Overdrive

Repairs and Maintenance

Section	Group
4	43

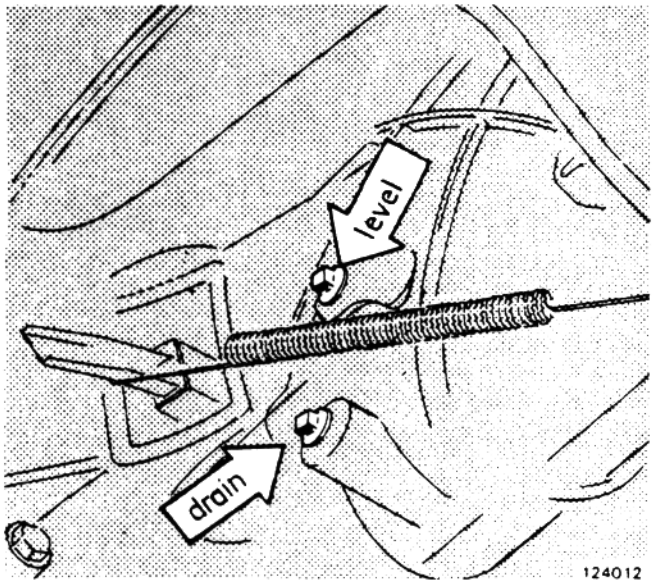
Overdrive
1976—

VOLVO

Contents

Specifications

Reduction ratio	0.8:1	
Solenoid current draw, approx.	2 Amps at 12 Volts	
Lubricant		
M41 – Type	Gear oil	
Quality	API GL-1	
Viscosity	SAE 80W/90 alt. SAE 80/90	
Capacity (transm. included)	1.6 liters	1.7 US qts
M46 – Type	ATF Type F or G	
Capacity (transm. included)	2.3 liters	2.4 US qts



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The oil level should be up to the filler plug hole. Transmission and overdrive are lubricated by the same oil. When oil is drained from transmission, also remove cover on overdrive and clean strainer.

Tightening torques

See specific operations

Applications

Volvo P/N	Laycock No.	Introduced	Drive flange	Main application
254740-4	115648	Fall 1974	1310	6-cyl engines
1208014-9	115655	Fall 1974	1140	4-cyl engines
1208015-6	115656	Fall 1974	1310	4-cyl engines. Replaced by 1208014-9 + drive flange 1310.
1208101-4	115657	Fall 1976	1140	4-cyl engines
1208109-7	115659	Jan. 1978	1310	6-cyl engines
1208110-5	115660	Fall 1977	1140	4-cyl engines
1208191-5	115895	Fall 1978	1140	Diesel engines

Specifications

Oil pressures:

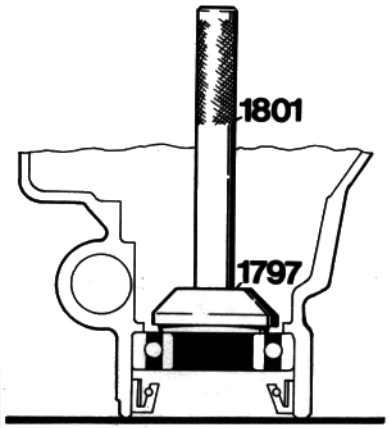
Direct drive engaged (all engine applications) ..... 0.15 MPa (21 psi)

Overdrive engaged:

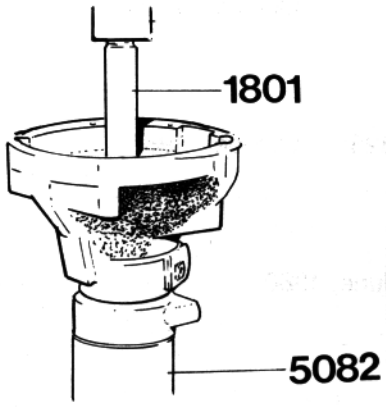
Engine application	Production date notes	MPa	(psi)
4-cyl (except Turbo)	B21: — June, 1980 B23: — October, 1980	2.7-3.1	(380-440)
6-cyl	B28: — October, 1980	3.2-3.6	(455-510)
B21 (except Turbo)	June, 1980 —	3.3-3.6	(469-510)
B23	October, 1980 —	3.3-3.6	(469-510)
B28	October, 1980 —	3.3-3.6	(469-510)
Diesel	March, 1981 —	2.8-3.1	(398-440)
Turbo	June, 1981 —	3.7-4.0	(526-568)

