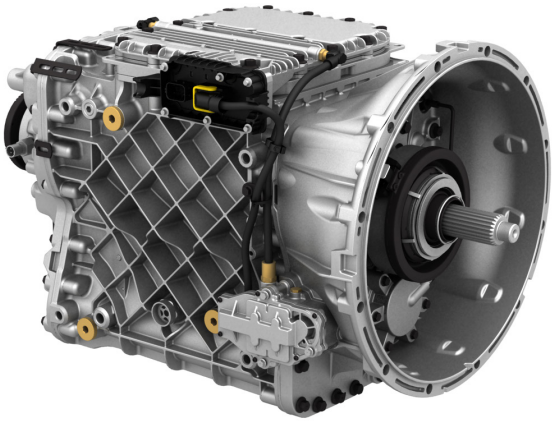
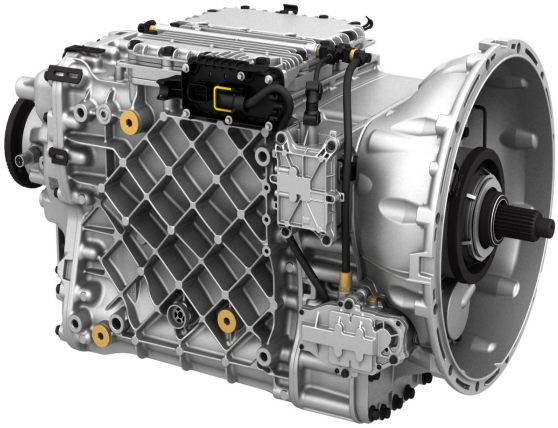
Volvo Trucks. Driving Progress

FACT SHEET

Gearbox ATO2612F



I-Shift –12-speed – automated gearbox.



I-Shift with crawler gears. It has an extra module between the clutch and the gearbox. Includes options ASO-C/ASO-ULC/ARSO-MSR.

I-Shift ATO2612F is a 12-, 13- or 14-speed electronically controlled splitter and range-change transmission with overdrive designed for automatic gearchanging, with the possibility of manual shifts. It is dimensioned for 2600 Nm of torque.

I-Shift is characterised by a fast gearchanging system featuring minimum interruption in torque delivery during gearchanging. Because the gearbox has such a large ratio coverage, it has capacity for both high starting traction and high average speeds. I-Shift has advanced software with well-adapted gearchange strategies.

I-Shift ATO2612F is approved for gross combination weights of up to 100 tonnes. This makes it suitable for long-haul operations, heavy construction applications and regional and urban transportation duties.

An oil cooler, power take-off, compact retarder and emergency power steering pump can be fitted to the transmission. With the selectable oil cooler programme, it is possible to adjust cooling to suit the current driving mode and road conditions.

I-Shift ATO2612F has long intervals between oil changes, which promotes low operating costs and less environmental impact. With special oil, filter and oil changes take place after a maximum of 450,000 km or every third year.

It is also possible to order a heavy duty variant (TRAP-HD) on this gearbox. For gearbox with crawler gears TRAP-HD is mandatory. Please see separate fact sheet – Transmission application TRAP-HD – for more information.

Optional sales variants

ASO-ULC	Ultra low crawler gear
ASO-C	Crawler gear
ARSO-MSR	Reverse multi-speed

FEATURES AND BENEFITS

- A fully automatic gearchanging 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.
- The program package adapts the gearchanges to the prevailing transport conditions.
- Possibility of manual gearchanging 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.

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Gearbox ATO2612F

Electronic control and ergonomic consideration

The gear selector is integrated in the driver's seat for comfortable and safe operation. The gear selector has no mechanical contact with the transmission, but instead activates a number of sensors in the gear selector.

As an option, the gearshift controls can be mounted in the dashboard and replace the standard seat mounted gear control.

Fast gearchanging system with short torque interruption

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

In sensitive driving conditions, the driver can switch to the Manual mode that locks the current gear. In M, 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.

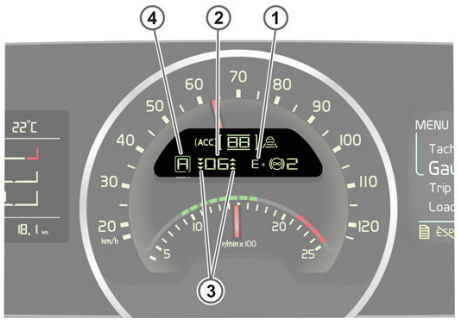
Driving program for optimum efficiency

In Automatic mode, the driver can choose between the "Performance" and "Economy" programs. Gears are changed via a button on the gear selector. This function offers different gearchange strategies depending on the road conditions. Economy mode provides good fuel economy. The "Performance" mode provides more responsive gearchanging, and is used when extra engine power is needed.

