

Instruction Guide For the “QTEQ DIFF RING TRUER SET” for 1/12-1/10 Scale Car

The “QTEQ Diff Ring Truer (DRT) Set” is a handy device which can produce an ideal diff ring surface with controlled micro grooves and a mirror like finish. This ideal surface condition, created by the diff ring s planetary-motion with the special drive pen, ensures that the diff ring works very well with grease, operates smoothly, slips less, and exhibits direct reaction in response to how you install it.

The Diff Ring Truer is applicable for a diff ring with an outer diameter from 19mm-27mm.

“QTEQ DRT Set” consists of:

1. Acryl Stage Set 1
2. Drive pen 1
3. Diff ring holder 1
4. O-ring 1
5. Lapping films: #320 (red) 2, #600 (green) 2, #1000 (orange) 2
6. Lapping film case 1
7. M2x2 #0 counter-sunk head screws 6 (including 3 spare screws)



How to Use the “QTEQ DRT Set”

To improve your RC car performance and to get the most of your “QTEQ DRT Set” please follow the instructions below:

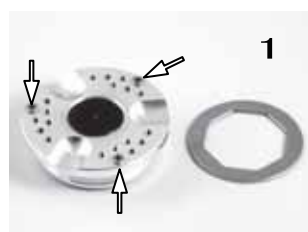
[1] Items needed other than the “QTEQ DRT Set”:

- #0 Phillips screwdriver
- water
- (a) diff ring(s)

[2] Before grinding a new diff ring you should:

Assemble the ball differential unit and rotate it to mark rotating traces on the diff ring surface. The traces will work as a measure for how deep you should grind the diff ring.

[3] How to install a diff ring in the “QTEQ DRT Set”:



1
According to the size of the diff ring to be ground, set three M2x2 #0 counter-sunk head screws to the tapped holes on the diff ring holder. In Image 1, the screws are set in the outmost holes for a diff ring for the Tamiya F103.



2
Position the diff ring as it is shown in Image 2. There should be a little clearance between the diff ring and the screws.



3
Remove the center pulley from the stage as shown in Image 3 and insert a lapping film with its glazed surface downward and secure it with the pulley.



4
Install the diff ring on the lapping film and place the diff ring holder onto the ring. Set the O-ring as shown in Image 4.

[4] How to grind a diff ring:

One cycle consist of one hundred rotations.



5 Pour 2-3ml of water over the lapping film. While grinding, make sure that the film stays very wet, so continuously add small amounts of water.

* Important: do not substitute solvent or oil for water as it may reduce the life of the films and cause the acrylic stage to deteriorate. Please refer to Image 5.



6 Position the pen as shown in Image 6.

When more pressure is needed to grind the diff ring, for example, when ball trace marks are rather deep, placing your thumb on the head of the pen is recommended and by doing so may help increase the pressure on the diff ring.



7 Put the drive pen into the center of the diff ring holder and revolve it with appropriate tension in either direction.

Only the pen ball at the tip should touch the black part so make sure that other parts of the pen do not contact it (Image 7).

For first-time grinding of a diff ring:

1. Start grinding with the #600 (green) lapping film. If the rotating traces have yet to disappear after some grinding, use the coarser abrasive, #320 (red) grit.
2. When the rotating traces disappear, use the finer grit to lap the diff ring and finish the surface with the finest, #1000.

As for the already lapped diff ring, start grinding with the #1000.

After all rotating traces on the diff ring surface disappear, grinding is considered completed. This ground surface now has controlled and random micro grooves, ensuring that your diff ring will perform at an enhanced level.

Please keep the following things in mind while grinding:

1. One cycle consists of one hundred rotations when creating and maintaining a uniform ground surface. The surface of the film should stay wet. So, be sure that enough water is used to keep it lubricated while grinding.
2. Grind the diff ring until the rotating traces disappear. As noted, one cycle consists of one hundred rotations.
3. Grinding should start with #600 grit and finish with #1000. If the rotating traces do not disappear after using the #600 grit, use the #320 and then switch back to #600 and then to #1000 accordingly.

How to perform maintenance on the diff ring and "QTEQ DRT Set"

Soon after the grinding finishes, wash the diff ring and dry it promptly.

Wash the acrylic stage set, the diff ring holder and the lapping films you used with water and dry and store them in a dry place.

A neutral detergent is also recommended.

The lapping films can be used many times depending on how they are used and maintenance is performed.