Special tools

1797 **Drift**
removing rear bearing
1801 **Standard handle**
1845 **Press tool**
installing drive flange
2261 **Puller**
pulling drive flange
2412 **Drift**
installing bearing and seal
2715 **Drift**
installing clutch bearing
2806 **Drift**
installing clutch bearing
2834 **Pressure gauge**
checking oil pressure
5172 **Crow-foot wrench**
replacing solenoid valve
5183 **Extractor**
for relief valve
5210 **Ring**
assembling/disassembling
one-way clutch
2835 **Centering tool**
for centering splines in planetary
gear cage and one-way clutch
2836 **Wrench**
for plugs
2851 **Drift**
removing clutch sliding member
5069 **Extractor**
for oil seal
5082 **Sleeve**
5103 **Drift**
removing clutch bearing
5149 **Wrench**
torquing drive flange nut



1797 **Drift**
removing rear bearing
115 919



1801 **Standard handle**
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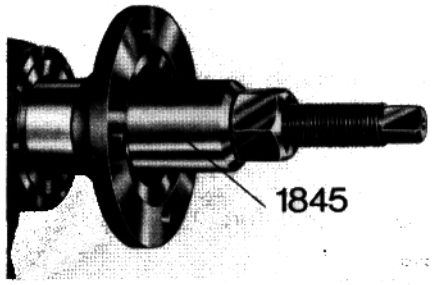
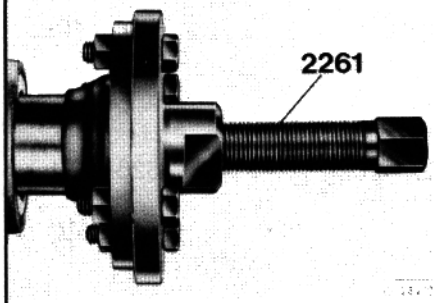
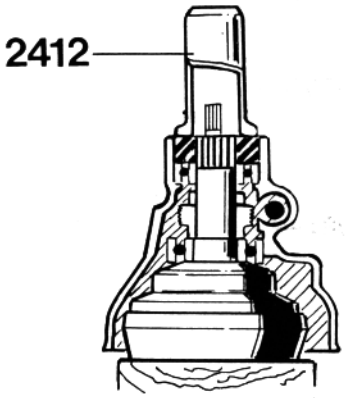


1845 **Press tool**
installing drive flange
22 723



2261 **Puller**
pulling drive flange
22 720



2412 **Drift**
installing bearing
and seal
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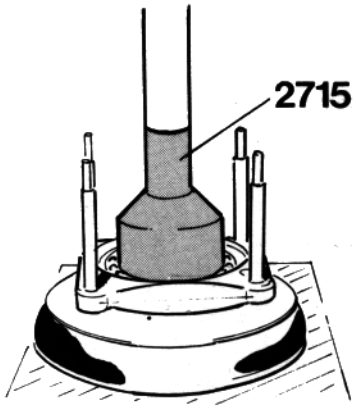

2715 **Drift**
installing clutch bearing
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Problems and remedies

Engaging problems

A new overdrive which has not been used for some time might be difficult to engage. The reason is mainly lack of "exercise" which causes the parts to stick. Some reasons:

1. Low oil level
2. Solenoid sticking or open electrical circuit.
3. Clutch sliding member sticks to the shaft.

1.
Check that the oil level is up to the plug level. Low oil level can cause many problems.

2.
Check solenoid operation. Switch on the ignition, engage 4th gear and switch on the overdrive. There should be a clicking sound from the overdrive solenoid.
No clicking sound:
Do NOT start to replace the solenoid.
Check voltage to the overdrive connections, then to relay etc.
Use jumper wires directly to the overdrive to check operation.

3.
If the clutch sliding member sticks to the shaft:
Drive at approx. 50 mph (80 km/h). Overdrive switched ON.
Disengage the clutch, increase engine rpm to approx. 5000, and quickly engage the clutch again. In most cases this should free the clutch sliding member.
Some "exercise" is recommended for new cars with sticking clutch sliding member. Drive at 50–55 mph (80–90 km/h). Coast and engage/disengage the overdrive at least 25 times. This will polish the bearing surfaces.

Operation malfunction

Overdrive does NOT engage, indicator light does NOT illuminate.
Check:
– Fuses
– Wiring
– Overdrive switch

Solenoid does NOT engage (click), indicator light illuminates.
Check:
– Switch on transmission
– Solenoid ground wire
– Solenoid

Engaging sound when re-starting.

