

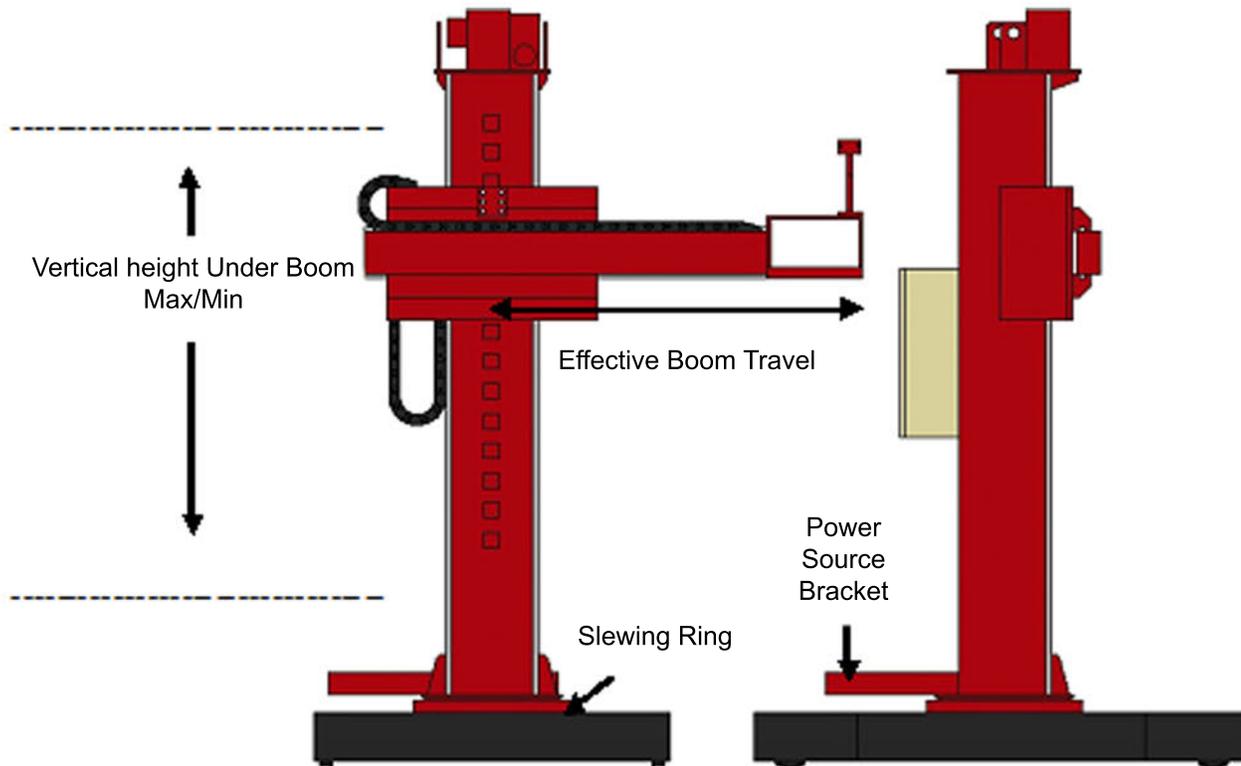
MM3535

The **Harbach Positioning** medium duty series of Column & Boom Manipulators are specifically designed and built to withstand the harsh and rugged environments expected in the welding industry. It includes the following features:

- A slewing ring for column mounting, thereby providing a smooth 360° lockable rotation.
- All vertical and horizontal rails are precisely machined in single runs giving unsurpassed smooth and steady travel.
- Latest Inverter drives fitted for variable speed of horizontal boom arm travel and rail travel car (optional).
- Worm gearbox for vertical travel via AC motor complete with brake for added safety.
- High tensile roller chain used for vertical travel with the addition of a counter balance system provides smooth effortless vertical travel.
- IP 55 control box and low voltage pendant control station.
- Standard safety feature includes anti-fall device and limit switches for all functions.
- Internally trunked cabling.

Inclusive:

- Power source mounting bracket of your choice



Medium Duty Harbach Positioning Series

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Optional Features Includes

- Travel car, manual or motorized variable speed operated via the same pendant station via selector switch.
- X-Y slide, manual or motorized, operated via the same pendant station.
- Compressed air operated flux recovery unit
- Welding power source & wire feeder controller system

All Column & Boom Manipulators are grit blasted to SA2.5 and two coats of zinc phosphate paint followed by one coat of polyurethane paintwork will ensure that your investment provides you with many years of uninterrupted service.

