YANMAR
Solutioneering Together

MINI-EXCAVATOR




# Mini-excavator ViO20-4

Operating weight: 2230/2335 kg

Arm digging force: 1200 kgf

Bucket digging force: 1900 kgf

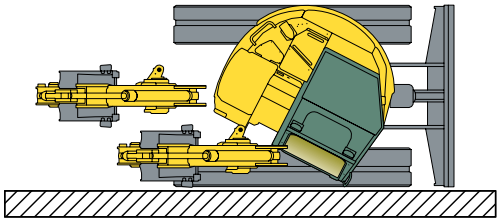
# > COMPACTNESS

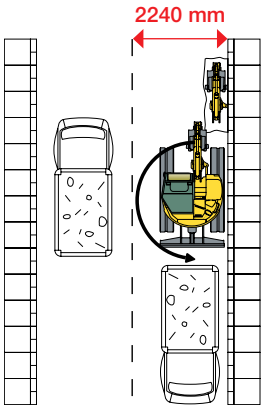
## ViO20-4

The ViO20 is a real Zero Tail Swing machine: neither the counterweight nor the front part of the upper frame exceed the width of the crawlers.


## Design principles

> No counterweight overhang the rear.
> Front swing radius with boom swing: 1550 mm.
> Rear swing radius: 690 mm.
> Width of the machine reduced to 1380 mm.





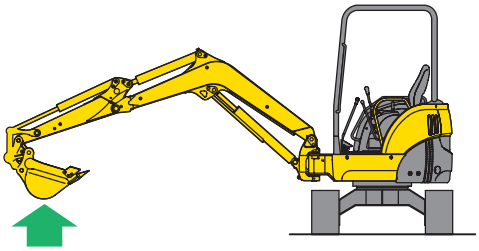

## Advantages for the user

> Possibility to work in narrow areas, where a conventional machine is not able to work.
> Possibility to work along a wall.
> No dead angle in the upper structure: maximum all-round visibility.
> Safety and productivity for the operator.
> Easier transport thanks to reduced width.
> Operations are perfectly adapted to urban areas: the machine does not obstruct all lanes of traffic.

## 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.



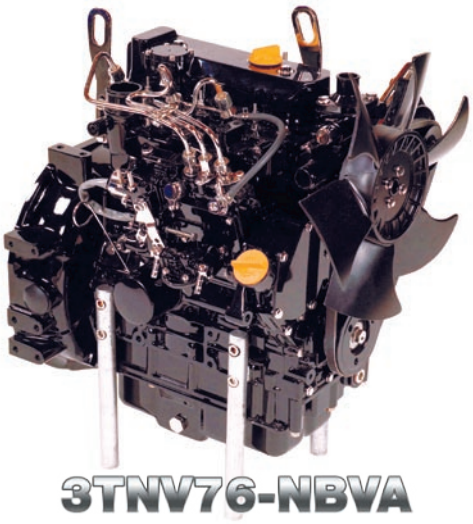
## Asymmetric crawlers (patented VICTAS® System)

> Increased foot print without the increase of machine width.
> Higher sideward stability and higher lift capacity.
> Noise and vibration free travel.
> Less ground damage.

# > HIGH PERFORMANCE

## ViO20-4

Combining long experience and unrivalled expertise, YANMAR's technology ensures environmental performance and high efficiency.




### 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 engine 3TNV76-NBVA meets Stage II emissions regulations of the European Commission (EC) and Tier 4 emissions regulations of the American Environment Protection Agency (EPA).

### Higher productivity for the operator

> Separate pedals for 3rd circuit and boom swing + forward and backward travelling possible with feet: possibility to combine various working movements and travelling.

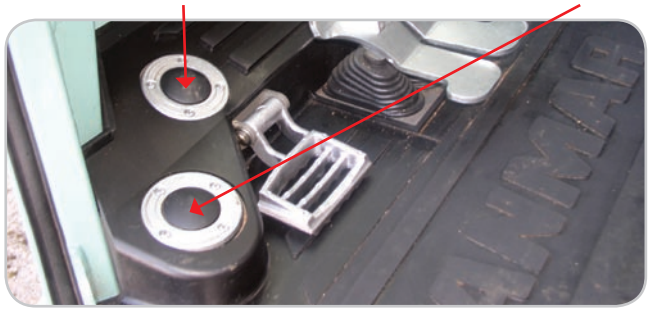
> Single-action auxiliary circuit with pedal to add accessories (for example: hydraulic breaker, auger...).

> Second speed.

> Dual-action auxiliary circuit with the right joystick allowing a higher precision (for example: swivelling ditch cleaning bucket).

Single-action auxiliary circuit with pedal

Second speed



### Hydraulic circuit Load-Sensing. Variable flow piston pump

> Precise working movements.

> Simultaneous operations.

