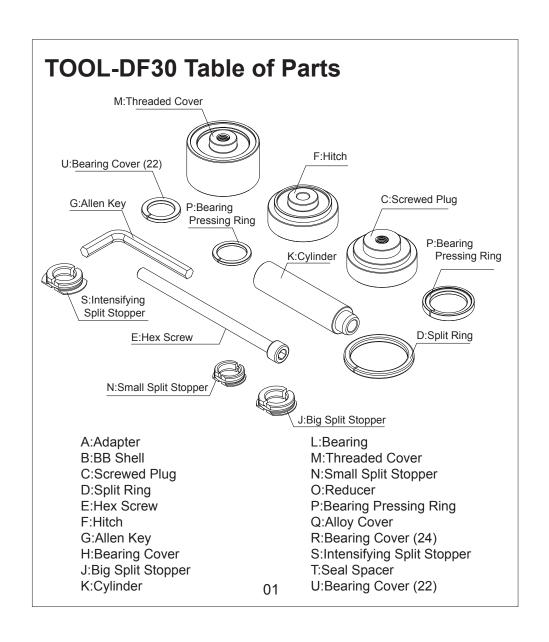
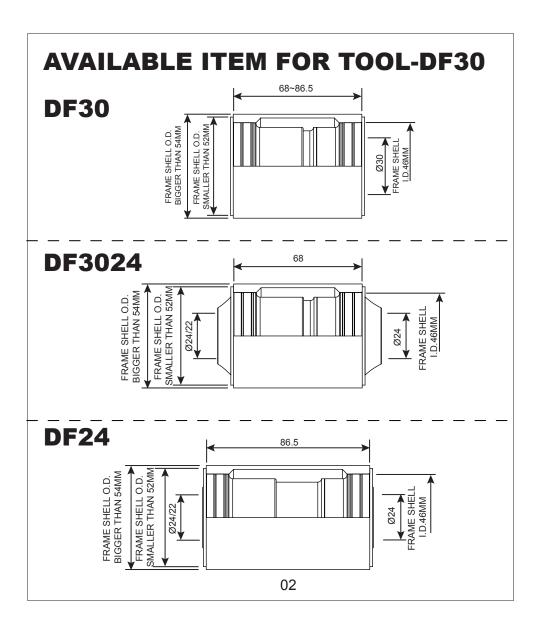
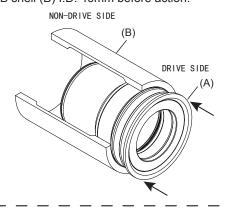
# Multi-Functional Tool **TOOL-DF30 Instruction Manual**



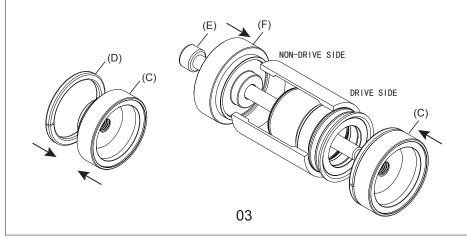


# Assembly Manual for DF30

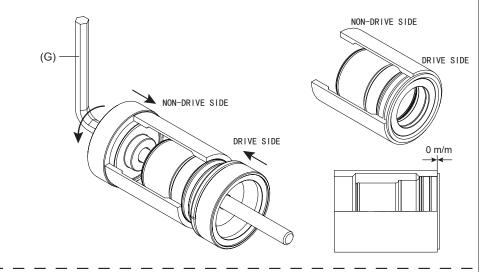
1. Put the Adapter of DF30 (A) into BB Shell (B) at drive side according to arrow and make sure the BB shell (B) I.D. 46mm before action.



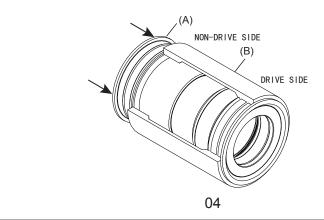
- 2-1. Press the Spilt Ring (D) onto the Screwed Plug (C).
- 2-2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten together with the Screwed Plug (C). All action should be aligned to the pressing area.

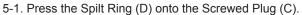


3. Tighten clockwise by Allen Key (G) to press the Adapter (A) firmly lean to the BB Shell (B). Check if the Adapter (A) was pressed to the correct position.

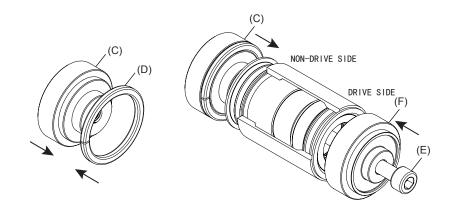


4. Put the Adapter of DF30 (A) into BB Shell (B) at non-drive side according to arrow and make sure the BB Shell (B) I.D. 46mm before action.

