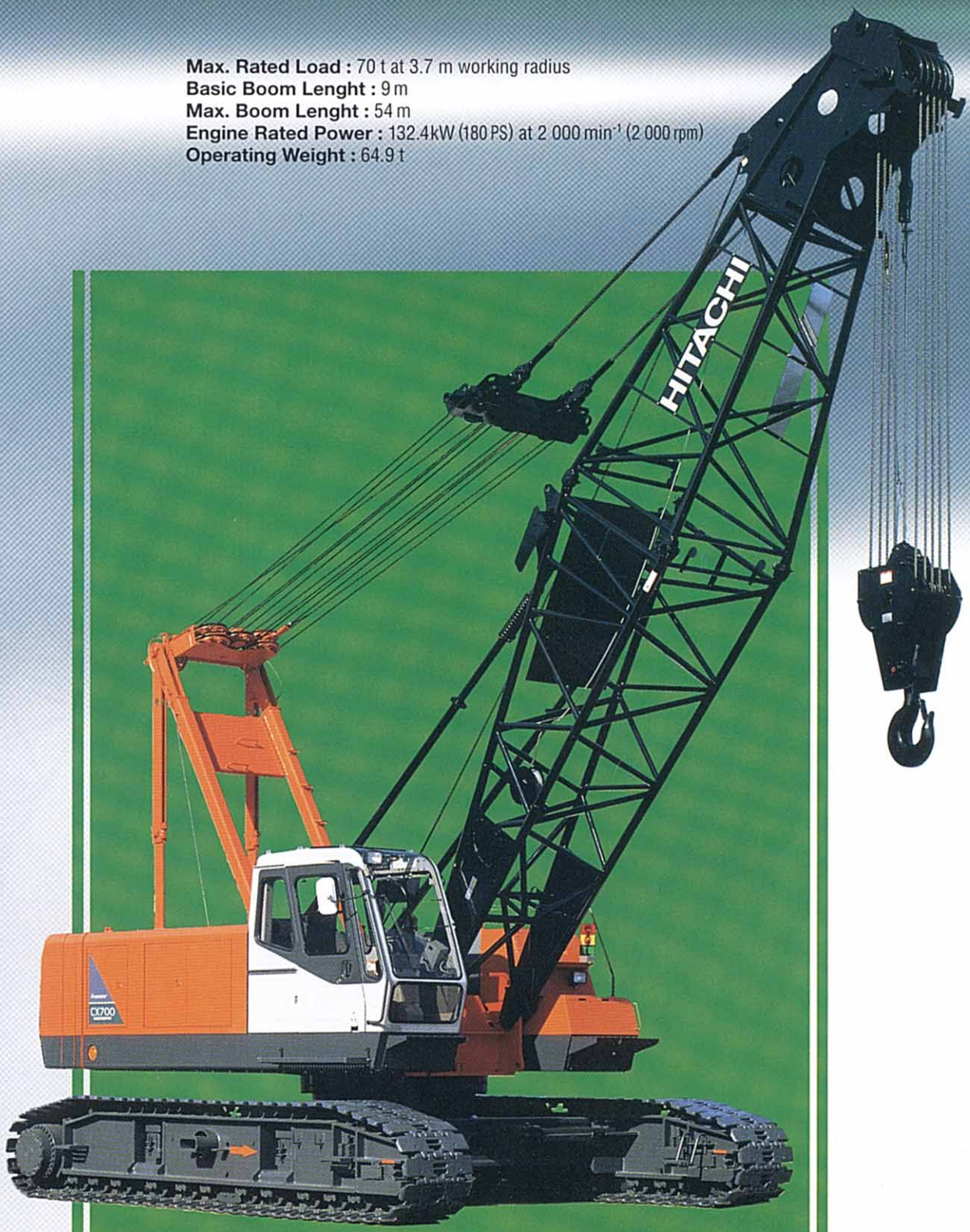
CX700

HYDRAULIC CRAWLER CRANE

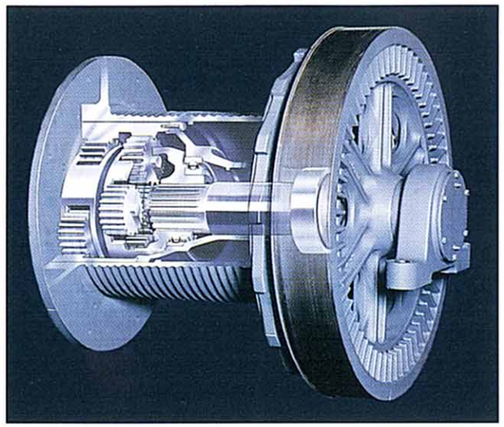
Max. Rated Load : 70 t at 3.7 m working radius
Basic Boom Lenght : 9 m
Max. Boom Lenght : 54 m
Engine Rated Power : 132.4kW (180 PS) at 2 000 min^{-1} (2 000 rpm)
Operating Weight : 64.9 t



