

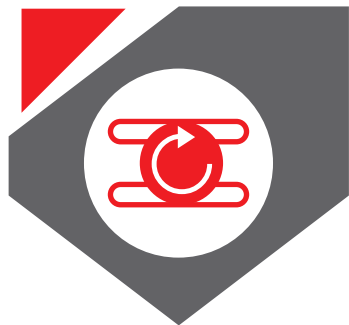


## Mini-excavator ViO20-4

Operating weight: 2230/2335 kg

Arm digging force: 1200 kgf

Bucket digging force: 1900 kgf



## COMPACTNESS

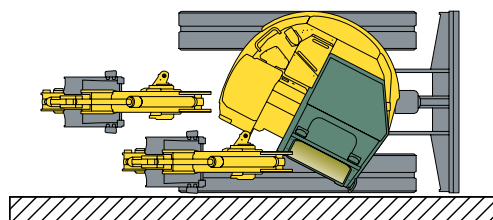
### ViO20-4

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.



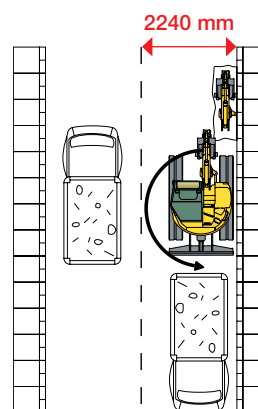
#### Design principles

- > 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

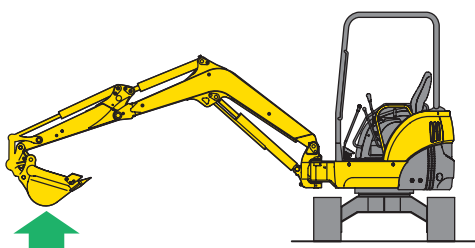
- > Possibility to work in narrow areas, where a conventional machine is not able to work.
- > Possibility to work along a wall.
- > No dead angle in the upper structure: maximum all-round visibility.
- > Safety and productivity for the operator.
- > Easier transport thanks to reduced width.
- > Operations 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 3<sup>rd</sup> 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).

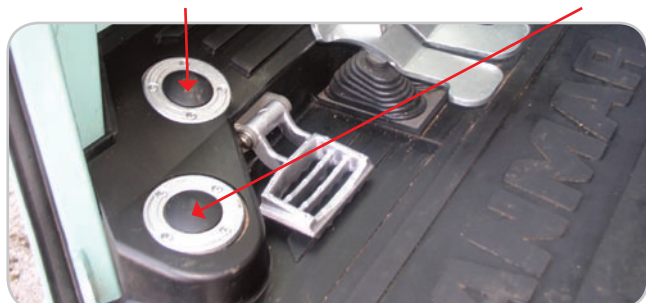
#### Hydraulic circuit Load-Sensing. Variable flow piston pump

- > Precise working movements.
- > Simultaneous operations.
- > Safety and productivity, particularly for operations requiring accuracy: grading.
- > 3<sup>rd</sup> hydraulic circuit to arm end.



Single-action auxiliary circuit with pedal

Second speed





## > 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.

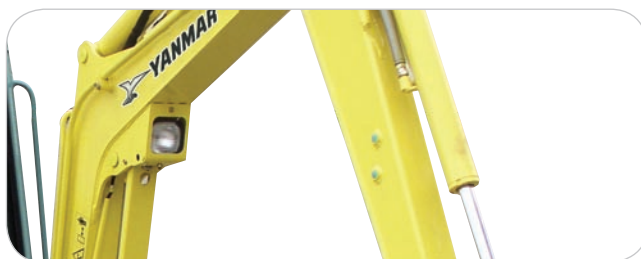


> Battery isolator.



