



Operating weight (with cab)
Net power
Breakout force

2635 (2710) kg
13.6 kW
2140 daN

WALKAROUND

BY MATTHIEU COLOMBO



KATO IMER

27V
Four

BIG COMPACT

Designed in Japan, the new 27V4 compact excavator is completely manufactured in Italy, in the San Gimignano plant near Siena. It is stable and safe thanks to its sturdy structure and it assures the same working comfort as bigger machines. Maintenance is easy



THE PLUSES by Costruzioni

Performance enhanced compared to the previous model 25VXL.
14% increase in lifting capacity.
9% increase in breakout force and digging force.

1

Mechanical and hydraulic components manufactured in Japan, structure produced in Italy. Quality guaranteed.

2

High stability thanks to a construction layout typical of bigger machines as well as to blade distance of 1410 mm.

3

More resistant swing system and new boom layout. Standard or long arm available.

4

High-pressure hydraulic circuit with proportional control and trimmer control as standard.

5

FOPS, TOPS and ROPS canopy. Machine starting with safety lever up and automatic brake with lever up.

6

Comfort enhanced. 20% wider legroom and ROPS/TOPS cab mounted on four viscous isolation dampers.

7

Two speeds with automatic downshifting through hydraulic pressure control. Smooth machine movements.

8

Easy access to mechanical components. Easy and cost-saving maintenance, same maintenance requirements as all V4 models.

9

Manufactured on a production line in San Gimignano making use of a computerized system for production quality control.

10

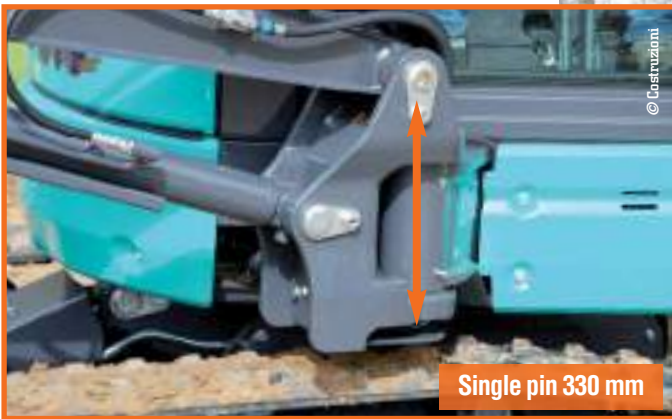
Sturdy Zero Tail Swing

The structure of the new 27V4 is sturdier than that of the previous 25VXL model, though featuring a very compact upper structure. The offset boom facilitates swinging operations and makes it easier to dig close to walls on the right side





Well-protected pipes



Single pin 330 mm

VERY STURDY BOOM SWING SYSTEM

The completely cast boom swing system is fastened to the upper structure by means of one only pin of 330 mm. The new layout guarantees an optimal location for flexible hydraulic pipes.



Offset boom
Better visibility
on digging operations



Right swing angle **80°**, left swing angle **40°**

PERFORMANCE COMPARED TO 25VXL EXCAVATOR

- BREAKOUT FORCE +9% **2140 daN**
- DIGGING FORCE + 9% **1430 daN**
- LIFTING CAPACITY* +14% **800 Kg**

*Note: 360°, distance 3 m, ground level, dozer down.



- 1 DESIGNED FOR OFF-ROAD**
The engine manufacturer Shibaura has specialized in designing compact diesel fuel engines since 1951.
- 2 TRIED AND TESTED S773L-C**
It is a simple and reliable 3-cylinder direct injection diesel engine. It supplies 13.6 kW at 2400 rpm and delivers a torque of 62.4 Nm at 1900 rpm.
- 3 BETTER PERFORMANCE, SAME CONSUMPTION**
Piston average speed is 6.48 mps only. Consumption is the same as the 25VXL model.

