

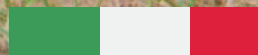
WALKAROUND



Canopy operating weight	1.895 kg
Yanmar engine	10,5 kW
Digging force	1.640 daN



KATO HD20N5



KATO HD20N5





HD20N5 is a traditional mini that relies on generous kinematics to make a difference. Completely new, it is built to last and ensure low running costs. Perfect for working with equipment, it features a cab

1

A mini-excavator that does not focus on compact size, but on absolute performance, digging depth and dumping height. Perfect for very tall operators

2

The basic structure of the turret is completely cast and, together with the "vertical" ballast, forms a non-deformable shell. Low operating centre of gravity

3

Traditional hydraulic system, without any electronic control, supplied by twin variable displacement pumps. High-quality, well-assembled components

4

Aux line 1 with proportional control as standard, flow rate can be set on two levels and the possibility of blocking the flow to work with equipment

5

Very efficient Stage V engine, without electronic control, well tested in earthmoving applications. High torque available at low rpm

6

It is available in a cabin version that includes heating. The Rops Fops structure does not have the rear left upright, to facilitate visibility

7

Undercarriage hydraulically extendable from 990 to 1,300 mm, made with cylindrical extensions. Well-protected pipes. A refined solution that enhances reliability over time

8

The standard equipment for Italy of the HD20N5 features a digging unit with 1,710 mm boom and a single 'long' 1,235 mm forearm

9

It is a 2 t mini-excavator that aims to compete with higher class machines in terms of maximum reach and lifting diagram

10

New generation machine, Stage V, but mechanically simple and with reduced total management costs. Hydraulic components always well accessible

**SINGLE FOREARM**

The standard forearm measures 1,235 mm, which translates into a maximum digging depth of 2,440 mm and a maximum dumping height of 2,520 mm.

Equipment carrier kinematics

The HD20N5 traditional mini-excavator is related to the HD18V5 zero-tail swing, but weighs 40 kg and has superior performance

COMFORTABLE PERFORMANCE Katolmer's designers wanted to broaden the range of the 2-tonne operating weight segment by offering a model with a traditional turret that could have higher performance and comfort than the zero-tail swing model. A second objective was to make the smallest model in the range with a cab. These were the foundations that led to the development of the new HD20N5, a model perfect for working with quick couplings and attachments, even in harsh climates.

REAR OVERHANG With the undercarriage fully extended, in 360-degree rotation, the rear ballast exceeds the track profile by 330 mm. The retracted carriage is 485 mm

THE MINIMUM ROTATION CONE IS ONLY 2,239 MM





PERFECT FLUSH-TO-WALL

Like its zero-tail swing sibling HD18V5, the HD20N5 allows easy flush-to-wall excavation from both sides.

Note the excellent shell turret base that extends all the way to the canopy base: even touching a wall does not damage a single bonnet.

LOWER AND PROTECTED CYLINDER The digging unit of the HD20N5 relies on high forces and broad kinematics. To the 1,710 mm long main boom from pivot to pivot and with an open boomerang profile, Katolmer has combined an impressive 1,235 mm forearm. In this way, HD20N5 stands as the alter ego in the range of the compact HD18V5. This positioning avoids overlaps and it is easy to imagine the two models in the same rental fleet: the HD18V5 for work in confined spaces and the HD20N5 for mounting tilt rotators or, for example, grapples.





Like its main competitors, HD20N5 has a hydraulically variable-width undercarriage to combine ease of transport with stability and lifting performance

Stable even at the limit

SOLID BASES The variable-width undercarriage, together with the low centre of gravity of this mini-excavator and the swing block connected to the machine by a single 250 mm pin, are the basis of the stability of the HD20N5.

The declared digging force is 1,670 daN, slightly higher than the category average, while the penetration force is 825 daN (942 daN in max pressure valve). When the undercarriage is extended, this mini-excavator rotated sideways and 2,5 m from the slewing ring centre lifts 400 kg off the ground, which becomes 300 if the undercarriage is retracted. Frontally, with 2.5 m radius and the blade lowered, it lifts 600 kg off the ground.

