

This data sheet interacts with
PRT2 Catalogue
 40-41

No. 2 Installation Details

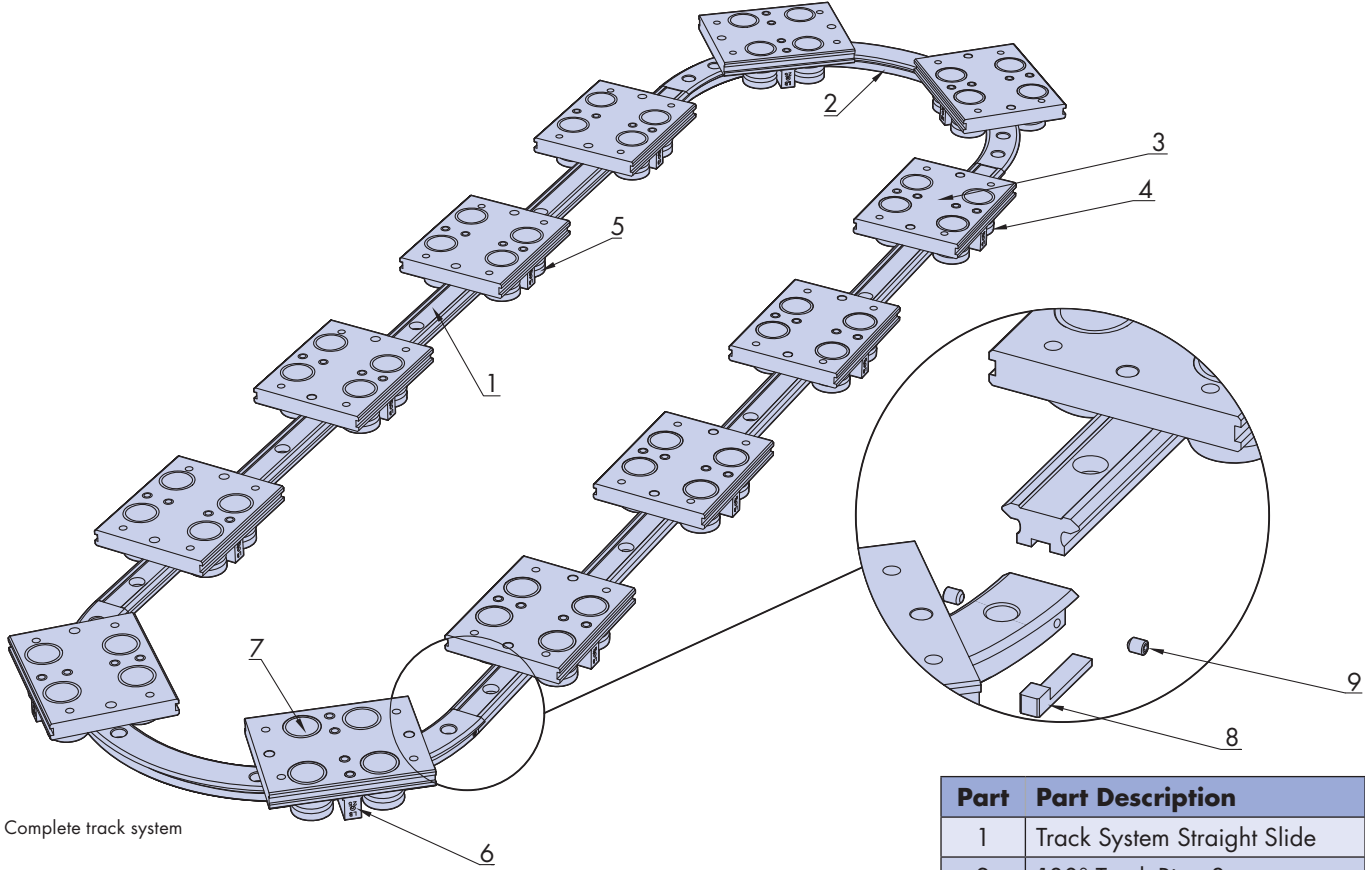
HepcoMotion precision ring and track systems are manufactured to high quality standards and provides smooth and accurate motion for any application. The supporting structure for mounting these systems is somewhat instrumental in achieving overall accuracy and efficiency, consequently the mounting/datum faces should be machined flat and parallel. When choosing a fixing method, consideration should be given to both the application and the components being used.

The following datasheet outlines various mounting and assembly options.

Details of component and assembly dimensions can be found on pages 22 to 53 of the PRT2 catalogue.

Unless the 'Pre-drillable' option is requested HepcoMotion® Track Systems will require manual drilling and setting to ensure they are installed correctly and to the accuracy required. The following instructions are intended to aid the installation process.

Caution Sharp Edges - Track systems are required to have sharp edges on the ends to ensure joint quality when butted together.

