FIAT-HITACHI

COMPACT LINE

NET FLYWHEEL POWER	57 kW / 76 HP
OPERATING WEIGHT (max)	9460 Kg
BUCKET CAPACITY	0.05 - 0.29 m^3

FH90W

FIAT-HITACHI
MIDI EXCAVATORS
RELIABILITY
PRODUCTIVITY
VERSATILITY
COMFORT
ACCESSIBILITY

The new FIAT-HITACHI midi excavators offer technological features of comfort, performance, and reliability at the top of what the market has available today.

Machines designed and built to

- Satisfy the most demanding customers and operators
- Offer easy operation, precision and productivity in all maintenance and tough digging jobs
- Operate in the most cramped areas and the toughest working conditions
- Ensure total reliability and unit availability
- Guarantee operators have the best place to work in terms of comfort, easy and safe operation

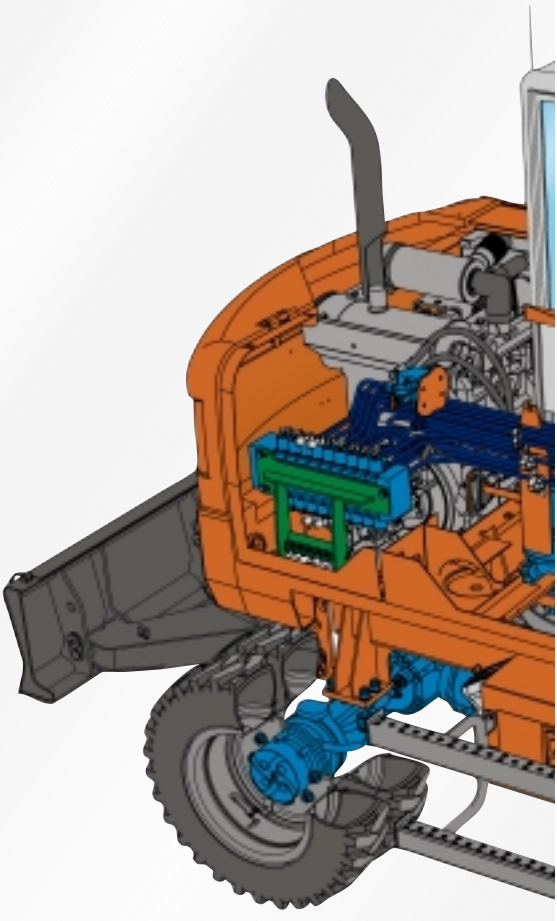
4.2 l emissioned Perkins engine

- **Low rpm** = quiet operation and low fuel consumption
- **Low piston linear velocity** = less wear
- **Low HP/l ratio** = longer life

Features that ensure long-lasting reliability.

On-board Computer

NEW MIDI FIAT-HITACHI WHEEL EXCAVATORS: COMPACT BUT BIG IN EVERYTHING



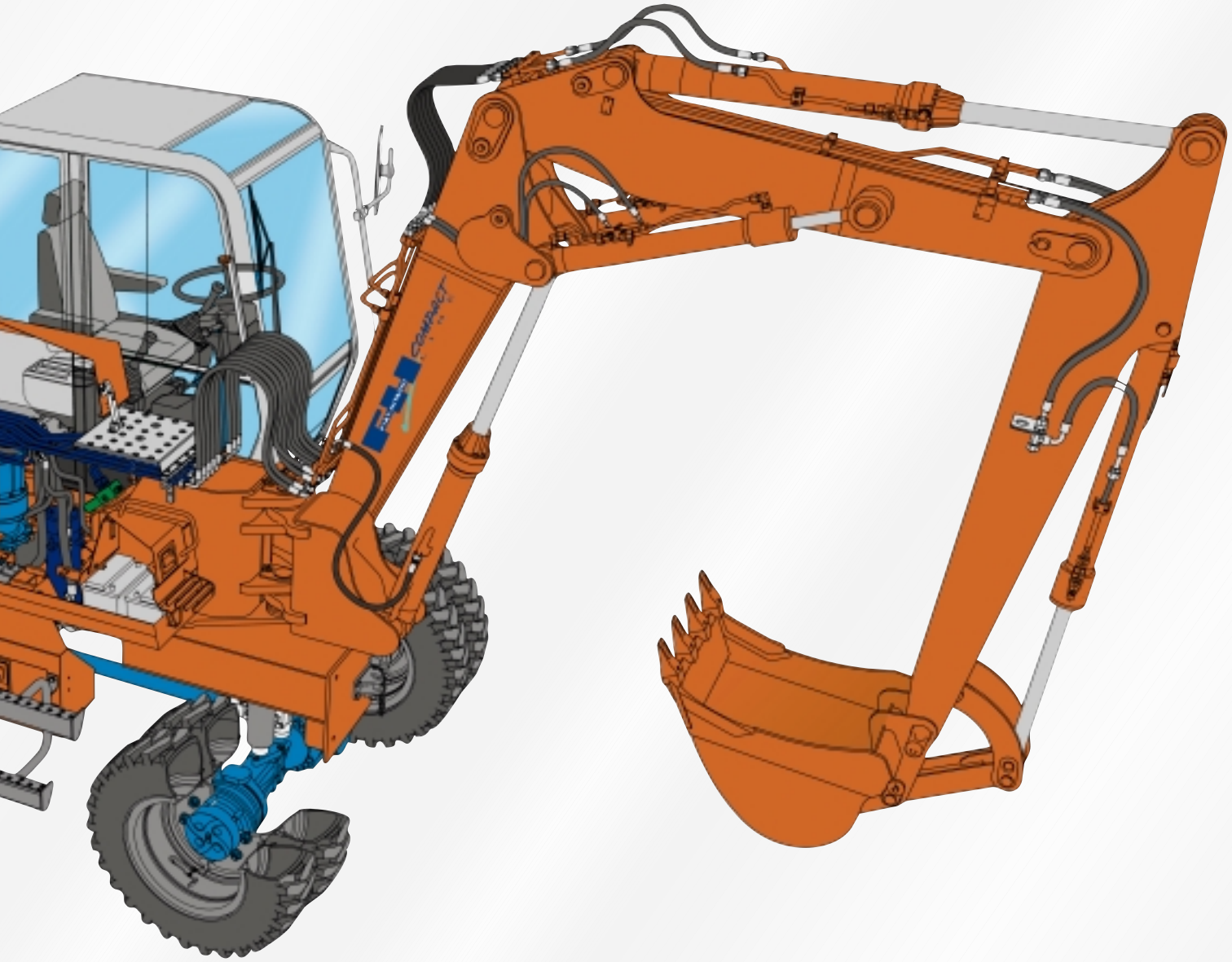
Superstructure slewing with the SPC (Swing Pressure Control) device
The **SPC** acts “automatically” on superstructure slewing pump delivery for immediately available pressure and precise response to slewing control or peerless soft superstructure stopping.

