

FSJ T-case Listing and Information

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1. Do all systems have locking hubs that need to be engaged for 4wd and disengaged to freewheel?

No; there were three ways the front hubs were engaged:

Permanent-Drive hubs, used on QT and Selectrac systems.

Unlocking hubs, optional for all part-time cases over the years.

Front Axle disconnect, used on '83-'84 Selectrac models (which disconnected the front driveshaft from turning in 2wd mode.

2. Which systems(and the years offered on Wags)are able to be engaged from inside the cab? (and do you have to lock the hubs first).

All could be engaged from inside the cab; only the locking hubs had to be engaged with the D20/D21 and NP208 cases before 4wd could be used. (you **could** engage it without the hubs locked, but you'd only have rwd; as a rule, if you expected to need 4wd, you'd lock the hubs before starting off and engage 4wd as needed.

3. How are each system engaged? (rolling in N 2-5mph, at any speed, etc.)

D20 and D21 were shift-on-the-fly.

Both QT systems were permanently engaged.

'83-'84 Selectrac models needed to be stopped.

'85 and newer Selectracs could be shifted into 4Hi at any speed.

NP208 Command-trac was engaged at a 2-5mph roll, as was the low-range and/or emergency drive on all other cases.

4. Which systems offered 4low on the Wags and which years?

It was optional on the '73-'79 Quadratrac systems, and not available in '63-early'65 with the Borg-Warner automatic that only came with the single-speed D21 transfer case. Other than that, all FSJ's came with a Low-range.

5. Any other info that may help me better understand the various systems, their operation and their limitations.

There are two basic modes for 4wd systems, Part-time or Full-time:

Part-time mode locks both front and rear driveshafts to spin together. This system can only be used on loose-traction surfaces (snow, dirt, gravel, etc) that allows one of the wheels to slip, as they each travel through different arcs (and thus rotate different amounts) in corners. Page 104 of the February _Four Wheeler_ has a good illustration of this.

Full-time mode employs a differential between the front and rear driveshafts, which allows it to be used on high-traction, low-traction and mixed-traction surfaces. All full-time cases used in FSJ's (except the '86 NP228) employed a device to limit the amount of slippage between the front and rear driveshafts, so that at least two wheels will get some power. With the NP228, all power might get directed to one tire that loses traction.

Low-range was a lower gear that multiplied torque-output in 4wd; although most cases employed it as a part-time mode, the Borg-Warner Quadratrac (BW QT) had a full-time low-range as well.

All part-time cases, and some full-time cases, had a 2wd mode as well. While this was always a 1:1 drive ratio from the factory, BW QT cases with the Milemarker part-time conversion had a 2wd part-time Lo-range mode as well. Here's the rundown of what was available, the rough years of availability, and what modes each employed. (PT=Part-time, FT=Full-time)

D20 (1962-1979): 4HiPT, 4LoPT, 2Hi

D21 (1962-1965) 4HiPT, 2Hi

BW1305 Quadratrac (1973-1979) 4HiFT, 4HiPT

BW1339 Quadratrac w/optional Low-range (1973-1979) 4HiFT, 4LoFT, 4HiPT, 4LoPT

BW1339 Quadratrac w/part-time conversion 2Hi, 2Lo, 4HiPT, 4LoPT

NP208 Command-trac (1980-1987; up to 1988 and maybe even to 1991 for fleet and government orders) 4HiPT, 4LoPT, 2Hi

NP219 Quadratrac (1980-1982) 4HiFT, 4HiPT, 4LoPT

NP229 Selectrac (1983-1985, 1987-1991) 4HiFT, 4LoPT, 2Hi

NP228 Selectrac (1986) 4HiFT, 4LoPT, 2Hi