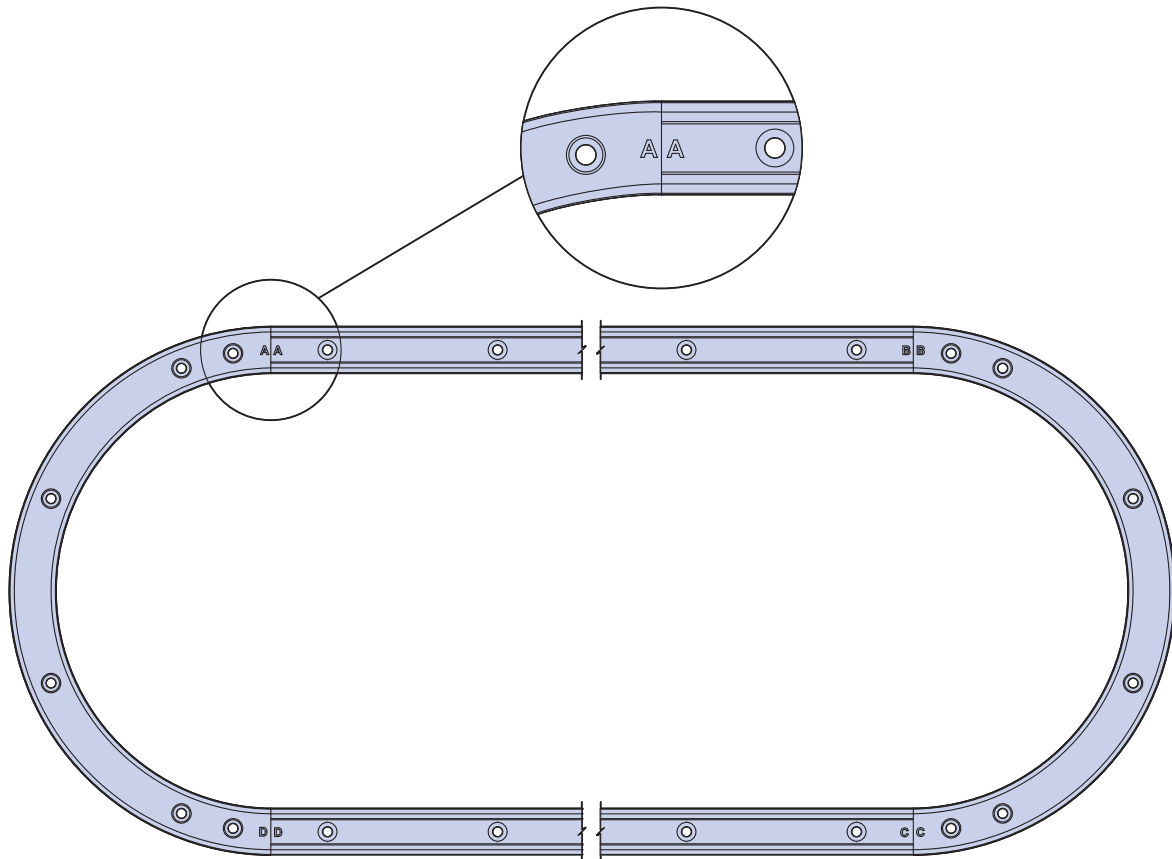


Complete track system

Part	Part Description
1	Track System Straight Slide
2	180° Track Ring Segment
3	Fixed Centre Carriage Plate
4	Eccentric Bearing
5	Concentric Bearing
6	Lubricator
7	Blanking plug
8	Jacking Screw
9	Adjustment key

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Before beginning to fit the track system in place it is advisable to position it as it will look when assembled. This will confirm that all the parts are correct before it is assembled and will also check that the marks on each side of the joint correspond, as shown below.



Track system laid out in position before securing

Note: To ensure ease of assembly, make sure that the two track system straight slides are parallel to each other and the ends are aligned, if they are not, the track system will not fit together correctly.

1. Setting the first slide.

1.1 To ensure straightness the slide needs to be set against an accurately machined register as shown in figure 1.1. Alternatively dowel pins can be used to set the slide parallel as seen in figure 1.2. The holes for the dowel pins should be accurately machined to ensure that the slide is straight when assembled.

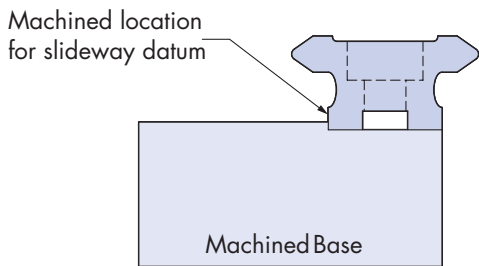


Figure 1.1 Machined register for slide location

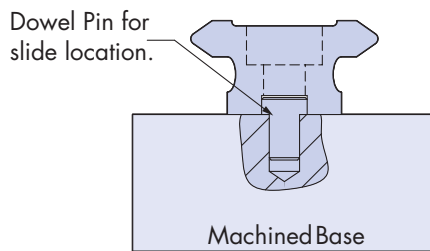


Figure 1.2 Dowel pin location method

1.2 If using the dowel pin method, the dowels should be positioned between every other slide fixing hole as shown in figure 1.3. If using a shorter length of slide a minimum of two dowel pins is recommended.

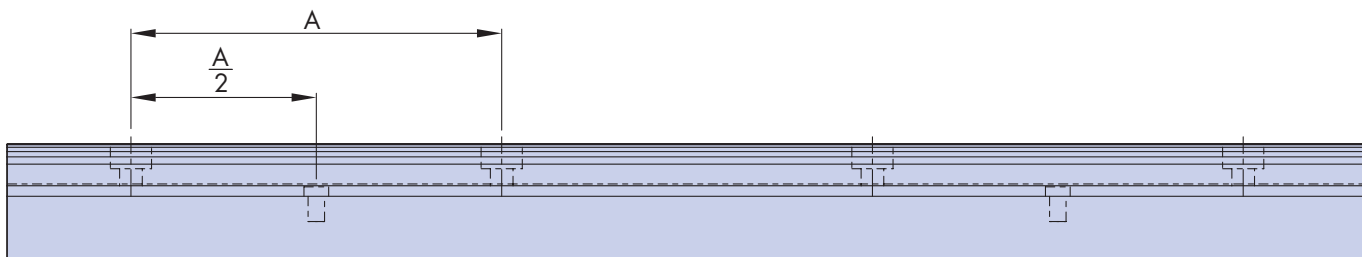


Figure 1.3 Position of dowel pin holes

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2. Securing the first slide

2.1 To ensure that the slides are fixed correctly, hold tight against the register/ dowel pins and secure using clamps, as shown in figure 2.1, the track can then be used as a template to spot through into the base. The slide can be removed and the holes drilled to suit, this will avoid possible misalignment from the cumulative effect of hole position tolerances and ensure that the slide is parallel.

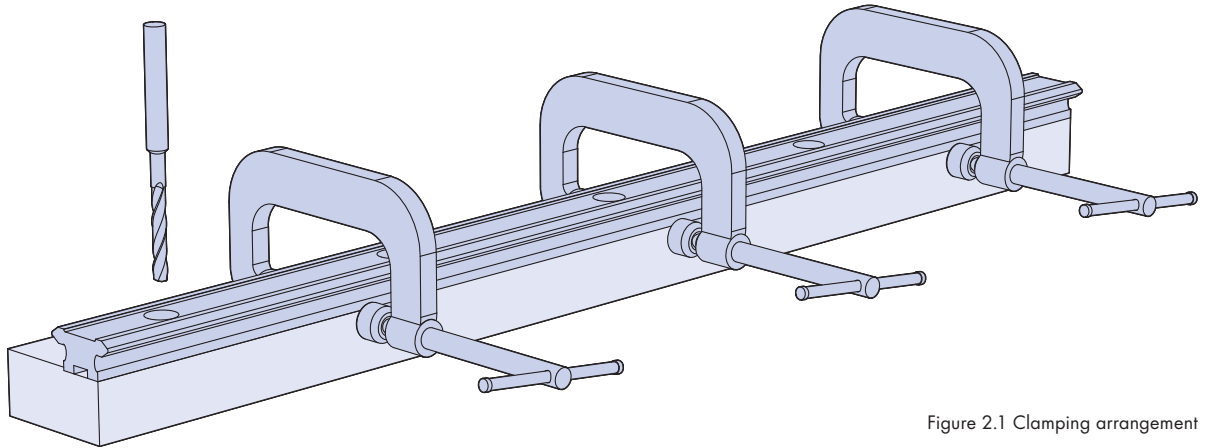


Figure 2.1 Clamping arrangement

2.2 Once the holes have been drilled the slides can be secured to the base. Start from the middle of the slide and work outwards so it is secured down evenly along the length as demonstrated in figure 2.2.

