HOPE TECHNOLOGY

TI-GLIDE CASSETTE FREE HUB
(Single Circlip Rotor Model)
Overhaul Procedure

1. Bearing Change - Rotor Body Strip
Remove rotor body and pawls as described previously in Maintenance Instructions. Place rotor body on a flat firm surface pawl carrier end up. Use a small screw-driver to push spacer (item 15) to one side. Using an aluminium drift, tap inside of bearing (item 16) working all round the bearing keeping it square so as not to jam it in the rotor (see fig 1) . When the bearing is flush with the end of the rotor, place rotor on a washer or ring with a 30mm hole in it and drive out the bearing. Remove spacer (item 15). This gives access to the circlip (item 14). Remove using long nose circlip pliers. Inner bearing (item 13) can then be removed using a 15 dia. drift. Make sure it doesn't jam on the second bearing location. Discard both bearings due to possible damage to the race ways. Thoroughly clean rotor body prior to fitting new bearings.

Assembly: Use special tool HTT168 or HTT169 to press or drive in the bearings. It is essential to drive in on the outer raceway, driving on the inner raceway only, will damage the tracks. After fitting inner bearing (item 13) replace circlip (item 14) spacer (item 15) then outer bearing (item 16).

2. Bearing Change (Hub)
Strip: Remove rotor body as described previously in Maintenance Instructions. Sit non-drive side spoke flange on tool HTT167 or a pair of parallels. See fig.2. Using a soft hammer (nylon or hide) tap end of spindle and remove the spindle with non-drive bearing attached. Turn hub or wheel over, sit on drive side spoke flange, use soft drift and tap out drive side bearing. Inspect lip seal (item 9) for damage, prise out with screw-driver if replacement is required.

Assembly Procedure: Sit hub on non-drive side flange. Press or drive in bearing (item 7). Use tool no. HTT169. Carefully fit new seal (item 9). Use a bush which covers the full diameter of the seal to press it home. Slide spindle long end through hub and bearing (item 7). Sit hub assembly drive side down on tool HTT168 (See fig 3). Press or drive in bearing (item 3) using tool HTT169. Assemble rotor body to hub as described in Maintenance Instructions.

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB
(Single Circlip Rotor Model)
Overhaul Procedure

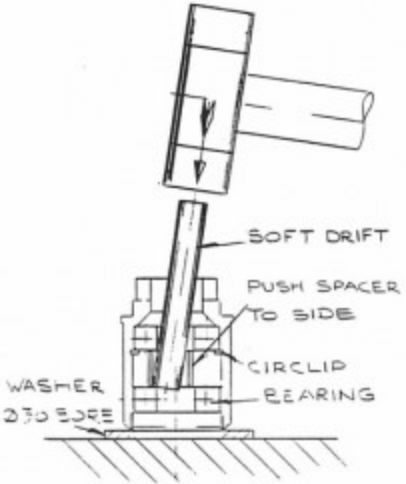


FIG 1

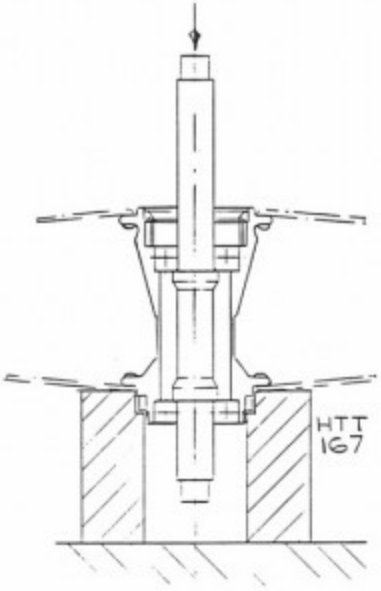


FIG 2

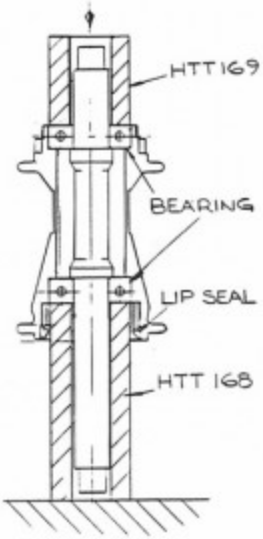


FIG 3

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB
Double Circlip Standard
Maintenance & Strip Instructions