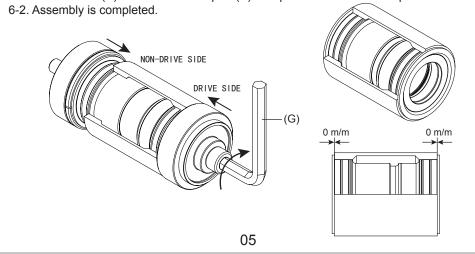


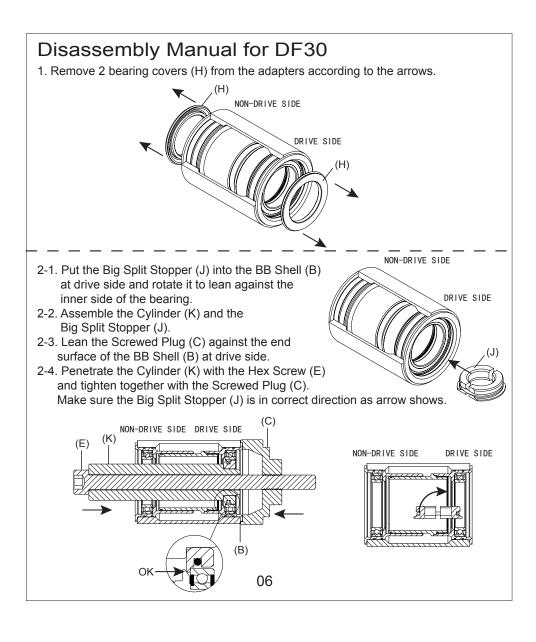


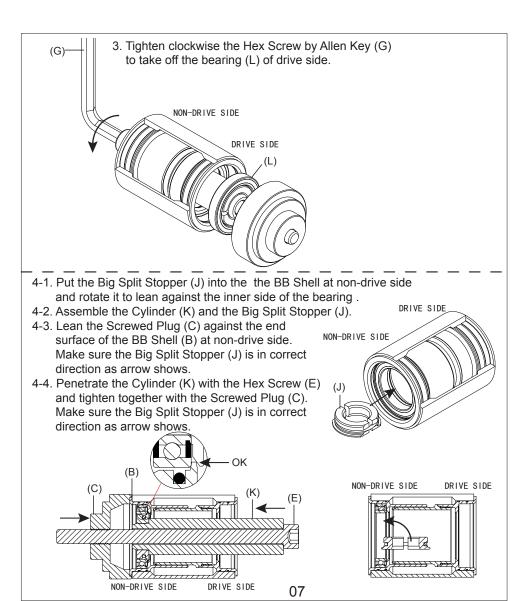
5-2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten together with the Screwed Plug (C). All action should be aligned to the pressing area.

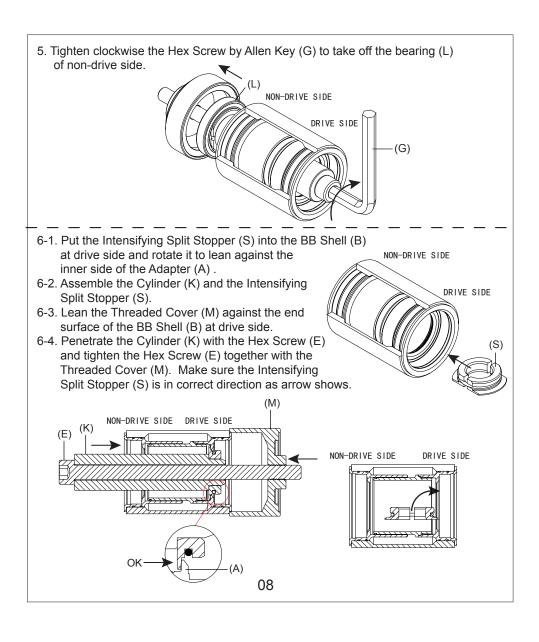


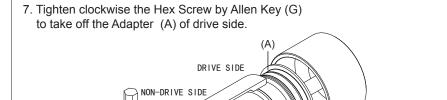
6-1. Tighten clockwise by Allen Key (G) to press the Adapter (A) firmly lean to the BB Shell (B). Check if the Adapter (A) was pressed to the correct position.

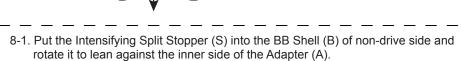








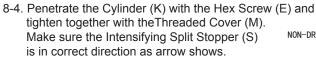




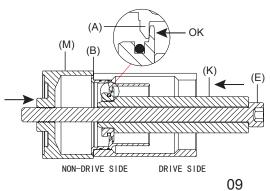
8-2. Assemble the Cylinder (K) and the Intensifying Split Stopper (S).

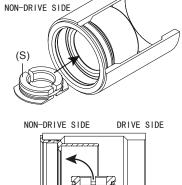
8-3. Lean the Threaded Cover (M) against the end surface of the BB Shell (B) at non-drive side.

8-4. Penetrate the Cylinder (K) with the Hey Screw (F) and

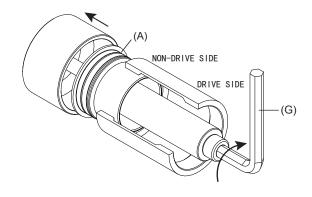


(G)

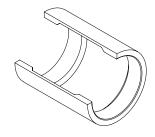




9. Tighten clockwise the Hex Screw by Allen Key (G) to take off the Adapter (A) of non-drive side.



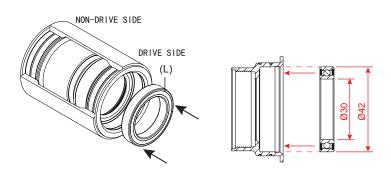
10. Disassembly is completed.



