

Document Title: <b>Foreword additional Service manual Demolition machine</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

## **Foreword additional Service manual Demolition machine**

This Service manual for Demolition machine built on base machines EC210B, EC240B, EC290B and EC360B.

### **NOTE!**

This is an additional Service manual and should be used together with the Service manual for the base machine.

See Operator's manual for dimensions and weights for the complete machine. Service work on the machine must not be carried out before the instructions in Section "Safety" in both this Service manual and in the base machine Service manual.

For manual reference numbers, see current publications catalogue and SSI (Service Support Information). The operation numbers refer to "Time Guide". The instructions are based on the use of special tools, E-tools and generally available standard tools.

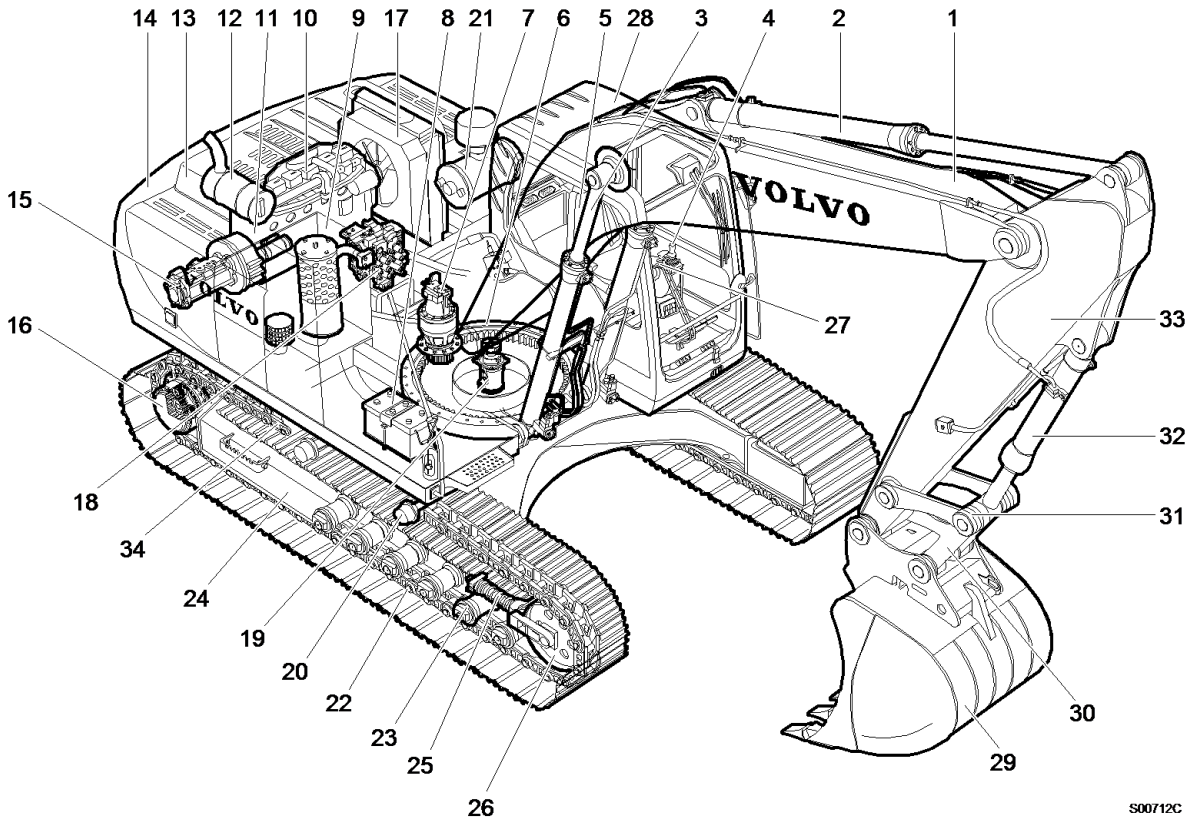
For supplementary information on special tools, see "Special tools." Drawings for E-tools can be found in Section 0 (08) General.

Volvo will not accept any responsibility if any lifting devices, tools or work methods other than those described in this publication are used.

The information and data given in this manual are valid at the time of publication. We reserve the right to modify specifications and equipment without prior notification.

Document Title: <b>Component locations</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

**Component locations**



S00712C

**Figure 1**  
**Location of components**

1 Boom	13 Cowl	25 Recoil spring
2 Arm cylinder	14 Counterweight	26 Idler
3 Boom cylinder	15 Hydraulic pump	27 Control pedal (travel)
4 Control lever	16 Track motor and gearbox	28 Operator cab
5 Operator's seat	17 Radiator and oil cooler	29 Bucket
6 Slew ring gear	18 Main control valve	30 Connecting rod
7 Slew motor and gearbox	19 Center passage	31 Link
8 Battery	20 Top roller	32 Bucket cylinder
9 Fuel tank	21 Air cleaner	33 Arm
10 Engine	22 Track link	34 Track link
11 Hydraulic tank	23 Bottom roller	
12 Muffler	24 Bottom frame	

Document Title: <b>Demolition machine, description</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

## **Demolition machine, description**

The demolition machine is based on a standard machine.