The 3- transfer and 3-operating 6-speed hydrostatic transmission means selecting proper transfer of operating speed with top precision.
The variable displacement hydraulic motor guarantees constant speed adjustment to the tractive effort demanded to ensure top speed or steep slope coverage.

Sturdy oil bath disc brake axles.
Both steering oil bath disc brakes ensure soft and effective braking. This solution eliminates the need for brake adjustment.

FIAT-HITACHI COMPACT LINE

The new LOAD SENSING hydraulic system with variable delivery double pump and closed centre main hydraulic control valve ensures **great application versatility and excellent operating performance** when digging, levelling, finishing and moving dirt. **The CS Cross Sensing device** enables you to **exploit all engine power** on one function only or its optimum automatic distribution in **simultaneous movements** of superstructure slewing, boom lifting and dipper stick boom opening.



Grease bath circle

FIAT-HITACHI
MIDI EXCAVATORS
RELIABILITY

New double proof electrical connections
The new double proof electrical connections ensure total protection against humidity and possible liquid infiltration.
All electrical wires are coded for easy identification of the function they are connected to.

Hew hydraulic hoses with front seals
All hydraulic hoses feature front seals to prevent all possible oil leaks.
The same system as used on higher-class FIAT-HITACHI crawler excavators.

HD Heavy Duty booms for severe applications
The booms on the new FIAT-HITACHI midi excavators are designed and built with state-of-the-art CAD-CAM technologies for top reliability and top performance.
The boom to frame connection area is reinforced to guarantee the same performance level and **reliability even when working slewed.**
Robot controlled industrialised boom guarantees high quality standards.

New main hydraulic control valve
The new pressure compensation main hydraulic control valve with anti-saturation valves guarantees not only perfect excavator controllability but also features constructional items such as controlled balance rods, delivery pre-adjustment and the like for long-lasting top reliability

New hydraulic oil and engine coolant radiators
New design and increased radiating mass for regular operation even in the hottest climates. The special blade design and optimum radiator location ensure excellent accessibility and easy cleaning.

New generation engine rpm adjustment
The new FIAT-HITACHI midi wheel excavators feature the innovative STEP MOTOR adjustment system.
This device connected to the on-board computer and the accelerator potentiometer hand control ensures constant and precise engine rpm adjustment.

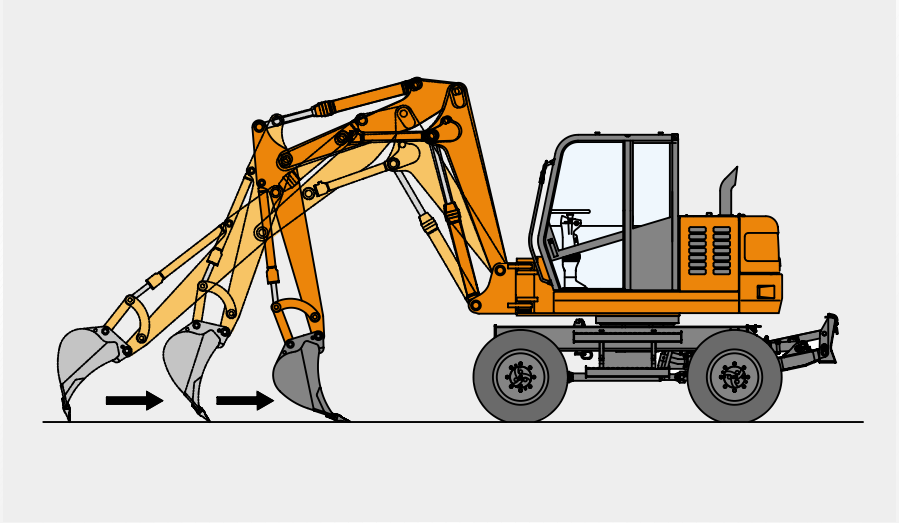
FIAT-HITACHI
MIDI EXCAVATORS
PERFORMANCE

The clamshell bucket rotation feature reaching the dipper stick and predisposition for the hammer system are supplied standard.

One-piece bucket control rod.
Top reliability and fast bucket replacement.
Great bucket opening angle for easy plinth digging.

Specific antidrop valves are supplied as standard equipment on the positioning, slewing, blade and axle locking cylinders to ensure booms remain exactly in the position selected for safe operation.

Damped travel end hydraulic cylinders
The special design of the hydraulic travel ends inside the cylinders guarantees:
- Soft manoeuvres
- No cylinder or boom stress
- Increased operator comfort



FIAT-HITACHI COMPACT LINE

Exceptional precision and productivity
The LOAD SENSING hydraulic system with UNLOADING valve features precision and operating speed to simplify even the toughest jobs such as levelling, which requires combined finishing and backfill compacting.