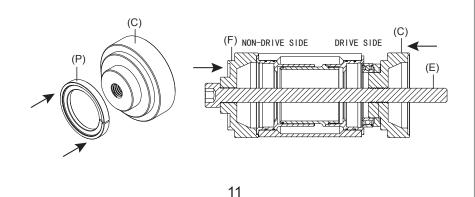
10

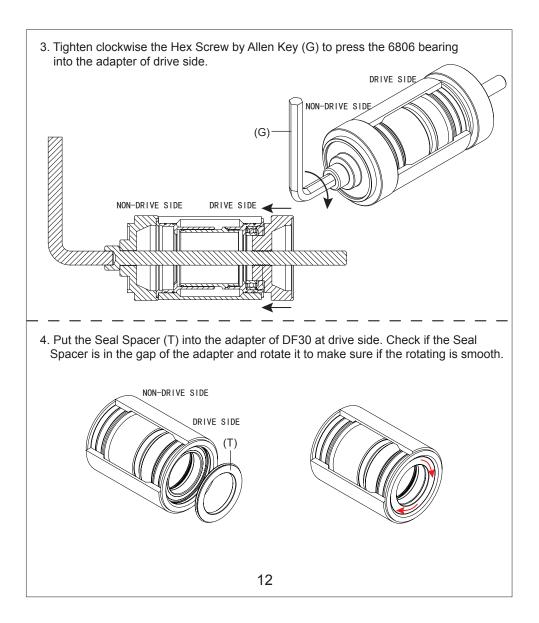
# Bearing Replacement Manual for DF30

1. First, disassemble old bearing and reducer, and ensure the adapter of DF30 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.

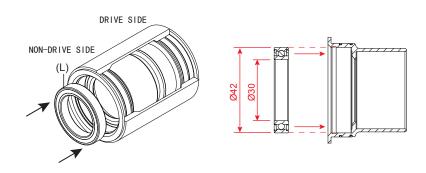


- 2-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C).
- 2-2. Lean the Hitch (F) against the end surface of the adapter of DF30 at non-drive side.
- 2-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).

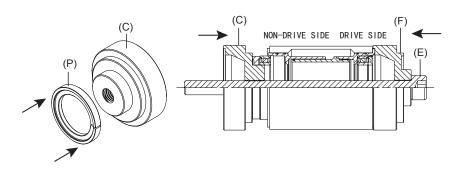




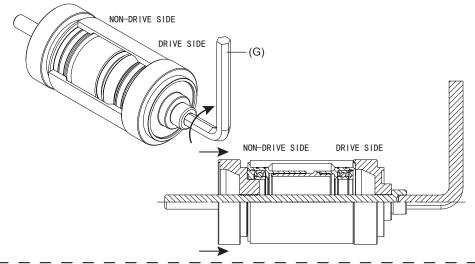
5. First, disassemble old bearing and reducer, and ensure the adapter of DF30 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.



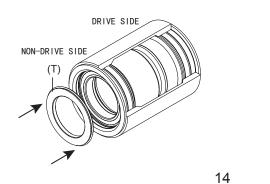
- 6-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C).
- 6-2. Lean the Hitch (F) against the end surface of the adapter of DF30 at drive side.
- 6-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).

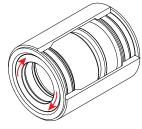


7. Tighten clockwise the Hex Screw by Allen Key (G) to press the 6806 bearing into the adapter of non-drive side.



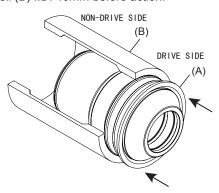
- 8. Put the Seal Spacer (T) into the adapter of DF30 at non-drive side. Check if the Seal Spacer is in the gap of the adapter and rotate it to make sure if the rotating is smooth. 9. Assembly is completed.



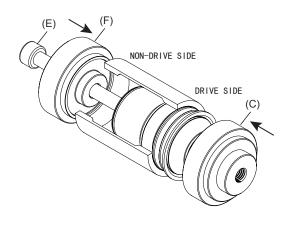


# Assembly Manual for DF3024S(R)

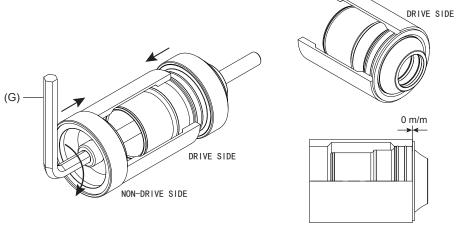
1. Put the Adapter of DF3024S (A) into BB Shell (B) at drive side according to arrow and make sure the BB Shell (B) I.D. 46mm before action.



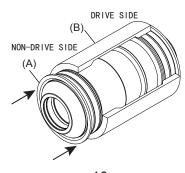
2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten together with the Screwed Plug (C). All action should be aligned to the pressing area.



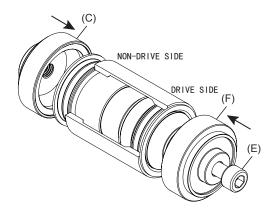
3. Tighten clockwise by Allen Key (G) to press the Adapter (A) firmly lean to the BB Shell (B). Check if the Adapter (A) was pressed to the correct position. NON-DRIVE SIDE



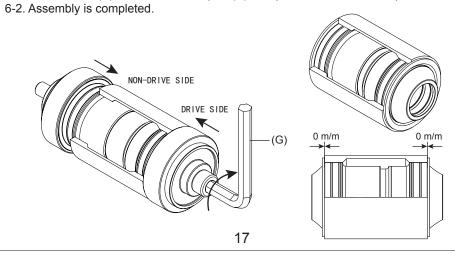
4. Put the Adapter of DF3024S (A) into BB Shell (B) at non-drive side according to arrow and make sure the BB Shell (B) I.D. 46mm before action.