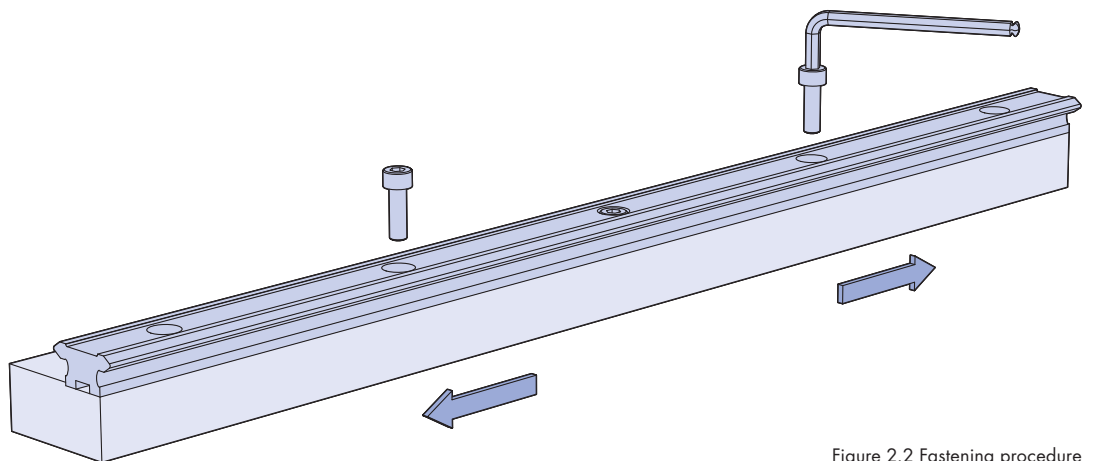


Figure 2.2 Fastening procedure

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3. Setting second and subsequent slides

3.1 Second and subsequent slides should be assembled at the correct pitch line to ensure that the segment will fit into place. This should be taken into account when machining the register or dowel pin holes.

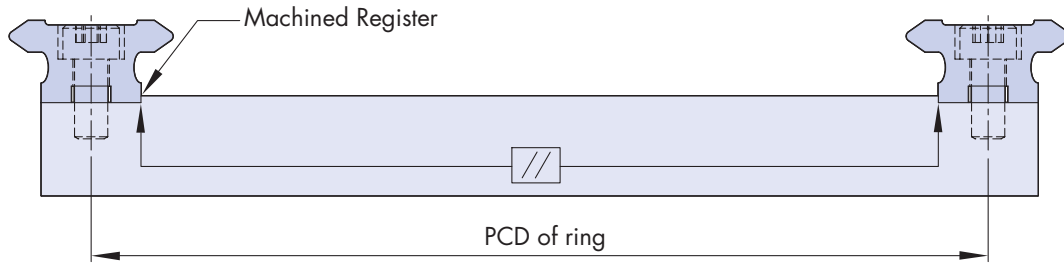


Figure 3.1 Slides fitted at correct PCD

3.2 If securing the slides with dowel pins as location it is best to fix one of the slides whilst leaving the other 'floating', assemble two carriage plates to a suitably sized joining plate and place onto the slides (figure 3.2). Run the carriages up and down the length of the slides until they are parallel and secure in place.

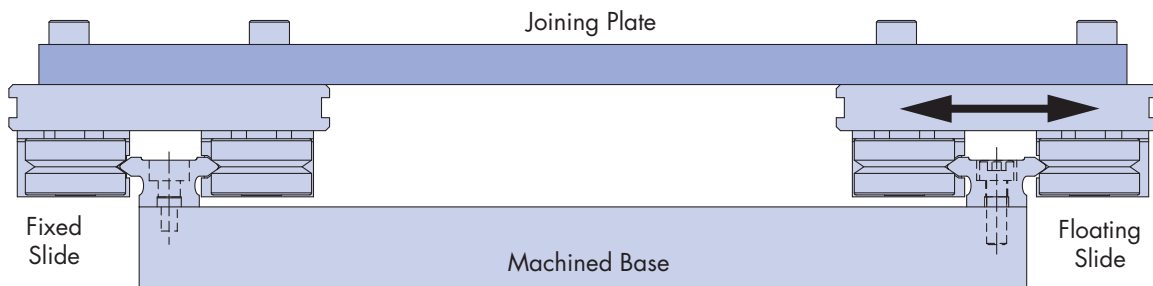


Figure 3.2 Slide setting procedure when using dowel pins.

Alternatively a setting piece can be used as shown in figure 3.3. The setting piece should be pushed up against the fixed slide, the floating slide should then be firmly pressed up against the setting piece whilst being secured down. This process should be repeated along the length of the slide to ensure that it is parallel.

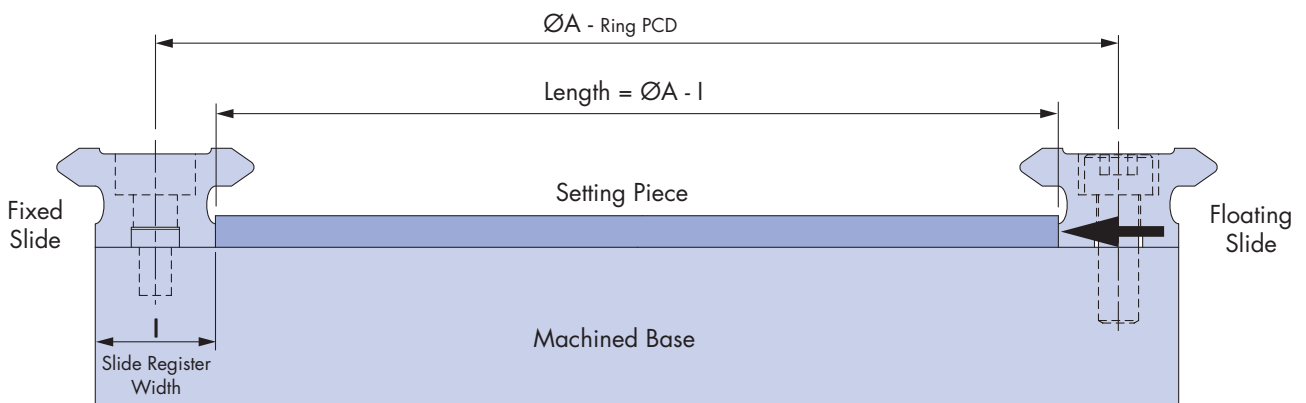


Figure 3.3 Alternative slide setting procedure.

