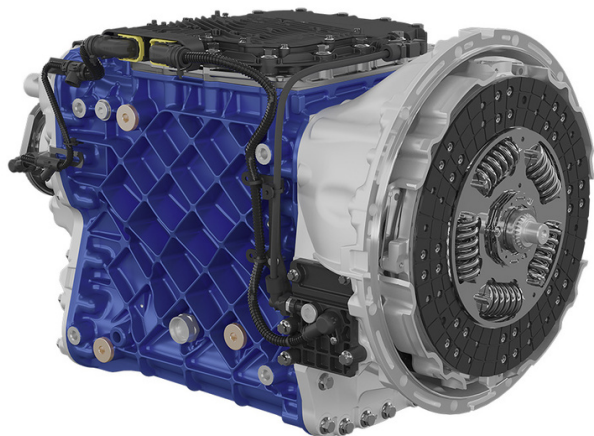


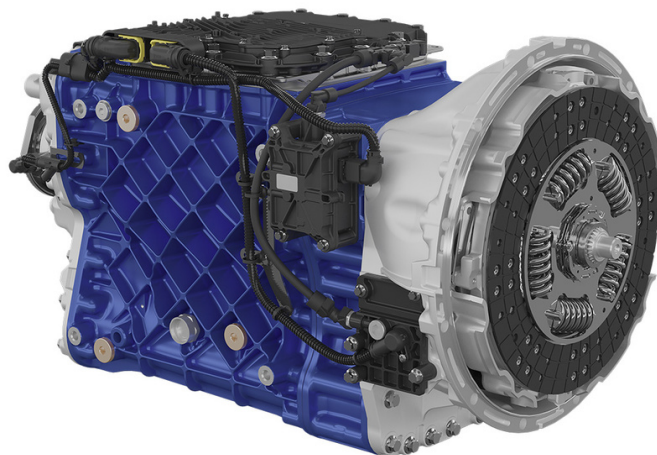
## FACT SHEET

# TRANSMISSION

ATO3112 I-Shift automated gearbox



I-Shift –12-speed – automated gearbox.



I-Shift with crawler gears. It has an extension unit between the clutch and the gearbox - enabling 13 or 14 gear with possibility of additional reverse gears. Includes options ASO-C/ASO-ULC/ARSO-MSR.

I-Shift ATO3112 generation G is a 12-, 13- or 14-speed electronically controlled splitter and range-change over drive transmission designed for automatic gear changing, with the possibility of manual shifts. It is dimensioned for 3150 Nm of torque.

I-Shift is characterised by a fast and smooth gear-changing system featuring minimum interruption in torque delivery during gear changing.

The gearbox has advanced software with well-adapted gear change strategies. Because the gearbox has such a large ratio coverage, it has capacity for both high starting traction and high average speeds.

I-Shift ATO3112 is approved for engines with a torque level up to 3150 Nm. This transmission is suitable for long haul operations, heavy construction applications, regional and urban transportation duties.

Transmission oil cooler, power take-off, compact retarder and emergency power steering pump can be fitted to the transmission. With the selectable transmission oil cooler program, it is possible to adjust the cooling need to suit the operation conditions.

I-Shift ATO3112 has long intervals between oil changes, which promote low operating costs and less environmental impact. Oil and filter changes take place after a maximum of 450,000 km or every third year.

### Sales variants

#### Aux Speed Operation

|         |                        |
|---------|------------------------|
| ASO-C   | Crawler gear           |
| ASO-ULC | Ultra low crawler gear |

#### Aux Reverse Speed Operation

|          |                     |
|----------|---------------------|
| ARSO-MSR | Reverse multi-speed |
|----------|---------------------|

### FEATURES AND BENEFITS

- A fully automatic gear-changing system allows high comfort and fuel-efficient driving.
- The overdrive on the top gear, the engine's economy rev band can be better exploited, leading to fuel savings and quieter operation.
- Software program package adapts the gear changes to the prevailing transport conditions.
- Possibility of manual gear changing and locking of the current gear promotes high driving flexibility.
- Low weight with main box, range-change housing and clutch housing made of aluminium.
- I-Shift is suitable for transport applications in all segments.
- Crawler gear option enables low speed maneuverability and even higher startability.

## FACT SHEET

# TRANSMISSION

ATO3112 I-Shift automated gearbox

### I-Shift is prepared for the future

In generation G, developed software gives an improved accuracy. The gearbox has a developed control unit with micro controller, sensors and actuators to enable an optimal control of gear shifting.

I-Shift is prepared for the future. The micro controller has increased computational capacity to support further functional growth.