5. Penetrate the Hitch (F) with the Hex Screw (E) and tighten together with the Screwed Plug (C). All action should be aligned to the pressing area.



6-1. Tighten clockwise by Allen Key (G) to press the Adapter (A) firmly lean to the BB Shell (B). Check if the Adapter (A) was pressed to the correct position.



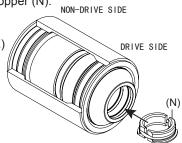


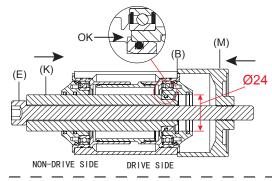
1-1. Put the Small Split Stopper (N) into the BB Shell (B) at drive side and rotate it to lean against the inner side of the Reducer (O).

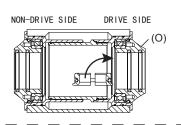
1-2. Assemble the Cylinder (K) and the Small Split Stopper (N).

1-3. Lean the Threaded Cover (M) against the end surface of the BB Shell (B) at drive side.

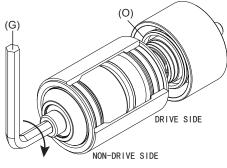
1-4. Penetrate the Cylinder (K) with the Hex Screw (E) and tighten together with the Threaded Cover (M). Make sure the Small Split Stopper (N) is in correct direction as arrow shows.



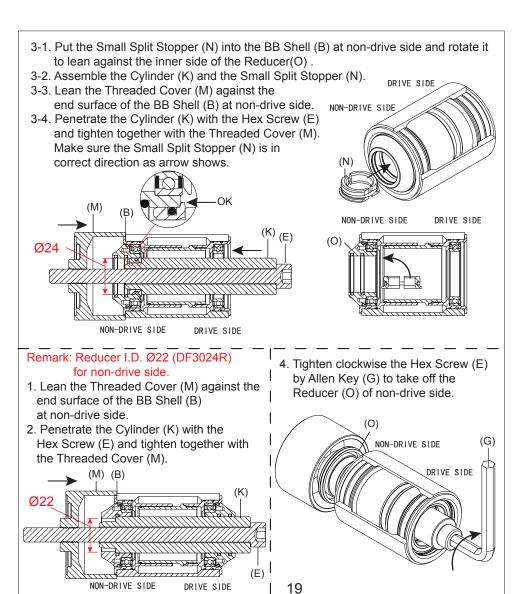


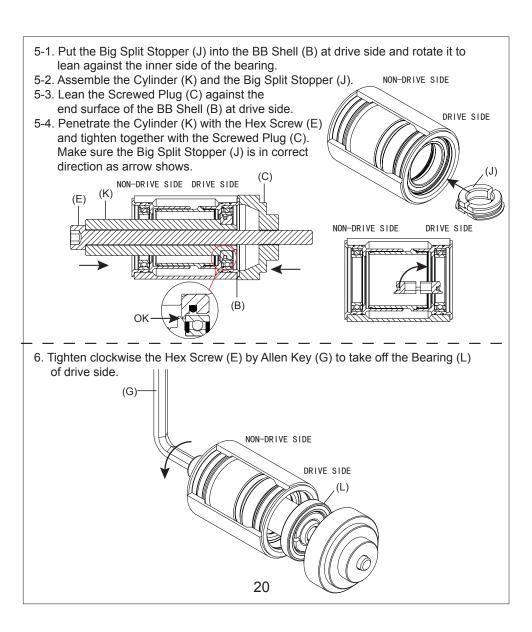


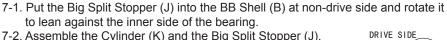
2. Tighten clockwise the Hex Screw (E) by Allen Key (G) to take off the Reducer (O) of drive side.

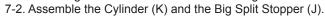


18



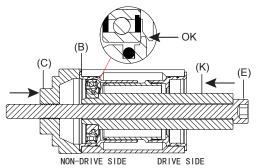


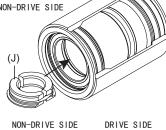


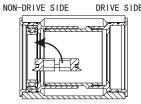


7-3. Lean the Screwed Plug (C) against the end surface of the BB Shell (B) at non-drive side. NON-DRIVE SIDE

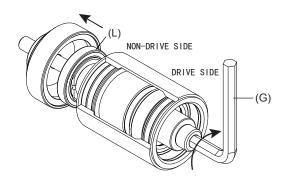
7-4. Penetrate the Cylinder (K) with the Hex Screw (E) and tighten together with the Screwed Plug (C). Make sure the Big Split Stopper (J) is in correct direction as arrow shows.