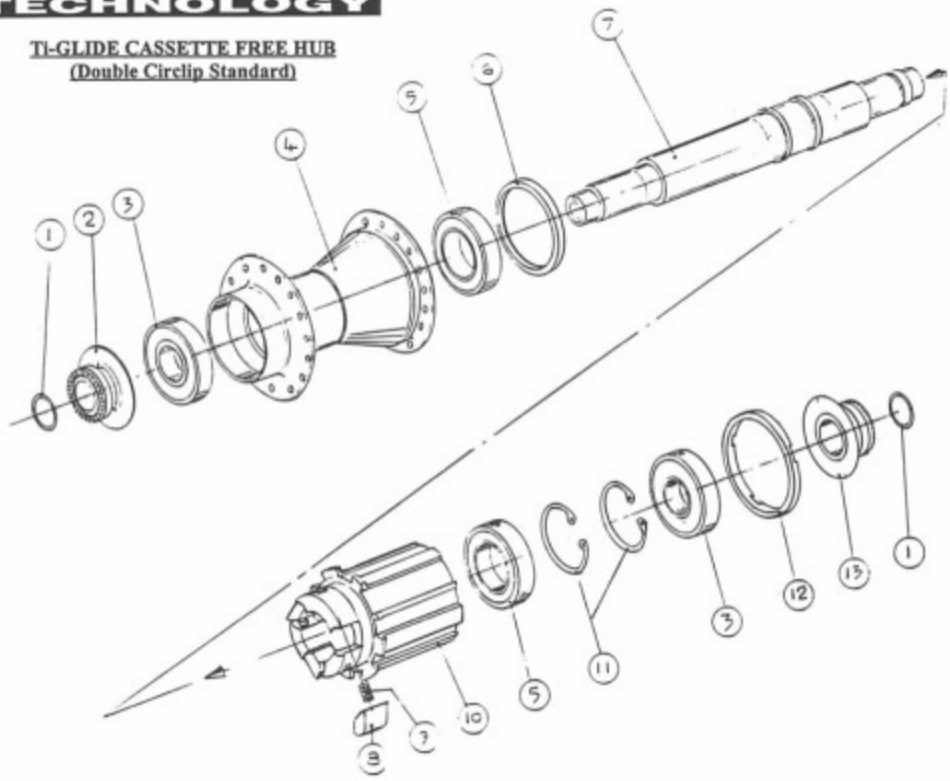
Weekly
Apply a few drops of light oil to the ratchet seal (item 9) behind the sprockets, between cassette rotor and hub.
Three month intervals
Remove wheel and unscrew lock-ring holding sprockets in position, withdraw sprockets.
Use a broad blade screw-driver to prise out the spacer (item 13) from inside the rotor (item 10). Remove rotor body (item 10), turning anti-clockwise at the same time so as to prevent pawls being dislodged.
Remove pawls and springs and clean with meths or white spirit to remove old grease. Wipe out old grease from inside ratchet (item 5). Do not immerse hub in degreaser as this will remove grease from bearings.

Assembly Procedure:
Smear a thin layer of grease around pawl locations in rotor body and ratchet in hub. Insert springs into body, carefully re-place pawls into seatings. (The grease will help to retain them) Make sure springs are located properly in pawl and body. Slide rotor body assembly onto spindle. Using a small screw driver, ease pawls into ratchet whilst applying a gentle pressure to end of rotor body. When fully engaged rotor should spin freely in an anti-clockwise direction with the pawls clicking lightly and evenly. The rotor should lock up immediately when turned clockwise.
Replace spacer (item 13) with 'O' ring (item1) installed.
Apply a light film of grease to rotor splines and clean sprockets and refit.
Replace sprocket retainer ring and tighten to required torque 40 Nm (30 ft.lb.).

NOTE: We recommend the use of cassettes with an aluminium spider i.e.XT/XTR. If all steel sprockets are used slight marking of the rotor body may occur but this will not impair the function of the product .It is not recommended for HOPE hubs to be built radially.

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB
(Double Circlip Standard)



PARTS LIST

Item	Description	Qty.
1.	'O' Ring	2
2.	Spacer (19mm for 135 axle)	1
	" (14mm for 130 axle)	1
3.	Bearing 6001 2RS	2
4.	Hub Assembly	1
5.	Bearing 61902 2RS	2
6.	Lip Seal	1
7.	Spindle	1
8.	Pawl	3
9.	Spring	3
10.	Rotor Body	1
11.	Circlip	2
12.	Spacer (7 speed conversion)	1
13.	Spacer (11mm long)	1

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB

(Double Circlip Rotor Model)

This standard of 'Free Hub' can be identified by a small machined 'V' groove on the O/D of the rotor splines 10mm from the end.

Overhaul Procedure

1. Bearing Change - Rotor Body Strip

Remove rotor body and pawls as described previously in Maintenance Instructions. Place rotor body on a flat firm surface pawl carrier end up. Using an aluminium drift, tap out outer bearing working all round the bearing keeping it square so as not to jam it in the rotor (see fig 1). When the bearing is flush with the end of the rotor, place rotor on a washer or ring with a 30mm dia. hole in it so that the bearing will drop clear. Use long nose circlip pliers to remove the two circlips, then drive out the second bearing using a 15 dia. drift. Take care not to jam it on the first bearing's location. Discard both bearings due to possible damage to the race ways. Thoroughly clean rotor body prior to fitting new bearings.

Assembly: Use special tool HTT168 or HTT169 to press or drive in the bearings. It is essential to drive in on the outer raceway, driving on the inner raceway only, will damage tracks. After fitting inner bearing (item 13) replace both circlips and then the outer bearing (item 16).

2. Bearing Change (Hub)

Strip: Remove rotor body as described previously in Maintenance Instructions. Sit drive side spoke flange on tool HTT167 or a pair of parallels. See Fig.2. Using a soft hammer (nylon or hide) tap end of spindle and remove. One or both bearings will be left in situ in the hub. Using an aluminium drift tap out using the same procedure as used on the rotor body.
Examine spindle for straightness and damage, thoroughly clean both spindle and hub.

Assembly Procedure: Slide bearing (item 7) onto spindle (item 6). Locate in tool HTT212 and drive or press spindle end to fully locate bearing. See fig 3.
Sit drive side spoked flange on tool HTT167 and fit new bearing to non-drive side using tool HTT169, See Fig 4.
Turn wheel over, sit non-drive on tool HTT169. Using tool HTT212 drive in spindle and bearing sub-assy into hub. See Fig 5.
Ensure spindle rotates smoothly with no sign of roughness or judder.
Finally assemble rotor to hub as described in maintenance instructions.

HOPE
TECHNOLOGY

TI-GLIDE CASSETTE FREE HUB

(Double Circlip Rotor Model)

This standard of 'Free Hub' can be identified by a small machined 'V' groove on the O/D of the rotor splines 10mm from the end.