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4. Setting the ring segments

4.1 Once the slides are secured the segments can be fitted. The adjustment key should be inserted into the bottom recess on the slide, the ring segment can then be placed in position and loosely secured (figure 4.1). The slot on the ring segment is bigger to allow for adjustment of the segment with the jacking screws.

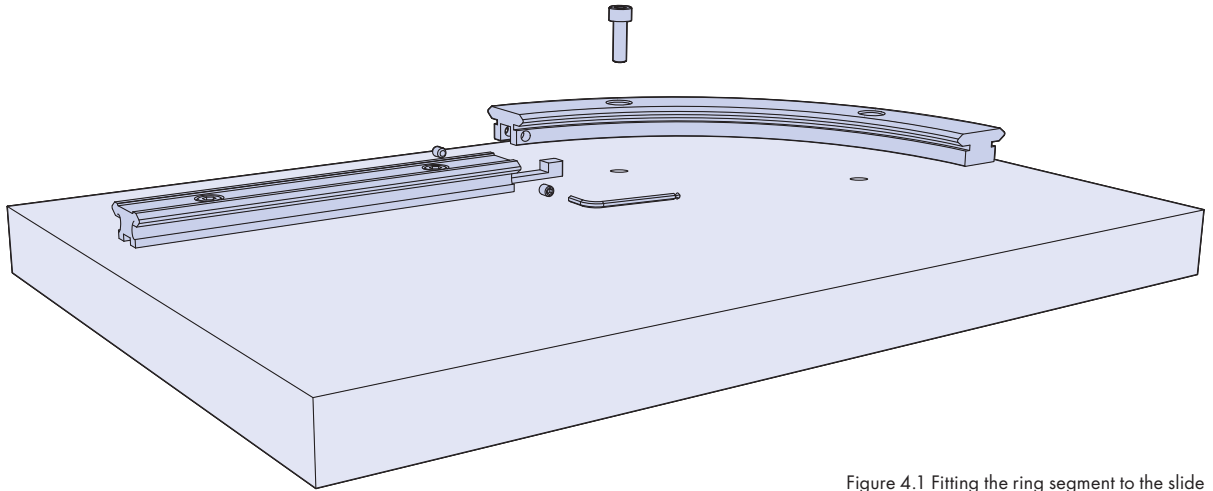


Figure 4.1 Fitting the ring segment to the slide

4.2 Fine-tune the position of the ring by adjusting the jacking screws to centralise the two components and ensure that the vees are in line (figure 4.2).

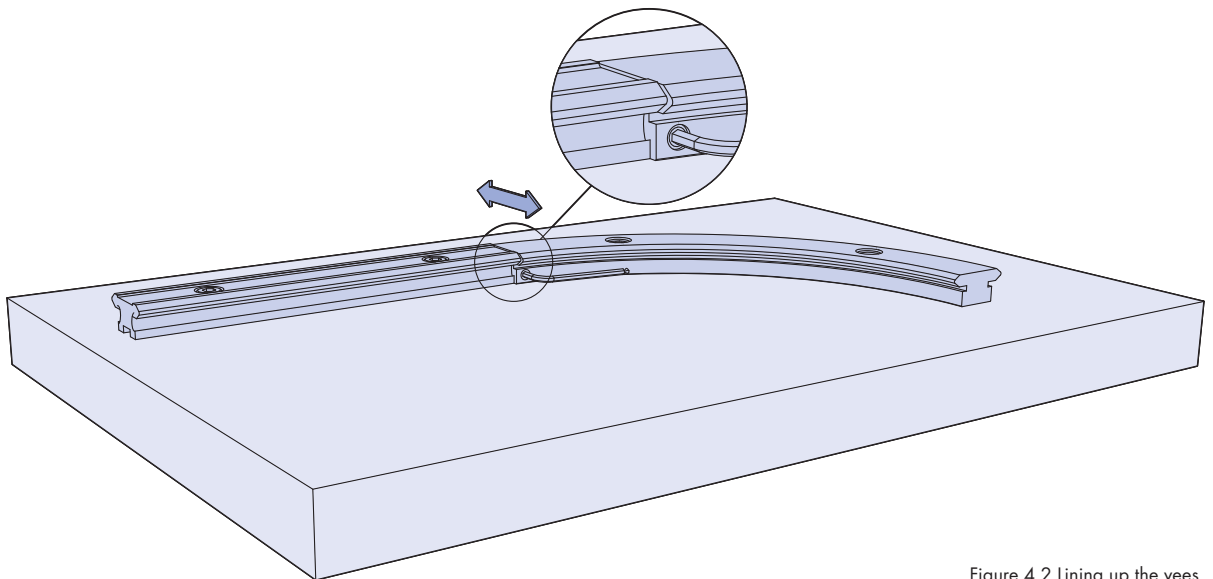


Figure 4.2 Lining up the vees.

4.3 Once in position, a light stoning, using a lubricated oilstone may be required (figure 4.3). This will take off a minimum of material to produce a blended surface between the track and the segment. The joint can then be tested with a carriage to confirm the required quality has been obtained.

