

products range

N Series



2.8 | 5.5 Ton.



Models inside

28N | 35N | 55N



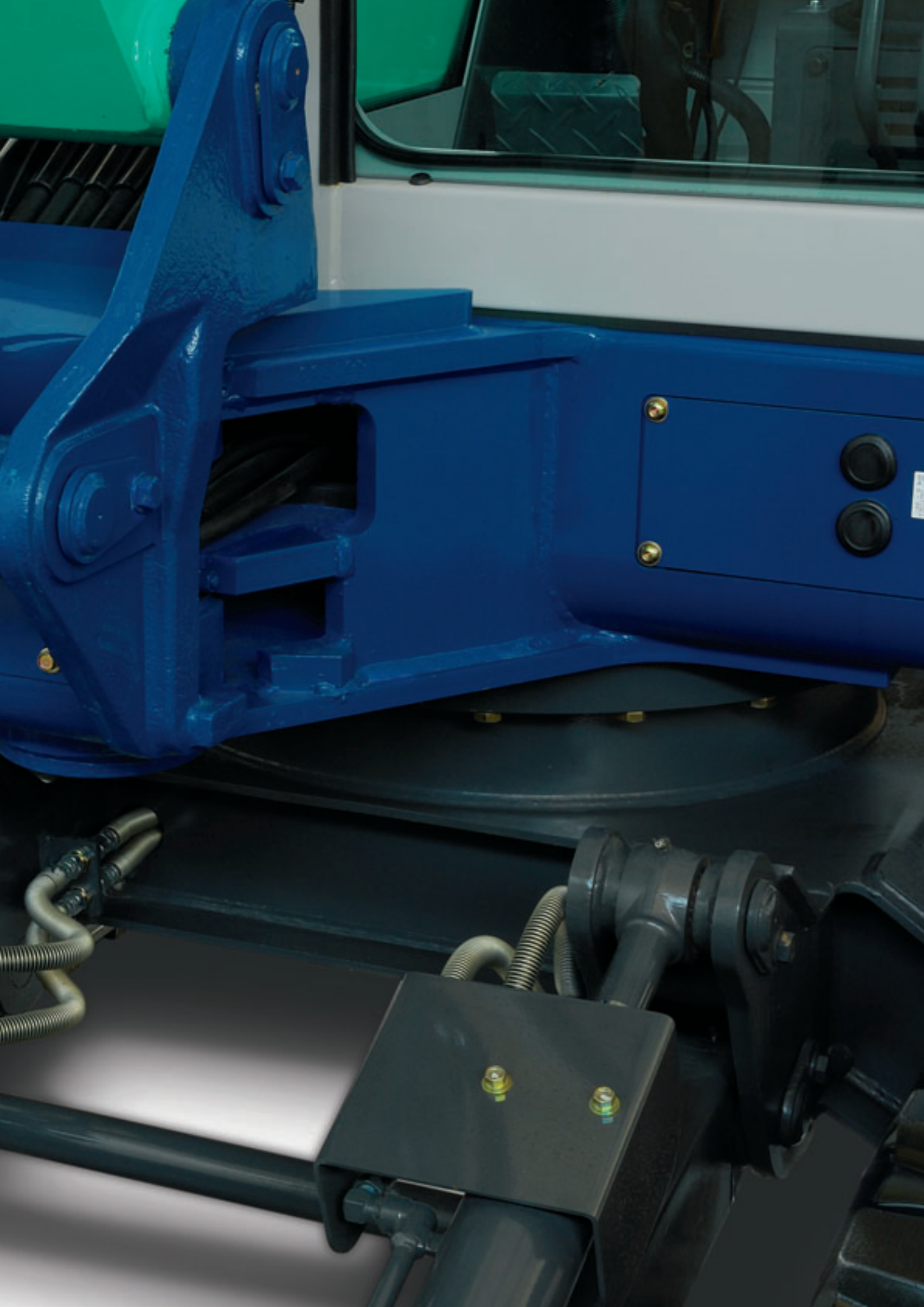
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CE IHI
Model No. ...
Serial No. ...
Date of Commissioning ...
Name of Commissioning Dept. ...
Name of Commissioning Officer ...







