

**CX75C SR**  
Midi Excavator

**SERVICE MANUAL**

**Part number 47575334A**  
1<sup>st</sup> edition English  
July 2013



# Contents

---

## INTRODUCTION

Engine.....	10
[10.001] Engine and crankcase .....	10.1
[10.102] Pan and covers .....	10.2
[10.106] Valve drive and gears .....	10.3
[10.101] Cylinder heads .....	10.4
[10.105] Connecting rods and pistons.....	10.5
[10.103] Crankshaft and flywheel.....	10.6
[10.216] Fuel tanks .....	10.7
[10.218] Fuel injection system.....	10.8
[10.250] Turbocharger and lines.....	10.9
[10.254] Intake and exhaust manifolds and muffler .....	10.10
[10.501] Exhaust Gas Recirculation (EGR) - Diesel Particulate Filter (DPF) exhaust treatment .....	10.11
[10.400] Engine cooling system .....	10.12
[10.414] Fan and drive .....	10.13
[10.310] Aftercooler.....	10.14
[10.304] Engine lubrication system.....	10.15
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2
[35.106] Variable displacement pump .....	35.3
[35.102] Pump control valves.....	35.4
[35.359] Main control valve.....	35.5
[35.357] Pilot system .....	35.6
[35.525] Auxiliary hydraulic valves and lines .....	35.7
[35.355] Hydraulic hand control .....	35.8

[35.356] Hydraulic foot control .....	35.9
[35.352] Hydraulic swing system .....	35.10
[35.353] Hydraulic travel system .....	35.11
[35.354] Hydraulic central joint .....	35.12
[35.736] Boom hydraulic system .....	35.13
[35.737] Dipper hydraulic system .....	35.14
[35.738] Excavator and backhoe bucket hydraulic system .....	35.15
[35.739] Swing arm hydraulic system .....	35.16
[35.741] Dozer blade cylinders .....	35.17
<b>Frames and ballasting .....</b>	<b>39</b>
[39.140] Ballasts and supports .....	39.1
<b>Tracks and track suspension .....</b>	<b>48</b>
[48.130] Track frame and driving wheels .....	48.1
[48.100] Tracks .....	48.2
[48.134] Track tension units .....	48.3
[48.138] Track rollers .....	48.4
<b>Cab climate control .....</b>	<b>50</b>
[50.100] Heating .....	50.1
[50.104] Ventilation .....	50.2
[50.200] Air conditioning .....	50.3
<b>Electrical systems .....</b>	<b>55</b>
[55.416] Swing control system .....	55.1
[55.000] Electrical system .....	55.2
[55.100] Harnesses and connectors .....	55.3
[55.015] Engine control system .....	55.4
[55.201] Engine starting system .....	55.5
[55.301] Alternator .....	55.6
[55.302] Battery .....	55.7
[55.202] Cold start aid .....	55.8

[55.010] Fuel injection system .....	55.9
[55.014] Engine intake and exhaust system .....	55.10
[55.989] Exhaust Gas Recirculation (EGR) electrical system .....	55.11
[55.012] Engine cooling system .....	55.12
[55.013] Engine oil system .....	55.13
[55.640] Electronic modules .....	55.14
[55.512] Cab controls .....	55.15
[55.051] Cab Heating, Ventilation, and Air-Conditioning (HVAC) controls .....	55.16
[55.050] Heating, Ventilation, and Air-Conditioning (HVAC) control system .....	55.17
[55.524] Cab controls (Lift arm, Boom, Dipper, Bucket) .....	55.18
[55.417] Travel control system .....	55.19
[55.950] Hammer electric system .....	55.20
[55.530] Camera .....	55.21
[55.518] Wiper and washer system .....	55.22
[55.404] External lighting .....	55.23
[55.408] Warning indicators, alarms, and instruments .....	55.24
[55.992] Anti-theft system .....	55.25
[55.DTC] FAULT CODES .....	55.26
<b>Booms, dippers, and buckets .....</b>	<b>84</b>
[84.910] Boom .....	84.1
[84.912] Dipper arm .....	84.2
[84.100] Bucket .....	84.3
<b>Platform, cab, bodywork, and decals .....</b>	<b>90</b>
[90.150] Cab .....	90.1
[90.156] Cab glazing .....	90.2
[90.120] Mechanically-adjusted operator seat .....	90.3
[90.100] Engine hood and panels .....	90.4

**Thanks very much for your reading,  
Want to get more information,  
Please click here, Then get the complete  
manual**

**JustClickHere** 

**NOTE:**

**If there is no response to click on the link above,  
please download the PDF document first, and then  
click on it.**