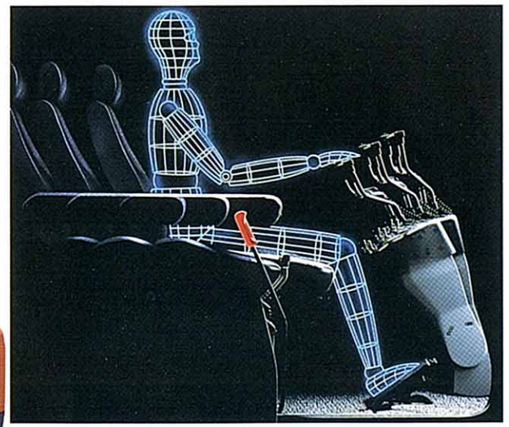
HITACHI

Dependable, Operator-friendly and Comfortable. That's the Basic Design Concept.

1 Speedy operation and high mobility for increased job efficiency
2 Fast hoisting and lowering line speeds (100 m/min)
3 Wide main and auxiliary hoist drums for ample winding capacity (215 m long rope wound in five layers)
4 Boosted heat dissipation for the brake and increased rope diameter enable more efficient bucket operation
5 Improved cab design for added operator comfort and convenience



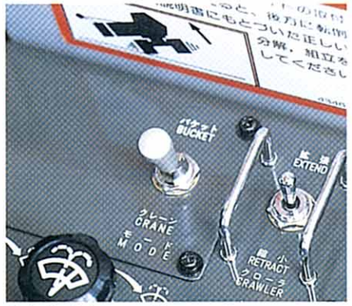
● **Improved simple-to-use winch system**
The improved winch with a built-in planetary reduction gear and wide hoist drum. This winch enhances controllability and productivity, and can meet diversified job needs, such as high lift, deep crane operation under the ground, and civil engineering works.



Tilt type lever stand and adjustable deluxe seat.
The operator can suit his position to various job requirements.

The electronic fuel control accelerator–finger-touch grip atop the swing lever–has been added to the conventional fuel control lever and accelerator pedal.

The newly-developed drum rotation sensor allows the operator to feel the starting of the drum with his hand.



● **Selectable working modes**
- The crane working mode gives priority to the line speed.
- Bucket mode working ensures line pull and line speed optimized for the load.

Careful designs for Safety and simple maintenance.

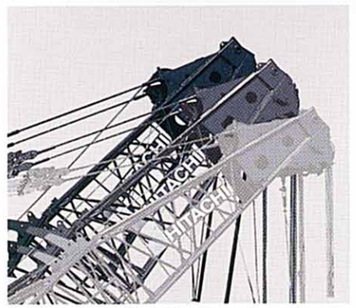
Auto brake (green indicator)
Free fall (red indicator)

● Brake mode

The brake mode switch, located on the lever stand, is easy to read and control. With the aid of indicators, the operator can read the brake mode at a glance. The interlock mechanism disables free fall even if the brake pedal is not applied completely.

● Pilot control shut-off lever

The pilot control shut-off lever shuts out hydraulic pilot pressure to the pilot control valves. With the pilot control shut-off lever in the LOCK position, the machine will not move if a lever is accidentally moved.



● Slow boom hoisting/lowering stop

- The slow stopping mechanism absorbs shocks at stop of boom hoinsting when the boom overhoist prevention device functions.
- It also absorbs shocks at stop of boom lowering when the overload prevention device functions.

● Fail-safe braking system

The braking protection mechanism does not allow the engine to start unless the swing brake is locked and the hoisting brake is set to the auto mode.