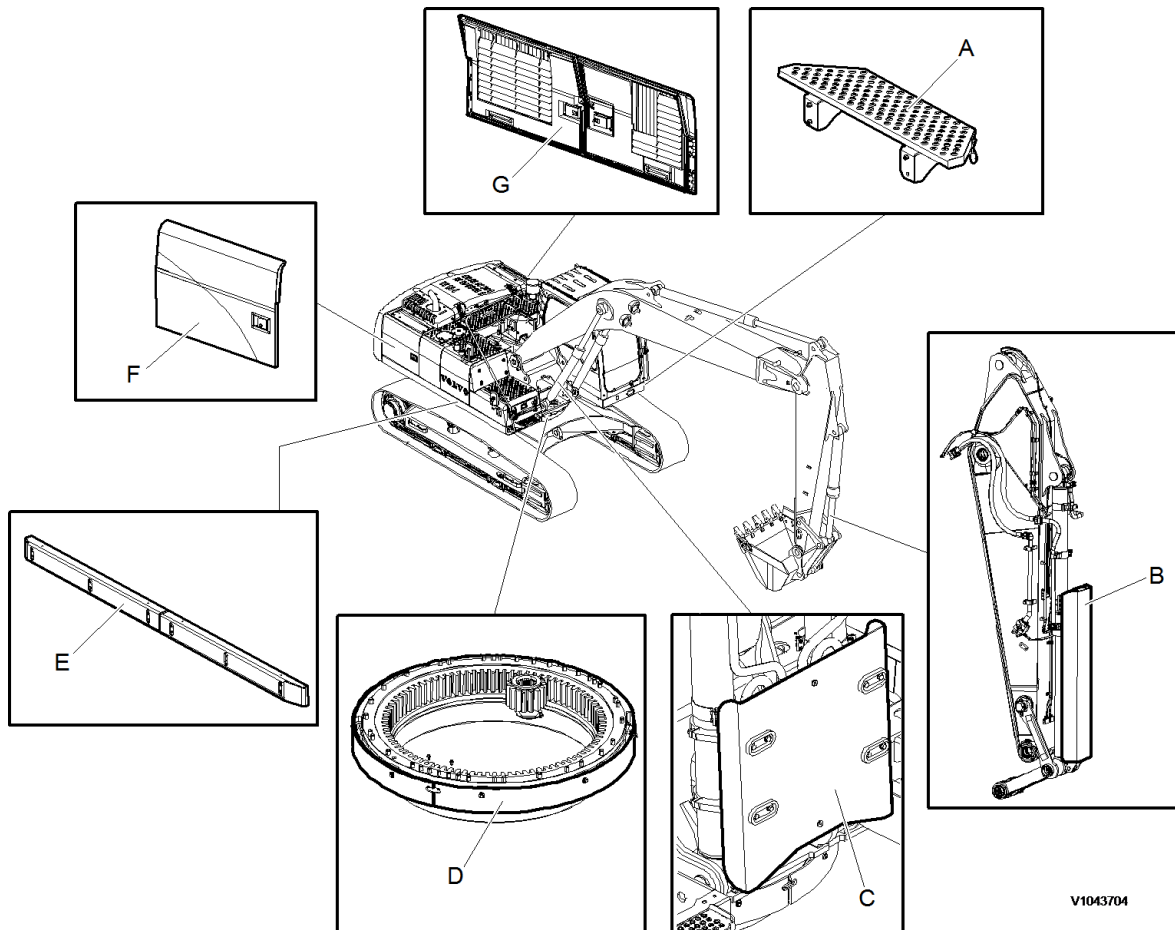
This demolition machine is composed of HD Side door reinforce, Slew ring gear protection cover, Upper frame side protection plate reinforce, Upper under cover reinforce, Boom cylinder protection plate and Bucket cylinder protection plate, Working and maintenance lamps, Top protection round pipe on rear and RH side.

See machine view [000 Machine view, demolition](#).

