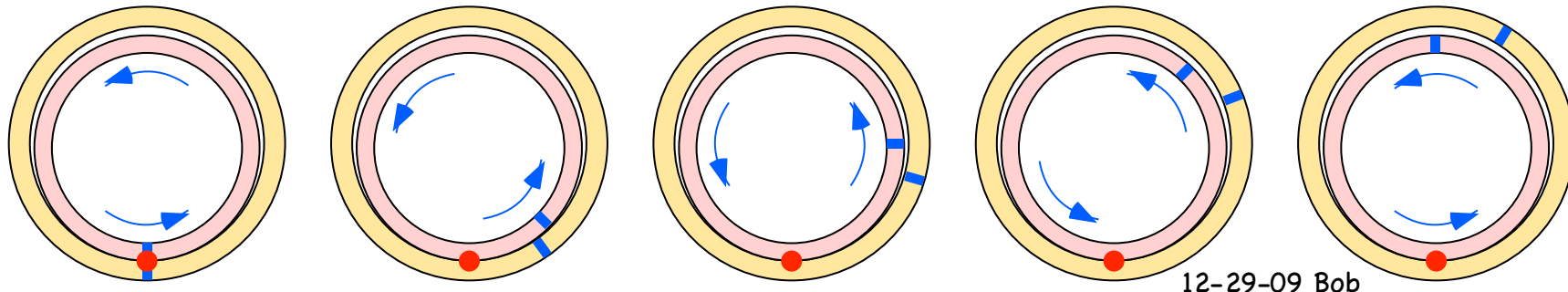


## - Epicyclic Fretting Precession -

Counterclockwise rotation rolls the larger diameter less rapidly counterclockwise (relatively clockwise).  
[diametral clearance is exaggerated for illustration.]



