YANMAR

MINI-EXCAVATOR

ViO27-6

Operating weight	2640 kg (Canopy) / 2745 kg (Cabin)
Engine	3TNV76-NBVA1
Digging force (arm)	14.4 / 12.7 kN (long arm)
Digging force (bucket)	23.1 kN

Reliability and robustness

in a compact package

COMPACTNESS

Yanmar, inventor of the ViO concept, has an unmatched experience in developing Zero Tail Swing excavators. The Vi027-6 is a true Zero Tail Swing mini-excavator that allows a full rotation of the upper frame within the width of the crawlers for maximum safety.

NEW GENERATION YANMAR ENGINE

Latest generation of Yanmar TNV engines: electronically-controlled 3-cylinder engine with direct injection to improve performance, fuel consumption and emission levels.

BEST COMPONENTS

Developed in Japan with renowned components for top quality. Design and performance of the components made for long service life.

ViPPS HYDRAULIC SYSTEM

The Vi027-6 is equipped with a ViPPS hydraulic system which cumulates the flow of separate pumps in order to obtain the optimal combination in terms of speed, power, smoothness and balance to allow smooth and simultaneous performance of all the operations, even while traveling.

EASE OF MAINTENANCE

5 hoods or openings which allow easy access for components maintenance. Fast and easy daily checks or servicing.

CABIN

Upgraded operator station: increased leg room, universal design, new electronic instrumentation, improved ergonomics and greatly improved noise level.

EASY OPERATION

Control levers ideally located for exceptional movement precision. The Vi027-6 benefits of the proportional control of the boom swing, via the proportional switch located on the right-hand joystick. An “auto-deceleration” feature is available in standard.

HIGH PERFORMANCE

Upgrading of the powerline components (engine, hydraulic pump, control valve): no compromise between power and compactness.

UNMATCHED COMPACTNESS

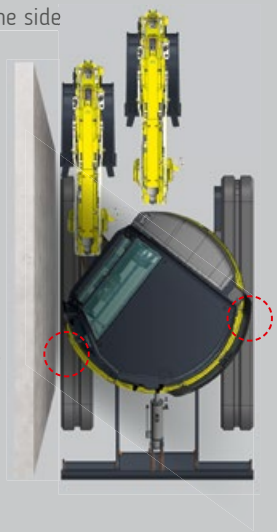
The Vi027-6 is providing Yanmar customers with true peace of mind, especially in urban environment where space is limited.

ADVANTAGES OF THE ViO DESIGN

YANMAR TRUE ZTS

Neither the counterweight, nor the front part of the upper frame project beyond the track width. With its front part designed not to extend over, the Vi027-6 has a very small turning radius.

+ Improved safety for both the operator and the side workers: critical on the jobsites.
+ Rear blind spot reduced to a minimum: enhances again the safety for the workers around the machine.



EASY TRANSPORTATION

The transportation weight is only 2670 kg with cabin and its very compact undercarriage enables the Vi027-6 to be transported with its accessories.

NO COMPROMISE ON PERFORMANCE

The Vi027-6 offers exceptional performance for a machine in its class. Its digging depth of 2940 mm * and its digging forces (bucket) of 23.1 kN and digging forces (arm) of 14.4 kN allow it to work quickly and efficiently even under the most severe conditions.

STABILITY

The 1500 mm width of its undercarriage, the use of a large counterweight and excellent weight distribution offer same or even greater stability than that of conventional machines of the same weight class, as well as great lifting capacities.

* With long arm

COMFORT

SPACIOUS AND COMFORTABLE **CABIN**

Putting the operator in the center of its design initiatives, Yanmar developed the "Universal Design" concept which gives you comfort for enhanced productivity. Combined to an increased leg room, it enables to improve the comfort and safety of the operator. Operating controls and switches are ergonomically arranged for easy reach.

Flat and spacious leg room 385 mm

ALL-AROUND **VISIBILITY**

The ViO27-6 design provides an ergonomic environment, excellent visibility and exceptional safety. The shape of the cabin provides the operator with an optimal 360° visibility in order to improve the safety on the jobsite and to make work more efficient. The ViO27-6 is equipped with two mirrors to help the operator control the work area without moving from his seat.

COMFORTABLE SEAT

The ViO27-6 is equipped as standard with a comfortable and ergonomic suspension seat with adjustable controls, high backrest and retractable seat belt to increase operator comfort and reduce body tension and fatigue.