Overhaul Procedure

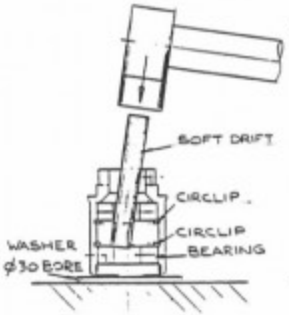


FIG 1

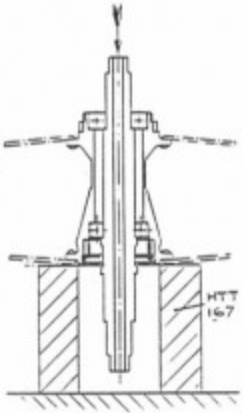


FIG 2

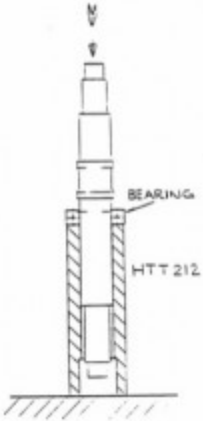


FIG 3

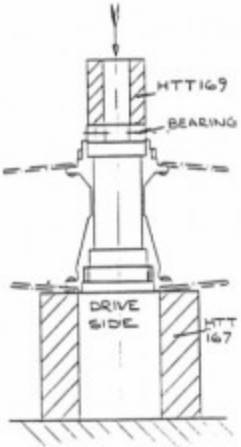


FIG 4

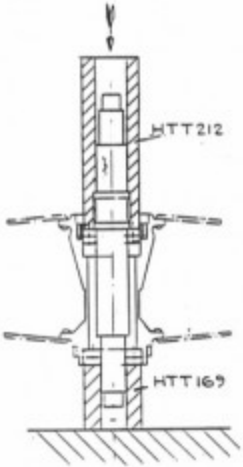


FIG 5

HOPE
TECHNOLOGY

TITANIUM BOTTOM BRACKET

Fitting Instructions

Carefully examine threads in cycle frame for any signs of damage or burrs. Check for any protruding tubes which may interfere with the bottom bracket spacer tube. If threads are damaged it will be necessary to re-skim out with a set of spindle located taps, small burrs at the entry of the thread can be removed using a small file. Your dealer will advise you if you think tapping is required.

Clean out all filings and debris and apply a light film of grease to both threads.

The Hope Bottom Bracket will be supplied with the chain wheel side cup (L.H. thread) item 7 assembled. Insert into frame and screw in anti-clockwise, leaving four or five threads exposed. Take R.H. threaded cup item 4 and screw in from opposite side (clockwise). Ensure it locates over bearing.

Check position of chain wheel for alignment, adjust accordingly by screwing in or out the bearing cups.

When positioned correctly, tighten to 68 n/m (50 ft/lbs). Assemble the locking rings if supplied and nip up. A special tool HTT204 is available for tightening cups and locking rings.

Note: Bottom brackets with spindle lengths of 103, 109 and 113 mm do not have locking rings.

Assemble crank arms and using standard crank arm bolts tighten to 30 n/m (22 ft/lb)

HOPE TECHNOLOGY

FRONT HUB

Bearing Change

Sit wheel or hub on spoke flange using tool HTT167. If tool is not available use a pair of parallels or a similar support bush. See Fig. 1.

Tap spindle end with a soft hammer (plastic or hide). Once the bottom bearing leaves its housing the spindle can be withdrawn from below with spacer and bearing on spindle.

Turn the wheel over, sit as before and using an aluminium drift tap out the other bearing. Pull spacer and bearing off the spindle.

Assembly Procedure:

Sit wheel on hub on a flat surface. Carefully press or tap in replacement bearing. Insert spindle through fitted bearing. Sit on tool HTT173 and press or tap in bearing on second side. See Fig. 2. Replace spacers on to spindle ends. Using thumb and forefinger rotate spindle, it should rotate smoothly.

Any roughness or bumps would suggest that one or both bearings have been damaged during assembly.

NOTE: Radial building of HOPE hubs is not recommended unless specifically designed for this purpose.

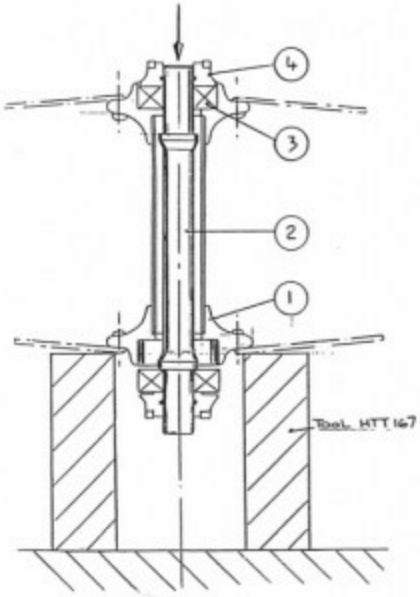


FIG 1.

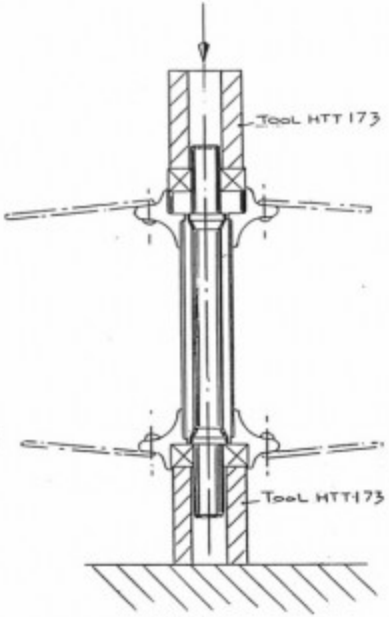


FIG 2.