Document Title: <b>Machine view, demolition</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

[Go back to Index Page](#)

## Machine view, demolition



V1043704

**Figure 1**  
**Machine view, demolition**

- A. Step, Cabin
- B. Bucket cylinder protecting guard
- C. Boom cylinder protecting guard
- D. Swing ring gear cover
- E. Side impact protection
- F. Auxiliary hood, right side door
- G. Auxiliary hood, left side door

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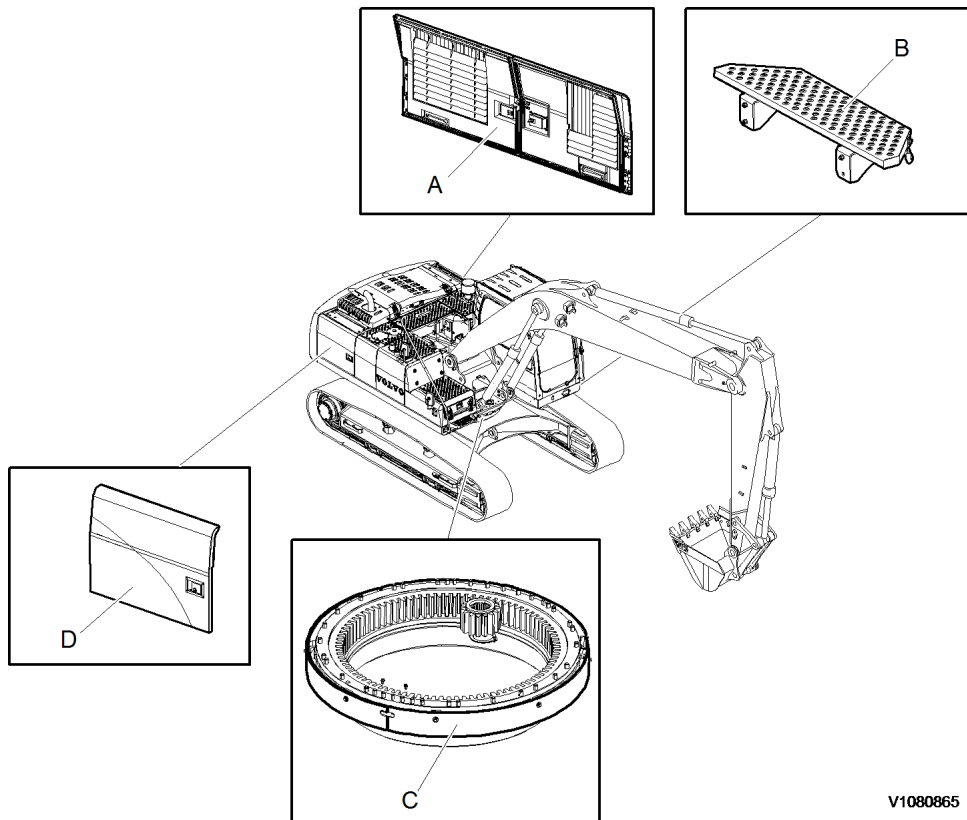
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Document Title: <b>Machine view, demolition</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
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[Go back to Index Page](#)

## Machine view, demolition



V1080865

**Figure 1**  
**Machine view, demolition**

- A. Auxiliary hood, left side door
- B. Step, Cabin
- C. Swing ring gear cover
- D. Auxiliary hood, right side door

Document Title: <b>Measurement conversion tables</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

## Measurement conversion tables

### Length

Unit	cm	m	km	in	ft	yd	mile
cm	1	0.01	0.00001	0.3937	0.03281	0.01094	0.000006
m	100	1	0.001	39.37	3.2808	1.0936	0.00062
km	100000	1000	1	39370.7	3280.8	1093.6	0.62137
in	2.54	0.0254	0.000025	1	0.08333	0.02777	0.000015
ft	30.48	0.3048	0.000304	12	1	0.3333	0.000189
yd	91.44	0.9144	0.000914	36	3	1	0.000568
mile	160930	1609.3	1.6093	63360	5280	1760	1

1 mm = 0.1 cm, 1 mm = 0.001 m

### Area

Unit	cm2	m2	km2	a	ft2	yd2	in2
cm2	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
m2	10000	1	0.000001	0.01	10.764	1.1958	1550.000
km2	-	1000000	1	10000	1076400	1195800	-
a	0.01	100	0.0001	1	1076.4	119.58	-
ft2	-	0.092903	-	0.000929	1	0.1111	144.000
yd2	-	0.83613	-	0.008361	9	1	1296.00
in2	6.4516	0.000645	-	-	0.006943	0.000771	1

1 ha = 100 a, 1 mile<sup>2</sup> = 259 ha = 2.59 km<sup>2</sup>

### Volume

Unit	cm3 = cc	m3	Liter	in3	ft3	yd3
cm3 = m liter	1	0.000001	0.001	0.061024	0.000035	0.000001
m3	1000000	1	1000	61024	35.315	1.30796
Liter	1000	0.001	1	61.024	0.035315	0.001308
in3	16.387	0.000016	0.01638	1	0.000578	0.000021
ft3	28316.8	0.028317	28.317	1728	1	0.03704
yd3	764529.8	0.76453	764.53	46656	27	1