PERFORMANCE

NEW GENERATION ELECTRONICALLY CONTROLLED YANMAR MOTOR

With an output of 15.8 kW at 2500 rpm, Yanmar's 3TNV76-NBVA1 engine is the result of our continuous efforts to achieve technological advances in fuel consumption and emissions. An improved fuel injection system reduces emissions and noise.

+ In standard, an auto-deceleration system further reduces fuel consumption.

VIPPS HYDRAULIC CIRCUIT (ViO PROGRESSIVE 3 PUMP SYSTEM)

The Vi027-6 is equipped with a ViPPS (ViO Progressive 3 Pump System) hydraulic system. This hydraulic system main characteristic is the use of 4 hydraulic pumps, 2 variable displacement pumps and 2 gear pumps, (including one for joysticks) in order to deliver a total flow of as much as 92,6 l/min. To complete the system, Yanmar is using a control valve based on the ViPPS principle, which cumulates the flow of separate pumps in order to obtain the optimal combination in terms of speed, power, smoothness and balance. The ViPPS system allows smooth and simultaneous performance of all the operations, even while traveling in order to have the ultimate working tool.

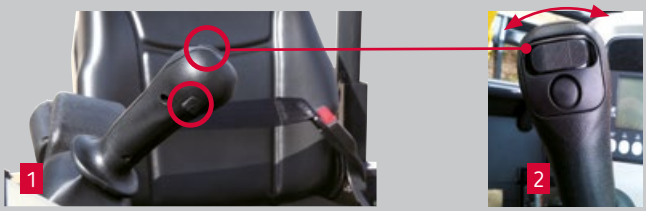
EASY OPERATION

BOOM SWING BY RIGHT CONTROL JOYSTICK

The boom swing is controlled by just one lever which makes work much easier

PROPORTIONAL CONTROL OF THE AUXILIARY CIRCUIT

Standard equipment of the Vi027-6 includes an auxiliary hydraulic circuit which is operated via a proportional control located on the joystick which adapt the flow and the direction of the oil flow.



1 P.T.O hold button 2 Adjust lever

SAFETY

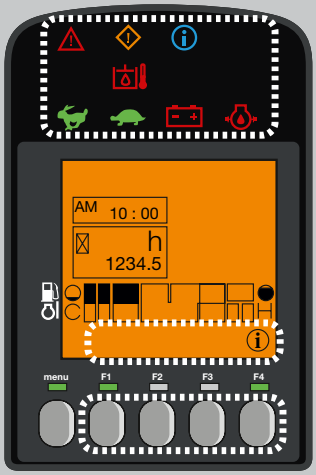
The structure of the ViO27-6 cabin has been designed to meet the ROPS (Roll-Over Protective Structure) certification as well as the FOPS (Falling Object Protective Structure) level 1.

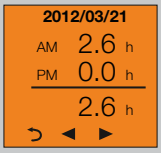
THE BEST BOOM AND ARM PROTECTION ON THE MARKET

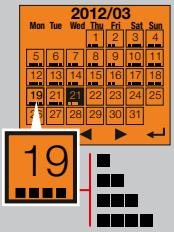
The ViO27-6 benefits from a unique and complete protection of all its boom and arm cylinders. All cylinder tubes and rods are protected by a spring type steel plate, which reduces drastically the Total Cost of Ownership of the machine.

LED LIGHTING: EFFICIENCY AND LOW CONSUMPTION

In order to work safely, efficiently and with accuracy in the darkness, the ViO27-6 is equipped in standard with 1 LED light positioned in the inner part of the boom.







DIGITAL INTERFACE

The ViO27-6 is equipped with a digital interface which informs the operator in real time about the status of his machine. Perfectly integrated into the right hand console, the 3.3" screen provides excellent visibility. The interface provides the customer with useful information through LED lamps, or indications about important elements like fuel consumption, fuel gauge, coolant temperature gauge, etc... The interface assists the customer for maintenance intervals and to program such interventions. It also works as a diagnostic tool in case of malfunction by sending an error code and an information icon on the display.

MAINTENANCE

EASY ACCESS

Daily maintenance has to be performed easily. There is one easy to open engine bonnet and the right-hand side cover is mounted on one hinge to open easily. This gives an access to all major elements: air filter, compressor, radiator, refueling pump, battery, fuel tank, hydraulic oil tank alternator, engine oil dipstick, water separator, coolant level, etc... A flat floor mat makes cleaning easier.

