

<b>Chassis ID</b>	<b>Path</b>
	431/Specifications//Gearbox, mechanical
<b>Model</b>	<b>Identity</b>
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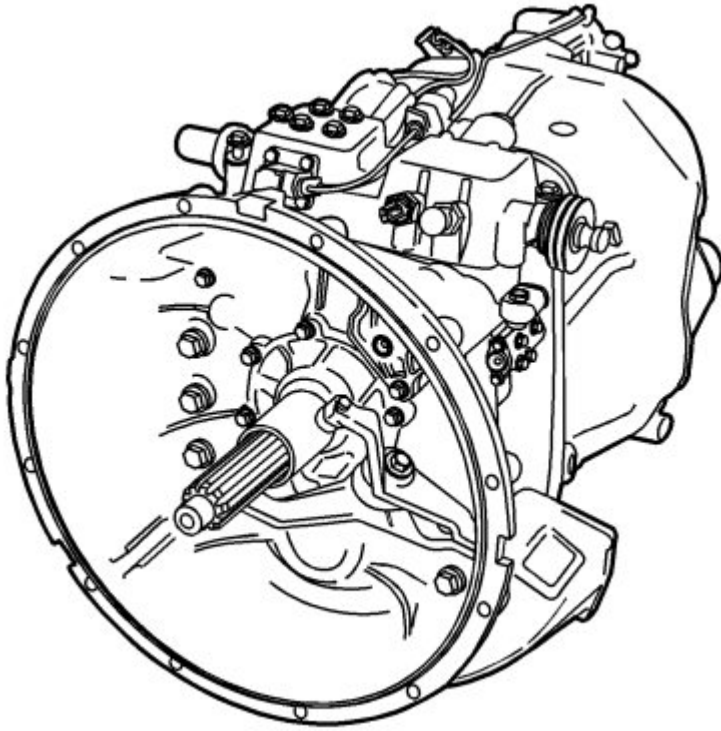
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## Gearbox, mechanical

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### General



Manufacturer	Volvo	
Type	VT2014, VT2014OD, VT2514, VT2514OD	
No. of gears	Forwards	14
	Reverse	4
Weight without oil	330 kg	

## Gear ratio

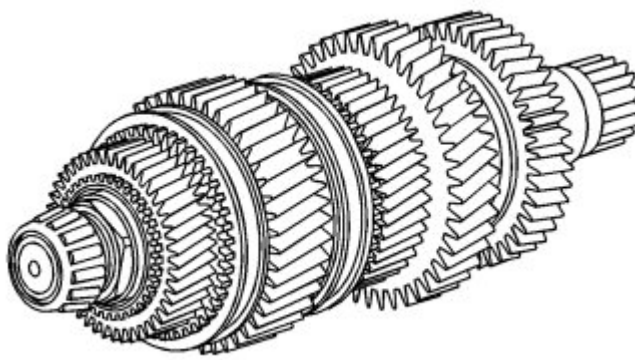
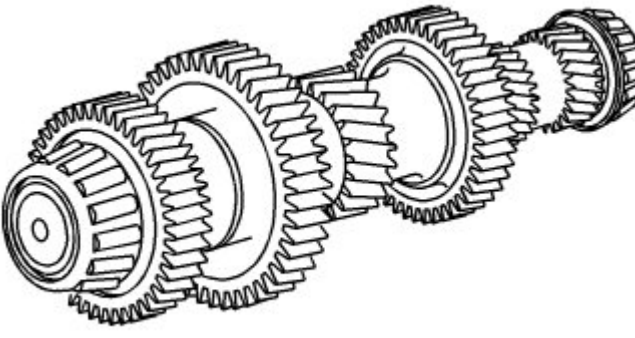
Gears	VT2014/VT2514	VT2014OD/VT2514OD
6HS	1:1	0.80:1
6LS	1.25:1	1:1
5HS	1.53:1	1.23:1
5LS	1.91:1	1.53:1
4HS	2.38:1	1.91:1
4LS	2.97:1	2.38:1
3HS	3.75:1	3.00:1
3LS	4.68:1	3.75:1
2HS	5.74:1	4.60:1
2LS	7.16:1	5.74:1
1HS	8.92:1	7.15:1
1LS	11.13:1	8.92:1

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CHS	13.51:1	10.83:1
CLS	16.86:1	13.51:1
RHRHS	3.22:1	2.58:1
RHRLS	4.02:1	3.22:1
RLRLS	12.09:1	9.69:1
RLRLS	15.06:1	12.09:1

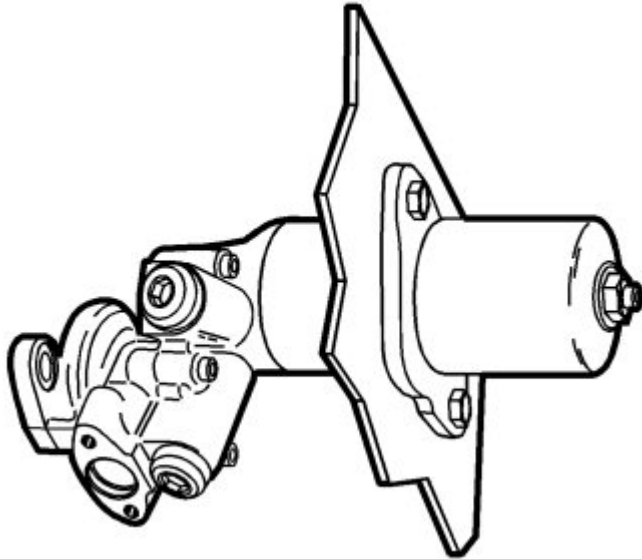
## Axial play, shafts

Main shaft	0.10-0.18 mm	
Countershaft	0.10-0.18 mm	

## Axial play, circlips

Input shaft	max. 0.05 mm
Countershaft	max. 0.10 mm
Main shaft (1st/2nd sync.)	max. 0.10 mm
Output shaft	max. 0.10 mm