28N | 35N

The front-line device

N Series, environmentally friendly and safety conscious Standard mini-excavators. The latest model of clean engines are equipped in eco-friendly "N Series" and they are compliant with gas emission for EC Stage IIIA. N Series provides superior performance and preeminent stability and workability.



TOP CLASS PERFORMANCES

A powerful engine combined with a variable capacity pump hydraulic system affords top class performance. Bucket penetration forces of 19.6 kN for the 28N, 26.5 kN for the 35N.

STAGE IIIA YANMAR DIESEL ENGINE

Stage IIIA Yanmar 3TNV82 diesel engine for 28N3 and stage IIIA Yanmar 3TNV88 diesel engine for 35N3 generates a power output of 22.7 HP (28N3) and 27.3 HP (35N3) at 2300 rpm. The Yanmar engine and the high-efficiency hydraulic circuit ensure minimal noise, low fuel consumption and pollution emissions reduced to the minimum. The bore/stroke ratio close to 1 (82 mm x 84 mm for 28N3 and 88 mm x 90 mm for 35N3) denotes an engine with little vibration due to the less inertia and linear velocity of the piston. The new TNV series complies with current regulations on pollution emissions.



STABILITY AND DIGGING PERFORMANCE

The structure and width of the undercarriage allows an efficient weight distribution for excellent stability when working in critical situations or on muddy ground. The large hydraulic bucket cylinder is well-protected against impact and site damage.

GREATER RELIABILITY AND DURABILITY

The toughness of all three models in the series is further enhanced by the employment on an uprated boom pivot and the strength of the boom itself. All body panels are made from sheet steel.

MINIMUM DISTANCE BETWEEN THE BUCKET AND DOZER BLADE

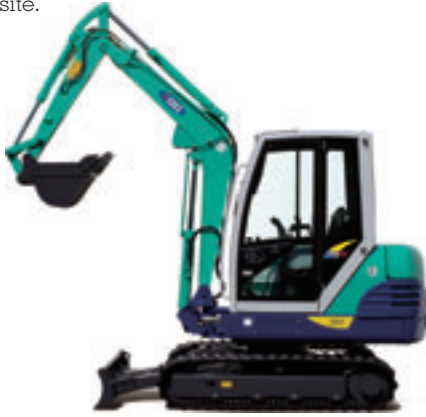
Thanks to the optimum geometry of the boom movements and the reduced distance between the bucket and the dozer blade, it is possible to excavate very close to the blade itself, thus facilitating the loading of stones or excavated material.



The 28N3

Ideal traditional mini excavator.

With an operating weight of 3010 kg, this is the smallest machine in the series, but it offers big performance; a digging depth of 2520 mm (2820 mm with the long arm), stability and safety ensured by the dimensions of the undercarriage, exceptional operating capacity and high level of operator comfort. The travel speed system (2.3/4.5 km/h) enables fast travel on site.



The 35N3

An operating weight of 3460 kg, a digging depth of 3150 mm (3450 mm with long arm) and perfect weight distribution make this the ideal machine for more arduous tasks. The travel speed combined with the Power Booster System (pressure boost) gives this machine strength, agility and manoeuvrability. The high speed drive system (2.8/4.8 km/h) is controlled by a floor-mounted pedal. The 35N3 is provided by proportional control roller mounted on right joystick to control the double action hydraulic circuit for accessories.



STATE-OF-THE-ART CAB

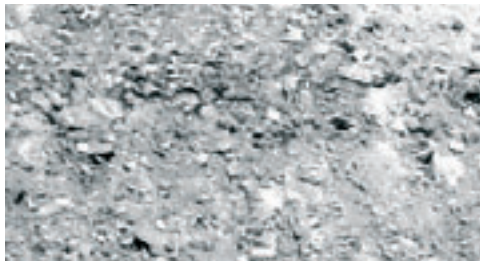
The new generation cab of the series N3 mini excavators (optional for the 28N3 model) provides a roomy operation station while the extensive glass area ensures 360° visibility. Interior trim in preformed polyester and the rear storage compartment console in moulded ABS give the cab a touch of luxury. The openable front window, easily positioned under the canopy, the sliding side window, as well as the door with hold-open device, allow plenty of ventilation in hot weather conditions.

