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## 4 Arm Cranks - 2000/2001 - Square/Spline

### Installation and Service

Every effort has been made to guarantee superior design and workmanship on our products. To ensure correct installation and performance we recommend the services of a qualified, professional bicycle technician. If you are adventurous and plan to install these parts yourself, please read this entire manual carefully before proceeding.

TRUVATIV assumes no responsibility for malfunction or injury caused by faulty installation or maintenance. You should be aware that bolts can rattle loose and parts may be damaged after a crash. All parts must be frequently checked and serviced to ensure safety.

### Parts & Tools

#### Parts:

- 4 Arm Crank, left side
- 4 Arm Crank, right side
- One of the following:
  - 42, 44, or 48 Chainring (aluminum)
  - 42, 44, or 48 Chainring (steel)
- One of the following:
  - 32 or 38 Chainring (aluminum)
  - 32 or 38 Chainring (steel)
- One of the following:
  - 22 or 28 Chainring (aluminum)
  - 22 or 28 Chainring (steel)
- 8 pieces M8-8mm long Allen bolts
- 4 pieces M8-9mm long T-Nuts
- One of the following:
  - 2 pieces M8 crank bolts (Square Bottom Bracket)
  - 2 pieces M15 or M12 crank bolts (Spline Bottom Bracket)

#### Optional:

- 1 piece AEROGUARD chain guard
- 4 pieces M3 7-9mm long Phillips screws

#### Tools:

- 5 & 8mm Allen key torque wrench
- Flat blade screwdriver or chainring bolt spanner
- Phillips screwdriver (optional)

**Note:** Some models come with a self extractor bolt/cap assembly pre-installed in the crank arm. If you take the assembly apart for cleaning, re-grease the threads, under bolt head, and between bolt head and retaining cup when reassembling.

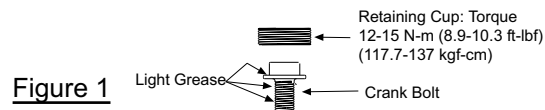


Figure 1

### Chainring Assembly

**Note: Always use TRUVATIV replacement parts for optimum performance. TRUVATIV chainrings are date coded (1999, 2000, etc.) and must be used together with rings from the same date code. Shifting performance may be severely impacted if rings with different date codes are mixed within an assembly.**

#### STEP 1: Large & Middle Ring Assembly.

Slide the large chainring over the crank arm (Figure 2).

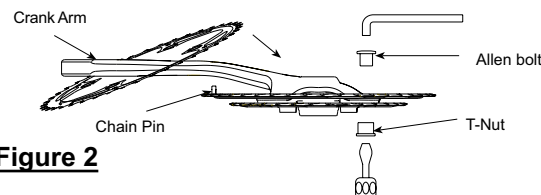


Figure 2

The chain pin on the large chainring should be pointing toward the crank arm and aligned with the centerline of the crank arm. Align the four mounting holes on the chainring with the corresponding holes on the crank spider. Turn the crank and chainring over and adjoin the middle chainring to the crank spider. Align the four mounting holes. Make sure that you can read the text embossed on the large and middle chainrings. The index marks of the large and middle chainrings should line up

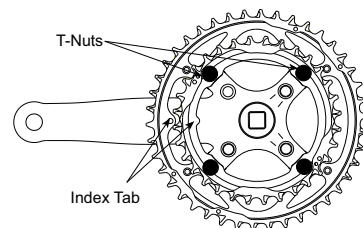


Figure 3

Insert the four M8 Allen bolts slightly greased into the four mounting holes opposite the crank arm. Screw on the four long T-nuts. Make sure that the chainrings are seated correctly then tighten to the torque requirements in Figure 4.

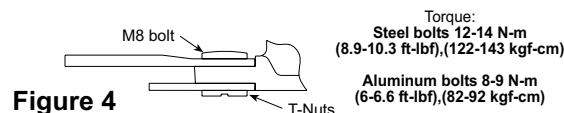


Figure 4

#### STEP 2: Small Chainring Assembly.

Hold the assembly so the middle chainring is facing up. Lay the small chainring on top of the assembly so the mounting holes line up with the four unused threaded holes in the crank spider. Make sure that the embossed text faces up and the alignment tab is aligned with the tab on the middle chainring. Insert a steel Allen bolt slightly greased into each screw hole and tighten to the torque requirements in Figure 5, do not use aluminum bolts for the small chainring. At this point, the right crank assembly should look like Figure 5.

