Washer Arrangement and Modification
Encore, Virtuoso, Preciso

The cone burr/drive gear assembly uses washers in two places:
- Beneath the cone burr
- Inside the gearbox

Washers beneath the cone burr modify grind range. More washers = finer grinding.
Washers inside the gearbox modify vertical play in the assembly. More washers = less play

First, add washers to eliminate vertical play. Then, verify that the gear and cone burr assembly can turn easily, but will not spin freely. Finally, arrange washers to desired calibration.

TOTAL WASHER THICKNESS IS 3.25mm
If washers are added or removed from beneath the cone burr, they must be removed/added to the gearbox to maintain total thickness of 3.25mm.

See next page for clarification if needed.
There are three different washers used in our conical grinders:
- 1.5mm
- 0.5mm
- 0.25mm
These can typically be identified visually.

The washers under the cone burr/paddle wheel set the burr gap and the grind range. Changing the total thickness of washers under the cone burr/paddle wheel will adjust the grind range. For example, removing a washer will reduce the total thickness of the washers underneath the cone burr/paddle wheel and will shift the grind range coarser. Adding a washer will increase the total thickness of the washers underneath the cone burr/paddle wheel and will shift the grind range finer. Recommendations for the total thickness of washers under the cone burr/paddle wheel are below:

Encore/Virtuoso 2.75mm
Preciso 3.00mm

The washers between the drive gear and gearbox housing remove excess vertical play in the cone burr/driveshaft/gear assembly. At least one 0.25mm washer must be used between the drive gear and gearbox housing. Recommendations for the total thickness of washers between the drive gear and gearbox housing are below:

Encore/Virtuoso 0.50mm
Preciso 0.25mm

Assemble with the recommended washers. After tightening the 13mm gear nut, check that the drive gear can be rotated by hand. If the gear is stiff and binding, verify shimming and assembly for issues, as the recommended washers will not result in binding. Check for vertical play in the assembly by holding the gearbox housing and shifting the driveshaft up and down. Vertical play should be less than 0.25mm. Add washers between the drive gear and gearbox housing to reduce vertical play.

If you have any questions, or encounter issues with this guide, contact support@baratza.com