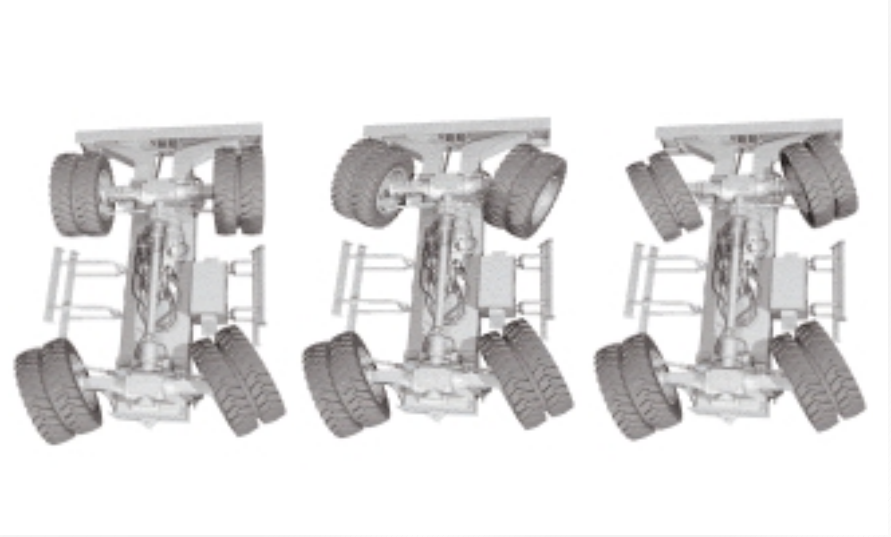
Totally simultaneous movements
The new technology of its components means the hydraulic system features simultaneous movements **at speed independent of pressure for different uses.**
The outcome is **outstanding operating speed coupled with perfectly homogeneous movements.**

Reduced superstructure slewing (1490 mm) matched with boom wing means operating in cramped areas and reducing unit overall dimensions in **road maintenance jobs.**

FIAT-HITACHI

MIDI EXCAVATORS

VERSATILITY



Steering selector easy to reach and actuate.

4-wheel steering.
The two steering axles are a feature that increases the versatility of these machines.
The advantages: selection of three different types of steering action:

- **1 axle**, for normal on the road and yard transfers
- **2 axles**, where reduced steering radius is needed to move in very cramped areas (only 3.6 m steering radius at the wheel outside)
- **crab steering**, to move sideways with the wheel parallel and approach/leave the operating area without complicated manoeuvres

Recovery of precise rear wheel alignment is indicated with a special light.

Wall side digging.
Optimum boom swing and design enables the operator to position the unit perfectly at the wall side. Crab steering means the operator can approach and leave the digging area with very simple manoeuvres.

Possible versions of the basis wheel unit.

Stabiliser blade and/or stabilisers.
Its robust construction gives the excavator excellent operating stability. Note the 614-mm blade lift height for 36° high ramp angle. Both the blade and the stabilisers are supplied standard with **lock valves**, to guarantee operator safety.

FH90W side digging version.
The ideal choice for **trenching** in urban maintenance jobs and wherever operations require small overall dimensions, easy movements, and versatility.
Easy **digging beyond the wall side** both sides.
Perfectly vertical side digging.
Great performance.

FIAT-HITACHI
MIDI ESCAVATORS
COMFORT

Continuous adjustment tiltable operator seat
The tiltable steering wheel enables personalised operator positions and features maximum visibility to the digging area.

The motorcar-style front instrument panel enables full operator control of:
- travel speed
- speed selected
- braking system pressure
- steering mode selected

On the right, the ergonomic and easily actuated control switch and axle lock.

Comfortable cab with ample glass areas
Transparent upper canopy for maximum visibility at full height.
Rear sun shield. Ample glass area for complete visibility both on the job and on-road transfers.

Multi-function hand controls
Enable actuation of all excavator functions, including the stabilisers, the blade and all supplementary hydraulic functions, such as the hammer for instance, without having to remove the hand from the controls.

Wide operators seat with armrests supplied standard for improved operator comfort.

On-board electronic instrument panel for immediate level checks

Potentiometer hand accelerator
Precise and easy engine rpm selection. When actuated, **push button E** enables **fuel consumption reduction** for all jobs not requiring maximum productivity.

FIAT-HITACHI COMPACT LINE

The operator compartment
A comfortable working environment is the basis of daily productivity.

- Ample internal room
- Rational control location
- Efficient ventilation system
- Quiet operation

FIAT-HITACHI
MIDI ESCAVATORS
ACCESSIBILITY

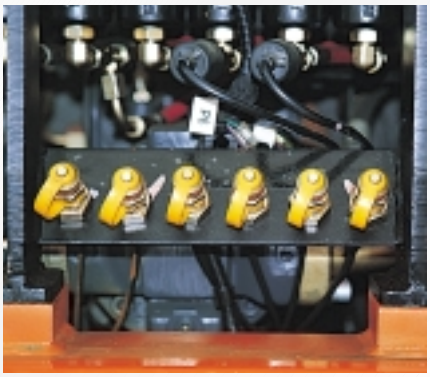
Fuel purging pump, fuel and air filters positioned for easy maintenance.

Batteries easily accessed from ground level, automatic battery cutout device.

Completely liftable fibreglass reinforced rear cover to access the rear of the unit for easy and fast maintenance.
Hinged side panels openable from the inside to easily access the radiator, the pumps, and the main control valve.
Anti-vandalism locks

Easily accessed **fuse box holder**

Spacious tool kit compartment.



Quick-disconnect PTOs.

Standard key for engine start and all doors

An easy compartment to access and leave
Positioning of the ladder and cab door means the operator can enter and leave the machine in absolute safety and with the greatest of ease.