Manufactured by KATO IMER

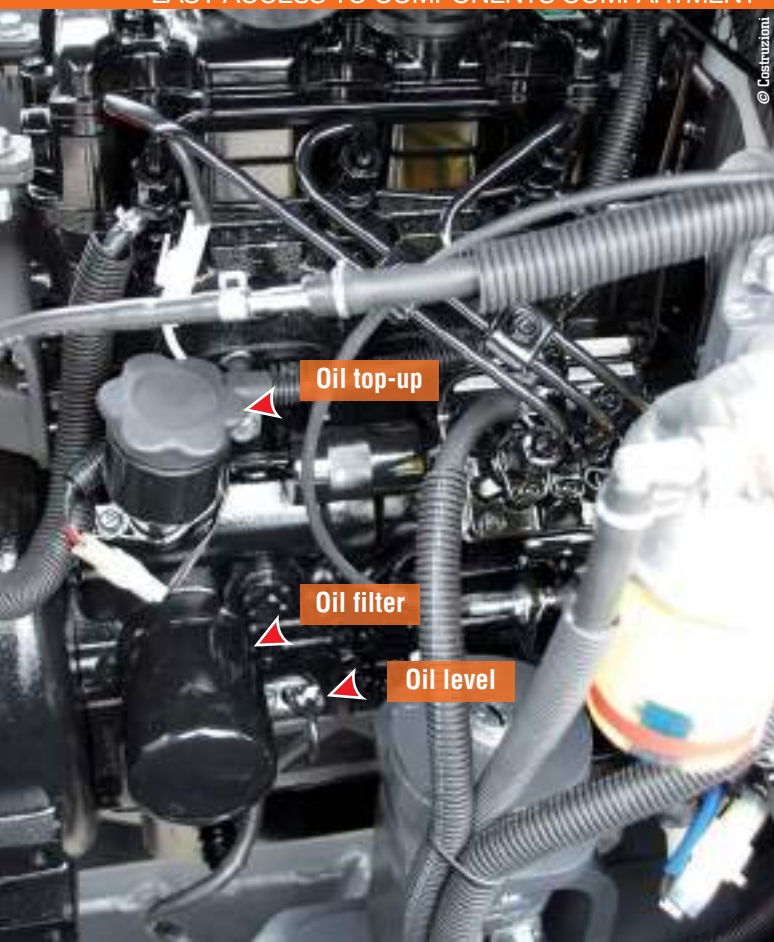
The engine is supplied by the Japanese Shibaura Machinery Corporation which produces more than 100,000 engines per year in four plants. The S773L-C model is produced in Japan

TWO DIESEL FUEL FILTERS

Two filters are mounted in series to keep diesel fuel clean. The second one also features a separator with tap for water drain (warning light on dashboard). The re-activation of the system is performed by means of an electric pump.



EASY ACCESS TO COMPONENTS COMPARTMENT



Oil top-up

Oil filter

Oil level



CAST SUPPORTS

The engine is mounted on four silent blocks. To assure the best weight distribution, a cast bearing flange is provided on the flywheel side.

GLOBAL PLAYER Shibaura has produced more than 2.5 million engines up to now. Besides the Japanese plant in Matsumoto City (Nagano), its production in joint venture with Perkins (Caterpillar Group) is carried out in plants in UK, USA and China.





D

Open centre
control
valve

Hydraulic oil
metal tank

Traditional and easy to access

ALL MADE IN JAPAN

The regulation of the three pumps is traditional (not load sensing). Boom, arm and swing controls are always independent on one another. This machine performs well and meets the requirements of experienced operators.



Hydraulic pumps, swing motor and travel motors are all manufactured in Japan.



All pipes are codified with colours

DUAL OR SINGLE- ACTION

In the round picture, the set up switch of the accessories is shown. It is mounted on the front side of the control valve. It can be regulated as dual or single-action circuit. In the latter case, the second line is used for hydraulic oil tank discharge.



NACHI SWING MOTOR

The diesel oil tank is located under the operator's feet. Swing motor and coupling are the only "hot" parts. The hydraulic control valve is located on the right side of the machine in an easy-to-access place.

