

# **CX75C SR** Midi Excavator

## **SERVICE MANUAL**

Part number 47575329A

English

July 2013

Sample manual. Download All pages at:

<https://www.aresairmanual.com/downloads/2013-case-cx75c-sr-mini-excavator-service-manual-47575334a/>

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**CASE**  
CONSTRUCTION

Product: 2013 Case CX75C SR Mini Excavator Service Manual 47575334A  
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# SERVICE MANUAL

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47575329A 09/07/2013

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## **INTRODUCTION**

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## **Safety rules – General information**

### **Cleaning**

Clean the metal parts with cleaning solution that meets the standard and steam cleaning. (except for bearings)

After cleaning, dry well, and inject oil in all parts.

Also inject oil into the bearings after drying.

### **Inspection**

When disassembling parts, check all the parts.

If there are any worn or damaged parts, replace them.

Inspect carefully to prevent initial breakdowns.

### **Bearing**

Replace any loose bearings.

Air dry bearings before installing them.

### **Needle bearing**

When inserting needle bearings, be very careful not to damage them.

Apply grease to the section where the needle bearing will be inserted.

### **Gear**

Check that there is no wear and no damage.

### **Oil seal, O-ring, gasket**

Always install new oil seals, O-rings, and gaskets.

Apply grease to sections where oil seals and O-rings will be inserted.

### **Shaft**

Check that there is no wear and no damage.

Check the bearings and check for damaged oil seals on the shaft.

### **Service parts**

Install CASE genuine service parts.

When placing an order, check the parts catalog. It contains the CASE genuine part numbers.

Any breakdowns arising from the installation of non-genuine parts are not covered by the warranty.

### **Lubricants (fuel, hydraulic oil)**

Use the oil from the specified company or specified in the operator's Manual or service Manual.

Any breakdowns arising from any fuel or hydraulic oil other than those specified are not covered by the warranty.

## Safety rules

### WARNING:

This symbol indicates the need for caution.

Details are given concerning the safety of the operator and the surroundings.

Read all cautions carefully and understand them well before starting any work.

In order to prevent any accidents, always comply with warnings and cautions.

This section covers overall dangers.

Check if warning labels are installed.

Additional warning labels are available for order as a service part.

### WARNING:

Read this operator's manual well to have a thorough understanding of how to control and operate this machine.

### WARNING:

Always operate this machine from the seated position.

Any other method of operation has the danger of severe injury.

### WARNING:

This machine is for only 1 person to ride on. Do not ride 2 people on this machine.

### WARNING:

Before starting the engine, check the safety messages in this operator's manual.

Check all the warning labels on the machine.

Check that there is no one anywhere in or around the work range for the machine.

Check the operation methods in a safe location before starting the actual work.

Understand the operation of this machine well, then operate it according to service-related laws and ordinances.

The operator's manual and service manual can be ordered from any CASE CONSTRUCTION dealer.

### WARNING:

Working in untidy work clothes or in clothes with which safety cannot be ensured leads to damage to the machine and injury of the operator themselves.

Always work dressed for safety.

In order to work more safely, it is recommended to wear additional safety gear.

(Helmet, safety shoes, earplugs, goggles, work clothes, and gloves)

### WARNING:

Work with great care when the engine is running.

### WARNING:

Check and verify hydraulic equipment.

Work according to the procedure.

Do not change the procedure.

### WARNING:

When bleeding the pressure from hydraulic circuits to inspect the machine's hydraulic cylinders, make sure that there is no one in the vicinity before doing the work.

 WARNING:

Use gloves when handling hot parts.

 WARNING:

Lower the parts to the ground before inspecting or repairing attachments and lower parts.

 WARNING:

Check that all hoses and tubes are securely connected.  
Replace any damaged hose or tube.  
Do not use your hands to check for oil leaks. Use a piece of cardboard or wood.

 WARNING:

When removing an attachment pin or other hard pin, use a hammer with a soft head.

 WARNING:

When installing a pin with a hammer and working with a grinder, wear protective eyewear.  
At this time, use goggles or a protector that meets the standards.

 WARNING:

When repairing or inspecting, stop the machine at a safe location.

 WARNING:

When repairing the machine, protect the work site.  
Check the oil, coolant, grease, and tools.  
Collect materials and parts as necessary.  
Pay careful attention to work safely.

 WARNING:

Some of the machine's parts are extremely heavy.  
In this case, use an appropriate crane.  
For details on the weights and correct procedures, see the Service Manual.

 WARNING:

Exhaust gas is harmful.  
When working indoors or in any other enclosed space, always use good ventilation.

 WARNING:

If battery solution is frozen, there is a danger of it exploding.

## Safety rules – ROPS judgment method

### 1. Purpose

Check against the ROPS judgment criteria to judge whether the machine satisfies the ROPS criteria or not.

The weight and boom of the machine greatly effects whether the ROPS judgment criteria is satisfied or not.

The ROPS test assumes that the weight being used is the weight of the machine when the maximum number of selectable options are mounted (as of 2009).

However, depending on the derivative machinery or the order details, the weight and boom position may differ from the assumed weight or position.

### 2. Criteria for judging whether a machine satisfies the ROPS criteria

#### Weight

The weight must not be over the weight shown below for each class.

If the weight is exceeded, there is a danger that the cab could be damaged and the operator could die or sustain a serious injury when the machine falls over.

If the weight exceeds the stipulated weight, the machine will not satisfy the ROPS criteria.

- Weight (X3 model)

To satisfy the ROPS criteria, the weight must not be over the indicated weight. (The below weights are the weights indicated on the nameplate within the ROPS cab.)

Machine body total weight	Class
16000 kg (35273.962 lb) max.	CX75C CX80C CX145C
20500 kg (45194.764 lb) max.	CX130C CX160C CX180C
28000 kg (61729.433 lb) max.	CX235C
31000 kg (68343.301 lb) max.	CX210C CX250C CX250C LR CX300C
40000 kg (88184.905 lb) max.	CX370C
50000 kg (110231.131 lb) max.	CX470C

\* The ROPS test assumes that the CX470C has a cage guard (alone).

- Weight (X2 model)

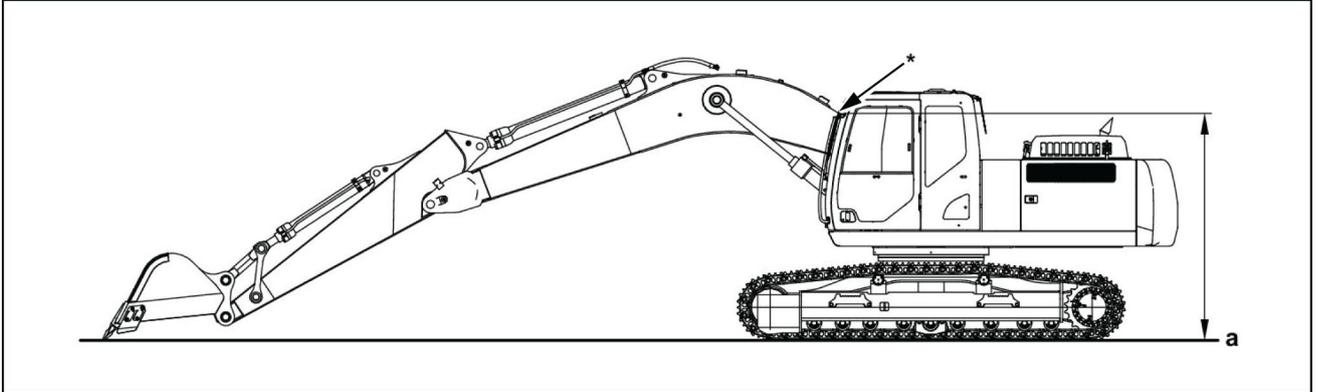
To satisfy the ROPS criteria, the weight must not be over the indicated weight. (The below weights are the weights indicated on the nameplate within the ROPS cab.)

Machine body total weight	Class
26600 kg (58642.962 lb) max.	CX130B CX160B CX180B CX210B CX240B

## Boom position

### WARNING:

- If the machine has been modified so that the boom position has been lowered, the machine will not satisfy the ROPS criteria.
- It is necessary to consult with our company if it is possible that the boom's position has been lowered by modification.
- The extent to which a boom position has moved cannot be determined in the same way for all machines.



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#### a. Ground point

With the tip of the bucket in contact with the ground surface at maximum work radius, if the position (\* in the diagram) that overlaps with the cab when viewed from the side is markedly lower than that of a standard machine (standard arm), the machine will not satisfy the ROPS criteria.

Also, with a machine body with a cab mounted that can withstand up to **31 t (68343.30 lb)**, the effect of mounting a **24 t (52910.94 lb)** machine, which is near the restriction weight, and a **21 t (46297.08 lb)** machine to the same cab will not be the same.