### Three main speeds, splitter, range and reverse gears

The main box has three base gears, an integrated splitter gear and a reverse gear. In the range housing, the range gear is of planetary type.

All the shafts, bearings and gears are sturdy dimensioned for high operating reliability and long service life. All the gears are made of special steel that has been case-hardened to provide considerable strength. Helical gears in both the main box and range-change section mean that more gear surface is in mesh at any given time, promoting quiet operation and high reliability.

### Fast gear-changing system with short torque interruption

I-Shift is a very flexible gear-changing system. In Auto mode, gears change automatically even with the cruise control engaged.

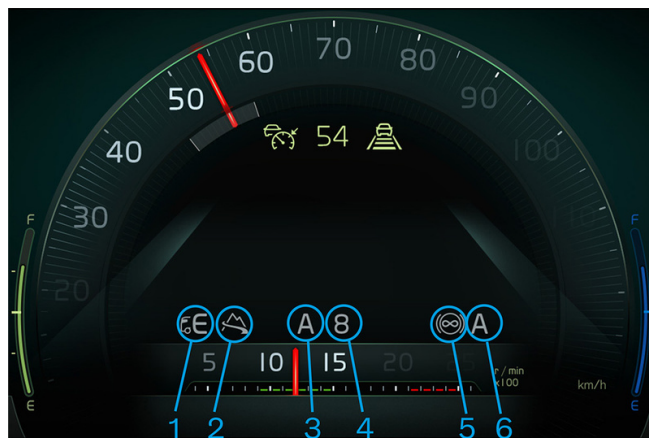
In sensitive driving conditions with seat mounted gear selector, the driver can switch to the Manual mode. In Manual mode the driver changes gear manually using a button integrated into the gear lever. Since clutch operation is controlled by the gear-changing system, there is no clutch pedal.

### I-Shift gear selector in seat or in dashboard

For I-Shift gearboxes, there is a choice between a seat mounted and a dashboard-mounted gear selector. The seat mounted is best suited for rough or complex driving while the dashboard-mounted selector provides extra room in the cab. For more information, see fact sheet "I-Shift gear selector".

### I-Shift drive modes and for optimum efficiency

The I-Shift gearbox's functions are optimized with specially adapted drive modes, which make the gearbox even more practical and economical by adapting the gearshift functionality to the current transport conditions. For more information, see fact sheet "I-Shift drive modes and software functions".



Shown on the display: 1. Drive mode 2. I-See symbol (Green = Working / Grey = Engaged "Ready to work") 3. Automatic gear shifts / Manual gear shifts 4. Selected gear 5. Aux Brakes engaged 6. Brake level in position automatic (A=Brake blend)

### Reinforced gearbox application as standard

I-Shift ATO3112 is equipped with TRAP-HD reinforced gearbox application. The reinforcements concern split synchronizer and main gear dog clutches. For more information, see fact sheet "Transmission application".

### I-Shift with crawler gears

I-Shift with crawler gears has an extension unit between the clutch and the gearbox. The extension unit includes options ASO-C/ASO-ULC and ARSO-MSR.

### ASO-C – Crawler gear

The ASO-C, crawler gear enabling a 13<sup>th</sup> gear, is for improved vehicle startability and low speed maneuvering.

### ASO-ULC – Ultra low crawler gear

The ASO-ULC gives 2 extra crawler gears - enabling a 13<sup>th</sup> and a 14<sup>th</sup> gear. Ultra low crawler gear and crawler gear. Ultra low crawler gear is designed for very good startability and very low speed maneuvering.

### ARSO-MSR – Reverse multi-speed

The ARSO-MSR function gives 2 extra reverse gears. The lowest reverse gear enables to start in reverse in a very good way. The other extra reverse gear enables you to start in high range. (ARSO-MSR requires ASO-C or ASO-ULC.)