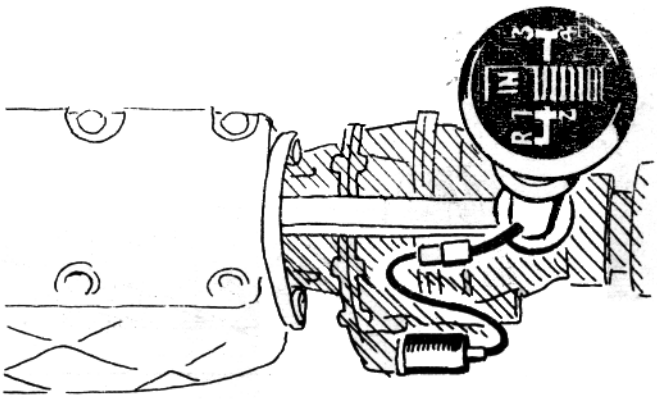
Up to early 1978 Models.
Sometimes a sound could be heard from the overdrive when re-starting after driving with the overdrive engaged.
The reason is quite normal and does not cause any damage or abnormal wear. During normal driving the overdrive takes up the engine torque and assumes a certain position. It then causes a noise when it returns to the locked position.
It is not necessary to replace any parts or the overdrive assembly.
The design was changed during the 1978 Model production run to eliminate the sound.

Wiring harness

An improved wiring harness for the overdrive was introduced during the 1978 Model production run. VIN-s:

242	131 000	264	53 000
244	317 000	265	13 000
245	182 000		

The new wiring harness is longer, softer and better insulated.



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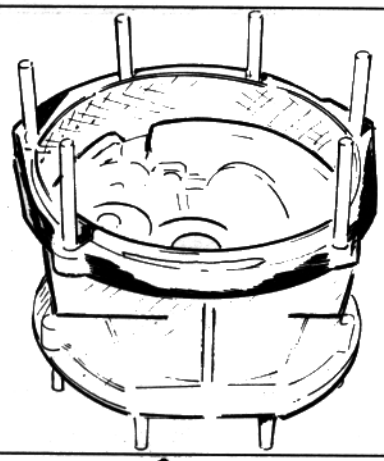

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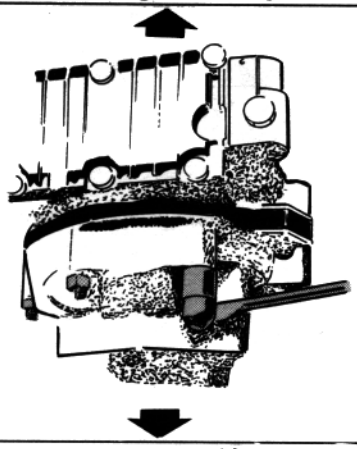
Position gasket and brake drum on front housing.



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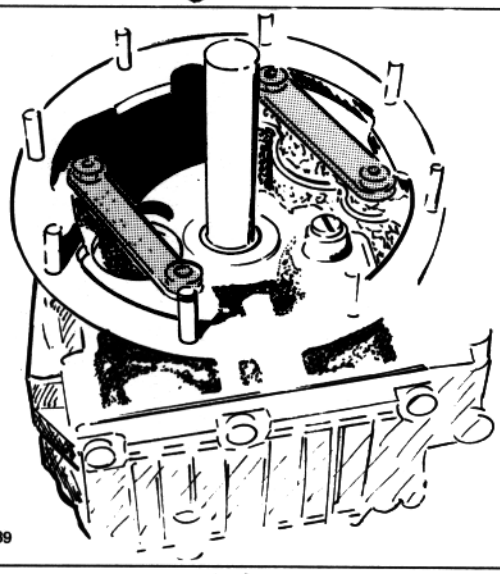
Assemble rear and front housing.

NOTE:
Gasket between brake drum and rear housing.

Torque the nuts crosswise to:
7–16 Nm = 5–12 ft.lbs.

NOTE:
The two upper studs have nylon seals.
The narrow end toward the housing.



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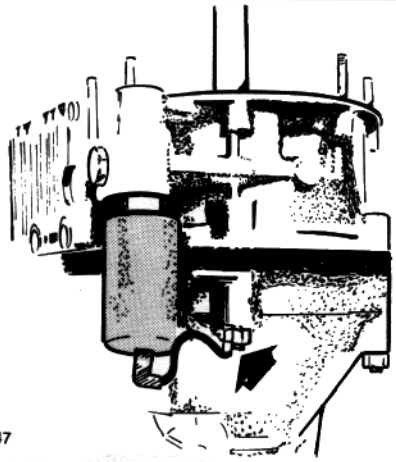
Install the bridges and tighten the nuts.
7–16 Nm = 5–12 ft.lbs.