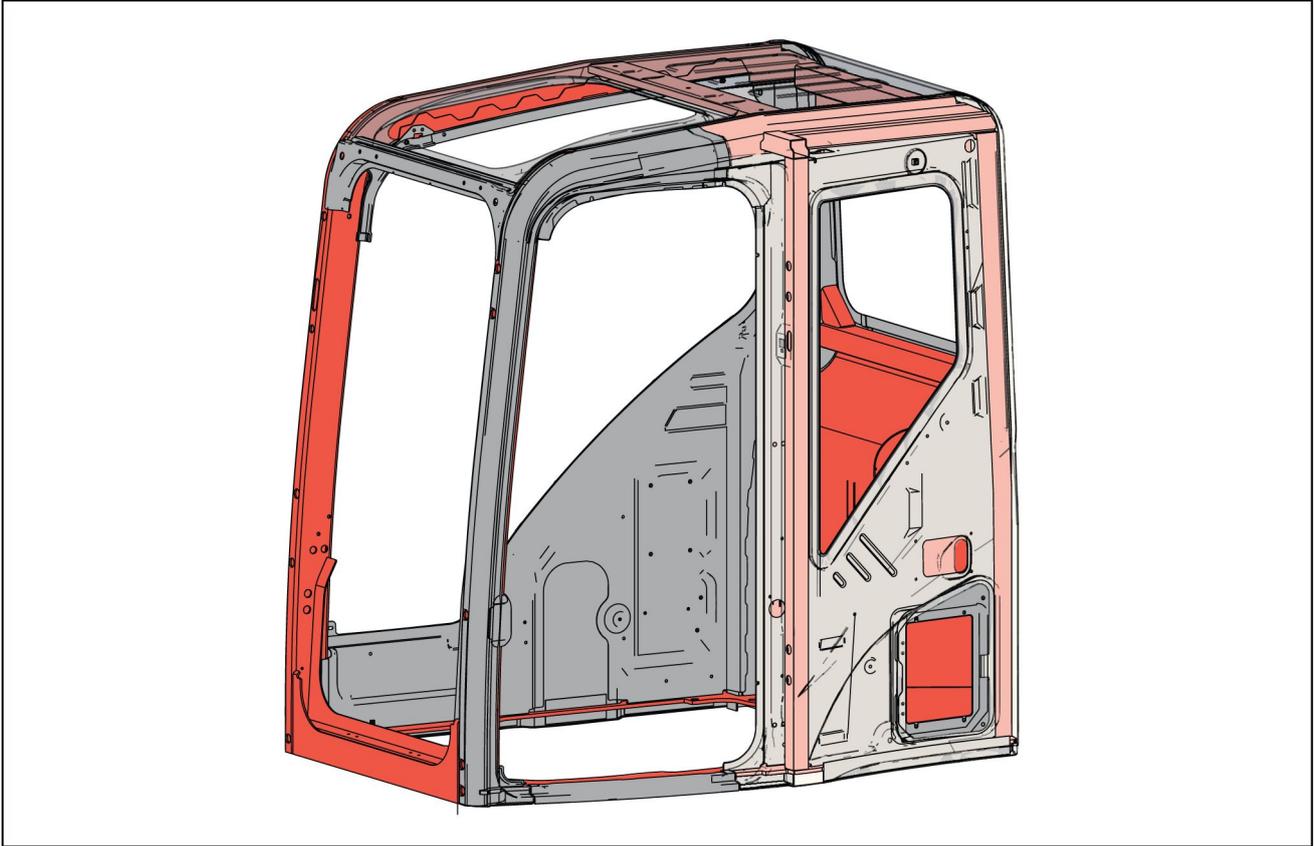
## 3. Prohibited items

- Modifications that reduce the strength of a platform that has a cab with a ROPS mounted to it. (Actions or modifications that reduce the functionality of the anchoring part at the left-rear of the cab)
- Modifications that effect the strength of the ROPS of a cab with a ROPS mounted to it.

Modification prohibited (red part)	All modifications (grinding, welding, drilling holes, removing, etc.) are prohibited
Modification permitted under conditions (gray part)	Removal of parts is prohibited Bar welding and making holes [up to diameter <b>20 mm (0.787 in)</b> ] by drilling are possible

# INTRODUCTION

[X3 cab (CX75C/CX80C/CX145C)]

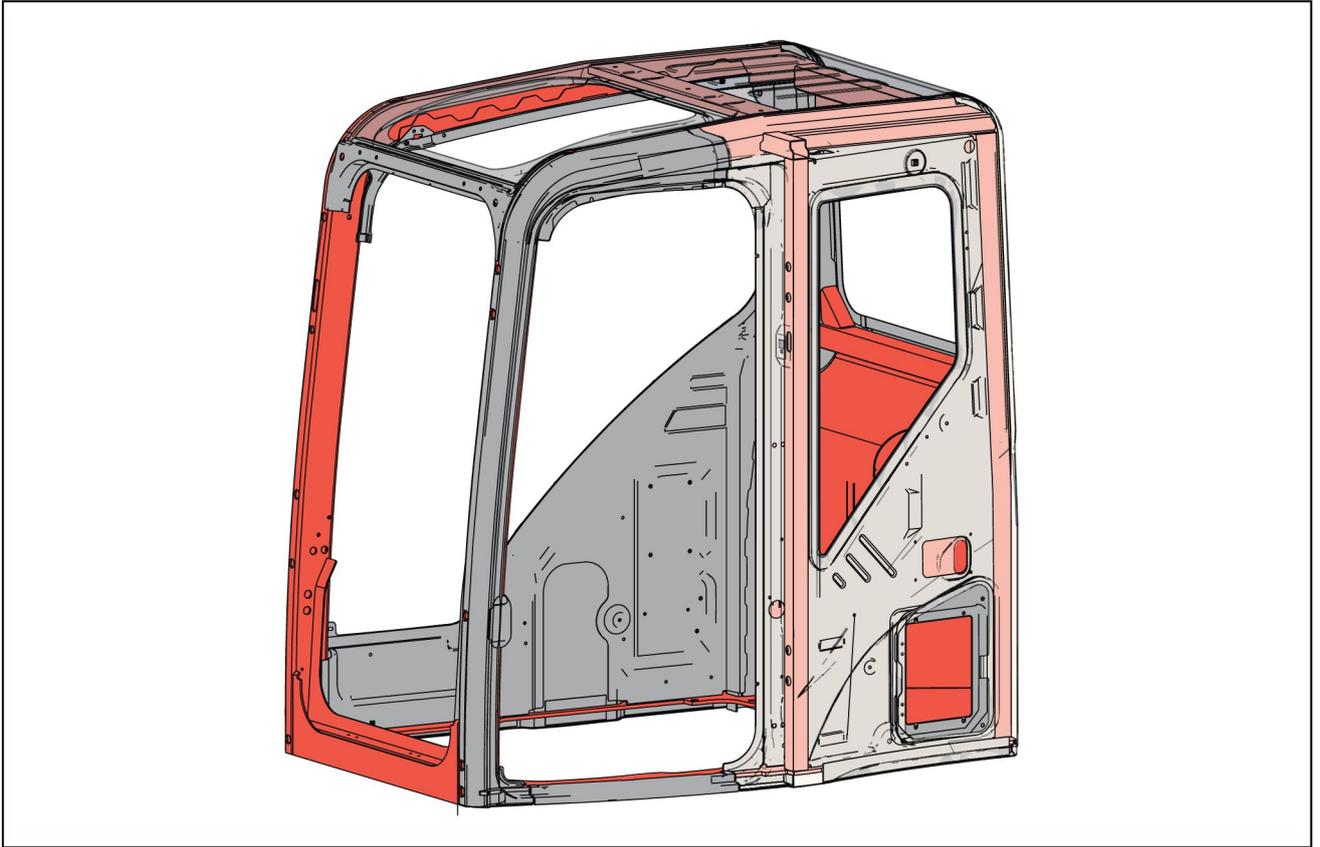


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## INTRODUCTION

[X3 cab (CX235C)]

