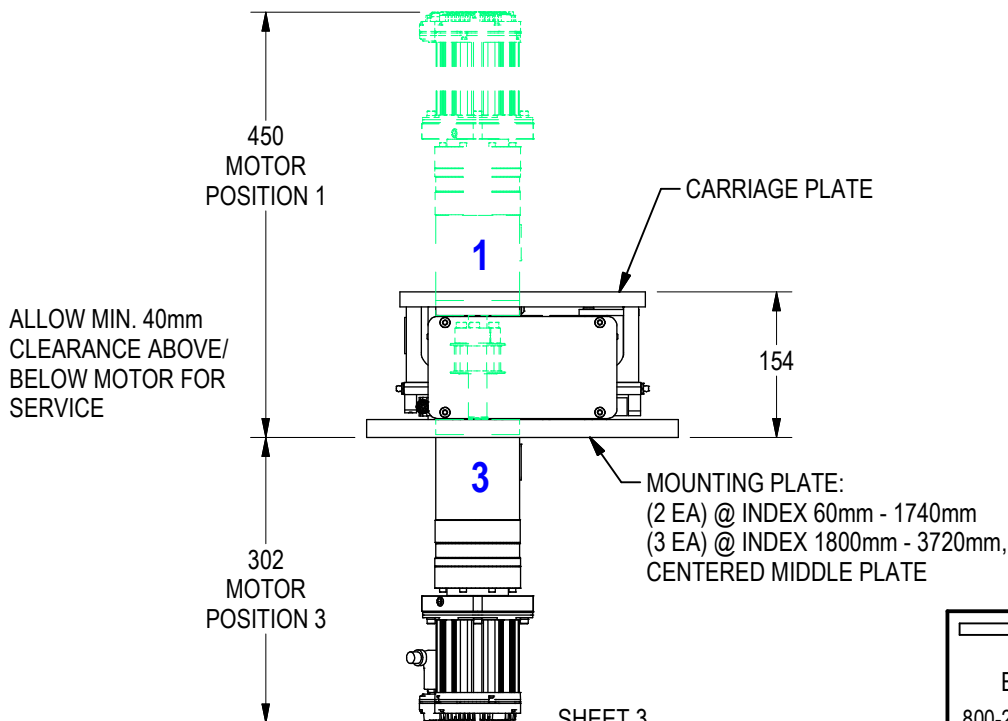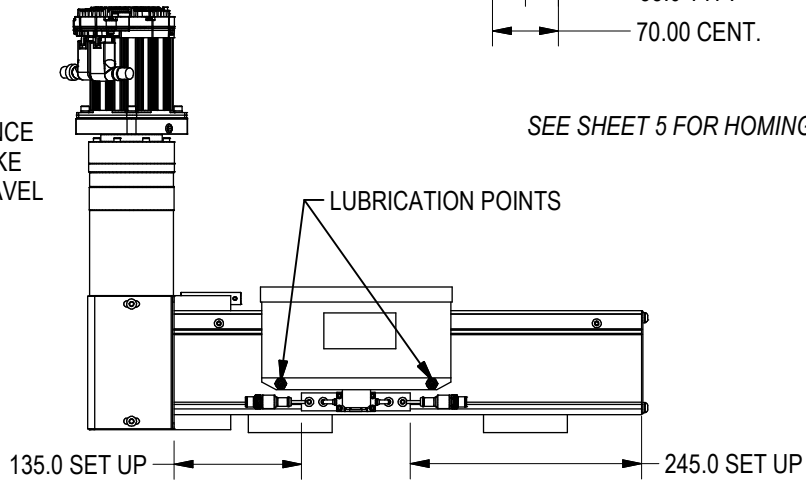
LUBRICATION POINTS