EXPANDABLE BLADE The ears of the blade are not hinged but separated and secured to the blade by a double pin. A simpler solution, but very reliable.

Closed blade extensions



Open blade extensions



Nachi Motors...



... variable displacement



Protected grease nipple



Undercarriage at 990 mm



Undercarriage at 1,300 mm



DESIGN QUALITY AND REALISATION

The undercarriage of HD20N5 is the hydraulically-widened undercarriage of a large excavator, but in miniature. We are not dealing with a structure made of box sections, but with cylindrical extensions that maintain their efficiency over time without requiring any maintenance other than greasing. Built to last.

THE PERFORMANCE OF THE NEW HD20N5

- DIGGING FORCE **1.640 daN**
- PENETRATION FORCE.* **825 (942**) daN**
- FRONT LIFTING CAPACITY WITH BLADE LOWERED* **600 Kg**
- LATERAL LIFTING CAPACITY (90°) BLADE DOWN AND RETRACTED UNDERCARRIAGE* **300kg**
- LATERAL LIFTING CAPACITY (90°) BLADE DOWN AND EXTENDED UNDERCARRIAGE* **400kg**

Notes: *radius 2.5 m, height 0 m; **942 daN is the penetration force in maximum pressure valve.



Accentuated blade curvature



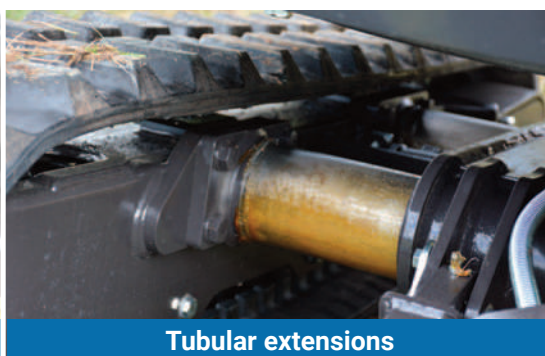
Protected cylinder rod



Protected grease nipple



Teflon top slide blocks



Tubular extensions

The blade is built with care. The extensions can be removed and reassembled with a double pin.

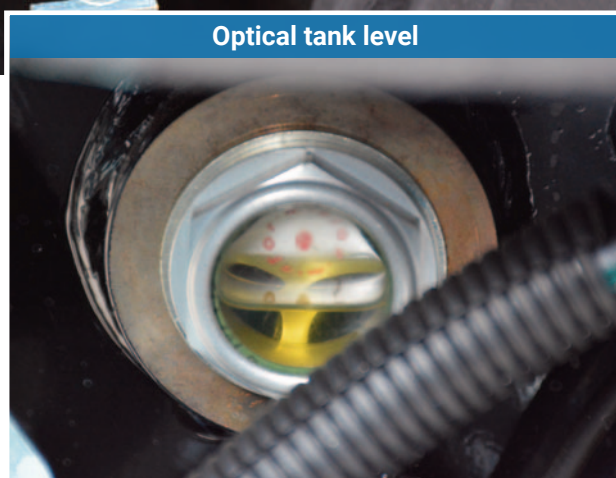
The extendable undercarriage is made with tubular extensions that do not retain soil or stones. More reliability over time.

Classic variable

The hydraulic system is traditional, with no electronic controls whatsoever. A variable displacement double pump and a gear pump feed the directional valve

CLASSIC RELIABILITY All hydraulic components are manufactured in Japan.

The variable displacement double pump with a rate of 17.2 litres per minute is manufactured by Shimadzu, as is the P3 gear pump. The P1 controls bucket arm, right drive engine, while the P2 forearm, Aux 1 and left drive engine. The P3, 12 litres/min, feeds swing or rotation and extendable blade or undercarriage.