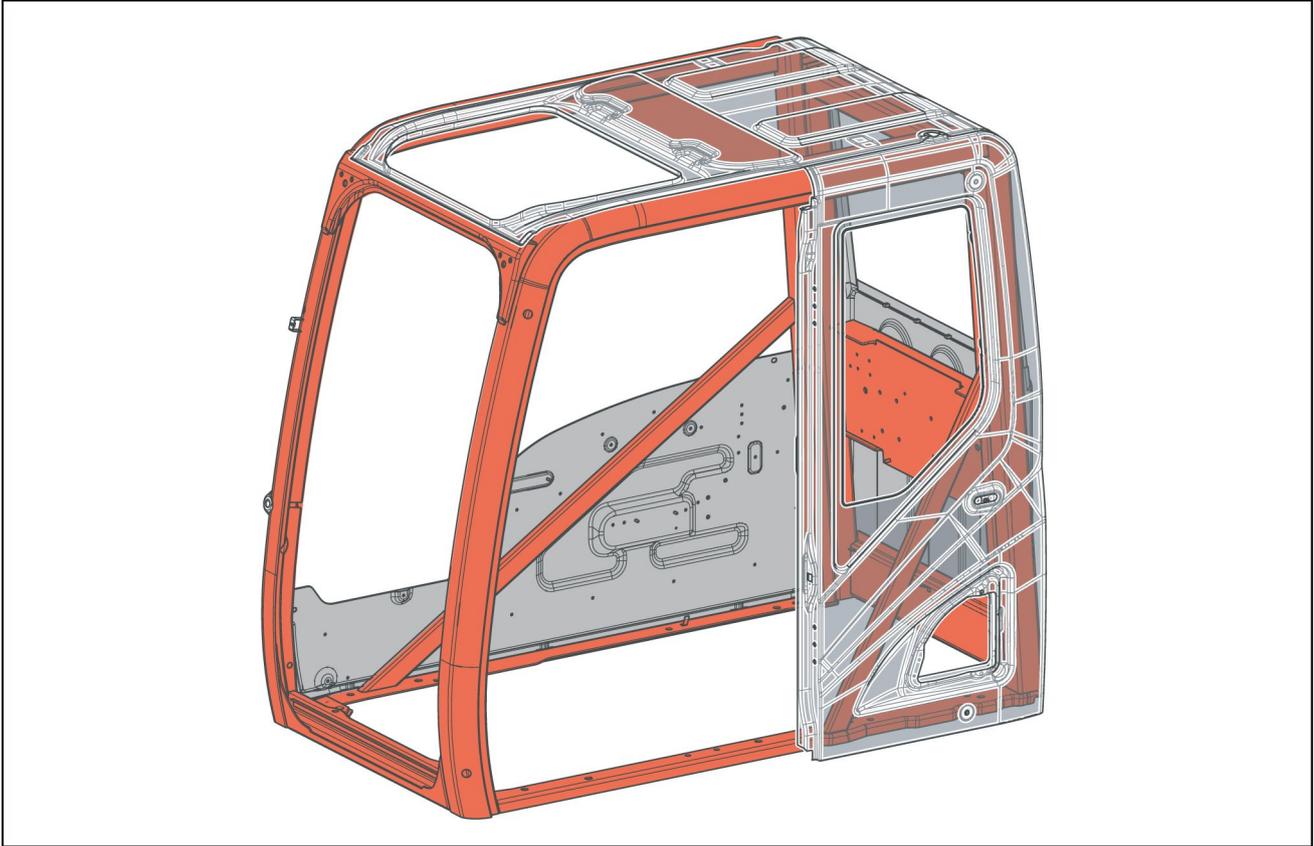
The cab for the MSR model (CX235C) has 3 additional reinforcement parts that were added to the MSR model (CX75C/CX80C/CX145C) cab shown in the diagram.



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# INTRODUCTION

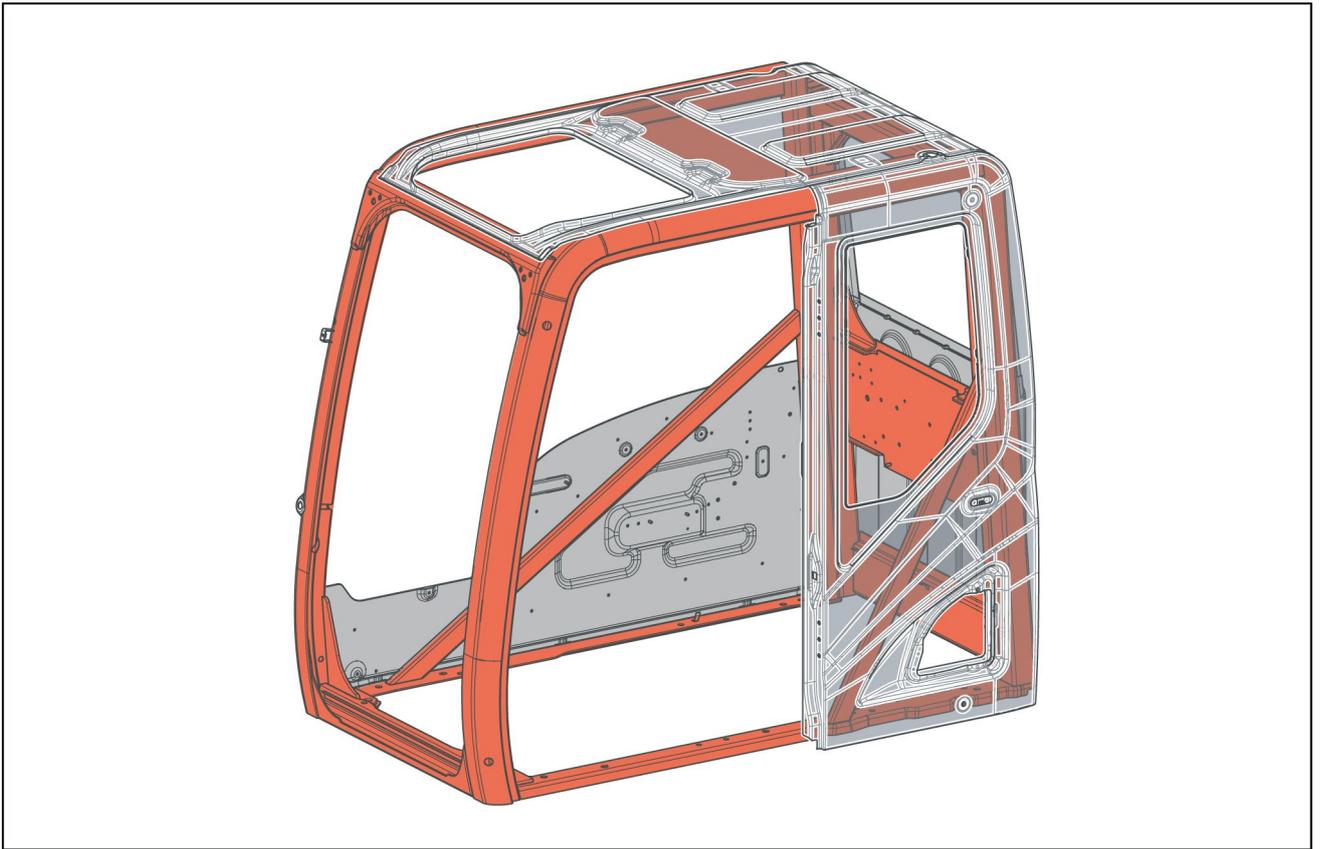
[X3 cab (CX130C/CX160C/CX180C)]



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# INTRODUCTION

[X3 cab (CX210C/CX240C/CX290C)]