135.0 SET UP
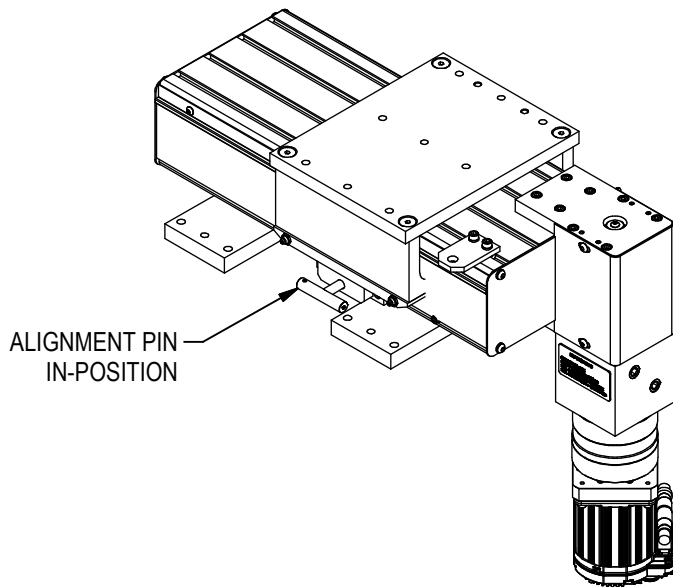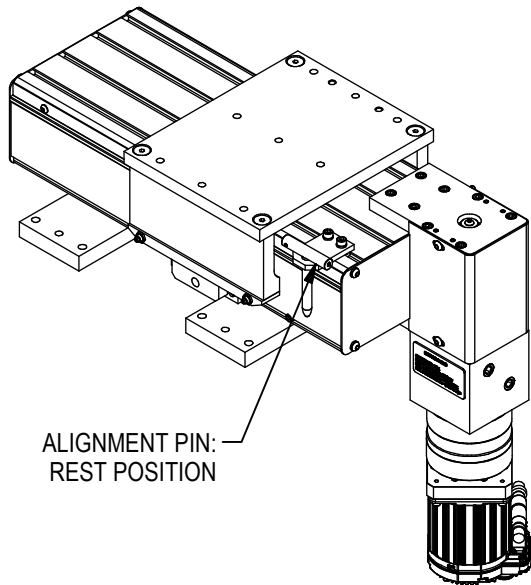
245.0 SET UP

450
MOTOR
POSITION 1

CARRIAGE PLATE

1

154

ALLOW MIN. 40mm
CLEARANCE ABOVE/
BELOW MOTOR FOR
SERVICE

3

MOUNTING PLATE:
(2 EA) @ INDEX 60mm - 1740mm
(3 EA) @ INDEX 1800mm - 3720mm,
CENTERED MIDDLE PLATE

302
MOTOR
POSITION 3

(DO NOT SCALE DRAWING)