HOPE TECHNOLOGY

'FATSO' FRONT HUB

Bearing Change

One side of the hub has a 6mm diameter thread in the stub axle. Screw in a short setscrew or capscrew about 10mm deep. Turn the hub or wheel over and sit on the spoke flange using tool HTT167. See Fig 1. If tool is not available use a pair of parallels or a similar support bush.

Insert a piece of 5mm diameter steel rod approximately 120mm long through the stub axle until it rests on the end of the capscrew. It is important that the capscrew is screwed in only 10-12mm so that there is a threaded portion of hole available to locate the end of the rod. This prevents peening over the capscrew nose when driving out the spindle. Tap out the spindle as shown in Fig. 1.

Sometimes the stub axle will come out with bearing and spindle attached, or sometimes just the stub axle, or stub axle plus bearing.

Turn the hub or wheel over. If the spindle is still in position, insert 10mm diameter aluminium drift through spindle onto stub axle and drive out. See Fig 2. One or both bearings plus the spindle may be left in position.

Push spindle to one side and tap side of bearing using aluminium drift working round the bearing until removed. See Fig 3.

Removal of Spindle and Bearing from Stub Axle

For this operation a special split bush HTT178 is required plus a bench vice.

Locate the spindle and bearing in split bush HTT178. See Fig. 4. Position in vice and tighten lightly. Do not over tighten as this will distort both spindle and bearing. Note position of lip on bush which wraps around bearing. Use aluminium drift to drive out stub axle.

This split bush can also be used to remove the bearing from the stub axle position, the split bush in the vice so as to clamp over the bearing and drive out the stub. See Fig. 5.

Assembly Procedure

Support hub housing (item 1) on HTT179. Press in bearing using tool HTT179. Turn hub/wheel over, insert spindle to rest on bottom bearing then press in top bearing using a second HTT179. The spindle bore must then be set in line with the bearing bores and the stub axles pressed in position.

NOTE: Radial building of HOPE hubs is not recommended.