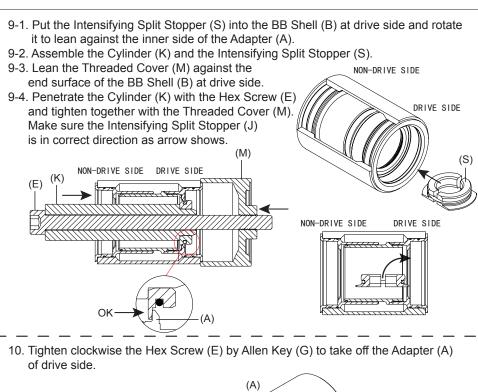


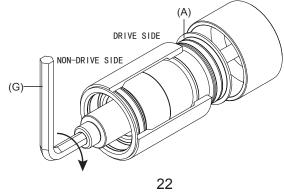


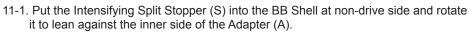


8. Tighten clockwise the Hex Screw (E) by Allen Key (G) to take off the Bearing (L) of non-drive side.







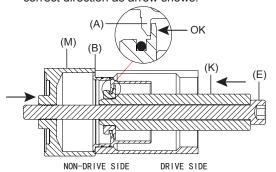


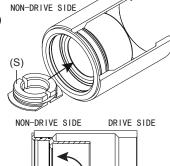
11-2. Assemble the Cylinder (K) and the Intensifying Split Stopper (S). DRIVE SIDE

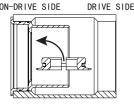
11-3. Lean the Threaded Cover (M) against the end surface of the BB Shell (B) at non-drive side.

NON-DRIVE SIDE

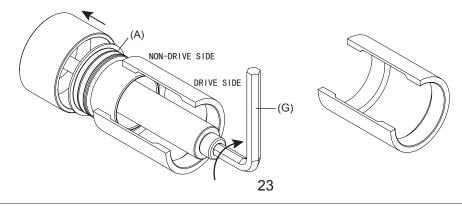
11-4. Penetrate the Cylinder (K) with the Hex Screw (E) and tighten together with the Threaded Cover(M). Make sure the Intensifying Split Stopper (S) is in correct direction as arrow shows.





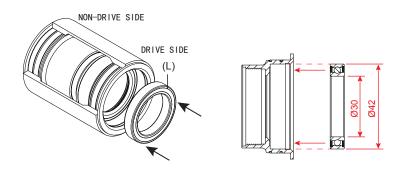


- 12. Tighten clockwise the Hex Screw (E) by Allen Key (G) to take off the Adapter (A) of non-drive side.
- 13. Disassembly is completed.

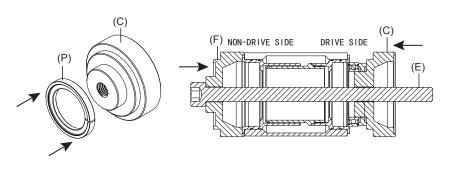


# Bearing Replacement Manual for DF3024S(R)

1. First, disassemble old bearing and reducer, and ensure the adapter of DF3024 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.

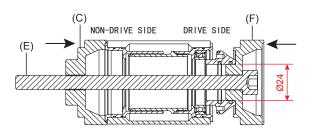


- 2-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C).
- 2-2. Lean the Hitch (F) against the end surface of the adapter of DF3024 at non-drive side.
- 2-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).

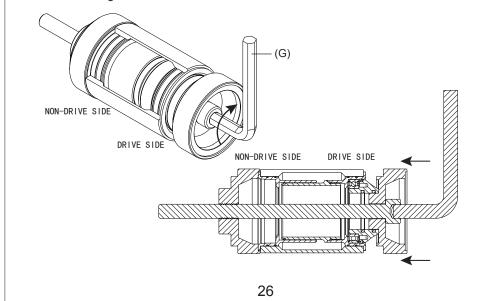


3. Tighten clockwise the Hex Screw by Allen Key (G) to press the bearing into the adapter of drive side. DRIVE SIDE NON-DRIVE SIDE (G) NON-DRIVE SIDE DRIVE SIDE 4. Put the Reducer (O) into the bearing of drive side according to the correct direction of arrows. The pressing must align and parallel the inner hole of bearing. NON-DRIVE SIDE DRIVE SIDE 25

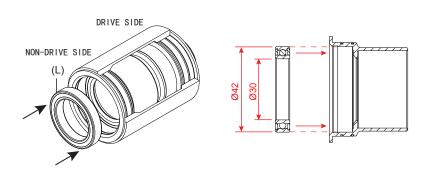
- 5-1. Lean the Screwed Plug (C) against the end surface of the adapter of DF3024 at non-drive side.
- 5-2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).



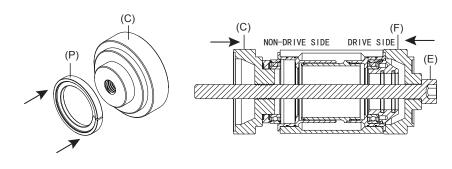
6. Tighten clockwise the Hex Screw by Allen Key (G) to press the Reducer (O) into the bearing of drive side.

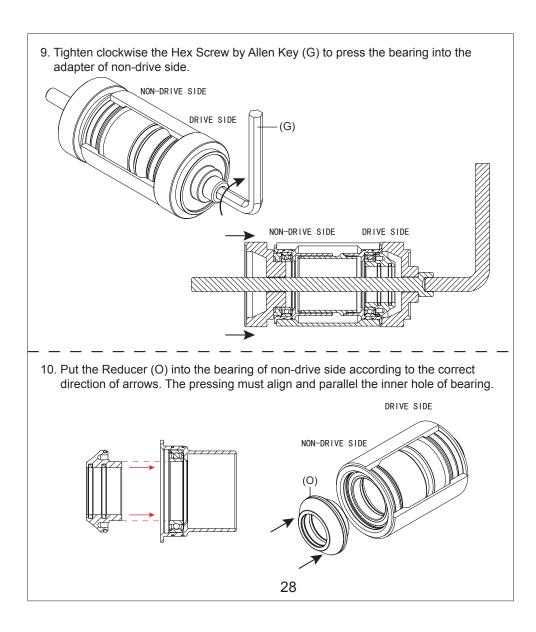


7. First, disassemble old bearing and reducer, and ensure the adapter of DF3024 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.