Specification

| Input Voltage: 3-Phase Voltage (Specify 3 –phase voltage requirement before ordering) | | | |
|---------------------------------------------------------------------------------------|----------------------------------|---------------------------------|-------------------|
| Electrical Box: IP55 code | | | |
| Vertical Travel Speed: 750mm/min | | | |
| Boom Travel Speed: 200 to 2070 mm/min | | | |
| Carriage Travel Speed: 450 to 4500 mm/min (optional) | | | |
| Model | Effective Travel (Horizontal) mm | Height under Boom (Vertical) mm | Overall Height mm |
| MM2525 | 2500 | 2500 | 3500 |
| MM3030 | 3000 | 3000 | 4000 |
| MM3535 | 3500 | 3500 | 4500 |
| MM4040 | 4000 | 4000 | 5000 |

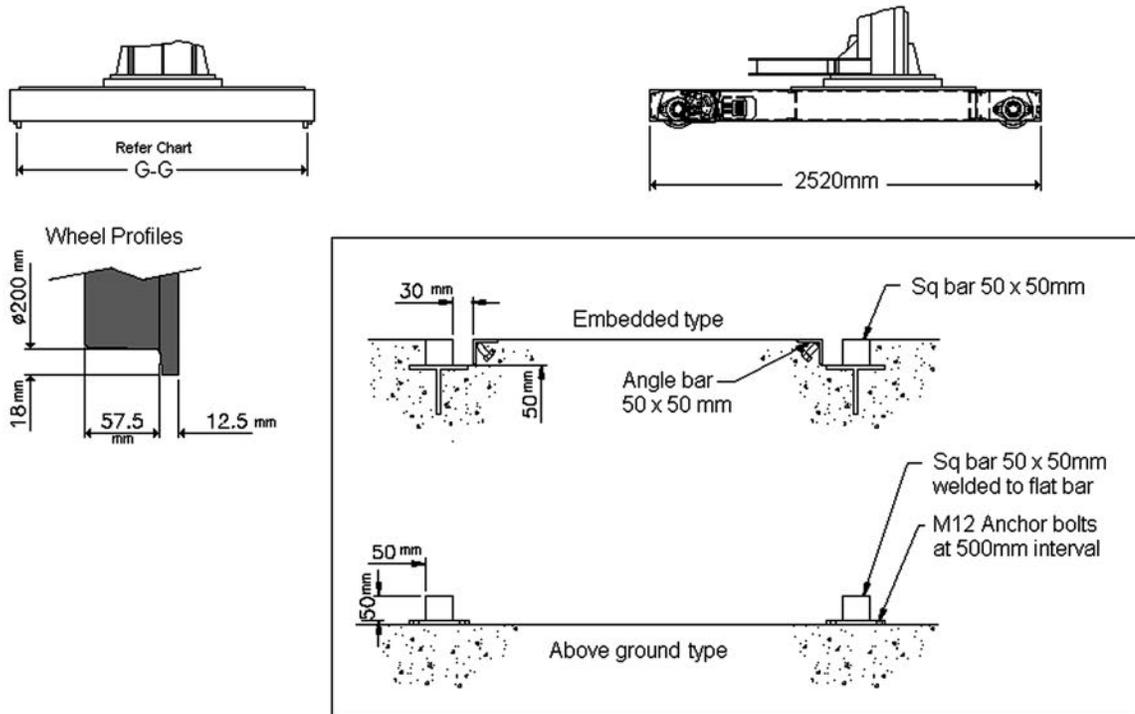
All dimensions are subject to change without prior notice.

All speed base on 50Hz.

Please advise welding power source/welding head to be use.

Medium Duty Harbach Positioning Series

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Manipulator Rail Gauge Table

Medium Duty Type Travelcar Rails G-G in mm (250kg Payload)

MM series

| Boom Height | 2 | 2.5 | 3 | 3.5 | 4 |
|-------------|--------|--------|--------|--------|--------|
| 2 | GG1650 | GG2000 | GG2000 | GG2000 | GG2500 |
| 2.5 | | | | | |
| 3 | GG1650 | GG2000 | GG2000 | GG2000 | GG2500 |
| 3.5 | GG1650 | GG2000 | GG2000 | GG2000 | GG2500 |
| 4 | GG1650 | GG2000 | GG2000 | GG2000 | GG2500 |

Notes:

