

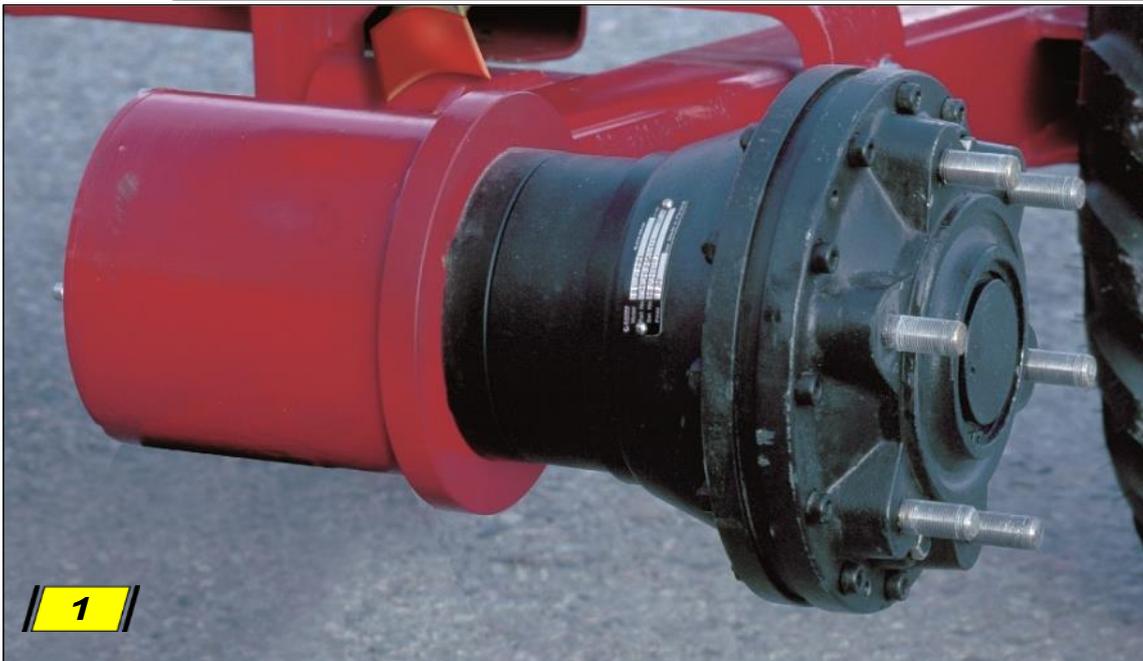
## K.T.S Hub-Motor Drive

**1**

It goes without saying that K.T.S could have chosen either type, hub-motor drive or roller drive. The latter type is also known as Robson drive (a small drive wheel is pressed down in between the tires). Before choosing hub motor drive instead of roller drive (Robson drive) we asked our customers. The reply was unanimous: hub motor drive! Why? Please, see below!

**Advantages with hub-motor drive:**

- You can use snow chains on two wheels or all four wheels, which is necessary **to avoid skidding of the wheels on snow and ice.**
- **It is also a matter of safety!** Just imagine driving on hilly grounds on a slippery surface. You slip downwards unable to make the trailer to stop! What happens? With chains on braked wheels you will manage the situation.
- Easier to construct with fewer moving parts.
- Less tire wear, **lower costs.**
- Less transmission losses, more traction power.
- Easier to change tire dimension.
- With the K.T.S design you can also drive for transportation without any changeovers.
- K.T.S uses a professional hub-motor, Black Bruin (former Sampo), the same motor brand used on combine harvesters, asphalt pavers and rollers etc.



For which types of K.T.S Timber Trailers can the hub-motor drive be used?	8.5 - 10.0 - and 11.0 t - 10.6 and 13.0 t
Is it possible to equip timber trailers from K.T.S or other manufacturers with hub-motor drive at a later date?	Yes
Hub-motor make	Black Bruin, Finland
Starting torque at 280 bars hydraulic pressure	2,800 Nm
Total traction force with still standing trailer, 280 bars hydraulic pressure	12,860 N / 1,310 kg
Torque at 3.0 km/h approx. 30 l/min, 280 bars hydraulic pressure	3,220 Nm
Total traction force at 3.0 km/h approx. 30 l/min, 280 bars hydraulic pressure	14,800 N / 1,510 kg
Max torque at 6.7 km/h approx. 66 l/min, 280 bars hydraulic pressure	3,360 Nm
Max total traction force at 6.7 km/h approx. 66 l/min, 280 bars hydraulic pressure	15,450 N / 1,570 kg
Freewheeling for road transportations when driving is disconnected?	Yes / standard
All specifications above are at 280 bars hydraulic pressure, which is the standard pressure when the trailer is equipped with hub-motor drive and its own hydraulics.	

**1****Advantages with roller drive:**

- Lower costs
- Drives on four wheels, but on the other hand it is not possible to transfer more power with roller drive than what is possible on *one* axle. Tire friction against the ground is so large that the wheels rarely lose their gripping force. With a very slippery soil, however, it is possible to combine hub motor drive with snow chains.
- The hydraulic motor used for the roller is equally strong as the wheel motor. When the roller is pressed against the tires, however, power is lost due to the friction between roller and tires, which, in turn, reduces the translated force.

**Look at the picture!**

What a simple design with hub-motor drive!

- No unprotected items, **reduces the risk of breakages.**
- The hub-motor drive is completely protected in the coarse tube.
- All hoses are also well protected.
- You can choose if you want drive on the front, the rear or both wheel pairs.

In order to get the best efficiency out of the hub-motors, you can **equip the trailer with its own hydraulic system and a 50 l/min hydraulic pump.** Then the hub-motors will drive up to 6.7 km/h. The additional pump works at a pressure of 280 Bars, which will lead to an improved traction force. We refer to the instruction manual for the tractor to see how much oil is available for external hydraulics and at which pressure.

With a hydraulic system of its own on the trailer you will also get a good speed for the crane motions and several functions can be operated simultaneously. Also, in connection with loading and unloading you can **use low speeds on the tractor and save fuel.**

The control unit is fitted in the tractor cabin and is simply operated:

- Drive On and Off
- Forward — Reverse

When the trailer has been equipped with an additional pump on the PTO, the drawbar has been replaced, so that there is space enough for the pump.

**2**

The axle distance is as much as 1,200 mm. This increases the load capacity of the trailer. A large axle distance also means an increased possibility to choose different wheel dimensions. As standard we have mounted 400/60x15.5 14-ply with tractor or trailer tread, a big wheel with an excellent capacity.

If larger wheel dimensions are fitted, the axle distance is increased in order to make room for the wheels.

Snow chains on one or two axles will increase safety.

The trailer can be equipped with disc or drum brakes on one axle. If hub-motor drive is fitted, the driven pair of wheels cannot be equipped with brakes.