Optical tank level

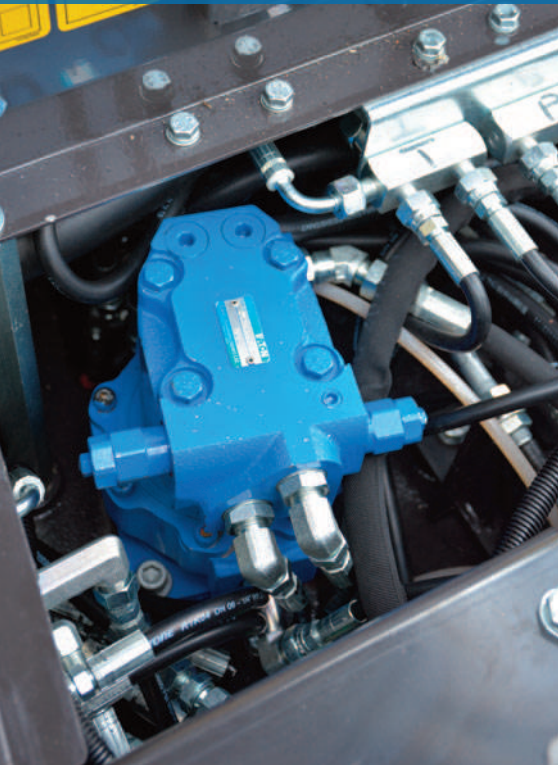


PEDAL SWING The operator manages the swing of the arm with the right foot. The control rocker arm is protected by a safety cover that serves as a footrest. The control also serves the Aux 2 functions.



Metal oil tank (16 litres)