**Have any questions please write to me:  
[admin@servicemanualperfect.com](mailto:admin@servicemanualperfect.com)**



## INTRODUCTION

# Contents

---

## INTRODUCTION

Safety rules – General information .....	3
Safety rules .....	4
Safety rules – ROPS judgment method .....	6
Torque – Bolt and nut .....	17
Torque .....	18
General specification – CX75C .....	22
CX75C SR NA	
General specification – CX75C SR Blade .....	26
CX75C SR NA	
General specification – CX75C SR (Offset) .....	30
CX75C SR NA	
General specification – Main components CX75C SR .....	34
General specification – Main components CX75C SR Blade .....	41
General specification – Main components CX75C SR Offset .....	48
Weight - CX75C SR .....	55
Weight - CX75C SR Blade .....	57
Weight - CX75C SR Offset .....	59
Dimension .....	61
CX75C SR NA	
Dimension – CX75C SR Blade .....	63
CX75C SR NA	
Dimension – CX75C SR Offset .....	65
CX75C SR NA	
Consumables .....	66
Conversion factors .....	69
Abbreviation .....	81

---

## **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
<b>16000 kg (35273.962 lb) max.</b>	CX75C CX80C CX145C
<b>20500 kg (45194.764 lb) max.</b>	CX130C CX160C
<b>28000 kg (61729.433 lb) max.</b>	CX235C
<b>31000 kg (68343.301 lb) max.</b>	CX210C CX250C CX250C LR CX300C
<b>50000 kg (110231.131 lb) max.</b>	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.)

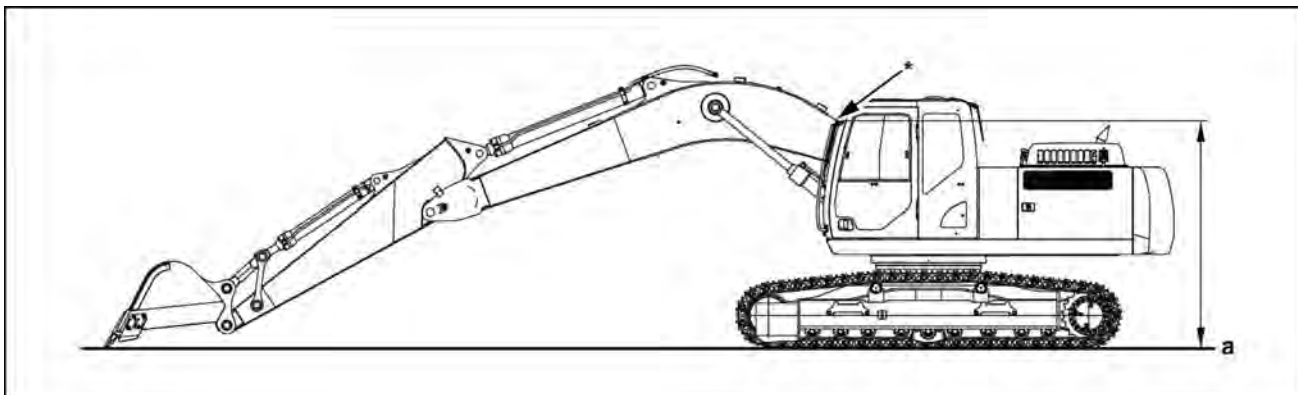
Machine body total weight	Class
<b>26600 kg (58642.962 lb) max.</b>	CX130B CX160B CX180B CX210B CX240B

