CX245D SR
Crawler Excavator

SERVICE MANUAL

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CASE
CONSTRUCTION

SERVICE MANUAL

CX245D SR Crawler excavators LC W/Blade triple articulation version (Tier 4 FINAL) - EU Market
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(*) See content for specific models

Foreword - Important notice regarding equipment servicing

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The manufacturer reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication but are subject to change without notice.

In case of questions, refer to your CASE CONSTRUCTION Sales and Service Networks.

Safety rules

Personal safety

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

⚠ DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation that, if not avoided, could result in machine or property damage.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information that clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

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 CONSTRUCTION genuine service parts.

When placing an order, check the parts catalog. It contains the CASE CONSTRUCTION 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 - Personal safety

WARNING:

This symbol indicates a precaution.

It gives information concerning the safety of the operator and those in the surroundings.

Read and understand these precautions thoroughly before performing the work.

Always comply with warnings and precautions so as to avoid any accidents.

This section covers information related to overall safety.

Check whether all warning labels are in place.

Additional labels can be ordered from Service Parts.

WARNING:

Read the operator's manual to gain a thorough understanding of machine control operations.

WARNING:

Perform any machine operations from the seating position.

Any other method may cause severe injuries.

WARNING:

Only the one operator is to ride on the machine. No one else is to ride on it.

WARNING:

Check the safety messages in the operator's manual before starting the engine.

Check all the warning labels on the machine.

Check that no one is within the machine’s operating range.

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

Understand the machine operations well, then operate in compliance with all service-related laws and regulations.

The operator's manual can be purchased at your CASE CONSTRUCTION dealer.

WARNING:

Working with sloppy clothes or clothes with which safety cannot be ensured leads to damage to the machine and injury to the operator.

Always wear clothes that ensures safety.

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

Helmet, safety shoes, ear protection, goggles, work clothes, and gloves

WARNING:

Pay careful attention when working with the engine running.

WARNING:

Check hydraulic equipment.

Work according to the procedure.

Do not change the procedure.

WARNING:

Check that there is no one in the surroundings before draining the pressure from hydraulic circuits during machine hydraulic cylinder inspection.

WARNING:

Use gloves when handling high-temperature parts.

WARNING:

Bring the lower parts or attachments in contact with the ground before inspecting or repairing them.

WARNING:

Check that hoses and tubes are securely connected.

If there is any damage to a hose or tube, replace it.

Do not check for oil leaks by hand. Use cardboard or wood.

WARNING:

When removing an attachment pin or other hardened pin, use a hammer that has a soft head.

WARNING:

Wear eye protection when using a hammer to install a pin or when working with a grinder.

At this time, use goggles or eye protectors that meet standards.

WARNING:

Park the machine in a safe location when repairing or inspecting it.

WARNING:

Use work site protection when repairing the machine.

Check the oil, coolant, grease, and tools.

Recover materials and parts as necessary.

Pay enough attention to safety.

WARNING:

Some of the machine's parts are extremely heavy.

Use an appropriate lifting equipment for such parts.

For weights and procedures, see the Service Manual.

WARNING:

Exhaust gases are toxic.

Always provide good ventilation when working indoors or in any other enclosed space.

WARNING:

If the electrolytic battery solution freezes, it may explode.

Safety rules - ROPS judgment

Purpose

Judge whether or not the model is compliant with ROPS by the ROPS criteria.

Compliance with ROPS is highly dependent on its deadweight and boom.

The model has passed the ROPS test for its deadweight with all selectable options installed (as of 2014).

However, the judgment is required because its deadweight or boom position may go beyond the assumption depending on derivative or order conditions.

ROPS criteria

Weight

For each class, the following weight shall not be exceeded.

If the weight is exceeded, a cab may become damaged in case of a rollover, causing the operator to die or become severely disabled.

It is not applicable beyond the criterion.

The ROPS-compliant model shall not exceed the weight shown in the table.

(The following weight is shown on the decal in the ROPS cab.)

Gross body weight: **28500 kg** (**62831.74 lb**) or less.

Boom position

⚠ WARNING

Avoid injury!
Follow ALL of the precautions listed below.
Failure to comply could result in death or serious injury.

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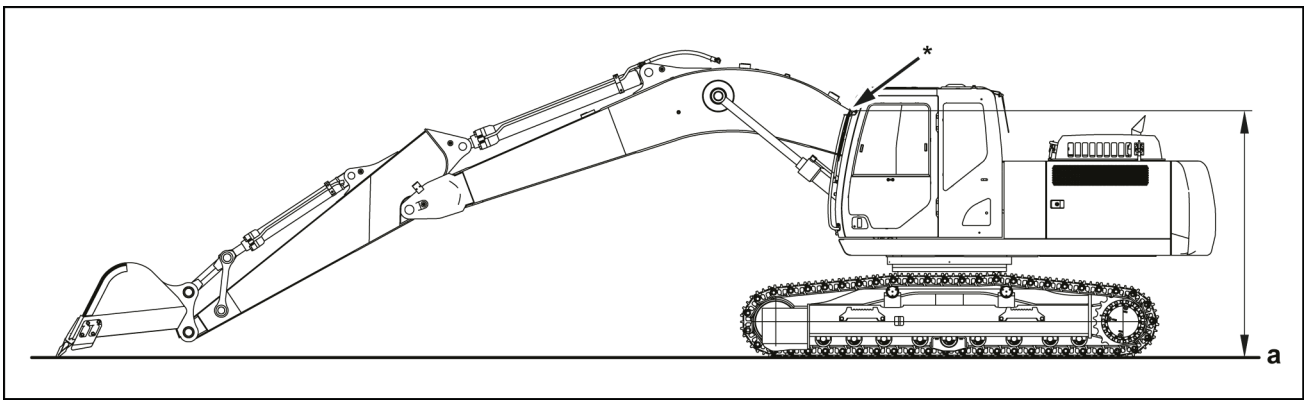
- If you make such modification as lowers the boom position, ROPS is not applicable.
- Consultation with us is required whenever it is assumed that the boom position is lowered by modification.
- The range of change in the boom position cannot be determined uniformly.



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(a) Ground point

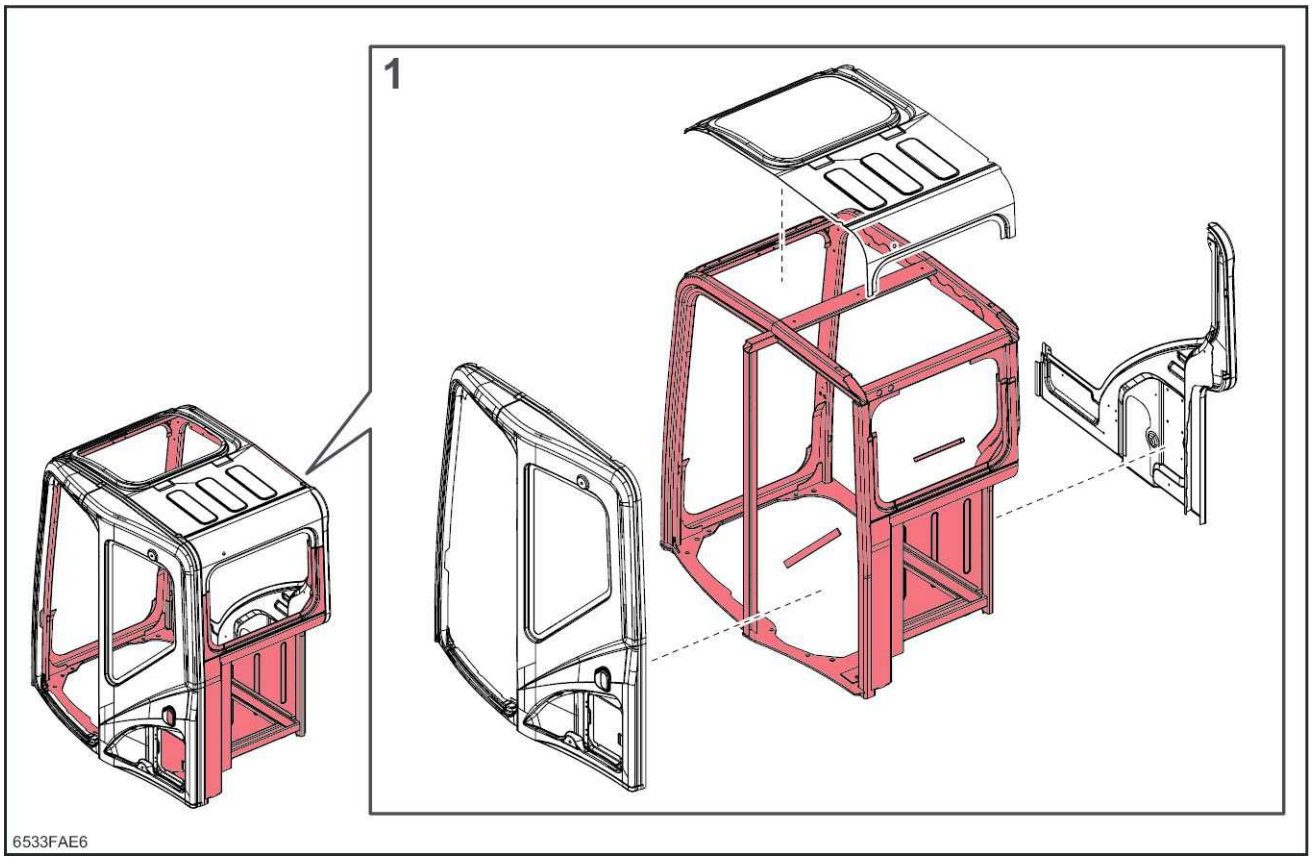
It is not applicable if the position overlapping with a cab on the side view (mark * in the figure) is lowered significantly as compared with the standard model (standard arm), within the maximum digging radius with the bucket tip on the surface of the ground.

Moreover, it cannot be said that the 24-ton model, close to the limit weight, with a cab that can bear up to 31-tons and the 21-ton model with the same cab are the same in the degree of influence.

Prohibitions

- Such modification as reduces the strength of the platform where the ROPS cab is installed. (Such action or modification as reduces the function of the retaining anchor in the left rear of the cab)
- Such modification as affects the ROPS strength of the ROPS cab.

Modification prohibited (Red components)	All changes (grinding, welding, drilling, removal, etc.) are prohibited.
Conditional modification permitted (Gray components)	Removal of components is prohibited. Welding and drilling of bars (limited to **20 mm** (**0.79 in**) or less in diameter) are allowed.



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The high cab is not supported basically. (Since it varies for each model, consultation with us is required in each case.)

Safety rules - Ecology and the environment

Soil, air, and water quality is important for all industries and life in general. When legislation does not yet rule the treatment of some of the substances that advanced technology requires, sound judgment should govern the use and disposal of products of a chemical and petrochemical nature.

Familiarize yourself with the relative legislation applicable to your country, and make sure that you understand this legislation. Where no legislation exists, obtain information from suppliers of oils, filters, batteries, fuels, anti-freeze, cleaning agents, etc., with regard to the effect of these substances on man and nature and how to safely store, use, and dispose of these substances.

Helpful hints

- Avoid the use of cans or other inappropriate pressurized fuel delivery systems to fill tanks. Such delivery systems may cause considerable spillage.
- In general, avoid skin contact with all fuels, oils, acids, solvents, etc. Most of these products contain substances that may be harmful to your health.
- Modern oils contain additives. Do not burn contaminated fuels and or waste oils in ordinary heating systems.
- Avoid spillage when you drain fluids such as used engine coolant mixtures, engine oil, hydraulic fluid, brake fluid, etc. Do not mix drained brake fluids or fuels with lubricants. Store all drained fluids safely until you can dispose of the fluids in a proper way that complies with all local legislation and available resources.
- Do not allow coolant mixtures to get into the soil. Collect and dispose of coolant mixtures properly.
- The air-conditioning system contains gases that should not be released into the atmosphere. Consult an air-conditioning specialist or use a special extractor to recharge the system properly.
- Repair any leaks or defects in the engine cooling system or hydraulic system immediately.
- Do not increase the pressure in a pressurized circuit as this may lead to a component failure.
- Protect hoses during welding. Penetrating weld splatter may burn a hole or weaken hoses, allowing the loss of oils, coolant, etc.

Battery recycling

Batteries and electric accumulators contain several substances that can have a harmful effect on the environment if the batteries are not properly recycled after use. Improper disposal of batteries can contaminate the soil, groundwater, and waterways. CASE CONSTRUCTION strongly recommends that you return all used batteries to a CASE CONSTRUCTION dealer, who will dispose of the used batteries or recycle the used batteries properly. In some countries, this is a legal requirement.

Mandatory battery recycling

NOTE: *The following requirements are mandatory in Brazil.*

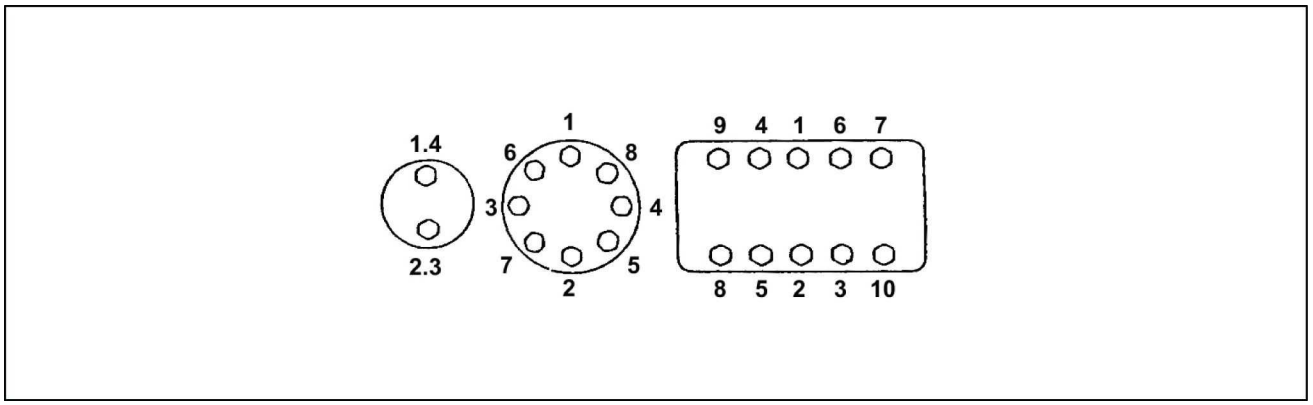
Batteries are made of lead plates and a sulfuric acid solution. Because batteries contain heavy metals such as lead, CONAMA Resolution 401/2008 requires you to return all used batteries to the battery dealer when you replace any batteries. Do not dispose of batteries in your household garbage.

Points of sale are obliged to:

- Accept the return of your used batteries
- Store the returned batteries in a suitable location
- Send the returned batteries to the battery manufacturer for recycling

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.

