

AF 125

HYDRAULIC DRILL RIG



INTERNATIONAL

AF 125



THE PERFECT BLEND
OF TECHNOLOGY
AND PERFORMANCE

The AF 125 is a very reliable machine that has been created for customers who want a small-sized machine with low dimensions capable of giving top performance together with high manoeuvrability. It is the result of several years of research and study by the entire IMT technical staff, carried out in order to achieve a top-quality product that satisfies every customer's requirements. Every suggestion received by IMT customers all over the world were taken into consideration during the designing and development of this machine. The rig has been conceived for foundation piles for diameters up to 1500 mm and a depth up to 38 m and it is mounted on a Caterpillar 323D series excavator with lowers undercarriages extensible from 2,55 m to 3,65 m. IMT has studied every part in detail to ensure maximum reliability and performance.





OPERATOR STATION

The operator station of the AF 125 is a particular example of comfort and rationality. Besides the comfort available on the CAT base (adjustable seat, air conditioning, etc) all the controls are properly placed so as to give the operator maximum control on the machine operations. The main controls, such as main winch, swing, rotary and crowd system are operated by means of two main joysticks. The drilling depth and pile verticality control systems are foreseen in the cabin.





UNDERCARRIAGE

Manufactured by Caterpillar on the basis of our specifications, the crawler track undercarriage used on the AF125 has the following characteristics:

- it has a central "H" type frame which can widen the lowers from 2,55 m (for transportation) to 3,65 m (working phase) and guarantees maximum operation and resistance.
- the lowers have a length of 4,66 m and a width of 3,65 m which guarantee exception stability in any type of ground. It has considerable traction force which allows easy movement even in the most difficult job sites (maximum superable gradient 75%).

BASE

The AF 125 uses a CAT 323D series. Caterpillar installs a CAT C 6.4 Acert® engine on this base which is set to supply a power of 155 HP (115 KW) at 1800 rpm. The hydraulic system is made in order to exploit the power of the diesel to the most and in order to guarantee maximum performance.