1 gal(US) = 3785.41 cm<sup>3</sup> = 231 in<sup>3</sup> = 0.83267 gal(US)

### Weight

Unit	g	kg	t	oz	lb
g	1	0.001	0.000001	0.03527	0.0022
kg	1000	1	0.001	35.273	2.20459

t	1000000	1000	1	35273	2204.59
oz	28.3495	0.02835	0.000028	1	0.0625
lb	453.592	0.45359	0.000454	16	1
1 tonne(metric) = 1.1023 ton(US) = 0.9842 ton(UK)					

### Pressure

Unit	kgf/cm <sup>2</sup>	bar	Pa=N/m <sup>2</sup>	kPa	lbf/in <sup>2</sup>	lbf/ft <sup>2</sup>
kgf/cm <sup>2</sup>	1	0.98067	98066.5	98.0665	14.2233	2048.16
bar	1.01972	1	100000	100	14.5037	2088.6
Pa=N/m <sup>2</sup>	0.00001	0.001	1	0.001	0.00015	0.02086
kPa	0.01020	0.01	1000	1	0.14504	20.886
lbf/in <sup>2</sup>	0.07032	0.0689	6894.76	6.89476	1	144
lbf/ft <sup>2</sup>	0.00047	0.00047	47.88028	0.04788	0.00694	1
1 kgf/cm <sup>2</sup> = 735.56 Torr(mmHg) = 0.96784 atm						

### Approximate conversions

SI	Conversion	Non-SI	Conversion	SI
Unit	Factor	Unit	Factor	Unit
<b>Torque</b>				
newton meter (N·m)	x 10.2	= kgf·cm	x 0.8664	= (lbf·in)
newton meter (N·m)	x 0.74	= lb·ft	x 1.36	= N·m
newton meter (N·m)	x 0.102	= kgf·m	x 7.22	= (lbf·ft)
<b>Pressure (Pa = N/m<sup>2</sup>)</b>				
kilopascal (kPa)	x 4.0	= in. H <sub>2</sub> O	x 0.249	= kPa
kilopascal (kPa)	x 0.30	= in. Hg	x 3.38	= kPa
kilopascal (kPa)	x 0.145	= psi	x 6.89	= kPa
(bar)	x 14.5	= psi	x 0.069	= (bar)
(kgf/cm <sup>2</sup> )	x 14.22	= psi	x 0.070	= (kgf/cm <sup>2</sup> )
(newton/mm <sup>2</sup> )	x 145.04	= psi	x 0.069	= (bar)
megapascal (MPa)	x 145	= psi	x 0.00689	= MPa
<b>Power (W = J/s)</b>				
kilowatt (kW)	x 1.36	= PS (cv)	x 0.736	= kW
kilowatt (kW)	x 1.34	= HP	x 0.746	= kW
kilowatt (kW)	x 0.948	= Btu/s	x 1.055	= kW
watt (W)	x 0.74	= ft·lb/s	x 1.36	= W
<b>Energy (J = N·m)</b>				
kilojoule (kJ)	x 0.948	= Btu	x 1.055	= kJ
joule (J)	x 0.239	= calorie	x 4.19	= J
<b>Velocity and Acceleration</b>				
meter per sec <sup>2</sup> (m/s <sup>2</sup> )	x 3.28	= ft/s <sup>2</sup>	x 0.305	= m/s <sup>2</sup>
meter per sec (m/s)	x 3.28	= ft/s	x 0.305	= m/s
kilometer per hour (km/h)	x 0.62	= mph	x 1.61	= km/h
<b>Horse power/torque</b>				
BHP x 5252 rpm = TQ (lb·ft)			TQ x rpm 5252 = B.H.P.	
<b>Temperature</b>				
°C = (°F - 32) / 1.8		°F = (°C x 1.8) + 32		
<b>Flow Rate</b>				

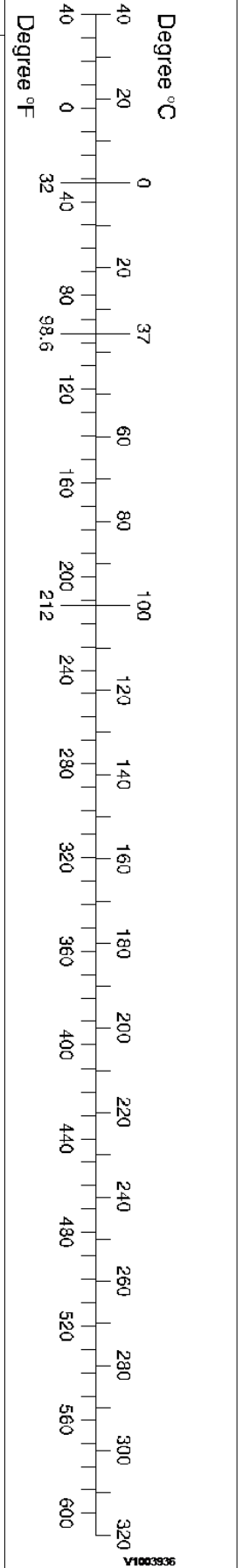
liter/min (dm<sup>3</sup>/min)

x 0.264

= US gal/min x 3.785

= liter/min

Note: ( ) non-si unit



Document Title: <b>Specification, filling capacities</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