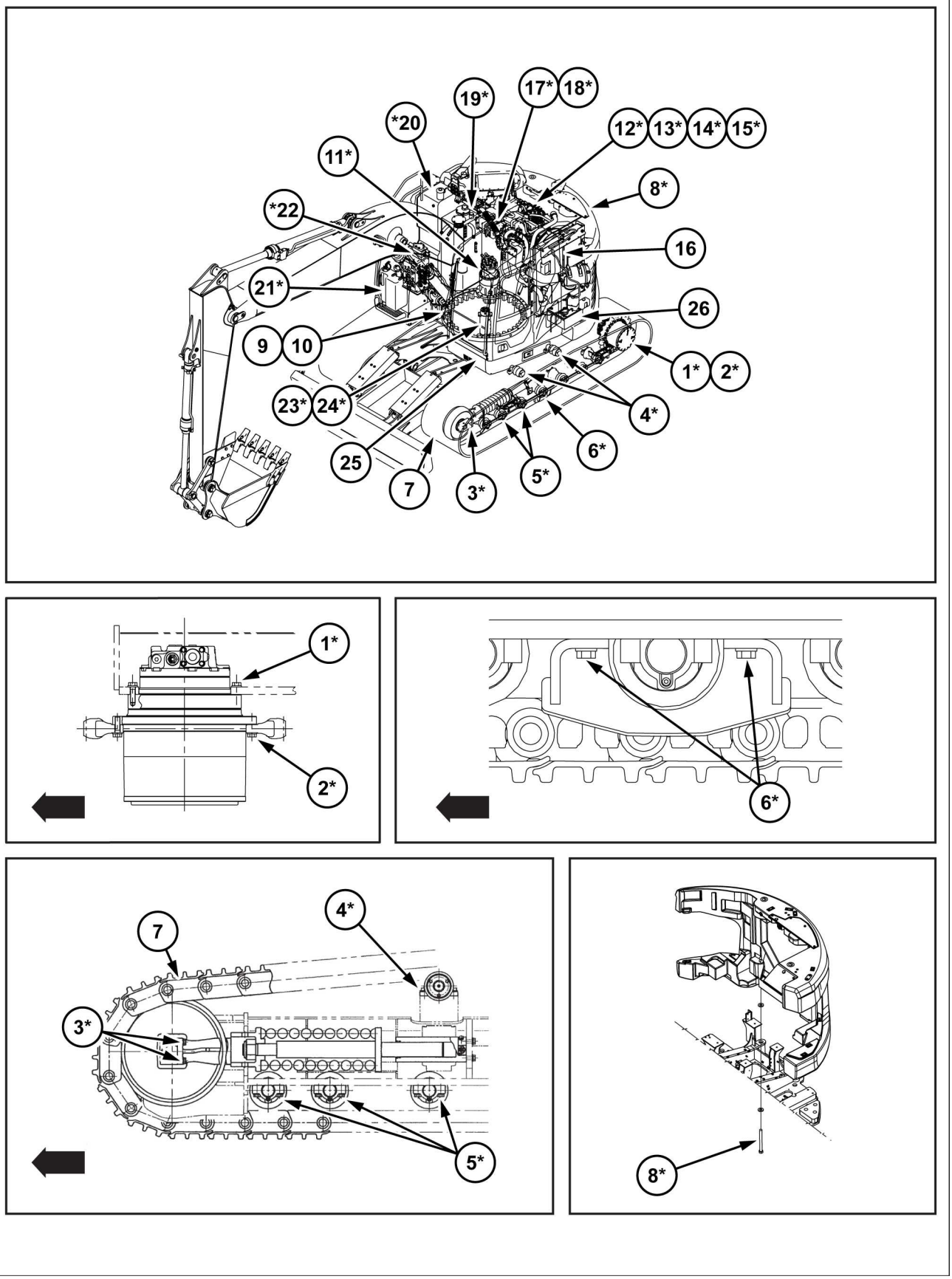
Torque table

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 setting

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		M16	**24 mm**	**267 – 312 N·m** (**196.93 – 230.12 lb ft**)
3*	Take-up roller		M16	**24 mm**	**267 – 312 N·m** (**196.93 – 230.12 lb ft**)
4*	Upper roller		M20	**30 mm**	**521 – 608 N·m** (**384.27 – 448.44 lb ft**)
5*	Lower roller		M18	**27 mm**	**371 – 432 N·m** (**273.64 – 318.63 lb ft**)
6*	Track guard		M18	**27 mm**	**400 – 462 N·m** (**295.02 – 340.75 lb ft**)
7	Shoe		M20	**30 mm**	**250 – 350 N·m** (**184.39 – 258.15 lb ft**)
8*	Counterweight		M33	**50 mm**	**1670 – 1860 N·m** (**1231.94 – 1372.10 lb ft**)
9	Turntable bearing		M20 (outside)	**30 mm**	**468 – 545 N·m** (**345.24 – 402.04 lb ft**)
10			M20 (inside)	**30 mm**	**518 – 590 N·m** (**382.12 – 435.24 lb ft**)
11*	Swing unit		M20	**30 mm**	**539.4 – 629.6 N·m** (**397.910 – 464.448 lb ft**)
12*	Engine	Engine mount (front)	M16	**24 mm**	**264.9 – 313.9 N·m** (**195.38 – 231.52 lb ft**)
13*		Engine mount (rear)	M16	**17 mm**	**264.9 – 313.9 N·m** (**195.38 – 231.52 lb ft**)
14*		Front bracket	M10	**24 mm**	**63.8 – 73.6 N·m** (**47.06 – 54.28 lb ft**)
15*		Rear bracket	M16	**24 mm**	**205.9 – 247.1 N·m** (**151.86 – 182.25 lb ft**)
16*	Radiator		M16	**24 mm**	**147.2 – 176.6 N·m** (**108.57 – 130.25 lb ft**)
17*	Hydraulic pump	Pump	M20	**17 mm** hexagon socket head	**367 – 496 N·m** (**270.69 – 365.83 lb ft**)
18*			M10	**17 mm**	**63.7 – 72.6 N·m** (**46.99 – 53.56 lb ft**)
19*	Hydraulic tank		M16	**24 mm**	**232.4 – 276 N·m** (**171.41 – 203.57 lb ft**)
20*	Fuel tank		M16	**24 mm**	**232.4 – 276 N·m** (**171.41 – 203.57 lb ft**)
21*	Urea solution tank		M16	**24 mm**	**225.6 – 264.8 N·m** (**166.39 – 195.31 lb ft**)
22*	Control valve		M16	**24 mm**	**267.0 – 312.0 N·m** (**196.93 – 230.12 lb ft**)
23*	Center joint	Lock bar	M12	**19 mm**	**88.3 – 107 N·m** (**65.13 – 78.92 lb ft**)
24*		Joint	M12	**19 mm**	**109 – 127 N·m** (**80.39 – 93.67 lb ft**)
25	Cab (anchor)		M24	**36 mm**	**294.0 – 392.0 N·m** (**216.84 – 289.12 lb ft**)
26	Battery		M10	**17 mm**	**19.6 – 29.4 N·m** (**14.46 – 21.68 lb ft**)

NOTE: *Make sure to apply* ***LOCTITE® 262™*** *or equivalent to the locations with the * mark, and tighten them with the specified torque.*



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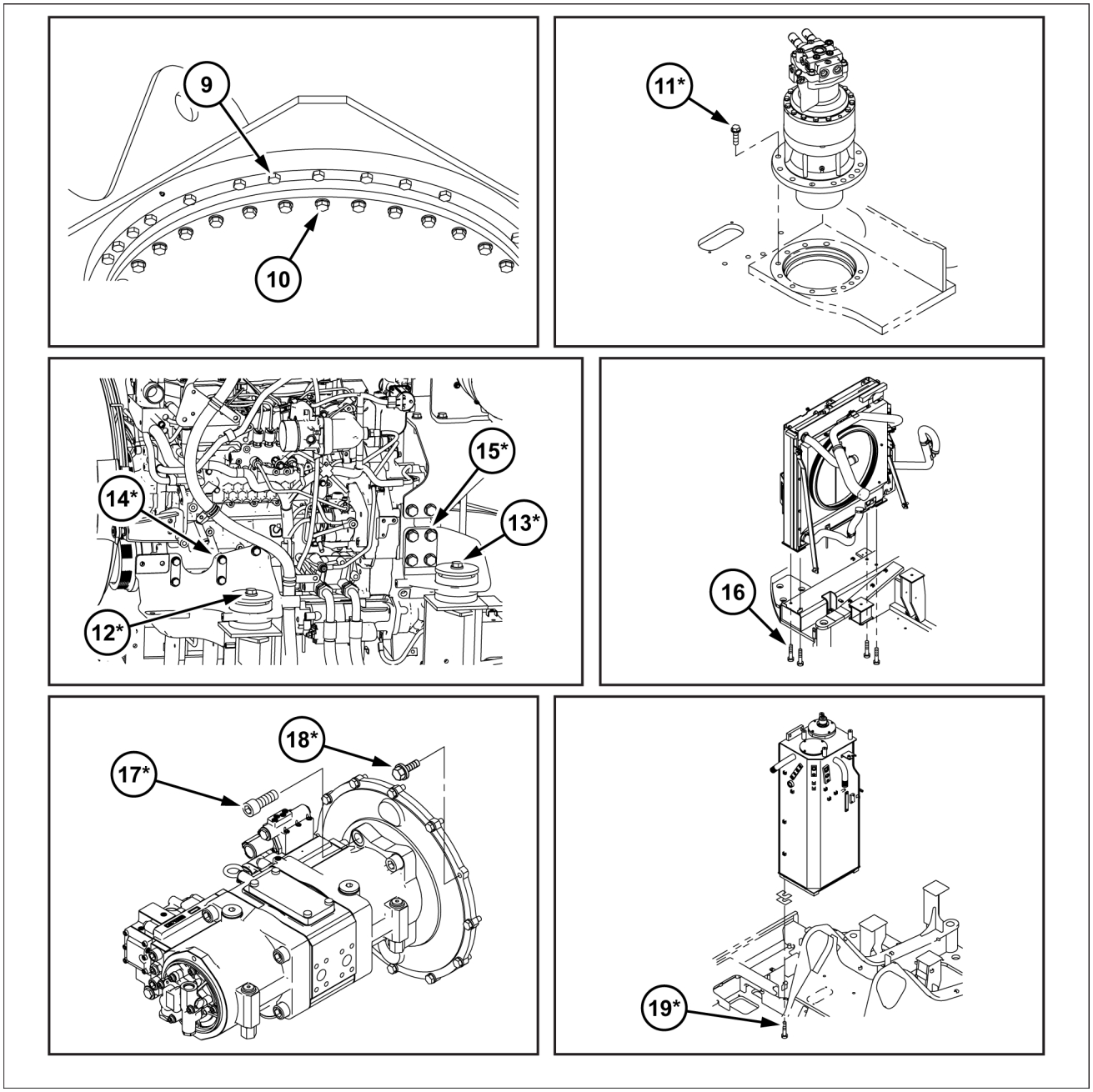

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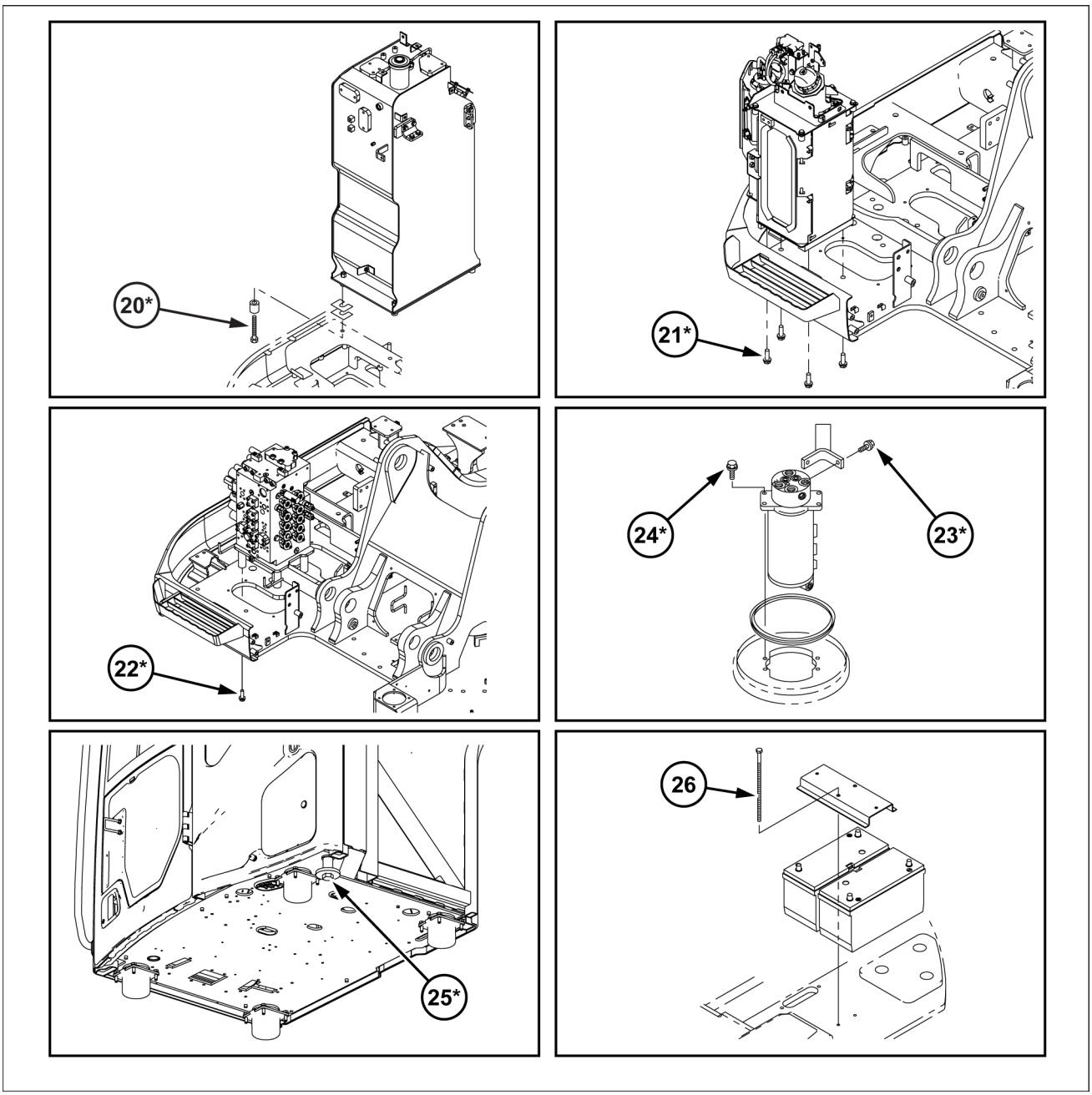

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Basic instructions - Shop and assembly

Shimming

For each adjustment operation, select adjusting shims and measure the adjusting shims individually using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, or the rated value shown on each shim.

Rotating shaft seals

For correct rotating shaft seal installation, proceed as follows:

1. Before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes.
2. Thoroughly clean the shaft and check that the working surface on the shaft is not damaged.
3. Position the sealing lip facing the fluid.

   NOTE: *With hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will move the fluid towards the inner side of the seal.*
4. Coat the sealing lip with a thin layer of lubricant (use oil rather than grease). Fill the gap between the sealing lip and the dust lip on double lip seals with grease.
5. Insert the seal in its seat and press down using a flat punch or seal installation tool. Do not tap the seal with a hammer or mallet.
6. While you insert the seal, check that the seal is perpendicular to the seat. When the seal settles, make sure that the seal makes contact with the thrust element, if required.
7. To prevent damage to the seal lip on the shaft, position a protective guard during installation operations.

O-ring seals

Lubricate the O-ring seals before you insert them in the seats. This will prevent the O-ring seals from overturning and twisting, which would jeopardize sealing efficiency.

Sealing compounds

Apply a sealing compound on the mating surfaces when specified by the procedure. Before you apply the sealing compound, prepare the surfaces as directed by the product container.

Spare parts

Only use CNH Original Parts or CASE CONSTRUCTION Original Parts.

Only genuine spare parts guarantee the same quality, duration, and safety as original parts, as they are the same parts that are assembled during standard production. Only CNH Original Parts or CASE CONSTRUCTION Original Parts can offer this guarantee.

When ordering spare parts, always provide the following information:

- Machine model (commercial name) and Product Identification Number (PIN)
- Part number of the ordered part, which can be found in the parts catalog

Protecting the electronic and/or electrical systems during charging and welding

To avoid damage to the electronic and/or electrical systems, always observe the following practices:

1. Never make or break any of the charging circuit connections when the engine is running, including the battery connections.
2. Never short any of the charging components to ground.
3. Always disconnect the ground cable from the battery before arc welding on the machine or on any machine attachment.
   - Position the welder ground clamp as close to the welding area as possible.
   - If you weld in close proximity to a computer module, then you should remove the module from the machine.
   - Never allow welding cables to lie on, near, or across any electrical wiring or electronic component while you weld.
4. Always disconnect the negative cable from the battery when charging the battery in the machine with a battery charger.

   NOTICE: *If you must weld on the unit, you must disconnect the battery ground cable from the machine battery. The electronic monitoring system and charging system will be damaged if this is not done.*
5. Remove the battery ground cable. Reconnect the cable when you complete welding.

⚠ WARNING

Battery acid causes burns. Batteries contain sulfuric acid.
Avoid contact with skin, eyes or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.
Failure to comply could result in death or serious injury.

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Special tools

The special tools that CASE CONSTRUCTION suggests and illustrate in this manual have been specifically researched and designed for use with CASE CONSTRUCTION machines. The special tools are essential for reliable repair operations. The special tools are accurately built and rigorously tested to offer efficient and long-lasting operation.