Two variable flow pumps in parallel

Solenoids for safety controls blocking and auxiliary circuit proportional solenoid

Bucket, boom and right track control

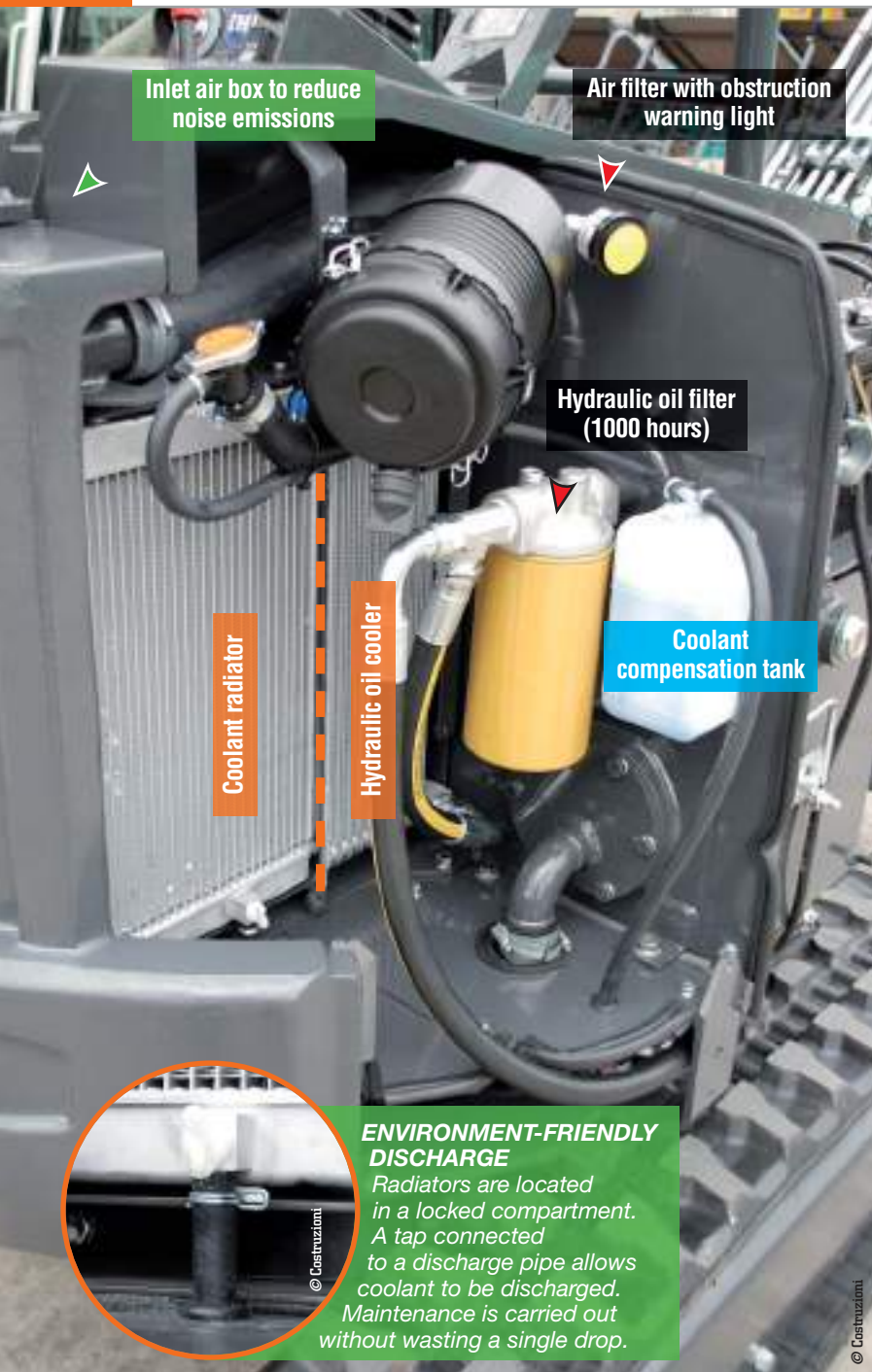
Gear pump for blade and boom swing control