Swing motor
Eaton made in Japan

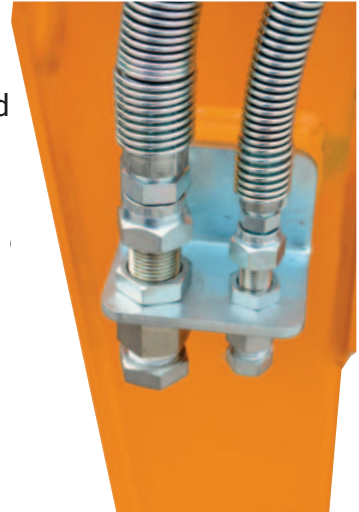


WALKAROUND by Construction

SIMPLE AND ACCESSIBLE

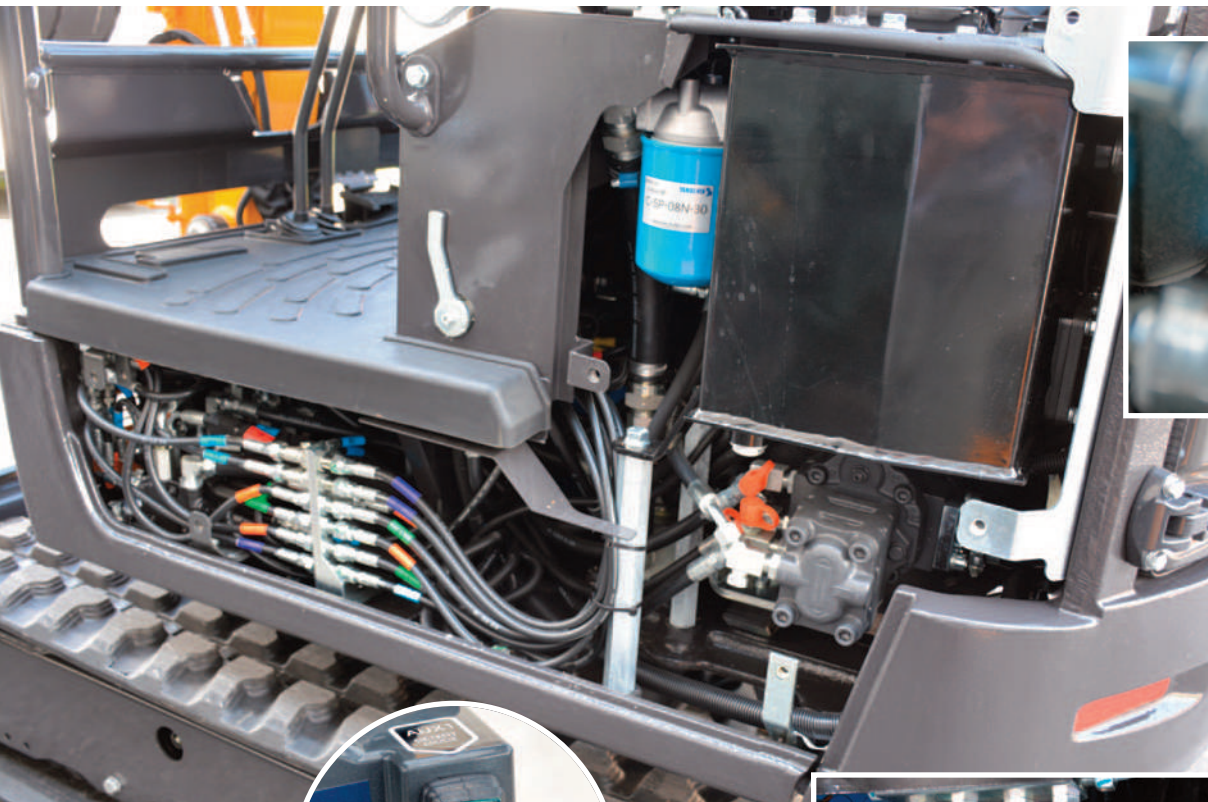
The choice of a metal tank and metal servo pressure accumulator ensures consistent performance and long system life. The open-centre directional valve is easily accessible and the system is made with minimal joints to avoid overheating the oil.

The travel motors are variable displacement and automatic gear shifting.



FROM SWING TO AUX 2

An electro-actuated valve diverts the flow of the P3, dedicated to the swing, to the second optional auxiliary line. The first line is proportional.



OPEN CENTRE

The hydraulic 9-spool open centre directional valve is manufactured by Nabtesco. Placed under the operator's feet, it is easily accessible.

DETENT MODE

The flow rate of Aux 1 can be low or high. Once chosen, it is possible to block the flow to constantly operate a hydraulic attachment such as a cutter head. The Aux 2 line is optional and it can be switched on/off.



SINGLE OR DOUBLE ACTING

To switch to control hydraulic attachments from single (hammer) to double acting (handling & demolition grapple) a lever on the turret side is used.



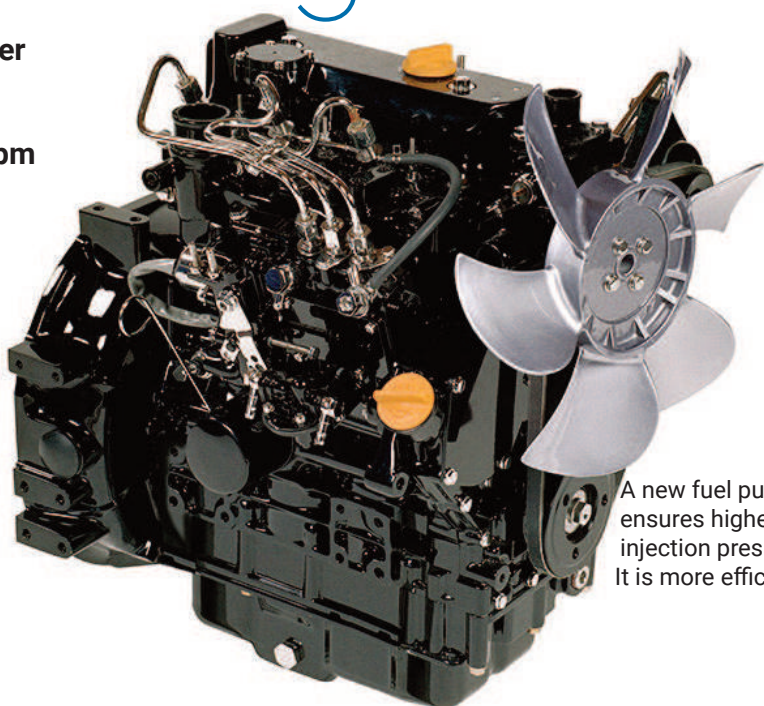
Easily accessible
air filterWell-made
fan guard**AT YOUR FINGERTIPS**

