

Brake and Transfer Shaft Removal, Inspection and Reassembly. (DB1200i & DB9500i winches only)

Description of the system:

The brake assembly is located within the cable drum itself and works by the use of a two spring coils. Assuming that the motor is not running for a second, any load on the cable will be pulling on the drum and would force it to rotate in the direction corresponding to the direction in which the cable is wound onto it. When the motor is not turning under power the spring coils flex and unwind slightly which then in turn forces the two shoes to bite on the drum itself. As soon as power is given to the motor, the motors power and torque wind up the spring coil by 60° of rotation. This allows the shoes to release the bite and the winch to pull or pay out a load.

The above statement suggests that the brake is normally on unless the winch motor is being turned with power. So how does Free spool work if the brake is on?

When in free spool all of the parts are allowed to turn at the same speed, this includes the drum, transfer shaft and the motor armature. The brake has locked the transfer shaft to the inside of the drum and therefore the drum is turning with transfer shaft.

When the gears are taken out of free spool and the lever is placed un the “engaged” position, the gears change the ratios of the power to give it more torque. Consequently the transfer shaft and drum need to rotate at different speeds. The brake is stopping the shaft and the drum from turning at different speeds and so the whole winch is locked up until the user drives the motor again with power (automatically disengaging the brake).

Stripping and Assembly:



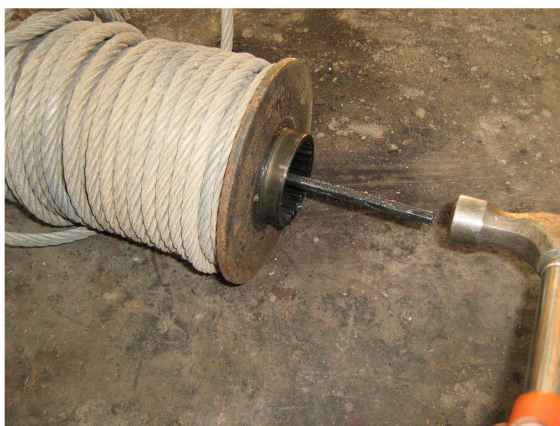
This is how the winch should look having had the top cover and motor already removed. It's normally best to remove the cable prior to starting so that it doesn't spring loose on the drum.



Simply just pull the drum away from the gear housing.



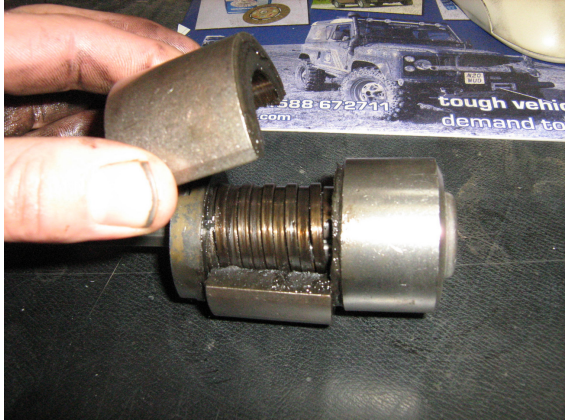
The transfer shaft will now be visible from the gear/lever end of the drum



Gently tap the end of the transfer shaft to knock the shaft and brake assembly out the other side of the drum.



This is the brake assembly now being withdrawn from the drum. There are two shoes which will fall free as they become clear of the drum so just cup them with your hand as they come out.



Under the brake shoes you can see the spring coil. Check for any signs of debris or damage and clean the face of the shoes.

If you hold the base of the brake assembly at the end of the shaft you can then use an 11/32 socket/spanner on the open end and test for the 60° spring compression (rotation).



To re assemble the brake into the drum it's just a case of wiggling it firmly by hand until the shoes are just inside the drum and then tap it back near to its original position. It will centre itself when you remount the drum and motor.

All other re assembly is basically the same as disassembly in reverse order. *(Remember to grease the runners and gear teeth at the gear end of the drum and not the shoes themselves.)*