TECHNICAL FEATURES

"EUROMOT 1 emissioned" ENGINE

Rated power (ISO/TR 14396) .....76 HP / 57 kW
Rated rpm (transfer) 2000
Rated power (EEC 80/1269) .....71 HP / 53 kW
Operational rated rpm.....1800
Make and model .....PERKINS - 1004.42
Type .....diesel, 4 stroke, direct injection, natural aspiration
Number of cylinders 4
Displacement .....4233 cm^3
Bore and stroke .....103 x 127 mm
"Auto Idling" device to return engine automatically to minimum rpm with controls in neutral. The device can be cutout manually with the switch in the cab.
Engine rpm **electronic control** with a knob hand control.
Pushbutton E (Economy) to reduce fuel consumption.
Cold start device for easy engine starts down to - 18 °C outside temperature.

ELECTRICAL SYSTEM

Operating voltage.....24 V
Batteries in series, maintenance free 2
Rating.....75 Ah
Alternator .....55 A
Starter .....4 kW

HYDRAULIC SYSTEM

New "Load Sensing" hydraulic system with implement control closed centre and **CS Cross Sensing** type superstructure slewing circuit for simultaneous movements.
SPC Swing Pressure Control Device for top controllability and operating comfort during superstructure accelerations and stops.
Main pumps:
1 variable delivery piston type pump for implement/travel control
maximum delivery.....150 l/min
maximum operating pressure .....350 bar
1 variable delivery piston type pump for superstructure slewing control
maximum delivery.....50 l/min
maximum operating pressure .....310 bar

Cylnders:	number	bore x stroke
lift	1	100 x 750 mm
digging	1	100 x 750 mm
*positioning	2	70 x 610 mm
bucket	1	70 x 750 mm
swing	1	100 x 550 mm
blade	2	80 x 200 mm

*(only triple articulation)
Cylinders with hydraulic travel end stop for less stress on implements and greater operating comfort.

SWING

Swing motor.....axial piston type
Swing brake .....automatic disk type
Reduction unit .....oil bath epicyclical
Swing ring.....grease bath
Swing speed.....9 rpm

TRANSMISSION

Hydrostatic 4-wheel drive. The hydraulic motor operates through an electro-hydraulic shift for two speed ranges.
Travel speed .....km/h
1st.....0 - 10
2nd .....0 - 20
3rd.....0 - 30
Maximum slope 16%
Operating speed .....km/h
1st.....0 - 4
2nd .....0 - 7
3rd .....0 - 11
Maximum slope 60%

AXLES

Oil bath disk brake axles.
Rear axles: steering, rigid.
Front axles: steering, oscillating:
total oscillation .....15°
vertical travel .....290 mm
The front axle can be locked hydraulically at any position.

STEERING

Selection of 3 steering modes: 2 wheels, 4 wheels, crab.
Steering mode selection with a selector in the cab, rear wheel alignment indicated with a light in the cab , steering mode selection indicated in the cab with lights and ideograms.
Steering type .....ORBITROL with safety valves
Pump .....gear type
Double effect double stem cylinder
Steering can be with engine cut out and excavator on the move.
Steering radius at tyre outside:
front axle steered .....6000 mm
rear and front axles steered .....3600 mm

BRAKING SYSTEM

Service: oil bath disk type on the 4 wheels with double independent circuit.
Parking: multiple oil bath disk type. Mechanically applied, electro-hydraulically released.
Emergency: double independent circuit to ensure braking on at least one axle in case of failure.
Operating: on service brakes.

TYRES

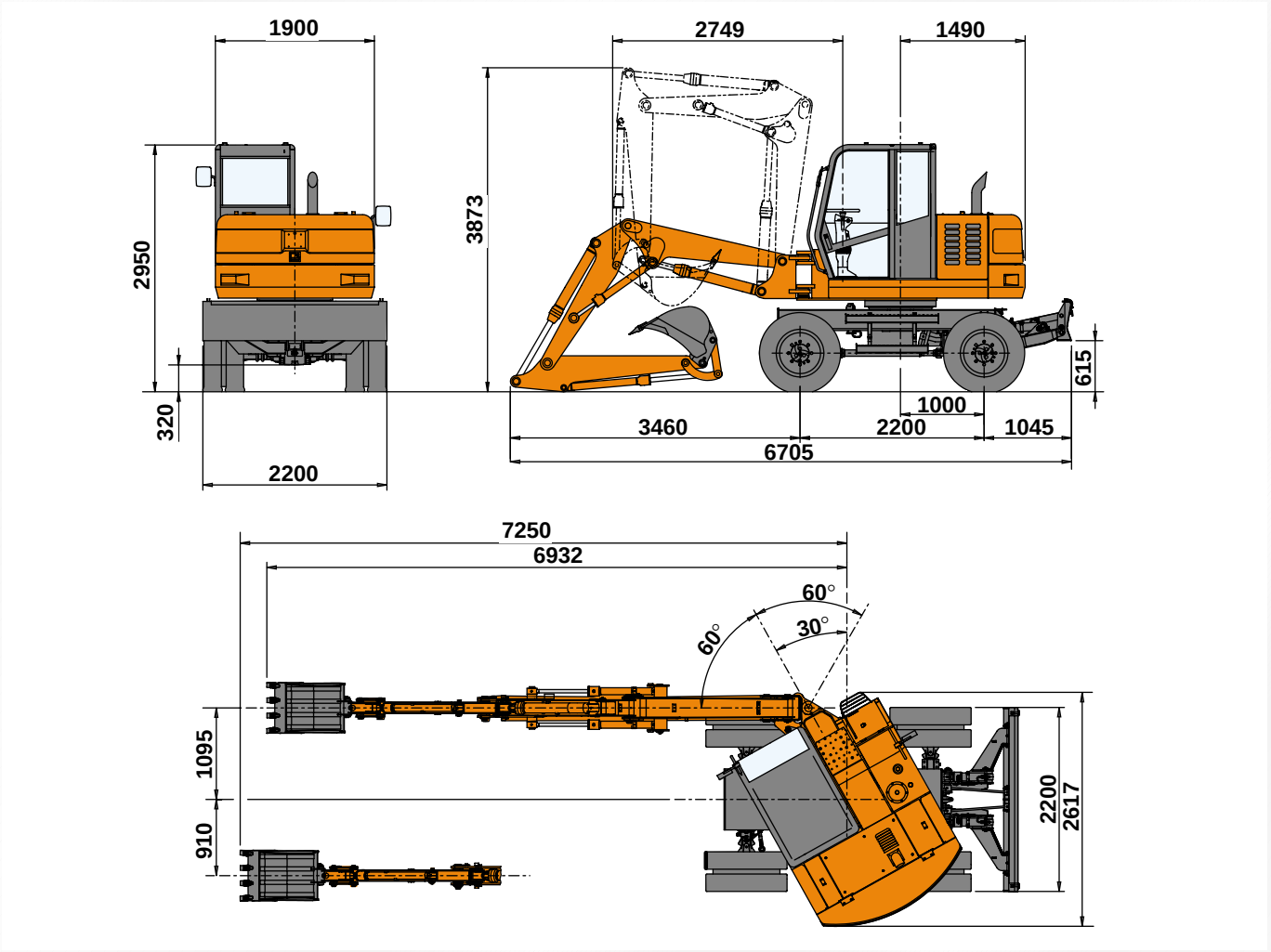
Sizes available .....8.25 - 20 twinned, with spacer ring
.....500/45-20 single