> Safety and productivity, particularly for operations requiring accuracy: grading.

> 3rd hydraulic circuit to arm end.

# > COMFORT & SAFETY

## ViO20-4

All-round comfort and convenience. The many easy to use features include a comfortable seat with retractable seat belt, sensitive lever controls and uncomplicated lever arrangement.

### Spacious and ergonomic pilot system

> Perfect position of joysticks, armrests and travel levers.

> Luxurious adjustable operators seat with headrest (forward and aft adjustment, backrest inclination adjustment, and weight adjustment).

> Canopy and cabin fully compliant with safety norms: ROPS (Roll Over Protective Structure), FOPS 1 (Falling Object Protective Structure) and TOPS (Tip-Over Protective Structure).

> Large safety lever on access to operating position: locks working movements and travel (in raised position).

> Battery isolator in standard.

> Dual or single-action auxiliary circuit to add various accessories (swivelling ditch cleaning buckets...).

> Safety lever.


> Battery isolator.

### Cabin version

> Windscreen in 2 parts, stored overhead. Sliding side windows.

> Wide access to the operating position.

> Defroster, heater, ventilation, inside lighting, windscreen washer.


> Integrated working lamp.

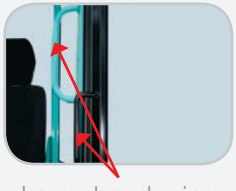
### Other equipment

Storage space

Fixing points on track frame and blade to facilitate transportation on trailers

Travelling pedals

Evacuation hammer



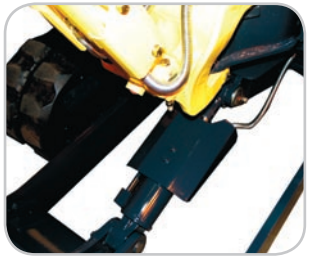
Large hand grips

# > RELIABILITY & ACCESSIBILITY

## ViO20-4

Simple maintenance structure for fast and easy access wherever it's needed.


> Cylinder protection on boom.



> The blade hydraulic cylinder is covered by a protective shield.

### 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 test points of all hydraulic circuits from the pilot system.

### Strong protective devices

> Flexible hoses protected by external covers.

> Careful routing of hydraulic pipes and hoses on top of boom.

# > TECHNICAL SPECIFICATIONS

## ViO20-4

## Engine

Yanmar Diesel 3 cylinders ..... 3TNV76-NBVA
Rated Output (DIN 6270B) ..... 15.2 kw/20.7 HP/2500 rpm
Displacement ..... 1115 $cm^3$
Max. torque ..... 68.6 N.m./1800 rpm

## Load-Sensing hydraulic circuit

System capacity ..... 39 l
Hydraulic tank capacity ..... 26 l
Max. pressure ..... 210 bar
Variable flow piston pump ..... 55 l/mn
Straight travelling .....
Direct return to hydraulic tank .....
Accumulator .....

## Performances

Travelling speed ..... 4.3/2.5 km/h
Swing speed ..... 9.7 rpm
Digging force (arm/bucket) ..... 1200/1900 kgf
Boom swing (L/R) ..... 47°/75°
Ground pressure* ..... 0.29/0.28 $kg/cm^2$
Grade ability ..... 30°
Shoe width ..... 250 mm
Ground clearance ..... 280 mm
Blade (width x height) ..... 1380 x 290 mm
* Cabin/Canopy

## Miscellaneous

Fuel tank ..... 28.5 l
Cooling system ..... 2.9 l
Transport dimensions (L x w x h) ..... 3895 x 1380 x 2458 mm
Noise Level LwA (2000/14/EC & 2005/88/EC) ..... 92/92 dBA*
* Cabin/Canopy

## Optional equipment

- > Special paint
- > Safety device for loading
- > Anti-theft device (with key / keyboard)
- > Bio oil
- > Radio
- > 2 additional working lamps
- > Quick coupler on the 3rd circuit
- > Mechanical quick hitch
- > Standard, ditch cleaning and swivelling buckets
- > Hydraulic hammers

| PTO | Theoretical data at 2500 rpm | |
|---|---|---|
| | Pressure | Oil flow |
|  | 0 ~ 190 bar | 48 ~ 18 l/mn |
|  | 0 ~ 190 bar | 48 ~ 18 l/mn |

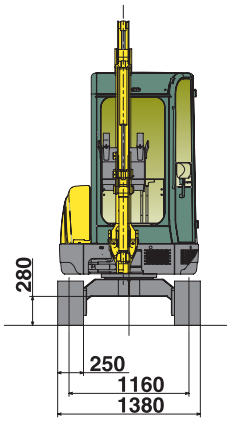
> The output reduces as the pressure increases.