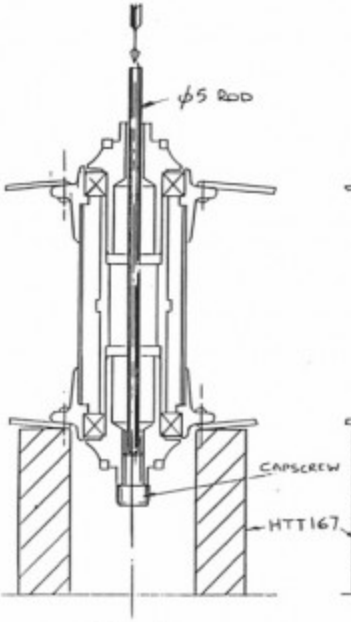


FIG 1

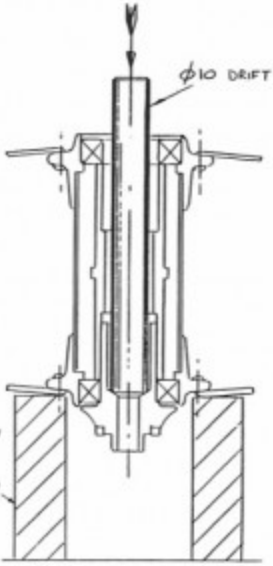


FIG 2

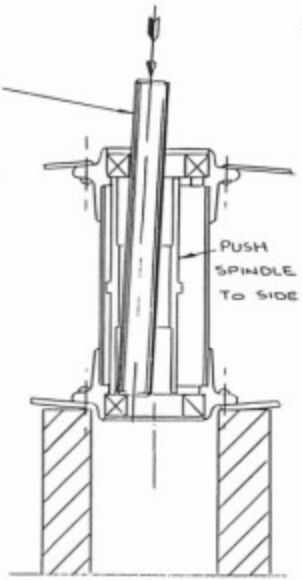


FIG 3

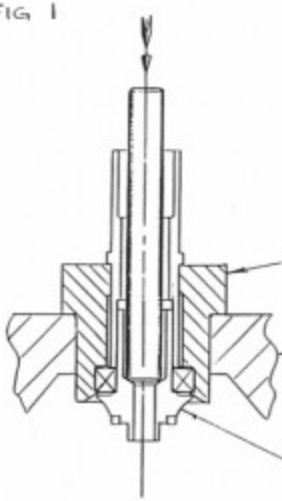


FIG 4

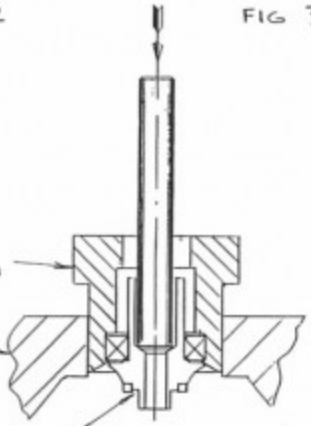
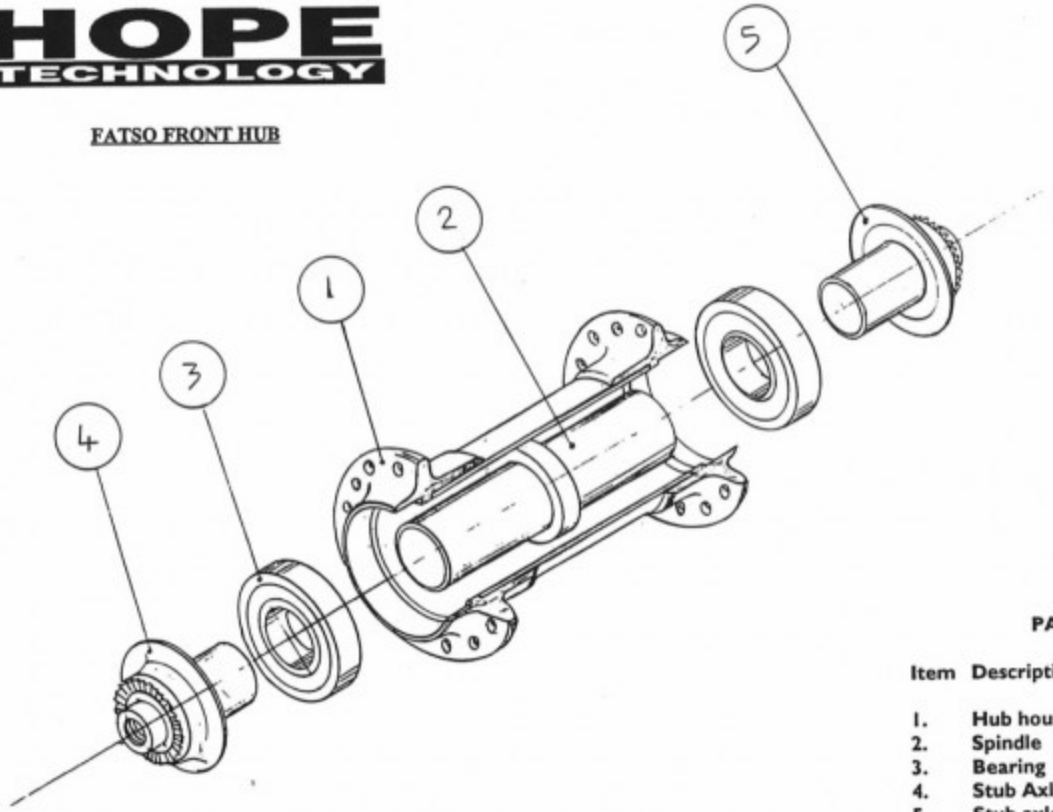


FIG 5

HOPE TECHNOLOGY

HOPE
TECHNOLOGY

FATSO FRONT HUB



PARTS LIST

Item	Description	Qty.
1.	Hub housing	1
2.	Spindle	1
3.	Bearing	2
4.	Stub Axle (threaded)	
5.	Stub axle plain	

HOPE TECHNOLOGY

SCREW-ON REAR HUB 7/8 SPEED

Instructions

The HOPE hub as supplied will usually be built to suit a 7 speed freewheel configuration . See Fig.1.

To convert hub from 7 speed to 8 speed

1. Remove spacers 2 and 3 from non-drive side and spacer 7 from drive side.
2. Support drive side spoke flange, use special tool no. HTT167. If tool is not available use a suitable bush or a pair of parallels. See Fig. 3.

Using a soft hammer (plastic or hide) tap spindle end on non-drive side until spindle, drive side bearing and 5mm spacer are released.

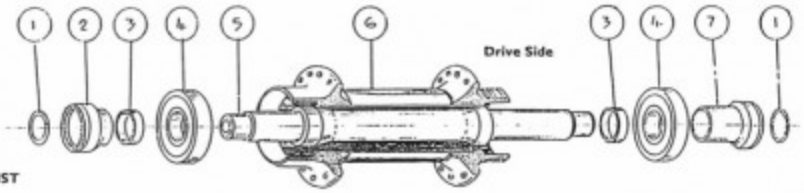
Once the bearing clears its housing the spindle will slide out. The non drive side bearing will remain in the hub body and need not be removed.

3. Pull off the drive side bearing and 5mm spacer from spindle. Refit the spacer onto the spindle non drive side.
4. Support wheel or hub on bush tool no. HTT169 non drive side down and re-load spindle non drive side back into hub. Ensure 5mm spacer does not drop off spindle. See fig 4. Slide bearing and bush tool no. HTT169 over spindle end and tap bearing until fully seated. Re-fit spacer item2 to non drive side and re-fit spacers items 3 and 7 to drive side. See Fig. 2.

NOTE : Radial building of HOPE hubs is not recommended unless specifically designed for this purpose.

HOPE TECHNOLOGY

SCREW-ON REAR HUB 7/8 SPEED



PARTS LIST

Item	Description	Qty.
1.	'O' Ring	2 off
2.	Spacer (15mm long)	1 off
3.	" (5mm long)	2 off
4.	Bearing 6001 2RS	2 off
5.	Spindle	1 off
6.	Hub Body	1 off
7.	Spacer (28.5mm long)	1 off

Fig 1. Shows hub built to suit 7 speed freewheel
Spacers (item 3) are on left side of bearings (item 4).

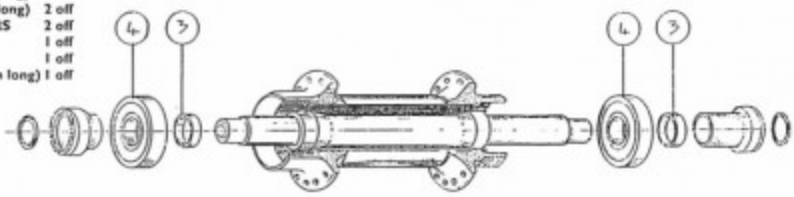


Fig 2. Shows hub built to suit 8 speed freewheel
Spacers (item 3) are on right side of bearings (item 4).