● Utmost boom overhoist prevention device

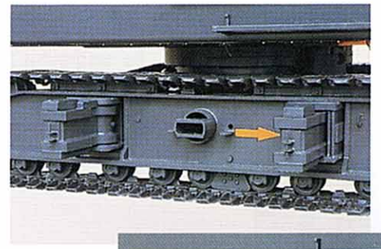
In addition to the hook overhoist prevention device and boom overhoist prevention device, the utmost boom overhoist prevention device is provided. It actuates at a boom angle of 82° to avoid overhoisting of both the boom and hook.

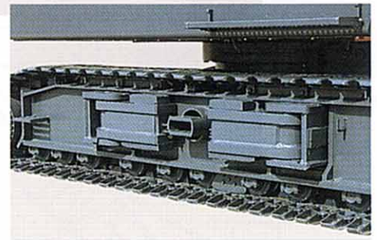
● Auto stop release switch with key

The auto stop release switch is keyed to prevent accidental release of safety devies.

● Brake mode selector switch with key

The hoist brake mode selector switch is keyed to prevent the mode from being accidentally switched to free fall during hoisting operation.





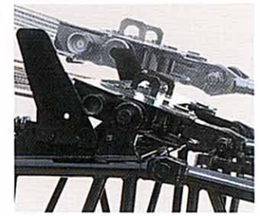
● Retractable track beam

The track frame of a folding beam type can be retracted down to 3 200 mm wide. In transportation, extension/retraction of the crawler can be controlled through a switching operation from the cab.

● Ample servicing space

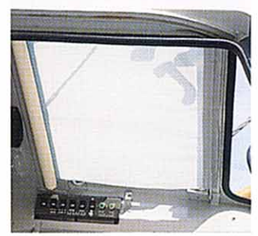
An ample servicing space is provided around the winch drum for efficient servicing and maintenance.
New winch system with simplified maintenance feature.

● Crawler extension/retraction switch



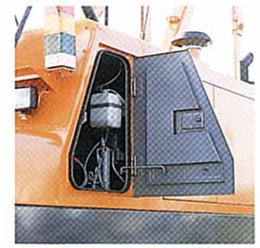
● Bridle joint guide

● Dual taper pin and stopper



● Retractable sunshade shields glare

● Intermittent windshield wiper and washer



● Radiator water level check door

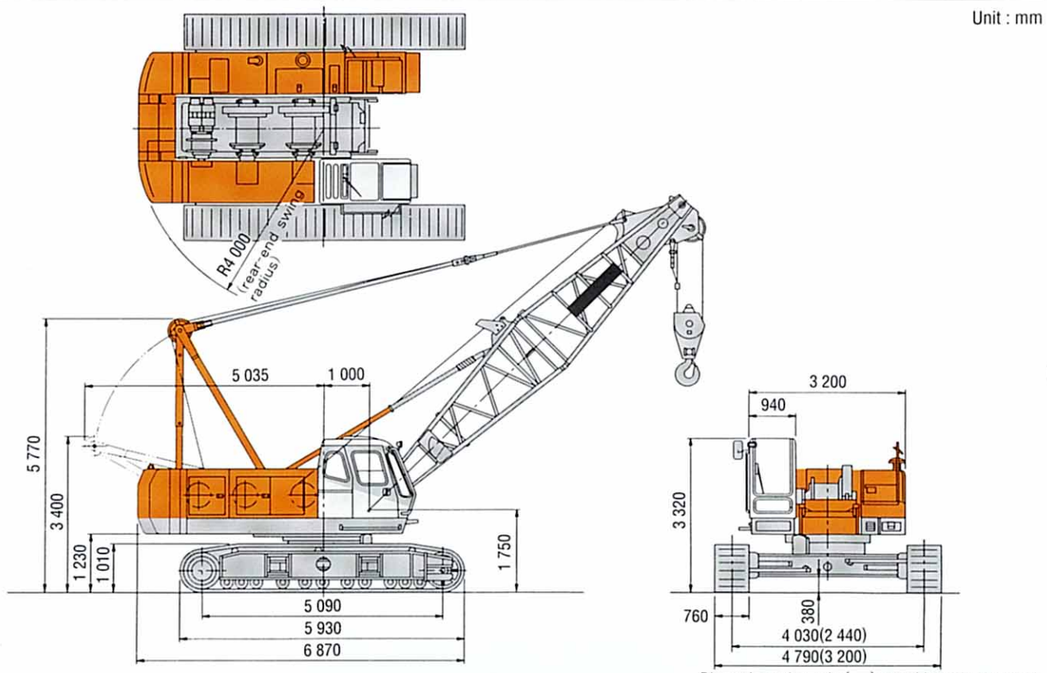
● Sideframe step allowing easy access to machine

● Large steps

● Large tool box for containing long tools such as bars etc.

