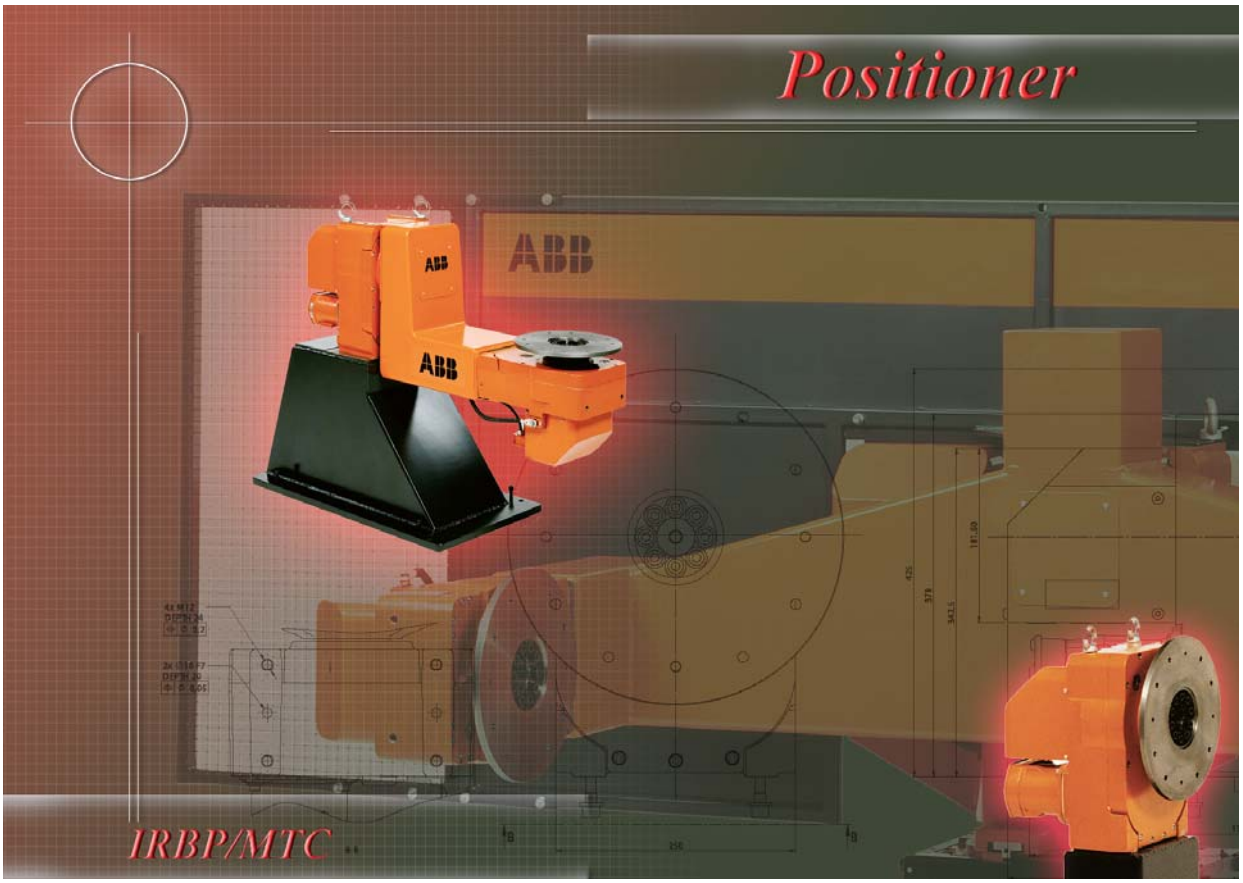
Product specification

Positioner

IRBP 250, 500, 750, 2000, 5000 (A/ B / C / C INDEX / D / K / L / R)
MTC 250, 500, 750, 2000, 5000
M2004



Product specification

Positioner

3HAC028283-001

Rev.B

MTC 250/500/750/2000/5000

IRBP 250/500/750/2000/5000L

IRBP 250/500/750R

IRBP 250/500/750K

IRBP 500/1000C

IRBP 250/500C INDEX

RBP 250/500/750A

IRBP 250/500/750B

IRBP 250/ 500D

M2004

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Overview

About this Product specification

It describes the performance of the different positoners in terms of:

- The structure and dimensional prints
- The fulfilment of standards, safety and operating requirements
- The load diagrams, mounting of extra equipment, the motion and reach
- The integrated auxiliary equipments as that is: Customer Connections
- The specifiaction of variants and options available

Users

It is intended for:

- Product managers and Product personnel
- Sales and Marketing personnel
- Order and Customer Service personnel

Contents

Please see Table of Contents on page 3.

Revisions

Revision	Description
Revision -	- New product specification
Revision A	- Warranty information for Loading diagrams
Revision B	- User documentation on DVD

Complementary Product specifications

Product specification	Description
Controller	IRC5 with FlexPendant, 3HAC021785-001
Controller Software IRC5	RobotWare 5.09, 3HAC022349-001
Robot User Documentation	IRC5 and M2004, 3HAC024534-001

1 Description

1.1 Structure

1.1.1 Introduction

General

The positioners are designed to handle workpieces of a weight between 250 and 5000 kg (incl.fixture) in connection with robot welding using the MIG/MAG methods.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

Safety

Safety standards require that the positioner is connected to the robot system.

1.1.2 Warranty information for loading diagrams

It is very important to always define correct actual load data and correct payload of the robot. Incorrect definitions of load data can result in overloading of the robot.

If incorrect load data and/or loads outside load diagram is used the following parts can be damaged due to overload:

- motors
- gearboxes
- mechanical structure

Robots running with incorrect load data and/or with loads outside load diagram will not be covered by the robot warranty.

1.1.3 MTC 250 / 500 / 750 / 2000 / 5000

1.1.4 General

The rotary unit MTC is a modular unit, developed especially for robot applications when welding and is intended for positioning the workpiece.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

The drive equipment for the positioner is placed in the system's equipment cabinet

1.1.5 The rotary unit consists of the following parts

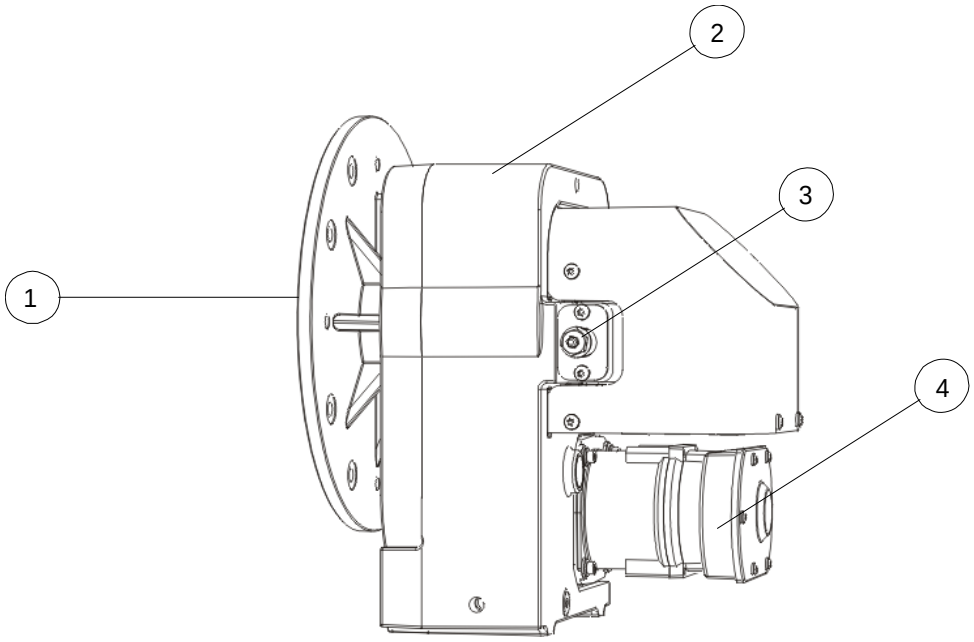


Figure 1 Rotary unit, MTC

Pos	Description	Pos	Description
1	Rotary unit faceplate	3	Current collector
2	Gearbox	4	AC motor with integrated brake and resolver

1.1.6 Technical data

MTC 250, MTC 500, MTC 750

Technical Data	MTC 250	MTC 500	MTC 750
Max. handling capacity	250 kg	500 kg	750 kg
Max. continuous torque	350 Nm	650 Nm	900 Nm
Center of gravity	See loading diagram	See loading diagram	See loading diagram
Max bending moment	600 Nm	3300 Nm	5000 Nm
Positioning time 0 - 45 degrees	1.1 s	1.4 s	1.5s
Positioning time 0 - 90 degrees	1.4 s	1.8s	2.1s
Positioning time 0 - 180 degrees	2 s	2.5 s	2.8 s
Positioning time 0 - 270 degrees	2.6 s	3 s	3.3 s
Positioning time 0 - 360 degrees	3 s	3.6 s	4.1 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	30 rpm	25 rpm	25 rpm
Stop time with an emergency stop	< 0.5 s	< 0.5 s	< 0.5 s
Max welding current, 60% duty cycle	600 Amp	600 Amp	600 Amp
Weight	70 kg	170 kg	171 kg

1.1.6 Technical data

MTC 2000, MTC 5000

Technical Data	MTC 2000	MTC 5000
Max. handling capacity	2000 kg	5000 kg
Max continuous torque	3800 Nm	9000 Nm
Center of gravity	See loading diagram	See loading diagram
Max bending moment	25000 Nm	60000 Nm
Positioning time 0 - 45 degrees	2.3 s	2.5 s
Positioning time 0 - 90 degrees	3.2 s	3.7 s
Positioning time 0 - 180 degrees	4.4 s	6 s
Positioning time 0 - 270 degrees	5.5 s	8.8 s
Positioning time 0 - 360 degrees	6.4 s	10.9 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	15 rpm	6.5 rpm
Stop time with an emergency stop	< 0.6 s	< 0.9 s
Max welding current, 60% duty cycle	1200 Amp	1200 Amp
Weight	343 kg	777 kg

1.1.7 Loading diagram

General

The diagrams (Figure 2, Figure 3, Figure 4, Figure 5, Figure 6) show the maximum permitted center of gravity displacement from the center of rotation at different loads.

The load refers to the workpiece including the fixture. Also refer to the value for the max. continuous torque.

MTC 250

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 129 kg.

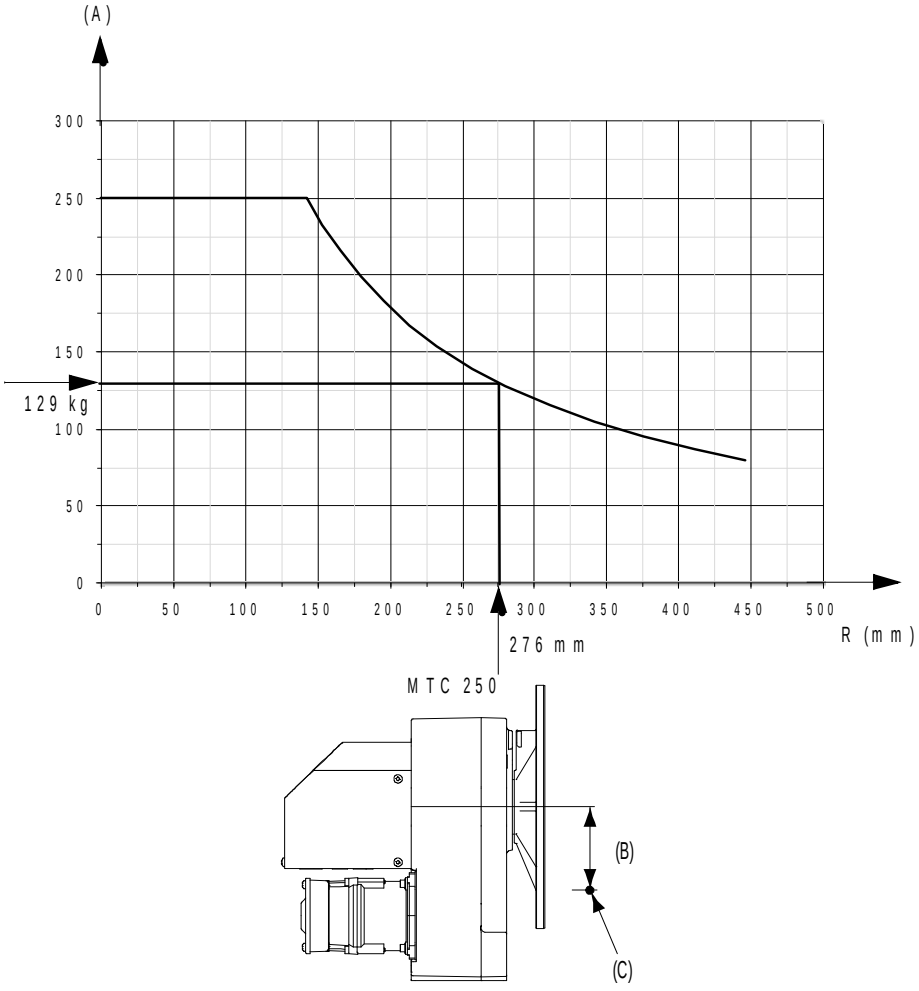


Figure 2 Limits for the position of the center of gravity at different loads. k4189801

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

MTC 500

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 240 kg.

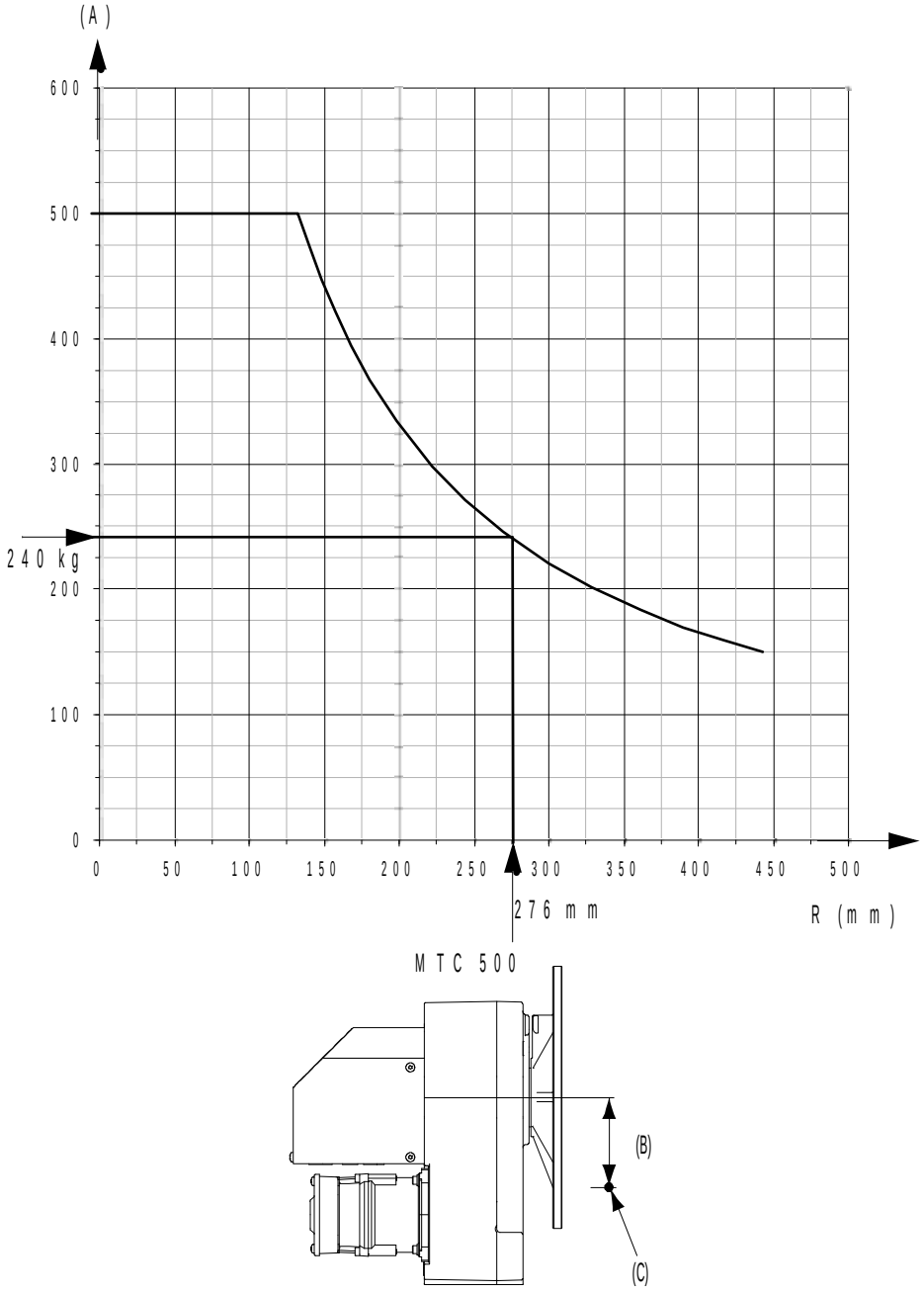


Figure 3 Limits for the center of gravity at different load.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

MTC 750

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 333 kg.

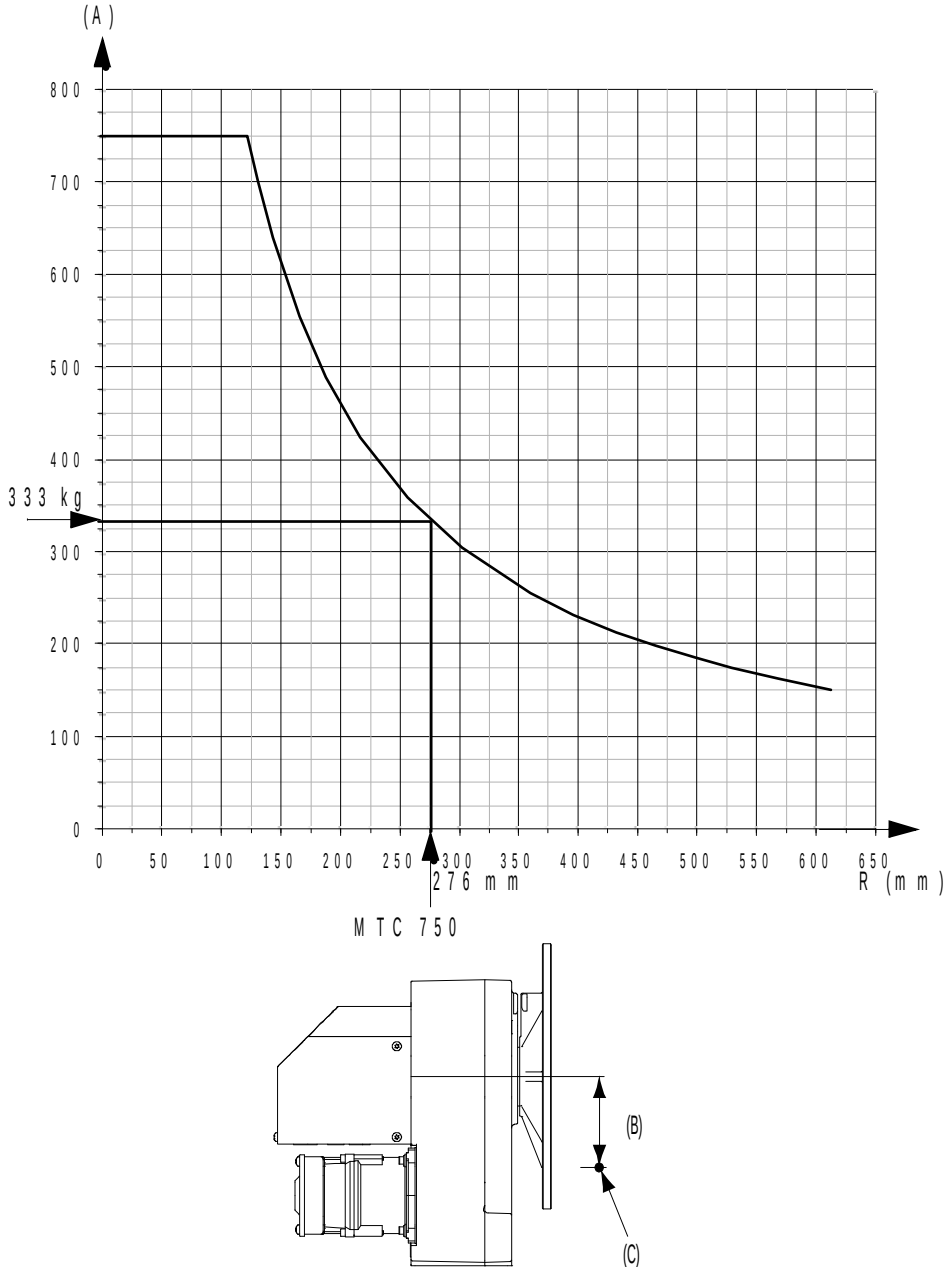


Figure 4 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

1.1.7 Loading diagram

MTC 2000

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 1400 kg.

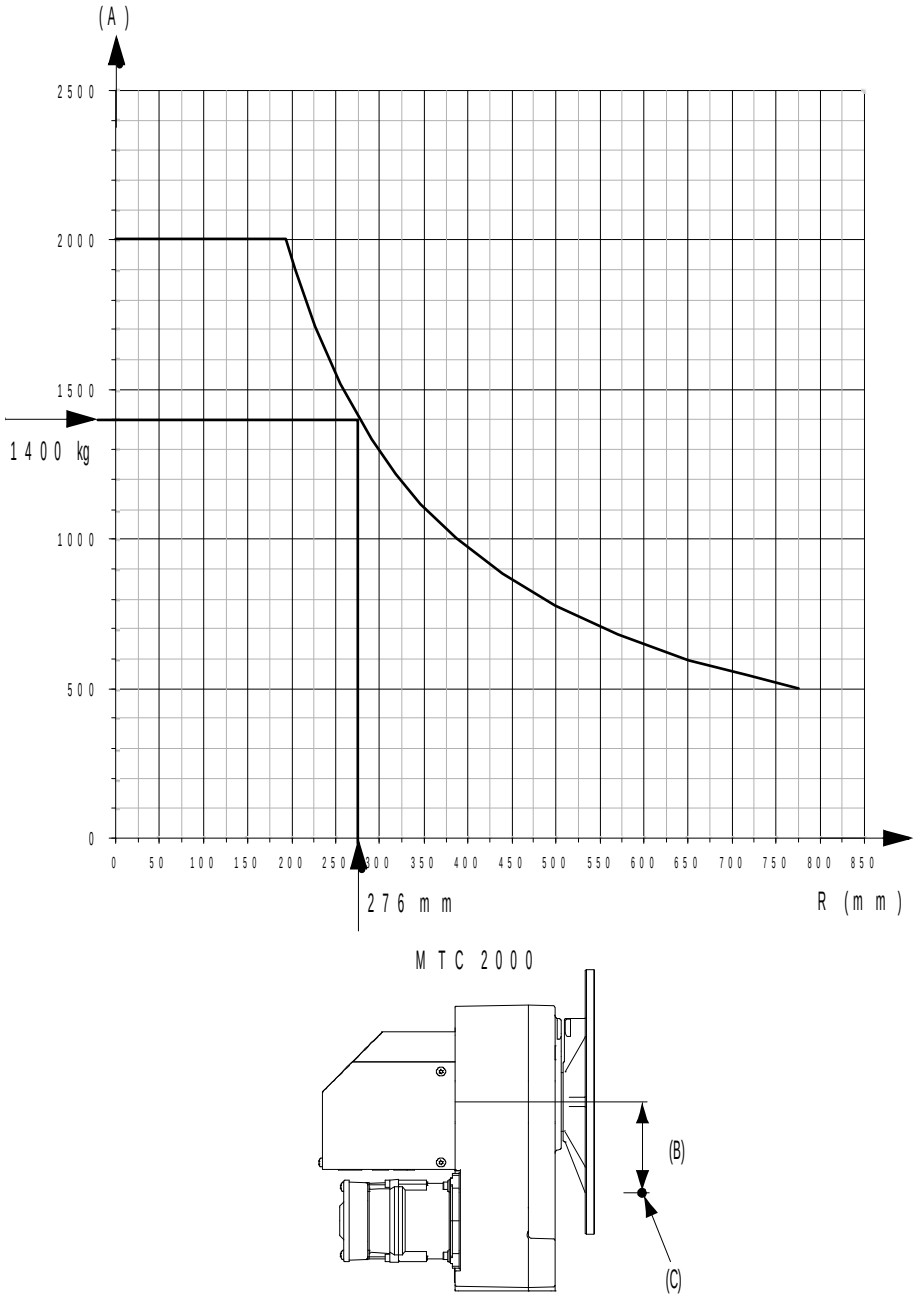


Figure 5 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

MTC 5000

If the center of gravity is placed 250 mm from the center of rotation the load may not be greater than: 3669 kg.

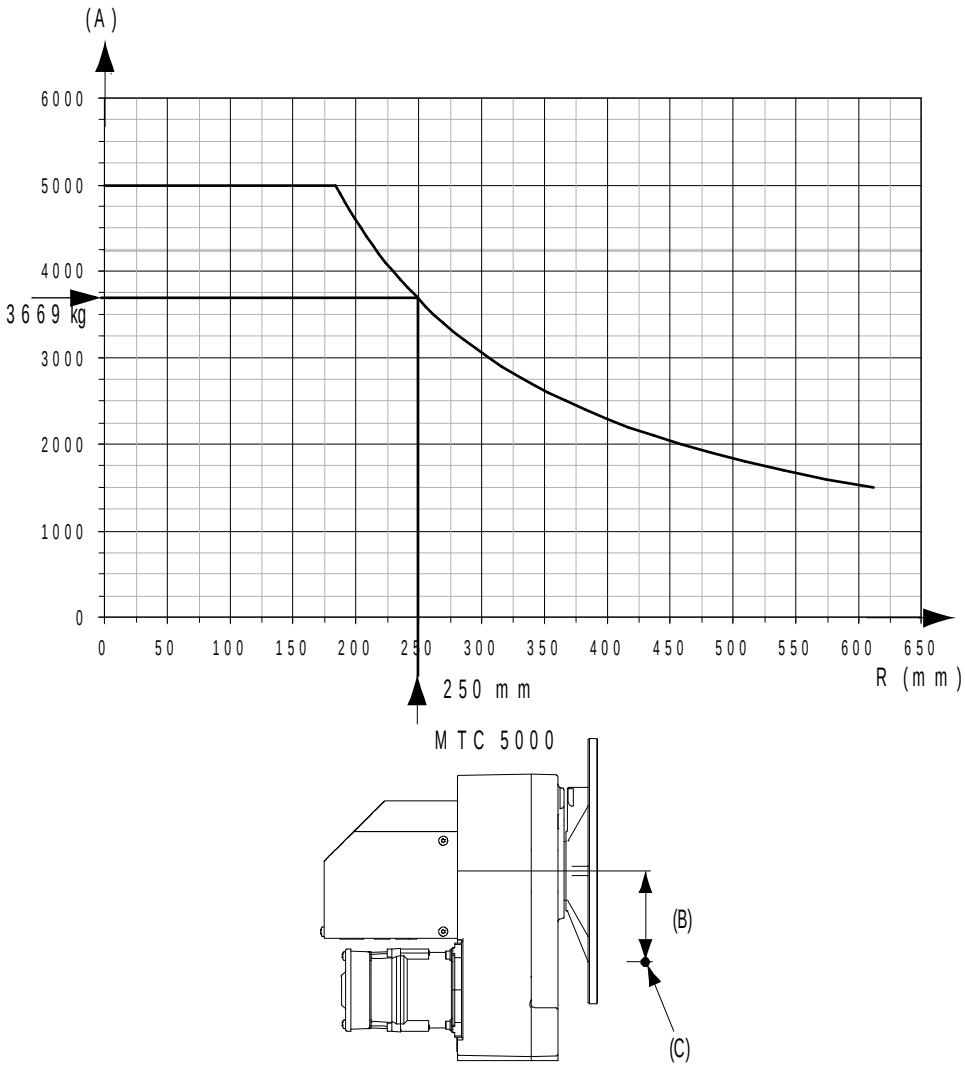


Figure 6 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

1.1.8 Measurement diagrams

MTC 250

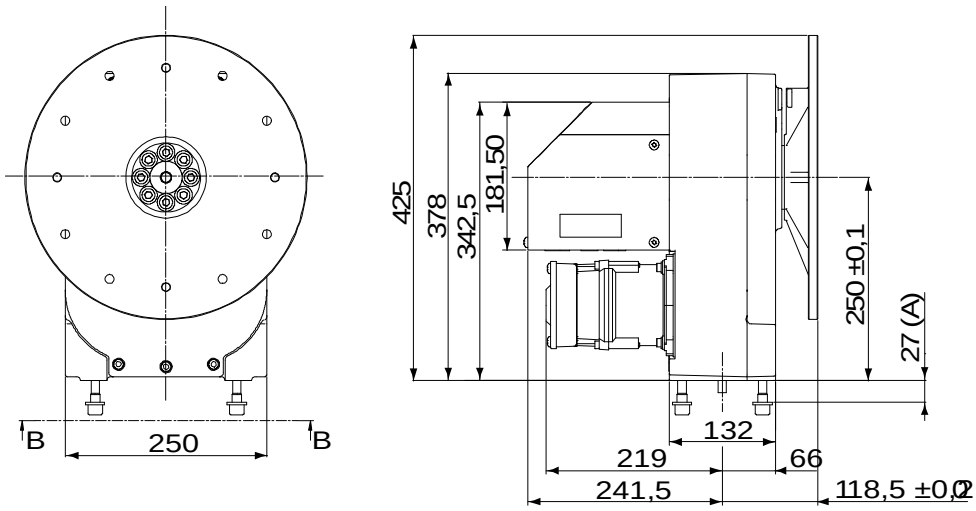


Figure 7 Measurements for MTC 250.

Pos	Description
A	Recommended clamping length

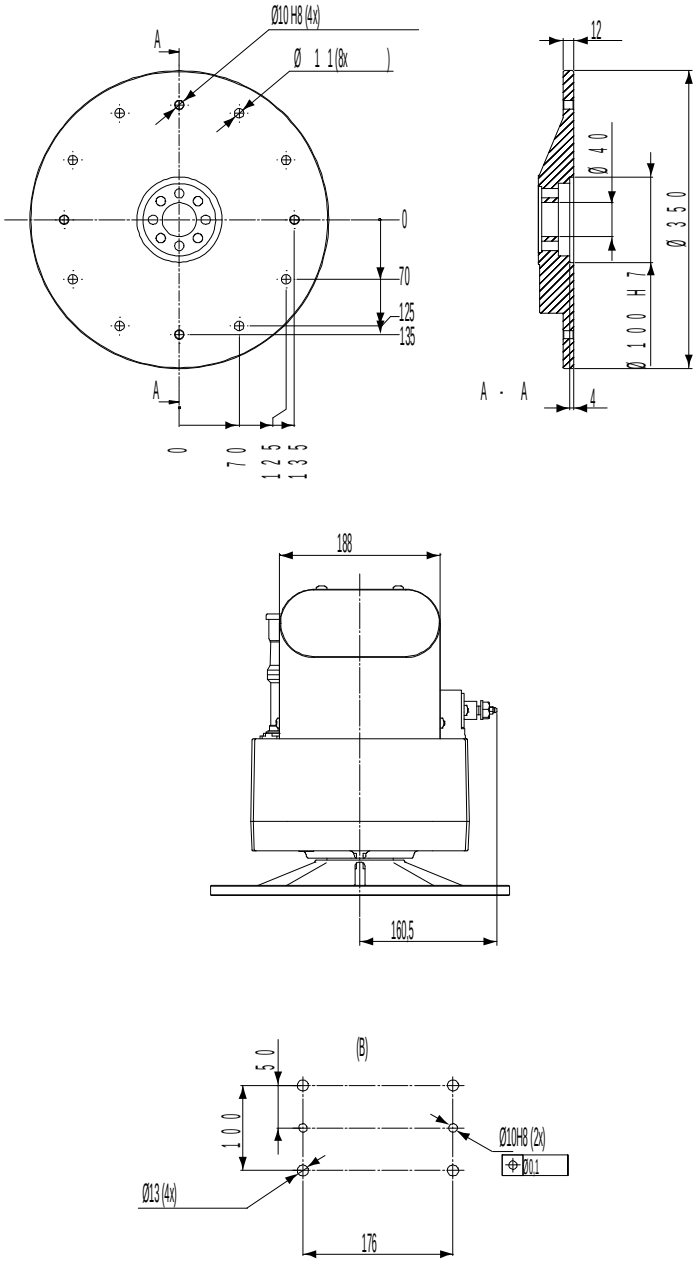


Figure 8 Measurements for MTC 250.

Pos	Description
A	Hole distance mounting base

1.1.8 Measurement diagrams

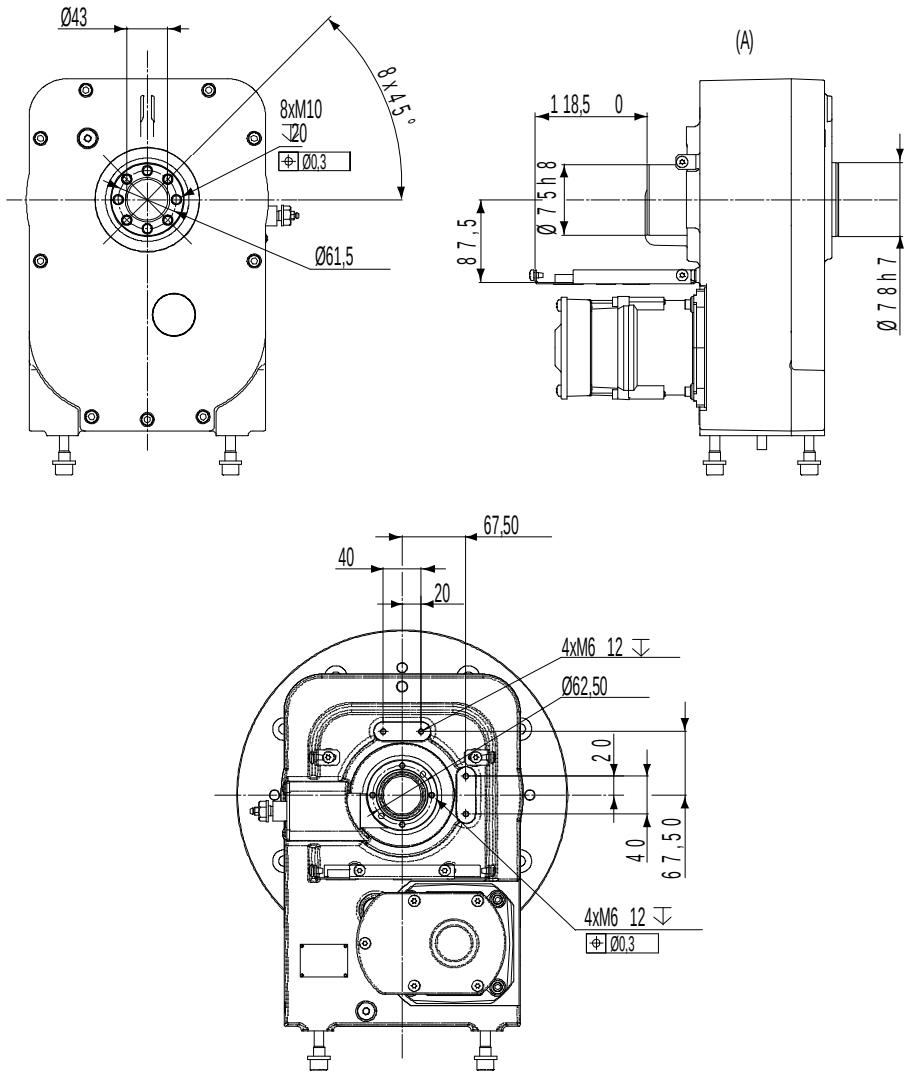


Figure 9 Measurements for MTC 250.

Pos	Description
A	Parts removed from drawing for carity of dimension

MTC 500

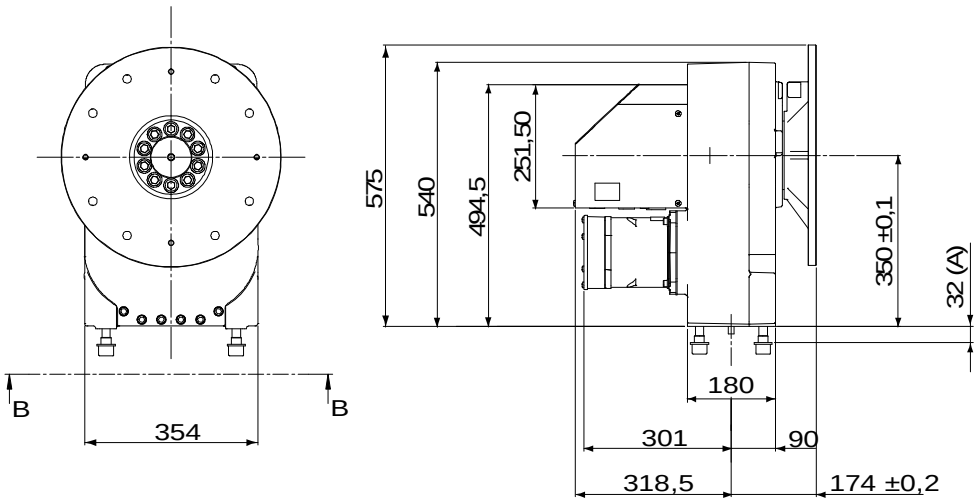


Figure 10 Measurements MTC 500.

Pos	Description
A	Recommended clamping length.

1.1.8 Measurement diagrams

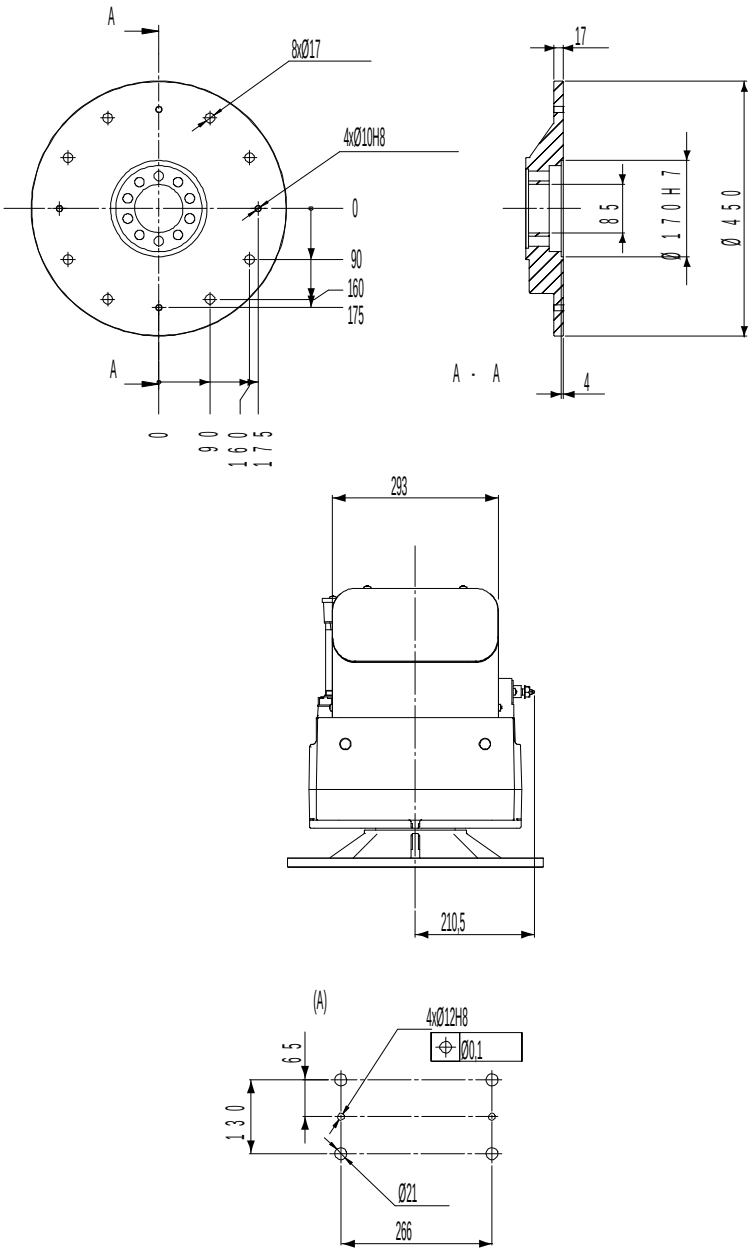


Figure 11 Measurements MTC 500.

Pos	Description
A	Hole distance mounting base.

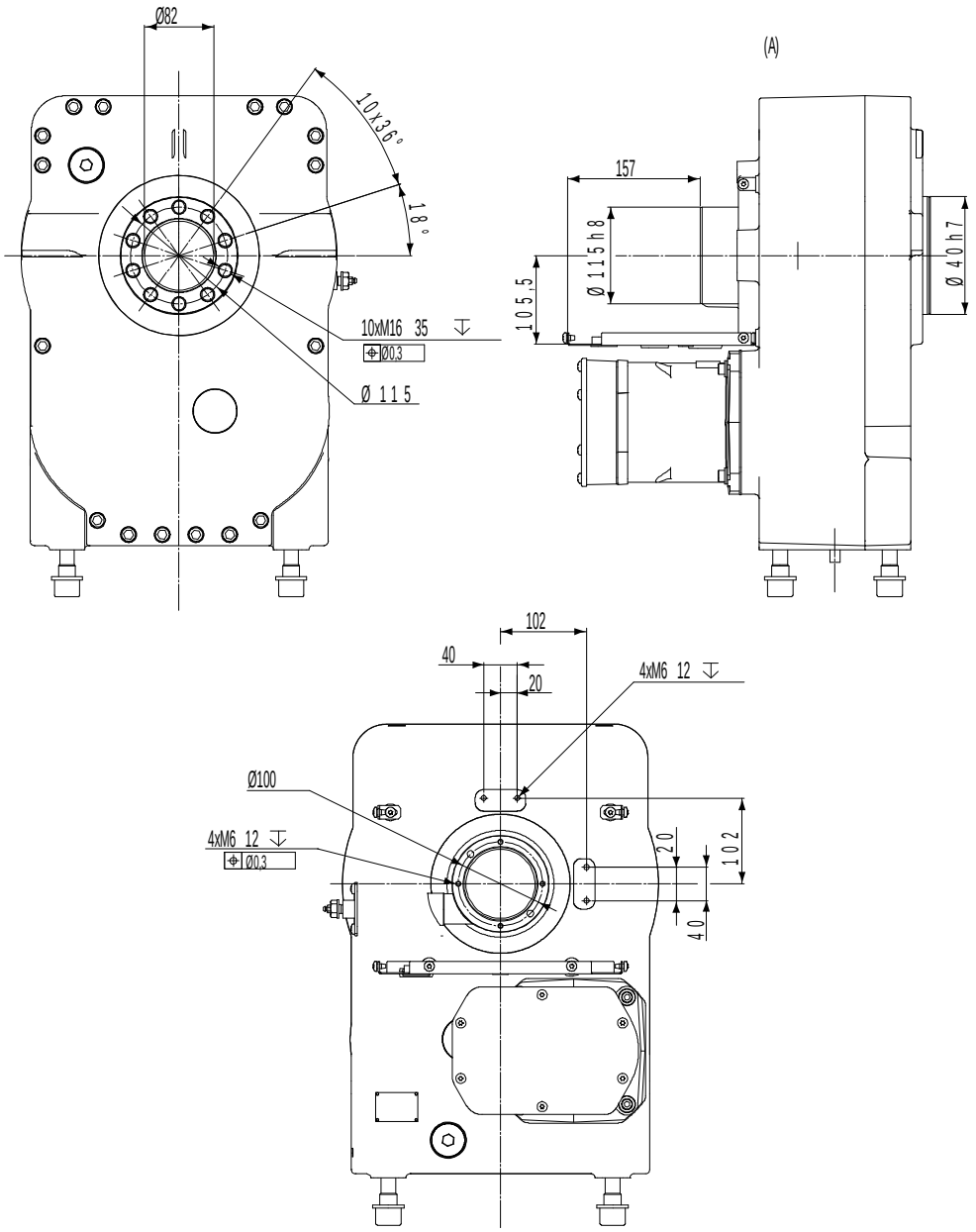


Figure 12 Measurements for MTC 500.

Pos	Description
A	Parts removed from drawing for carity of dimension

1.1.8 Measurement diagrams

MTC 750

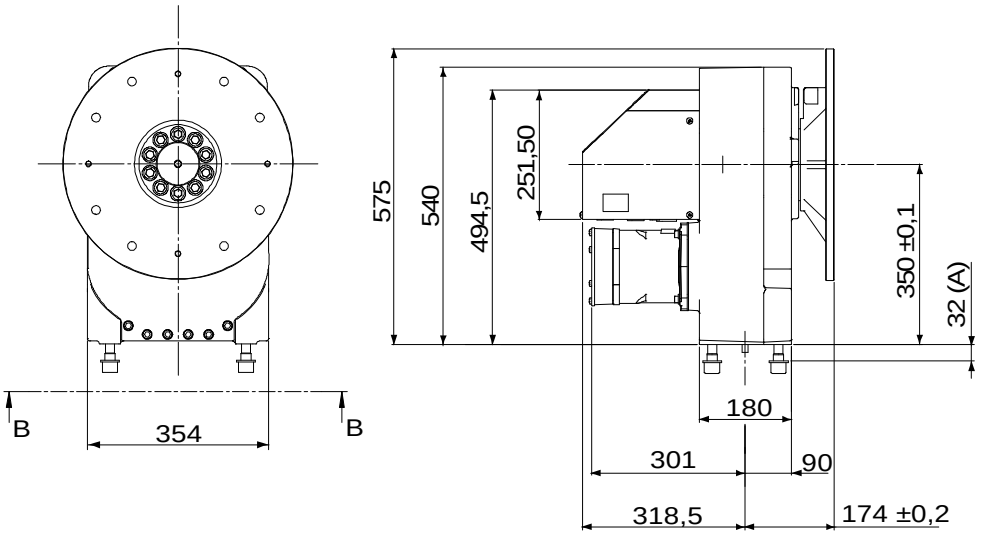


Figure 13 Measurements for MTC 750.

Pos	Description
A	Recommended clamping length.

