

# ATS Speed Drive前變速器使用注意事項:

(1) 保固期：1 年（但可能因不當操作<註1>而失去保固）。

(2) 保養與檢查調整：

(a) 原廠已注入含MoS2(二硫化鉬)之潤滑油，至少可保持最佳狀態3000~4500 km，之後請您視騎乘狀況潤滑即可(含MoS2潤滑油一次1~2ml即可(一年1~2次或每2000~3000km)，此前變速器並非設計齒輪沉浸在潤滑油中)。過度加潤滑油不會有功能喪失的問題，但可能致潤滑油漏出本體外，這時搬動bike時，便須小心，不要弄髒您汽車地毯或房中地板了。<註2>

(b) 每次騎乘約2000~3000km後，請確認齒盤是否有偏擺超過2mm情況？若有，請調整BB處之銀色尼龍螺帽(用C-spanner工具)，一次旋轉約3~5度角，以齒盤偏擺之間隙1~2mm且可自由良好之運轉為標準。<註3>

(c) 建議每2000~3000km檢查齒盤偏擺有無過大之同時，加潤滑油MoS2數滴(1~2ml)。<註2>

(d) 當有變速失效情況發生，請檢查：(d1)是否變速鈕(軸心蓋)位置正確？(d2)若有選配之零件<覆蓋片>請卸下後騎乘，觀察是否仍無法正確變速？<註4>

(e) 若有Speed Drive重踏打滑之情況，原因是本體組裝之左螺帽(黑色)未旋緊或組裝不良所致。<註5>

(f) 雖Speed Drive之構造並不複雜，但故障發生時不建議消費者自行拆解本體，建議去店家換裝，若是本體內部之問題，應由工廠處理，消費者請勿拆解。

(3) 當情況(d)發生，而經檢查且修正後仍無法變速，即可退換貨。

(4) 消費者自行處理的情況為：(a)、(b)、(c)

但購買後，在騎乘數百公里後，有(d)情況發生時，消費者亦可自行調整處理，但在調整正確後，若仍無法變速，即可退換貨(1年保固期內，且無不當操作或拆解本體)。

(5) 工廠出廠前須處理的情況為：(d)、(e)、(f)

(6) 拆卸曲柄：請注意變速鈕(軸心蓋)旋轉卸下後，中間為離合器變速桿(天心頂針)，不可於卸曲柄時頂壞損傷到。頂壞損傷時，變速將永遠固定於高速檔(或低檔)。請購買特殊工具進行拆卸或由熟練之店家進行。(細節請參考網頁：[www.ats-speeddrive.com](http://www.ats-speeddrive.com))

附註：

<註1>：不當操作--(a)卸下曲柄時，損傷到變速桿(天心頂針)。(b)變速鈕(軸心蓋)拆卸不當導致變形。(c)從不加潤滑油--內部生鏽磨損(加潤滑油方法請見<註2>)。(覆蓋片為選配之零件，會因消費者之使用不當，或外力變形--外翻或折斷。故不在保固範圍內)

<註2>：加潤滑油時須左右軸承同時進行：以鋼針插入注油孔僅可伸入5mm時，此時注潤滑油僅達右軸承。變速至高速檔後，慢轉曲柄，直到內齒盤孔對孔時，以潤滑油嘴伸入16mm，此時潤滑油僅達左軸承。若左軸承長期不加潤滑油時，低速檔將因生鏽而致騎行有噪音且損壞變速器。

<註3>：齒盤偏擺之間隙：輕扳動齒盤 - 無間隙，或用力扳動齒盤 - 有1~2m/m左右之間隙為最佳狀況，若用力扳動齒盤仍無間隙，則運轉時將有困難，表示防鬆脫之尼龍螺帽(銀色)須旋鬆！

<註4>：(1)無法變速：可能原因為--軸心蓋之凸出高度不對，在變速壓下後，須與曲柄面同高或凸出約0~0.5m/m以內，並旋緊軸心蓋內之1.5m/m內六角沉頭螺絲(此螺絲為了防止軸心蓋因騎一段時間而走位偏移)。(2)變速器空轉：一般皆由於選配之零件<覆蓋片>彈性可能因騎乘期間的外力因素(折翻)導致左右覆蓋片之彈性不同，而使軸心蓋變速時位移至中途即停住(致變速器空轉)或永遠僅停於單一邊(致變速器無法變速)! 檢查方法：卸下覆蓋片，直接以腳跟踢軸心蓋變速，即可避免空轉發生。而卸下之覆蓋片請校正至可執行變速功能後才可安裝回曲柄上。覆蓋片須可有效撞擊變速鈕(軸心蓋)，若消費者無法調整到正確位置，可購買新品或不組裝覆蓋片直接騎乘。