[Go back to Index Page](#)

## Specification, filling capacities

### Refill capacities

Reservoir	Kind of fluid	Approximate refill capacities
		Liters (US gal)
Engine oil pan with filter	Engine oil	25 (6.61)
Hydraulic oil tank	Hydraulic oil	160 (42.3)
Hydraulic system, total	Hydraulic oil	285 (75.3)
Slew gearbox (SN: 10001~17232, 20001~20728, 30000~31519)	Gear oil	6.0 (1.7)
Slew gearbox (SN: 17233~20000, 20729~30000, 31520~)	Gear oil	8.6 (2.3)
Track gearbox	Gear oil	5.8 (1.5)
Fuel tank	Diesel fuel	LC: 350 (92.5) NLC: 335 (89)
Slew ring gear	Grease	17 (4.5)
Pin and bushing	Grease	-
Cooling system	Coolant	27.5 (7.3)

Document Title: <b>Specification, filling capacities</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
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[Go back to Index Page](#)

## Specification, filling capacities

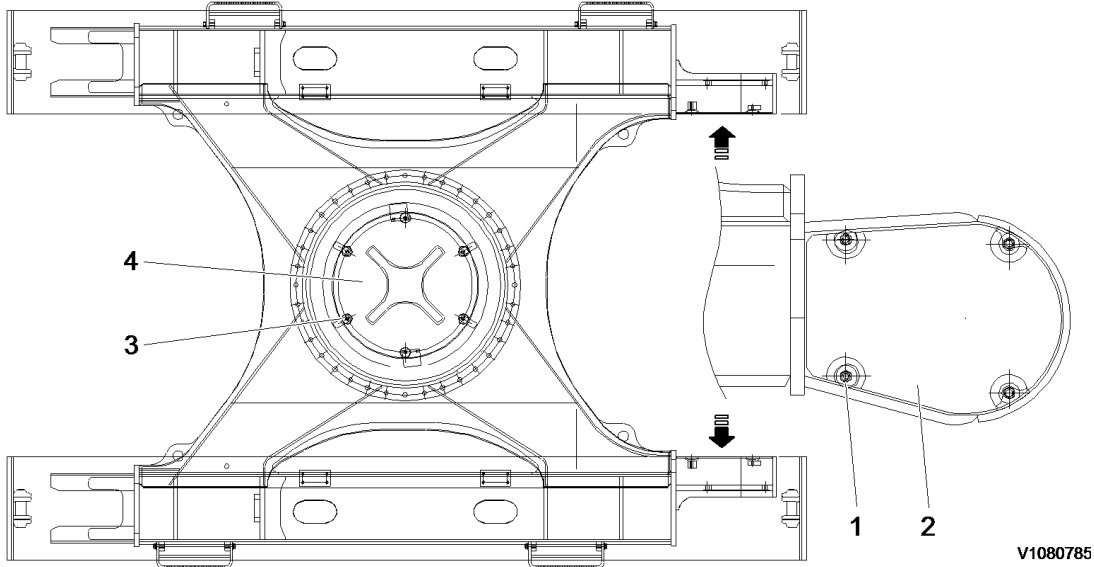
### Refill capacities

Reservoir	Kind of fluid	Approximate refill capacities
		Liters (US gal)
Engine oil pan with filter	Engine oil	25 (6.61)
Hydraulic oil tank	Hydraulic oil	160 (42.3)
Hydraulic system, total	Hydraulic oil	285 (75.3)
Slew gearbox	Gear oil	8.6 (2.3)
Track gearbox	Gear oil	5.8 (1.5)
Fuel tank	Diesel fuel	LC: 350 (92.5) NLC: 335 (89)
Slew ring gear	Grease	20 (5.3)
Pin and bushing	Grease	-
Cooling system	Coolant	32 (8.45)

Document Title: <b>Tightening specifications</b>	torque, <b>030</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>				

## Tightening torque, specifications

### Protecting plate



V1080785

**Figure 1**  
**Machine view, protecting plate**

**Tightening torque: Nm (kgf m) (lbf ft)**

No.	Items	Weight: kg (lbs)	Tightening torque
1	Mounting screws	–	265 ±29 (27 ±3) (195 ±22)
2	Track motor protection cover (LH, RH)	6.5 (14)	–
3	Mounting screws	–	262 ±26 (26.7 ±2.7) (193 ±19)
4	Under cover HDF (MUD) thick: 20	91 (201)	–

**NOTE!**

Apply loctite #277 or 609 on screws.