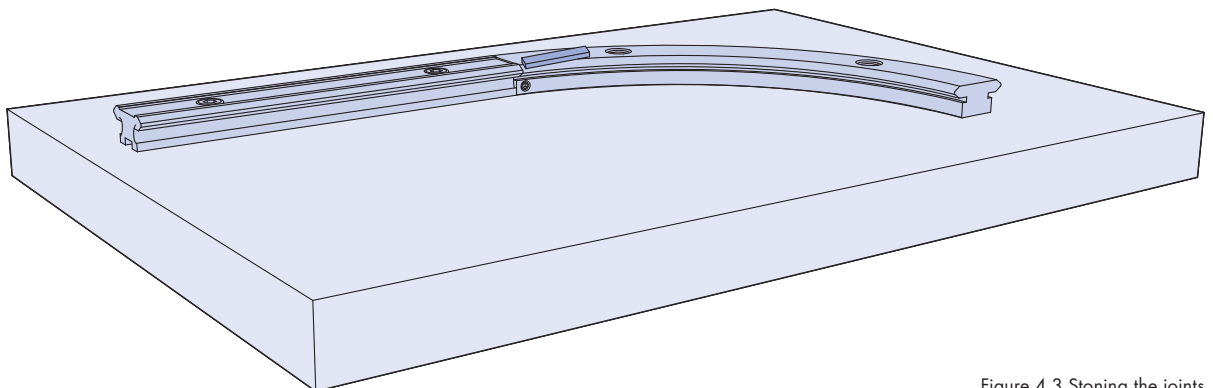


Figure 4.3 Stoning the joints

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5. Assembling the carriage plates

5.1 Ensure that, before assembling the carriage plates, they are in the correct orientation (figure 5.1). For standard carriages the concentric bearings should be on the inside of the track system with the more widely spaced eccentric bearings on the outside.

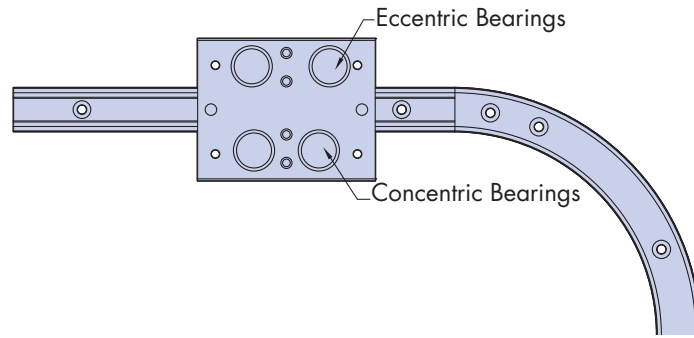


Figure 5.1 Carriage plate orientation

5.2 To assemble the carriage plates, there are two different methods that can be used. The first is as shown in figure 5.2, the carriages will be supplied fully adjusted and can be pushed onto the slide before the final ring segment is put in place. If lubricators are fitted to the carriage plate, the felt will need to be pushed into the lubricator body to enable the carriages to be assembled onto the track. A small elastic band can be used to hold the felts in place whilst the carriage plates are pushed onto the slide. After this is complete the elastic band can be cut and removed from the lubricator.

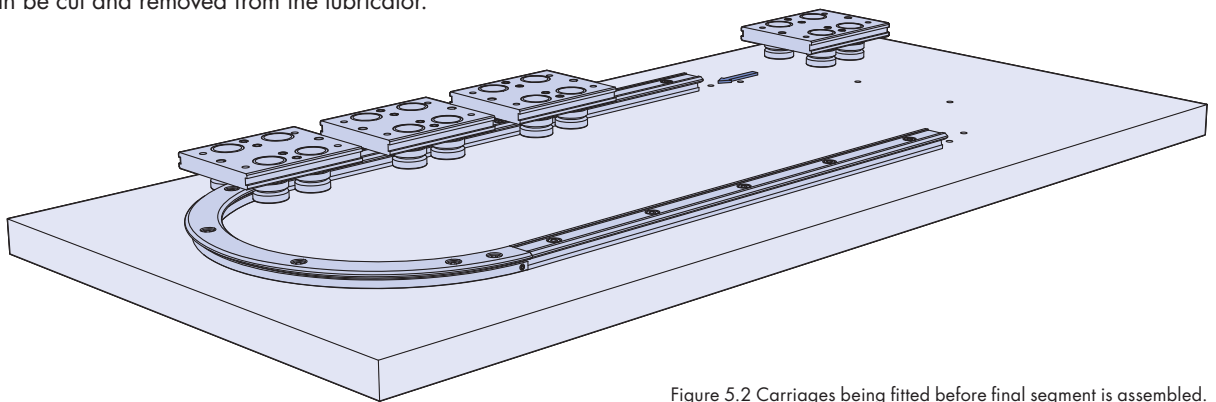


Figure 5.2 Carriages being fitted before final segment is assembled.

5.3 The second method is to adjust the carriage plates onto the slide once the track system is complete. This is done using a socket tool and adjusting wrench as illustrated in figure 5.3. If using this method of fitting the carriage plates, any lubricators that are fitted will need to be removed prior to assembly.

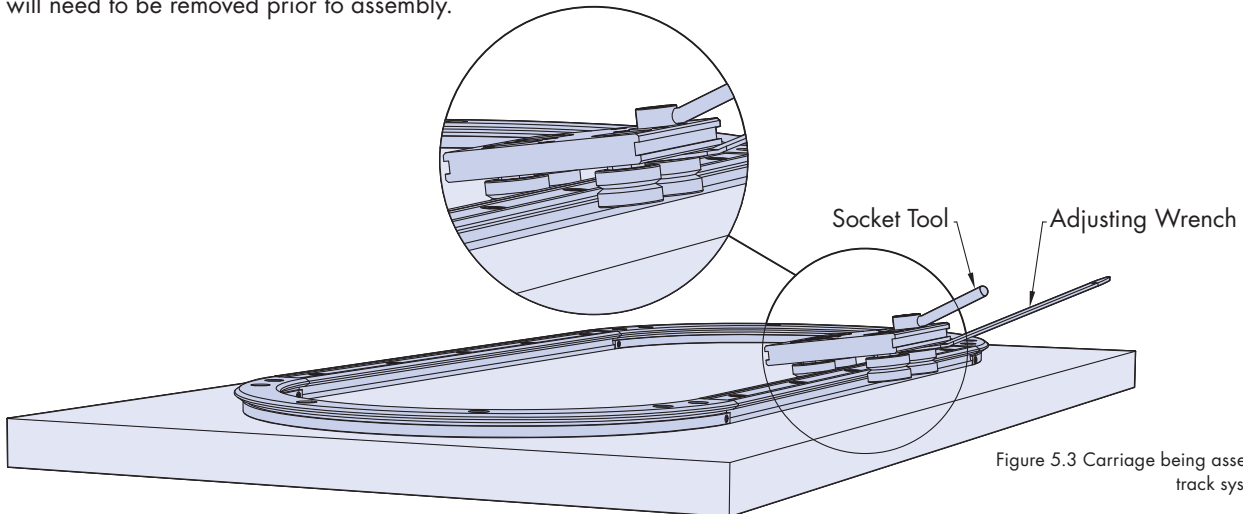


Figure 5.3 Carriage being assembled after the track system is complete

5.4 The offset holes in the carriage for the eccentric bearings necessitate adjustment in the direction of the arrow shown in figure 5.4. For more information please see [PRT2 catalogue](#).