In the engine compartment of the HD20N5 there are two easily accessible water/diesel separators. An electric pump for re-igniting diesel fuel is standard.

Efficient Stage V

The 0.993-litre Yanmar 3TNV74E 3-cylinder engine is also used by competitor mini-excavators. In this case, it is the Stage V version with 10.5 kW net power at 2,300 rpm

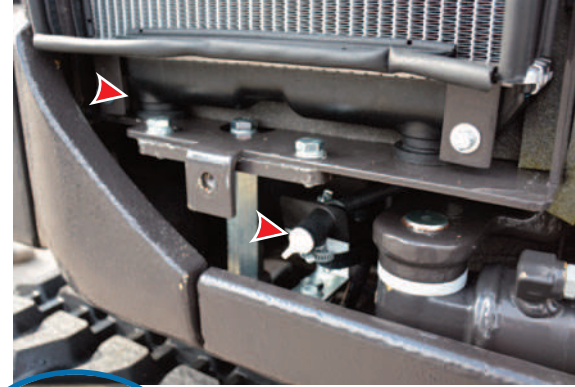
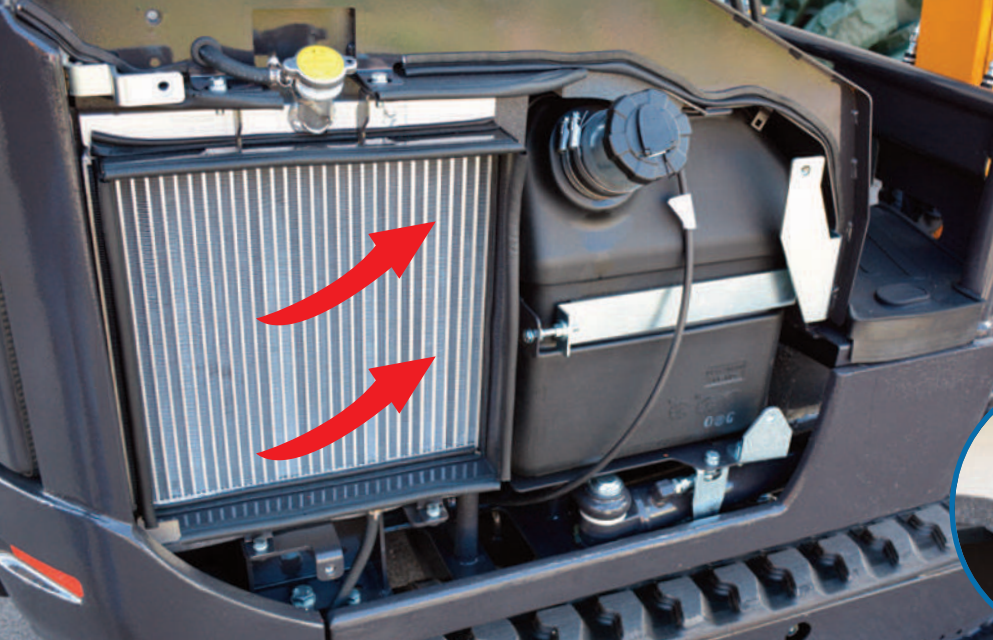
- 1 **STAGE V FORMULA** The injection is always direct, but thanks to injectors that work at higher pressure and optimized chamber design, combustion is better. Emissions into the atmosphere are decreasing, but so are noise emissions.
- 2 **IT'S THE TORQUE THAT COUNTS** The maximum torque of 52 Nm is already achieved at 1,800 rpm. The average piston speed of only 5.90 m/s makes this engine eternal (obviously if maintenance is carried out).
- 3 **REDUCED MANAGEMENT COSTS** It is a Stage V engine but without electronic control. Management costs remain low. In addition to the first 50 hours of operation, the oil change is carried out every 250 hours.