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SHEET 3

CARRIAGE PLATE DIMENSIONS

203

230.00
CENT.

115.0

TRAVEL

⌀ EXTRUSION

15.9

260

⌀8.00 P.F. THRU
(3) PLACES

62.5

125.00
CENT.

M10x1.5 TAP THRU
(6) PLACES

SHEET 4

HOMING PIN INFORMATION

ALIGNMENT PIN:
REST POSITION

ALIGNMENT PIN
IN-POSITION

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ENGINEERED PRODUCTS

SHEET 5

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INDEX TIMES

APPROXIMATE ONE-WAY TRAVEL TIMES FOR THE MES ARE SHOWN IN THE CHART BELOW AND ARE BASED ON THE MAXIMUM TRAVEL SPEED AND ACCELERATION/DECELERATION OF 600mm/s [23.6in./s] AND 1,200mm/s^2 [47.2in./s^2] RESPECTIVELY.
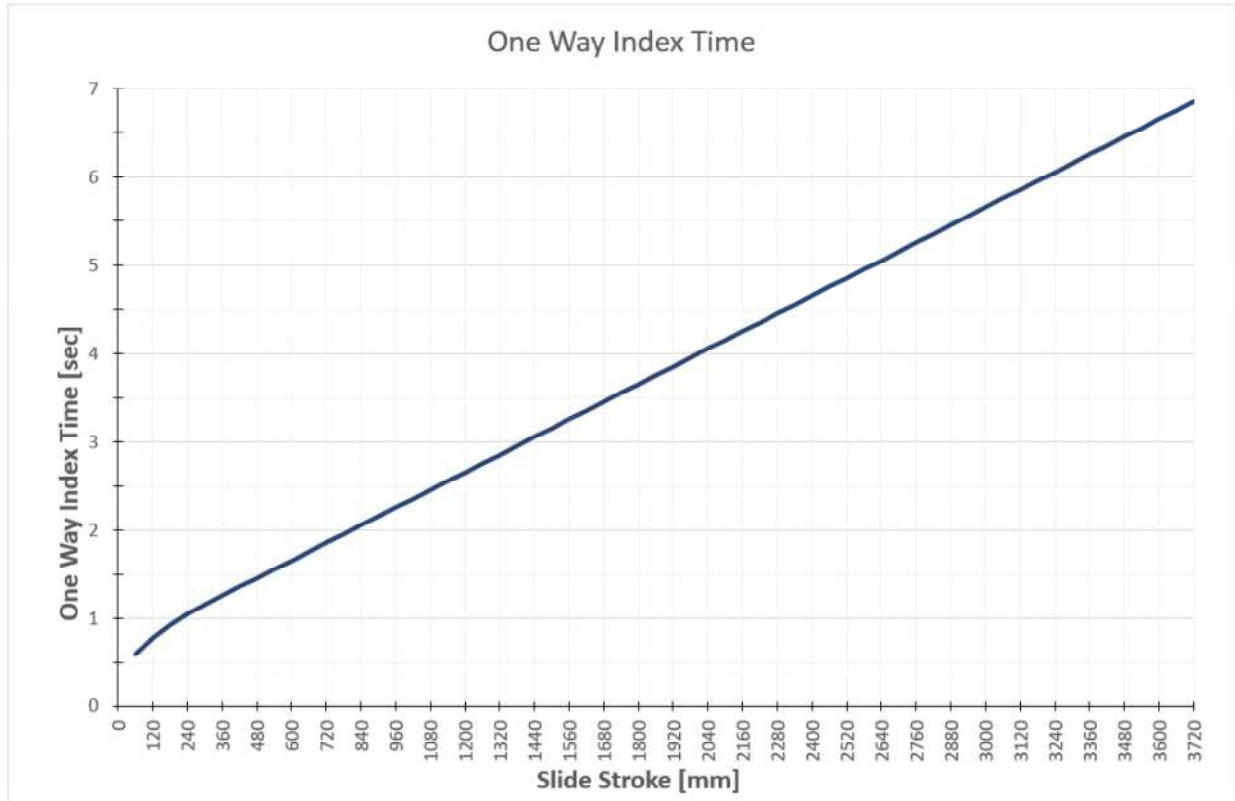
STANDARD ACCURACY & REPEATABILITY
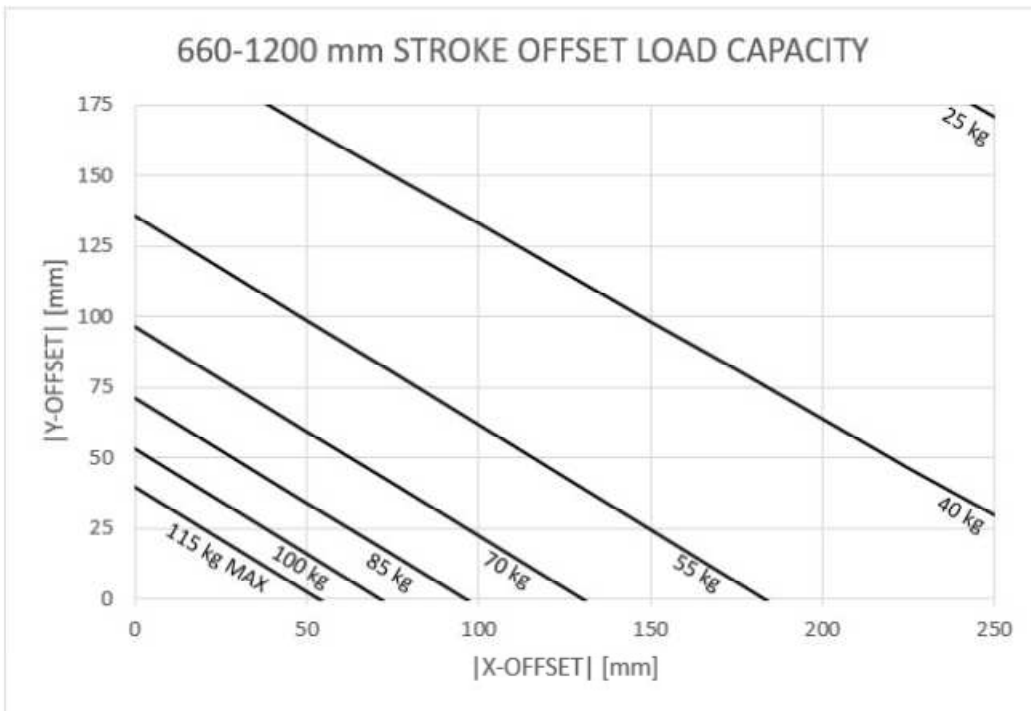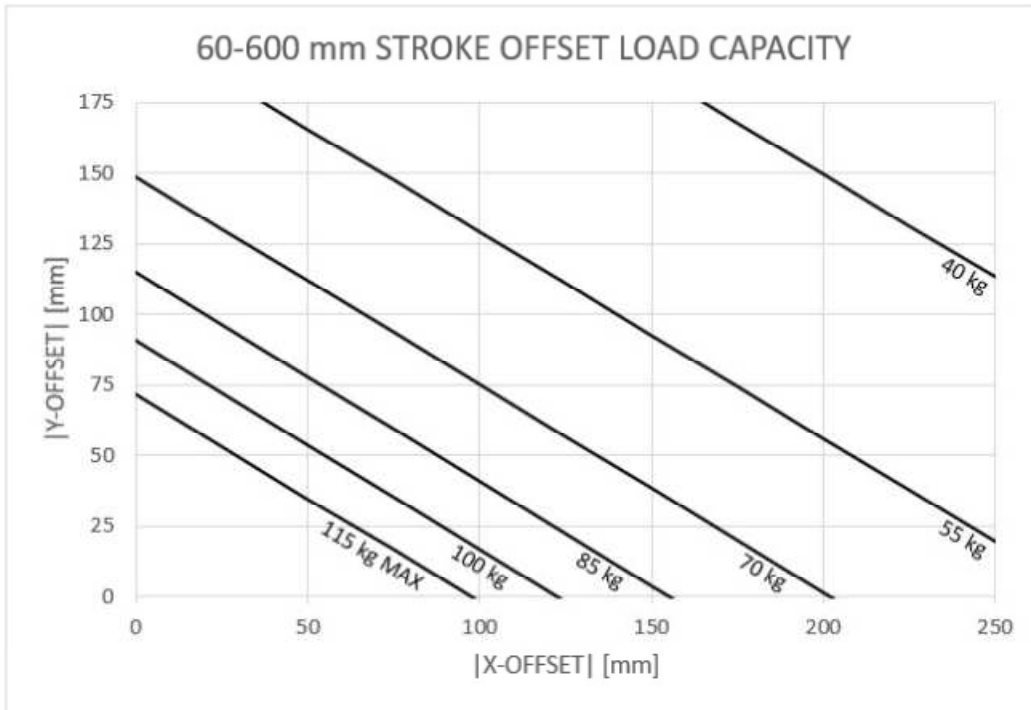
STOPPING POSITION ACCURACY: +/-0.5mm
STOPPING POSITION REPEATABILITY: +/-0.25mm