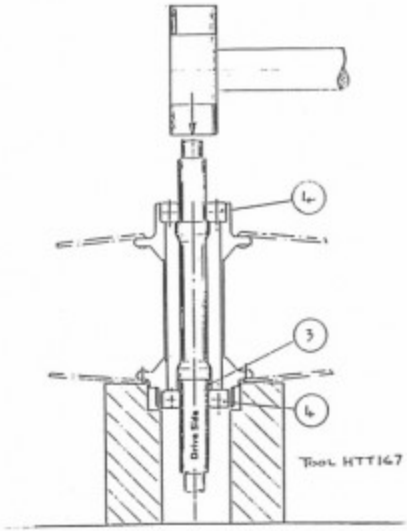


FIG. 3

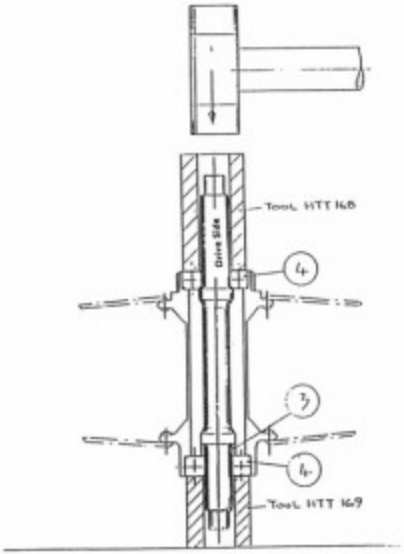


FIG 4

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB
Single Circlip Standard
Maintenance & Strip Instructions

Weekly
Apply a few drops of light oil to the ratchet seal (item 9) behind the sprockets, between cassette rotor and hub.

Three month intervals
Remove wheel and unscrew lock-ring holding sprockets in position, withdraw sprockets.
Use a 2mm allen key and slacken grub screw (item 19) and remove rotor body (item 12), turning anti-clockwise at the same time so as to prevent pawls being dislodged.
Remove pawls and springs and clean with meths or white spirit to remove old grease. Wipe out old grease from inside ratchet (item 5). Do not immerse hub in degreaser as this will remove grease from bearings.

Assembly Procedure:
Smear a thin layer of grease around pawl locations in rotor body and ratchet in hub. Insert springs into body, carefully re-place pawls into seatings. (The grease will help to retain them) Make sure springs are located properly in pawl and body. Slide rotor body assembly onto spindle. Using a small screw driver, ease pawls into ratchet whilst applying a gentle pressure to end of rotor body. When fully engaged rotor should spin freely in an anti-clockwise direction with the pawls clicking lightly and evenly. The rotor should lock up immediately when turned clockwise.
Replace spacer (item 18) and tighten grubscrew (item 19).
Apply a light film of grease to rotor splines and clean sprockets and refit.
Replace sprocket retainer ring and tighten to required torque 40 Nm (30 ft.lb.).
NOTE: We recommend the use of cassettes with an aluminium spider i.e.XT/XTR. If all steel sprockets are used slight marking of the rotor body may occur but this will not impair the function of the product .It is not recommended for HOPE hubs to be built radially.

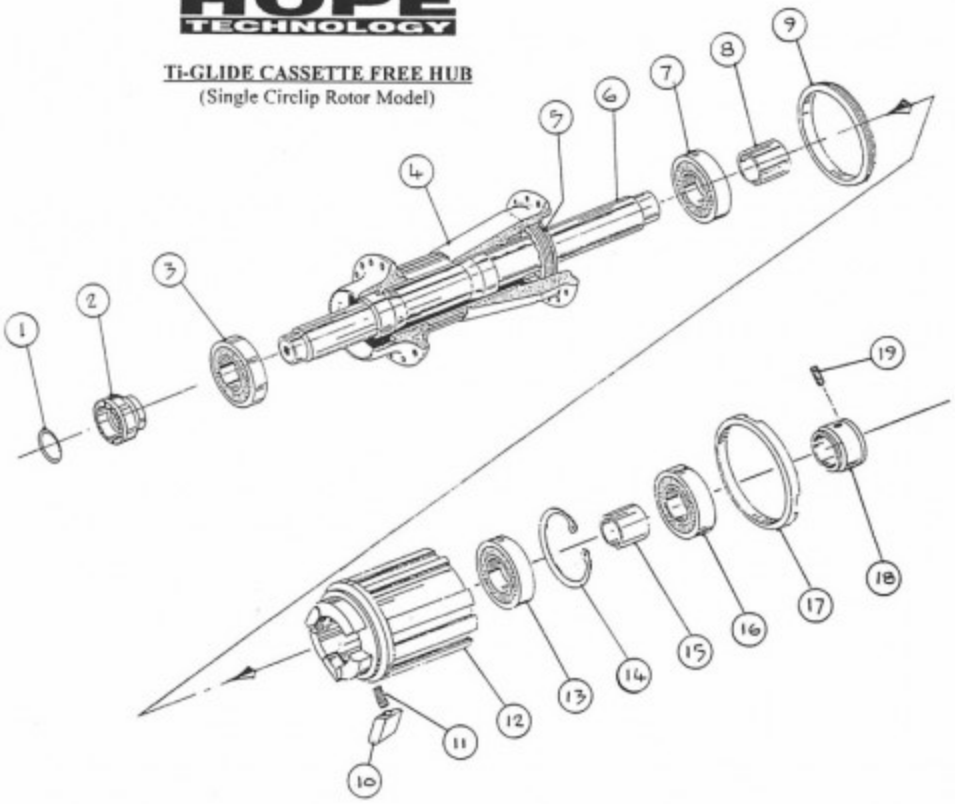
PARTS LIST

Item	Description
1.	'O' Ring
2.	Spacer (19mm for 135 axle)
	" (14mm for 130 axle)
3.	Bearing 6001 2RS
4.	Hub Body
5.	Ratchet Ring
6.	Spindle
7.	Bearing 6001 2RS
8.	Spacer (16mm long)
9.	Seal-lip
10.	Pawls (3 off)
11.	Spring (3 off)
12.	Rotor Body
13.	Bearing 6001 2RS
14.	Circlip
15.	Spacer (14mm long)
16.	Bearing 6001 2RS
17.	Spacer (7 speed conversion)
18.	Spacer (11mm long)
19.	M4 Grub Screw