Arm, left track and services control

P3

P1

P2

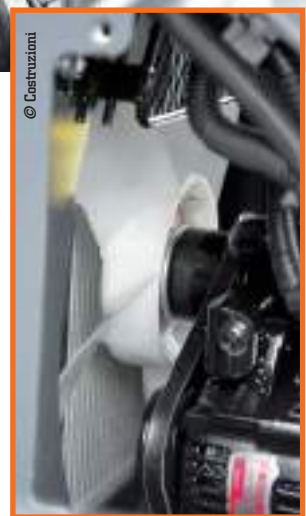


Parallel radiators

EASY CLEANING On the new compact excavator 27V4, coolant and hydraulic oil radiators are easy to access and easy to clean as they are not mounted in series. Cooler is secured to a perimetral structure through elastic supporting blocks.



PLASTIC FAN
The cooling fan has been studied to reduce noise emissions. It only works when engine is on and it is protected by an apposite grid on the side where daily checks are carried out. On the front side (which can be accessed removing a guard), it is possible to access the tensioning belt which can be adjusted through the alternator.

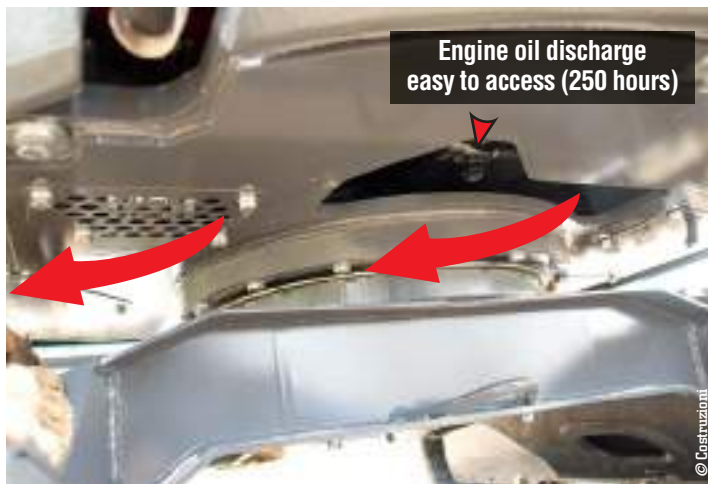


DIESEL FUEL SUPPLY

- DIESEL SUPPLY LEVEL AT **1100 MM FROM GROUND (200 MM LESS)**
- CONTAINER CAP WITH KEY (SINGLE KEY) AND **REMOVABLE GRID**
- BIG 42 LITER **PLASTIC AND REMOVABLE TANK**

WARNING MESSAGE INSIDE THE CAB
The water/diesel separator sends messages to the dashboard.





Suction fan

AIRTIGHT COMPARTMENTS Separation between radiators and the engine compartment is guaranteed by quality plastic foams. The engine compartment has wide openings under the upper structure to spill the warm air coming from coolers. The hoods - all made of metal - are internally covered with high-density soundproofing foams. Heat retained is minimal.

ELECTRIC SYSTEM

- **BATTERY 60 AH** EASY TO ACCESS IN CASE OF EMERGENCY
- **FUSES BOX** PROTECTED INSIDE THE CAB, WITH LEGEND
- **STARTER MOTOR 2 kW (1.1 L DISPLACEMENT)**





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2.63 t

Canopy or maxi cab?

The 27V4 excavator is available in both versions. It is the smallest model of a modular project which has resulted in six machines whose operating weight ranges from 2.7 t to 6 t. The cab is entirely manufactured in Italy and it is the same in all models



Offset pillar (better visibility)