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LOAD CAPACITY CHARTS
USE LOAD CAPACITY PLOTS FOR INITIAL DESIGN SELECTION.
USE THE MES LINEAR SLIDE CALCULATOR TOOL FOR FINAL DESIGN VERIFICATION.

60-600 mm STROKE OFFSET LOAD CAPACITY

660-1200 mm STROKE OFFSET LOAD CAPACITY

Application example for a 1500mm stroke slide with a 100mm "X-offset" and 50mm "Y-offset":
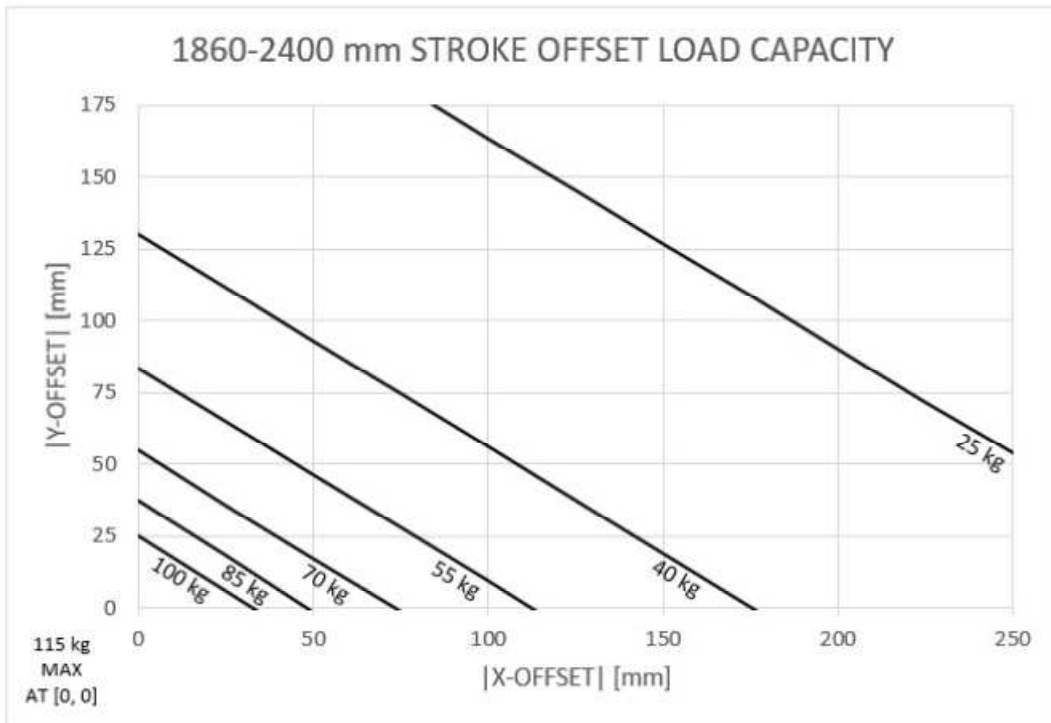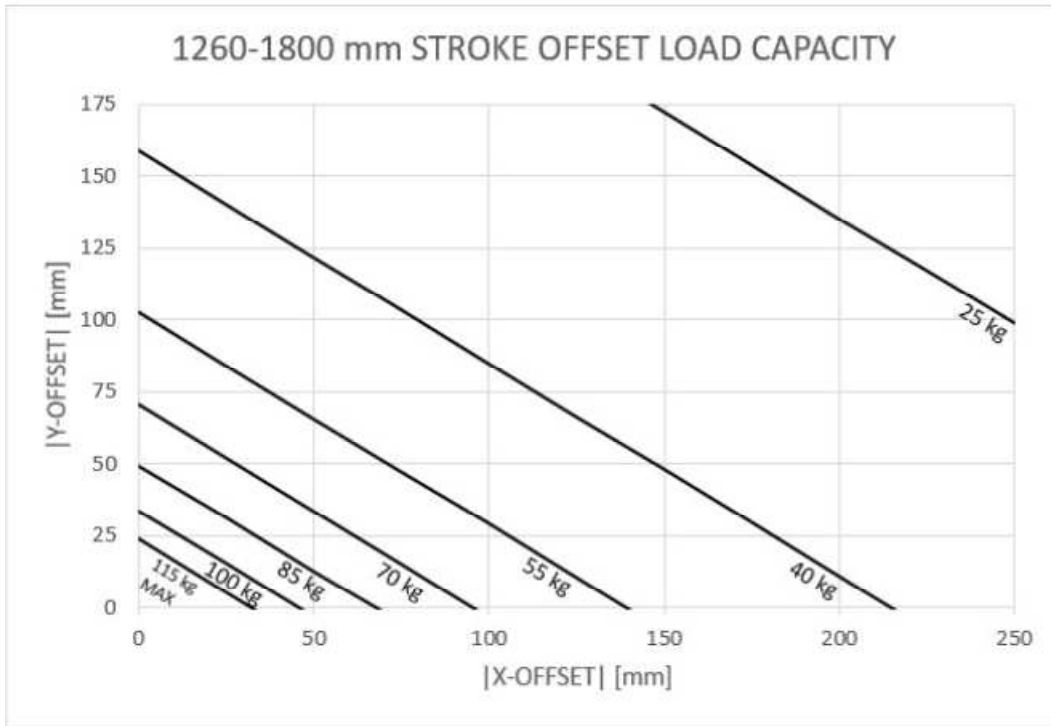
Use the 1260-1800mm stroke offset load capacity plot. Draw a vertical line that crosses the "X-offset" axis at 100mm. Draw a horizontal line that crosses the "Y-offset" axis at 50mm. Find the point where both lines intersect to find (interpolate) the allowable load capacity. This slide would have an estimated load capacity range of 48-50kg at the offsets specified.

(DO NOT SCALE DRAWING)

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SHEET 7

LOAD CAPACITY CHARTS
USE LOAD CAPACITY PLOTS FOR INITIAL DESIGN SELECTION.
USE THE MES LINEAR SLIDE CALCULATOR TOOL FOR FINAL DESIGN VERIFICATION.