A new fuel pump ensures higher injection pressure. It is more efficient.



Dual-stage air filter



Heat exchangers with "S" mesh retain fewer impurities. The coolant and hydraulic oil heat exchangers are mounted in series.

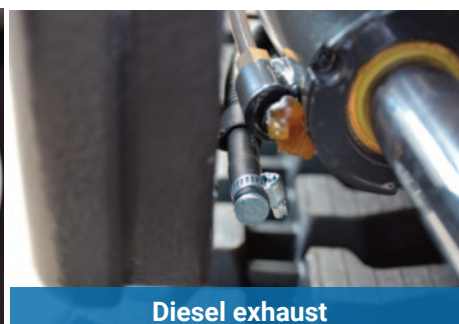


ATTENTION TO DETAIL

The cooling system has a micro-grid on the intake, a gasket around the perimeter of the heat exchangers, a compensation tank with a maximum level higher than the engine head and a very well protected plastic fan.

Blower fan

PLASTIC/ALUMINIUM MODULES The cooling system of Kato HD20N5 draws air from the bottom of the chassis and dissipates it through extractors on the right side. The aluminium exchangers, with composite material heads, are assembled on elastic supports to prevent cracks from thermal expansion. As on large excavators, the coolant can be drained from the radiator thanks to a tap connected to a pipe that runs under the turret. Carefully built system.



The diesel tank is made of plastic and at 22 litres it has a capacity above the category average. The cap opens with the ignition key, there is a removable impurity retainer grid.

Diesel exhaust

The ROPS, FOPS Level 1, TOPS canopy is certified to withstand machine tipping over, weighing up to 2,075 kg.



Seat with adjustable mechanical suspension

Also with cab

Kato's designers aimed to make a mini suitable for the average build of European and North American customers, also available with cab. The ergonomics are well -designed and the seat cushioned

SUITABLE FOR ALL SIZES On board the HD20N5 you don't feel constrained and you don't get tired gripping joysticks, because they are not small. There is no shortage of legroom and footroom and it is favoured by the absence of shifting pedals, while the distance between the Kawasaki joysticks and the high backrest of the Grammer seat, with adjustable mechanical suspension, allow you to assume a natural and relaxed posture. The operator's seat could easily be that of a mini-excavator with an operating weight of 3.5 t. The dashboard is analogue with engine coolant temperature and fuel level gauges. Behind the dashboard console is a handy 12V socket.



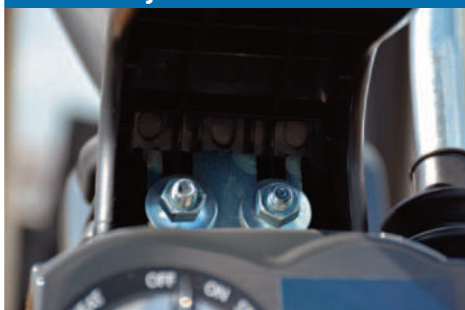
12 V socket
behind
dashboard



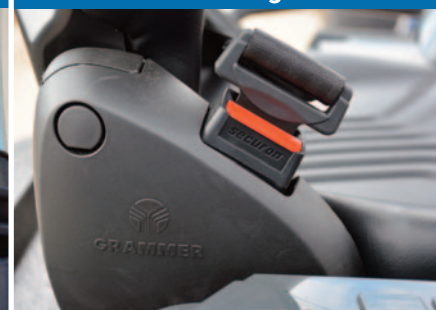
Single start/diesel key



Adjustable arm rests



Self-winding belt





HEATING

The cab version includes an effective heating module, with adjustable ventilation and three vents that allow the flow to be adjusted independently by 360 degrees. Perfect for cold climates.