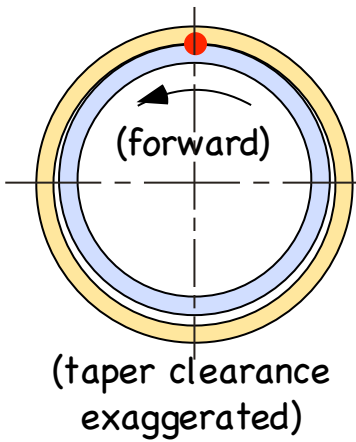
12-29-09 Bob

<http://trumpetb.net/57SC/knockoff.html>

### Self Tightening Theory - epicyclic fretting precession acting at knock-off cap taper ●

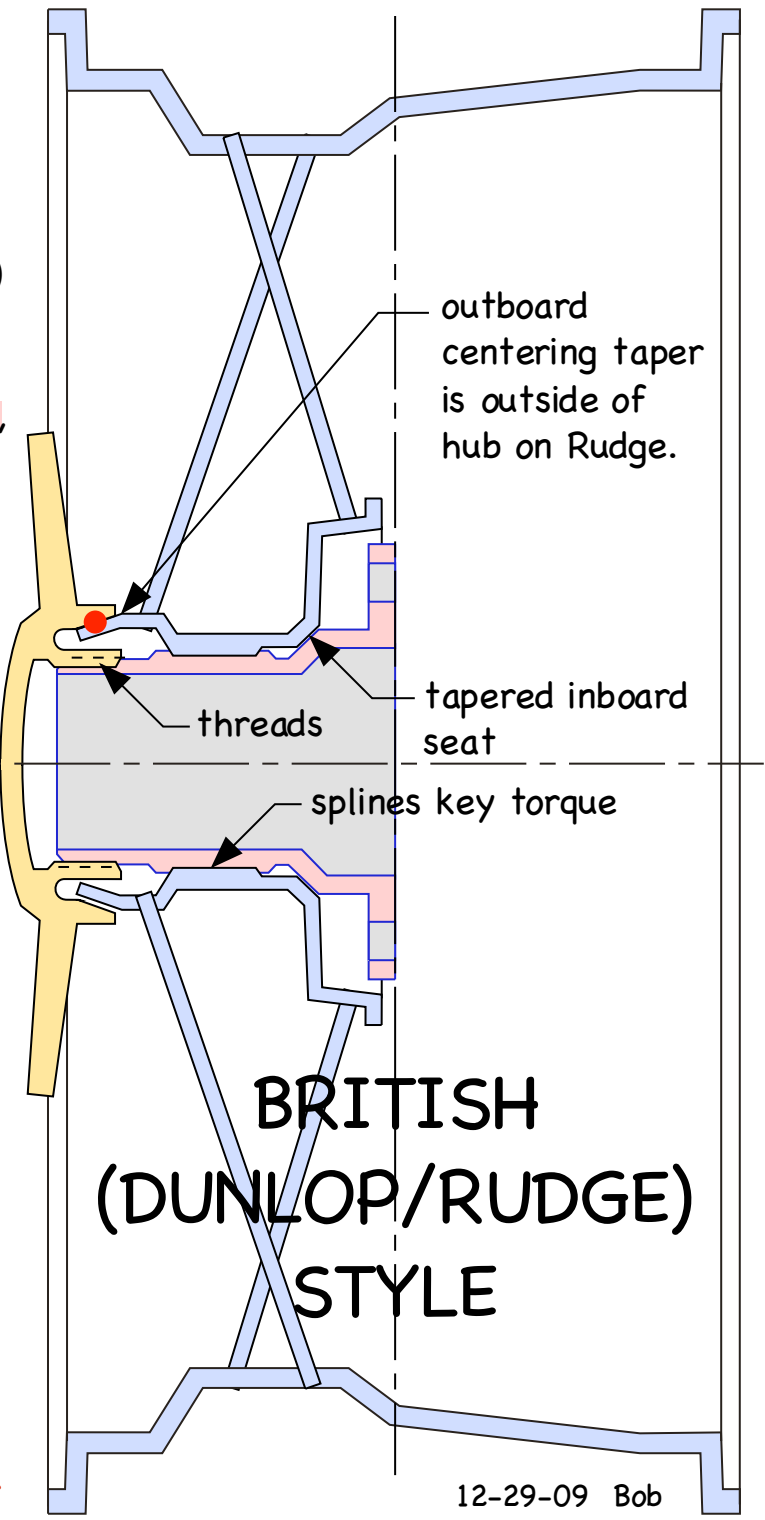
Looking at  
**LEFT SIDE -**  
RH threads  
(opposite for right side)

Weight of car, adapter,  
and knock-on cap...



Tire, rim, spokes and hub  
react upward on (loose)  
K.O. cap (fretting  
contact at red dot).

Forward rotation rolls  
(larger) K.O. cap less  
rapidly counterclockwise  
(relatively clockwise),  
self-tightening the right-  
hand threads. ✓OK