## 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.



LPIL12CX00001EB 1

#### 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.

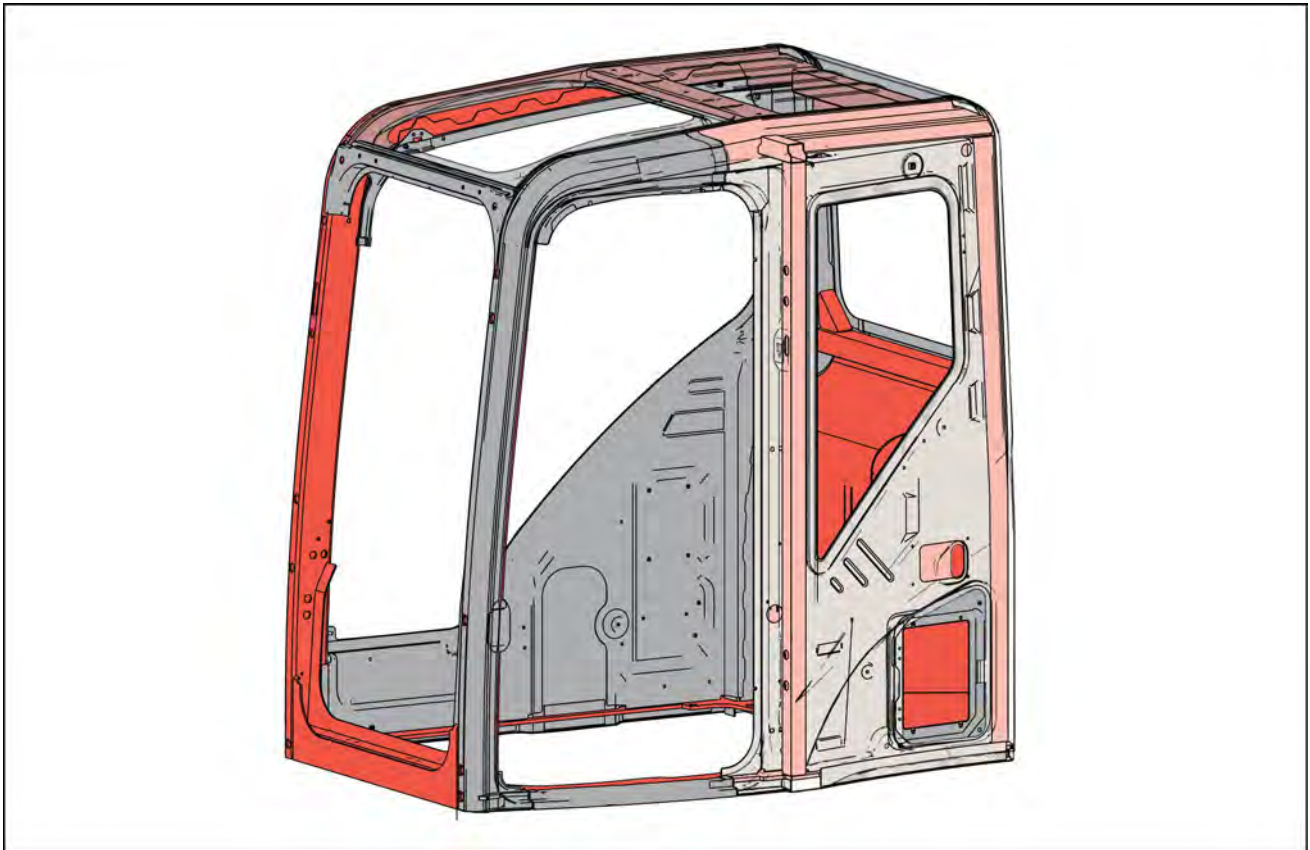
## 3. Prohibited items

- 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)]

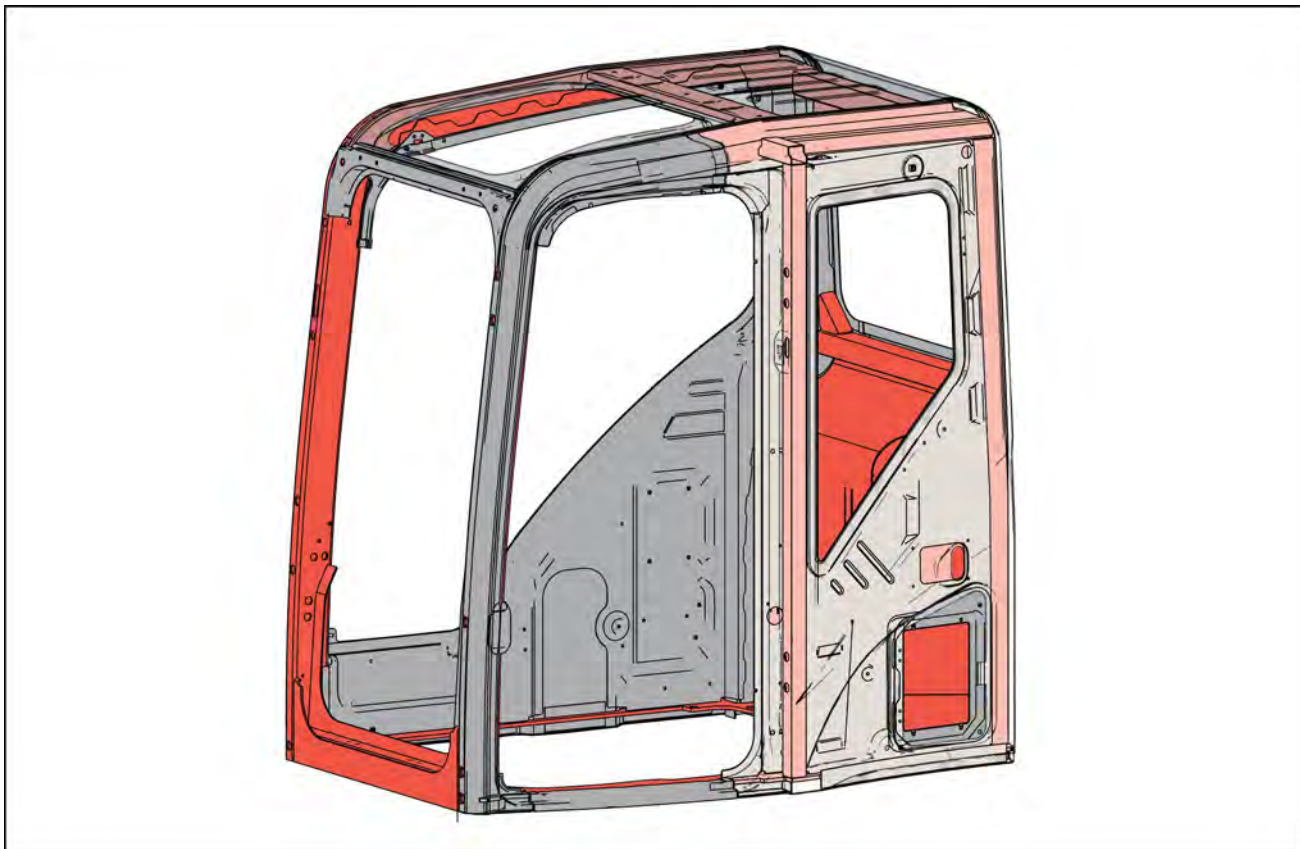


SMIL13CEX5638FA 2

## INTRODUCTION

[X3 cab (CX235C)]

