



## AMMANN-YANMAR SAS

25, rue de la Tambourine - F-52100 SAINT DIZIER

[sales@ammann-yanmar.fr](mailto:sales@ammann-yanmar.fr)

[www.ammann-yanmar.com](http://www.ammann-yanmar.com)

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Mini-excavator



**ViO45**

Operating weight : 4430 kg

Arm digging force : 2150 kgf

Bucket digging force : 3350 kgf



# *Yanmar, inven to of the ZTS m in*



Mini-excavator



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# Zero Tail Swing

## Design principles

- Full swing of the machine inside the size of the crawlers.
- Perfectly round shape of counterweight and bonnets.
- Zero swing radius :
  - front swing radius with boom swing : 1830 mm ;
  - rear swing radius : 975 mm.

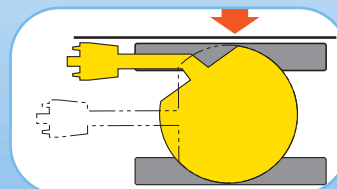


**Yanmar, inventor  
of the ZTS mini**



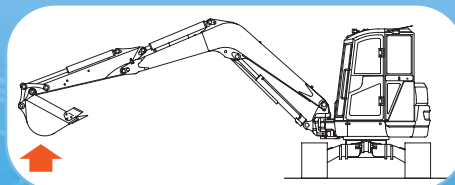
## Advantages for the user

- Maximum superb all-round visibility.
- No dead angle in the upper structure.
- Possibility to work in narrow areas, where a conventional machine is not able to work :
  - increased productivity : the operator can concentrate on his work without paying attention to the bulk of the machine ;
  - easy excavation along walls ;
  - decreased damage risks on the machine.



## Excellent weight distribution

- The use of a large counterweight, asymmetric crawlers (VICTAS® system) and high tensile equipment allows :
  - equalled stability, even higher than that of a conventional machine of the same weight ;
  - increased lifting capacity.



**Mini-excavator**

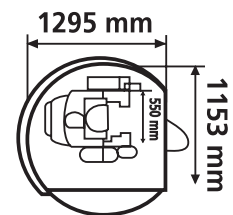


# Operator and leader in mini-excavators

## Comfort and safety

### Spacious and ergonomic pilot system

- Perfect position of joysticks, armrests and travel levers with pedals.
- Comfortable, multi-adjustable seat : sliding seat, reclining backrest and weight.
- Separate pedals for using the auxiliary power take-off line and swinging the boom. Sturdy covers which serve as footrests.



1.3 m³ available



### Cabin version

- Windscreen in 2 parts mounted on steel structures : quick opening and closing with blocking in high and low position.
- Defroster, heater, ventilation, inside lighting, windscreen washer.
- Easy access thanks to grabrails.

### Maximum operator safety

- Canopy and cabin meet the requirements of the strictest safety standards :
  - ROPS (Roll Over Protective Structure) ;
  - FOPS 1 (Falling Object Protective Structure) ;
  - TOPS (Tip-Over Protective Structure).
- Shock absorber on boom cylinder, arm cylinder, offset cylinder, swing and travelling motors.
- Large safety lever on access to control position : in the raised position it prevents all working movements and travel.
- Modern, user-friendly instrument panel, giving instant warning to the operator of any anomalies that may occur.



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...ini-excavators

## Performance

### Exceptional stability



- The VICTAS® system (patented by Yanmar) consists in increasing the bearing surface by increasing the track path and using asymmetric crawlers.
- Main advantages :
  - increased lateral stability ;
  - increased lifting capacity ;
  - reduced ground damage ;
  - reduced track wear ;
  - quiet, vibration-free movement.



## Reliability and acc

### A new-generation Yanmar "TNV" (Totally New Value) engine

- Improvement and modernisation of TNE series, which is already well-known for its "clean and quiet" profile :
  - reduced emissions for an even cleaner engine ;
  - noise reduction for an even quieter engine ;
  - improved starting (warms up faster).
- The new TNV series exceeds the most stringent emissions standards.