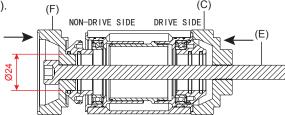


- 8-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C). 8-2. Lean the Hitch (F) against the end surface of the adapter of DF3024 at drive side.
- 8-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).



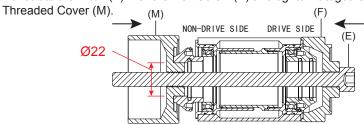


- 11-1. Lean the Screwed Plug (C) against the end surface of the adapter of DF3024 at drive side.
- 11-2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C). (C)

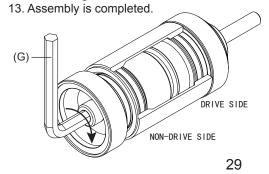


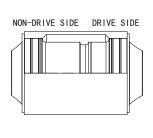
### Remark: Reducer I.D. Ø22 (DF3024R) for non-drive side.

- 1. Lean the Hitch (F) against the end surface of the adapter of DF3024 at drive side.
- 2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the



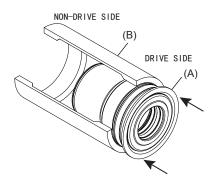
12. Tighten clockwise the Hex Screw by Allen Key (G) to press the Reducer (O) into the bearing of non-drive side.



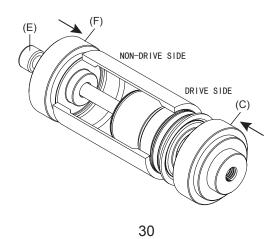


# Assembly Manual for DF24S(R)

1. Put the adapter of DF24 (A) into BB Shell (B) at drive side according to the direction of the arrows. Make sure the I.D. ( Ø46) of the BB Shell before action.

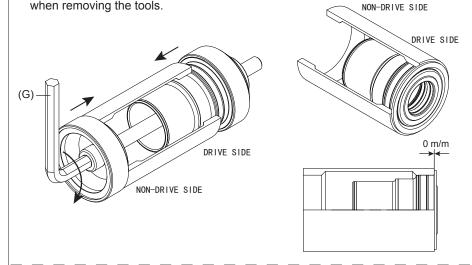


2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C). All the actions should be aligned.

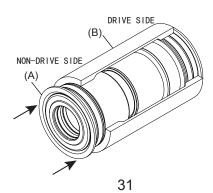


3. Tighten clockwise by Allen Key (G) to press the adapter of DF24S (A) firmly lean to the BB Shell (B).

Have visual check to see if the adapter were pressed to the correct position when removing the tools.



4. Put the adapter of DF24 (A) into BB Shell (B) at non-drive side according to the direction of the arrows. Make sure the I.D. (  $\varnothing$ 46) of the BB Shell before action.



5. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C). All the actions should be aligned. NON-DRIVE SIDE DRIVE SIDE (F) 6-1. Tighten clockwise by Allen Key (G) to press the adapter (A) firmly lean to the BB Shell (B). 6-2. Assembly is completed. NON-DRIVE SIDE DRIVE SIDE (G) 0 m/m 0 m/m 32

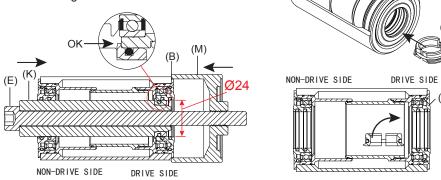


1-1. Put the Small Split Stopper (N) into the BB Shell of drive side and then rotate it to lean against the inner side of the Reducer (O).

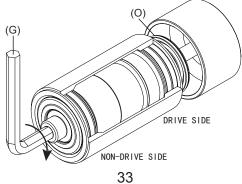
NON-DRIVE SIDE

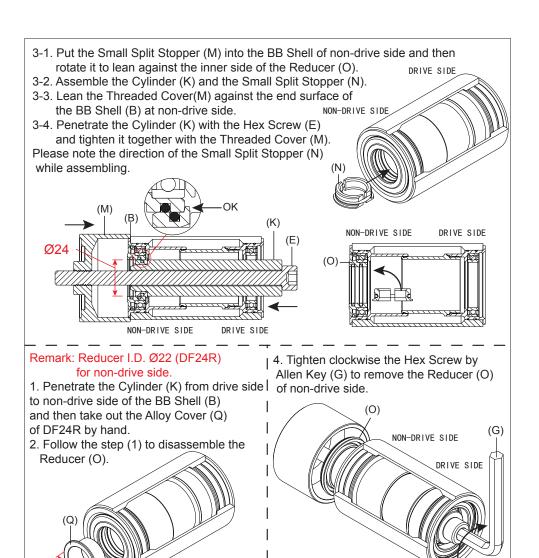
DRIVE SIDE

- 1-2. Assemble the Cylinder (K) and the Small Split Stopper (N).
- 1-3. Lean the Screwed Plug (C) against the end surface of the BB Shell (B) at drive side.
- 1-4. Penetrate the Cylinder (K) with the Hex Screw (E) and tighten it together with the Threaded Cover (M). Please note the direction of the Small Split Stopper (N) while assembling.