HOPE TECHNOLOGY

Ti-GLIDE CASSETTE FREE HUB

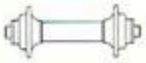
(Single Circlip Rotor Model)




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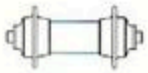
HOPE TITANIUM MOUNTAIN BIKE HUBS

HOPEs' philosophy is to design and manufacture a product of excellent quality, lightweight and fully serviceable with no compromise in strength or reliability.
All parts are machined in house, using aerospace quality materials on the latest CNC (computer numerical control) machines under the strict quality control of HOPEs' skilled engineers.
The classic HOPE hub design incorporates two 7075 T6 aluminium flanges pressed and bonded onto a titanium centre tube with a high strength aluminium axle drilled for quick release. The flanges are anodised in a choice of either silver, blue, purple, red, or black, creating a corrosion resistant surface.
All the hubs are available in an extensive range of hole drillings or slots ranging from 12 to 36. To extend the life of the double sealed top quality deep groove bearings HOPE have also introduced extra dirt/power wash protection shields on all hubs.
We are working constantly to develop and improve our products and aim to provide the highest standards of service and technology in the cycle component business.



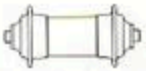
LIGHTWEIGHT – 98g

The most economic of the HOPE range and offering a top quality low cost upgrade from standard front hubs. This hub gives you the smooth running of 609 2RS cartridge bearings and is available in a full choice of colours and hole drillings.



SUSPENSION – 164g

Especially designed to provide the extra rigidity required to alleviate the flexing of suspension forks. This hub is a less expensive alternative to the FATSO. But still offers the rigidity of a 16mm axle. The construction of this hub allows for the optional use of allen screw end caps. It can also be supplied with a spline for the HOPE disc brake.

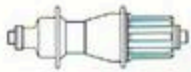


FATSO – 162g

If you are looking for the ultimate in suspension hubs to stop your forks 'wagging' look no further than HOPEs' FATSO front hub. This hub features a 21mm spindle with stub axles pressed into the ends. The stub axles cover the bearings providing even more protection against ingress from dirt and water than the already sealed 61903 2RS cartridge bearings. The construction of the axle has resulted in a hub which is stiffer than virtually anything currently available without the need for bolts in the end of the hub or oversized spacers. This attention to detail has resulted in a hub which will fit into any suspension forks. Flange width has also been increased to stiffen the wheel as a whole.

TI-GLIDE – 290g

HOPEs Ti-Glide cassette incorporates materials and technology which far surpass other hubs currently available. The rotor body is produced from 6Al/4V titanium, an industry first, giving the ultimate in weight saving without any sacrifice in the strength.
This rotor body is available to suit either Shimano or Campagnolo sprockets. It comes complete with a removable spacer allowing use with 7 or 8 speed sprockets. The rotor body contains two cartridge bearings. The hub body houses a further two cartridge bearings. It also holds the ratchet which is made from nitrided high grade steel and three tool steel pawls. The ratchet mechanism is sealed with a lip seal to prevent any ingress of dirt or water.
To cope with the extra stresses associated with the growing number of full suspension bikes HOPE have increased the axle diameter up to 15mm, eliminating any unwanted flex.
Finally, maintenance could not be simpler, by pulling the end spacer from the spindle, the rotor can be removed, allowing access to the pawls and ratchet for routine greasing. No need for special tools or pullers.



SCREW-ON REAR – 170g

HOPEs screw-on hub offers one of the lightest rear hubs on the market and at a very competitive price. It runs on two 6001 2RS deep groove double sealed bearings. The axle design makes possible use of either 7 or 8 speed blocks on the same hub allowing for easy upgrades and will accept any standard BSA threaded blocks.



HOPE TECHNOLOGY

Hope Mill, Skelton Street,
Colne, Lancashire BB8 9JE
Tel/Fax: 01282 870498

Machine Tech

Looks like a Bubba hub on steroids, even down to the same O rings inside the dust covers. Its fatter central body looks good, but doesn't seem to improve anything. With a constant diameter axle, it's gone on a diet but lost some stiffness.

Face diameter: 22mm
Flange spacing: 71mm
Flange diameter: 42mm
Deflection: 0.95mm
Weight: 154g
Function: ●●●●○
Value: ●●●◐○
Price: £88.50
From: AMS Associates ☎ 0455 274520



T-Gear Suspension

A quite unique design, unlike any other hub, the T-Gear uses a 12mm axle with well supported faces to do an OK job of fastening everything together. Could be modified to be held in with M8 bolts which could get interesting. More later...

Face diameter: 19mm
Flange spacing: 73mm
Flange diameter: 43mm
Deflection: 0.95mm
Weight: 148g
Function: ●●●●○
Value: ●●●◐○
Price: £89
From: AMS Associates ☎ 0455 274520



Shocktech Suspension

With these hubs the neat, large faces hit the dropouts and stop everything from shifting too much. Unfortunately, the 12mm aluminium axle is too flexible to do much good. The carbon centre looks classy.