EQUIPMENT

[STANDARD EQUIPMENT]

PERFORMANCE

3TNV76-NBVA1 Yanmar diesel | Direct Injection | Auto-deceleration system | VIPPS Hydraulic system (ViO Progressive 3 Pump System) | Proportional 3rd hydraulic circuit line to arm end | 1 LED light integrated into the boom

COMFORT AND EASE OF USE

LCD interface | Ergonomic suspension seat with adjusting levers | Arm rests | Foot rests | Foldable travelling pedals | Switch on blade lever for travelling speed change | Windshield with 2 fully retractable parts | Sliding double right side window | Transparent upper front part | Wiper | Windshield washer | Automatic ceiling lamp | 1 x 12V outlet | Storage boxes

SAFETY AND DURABILITY

Handrails | Safety lever | Seat belt | Evacuation hammer | Anchor points | 3 mirrors | Horn | Blade cylinder supply hose into two parts | Complete protection of the cylinders (boom, arm and blade) | Hoses protected by abrasion resistant sleeves | Lockable covers

MISCELLANEOUS

Fuel gauge | Toolbox | Toolkit | Grease pump

[OPTIONAL EQUIPMENT]

PERFORMANCE

Steel crawlers | Long arm (+250 mm) | Clamshell bucket circuit | Quick couplers | 2 front LED working lights (cabin and canopy) | 1 rear LED working light (cabin and canopy) | 1 LED flashing rotary fixed (cabin and canopy) | 1 rear LED work light + 1 LED flashing rotary fixed | Beacon light with magnetic base

COMFORT AND EASE OF USE

PVC suspension seat with adjustment levers | Seat Cover | Radio

SECURITY AND DURABILITY

Safety valves for lifting + overload warning | Travel alarm

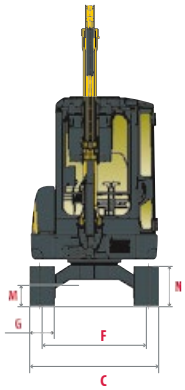
MISCELLANEOUS

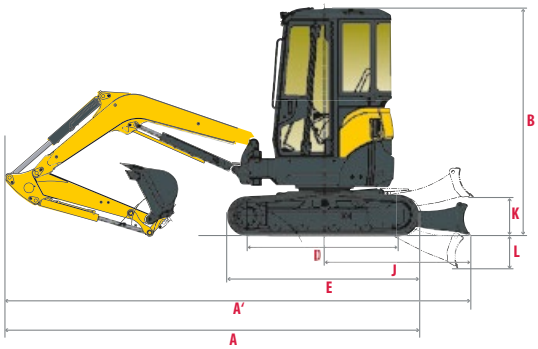
Biodegradable oil | Documentation box

[ATTACHMENTS]

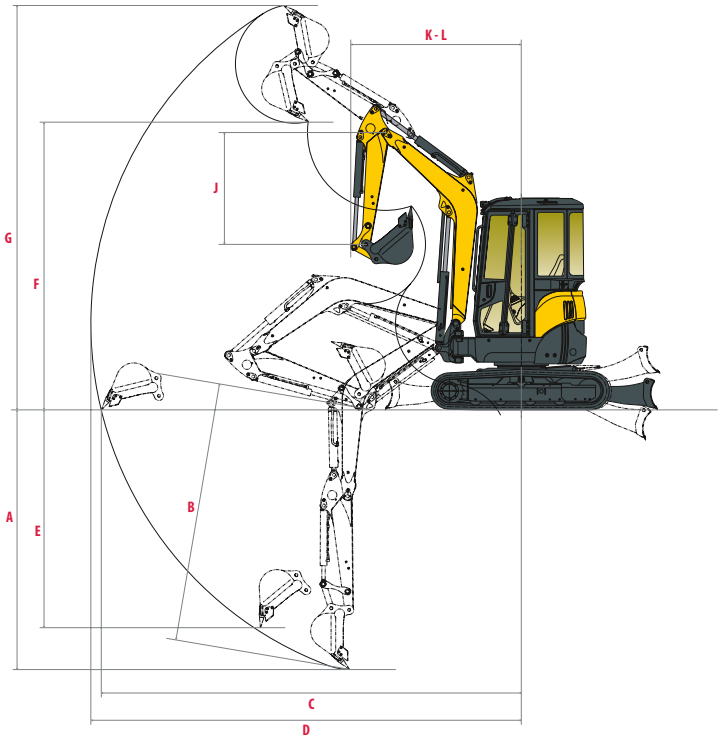
Yanmar gives you the attachment that fit your needs and match the safety standards in force in your country: mechanical quick coupler, hydraulic quick coupler, ditching bucket, swinging bucket, backhoe bucket, hydraulic breaker...