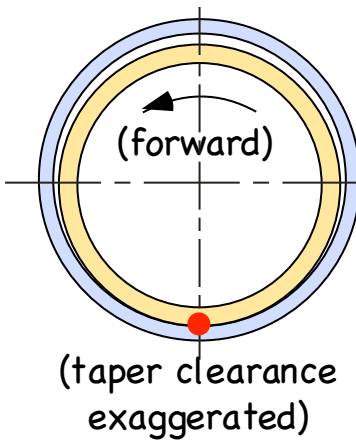
## BRITISH (DUNLOP/RUDGE) STYLE

12-29-09 Bob

### Self Tightening Theory - epicyclic fretting precession acting at knock-off cap taper ●

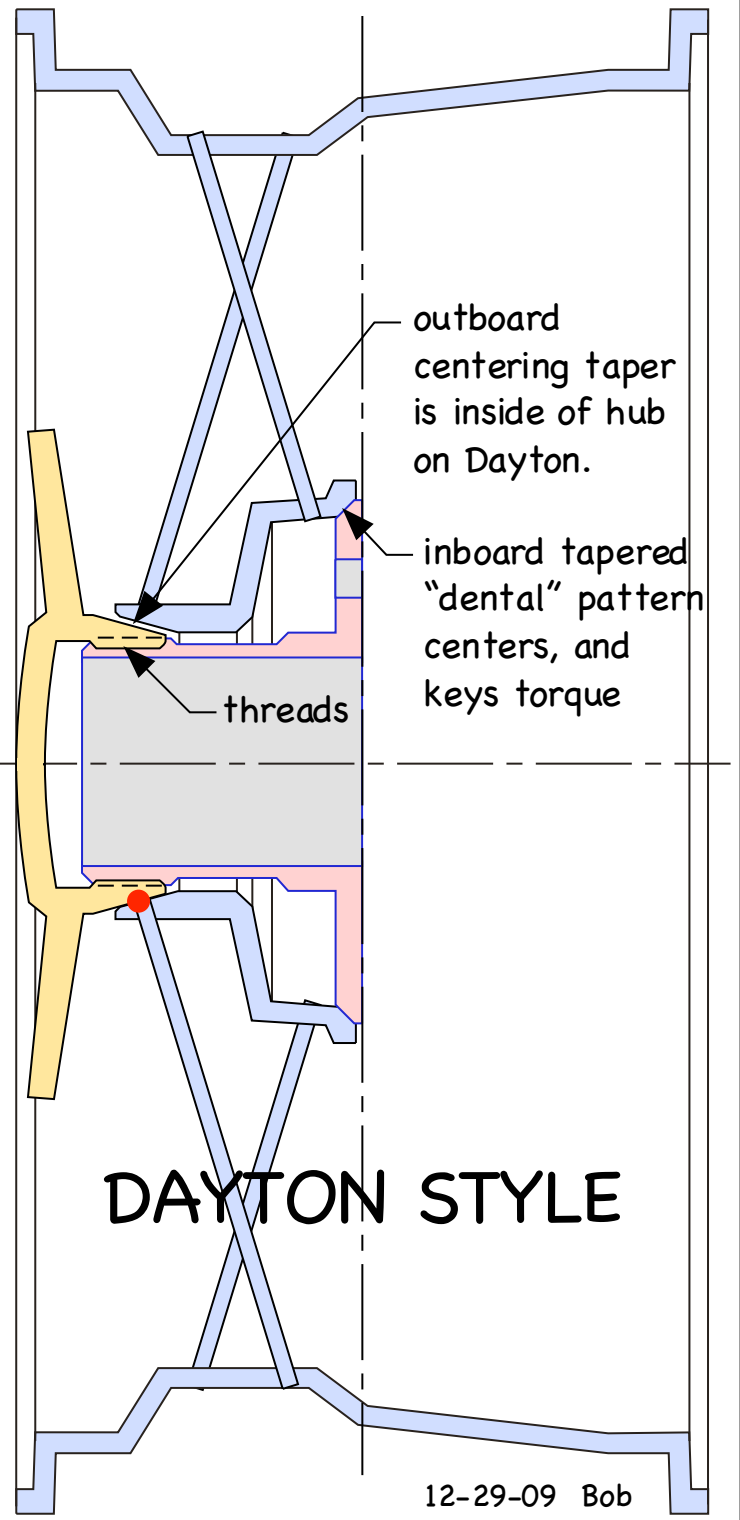
Looking at  
**LEFT SIDE -**  
RH threads  
(opposite for right side)

Weight of car, adapter,  
and knock-on cap...



Tire, rim, spokes and hub  
react upward on (loose)  
K.O. cap (fretting  
contact at red dot).

Forward rotation rolls  
(smaller) K.O. cap more  
rapidly counterclockwise,  
self-loosening the right-  
hand threads. huh?! N.G.