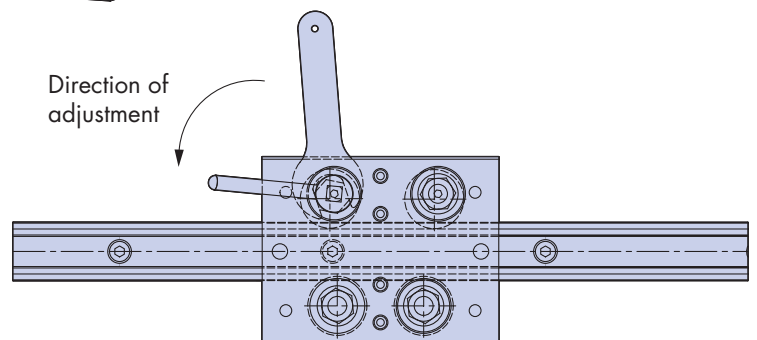


Figure 5.4 Direction of bearing adjustment.

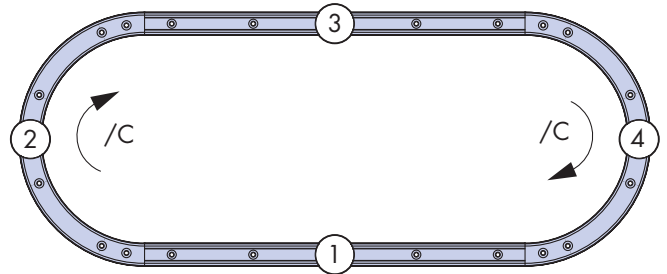
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Pre-Drillable Track Systems

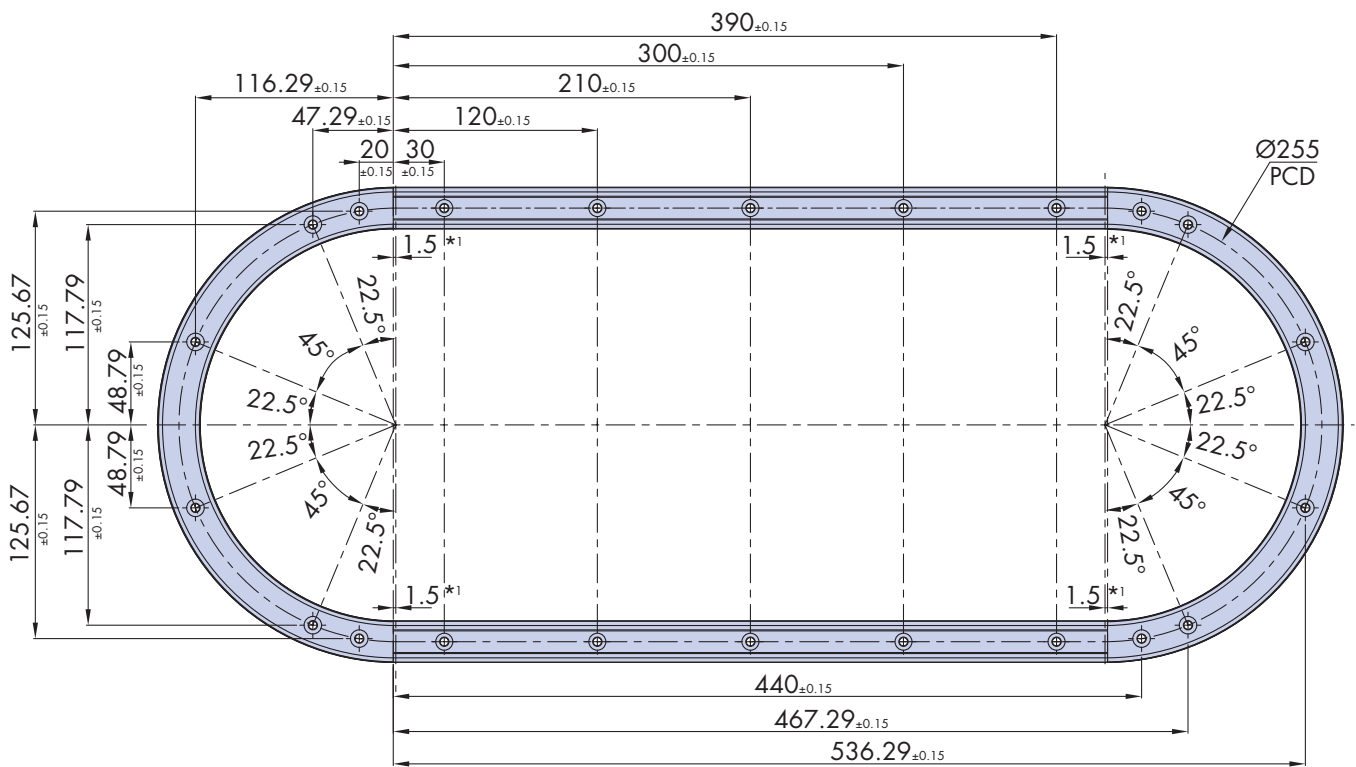
Pre-drillable track systems are available on request. This means that the holes for the track system are able to be drilled prior to the track system arriving. When placing an order for a pre-drillable track system please ensure that the requirement is clearly stated at the end of the order as shown in the example below.

Ordering Example

- (1) TNS25 B420 2xAK
 - (2) TR25 255 R180/C
 - (3) TNS25 B420 2xAK
 - (4) TR25 255 R180/C
- } Pre-drillable track system
Type P required.



Once an order has been received a custom drawing will be created which will give the position of the holes and their tolerances. The drawing will be sent to confirm the details are correct, once this confirmation is received the drawing can be used to predrill the holes. An example of the custom drawing that is produced can be seen below.



Notes

- Standard track ring segments will be slightly less than 90° and 180° because of the cutting allowance. For more information or advice, please contact Hepco's technical department.
- The hole positional tolerance shown on the above drawing is the same across the whole range of ring sizes.
- Custom drawing example is based on a TR25 255 track system as stated in the ordering example above.