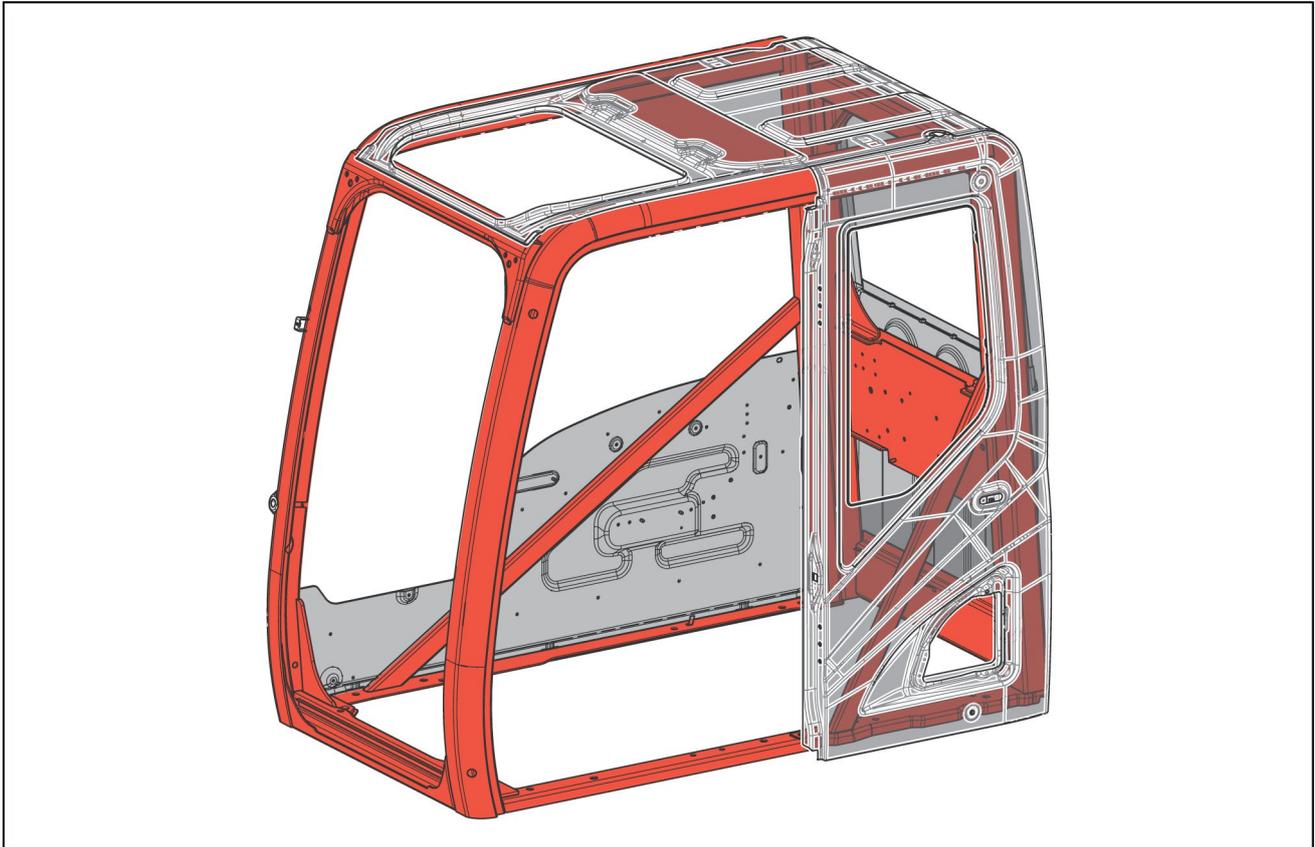


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## INTRODUCTION

[X3 cab (CX350C)]

The cab for the large-sized model (CX350C) is the cab of the medium-sized model on the diagram (CX210C - CX290C) with reinforcement materials added in 7 locations.



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## INTRODUCTION

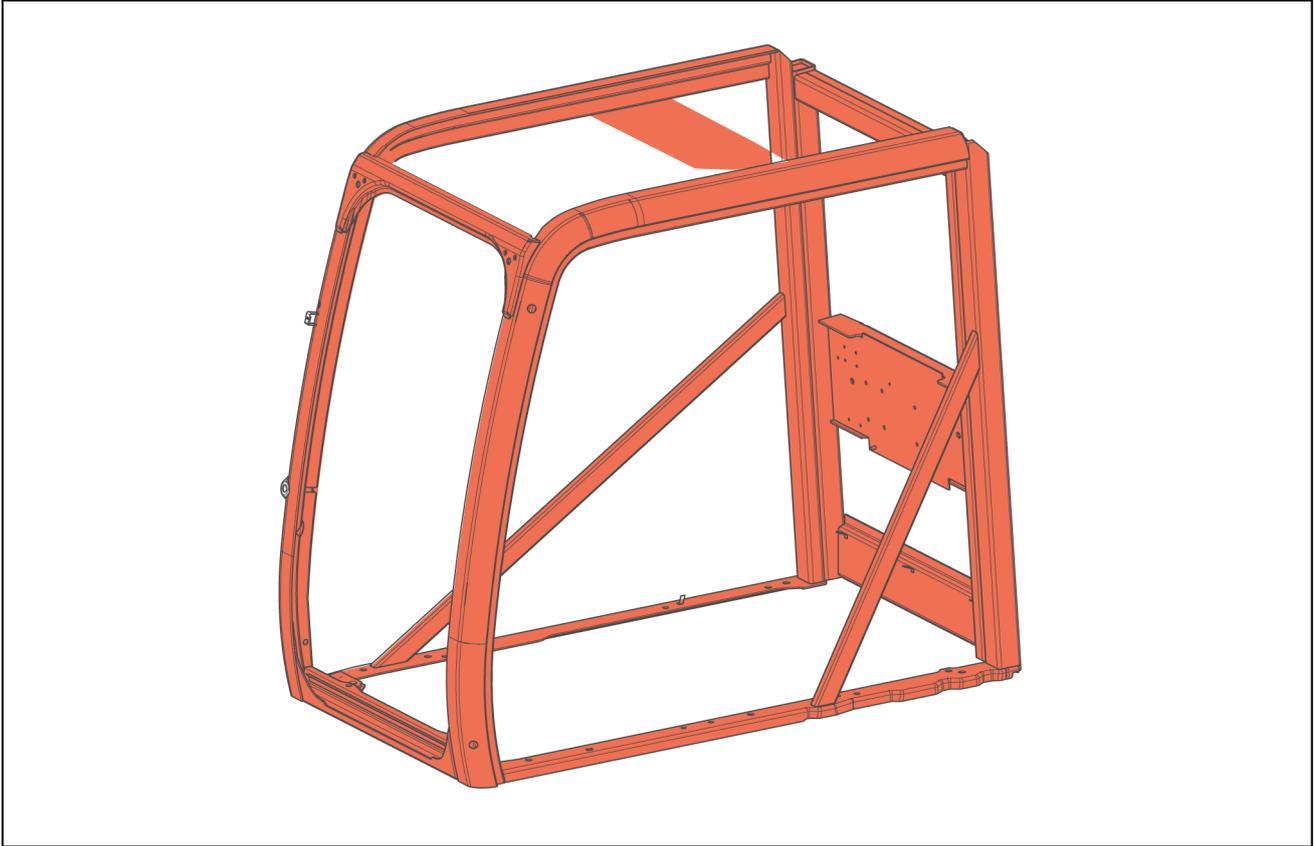
[X3 cab members that cannot be modified (CX75C/CX80C/CX145C/CX235C)]



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## INTRODUCTION

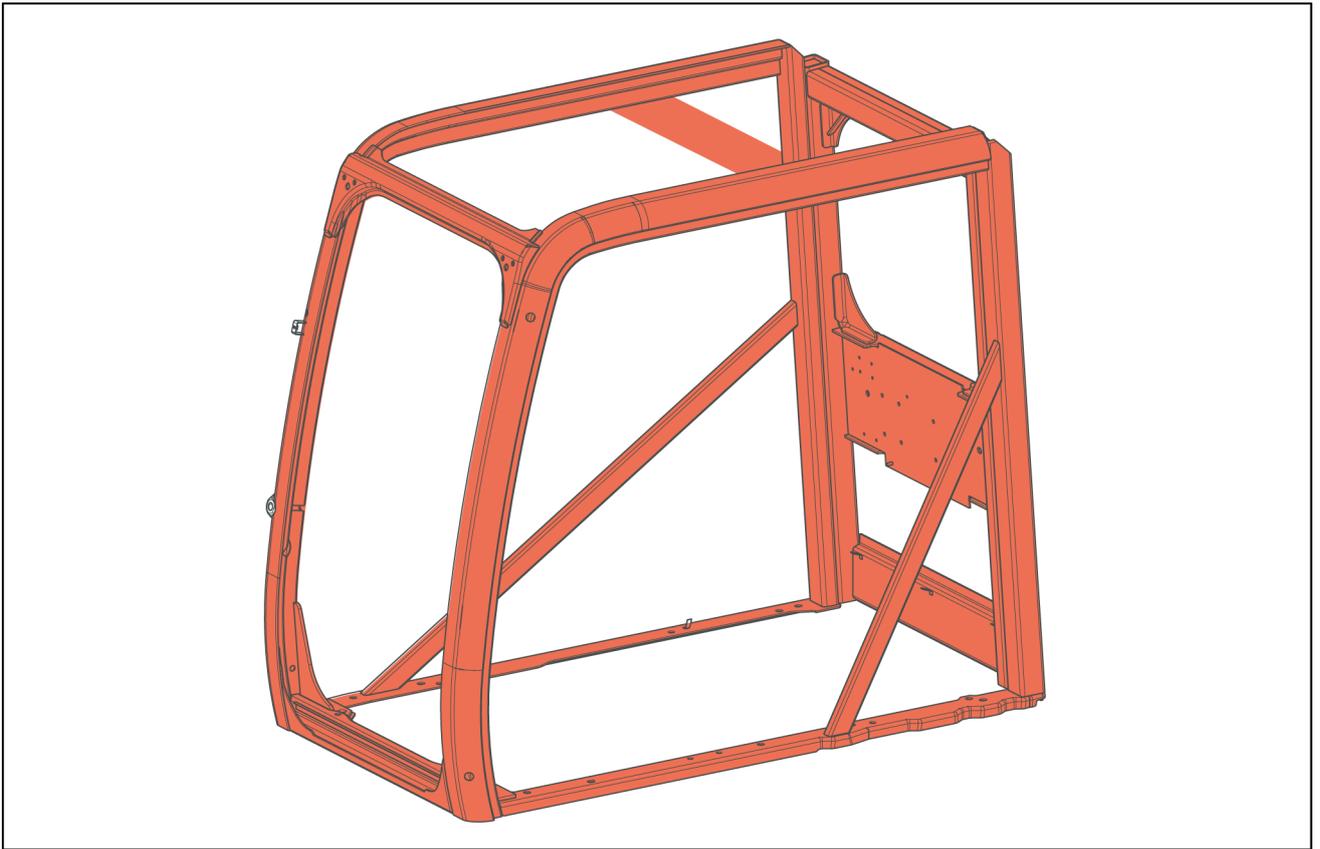
[X3 cab; members that cannot be modified (CX210C/CX240C/CX290C)]