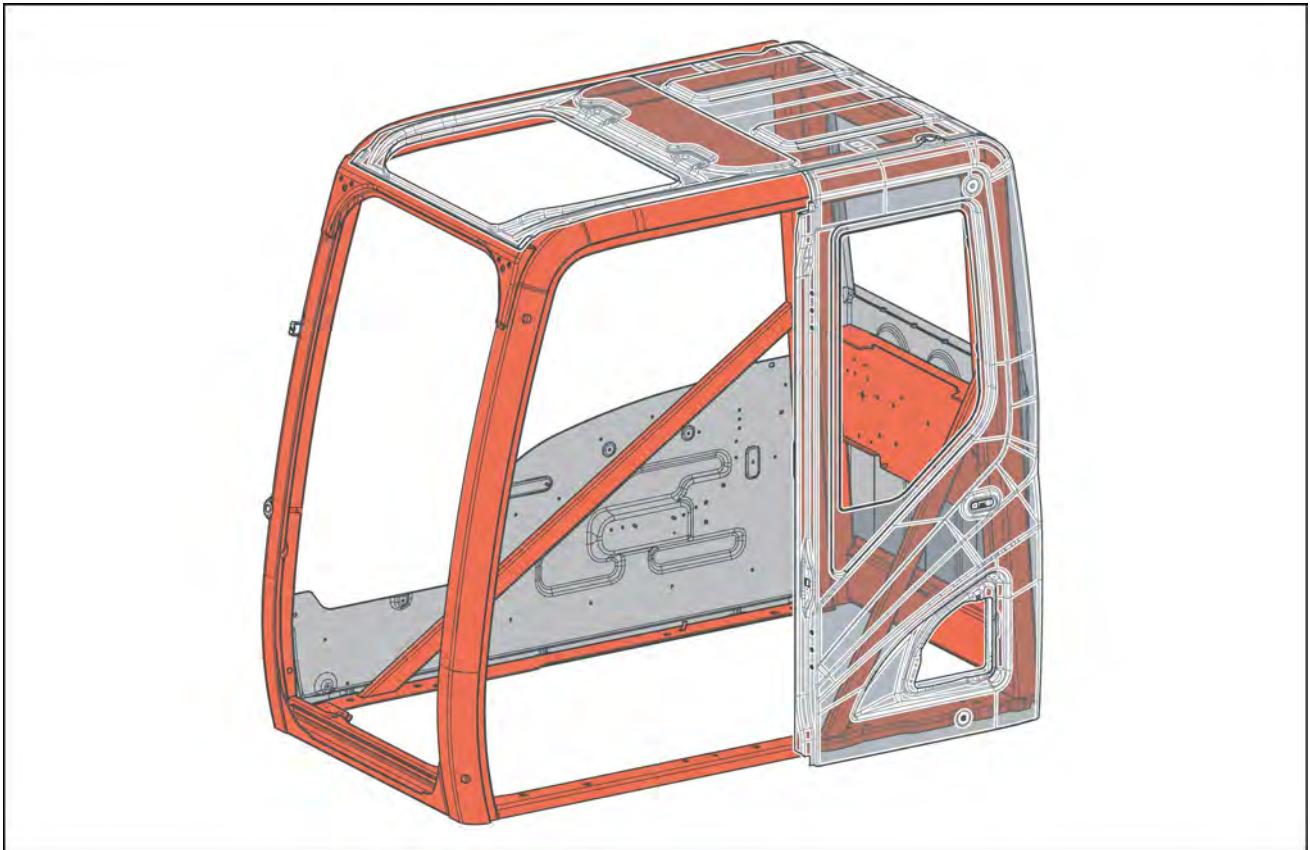
The cab for the MSR model (CX235C) has 3 additional reinforcement parts that were added to the MSR model (CX75C/CX80C/CX145C) cab shown in the diagram.