By using these tools, repair personnel will benefit from:

- Operating in optimal technical conditions
- Obtaining the best results
- Saving time and effort
- Working in safe conditions

Hydraulic contamination

Contamination in the hydraulic system is a major cause of the malfunction of hydraulic components. Contamination is any foreign material in the hydraulic oil.

Contamination can enter the hydraulic system in several ways:

- When you drain the oil or disconnect any line
- When you disassemble a component
- From normal wear of the hydraulic components
- From damaged seals or worn seals
- From a damaged component in the hydraulic system

All hydraulic systems operate with some contamination. The design of the components in this hydraulic system permits efficient operation with a small amount of contamination. An increase in this amount of contamination can cause problems in the hydraulic system.

The following list includes some of these problems:

- Cylinder rod seals that leak
- Control valve spools that do not return to neutral
- Movement of control valve spools is difficult
- Hydraulic oil that becomes too hot
- Pump gears, housing, and other parts that wear rapidly
- Relief valves or check valves held open by dirt
- Quick failure of components that have been repaired
- Slow cycle times are slow. The machine does not have enough power.

If your machine has any of these problems, check the hydraulic oil for contamination.

There are two types of contamination: microscopic and visible.

Microscopic contamination occurs when very fine particles of foreign material are suspended in the hydraulic oil. These particles are too small to see or feel. Microscopic contamination can be found by identification of the following problems or by testing in a laboratory.

Examples of problems caused by microscopic contamination:

- Cylinder rod seals that leak
- Control valve spools that do not return to neutral
- The hydraulic system has a high operating temperature

Visible contamination is foreign material that can be found by sight, touch, or odor. Visible contamination can cause a sudden failure of components.

Examples of problems caused by visible contamination:

- Particles of metal or dirt in the oil
- Air in the oil
- Dark or thick oil
- Oil with an odor of burned oil
- Water in the oil

If you find contamination, use a portable filter to clean the hydraulic system.

General specification

CX245D SR Crawler excavators LC version (TIER 4 FINAL) - EU Market	WE

Engine

Type		Water-cooled, 4-cycle diesel, 4-cylinder in line, High pressure common rail system (electric control), Turbocharger with air cooled intercooler, SCR system
Model		ISUZU AR-4HK1X
Rated flywheel horse power		
	SAE J1349, **ISO 9249**	**119.3 kW** (**162.2 Hp**) at **1800 RPM**
	ISO 14396	**124 kW** (**169 Hp**) at **1800 RPM**
Piston displacement		**5193 cm³** (**317 in³**)
Maximum torque		
	SAE J1349, **ISO 9249**	**620 N·m** (**457 lb ft**) at **1600 RPM**
	ISO 14396	**636 N·m** (**469 lb ft**) at **1600 RPM**
Bore and stroke		**115 – 125 mm** (**4.53 – 4.92 in**)
Voltage		**24 V**
Alternator		**50 A**
Starter		**24 V 5.0 kW**

Hydraulic system

Main pumps		2 variable displacement axial piston pumps with regulating system	
	Max. oil flow		2 × **211 L** (**55.7 US gal**) at **1800 RPM**
	Working circuit pressure	Boom/Arm/Bucket	**34.3 MPa** (**4975 psi**)
			37.3 MPa (**5410 psi**) with auto power up
		Swing circuit	**29.4 MPa** (**4265 psi**)
		Travel circuit	**34.3 MPa** (**4975 psi**)
Pilot pump		1 gear pump	
	Max. oil flow		**18 L** (**4.8 US gal**)
	Working circuit pressure		**3.9 MPa** (**566 psi**)
Control valves		With Boom/Arm holding valve	
		One 4-spool valve for Right track travel, Bucket, Boom and Arm acceleration	
		One 5-spool valve for Left track travel, Auxiliary, Swing, Boom acceleration and Arm	
Swing device			
	Motor	Fixed displacement axial piston motor	
	Brake	Mechanical disc brake	
	Final drive	Planetary gear reduction	
	Turn table bearing	Ball bearing type with internal gear	
	Maximum swing speed	**11.5 RPM**	
	Swing torque	**64000 N·m** (**47204 lb ft**)	
Cylinders		Number of cylinders – bore X Rod diameter X Stroke	
	Boom	2 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1370 mm** (**53.937 in**)	
	Arm	1 x Ø **140 mm** (**5.512 in**) - Ø **100 mm** (**3.937 in**) - **1460 mm** (**57.480 in**)	
	Bucket	1 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1010 mm** (**39.764 in**)	
Cooling system			
	Fan		Ø **650 mm** (**25.6 in**) with 7-blades
	Radiator capacity		**88.9 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Long life coolant		Coolant **55%**, Water **45%**

	Oil cooler capacity		**47.2 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Intercooler capacity		**8.9 kW**
		fin type	Straight fin
		fin space	**1.75 mm** (**0.06890 in**)
	Fuel cooler capacity		**1.3 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**2.0 mm** (**0.0787 in**)
Filters			
	Suction filter		105 µm
	Return filter		6 µm
	Pilot line filter		8 µm

Hydraulic controls

Boom/Arm/Bucket/Swing	Pilot pressure control system (ISO control pattern)
Travel	Pilot pressure control system
Work mode select	SP - mode
	H - mode
	Auto - mode
Travel mode select	2-speed travel
Attachment cushion control	
Hydraulic lock (gate lock, left side tilt console)	

Electrical system

Engine control			
			Dial type throttle control
			One touch idle / Auto deceleration / Auto idle shutdown system
			Emergency stop
Monitor system			
			Message display (Caution, condition, etc.)
			Work mode display (SP, H, Auto)
			Machine condition (Power boost, etc.)
			Alarm display and buzzer
			Water temperature
			Hydraulic oil temperature
			Fuel level
			Diagnosis system
			Rear and right side view camera image
			Urea water level
Wire harness			
			Waterproof type connector
Safety			
			Double horn
Battery			2 X **12 V 92 A·h/ 5 h**
Lights			
	Working light	Upper	**24 V 70 W** X 1
		Boom	**24 V 70 W** X 1
		Cab	**24 V 70 W** X 2
	Operator's cab room		**24 V 70 W** X 1

Operator environment

Operator's cab			
	Smooth and round shape design cab, fabricated by press work		
	Safety glass for all windows		
	Shock-less cab suspension by 4-point fluid mounting		
	Sliding front window with auto lock		
	Built-in type full-color LCD monitor display		
	Membrane switch on monitor display		
	Windshield wiper & washer		
	Floor mat		
	Polycarbonate roof hatch & Sun shade		
	Auto air-conditioner		
	Rain deflector		
	Sun visor		
	Roll-over protective structure (ROPS)		
	Top guard OPG level 1 (in CAB structure)		
	Top guard OPG level 2 (additional guard)		
Operator's seat			
	Low frequency air suspension with air springs and double acting hydraulic damper. (Achieves ISO7096 in category EM6)		
	With following features		
		Manual weight adjustment	Backrest angle adjustment
		Seat height adjustment	Adjustable pivoting armrests linked to consoles
		Adjustable headrest	Retractable seat belt
		Adjustable lumbar support	Control consoles adjust independently of seat
Others			
	Rear view mirror (Cab side & Right side)		
	Rear and right side view camera		

Undercarriage

Travel motor		Variable displacement axial piston motor
Brake		Mechanical disc brake
Hydraulic service brake		Brake valve
Final drive		Planetary gear reduction
Travel speeds	High	**5.0 km/h** (**3.1 mph**) (Automatic travel speed shifting)
	Low	**3.2 km/h** (**2.0 mph**)
Drawbar pull		**201 kN** (**45186.6 lb**)
Number of carrier rollers (each side)		2
Number of track rollers (each side)		8
Number of shoes (each side)		49
Type of shoe		Triple grouser shoe
Link pitch		**190 mm** (**7.480 in**)
Width of shoe		**600 mm** (**23.622 in**) (S.T.D)
Grade-ability		**70%** (**35°**)

Mass

Operating mass		**24400 kg** (**53793 lb**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe, operator, lubricant, coolant and full fuel tank, and top guard OPG level 2	
Shipping mass		**23400 kg** (**51588 lb**)
	Operating mass - (operator mass [**75 kg** (**165.35 lb**)] + **90%** of fuel mass + bucket mass [**698 kg** (**1538.83 lb**)]	
Counter weight mass		**6530 kg** (**14396 lb**)
Ground pressure		**0.050 MPa** (**7.253 psi**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe	

Digging force (with 1.0 m³ bucket) (ISO 6015)

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Arm digging force	**123 kN** (**27652 lb**)	**142 kN** (**31923 lb**)	**103 kN** (**23155 lb**)
With auto power up	**133 kN** (**29900 lb**)	**154 kN** (**34621 lb**)	**112 kN** (**25179 lb**)
Bucket digging force	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)
With auto power up	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)

Dimensions

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Overall length (without attachment)	**4470 mm** (**175.954 in**)	**4470 mm** (**175.954 in**)	**4470 mm** (**175.954 in**)
Overall length (with attachment)	**8920 mm** (**351.181 in**)	**8940 mm** (**351.969 in**)	**8830 mm** (**347.638 in**)
Overall height (to top of boom)	**3180 mm** (**125.197 in**)	**3100 mm** (**122.047 in**)	**2980 mm** (**117.323 in**)
Overall height (to top of Cab)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Overall height (to top of guardrail)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)
Cab height	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Upper structure overall width	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Swing (rear end) radius	**1720 mm** (**67.717 in**)	**1720 mm** (**67.717 in**)	**1720 mm** (**67.717 in**)
Clearance height under upper structure	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)
Minimum ground clearance	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)
Wheel base (Center to center of wheels)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)
Crawler overall length	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)
Track gauge	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)
Undercarriage overall width [with **600 mm** (**23.622 in**) shoes]	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Crawler tracks height	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)

Working ranges

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Boom length	**5700 mm** (**224.409 in**)	**5700 mm** (**224.409 in**)	**5700 mm** (**224.409 in**)
Bucket radius	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)
Bucket wrist action	**177°**	**177°**	**177°**
Maximum reach at GRP	**9180 mm** (**361.417 in**)	**8710 mm** (**342.913 in**)	**9670 mm** (**380.709 in**)
Maximum reach	**9370 mm** (**368.898 in**)	**8910 mm** (**350.787 in**)	**9850 mm** (**387.795 in**)
Max. digging depth	**6120 mm** (**240.945 in**)	**5620 mm** (**221.260 in**)	**6650 mm** (**261.811 in**)
Max. digging height	**10520 mm** (**414.173 in**)	**10170 mm** (**400.394 in**)	**10860 mm** (**427.559 in**)
Max. dumping height	**7630 mm** (**300.394 in**)	**7280 mm** (**286.614 in**)	**7970 mm** (**313.780 in**)

General specification

CX245D SR Crawler excavators LC W/Blade version (TIER 4 FINAL) - EU Market	WE

Engine

Type		Water-cooled, 4-cycle diesel, 4-cylinder in line, High pressure common rail system (electric control), Turbocharger with air cooled intercooler, SCR system
Model		ISUZU AR-4HK1X
Rated flywheel horse power		
	SAE J1349, **ISO 9249**	**119.3 kW** (**162.2 Hp**) at **1800 RPM**
	ISO 14396	**124 kW** (**169 Hp**) at **1800 RPM**
Piston displacement		**5193 cm³** (**317 in³**)
Maximum torque		
	SAE J1349, **ISO 9249**	**620 N·m** (**457 lb ft**) at **1600 RPM**
	ISO 14396	**636 N·m** (**469 lb ft**) at **1600 RPM**
Bore and stroke		**115 – 125 mm** (**4.53 – 4.92 in**)
Voltage		**24 V**
Alternator		**50 A**
Starter		**24 V 5.0 kW**

Hydraulic system

Main pumps		2 variable displacement axial piston pumps with regulating system	
	Max. oil flow		2 × **211 L** (**55.7 US gal**) at **1800 RPM**
	Working circuit pressure	Boom/Arm/Bucket	**34.3 MPa** (**4975 psi**)
			37.3 MPa (**5410 psi**) with auto power up
		Swing circuit	**29.4 MPa** (**4265 psi**)
		Travel circuit	**34.3 MPa** (**4975 psi**)
Pilot pump		1 gear pump	
	Max. oil flow		**18 L** (**4.8 US gal**)
	Working circuit pressure		**3.9 MPa** (**566 psi**)
Blade pump		1 gear pump	
	Max. oil flow		**73.1 L** (**19.3 US gal**)
	Working circuit pressure		**20.6 MPa** (**2990 psi**)
Control valves		With Boom/Arm holding valve	
		One 4-spool valve for Right track travel, Bucket, Boom and Arm acceleration	
		One 5-spool valve for Left track travel, Auxiliary, Swing, Boom acceleration and Arm	
		One 1-spool valve for Blade	
Swing device			
	Motor	Fixed displacement axial piston motor	
	Brake	Mechanical disc brake	
	Final drive	Planetary gear reduction	
	Turn table bearing	Ball bearing type with internal gear	
	Maximum swing speed	**11.5 RPM**	
	Swing torque	**64000 N·m** (**47204 lb ft**)	
Cylinders		Number of cylinders – bore X Rod diameter X Stroke	
	Boom	2 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1370 mm** (**53.937 in**)	
	Arm	1 x Ø **140 mm** (**5.512 in**) - Ø **100 mm** (**3.937 in**) - **1460 mm** (**57.480 in**)	
	Bucket	1 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1010 mm** (**39.764 in**)	
	Blade	2 x Ø **130 mm** (**5.118 in**) - Ø **80 mm** (**3.150 in**) - **260 mm** (**10.236 in**)	
Cooling system			

	Fan		Ø **650 mm** (**25.6 in**) with 7-blades
	Radiator capacity		**88.9 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Long life coolant		Coolant **55%**, Water **45%**
	Oil cooler capacity		**47.2 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Intercooler capacity		**8.9 kW**
		fin type	Straight fin
		fin space	**1.75 mm** (**0.06890 in**)
	Fuel cooler capacity		**1.3 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**2.0 mm** (**0.0787 in**)
Filters			
	Suction filter		105 µm
	Return filter		6 µm
	Pilot line filter		8 µm

Hydraulic controls

Boom/Arm/Bucket/Swing	Pilot pressure control system (ISO control pattern)
Travel	Pilot pressure control system
Work mode select	SP - mode
	H - mode
	Auto - mode
Travel mode select	2-speed travel
Attachment cushion control	
Hydraulic lock (gate lock, left side tilt console)	

Electrical system

Engine control			
			Dial type throttle control
			One touch idle / Auto deceleration / Auto idle shutdown system
			Emergency stop
Monitor system			
			Message display (Caution, condition, etc.)
			Work mode display (SP, H, Auto)
			Machine condition (Power boost, etc.)
			Alarm display and buzzer
			Water temperature
			Hydraulic oil temperature
			Fuel level
			Diagnosis system
			Rear and right side view camera image
			Urea water level
Wire harness			
			Waterproof type connector
Safety			
			Double horn
Battery			2 X **12 V 92 A·h/ 5 h**
Lights			
	Working light	Upper	**24 V 70 W** X 1
		Boom	**24 V 70 W** X 1

		Cab	**24 V 70 W** X 2
	Operator's cab room		**24 V 70 W** X 1

Operator environment

Operator's cab			
	Smooth and round shape design cab, fabricated by press work		
	Safety glass for all windows		
	Shock-less cab suspension by 4-point fluid mounting		
	Sliding front window with auto lock		
	Built-in type full-color LCD monitor display		
	Membrane switch on monitor display		
	Windshield wiper & washer		
	Floor mat		
	Polycarbonate roof hatch & Sun shade		
	Auto air-conditioner		
	Rain deflector		
	Sun visor		
	Roll-over protective structure (ROPS)		
	Top guard OPG level 1 (in CAB structure)		
	Top guard OPG level 2 (additional guard)		
Operator's seat			
	Low frequency air suspension with air springs and double acting hydraulic damper. (Achieves ISO7096 in category EM6)		
	With following features		
		Manual weight adjustment	Backrest angle adjustment
		Seat height adjustment	Adjustable pivoting armrests linked to consoles
		Adjustable headrest	Retractable seat belt
		Adjustable lumbar support	Control consoles adjust independently of seat
Others			
	Rear view mirror (Cab side & Right side)		
	Rear and right side view camera		