Specifications	28N	35N
Canopy / Cab operating weight w/RS	2875 / 3010 kg	3325 / 3460 kg
Standard bucket	500 mm	600 mm
Carriage width	1550 mm	1550 mm
Rear turning radius	1280 mm	1390 mm
Maximum digging depth	2520 mm	3150 mm



EXCEPTIONAL OPERATOR COMFORT

An exceptional level of operator comfort is ensured by the adjustable suspended seat, ergonomic control layout and joystick operated servo controls with armrest for maximum precision and minimum effort. When the operator leaves the driving seat, a safety system inhibits all operation of the the boom, bucket, slewing and travel functions.



TOPS-ROPS-FOPS CERTIFICATION

The canopy and cab provide maximum protection for the operator: both the canopy and the cab (with 4 pillars) conform to international TOPS (Tip Over Protection), ROPS (Roll Over Protection) and FOPS (Falling Object Protection) standards.

MAXIMUM VISIBILITY

The off-centre location of the boom relative to the operator and the careful positioning of the hydraulic hoses ensure maximum operating visibility. The hoses are also positioned to reduce the risk of site damage to a minimum.



QUICK AND EASY SERVICING

Inspection and maintenance operations are quick and easy thanks to the easy accessibility of all serviceable components. The spacious engine compartment is easily accessed; the side panels can be removed in just a few seconds.



VARIABLE CAPACITY HYDRAULIC PUMPS

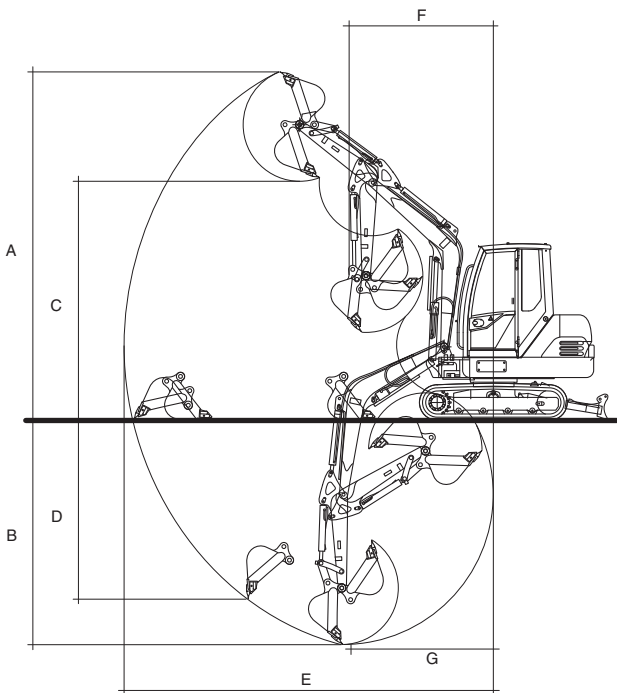
The sophisticated hydraulic circuit with variable capacity pumps allow multiple control operations for greater working efficiency and speed.



EXCELLENT CONTROL

The hydraulic control valve with new spool design allows exceptionally smooth and precise movements. The anti-shock valve incorporated in the boom circuit helps eliminate vibration generated during excavation.





Working range

	28N	35N
A Maximum dumping height	4050 mm (4280 mm)	4830 mm (5120 mm)
B Maximum digging depth	2520 mm (2820 mm)	3150 mm (3450 mm)
C Maximum digging height	2840 mm (3050 mm)	3350 mm (3620 mm)
D Maximum vertical digging depth	1950 mm (2290 mm)	2450 mm (2900 mm)
E Maximum digging radius	4310 mm (4610 mm)	5080 mm (5390 mm)
F Minimum front turning radius	1800 mm (1900 mm)	1930 mm (2040 mm)
at right boom swing	1430 mm (1530 mm)	1520 mm (1630 mm)
G Maximum digging depth radius	1730 mm (1730 mm)	2070 mm (2070 mm)
(...) with long arm		

Optional

■ Excavation and earthmoving equipment

- Long arm (+300 mm)