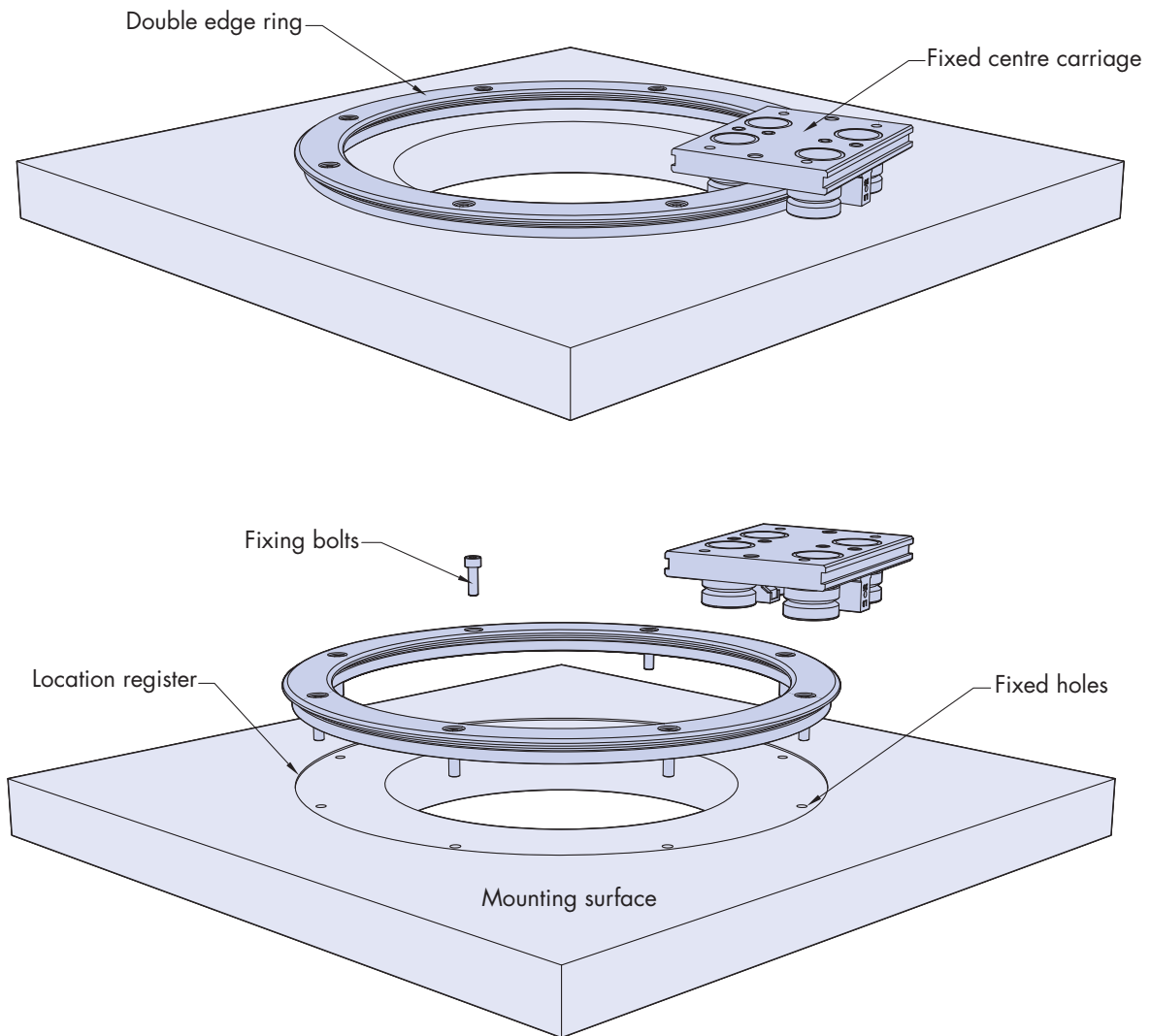
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Rings can be used as the fixed or rotating elements within a system. Within a fixed system, the rings should be mounted to a machined register and bolted securely. For maximum flexibility the rings slides are supplied with both internal and external register faces, either can be used depending upon the application.

Mounting holes should be drilled and tapped at the appropriate size on the ring PCD, this can be achieved by accurately pre-drilling the holes prior to assembly or "spotting through" the ring holes.

For less demanding applications the ring can be secured using only the mounting holes.

Double Edge Rings

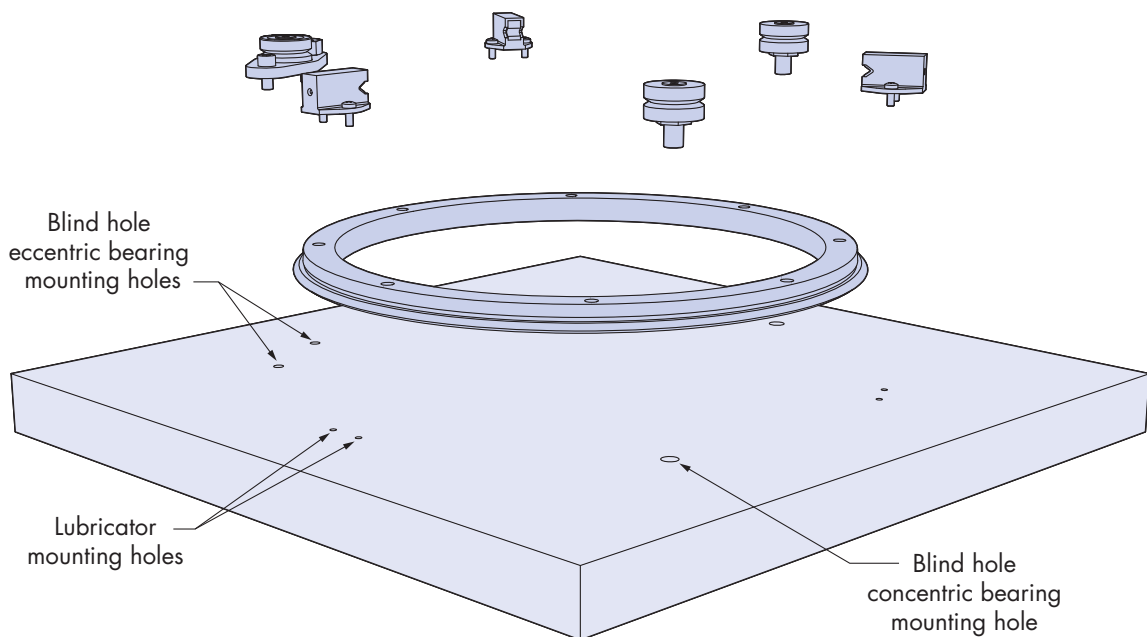
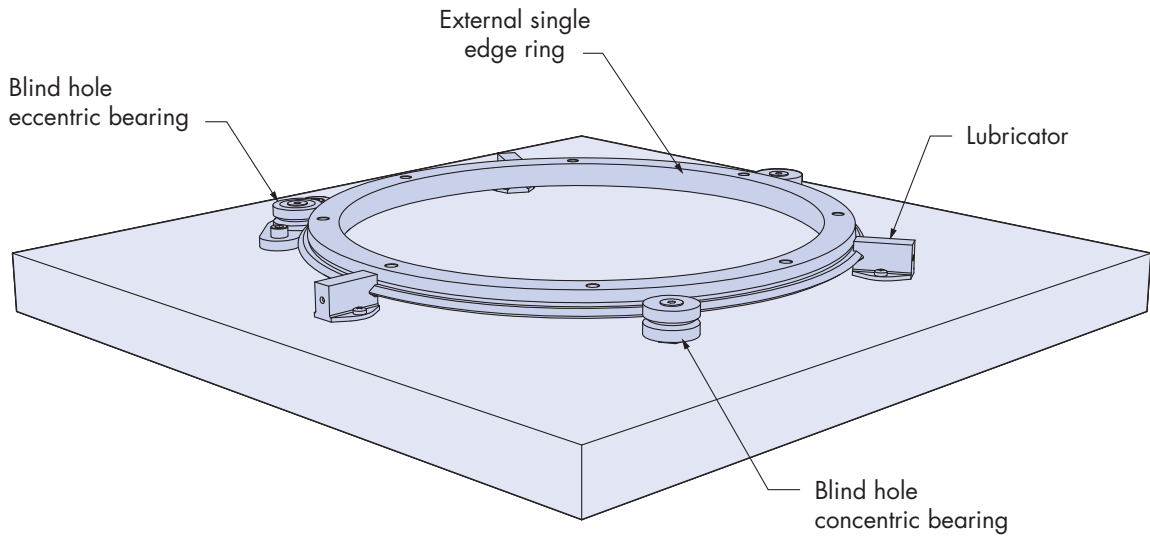