V denotes Max.Under Boom Height (Vertical), in hundreds of mm. i.e. 20 = 2000mm
H denotes Effective Boom Travel (Horizontal), in hundreds of mm. i.e. 20 = 2000mm

Medium Duty Harbach Positioning Series



Specification Data

Column & Boom Manipulators

Medium Duty Series

Range up to 4.0 x 4.0 meters

MM3535

Ordering Information Checklist

| Equipment | Part Number | Description | |
|---------------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Column & Boom Manipulator | MM25/25 MM30/30 MM35/35 MM40/40 | 2.5 x 2.5-meter Column & Boom 3.0 x 3.0-meter Column & Boom 3.5 x 3.5-meter Column & Boom 4.0 x 4.0-meter Column & Boom (Comes with standard fixed base unless specified) | |
| Base | Options | Fixed base (standard) for floor mounting Travel car Manual for rail mounting Travel car Motorized for rail mounting | Standard Optional Optional |
| Electrical Control | Options | Panel & 3-phase AC motor Panel, step-over & 3-phase AC motor | Standard Optional |

Welding System Accessories

Option One

- Lincoln NA3s Controller
- K208A weld head
- Drive roll kit
- Wire reel
- 600 amps nozzle
- Cable kit Assemble
- 10 Meter ground Cable with clamp
- DC 1000 power source

Optional:

Rotary Clamp 1000 amp

Option Two

- Lincoln NA5 Controller
- K346A weld head
- Drive roll kit
- Wire reel
- 600 amps nozzle
- Cable kit Assemble
- 10 Meter ground Cable with clamp
- DC 1000 power source

Optional:

Rotary Clamp 1000 amp

Option Three

- Miller HDC 1500 Controller
- RAD weld head
- Flux hopper
- Drive roll kit (specify wire size)
- Wire straightener
- 600 amps Nozzle
- Wire reel
- Cable kit assembly
- 10 Meter ground Cable with clamp
- Dimension 1000 power source

Optional:

Rotary Clamp 1000 amp

Medium Duty Harbach Positioning Series

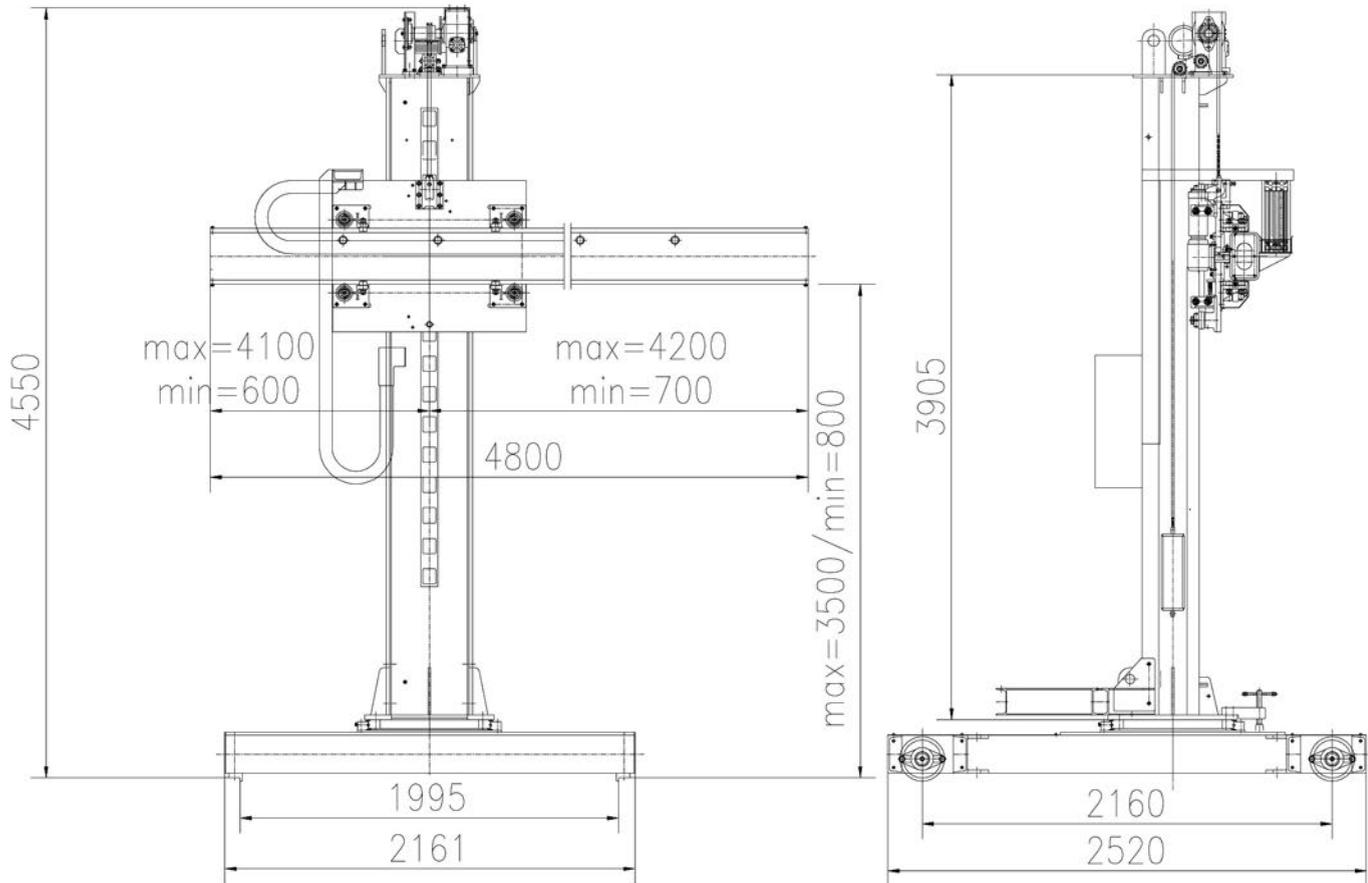
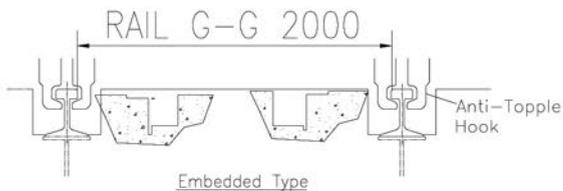
Specifications for Manipulator