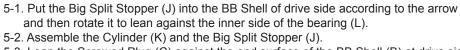


2. Tighten clockwise the Hex Screw by Allen Key (G) to take off the Reducer (O) of drive side.



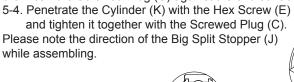


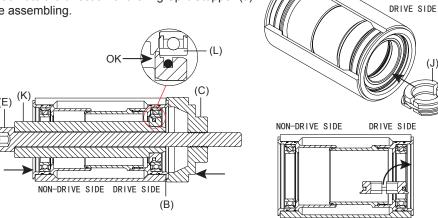
<sub>1</sub>34

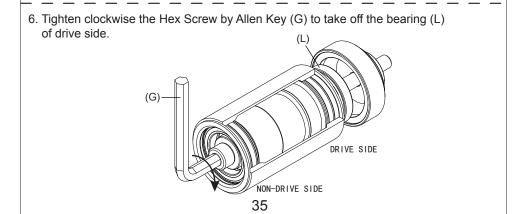


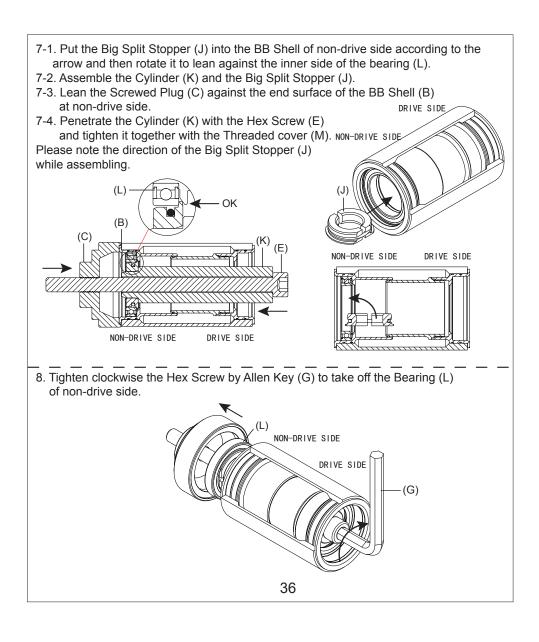
5-3. Lean the Screwed Plug (C) against the end surface of the BB Shell (B) at drive side.

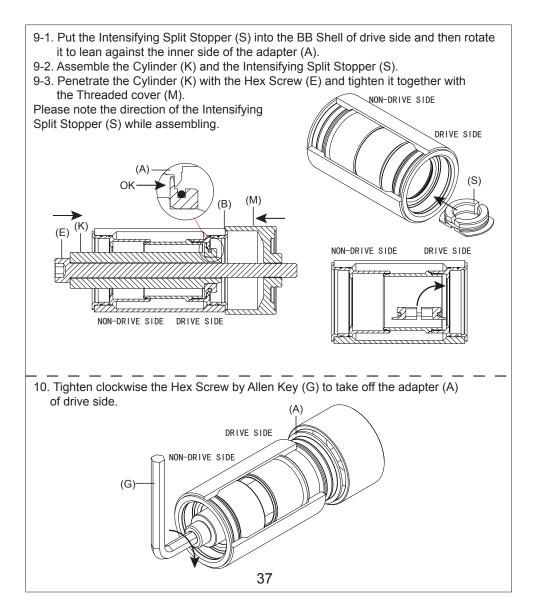
NON-DRIVE SIDE

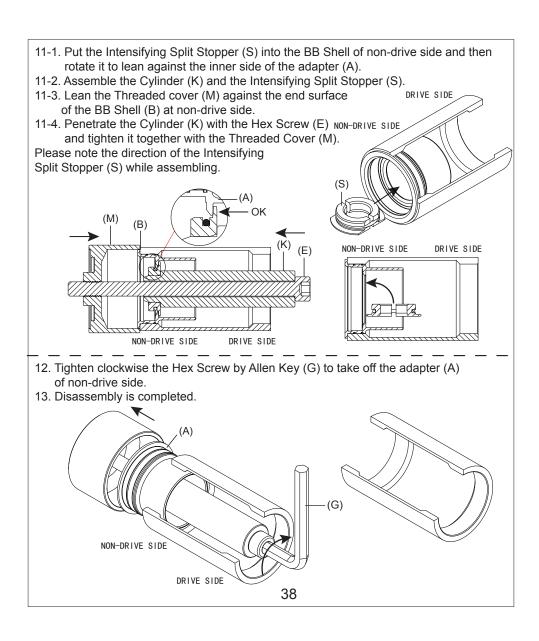






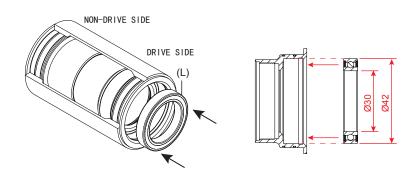




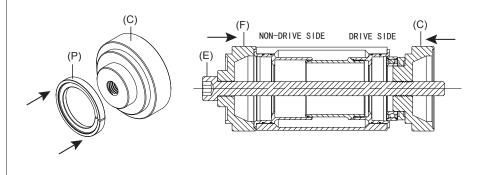


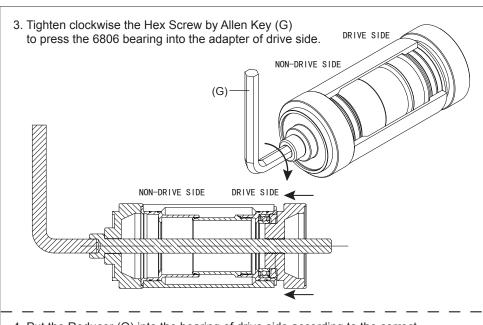
# Bearing Replacement Manual for DF24S(R)

1. First, disassemble old bearing and reducer, and ensure the adapter of DF24 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.