■ Frame

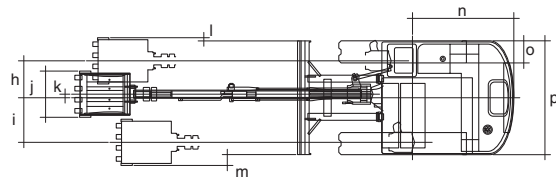
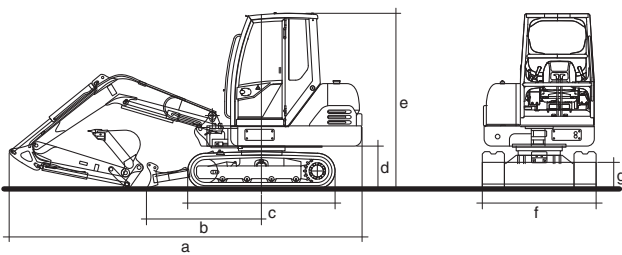
- Steel tracks

■ Lighting

- 2 additional front lights, 1 additional rear light on top of cabin

■ Comfort and safety

- Electrical antitheft system



Dimensions (mm)

	α	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
28N	4180	1470	1895	575	2380	1550	365	465	570	500	50	60	45	R 1280	300	1460
35N	4835	1580	2060	585	2420	1550	365	500	625	600	50	25	150	R 1390	300	1560

28N

35N



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General Specifications

STD. Bucket capacity (ISO)	0.08 m ³	0.11 m ³
STD. Bucket width	500 mm	600 mm
Machine weight R.S.* Canopy / Cabin	2800 / 2935 kg	3250 / 3385 kg
Operating weight R.S.* Canopy / Cabin	2875 / 3010 kg	3325 / 3460 kg
Transport dimensions	4180 x 1550 x 2310	4835 x 1560 x 2350 (2420 cabin)
Gradeability	30°	30°
Ground pressure	29.4 kPa	31 kPa
Minimum ground clearance	300 mm	305 mm
*Rubber Shoe		

Engine

Model	Yanmar 3TNV82A	Yanmar 3TNV88
N° cylinders / displacement	3 / 1330 cc direct injection	3 / 1642 cc direct injection
Bore x stroke	82 x 84 mm	88 x 90 mm
Max output	21.9 kW / 3000 min ⁻¹	27.1 kW / 3000 min ⁻¹
Rated output (ISO 1585)	22.7 HP α 2300 rpm (16.7 kW / 2300 min ⁻¹)	27.3 HP α 2300 rpm (20.1 kW / 2300 min ⁻¹)
Fuel consumption	258 g / kW-h	252 g / kW-h
Engine oil pan capacity	5.5 lt (Max level)	6.7 lt (Max level)

Electrical System

Voltage	12 V	12 V
Battery	12 V - 55 Ah	12 V - 55 Ah
Alternator	12 V - 40 A	12 V - 40 A
Starter motor	12 V - 1.7 kW	12 V - 1.7 kW

Hydraulic system

The Power Shift hydraulic circuit control system, with two variable displacement pumps and one gear pump, delivers maximum power, extremely easy handling and precise movements. The remote control circuit is supplied by another, autonomous gear pump.

Maximum flow	29.9 x 2 + 19.8 lt / min	40.3 x 2 + 24.6 lt / min
Max Pressure / Setting	20.6 MPa (210 kgf / cm ²)	20.6 MPa (210 kgf / cm ²)
Control	Hydraulic remote control	Hydraulic remote control

Double action hydraulic circuit for accessories

Maximum flow	48 lt / min	40.3 lt / min
Set pressure	20.6 MPa (210 kgf / cm ²)	20.6 MPa (210 kgf / cm ²)

End-of-stroke cushioning

Boom cylinder	rod fully extended	rod fully extended
Arm cylinder	rod fully retracted	rod fully extended
Swing cylinder	rod fully retracted and fully extended	rod fully retracted and fully extended

Slewing system

The swing system is assured with a hydraulic axial piston motor coupled to an epicyclic gearing drive reduction unit.