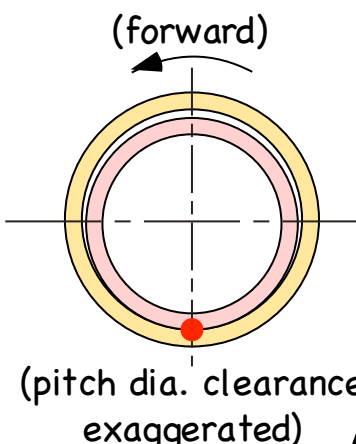
## DAYTON STYLE

12-29-09 Bob

### Self Tightening Theory - epicyclic fretting precession acting at knock-off cap threads ●

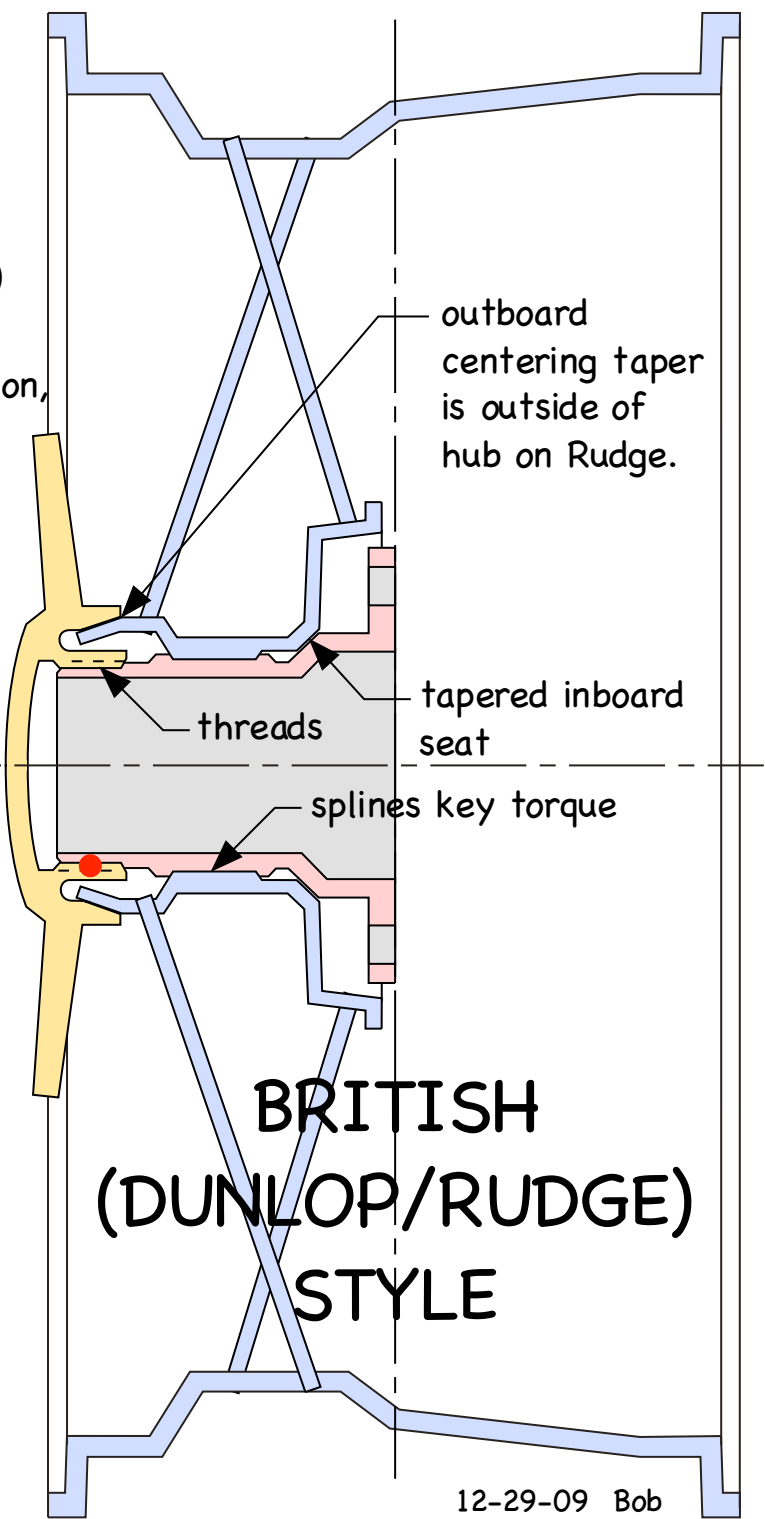
Looking at  
**LEFT SIDE -**  
RH threads  
(opposite for right side)

Weight of car, suspension,  
and adapter...



Tire, rim, spokes, hub,  
and K.O. cap react  
upward on adapter  
threads (fretting contact  
at red dot).

Forward rotation rolls  
(larger) K.O. cap less  
rapidly counterclockwise  
(relatively clockwise),  
self-tightening the right-  
hand threads.