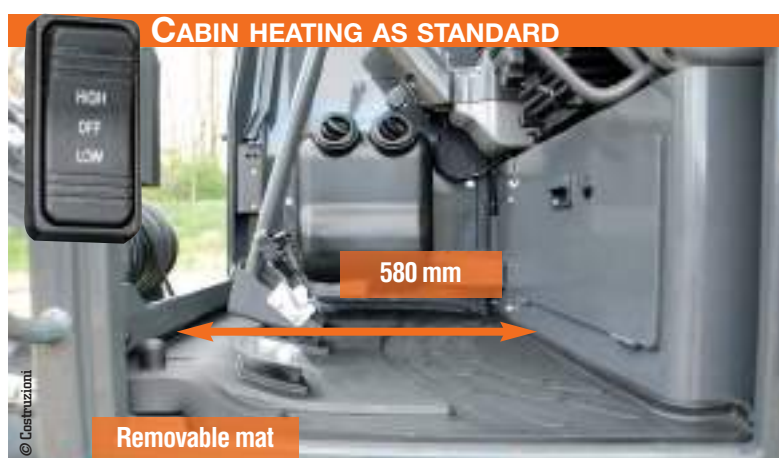
Seat with fabric covers available

Safety belt with belt winder

LEGROOM
+20%

Automatic brake with safety lever up

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CABIN HEATING AS STANDARD

580 mm

Removable mat

FOPS, TOPS, ROPS

The model with canopy has the same set-up as the version with cab. The latter includes however the cab heating as standard. The new console has analog warning lights and digital operating hours counter. Warning lights in the round pictures indicate the two-speed mode activation and the wrong machine starting (safety lever down). Moreover, the engine overheating and the presence of water inside the diesel fuel are also signalled.

Traditional setting



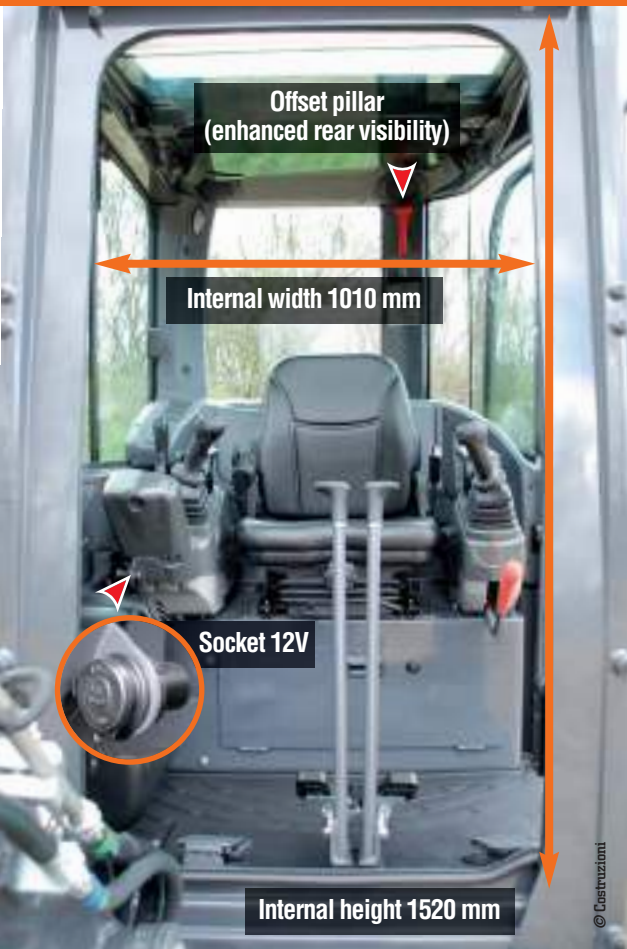
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2.71 t

Sliding double right side window



Offset pillar
(enhanced rear visibility)

Internal width 1010 mm

Socket 12V

Internal height 1520 mm

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SAME AS 60V4

The cab is the same as that of bigger machines up to the 60V4 model. The windshield lower side can be joined to the upper one, which on its turn can be conveniently folded under the canopy. Taller operators can feel this way at ease with windshield open.



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MADE IN ITALY
and certified in Japan. The cab is the same as that of bigger models and it features a ROPS/TOPS structure. The cab is available with FOPS protection (picture above) and it is prearranged for a front grid.