With dash mounted gear controls there is no option of Economy or Performance and also no Manual mode or Limp-home function.

With a program package that is selected to suit the specific transport application, it is possible to tailor the transmission's properties and functions via the software. The programs are designed to provide the best gearchanging strategy for each situation, with an added bonus in the form of fast gear changes.

See separate I-Shift software package fact sheet for more information.



Shown on the display: 1. Driving program 2. Selected gear 3. Available gears (down/up) 4. Lever position

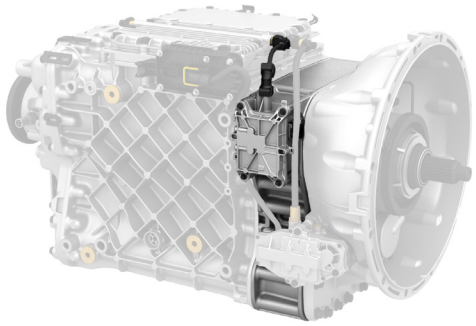
Three main speeds, splitter, range and reverse gears

The base unit has three base ratios, an integrated splitter gear and a reverse gear. In the range housing, there is a range gear of planetary type. The splitter and range gears are synchronised, while the main box has no mechanical synchromesh. Speed synchronisation is done electronically with the help of the engine and transmission control units, after which the gear is changed.

Strong and dependable components

All the shafts, bearings and gears are sturdily 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.

A flange-mounted clutch valve unit and integrated concentric clutch actuator including position sensor replace the externally mounted clutch cylinder.



I-Shift with crawler gears

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

ASO-C – Crawler gear

The ASO-C, crawler gear, is for improved vehicle startability and low speed maneuvering.

ASO-ULC – Ultra low crawler gear

The ASO-ULC gives 2 extra crawler gears. 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.)

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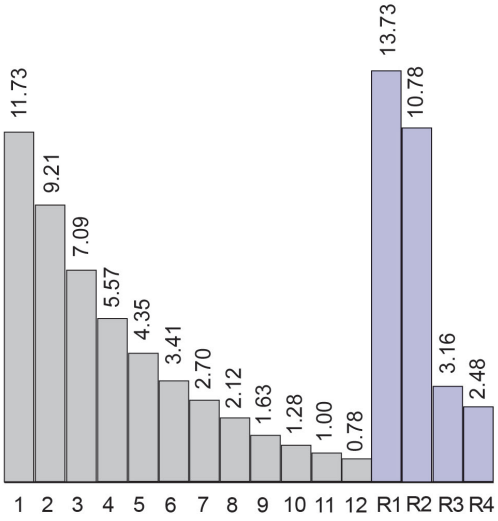
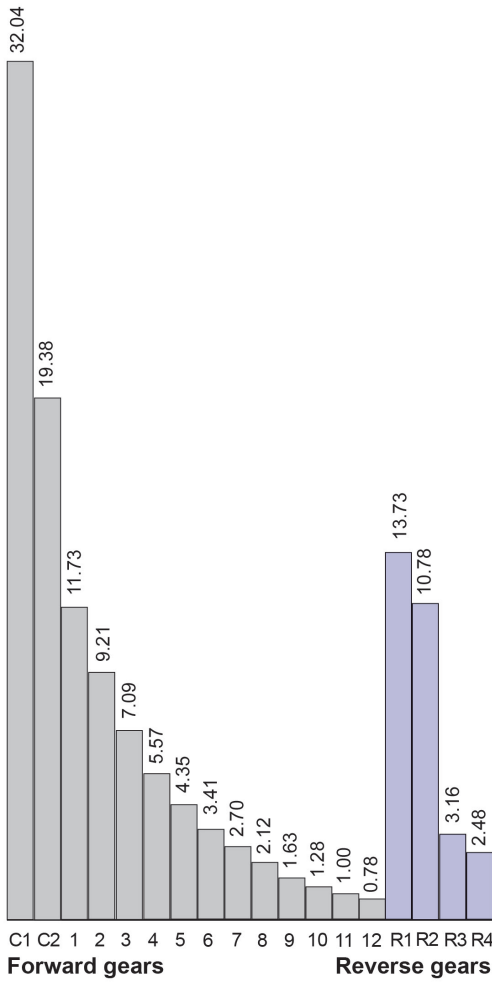
Gearbox ATO2612F

