

Section 6 Suspension and steering

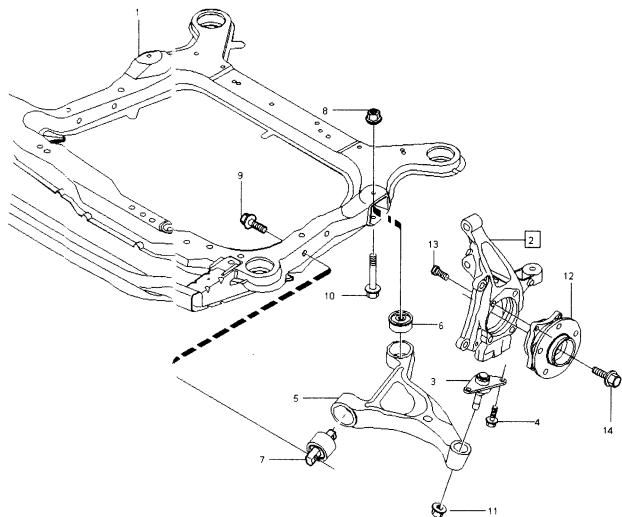
Group 60 Wheel alignment

Toe-in:	XC90 Check and setting values
Front:	
Camber	$-0.3^{\circ} \pm 0.9^{\circ}$
Castor	$5.7^{\circ} \pm 1^{\circ}$
Toe-in, can be adjusted	$-0.2^{\circ} \pm 0.1^{\circ}$
Rear:	
Camber	$-0.4^{\circ} \pm 1.0^{\circ}$
Toe-in, can be adjusted	$0^{\circ} \pm 0.5^{\circ}$
Thrust angle, can be adjusted	$0.5^{\circ} \pm 0.2^{\circ}$

XC90

Group 61 Front suspension

Group 61 Front suspension



VOLVO
Genuine Parts

R6100372

Front wheel suspension		
Number (as illustrated)	P/N	Designation
1		Sub-frame
2	30647131	Steering arm, Left-hand drive car
2	30647132	Steering arm, Right-hand drive car
3		Ball joint
4	96 82 33	Flanged screw
5	30639781	Control arm right
5	30639780	Control arm left
6	86 72 224	Bushing left
6	86 72 224	Bushing right
7	30639368	Bushing left
7	30639368	Bushing right
8	97 11 00	Flanged locknut
9	98 19 88	Sems screw
10	96 63 68	Flanged screw
11	97 10 99	Flanged locknut
12	30639875	Front wheel hub
13	98 56 29	Flanged screw
14	98 17 71	Sems screw

Designation	Tightening torques		
	Nm	lbf ft.	Dimensions
Mechanical component:			
Ball joint - Spring strut steel	50 ± 12	37 ± 9	M10
Ball joint - Link arm	90 ± 15	66 ± 11	M14
Control arm - Sub-frame, Left:			
Stage 1	65	48	M12
Step 2 angle-tighten	105°		
Control arm - Sub-frame, Right:			
Stage 1	65	48	M12
Step 2 angle-tighten	105°		
Control arm - Sub-frame:			
Stage 1	105	78	M14
Step 2 angle-tighten	150°		
Anti-roll bar - Sub-frame	50 ± 12	37 ± 9	M10
Anti-roll bar - Link	60 ± 15	44 ± 11	M10
Link - Spring strut	80 ± 20	59 ± 15	M12

XC90*Group 61 Front suspension*

Designation	Tightening torques		
	Nm	lbf ft.	Dimensions
Shock absorber - Steering arm:			
Stage 1	105	78	M14
Step 2 angle-tighten	75°		
Front wheel hub - Steering arm:			
Stage 1	20	15	M12
Stage 2	45	33	
Step 3 angle-tighten	60°		
Front wheel hub - Drive shaft:			
Stage 1	35	26	M10
Step 2 angle-tighten	90°		
Shock absorber - Upper bearing	70 ± 15	59 ± 11	M14

Group 64 Steering

Steering gear:	
Make	ZF
Turns of the steering wheel lock to lock:	
Tyre size 225/70H R16	2.8
Tyre size 235/60V R17, 235/65V R18	2.6
Gear ratios	16.4:1
Friction torque, measured at input shaft, max	4.5 Nm (3.3 lbf ft.)
Lubricants:	
Grease	Volvo P/N: 11 61 669
Quantity	100 grams (0.2 lbs.)
Power steering fluid, power steering gear:	
Oil type: PENTOSIN, CHF 11S:	
Power steering fluid	Volvo P/N: 11 61 529
Quantity	1.0 litres (1.05 qt)
Power steering pump:	
Maximum pressure	12 MPa