Dimensions

Unit : mm



Dimensions shown in ( ) are with tracks retracted.

Specifications

(1t=1 000kg)

		CX700
Maximum rated load	t×m	70×3.7
Basic boom length	m	9
Max. boom length	m	54
Jib length	m	9～18
Max. boom with jib length	m	45+18
Main hoist drum	m/min	＊100 / 65 / 32
Aux. hoist drum	m/min	＊100 / 65 / 32
Boom hoist drum	m/min	＊53
Swing speed	min^{-1}(rpm)	3.0 (3.0)
Travel speed	km/h	＊1.3 / 0.9
Gradeability	%(°)	40 (22)
Engine model		Hino H07CT
Rated power	kW/min^{-1}(PS/rpm)	132.4 / 2 000 (180 / 2 000)
Ground pressure	kPa(kgf/cm^2)	77.6 (0.79)
Operating weight	t	64.9 (Equipped with 9 m boom and 70 000 kg capacity hook)

NOTE : Data expressed above are in SI units (International System of Unit), followed by data in conventional units in ( ).
＊ Data in the crane mode will vary with the load.

SUPERSTRUCTURE

Engine

Model.....HINO H07C-T
Type.....Water-cooled, 4-cycle, 6-cylinder, direct fuel injection type diesel engine. 165 g/PS•h
Rated horsepower (DIN 6 271, Net).....132.4 kW (180 PS) at 2 000 min^{-1} (2 000 rpm)
Maximum torque.....657 N•m (67 kgf•m), at 1 600 min^{-1} (1 600 rpm)
Piston displacement.....6.728 L
Fuel tank capacity.....300 L
Electric system.....DC 24 V

Main and Auxiliary Hoist Mechanism

- The Hitachi CX700 is equipped with dual hoist mechanisms, each consisting of independent main and auxiliary hoist drum driven by a hydraulic motor.
- Hoisting and lowering the load is achieved by forward/reverse rotation of a hydraulic motor.
- Power lowering is carried out with a hydraulic brake.
- Hoisting and lowering can be carried out at three speeds–fast, medium and slow–to suit job requirements.
- Each drum is fitted with a friction band-type brake. This allows free fall (rapid lowering) of the hook.
- Main and auxiliary hoist drums are each fitted with a pawl-type drum lock to positively hold the load in the air.
- The drum brake is an external contracting friction band-type using durable nonasbestos lining.
- The brake is controlled by a hydraulic servo system to reduce control force. With the hoist lever in neutral, auto braking or foot braking can be selected.

Boom Hoist Mechanism

- Independent operation.
- Boom hoisting/lowering is done by forward/reverse rotation of the bent axis motor. Boom lowering is made by power lowering through the hydraulic system.
- Instant hoisting/lowering of boom is possible.
- Both hydraulic brake and spring-set hydraulic-released multiplate disc type brake offer positive and safe stopping of boom. When boom is hoisted or lowered, brakes are automatically released.

Boom Brakes
Spring-set, hydraulic-released multiplate disc type. Brake is automatically actuated when control lever is at neutral position.

Drum Locks
Drum pawl lock is manually controlled from operator's seat.

Swing Mechanism

- Independent operation.
- Driven by a high-torque piston motor through reduction gear, swing speeds are freely controllable within the 0 to maximum speed with single-lever stroking.

Swing Brake
The disc-type swing brake can be hydraulically actuated by the brake switch on the swing lever.

Swing Lock
Manually-operated mechanical lock with a rod tip which is engaged in a holder of track frame during transportation.

Swing Circle
Single-row shear-type ball bearing with heat treated internal gear.

Revolving Frame

All steel welded construction, stress-relieved, precision-machined unit, especially designed for rigidity and strength.

Gantry
Lowerable for transportation.

Counterweight
Welded structure. Total weight 23 800 kg
Consists of 3 sections : One : 7 400 kg
One : 7 900 kg
One : 8 500 kg

Boom

Tubular Chord CRANE Boom
1 400mm wide by, 1 400mm deep at connection, lattice construction, high tensile strength steel tubular chord.