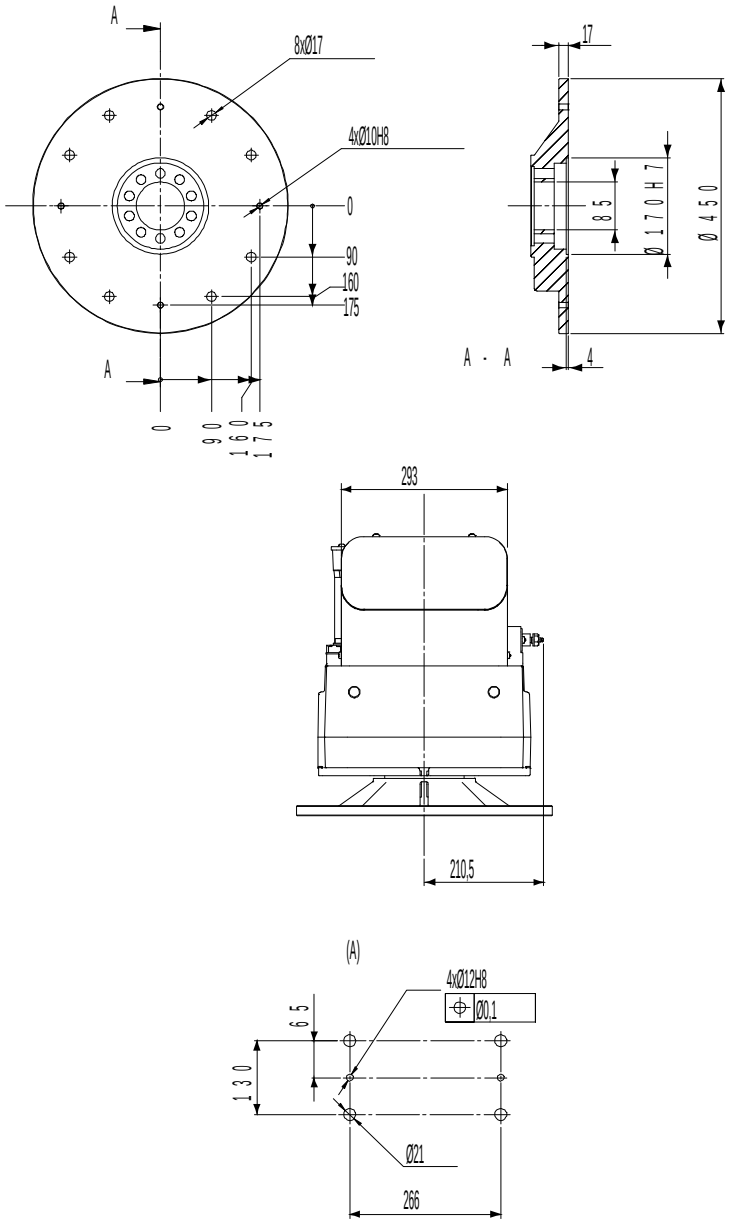


Figure 14 Measurements for MTC 750.

Pos	Description
A	Hole distance mounting base.

1.1.8 Measurement diagrams

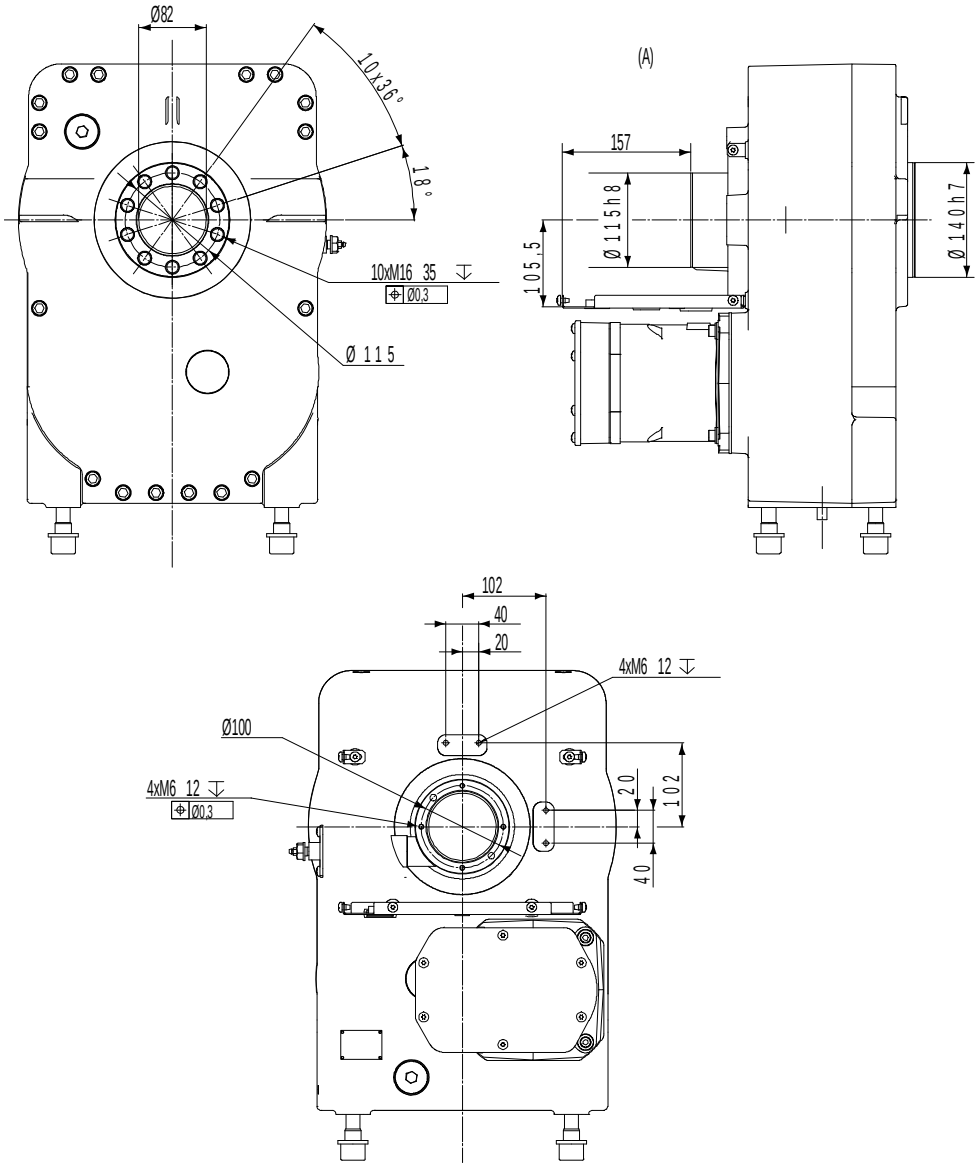


Figure 15 Measurements for MTC 750.

Pos	Description
A	Parts removed from drawing for carity of dimension

MTC 2000

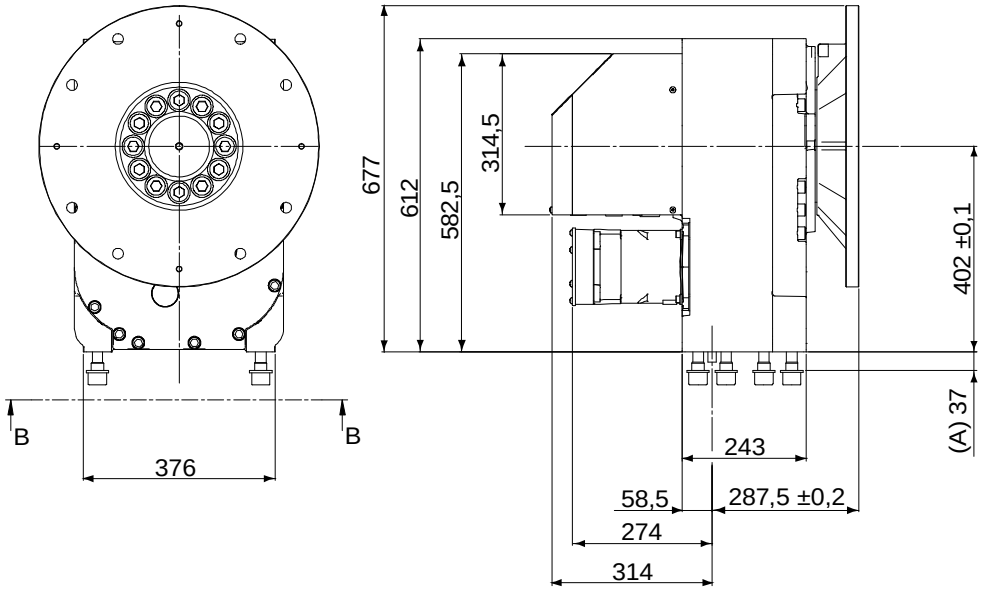


Figure 16 Measurements for MTC 2000.

Pos	Description
A	Recommended clamping length.

1.1.8 Measurement diagrams

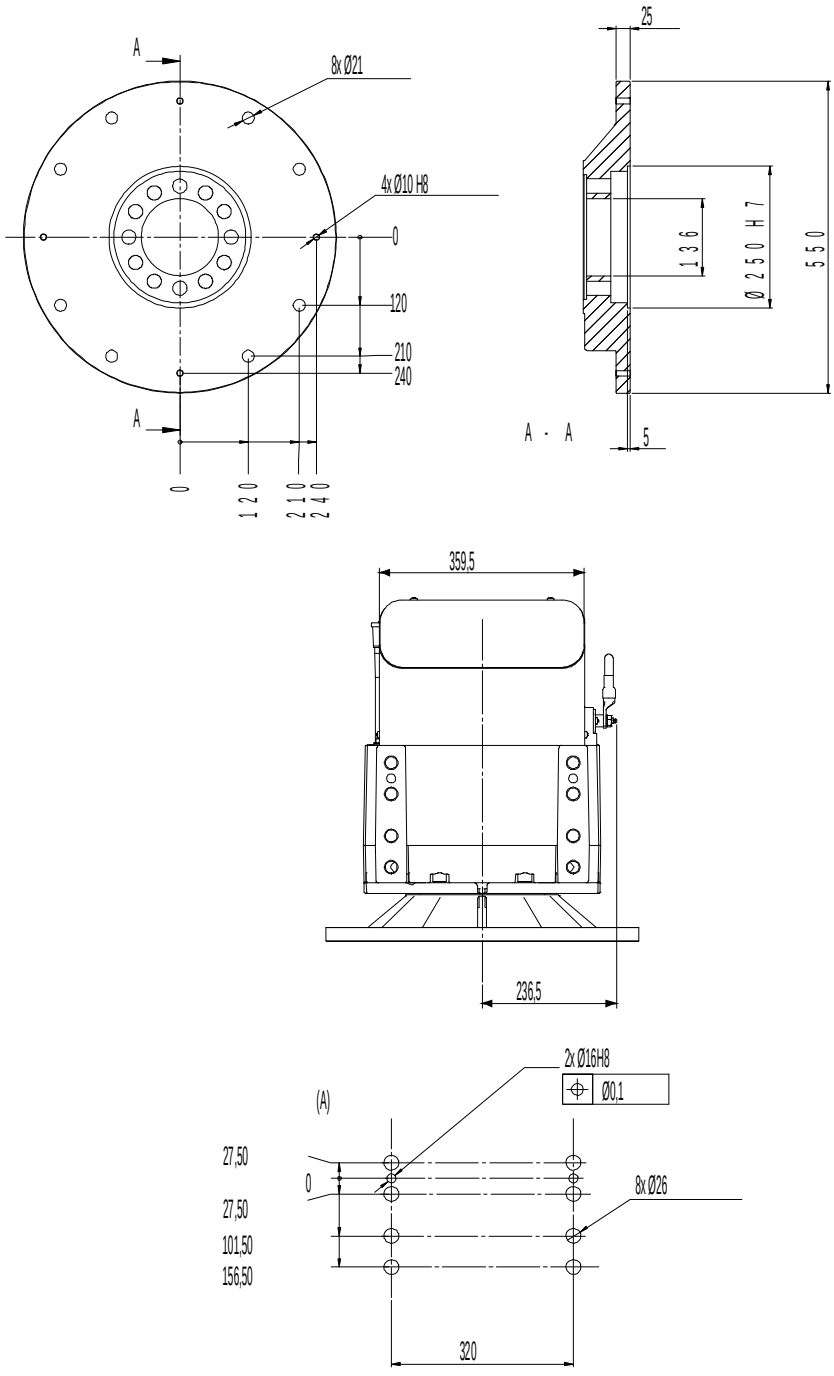


Figure 17 Measurements for MTC 2000.

Pos	Description
A	Hole distance mounting base.

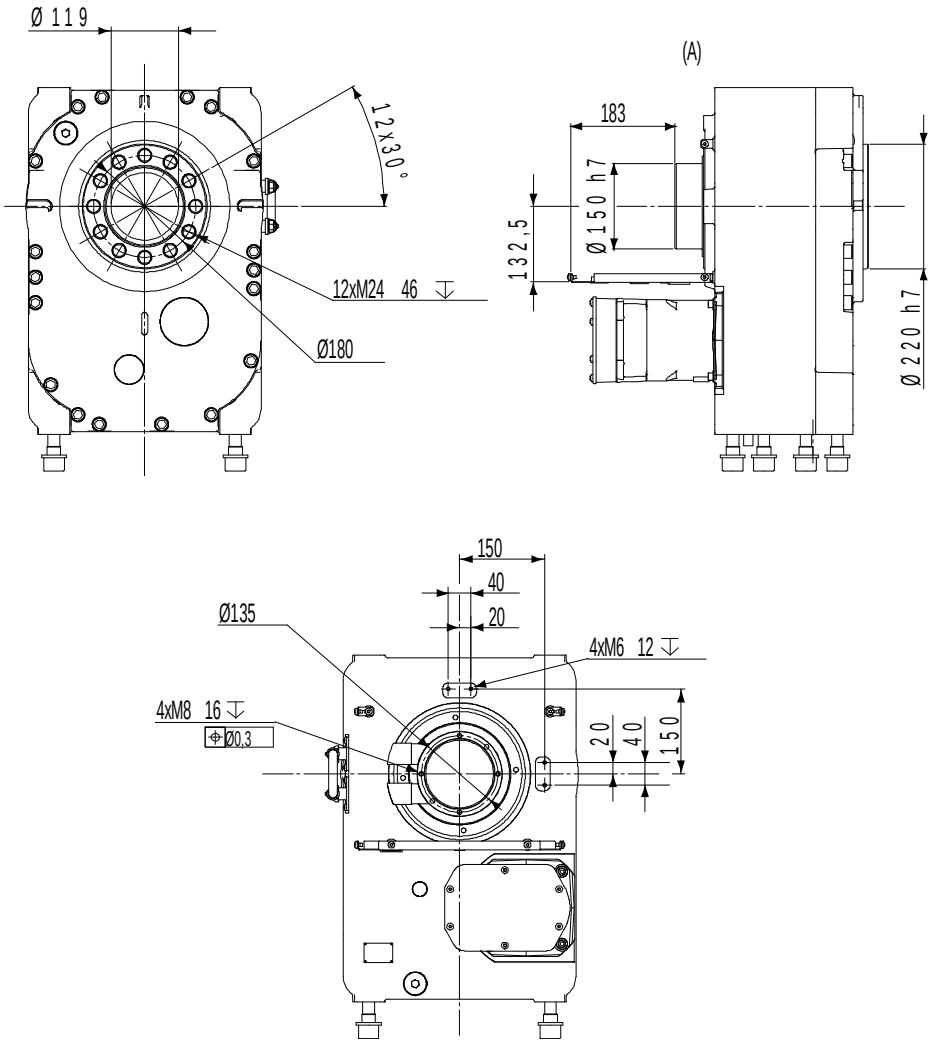


Figure 18 Measurements for MTC 2000.

Pos	Description
A	Parts removed from drawing for carity of dimension

1.1.8 Measurement diagrams

MTC 5000

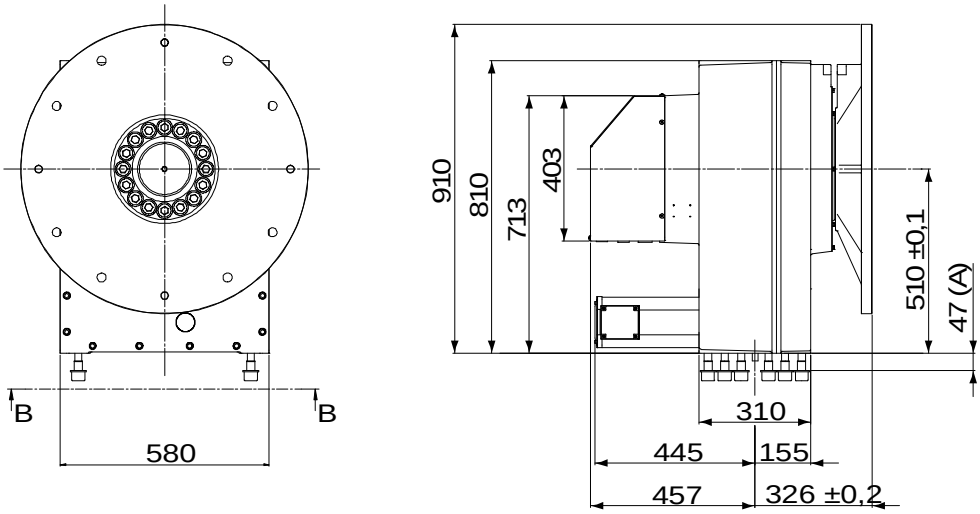


Figure 19 Measurements for MTC 5000.

Pos	Description
A	Recommended clamping length.

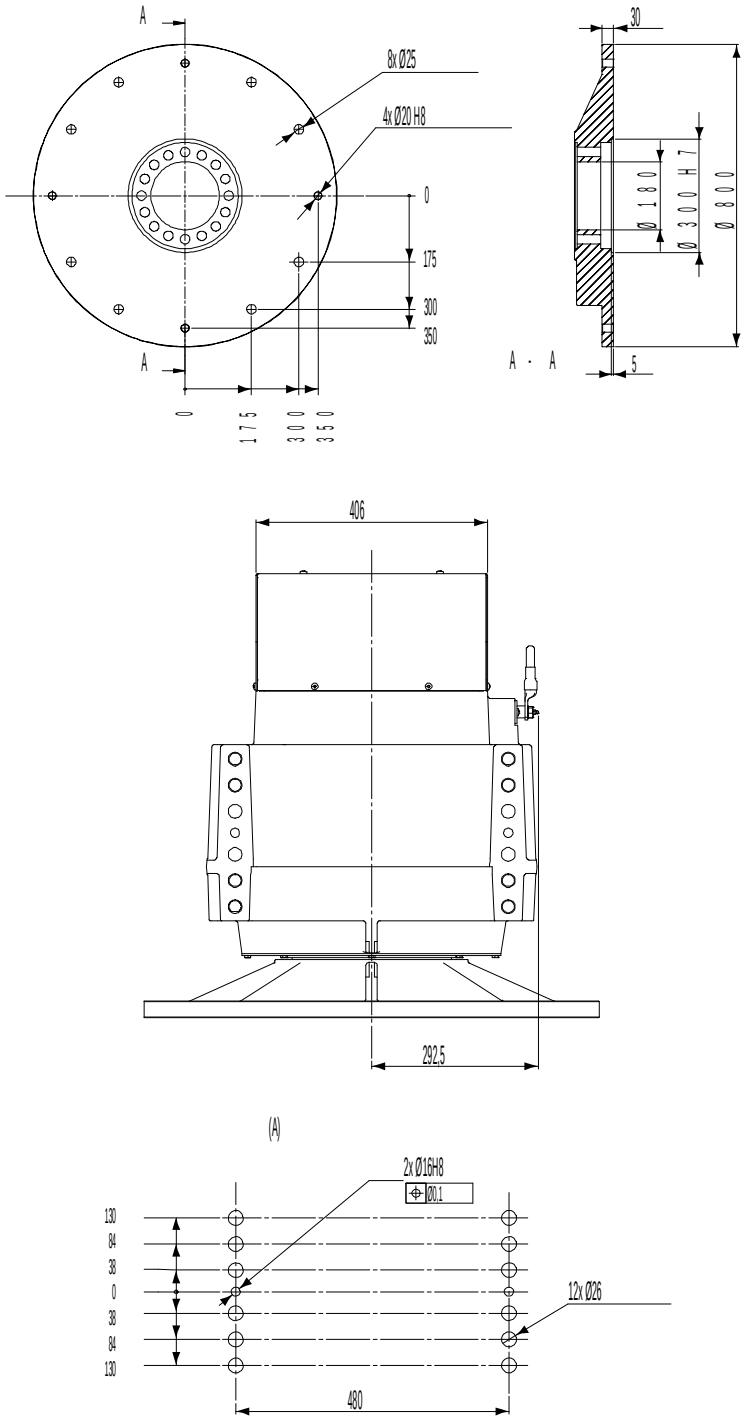


Figure 20 Measurements for MTC 5000.

Pos	Description
A	Hole distance mounting base.

1.1.8 Measurement diagrams

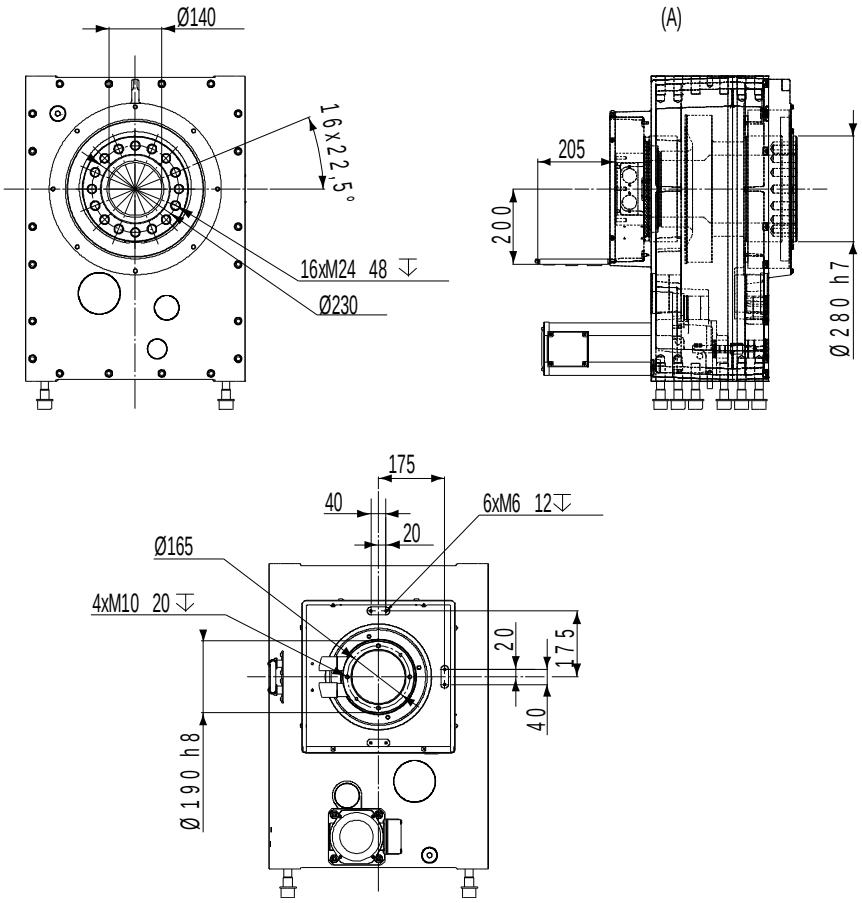


Figure 21 Measurements for MTC 5000.

Pos	Description
A	Parts removed from drawing for carity of dimension

1.2 IRBP 250L/ 500L/ 750L/ 2000L/ 5000L

1.2.1 General

The positioner is designed to handle workpieces of a weight up to 250/500/750/2000/ 5000 kg (including the fixture) in connection with robot welding using the MIG/ MAG methods. The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (see Figure 1):

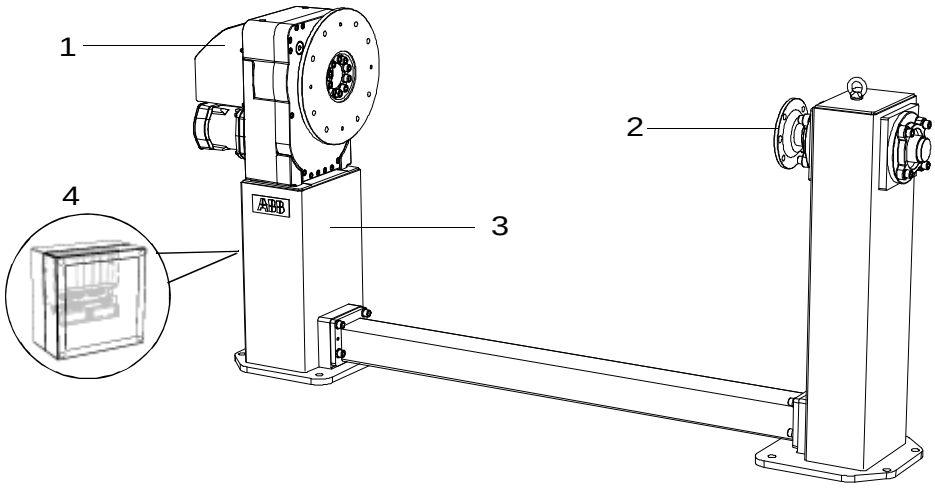


Figure 22 The positioner´s main sections.

Pos	Description	Pos	Description
1	Rotary unit MTC	3	Stand
2	Support collar	4	SMB unit

There is a rotary unit MTC fitted on the stand.

On the outgoing shaft of the rotary unit a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures. On the opposite side there is a support collar used for fixture support.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

The drive equipment for the positioner is placed in the system's equipment cabinet.

1.2.2 Technical data

IRBP250L, IRBP500L and IRBP750L

Technical Data	IRBP 250L	IRBP 500L	IRBP 750L
Max. handling capacity	250 kg	500 kg	750 kg
Max. continuous torque	350 Nm	650 Nm	900 Nm
Center of gravity	See loading diagram	See loading diagram	See loading diagram
Max bending moment	600 Nm	3300 Nm	5000 Nm
Positioning time 90 degrees	0.8 -1.2 s	1.2 -1.6 s	1.3 -1.7 s
Positioning time 180 degrees	1.4 -1.9 s	1.8 -2.5 s	1.9 -2.6 s
Positioning time 360 degrees	2.3 -2.7 s	3.1 -3.4 s	3.2 -3.5 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	30 rpm	25 rpm	25 rpm
Stop time with an emergency stop	< 0.5 s	< 0.5 s	< 0.5 s
Max welding current, 60% duty cycle	600 Amp	600 Amp	600 Amp
Weight	230 - 280 kg	430 - 480 kg	430 - 480 kg

IRBP2000L and IRBP5000L

Technical Data	IRBP 2000L	IRBP 5000L
Max. handling capacity	2000 kg	5000 kg
Max continuous torque	3800 Nm	9000 Nm
Center of gravity	See loading diagram	See loading diagram
Max bending moment	25000 Nm	60000 Nm
Positioning time 90 degrees	1,5 - 2,1 s	2,7 - 3,2 s
Positioning time 180 degrees	2,3 - 3,5 s	4.9 - 5.9 s
Positioning time 360 degrees	4,4 - 4,9 s	9,2 - 9,8 s
Repetition accuracy with equal loads and radii 500 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	15 rpm	6.5 rpm
Stop time with an emergency stop	< 0.6 s	< 0.9 s
Max welding current, 60% duty cycle	1200 Amp	1200 Amp
Weight	750 -810 kg	1400 -1800 kg

1.2.3 Loading diagram

The diagrams (Figure 23- Figure 27) show the maximum permitted center of gravity displacement from the center of rotation at different loads.

The load refers to the workpiece including the fixture. Also refer to the value for the max. continuous torque.

IRBP 250L

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 129 kg.

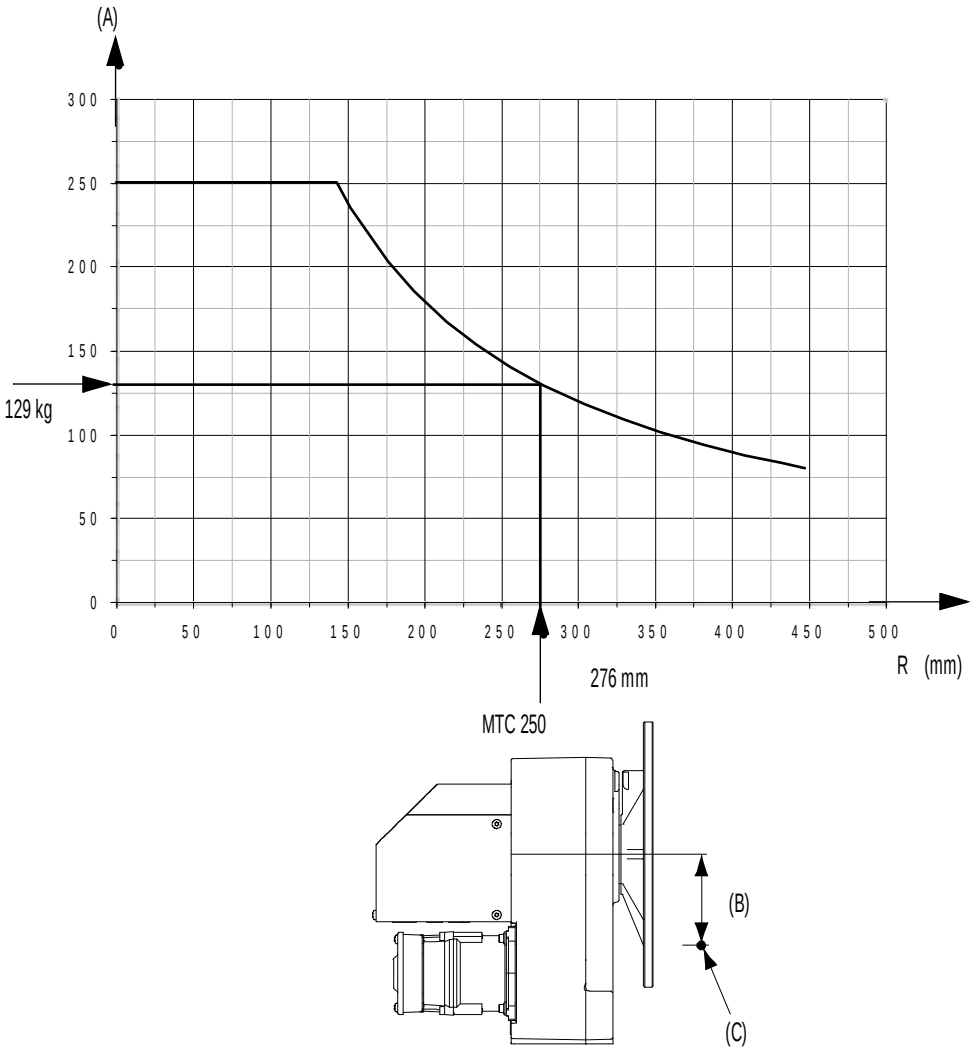


Figure 23 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 500L

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 240 kg.

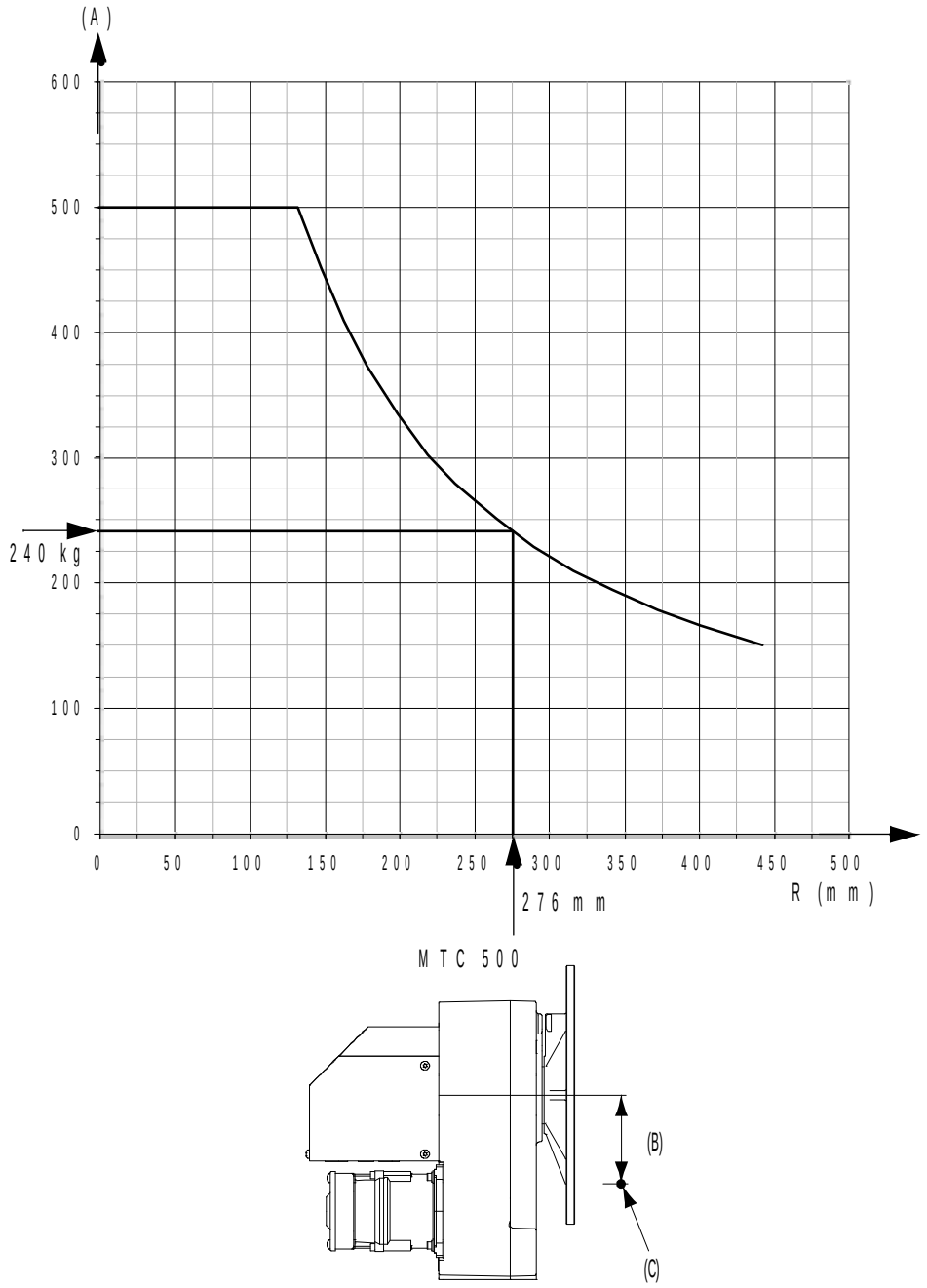


Figure 24 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 750L

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 333 kg.

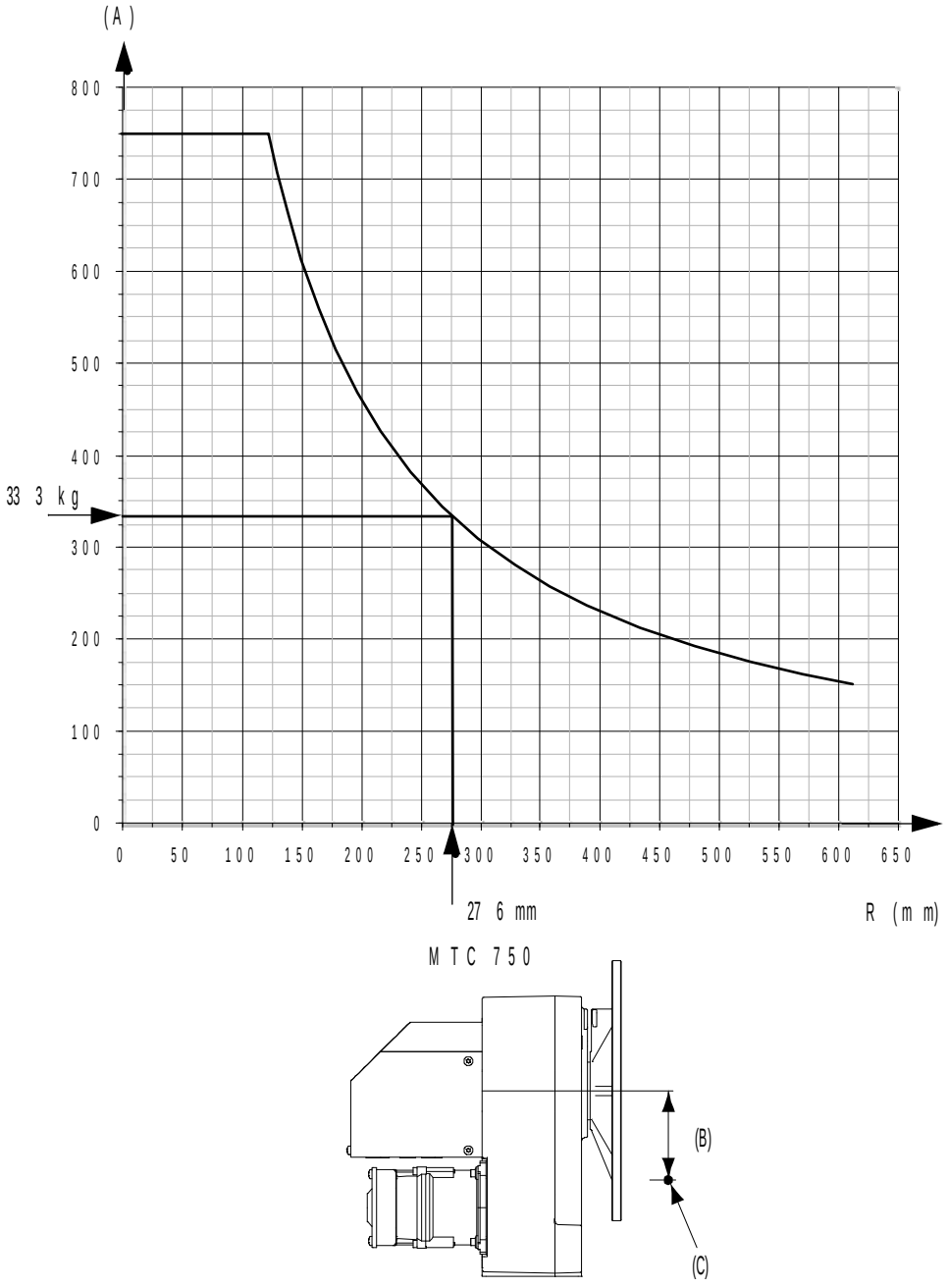


Figure 25 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 2000L

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 1400 kg.

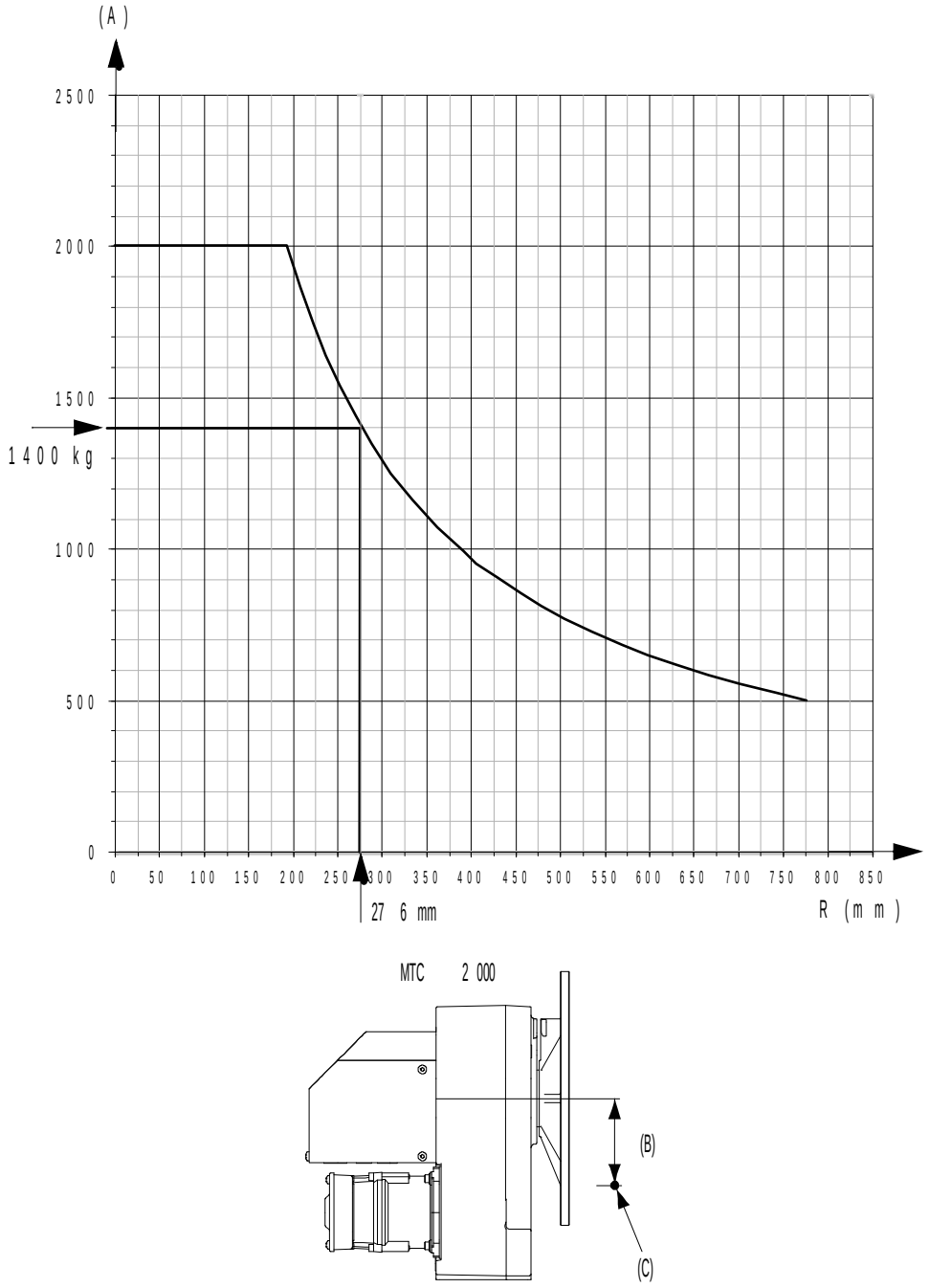


Figure 26 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 5000L

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 3669 kg.

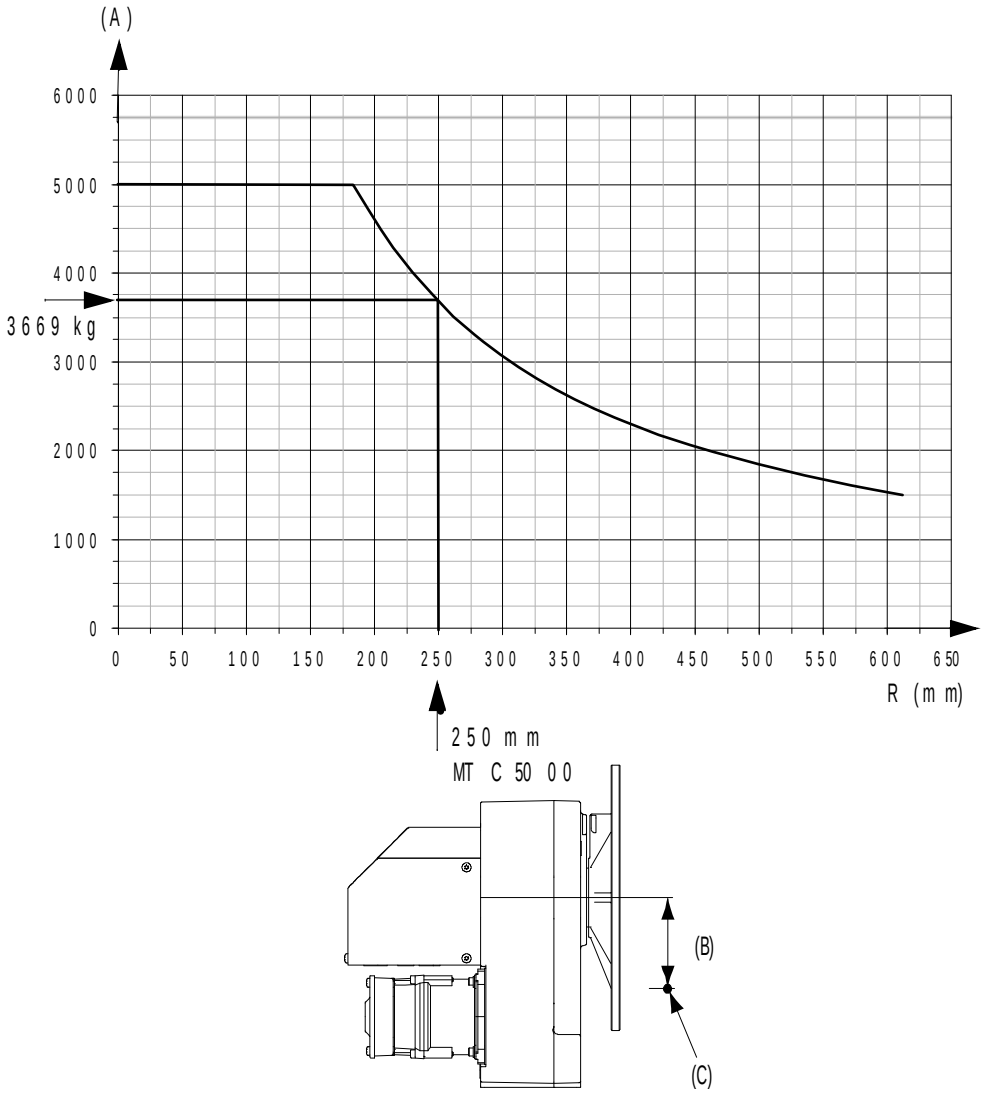


Figure 27 Limits for the position of the center of gravity at different load.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

1.2.4 Measurement diagrams

IRBP 250L

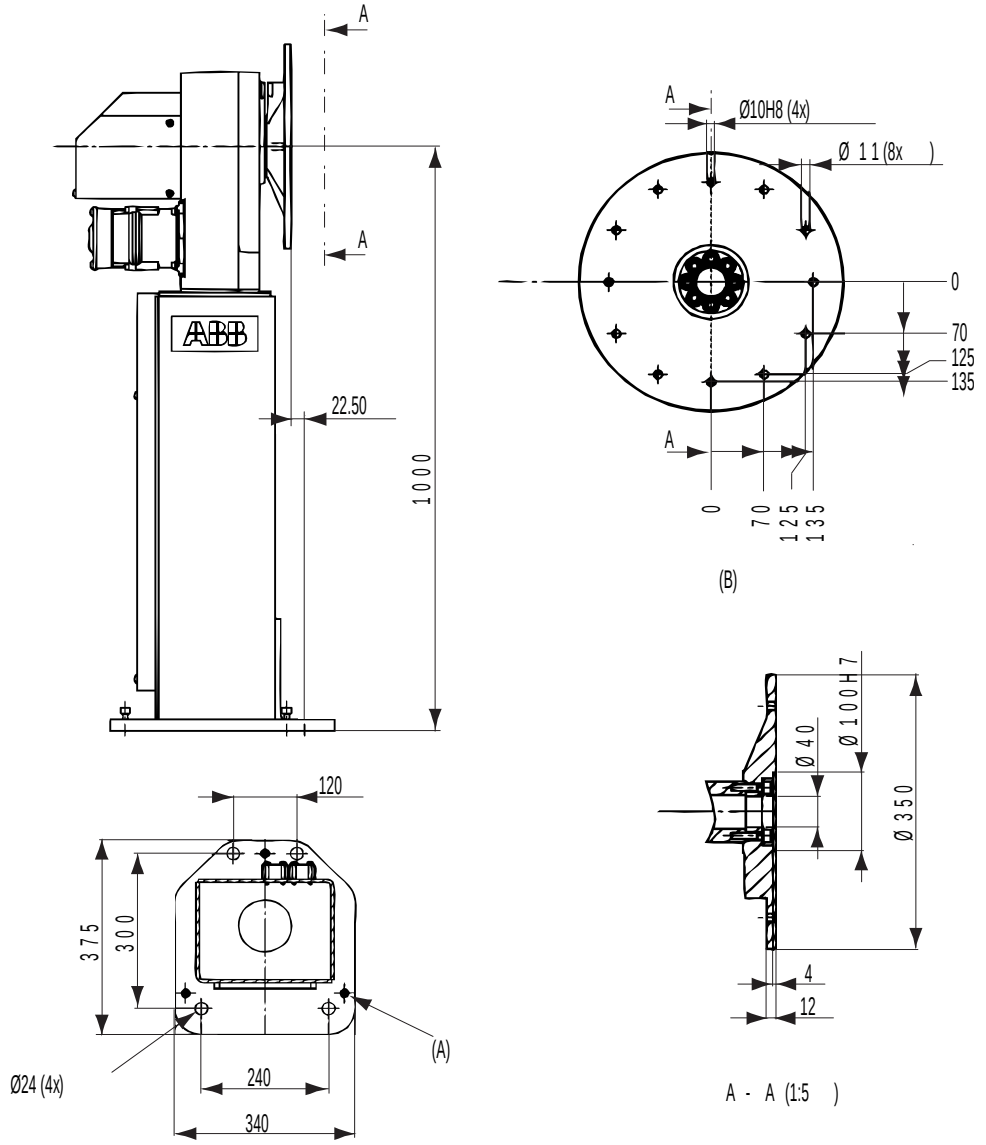


Figure 28 Measurements for IRBP 250L.