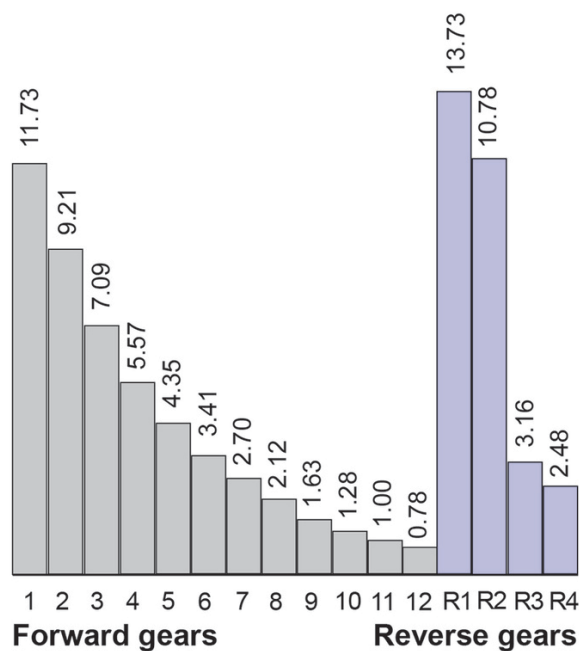
## FACT SHEET

# TRANSMISSION

ATO3112 I-Shift automated gearbox

### SPECIFICATION

Type designation.....ATO3112  
 Generation..... G  
 Type..... Automatic splitter/range-change over drive transmission  
 Max incoming torque..... 3150 Nm  
 Number of forward gears..... 12, 13 or 14  
 Number of reverse gears..... 4 or 6  
 Weight without oil standard version..... 278 kg  
 Weight without oil crawler gears version..... 324 kg  
 Oil-change volume, standard version.....approx. 16 l  
 Oil-change volume, standard version incl. oil cooler with normal capacity.....approx. 16 l  
 Oil-change volume, standard version incl. oil cooler with high capacity..... approx. 17 l  
 Oil-change volume, crawler gears version.....approx. 17.6 l  
 Oil-change volume, crawler gears version incl. oil cooler with normal capacity.....approx. 17.6 l  
 Oil-change volume, crawler gears version incl. oil cooler with high capacity..... approx. 18.6 l