Face diameter: 22mm
Flange spacing: 70mm
Flange diameter: 46mm
Deflection: 1.4mm
Weight: 146g
Function: ●●●◐○
Value: ●●●●○
Price: £49.95
From: Shocktech ☎ 0420 489313



Hope Suspension

Unlike their fantastic rear hub, this suspension model doesn't offer as much as it could. Smaller faces than other hubs and the constant diameter axle means that it isn't trying as hard as the other models in the test. The new model should be much improved, though.

Face diameter: 19mm
Flange spacing: 68mm
Flange diameter: 42mm
Deflection: 1.7mm
Weight: 162g
Function: ●●●○○
Value: ●●●●○
Price: £49.95
From: Hope ☎ 0282 870498



is that mountain bikers, on the whole, still want to undo their wheels to allow them to put their bikes in the car, mend punctures and the like. Motorbike hubs need spanners or big allen keys to remove them, and a bit of time.

Mountain bikers' impatience dictates that we want our wheels to fall from the bike with the slightest flick of the wrist.

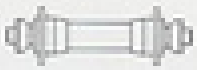
Design compromise

Wheels should come out easily, without any trouble, but only when you want them to. It's this requirement for ease of removal that produces the compromised design of suspension fork/hub attachments and reduces how effective at controlling independent fork leg movement any suspension hub can be.

As long as people want to use lightweight flip-open skewers, in any wheel, and any fork, they'll continue to be far worse than they could be. The current batch of suspension

HOPE TITANIUM ROAD HUBS

HOPEs' philosophy is to design and manufacture a product that is of excellent quality, lightweight and fully serviceable with no compromise in strength or reliability.
All parts are machined in house, using aerospace quality materials on the latest CNC (computer numerical control) machines under the strict quality control of HOPEs' skilled engineers.
The classic HOPE hub design incorporates two 7075 T6 aluminium flanges pressed and bonded onto a titanium centre tube with a high strength aluminium axle drilled for quick release. The flanges are anodised in a choice of either silver, blue, purple, red, or black, creating a corrosion resistant surface.
All the hubs are available in an extensive range of hole drillings or slots ranging from 12 to 36. To extend the life of the double sealed top quality deep groove bearings, HOPE have also introduced extra dirt/power wash protection shields on all hubs.
We are working constantly to develop and improve our products and aim to provide the highest standards of service and technology in the cycle component business.



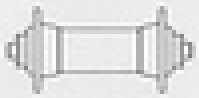
ULTRALIGHT – 65g

Currently the lightest usable front hub in the world at only 65g. It still runs on two quality 6800ZZ cartridge bearings and a 11 mm axle. The design features two external lip seals to inhibit the ingress of dirt to the bearings.



LIGHTWEIGHT – 98g

The most economic of the HOPE range offering a top quality low cost upgrade from standard front hubs. This hub gives you the smooth running of 609 2RS cartridge bearings and is available in a full choice of colours and hole drillings.



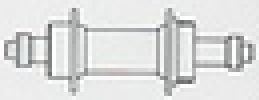
RADIAL – 120g

After working with major suppliers of specialist road rims HOPE have developed a hub specifically designed for radial lacing. This hub features thicker spoke flanges and extra material around spoke holes to prevent any deformation of the flange. The spoke flange is also produced to match the diameter of other major hub manufacturers allowing it to be used as a direct upgrade without the need to replace the spokes. As with other HOPE hubs the radial uses sealed cartridge bearings.



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SCREW-ON REAR – 170g

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Ti-GLIDE CASSETTE FREE HUB

Maintenance & Strip Instructions

Weekly

Apply a few drops of light oil to the ratchet seal (item 9) behind the sprockets, between cassette rotor and hub.

Three month intervals

Remove wheel and unscrew lock-ring holding sprockets in position, withdraw sprockets.

Use a 2mm allen key and slacken grub screw (item 19) and remove rotor body (item 12), turning anti-clockwise at the same time so as to prevent pawls being dislodged.

Remove pawls and springs and clean with meths or white spirit to remove old grease. Wipe out old grease from inside ratchet (item 5). Do not immerse hub in degreaser as this will remove grease from bearings.

Assembly Procedure:

Smear a thin layer of grease around pawl locations in rotor body and ratchet in hub. Insert springs into body, carefully re-place pawls into seatings. (The grease will help to retain them) Make sure springs are located properly in pawl and body. Slide rotor body assembly onto spindle. Using a small screw driver, ease pawls into ratchet whilst applying a gentle pressure to end of rotor body. When fully engaged rotor should spin freely in an anti-clockwise direction with the pawls clicking lightly and evenly. The rotor should lock up immediately when turned clockwise.

Replace spacer (item 18) and tighten grubscrew (item 19).

Apply a light film of grease to rotor splines and clean sprockets and refit.

Replace sprocket retainer ring and tighten to required torque 40 Nm (30 ft.lb.).

NOTE: We recommend the use of cassettes with an aluminium spider i.e.XT/XTR. If all steel sprockets are used slight marking of the rotor body may occur but this will not impair the function of the product.

It is not recommended for HOPE hubs to be built radially.

PARTS LIST

Item	Description
1.	'O' Ring
2.	Spacer (19mm for 135 axle)
	" (14mm for 130 axle)
3.	Bearing 6001 2RS
4.	Hub Body
5.	Ratchet Ring
6.	Spindle
7.	Bearing 6001 2RS
8.	Spacer (16mm long)
9.	Seal-lip
10.	Pawls (3 off)
11.	Spring (3 off)
12.	Rotor Body
13.	Bearing 6001 2RS
14.	Circlip
15.	Spacer (14mm long)
16.	Bearing 6001 2RS
17.	Spacer (7 speed conversion)
18.	Spacer (11mm long)
19.	M4 Grub Screw

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