Pos	Description
A	Adjusting bolts
B	Scale 1:5

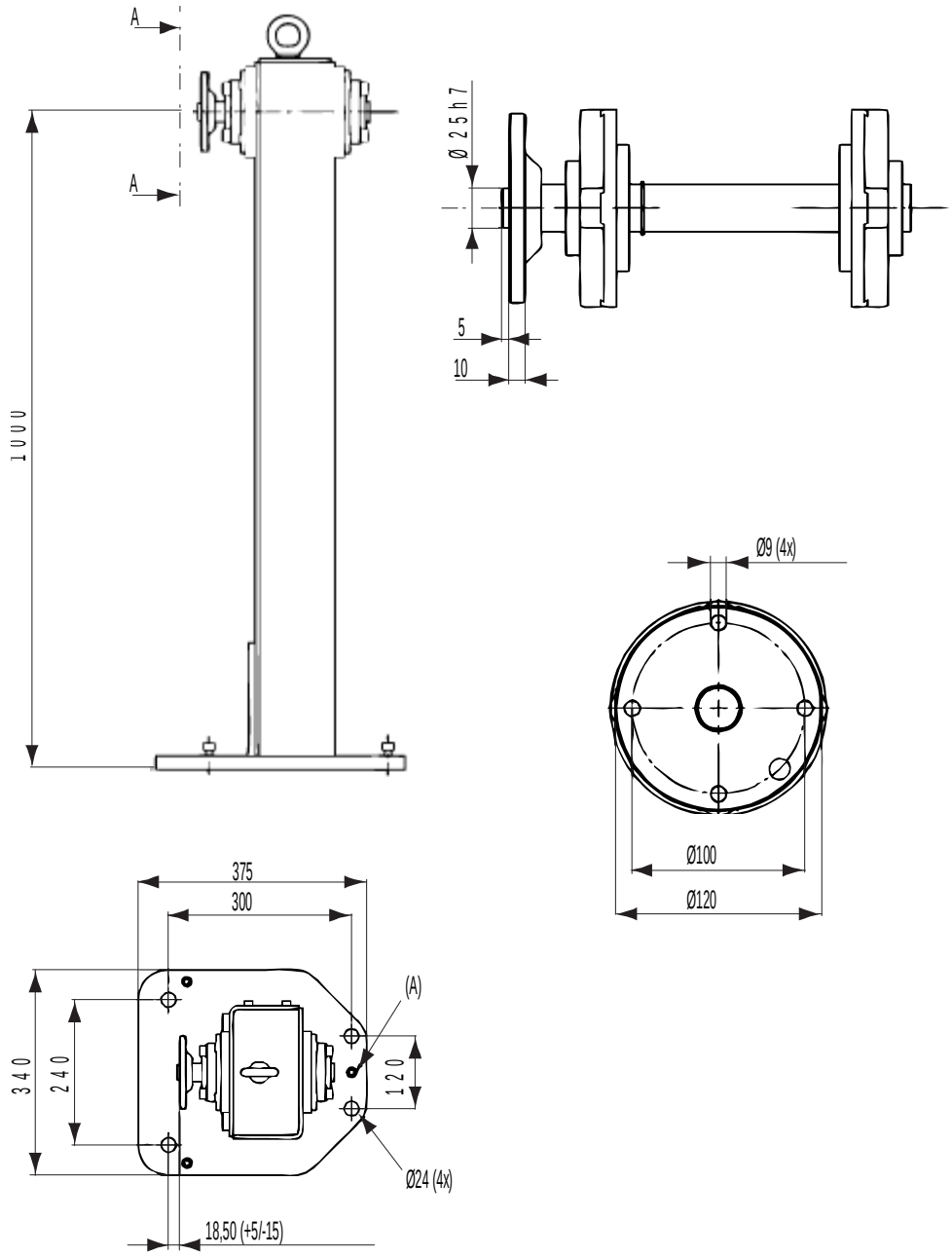


Figure 29 Measurements for IRBP 250L.

Pos	Description
A	Adjusting bolts

1.2.4 Measurement diagrams

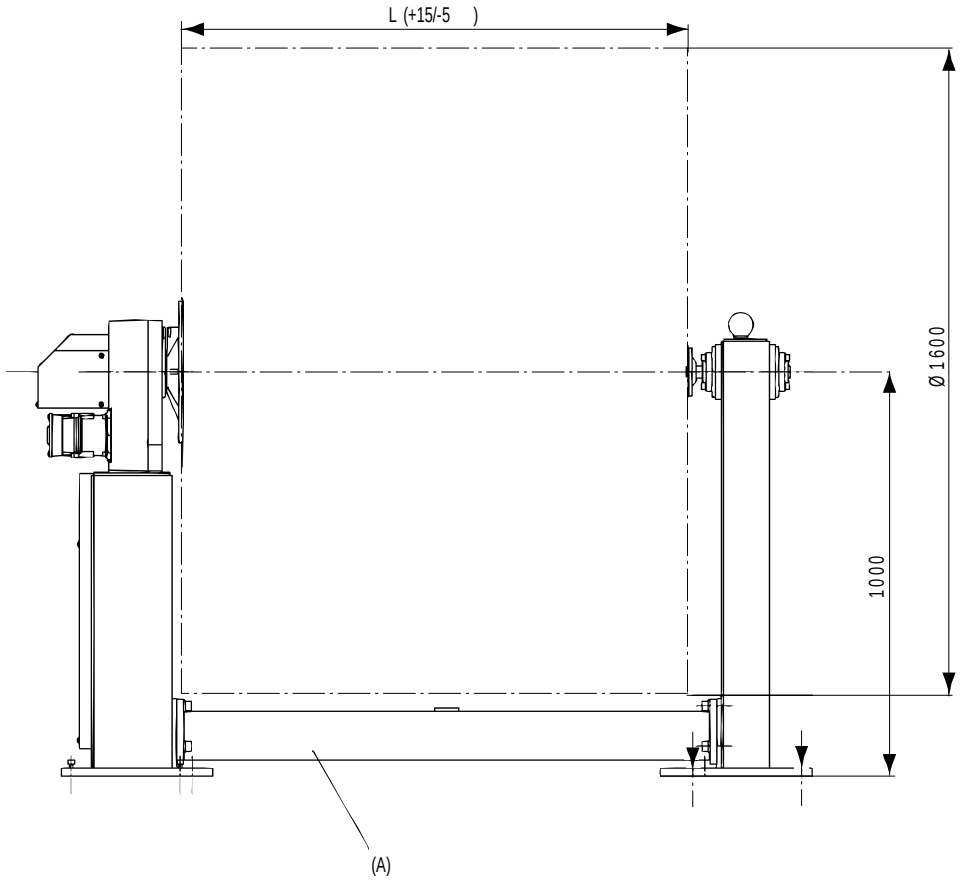


Figure 30 Measurements for IRBP 250L.

Pos	Description
A	Option

L	Weight incl beam
1250 mm	225 kg
1600	231
2000	238
2500	246
3150	258
4000	273

IRBP 500L/750L

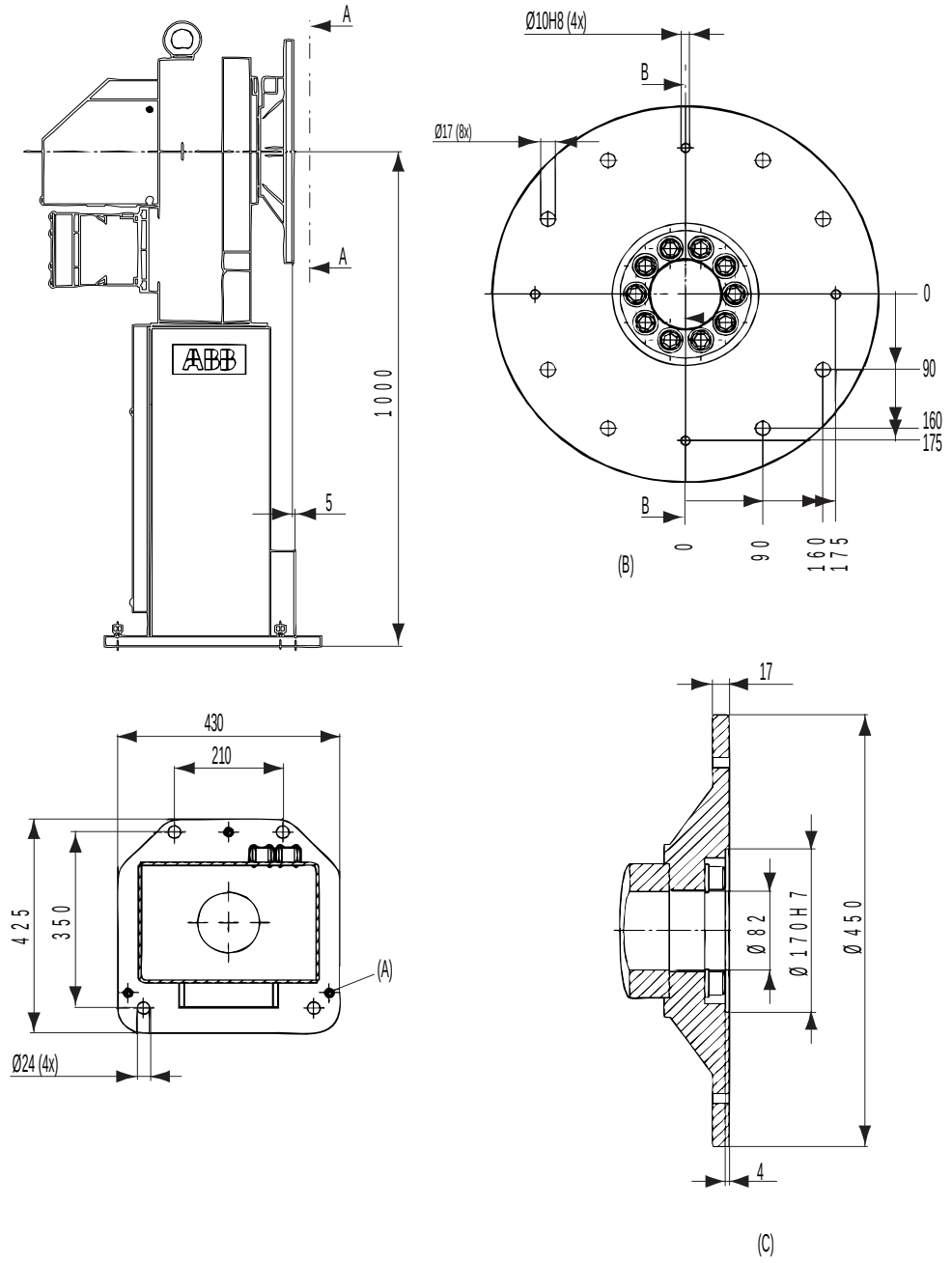


Figure 31 Measurements for IRBP 500L/750L.

Pos	Description
A	Option
B	View A Scale 1:2,5
C	Section B - B

1.2.4 Measurement diagrams

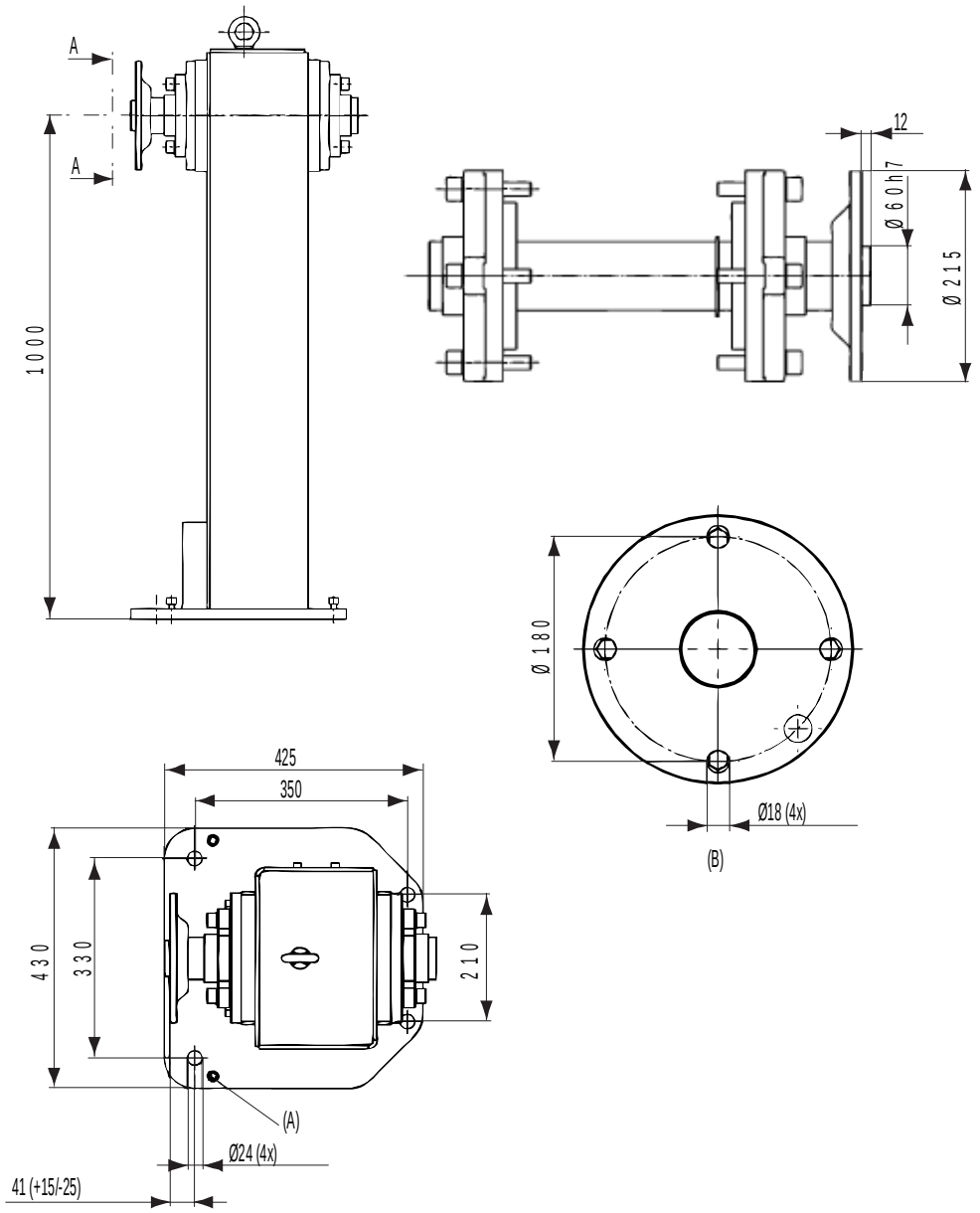


Figure 32 Measurements for IRBP 500L/750L.

Pos	Description
A	Adjusting bolts (3)
B	View A

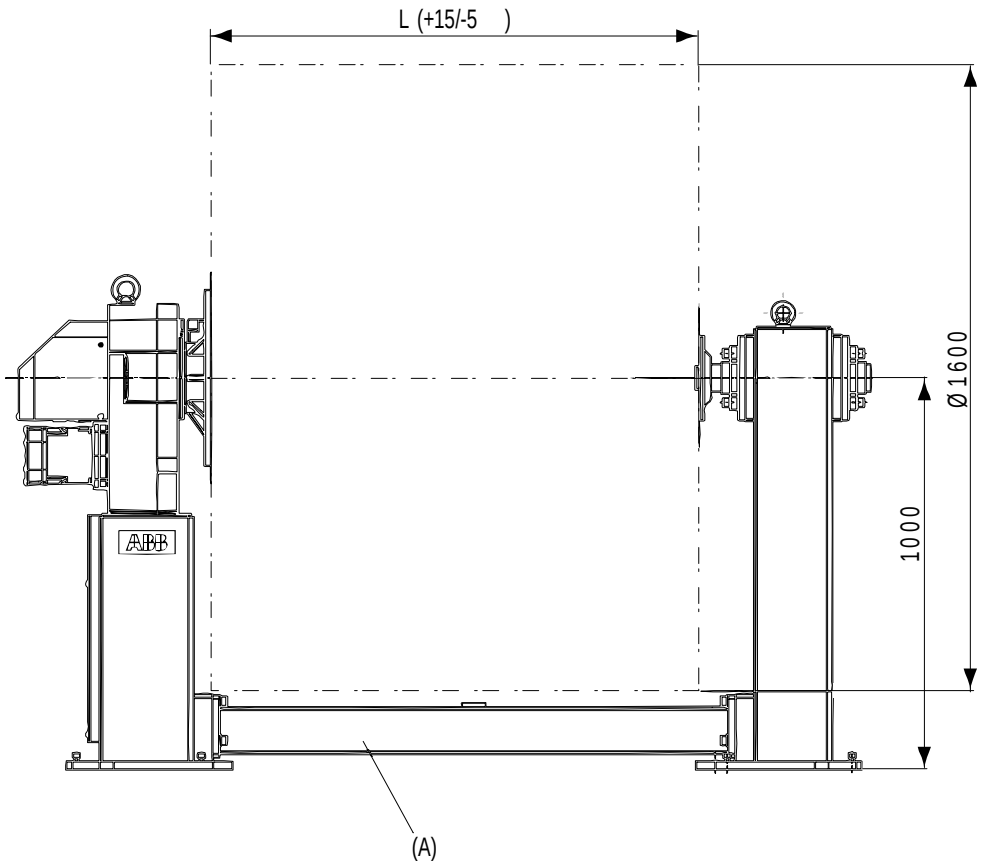


Figure 33 Measurements for IRBP 500L/750L.

Pos	Description
A	Option

L	Weight incl beam
1250 mm	430 kg
1600	436
2000	443
2500	450
3150	462
4000	477

1.2.4 Measurement diagrams

IRBP 2000L

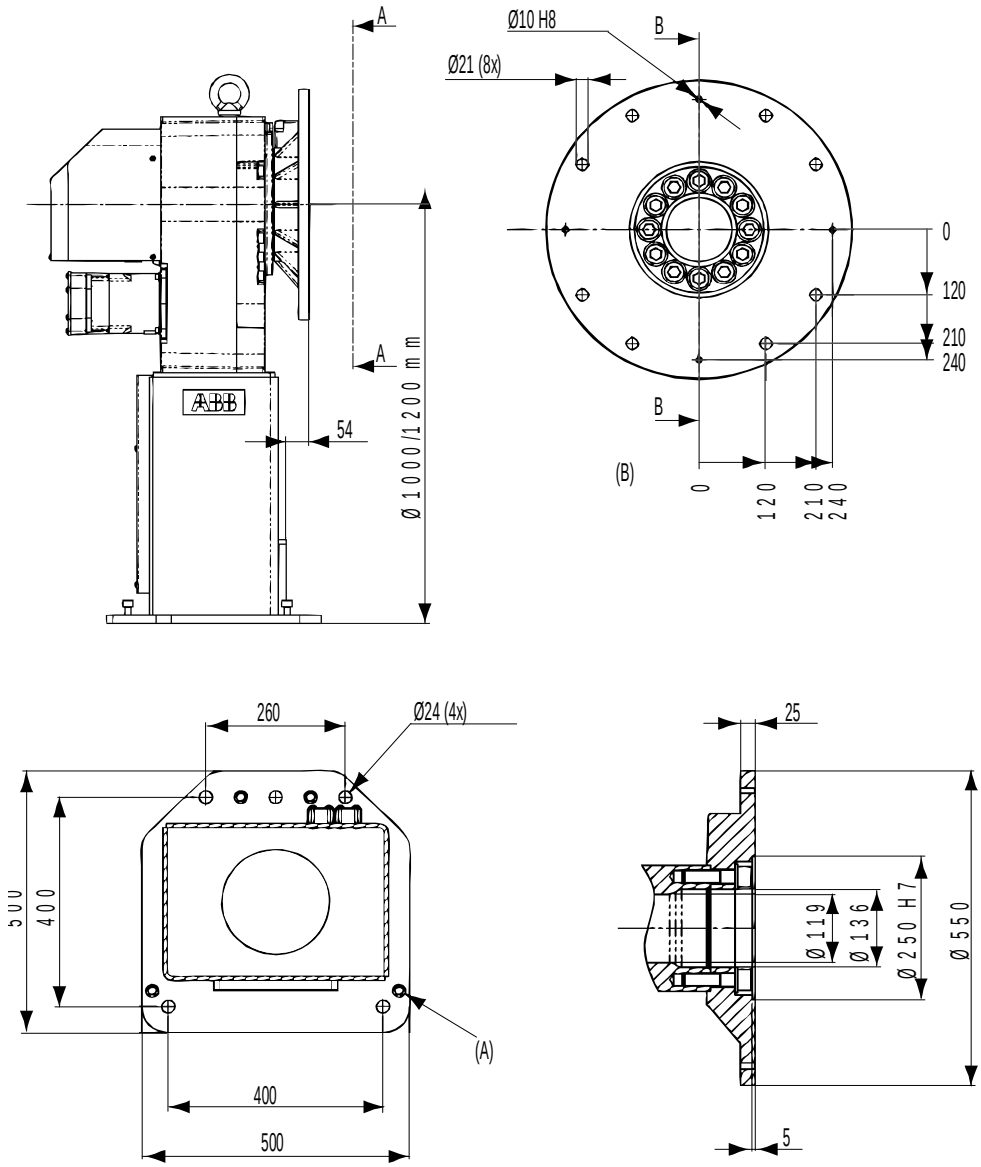


Figure 34 Measurements for IRBP 2000L.

Pos	Description
A	Adjusting bolts
B	View A

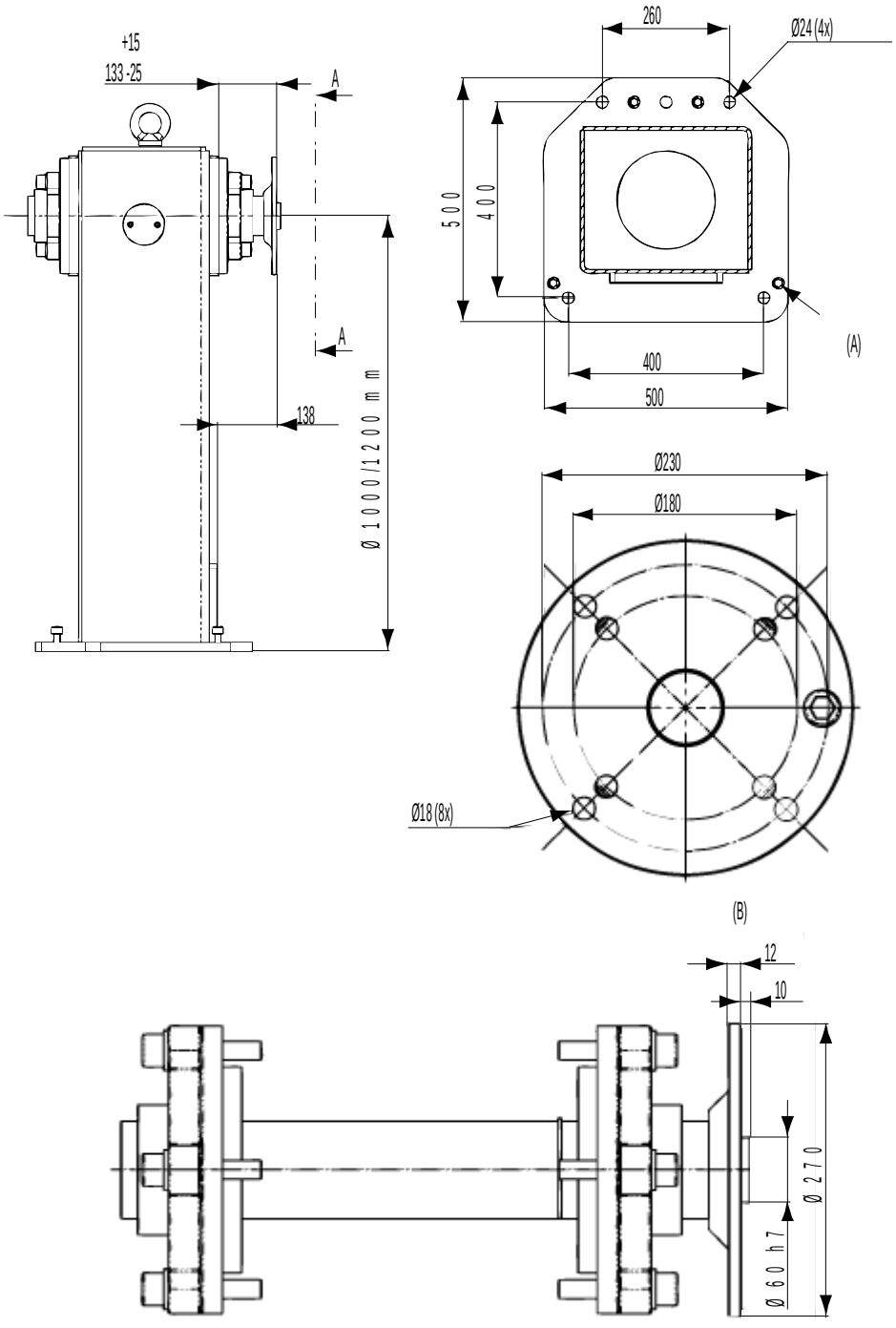


Figure 35 Measurements for IRBP 2000L.

Pos	Description
A	Adjusting bolts
B	View A - A Scale 1:2

1.2.4 Measurement diagrams

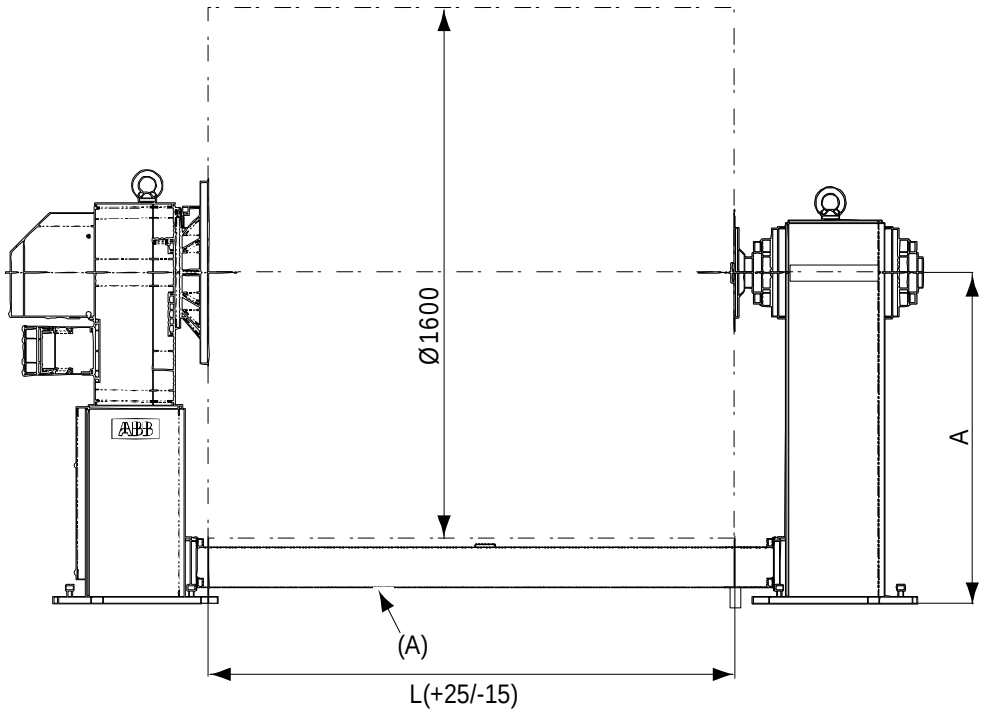


Figure 36 Measurements for IRBP 2000L.

Pos	Description
A	Option

L	Height A = 1000 mm Weight incl beam	Height A = 1200 mm Weight incl beam
1250 mm	719	752
1600	725	758
2000	732	765
2500	741	774
3150	752	785
4000	767	800

IRBP 5000L

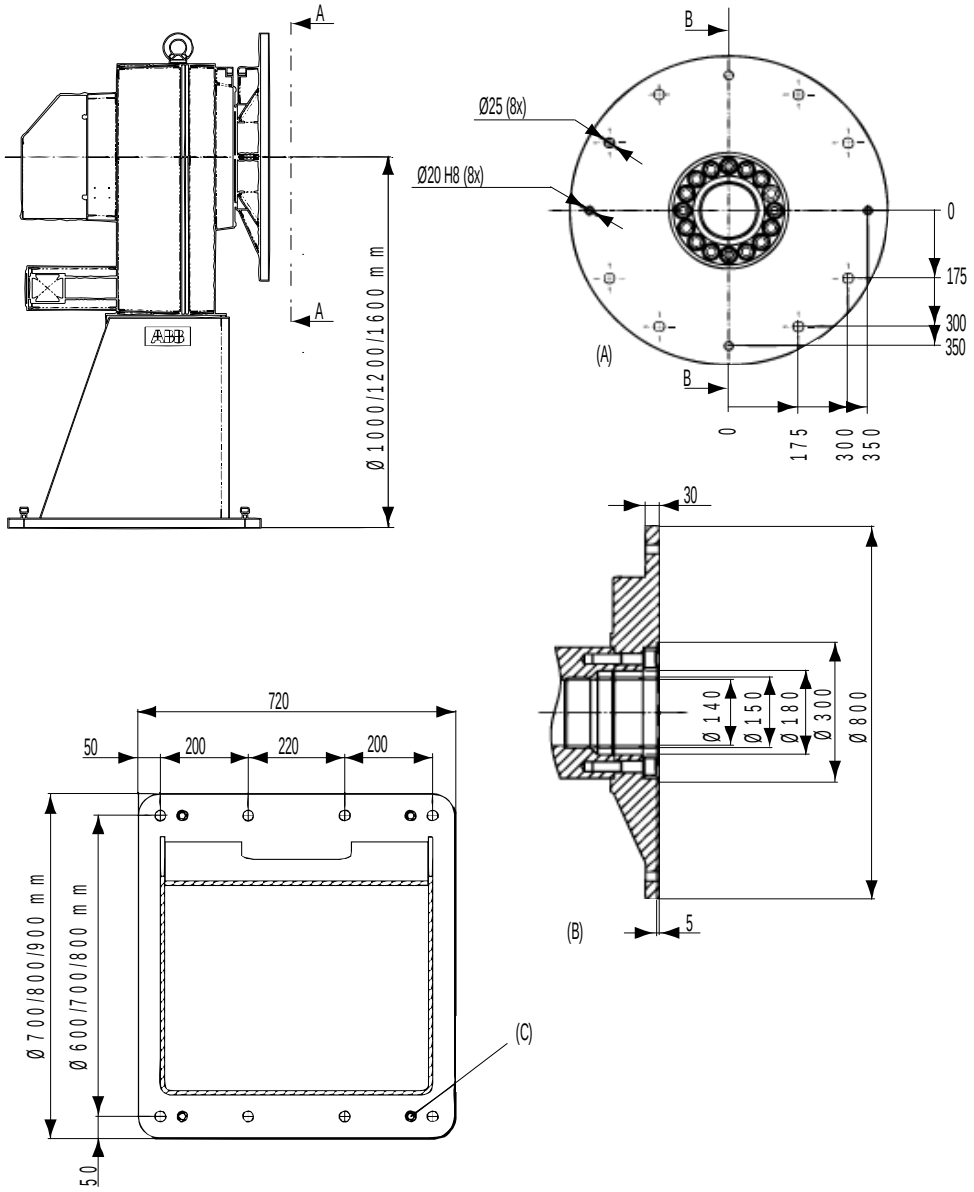


Figure 37 Measurements for IRBP 5000L.

Pos	Description
A	View A - A
B	View B - B
C	Adjusting bolts

1.2.4 Measurement diagrams

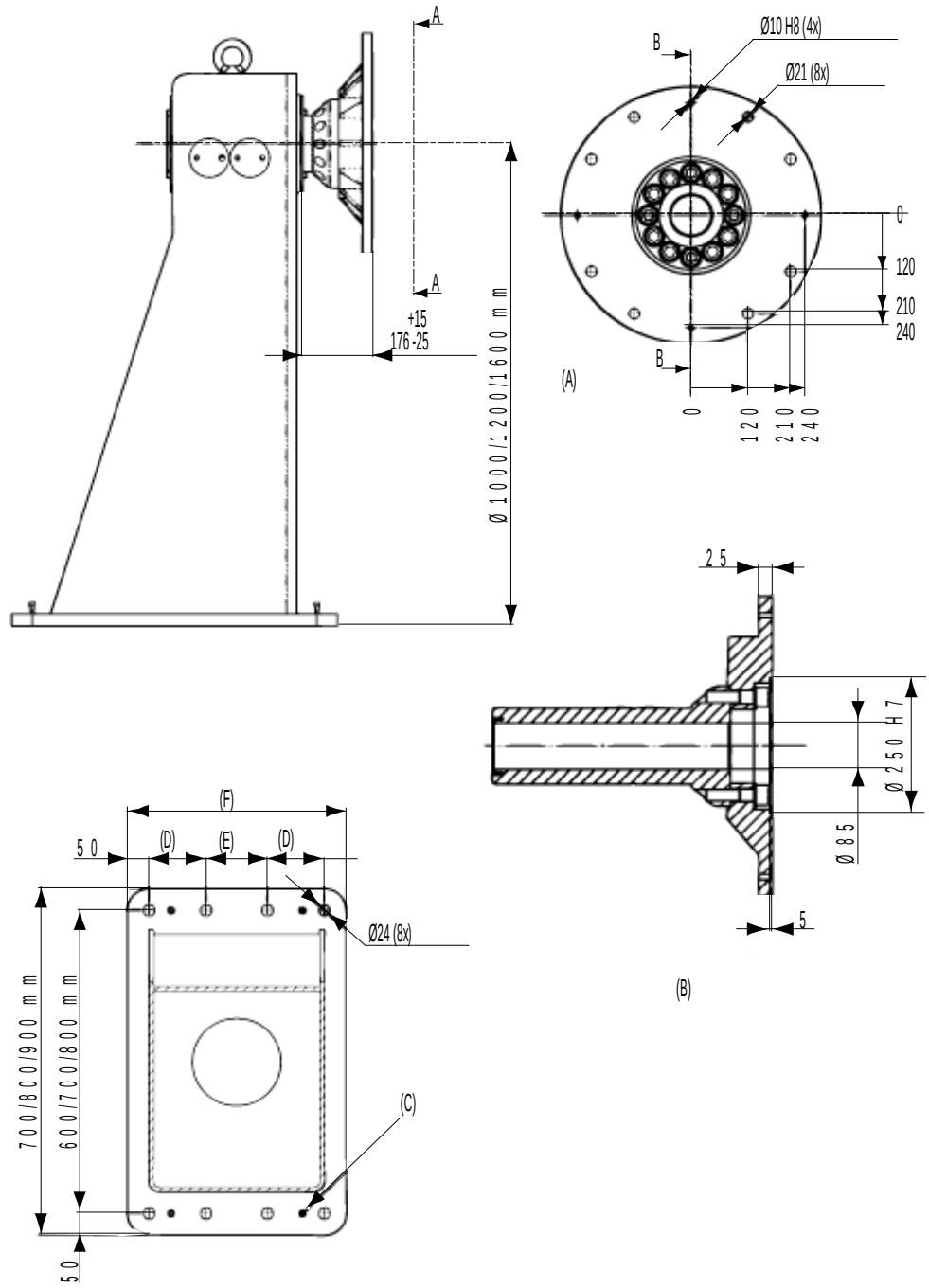


Figure 38 Measurements for IRBP 5000L.

Pos	Description
A	View A - A
B	View B - B
C	Adjusting bolts
D	130/130/165 mm
E	140/140/170 mm
F	500/500/600 mm

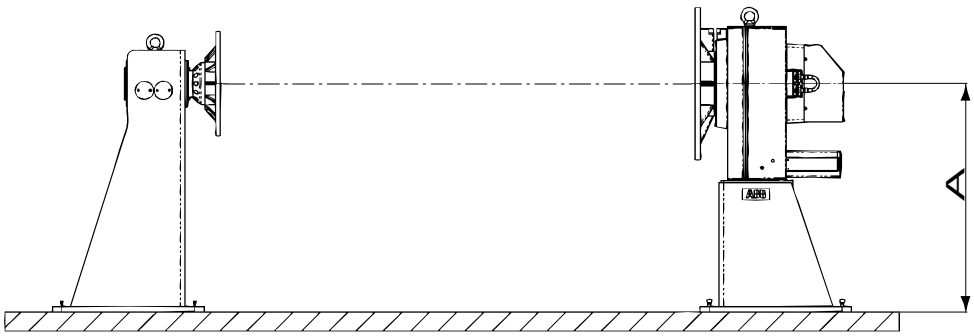


Figure 39 Measurements for IRBP 5000L.

L	Weight incl beam
1000	1414
1200	1512
1600	1736

1.3 IRBP250R/500R/750R

1.3.1 General

The positioner is designed to handle workpieces of a weight up to 250/500/750 kg (including the fixture) in connection with robot welding using the MIG/MAG methods.

The positioner features a twin station solution where the robot welds on one side and the operator loads and unloads on the other. The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 40).

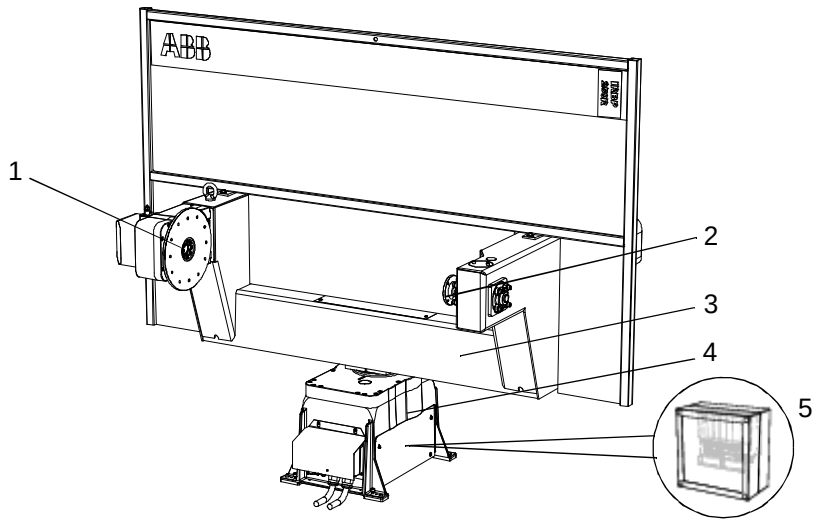


Figure 40 The position´s main sections.

Pos	Description	Pos	Description
1	Rotary unit MTC	4	Station interchange unit MIC
2	Support collar	5	SMB unit
3	Stand		

On the outgoing shaft of the station switching unit MIC there is a frame on which two rotary units MTC are fitted.

On the outgoing shaft of the rotary unit a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures. On the opposite side there is a support collar used for fixture support.

A screen is fitted between the two welding stations, which protects the operator from arc-eye.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

1.3.2 Technical data

Technical Data	IRBP 250 R	IRBP 500 R	IRBP 750 R
Max handling capacity	250 kg / side	500 kg / side	750 kg / side
Max load difference between sides 1 and 2 (workpieces and fixture)	150 kg	350 kg	350 kg
Max continuous torque	350 Nm	650 Nm	900 Nm
Center of gravity	See loading table	See loading table	See loading table
Max bending moment	650 Nm	3300 Nm	5000 Nm
Positioning time 90 degrees, axis 1	0.8 -1.2 s	1.2 -1.6 s	1.3 -1.7 s
Positioning time 180 degrees, axis 1	1.4 -1.9 s	1.8 -2.5 s	1.9 -2.6 s
Positioning time 360 degrees, axis 1	2.3 -2.7 s	3.1 -3.4 s	3.2 -3.5 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm	±0.1 mm
Max. rotation speed, axis 1	30 rpm	25 rpm	25 rpm
Station switching time	3,3 - 4,1 s	3,4 - 4,2 s	3,4 - 4,3 s
Stop time with an emergency stop	< 0.5 s	< 0.5 s	< 0.6 s
Max welding current, 60% duty cycle	600 Amp	600 Amp	600 Amp
Weight	590 -600 kg	1250 - 1350 kg	1250 - 1350 kg

1.3.3 Loading diagram

The diagrams (Figure 41, Figure 42, Figure 43) show the maximum permitted center of gravity displacement from the center of rotation at different loads.

The load refers to the workpiece including the fixture. Also refer to the value for the max. continuous torque.

250R

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 129 kg.

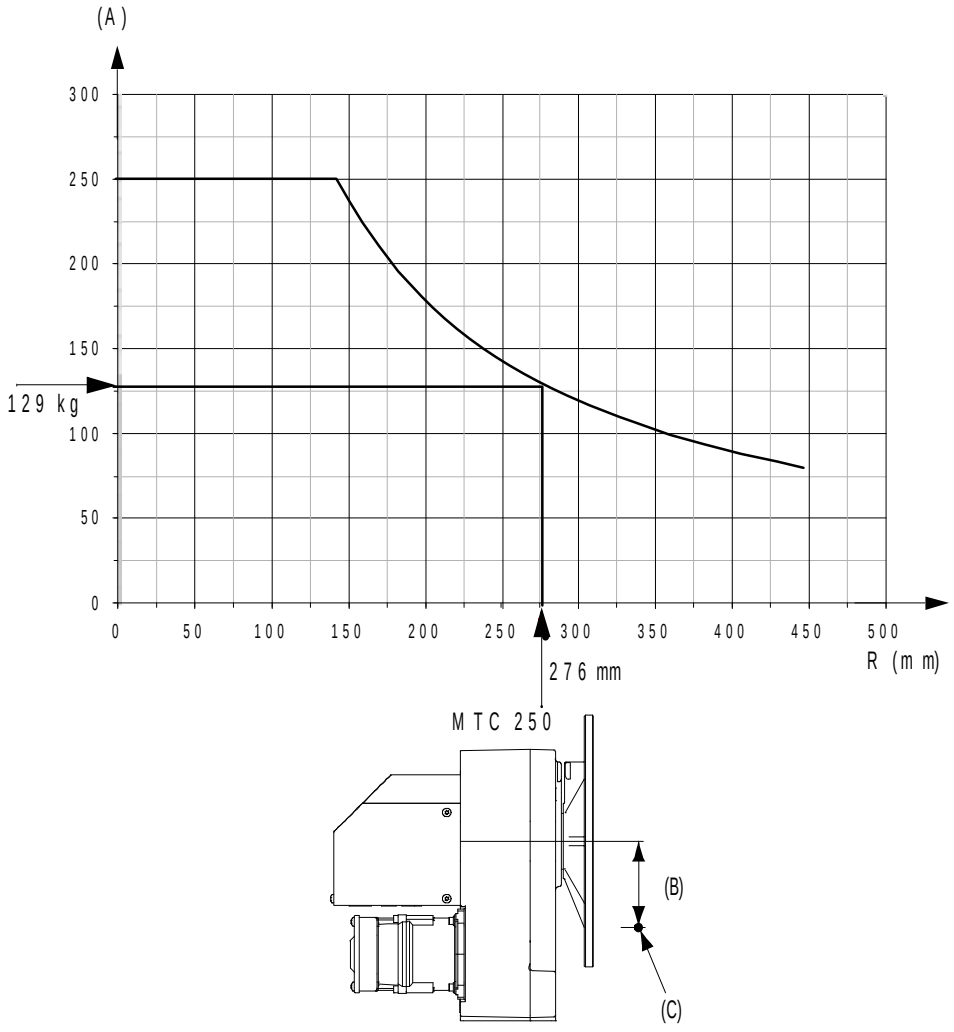


Figure 41 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

500R

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 240 kg.

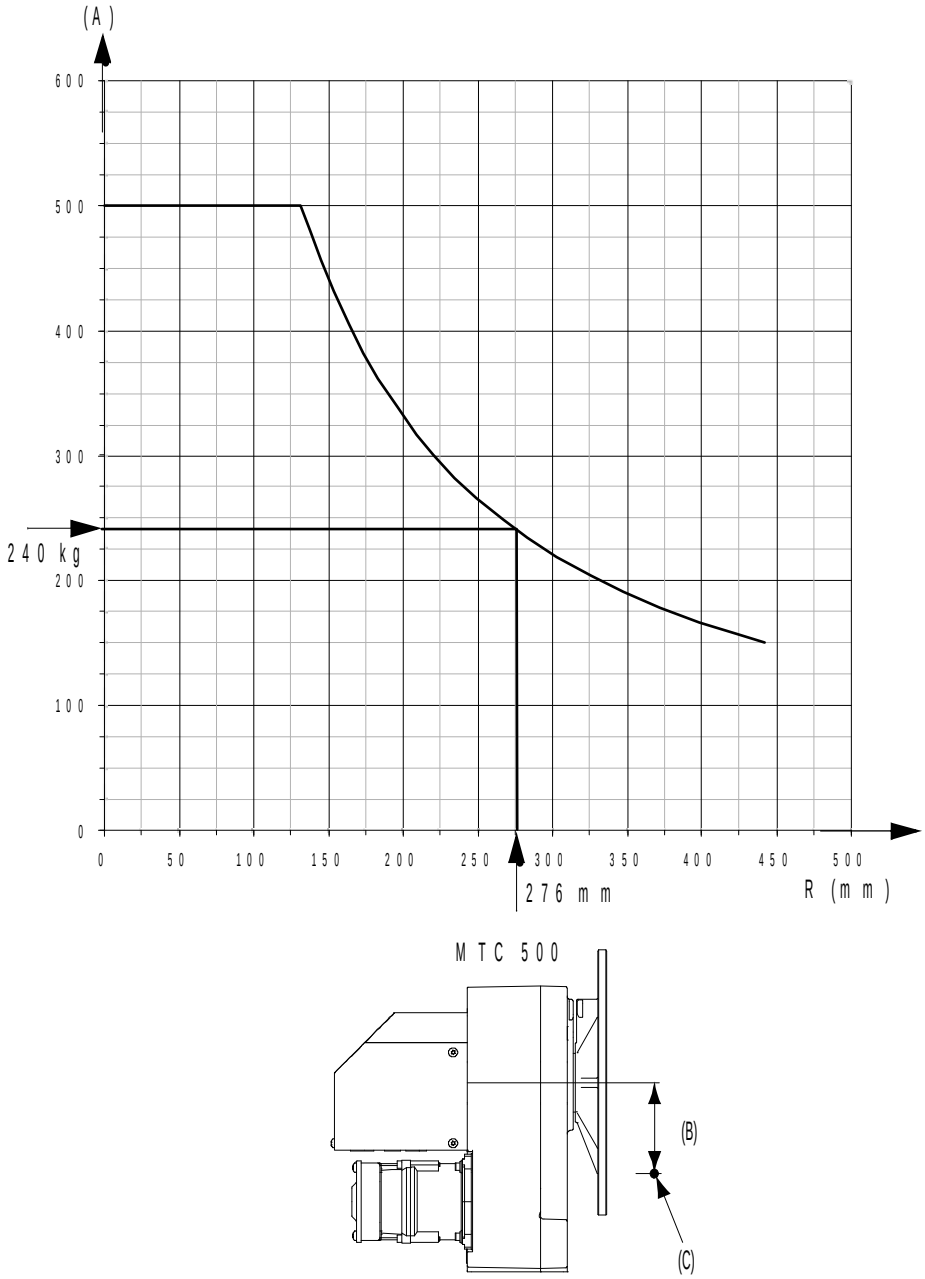


Figure 42 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

750R

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 333 kg.