SMIL13CEX5638FA 3

## INTRODUCTION

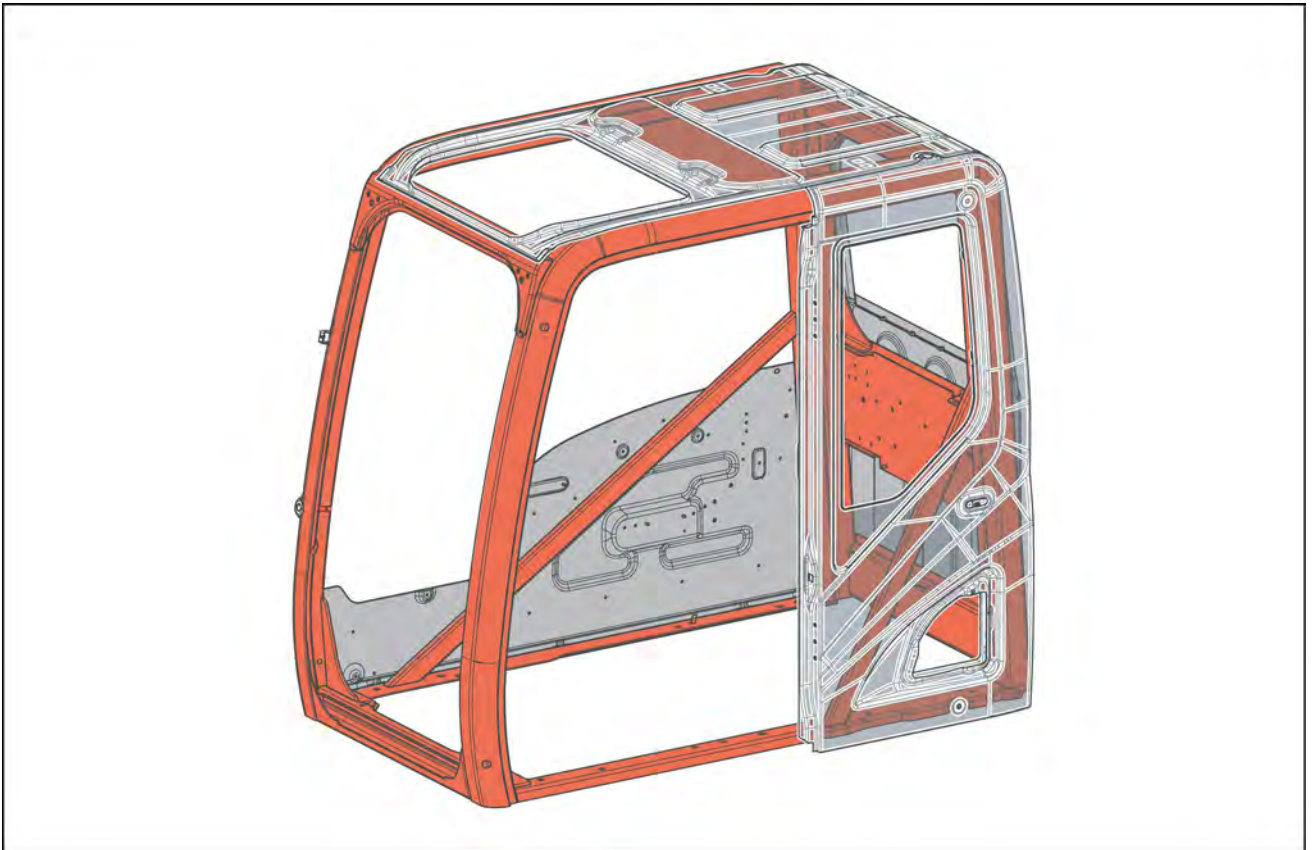
[X3 cab (CX130C/CX160C)]



SMIL13CEX5639FA 4

## INTRODUCTION

[X3 cab (CX210C/CX240C/CX290C)]