CAPACITIES

Engine .....litres
Lube oil.....8.5
Coolant.....18.5
Fuel 147
Hydraulic system 120
Swing reduction.....3
Axles (total) 19

TRIPLE ARTICULATION

DIMENSIONS (mm)



OPERATING WEIGHT (kg)

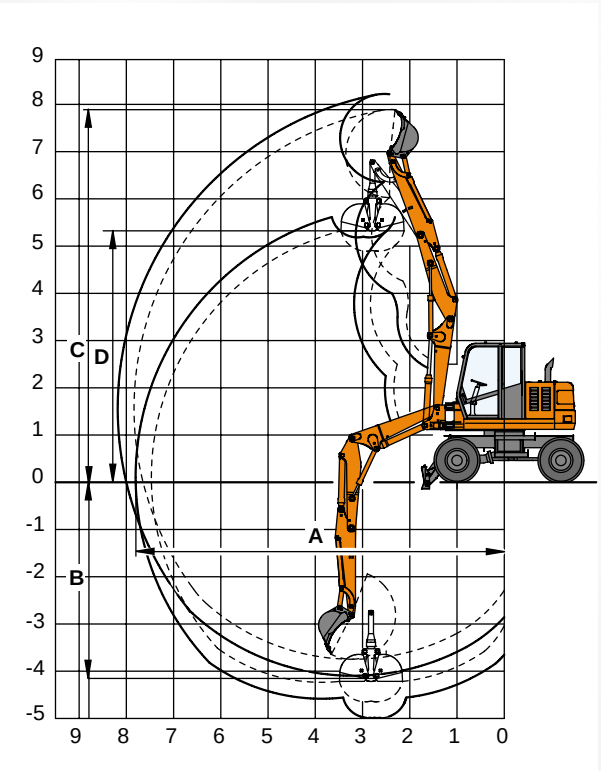
Rear blade	Rear stabilisers	Rear stabilisers and front blade
9040	8890	9390

(machine with 1850 mm dipper stick, 600 mm bucket, twinned wheels, full fuel tank, operator)

DIGGING PERFORMANCE

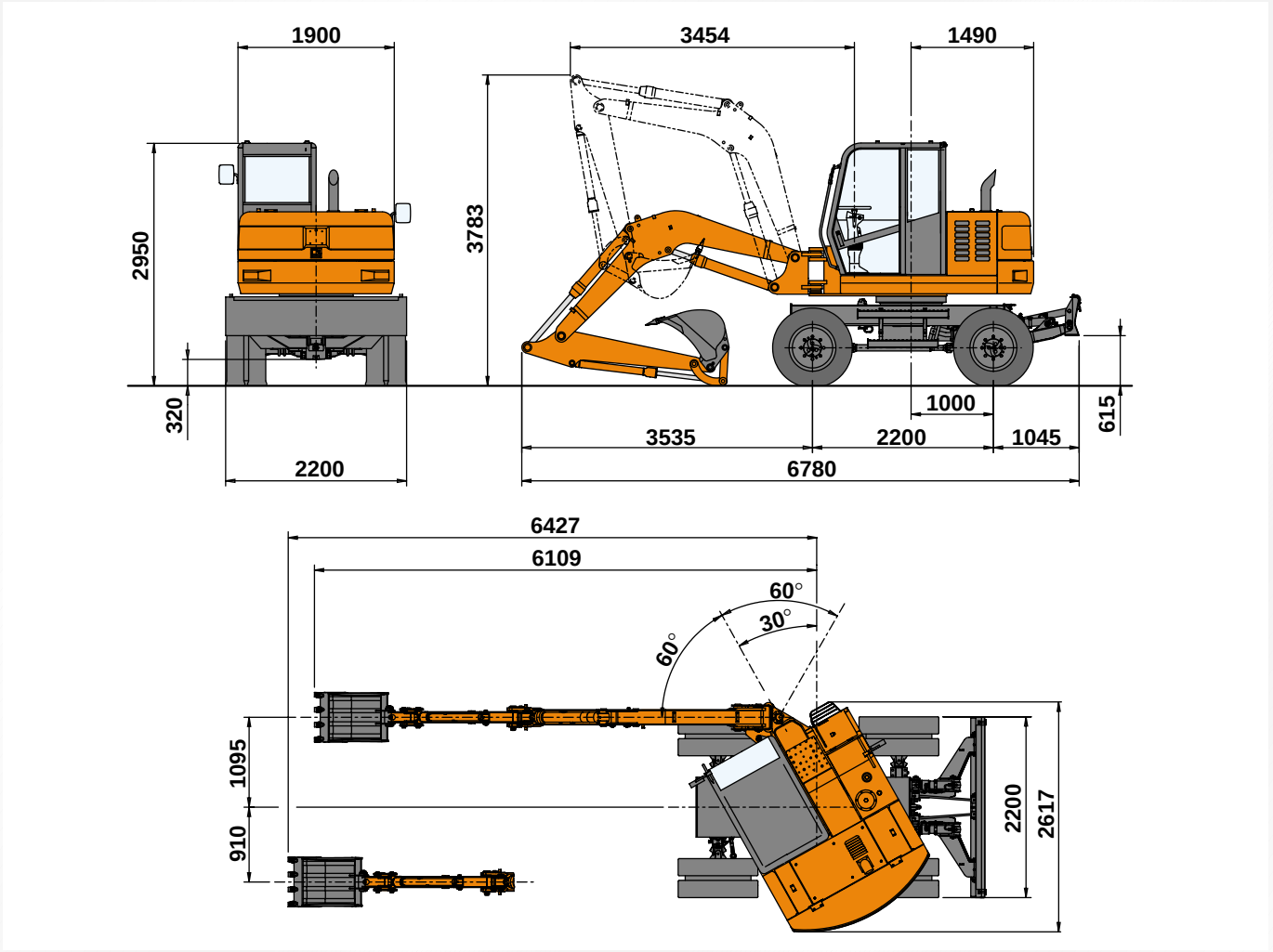
		Backhoe		Clamshell (**)	
Digging boom	**mm**	**1850**	**2200**	**1850**	**2200**
Maximum reach	mm	7840	8190	7450	7800
A) Reach at ground level	mm	7650	8000	-	-
B) Digging depth	mm	3750	4100	4650	5000
Vertical digging depth	mm	3585	3950	-	-
C) Digging front height	mm	7895	8225	-	-
D) Dump height	mm	6030	6355	4895	5125
Front swing radius(*)	mm	3240	3465	-	-
Breakout force:					
Bucket	daN	5400	5400	-	-
Dipper stick	daN	4400	3900	-	-