Swing speed	10 min ⁻¹	10 min ⁻¹
Turntable braking	automatic multi-disc brake	automatic multi-disc brake
Absorption of hydraulic shocks	shock less valve	shock less valve

Bucket performance

Max. bucket digging force (ISO 6015)	19.6 kN (2000 kgf)	26.5 kN (2700 kgf)
Max. arm digging force (ISO 6015)	14.5 kN (1480 kgf)	17.5 kN (1790 kgf)

Undercarriage

The lower frame is formed with two strong crawler frame joint to a welded and machined middle frame.

Undercarriage length R.S.	1895 / 1920 mm	2590 / 2590 mm
Crawler shoe width	300 mm	300 mm
Lower rollers	3 / 1	4 / 1
Track tension	tension spring and grease cylinder	tension spring and grease cylinder
Dozer blade size (Width x Height)	1550 mm x 365 mm	1560 mm x 365 mm
Lift above ground	370 mm	390 mm
Drop below ground	390 mm	450 mm

Travel system

Each track is driven by a two speed hydraulic axial piston motor coupled to an epicyclic gearing drive reduction unit.

Travel speed (1α / 2α)	2.3 / 4.5 km/h	2.8 / 4.8 km/h
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Capacity

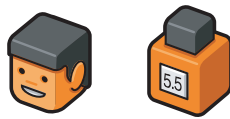
Fuel tank	49 lt	49 lt
Hydraulic tank	35 lt	35 lt
Engine oil	57 lt	60 lt
Engine coolant	4.5 lt	4.7 lt

Boom swing system

Right swing angle	90°	90°
Left swing angle	50°	50°

Other data

Noise level LwA (2000/14/EC)	93 dBA	94 dBA
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55N

Top-of-the-range performance

The high-power engine, combined with a hydraulic system featuring variable displacement pumps, offers top-of-the-range performance. A penetration force of 36.3 kN at the bucket translates into maximum digging capability, even on particularly compacted ground.



TOP-OF-THE-RANGE MACHINE

The operating weight of the machine is 5405 kg and its digging depth is 3850 mm (4100 mm with the long arm). This makes the 55N especially suitable for heavy-duty tasks which require a high level of productivity. The double flow rate action system on the arm cylinder increases the work rate, thereby reducing cycle times.

The 55N features double travelling speed which, combined with the Power Booster System, offers great strength and agility while making on-site handling as easy as possible.

The backfill blade is driven by two cylinders which increase its strength and stability, especially when it is used as a stabiliser during digging.

STAGE IIIA YANMAR DIESEL ENGINE

The mini-excavator is fitted with a low-speed Stage IIIA Yanmar 4TNV98 direct injection Diesel engine, which guarantees high power levels and maximum reliability, in addition to reduced consumption levels and low polluting emissions in line with current EC regulations. It offers a power level of 55.5 HP, at 2400 rpm.

Thanks to the radiator cooling fan, which has been increased in size, the temperature of the engine remains stable, even when operating intensively.

The bore/stroke ration close to 1 (98 mm x 110 mm).



STABILITY AND DIGGING PERFORMANCE

The structure and width of the carriage, coupled with efficient weight distribution, offer optimum stability during operation, even in particularly critical situations or on muddy ground. The large blade cylinder is well protected against impact and damage.

INCREASED RELIABILITY AND DURABILITY

The sturdiness of all three models has been increased even further, thanks to the use of a larger pivot in the arm and the sturdy structure of the arm itself. All the cowlings are made using sheet steel.

MINIMAL DISTANCE BETWEEN BUCKET AND DOZER BLADE

Thanks to the well-designed geometry of the arm movement and the minimal distance between the bucket and the dozer blade, digging may even be carried out near the blade itself, thereby facilitating the loading of stones or loosened material.

EXCEPTIONAL PERFORMANCE

Operating weight: 5405 kg.
Digging depth: 3850 mm
(4100 mm with the long arm).



Specifications

55N

Operating weight w/RS cab	5405 kg
Standard bucket	630 mm
Carriage width	2000 mm
Rear turning radius	1560 mm
Maximum digging depth	3850 mm

INCREASED OPERATOR COMFORT

The operator position is comfortable, thanks to the adjustable spring seat, the ergonomic design of the controls and the servo-assisted hydraulic joysticks which are fitted with arm rests, thus offering maximum precision while minimising the effort required. If the operator leaves the driving seat, a special system locks out all operating functions involving the main arm, foremost arm, bucket, upper frame rotation and travelling movements.