## Oil pump



Axial clearance	max. 0.20 mm	
Clearance between pump elements	max. 0.20 mm	
Overflow valve 1	Spring length, uncompressed	28.3 mm
Overflow valve 2	Spring length, uncompressed	68.8 mm

## Press force

		Min (tons)	Max (tons)	Note
Input shaft	Bearing, inner race	-	5	
Main shaft	Bearing, inner race	-	5	
	All control sleeves	2.5	20	
	Sun wheel	1	10	Part no. aligned towards rear of gearbox
Countershaft	Bearing, inner race	-	5	
	Both gear wheels	20	40	
Output shaft	Flange	1	12	
Main housing	Reverse gear	-	4	

## Tightening torques

### Main gearbox

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	Thread	Nm	kpm	Note	
Plug, oil drain	M26x1.5	35±5	3.5±0.5		
Bleeder nipple, oil filler	M26X1.5	-	-	Min 2 turns, 45° upwards	
Clutch housing - main housing	M16	200±25	20±2.5		
Main housing – range housing	M12	75±10	7.5±1		
Oil pump - main housing	M10	40±5	4±0.5	Screws with countersunk heads must be tightened first	
Cover	Input shaft	M10	40±5	4±0.5	Tighten alternately.
	Main shaft	M10	40±5	4±0.5	Tighten alternately.
	Countershaft	M10	40±5	4±0.5	Tighten alternately.
Stud, clutch housing	M8	8±1.5	0.8±0.15		
Attaching washers, fork retainer	M10	40±5	4±0.5		
Screw, release fork	M14	120 +20/-10	12 +2/-1		
Oil level glass	M26x1.5	35±5	3.5±0.5	Should not normally be undone.	
Nut, main shaft	M60x2	400±25	40±2.5	Locked with centrepunch mark in groove on shaft.	
Oil distribution pipe	M32x1.5	250±30	25±3		
Anchorage, suction pipe	M10	40±5	4±0.5		
Flange, suction pipe	M8	20±3	2±0.3		
Plug, hole for temperature sensor	M16x1.5	16±2	1.6±0.2		
Temperature sensor	M16x1.5	18±2	1.8±0.2		

## Control housing

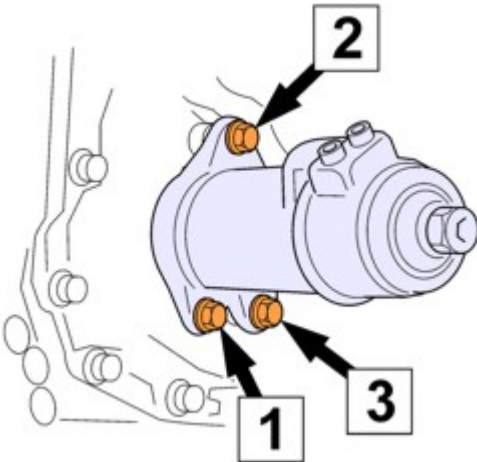
	Thread	Nm	kpm	Note
Control housing - main housing	M12	75±10	7.5±1	
Inhibitor valve	M6	10±1.5	1±0.15	
Latch cylinder	M6	10±1.5	1±0.15	
Gear position detent/Reverse lock	M18x1.5	40±4	4±0.4	Shim with 0.05-0.10 mm clearance to cam in control housing.
Plug	M18x1.5	25±5	2.5±0.5	
Reverse light contact	M18x1.5	40±5	4±0.5	

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Screw, solenoid	M6	10±1.5	1±0.15	
Screw (adjuster)	M10	25±5	2.5±0.5	

## Range gear

	Thread	Nm	kpm	Note	
Inhibitor valve	M8	20±3	2±0.3		
Screw for piston	M10	40±5	4±0.5		
Lock screw for selector fork	M16x1	75±7	7.5±0.7	Locked by rivetting in groove.	
Cover (power take off)	M12	40±5	4±0.5		
Vehicle speed sensor	M18x1.5	25±5	2.5±0.5		
Nut, companion flange	M60x2	400 +150/-50	40 +15/-5	Locked by rivetting in groove.	
Range cylinder - range housing	M10	40±5	4±0.5	Tighten alternately.	
Cover for range cylinder	M10	40±5	4±0.5	Front/rear	
Oil filter housing	M10	15±1,5	1,5±0.15	First tightening / Use new screws.	 <p>To be tightened in the order shown in the illustration.</p>
		40±5	4±0.5	Second tightening	
Plug, oil filter cover	M12x1.5	16±2	1.6±0.2		
Oil cooler, nuts	M22	55±6	5.5±0.6		

## Split gear

	Thread	Nm	kpm	Note
Splitter control cylinder - clutch housing	M10	40±5	4±0.5	Tighten alternately.

Screw for piston	M10	50±5	5±0.5	
Hollow screw, relay valve	M10x1.5	12±2	1.2±0.2	
Relay valve	M6	6.5±1.5	0.65±0.15	
Switch (on main housing)	M18x1.5	40±5	4±0.5	
Ball catch (on main housing)	M18x1.5	40±5	4±0.5	
Plug for splitter control cylinder	M26x1.5	75±10	7.5±1.0	

## Lubrication system

Oil change volume	app. 13.5 litre	
Additional	With oil cooler (TW)	0,0 litre
	With oil cooler (TWH)	0.8 litre
	With single power take off	0.8 litre
	With single power take off	0.8 litre
Oil change and oil quality	see <a href="#">- Preventive maintenance intervals</a>	