(*) With boom straight.
(**) Performance depends on clamshell bucket selection to be made according to lift capacity.



MONOBOOM

DIMENSIONS (mm)



OPERATING WEIGHT (kg)

Rear blade	Rear stabilisers	Rear stabilisers and front blade
8860	8710	9210

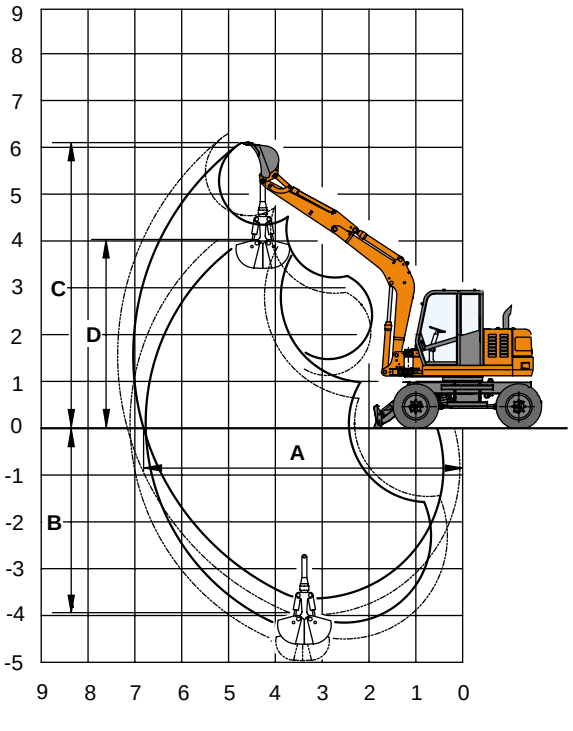
(machine with 1850 mm dipper stick, 600 mm bucket, twinned wheels, full fuel tank, operator)

DIGGING PERFORMANCE

		Backhoe		Clamshell (**)	
Digging boom	**mm**	**1850**	**2200**	**1850**	**2200**
Maximum reach	mm	7040	7385	6770	7100
A) Reach at ground level	mm	6815	7160	-	-
B) Digging depth	mm	3635	3985	4570	4920
Vertical digging depth	mm	3280	3670	-	-
C) Digging front height	mm	6110	6305	3400	3595
D) Dump height	mm	4340	4540	-	-
Front swing radius(*)	mm	3090	3115	-	-
Breakout force:					
Bucket	daN	5400	5400	-	-
Dipper stick	daN	4400	3900	-	-