1260-1800 mm STROKE OFFSET LOAD CAPACITY

1860-2400 mm STROKE OFFSET LOAD CAPACITY

Application example for a 1500mm stroke slide with a 100mm "X-offset" and 50mm "Y-offset":

Use the 1260-1800mm stroke offset load capacity plot. Draw a vertical line that crosses the "X-offset" axis at 100mm. Draw a horizontal line that crosses the "Y-offset" axis at 50mm. Find the point where both lines intersect to find (interpolate) the allowable load capacity. This slide would have an estimated load capacity range of 48-50kg at the offsets specified.
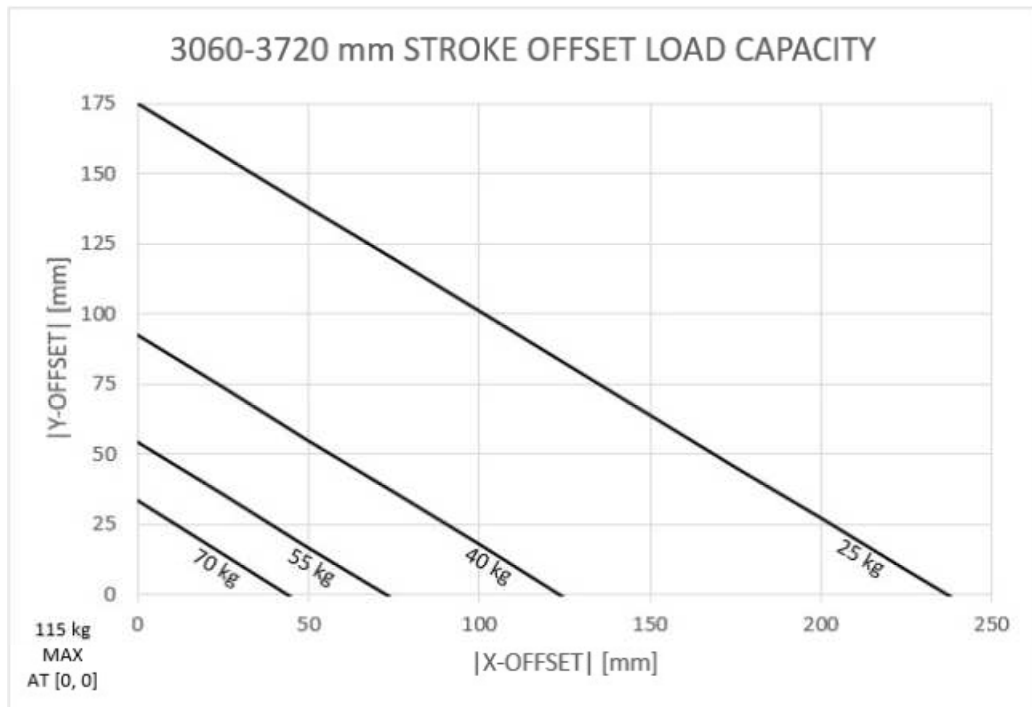
(DO NOT SCALE DRAWING)

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SHEET 8

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LOAD CAPACITY CHARTS

USE LOAD CAPACITY PLOTS FOR INITIAL DESIGN SELECTION.
USE THE MES LINEAR SLIDE CALCULATOR TOOL FOR FINAL DESIGN VERIFICATION.

2460-3000 mm STROKE OFFSET LOAD CAPACITY

Y-axis: |Y-OFFSET| [mm] — 0, 25, 50, 75, 100, 125, 150, 175
X-axis: |X-OFFSET| [mm] — 0, 50, 100, 150, 200, 250

Curves labeled: 85 kg, 70 kg, 55 kg, 40 kg, 25 kg

115 kg MAX AT [0, 0]

3060-3720 mm STROKE OFFSET LOAD CAPACITY

Y-axis: |Y-OFFSET| [mm] — 0, 25, 50, 75, 100, 125, 150, 175
X-axis: |X-OFFSET| [mm] — 0, 50, 100, 150, 200, 250

Curves labeled: 70 kg, 55 kg, 40 kg, 25 kg

115 kg MAX AT [0, 0]

Application example for a 1500mm stroke slide with a 100mm "X-offset" and 50mm "Y-offset":