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# INTRODUCTION

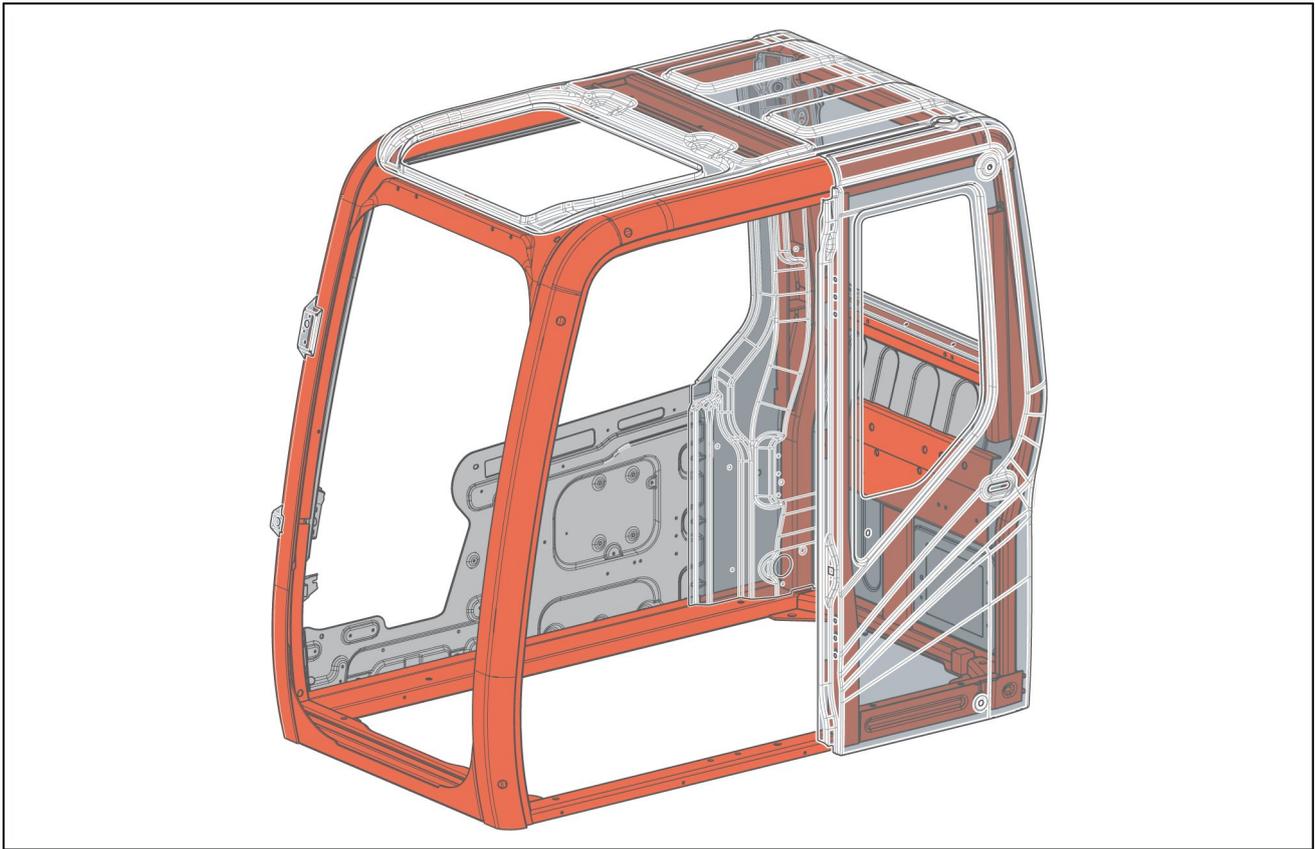
[X3 cab; members that cannot be modified (CX210C/CX240C/CX290C/CX350C)]



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## INTRODUCTION

[X2 cab (CX130B/CX160B/CX210B/CX240B)]

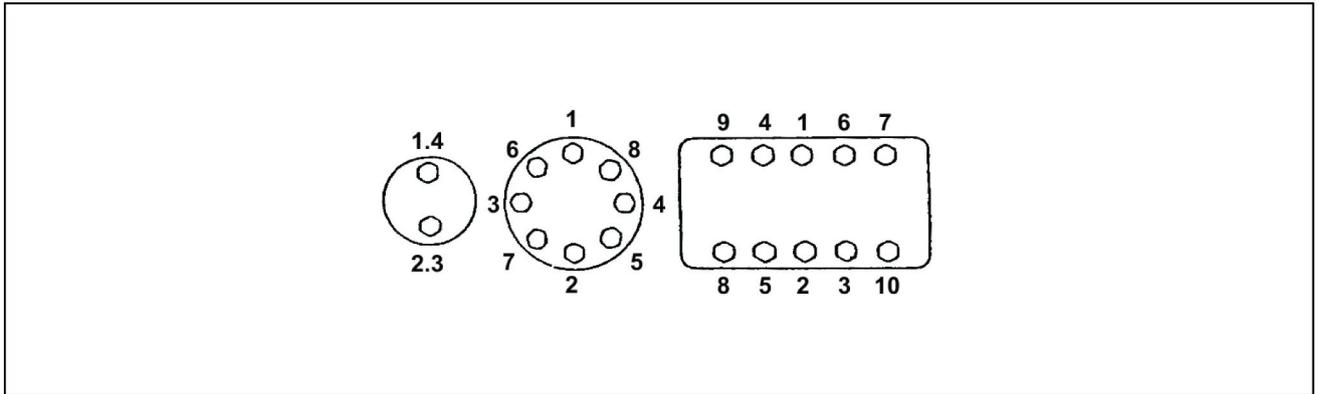


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- In general, high cabs do not satisfy the ROPS criteria. (It is necessary to consult with us to check if the high cab model satisfies the ROPS criteria.)

## Torque – Bolt and nut

- Tighten alternating between left and right and top and bottom so that uniform tightening force is applied.



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- If **LOCTITE®** was used on a removed bolt (there is something white sticking to the bolt when it is removed), clean the old **LOCTITE®** off with cleaning fluid, dry the bolt, then apply 2 - 3 drops of **LOCTITE®** to the thread section of the bolt.

### Torque table

Bolt nominal diameter (size)		M6	M8	M10	M12	M14	M16	M18	M20
Hexagon bolt	Wrench	10 mm	13 mm	17 mm	19 mm	22 mm	24 mm	27 mm	30 mm
	Tightening torque	6.9 N·m (5.089 lb ft)	19.6 N·m (14.456 lb ft)	39.2 N·m (28.912 lb ft)	58.8 N·m (43.369 lb ft)	98.1 N·m (72.355 lb ft)	156.9 N·m (115.723 lb ft)	196.1 N·m (144.636 lb ft)	294.2 N·m (216.991 lb ft)
Hexagon socket head bolt	Wrench	5 mm	6 mm	8 mm	10 mm	12 mm	14 mm	14 mm	17 mm
	Tightening torque	8.8 N·m (6.491 lb ft)	21.6 N·m (15.931 lb ft)	42.1 N·m (31.051 lb ft)	78.5 N·m (57.899 lb ft)	117.7 N·m (86.811 lb ft)	176.5 N·m (130.180 lb ft)	245.2 N·m (180.850 lb ft)	343.2 N·m (253.131 lb ft)

