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Identifying BorgWarner Transfer Cases

One of the greatest challenges to everyone in our business is the huge increase in the number of models and drivetrains. This tremendous proliferation of units and parts has changed our industry dramatically from both the shop and supplier perspectives.

The shop has an infinite variety of different models to understand and repair, and both suppliers and shops have had to endure massive changes in the levels of inventory they keep on hand. This makes the identification of what you are working on a critical issue. To diagnose and repair we have to know exactly which model of transmission, transfer case or differential we are dealing with. Add to that the fact that there are subtle design changes even within one model year that can require different schematics or parts and that wear and tear on the unit may have eliminated the factory ID tags or labels, and we are all in the detection business before we can even start to diagnose or repair the vehicle.

We have assembled here an identification guide for the current-production models of BorgWarner transfer cases, which will include a number of models that are not sold in the United States. Since we now have a global economy and Transmission Digest is read by technicians around the world, it is necessary to try to help our brothers in other countries to identify the complete line of transfer cases.

### 13-54
- **Application:** Ford Ranger, Explorer Sport Trac, Mazda B-Series trucks
- **Configuration:** Part time
- **Low-range ratio:** 2.48-1
- **Low range:** helical planetary design
- **Lube system:** gerotor pump
- **Fluid type:** ATF
- **Dry weight:** 67 lbs.
- **Shift Pattern:** 2H-4H-N-4L
- **Shift control:** electrical or mechanical, with 4W High shift-on-the-fly

### 44-02
- **Application:** Hyundai Starex
- **Configuration:** part time
- **Low-range ratio:** 2.48-1
- **Low range:** helical planetary design
- **Lube system:** gerotor pump
- **Fluid type:** ATF
- **Dry weight:** 67 lbs.
- **Shift pattern:** 2H-4H-N-4L
- **Shift control:** electrical, with 4W High shift-on-the-fly

### 44-06
- **Application:** Ford F Series
- **Configuration:** part time
- **Low-range ratio:** 2.64-1
- **Low range:** helical planetary design
- **Fluid type:** ATF
- **Weight with fluid:** 98.5 lbs.
- **Shift pattern:** 2H-4H-N-4L mechanical, 2H-4H-4L electrical part time
- **Shift control:** mechanical or electrical
44-08
Application: Ssangyong Korando, Musso, Rexton
Configuration: Part time
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 68 lbs.
Shift pattern: 2H-4H-N-4L
Shift control: electrical, with 4W High shift-on-the-fly

44-09
Application: Mercedes-Benz M Class
Configuration: full time
Low-range ratio: 2.64-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 89 lbs.
Differential control: open
Torque split front/rear: 48/52
Electronic control unit: all-wheel drive at all times

44-10
Application: Lincoln Aviator, Mercury Mountaineer
Configuration: full time, AWD at all times
Lube system: induction
Fluid type: ATF
Dry weight: 64 lbs.
Center differential: planetary design
Differential control: viscous-coupling unit
Torque split front/rear: 35/65

44-11
Application: Lincoln Aviator
Configuration: TOD (torque on demand)
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 62 lbs.
Shift pattern: A4WDH-4H
Shift control: electrical (TOD) – automatically delivers 4WD operation as required by computer controls and modulating clutch. Computer adjusts amount of power to the front wheels up to 50 times per second.

44-11
2-speed TOD
Application: Ford Explorer
Configuration: TOD (torque on demand)
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 74 lbs.
Shift pattern: A4WD-4H-4L
Shift control: electrical

44-12 TOD
Application: Isuzu Axiom
Configuration: torque on demand
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 78 lbs.
Shift control: electrical
Shift pattern: 2H-4H-N-4L

44-13 TOD
Application: Ssangyong Korando, Musso, Rexton
Configuration: torque on demand
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 82.2 lbs.
Shift control: electrical
Shift pattern: 4H-4L electronic, shift-on-the-fly to 4WD on part-time model

44-14 TOD
Application: Lincoln Aviator
Configuration: torque on demand
Low-range ratio: 2.64-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Weight with fluid: 93 lbs.
Shift pattern: 2H-4WD-4H-4L
torque on demand
Shift control: electrical

44-15 TOD
Application: Hyundai Terracan, Kia Sorrento
Configuration: Part time and torque on demand
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 79.3 lbs.
Shift pattern: 4H-4L electronic, shift-on-the-fly to 4WD on part-time model
Shift control: electrical
44-26 ESOF (electronic shift-on-the-fly)
Application: Ssangyong Korando, Musso, Rexton
Configuration: part time
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid Type: ATF
Dry weight: 79.6 lbs.
Shift Pattern: 2H-4H-N-4L
Shift control: electrical, 4WH shift-on-the-fly

44-26 TOD
Application: Ssangyong Korando, Musso, Rexton
Configuration: torque on demand
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 73.6 lbs.
Shift Pattern: 4H-4L
Shift control: electrical

44-73
Application: Chevrolet Express van, GMC Savana van
Configuration: full time
Lube system: splash
Fluid type: ATF
Dry weight: 70.8 lbs.
Center differential: planetary
Differential control: viscous coupling
Torque split front/rear: 35/65

44-76
Application: Cadillac SRX
Configuration: full time
Lube system: splash
Fluid type: ATF
Dry weight: 48.1 lbs.
Center differential: planetary
Differential control: open
Torque split front/rear: 50/50

44-79
Application: Cadillac STS
Configuration: full time
Lube system: splash
Fluid type: ATF
Dry weight: 48.1 lbs.
Center differential: planetary
Differential control: open
Torque split front/rear: 40/60

44-81
Application: Cadillac Escalade, GMC Yukon Denali
Configuration: full time
Fluid type: ATF
Dry weight: 61.1 lbs.
Center differential: planetary
Differential control: open
Torque split front/rear: 40/60

44-82
Application: Chevrolet Tahoe and Suburban, GMC Yukon and Yukon XL
Configuration: full time
Low-range ratio: 2.64-1

44-84
Application: Hummer H2
Configuration: full time
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 90 lbs.
Shift pattern: 4H-4H lock-N-4L lock
Shift control: electrical
4WH lock: shift-on-the-fly
Center differential: planetary
Differential control: open
Torque split front/rear: 40/60

45-54
Application: Telco Safari, Sumo, Sierra, crew cab
Configuration: Part time
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 63 lbs.
Shift pattern: 2H-4H-N-4L
Shift control: electrical, 4WH shift-on-the-fly
45-55
Application: Mahindra Bolero and Scorpio
Configuration: part time
Low-range ratio: 2.48-1
Low range: helical planetary design
Lube system: gerotor pump
Fluid type: ATF
Dry weight: 63 lbs.
Shift Pattern: 2H-4H-N-4L
Shift control: electrical, 4WH shift-on-the-fly

ITM 1
(Interactive Torque Management)
Application: Hyundai Santa Fe
Configuration: torque-transfer device for on-demand 4WD
Lubricant type: ATF, fill for life
Power supply: 12 volts
Current draw: 1-2 amps nominal, 3-5 amps peak demand
Activation/deactivation time: 100ms
Power divider for front-wheel-drive transaxles to create 4WD system

ITM II
(Interactive Torque Management)
Application: Acura MDX and Honda Pilot
Configuration: electronically controlled secondary axle assembly
Lubricant: Mobil 424
Controls torque transfer between two rear wheels of a 4WD vehicle
On-demand 4 WD
Fully interactive with engine and transmission management systems, brake-based traction controls and vehicle stability control.
No differential; each axle has clutch packs to differentiate torque to each wheel.