AN AVANT-GARDE CAB

This most up-to-date cab for mini-excavators in the range is a spacious environment in which the large glass surfaces offer maximum 360° visibility. The interior finishes in preformed polyester and the rear storage console in moulded ABS give the cab a striking and welcoming appearance. The windscreen with its conveniently-located opening just underneath the canopy, the sliding side window and the door with its open catch offer considerable ventilation when operating the machine in high temperatures.

TOPS-ROPS-FOPS CERTIFICATION

The canopy and cab offer maximum operator protection: both the cab and the canopy (which has 4 pillars) fully comply with the international TOPS, ROPS and FOPS standards (governing tip-over, roll-over and falling object protection structures respectively).

MAXIMUM VISIBILITY

The decentralised position of the arm in relation to the operator and the position of the hydraulic hoses offer maximum visibility during machine operation. The hoses are positioned so as to minimise the risk of damage during machine operation.



QUICK AND EASY MAINTENANCE

Maintenance and inspection procedures are quick and easy to perform, thanks to the fact that all components are extremely easy to access. The engine compartment is large and easily accessible, while the protective side panels may be removed in a matter of seconds.

VARIABLE DISPLACEMENT PUMPS

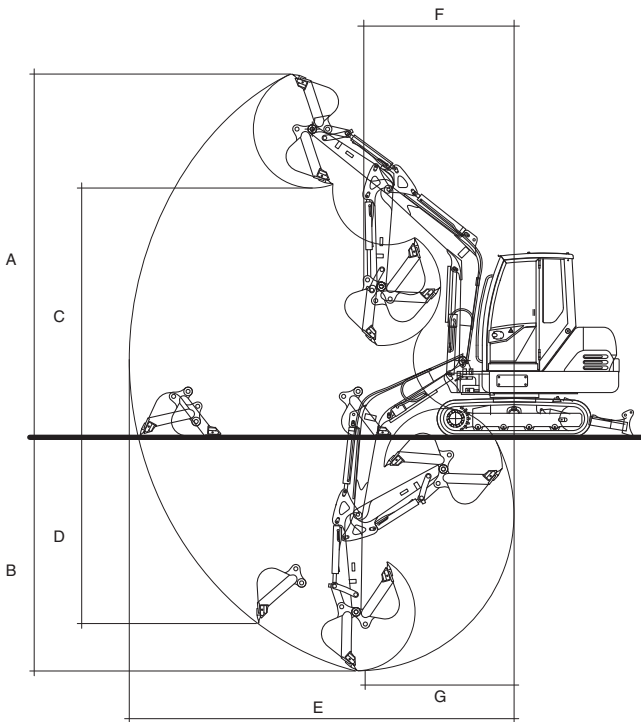
The sophisticated hydraulic circuit fitted with variable displacement pumps makes it possible to carry out several processes at once using multiple controls, for increased efficiency and operating speed when working on site.

EXCELLENT CONTROL

The hydraulic control valve, featuring a new spool design, offers exceptionally smooth and precise movement. The anti-shock valve fitted to the arm circuit helps to eliminate vibration during digging.

WORK LAMP IN THE ARM

A halogen work lamp on the side of the arm illuminates the digging area, offering maximum on-site operating efficiency.



Working range

	55N	55N*
A Maximum dumping height	5950 mm	6190 mm
B Maximum digging depth	3850 mm	4100 mm
C Maximum digging height	4110 mm	4340 mm
D Maximum vertical digging depth	2950 mm	3270 mm
E Maximum digging radius	6120 mm	6420 mm
F Minimum front turning radius at right boom swing	2220 mm	2240 mm
G Maximum digging depth radius	1790 mm	1820 mm

* with long arm

Optional

■ Excavation and earthmoving equipment

- Long arm (+300 mm)