Undercarriage

Travel motor		Variable displacement axial piston motor
Brake		Mechanical disc brake
Hydraulic service brake		Brake valve
Final drive		Planetary gear reduction
Travel speeds	High	**5.0 km/h** (**3.1 mph**) (Automatic travel speed shifting)
	Low	**3.2 km/h** (**2.0 mph**)
Drawbar pull		**200 kN** (**45000 lb**)
Number of carrier rollers (each side)		2
Number of track rollers (each side)		8
Number of shoes (each side)		49
Type of shoe		Triple grouser shoe
Link pitch		**190 mm** (**7.480 in**)
Width of shoe		**600 mm** (**23.622 in**) (S.T.D)
Grade-ability		**70%** (**35°**)

Dozer blade

Width of blade	**3000 mm** (**118.110 in**)
Height of blade	**610 mm** (**24.016 in**)
Max. lift above ground	**490 mm** (**19.291 in**)
Min. drop below ground	**390 mm** (**15.354 in**)

Mass

Operating mass		**26000 kg** (**57320 lb**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe, operator, lubricant, coolant and full fuel tank, and top guard OPG level 2	
Shipping mass		**25000 kg** (**55116 lb**)
	Operating mass - (operator mass [**75 kg** (**165.35 lb**)] + **90%** of fuel mass + bucket mass [**698 kg** (**1538.83 lb**)]	
Counter weight mass		**6530 kg** (**14396 lb**)
Ground pressure		**0.055 MPa** (**7.978 psi**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe	

Digging force (with 1.0 m³ bucket) (ISO 6015)

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Arm digging force	**123 kN** (**27652 lb**)	**142 kN** (**31923 lb**)	**103 kN** (**23155 lb**)
With auto power up	**133 kN** (**29900 lb**)	**154 kN** (**34621 lb**)	**112 kN** (**25179 lb**)
Bucket digging force	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)
With auto power up	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)

Dimensions

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Overall length (without attachment)	**5060 mm** (**199.213 in**)	**5060 mm** (**199.213 in**)	**5060 mm** (**199.213 in**)
Overall length (with attachment)	**9530 mm** (**375.197 in**)	**9550 mm** (**375.984 in**)	**9440 mm** (**371.654 in**)
Overall height (to top of boom)	**3180 mm** (**125.197 in**)	**3100 mm** (**122.047 in**)	**2980 mm** (**117.323 in**)
Overall height (to top of Cab)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Overall height (to top of guardrail)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)
Cab height	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Upper structure overall width	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Swing (rear end) radius	**1720 mm** (**67.717 in**)	**1720 mm** (**67.717 in**)	**1720 mm** (**67.717 in**)
Clearance height under upper structure	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)
Minimum ground clearance	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)
Wheel base (Center to center of wheels)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)
Crawler overall length	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)
Track gauge	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)
Undercarriage overall width [with **600 mm** (**23.622 in**) shoes]	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Crawler tracks height	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)

Working ranges

	2.40 m (**7.87 ft**) Arm	**1.91 m** (**6.27 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Boom length	**5700 mm** (**224.409 in**)	**5700 mm** (**224.409 in**)	**5700 mm** (**224.409 in**)
Bucket radius	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)
Bucket wrist action	**177°**	**177°**	**177°**
Maximum reach at GRP	**9180 mm** (**361.417 in**)	**8710 mm** (**342.913 in**)	**9670 mm** (**380.709 in**)
Maximum reach	**9370 mm** (**368.898 in**)	**8910 mm** (**350.787 in**)	**9850 mm** (**387.795 in**)
Max. digging depth	**6120 mm** (**240.945 in**)	**5620 mm** (**221.260 in**)	**6650 mm** (**261.811 in**)
Max. digging height	**10520 mm** (**414.173 in**)	**10170 mm** (**400.394 in**)	**10860 mm** (**427.559 in**)
Max. dumping height	**7630 mm** (**300.394 in**)	**7280 mm** (**286.614 in**)	**7970 mm** (**313.780 in**)

General specification

CX245D SR Crawler excavators LC triple articulation version (Tier 4 FINAL) - EU Market	WE

Engine

Type		Water-cooled, 4-cycle diesel, 4-cylinder in line, High pressure common rail system (electric control), Turbocharger with air cooled intercooler, SCR system
Model		ISUZU AR-4HK1X
Rated flywheel horse power		
	SAE J1349, **ISO 9249**	**119.3 kW** (**162.2 Hp**) at **1800 RPM**
	ISO 14396	**124 kW** (**169 Hp**) at **1800 RPM**
Piston displacement		**5193 cm³** (**317 in³**)
Maximum torque		
	SAE J1349, **ISO 9249**	**620 N·m** (**457 lb ft**) at **1600 RPM**
	ISO 14396	**636 N·m** (**469 lb ft**) at **1600 RPM**
Bore and stroke		**115 – 125 mm** (**4.53 – 4.92 in**)
Voltage		**24 V**
Alternator		**50 A**
Starter		**24 V 5.0 kW**

Hydraulic system

Main pumps		2 variable displacement axial piston pumps with regulating system	
	Max. oil flow		2 × **211 L** (**55.7 US gal**) at **1800 RPM**
	Working circuit pressure	Boom/Arm/Bucket	**34.3 MPa** (**4975 psi**)
			37.3 MPa (**5410 psi**) with auto power up
		Swing circuit	**29.4 MPa** (**4265 psi**)
		Travel circuit	**34.3 MPa** (**4975 psi**)
Pilot pump		1 gear pump	
	Max. oil flow		**18 L** (**4.8 US gal**)
	Working circuit pressure		**3.9 MPa** (**566 psi**)
Control valves		With Boom/Arm holding valve	
		One 4-spool valve for Right track travel, Bucket, Boom and Arm acceleration	
		One 5-spool valve for Left track travel, Auxiliary, Swing, Boom acceleration and Arm	
		One 1-spool valve for Boom (positioning)	
Swing device			
	Motor	Fixed displacement axial piston motor	
	Brake	Mechanical disc brake	
	Final drive	Planetary gear reduction	
	Turn table bearing	Ball bearing type with internal gear	
	Maximum swing speed	**11.5 RPM**	
	Swing torque	**64000 N·m** (**47204 lb ft**)	
Cylinders		Number of cylinders – bore X Rod diameter X Stroke	
	Boom	2 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1255 mm** (**49.409 in**)	
	Boom (positioning)	2 x Ø **150 mm** (**5.906 in**) - Ø **100 mm** (**3.937 in**) - **1090 mm** (**42.913 in**)	
	Arm	1 x Ø **140 mm** (**5.512 in**) - Ø **100 mm** (**3.937 in**) - **1460 mm** (**57.480 in**)	
	Bucket	1 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1010 mm** (**39.764 in**)	
Cooling system			
	Fan		Ø **650 mm** (**25.6 in**) with 7-blades
	Radiator capacity		**88.9 kW**
		fin type	Corrugated fin (wavy type)

		fin space	**1.75 mm** (**0.06890 in**)
	Long life coolant		Coolant **55%**, Water **45%**
	Oil cooler capacity		**47.2 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Intercooler capacity		**8.9 kW**
		fin type	Straight fin
		fin space	**1.75 mm** (**0.06890 in**)
	Fuel cooler capacity		**1.3 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**2.0 mm** (**0.0787 in**)
Filters			
	Suction filter		105 µm
	Return filter		6 µm
	Pilot line filter		8 µm

Hydraulic controls

Boom/Arm/Bucket/Swing	Pilot pressure control system (ISO control pattern)
Boom (positioning)	Pilot pressure control system
Travel	Pilot pressure control system
Work mode select	SP - mode
	H - mode
	Auto - mode
Travel mode select	2-speed travel
Attachment cushion control	
Hydraulic lock (gate lock, left side tilt console)	

Electrical system

Engine control			
			Dial type throttle control
			One touch idle / Auto deceleration / Auto idle shutdown system
			Emergency stop
Monitor system			
			Message display (Caution, condition, etc.)
			Work mode display (SP, H, Auto)
			Machine condition (Power boost, etc.)
			Alarm display and buzzer
			Water temperature
			Hydraulic oil temperature
			Fuel level
			Diagnosis system
			Rear and right side view camera image
			Urea water level
Wire harness			
			Waterproof type connector
Safety			
			Double horn
Battery			2 X **12 V 92 A·h/ 5 h**
Lights			
	Working light	Upper	**24 V 70 W** X 1
		Boom	**24 V 70 W** X 1
		Cab	**24 V 70 W** X 2
	Operator's cab room		**24 V 70 W** X 1

Operator environment

Operator's cab			
	Smooth and round shape design cab, fabricated by press work		
	Safety glass for all windows		
	Shock-less cab suspension by 4-point fluid mounting		
	Sliding front window with auto lock		
	Built-in type full-color LCD monitor display		
	Membrane switch on monitor display		
	Windshield wiper & washer		
	Floor mat		
	Polycarbonate roof hatch & Sun shade		
	Auto air-conditioner		
	Rain deflector		
	Sun visor		
	Roll-over protective structure (ROPS)		
	Top guard OPG level 1 (in CAB structure)		
	Top guard OPG level 2 (additional guard)		
Operator's seat			
	Low frequency air suspension with air springs and double acting hydraulic damper. (Achieves ISO7096 in category EM6)		
	With following features		
		Manual weight adjustment	Backrest angle adjustment
		Seat height adjustment	Adjustable pivoting armrests linked to consoles
		Adjustable headrest	Retractable seat belt
		Adjustable lumbar support	Control consoles adjust independently of seat
Others			
	Rear view mirror (Cab side & Right side)		
	Rear and right side view camera		

Undercarriage

Travel motor		Variable displacement axial piston motor
Brake		Mechanical disc brake
Hydraulic service brake		Brake valve
Final drive		Planetary gear reduction
Travel speeds	High	**5.0 km/h** (**3.1 mph**) (Automatic travel speed shifting)
	Low	**3.2 km/h** (**2.0 mph**)
Drawbar pull		**200 kN** (**44969 lb**)
Number of carrier rollers (each side)		2
Number of track rollers (each side)		8
Number of shoes (each side)		49
Type of shoe		Triple grouser shoe
Link pitch		**190 mm** (**7.480 in**)
Width of shoe		**600 mm** (**23.622 in**) (S.T.D)
Grade-ability		**70%** (**35°**)

Mass

Operating mass		**26100 kg** (**57540 lb**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe, operator, lubricant, coolant and full fuel tank, and top guard OPG level 2	
Shipping mass		**25200 kg** (**55557 lb**)
	Operating mass - (operator mass [**75 kg** (**165.35 lb**)] + **90%** of fuel mass + bucket mass [**698 kg** (**1538.83 lb**)]	
Counter weight mass		**7430 kg** (**16380 lb**)
Ground pressure		**0.054 MPa** (**7.833 psi**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe	

Digging force (with 1.0 m³ bucket) (ISO 6015)

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Arm digging force	**123 kN** (**27652 lb**)	**103 kN** (**23155 lb**)
With auto power up	**133 kN** (**29900 lb**)	**112 kN** (**25179 lb**)
Bucket digging force	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)
With auto power up	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)

Dimensions

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Overall length (without attachment)	**4470 mm** (**175.954 in**)	**4470 mm** (**175.954 in**)
Overall length (with attachment)	**8890 mm** (**350.000 in**)	**8830 mm** (**347.638 in**)
Overall height (to top of boom)	**3050 mm** (**120.079 in**)	**2890 mm** (**113.780 in**)
Overall height (to top of Cab)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Overall height (to top of guardrail)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)
Cab height	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Upper structure overall width	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Swing (rear end) radius	**1790 mm** (**70.472 in**)	**1790 mm** (**70.472 in**)
Clearance height under upper structure	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)
Minimum ground clearance	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)
Wheel base (Center to center of wheels)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)
Crawler overall length	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)
Track gauge	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)
Undercarriage overall width [with **600 mm** (**23.622 in**) shoes]	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Crawler tracks height	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)

Working ranges

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
First boom length	**2960 mm** (**116.535 in**)	**2960 mm** (**116.535 in**)
Second boom length	**2790 mm** (**109.843 in**)	**2790 mm** (**109.843 in**)
Bucket radius	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)
Bucket wrist action	**177°**	**177°**
Maximum reach at GRP	**9180 mm** (**361.417 in**)	**9680 mm** (**381.102 in**)
Maximum reach	**9370 mm** (**368.898 in**)	**9860 mm** (**388.189 in**)
Max. digging depth	**5850 mm** (**230.315 in**)	**6370 mm** (**250.787 in**)
Max. digging height	**10470 mm** (**412.205 in**)	**10810 mm** (**425.591 in**)
Max. dumping height	**7580 mm** (**298.425 in**)	**7970 mm** (**313.780 in**)

General specification

CX245D SR Crawler excavators LC W/Blade triple articulation version (Tier 4 FINAL) - EU Market	WE

Engine

Type		Water-cooled, 4-cycle diesel, 4-cylinder in line, High pressure common rail system (electric control), Turbocharger with air cooled intercooler, SCR system
Model		ISUZU AR-4HK1X
Rated flywheel horse power		
	SAE J1349, **ISO 9249**	**119.3 kW** (**162.2 Hp**) at **1800 RPM**
	ISO 14396	**124 kW** (**169 Hp**) at **1800 RPM**
Piston displacement		**5193 cm³** (**317 in³**)
Maximum torque		
	SAE J1349, **ISO 9249**	**620 N·m** (**457 lb ft**) at **1600 RPM**
	ISO 14396	**636 N·m** (**469 lb ft**) at **1600 RPM**
Bore and stroke		**115 – 125 mm** (**4.53 – 4.92 in**)
Voltage		**24 V**
Alternator		**50 A**
Starter		**24 V 5.0 kW**

Hydraulic system

Main pumps		2 variable displacement axial piston pumps with regulating system	
	Max. oil flow		2 × **211 L** (**55.7 US gal**) at **1800 RPM**
	Working circuit pressure	Boom/Arm/Bucket	**34.3 MPa** (**4975 psi**)
			37.3 MPa (**5410 psi**) with auto power up
		Swing circuit	**29.4 MPa** (**4265 psi**)
		Travel circuit	**34.3 MPa** (**4975 psi**)
Pilot pump		1 gear pump	
	Max. oil flow		**18 L** (**4.8 US gal**)
	Working circuit pressure		**3.9 MPa** (**566 psi**)
Blade pump		1 gear pump	
	Max. oil flow		**73.1 L/min** (**19.3 US gpm**)
	Working circuit pressure		**20.6 MPa** (**2988 psi**)
Control valves		With Boom/Arm holding valve	
		One 4-spool valve for Right track travel, Bucket, Boom and Arm acceleration	
		One 5-spool valve for Left track travel, Auxiliary, Swing, Boom acceleration and Arm	
		One 1-spool valve for Boom (positioning)	
		One 1-spool valve for Blade	
Swing device			
	Motor	Fixed displacement axial piston motor	
	Brake	Mechanical disc brake	
	Final drive	Planetary gear reduction	
	Turn table bearing	Ball bearing type with internal gear	
	Maximum swing speed	**11.5 RPM**	
	Swing torque	**64000 N·m** (**47204 lb ft**)	
Cylinders		Number of cylinders – bore X Rod diameter X Stroke	
	Boom	2 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1255 mm** (**49.409 in**)	
	Boom (positioning)	2 x Ø **150 mm** (**5.906 in**) - Ø **100 mm** (**3.937 in**) - **1090 mm** (**42.913 in**)	
	Arm	1 x Ø **140 mm** (**5.512 in**) - Ø **100 mm** (**3.937 in**) - **1460 mm** (**57.480 in**)	
	Bucket	1 x Ø **120 mm** (**4.724 in**) - Ø **85 mm** (**3.346 in**) - **1010 mm** (**39.764 in**)	

	Blade	2 x Ø **130 mm** (**5.118 in**) - Ø **80 mm** (**3.150 in**) - **260 mm** (**10.236 in**)	
Cooling system			
	Fan		Ø **650 mm** (**25.6 in**) with 7-blades
	Radiator capacity		**88.9 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Long life coolant		Coolant **55%**, Water **45%**
	Oil cooler capacity		**47.2 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**1.75 mm** (**0.06890 in**)
	Intercooler capacity		**8.9 kW**
		fin type	Straight fin
		fin space	**1.75 mm** (**0.06890 in**)
	Fuel cooler capacity		**1.3 kW**
		fin type	Corrugated fin (wavy type)
		fin space	**2.0 mm** (**0.0787 in**)
Filters			
	Suction filter		105 µm
	Return filter		6 µm
	Pilot line filter		8 µm