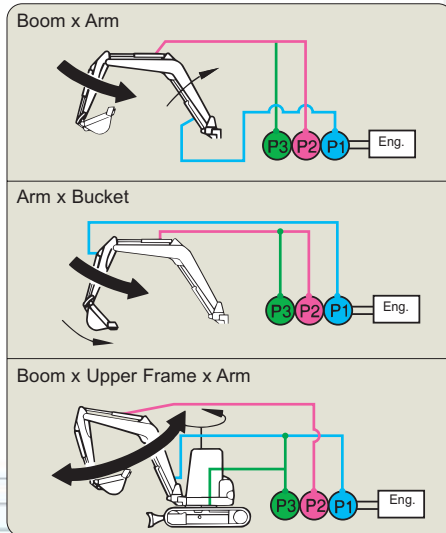




## "VIPPS®" hydraulic circuit (ViO Progressive 3 Pumps System)



- Hydraulic circuit fitted with a variable-flow dual piston pump, a gear pump and a multiple-combination directional control valve :
  - increased working speed due to the cumulative pump capacities ;
  - smooth, simultaneous operation of all functions, even when travelling.



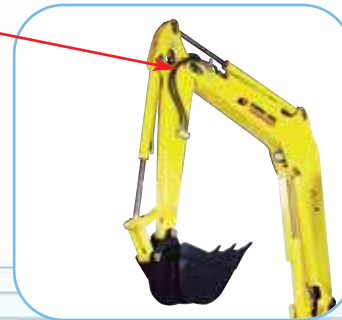
## Environmentally friendly

- Combination of a high-performance Yanmar engine and the VIPPS® hydraulic system :
  - increased productivity ;
  - reduced fuel consumption ;
  - less noise ;
  - less exhaust fumes.
- Exhaust gas vented vertically.

## Auxiliary circuit (PTO)

- Dual auxiliary circuit to add various accessories : hydraulic rock breaker, swivelling ditch cleaning buckets, concrete share, auger, etc.
- Pedal lock for use with manual hydraulic tools.

Auxiliary circuit (PTO)



# accessibility

## Miscellaneous protective devices

- Integrated working lamp :
  - reduces risk of damage ;
  - provides better visibility at bottom of trenches.
- Careful routing of hydraulic pipes and hoses on top of the boom.
- Protection on boom and blade cylinders.

## Easy access to maintenance points

- Large rear bonnet allowing access to all engine components and hydraulic pumps.
- Daily check points gathered under the front bonnet (top up oil, water, diesel).
- Quick access to control valve by removing side panel.





# TECHNICAL SPECI

## Engine

Yanmar Diesel 3 cylinders ..... 3TNV88-XBVA  
Rated Output (DIN 6270B) ..... 22.6 kw/30.7 HP/2500 rpm  
Displacement ..... 1642 cm<sup>3</sup>  
Max. torque ..... 109.8 N.m./1300 rpm

## Hydraulic circuit

System capacity ..... 65 l  
Max. pressure ..... 220 bar  
Total pump capacity ..... 119.8 l/mn  
Variable flow dual piston pump ..... 2 x 42 l/mn  
1 gear pump ..... 1 x 35.8 l/mn

## Performances

Travelling speed ..... 4.7/2.5 km/h  
Swing speed ..... 9.5 rpm  
Digging force (arm/bucket) ..... 2150/3350 kgf  
Boom swing (L/R) ..... 70°/70°  
Ground pressure\* ..... 0.286/0.29 kg/cm<sup>2</sup>  
Grade ability ..... 30°  
Shoe width ..... 350 mm  
Ground clearance ..... 360 mm



\* rubber/steel crawlers

## Miscellaneous

Fuel tank ..... 55 l  
Cooling system ..... 6.7 l  
Transport dimensions (L x w x h) ..... 5150 x 1970 x 2620 mm  
Noise level LwA (2000/14/EC & 2005/88/EC) ..... 94 dBA

## Optional equipment

Special paint  
Bio Oil  
Air conditioning  
Long dipper arm (+ 300 mm)  
Arm extension (+ 800 mm)  
4<sup>th</sup> hydraulic circuit  
Safety device for loading  
Anti-theft device  
FOPS 2 protection bars on cab roof

PTO	Theoretical data	
	Pressure	2500 rpm
	0 ~ 220 bar	77 ~ 33 l/mn
	0 ~ 220 bar	77 ~ 33 l/mn



• The output reduces as the pressure increases.

