

Beginners guide to Bearings

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- What bearings?
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 - How do I open them?
 - How do I clean them?
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- Before commencing any of this work be sure you have read and understand the following information, If you still don't feel confident then please ask either on the forums or ask next time you visit us, please see the calendar for more information.

What bearings?

Your skates will probably be fitted with 608 series bearings 8x22x7mm, these have been adopted as the standard for skates although some other skates and often junior skates might be supplied with something else I.E micro (688) bearings but for this Article we will just consider 608 type bearings.

608 is just the series, when buying bearings you'll probably find other prefixes and affixes attached i.e.

- 608C3 Single Row Deep Groove Ball Bearing Open.
- 608Z Single Row Deep Groove Ball Bearing 1 metal shield
- 6082Z Single Row Deep Groove Ball Bearing 2 metal shields
- 6082RS Row Deep Groove Ball Bearing 2 Rubber Seals
- SKF 608 brand name
- 608 ceramic You can select different bearings for your skates but you should understand a little about what bearing is best for you.

Shields and seals.

A shield is a metal cover attached only to the outer race (outside case) with a C clip, it will stop the ingress of larger contaminants (stones etc) but will not stop dirt and grim from eventually entering the bearing. Skate in the rain with these and like me and you'll be cleaning them very soon. Due to the shield only attached to one side the will have less friction. If your mainly skating indoors or don't mind regularly servicing your bearings then these will do for you. They are the most commonly found bearing supplied on skates.

A seal is again a metal cover but covered with rubber, it is simply pressed into the side of the bearing and requires no C clip, if you're skating in dirty environments or don't want to maintain your bearings as much then this is for you. Even though it's sealed actually it is just as easy to open and maintain.

Ceramic or steel?

Actually that should read solid ceramic or steel but I'll discuss that very soon. Ceramic bearings contain balls made from Silicon Nitride (Si₃N₄) This material is harder, lighter more resistant to wear, has a higher thermal stability and the surface is smoother. This is a high performance bearing but it's going to cost you a lot more. There are ceramic coated steel bearings but the ceramic can come away from the steel so I would advise avoiding these.

Why should I care?

Bearings make your skates roll, without a set of bearings you're not going to move, without a reasonable quality of bearing your not going to enjoy your skates. Eventually you will need to investigate your bearings, replace or maintain them. If you spin your wheels and they feel gritty or they make a gritty sound they need attention, if you don't look after them the deterioration will accelerate.

How do I get to them?

First you need to remove your wheels from the frames, this is normally accomplished with an Allen key (hex key), if you don't have one then get one and carry it with you whenever you go skating (you only need one of the correct size), it's common to pick up a stone between one of your wheels and the frame and if you don't a key, you could be walking home. The picture shows many keys on a key ring the way they are often sold. The key ring is useful and is how my single key is carried attached to my house keys so it goes with me even when I'm not skating. Keep an eye open next time your building something flat packed as the kits will often include a key of the right size.

On one side of your frames you should easily spot the hexagon shaped hole that will accept your key, undo (CCW) this screw and then one side or both sides of your axle will be free to slide out, once your axle has been removed , the wheel

should be free to slide out of the frame.

Please note! As you remove your wheels, lay them out exactly the same as the positions they occupied in your skates. Once you've finished cleaning you will need to do something called rotating your wheels, I have included a link for you to click because rotating wheels is another procedure that needs its own FAQ, until then use the link supplied.

You will either need something that will push the opposite bearing out of the wheel if your spacers are the type that slide inside the bearing or you will need to pry out your bearings if the spacers are the short ones. The simple way to tell is to measure your axle, if your axle has a diameter of about 8mm then you will need to pry them out but if your axles are smaller and probably about 6mm then you need to press out the spacer taking the opposite bearing with it.

The tool on the left is both a bearing removal tool and a hex key in one, simply press the upper probe into your bearing and push. I am quite fortunate that my axle fits perfectly and accomplishes this task without needing any other tools.

Once you have all the bearings removed you can now proceed to open and clean them.

How do I open them?

Firstly lay out some newspaper or do the following on a table, the C-clips can spring out and virtually disappear into thin air.

Shields

Most people suggest using a pin, run the pin around the outside edge of the shield and you should find the retaining clip pops out, if it does not then run the pin around in the opposite direction as most C-clips only open one way. I myself use an old broken hack saw blade which has been shaped specially for the purpose. Remove both side C-clips and shields.

Seals

Seals can be removed by simply pressing the point of the pin between the outer edge of the seal and the race and then prying the seal out, the picture above shows the pin in the correct position for removing C-clips and also for prying out the seal.

How do I clean them?

Everyone seems to have their own technique for cleaning and some company's will even supply special bearing cleaning kits, some techniques I have tried include:

- Dunking them in solvent. I think any solvent / spirit will do, petrol, diesel and paint thinners but use something that does not leave any residue as a final rinse. Be aware a lot of solvents have low flash points so no smoking and also you'll need to protect your skin from most if not all solvents.
 - Dunking them in a degreasing solution, there are some citrus degreasers around which are also completely harmless to your skin.
 - Using an ultrasonic cleaner with a fluid designed for ultrasonic cleaners. To make life a little easier you can help the cleaning fluid penetrate with a toothbrush but be careful not to lose any stray hairs inside the bearing.
- As a final rise you can use hot soapy water then hot water, drain them first then use a hair dryer to get them nice and dry.

How do I lubricate them?

Once again everyone will give you some different advice about the best lubricant to use and there are many to choose from, it would be really difficult to get an accurate comparison to the effect each one has. Quite a few people would probably recommend a spin test where you spin the bearing and see how long and quick it rotates, this is pretty much useless because it does not put any load on the bearing.

The first choice you need to make is oil or grease.

- Grease or Gel might give slightly more resistance but because it's thicker it will lubricate your bearing for longer due to it not being expelled as easily by your bearing. Synthetic gels are better than grease but are likely to be more expensive, they are man made and more slippery due to their design.
- Oil being thinner might reduce friction and give you a faster skate but it will not last as long, I would suggest re-lubricating each week or seven days of skating and also re-lubricating if your skates have not been used for sometime. There are other options also available, no lubrication! Sure the spin test will make this method look fantastic but don't do it as you will wear out your bearings much faster. Graphite is a dry lubricant and I don't know how well this works.

Apply your chosen lubricant to each bearing. If you're using grease or gels then you need just enough to coat each ball, avoid using too much because the surplus will be expelled from the bearing making a nice sticky surface for dirt and grime to stick to. If you're using oil then you only need a few drops, again too much and it will be expelled.

Once you have lubricated your bearings refit the seals and or shields and rebuild your skates.

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