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Blade control by second speed button

The lower section of the laminated windshield can be opened and folded



Radio arrangement as standard

Courtesy light

HIGH QUALITY INTERNAL FINISHES



Radio compartment DIN

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VISCOUS ISOLATION DAMPERS

The cab is mounted on viscous isolation dampers for low vibration levels and better comfort.

Drip edge

FOPS protection connections

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LAMINATED UPPER WINDOW

All windows in the cab are tinted, flat (less expensive in case of replacement) and mounted using the typical automotive industry technique. The upper one is laminated like the windshield.





Max depth of vertical wall which can be excavated 1840 mm (long dipperstick 2120 mm)

Maximum digging depth 2440 mm (long dipperstick 2740 mm)

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And long, too

Boom structures are all made in Italy and hydraulic cylinders are made in Europe. Besides the standard dipperstick 1100 mm long, the long one 1400 mm is also available

AUXILIARY HYDRAULIC SYSTEM AS STANDARD

It is fitted with an auxiliary high-pressure hydraulic circuit as standard. A second high-pressure circuit and a low-pressure one can be supplied upon request in order to control attachments with third function, like the rotating one. Rigid hydraulic pipes are made of zinc-coated steel whereas the flexible ones features a safety sheath (close to the boom swing system) or a metal protection spiral.

TRIMMER AS STANDARD

Bigger machines may be supplied with proportional controls upon request. The 27V4 excavator features this as standard. Maximum precision in attachment control.



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AUXILIARY PROPORTIONAL CONTROL AS STANDARD

Solenoids for proportional control



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ADJUSTABLE

As to the main auxiliary hydraulic circuit, it is possible to choose two pre-set flow capacities through a simple button. When green light is on, the auxiliary circuit is active.

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Lift cylinder protection
as standard

STRENGTHS

- DIPPERSTICK **1100** OR **1400** MM
- DIGGING FORCE **1430 daN**
- **ONE SINGLE PIN BOOM SWING - UPPER STRUCTURE**



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LIGHT IN LINE WITH DIGGING OPERATIONS

The boom features an alogen working light in the central part of the boomerang. Two front lights on the roof as well as one rear light are also available.

NEW DESIGN, BETTER RESISTANCE
The new cast boom swing system is fastened to the upper structure by means of one only pin. Thanks to the new component design, hydraulic pipes going from the machine to the boom are orderly arranged and protected. They can be easily accessed by removing a bolted "L-shape" protection.

Blade upwards
355 mm

Always
protected rod

Blade distance
1490 mm

Blade downwards
410 mm

Blade width 1550 mm - Blade height 380 mm

**TRACK IDLER
GREASING**
On undercarriage sides
in protected position

Blade and heavy duty undercarriage

STRUCTURE OF A BIG MACHINE

The blade box-like structure and the reinforced metal struts confirm that the 27V4 compact excavator is sturdy and guarantees a remarkable operating stability.

The master cylinder is mounted with rod towards the upperstructure and it is protected.

AUTOMATIC DOWNSHIFT

In gear first, this machine reaches 2.5 kmph, in gear second 5.5 kmph. The system automatically downshifts when **hydraulic pressure** reaches a preset value - and not in function of the actual speed. This always facilitates **smooth and predictable operations.**

Modular pipes (easy maintenance)



CAST ENDS

Cast ends of the dozer blade supporting frame guarantee maximum stability and resistance in connecting with the upper structure.

Very easy approach to blade



TRAVEL MOTORS KAYABA MADE IN JAPAN

Bridgestone rubber tracks 250 mm
(steel tracks available)

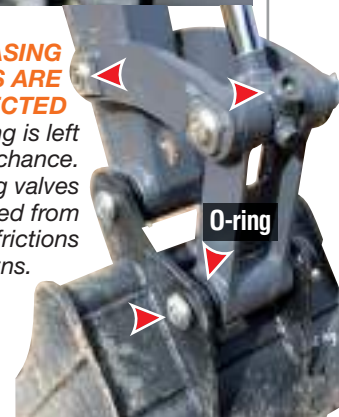
300 mm ground clearance

Accurate care of details



ALL GREASING POINTS ARE PROTECTED

Nothing is left to chance. The greasing valves are protected from possible frictions or breakdowns.