Document Title: <b>Hammer return filter, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

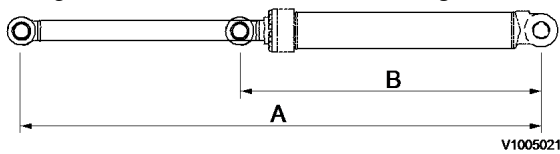
## **Hammer return filter, specifications**

### **Specifications, return filter**

<b>Description</b>	<b>Unit</b>	<b>Specifications</b>
Flow rate	Liter/min (gal/min)	115 (30.4)
Oil temperature	°C (°F)	-20 ~ 120 (-4 ~ 248)
Filtration rate	µm	6
Filtration area	cm <sup>2</sup> (in <sup>2</sup> )	4800 (744)
Proof pressure	kgf/cm <sup>2</sup> (psi)	70 (996)
Bypass pressure	kgf/cm <sup>2</sup> (psi)	1.5 (22)

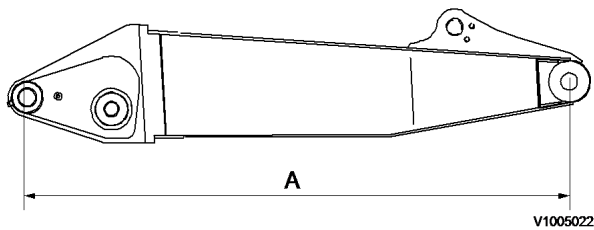
Document Title: <b>Adjustable boom and cylinder, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

## Adjustable boom and cylinder, specifications



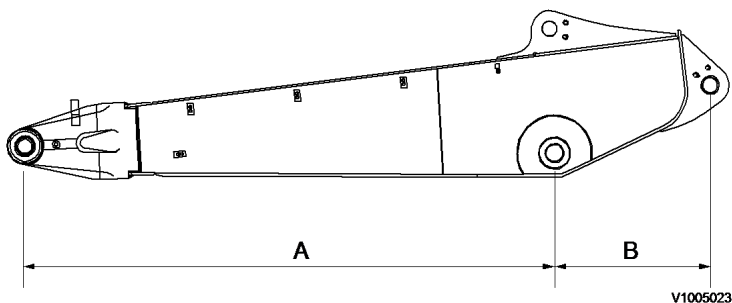
**Figure 1**  
**2nd cylinder**

	<b>Unit</b>	<b>Dimension</b>
A	mm (in)	2750 (108.3)
B	mm (in)	1680 (66.1)
Weight	kg (lb)	246 (9.7)



**Figure 2**  
**1st boom**

	<b>Unit</b>	<b>Dimension</b>
A	mm (in)	2870 ±3 (113 ±0.1)
Weight	kg (lb)	760 (37.1)



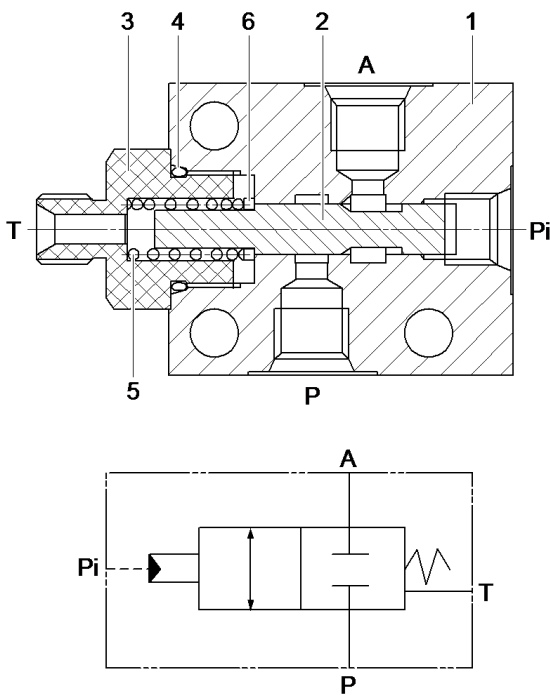
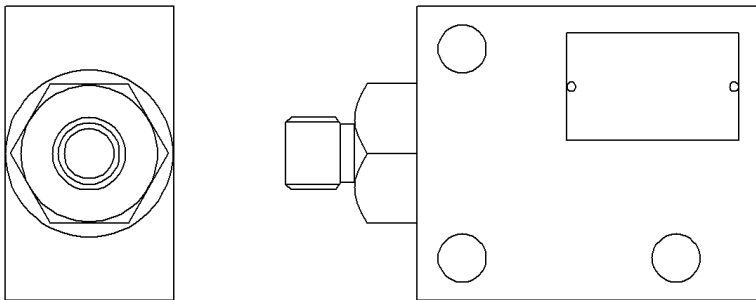
**Figure 3**  
**2nd boom**