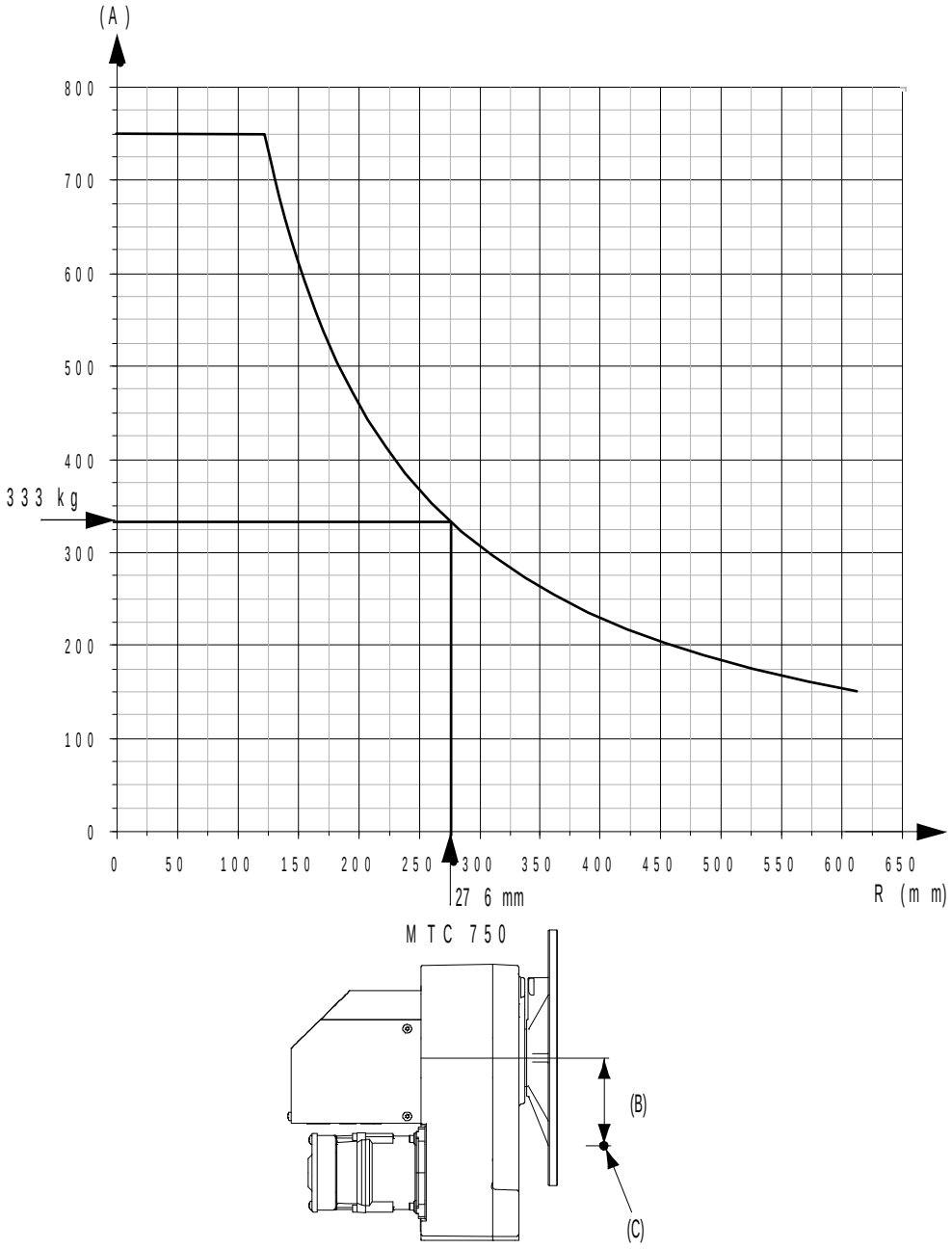


Figure 43 Limits of the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

1.3.4 Measurement diagrams

IRBP 250R

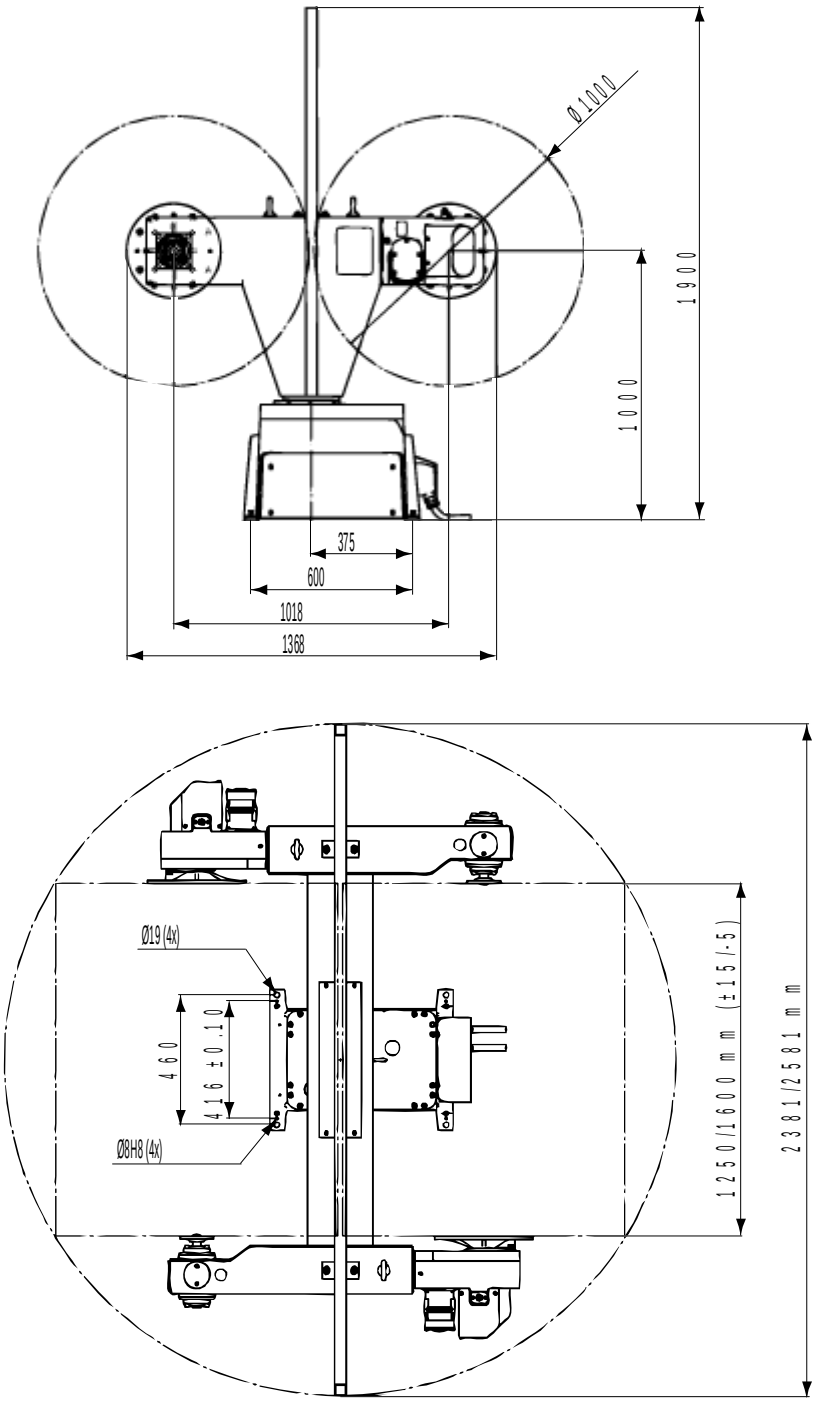


Figure 44 Measurements of the IRBP 250R.

1.3.4 Measurement diagrams

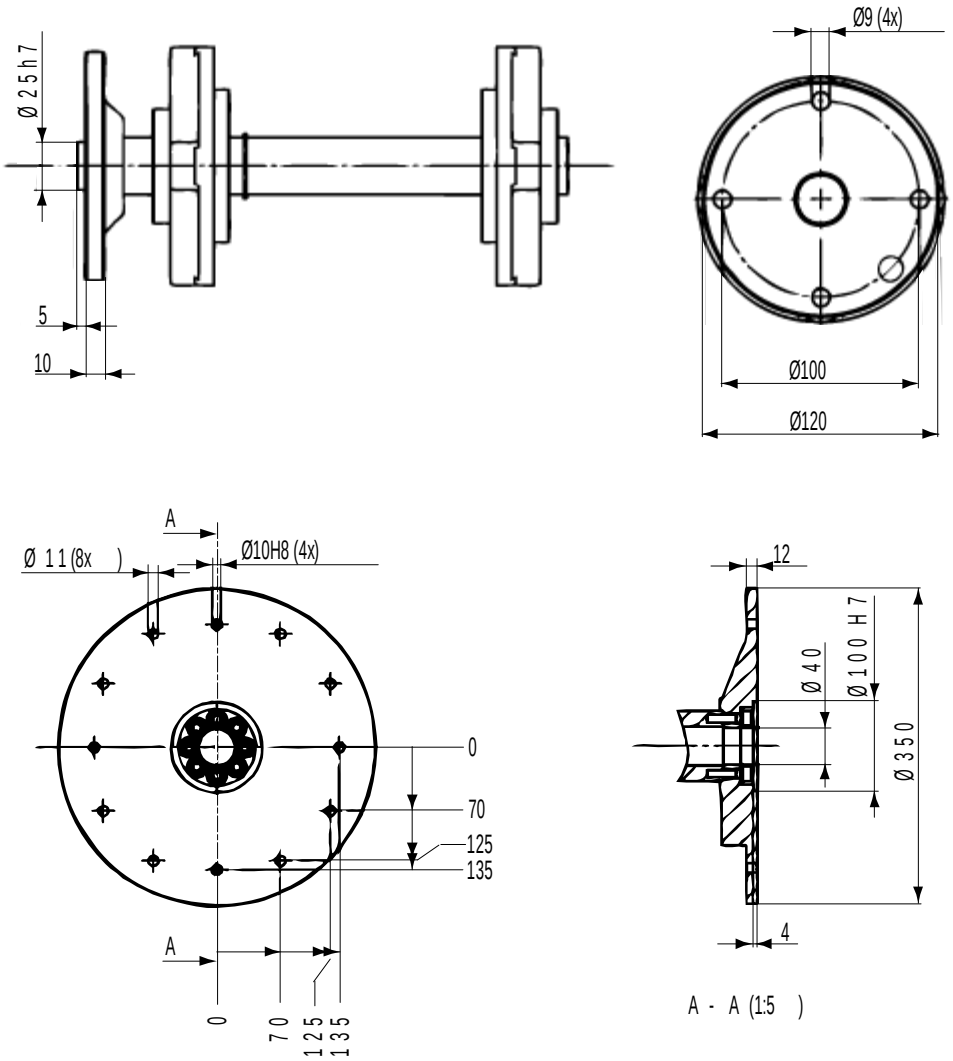


Figure 45 Measurements of the IRB 250R.

IRBP 500R/750R Ø 1000

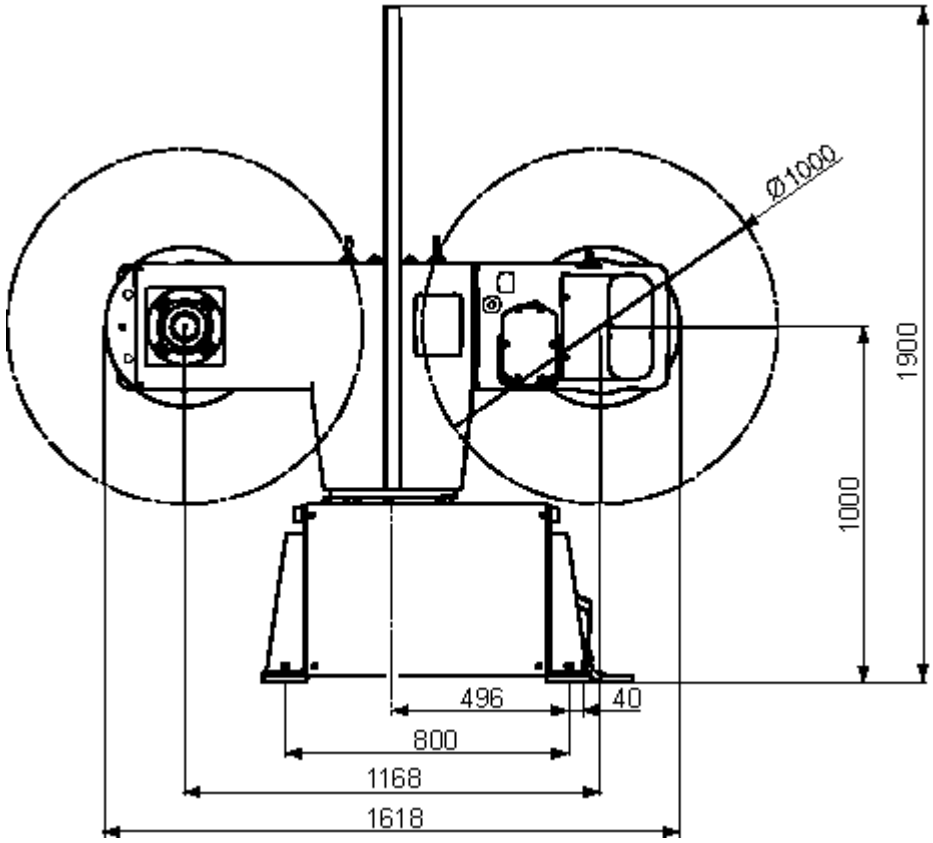


Figure 46 Measurements of the IRBP 500R/750R, diameter 1000 mm.

1.3.4 Measurement diagrams

IRBP 500R/750R Ø 1200

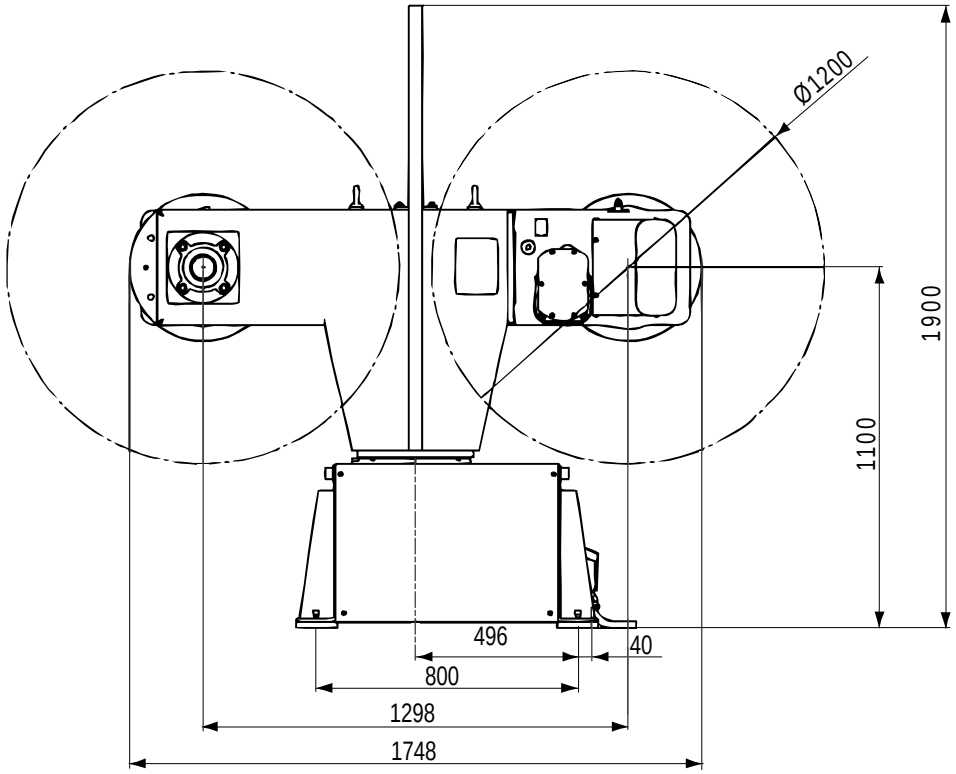


Figure 47 Measurements of the IRBP 500R/750R, diameter 1200 mm.

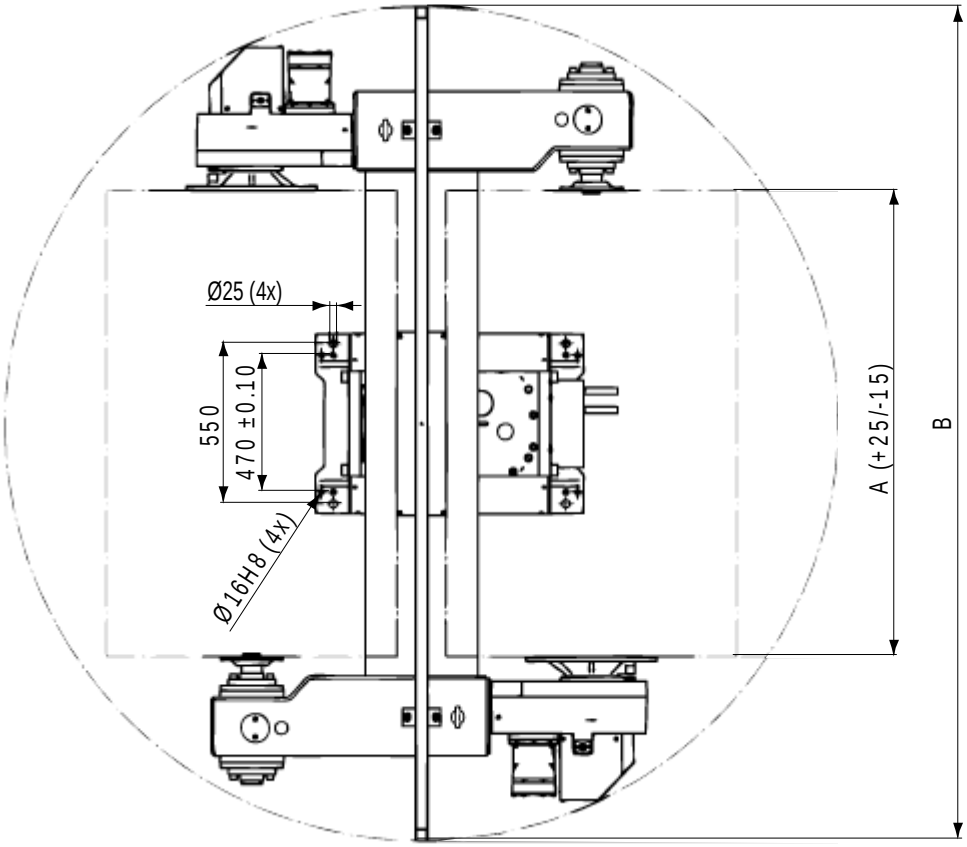


Figure 48 Measurements of the IRBP 500R/750R.

IRBP 500/750R Ø 1000		IRBP 500/750R Ø 1200	
A (mm)	**B (mm)**	**A (mm)**	**B (mm)**
1600	2865	1600	2970
2000	3230	2000	3280

1.3.4 Measurement diagrams

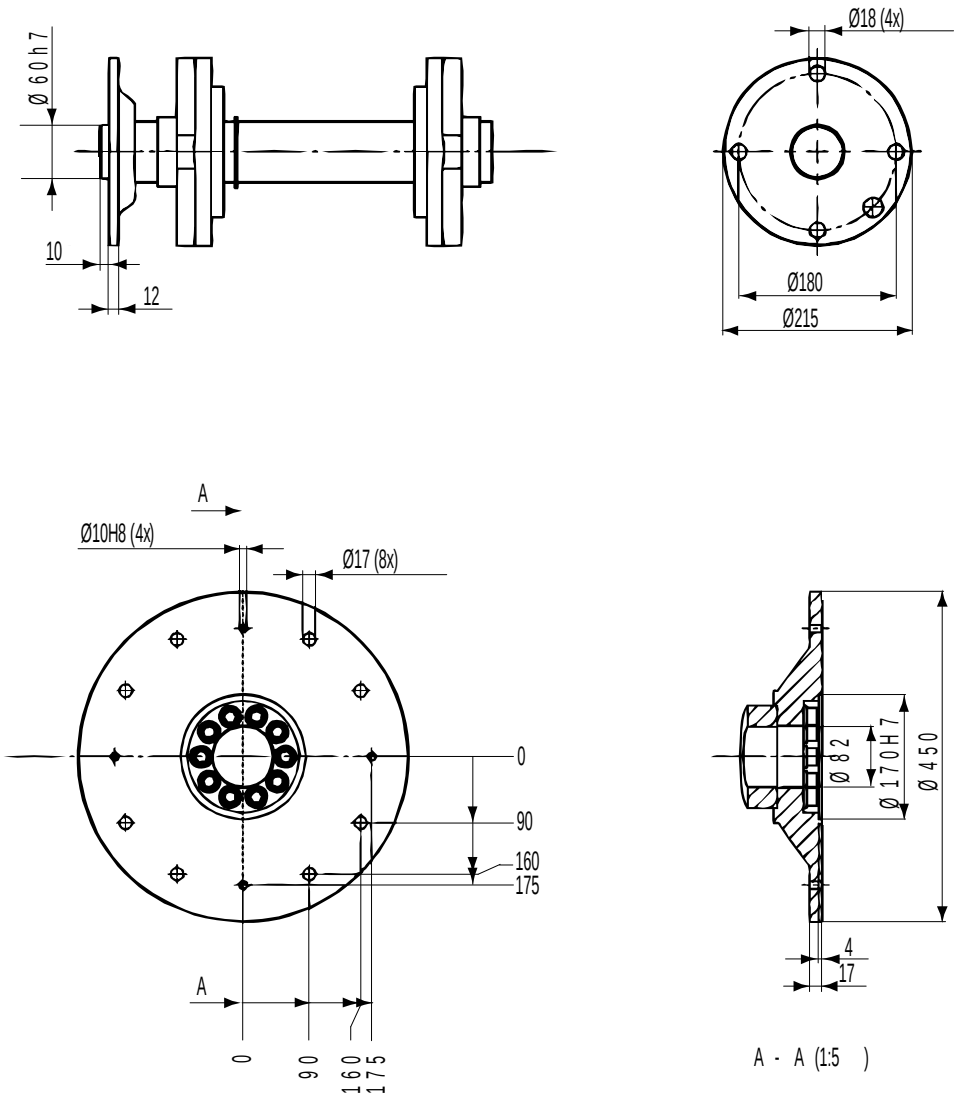


Figure 49 Measurements of the IRBP 500R/750R.

1.4 IRBP 250K/ 500K/ 750K

1.4.1 General

The positioner is designed to handle workpieces of a weight up to 250/500/750 kg including the fixture in connection with robot welding using the MIG/MAG methods.

The positioner features a twin station solution where the robot welds on one side and the operator loads and unloads on the other.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.
The positioner is designed with the following main sections (see Figure 50):

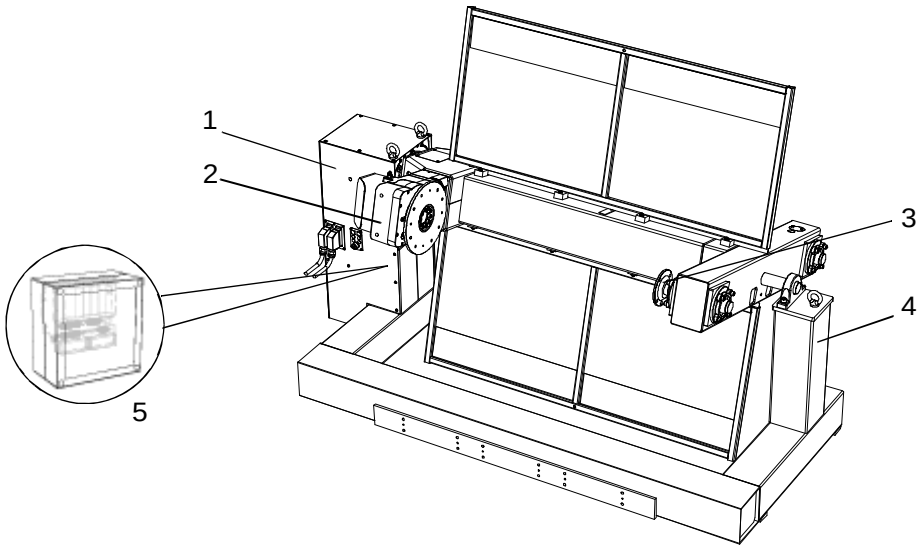


Figure 50 The positioner´s main sections.

Pos	Description	Pos	Description
1	Station interchange unit MIC	4	Stand
2	Rotary unit MTC	5	SMB unit
3	Support collar		

On the outgoing shaft of the station interchange unit MIC there is a frame on which two rotary units MTC are fitted.

On the outgoing shaft of the rotary unit a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures. On the opposite side there is a support collar used for fixture support.

A screen is fitted between the two welding stations, which protects the operator from arc-eye.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

The drive equipment for the positioner is placed in the system's equipment cabinet.

1.4.2 Technical data

250K

Technical Data	IRBP 250K (Ø 1000)	IRBP 250K (Ø 1200)
Max. handling capacityv	250 kg	250 kg
Max load difference between sides 1 and 2 (workpiece and fixture)	140 kg	120 kg
Max. continuous torque	350 Nm	350 Nm
Center of gravity	See loading diagram	See loading diagram
Max bending moment	600 Nm	600 Nm
Positioning time 90 degrees	0.8 -1.2 s	0.8 -1.2 s
Positioning time 180 degrees	1.4 -1.9 s	1.4 -1.9 s
Positioning time 360 degrees	2.3 -2.7 s	2.3 -2.7 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	30 rpm	30 rpm
Station interchange time	3,2 - 3,9 s	3,2 - 3,9 s
Stop time with an emergency stop	< 0.5 s	< 0.5 s
Max welding current, 60% duty cycle	600 Amp	600 Amp
Weight	930 -1200 kg	970 -1250 kg

500K

Technical Data	IRBP 500K (Ø 1000)	IRBP 500K (Ø 1200)	IRBP 500K (Ø 1400)
Max. handling capacity	500 kg	500 kg	500 kg
Max load difference between sides 1 and 2 (workpiece and fixture)	300 kg	250 kg	220 kg
Max. continuous torque	650 Nm	650 Nm	650 Nm
Center of gravity	See loading diagram	See loading diagram	See loading diagram
Max bending moment	3300 Nm	3300 Nm	3300 Nm
Positioning time 90 degrees	1.2 -1.6 s	1.2 -1.6 s	1.2 -1.6 s
Positioning time 180 degrees	1.8 -2.5 s	1.8 -2.5 s	1.8 -2.5 s
Positioning time 360 degrees	3.1 -3.4 s	3.1 -3.4 s	3.1 -3.4 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	25 rpm	25 rpm	25 rpm
Station interchange time	3,3 - 4,5 s	3,3 - 4,5 s	3,3 - 4,5 s
Stop time with an emergency stop	< 0.5 s	< 0.5 s	< 0.5 s
Max welding current, 60% duty cycle	600 Amp	600 Amp	600 Amp
Weight	1700 -2150 kg	1750 -2200 kg	1850 -2300 kg

750K

Technical Data	IRBP 750K (Ø 1000)	IRBP 750K (Ø 1200)	IRBP 750K (Ø 1400)
Max. handling capacity	750 kg	750 kg	750 kg
Max load difference between sides 1 and 2 (workpiece and fixture)	250 kg	220 kg	200 kg
Max. continuous torque	900 Nm	900 Nm	900 Nm
Center of gravity	See loading diagram	See loading diagram	See loading diagram
Max bending moment	5000 Nm	5000 Nm	5000 Nm
Positioning time 90 degrees	1.3 -1.7 s	1.3 -1.7 s	1.3 -1.7 s
Positioning time 180 degrees	1.9 -2.6 s	1.9 -2.6 s	1.9 -2.6 s
Positioning time 360 degrees	3.2 -3.5 s	3.2 -3.5 s	3.2 -3.5 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm	±0.1 mm
Max. speed of rotation	25 r/m	25 r/m	25 r/m
Station interchange time	3,3 - 4,6 s	3,3 - 4,6 s	3,3 - 4,6 s
Stop time with an emergency stop	< 0.6 s	< 0.6 s	< 0.6 s
Max welding current, 60% duty cycle	600 Amp	600 Amp	600 Amp
Weight	1700 -2150 kg	1750 -2200 kg	1850 -2300 kg

1.4.3 Loading diagram

The diagrams (Figure 51 - Figure 53) show the maximum permitted center of gravity displacement from the center of rotation at different loads.

For the maximum load difference between side 1 and side 2, see the technical data in the chapter *Positioner.*

The load refers to the workpiece including the fixture. Also refer to the value for the max. continuous torque.

IRBP 250K

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 129 kg.

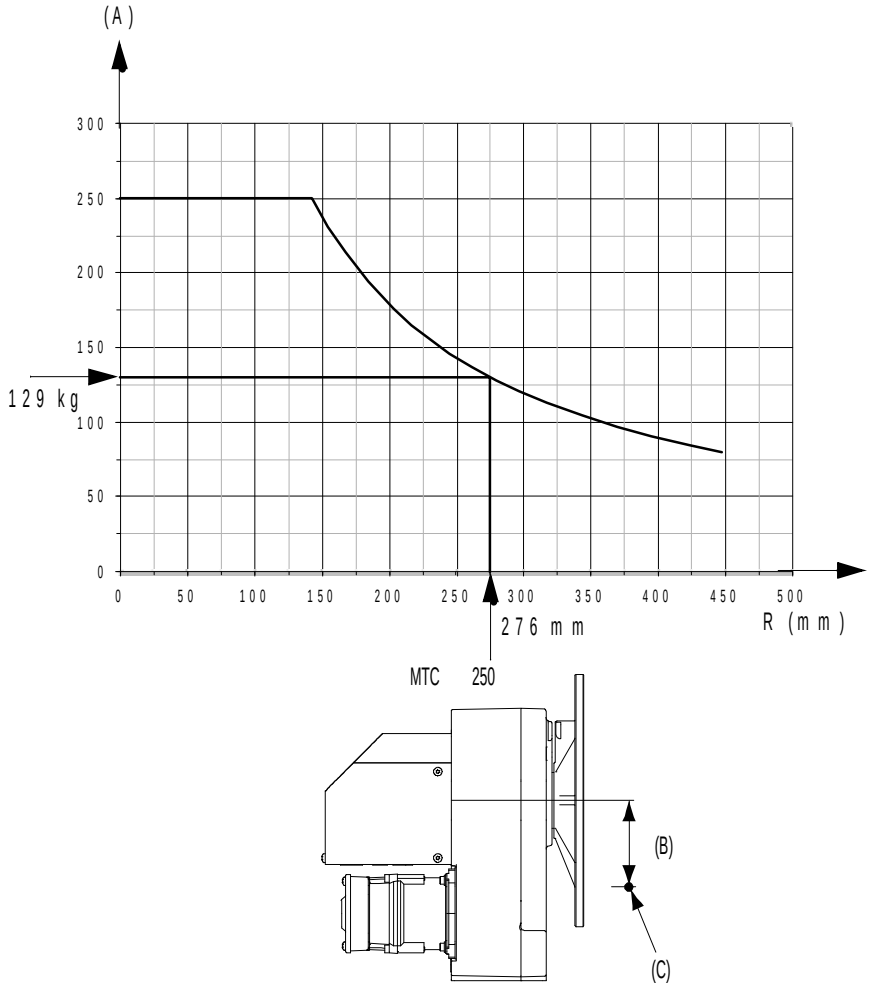


Figure 51 Limits for position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 500K

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 240 kg. The load refers to the workpiece including the fixture.

Also refer to the value for the max. continuous torque.

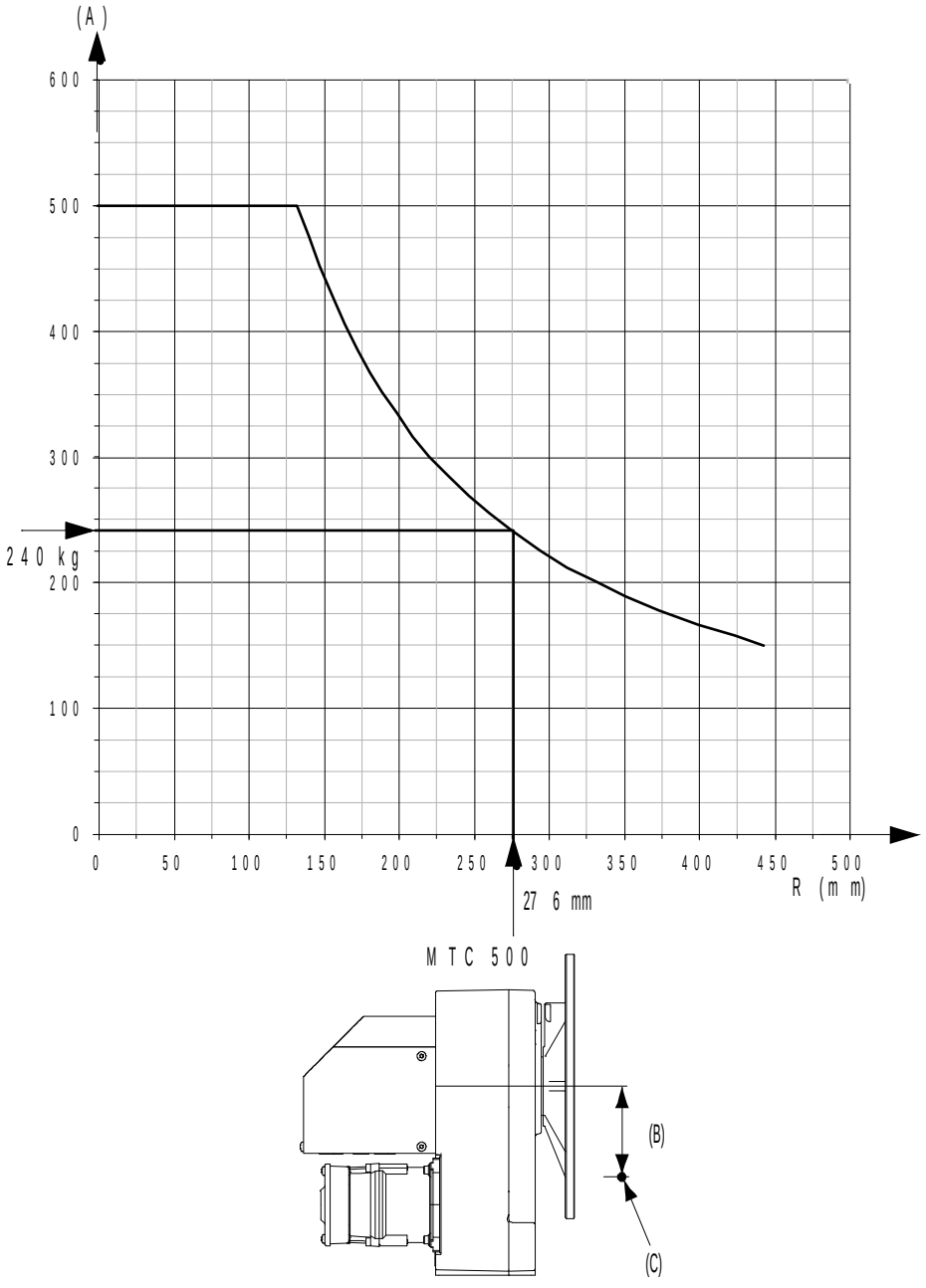


Figure 52 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

IRBP 750K

If the center of gravity is placed 276 mm from the center of rotation the load may not be greater than: 333kg. The load refers to the workpiece including the fixture.

Also refer to the value for the max. continuous torque.

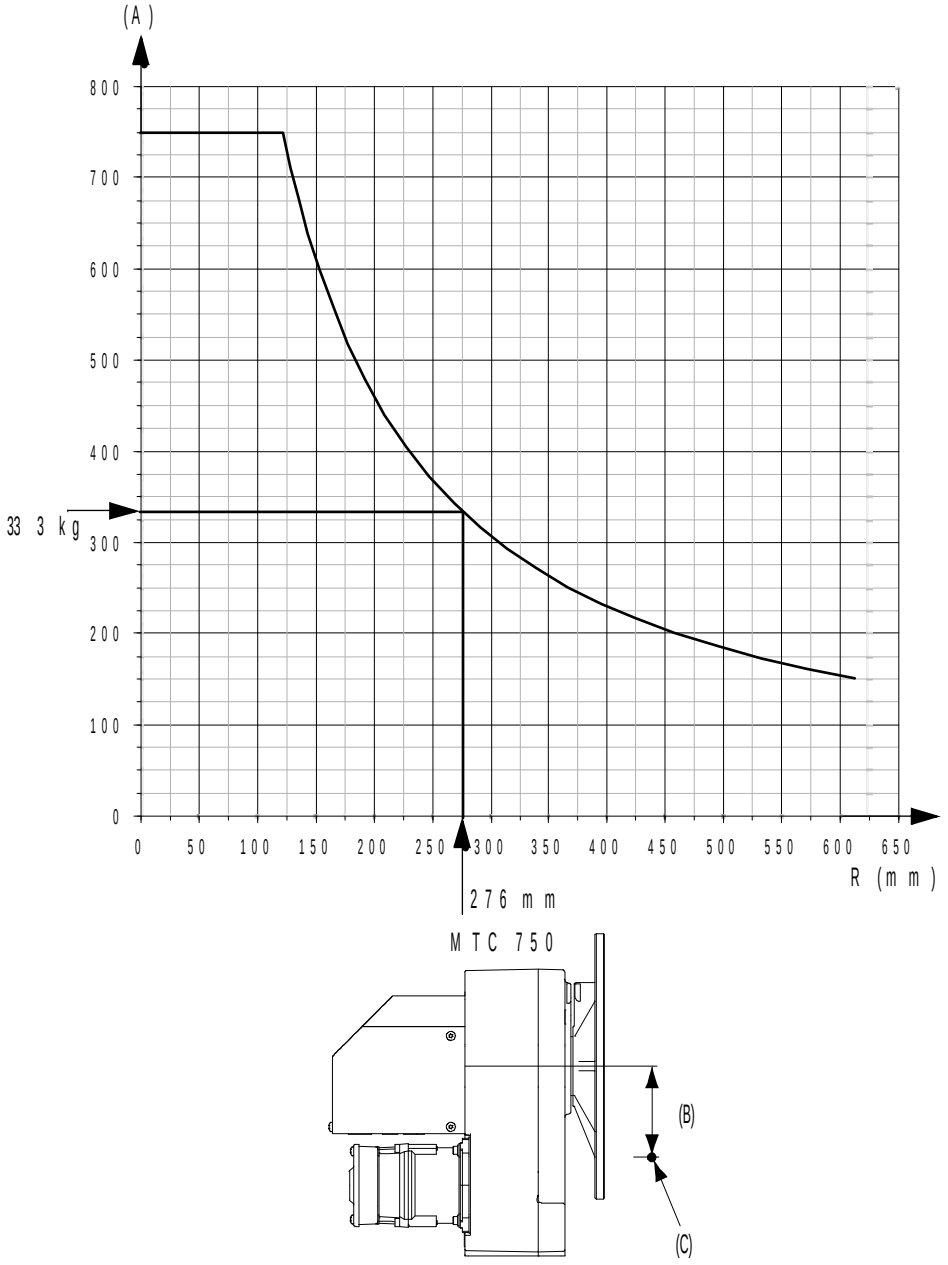


Figure 53 Limits for the position of the center of gravity at different loads.

Pos	Description
A	Weight
B	R = Distance in mm
C	Center of gravity

1.4.4 Measurement diagrams

IRBP 250K Ø 1000 mm

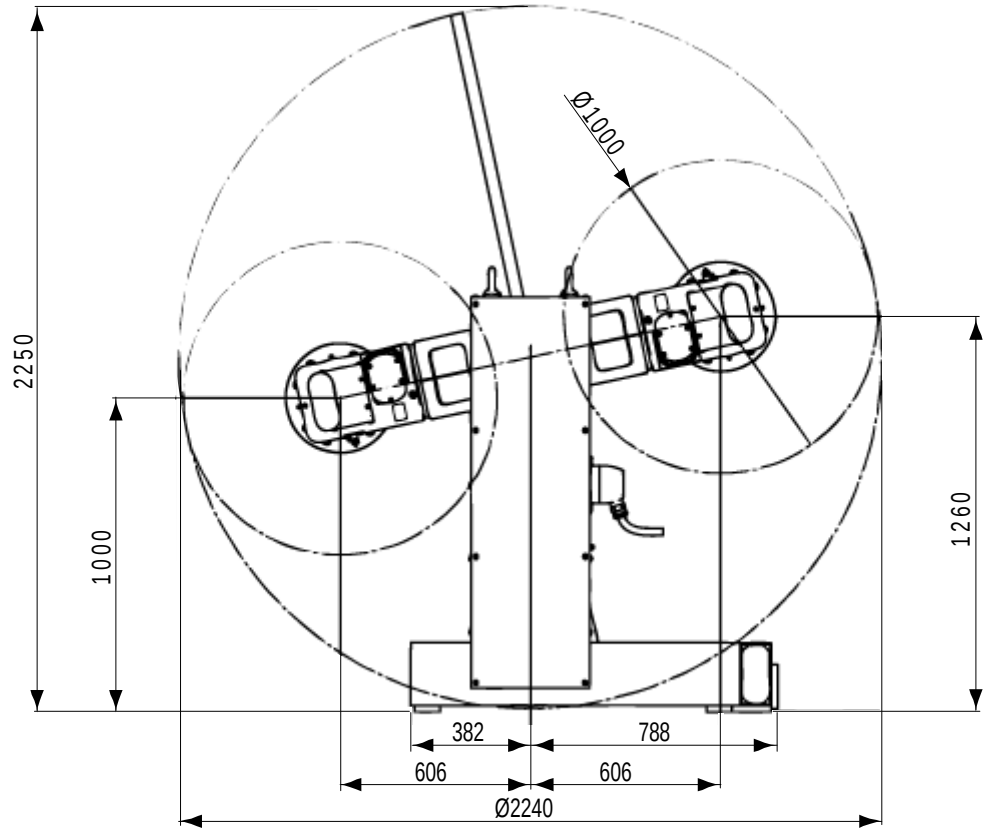


Figure 54 IRBP 250K, diameter 1000 mm.

1.4.4 Measurement diagrams

IRBP 250K Ø 1200 mm

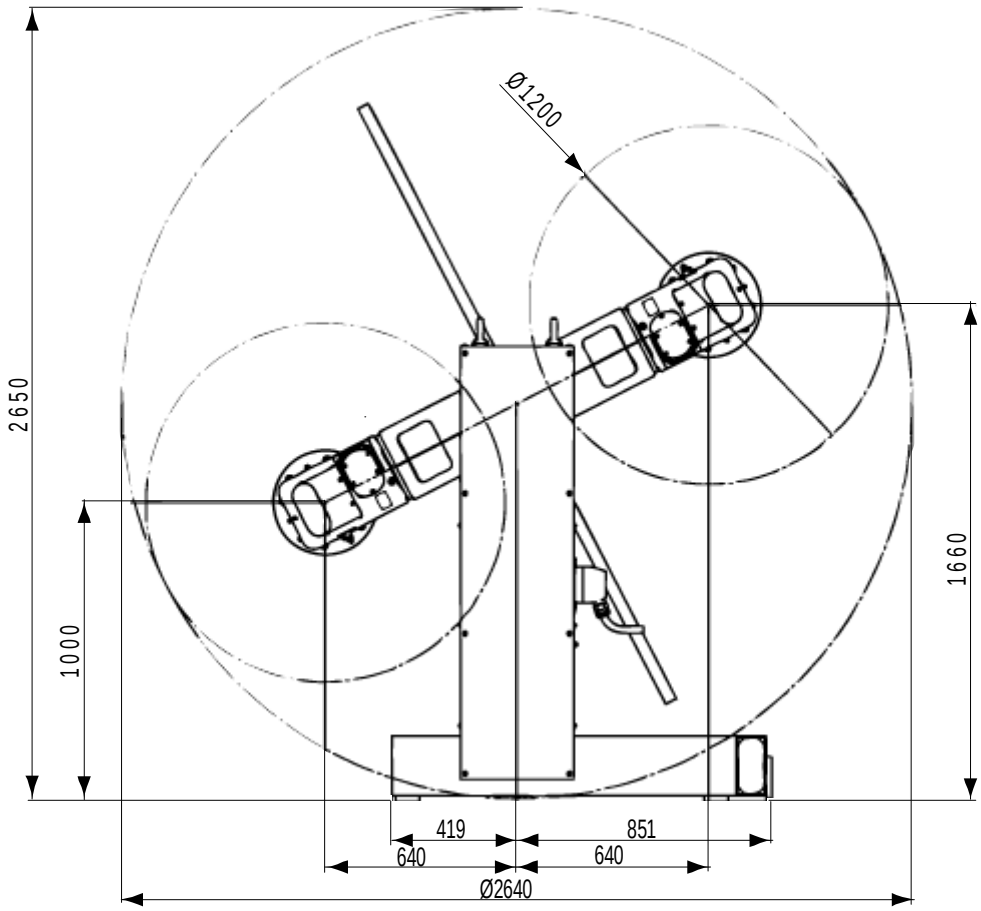


Figure 55 IRBP 250K, diameter 1200 mm.

IRBP 250K Ø1000 mm / Ø1200 mm

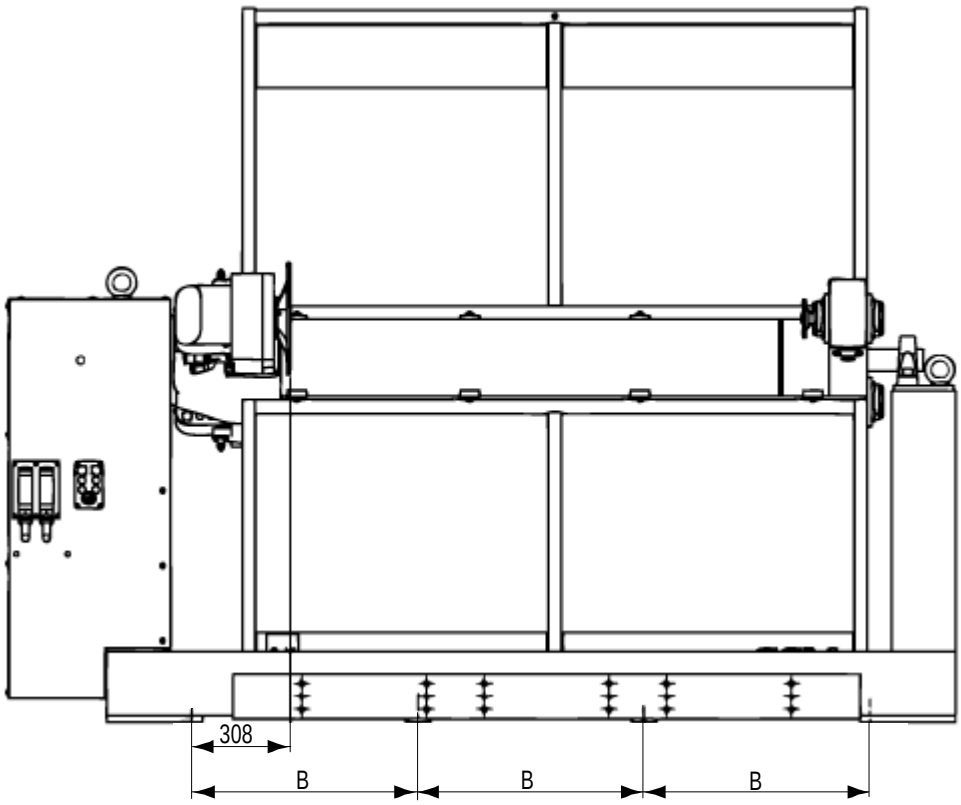


Figure 56 IRBP 250K, diameter 1000 mm and 1200 mm.