# Torque

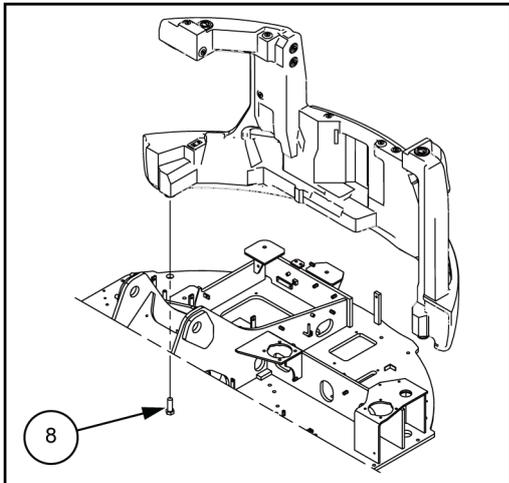
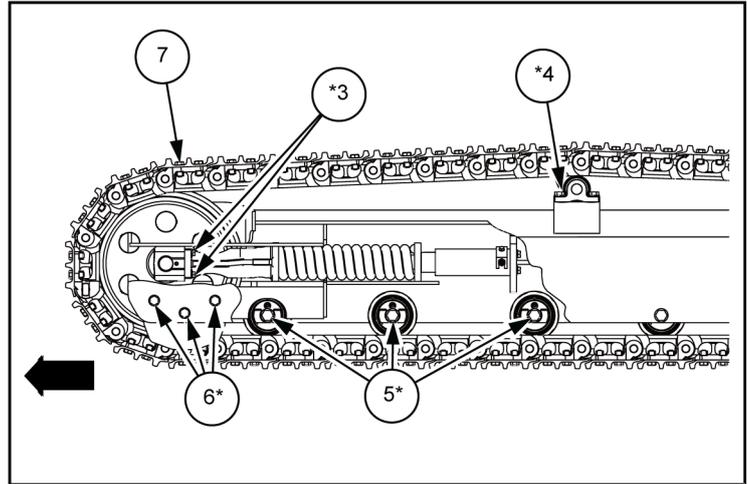
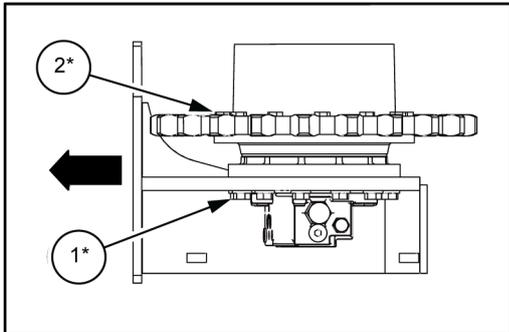
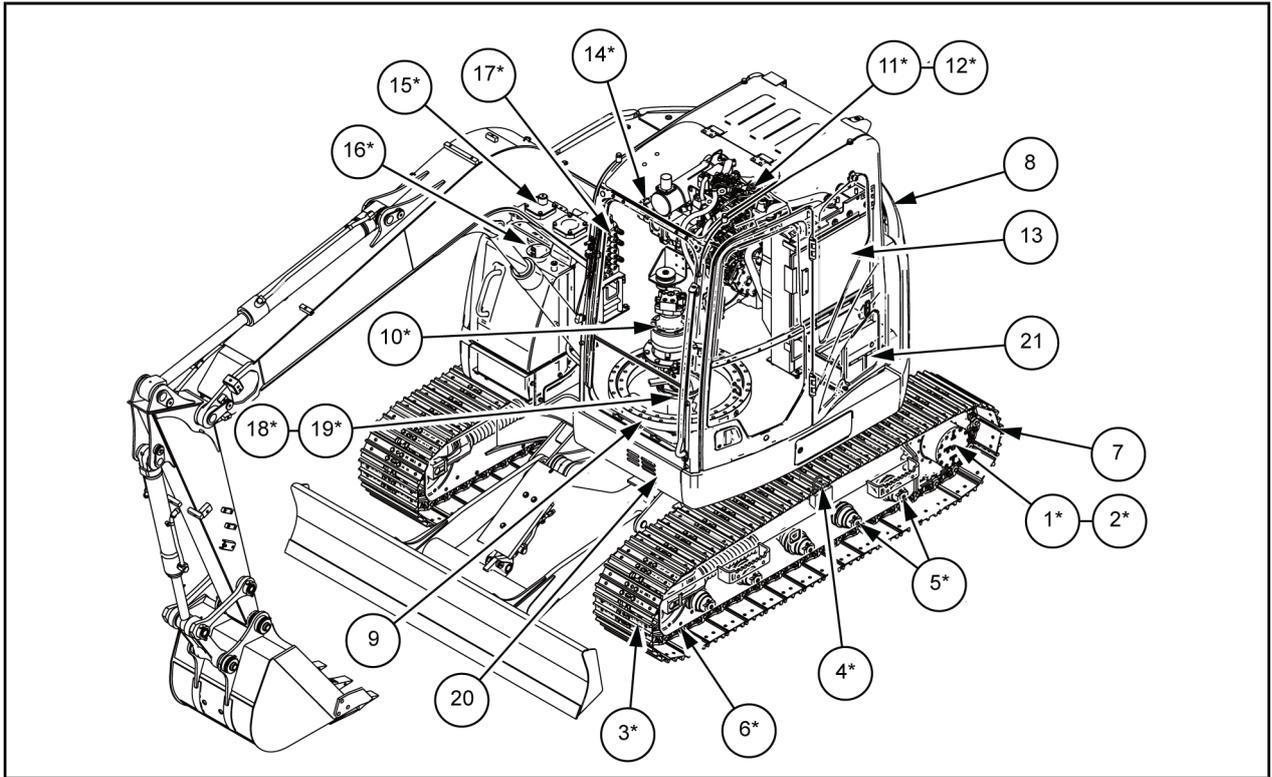
## Special torque settings

Code	Retightening location		Bolt nominal diameter	Wrench	Tightening torque
1*	Travel motor		M16	24 mm	267 - 312 N·m (196.93 - 230.12 lb ft)
2*	Drive sprocket		M14	22 mm	173 - 202 N·m (127.60 - 148.99 lb ft)
3*	Take-up roller		M10	17 mm	63 - 73 N·m (46.47 - 53.84 lb ft)
4*	Upper roller		M16	24 mm	267 - 312 N·m (196.93 - 230.12 lb ft)
5*	Lower roller		M20	30 mm	521 - 608 N·m (384.27 - 448.44 lb ft)
6*	Front guard		M16	24 mm	267 - 312 N·m (196.93 - 230.12 lb ft)
7	Shoe		M14	22 mm	220 - 270 N·m (162.26 - 199.14 lb ft)
8	Counterweight		M24	36 mm	850.2 - 992.4 N·m (627.08 - 731.96 lb ft)
9	Turntable bearing		M16	24 mm	252 - 283.4 N·m (185.87 - 209.03 lb ft)
10*	Swing unit		M16	24 mm	272.6 - 317.7 N·m (201.06 - 234.32 lb ft)
11*	Engine	Mount	M16	24 mm	264.9 - 313.9 N·m (195.38 - 231.52 lb ft)
12*		Rear bracket	M10	17 mm	
13	Radiator		M12	19 mm	63.8 - 73.6 N·m (47.06 - 54.28 lb ft)
14*	Hydraulic pump	Pump	M18	14 mm Hexagon socket head	197 - 218 N·m (145.30 - 160.79 lb ft)
15*	Hydraulic tank		M12	19 mm	98.1 - 107.9 N·m (72.35 - 79.58 lb ft)
16*	Fuel tank		M12	19 mm	98.1 - 107.9 N·m (72.35 - 79.58 lb ft)
17*	Control valve		M12	19 mm	63.8 - 73.60 N·m (47.06 - 54.28 lb ft)
18*	Center joint	Lock bar	M12	19 mm	88.3 - 107 N·m (65.13 - 78.92 lb ft)
19*		Joint	M12	19 mm	109 - 127 N·m (80.39 - 93.67 lb ft)
20	Cab		M16	24 mm	149 - 173 N·m (109.90 - 127.60 lb ft)
21	Battery		M10	17 mm	19.6 - 29.4 N·m (14.46 - 21.68 lb ft)