SMIL13CEX5640FA 5

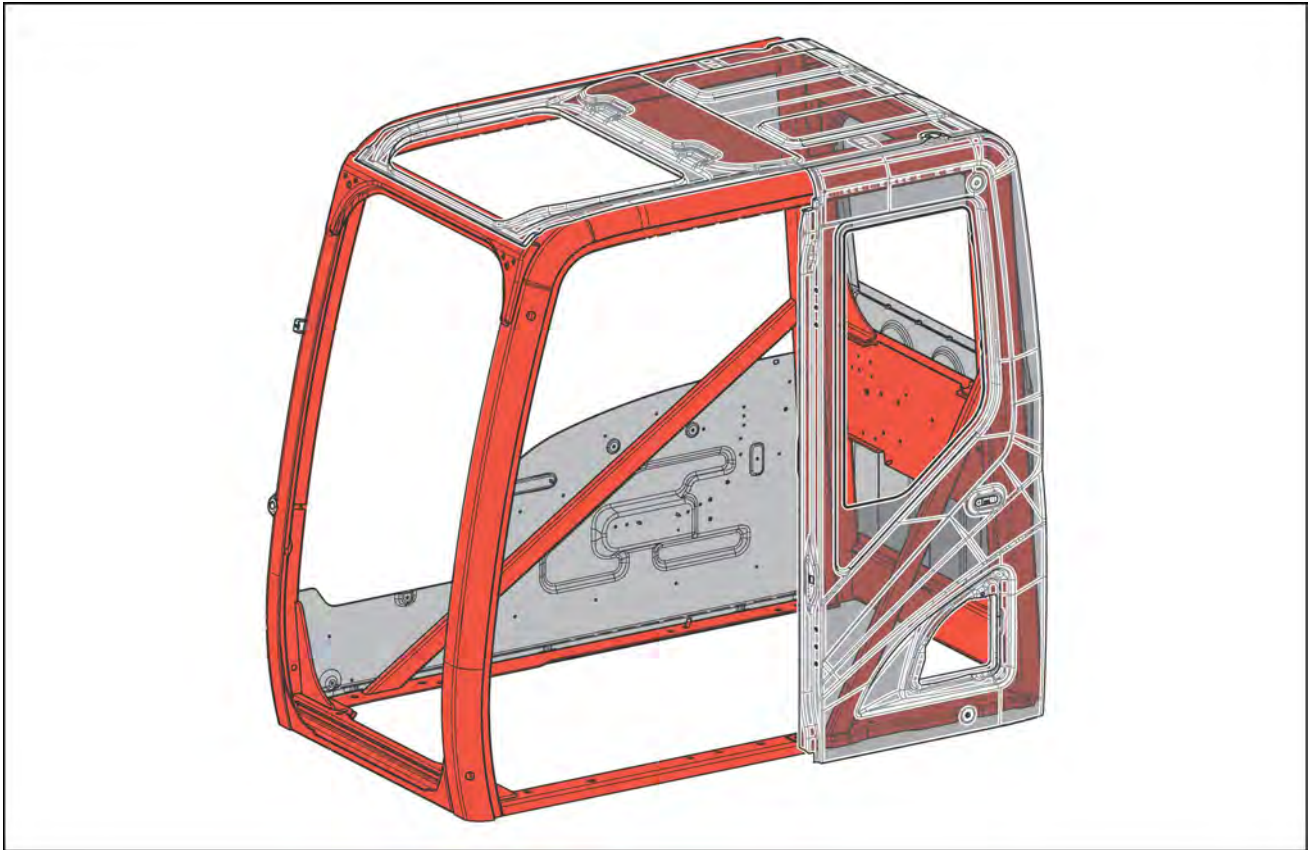


## INTRODUCTION

---

### [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.



SMIL13CEX5227FA 6

## INTRODUCTION

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