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Where the ring is the rotating element, the position of the supporting bearings is the important factor. It is recommended that two concentric bearings should be placed 120° apart in order to provide a datum reference, the other bearings should be of eccentric type. All eccentric bearings can be used where positional adjustment of the ring is required.

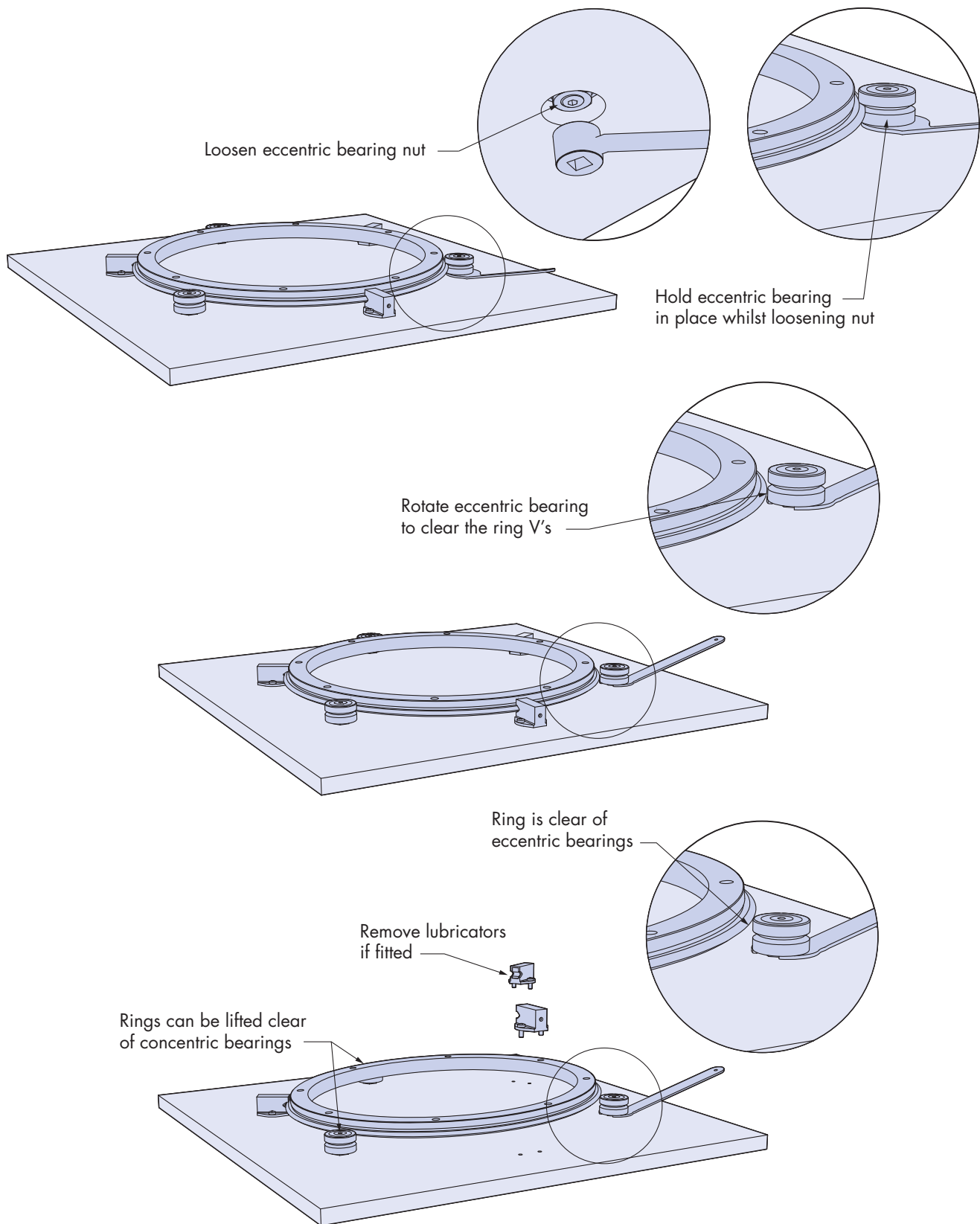
Where access is restricted to the underside of the mounting face, blind hole bearings should be used. Blind hole eccentric bearings are supplied with a mounting plate which allows adjustment of the bearing from above, as shown below.

Single Edge Rings



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Where access is available to the underside, through hole bearings can be used. PRT2 eccentric bearings are of double eccentric design with sufficient throw to enable disengagement of the ring without any further disassembly as shown below.



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