### WARNING:

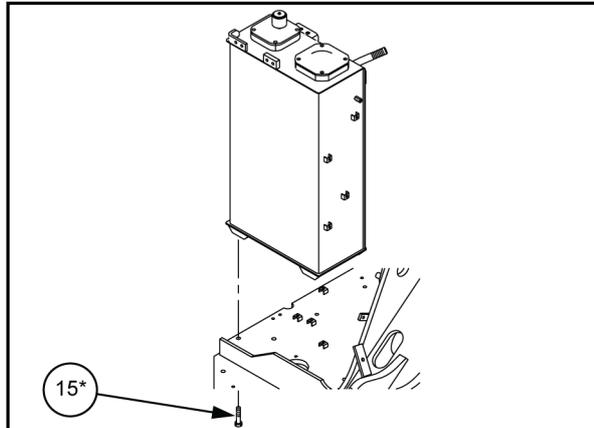
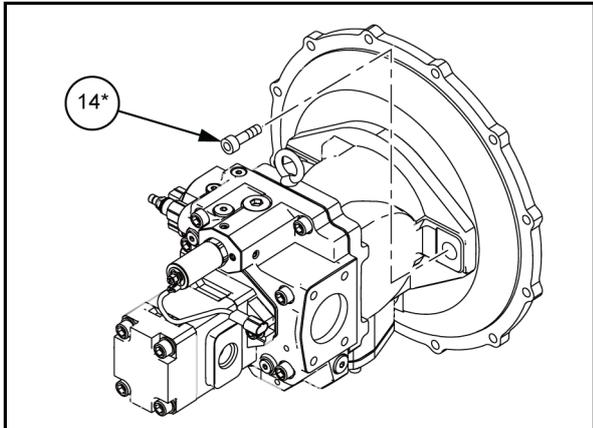
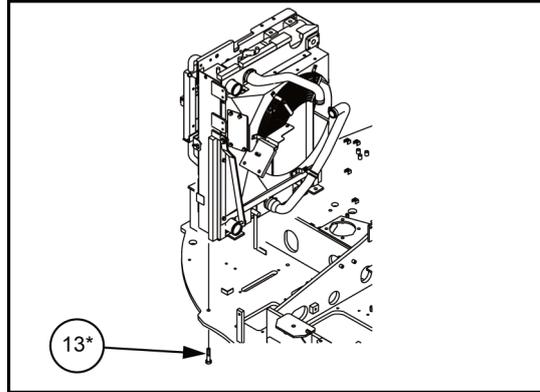
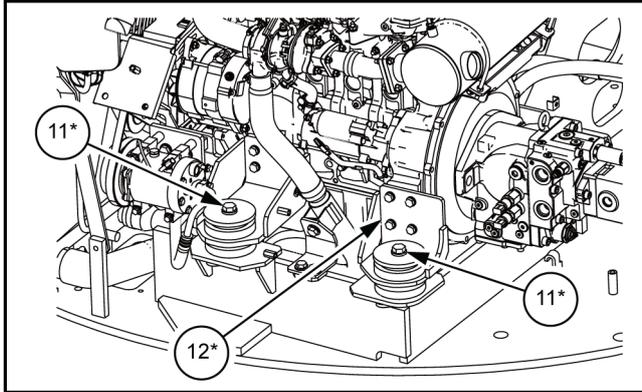
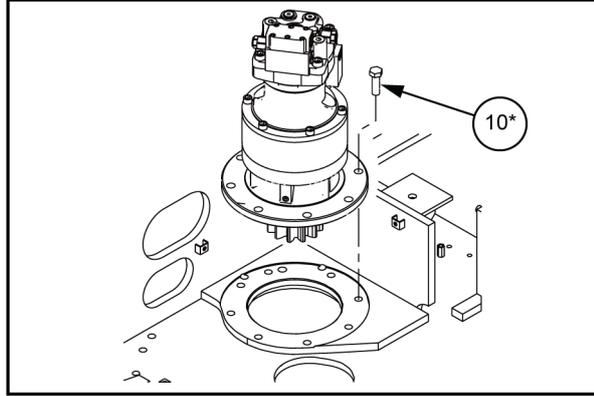
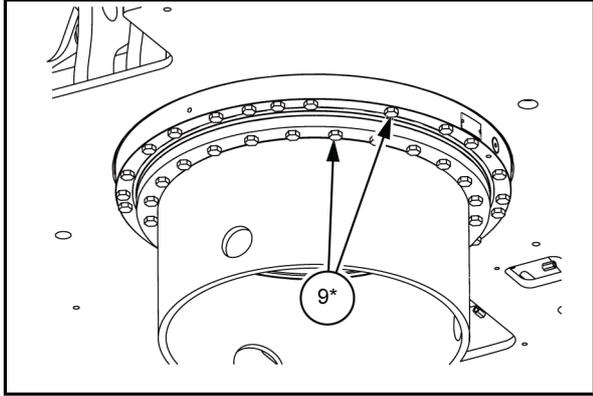
- For items marked with \*, always apply **LOCTITE® 262** or the equivalent and tighten to the specified torque. The tightening torque in kgf·m is determined with **9.8 N·m (7.2 lb ft)**.

INTRODUCTION



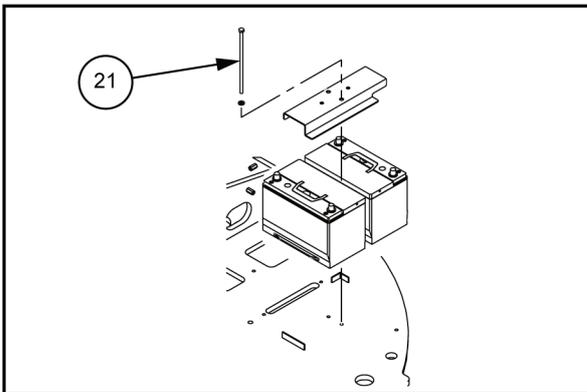
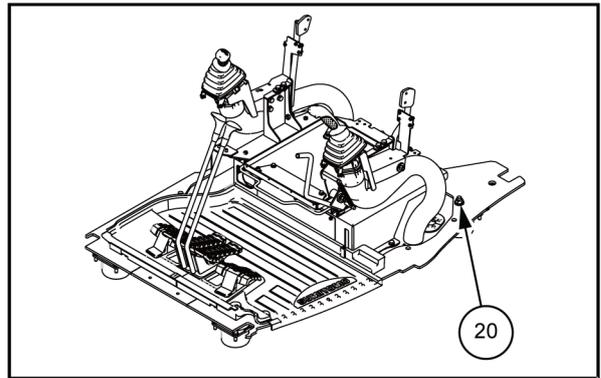
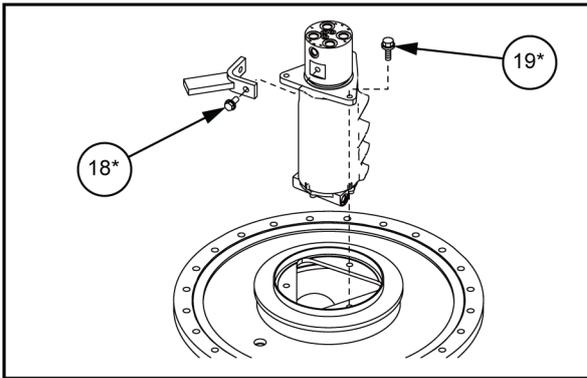
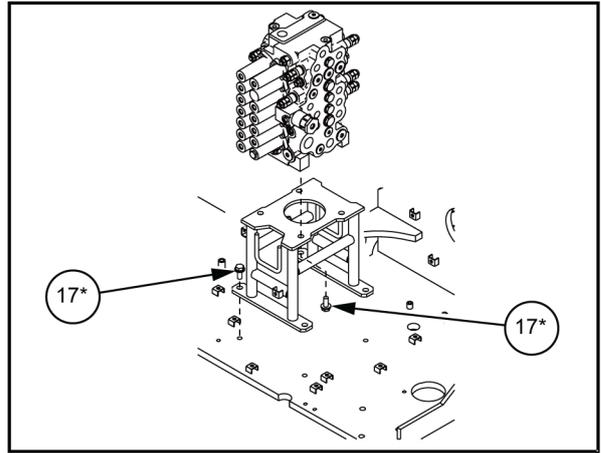
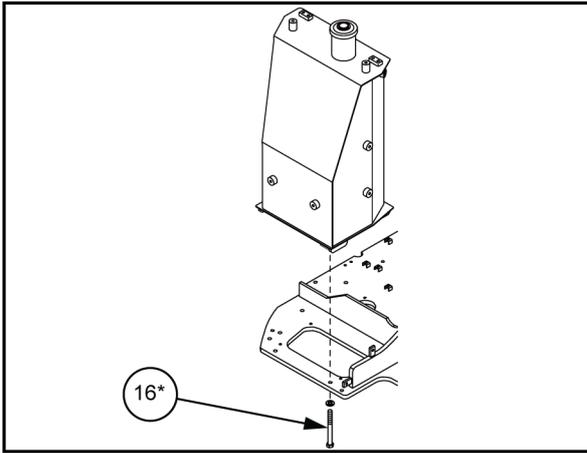
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INTRODUCTION



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# INTRODUCTION



SML13CEX4647GB 3

## General specification – CX75C

CX75C SR WE

### Main data

Operating weight	<b>7520 kg (16490.577 lb)</b>
Engine output	<b>40.0 kW (54.385 Hp) / 2000 RPM</b>
Bucket capacity	Heaped <b>0.370 m<sup>3</sup> (13.066 ft<sup>3</sup>)</b>
	Leveled <b>0.100 m<sup>3</sup> (3.531 ft<sup>3</sup>)</b>

### Performance

Standard weight	<b>6.6 kN (1483.739 lb)</b>
Swing speed	<b>10.4 RPM</b>
Travel speed	Low speed <b>3.2 km/h (1.988 mph)</b>
	High speed <b>5.1 km/h (3.169 mph)</b>
Maximum pulling force	<b>59.5 kN (13488.54 lb)</b>
Grade ability	<b>70 % (35°)</b>
Ground pressure	<b>34 kPa (5 psi) [ 450 mm (17.717 in) grouser shoe]</b>
	<b>25 kPa (4 psi) [ 600 mm (23.622 in) grouser shoe]</b>