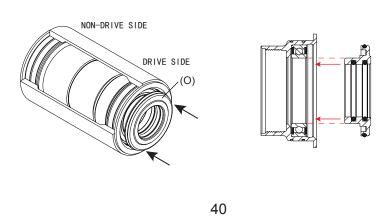


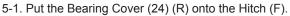
- 2-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C).2-2. Lean the Hitch (F) against the end surface of the adapter of DF24 at non-drive side.
- 2-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).



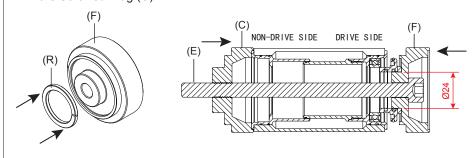


4. Put the Reducer (O) into the bearing of drive side according to the correct direction of arrows. The pressing must align and parallel the inner hole of bearing.

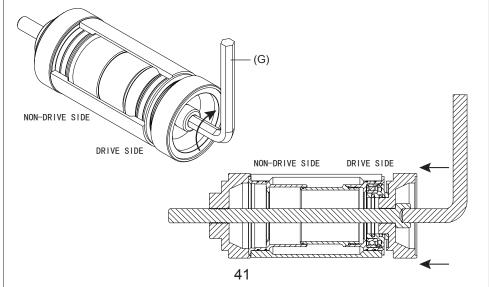




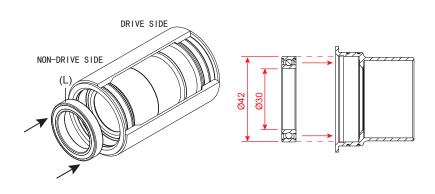
- 5-2. Lean the Screwed Plug (C) against the end surface of the adapter of DF24 at non-drive side.
- 5-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).



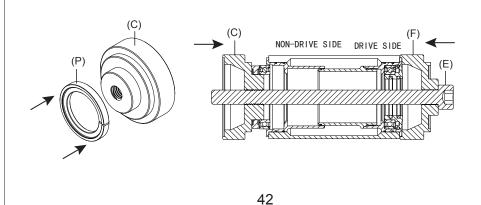
6. Tighten clockwise the Hex Screw by Allen Key (G) to press the Reducer (O) into the BB Shell of drive side.



7. First, disassemble old bearing and reducer, and ensure the adapter of DF24 is clean. Then, align and parallel the new 6806 bearing (L) into the adapter.



- 8-1. Put the Bearing Pressing Ring (P) onto the Screwed Plug (C).
- 8-2. Lean the Hitch (F) against the end surface of the adapter of DF24 at drive side.
- 8-3. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the Screwed Plug (C).



9. Tighten clockwise the Hex Screw by Allen Key (G) to press the 6806 bearing into the adapter of non-drive side.

DRIVE SIDE

NON-DRIVE SIDE

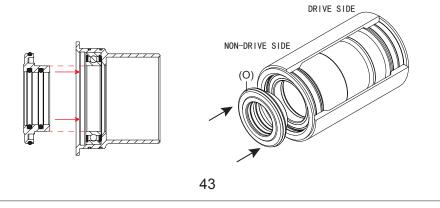
DRIVE SIDE

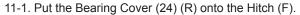
NON-DRIVE SIDE

DRIVE SIDE

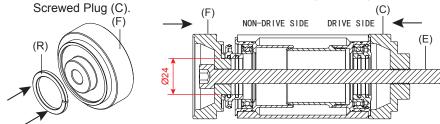
NON-DRIVE SIDE

10. Put the Reducer (O) into the bearing of non-drive side according to the correct direction of arrows. The pressing must align and parallel the inner hole of bearing.

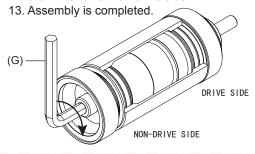


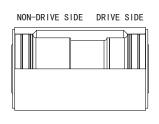


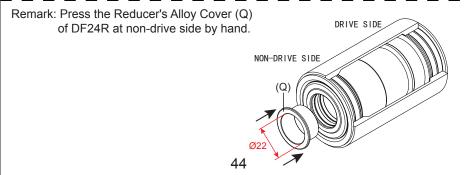
- 11-2. Lean the Screwed Plug (C) against the end surface of the adapter of DF24 at drive side.
- 11-2. Penetrate the Hitch (F) with the Hex Screw (E) and tighten it together with the



12. Tighten clockwise the Hex Screw by Allen Key (G) to press the Reducer (O) into the BB Shell of non-drive side.







# **Controller & Transmission Crankset · Turn Signal Lightset**





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