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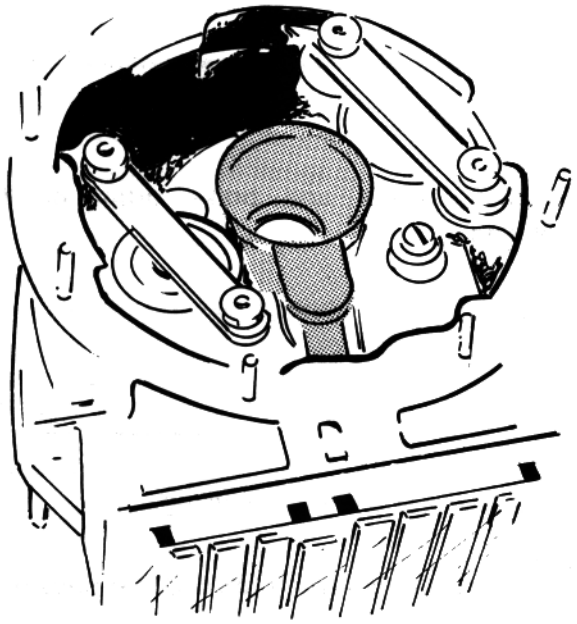
Install solenoid and ground wire.
Torque the solenoid to:
42–55 Nm = 30–40 ft.lbs.



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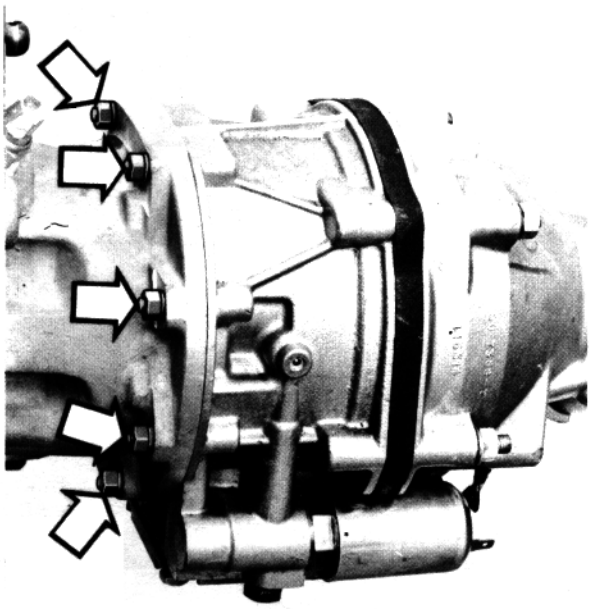
Remove centering tool 2835.
Install pump link and pump piston.

Installing overdrive



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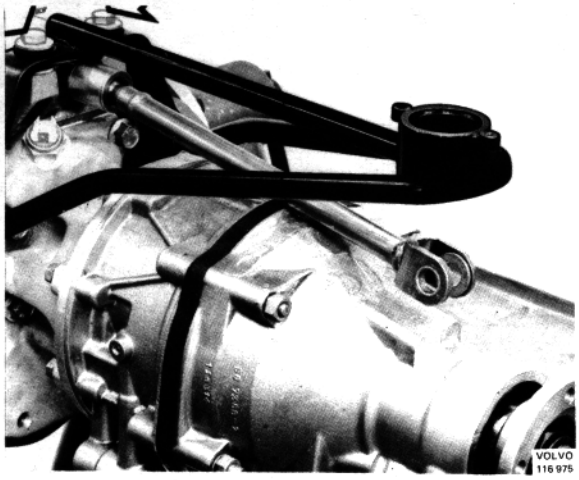
1.
Position the overdrive on the transmission output shaft. Install the nuts. Torque to:
7–11Nm = 5–8 ft.lbs.

2.
Raise the transmission and install the cross member.



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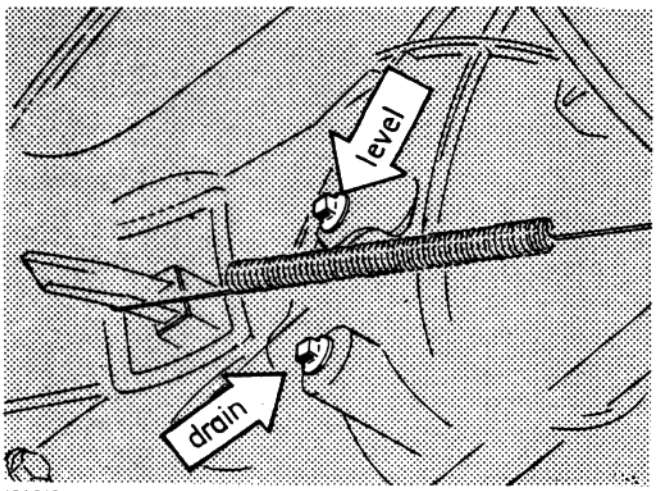
3.
Reconnect the wires at the solenoid.

4.
Reconnect the drive shaft.



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5.
Fill with oil to plug hole level.
M41: SAE 80W/90
M46: Automatic Transmission Fluid

6.
Recheck oil level after driving approx. 10 miles = 15 km.