#### 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



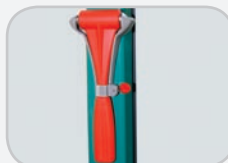
Storage space



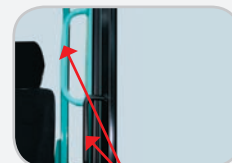
Fixing points on track frame and blade to facilitate transportation on trailers



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 <sup>3</sup>     |
| 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 <sup>2</sup> |
| 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 3<sup>rd</sup> 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

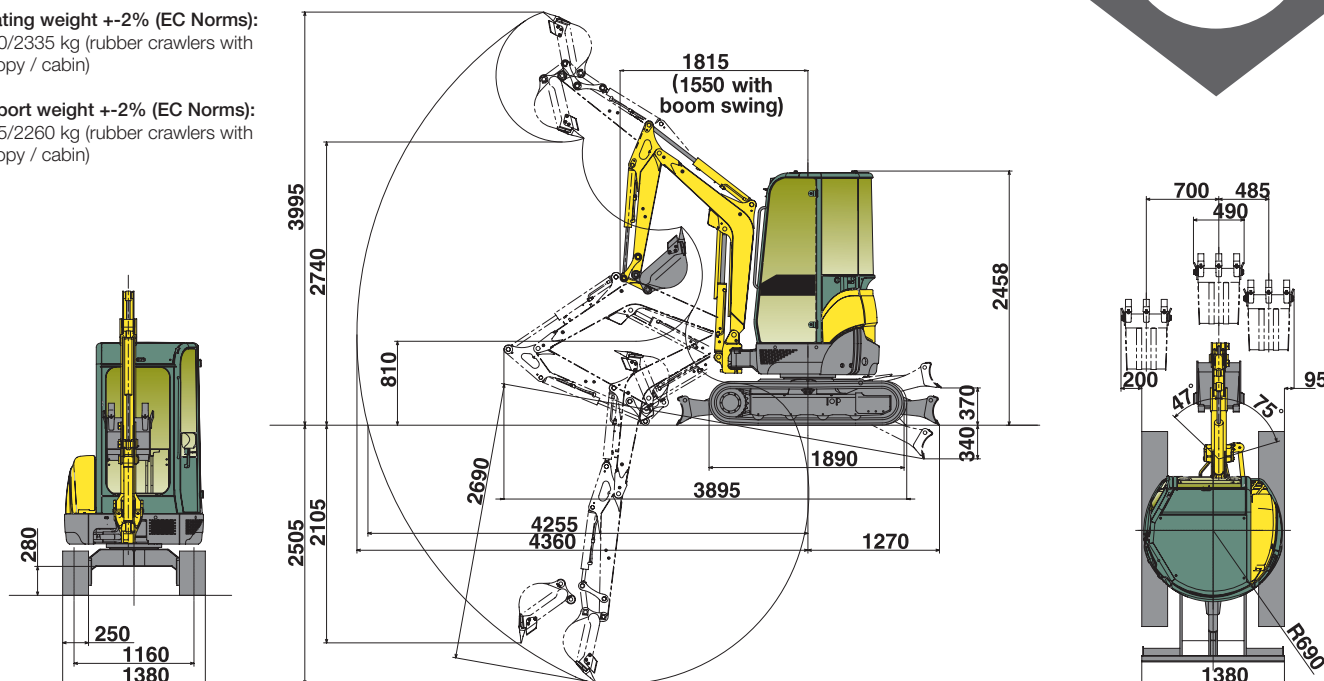


### Operating weight +-2% (EC Norms):

> 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

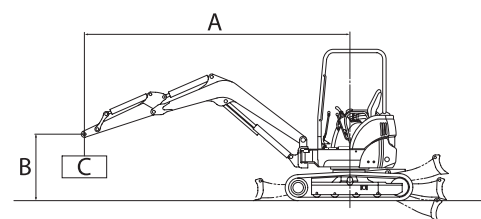
| A    | Maxi |      | 3.0 m |      | 2.5 m |      | 2.0 m |       |   |
|------|------|------|-------|------|-------|------|-------|-------|---|
| B    |      |      |       |      |       |      |       |       |   |
| 3.4  | *390 | *390 | -     | -    | -     | -    | -     | -     | C |
| 2.5  | 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  |   |

### 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).



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  |   |



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.



Call for Yanmar solutions