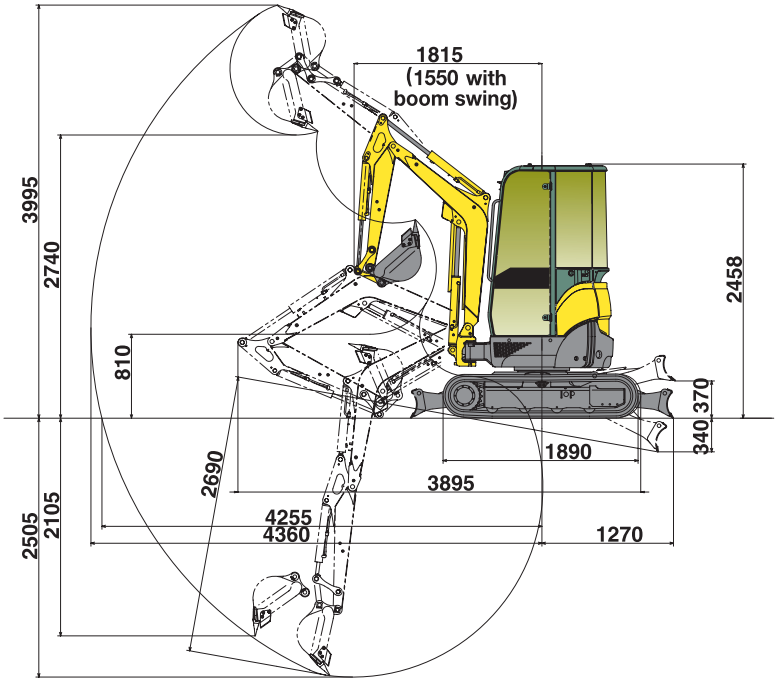
# TECHNICAL SPECIFICATIONS

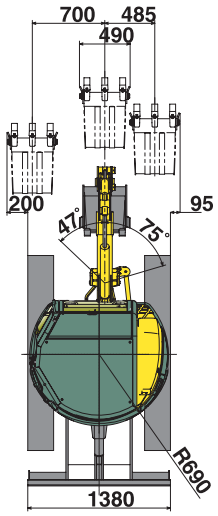
## ViO20-4

**Operating weight +-2% (EC Norms):**
> 2230/2335 kg (rubber crawlers with canopy / cabin)

**Transport weight +-2% (EC Norms):**
> 2155/2260 kg (rubber crawlers with canopy / cabin)




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

### Blade on ground

| A | Maxi | | 3.0 m | | 2.5 m | | 2.0 m | | |
|---|---|---|---|---|---|---|---|---|---|
| B | | | | | | | | | |
| 3.4 | *390 | *390 | - | - | - | - | - | - | C |
| 2.5 | 290 | *405 | - | - | *335 | *335 | - | - | |
| 2.0 | 245 | *405 | 320 | *400 | *390 | *390 | - | - | |
| 1.5 | 215 | *425 | 305 | *530 | *495 | *495 | - | - | |
| 1.0 | 200 | *425 | 270 | *510 | 420 | *615 | 605 | *790 | |
| 0 | 210 | *460 | 290 | *600 | 390 | *770 | 515 | *1095 | |
| -1.0 | 275 | *475 | - | - | 375 | *700 | 515 | *980 | |
| -1.5 | 360 | *500 | - | - | - | - | 540 | *735 | |

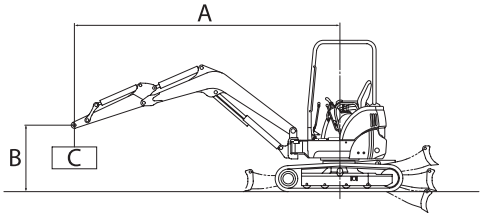
### Blade above ground

| A | Maxi | | 3.0 m | | 2.5 m | | 2.0 m | | |
|---|---|---|---|---|---|---|---|---|---|
| B | | | | | | | | | |
| 3.4 | *390 | *390 | - | - | - | - | - | - | C |
| 2.5 | 290 | 320 | - | - | *335 | *335 | - | - | |
| 2.0 | 245 | 275 | 320 | *400 | *390 | *390 | - | - | |
| 1.5 | 215 | 245 | 305 | 335 | *495 | *495 | - | - | |
| 1.0 | 200 | 240 | 270 | 350 | 420 | 470 | 605 | *790 | |
| 0 | 210 | 245 | 290 | 335 | 390 | 440 | 515 | 605 | |
| -1.0 | 275 | 305 | - | - | 375 | 435 | 515 | 620 | |
| -1.5 | 360 | 440 | - | - | - | - | 540 | 615 | |

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.

### Machine with canopy, rubber crawlers, bucket of 52 kg (490 mm).

A: Overhang from rotational axis (m).
B: Height of hooking point (m).
C: Safe working load (kg).
(+ 4% with cab).




Tipping load, rating over front

Tipping load, rating over side 90°

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# Call for Yanmar solutions



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