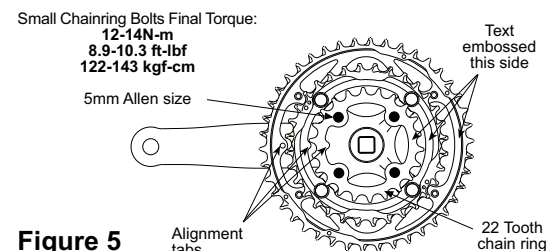


Figure 5

#### STEP 3: Optional AEROGUARD Assembly.

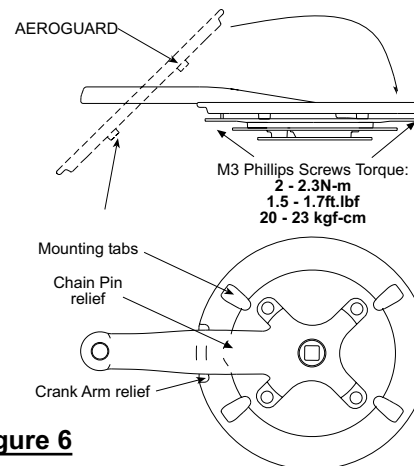


Figure 6

Insert the four M3 Phillips screws from the back into the AEROGUARD and tighten to the torque requirements shown in Figure 6. This completes the right crank assembly. You are now ready to install the crank assembly onto the bicycle bottom bracket.

### Assembly Onto Bottom Bracket

It is very important that you clean the bottom bracket spindle of grease and dirt before installing the crankset. Install square-hole cranks onto a **clean and dry** bottom bracket spindle. Install spline cranks onto a lightly greased bottom bracket spindle.

Install the crank assembly as specified and shown in Figure 7. Grease the bottom bracket bolt threads and under the bolt head, then tightened to the torque requirements specified in Figure 7. Remember, if bolts are not tight enough they may come loose. If too much torque is applied the bolt may fail. It is therefore necessary to use a torque wrench for proper installation.

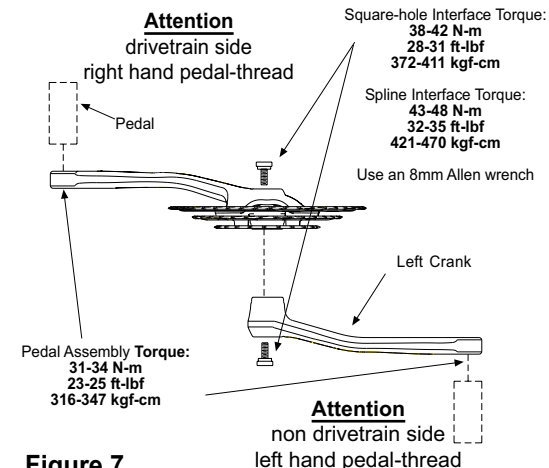


Figure 7

- Note:**
1. Square-hole interface cranks must use a Shimano LP27 or UN40/52/72, 113mm spindle width bottom bracket for correct chain-line.
  2. Spline interface cranks must use a TRUVATIV Sealex Spline bottom bracket, 113mm width.
  3. Use a Shimano 9-speed chain for optimum shifting performance.
  4. An optional pedal washer may be included and used between the pedal and crank arm interface.

### One Last Word

We have done our best to provide you with very high quality, competitively priced products that are designed, developed, and manufactured with state of the art technology. Now it is your turn. After you have used our products your way, let us know how they performed. Did they live up to your expectations? Do you see areas where improvement can be made? Are you satisfied? We hope so.

Your feedback will help us know where we have succeeded or need improvement. Please take the time to write our research department at:

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or send us e-mail to: [contact@truvativ.com](mailto:contact@truvativ.com)

Your participation will help us to better understand your needs. We appreciate your support and feedback.