Hydraulic controls

Boom/Arm/Bucket/Swing	Pilot pressure control system (ISO control pattern)
Boom (positioning)	Pilot pressure control system
Travel/Blade	Pilot pressure control system
Work mode select	SP - mode
	H - mode
	Auto - mode
Travel mode select	2-speed travel
Attachment cushion control	
Hydraulic lock (gate lock, left side tilt console)	

Electrical system

Engine control	
	Dial type throttle control
	One touch idle / Auto deceleration / Auto idle shutdown system
	Emergency stop
Monitor system	
	Message display (Caution, condition, etc.)
	Work mode display (SP, H, Auto)
	Machine condition (Power boost, etc.)
	Alarm display and buzzer
	Water temperature
	Hydraulic oil temperature
	Fuel level
	Diagnosis system
	Rear and right side view camera image
	Urea water level
Wire harness	
	Waterproof type connector
Safety	
	Double horn
Battery	2 X **12 V 92 A·h/ 5 h**

Lights			
	Working light	Upper	**24 V 70 W** X 1
		Boom	**24 V 70 W** X 1
		Cab	**24 V 70 W** X 2
	Operator's cab room		**24 V 70 W** X 1

Operator environment

Operator's cab			
	Smooth and round shape design cab, fabricated by press work		
	Safety glass for all windows		
	Shock-less cab suspension by 4-point fluid mounting		
	Sliding front window with auto lock		
	Built-in type full-color LCD monitor display		
	Membrane switch on monitor display		
	Windshield wiper & washer		
	Floor mat		
	Polycarbonate roof hatch & Sun shade		
	Auto air-conditioner		
	Rain deflector		
	Sun visor		
	Roll-over protective structure (ROPS)		
	Top guard OPG level 1 (in CAB structure)		
	Top guard OPG level 2 (additional guard)		
Operator's seat			
	Low frequency air suspension with air springs and double acting hydraulic damper. (Achieves ISO7096 in category EM6)		
	With following features		
		Manual weight adjustment	Backrest angle adjustment
		Seat height adjustment	Adjustable pivoting armrests linked to consoles
		Adjustable headrest	Retractable seat belt
		Adjustable lumbar support	Control consoles adjust independently of seat
Others			
	Rear view mirror (Cab side & Right side)		
	Rear and right side view camera		

Undercarriage

Travel motor		Variable displacement axial piston motor
Brake		Mechanical disc brake
Hydraulic service brake		Brake valve
Final drive		Planetary gear reduction
Travel speeds	High	**5.0 km/h** (**3.1 mph**) (Automatic travel speed shifting)
	Low	**3.2 km/h** (**2.0 mph**)
Drawbar pull		**199 kN** (**44737 lb**)
Number of carrier rollers (each side)		2
Number of track rollers (each side)		8
Number of shoes (each side)		49
Type of shoe		Triple grouser shoe
Link pitch		**190 mm** (**7.480 in**)
Width of shoe		**600 mm** (**23.622 in**) (S.T.D)
Grade-ability		**70%** (**35°**)

Dozer blade

Width of blade	**3000 mm** (**118.110 in**)
Height of blade	**610 mm** (**24.016 in**)
Max. lift above ground	**490 mm** (**19.291 in**)
Min. drop below ground	**390 mm** (**15.354 in**)

Mass

Operating mass		**27700 kg** (**61068 lb**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe, operator, lubricant, coolant and full fuel tank, and top guard OPG level 2	
Shipping mass		**26800 kg** (**59084 lb**)
	Operating mass - (operator mass [**75 kg** (**165.35 lb**)] + **90%** of fuel mass + bucket mass [**698 kg** (**1538.83 lb**)]	
Counter weight mass		**7430 kg** (**16380 lb**)
Ground pressure		**0.059 MPa** (**8.558 psi**)
	with **2.40 m** (**7.87 ft**) Arm, **1.0 m³** Bucket, **600 mm** (**23.622 in**) grouser shoe	

Digging force (with 1.0 m³ bucket) (ISO 6015)

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Arm digging force	**123 kN** (**27652 lb**)	**103 kN** (**23155 lb**)
With auto power up	**133 kN** (**29900 lb**)	**112 kN** (**25179 lb**)
Bucket digging force	**142 kN** (**31923 lb**)	**142 kN** (**31923 lb**)
With auto power up	**154 kN** (**34621 lb**)	**154 kN** (**34621 lb**)

Dimensions

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
Overall length (without attachment)	**5060 mm** (**199.213 in**)	**5060 mm** (**199.213 in**)
Overall length (with attachment)	**9500 mm** (**374.016 in**)	**9440 mm** (**371.654 in**)
Overall height (to top of boom)	**3050 mm** (**120.079 in**)	**2890 mm** (**113.780 in**)
Overall height (to top of Cab)	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Overall height (to top of guardrail)	**3090 mm** (**121.654 in**)	**3090 mm** (**121.654 in**)
Cab height	**3140 mm** (**123.622 in**)	**3140 mm** (**123.622 in**)
Upper structure overall width	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Swing (rear end) radius	**1790 mm** (**70.472 in**)	**1790 mm** (**70.472 in**)
Clearance height under upper structure	**1020 mm** (**40.157 in**)	**1020 mm** (**40.157 in**)
Minimum ground clearance	**440 mm** (**17.323 in**)	**440 mm** (**17.323 in**)
Wheel base (Center to center of wheels)	**3660 mm** (**144.094 in**)	**3660 mm** (**144.094 in**)
Crawler overall length	**4470 mm** (**175.984 in**)	**4470 mm** (**175.984 in**)
Track gauge	**2390 mm** (**94.094 in**)	**2390 mm** (**94.094 in**)
Undercarriage overall width [with **600 mm** (**23.622 in**) shoes]	**2990 mm** (**117.717 in**)	**2990 mm** (**117.717 in**)
Crawler tracks height	**920 mm** (**36.220 in**)	**920 mm** (**36.220 in**)

Working ranges

	2.40 m (**7.87 ft**) Arm	**2.94 m** (**9.65 ft**) Arm
First boom length	**2960 mm** (**116.535 in**)	**2960 mm** (**116.535 in**)
Second boom length	**2790 mm** (**109.843 in**)	**2790 mm** (**109.843 in**)
Bucket radius	**1450 mm** (**57.087 in**)	**1450 mm** (**57.087 in**)
Bucket wrist action	**177°**	**177°**
Maximum reach at GRP	**9180 mm** (**361.417 in**)	**9680 mm** (**381.102 in**)
Maximum reach	**9370 mm** (**368.898 in**)	**9860 mm** (**388.189 in**)
Max. digging depth	**5850 mm** (**230.315 in**)	**6370 mm** (**250.787 in**)
Max. digging height	**10470 mm** (**412.205 in**)	**10810 mm** (**425.591 in**)
Max. dumping height	**7580 mm** (**298.425 in**)	**7970 mm** (**313.780 in**)

General specification - Main equipment

CX245D SR Crawler excavators LC version (TIER 4 FINAL) - EU Market	WE

Lower component

Travel unit

Manufacturer	KYB Corporation
Motor type	Variable displacement piston motor
	Automatic 2-speed switchover with parking brake
Absorption amount	**112.6 – 181.3 cm³/rev** (**6.87 – 11.06 in³/rev**)
Operating pressure	**34.3 MPa** (**4975 psi**)
Operating flow	**234.0 L/min** (**61.8 US gpm**)
Brake torque	**32700 N·m** (**24118.28 lb ft**) or more (reduction gear included)
Relief valve set pressure	**35.3 MPa** (**5120 psi**) at **40 L/min** (**10.567 US gpm**)
Automatic 2-speed switch over pressure	**25.8 MPa** (**3742.290 psi**)
Reduction gear	
Reduction gear type	Planetary gear 2-stage reduction gear
Reduction ratio	43.246
Dry weight	**271 kg** (**597.456 lb**)

Take-up roller

Weight	**104.3 kg** (**229.943 lb**)

Upper roller

Weight	**17.8 kg** (**39.24 lb**)

Lower roller

Weight	**35.5 kg** (**78.26 lb**)

Recoil spring

Item	Weight	Quantity
Yoke	**23.9 kg** (**52.690 lb**)	1
Sems B M16 x 50	**0.1 kg** (**0.2205 lb**)	4
Threaded rod	**28.5 kg** (**62.8321 lb**)	1
Groove height N M48	**1.3 kg** (**2.8660 lb**)	1
SP pin 8 x 80	**0.1 kg** (**0.2205 lb**)	1
Recoil spring	**64.6 kg** (**142.4194 lb**)	1
Grease cylinder assembly	**32.7 kg** (**72.0915 lb**)	1
Sems B M16 x 60	**0.1 kg** (**0.2205 lb**)	2
Assembly (total)	**151.7 kg** (**334.4430 lb**)	
Mounting length of spring	**576 mm** (**22.677 in**)	

Shoes

	Weight or quantity
600 grouser (shoe)	**1333 kg** (**2938.762 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
600 geo grip (shoe)	**1554 kg** (**3426 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
700 grouser (shoe)	**1549 kg** (**3414.978 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
800 grouser (shoe)	**1689 kg** (**3723.61 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
900 grouser (shoe)	**1828 kg** (**4030.07 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196

Upper component

Swing unit

Swing motor		
	Manufacturer	Hyest Corporation
	Motor type	Fixed displacement piston motor
		With parking brake
	Absorption amount	**151 cm³/rev** (**9.21 in³/rev**)
	Operating pressure	**29.4 MPa** (**4264.47 psi**)
	Operating flow	**210.6 L/min** (**55.63 US gpm**)
	Mechanical brake torque	**821.5 N·m** (**605.91 lb ft**)
	Brake off pressure	**3.2 MPa** (**464.160 psi**) or less
	Relief valve set pressure	**29.4 MPa** (**4264.470 psi**)
Swing reduction gear		
	Reduction gear type	Planetary gear 2-stage reduction gear
	Reduction ratio	16.757
Dry weight		**235 kg** (**518.09 lb**)
Turntable bearing		
	Number of teeth	92
	Weight	**244 kg** (**537.928 lb**)
Counterweight		
	Weight	**6500 kg** (**14330.12 lb**)

Engine-related

Engine

Engine model name	Isuzu 4HK1X diesel engine
Engine type	4-cycle, water-cooled, overhead camshaft, vertical in-line, direct injection type (electronics control type)
Number of cylinders - diameter - stroke	4- ∅**115 mm** (**4.53 in**) - **125 mm** (**4.92 in**)
Total displacement	**5193 L** (**1371.85 US gal**)
Compression ratio	16.5
Rated output	**119.3 kW** (**162.20 Hp**) / **1800 RPM**
Maximum torque	**620 N·m** (**457.29 lb ft**) / **1600 RPM**
Engine dry weight	About **520 kg** (**1212.54 lb**)
Cooling fan	**650 mm** (**25.591 in**) - suction type - 7 blades resin
	With bell mouth-type fan guide
Pulley ratio	0.85 (reduction)
Charging generator	**24 V 50 A** AC type
Starter motor	**24 V 5 kW** (**6.8 Hp**) reduction type
Coolant capacity	**14.5 L** (**3.830 US gal**)
Oil pan capacity	Max: **20.5 L** (**5.416 US gal**) Min: **13 L** (**3.434 US gal**) (excluding oil filter)
Direction of rotation	Right (viewed from fan side)

Air cleaner (double element)

Manufacturer		Nippon Donaldson, Ltd.
Element (outer)	Filtering area size	**5.23 m²** (**56.30 ft²**)
Element (inner)	Filtering area size	**0.11 m²** (**1.18 ft²**)
Weight		**7.5 kg** (**16.535 lb**)

Radiator

Manufacturer		T.Rad. Co.,Ltd.
Oil cooler	Weight	**32.3 kg** (**71.209 lb**)
	Oil volume	**13.6 L** (**3.593 US gal**)
Radiator	Weight	**17.75 kg** (**39.1323 lb**)
	Coolant capacity	**10.1 L** (**2.67 US gal**)
Air cooler	Weight	**7.3 kg** (**16.094 lb**)
	Capacity	-
Fuel cooler	Weight	**1.1 kg** (**2.425 lb**) x 2
	Capacity	**0.44 L** (**0.1162 US gal**) x 2
Total weight		**122 kg** (**268.965 lb**)

SCR

Manufacturer	Takagi Seiko Corporation.
Urea capacity	**43 L** (**11.36 US gal**)
Weight	**8.1 kg** (**17.858 lb**)

Hydraulic device

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Dry weight			**152.7 kg** (**336.646 lb**)

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Accessory			Power take-off
Dry weight			**152.7 kg** (**336.646 lb**)
Dry weight (Second option specification)			**156 kg** (**343.921 lb**)

Control-related

Control valve

Manufacturer		KYB Corporation
Maximum flow		**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Overload set pressure		**34.5 MPa** (**5004.352 psi**), boom down
		39.2 MPa (**5685.960 psi**) other
Main relief set pressure		**34.3 MPa** (**4975 psi**)
	(Upon pressure boost)	**37.3 MPa** (**5410 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**250 kg** (**551.156 lb**)

Solenoid valve (5 stack)

Manufacturer			Yuken Kogyo Co., Ltd.
Valve specifications			
	Maximum flow		SP: **30 L/min** (**7.925 US gpm**), Others: **5 L/min** (**1.321 US gpm**)
	Rated pressure		**4.5 MPa** (**652 psi**)
	Port size	**G3/8**	Port P0, P1, D1, C2
		G1/4	Port C1, C3, C12
Solenoid specifications			
	Operating voltage		**20 – 32 V** DC
	Power consumption		**17 W** or less
Weight			**6.7 kg** (**14.77 lb**)

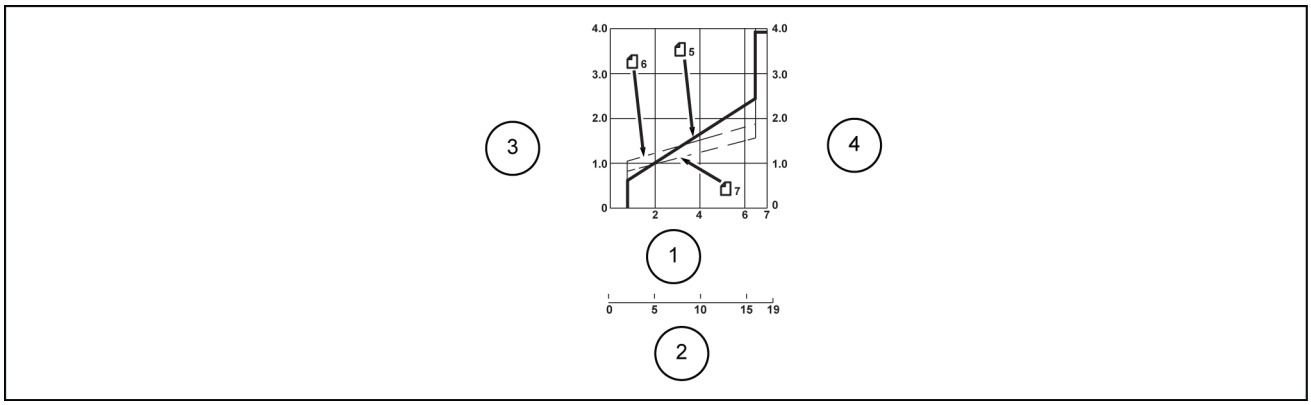
Remote control valve for Left/Right operations

Manufacturer		Kawasaki Precision Machinery Ltd.
Operating pressure		**3.92 MPa** (**569 psi**)
Secondary pressure		**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	port 1,3	**19°**
	port 2,4	**25°**
Weight		**1.9 kg** (**4.1888 lb**)

Remote control valve for travel operation

Manufacturer	Kawasaki Heavy Industries Ltd.
Operating pressure	**3.92 MPa** (**569 psi**)
Secondary pressure	**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	**12.4°**
Weight	**4.1 kg** (**9.039 lb**)