XC90

Group 64 Steering

Tightening torques

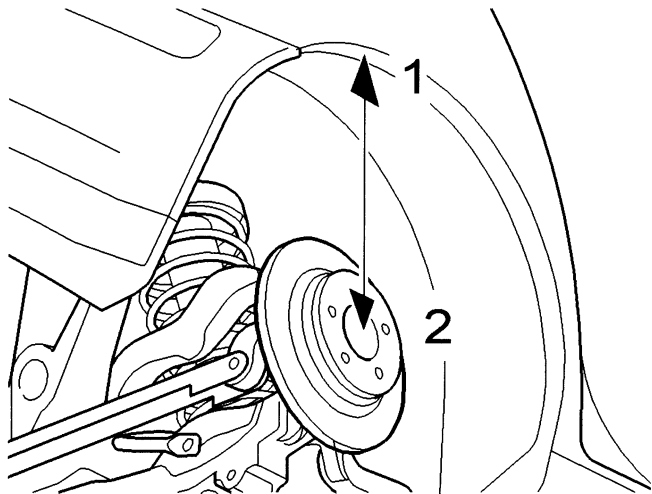
Mechanical component: Designation:	Tightening torques Nm	Tightening torques lbf ft.	Dimensions
Steering gear - Sub-frame, side	50 ± 12	37 ± 9	M10
Track rod - Outer ball joint, tie-rod	70 ± 15	52 ± 11	M14
Track rod ball joint - Steering arm	80 ± 20	59 ± 15	M12
Pressure pipe - Steering gear	25 ± 6	18 ± 4.5	M16
Pressure hose - Pump	32 ± 5	23 ± 3	M16
Return pipe - Steering gear	25 ± 6	18 ± 4.5	M18
Heat deflector plate - Steering gear	6 ± 1.5	4.5 ± 1	M5
Mounting, centre - Sub-frame	50 ± 12	37 ± 9	M10
Steering column - X member	25 ± 6	18 ± 4.5	M8
Steering shaft, lower - Steering column	25 ± 6	18 ± 4.5	M8
Steering shaft, lower - Steering gear	25 ± 6	18 ± 4.5	M8
Steering wheel - Steering column	40 ± 10	30 ± 7	M14
Airbag unit - Steering wheel	10 ± 2.5	7 ± 2	M6
Cover - Steering wheel lock	>18	>13	M8
Lower cover - Steering wheel lock	3 ± 0.7	2 ± 0.5	M5
Ball joint, screw	50	37	
Steering shaft joint, screw - mounting steering gear	25	18	
Power steering pump, screw mounting	25	18	
Power steering pump Diesel cars, screw motor	25 ± 4	18 ± 3	
Power steering pump Diesel cars, screw pump	25 ± 4	18 ± 3	
Steering column, screw steering	25	18	

XC90

Group 6 5 Rear suspension

Tightening torques

Mechanical component Designation:	Tightening torques:	Dimension:
	Nm	
Sub-frame - Lower control arm	80±20	M12
Upper rear control arm - Subframe	80±20	M12
Upper front control arm - Subframe	80±20	M12
Track rod	80±20	M12
Sub frame - Track rod	80±20	M12
Anti-roll bar - Subframe	50±12	M10
Lateral link - Subframe	80±20	M12
Lateral link - Wheel unit	80±20	M12
Sub-frame, front - Car body	100±25	M12
Sub-frame, rear - Car body	100±20	M12
Shock absorber - Upper bearing	60±15	M12
Control arm lower - Wheel unit	80±20	M12
Bottom flange - Body	80±20	M12
Track rod - Wheel unit	80±20	M12
Control arm lower - Shock absorber	80±20	M12
Link - Anti-roll bar	80±20	M12
Upper control arm - Link	80±20	M12
Rear wheel hub - Wheel bearing housing		
Stage 1	20Nm+45Nm	M12
Stage 2	Tighten 60°	
EVAP canister - Subframe	25±6	M8
Control arm upper - Wheel unit	80±20	M12
Exhaust mounting - Subframe	25±6	M8
Bump rubber bracket - Body	25±6	M8
EVAP canister bracket - EVAP canister	10±2.5	M6
Lock subframe	80±20	M12
Lower control arm - Subframe	80±20	M12
Final drive front bushing	80±20	M12
Final drive rear bushing	80±20	M12
Drive shaft - Rear wheel hub AWD	50±12	M10
Rubber bump stop wheel bearing housing	25±6	M8
Mudguard - Control arm	8±2	ST6.3



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Tightening the screwed joint in the control arms

Tighten when the rear suspension is in the normal position:

The normal position of the rear suspension is when the distance from the wing edge 1 to centre of wheel 2) is the following:

XC90	453 ± 1 mm
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