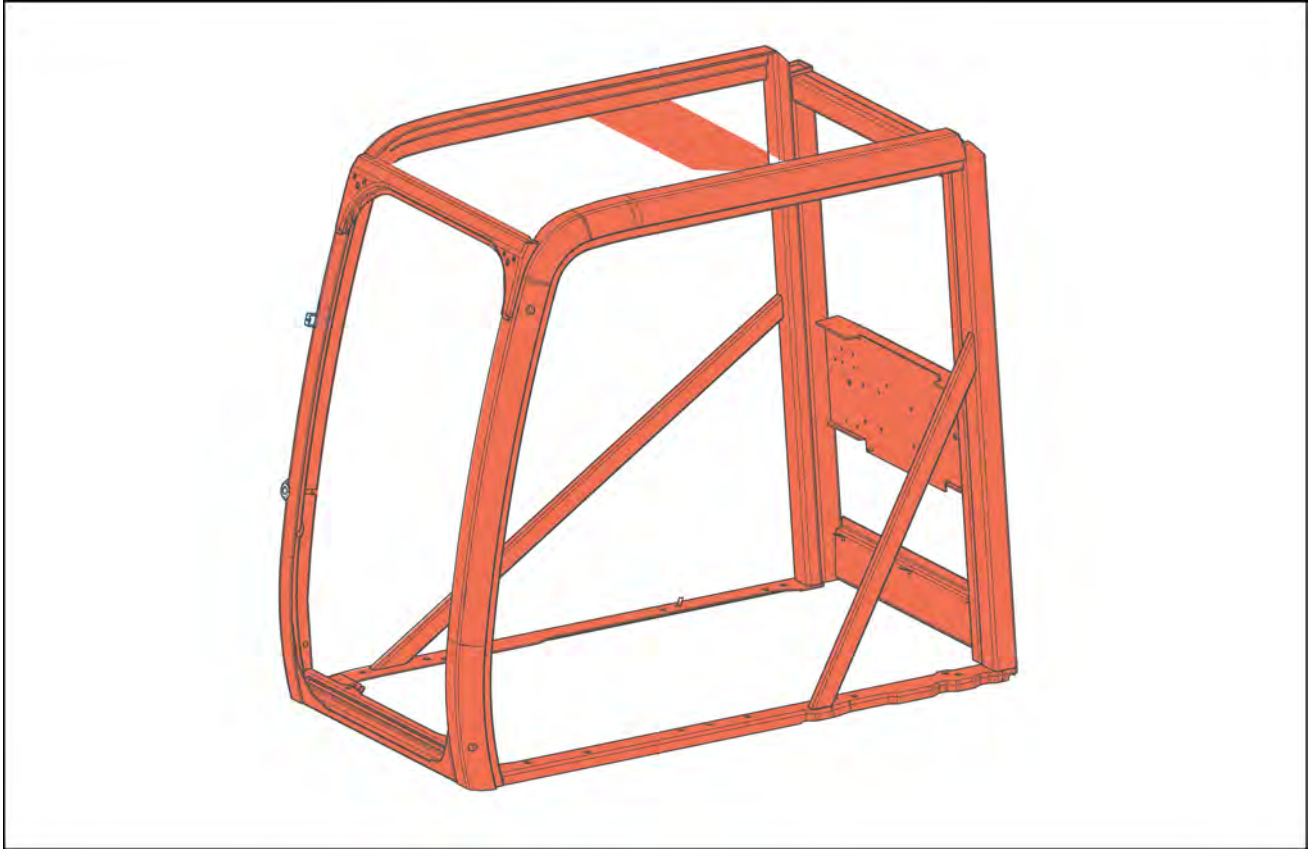


SMIL13CEX5641FA 7

## INTRODUCTION

---

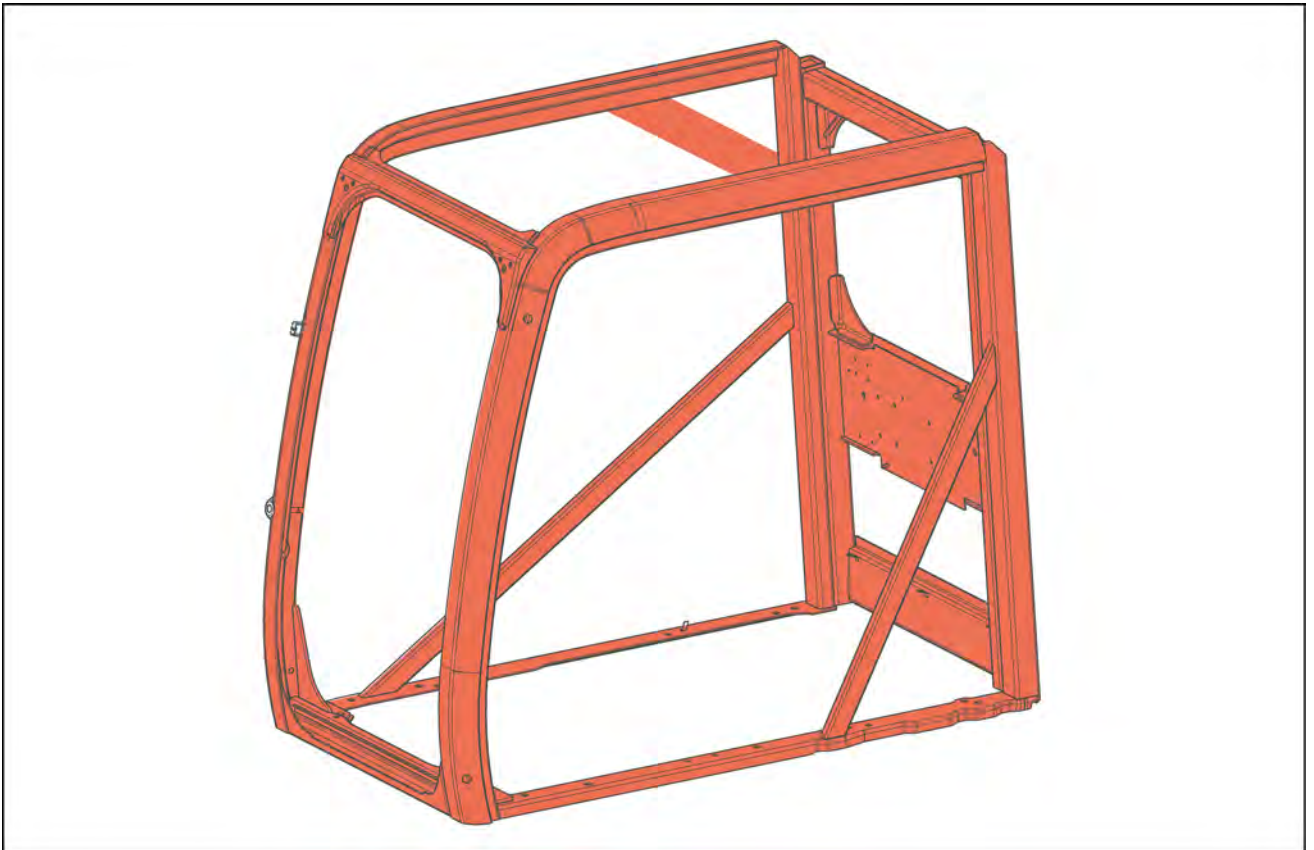
[X3 cab; members that cannot be modified (CX210C/CX240C/CX290C)]



