

## Tip-3

### OD adjustable aluminum knuckle set – special feature and set up

Picking up Overdose well sales item for RWD “OD adjustable aluminum knuckle” with special features and tips for assemble mainly axle section.

Topic is related to how to rotate front wheel smoothly and fulfill the function of this knuckle.

#### 1. Features

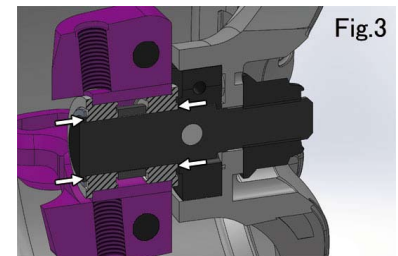
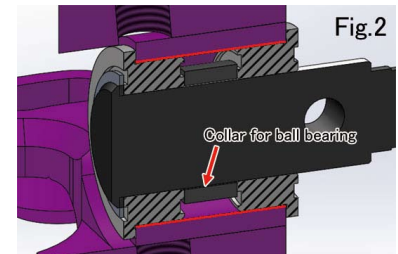
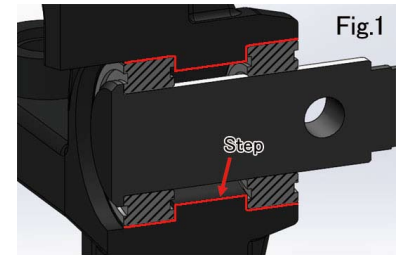
##### 1-1 Ball bearing

This knuckle use size 850 ball bearing with flange. Why with flange? It is to have higher concentricity of two bearings which use inside and outside.

Usually there is a step inside the product to settle the bearing (Fig. 1) Actually it is hard to have precise concentricity with this way because of drilling from both side.

On the other hand, OD knuckle have one straight hole for bearing which flanged bearing make it possible.

Therefore, the bearing attached to OD knuckle will rotate with same center line and then axle will have smooth rotation.



##### 1-2 Ball bearing collar

OD knuckle have a collar between the bearing (Fig. 2).

This collar sandwiched by bearing from both side and inner ring of bearing will have synchronize move (Fig. 3).

Also this will minimize the backlash of axle shaft and available to keep right wheel alignment.

Moreover, this design will equally apply a load to the bearing which provide smooth rotation when driving.

Actually giving preload to the bearing minimize backlash more and the bearing will last longer.

#### 2. Tip for set up

You see that OD adjustable knuckle have a structure focus on “smooth rotation” and “minimize the backlash” .

Now, the tip for set up to maximize the function.

- 1) Prepare the shim, inner diameter of 5 mm with 0.05 mm ~ 0.1 mm thick.
- 2) Assemble the shim (Fig. 4) and then attach the wheel.
- 3) Check 2 things at this point.
  - a) Wheel rotate smoothly
  - b) Less backlash with horizontal direction against the direction of wheel rotation.
- 4) Repeat 2) and 3) until find the best point of smooth rotation and less backlash as possible (Fig. 5).

Recommend to use 0.1 mm~0.15 mm shim to find the point.

This way, you can obtain the setting of knuckle with smoother rotation and less backlash and also last longer.