IRBP 250K Ø1000/Ø1200		
A (mm)	**B (mm)**	**C (mm)**
1600	706	2960
2000	840	3360
2500	1006	3860
3150	1223	4510
3500	1340	4860
4000	1507	5360

1.4.4 Measurement diagrams

IRBP 250K Ø1000 mm / Ø1200 mm

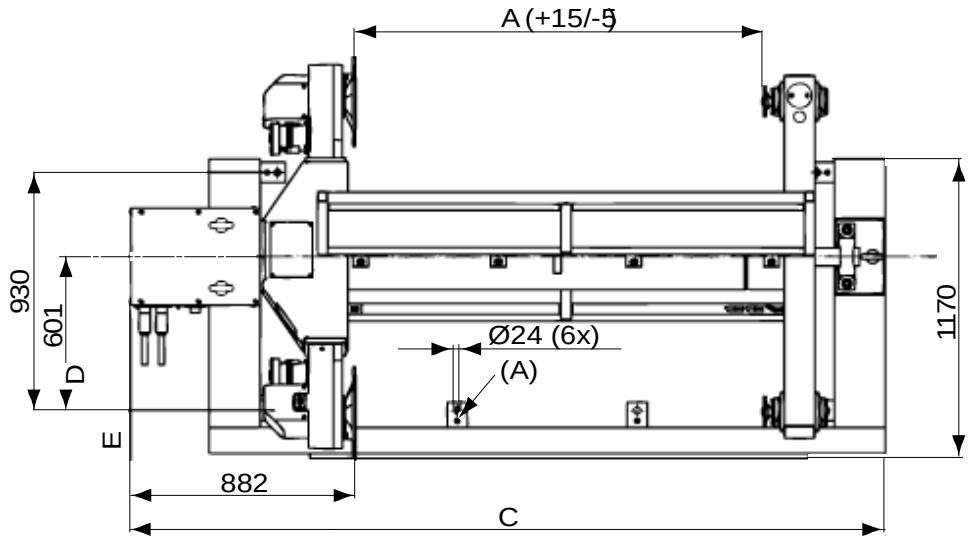


Figure 57 IRBP 250K, diameter. 1000 mm and 1200mm.

Pos	Description
A	Adjusting bolts

IRBP 250K Ø1000/Ø1200		
A (mm)	**B (mm)**	**C (mm)**
1600	706	2960
2000	840	3360
2500	1006	3860
3150	1223	4510
3500	1340	4860
4000	1507	5360

IRBP 250K	D (mm)	E (Mm)
Ø1000	930	601
Ø1200	1030	664

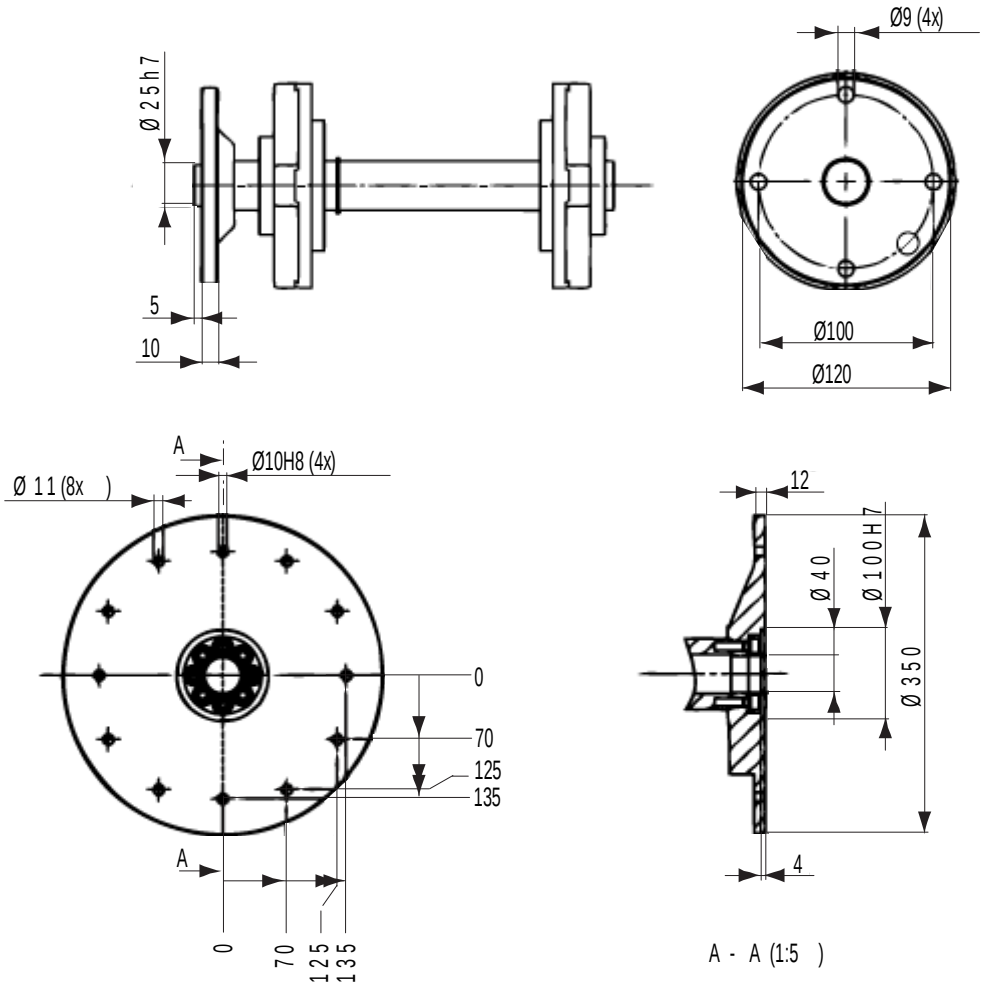

Ø9 (4x)
Ø 2 5 h 7
5
10
Ø100
Ø120
A
Ø10H8 (4x)
Ø 1 1 (8x)
0
70
125
135
A
0
70
125
135
12
Ø 4 0
Ø 1 0 0 H 7
Ø 3 5 0
4
A - A (1:5)

Figure 58

1.4.4 Measurement diagrams

IRBP 500K/750K Ø1000 mm

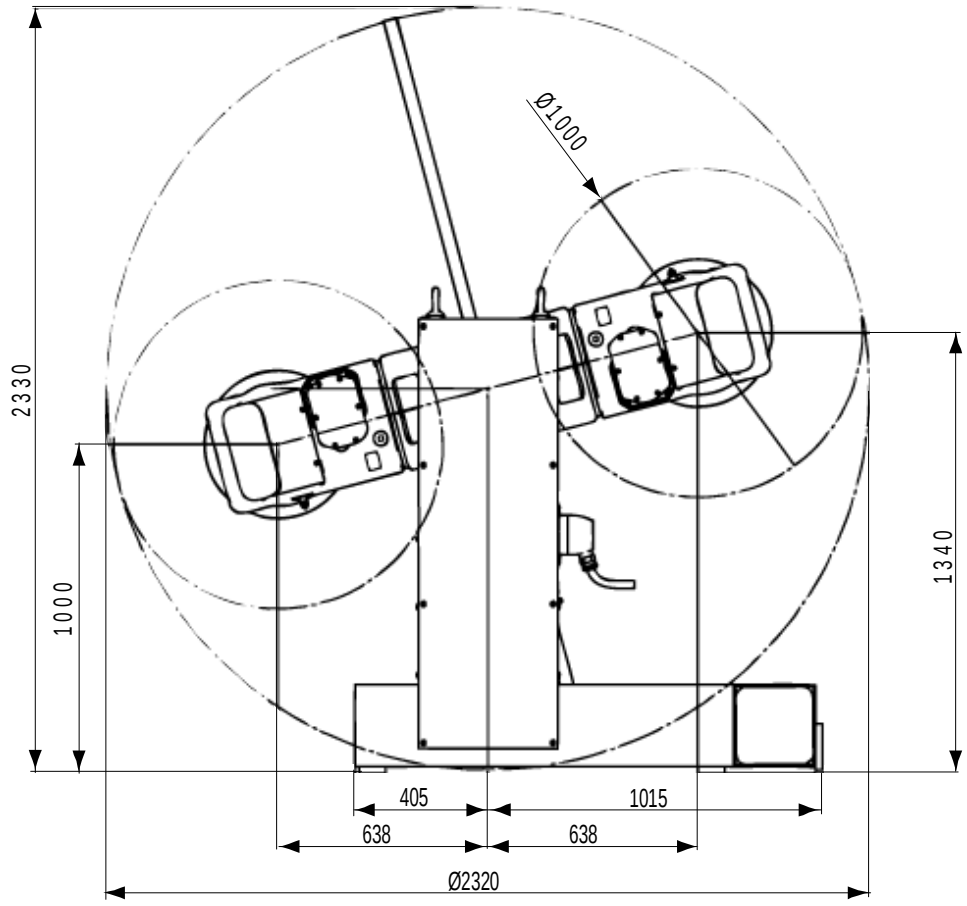


Figure 59 IRBP 500/750K, diameter 1000 mm.

IRBP 500K/750K Ø1200 mm

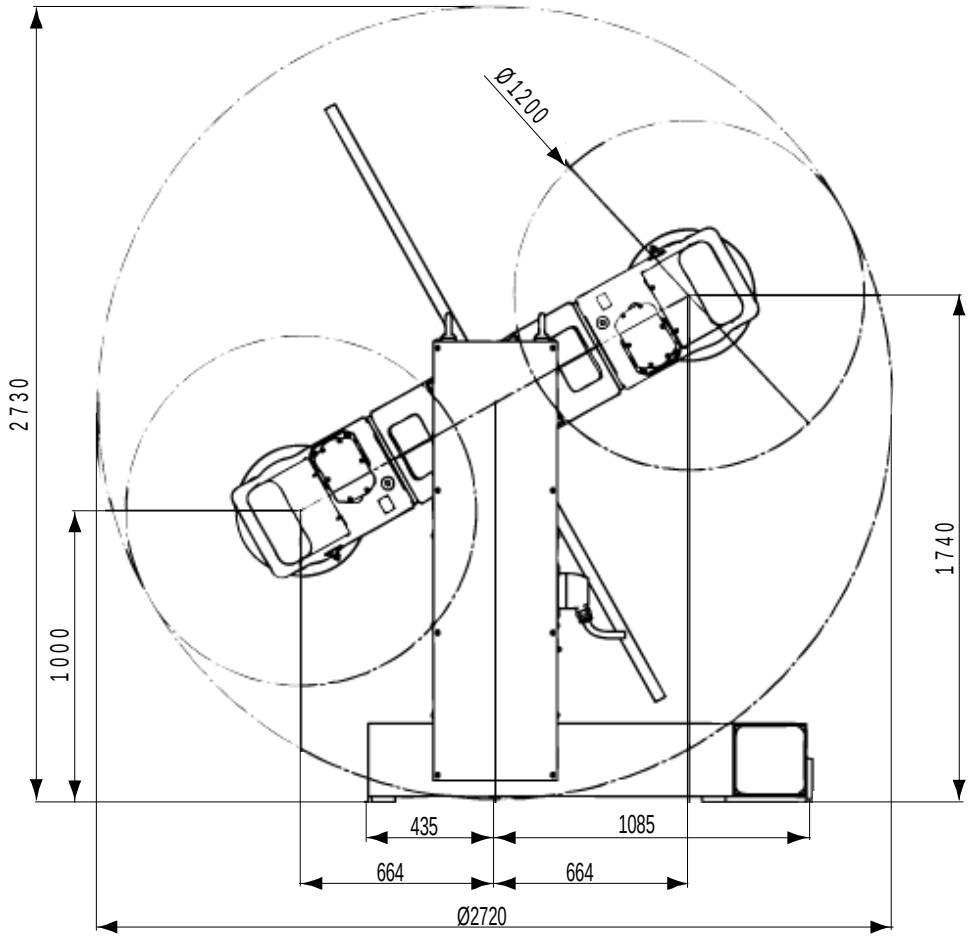


Figure 60 IRBP 500/750K, diameter 1200 mm.

1.4.4 Measurement diagrams

IRBP 500K/750K Ø1400 mm

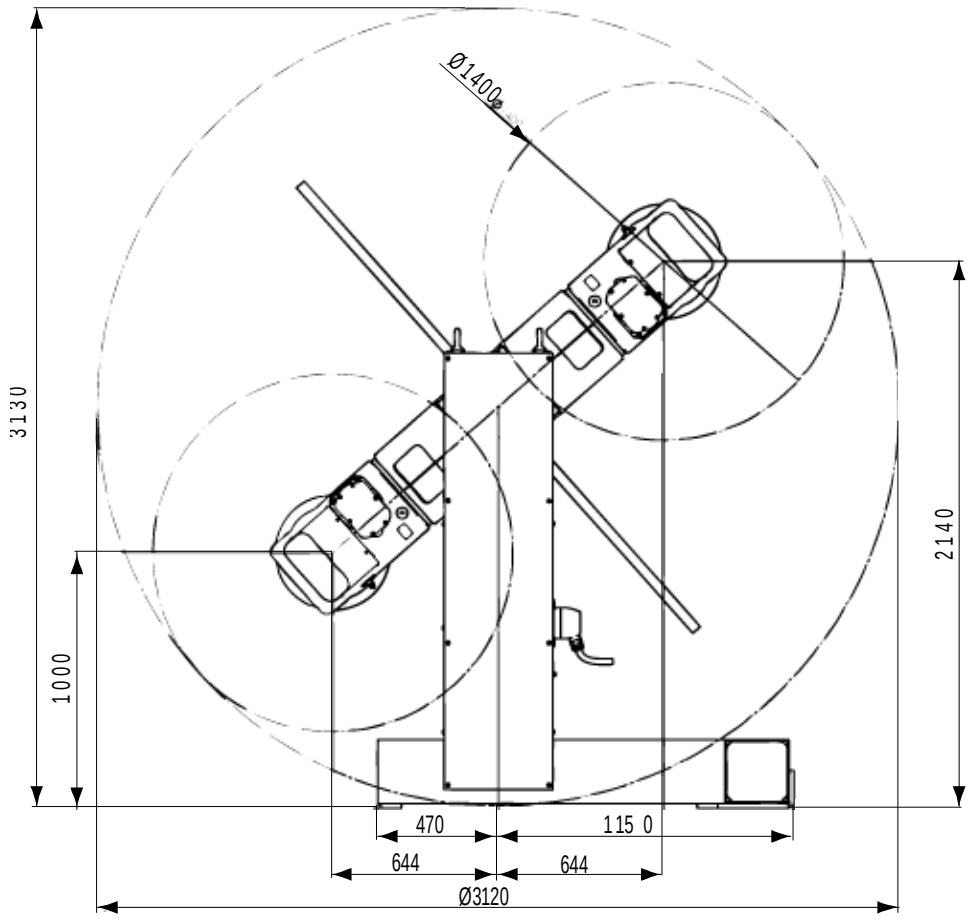


Figure 61 IRBP 500/750K, diameter 1400 mm.

IRBP 500K/750K Ø1000 mm / Ø1200 mm / Ø1400 mm

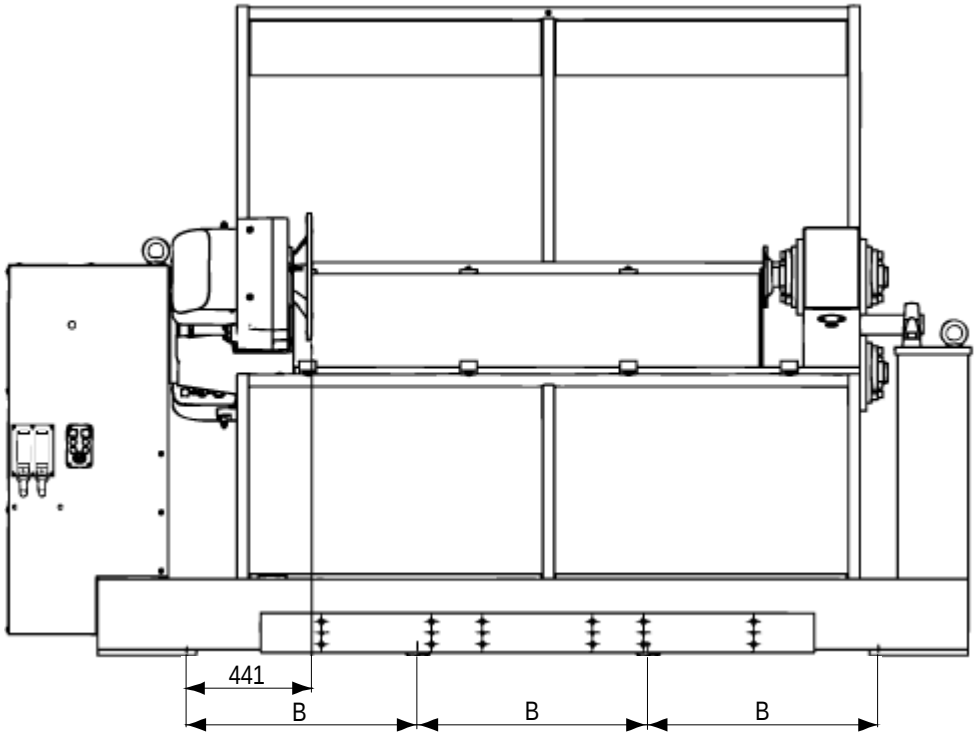


Figure 62 IRBP 500/750K, diameter 1000, 1200 and 1400 mm.

IRBP 500K750K Ø1000/Ø1200/Ø1400		
A (mm)	**B (mm)**	**C (mm)**
1600	816	3409
2000	950	3809
2500	1116	4309
3150	1333	4959
3500	1450	5309
4000	1616	5809

1.4.4 Measurement diagrams

IRBP 500K/750K Ø1000 mm / Ø1200 mm / Ø1400 mm

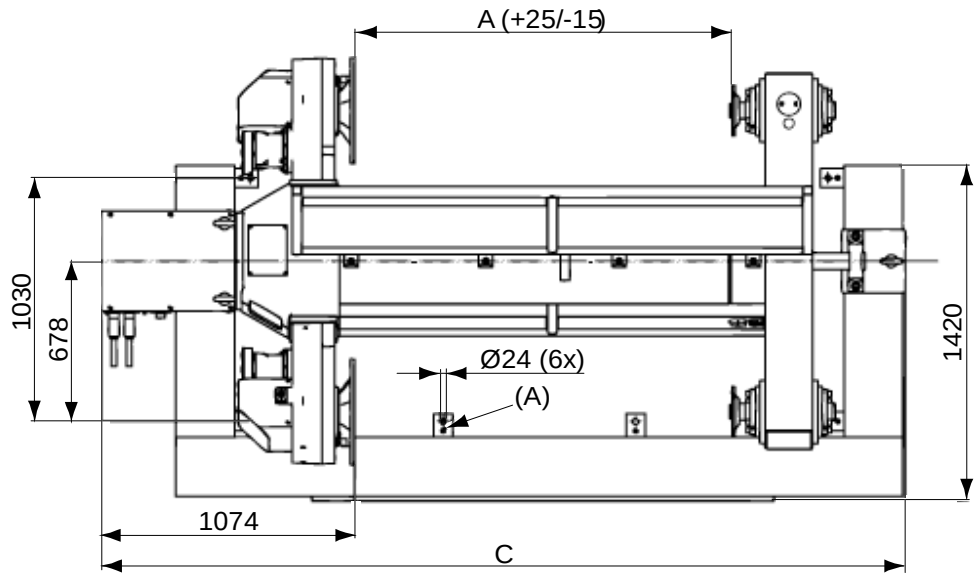


Figure 63 IRBP 500/750K, diameter 1000, 1200 and 1400 mm.

Pos	Description
A	Adjusting bolts

IRBP 500K750K Ø1000/Ø1200/Ø1400		
A (mm)	**B (mm)**	**C (mm)**
1600	816	3409
2000	950	3809
2500	1116	4309
3150	1333	4959
3500	1450	5309
4000	1616	5809

IRBP 500K/750K	D (mm)	E (Mm)
Ø1000	1030	678
Ø1200	1130	748
Ø1400	1230	813

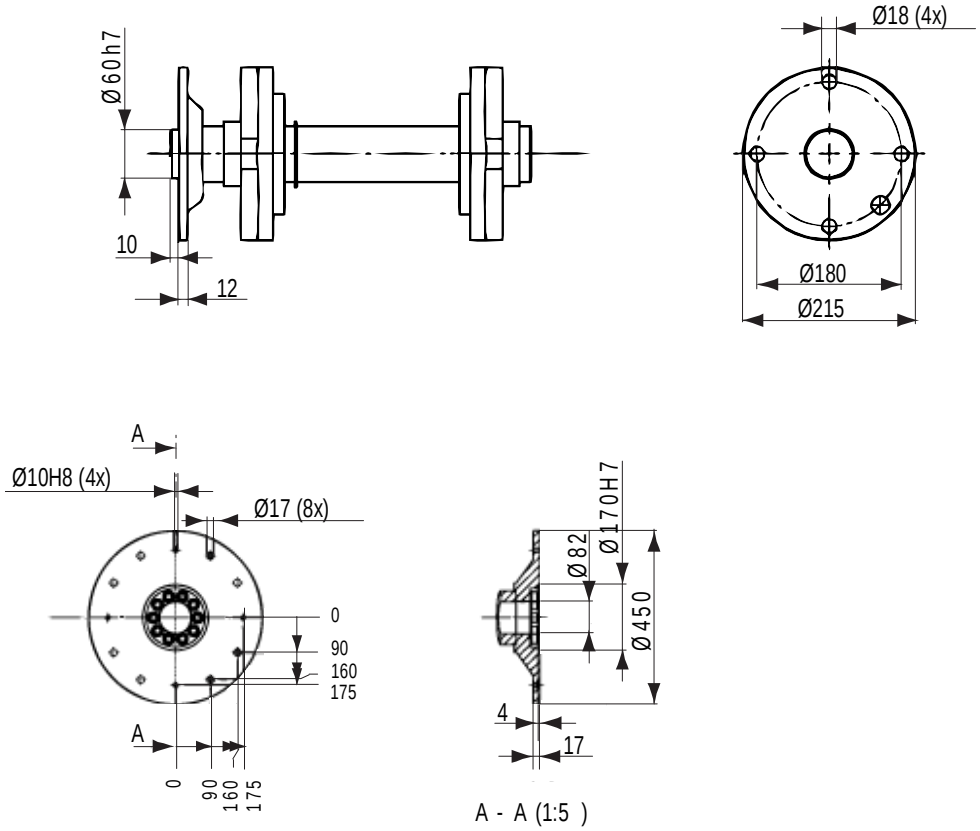


Figure 64 IRBP 500/750K.

1.5 IRBP 500C/ 1000C

1.5.1 General

The positioner is designed to handle workpieces of a weight up to 500/1000 kg (including the fixture) in connection with robot welding.

The positioner features a twin station solution where the robot welds on one side and the operator loads and unloads on the other.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 65):

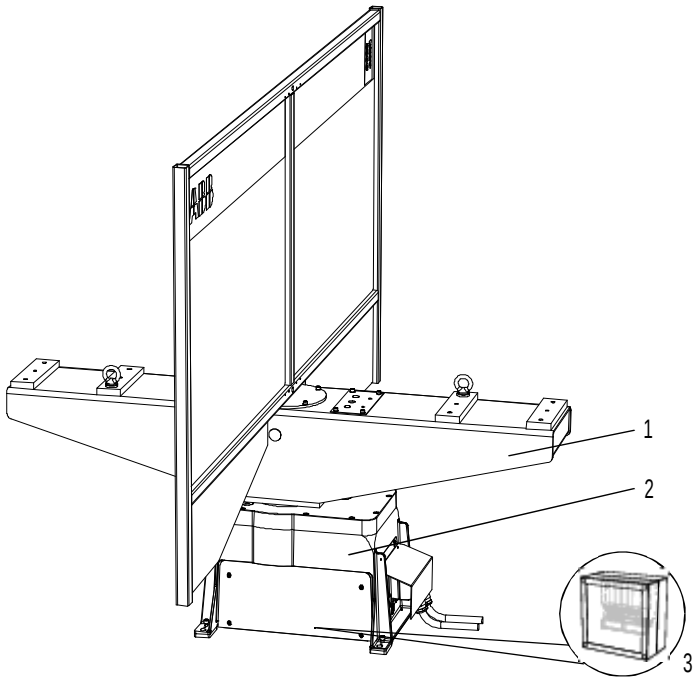


Figure 65 The positioner´s main sections.

Pos	Description
1	Stand
2	Station interchange unit MIC
3	SMB unit

On the outgoing shaft of the station interchange unit MIC there is a frame on which two fixed tables are fitted.

The tables have plain holes and guide holes for securing fixtures.

A screen is fitted between the two welding stations, which protects the operator from arc-eye.

The drive equipment is placed in the system's equipment cabinet.

1.5.2 Technical data

Technical Data	IRBP 500C	IRBP 1000C
Max. handling capacity	500 kg / side	1000 kg / side
Max load difference between sides 1 and 2 (workpiece and fixture)	350 kg	500 kg
Center of gravity	See loading table	See loading table
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm
Station interchange time 180°	3.3 - 4,0 s	3.1 - 4,0 s
Stop time with an emergency stop	< 0.5 s	< 0.6 s
Max welding power, 60% duty cycle	600 Amp	600 Amp
Weight	360 kg	660 kg

1.5.3 Loading table

IRBP 500C

The table shows the limits for the position of the center of gravity at different loads.

If the load is 500 kg the center of gravity for the workpiece including the fixture must be within the area which is limited by the circle with a diameter of A.

If the load is, for example, 475 kg use the column immediately above, that is the 500 kg column.

The sides can be loaded with different weights as long as the load difference between the side 1 and side 2 is less than 350 kg.

Weight of the workpiece including fixture (kg)	500	450	400	350	300	250
Ø A (mm)	120	220	350	500	680	850

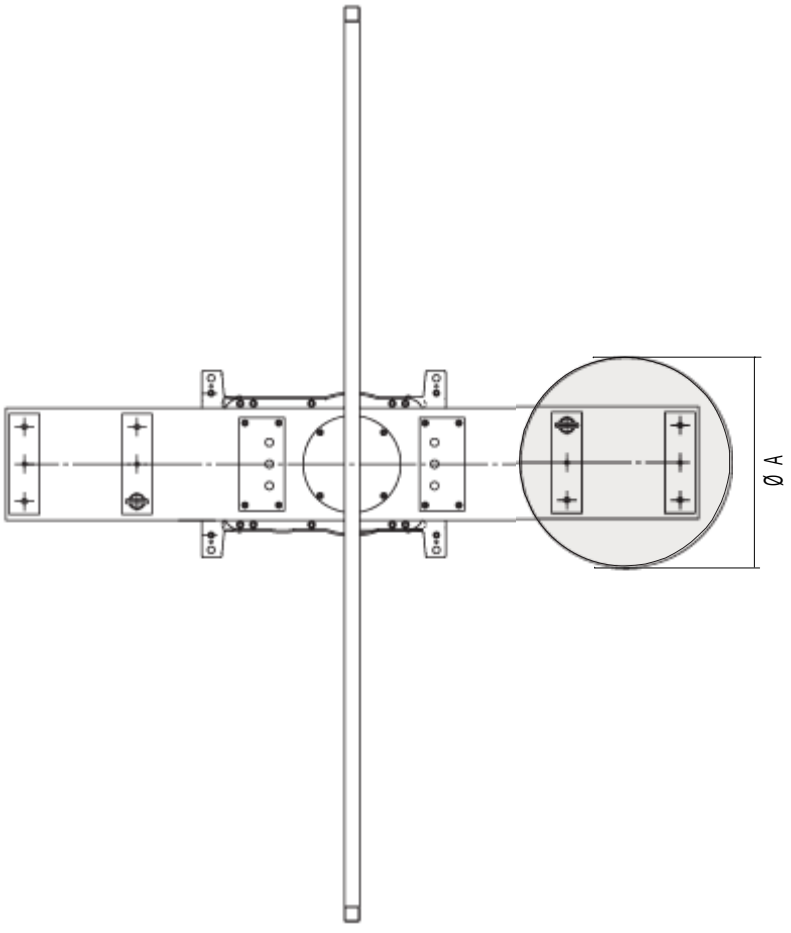


Figure 66 IRBP 500C.

IRBP 1000C

The table shows the limits for the position of the center of gravity at different loads.

If the load is 1000 kg the center of gravity for the workpiece including the fixture must be within the area which is limited by the circle with a diameter of A.

If the load is, for example, 820 kg use the column immediately above, that is the 850 kg column.

The sides can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 500 kg.

Weight of the workpiece including fixture (kg)	1000	950	900	850	800	750	700	650
Ø A (mm)	400	470	550	620	700	790	900	1000

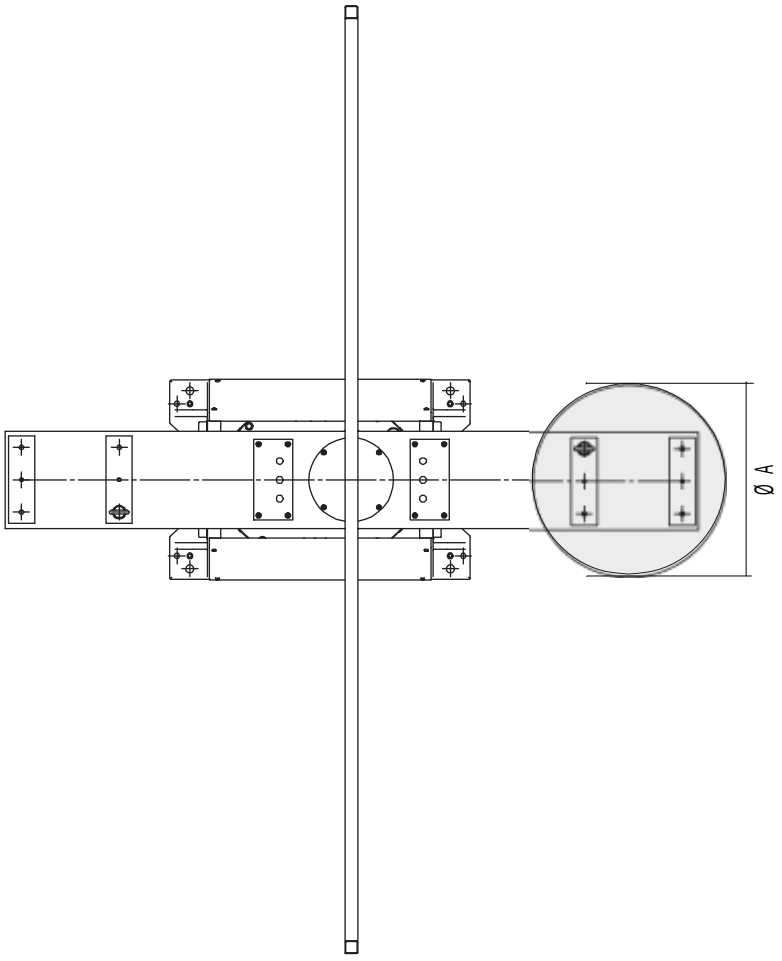


Figure 67 IRBP 1000C.

1.5.4 Measurement diagrams

IRBP 500C

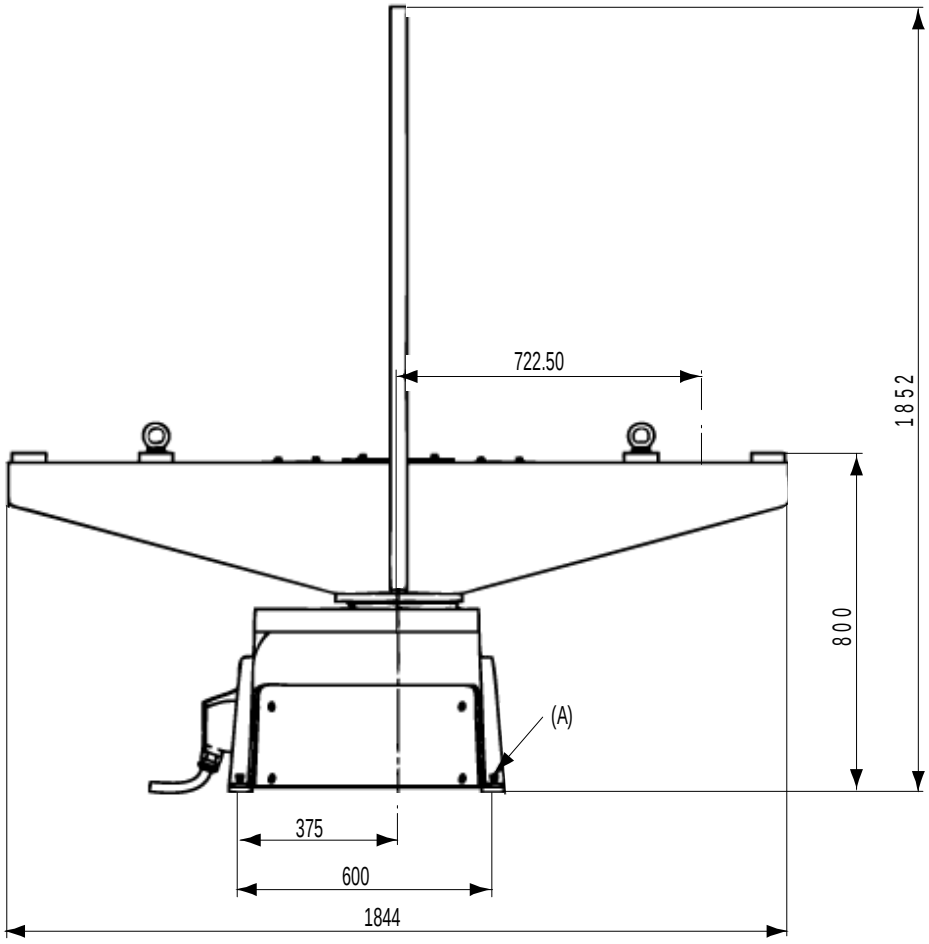


Figure 68 IRBP 500C.

Pos	Description
A	Adjusting bolts

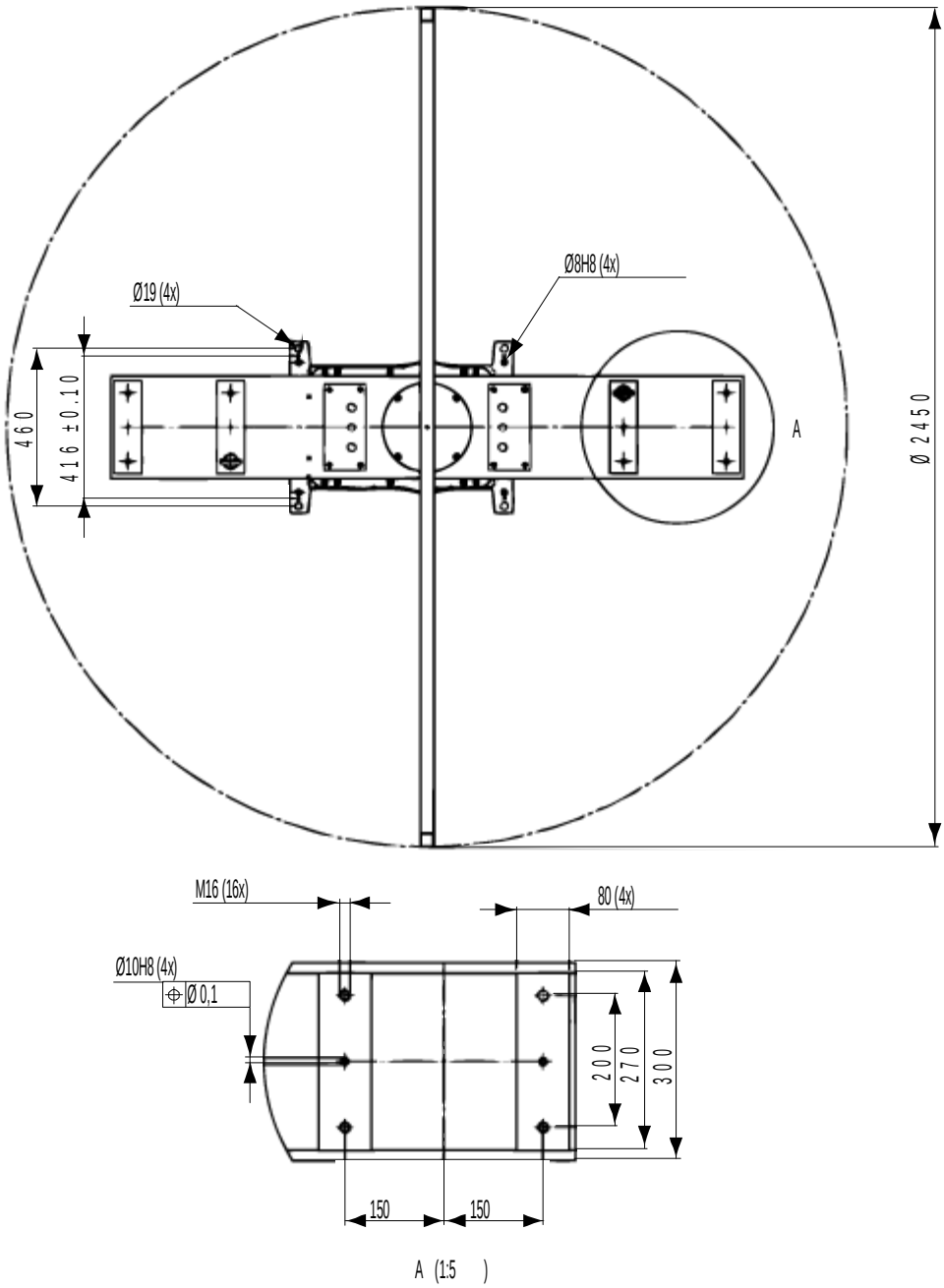


Figure 69 IRBP 500C.

1.5.4 Measurement diagrams

IRBP 1000C

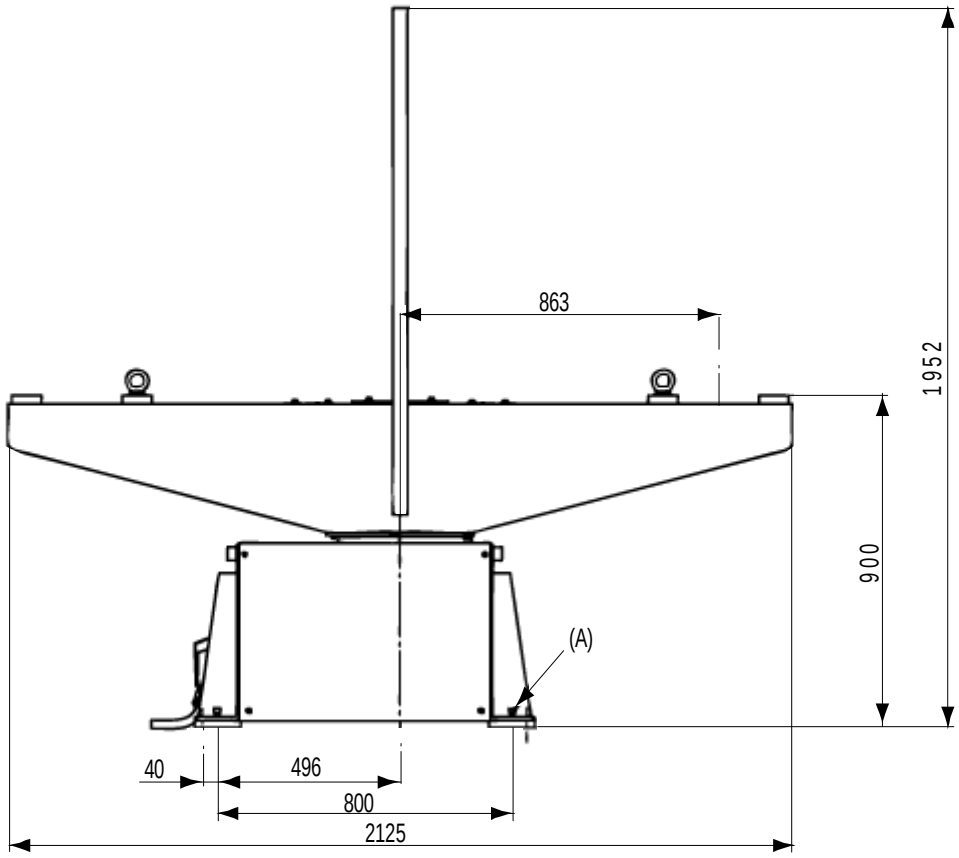


Figure 70 IRBP 1000C.

Pos	Description
A	Adjusting bolts

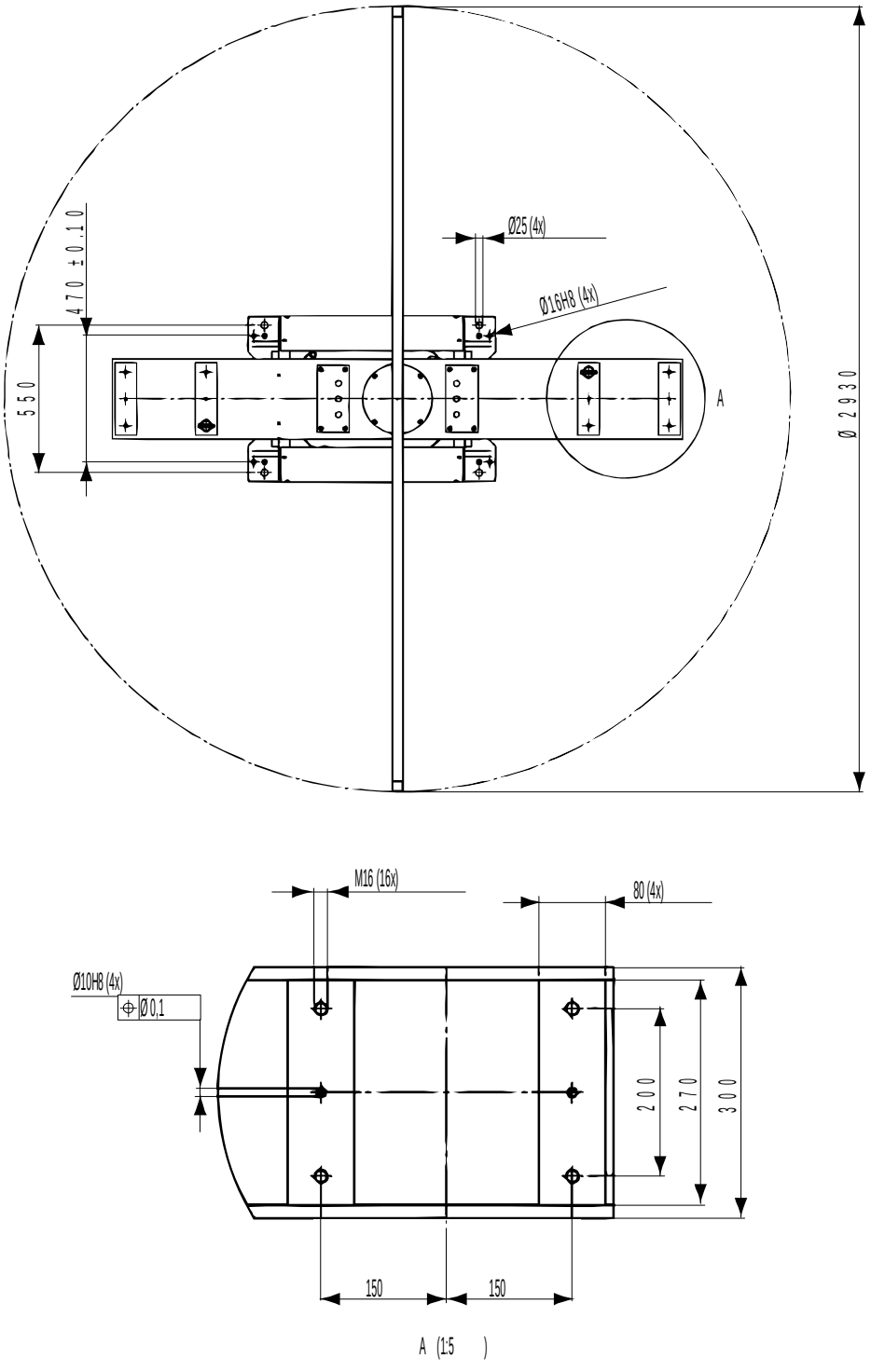


Figure 71 IRBP 1000C.

1.6 IRBP 250C Index / 500C Index

1.6.1 General

The positioner 250C Index / 500C Index is designed to handle workpieces of a weight up to 250/500 kg (including the fixture) in connection with robot welding.

The positioner has four stations where the robot welds on one or more sides and the operator loads and unloads on the remaining sides. Different station interchange sequences can be used.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 72):

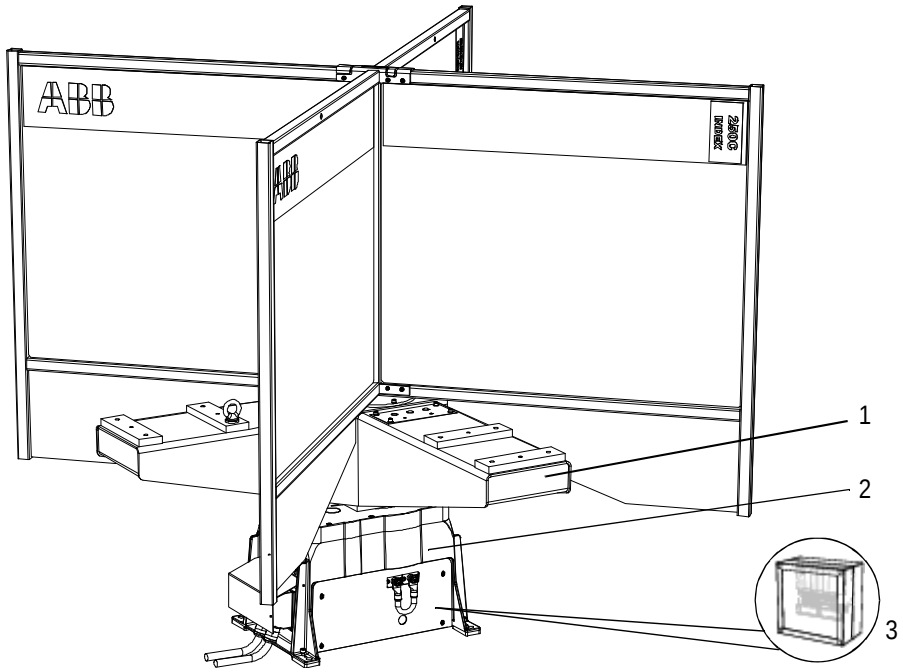


Figure 72 The positioner´s main sections.