SMIL13CEX4425FA 8

## INTRODUCTION

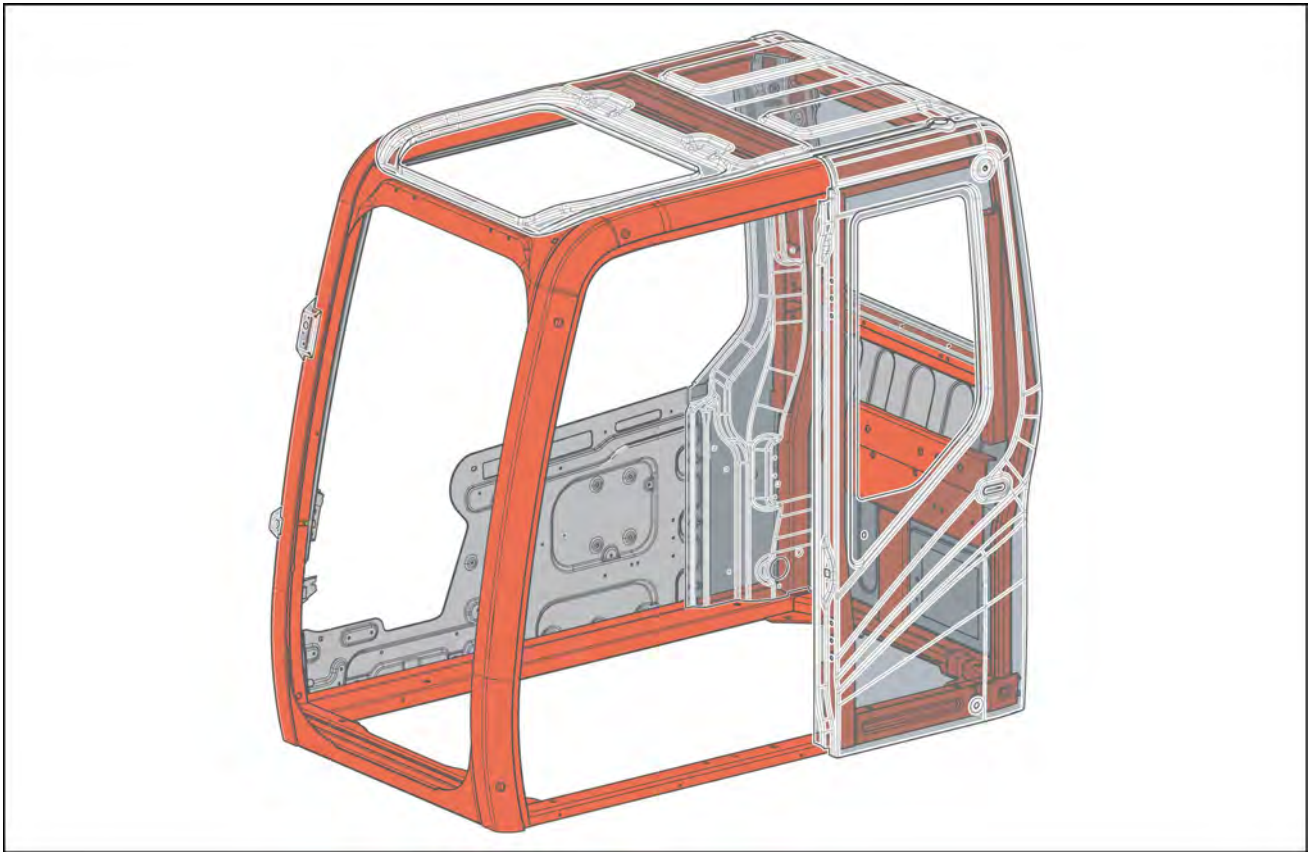
[X3 cab; members that cannot be modified (CX210C/CX240C/CX290C/CX350C)]



SMIL13CEX5642FA 9

## INTRODUCTION

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

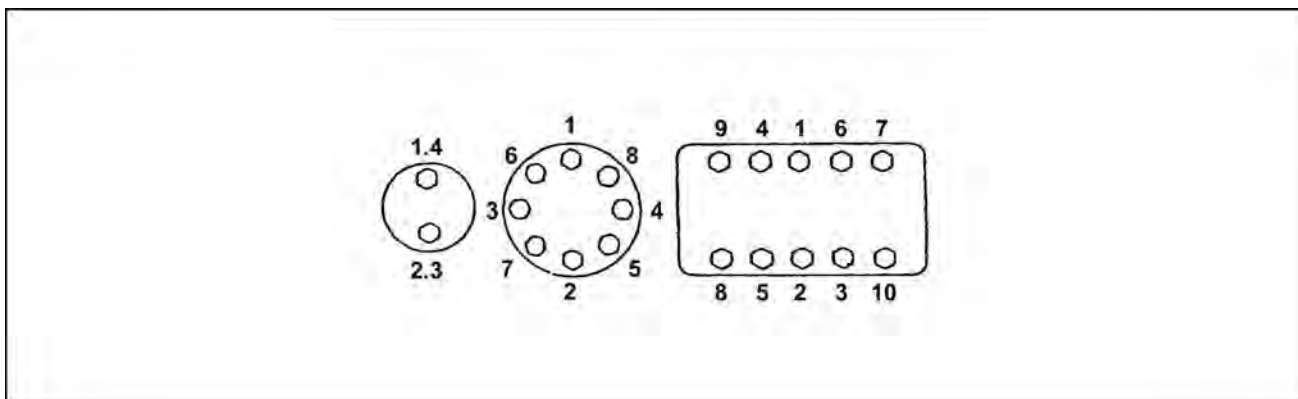


SMIL13CEX4335FA 10

- 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.



LPIL12CX00005EA 1

- 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)