	<b>Unit</b>	<b>Dimension</b>
A	mm (in)	2800 ±3 (110.2 ±0.08)

B	mm (in)	845 (33.3)
Weight	kg (lb)	930 (2050.3)

Document Title: <b>Adjustable boom selector valve</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

**Adjustable boom selector valve**



V1005050

**Figure 1**  
**Adjustable boom selector valve**

**Specifications, adjustable boom selector valve**

Description	Unit	Specifications
Maximum operating pressure	MPa (kgf/cm <sup>2</sup> ) (psi) (bar)	3.92 (40) (569) (39.2)
Operating flow rate	Litre/min (gal/min)	20 (5.3)
Cracking pressure	MPa (kgf/cm <sup>2</sup> ) (psi) (bar)	0.49 (5) (71.1) (4.9)
Internal leakage, at 70 kgf/cm <sup>2</sup> and 20 cSt	cc/min (cu-in/min)	30 (1.8)



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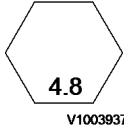

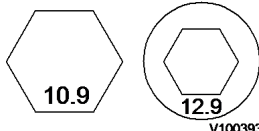
**Thank you so much for reading**

Document Title: <b>Standard tightening torques</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>2014/6/11</b>
Profile: <b>EXC, EC210B LC [GB]</b>			

## Standard tightening torques

The following charts give the standard tightening torques of screws and nuts. Exceptions are given in each sections of "disassembly and assembly".

### Tightening torque (meter)

Classification		4.8T			8.8T			10.9T, 12.9T		
Screw type										
Screw size		Tightening torque			Tightening torque			Tightening torque		
mm	inch	N m	kgf m	lbf ft	N m	kgf m	lbf ft	N m	kgf m	lbf ft
M 4	0.15	1.96 ±0.19	0.2 ±0.02	1.4 ±0.1	-	-	-	3.92 ±0.39	0.4 ±0.04	2.9 ±0.3
M 5	0.19	2.94 ±0.29	0.3 ±0.03	2.2 ±0.2	5.88 ±0.59	0.6 ±0.06	4.3 ±0.4	7.84 ±0.78	0.8 ±0.08	5.8 ±0.6
M 6	0.23	4.90 ±0.49	0.5 ±0.05	3.6 ±0.4	9.8 ±0.98	1.0 ±0.10	7.2 ±0.7	13.72 ±1.37	1.4 ±0.14	10.1 ±1
M 8	0.31	11.76 ±1.17	1.2 ±0.12	8.7 ±0.9	23.541 ±2.35	2.4 ±0.24	17.3 ±1.7	32.36 ±2.94	3.3 ±0.3	23.8 ±2.2
M 10	0.39	22.55 ±2.25	2.3 ±0.23	16.6 ±1.7	48.05 ±4.9	4.9 ±0.5	35.4 ±3.6	63.74 ±6.86	6.5 ±0.7	46.9 ±5.1
M 12	0.46	39.22 ±3.92	4.0 ±0.4	29 ±3	85.32 ±8.83	8.7 ±0.9	62.8 ±6.5	110.81 ±10.78	11.3 ±1.1	81.6 ±7.9
M 14	0.55	62.7 ±5.88	6.4 ±0.6	46 ±4	140.24 ±13.73	14.3 ±1.4	103.2 ±10.1	175.53 ±17.65	17.9 ±1.8	129.2 ±13
M 16	0.62	93.16 ±8.82	9.5 ±0.9	69 ±6	219.67 ±21.57	22.4 ±2.2	161.7 ±15.9	261.83 ±26.47	26.7 ±2.7	192.8 ±19.5
M 18	0.71	132.3 ±13.72	13.5 ±1.4	97 ±10	290.28 ±29.42	29.6 ±3.0	213.7 ±21.7	372.65 ±37.26	38.0 ±3.8	274.4 ±27.4
M 20	0.78	182.40 ±18.63	18.6 ±1.9	134 ±14	430.51 ±43.14	43.9 ±4.4	317.0 ±31.8	511.90 ±50.99	52.2 ±5.2	376.9 ±37.5
M 22	0.87	242.22 ±24.51	24.7 ±2.5	178 ±18	579.57 ±57.85	59.1 ±5.9	426.7 ±42.6	680.58 ±67.66	69.4 ±6.9	501.1 ±49.8
M 24	0.94	314.79 ±31.38	32.1 ±3.2	232 ±23	740.40 ±73.54	75.5 ±7.5	545.1 ±54.2	884.56 ±88.25	90.2 ±9.0	651.2 ±65
M 30	1.17	613.80 ±61.78	62.6 ±6.3	452 ±45	-	-	-	1726.95 ±172.59	176.1 ±17.6	1271.4 ±127.1
M 36	1.40	1061.08 ±105.91	108.2 ±10.8	781 ±78	-	-	-	2984.16 ±298.12	304.3 ±30.4	2197 ±219.5
M 42	1.65	1684.78 ±168.67	171.8 ±17.2	1240 ±124	-	-	-	4738.57 ±473.66	483.2 ±48.3	3488.7 ±348.7
M 45	1.77	2072.15 ±206.92	211.3 ±21.1	1525 ±152	-	-	-	5828.09 ±582.51	594.3 ±59.4	4290.9 ±428.9