The cab version has an under-boom work light, like the canopy model, plus two over-cab front lights and a rear light.

BROAD WINDOW The cabin structure is manufactured by Italcab, which also takes care of the assembly. If you choose the closed version, HD20N5 comes with a velour Grammer seat. The upper part of the windscreen can be folded down and the lower part features compass opening. The right side window is sliding.



Tinted top glass with curtain

120 mm more space than the HD18V5

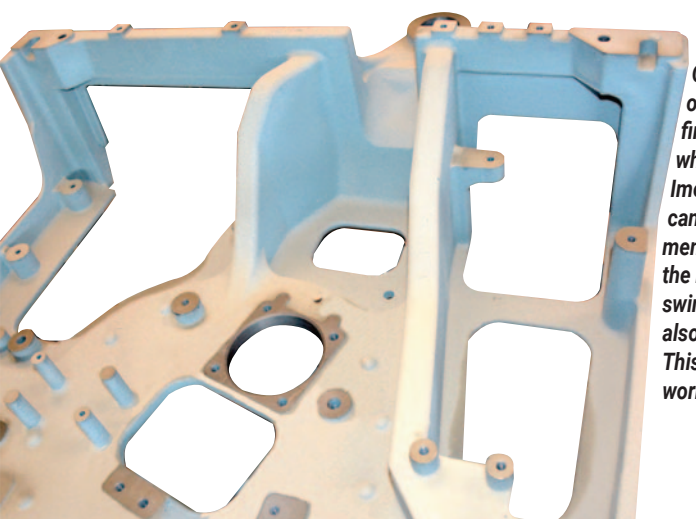




The turret is in fact a cast shell to which the "vertical" rear ballast is joined. The canopy bolted to them closes the circle

TOP QUALITY HD20N5 relies on a robust cast turret base to optimise weight distribution. This solution ensures maximum robustness and lowers the centre of gravity. This solution is in our opinion the heart of the project and is realised in a way that does not penalise access to the mechanics.

100% cast turret base



STILL UNFINISHED

On the left, the base of the cast turret, finished with primer, which comes to Kato Imer from Japan. You can see the cast cross-members that support the nose to which the swing block is attached, also in casting. This is high quality workmanship.

Lamierati resistenti (spessore elevato)



WEIGHT WHERE YOU NEED IT Over the years we have seen end customers weld plates under turret to give more weight at the bottom to their mini-excavator. Here you won't have to... Engine accessibility preserved.



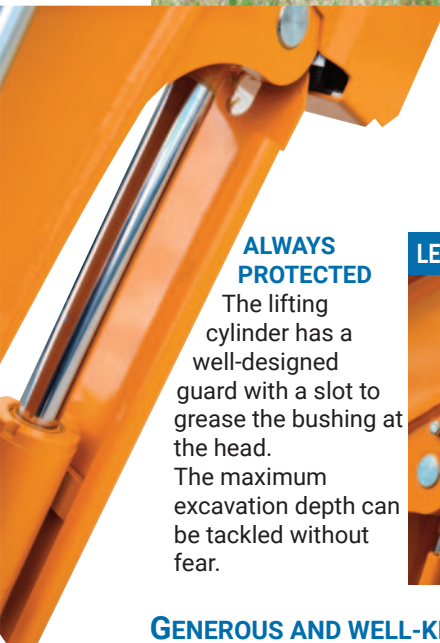
LINEAR DESIGN

On the left, you can see the turret base that houses all the components. On the front you can see the nose that supports the swing block and above it the passage designed for the passage of hydraulic pipes.