Pos	Description
1	Stand
2	Station interchange unit MIC
3	SMB unit

On the outgoing shaft of the station interchange unit MIC there is a frame on which four fixed tables are fitted.

The tables have plain holes and guide holes for securing fixtures.

A screen is fitted between the welding stations, which protects the operator from arc-eye.

The drive equipment is placed in the system's equipment cabinet.

1.6.2 Technical data

Technical Data	IRBP 250C/Index	IRBP 500C/Index
Max. handling capacity	250 kg / side	500 kg / side
Max load difference between sides 1 and 2 (workpiece and fixture)	125 kg	350 kg
Center of gravity	See loading table	See loading table
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm	±0.1 mm
Station interchange time 180°	2.1 -2.8 s	2.4 -3.0 s
Stop time with an emergency stop	< 0.5 s	< 0.6 s
Max welding power, 60% duty cycle	600 Amp	600 Amp
Weight	500 kg	850 kg

1.6.3 Loading table

IRBP 250C Index

The table shows the limits for the position of the center of gravity at different loads.

If the load is 250 kg the center of gravity for the workpiece including the fixture must be within the area which is limited by the circle with a diameter of A.

If the load is, for example, 215 kg use the column immediately above, that is the 225 kg column.

The sides can be loaded with different weights as long as the load difference between the sides is less than 125 kg.

Weight of the workpiece including fixture (kg)	250	225	200	175	150	125
Ø A (mm)	200	300	430	560	750	980

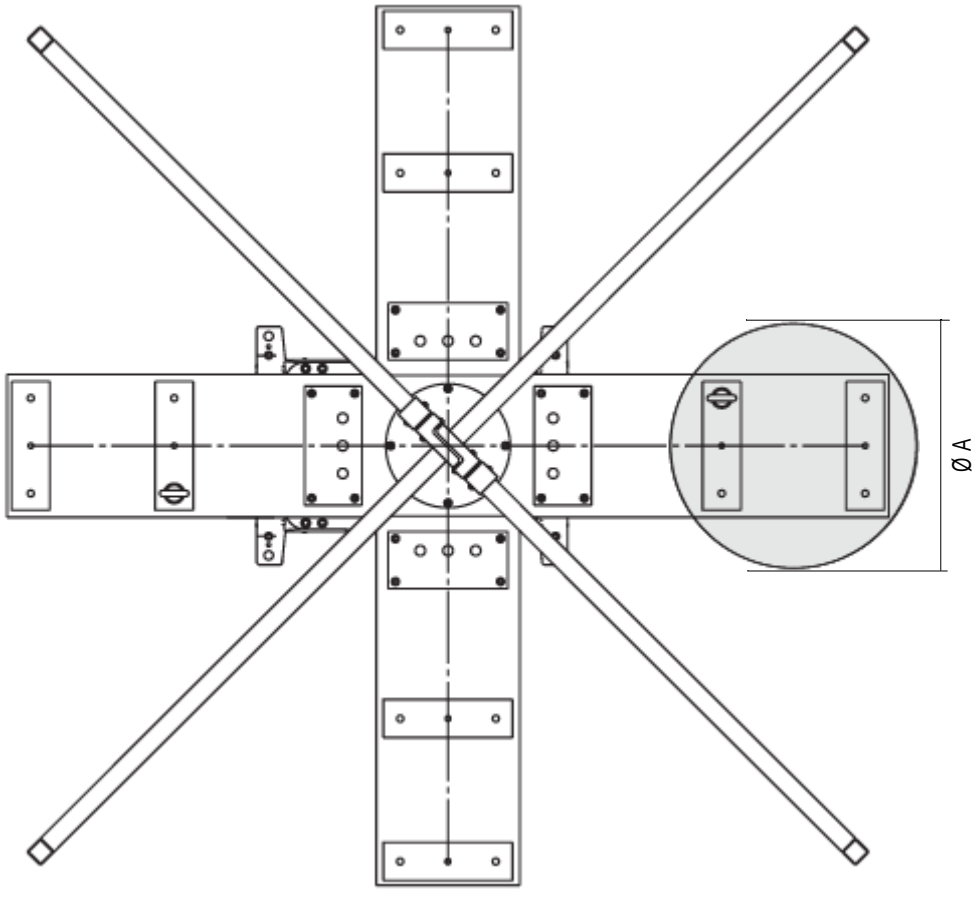


Figure 73 IRBP 250C Index.

IRBP 500C Index

The table shows the limits for the position of the center of gravity at different loads.

If the load is 500 kg the center of gravity for the workpiece including the fixture must be within the area which is limited by the circle with a diameter of A.

If the load is, for example, 330 kg use the column immediately above, that is the 350 kg column.

The sides can be loaded with different weights as long as the load difference between the sides is less than 250 kg.

Weight of the workpiece including fixture (kg)	500	450	400	350	300	250
Ø A (mm)	400	540	700	900	1100	1200

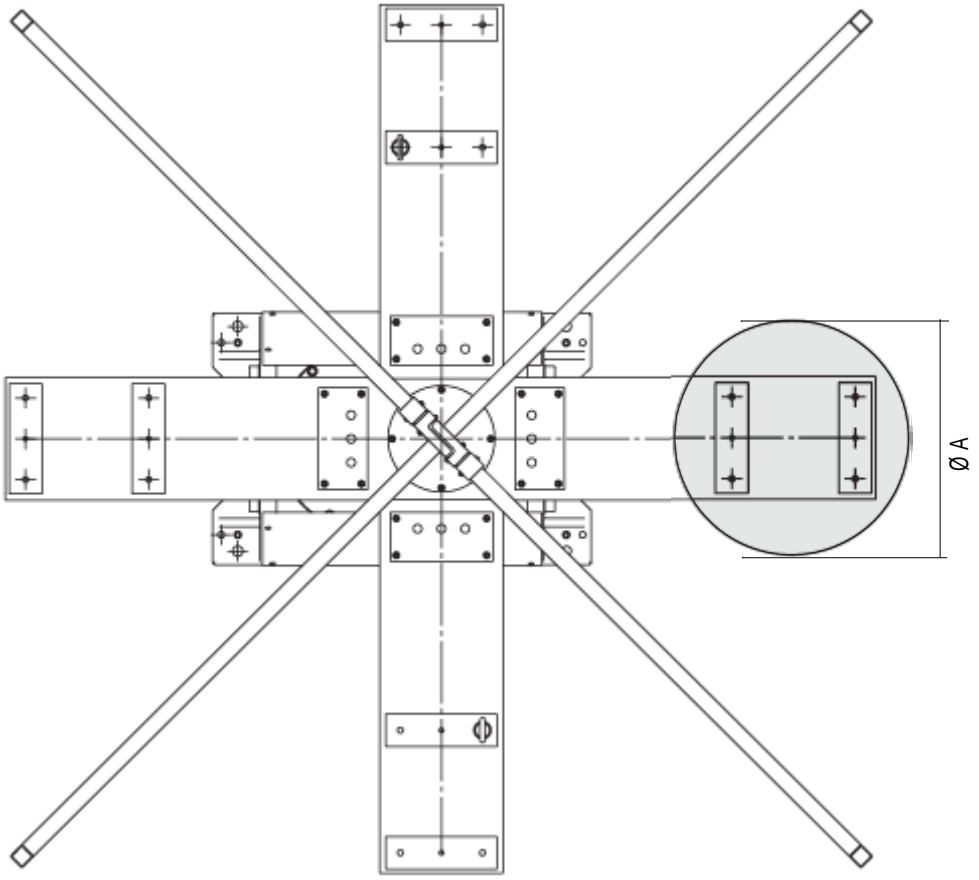


Figure 74 IRBP 500C Index.

1.6.4 Measurement diagrams

IRBP 250C Index

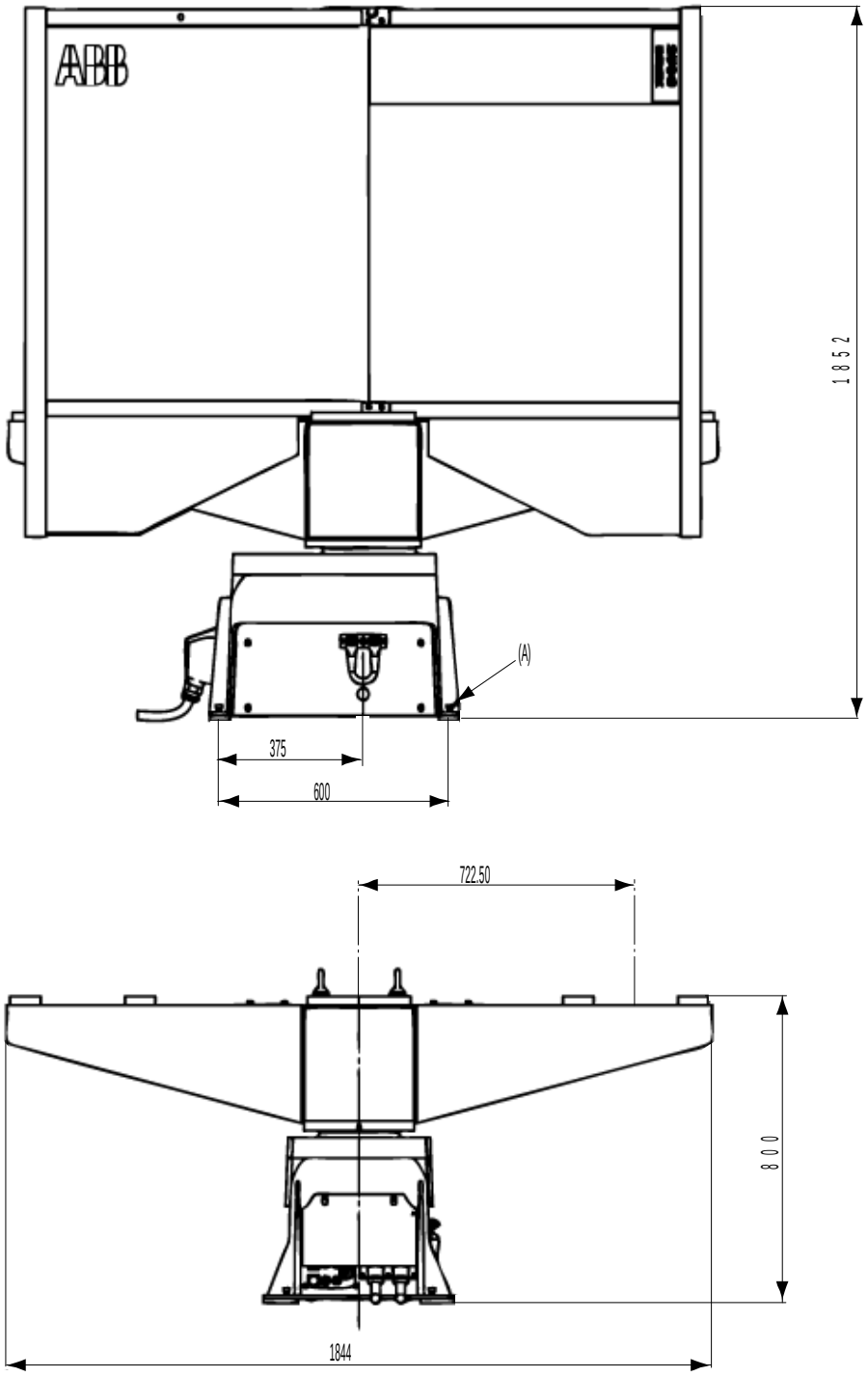


Figure 75 IRBP 250C Index.

Pos	Description
A	Adjusting bolts

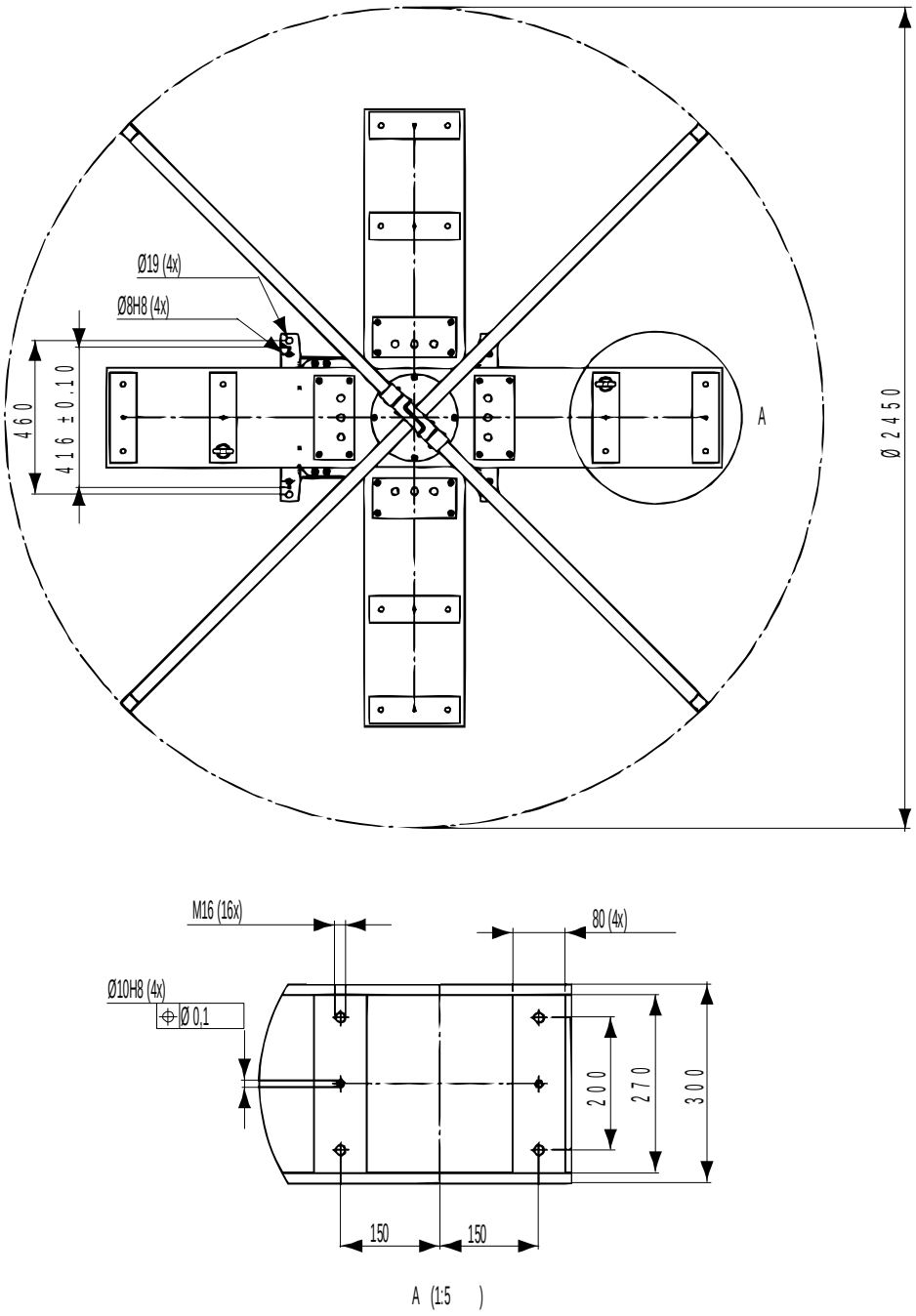


Figure 76 IRBP 250C Index.

1.6.4 Measurement diagrams

IRBP 500C Index

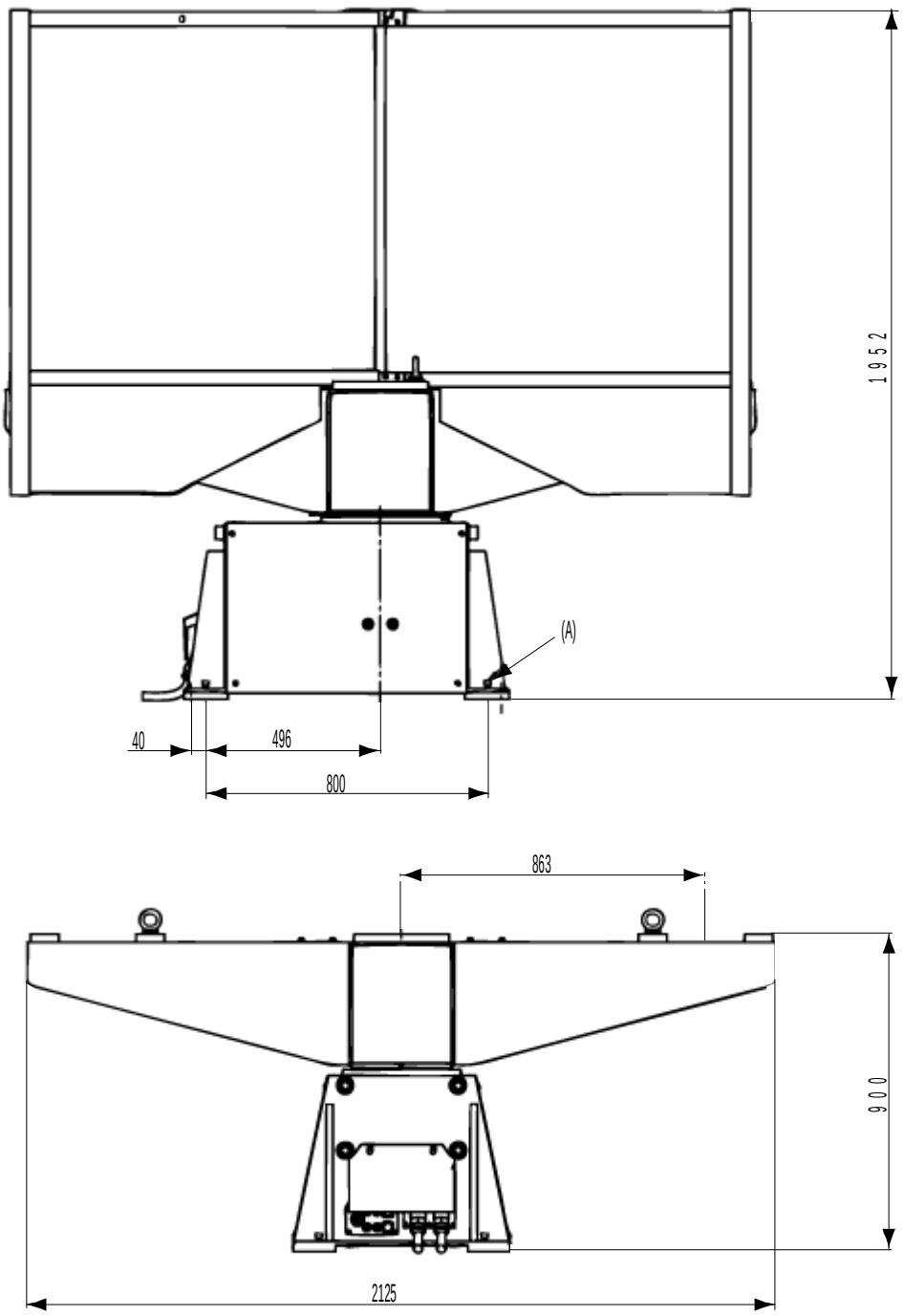


Figure 77 IRBP 500C Index.

Pos	Description
A	Adjusting bolts

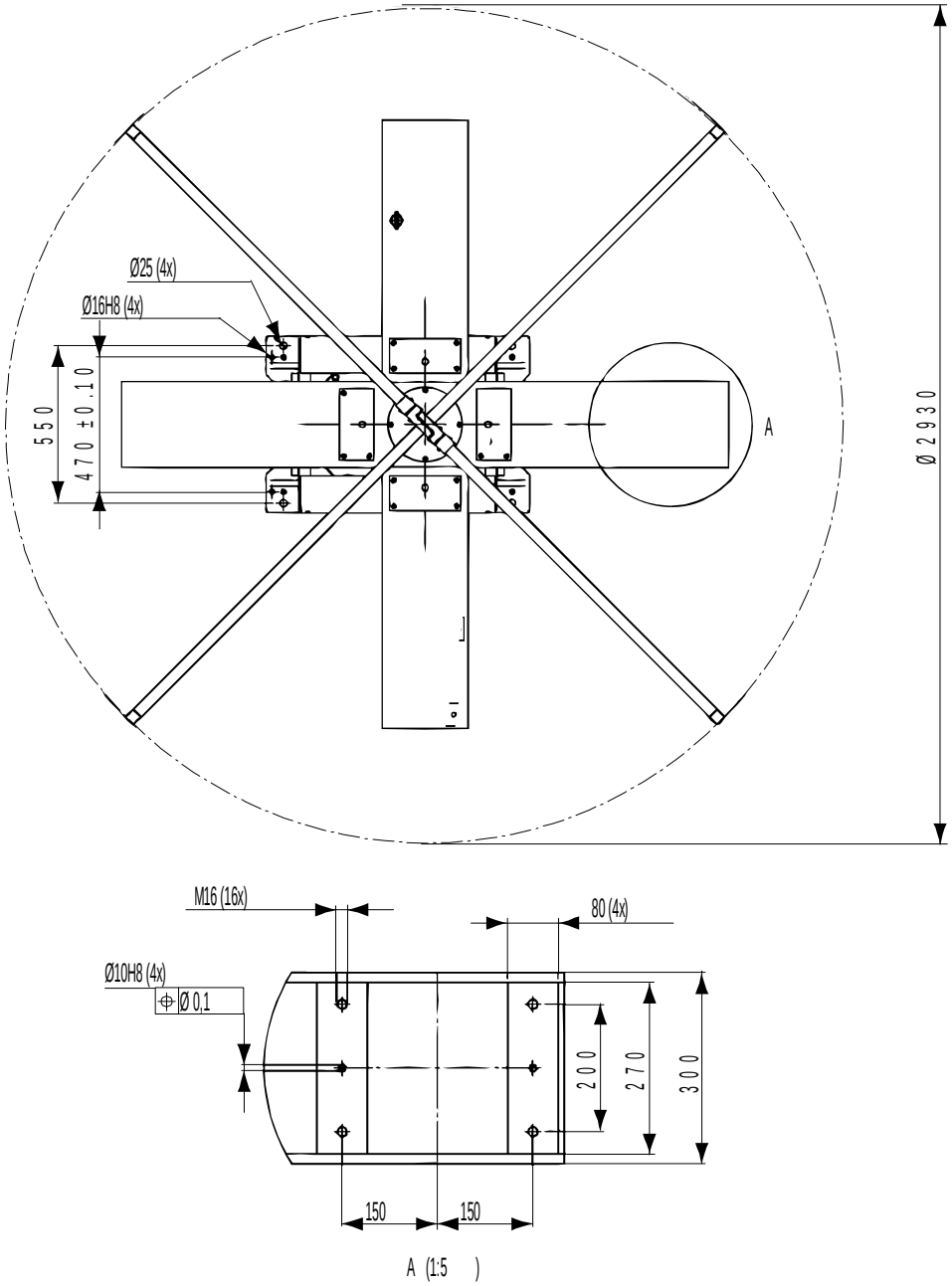


Figure 78 IRBP 500C Index.

1.7 IRBP 250A/ 500A/ 750A

1.7.1 General

The positioner is designed to handle workpieces of a weight up to 250/500/750 kg (including the fixture) in connection with robot welding using the MIG/MAG methods.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 79)

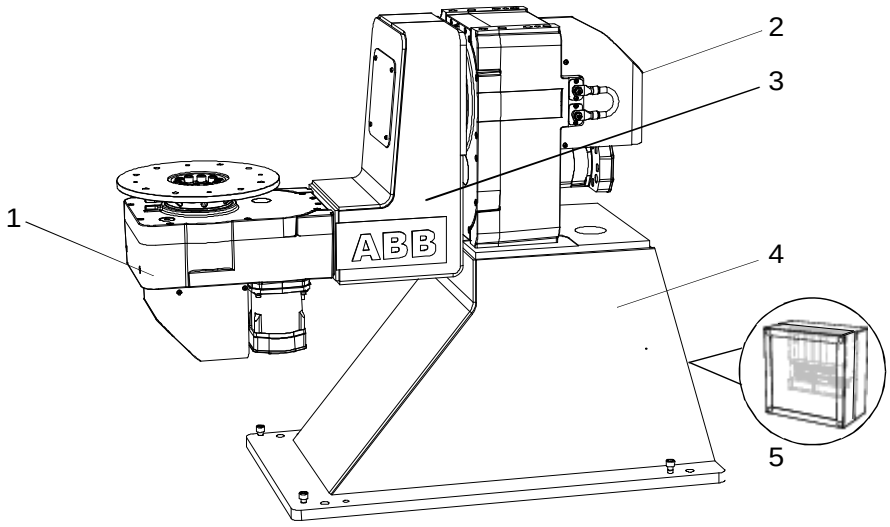


Figure 79 The positioner´s main sections.

Pos	Description	Pos	Description
1	Rotary unit MTC	4	Stand
2	Rotary unit MTC	5	SMB unit
3	Arm		

There is a rotary unit MTC (2) fitted on the stand (4).

On MTC (2) outgoing shaft there is an arm (3) which on its end there is a rotary unit MTC (1) fitted.

On the outgoing shaft of the rotary unit (1, axis 2) a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

1.7.2 Technical data

Technical Data	IRBP 250A		IRBP 500A		IRBP 750A	
Max. handling capacity	250 kg		500 kg		750 kg	
Max continuous torque	350 Nm		650 Nm		900 Nm	
Center of gravity	See loading table		See loading table		See loading table	
Max bending moment	600 Nm		3300 Nm		5000 Nm	
Positioning time 90 degrees	**Axis 1** 1.3 -1.7 s	**Axis 2** 0.8 -1.2 s	**Axis 1** 1.5 -2.1 s	**Axis 2** 1.2 -1.6 s	**Axis 1** 1.5 -2.1 s	**Axis 2** 1.3 -1.7 s
Positioning time 180 degrees	**Axis 1** 1.9 -2.6 s	**Axis 2** 1.4 -1.9 s	**Axis 1** 2.3 -3.5 s	**Axis 2** 1.8 -2.5 s	**Axis 1** 2.3 -3.5 s	**Axis 2** 1.9 -2.6 s
Positioning time 360 degrees	**Axis 1** 3.2 -3.5 s	**Axis 2** 2.3 -2.7 s	**Axis 1** 4.4 -4.9 s	**Axis 2** 3.1 -3.4 s	**Axis 1** 4.4 -4.9 s	**Axis 2** 3.2 -3.5 s
Working area	Axis 1 = ± 181º		Axis 1 = ± 181º		Axis 1 = ± 181º	
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm		±0.1 mm		±0.1 mm	
Max. speed of rotation	**Axis 1** 25 rpm	**Axis 2** 30 rpm	**Axis 1** 25 rpm	**Axis 2** 30 rpm	**Axis 1** 15 rpm	**Axis 2** 25 rpm
Stop time with an emergency stop	< 0.5 s		< 0.5 s		< 0.6 s	
Max welding power, 60% duty cycle	600 Amp		600 Amp		600 Amp	
Weight	490 kg		940 - 990 kg		940 - 990 kg	

1.7.3 Loading table

The tables show the maximum permitted center of gravity displacement from the center of rotation and the rotary unit's faceplate at different loads.

IRBP 250A

If the load is 225 kg the center of gravity must be within the area limited by the measurement ØD respective measurement H (317 mm respective 294 mm), see Figure 80

If the load is 235 kg use the column immediately above, that is the 250 kg column.

Weight of the workpiece including fixture (kg)	250	225	200	175	150	125	100	75
ØD (mm)	285	317	357	408	476	571	714	951
H (mm)	265	294	331	379	442	530	663	883

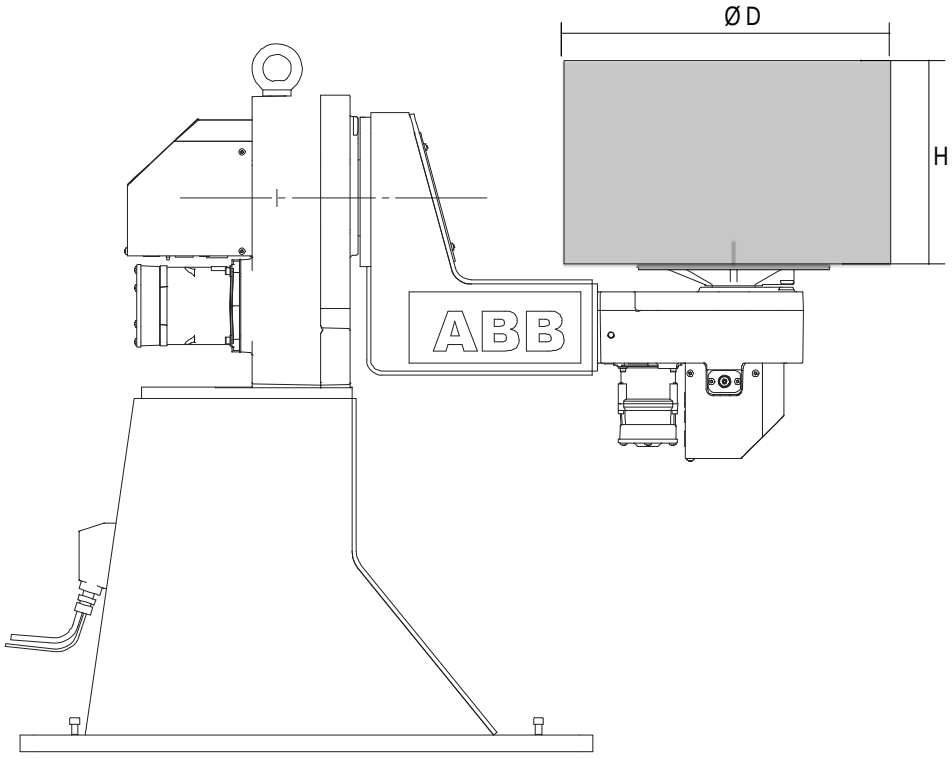


Figure 80 IRBP 250A.

IRBP 500A

If the load is 450 kg the center of gravity must be within the area limited by the measurement ØD respective measurement H (294 mm respective 748 mm), see Figure 81.

If the load is 435 kg use the column immediately above, that is the 450 kg column.

Weight of the workpiece including fixture (kg)	500	450	400	350	300	250	200	150
ØD (mm)	265	294	331	379	442	530	663	888
H (mm)	673	748	841	950	950	950	950	950

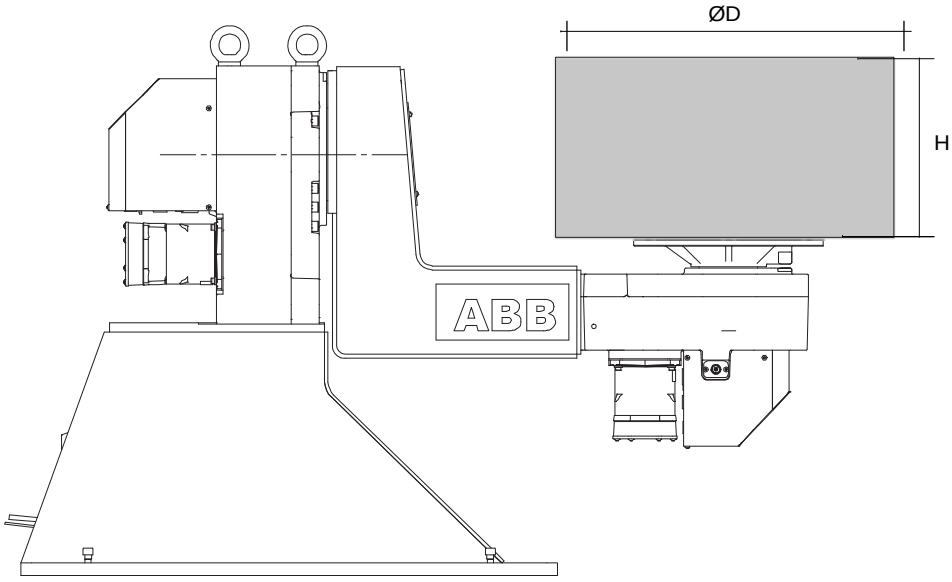


Figure 81 IRBP 500A, diameter 1450 mm.

IRBP 750A

If the load is 700 kg the center of gravity must be within the area limited by the measurement ØD respective measurement H (262 mm respective 728 mm), see Figure 82.

If the load is 685 kg use the column immediately above, that is the 700 kg column.

Weight of the workpiece including fixture (kg)	750	700	650	600	550	500	450	400
ØD (mm)	245	262	282	306	334	367	408	459
H (mm)	680	728	784	849	927	950	950	950

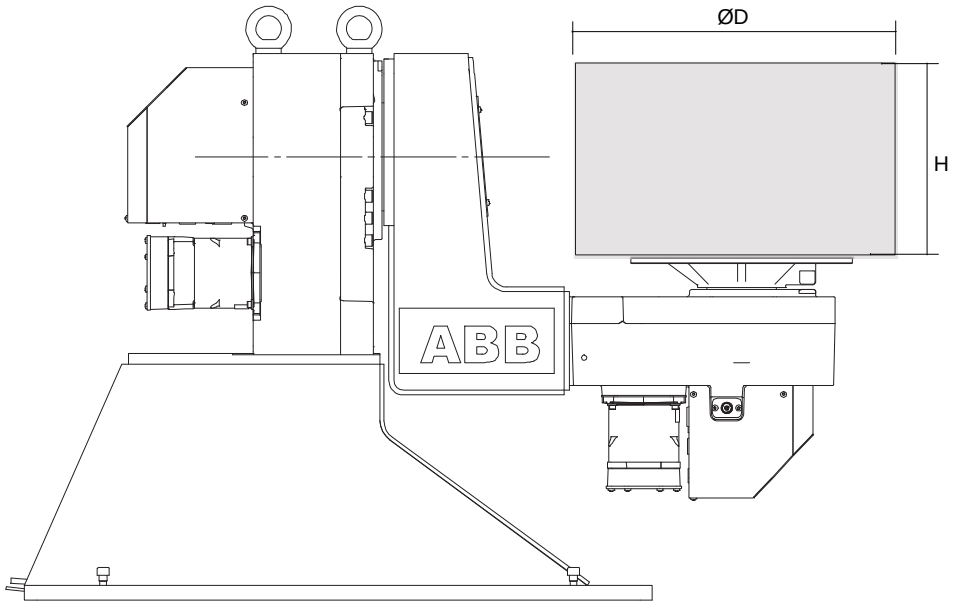


Figure 82 IRBP 750A, diameter 1000 and 1450 mm.

1.7.4 Measurement diagrams

IRBP 250A

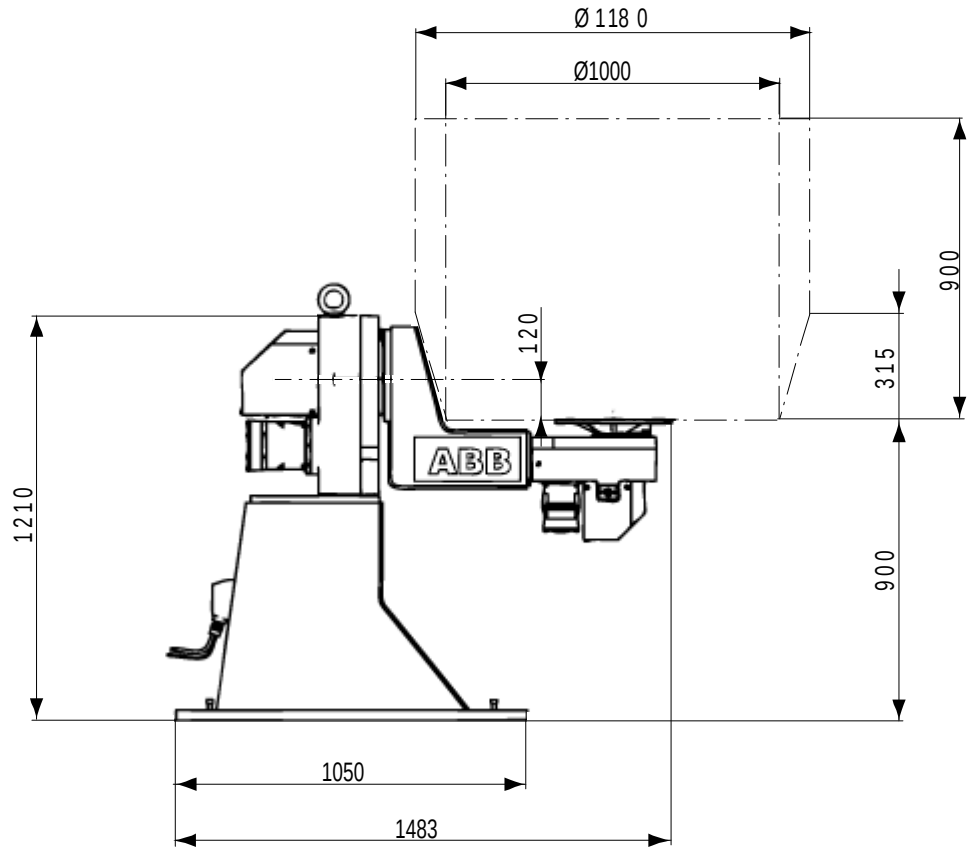


Figure 83 IRBP 250A.

1.7.4 Measurement diagrams

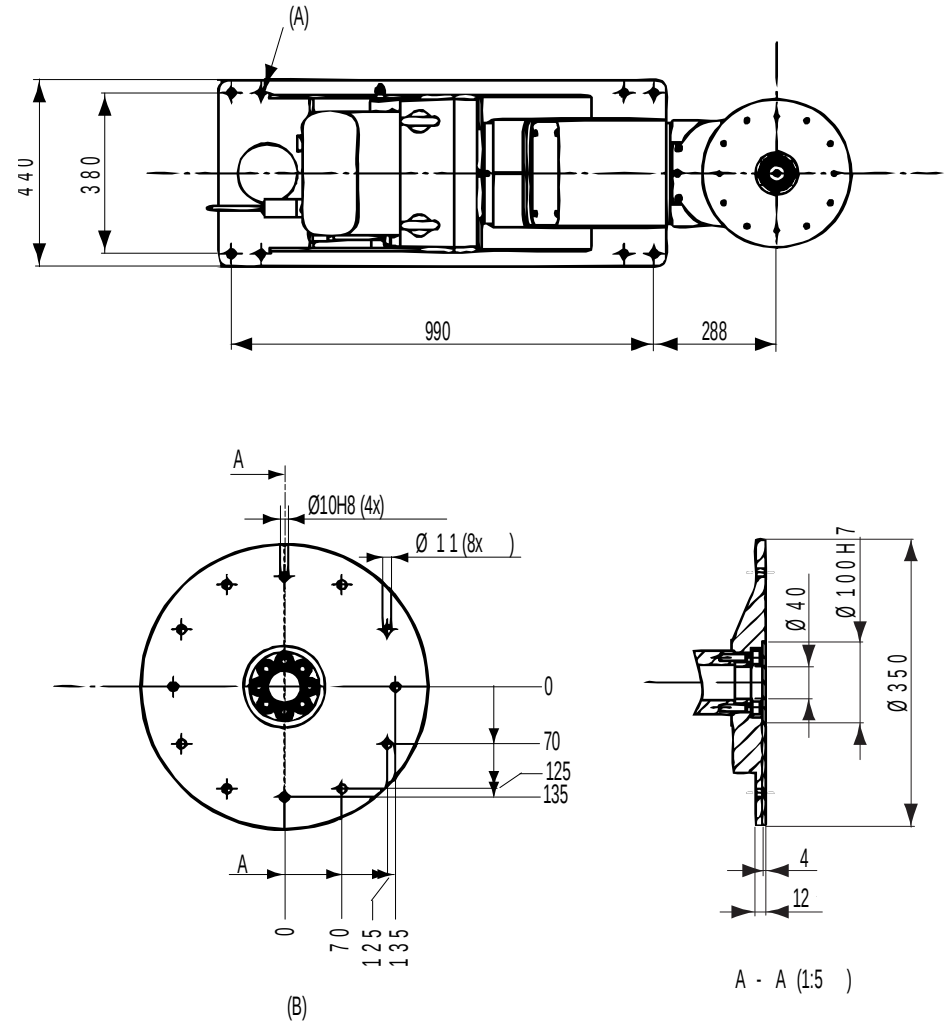


Figure 84 IRBP 250A.

Pos	Description
A	Adjusting bolts
B	Scale 1:5

IRBP 500A/750A Ø1450 mm

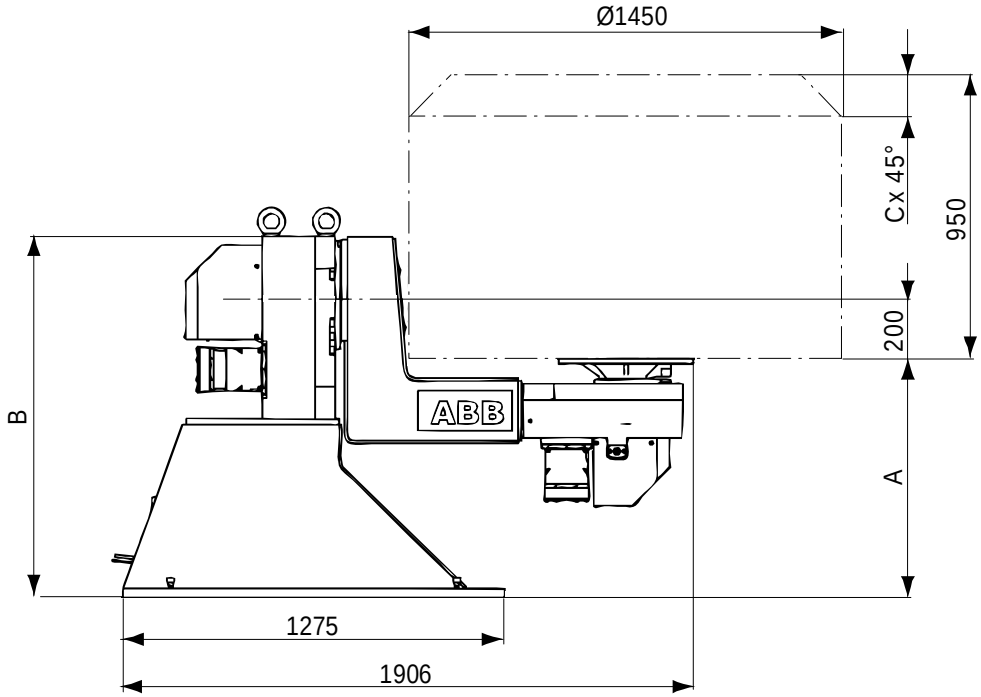


Figure 85 IRBP 500A / 750A, diam. 1450 mm.

IRBP 500A/750A Ø1450		
A (mm)	**B (mm)**	**C (mm)**
700	1110	310
800	1210	140
900	1310	0

1.7.4 Measurement diagrams

IRBP 500A/750A Ø1000 mm

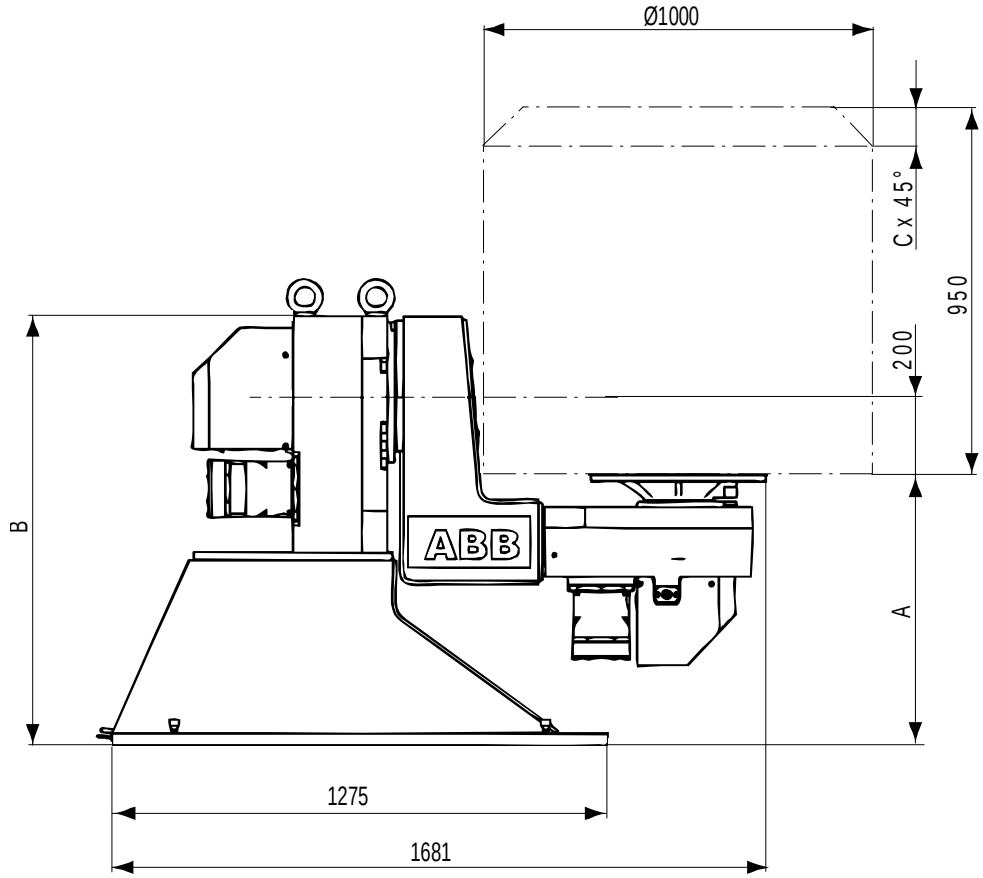


Figure 86 IRBP 500A / 750A, diam. 1000 mm.

IRBP 500A/750A Ø1000		
A (mm)	**B (mm)**	**C (mm)**
700	1110	100
800	1210	0
900	1310	0

IRBP 500A/750A Ø1450 mm

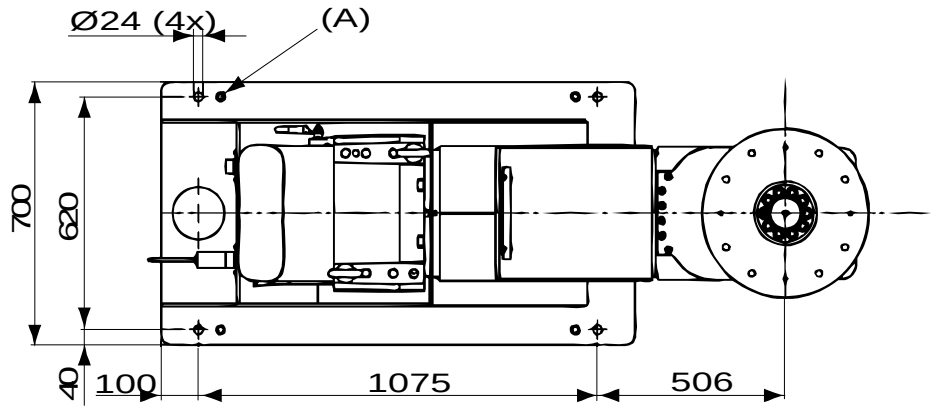


Figure 87 IRBP 500A / 750A., diam. 1450 mm.