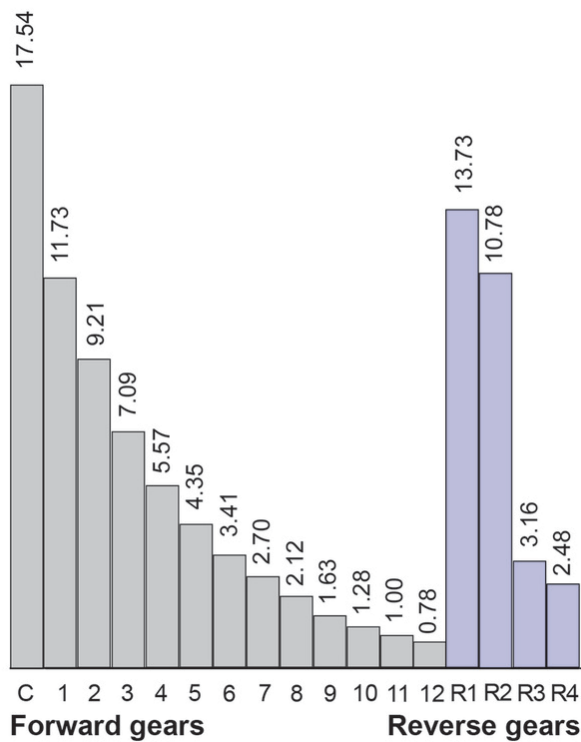


Ratios ATO3112

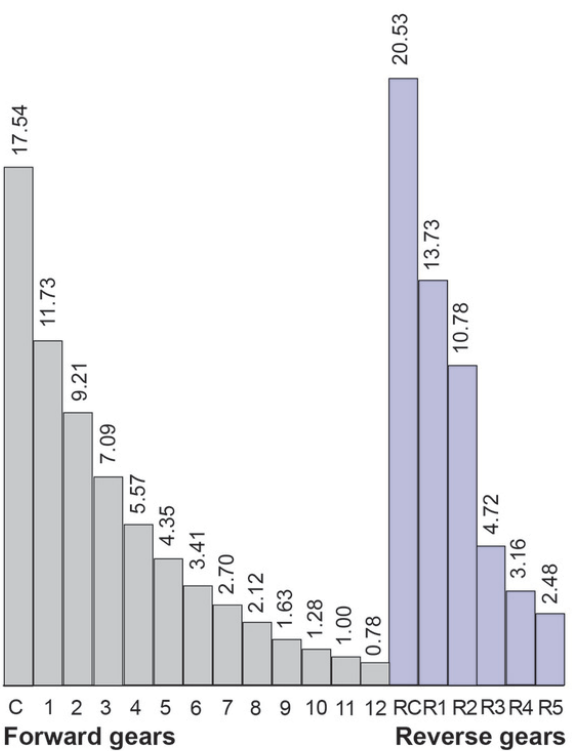
FACT SHEET

TRANSMISSION

ATO3112 I-Shift automated gearbox



Ratios ATO3112 with ASO-C

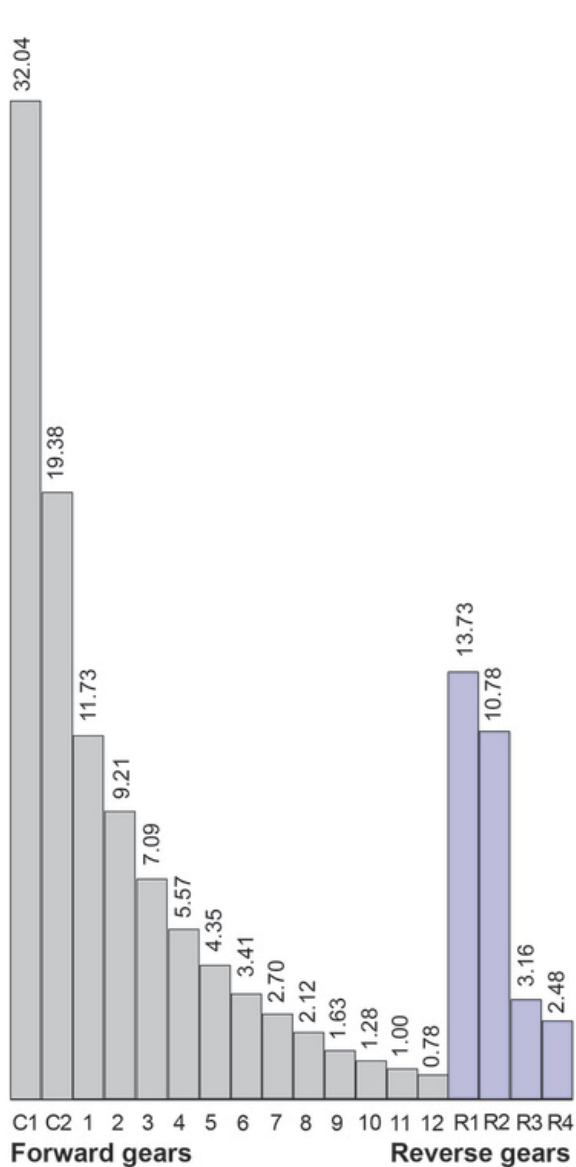


Ratios ATO3112 with ASO-C and ARSO-MSR

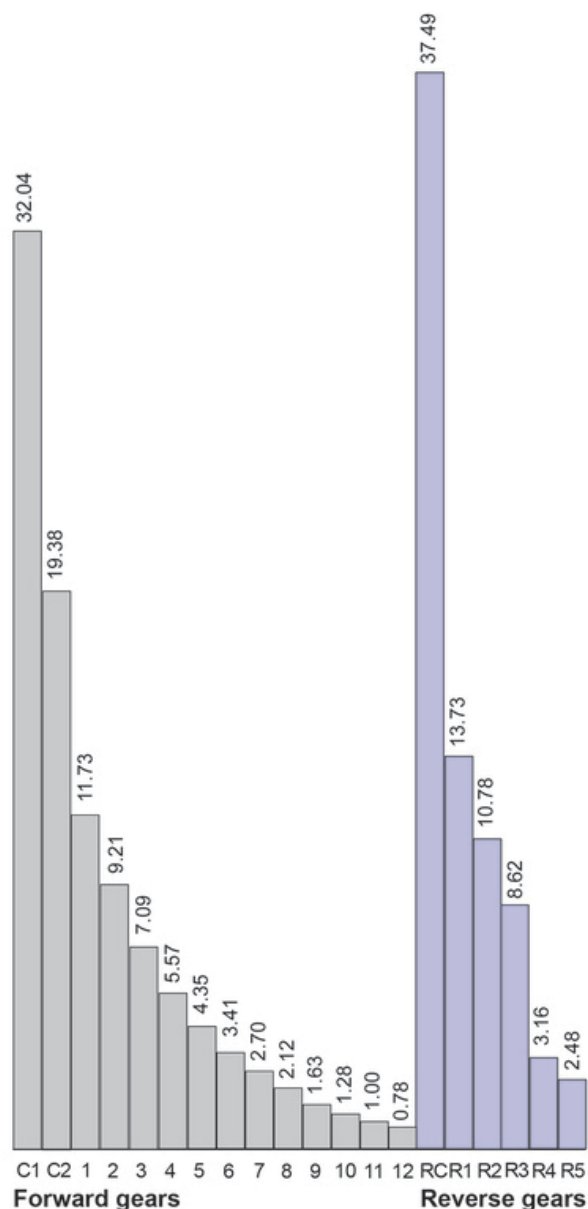
## FACT SHEET

# TRANSMISSION

ATO3112 I-Shift automated gearbox



Ratios ATO3112 with ASO-ULC



Ratios ATO3112 with ASO-ULC and ARSO-MSR