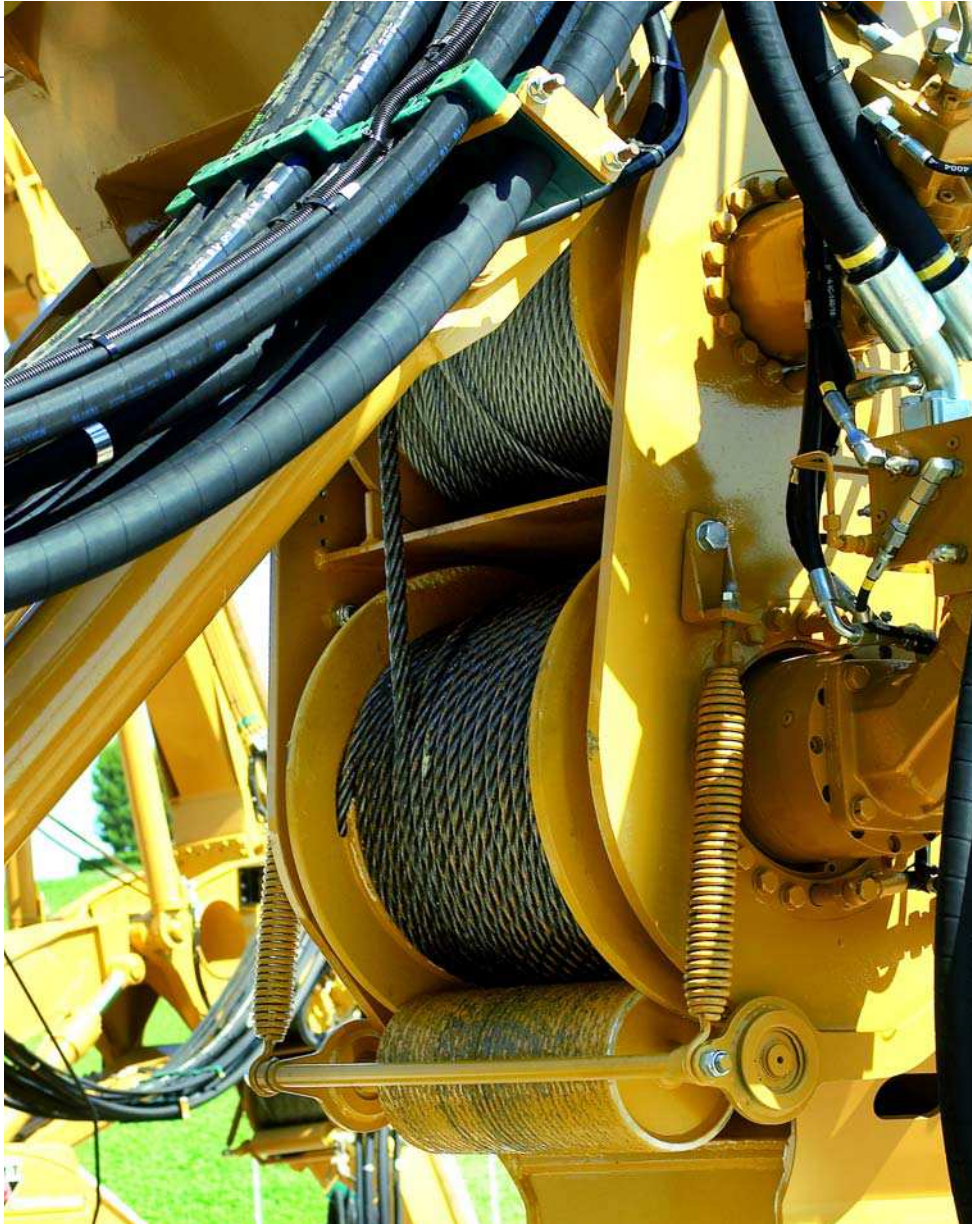


ROTARY

The rotary of the AF125 is extremely reliable. It has been designed in order to guarantee a very compact, efficient and powerful rotary. IMT has developed a rotary with a single transmission group. The transmission group is made up of a hydraulic motor and a new power shift purposely studied and designed to obtain maximum performance. The tooth crown and the pinion are always in oil bath supported by two large bearings. The rotary is capable of transmitting a nominal torque of 117 kNm to the tool. The working speeds vary from 7,5 to 27 rpm. The unloading speed is 45 – 120 rpm. During the drilling phase, the rotary has the entire power of the diesel at its complete disposal. The rotary is equipped with a sliding adapter that is essential to absorb the considerable shock connected to the high speed of the main winch.







ARTICULATION

All the articulations of the AF125 use case hardened pins and bushings of large dimensions which guarantee maximum precision in time. This kind of articulation offers the following advantages:

- possibility of moving the working axis accurately without losing the verticality of the mast
- possibility of working in a large range (essential when working with casing oscillator)
- correct anchoring of the mast by means of a hinge and tilting cylinder anchored at the top
- correct division of the machine weight in transportation configuration.

WINCHES

The winches are positioned in the lower part of the mast, in front of the cabin, so that the operator can constantly check the proper operation. Thanks to the fact that the cable moves parallelly to the mast, flexion is not created on the upper part of the mast and the operating life of the cable is therefore much longer.

During the lifting and lowering phase, the main winch has the entire power of the diesel at its disposal; this gives the machine considerable speed and therefore maximum productivity. It has a hydraulic "down the hole" system which prevents the unwinding of the cable when the tool reaches the ground.

Another system, call "free flow", allows the cable to advance in the drilling phase when the rotary advances.

The main winch has a maximum pullback of 120 kN and a speed of 90 m/min. and the auxiliary winch has a maximum pulling force of 60 kN and a speed of 90 m/min.



MAST

It is built with high-resistance material, capable of supporting considerable stress with reduced weights (and therefore inertial force). The verticalization of the mast is controlled by an electronic level located in the cabin.

The head of the mast has a "Y" shape for the pulleys of the main and secondary winches in order to position steel cages without moving the parallelogram.

The particular conformation of the mast, made up of two moveable parts, allows you to transport the Kelly bar with the machine, by means of a hydraulic cylinder, thereby reducing the time it takes for the opening.