**Tightening torque (inch)**

Classification		4.8T			8.8T			10.9T, 12.9T		
Screw size		Tightening torque			Tightening torque			Tightening torque		
mm	inch	N m	kgf m	lbf ft	N m	kgf m	lbf ft	N m	kgf m	lbf ft
1/4	6.35	9.80 ±0.98	0.6 ±0.06	4.3 ±0.4	23.53 ±2.35	1.0 ±0.1	7.2 ±0.7	16.67 ±1.96	1.7 ±0.2	12.2 ±1.2
5/16	7.94	11.76 ±1.17	1.2 ±0.12	8.7 ±0.8	19.61 ±1.96	2.0 ±0.2	14.4 ±1.4	29.42 ±2.94	3.0 ±0.3	21.7 ±2.2
3/8	9.53	19.61 ±1.96	2.0 ±0.20	14.4 ±1.4	40.20 ±3.92	4.1 ±0.4	29.6 ±2.9	54.91 ±4.90	5.6 ±0.5	40 ±4
7/16	11.11	31.38 ±3.13	3.2 ±0.32	23 ±2	59.82 ±5.88	6.1 ±0.6	44.0 ±4.3	87.27 ±8.82	8.9 ±0.9	64 ±6
1/2	12.70	46.09 ±4.60	4.7 ±0.47	34 ±3	100.02 ±9.80	10.2 ±1.0	73.6 ±7.2	131.40 ±12.74	13.4 ±1.3	97 ±10
9/16	14.29	66.68 ±6.66	6.8 ±0.68	50 ±5	140.23 ±13.72	14.3 ±1.4	103.2 ±10.1	186.32 ±18.63	19.0 ±1.9	137 ±14
5/8	15.88	91.20 ±9.12	9.3 ±0.93	67 ±7	200.05 ±19.61	20.4 ±2.0	147.3 ±14.4	255.95 ±25.49	26.1 ±2.6	190 ±19
3/4	19.05	156.90 ±15.69	16.0 ±1.60	115 ±15	-	-	-	442.28 ±44.12	45.1 ±4.5	325 ±33
7/8	22.22	250.07 ±25.00	25.5 ±2.55	185 ±19	-	-	-	702.15 ±70.60	71.6 ±7.2	520 ±52
1	25.40	372.65 ±37.26	38.0 ±3.80	275 ±27	-	-	-	1048.33 ±104.93	106.9 ±10.7	770 ±77
1 1/8	28.58	530.54 ±53.05	54.1 ±5.41	390 ±39	-	-	-	1492.57 ±149.06	152.2 ±15.2	1100 ±110
1 1/4	31.75	727.65 ±72.76	74.2 ±7.42	535 ±54	-	-	-	2048.61 ±204.95	208.9 ±20.9	1510 ±151
1 3/4	34.93	968.89 ±96.88	98.8 ±9.88	710 ±71	-	-	-	2724.29 ±272.62	277.8 ±27.8	2000 ±200
1 1/2	38.1	1257.21 ±125.72	128.2 ±12.82	925 ± 93	-	-	-	3537.26 ±354.02	360.7 ±36.1	2600 ±260

**NOTE!**

This torque table does not apply to screws with nylon packings or where nonferrous metal washers are to be used, or which require tightening to a different specified torque, or tightening procedure.

**NOTE!**

N m (Newton meter): 1 N m ≅ 0.1 kgf m

**Tightening torque of split flange screws**

Use these torques for split flange screws.

**Tightening torque (split flange screws)**

Thread diameter of screw (mm)	Width across flats (mm)	Tightening torque		
		N m	kgf m	lbf ft
10	14	65.7 ±6.8	6.7 ±0.7	48.4 ±5
12	17	112 ±9.8	11.5 ±1	83 ±8
16	22	279 ±29	28.5 ±3	206 ±20

**Tightening torque for hydraulic plugs with O-ring**

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