Operation remote control valve control diagram



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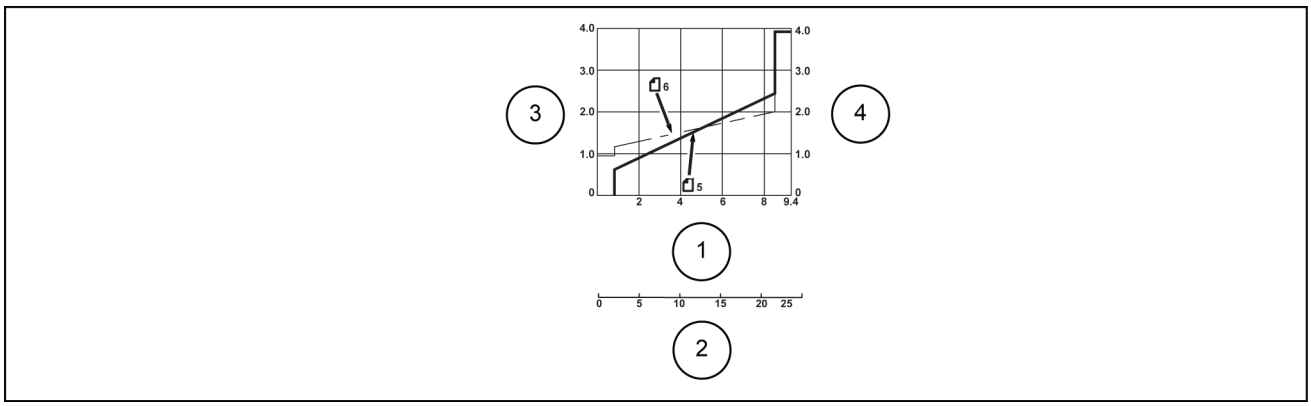
1	Push rod stroke [mm (in)]	5	Secondary pressure
2	Operating angle [deg.]	6	Independent operating torque (Port 1)
3	Secondary pressure [MPa (psi)]	7	Independent operating torque (Port 3)
4	Operating torque [Nm]		



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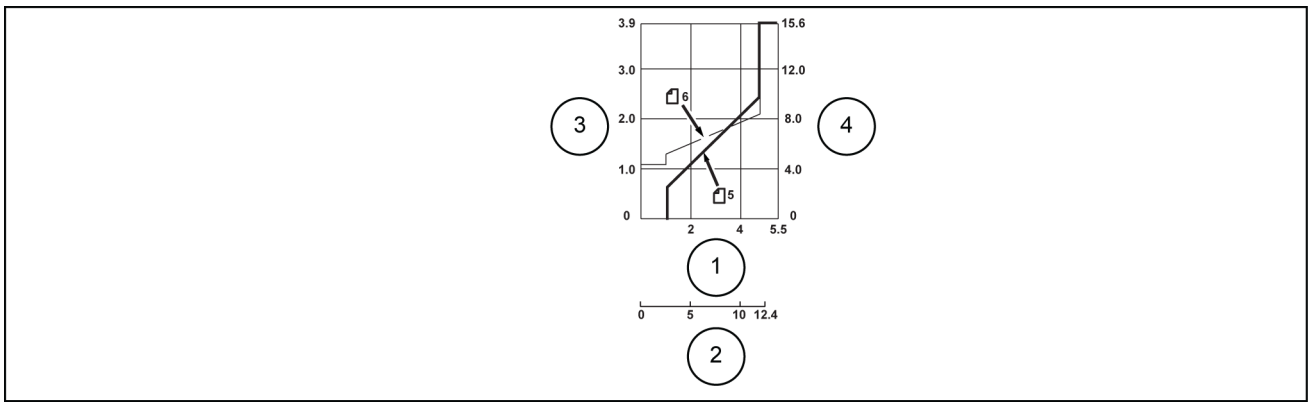
1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Travel remote control valve control diagram



SMIL14CEX2904EB 3

1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Pedal operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Cushion valve (heat circuit, with shuttle valve)

Manufacturer	Yanagisawa Seiki MFG. Co., Ltd.
Port size	**G3/8** (A - P port)
	G1/4 (Q - V port)
Weight	**12.5 kg** (**27.5578 lb**)

Selector valve (option)

2WAY	
Manufacturer	Nishina Industrial Co., Ltd.
Rated flow rate	**25 l/min** (**6.604 US gpm**)
Operating method	ISO, S: Sumitomo (old)
Port size	**G3/8**
Weight	**4 kg** (**8.8185 lb**)

Center joint

Operating pressure	High-pressure passage (ABCD)	**34.3 MPa** (**4975 psi**)
	Drain port (E)	**0.5 MPa** (**72.52 psi**)
	Pilot port (F)	**3.9 MPa** (**566 psi**)
Flow amount	High-pressure passage (ABCD)	**234 L/min** (**61.816 US gpm**)
	Drain port (E)	**10 L/min** (**2.642 US gpm**)
	Pilot port (F)	**21 L/min** (**5.548 US gpm**)
Speed	**15 RPM** or less	
Rotational torque	At no load, **74 – 206 N·m** (**54.58 – 151.94 lb ft**)	
	29.4 MPa (**4264.470 psi**) applied to A and B or C and D ports **103 – 217 N·m** (**75.97 – 160.05 lb ft**)	
Hydraulic fluid used	ISO VG46	
Hydraulic fluid temperature range	**-20 – -95 °C** (**-4 – -139 °F**)	
Port A	Forward right	G3/4
Port B	Forward left	G3/4
Port C	Backward right	G3/4
Port D	Backward left	G3/4
Port E	Drain port	G1/2
Port F	Pilot port	G1/4
Weight	**31.4 kg** (**69.226 lb**)	

Cylinder

Boom cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1838 mm** (**72.362 in**)
Stroke	**1370 mm** (**53.937 in**)
Weight	**176 kg** (**388.015 lb**)

Arm cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **140 mm** (**5.512 in**)
Rod diameter	∅ **100 mm** (**3.937 in**)
Maximum retracted length	**2020 mm** (**79.528 in**)
Stroke	**1460 mm** (**57.480 in**)
Weight	**251 kg** (**553.360 lb**)

Bucket cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1565 mm** (**61.614 in**)
Stroke	**1010 mm** (**39.764 in**)
Weight	**145 kg** (**319.670 lb**)

General specification - Main equipment

CX245D SR Crawler excavators LC W/Blade version (TIER 4 FINAL) - EU Market	WE

Lower component

Travel unit

Manufacturer	KYB Corporation
Motor type	Variable displacement piston motor
	Automatic 2-speed switchover with parking brake
Absorption amount	**112.6 – 181.3 cm³/rev** (**6.87 – 11.06 in³/rev**)
Operating pressure	**34.3 MPa** (**4975 psi**)
Operating flow	**234.0 L/min** (**61.8 US gpm**)
Brake torque	**32700 N·m** (**24118.28 lb ft**) or more (reduction gear included)
Relief valve set pressure	**35.3 MPa** (**5120 psi**) at **40 L/min** (**10.567 US gpm**)
Automatic 2-speed switch over pressure	**25.8 MPa** (**3742.290 psi**)
Reduction gear	
Reduction gear type	Planetary gear 2-stage reduction gear
Reduction ratio	43.246
Dry weight	**271 kg** (**597.456 lb**)

Take-up roller

Weight	**104.3 kg** (**229.943 lb**)

Upper roller

Weight	**17.8 kg** (**39.24 lb**)

Lower roller

Weight	**35.5 kg** (**78.26 lb**)

Recoil spring

Item	Weight	Quantity
Yoke	**23.9 kg** (**52.690 lb**)	1
Sems B M16 x 50	**0.1 kg** (**0.2205 lb**)	4
Threaded rod	**28.5 kg** (**62.8321 lb**)	1
Groove height N M48	**1.3 kg** (**2.8660 lb**)	1
SP pin 8 x 80	**0.1 kg** (**0.2205 lb**)	1
Recoil spring	**64.6 kg** (**142.4194 lb**)	1
Grease cylinder assembly	**32.7 kg** (**72.0915 lb**)	1
Sems B M16 x 60	**0.1 kg** (**0.2205 lb**)	2
Assembly (total)	**151.7 kg** (**334.4430 lb**)	
Mounting length of spring	**576 mm** (**22.677 in**)	

Shoes

	Weight or quantity
600 grouser (shoe)	**1554 kg** (**3426 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
700 grouser (shoe)	**1549 kg** (**3414.978 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
800 grouser (shoe)	**1689 kg** (**3723.61 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
900 grouser (shoe)	**1828 kg** (**4030.07 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196

Upper component

Swing unit

Swing motor		
	Manufacturer	Hyest Corporation
	Motor type	Fixed displacement piston motor
		With parking brake
	Absorption amount	**151 cm³/rev** (**9.21 in³/rev**)
	Operating pressure	**29.4 MPa** (**4264.47 psi**)
	Operating flow	**210.6 L/min** (**55.63 US gpm**)
	Mechanical brake torque	**821.5 N·m** (**605.91 lb ft**)
	Brake off pressure	**3.2 MPa** (**464.160 psi**) or less
	Relief valve set pressure	**29.4 MPa** (**4264.470 psi**)
Swing reduction gear		
	Reduction gear type	Planetary gear 2-stage reduction gear
	Reduction ratio	16.757
Dry weight		**235 kg** (**518.09 lb**)
Turntable bearing		
	Number of teeth	92
	Weight	**244 kg** (**537.928 lb**)
Counterweight		
	Weight	**6500 kg** (**14330.12 lb**)

Engine-related

Engine

Engine model name	Isuzu 4HK1X diesel engine
Engine type	4-cycle, water-cooled, overhead camshaft, vertical in-line, direct injection type (electronics control type)
Number of cylinders - diameter - stroke	4- ∅**115 mm** (**4.53 in**) - **125 mm** (**4.92 in**)
Total displacement	**5193 L** (**1371.85 US gal**)
Compression ratio	16.5
Rated output	**119.3 kW** (**162.20 Hp**) / **1800 RPM**
Maximum torque	**620 N·m** (**457.29 lb ft**) / **1600 RPM**
Engine dry weight	About **520 kg** (**1212.54 lb**)
Cooling fan	**650 mm** (**25.591 in**) - suction type - 7 blades resin
	With bell mouth-type fan guide
Pulley ratio	0.85 (reduction)
Charging generator	**24 V 50 A** AC type
Starter motor	**24 V 5 kW** (**6.8 Hp**) reduction type
Coolant capacity	**14.5 L** (**3.830 US gal**)
Oil pan capacity	Max: **20.5 L** (**5.416 US gal**) Min: **13 L** (**3.434 US gal**) (excluding oil filter)
Direction of rotation	Right (viewed from fan side)

Air cleaner (double element)

Manufacturer		Nippon Donaldson, Ltd.
Element (outer)	Filtering area size	**5.23 m²** (**56.30 ft²**)
Element (inner)	Filtering area size	**0.11 m²** (**1.18 ft²**)
Weight		**7.5 kg** (**16.535 lb**)

Radiator

Manufacturer		T.Rad. Co.,Ltd.
Oil cooler	Weight	**32.3 kg** (**71.209 lb**)
	Oil volume	**13.6 L** (**3.593 US gal**)
Radiator	Weight	**17.75 kg** (**39.1323 lb**)
	Coolant capacity	**10.1 L** (**2.67 US gal**)
Air cooler	Weight	**7.3 kg** (**16.094 lb**)
	Capacity	-
Fuel cooler	Weight	**1.1 kg** (**2.425 lb**) x 2
	Capacity	**0.44 L** (**0.1162 US gal**) x 2
Total weight		**122 kg** (**268.965 lb**)

SCR

Manufacturer	Takagi Seiko Corporation.
Urea capacity	**43 L** (**11.36 US gal**)
Weight	**8.1 kg** (**17.858 lb**)

Hydraulic device

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Dry weight			**152.7 kg** (**336.646 lb**)

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Accessory			Power take-off
Dry weight			**152.7 kg** (**336.646 lb**)
Dry weight (Second option specification)			**156 kg** (**343.921 lb**)

Control-related

Control valve

Manufacturer		KYB Corporation
Maximum flow		**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Overload set pressure		**34.5 MPa** (**5004.352 psi**), boom down
		39.2 MPa (**5685.960 psi**) other
Main relief set pressure		**34.3 MPa** (**4975 psi**)
	(Upon pressure boost)	**37.3 MPa** (**5410 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**250 kg** (**551.156 lb**)

Control valve

Manufacturer		KYB Corporation
Maximum flow		**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Main relief set pressure	P1, P2	**34.3 MPa** (**4975.34 psi**), boom down
	P1, P2 (upon pressure boost)	**37.3 MPa** (**5410.50 psi**) other
	Pr	**20.6 MPa** (**2988.11 psi**)
Overload set pressure	Boom up, Arm Bucket, Option	**39.2 MPa** (**5686 psi**)
	Boom down	**34.5 MPa** (**5004.35 psi**)
	Attachment 1	**22.6 MPa** (**3278.21 psi**)
	Attachment 2	**22.6 MPa** (**3278.21 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**34.5 kg** (**76.06 lb**)

Solenoid valve (5 stack)

Manufacturer			Yuken Kogyo Co., Ltd.
Valve specifications			
	Maximum flow		SP: **30 L/min** (**7.925 US gpm**), Others: **5 L/min** (**1.321 US gpm**)
	Rated pressure		**4.5 MPa** (**652 psi**)
	Port size	**G3/8**	Port P0, P1, D1, C2
		G1/4	Port C1, C3, C12
Solenoid specifications			
	Operating voltage		**20 – 32 V** DC
	Power consumption		**17 W** or less

Weight	**6.7 kg** (**14.77 lb**)

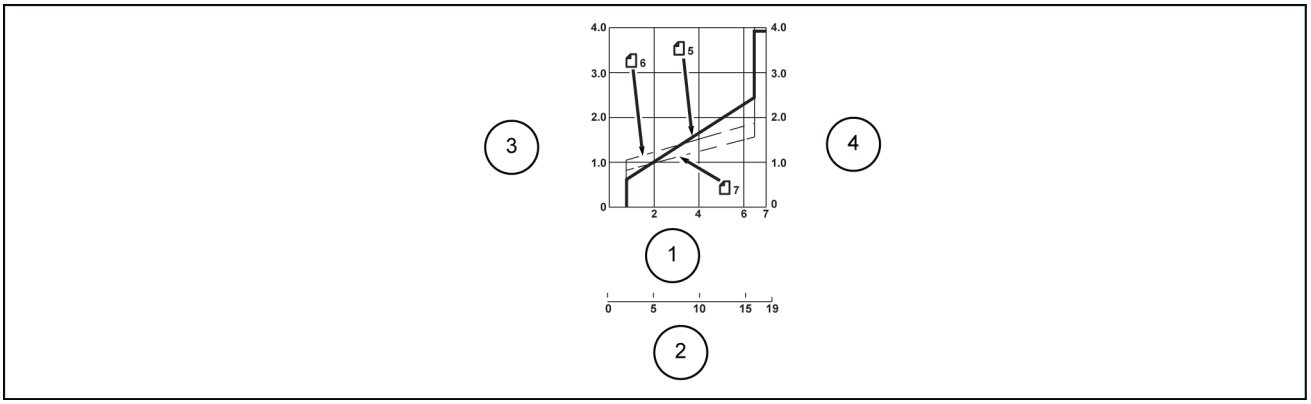
Remote control valve for Left/Right operations

Manufacturer		Kawasaki Precision Machinery Ltd.
Operating pressure		**3.92 MPa** (**569 psi**)
Secondary pressure		**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	port 1,3	**19°**
	port 2,4	**25°**
Weight		**1.9 kg** (**4.1888 lb**)

