

# IMPORTANT NOTICE - Extended .30, .40, .50, .60 Mainshafts

## Instructions for .50/.60 Extended Main Shaft Kit #0530

### .30/.40 Extended Main Shaft #0614

Kit #0530 Includes 1 #0614, 1 #0019, 1 #0619, 1 #0067.

Part #0614 supercedes #0203 and #0613. #0614 is 10.0mm longer than #0203 and #0613. A number of reasons have made this change desirable.

#### SPECIAL NOTE:

The solid end of the main shaft must be installed (downward) in the autorotation gear with the drilled end installed in the rotor head block facing upwards.

- A. If the optional #0540 mainshaft thrust bearing kit is utilized, additional swashplate-to-frame clearance is helpful.
- B. If the hi-tilt flybar system #0565 is installed, it is beneficial to have more flybar clearance during hard flying.
- C. Some extra hovering stability is gained by the longer mainshaft.
- D. Additional boom clearance is possible during poorly executed autorotations or hard landings.

NOTE: As per drawing - when using shaft #0614 in place of the original shaft #0203 for the X-Cell .50 or .60, part #0215 collar and #0213 washer will be substituted by 1 #0619 washer, 1 #0067 (3x14mm) bolt and 1 #0019 (3mm) locknut.

Some important steps are necessary when installing this unit. It is your option as to whether or not you elect to utilize its full length or portions of it. By using plastic spacers #0210 (5.0mm tall) under the autorotation assembly (and above #0619 washer), you can use it in one of three ways (each has corresponding special instructions).

**MODE 1** - Using the shaft in its full length (without any #0210 spacers). Readjust all four #0227 swashplate support pushrods so that the gap between the back surface of each ball link is 29.5mm. The flybar control rods should be readjusted so that the gap from link to link is 8.5mm ("gap" meaning the amount of pushrod exposed -- be sure equal amounts of threads are showing on the swashplate rods). The hiller rods should have a gap of 58.0mm.

**MODE 2** - Using the #0614 shaft with (1) #0210 5.0mm spacer. Readjust the four #0227 swashplate support pushrods to a "gap" of 27.0mm. The flybar pushrods should again be adjusted to a "gap" of 6.5mm. The hiller pushrods should have a "gap" of 58.0mm. Install (1) #0210 plastic spacer between the auto unit and the #0619 washer.

**MODE 3** - Using the #0614 shaft with (2) #0210 5.0mm spacers (or the same as original stock length #0203 or #0613 mainshaft). Follow all original pushrod length adjustments and install (2) #0210 5.0mm thick plastic spacers below the autorotation assembly and above washer #0619 and the lower autorotation collar. In this mode, clearance must be cut into the fan shroud -- a 20.0mm diameter hole is suitable.

In each case be sure to apply a drop of oil or light grease to the #0619 washer and any #0210 spacers used.

Order #0614 for replacement shafts.

If Mode 1 or 2 are used, perform the following procedure:

Drill a new hole 15.5mm from the bottom of support #0247 (directly between the existing holes) with a #32 drill (.116" or 3.0mm) completely through. Make a countersink hole at half depth using a #3 drill (.213" or 5.5mm) and light pressure.

Drill a new hole in the left main frame directly between the two existing support mounting holes (16.0mm from the top or bottom edge) with a #32 drill (.116" or 3.0mm)

Install anti-rotation support #0247 using the upper two holes in the frame and the lower two holes in the support. This will raise the support by about 9.0mm (thereby accommodating any additional main shaft length).

**WARNING:** It is most important that you follow these directions closely to avoid any possible disengagement of the #0219 washout hub from its guide pins #0297 in the lower head block during extreme negative pitch ranges. The steps outlined will prevent this situation.

## Instructions for #0614

Part #0614 supercedes #0613. #0614 is 10.0mm longer than #0613. A number of reasons have made this change desirable.

- A. Additional swashplate-to-frame clearance at full negative pitch is helpful.
- B. If the hi-tilt flybar system #0565 is installed, it is beneficial to have more flybar clearance during hard flying.
- C. Some extra hovering stability is gained by the longer mainshaft.
- D. Additional boom clearance is possible during poorly executed autorotations or hard landings.

Some **important** steps are necessary when installing this unit. It is your option as to whether or not you elect to utilize its full length or portions of it. By using plastic spacers #0210 (5.0mm tall) under the autorotation assembly (and above the #0619 lower washer and retaining bolt), you can use it in one of three ways (each has corresponding special instructions).

**MODE 1** - Using the shaft in its full length (**without any #0210 spacers**). Readjust all four #0227 swashplate support pushrods so that the "gap" between the back surface of each ball link is 29.5mm. The flybar control rods should be readjusted so that the "gap" from link to link is 8.0mm ("gap" meaning the amount of pushrod exposed -- be sure equal amounts of threads are showing on the swashplate rods). The hiller rods should have a gap of 60.0mm.

**MODE 2** - Using the #0614 shaft with (1) #0210 5.0mm spacer. Readjust the four #0227 swashplate support pushrods to a "gap" of 27.0mm. The flybar pushrods should again be adjusted to a "gap" of 8.0mm. The hiller pushrods should have a "gap" of 59.0mm. Install (1) #0210 plastic spacer between the auto unit and the #0619 washer.

**MODE 3** - Using the #0614 shaft with (2) #0210 5.0mm spacers (or the same as original stock length #0613 mainshaft). Follow all original pushrod length adjustments and install (2) #0210 5.0mm thick plastic spacers below the autorotation assembly and above washer #0619. In this mode, clearance must be cut into the fan shroud -- a 20.0mm diameter hole is suitable.

In each case be sure to apply a drop of oil or light grease to the #0619 washer and any #0210 spacers used.

**If Mode 1 or 2 are used, perform the following procedure:**

Drill a new hole 15.5mm from the bottom of support #0247 (directly between the existing holes) with a #32 drill (.116" or 3.0mm) completely through. Make a countersink hole at half depth using a #3 drill (.213" or 5.5mm) and light pressure.

Drill a new hole in the left main frame directly between the two existing support mounting holes (16.0mm from the top or bottom edge) with a #32 drill (.116" or 3.0mm)

Install anti-rotation support #0247 using the upper two holes in the frame and the lower two holes in the support. This will raise the support by about 9.0mm (thereby accommodating any additional main shaft length).

**WARNING:** It is most important that you follow these directions closely to avoid any possible disengagement of the #0219 washout hub from its guide pins #0297 in the lower head block during extreme negative pitch ranges. The steps outlined will prevent this situation.

**NOTE:** Some shafts will be of two-piece construction. Use the solid end within the autorotation unit.

# LONG SHAFT #0614

Rod #   No Spcrs   One Spcr

0337   8.5mm   6.5mm

0227   29.5mm   27mm

0335   58mm   56mm