Basic boom..... 2-piece, total length 9.0 m ; upper section 4.0 m and lower section 5.0 m.
Boom point..... Offset boom point, 5 sheaves [462 mm p.c.d.] mounted on anti-friction bearings on boom top.
Boom insert..... 3.0 m, 6.0 m and 9.0 m long available.
Connection type..... Pin-connected
Boom backstop..... Dual-rail, telescopic tubular construction with spring bumper.
Boom hoist bridle..... Serves as connection between pendants and boom hoist wire rope reeving, equipped with 6 sheaves [340 mm p.c.d.] for 12-part boom hoist wire rope reeving.

Crane Jib
540 mm wide by 510 mm deep at connection, lattice construction, high tensile strength steel tubular chord.

Basic jib..... 2-piece, total length 9.0 m; upper section 4.5 m, and lower section 4.5 m.
Jib point..... 1 sheave [520 mm p.c.d.] mounted on anti-friction bearings on jib top.
Jib insert..... 4.5 m long available.
Connection type..... Pin-connected
Auxiliary jib..... Optional
Attachable to main boom top for hoisting lightweight load quickly with a single rope used.

Note : Boom insert, crane jib, or auxiliary jib can be attached to the basic boom when needed. However, both crane jib and auxiliary jib cannot be attached simultaneously to the boom or used.

Tubular Chord TOWER CRANE Boom
1 400 mm wide by 1 400 mm deep at connection, lattice construction, high tensile strength steel tubular chord.

Tower boom length..... Mimimum : 25 m
Maximum : 43 m
Tower insert..... 1.5 m, 3.0 m, 6.0 m, and 9.0 m tower insert are in common with each crane boom insert.
Connection type..... Pin-connected.
Tower backstop..... Dual-rail, telescopic tubular construction with spring dumper.
Tower hoist bridle..... Serves as connection between tower boom pendants and tower boom hoist wire rope reeving, equipped with 4 sheaves [360 mm p.c.d.×3 & 420 mm p.c.d×1] for 8-part tower boom hoist wire rope reeving.

Tower Jib
Jib..... 1 150 mm wide by 900 mm deep at connection, lattice construction, high tensile strength steel tubular chord.
Jib length..... 19.0 m to 31.0 m
Jib insert..... 3.0 m and 6.0 m long available.
Connection type..... Pin-connected.

Operator's Cab

All-weather, well-ventilated, all-round visibility, roomy operator's cab. The independent cab is insulated against noise and vibration. Sliding, fold-in windshield swings up and stores in roof. Fully adjustable reclining seat.

HYDRAULIC SYSTEM

- 2 variable displacement piston pumps plus 1 fix piston pump hydraulic system allows both independent and combined operations of all functions.
- Variable-displacement piston pumps not only adequately control operating speeds, but also utilize engine power to maximum.

	Pump-1	Pump-2
Type of pump	Variable displacement pump	
Pressure setting	29.4 MPa (300 kgf/cm²)	29.4 MPa (300 kgf/cm²)
Oil flow	200 L/min	200 L/min

	Pump-3	Pump-4
Type of pump	Piston pump	Gear-pump
Pressure setting	27.5 MPa (280 kgf/cm²)	4.9 MPa (50 kgf/cm²)
Oil flow	135 L/min	32 L/min

Main and Auxiliary Hoist Motor
Swash plate type axial piston motor with counterbalance valve.

Boom Hoist Motor
Bent axis motor with counterbalance valve.

Swing Motor
Swash plate type axial piston motor.

Travel Motor
Swash plate type axial piston motor with brake valve and spring-set/hydraulic-released multiplate disc brake.

Relief and Brake Valves
- Each hydraulic circuit incorporates large-capacity relief valves to protect circuit from overload or shock load.
- Counterbalance valves (compensates load lowering and prevents accidental load drop when hydraulic power is suddenly reduced) are provided for hoist motor.
- Brake valves (consisting of relief valve and counterbalance valve) are provided for travel circuit.

Pressure Setting
MAIN CIRCUIT
- Main relief valves
  Hoist (main and aux.)..... 29.4 MPa (300 kgf/cm²)
  Swing..... 23.0 MPa (235 kgf/cm²)
- Overload relief valves
  Hoist (main and aux.) circuit..... 31.4 MPa (320 kgf/cm²)
  Boom hoist circuit..... 30.8 MPa (315 kgf/cm²)
  Travel circuit..... 23.1 MPa (236 kgf/cm²)

PILOT CIRCUIT
- Main relief valve..... 4.4 MPa (45 kgf/cm²)

Line Filters
High-filtration 10 μm full-flow filter element is incorporated in the return line.
Pilot filter and suction filter are provided for each circuit.