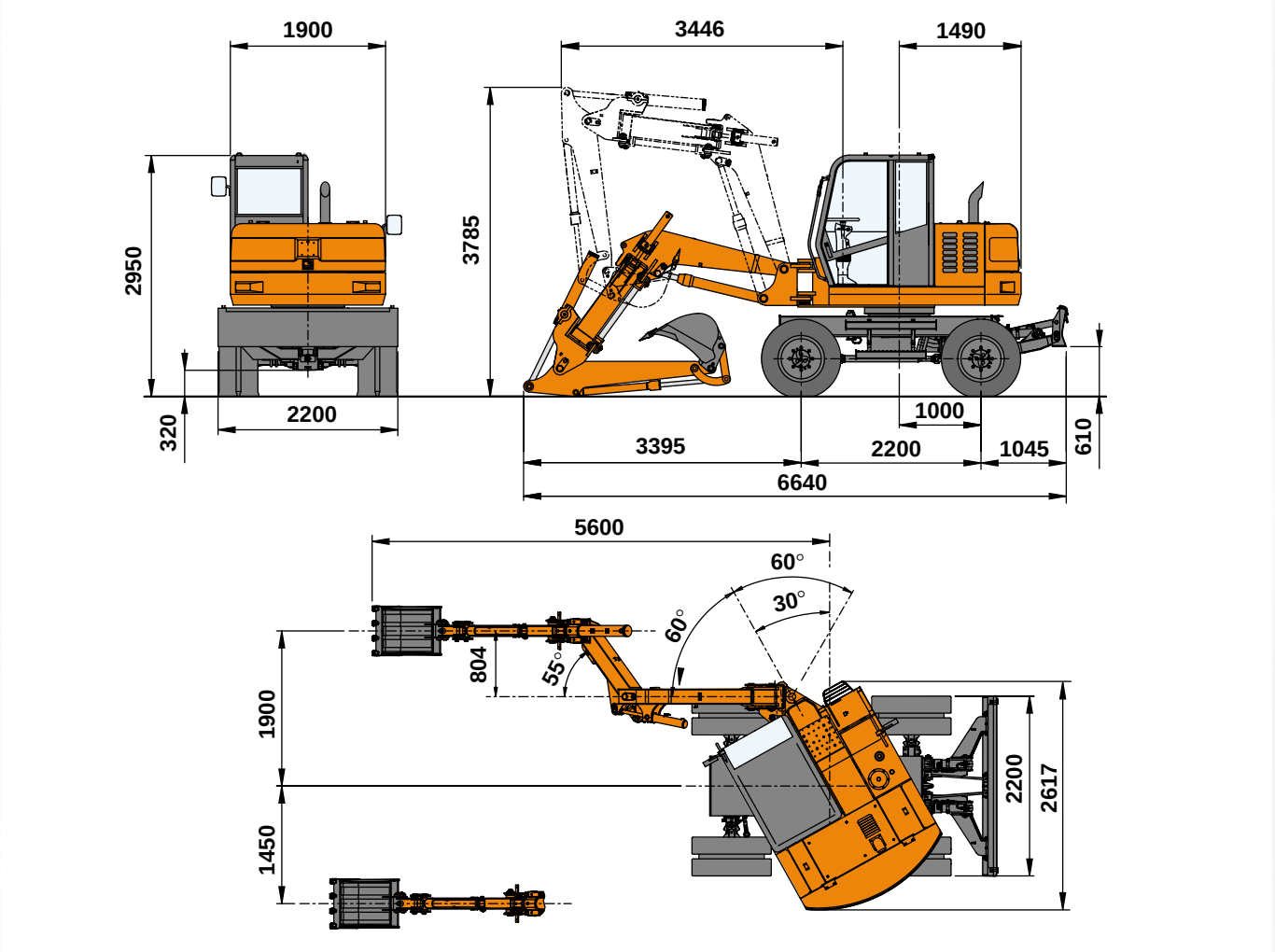
(*) With boom straight.

(**) Performance depends on clamshell bucket selection to be made according to lift capacity.



SIDE DIGGING

DIMENSIONS (mm)



OPERATING WEIGHT (kg)

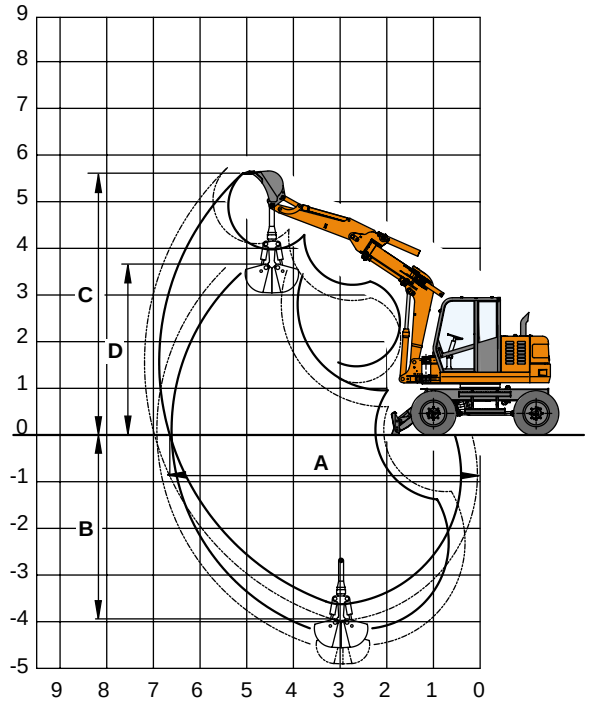
Rear blade	Rear stabilisers	Rear stabilisers and front blade
9110	8960	9460

(machine with 1850 mm dipper stick, 600 mm bucket, twinned wheels, full fuel tank, operator)

DIGGING PERFORMANCE

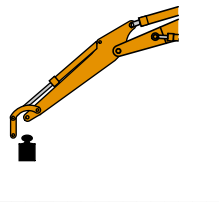
		Backhoe	
Digging boom	**mm**	**1850**	**2200**
Maximum reach	mm	6875	7215
A) Reach at ground level	mm	6650	6990
B) Digging depth	mm	3625	3975
Vertical digging depth	mm	3190	3580
C) Digging front height	mm	5600	5760
D) Dump height	mm	3980	3780
Front swing radius(*)	mm	3070	3070
Breakout force:			
Bucket	daN	5400	5400
Dipper stick	daN	4400	3900

(*) With boom straight.