| | | |
|----|----------------------------|-----------------------------------------------------------|
| 1 | Model | MM3535-PT2000-WE |
| 2 | Max. Under Boom Height | 3500mm |
| 3 | Effective Boom Travel | 3500mm |
| 4 | Vertical Speed | 750mm/min running at 50Hz |
| 5 | Boom Speed | 200~2000mm/min running at 5~50Hz |
| 6 | Travel Speed | 450~4500mm/min running at 5~50Hz |
| 7 | Vertical Drive | 0.75KW AC Motor c/w Brake |
| 8 | Boom Drive | 0.55KW AC Motor c/w Force Cooling |
| 9 | Travel Car Drive | 0.75KW AC Motor c/w Brake |
| 10 | Drive Control | Inverter (Boom only) |
| 11 | Welding Controller/Feeder | T.B.A. (by Others) |
| 12 | Welding Power Source/Brand | T.B.A. (by Others) |
| 13 | Electrical Panel | Yes |
| 14 | Base Type | Travelcar |
| 15 | Travel Car Rail G-G | 2000 |
| 16 | Slewing Feature | Manual, ±180° |
| 17 | Slewing Drive | N.A. |
| 18 | X-Y Slides | Manual, 200 x 200 |
| 19 | Operator Chair | No |
| 20 | Flux Recovery | No |
| 21 | Incoming Supply | 380/400/415V-3P-50Hz or 440/460/480V-3P-60Hz ¹ |
| 22 | Control Voltage | 24Vac |
| 23 | Control Means | Via Push Button Pendant c/w 8m Cable |
| 24 | Payload | 200kg |
| 25 | Surface Preparation | Gritblast to SA2.5 |
| 26 | Painting | 2 Coats Zinc Phosphate, 1 Coat Polyurethane |
| 27 | Colour | RAL3003 Red & RAL9005 Black for Travelcar only |
| 28 | Qty | 1 Unit |
| 29 | Weight | ~2100kg |

Note:

1. Input terminals are wired for 400V by default.
2. This drawing is accurate at the time of preparation and may be subjected to final design change.

Rail Profile (By Client)



All dimensions in mm unless otherwise specified.

| REV | DATE | DESCRIPTION | EDIT BY | REMARKS |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------------|---------|--------------------|
| CUSTOMER: | | | | |
| DRAWING NAME: Medium Heavy Duty Manipulator | | | | SCALE: N.T.S. |
| DRAWING NO.: MM3535-PT2000-WE | | | | REVISION: 0 |
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| SHEET: 1 OF 1 | | | | |



CUSTOMER APPROVAL

CHECKED BY:

DRAWN BY: SF

17-08-2010