Remote control valve for travel operation

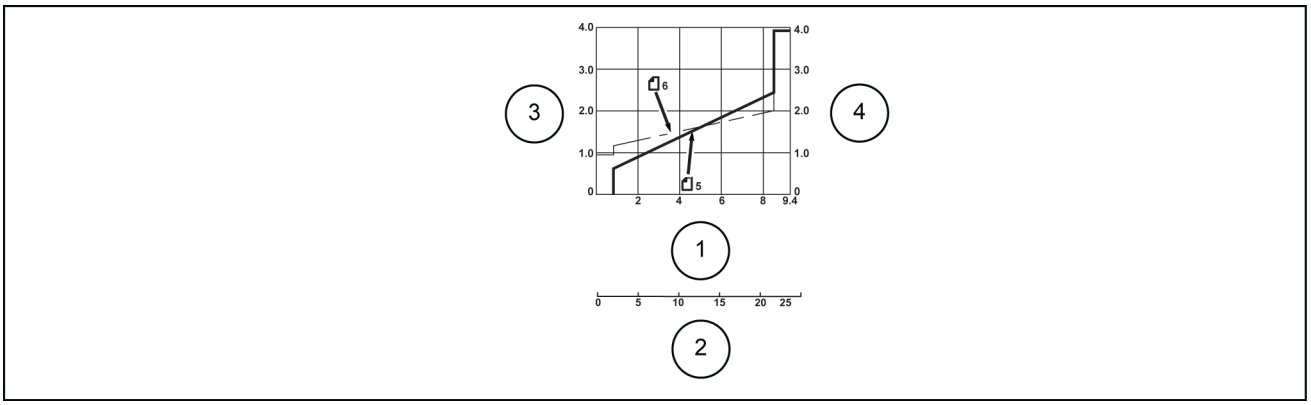
Manufacturer	Kawasaki Heavy Industries Ltd.
Operating pressure	**3.92 MPa** (**569 psi**)
Secondary pressure	**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	**12.4°**
Weight	**4.1 kg** (**9.039 lb**)

Operation remote control valve control diagram



SMIL14CEX2902EB 1

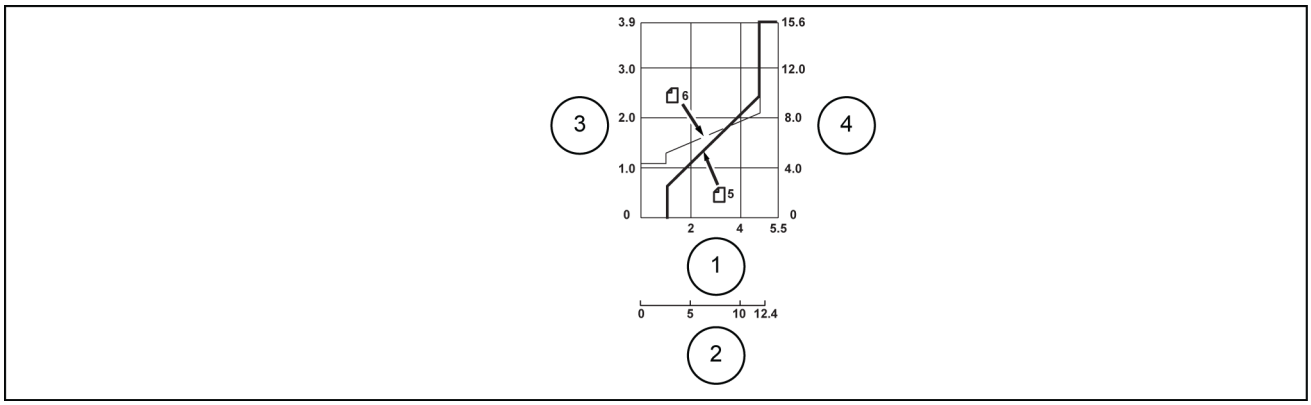
1	Push rod stroke [mm (in)]	5	Secondary pressure
2	Operating angle [deg.]	6	Independent operating torque (Port 1)
3	Secondary pressure [MPa (psi)]	7	Independent operating torque (Port 3)
4	Operating torque [Nm]		



SMIL14CEX2903EB 2

1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Travel remote control valve control diagram



SMIL14CEX2904EB 3

1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Pedal operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Cushion valve (heat circuit, with shuttle valve)

Manufacturer	Yanagisawa Seiki MFG. Co., Ltd.
Port size	**G3/8** (A - P port)
	G1/4 (Q - V port)
Weight	**12.5 kg** (**27.5578 lb**)

Selector valve (option)

2WAY	
Manufacturer	Nishina Industrial Co., Ltd.
Rated flow rate	**25 l/min** (**6.604 US gpm**)
Operating method	ISO, S: Sumitomo (old)
Port size	**G3/8**
Weight	**4 kg** (**8.8185 lb**)

Center Joint

Operating pressure	High-pressure passage (ABCD)	**34.3 MPa** (**4975.34 psi**)
	High-pressure passage (EF)	**20.6 MPa** (**2988.11 psi**)
	Drain port (G)	**0.5 MPa** (**72.53 psi**)
	Pilot port (H)	**3.9 MPa** (**565.71 psi**)
Flow rate	High-pressure passage (ABCD)	**210 L/min** (**55.477 US gpm**)
	High-pressure passage (EF)	**80.5 L/min** (**21.266 US gpm**)
	Drain port (G)	**10 L/min** (**2.642 US gpm**)
	Pilot port (H)	**19.8 L/min** (**5.231 US gpm**)
Speed	**15 RPM** or less	
Rotational torque	At no load, **115 – 247 N·m** (**84.82 – 182.18 lb ft**)	
	29.4 MPa (**4264.470 psi**) applied to A and B or C and D ports **160 – 274 N·m** (**118.01 – 202.09 lb ft**)	
Hydraulic fluid used	ISO VG46	
Hydraulic fluid temperature range	**-20 – -95 °C** (**-3.9 – -203 °F**)	
Port A	Forward right	G3/4
Port B	Forward left	G3/4
Port C	Backward right	G3/4
Port D	Backward left	G3/4
Port E	Blade up	G1/2
Port F	Blade down	G1/2
Port G	Drain port	G1/2
Port H	Pilot port	G1/2

Weight	**53.4 kg** (**117.727 lb**)	G1/4

Cylinder

Boom cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1838 mm** (**72.362 in**)
Stroke	**1370 mm** (**53.937 in**)
Weight	**176 kg** (**388.015 lb**)

Arm cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **140 mm** (**5.512 in**)
Rod diameter	∅ **100 mm** (**3.937 in**)
Maximum retracted length	**2020 mm** (**79.528 in**)
Stroke	**1460 mm** (**57.480 in**)
Weight	**251 kg** (**553.360 lb**)

Bucket cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1565 mm** (**61.614 in**)
Stroke	**1010 mm** (**39.764 in**)
Weight	**145 kg** (**319.670 lb**)

Blade cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **130 mm** (**5.118 in**)
Rod diameter	∅ **80 mm** (**3.150 in**)
Maximum retracted length	**708 mm** (**27.874 in**)
Stroke	**260 mm** (**10.236 in**)
Weight	**79 kg** (**174.166 lb**)

General specification - Main equipment

CX245D SR Crawler excavators LC W/Blade version (TIER 4 FINAL) - EU Market	WE

Lower component

Travel unit

Manufacturer	KYB Corporation
Motor type	Variable displacement piston motor
	Automatic 2-speed switchover with parking brake
Absorption amount	**112.6 – 181.3 cm³/rev** (**6.87 – 11.06 in³/rev**)
Operating pressure	**34.3 MPa** (**4975 psi**)
Operating flow	**234.0 L/min** (**61.8 US gpm**)
Brake torque	**32700 N·m** (**24118.28 lb ft**) or more (reduction gear included)
Relief valve set pressure	**35.3 MPa** (**5120 psi**) at **40 L/min** (**10.567 US gpm**)
Automatic 2-speed switch over pressure	**25.8 MPa** (**3742.290 psi**)
Reduction gear	
Reduction gear type	Planetary gear 2-stage reduction gear
Reduction ratio	43.246
Dry weight	**271 kg** (**597.456 lb**)

Take-up roller

Weight	**104.3 kg** (**229.943 lb**)

Upper roller

Weight	**17.8 kg** (**39.24 lb**)

Lower roller

Weight	**35.5 kg** (**78.26 lb**)

Recoil spring

Item	Weight	Quantity
Yoke	**23.9 kg** (**52.690 lb**)	1
Sems B M16 x 50	**0.1 kg** (**0.2205 lb**)	4
Threaded rod	**28.5 kg** (**62.8321 lb**)	1
Groove height N M48	**1.3 kg** (**2.8660 lb**)	1
SP pin 8 x 80	**0.1 kg** (**0.2205 lb**)	1
Recoil spring	**64.6 kg** (**142.4194 lb**)	1
Grease cylinder assembly	**32.7 kg** (**72.0915 lb**)	1
Sems B M16 x 60	**0.1 kg** (**0.2205 lb**)	2
Assembly (total)	**151.7 kg** (**334.4430 lb**)	
Mounting length of spring	**576 mm** (**22.677 in**)	

Shoes

	Weight or quantity
600 grouser (shoe)	**1333 kg** (**2938.762 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
600 geo grip (shoe)	**1554 kg** (**3426 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
600 grouser for pad (shoe)	**1329 kg** (**2929.943 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
700 grouser (shoe)	**1549 kg** (**3414.978 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
800 grouser (shoe)	**1689 kg** (**3723.61 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
900 grouser (shoe)	**1828 kg** (**4030.07 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196

Upper component

Swing unit

Swing motor		
	Manufacturer	Hyest Corporation
	Motor type	Fixed displacement piston motor
		With parking brake
	Absorption amount	**151 cm³/rev** (**9.21 in³/rev**)
	Operating pressure	**29.4 MPa** (**4264.47 psi**)
	Operating flow	**210.6 L/min** (**55.63 US gpm**)
	Mechanical brake torque	**821.5 N·m** (**605.91 lb ft**)
	Brake off pressure	**3.2 MPa** (**464.160 psi**) or less
	Relief valve set pressure	**29.4 MPa** (**4264.470 psi**)
Swing reduction gear		
	Reduction gear type	Planetary gear 2-stage reduction gear
	Reduction ratio	16.757
Dry weight		**235 kg** (**518.09 lb**)
Turntable bearing		
	Number of teeth	92
	Weight	**244 kg** (**537.928 lb**)
Counterweight		
	Weight	**6500 kg** (**14330.12 lb**)

Engine-related

Engine

Engine model name	Isuzu 4HK1X diesel engine
Engine type	4-cycle, water-cooled, overhead camshaft, vertical in-line, direct injection type (electronics control type)
Number of cylinders - diameter - stroke	4- ∅**115 mm** (**4.53 in**) - **125 mm** (**4.92 in**)
Total displacement	**5193 L** (**1371.85 US gal**)
Compression ratio	16.5
Rated output	**119.3 kW** (**162.20 Hp**) / **1800 RPM**
Maximum torque	**620 N·m** (**457.29 lb ft**) / **1600 RPM**
Engine dry weight	About **520 kg** (**1212.54 lb**)
Cooling fan	**650 mm** (**25.591 in**) - suction type - 7 blades resin
	With bell mouth-type fan guide
Pulley ratio	0.85 (reduction)
Charging generator	**24 V 50 A** AC type
Starter motor	**24 V 5 kW** (**6.8 Hp**) reduction type
Coolant capacity	**14.5 L** (**3.830 US gal**)
Oil pan capacity	Max: **20.5 L** (**5.416 US gal**) Min: **13 L** (**3.434 US gal**) (excluding oil filter)
Direction of rotation	Right (viewed from fan side)

Air cleaner (double element)

Manufacturer		Nippon Donaldson, Ltd.
Element (outer)	Filtering area size	**5.23 m²** (**56.30 ft²**)
Element (inner)	Filtering area size	**0.11 m²** (**1.18 ft²**)
Weight		**7.5 kg** (**16.535 lb**)

Radiator

Manufacturer		T.Rad. Co.,Ltd.
Oil cooler	Weight	**32.3 kg** (**71.209 lb**)
	Oil volume	**13.6 L** (**3.593 US gal**)
Radiator	Weight	**17.75 kg** (**39.1323 lb**)
	Coolant capacity	**10.1 L** (**2.67 US gal**)
Air cooler	Weight	**7.3 kg** (**16.094 lb**)
	Capacity	-
Fuel cooler	Weight	**1.1 kg** (**2.425 lb**) x 2
	Capacity	**0.44 L** (**0.1162 US gal**) x 2
Total weight		**122 kg** (**268.965 lb**)

SCR

Manufacturer	Takagi Seiko Corporation.
Urea capacity	**43 L** (**11.36 US gal**)
Weight	**8.1 kg** (**17.858 lb**)

Hydraulic device

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Dry weight			**152.7 kg** (**336.646 lb**)

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Accessory			Power take-off
Dry weight			**152.7 kg** (**336.646 lb**)
Dry weight (Second option specification)			**156 kg** (**343.921 lb**)

Control-related

Control valve

Manufacturer		KYB Corporation
Maximum flow		**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Overload set pressure		**34.5 MPa** (**5004.352 psi**), boom down
		39.2 MPa (**5685.960 psi**) other
Main relief set pressure		**34.3 MPa** (**4975 psi**)
	(Upon pressure boost)	**37.3 MPa** (**5410 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**250 kg** (**551.156 lb**)

Control valve

Manufacturer		KYB Corporation
Maximum flow		**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Main relief set pressure	P1, P2	**34.3 MPa** (**4975.34 psi**), boom down
	P1, P2 (upon pressure boost)	**37.3 MPa** (**5410.50 psi**) other
	Pr	**20.6 MPa** (**2988.11 psi**)
Overload set pressure	Boom up, Arm Bucket, Option	**39.2 MPa** (**5686 psi**)
	Boom down	**34.5 MPa** (**5004.35 psi**)
	Attachment 1	**22.6 MPa** (**3278.21 psi**)
	Attachment 2	**22.6 MPa** (**3278.21 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**34.5 kg** (**76.06 lb**)

Solenoid valve (5 stack)

Manufacturer			Yuken Kogyo Co., Ltd.
Valve specifications			
	Maximum flow		SP: **30 L/min** (**7.925 US gpm**), Others: **5 L/min** (**1.321 US gpm**)
	Rated pressure		**4.5 MPa** (**652 psi**)
	Port size	**G3/8**	Port P0, P1, D1, C2
		G1/4	Port C1, C3, C12
Solenoid specifications			
	Operating voltage		**20 – 32 V** DC
	Power consumption		**17 W** or less

Weight	**6.7 kg** (**14.77 lb**)

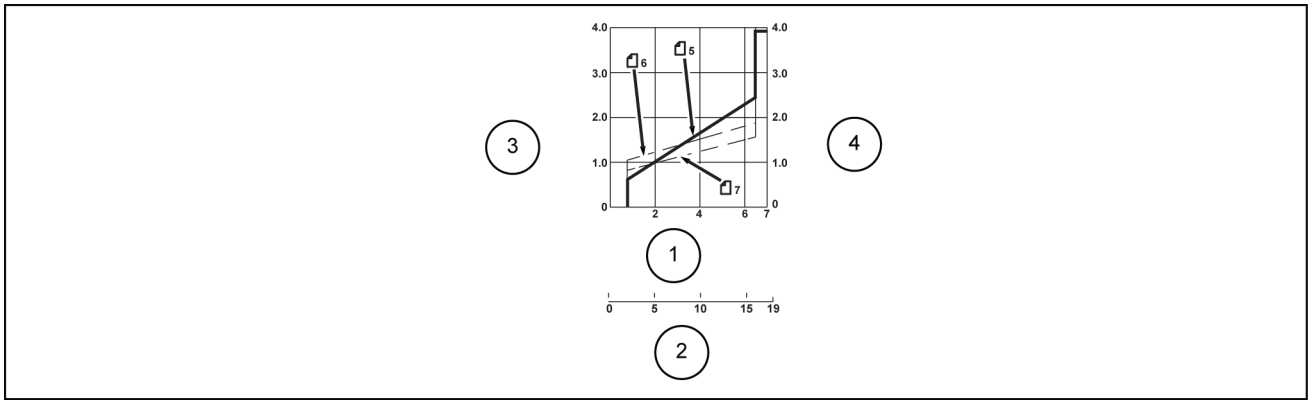
Remote control valve for Left/Right operations

Manufacturer		Kawasaki Precision Machinery Ltd.
Operating pressure		**3.92 MPa** (**569 psi**)
Secondary pressure		**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	port 1,3	**19°**
	port 2,4	**25°**
Weight		**1.9 kg** (**4.1888 lb**)