LIKE THE BIG ONES

The arm and forearm are carefully built and feature progressive bracing ears.



ALWAYS PROTECTED

The lifting cylinder has a well-designed guard with a slot to grease the bushing at the head. The maximum excavation depth can be tackled without fear.

FRICTION WELDED
The three hydraulic cylinders have friction-welded rods to ensure strength and perfect alignment, thus preventing future oil leakage.



LED headlight with 2,800 lumens of power



WELL-PROTECTED HEADLIGHT

The Nordic Lights work light is in the middle of the arm, very well protected. It doesn't reduce visibility and you don't risk ruining it.



GENEROUS AND WELL-KEPT The excavation unit is well made. The forearm opening is remarkable and with the only available configuration, a maximum digging height of 3,530 mm, a maximum depth of 2,440 and a maximum depth at the plinth of 2,020 mm can be achieved. The hydraulic lines are inside the boom, except for those of the auxiliary hydraulic lines .



BUILT TO LAST

The connecting rods are very thick and the bucket control "plate" has a radial shape. The two bushings have perfectly protected grease nipples. Even when working in the presence of boulders, there is no risk of ruining any grease nipples.

Grease points in protected position





Kato HD20N5 in numbers

Canopy operating weight (cab.)	1.89 (2.04)	t
Power	10.5	kW
Yanmar engine	3TNV74	Stage V
Displacement	0.99	l
Cylinders	3	
Bore x stroke	74 x 77	mm
Calibration speed	2,300	rpm
Piston speed	5.67	m/s
Valves per cylinder	2	
Distribution	conv.	
Injection	conv.	
Injection steps	1	
Egr	no	
Exhaust gas treatment	n.d.	
Air supply	natural	
Pumps	var + fix	
Flow Rate (aux)	2 x 17.2 + 12	l/min
Pump adjustment	conv./no	
Directional spool valve	conv.	
Maximum hydraulic pressure	20.6	MPa
Max. excavation depth	2,440	mm
Plinth depth	2,020	mm
Ground excavation dist.	3,970	mm
Loading height	2,520	mm
Digging force	1640	daN
Penetration force	825	daN
Shifting speed	2.1-4	km/h
Turret slewing speed	8.5	rpm
Undercarriage wheelbase/length	n.d./1.57	mm
Support rollers	3	
Undercarriage length	990 var 1.300	mm
Track width	230	mm
Rear overhang	980	mm
Offset excavation (left-right)	615-375	mm
Transport length	3,580	mm
Transport height	2,400	mm
Blade (W-H)	990-1,300	mm
Blade lift-lower	300-230	mm
Blade overhang	1,160	mm
Battery	1 x 45	Ah
Alternator	20	A
Diesel tank	22	l
Hydraulic system/tank	16/21	l

MADE IN TUSCANY

The Katolmer factory in San Gimignano (SI) produces Kato minis up to the 3.7t category and is implementing the production line for future skid and compact wheel loaders. To make room for this line, the production of haulers was transferred to Imer.



Very low TCO

NOTHING CHANGES The adoption of a Stage V engine does not change the maintenance intervals required by the manufacturer. The choice is to focus on a top quality motor oil, but not on an expensive long life and maintain service every 250 hours (the first is carried out after the first 50 hours of use). ISO VG46 hydraulic oil is changed every 1,000 hours or, if working regularly with a hydraulic hammer, every 600 hours.

MAINTENANCE INTERVALS

- **MOTOR OIL 250 HOURS**
- **MOTOR OIL FILTER 250 HOURS**
- **DIESEL FILTER 500 HOURS**
- **AIR FILTER 500 HOURS**
- **HYDRAULIC OIL FILTER 1,000 HOURS**
- **HYDRAULIC OIL 1.000 HOURS**
- **COOLANT 1.000 HOURS**
- **BUSHING GREASING 50 HOURS**