SPECIFICATION

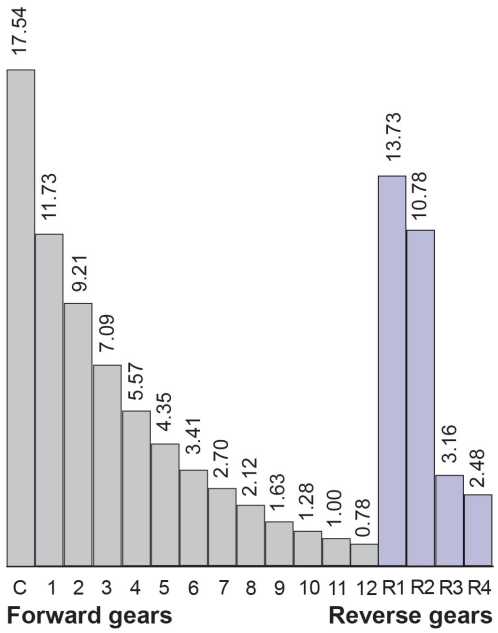
Type designation	ATO2612F
Max incoming torque	2600 Nm
Max gross combination weight	100 tonnes
Weight without oil standard version	278 kg
Weight without oil crawler gears version	324 kg
Type	Automatic splitter/range-change transmission
Number of forward gears	12, 13 or 14
Number of reverse gears	4 or 6
Gear selector positions:	
R	Reverse
N	Neutral
A	Automatic
M	Manual
Driving programs (Seat mounted gear selector):	
E	Economy
P	Performance program
B	Braking program (option)
L	Limp Home function
Oil-change volume, standard version	approx. 16 l
Standard version incl. oil cooler with normal capacity	approx. 16 l
Standard version incl. oil cooler with high capacity	approx. 17 l
Oil-change volume, crawler gears version	approx. 17.6 l
Crawler gears version incl. oil cooler with normal capacity	approx. 17.6 l
Crawler gears incl. oil cooler with high capacity	approx. 18.6 l



Ratios ATO2612F



Ratios ATO2612F with ASO-ULC



Ratios ATO2612F with ASO-C

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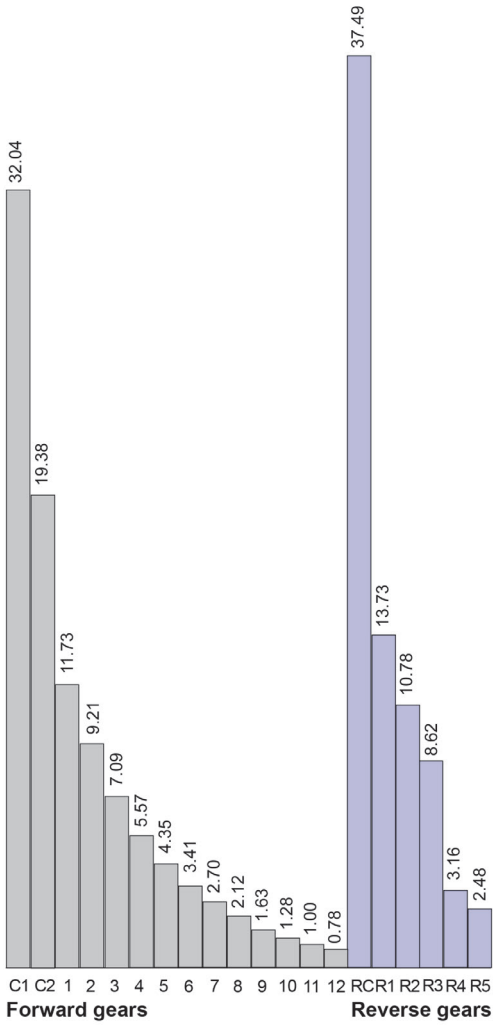
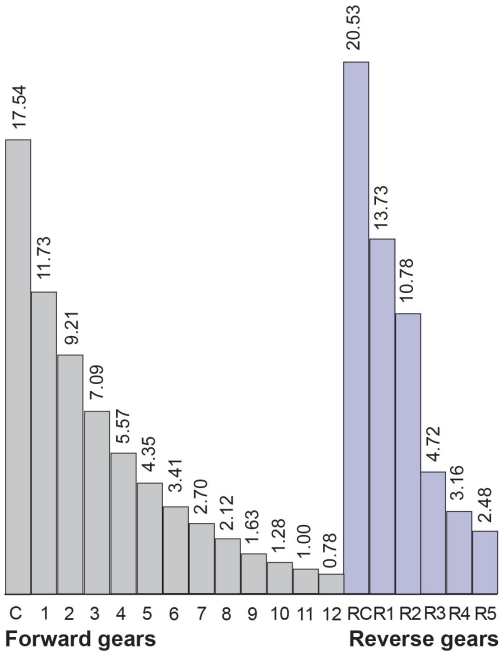
Gearbox ATO2612F



Ratios ATO2612F with ASO-ULC and ARSO-MSR



Ratios ATO2612F with ASO-C and ARSO-MSR

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