■ Frame

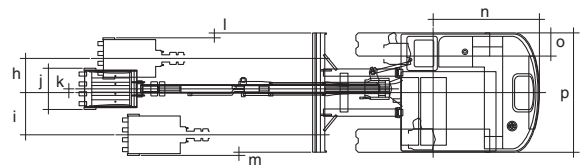
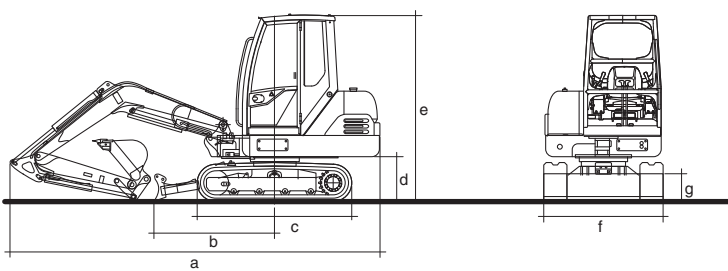
- Steel tracks

■ Lighting

- 2 additional front lights, 1 additional rear light on top of cabin

■ Comfort and safety

- Electrical antitheft system



Dimensions (mm)

	α	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
55N	5710	1700	2500	695	2500	2000	370	600	700	630	100	60	45	R1560	400	1880

55N



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General Specifications

STD. Bucket capacity (ISO)	0.18 m ³
STD. Bucket width	630 mm
Machine weight R.S. / S.S.* Cabin	5330 / 5380 kg
Operating weight R.S. / S.S.* Cabin	5405 / 5455 kg
Transport dimensions	5710 x 2000 x 2500 mm
Gradeability	30°
Ground pressure	31 kPa
Minimum ground clearance	340 mm
*Rubber Shoe / Steel Shoe	

Engine

Model	Yanmar 4TNV98
N° cylinders / displacement	4 / 3318 cc direct injection
Bore x stroke	98 x 110 mm
Max output	43 kW / 2500 min ⁻¹
Rated output (ISO 1585)	55.5 HP α 2400 rpm (40.8 kW / 2400 min ⁻¹)
Fuel consumption	245 g / kW-h
Engine oil pan capacity	10.5 lt (Max level)

Electrical System

Voltage	12 V
Battery	12 V - 72 Ah
Alternator	12 V - 40 A
Starter motor	12 V - 3 kW

Hydraulic system

The Power Shift hydraulic circuit control system, with two variable displacement pumps and one gear pump, delivers maximum power, extremely easy handling and precise movements. The remote control circuit is supplied by another, autonomous gear pump.

Maximum flow	64.6 x 2 + 46.1 lt / min
Max Pressure / Setting	20.6 MPa (210 kgf / cm ²)
Control	Hydraulic remote control

Double action hydraulic circuit for accessories

Maximum flow	110 lt / min
Set pressure	20.6 MPa (210 kgf / cm ²)

End-of-stroke cushioning

Boom cylinder	rod fully extended
Arm cylinder	rod fully retracted
Swing cylinder	rod fully retracted and fully extended

Slewing system

The swing system is assured with a hydraulic axial piston motor coupled to an epicyclic gearing drive reduction unit.

Swing speed	9 min ⁻¹
Turntable braking	automatic multi-disc brake
Absorption of hydraulic shocks	shock less valve shock less valve

Bucket performance

Max. bucket digging force (ISO 6015)	36.3 kN (3700 kgf)
Max. arm digging force (ISO 6015)	24.9 kN (2540 kgf)

Undercarriage

The lower frame is formed with two strong crawler frame joint to a welded and machined middle frame.

Undercarriage length R.S. / S.S.	2500 / 2480 mm
Crawler shoe width	400 mm
Lower rollers	5 / 1
Track tension	tension spring and grease cylinder
Dozer blade size (Width x Height)	2000 mm x 370 mm
Lift above ground	370 mm
Drop below ground	390 mm

Travel system

Each track is driven by a two speed hydraulic axial piston motor coupled to an epicyclic gearing drive reduction unit.

Travel speed (1 α / 2 α)	2.6 / 4.5 km/h
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Capacity

Fuel tank	75 lt
Hydraulic tank	75 lt
Engine oil	110 lt
Engine coolant	4.2 lt

Boom swing system

Right swing angle	90°
Left swing angle	50°

Other data

Noise level LwA (2000/14/EC)	98 dBA
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