LIFTING CAPACITIES

With blade or two stabilizers on ground
(Kg x 1000)



Reach										
1,5 m		3,0 m		4,5 m		6,0 m		**Max reach**	
Front	Side	Front	Side	Front	Side	Front	Side	Front	Side

1850 mm Dipper stick

Height									
+6.0 m	Triple art./Offset boom			*2.36	1.53			*2.36	1.43
	One piece boom								
+4.5 m	Triple art./Offset boom			*2.21	1.55	*1.89	0.97	*1.89	0.95
	One piece boom			*1.98	1.55			*2.02	1.50
+3.0 m	Triple art./Offset boom			*2.56	1.46	*1.90	0.96	*1.70	0.79
	One piece boom			*1.90	1.64			*1.76	1.14
+1.5 m	Triple art./Offset boom	*3.42	2.72	*2.92	1.34	*1.97	0.91	*1.55	0.75
	One piece boom			*2.09	1.36			*1.80	1.05
0	Triple art./Offset boom	*4.53	2.30	*2.77	1.28	*1.82	0.89	*1.37	0.78
	One piece boom	*2.29	1.26	*2.56	1.23			*2.12	1.11
-1.5 m	Triple art./Offset boom	*2.56	2.31	*2.02	1.29			*1.02	0.91
	One piece boom	*3.41	1.79					*2.36	1.46
-2.5 m	Triple art./Offset boom	*3.20	2.39					*1.92	1.49
	One piece boom								
-3.0 m	Triple art./Offset boom								
	One piece boom								

2000 mm Dipper stick

Height									
+6.0 m	Triple art./Offset boom			*2.10	1.57			*2.03	1.21
	One piece boom								
+4.5 m	Triple art./Offset boom			*2.04	1.58	*1.77	0.99	*1.64	0.86
	One piece boom			*1.71	1.60			*1.64	1.35
+3.0 m	Triple art./Offset boom			*2.41	1.49	*1.83	0.96	*1.53	0.73
	One piece boom			*1.64	*1.64			*1.46	1.06
+1.5 m	Triple art./Offset boom	*2.52	2.52	*2.85	1.35	*1.94	0.91	*1.45	0.69
	One piece boom			*1.84	1.37	*1.69	0.99	*1.49	0.98
0	Triple art./Offset boom	*4.49	2.29	*2.85	1.27	*1.88	0.87	*1.30	0.71
	One piece boom	*2.00	1.25	*2.33	1.16			*1.72	1.03
-1.5 m	Triple art./Offset boom	*3.24	2.27	*2.24	1.26	*1.38	0.88	*1.02	0.82
	One piece boom	*3.20	1.56	*2.69	1.43			*2.23	1.30
-2.5 m	Triple art./Offset boom	*2.87	2.34	*1.42	1.30			*1.16	0.76
	One piece boom	*3.10	2.62					*2.12	1.91
-3.0 m	Triple art./Offset boom	*2.88	2.39					*1.81	1.58
	One piece boom								

Values are according with ISO 10567, with excavator without bucket, equipped with bucket cylinder, and bucket linkage.
Lifting capacities does not exceed 75% of tipping load or 87% of full hydraulic capacity.
Data marked with an asterisk (*) are limited by hydraulic capacity.

STANDARD EQUIPMENT

Standard equipment may change according to the country. Consult the Fiat-Hitachi Dealer.

ENGINE
Alternator 55 A
Anti-freeze
Engine preheating
Dry air filter with safety cartridge
Maintenance-free batteries

ELECTRICAL SYSTEM
24 Volt
Horn
Working lights
Road circulation lights

HYDRAULIC SYSTEM
Load Sensing
Hydraulic hoses and connections with seals
Hydraulic cylinders with hydraulic travel end
Antidrop valves for positioner, slewing, blade, and axle locking cylinders

CAB
Cab with heating, heat protection glasses, windshield wiper, washer, rear sun shield
Damped seat with independent adjustment control
Safety belts
Tiltable steering column
Radio
Travel foot control

ON BOARD MONITOR
Indicators:
- Engine coolant temperature
- Fuel level
- Tachometer
- Brake pressure gauge
- Hourmeter

Warning lights
- Engine oil lever
- Coolant level
- Hydraulic oil level
- Battery charge
- Engine oil low pressure
- Air filter clogging
- Engine overheating
- Low fuel level
- Operating lights
- Position lights
- Steering mode
- Rear wheel alignment
- Engine preheating
- Automatic idling on
- E Economy mode on
- Level checks
- Axle lock
- Parking bake
- Operating brake
- Brake pressure
- Emergency lights
- Direction indicators
- Piloting system off
- Rotating light
- 1st gear
- 2nd gear
- TB / EX

Switches:
- Horn
- Emergency lights
- Piloting system off
- Level checks
- Automatic idling
- Buzzer off
- Operating lights
- E Economy mode on
- Parking, operating brake and axle locking selector
- Speed selector (1st and 2nd mechanical)
- Steering mode selector
- Rpm control selector
- Cab heating selector
- Air conditioning selector (optional)
- Engine starter selector
- Windshield wiper lever
- Lights and direction indicator control lever
- Hydraulic speed control lever
- Steering column tilt lever
- Servo control cut out safety lever
- Swing locking lever

FRONT IMPLEMENT
One piece boom
Triple articulation
Offset boom
1850 mm dipper stick
Predisposition for hydraulic demolition hammer system
Predisposition for branch cutter system
Clamshell bucket hydraulic system
Clamshell bucket rotation hydraulic cylinder
600 mm bucket

UNDERCARRIAGE
Grease bath circle
Rear stabiliser blade
Tool hit holder
2 steering axles
Front axle locking
Twinned 8.25 - 20 tyres with spacer ring

MISCELLANEOUS
1650 Kg counterweight
Internal and external sound deadening
Standardised lock doors

OPTIONAL ACCESSORIES

Air conditioning
280 to 800 mm backhoe buckets
2200 mm dipper stick
FOPS, FGPS
Digging and lift cylinder anti-drop valves
Hydraulic hammer system
Branch cutter system
Rear stabilisers
Rear stabilisers and front blade
Front and rear stabilisers
Single 500/45-20 tyres
Fuel pump
Stabiliser rubber shoes
Clamshell bucket support
Rain protection canopy

BACKHOES

SAE capacity	Width	Weight with teeth
m^3	mm	kg
0,050	280	78
0,075	350	85
0,145	450	128
0,181	600	137
0,217	700	147
0,290	800	163

Bucket selection depends on machine equipment and operating conditions.

FIAT-HITACHI

At your dealership

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