IRBP 500A/750A Ø1000 mm

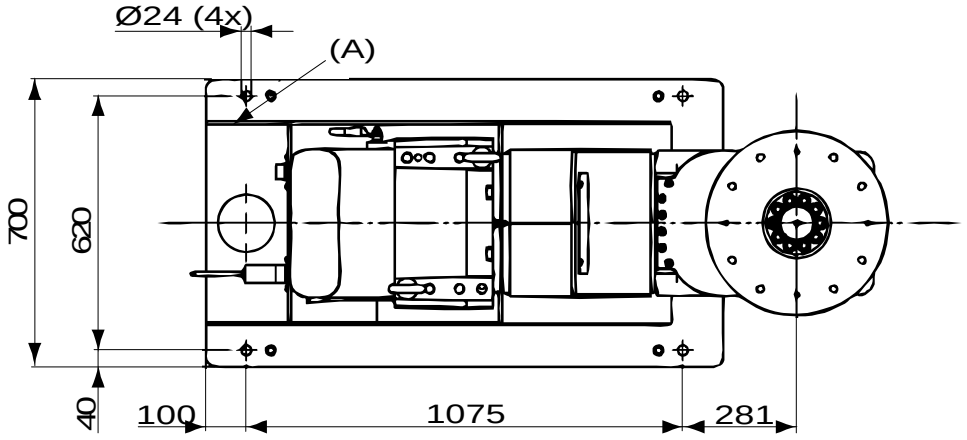


Figure 88 IRBP 500A / 750A, diam. 1000 mm.

Pos	Description
A	Adjusting bolts

1.7.4 Measurement diagrams

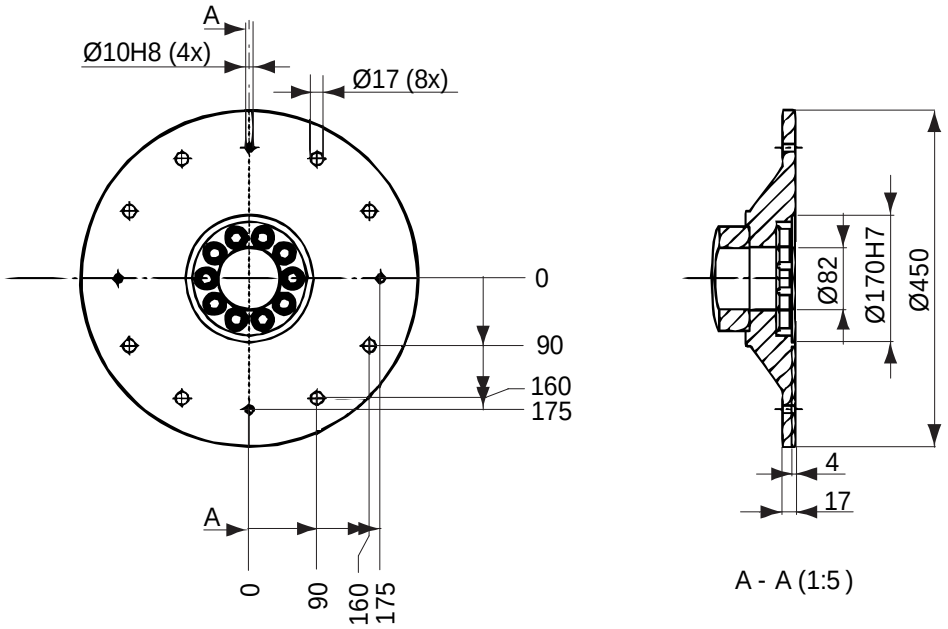


Figure 89 IRBP 500A / 750A.

1.8 IRBP 250B/ 500B/ 750B

1.8.1 General

The positioner is designed to handle workpieces of a weight up to 250/500/750 kg (incl. the fixture) in connection with robot welding using the MIG/MAG methods.

The positioner features a twin station solution where the robot welds on one side and the operator loads and unloads on the other.
The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 90).

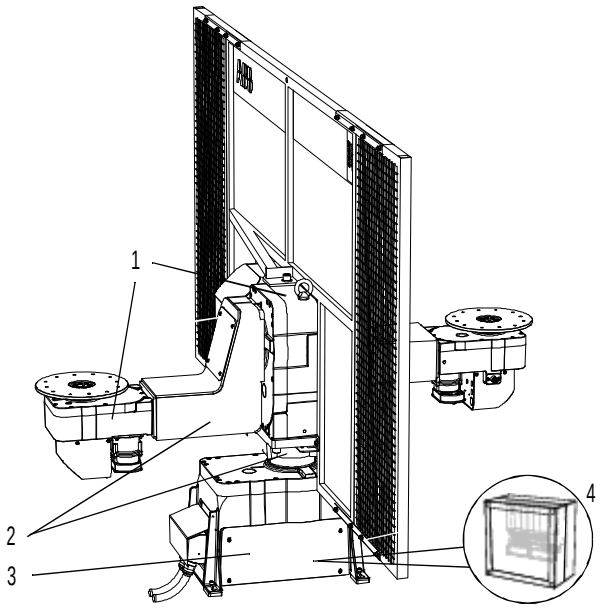


Figure 90

Pos	Description	Pos	Description
1	Rotary unit MTC	3	Station interchange unit MIC
2	Stand	4	SMB unit

On the outgoing shaft of the station interchange unit MIC**,** there is a frame on which two rotary units MTC are fitted.

On the outgoing shaft there is an arm fitted, with a rotary unit mounted.

On the outgoing shaft of the rotary unit a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures.

A screen is fitted between the two welding stations, which protects the operator from arc-eye.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

1.8.2 Technical data

Technical Data	IRBP 250B		IRBP 500B		IRBP 750B	
Max. handling capacity	250 kg		500 kg		750 kg	
Max load difference between sides 1 and 2 (workpiece and fixture)	125 kg		250 kg		250 kg	
Max continuous torque	350 Nm		650 Nm		900 Nm	
Center of gravity	See loading table		See loading table		See loading table	
Max bending moment	650 Nm		3300 Nm		5000 Nm	
Positioning time 90 degrees	**Axis 1** 1.3 -1.7 s	**Axis 2** 0.8 -1.2 s	**Axis 1** 1.5 -2.1 s	**Axis 2** 1.2 -1.6 s	**Axis 1** 1.5 -2.1 s	**Axis 2** 1.3 -1.7 s
Positioning time 180 degrees	**Axis 1** 1.9 -2.6 s	**Axis 2** 1.4 -1.9 s	**Axis 1** 2.3 -3.5 s	**Axis 2** 1.8 -2.5 s	**Axis 1** 2.3 -3.5 s	**Axis 2** 1.9 -2.6 s
Positioning time 360 degrees	**Axis 1** 3.2 -3.5 s	**Axis 2** 2.3 -2.7 s	**Axis 1** 4.4 -4.9 s	**Axis 2** 3.1 -3.4 s	**Axis 1** 4.4 -4.9 s	**Axis 2** 3.2 -3.5 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm		±0.1 mm		±0.1 mm	
Max. speed of rotation	**Axis 1** 25 rpm	**Axis 2** 30 rpm	**Axis 1** 15 rpm	**Axis 2** 25 rpm	**Axis 1** 15 rpm	**Axis 2** 25 rpm
Station interchange time	3,5 - 4,1 s		4,4 - 5,2 s		4,4 - 5,2 s	
Stop time with an emergency stop	< 0.5 s		< 0.6 s		< 0.6 s	
Max welding current, 60% duty cycle	600 Amp		600 Amp		600 Amp	
Weight	940 kg		2000 kg		2000 kg	

1.8.3 Loading table

The tables shows max. permitted center of gravity shift from the rotation center and the rotary unit's faceplate at different loads.

IRBP 250B

If the load is 225 kg, the center of gravity must be located within the area ØD and H (ØD=317 mm, H= 271 mm), see Figure 91.

If the load is 235 kg, see the column for 250 kg load.

Each side can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 125 kg.

Weight of the workpiece including fixture (kg)	250	225	200	175	150	125	100	75
ØD (mm)	285	317	357	408	476	571	714	951
H (mm)	265	294	331	379	442	530	663	883

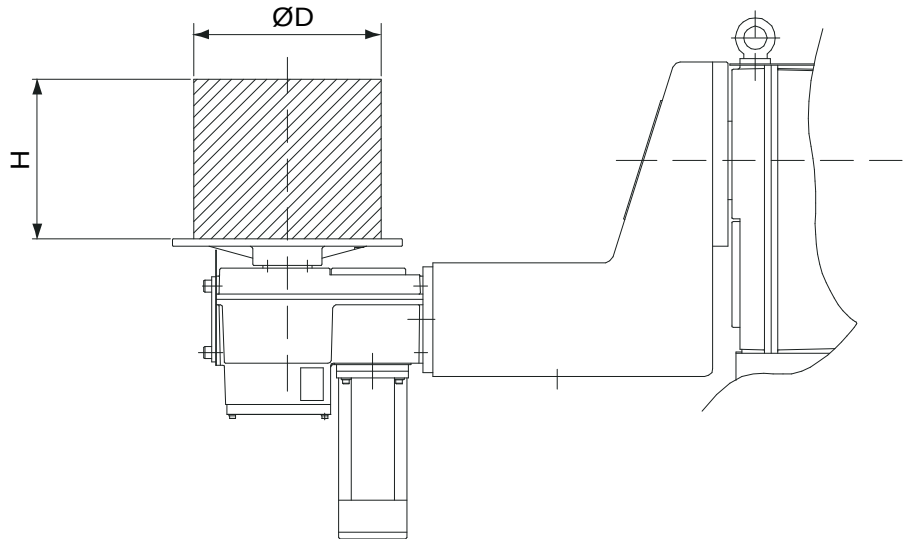


Figure 91 IRBP 250B.

IRBP 500B

If the load is 450 kg, the center of gravity must be located within the area ØD and H (ØD=294 mm, H= 748 mm), see Figure 92.

If the load is 435 kg, see the column for 450 kg load.

Each side can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 250 kg.

Weight of the workpiece including fixture (kg)	500	450	400	350	300	250	200	150
ØD (mm)	265	294	331	379	442	530	663	888
H (mm)	673	748	841	950	950	950	950	950

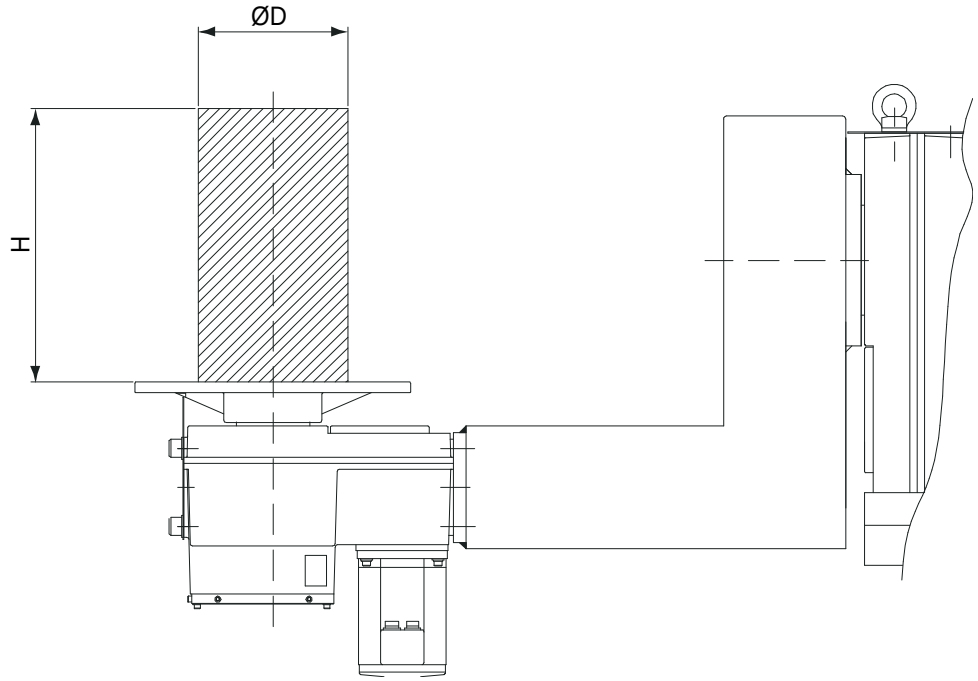


Figure 92 IRBP 500B.

IRBP 750B

If the load is 700 kg, the center of gravity must be located within the area ØD and H, (ØD=262 mm, H= 728 mm), see Figure 93.

If the load is 685 kg, see the column for 700 kg load.

Each side can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 250 kg.

Weight of the workpiece including fixture (kg)	750	700	650	600	550	500	450	400
ØD (mm)	245	262	282	306	334	367	408	459
H (mm)	680	728	784	849	927	950	950	950

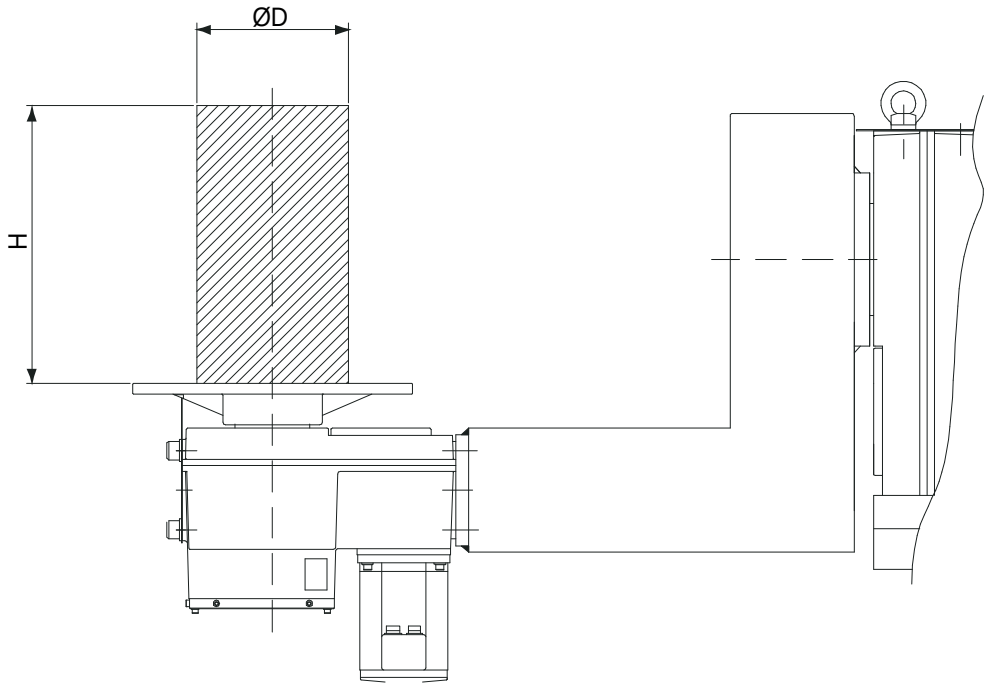


Figure 93 IRBP 750B.

1.8.4 Measurement diagrams

IRBP 250B

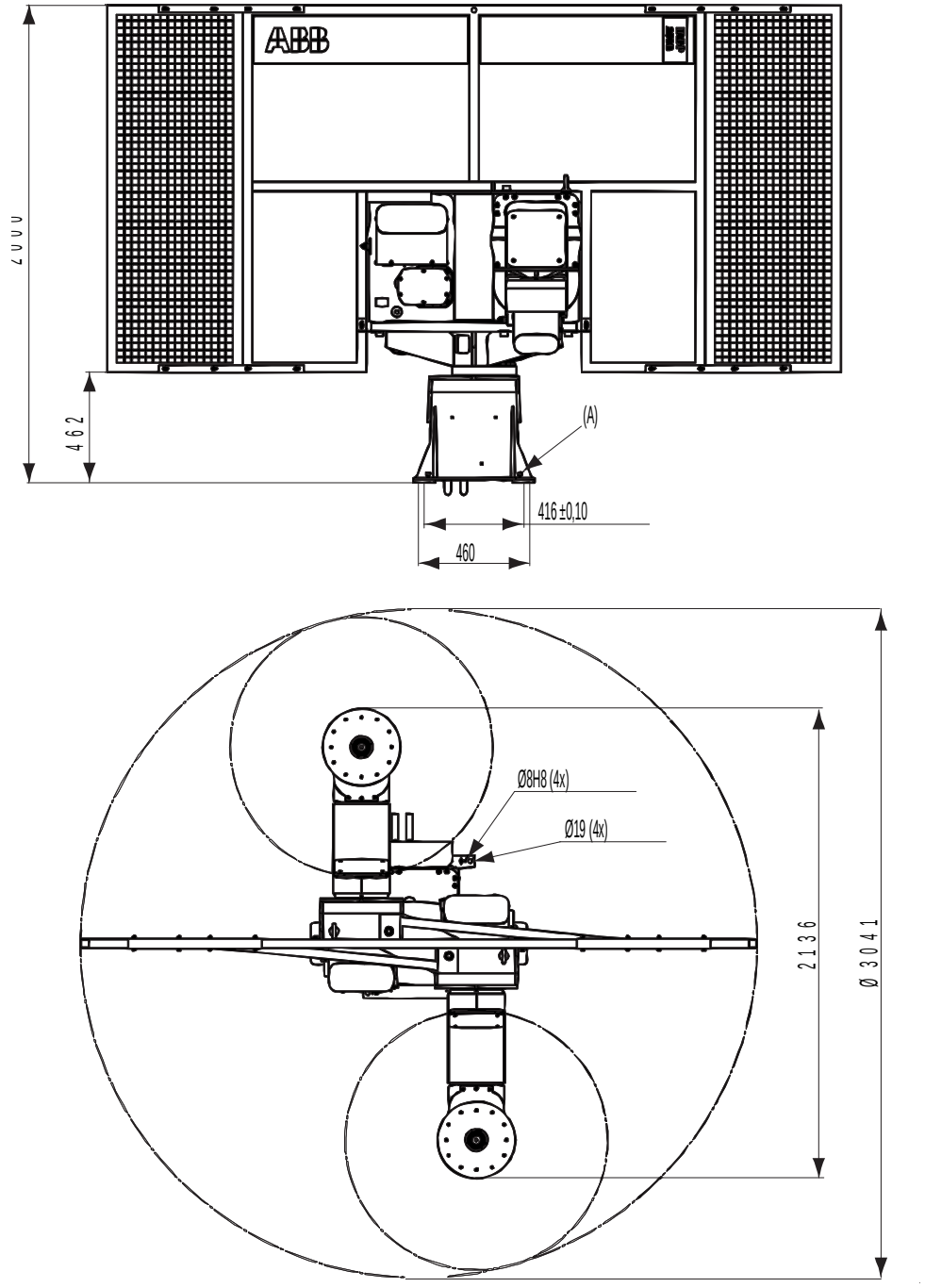


Figure 94 IRBP 250B.

Pos	Description
A	Adjusting bolts

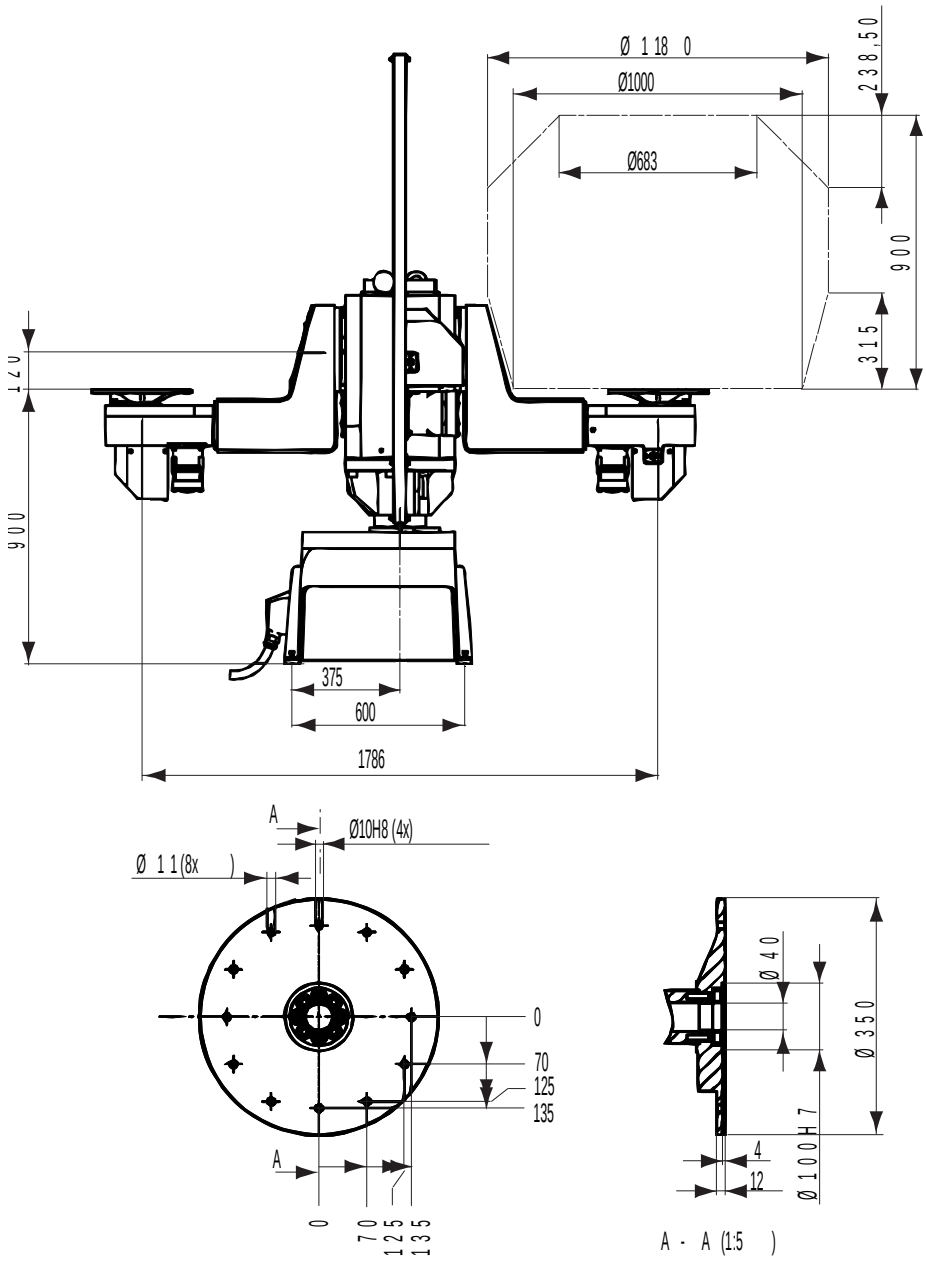


Figure 95 IRB 250B.

1.8.4 Measurement diagrams

IRBP 500B/750B

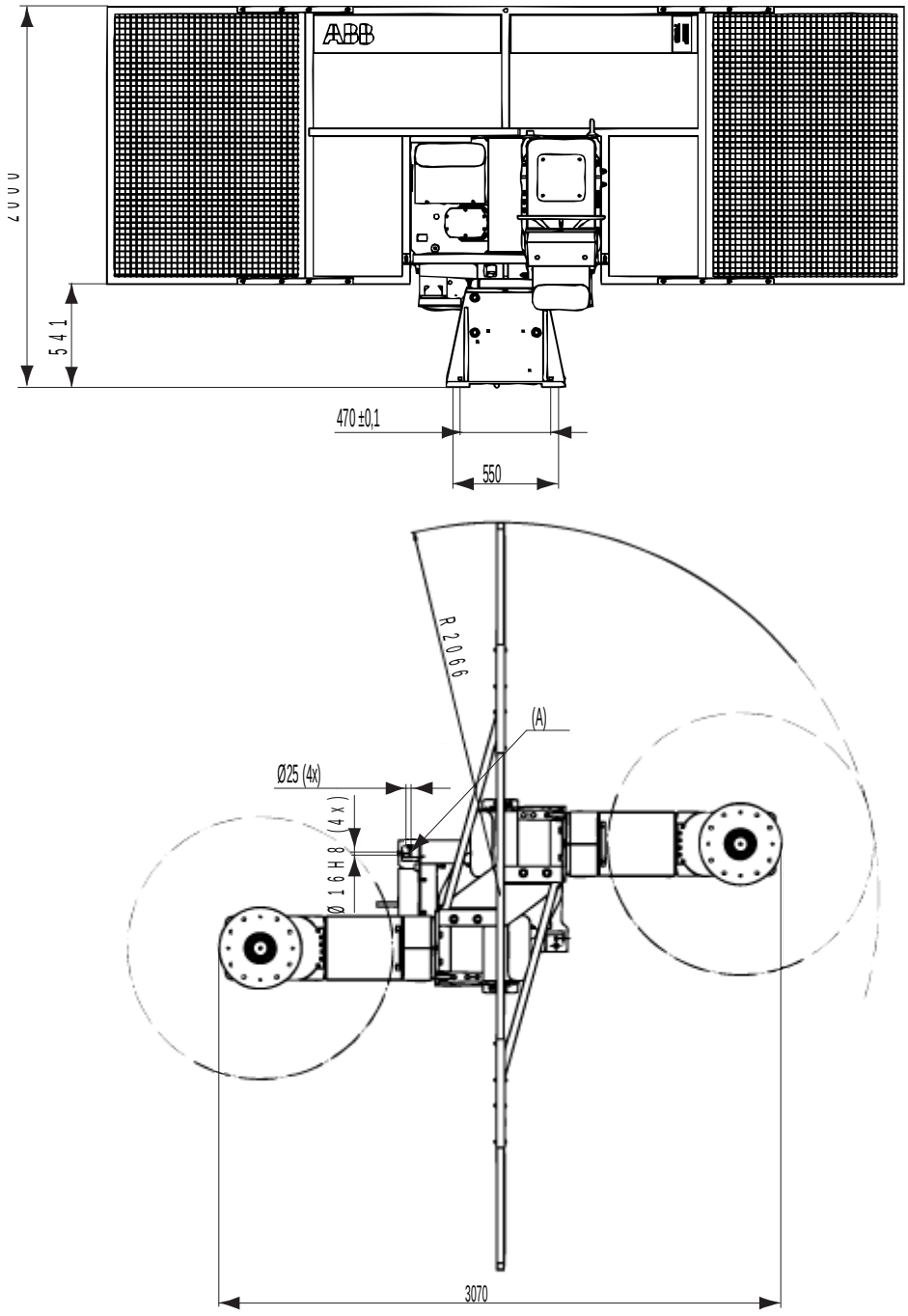


Figure 96 IRBP 500B / 750B.

Pos	Description
A	Adjusting bolts

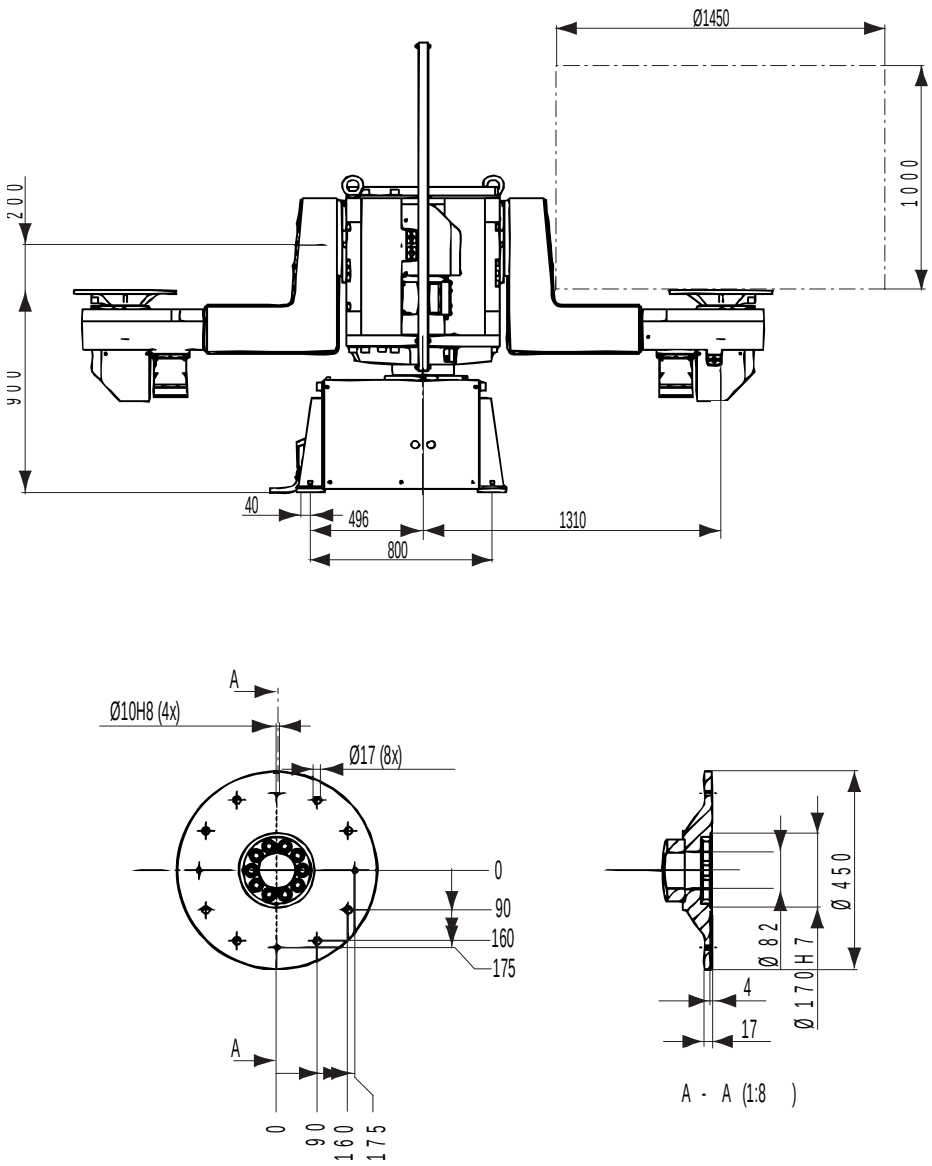


Figure 97 IRB 500B / 750B.

1.9 IRBP 250D/ 500D

1.9.1 General

The positioner is designed to handle workpieces of a weight up to 250/500 kg (incl. the fixture) in connection with robot welding using the MIG/MAG methods.

The positioner features a twin station solution where the robot welds on one side and the operator loads and unloads on the other.

The modular design, few and heavy-duty moving parts as well as minimal maintenance demands make the positioner extremely service friendly.

The positioner is designed with the following main sections (Figure 98).

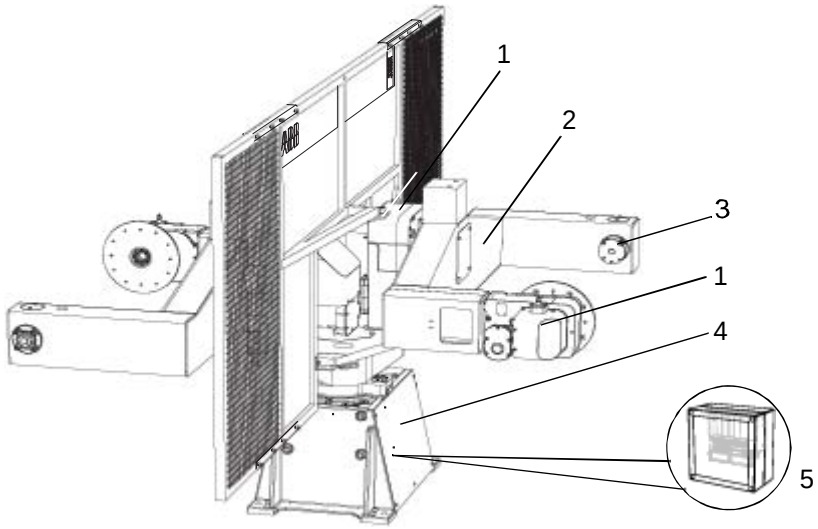


Figure 98 The positioner´s main sections.

Pos	Description	Pos	Description
1	Rotary unit MTC	4	Station interchange unit MIC
2	Stand	5	SMB unit
3	Support collar		

On the outgoing shaft of the station interchange unit MIC there is a frame on which two rotary units MTC are fitted.

On the outgoing shaft there is an arm fitted, with a rotary unit mounted.

On the outgoing shaft of the rotary unit a faceplate is fitted. The faceplate has plain holes and guide holes for securing fixtures. On the opposite side there is a support collar used for fixture support.

A screen is fitted between the two welding stations, which protects the operator from arc-eye.

The rotary unit is fitted with a current collector in the form of a slip ring in order to transfer the weld current.

1.9.2 Technical data

Technical Data	IRBP 250D		IRBP 500D	
Max. handling capacity	250 kg		500 kg	
Max load difference between sides 1 and 2 (workpiece and fixture)	175 kg		250 kg	
Max continuous torque	350 Nm		650 Nm	
Center of gravity	See loading table		See loading table	
Max bending moment	650 Nm		3300 Nm	
Positioning time 90 degrees	**Axis 1** 1.3 -1.7 s	**Axis 2** 0.8 -1.2 s	**Axis 1** 1.5 -2.1 s	**Axis 2** 1.2 -1.6 s
Positioning time 180 degrees	**Axis 1** 1.9 -2.6 s	**Axis 2** 1.4 -1.9 s	**Axis 1** 2.3 -3.5 s	**Axis 2** 1.8 -2.5 s
Positioning time 360 degrees	**Axis 1** 3.2 -3.5 s	**Axis 2** 2.3 -2.7 s	**Axis 1** 4.4 -4.9 s	**Axis 2** 3.1 -3.4 s
Repetition accuracy with equal loads and radius 500 mm	±0.1 mm		±0.1 mm	
Max. speed of rotation	**Axis 1** 25 rpm	**Axis 2** 30 rpm	**Axis 1** 15 rpm	**Axis 2** 25 rpm
Station interchange time	3,5 - 4,0 s		4,9 - 5,7 s	
Stop time with an emergency stop	< 0.5 s		< 0.6 s	
Max welding current, 60% duty cycle	600 Amp		600 Amp	
Weight	1650 kg		3000 - 3100 kg	

1.9.3 Loading table

The tables shows max. permitted center of gravity shift from the rotation center and the rotary unit's faceplate at different loads.

IRBP 250D

If the load is 225 kg the center of gravity must be located within the marked area, limited by ØD, A and B, see Figure 99.

If the load is 235 kg, see the column for 250 kg load.

Each side can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 175 kg.

Weight of the workpiece including fixture (kg)	250	225	200	175	150	125	100
ØD (mm)	285	317	356	407	475	570	713
A (mm)	219	243	273	312	364	437	547
B (mm)	515	572	643	735	858	1029	1287

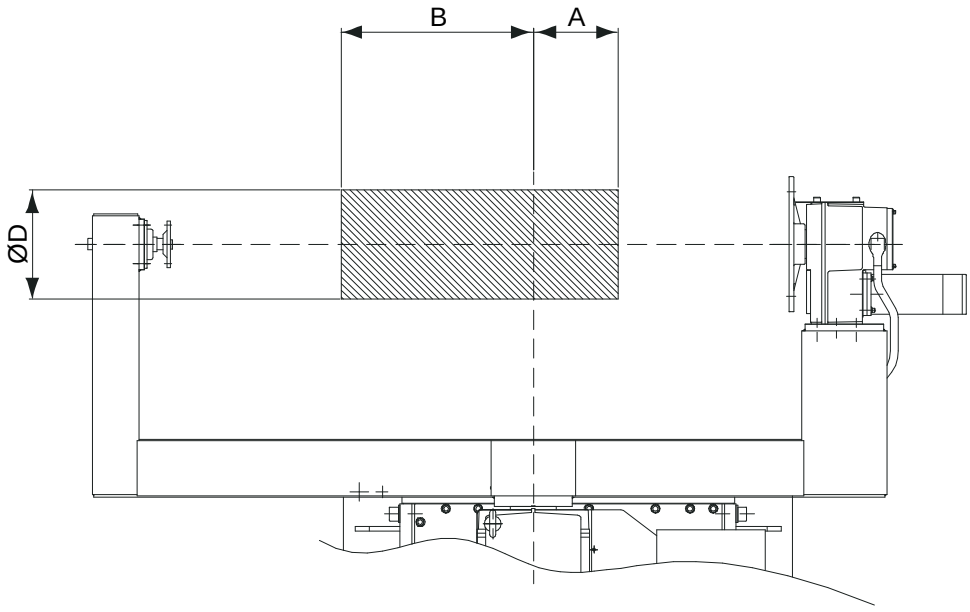


Figure 99 IRBP 250D.

IRBP 500D

If the load is 450 kg the center of gravity must be located within the marked area, limited by ØD, A and B, see Figure 100.

If the load is 485 kg, see the column for 450 kg load.

Each side can be loaded with different weights as long as the load difference between side 1 and side 2 is less than 250 kg.

Weight of the workpiece including fixture (kg)	500	450	400	350	300	250
ØD (mm)	265	294	331	378	441	530
A (mm)	380	430	480	550	640	770
B (mm)	460	510	580	670	780	930

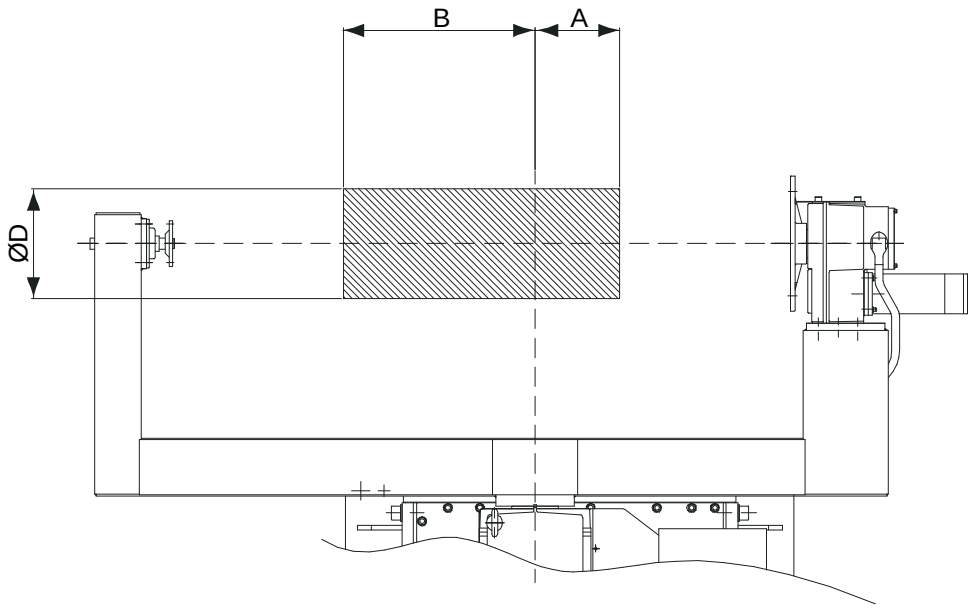


Figure 100 IRBP 500D.

1.9.4 Measurement diagrams

IRBP 250D Ø1000 mm / L=1250

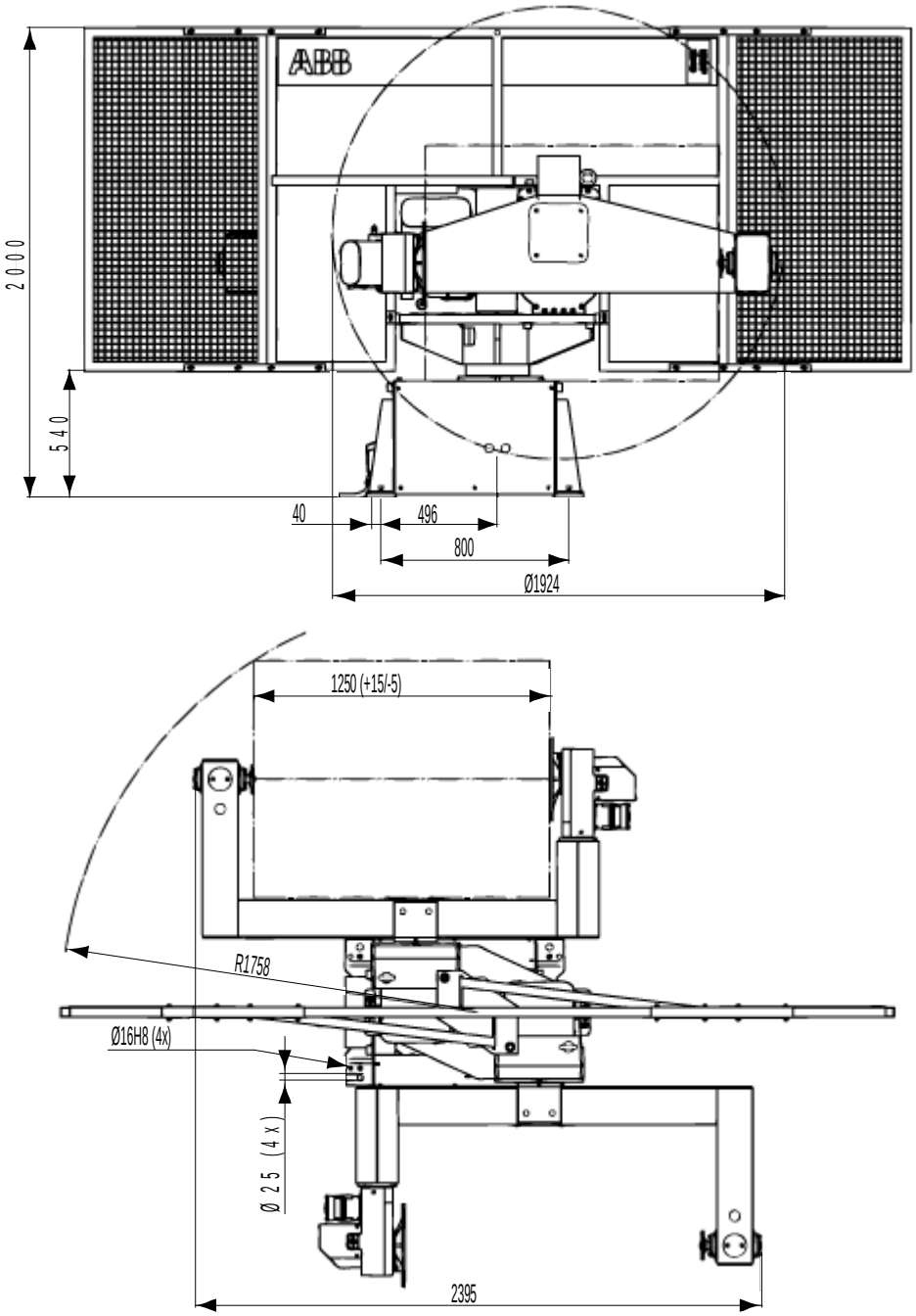


Figure 101 IRBP 250D, diameter 1000 mm and L= 1250 mm.

IRBP 250D Ø1000 / L=1600

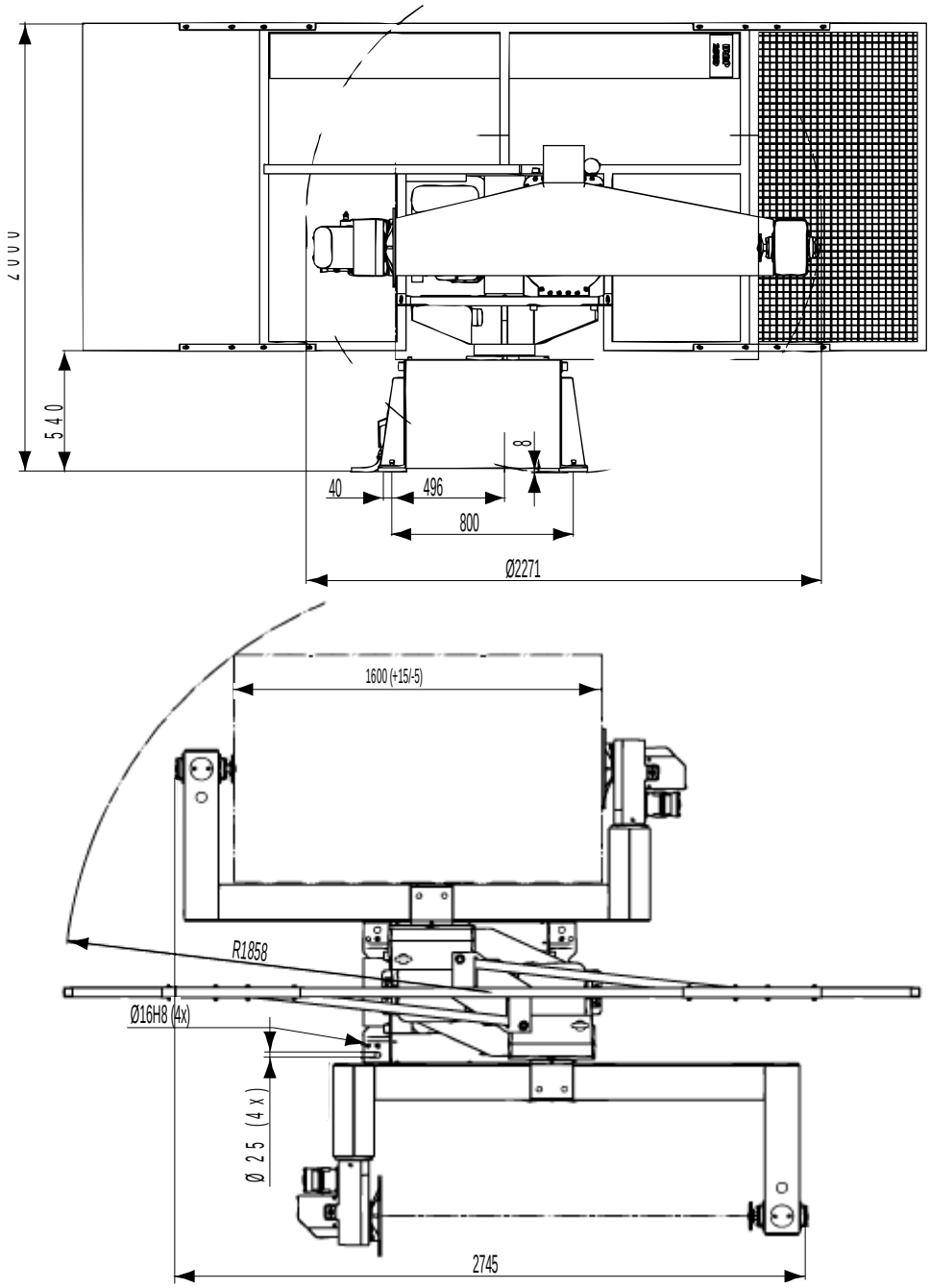


Figure 102 IRBP 250D, diameter 1000 mm and L= 1600 mm.