KELLY BAR

The standard kelly bar associated with the machine is a J-lock type, 4-element kelly bar with a square joint of 130 x 130 mm and a depth of 38 m. It is also possible to supply a 5-element kelly bar with a depth of 47 m or a kelly bar that is slightly shorter than the standard kelly bar (4/33) that is useful when utilizing casings or an IMT full interlocking kelly bar.

CROWD SYSTEM

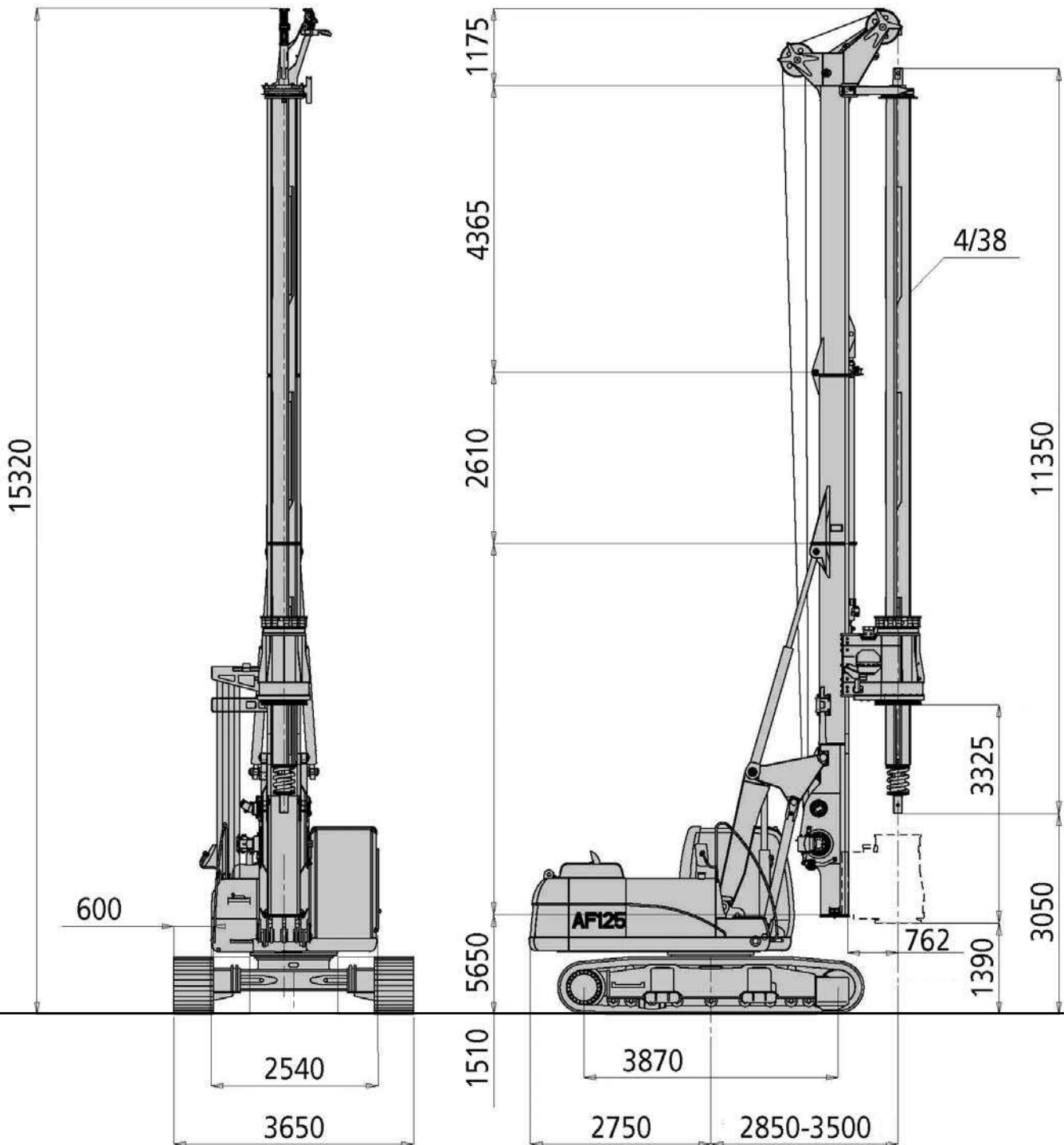
The crowd system of the AF125, located on the front part of the mast, allows the vertical translation of the rotary.