### Main unit dimensions

Main unit length (without attachment)	<b>2845 mm (112.008 in)</b>
Main unit width	<b>2320 mm (91.339 in)</b>
Upper swing body width	<b>2270 mm (89.37 in)</b>
Cab width	<b>1000 mm (39.37 in)</b>
Main unit height	<b>2860 mm (112.598 in)</b>
Swing radius (rear end)	<b>1290 mm (50.787 in)</b>
Swing body rear end distance	<b>1290 mm (50.787 in)</b>
Swing body rear section bottom height	<b>750 mm (29.528 in)</b>
Distance between tumblers	<b>2210 mm (87.008 in)</b>
Overall track length	<b>2845 mm (112.008 in)</b>
Overall track width	<b>2320 mm (91.339 in)</b>
Distance between tracks	<b>1870 mm (73.622 in)</b>
Track shoe width	<b>450 mm (17.717 in) [option: 600 mm (23.622 in)]</b>
Minimum ground clearance	<b>360 mm (14.173 in) (to bottom of lower frame)</b>

### Engine

Name	Isuzu AP-4LE2X diesel engine
Type	4-cycle water-cooled overhead camshaft type, common rail system (electronic control), cooled EGR, with turbocharger (variable displacement type)
No. of cylinders-bore x stroke	<b>4- Ø85 mm (3.346 in) x 96 mm (3.780 in)</b>
Total stroke volume	<b>2.179 l (0.5756 US gal)</b>
Maximum torque	<b>193 N·m (142.35 lb ft) / 1800 RPM</b>
Starter	<b>24 V 3.2 kW (4.35 Hp) reduction type</b>
Charging generator	<b>24 V 50 A AC type</b>
Battery	<b>12 V 64 A·h / 5 h x 2</b>

### Cooling system

Fan type	<b>Ø475 mm (18.701 in) 7 blades, suction</b>
Radiator	
Fin type	<b>Wavy</b>

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	Fin pitch	<b>1.75 mm (0.06890 in)</b>
Oil cooler		
	Fin type	Wavy
	Fin pitch	<b>1.75 mm (0.06890 in)</b>
Intercooler		
	Fin type	Wavy
	Fin pitch	<b>2.0 mm (0.07874 in)</b>
Fuel cooler		
	Fin type	Wavy
	Fin pitch	<b>2.0 mm (0.07874 in)</b>

**Upper side work system**

Model		Backhoe attachment
Components, dimensions, working dimensions		
	Standard bucket capacity	Heaped <b>0.370 m<sup>3</sup> (13.066 ft<sup>3</sup>)</b> (Leveled <b>0.100 m<sup>3</sup> (3.531 ft<sup>3</sup>)</b> )
	Bucket width	<b>850 mm (33.465 in)</b>
	Bucket width with side cutter	<b>804 mm (31.654 in)</b>
	Bucket weight with side cutter	<b>213 kg (469.585 lb)</b>
	Boom length	<b>3750 mm (147.638 in)</b>
	Arm type	Standard [ <b>1.69 m (5.5446 ft)</b> ]
	Arm length	<b>1690 mm (66.535 in)</b>
	Bucket radius	<b>1050 mm (41.339 in)</b>
	Bucket wrist angle	177°
	Maximum digging radius	<b>6410 mm (252.362 in)</b>
	Maximum digging radius at ground line	<b>6270 mm (246.850 in)</b>
	Maximum digging depth	<b>4130 mm (162.598 in)</b>
	Maximum vertical straight wall digging depth	<b>3800 mm (149.606 in)</b>
	Maximum digging height	<b>7370 mm (290.157 in)</b>
	Maximum dump height	<b>5280 mm (207.874 in)</b>
	Minimum swing radius at front	<b>1630 mm (64.173 in)</b>
	Height for minimum swing radius at front	<b>5530 mm (217.717 in)</b>

**Operating device**

Operator's seat		
	Position	Left side
	Structure	Adjustable forward and back and up and down, reclining mechanism, with seat suspension
Cab		Sealed steel type, all reinforced glass
Levers and pedals		
	For travel use	Lever and pedal type (hydraulic pilot type) x 2
	For operating machine use	Lever type (hydraulic pilot type) x 2
Instruments and switches		
Work mode switchover		3 modes (SP/H/A)
	Travel mode switchover	Low-speed/high-speed switch type
	One-touch idle	Knob switch type
	Engine emergency stop	Switch type
Monitor device		
	Machine status display (full color liquid crystal)	
	Work mode select status	SP/H/A
Instruments (full color liquid crystal)		
	Fuel gauge	Bar graph and indicator
	Engine coolant temperature gauge	Bar graph and indicator
	Hydraulic oil temperature gauge	Bar graph and indicator

## INTRODUCTION

Hour meter	Digital type	
Machine status and warnings (full color liquid crystal and warning alarm) * has warning alarm		
Overheat (*) Battery charge (*) Electrical system abnormality (*) Refill fuel (*) Engine oil pressure (*) Refill coolant (*) Engine pre-heat Auto warm up Air cleaner (*) Anti-theft device triggered Engine system abnormality (*) Engine emergency stop (*)		
Illumination equipment		
Working light	Cab top	<b>24 V 70 W x 1</b>
	Boom up	<b>24 V 70 W x 1</b>
Interior light	<b>24 V 5 W x 1</b>	
Horn	Electric horn x 2	
Other	Wiper with intermittent function, window washer, air-conditioner, clock, rear view mirrors (left and right, total of 3)	

### Swing units

Swing circle	Swing bearing type (with inner gear)
Swing hydraulic motor	Fixed displacement piston motor x 1
Reduction gear	Planetary gear 2-stage reduction gear
Swing parking brake	Mechanical lock (operational lever linkage type)

### Travel lower body

Travel hydraulic motor	Variable displacement piston motor x 2
Reduction gear	Planetary gear 2-stage reduction gear
Travel brake	Hydraulic lock
Parking brake	Mechanical lock (travel lever linkage type)
Track shoe	
Type	Assembly-type triple grouser shoe
No. of shoes (per side)	With 450G seals: 39 seals
Shoe width	<b>450 mm (17.717 in) [option 600 mm (23.622 in)]</b>
Grouser height	<b>20 mm (0.787 in)</b>
Link pitch	<b>154 mm (6.063 in)</b>
Roller	
No. of upper rollers (per side)	1
No. of lower rollers (per side)	5
Track belt tension adjuster	Grease cylinder type (with cushion spring)

### Hydraulic equipment

#### Hydraulic device

Hydraulic pump drive type	Direct engine link (no transmission)
Hydraulic pump	
Type	Double variable displacement piston pump x 1 Gear pump x 1
Discharge volume	Piston pump 2 x <b>74 l/min (19.549 US gpm)</b> Gear pump <b>18 l/min (4.755 US gpm)</b>
Pump control method	Simultaneous output full-horsepower control

#### Control valve and cylinder

Control valve		
Type	Quadruple spool Quintuple spool	One-piece type x 1
Operating type	Hydraulic pilot type: Travel, swing, and operating machine	
Cylinder	No. of cylinders x tube bore-rod diameter-stroke	

Product: 2013 Case CX75C SR Mini Excavator Service Manual 47575334A

Full Download: [https://www.arepairmanual.com/downloads/2013-case-cx75c-sr-m](https://www.arepairmanual.com/downloads/2013-case-cx75c-sr-mini-excavator-service-manual-47575334a/)[ini-excavator-service-manual-47575334a/](https://www.arepairmanual.com/downloads/2013-case-cx75c-sr-mini-excavator-service-manual-47575334a/)

Boom cylinder	1x $\varnothing 115$ mm (4.528 in) - $\varnothing 75$ mm (2.953 in) - 850 mm (33.465 in)
Arm cylinder	1 x $\varnothing 100$ mm (3.937 in) - $\varnothing 65$ mm (2.559 in) - 755 mm (29.724 in)
Bucket cylinder	1 x $\varnothing 85$ mm (3.346 in) - $\varnothing 55$ mm (2.165 in) - 665 mm (26.181 in)

## Capacities, filters

### Coolant and oil capacities

Coolant	12.2 l (3.223 US gal)
Fuel	120 l (31.70 US gal)
Engine lubricating oil	11.5 l (3.038 US gal)
Travel reduction gear lubricating oil (one side)	1.1 l (0.291 US gal)
Hydraulic oil	96.3 l (25.440 US gal)
Hydraulic oil tank regulation amount	51 l (13.47 US gal)

### Hydraulic oil filters

Suction filter (inside tank)	105 $\mu$ m
Return filter (inside tank)	6 $\mu$ m
Pilot line filter (inside housing)	8 $\mu$ m

### Fuel filter

Main filter	2 $\mu$ m
Pre-filter	5.5 $\mu$ m

Sample manual. Download All pages at:

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