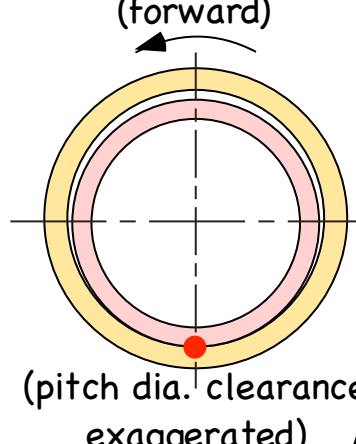
## BRITISH (DUNLOP/RUDGE) STYLE

12-29-09 Bob

### Self Tightening Theory - epicyclic fretting precession acting at knock-off cap threads ●

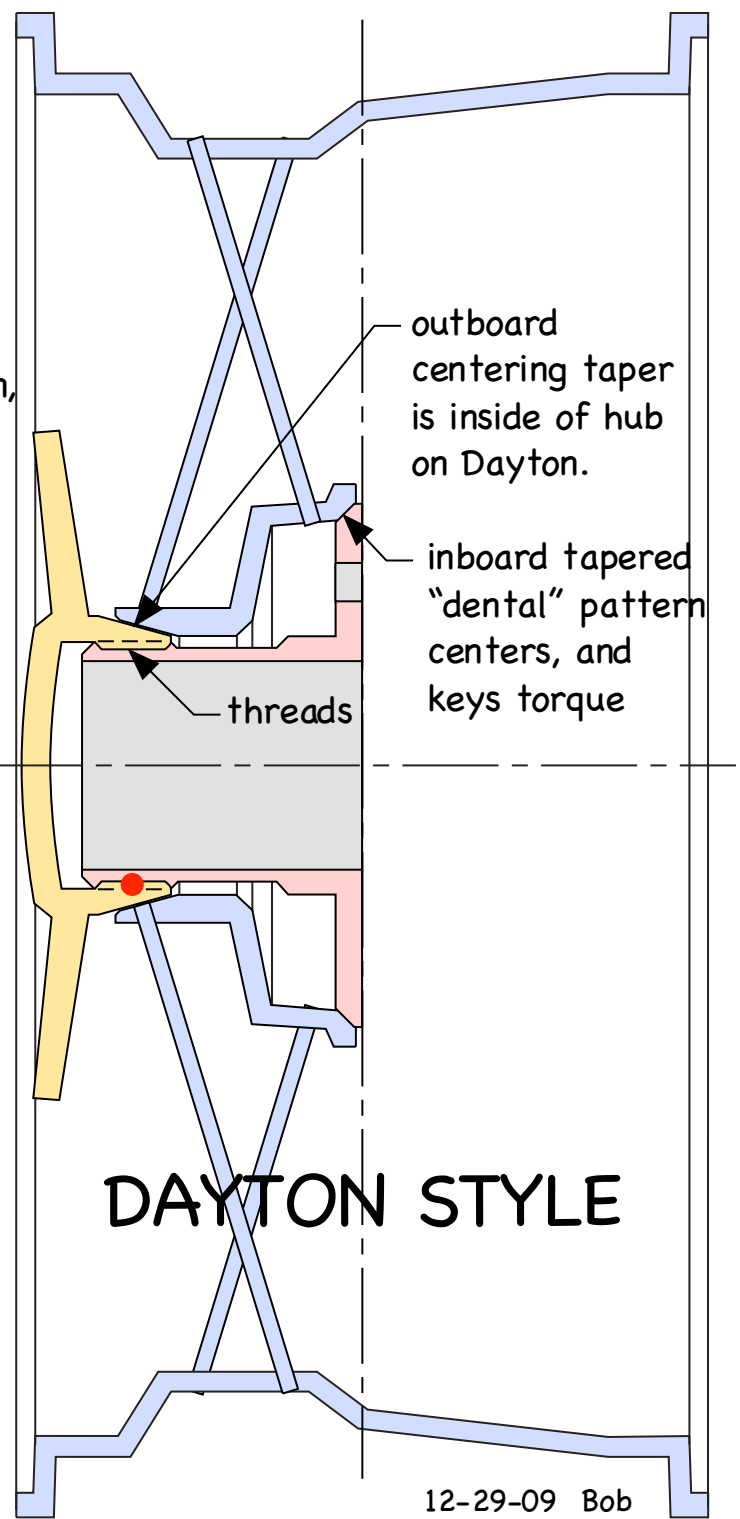
Looking at  
**LEFT SIDE -**  
RH threads  
(opposite for right side)

Weight of car, suspension,  
and adapter...



Tire, rim, spokes, hub,  
and K.O. cap react  
upward on adapter  
threads (fretting contact  
at red dot).

Forward rotation rolls  
(larger) K.O. cap less  
rapidly counterclockwise  
(relatively clockwise),  
self-tightening the  
right-hand threads.



## DAYTON STYLE

12-29-09 Bob