

FACT SHEET

REAR AXLE

RTH3312 Rear hub reduction tandem axle - bogie load 33 tonnes, GCW 120 tonnes



RTH3312 is a tandem axle with hub reduction, dimensioned for an engine torque of 3550 Nm. The maximum axle loading is 33 tons and the combination weight is 120 tons.

RTH3312 consists of two spirals bevel single-gear units, with a distribution gearbox in the forward rear axle. The axle casing is in nodular iron, giving a compact design with high ground clearance.

Most of the torque conversion takes place in the reduction gears in the wheel hubs. This is a reliable design which takes the form of a cylindrical planetary gear with straight-cut gears on needle bearings, giving low drive losses.

RTH3312 is designed for heavy, demanding haulage and train weights of up to 120 ton. The two-axle drive means that the tractive effort can be transferred to the ground without a wheel slip, giving excellent grip and very low tyre wear.

RTH3312 has three differential locks, one for the forward and one for the rearward gear units and one for the distribution gearbox. This guarantees very good grip when the surface is slippery, which results in a higher truck productivity.

The diff locks are controlled by a two-stage switch on the instrument panel. When the first stage of the switch is selected the diff lock on the distribution gearbox is engaged, coupling the two rear axles together. When the second stage of the switch is selected, the drive shafts of the two rear axles are coupled together.

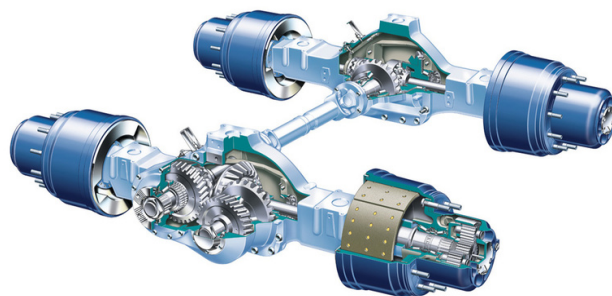
A combination of new production methods and special oil has resulted in longer oil change intervals. This means lower operating expenses and reduced environmental impact. With an approved synthetic oil, an oil change is needed after at most 450 000 km or every three years.

**PRODUCTIVITY**

- Three reliable diff locks give a high vehicle availability.
- High ground clearance.
- Robust axle housing for high load capacity.

**UPTIME**

- Spiral bevel single-gear units with high efficiency and low servicing requirements.
- Sturdily dimensioned and hardened shafts and gears.
- Hub reduction gears reduce loads on the driveline.
- Wheel bearings in the form of maintenance-free unit bearings gives a longer life and easier servicing.



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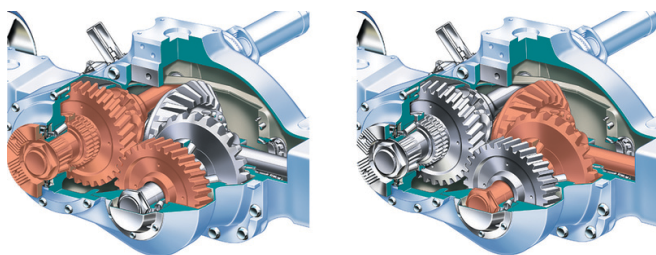
Tandem drive offers an excellent traction and superb pulling power.

The RTH3312 consists of two single reduction gears of spiral bevel type and a transfer gear which is integrated in the first final drive.

The job of the transfer gear is to distribute the drive force evenly between the two rear axles.

The drive force from the gearbox goes via the transfer gear's input shaft to the differential. From the differential, the power is transferred partly by a cylindrical spur gear to the first rear axle's final drive, and partly to the transfer gear's output shaft which operates the second axle's final drive via a propeller shaft.

This type of rear axle combination with tandem drive allows considerable tractive force to be transferred to the road surface without slipping since the combined axle pressure is high. The result is excellent get-you-there ability and low tyre wear.



First final drive: Transfer gear (left) and single reduction gear (right)

Hub reduction with high reliability

RTH3312 is fitted with reduction gears in each hub. The hub reduction gearing consists of a cylindrical planetary gear with straight-cut gears on needle bearings, giving low drive losses.

The sun wheel is mounted on the drive shaft. From the sun wheel, the power is transferred to four planetary gears connected to the wheel hub.

When the planetary gears are forced to rotate against the ring gear, which is rigidly fixed to the rear axle casing, the rotation speed is geared down.

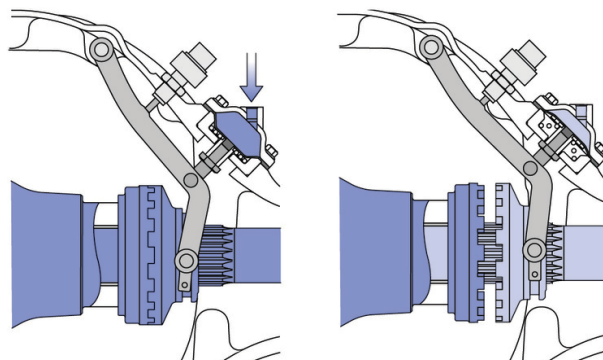
The wheel bearings are in the form of maintenance-free unit bearings. The entire hub with bearings can be removed and installed simply and safely without affecting the bearing clearance.

Three differential locks give a high availability.

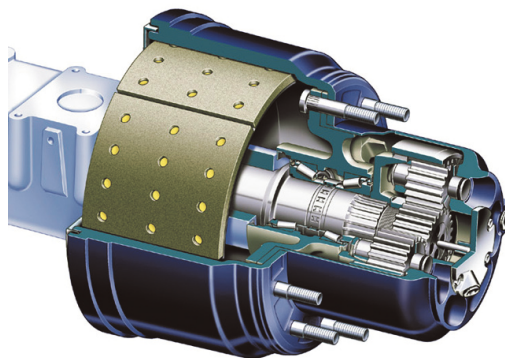
RTH3312 is fitted with three diff locks, one for each rear axle and one for the distribution gearbox. The diff lock for the distribution gearbox couples together the drives of the two rear axles, while the diff locks on the rear axles couple the drive shafts to the diff casing. When all three diff locks are engaged, all drive wheels are forced to rotate at the same speed.

The diff locks are in the form of hardened steel dog clutches operated by compressed air. There are two lamps on the instrument panel to indicate when the diff locks are engaged. One lamp is for the distribution gearbox diff lock and the other is for the diff locks of the two rear axles.

The diff lock function guarantees very good grip when the surface is slippery, which results in a higher truck vehicle availability.



Differential lock rear axle engaged (left) and disengaged (right).



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SPECIFICATION

Type designation.....	RTH3312
Gear.....	Single gear, spiral bevel with hub reduction
Distribution gearbox.....	Cylindrical spur gear
Hub reduction.....	Cylindrical planetary gear
Weight including drive shafts, hubs and drum brakes.....	
Forward axle.....	889 kg
Rearward axle.....	786 kg
Crown wheel, diameter.....	295 mm
Drive shafts, diameter.....	45 mm
Maximum engine torque.....	3550 Nm
Max bogie loading.....	33 000 kg
Max combination weight.....	120 000 kg
Ratio with hub reduction.....	3.61:1
.....	3.76:1
.....	4.12:1
.....	4.55:1
.....	5.41:1
.....	7.21:1
Ratio distribution gearbox.....	1:1
Oil change quantity.....	
Forward axle.....	26.5 l
Rearward axle.....	24 l