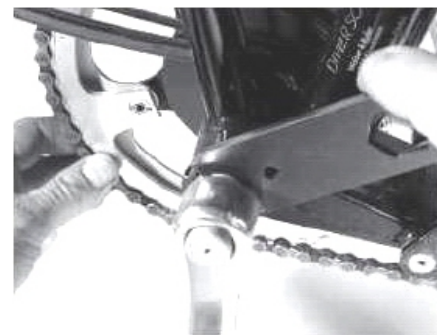
<註5>：組裝不良的原因，請確認：

(a) 鎖BB處是否有45度斜面加工(左右兩側皆須為45度角斜面)？

(b) 鋁車架須配鐵錐形環，鐵車架須配鋁錐形環。

(c) 左螺絲帽(黑色)須旋緊到140~160N.m。

(d) BB寬68m/m用6m/m左螺絲帽，BB寬73m/m用3m/m左螺絲帽。



# Maintenance

## A)Lubrication

A plastic cove protects the **ats-speed-drive** against dust and spray, The cover exerts only a limited pressure to minimize friction losses, and therefore cannot retain an oil bath. The original lubrication is done with an **MoS2-lube**, which is a good compromise between oil and grease lubrication characteristics, and is also an effective long term lubrication in case, the rider never does any maintenance, MoS2-injectors are available as an accessory, they provide enough lubrication for at least 3000-4000 km. For riding in very low temperatures, oil lubrication gives better results than grease, Insert a few drops (1~2ml) 1-2 times a year or after 2000-3000 km, too much oil can cause leakage.



If the **ats-speed-drive** starts running noisily in low gear (when there is no load on the planets) after extended use, this is probably due to a lack of oil on the planet bearings, Insert some lube at the slot screw on the right side

*Very important: move the crank until you can see another hole at the rotating disk behind the outer hole, Only if the lubricant passes both holes, it reaches the gears. (At this moment, you can use a pin to insert this hole, 16mm depth.) Also lube on right side gearing on the same time. (When the pin only can insert 5mm depth.)*

Grease and oil each have their benefits, Mos2 grease damps noise much more effectively than oil, Oil causes less friction losses, especially at low temperatures.

Never use a different grease than the original Mos2 grease, Quantity: 1-2ml.

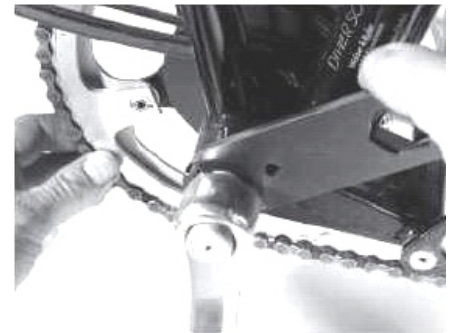
## B)Adjusting the gearing play

Please note: the adjustment of the gearing play is made at the factory with painstaking accuracy, Do not change the position of the self-locking nut at the left end of the axle without a good reason

Only adjust the gearing play, if the chainring has play along the axis of the spindle. Slightly tighten up the self-locking nut on the left end of the axle (only a few degrees), Never tighten the nut too firmly, preload on the gearing system may damage the bearings. Please note, that some play between the cranks and chainring in the direction of rotation is normal and necessary for proper engagement of the gears after switching.

To check a potentially incorrect adjustment, proceed as follows:

- Unscrew the self-locking nut on the axle 1/4-1/2 turns.
- Move the chainring in the direction of the spindle to feel the play
- Slowly tighten the nut while moving the chainring at the same time
- Feel the play decreasing



## C)Removing cranks

To remove a crank, please note: if not using the small tube or an M6 nut, you will destroy the shifting shaft when pushing with a standard puller! Once the shifting shaft is damaged, speed-drive will not shift anymore! Repair it will charge even under warranty period (1 year.). Or, please refer our website: [www.ats-speeddrive.com](http://www.ats-speeddrive.com) to see details.

### Very important:

If using a different crankarm not provided by the manufacturer, make sure the hole has a depth of at least 8mm.

Please also make sure that the right-side crankarm is not wider than 25mm, to prevent it from touching the spider when being tightened.

**Caution:** Kickplate (easy-shift levers, it is accessory for speed drive, not covered by warranty) make shifting more easy. But it is possible to make shifting ineffective! Because some unknown factors will damage kickplate when riding. Ex: bent kickplate under unknown reason. It will let kickplate spring force different on right and left side. If spring force is big different, the shift button might stop on the center of BB housing (it causes the speed-drive rotation freely) or stop on right/left side forever (it causes shifting ineffective). Therefore when shifting gear ineffective happens, please take off the kickplate first, to make sure the shift button is on the right position. (The button must be approximately flush with the surface of the crank when being pushed. It can protrude up to 1mm, especially in combination with easy-shift kick plates.

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