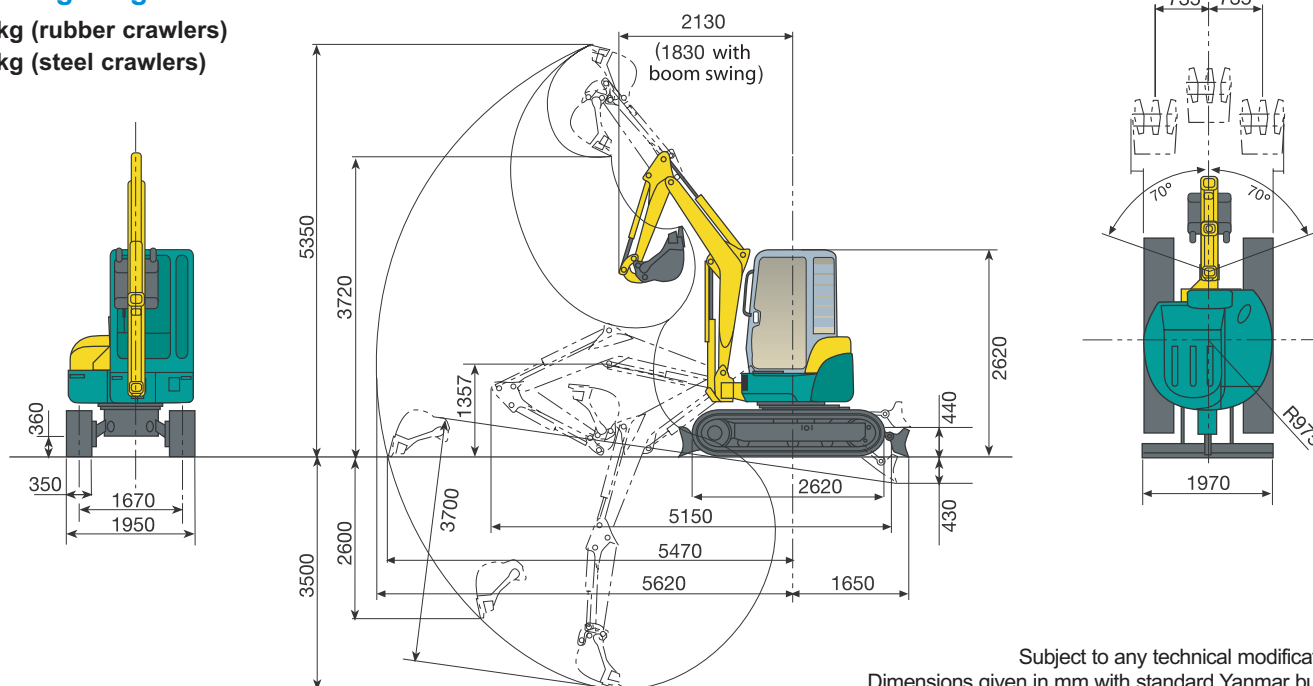
# IFICATIONS



## Operating weight +2% :

4430 kg (rubber crawlers)

4500 kg (steel crawlers)



Subject to any technical modifications.  
Dimensions given in mm with standard Yanmar bucket.

### Blade on ground

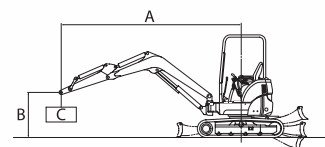
A	Maxi		4.0 m		3.0 m		2.5 m		
B									
4.0	680	*730	-	-	-	-	-	-	C
3.0	540	*810	640	*750	-	-	-	-	
2.0	440	*870	620	*940	*1100	*1100	*1360	*1360	
1.0	410	*880	610	*1100	990	*1590	1280	*2100	
0	450	*930	590	*1190	950	*1750	1210	*2190	
- 1.0	540	*1010	570	*1130	940	*1680	1330	*1960	
- 2.0	870	*1060	-	-	980	*1190	1310	*1550	

Machine with cabin,  
rubber crawlers,  
bucket of 123 kg.

A : Overhang from rotational axis (m).

B : Height of hooking point (m).

C : Safe working load (kg).



### Blade above ground

A	Maxi		4.0 m		3.0 m		2.5 m		
B									
4.0	680	*730	-	-	-	-	-	-	C
3.0	530	570	640	*750	-	-	-	-	
2.0	430	480	610	690	960	*1100	*1360	*1360	
1.0	400	450	570	650	980	1060	1250	*1440	
0	430	480	570	630	930	1030	1170	*1330	
- 1.0	540	590	570	620	910	1020	1300	*1270	
- 2.0	860	900	-	-	1050	1050	1290	*1550	



Tipping load,  
rating over front



Tipping load,  
rating over side 90°

The data contained in these tables represent the lifting capacity in accordance with ISO standard 10567.  
They correspond to 75 % of the maximum static tipping load or 87% of the hydraulic lifting power.  
Data marked \* are the hydraulic limits of the lifting power.