UNDERCARRIAGE

Traction mechanism
- Each track is driven by a bent axis motor through reduction gear. This mechanism allows counter-rotation of tracks for maximum maneuverability in close quarters.
- When lever is at neutral position, both hydraulic brake and spring-set/hydraulic-released multiplate disc brake are automatically actuated to effect reliable stopping.
- A hydraulic track adjuster is provided for easy tension adjustment of each track.

Track Frame
All-welded, stress-relieved, box section construction.

Side Frame
Side frames of all-welded construction can be retracted for transportation.

Side Frame Extending/Retracting Device
- Side frame extending/retracting is done with the hydraulic cylinder provided inside the track frame. Hydraulic power source for the extending/ retracting cylinder is separated from other systems so that a combined operation of travel and side frame control possible.
- The side frame extending/retracting can easily be done in a short time eliminating troublesome piping, etc.

Track Link Disengaging Prevention Device
Track link disengaging prevention device goes up and down together with the track link to prevent it from coming off.

Track Shoes
Heat treated alloy steel castings with induction-hardened roller path and driving lugs. Shoes are connected by induction-hardened steel pins.

No. of upper rollers (on each side)..... 3
No. of lower rollers (on each side)..... 11
No. of track shoes (on each side)..... 63
Shoe width..... 760 mm

CONTROLS

Boom, Main and Auxiliary Hoist and Travel
Remote controlled hydraulic servo. Working speed can be precisely controlled by changing lever stroke.

Swing
Mechanical linkage type.

●Electric Accelerator Grip
Engine power is controlled by three ways according to the type of job to be handled–electric thumb-controlled accelerator attached to the top the swing lever, accelerator lever and accelerator pedal.

●Monitor Displaying Machine Condition
The monitor lets the operator check engine oil pressure, water temperature, and fuel level, as well as levels of hydraulic oil, engine oil, and coolant. Indicators turn on a red light and a buzzer sounds in the event of an abnormal condition.

SAFETY DEVICES

Boom Angle Indicator
A mechanical type boom angle indicator is provided at boom foot.

Counterbalance Valve (Brake Valve)
A counterbalance valve is incorporated in travel motors, boom hoist motor, main and auxiliary hoist motor respectively. In case the hydraulic line is broken, this valve is automatically actuated to prevent motor rotation.

Spring-set/hydraulic-released Multiplate Disc Type Travel Brakes

Swing Lock and Swing Parking Brake

Drum Lock (electric type)
A pawl type drum lock is adopted for main drum, auxiliary drum and boom drum.

For Crane

●Moment Limiter
On the moment limiter, analog displays and pictorial load indications are functionally arranged for easy reading.

●Hook Overhoist Prevention Device
When the hook reaches its safety hoist limit, an alarm bell rings and an auto-stop device automatically actuates at the same time.

●Boom Overhoist Prevention Device
When the boom reaches its safety angle limit, a buzzer alarm sounds and boom hoisting automatically stops at the same time. A telescopic type boom backstop is also installed.

●Utmost Boom Overhoist Prevention Device
In addition to the hook overhoist prevention device and boom overhoist prevention device, the secondary boom overhoist prevention device is provided. It actuates at a boom angle of 82° to avoid overhoisting of both the boom and hook.

●Pilot Control Shut-off Lever
The pilot control shut-off lever shuts out hydraulic pilot pressure to the pilot control valves. With the pilot control shut-off lever in the LOCK position, the machine will not move if a lever is accidentally moved.

●Reliable Electric Circuit
The electric circuit is shut down automatically if an electric wire is broken or an electric device fails.

SERVICE REFILL CAPACITIES

	Liters
Fuel tank	300
Engine coolant	25.1
Engine oil	28
Pump transmission	2
Boom and winch hoist motor reduction device	9.5
Winch hoist motor reduction device	12.5
Swing reduction device	8
Travel final device (on each)	14
Hydraulic system (including tank capacity)	305
Hydraulic tank	225

This catalog is not applicable to the European area.
The machine shown may vary according to territory Specifications.
Specifications are subject to change without notice.

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