1.9.4 Measurement diagrams

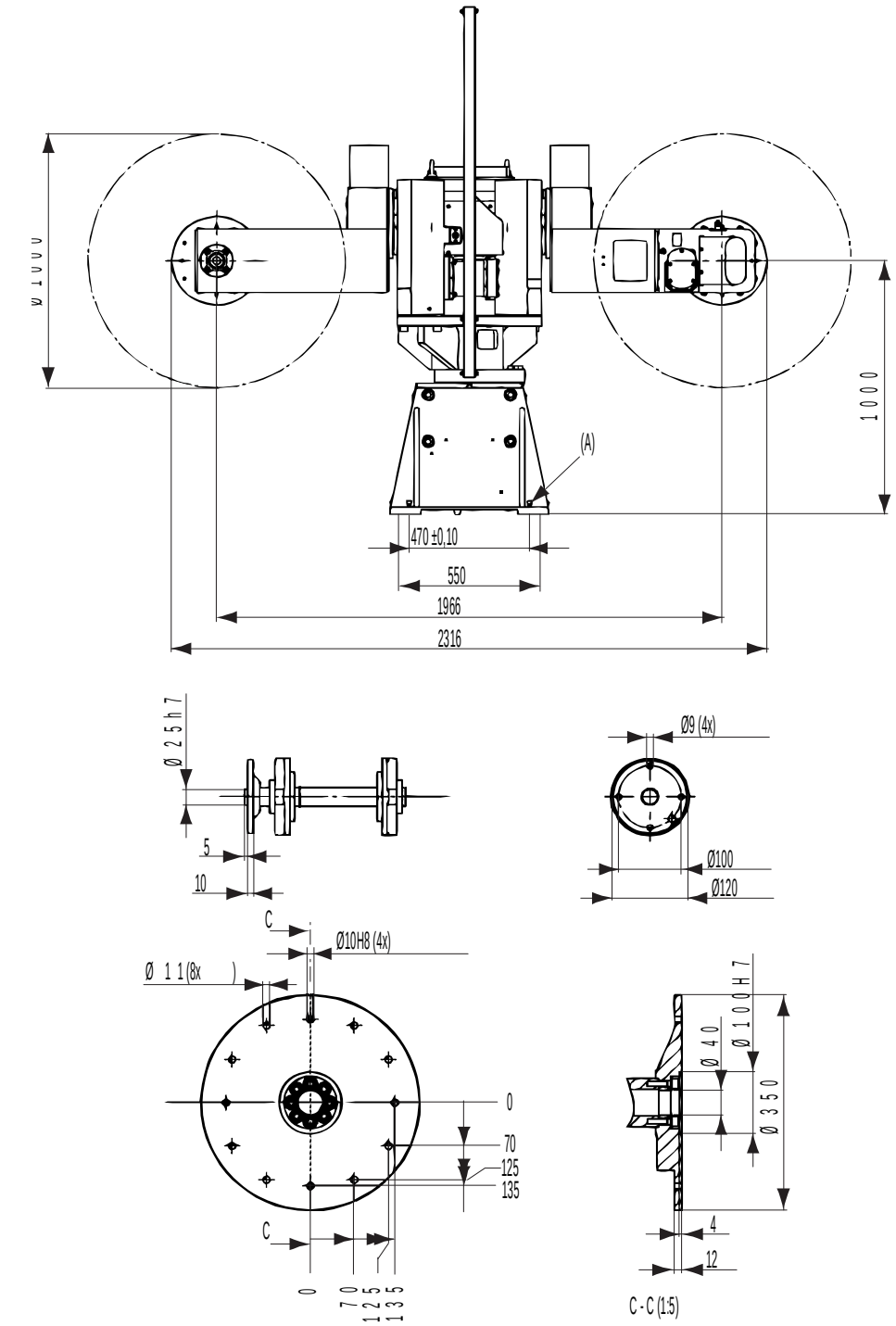


Figure 103 IRBP 250D.

Pos	Description
A	Adjusting bolts

IRBP 500D

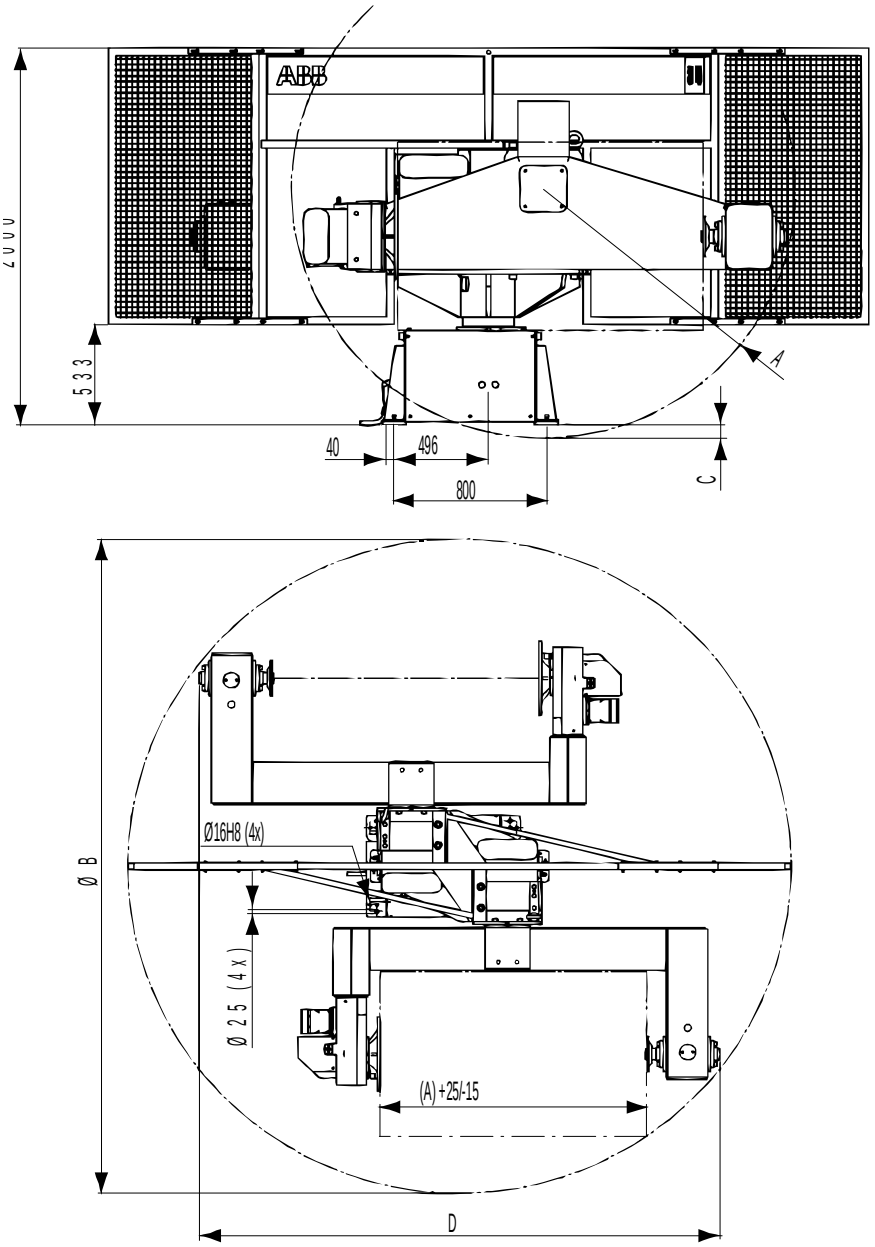


Figure 104 IRBP 500D.

Pos	Description
A	Length

IRBP 500D Ø1000 mm						IRBP 500D Ø1200 mm					
Pos	**Length**	**A**	**B**	**C**	**D**	**Pos**	**Length**	**A**	**B**	**C**	**D**
880	1600	1324	3983	71	3126	882	1600	1321	4319	71	3126
881	2000	1517	4260	267	3526	883	2000	1517	4540	267	3526
884	1800	1419	4099	169	3326	885	1800	1419	4427	169	3326

1.9.4 Measurement diagrams

IRBP 500D Ø1000 mm

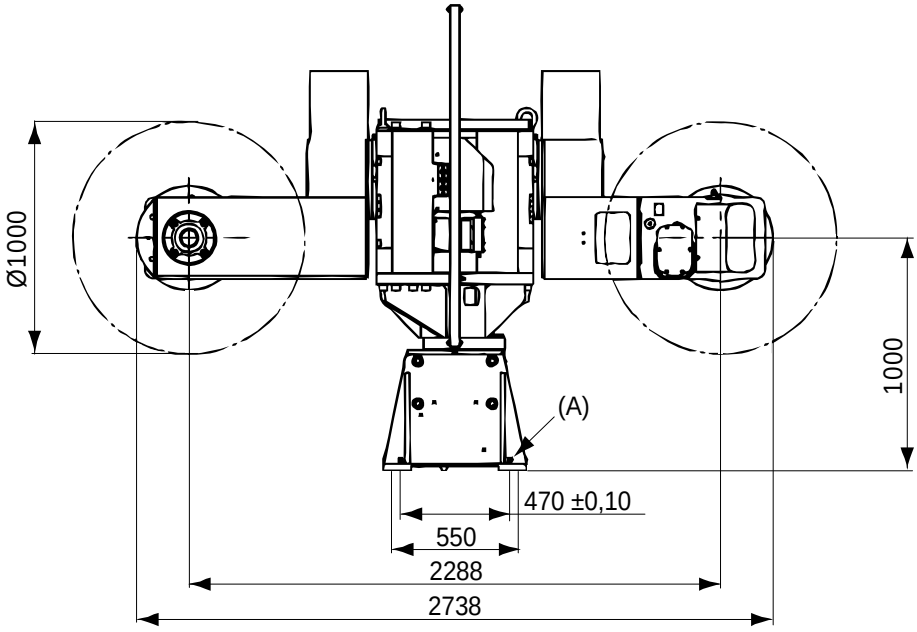


Figure 105 IRBP 500D, diameter 1000 mm.

IRBP 500D Ø1200 mm

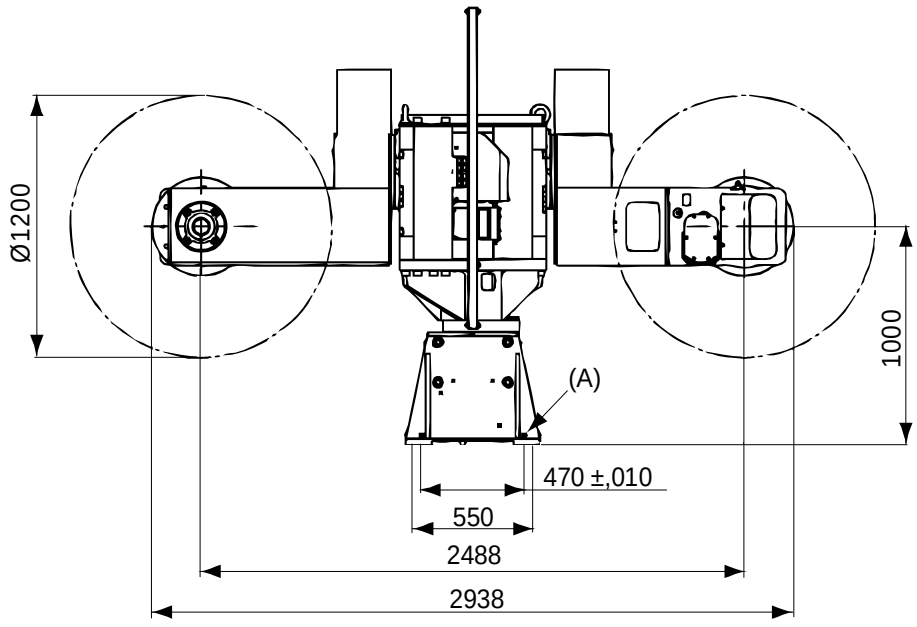


Figure 106 IRBP 500D, diameter 1200 mm.

Pos	Description
A	Adjusting bolts

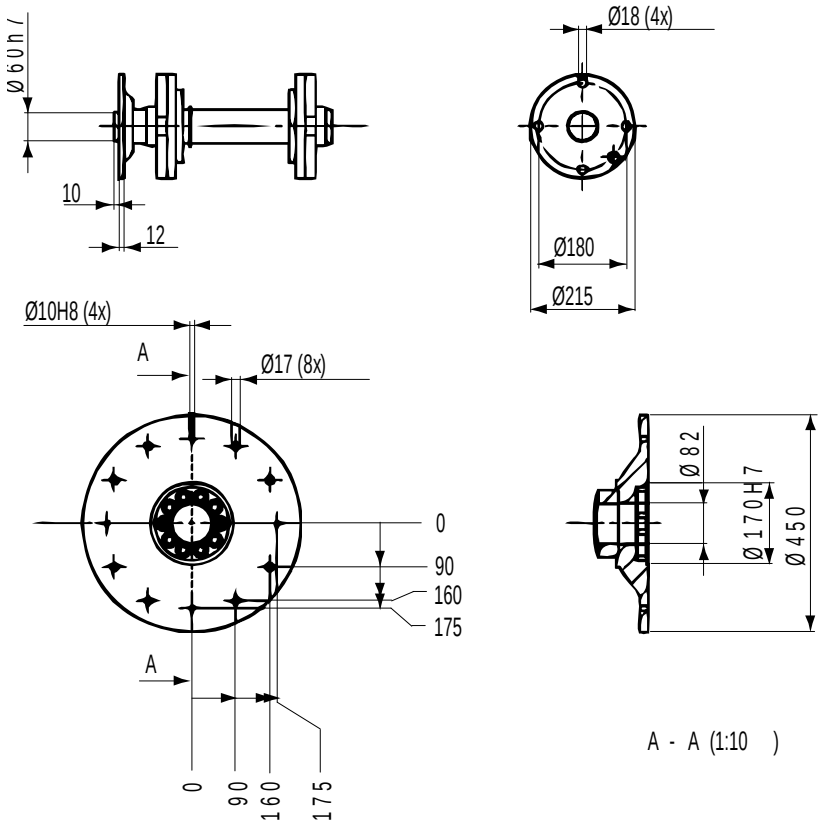


Figure 107 IRBP 500D.

1.10 Integration of fixtures

1.10.1 IRBP 250R/ 500R/ 750R/ 250K/ 500K/ 750K/ 250L/ 500L/ 750L/ 2000L/ 250D/ 500D

An attempt should be made when designing fixtures to match the center of gravity for fixtures and workpieces with the center of rotation. In doing so this will minimise the positioning time between positions.

First calculate the position of the center of gravity and after which the gravitational torque can be calculated. The latter must not exceed the specified value of the continuous torque.

See the dimensional drawings for the positioner, faceplate and support collar for the fasteners' installation measurements. The strength grade for the bolts in the fixture should be 12.9 or the equivalent.

The fixture must conform to specific tolerances to maintain trueness and parallelism in order to prevent clamping forces from occurring. See Figure 108.

Figure 108 Tolerances to maintain the performance.

1.10.2 Assembling/dismantling the fixtures 250K/ 500K/ 750K

With fixture weights exceeding the maximum permitted load difference between side 1 and side 2 the rotary unit's frame must be locked using an external aid, for example, an overhead crane.

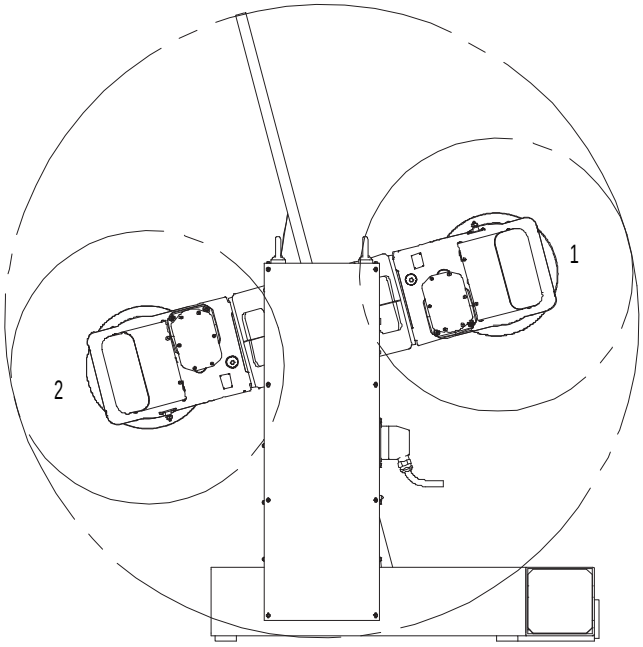


Figure 109 IRBP 750K.

1.10.3 IRBP 250 C Index/ 500C/ 500 C Index/ 1000C/ 250A/ 500A/ 750A/ 250B/ 500B/ 750B

The position of the center of gravity is to be calculated when designing fixtures. After this check that the center of gravity is within the permitted range (see the chapter *Loading diagram*).

See the dimensional drawings for the positioner for the fasteners' installation measurements.

The strength grade for the bolts in the fixture should be 12.9 or the equivalent.

1.10.4 Robot stand

The robot stand consists of the following parts:

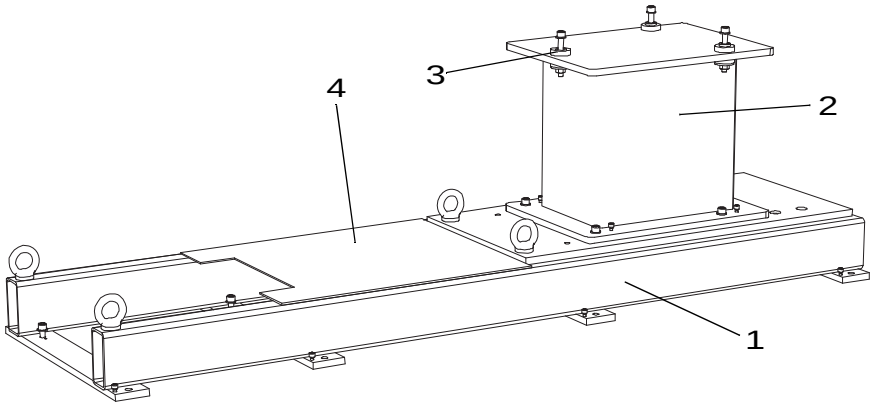


Figure 110 Robot stand for positioners of type C and R.

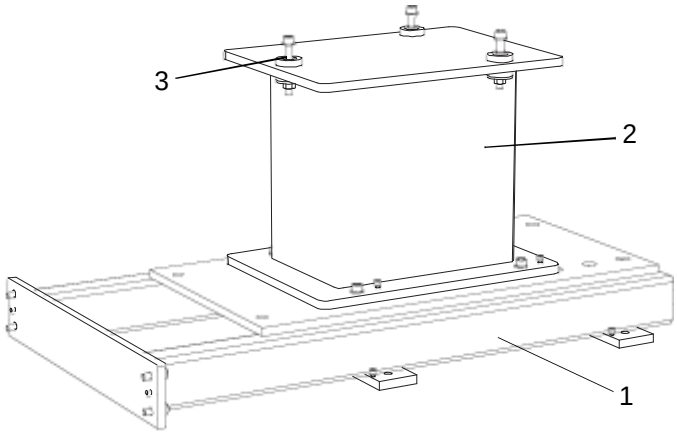


Figure 111 Robot stand for positioner of type K.

Pos	Description	Pos	Description
1	Stand	3	Insulation
2	Pedestal	4	Cover plate

The pedestal can be placed in different hole groups on the stand.

- Exercise care to ensure the robot and positioner do not collide during station switching. Recommended spacing, see the chapter for respective positioner.

1.10.5 Installation

General

The robot station requires a good foundation and a concrete floor with double reinforcement and with a bearing capacity of at least 1000 kg/m^2 is recommended.

The bolts need a cast steel plate of at least 150x150x10 mm. Other solutions, for example, cast steel sections are also possible.

Note any surface unevenness, a flatness of 0.5 mm is necessary. If necessary, use shims under the foundation on the robot and positioner.

Installing the floor stand

	Action	Info/Illustration
1.	Place the stand as set out in the station layout.	See chapter *Station layout*.
2.	Drill holes for the foundation bolts. For dimensions, see the station layout.	See chapter *Station layout*.
3.	Use level bolts to adjust the height of the station.	
4.	Use shims if necessary.	
5.	Fit the foundation bolts.	
6.	Remove the level bolts.	
7.	Tighten all bolts.	

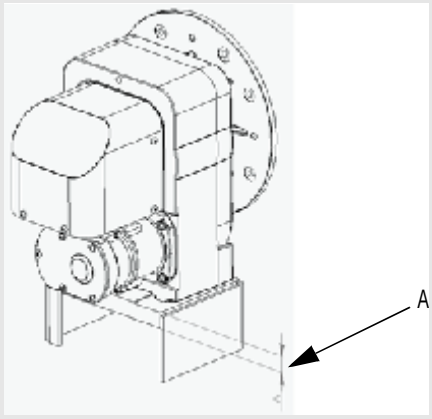
1.11 Installation of MTC units

1.11.1 General

It is important to follow the instructions set out below when assembling in order for the rotary unit to work correctly for a long period of time and handle high loads and bending moment.

1.11.2 Installation

It is important to ensure that the frame carrying the gearbox provides sufficient rigidity and strength to support the loads.

	Action	Info/Illustration
1.	Check that the mounting section against the gearbox is of the right thickness (measurement A), see table *Assembly* below.	
2.	Dress the connection faces to the gearbox to Ra < 6.3 and flatness should be better than 0.05 mm. Even the face by the washer should be dressed.	
3.	Hole configuration, see chapter 1.1.8 Measurement diagrams	

Assembly	MTC 250	MTC 500	MTC 750	MTC 2000	MTC 5000
Recommended thickness (A)	27	32	32	37	47
Bolt size	M12	M20	M20	M24	M24
Tightening torque	115 Nm	550 Nm	550 Nm	950 Nm	950 Nm

1.12 Swivels

The swivels can be combined in different configurations for different requirements.

- Air swivel for 1 channel
- Electrical swivel.
- Air/water swivel for 2 channels.
- Air swivel for 1 channel and electrical swivel.

1.12.1 Air swivel for 1 channel

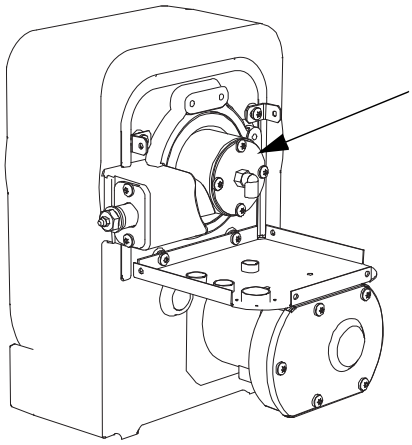


Figure 112 Air swivel.

The function is to transfer air between a fixed part and a moving part.

Technical specification, see table below.

Technical specificationfor 1-channel swivel

Channels	1
Dimensions	1 /4 “
Media	Air, max 10 bar
Max. temperature media	60 °C

1.12.2 Electrical swivel

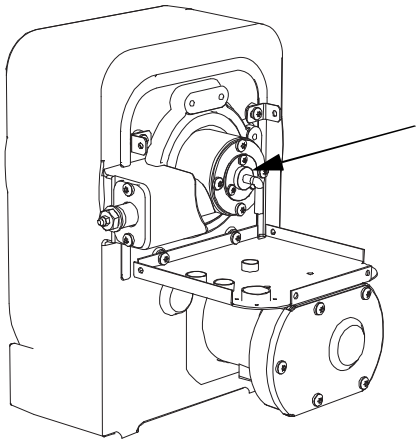


Figure 113 Electrical swivel.

The function is to transfer electrical signals between a fixed part and a moving part.

The electrical swivel can transfer different types of signals, for example 24 V DC and different data bus systems. Technical specification, see table below.

Technical specification for the electrical swivel

Channels	24[a]
Current	Max 2 A /channel
Voltage	Max 48 V DC
Conductor cross-section	0.15 mm² AWG 26
CAN-bus	Max 500 KBit/s
Profibus DP	Max 12 MBit/s
Interbus-S	Max 500 KBit/s

a. Of which 1 channel is a screen

1.12.3 Air/water swivel for 2 channels

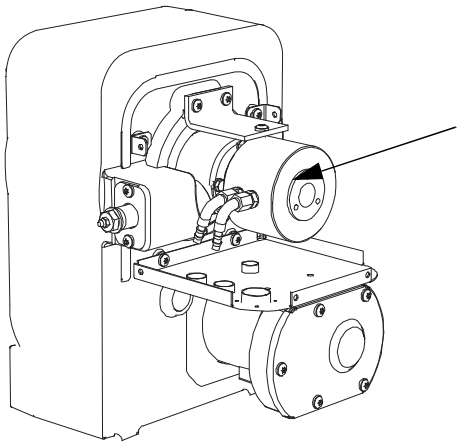


Figure 114 Air/water swivel.

The function is to transfer air/water between a fixed part and a moving part. Technical specification, see table below.

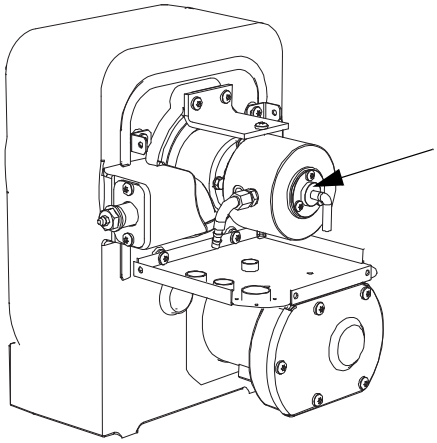
Technical specification for 1/2 channels air/water swivel for MTC 250

Channels	1 or 2
Dimensions	1 / 4"
Media 1	Air, max 10 bar
Media 2	Coolant, max 10 bar Type HFC , 35 % water 65% glycol
Max. temperature media	60°C
Purity, media	16/13, ISO 4406

Technical specification for 1/2 channels air/water swivel for MTC 500/750/2000/5000

Channels	1 or 2
Dimensions	1 / 2"
Media 1	Air, max 10 bar
Media 2	Coolant, max 10 bar Type HFC , 35 % water 65% glycol
Max. temperature media	60°C
Purity, media	16/13, ISO 4406

1.12.4 Air swivel for 1 channel and electrical swivel



The function is to transfer air and electrical signals between a fixed part and a moving part. Technical specification, see table below.

Technical specification for 1 channel air swivel for MTC 250

Channels	1
Dimensions	1 / 4"
Media 1	Air, max 10 bar
Max. temperature media	60°C

Technical specification for 1 channel air swivel for MTC 500/750/2000/5000

Channels	1
Dimensions	1 / 2"
Media 1	Air, max 10 bar
Max. temperature media	60°C
Purity, media	16/13, ISO 4406

Technical specification for the electrical swivel

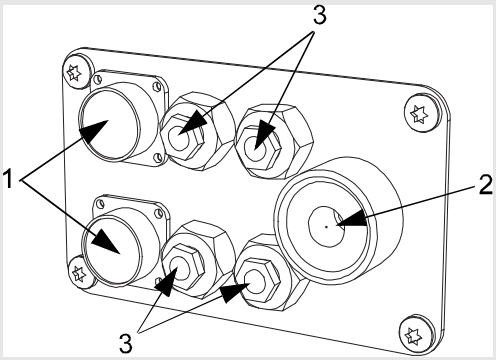
Channels	24[a]
Current	Max 2 A /channel
Voltage	Max 48 V DC
Conductor cross-section	0.15 mm² AWG 26
CAN-bus	Max 500 KBit/s
Profibus DP	Max 12 MBit/s
Interbus-S	Max 500 KBit/s

a. Of which 1 channel is a screen.

1.12.5 Installation of the swivels

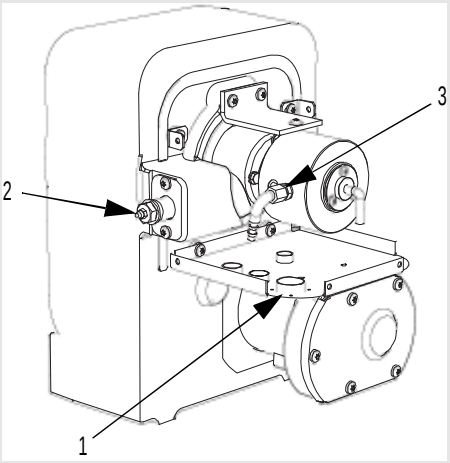
Positioner types A / B / C / D / K / R

Connection of the signals/media takes place via connection flanges, see figure below.

	Action	Info/Illustration
4.	Electrical signals are connected to a socket outlet (1). Suitable plugs are supplied for fitting on the incoming cables. *Circuit diagram*, see separate tab.	
5.	Connection of the weld negative (2). The positioner chassis is to be separated from the system ground, for example cable screen.	
6.	Connect the air (3) to the connection nipple with dimensions set out in the technical specification.	
7.	On the rotary unit there is a free cable/hose for connection to the fixture.	

Positioner type L

Connection of signals/media, see figure below:

	Action	Info/Illustration
1.	Electrical signals are connected to a socket outlet (1). Suitable plugs are supplied for fitting on the incoming cables. *Circuit diagram*, see separate tab.	
2.	Connection of the weld negative (2). The positioner chassis is to be separated from the system ground, for example cable screen	
3.	Connect the air to the connection nipple (3) with dimensions set out in the technical specification.	
4.	On the rotary unit there is a free cable/hose for connection to the fixture.	

1.12.6 Extra current collector for positioner types K / L / R / D

An extra current collector can be fitted if necessary, for example, with high weld currents or with problems with the magnetic blow mechanism when welding.

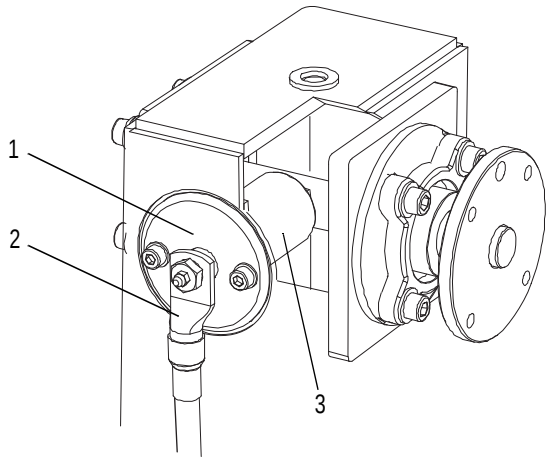


Figure 115 Extra current collector.

Pos	Description
1	Contact bar
2	Return
3	Holder

Technical data

600 Amp at 60% duty cycle.

1.12.7 Installation of the extra current collector for positioner type L

	Action	Info/Illustration
1.	Connect the return cable (2) on the current collector	See Figure 115 above.
2.	Lubricate the current collector with grease, our article number 501 869-001. Also see the chapter *Maintenance*.	

1.13 Safety/Standards

1.13.1 Standards

The robot conforms to the following standards:

Standard	Description
EN ISO 12100 -1	Safety of machinery, terminology
EN ISO 12100 -2	Safety of machinery, technical specifications
EN 954-1	Safety of machinery, safety related parts of control Systems
EN 60204	Electrical equipment of industrial machines
EN 775	Electrical equipment of industrial machines
EN 61000-6-4 (option)	EMC, Generic emission
EN 61000-6-2	EMC, Generic immunity

Standard	Description
IEC 60204-1	Electrical equipment of industrial machines
IEC 60529	Degrees of protection provided by enclosures

Standard	Description
ISO 10218	Manipulating industrial robots, safety
ISO 9787	Manipulating industrial robots, coordinate Systems and motions

Standard	Description
ANSI/RIA 15.06/1999	Safety Requirements for Industrial Robots and Robot Systems.
CAN/CSA Z 434-03 (option)	Industrial Robots and Robot Systems - General Safety Requirements

1.13.2 Safety

The robot complies fully with the health and safety standards specified in the EEC's Machinery Directives.

Safety function	Description
The Service Information System (SIS)	The service information system gathers information about the robot's usage and determines how hard the robot is used. The usage is characterized by the speed, the rotation angles and the load of every axis. With this data collection, the service interval of every individual robot of this generation can be predicted, optimized and service activities planned ahead. The collection data is available via the FlexPendant or the network link to the robot. The Process Robot Generation is designed with absolute safety in mind. It is dedicated to actively or passively avoid collisions and offers the highest level of safety to the operators and the machines as well as the surrounding and attached equipment. These features are presented in the active and passive safety system. The time the robot is in operation (brakes released) is indicated on the FlexPendant. Data can also be monitored over network, using for example WebWare.

The Active Safety System	Description
General	The active safety system includes those software features that maintain the accuracy of the robot's path and those that actively avoid collisions which can occur if the robot leaves the programmed path accidentally or if an obstacle is put into the robot's path.
The Active Brake System (ABS)	All robots are delivered with an active brake system that supports the robots to maintain the programmed path in General Stop (GS), Auto Stop (AS) and Superior Stop (SS). The ABS is active during all stop modes, braking the robot to a stop with the power of the servo drive system along the programmed path. After a specific time the mechanical brakes are activated ensuring a safe stop. The stopping process is in accordance with a class 1 stop. The maximum applicable torque on the most loaded axis determines the stopping distance. In case of a failure of the drive system or a power interruption, a class 0 stop turns out. Emergency Stop (ES) is a class 0 stop. All stops (GS, AS, SS and ES) are reconfigurable. While programming the robot in manual mode, the enabling device has a class 0 stop.

The Active Safety System	Description
The Self Tuning Performance (STP)	The Process Robot Generation is designed to run at different load configurations, many of which occur within the same program and cycle. The robot's installed electrical power can thus be exploited to lift heavy loads, create a high axis force or accelerate quickly without changing the configuration of the robot. Consequently the robot can run in a "power mode" or a "speed mode" which can be measured in the respective cycle time of one and the same program but with different tool loads. This feature is based on QuickMove™. The respective change in cycle time can be measured by running the robot in NoMotionExecution with different loads or with simulation tools like RobotStudio.
The Electronically Stabilized Path (ESP)	The load and inertia of the tool have a significant effect on the path performance of a robot. The Process Robot Generation is equipped with a system to electronically stabilize the robot's path in order to achieve the best path performance. This has an influence while accelerating and braking and consequently stabilizes the path during all motion operations with a compromise of the best cycle time. This feature is secured through TrueMove™.
Over-speed protection	The speed of the robot is monitored by two independent computers.
Restricting the working space	The movement of each axis can be restricted using software limits. As options there are safeguarded space stops for connection of position switches to restrict the working space for the axes 1-3. Axes 1-3 can also be restricted by means of mechanical stops.
Collision detection (option)	In case of an unexpected mechanical disturbance, such as a collision, electrode sticking, etc., the robot will detect the collision, stop on the path and slightly back off from its stop position, releasing tension in the tool.

The Passive Safety System	Description
General	The Process Robot Generation has a dedicated passive safety system that by hardware construction and dedicated solutions is designed to avoid collisions with surrounding equipment. It integrates the robot system into the surrounding equipment safely.
Mechanical stops	The track motion is equipped with mechanical stops, incl. rubber cushions.
Electronic Position Switches (EPS) on up to 7 axes (option)	EPS offers axes position status signals, fulfilling applicable regulations for personnel safety. Five outputs can each be configured to reflect the position of a single axis or a combination of axes. For each output, the range for each included axis can be set arbitrarily.

The Internal Safety Concept	Description
General	The internal safety concept of the Process Robot Generation is based on a two-channel circuit that is monitored continuously. If any component fails, the electrical power supplied to the motors shuts off and the brakes engage.
Safety category 3	Malfunction of a single component, such as a sticking relay, will be detected at the next MOTOR OFF/MOTOR ON operation. MOTOR ON is then prevented and the faulty section is indicated. This complies with category 3 of EN 954-1, Safety of machinery - safety related parts of control Systems - Part 1.
Selecting the operating mode	The robot can be operated either manually or automatically. In manual mode, the robot can only be operated via the FlexPendant, that is not by any external equipment.
Reduced speed	In manual mode, the speed is limited to a maximum of 250 mm/s (600 inch/min.). The speed limitation applies not only to the TCP (Tool Center Point), but to all parts of the robot. It is also possible to monitor the speed of equipment mounted on the robot.
Three position enabling device	The enabling device on the FlexPendant must be used to move the robot when in manual mode. The enabling device consists of a switch with three positions, meaning that all robot movements stop when either the enabling device is pushed fully in, or when it is released completely. This makes the robot safer to operate.
Safe manual movement	The robot is moved using a joystick instead of the operator having to look at the FlexPendant to find the right key.
Emergency stop	There is one emergency stop push button on the controller and another on the FlexPendant. Additional emergency stop buttons can be connected to the robot’s safety chain circuit.
Safeguarded space stop	The robot has a number of electrical inputs which can be used to connect external safety equipment, such as safety gates and light curtains. This allows the robot’s safety functions to be activated both by peripheral equipment and by the robot itself.
Delayed safeguarded space stop	A delayed stop gives a smooth stop. The robot stops the same way as at a normal program stop with no deviation from the programmed path. After approx. 1 second the power supplied to the motors is shut off.
Hold-to-run control	“Hold-to-run” means that you must depress the start button in order to move the robot. When the button is released the robot will stop. The hold-to-run function makes program testing safer.
Safety lamp (option)	As an option, the robot can be equipped with a safety lamp mounted on the manipulator. This is activated when the motors are in the MOTORS ON state.

1.14 Maintenance and Troubleshooting

1.14.1 Introduction

General

The Positioners requires only minimum maintenance during operation. It has been designed to make it as easy to service as possible:

- Maintenance-free AC motor is used.
- Oil is used for the gear boxes.
- The cabling is routed for longevity, and in the unlikely event of a failure, its modular design makes it easy to change.

Maintenance

The maintenance intervals depend on the use of the positioner. For detailed information on maintenance procedures, see Maintenance section in the Product Manual.

1.14.1 Introduction

2 Specification of Variants and Options

2.1 Introduction

2.1.1 General

The different variants and options for the IRBP positioners are described in the following sections.

The same numbers are used here as in the Specification form. For controller options, see Product specification - Controller IRC5 with Flex Pendant and for Controller software, see Product specification - Controller software IRC5/RobotWare.

2.1.2 Positioner

Positioner type

Option	IRBP Type	Option	IRBP type
1041-1	MTC 250	1041-2	MTC 250 x2
1041-3	MTC 500	1041-4	MTC 500 x2
1041-5	MTC 750	1041-6	MTC 750 x2
1041-7	MTC 2000	1041-8	MTC 2000 x2
1041-9	MTC 5000	1041-10	MTC 5000 x2
1041-11	IRBP 250L	1041-12	IRBP 250L x2
1041-13	IRBP 500L	1041-14	IRBP 500L x2
1041-15	IRBP 750L	1041-16	IRBP 750L x2
1041-17	IRBP 2000L	1041-18	IRBP 2000L x2
1041-19	IRBP 5000L	1041-20	IRBP 5000L x2
1041-21	IRBP 250R	1041-22	IRBP 500R
1041-23	IRBP 750R	1041-24	IRBP 250K
1041-25	IRBP 500K	1041-26	IRBP 750K
1041-27	IRBP 500C	1041-28	IRBP 1000C
1041-29	IRBP 250C INDEX	1041-30	IRBP 500C INDEX
1041-31	IRBP 250A	1041-32	IRBP 250A x2
1041-33	IRBP 500A	1041-34	IRBP 500A x2
1041-35	IRBP 750A	1041-36	IRBP 750A x2
1041-37	IRBP 250B	1041-38	IRBP 500B
1041-39	IRBP 750B	1041-40	IRBP 250D
1041-41	IRBP 500D		

Tailstock for L positioner

Option	Tailstock Type	Description
1042-1	250L	Only together with one IRBP 250L
1042-2	250L x2	Only together with two IRBP 250L
1043-3	500/750L	Only together with one IRBP 500/750L
1042-4	500/750L x2	Only together with two IRBP 500/750L
1042-5	2000L	Only together with one IRBP 2000L
1042-6	2000L x2	Only together with two IRBP 2000L
1042-7	5000L	Only together with one IRBP 5000L
1042-8	5000L x2	Only together with two IRBP 5000L

Distance beam for L positioner

Option	Beam length (mm)	Description
1043-1	1250	Only together with one IRBP 250/500/750L
1043-2	1250 x 2	Only together with two IRBP 250/500/750L
1043-3	1600	Only together with one IRBP 250/500/750L
1043-4	1600 x 2	Only together with two IRBP 250/500/750L
1043-5	2000	Only together with one IRBP 250/500/750L
1043-6	2000 x 2	Only together with two IRBP 250/500/750L
1043-7	2500	Only together with one IRBP 250/500/750L
1043-8	2500 x 2	Only together with two IRBP 250/500/750L
1043-9	3150	Only together with one IRBP 250/500/750L
1043-10	3150 x 2	Only together with two IRBP 250/500/750L
1043-11	4000	Only together with one IRBP 250/500/750L
1043-12	4000 x 2	Only together with two IRBP 250/500/750L
1043-13	1250	Only together with one IRBP 2000L
1043-14	1250 x 2	Only together with two IRBP 2000L
1043-15	1600	Only together with one IRBP 2000L
1043-16	1600 x 2	Only together with two IRBP 2000L
1043-17	2000	Only together with one IRBP 2000L
1043-18	2000 x 2	Only together with two IRBP 2000L
1043-19	2500	Only together with one IRBP 2000L
1043-20	2500 x 2	Only together with two IRBP 2000L
1043-21	3150	Only together with one IRBP 2000L
1043-22	3150 x 2	Only together with two IRBP 2000L
1043-23	4000	Only together with one IRBP 2000L
1043-24	4000 x 2	Only together with two IRBP 2000L

Positioner height

Option	Height (mm)	Description
1044-1	700	Only together with on or two IRBP 500/750A
1044-2	800	Only together with on or two IRBP 500/750A
1044-3	900	Only together with on or two IRBP 500/750A

Positioner length

Option	Length (mm)	Description
1045-1	1250	Only together with IRBP 250R, 250D
1045-2	1600	Only together with IRBP 250/500/750R, 250/500/750K, 250/500D
1045-3	2000	Only together with IRBP 500/750R, 250/500/750K, 500D
1045-4	2500	Only together with IRBP 250/500/750K
1045-5	3150	Only together with IRBP 250/500/750K
1045-6	3500	Only together with IRBP 250/500/750K
1045-7	4000	Only together with 250/500/750K

Positioner diameter

Option	Diameter (mm)	Description
1046-1	1000 (R)	Only together with IRBP 500/750R
1046-2	1000 (K)	Only together with IRBP 250/500/750K
1046-3	1000 (A)	Only together with one or two IRBP 500/750A
1046-4	1000 (D)	Only together with IRBP 250/500D
1046-5	1200 (R)	Only together with IRBP 500/750R
1046-6	1200 (K)	Only together with IRBP 250/500/750K
1046-7	1200 (D)	Only together with 500D
1046-8	1400 (K)	Only together with IRBP 500/750K
1046-9	1450 (A)	Only together with one or two IRBP 500/750A

Positioner cable 1

Option	Length	Description
1067-1	7 m	
1067-2	10 m	
1067-3	15 m	
1067-4	No cable	Only available when positioner is purchased as a stand alone product

2.1.2 Positioner

Positioner cable 2

Option	Length	Description
1068-1	7 m	
1068-2	10 m	
1068-3	15 m	

Positioner cable type

Option	Type	Description
1048-1	Flexible	Only available together with one or two MTC 250/500/750/200/5000

Interface for positioner

Option	Type	Description
1049-1	IRBP-L, MTC	Interface for one or two IRBP L-positioner or for one or two MTC units
1049-2	IRBP-R, K triple	Interface for one IRBP R/K positioner, triple drive
1049-3	IRBP-R, K single	Interface for one IRBP R/K positioner, single drive
1049-4	IRBP-C	Interface for one IRBP C/C-INDEX positioner
1049-5	IRBP-A	Interface for one or two IRBP A positioner
1049-6	IRBP-B/D	Interface for one IRBP B/D positioner
1049-7	No interface	Only available with positioner is purchased as a stand alone product

Manual jog

Option	Type	Description
1050-1	Man jog IRBP-L	Only available together with IRBP L positioner
1050-2	Man jog IRBP-R/K	Only available together with IRBP R/K positioner

Swivels and slip rings

Option	Type	Description
1051-1	1 air (L)	For one IRBP 250/500/750/2000/5000L
1051-2	1 air (L) x 2	For two IRBP 250/500/750/2000/5000L
1051-3	2 air (L)	For one IRBP 250/500/750/2000/5000L
1051-4	2 air (L) x 2	For two IRBP 250/500/750/2000/5000L
1051-5	24 electr. (L)	For one IRBP 250/500/750/2000/5000L
1051-6	24 electr. (L) x 2	For two IRBP 250/500/750/2000/5000L
1051-7	24 electr. + 1 air (L)	For one IRBP 250/500/750/2000/5000L
1051-8	24 electr. + 1 air (L) x 2	For two IRBP 250/500/750/2000/5000L
1051-9	1 air (R/K)	1 ch. air. For IRBP 250/500/750R, 250/500/750K
1051-10	2 air (R/K)	2 ch. air. For IRBP 250/500/750R, 250/500/750K
1051-11	24 electr. (R/K)	24 ch. electric signals. For IRBP 250/500/750R, 250/500/750K

Option	Type	Description
1051-12	24 electr. + 1 air (R/K)	24 ch. electric signals + 1 ch. air. For IRBP 250/500/750R, 250/500/750K
1051-13	1 air (C)	1 ch. air. For IRBP 500/1000C
1051-14	2 air (C)	2 ch. air. For IRBP 500/1000C
1051-15	1 air (INDEX)	1 ch. air. For IRBP 250/500C-INDEX
1051-16	2 air (INDEX)	2 ch. air. For IRBP 250/500C-INDEX
1051-17	24 electr. (INDEX)	24 ch. eletric signals. For IRBP 250/500C-INDEX
1051-18	24 electr. + 1 air (INDEX)	24 ch. electric signals + 1 ch. air. For IRBP 250/500C-INDEX
1051-19	1 air (A)	1 ch. air. For one IRBP 250/500/750A
1051-20	1 air (A) x 2	1 ch. air. For two IRBP 250/500/750A
1051-21	2 air (A)	2 ch. air. For one IRBP 250/500/750A
1051-22	2 air (A) x 2	2 ch. air. For two IRBP 250/500/750A
1051-23	24 electr. (A)	24 ch. electic signals. For one IRBP 250/500/750A
1051-24	24 electr. (A) x 2	24 ch. electic signals. For two IRBP 250/500/750A
1051-25	24 electr. + 1 air (A)	24 ch. electric signals + 1 air. For one IRBP 250/500/750A
1051-26	24 electr. + 1 air (A) x 2	24 ch. electric signals + 1 air. For two IRBP 250/500/750A
1051-27	1 air (B/D)	1 ch. air. For IRBP 250/500/750B, 250/500D
1051-28	2 air (B/D)	2 ch. air. For IRBP 250/500/750B, 250/500D
1051-29	24 electr. (B/D)	23 ch. electric signals. IRBP 250/500/750B, 250/500D
1051-30	24 electr. + 1 air (B/D)	24 ch. electric signals + 1 ch. air. IRBP 250/500/750B, 250/500D

Operator panel

Option	Type	Description
1054-1	Operators panel 1 area	For one wotking area
1054-2	Operators panel 2 areas	For two working areas
1054-3	2 x operator panels 2 areas	Two operator panels, one for each working area

Extra current collector

Option	Type	Description
1055-1	Current collector (L)	For one IRBP 250/500/750/2000/5000L
1055-2	Current collector (L) x 2	For two IRBP 250/500/750/2000/5000L
1055-3	Current collector (R)	For IRBP 250/500/750R
1055-4	Current collector (K)	For IRBP 250/500/750K
1055-5	Current collector (D)	For IRBP 250/500D

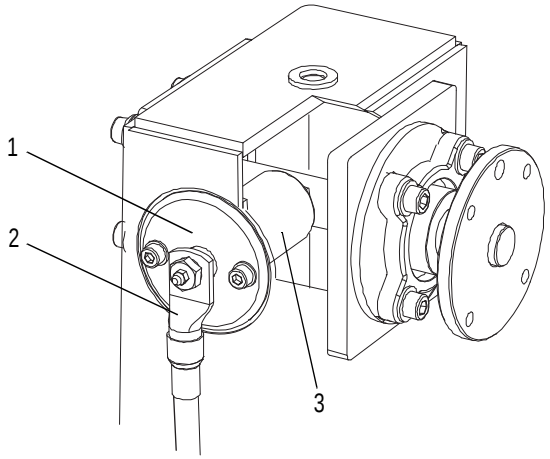


Figure 116 Extra current collector.

Pos	Description
1	Contact bar
2	Return
3	Holder

Weld return cable

Option	Length	Description
1056-1	7 m	
1056-2	7 m x 2	
1056-3	10 m	
1056-4	10 m x 2	
1056-5	15 m	
1056-6	15 m x 2	

Return cable OKC T-connection

Option	Description
1057-1	Choose quantity, 1 or 2

2.1.3 DVD User Documentation

Option	Type	Description
808-1	Documentation on DVD	See Product specification - Robot User Documentation

2.1.3 DVD User Documentation

3HAC 028283-001, Revision B, en

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