Remote control valve for travel operation

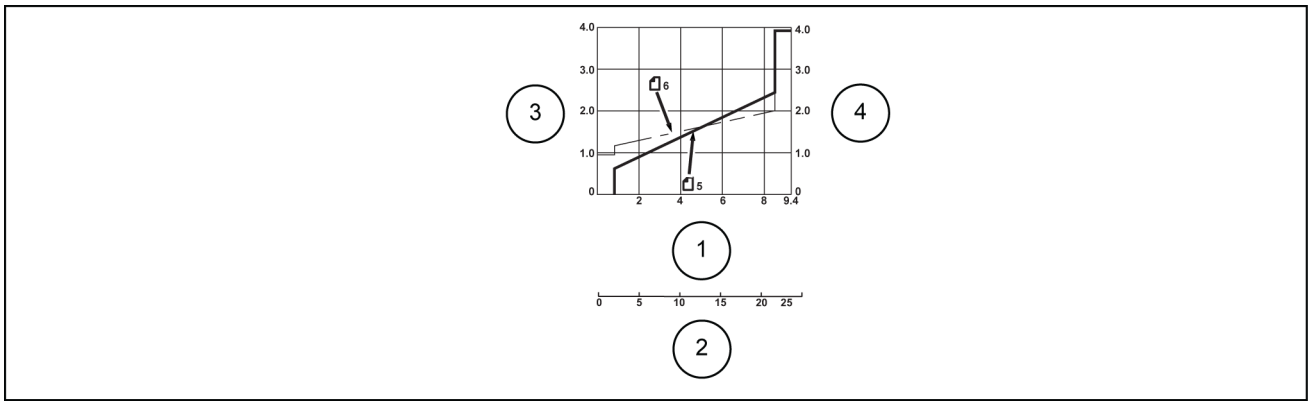
Manufacturer	Kawasaki Heavy Industries Ltd.
Operating pressure	**3.92 MPa** (**569 psi**)
Secondary pressure	**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	**12.4°**
Weight	**4.1 kg** (**9.039 lb**)

Operation remote control valve control diagram



SMIL14CEX2902EB 1

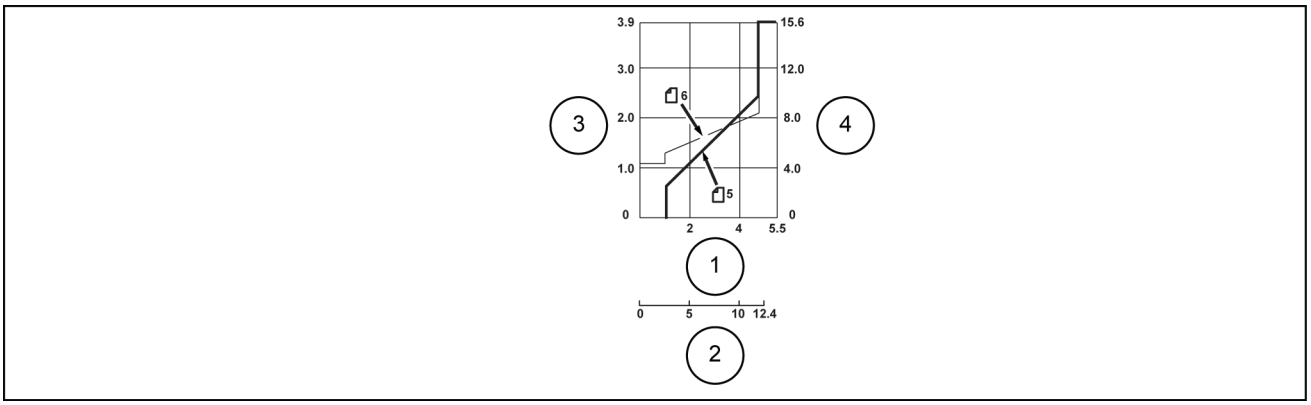
1	Push rod stroke [mm (in)]	5	Secondary pressure
2	Operating angle [deg.]	6	Independent operating torque (Port 1)
3	Secondary pressure [MPa (psi)]	7	Independent operating torque (Port 3)
4	Operating torque [Nm]		



SMIL14CEX2903EB 2

1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Travel remote control valve control diagram



SMIL14CEX2904EB 3

1	Push rod stroke [mm (in)]	4	Operating torque [Nm]
2	Pedal operating angle [deg.]	5	Secondary pressure
3	Secondary pressure [MPa (psi)]	6	Independent operating torque

Cushion valve (heat circuit, with shuttle valve)

Manufacturer	Yanagisawa Seiki MFG. Co., Ltd.
Port size	**G3/8** (A - P port)
	G1/4 (Q - V port)
Weight	**12.5 kg** (**27.5578 lb**)

Selector valve (option)

2WAY	
Manufacturer	Nishina Industrial Co., Ltd.
Rated flow rate	**25 l/min** (**6.604 US gpm**)
Operating method	ISO, S: Sumitomo (old)
Port size	**G3/8**
Weight	**4 kg** (**8.8185 lb**)

Center Joint

Operating pressure	High-pressure passage (ABCD)	**34.3 MPa** (**4975.34 psi**)
	High-pressure passage (EF)	**20.6 MPa** (**2988.11 psi**)
	Drain port (G)	**0.5 MPa** (**72.53 psi**)
	Pilot port (H)	**3.9 MPa** (**565.71 psi**)
Flow rate	High-pressure passage (ABCD)	**210 L/min** (**55.477 US gpm**)
	High-pressure passage (EF)	**80.5 L/min** (**21.266 US gpm**)
	Drain port (G)	**10 L/min** (**2.642 US gpm**)
	Pilot port (H)	**19.8 L/min** (**5.231 US gpm**)
Speed	**15 RPM** or less	
Rotational torque	At no load, **115 – 247 N·m** (**84.82 – 182.18 lb ft**)	
	29.4 MPa (**4264.470 psi**) applied to A and B or C and D ports **160 – 274 N·m** (**118.01 – 202.09 lb ft**)	
Hydraulic fluid used	ISO VG46	
Hydraulic fluid temperature range	**-20 – -95 °C** (**-3.9 – -203 °F**)	
Port A	Forward right	G3/4
Port B	Forward left	G3/4
Port C	Backward right	G3/4
Port D	Backward left	G3/4
Port E	Blade up	G1/2
Port F	Blade down	G1/2
Port G	Drain port	G1/2
Port H	Pilot port	G1/2

Weight	**53.4 kg** (**117.727 lb**)	G1/4

Cylinder

Boom cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1838 mm** (**72.362 in**)
Stroke	**1370 mm** (**53.937 in**)
Weight	**176 kg** (**388.015 lb**)

Arm cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **140 mm** (**5.512 in**)
Rod diameter	∅ **100 mm** (**3.937 in**)
Maximum retracted length	**2020 mm** (**79.528 in**)
Stroke	**1460 mm** (**57.480 in**)
Weight	**251 kg** (**553.360 lb**)

Bucket cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **120 mm** (**4.724 in**)
Rod diameter	∅ **85 mm** (**3.346 in**)
Maximum retracted length	**1565 mm** (**61.614 in**)
Stroke	**1010 mm** (**39.764 in**)
Weight	**145 kg** (**319.670 lb**)

Blade cylinder	
Manufacturer	**KYB corporation**
Cylinder bore	∅ **130 mm** (**5.118 in**)
Rod diameter	∅ **80 mm** (**3.150 in**)
Maximum retracted length	**708 mm** (**27.874 in**)
Stroke	**260 mm** (**10.236 in**)
Weight	**79 kg** (**174.166 lb**)

General specification - Main equipment

CX245D SR Crawler excavators LC triple articulation version (Tier 4 FINAL) - EU Market	WE

Lower component

Travel unit

Manufacturer	KYB Corporation
Motor type	Variable displacement piston motor
	Automatic 2-speed switchover with parking brake
Absorption amount	**112.6 – 181.3 cm³/rev** (**6.87 – 11.06 in³/rev**)
Operating pressure	**34.3 MPa** (**4975 psi**)
Operating flow	**234.0 L/min** (**61.8 US gpm**)
Brake torque	**32700 N·m** (**24118.28 lb ft**) or more (reduction gear included)
Relief valve set pressure	**35.3 MPa** (**5120 psi**) at **40 L/min** (**10.567 US gpm**)
Automatic 2-speed switch over pressure	**25.8 MPa** (**3742.290 psi**)
Reduction gear	
Reduction gear type	Planetary gear 2-stage reduction gear
Reduction ratio	43.246
Dry weight	**271 kg** (**597.456 lb**)

Take-up roller

Weight	**104.3 kg** (**229.943 lb**)

Upper roller

Weight	**17.8 kg** (**39.24 lb**)

Lower roller

Weight	**35.5 kg** (**78.26 lb**)

Recoil spring

Item	Weight	Quantity
Yoke	**23.9 kg** (**52.690 lb**)	1
Sems B M16 x 50	**0.1 kg** (**0.2205 lb**)	4
Threaded rod	**28.5 kg** (**62.8321 lb**)	1
Groove height N M48	**1.3 kg** (**2.8660 lb**)	1
SP pin 8 x 80	**0.1 kg** (**0.2205 lb**)	1
Recoil spring	**64.6 kg** (**142.4194 lb**)	1
Grease cylinder assembly	**32.7 kg** (**72.0915 lb**)	1
Sems B M16 x 60	**0.1 kg** (**0.2205 lb**)	2
Assembly (total)	**151.7 kg** (**334.4430 lb**)	
Mounting length of spring	**576 mm** (**22.677 in**)	

Shoes

	Weight or quantity
600 grouser (shoe)	**1333 kg** (**2938.762 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
600 geo grip (shoe)	**1554 kg** (**3426 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
700 grouser (shoe)	**1549 kg** (**3414.978 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
800 grouser (shoe)	**1689 kg** (**3723.61 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196
900 grouser (shoe)	**1828 kg** (**4030.07 lb**)
Link	1 pair
Shoe	49
Bolt	196
Nut	196

Upper component

Swing unit

Swing motor		
	Manufacturer	Hyest Corporation
	Motor type	Fixed displacement piston motor
		With parking brake
	Absorption amount	**151 cm³/rev** (**9.21 in³/rev**)
	Operating pressure	**29.4 MPa** (**4264.47 psi**)
	Operating flow	**210.6 L/min** (**55.63 US gpm**)
	Mechanical brake torque	**821.5 N·m** (**605.91 lb ft**)
	Brake off pressure	**3.2 MPa** (**464.160 psi**) or less
	Relief valve set pressure	**29.4 MPa** (**4264.470 psi**)
Swing reduction gear		
	Reduction gear type	Planetary gear 2-stage reduction gear
	Reduction ratio	16.757
Dry weight		**235 kg** (**518.09 lb**)
Turntable bearing		
	Number of teeth	92
	Weight	**244 kg** (**537.928 lb**)
Counterweight		
	Weight	**7400 kg** (**16314.207 lb**)

Engine-related

Engine

Engine model name	Isuzu 4HK1X diesel engine
Engine type	4-cycle, water-cooled, overhead camshaft, vertical in-line, direct injection type (electronics control type)
Number of cylinders - diameter - stroke	4- ∅**115 mm** (**4.53 in**) - **125 mm** (**4.92 in**)
Total displacement	**5193 L** (**1371.85 US gal**)
Compression ratio	16.5
Rated output	**119.3 kW** (**162.20 Hp**) / **1800 RPM**
Maximum torque	**620 N·m** (**457.29 lb ft**) / **1600 RPM**
Engine dry weight	About **520 kg** (**1212.54 lb**)
Cooling fan	**650 mm** (**25.591 in**) - suction type - 7 blades resin
	With bell mouth-type fan guide
Pulley ratio	0.85 (reduction)
Charging generator	**24 V 50 A** AC type
Starter motor	**24 V 5 kW** (**6.8 Hp**) reduction type
Coolant capacity	**14.5 L** (**3.830 US gal**)
Oil pan capacity	Max: **20.5 L** (**5.416 US gal**) Min: **13 L** (**3.434 US gal**) (excluding oil filter)
Direction of rotation	Right (viewed from fan side)

Air cleaner (double element)

Manufacturer		Nippon Donaldson, Ltd.
Element (outer)	Filtering area size	**5.23 m²** (**56.30 ft²**)
Element (inner)	Filtering area size	**0.11 m²** (**1.18 ft²**)
Weight		**7.5 kg** (**16.535 lb**)

Radiator

Manufacturer		T.Rad. Co.,Ltd.
Oil cooler	Weight	**32.3 kg** (**71.209 lb**)
	Oil volume	**13.6 L** (**3.593 US gal**)
Radiator	Weight	**17.75 kg** (**39.1323 lb**)
	Coolant capacity	**10.1 L** (**2.67 US gal**)
Air cooler	Weight	**7.3 kg** (**16.094 lb**)
	Capacity	-
Fuel cooler	Weight	**1.1 kg** (**2.425 lb**) x 2
	Capacity	**0.44 L** (**0.1162 US gal**) x 2
Total weight		**122 kg** (**268.965 lb**)

SCR

Manufacturer	Takagi Seiko Corporation.
Urea capacity	**43 L** (**11.36 US gal**)
Weight	**8.1 kg** (**17.858 lb**)

Hydraulic device

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Dry weight			**152.7 kg** (**336.646 lb**)

Hydraulic pump

Manufacturer			Kawasaki Heavy Industries, Ltd.
Main pump			
	Pump type		Double variable displacement piston pump
	Displacement		**118.5 cm³/rev** (**7.231 in³/rev**) x 2
	Operating pressure	Rated	**34.3 MPa** (**4975 psi**)
		Maximum	**37.3 MPa** (**5410.4 psi**)
	Input revolution speed		**1800 RPM**
	Maximum discharge flow		**213 L/min** (**56.27 US gpm**) x 2 (at Pd = **1800 RPM**)
Pilot pump			
	Pump type		Gear pump
	Displacement		**10 cm³/rev** (**0.61 in³/rev**)
	Operating pressure		**3.92 MPa** (**568.6 psi**)
	Maximum discharge flow		**18 L/min** (**4.76 US gpm**) (at **2000 RPM**)
Control method			Hydraulic simultaneous constant output control (at fuel safe)
			Electric negative control by external command milli-amp (on front and rear sides)
Accessory			Power take-off
Dry weight			**152.7 kg** (**336.646 lb**)
Dry weight (Second option specification)			**156 kg** (**343.921 lb**)

Control-related

Control valve

Manufacturer		KYB Corporation
Maximum flow	P1, P2	**213 L/min** (**56.27 US gpm**) (at **1800 RPM**)
Overload set pressure	Boom down	**34.5 MPa** (**5004.352 psi**), boom down
	Others	**39.2 MPa** (**5685.960 psi**) other
Main relief set pressure	P1, P2	**34.3 MPa** (**4975 psi**)
		37.3 MPa (**5410 psi**)
Foot relief set pressure		**2.55 MPa** (**370 psi**)
Function		Pressure boost circuit
		Straight Travel Circuit
		Boom-up and arm-out/in 2 pumps internal flow
		Boom-down and arm-in load holding circuit
		Boom-down and bucket-close regenerative circuit
		Arm-in forced regenerative circuit
		Arm 1 and Arm 2 parallel variable spool
		Neutral cut spool
		2 pumps flow
Weight		**259 kg** (**570.997 lb**)

Solenoid valve (5 stack)

Manufacturer			Yuken Kogyo Co., Ltd.
Valve specifications			
	Maximum flow		SP: **30 L/min** (**7.925 US gpm**), Others: **5 L/min** (**1.321 US gpm**)
	Rated pressure		**4.5 MPa** (**652 psi**)
	Port size	**G3/8**	Port P0, P1, D1, C2
		G1/4	Port C1, C3, C12
Solenoid specifications			
	Operating voltage		**20 – 32 V** DC
	Power consumption		**17 W** or less
Weight			**6.7 kg** (**14.77 lb**)

Remote control valve for Left/Right operations

Manufacturer		Kawasaki Precision Machinery Ltd.
Operating pressure		**3.92 MPa** (**569 psi**)
Secondary pressure		**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	port 1,3	**19°**
	port 2,4	**25°**
Weight		**1.9 kg** (**4.1888 lb**)

Remote control valve for travel operation

Manufacturer	Kawasaki Heavy Industries Ltd.
Operating pressure	**3.92 MPa** (**569 psi**)
Secondary pressure	**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	**12.4°**
Weight	**4.1 kg** (**9.039 lb**)

Remote control valve for option operation

Manufacturer	Nishina Industrial Co., Ltd.
Operating pressure	**3.92 MPa** (**569 psi**)
Secondary pressure	**0.64 – 2.45 MPa** (**92.8320 – 355 psi**), primary pressure short type
Operating angle	**11.4 – 12.6°**
Port size	P, T, A, B, C1, C2 G1/4
Weight	**1.7 kg** (**3.748 lb**)