Thanks to the crowd system, located on the rotary carrier slide, we are capable of transferring a push of 100 kN on the tool. The use of the crowd system is also exploited when carrying out piles with the driving and extraction of the cylinder. In fact, we are capable of guaranteeing an extraction force of 165 kN. The stroke is 3325 mm.



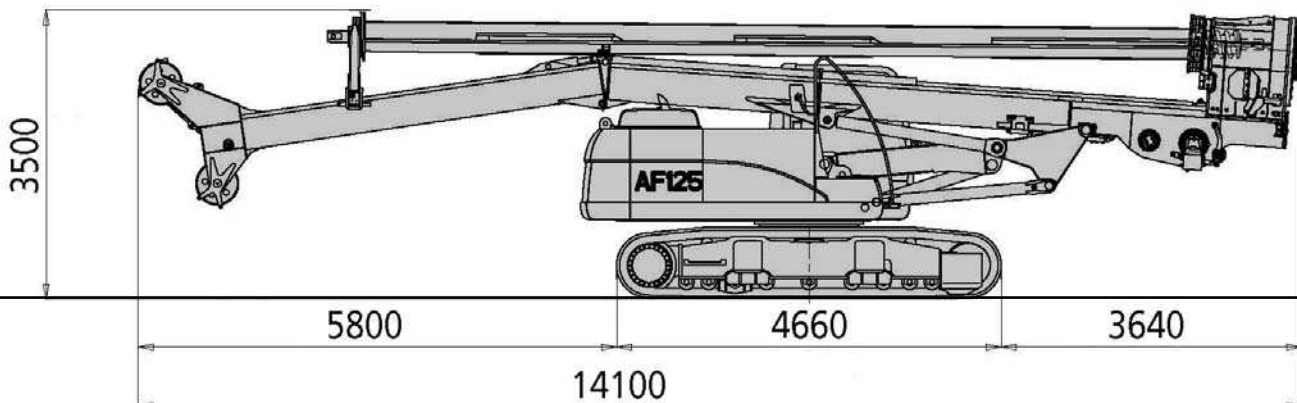
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TECHNICAL DATA



Base		Caterpillar 323D		Caterpillar 323D	
Undercarriage length / widening range / shoe	mm	CAT 4660/2550 - 3650/600		in	183/100 - 144/23,6
Engine type		CAT C 6.4 Acert		CAT C 6.4 Acert	
Power		115 KW (155 HP) @1800 rpm		115 KW (155 HP) @1800 rpm	
Rotary					
Nominal torque	kNm	117		lbf ft	86295
Working speed	rpm	7,5 - 27		rpm	7,5 - 27
Discharge speed	rpm	45 - 120		rpm	45 - 120
Winches					
Main winch pull force	kN	120		lbf	26980
Main winch speed	m/min	90		ft/min	295
Main winch Cable diameter	mm	22		in	/
Auxiliary winch pull force	kN	60		lbf	13490
Auxiliary winch Speed	m/min	90		ft/min	295
Auxiliary winch Cable diameter	mm	15		in	/
Crowd system					
Kelly crowd push	kN	100		lbf	22485
Kelly crowd pull	kN	165		lbf	37095
Stroke	mm	3325		in	131
Mast					
Mast raking forward		5°		5°	
Mast side raking		±5°		±5°	
Mast raking backwards		15°		15°	
Pile max. diameter	mm	1500		in	60
Kelly bar					
Standard		4/38		4/38	
Options available		4/34 - 5/47		4/34 - 5/47	
Operating Weight w/standard kelly bar	t (metric)	33		lbs	72755

All technical data are indicatives and subject to change without notice



WORLDWIDE SALES AND ASSISTANCE NETWORK



IMT dealers, a global network at your service

IMT, like very few other companies in the field, has a global commercial and assistance network which is present in over 30 countries. From any part of the world, IMT clients know that they can always count on fast and efficient service.

Furthermore, since 1997 IMT drill rigs are sold and supported on the American market by Kelly Tractor, one of the biggest Caterpillar dealers in the world.

This is an important goal for the further reinforcement of the presence of IMT in international markets.



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