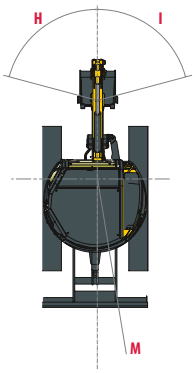
DIMENSIONS





A	Overall length	4110 / 4120 * mm	**H**	Overall blade width	1500 mm
A'	Overall length with blade at the back	4490 / 4500 * mm	**I**	Overall blade height	295 mm
B	Overall height	2530 mm	**J**	Blade distance	1380 mm
C	Overall width	1500 mm	**K**	Max. blade height above the ground	340 mm
D	Length of track on ground	1590 mm	**L**	Max. blade depth	355 mm
E	Undercarriage length	2040 mm	**M**	Minimum ground clearance	320 mm
F	Lane	1250 mm	**N**	Ground clearance under counterweight	-
G	Track width	250 mm			

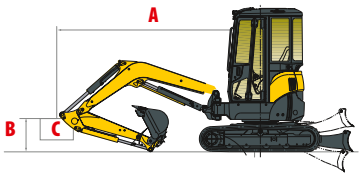




A	Max. digging depth - Blade lifted	2490 / 2740 * mm	**H**	Boom swinging base to left	47°
B	Max. digging depth - Blade lowered	2690 / 2940 * mm	**I**	Boom swinging base to right	74°
C	Max. digging reach on ground	4340 / 4590 * mm	**J**	Arm lenght	1150 / 1400 * mm
D	Max. digging reach	4460 / 4700 * mm	**K**	Front turning radius	1950 / 1990 * mm
E	Max. vertical wall	1150 / 1290 * mm	**L**	Front turning radius with boom swing	1650 / 1680 * mm
F	Max. dumping height	2830 / 2990 * mm	**M**	Rear turning radius	750 mm
G	Max. cutting height	3990 / 4140 * mm			

* with long arm

LIFTING FORCE



Tipping load, rating over front

Tipping load, rating over side 90°

Cabin, Standard arm

Blade on ground										Blade above ground								
A	(A=)	Max.		3 m		2,5 m		2 m		(A=)	Max		3 m		2,5 m		2 m	
B																		
3 m	3020	*525	*525	*525	*525	-	-	-	-	3020	*525	*525	*525	*525	-	-	-	-
2,5 m	3380	400	*520	*495	*495	-	-	-	-	3380	400	*520	*495	*495	-	-	-	-
2 m	3620	350	*520	*525	*525	*550	*550	-	-	3620	350	410	*525	*525	*550	*550	-	-
1 m	3810	310	*550	460	*670	*670	*850	830	*1220	3810	310	360	450	540	600	730	830	1040
0 m	3650	320	*570	430	*760	*610	*970	750	*1320	3650	310	370	420	500	540	650	750	910
-1 m	3120	380	*600	420	*660	530	*860	730	*1150	3120	380	450	410	490	530	640	730	880
-1,5 m	2610	500	*580	-	-	550	*650	740	*880	2610	500	580	-	-	540	*650	740	*880

Cabin, Long arm

Blade on ground										Blade above ground								
A	(A=)	Max.		3 m		2,5 m		2 m		(A=)	Max		3 m		2,5 m		2 m	
B																		
3 m	3020	400	*450	-	-	-	-	-	-	3020	390	*450	-	-	-	-	-	-
2,5 m	3380	350	*460	410	*460	-	-	-	-	3380	340	410	*460	*460	-	-	-	-
2 m	3620	320	*470	380	*460	-	-	-	-	3620	310	370	380	*460	-	-	-	-
1 m	3810	280	*490	310	*600	*760	*760	-	-	3810	280	330	460	*600	*760	*760	-	-
0 m	3650	330	*520	420	*730	540	*950	760	*1310	3650	280	340	420	500	540	660	730	930
-1 m	3120	340	*540	410	*700	530	*920	740	*1200	3120	330	400	400	490	530	630	740	910
-1,5 m	2610	420	*530	-	-	540	*760	720	*960	2610	410	480	-	-	540	640	720	870