Use the 1260-1800mm stroke offset load capacity plot. Draw a vertical line that crosses the "X-offset" axis at 100mm. Draw a horizontal line that crosses the "Y-offset" axis at 50mm. Find the point where both lines intersect to find (interpolate) the allowable load capacity. This slide would have an estimated load capacity range of 48-50kg at the offsets specified.
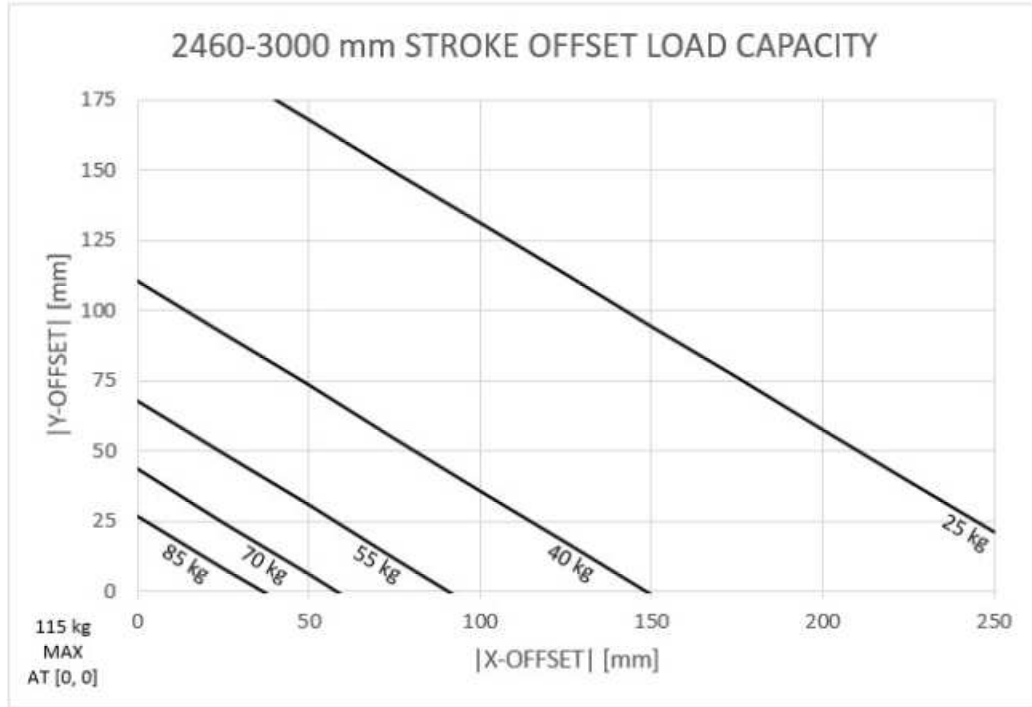
(DO NOT SCALE DRAWING)

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SHEET 9

MOTOR CONNECTORS

M	E	S	1	2	0	0	B	S				1	W	A

Motor

100 Welker Standard Motor

101 Welker Standard Motor with Adaptors

102 Welker Standard Motor with Cables

XXX Customer Spec (Contact Welker)
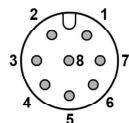
MOTOR OPTION 100

Standard motor connectors, no cables or adapters included. Connector for power and control are Molex Minifit Jr. 4-pin and 8-pin respectively. See MES Operation Manual for details.

MOTOR OPTION 101

Includes adapters for power and control. Allows the use of customer supplied standard cables. Converts connectors from Molex MinFit Jr. to M12 micro quick connect. Logic adapter is 8-pin M12 Type A, male. Power adapter is 4-pin, M12, Type S. See MES Operation Manual for details.

POWER CABLE ADAPTER
PART NUMBER: TM-CABLE-PWR

Male 8-Pin M12 Micro
Connector (Type A)

CONTROL CABLE ADAPTER
PART NUMBER: TM-CABLE-CTRL
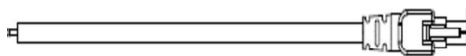

Male 4-Pin M12 Micro
Connector (Type S)

MOTOR OPTION 102

Includes cables with overmolded MiniFit Jr. connectors and flying leads . See MES Operation Manual for details.

POWER CABLE
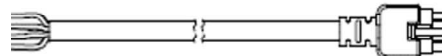PART NUMBER: PWR-MS120
LENGTH: 3m

Flying leads
(field wireable)

MOTOR END
Molex MiniFitJr. 4-pin

CONTROL CABLE
PART NUMBER: CPM-CABLE-CTRL-MU120
LENGTH: 3m

Flying leads
(field wireable)

MOTOR END
Molex MiniFitJr. 8-pin

(DO NOT SCALE DRAWING)

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