TWO PLANTS, ONE SOUL The 27V4 compact excavator is currently manufactured both in Japan and in Italy depending on the destination market. The structural parts of the machines produced in Italy are manufactured in Europe.

SMART & SUSTAINABLE PLANT



NEW PRODUCTION LINE A revolution has occurred in the KATO IMER plant in San Gimignano (certified ISO 9001). Since July 2013, the new compact excavators production line is in operation. This has resulted in a revised spaces allocation, thus optimizing the already existing minidumper production line and creating the new skid loader production line as well as a storage area at service

of all the three production lines. Quality control is now completely computerized and it is carried out via tablet devices.



Warehouse



Sub-assembly



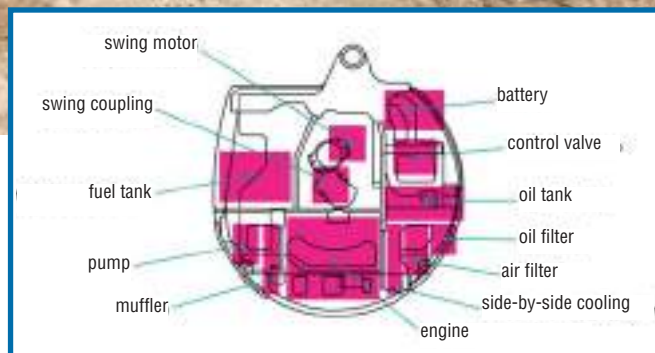
Production line



27V4 in short*

Operating weight (cab)	2.63 (2.71)	ton
Power	13.6	kW
Engine Shibaura	S773L-C	
Displacement	1131	l
Cylinders	3	
Bore x stroke	77 x 81	mm
Rated RPM	2400	rpm
Piston speed	6.48	mps
Cylinder valves	2	
Cammes	conventional	
Injection	indirect	
Injection phases	1	
EGR electronic control	no	
Exhaust gas aftertreatment	no	
Air feed	natural	
Pumps	2 variable + 1 fix	
Flow	2x28.8 + 19.2	l/min
Pump regulation	conventional	
Control valve	conventional	
Pressure	21.6	Mpa
Digging depth	2440 (2740)	mm
Vertical digging depth	1840 (2120)	mm
Digging reach	4440 (4700)	mm
Loading height	2900 (3090)	mm
Breakout force	2140	daN
Digging force	1430	daN
Travel speeds	2.5-4.4	kmph
Swing speed	9	rpm
Wheel base/track length	n.d./1900	mm
Track rollers	3	n°
Track width	1550	mm
Shoes width	250	mm
Swing radius	775	mm
Offset (L-R)	720 - 650	mm
Transport length (front blade)	4000	mm
Transport height	2460	mm
Blade (W-H)	1550 - 380	mm
Blade up/down	355 - 410	mm
Blade distance	1490	mm
Battery	60	Ah
Alternator	40	A
Fuel tank	42	l
Hydraulic system/tank	33/50	l

* Note: Data in brackets refer to version with cabin or dipperstick 1400 mm.



6 MODELS... one construction layout

Easy Maintenance

BORN BY A MODULAR CONCEPT

Compared to the previous model 25VXL, the new 27V4 compact excavator has much in common with the five bigger models. Several components of the 6 new models of the V4 series are the same. This makes it easier for dealers and hirers to carry out maintenance operations as well as to manage spare parts requirements.

- **ENGINE OIL AND FILTER CHANGE 250 hours**
- **HYDRAULIC RETURN OIL FILTER 500 hours**
- **HYDRAULIC OIL AND FILTER 1000 hours**
- **COOLANT CHANGE 1000 hours**



WATCH THE NEW
27V4 ON KATO IMER
YOUTUBE CHANNEL

KATO IMER S.p.A.
Head Offices and plant

53037 San Gimignano (Siena) Loc. Cusona - Italy
Phone: +39 0577 951 21 | Fax: +39 0577 982 400

info@katoimer.com | www.katoimer.com