Canopy, Standard arm

Blade on ground										Blade above ground								
A	(A=)	Max.		3,5 m		2,5 m		2 m		(A=)	Max		3 m		2,5 m		2 m	
B																		
3 m	3020	*525	*525	*525	*525	-	-	-	-	3020	*525	*525	*525	*525	-	-	-	-
2,5 m	3380	390	*520	*495	*495	-	-	-	-	3380	390	*520	*495	*495	-	-	-	-
2 m	3620	340	*520	*525	*525	*550	*550	-	-	3620	340	400	*525	*525	*550	*550	-	-
1 m	3810	300	*550	440	*670	*670	*850	790	*1220	3810	300	350	430	520	570	700	790	1000
0 m	3650	310	*570	410	*760	*610	*970	710	*1320	3650	300	360	400	480	510	620	710	870
-1 m	3120	370	*600	400	*660	500	*860	690	*1150	3120	370	440	390	470	500	610	690	840
-1,5 m	2610	490	*580	-	-	520	*650	700	*880	2610	490	580	-	-	510	*650	700	*880

Canopy, Long arm

Blade on ground										Blade above ground								
A	(A=)	Max.		3,5 m		2,5 m		2 m		(A=)	Max		3 m		2,5 m		2 m	
B																		
3 m	3020	390	*450	-	-	-	-	-	-	3020	380	*450	-	-	-	-	-	-
2,5 m	3380	340	*460	390	*460	-	-	-	-	3380	330	400	*460	*460	-	-	-	-
2 m	3620	310	*470	360	*460	-	-	-	-	3620	300	360	360	*460	-	-	-	-
1 m	3810	270	*490	290	*600	*760	*760	-	-	3810	270	320	440	*600	*760	*760	-	-
0 m	3650	320	*520	400	*730	510	*950	720	*1310	3650	270	330	400	480	510	630	690	890
-1 m	3120	330	*540	390	*700	500	*920	700	*1200	3120	320	390	380	470	500	600	700	870
-1,5 m	2610	410	*530	-	-	510	*760	680	*960	2610	400	470	-	-	510	610	680	840

[The data in this table represents the lifting capacity in accordance with IOS 10567. They do not include the weight of the bucket and correspond to 75% of the maximum static tipping load of the 87% of the hydraulic lifting capacity. Data marked with * are the hydraulic limits of the lifting force.]

SPECIFICATIONS

[WEIGHT +/- 2% (EN STANDARDS)]

	Weight	Ground Pressure
Operating Weight (Canopy / Cabin)	2640 / 2745 kg	29 / 30 kg/cm²
Transport Weight (Canopy / Cabin)	2565 / 2670 kg	29 / 28 kg/cm²
With steel tracks	+ 110 kg	-

[ENGINE]

Type	3TNV76-NBVA1
Fuel	Diesel
Net Power	15.2 kW / 20.7 HP at 2500 rpm
Gross Power	15.8 kW / 21.5 HP at 2500 rpm
Displacement	1.115 l
Maximum torque	63.4-69 at 1800 rpm (±100)
Cooling	Water-cooling
Starter	12 V - 1.4 kW
Battery	12 V - 36 Ah
Alternator	12 V - 40 A

[HYDRAULIC SYSTEM]

Maximum pressure	210 bars
1 double piston pump with variable flow	2 x 30 $l.min^{-1}$
1 gear pump	21.3 $l.min^{-1}$
1 gear pump for pilot line	11.3 $l.min^{-1}$

PTO	Theoretical data	
	Pressure (bar)	Flow ($l.min^{-1}$)
2 ways	0 - 210	54.2 - 1.3
1 way	0 - 210	54.2 - 1.3

Oil flow decreases as the pressure increases

[PERFORMANCE]

Travel speed	2.8 / 4.5 km/h
Rotation speed	10 rpm
Digging force (arm)	14.4 / 12.7 kN (with long arm)
Digging force (bucket)	23.1 kN
Gradability	25°
Noise Level (2000/14/CE&2005/88/CE)	LWAG: 93 dBA ; LPAG: 80 dBA

[UNDERCARRIAGE]

Number of top rollers	1
Number of bottom rollers	3
Track tensioning system	Grease cylinder

[CAPACITIES]

Fuel tank	30.5 l
Coolant: Incl.Sub-tank Capacity (0.4)	3.8 l
Engine oil	3.4 l
Hydraulic circuit	14 l
Hydraulic tank	25 l

MAINTENANCE FREQUENCY

[Change engine oil and filter: **50 hours (1st) / 500 hours (2nd)**] [Change fuel filter: **250 hours**] [Change hydraulic oil: **1000 hours**]
[Change hydraulic filter: **50 hours (1st) / 500 hours (2nd)**] [Change cooling fluid: **2000 hours**]

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