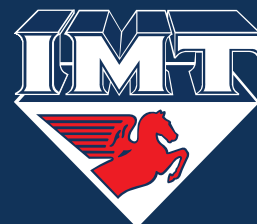


AF 300

HYDRAULIC
DRILL RIG



INTERNATIONAL



AF 300

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THE PERFECT BLEND
OF TECHNOLOGY
AND PERFORMANCE

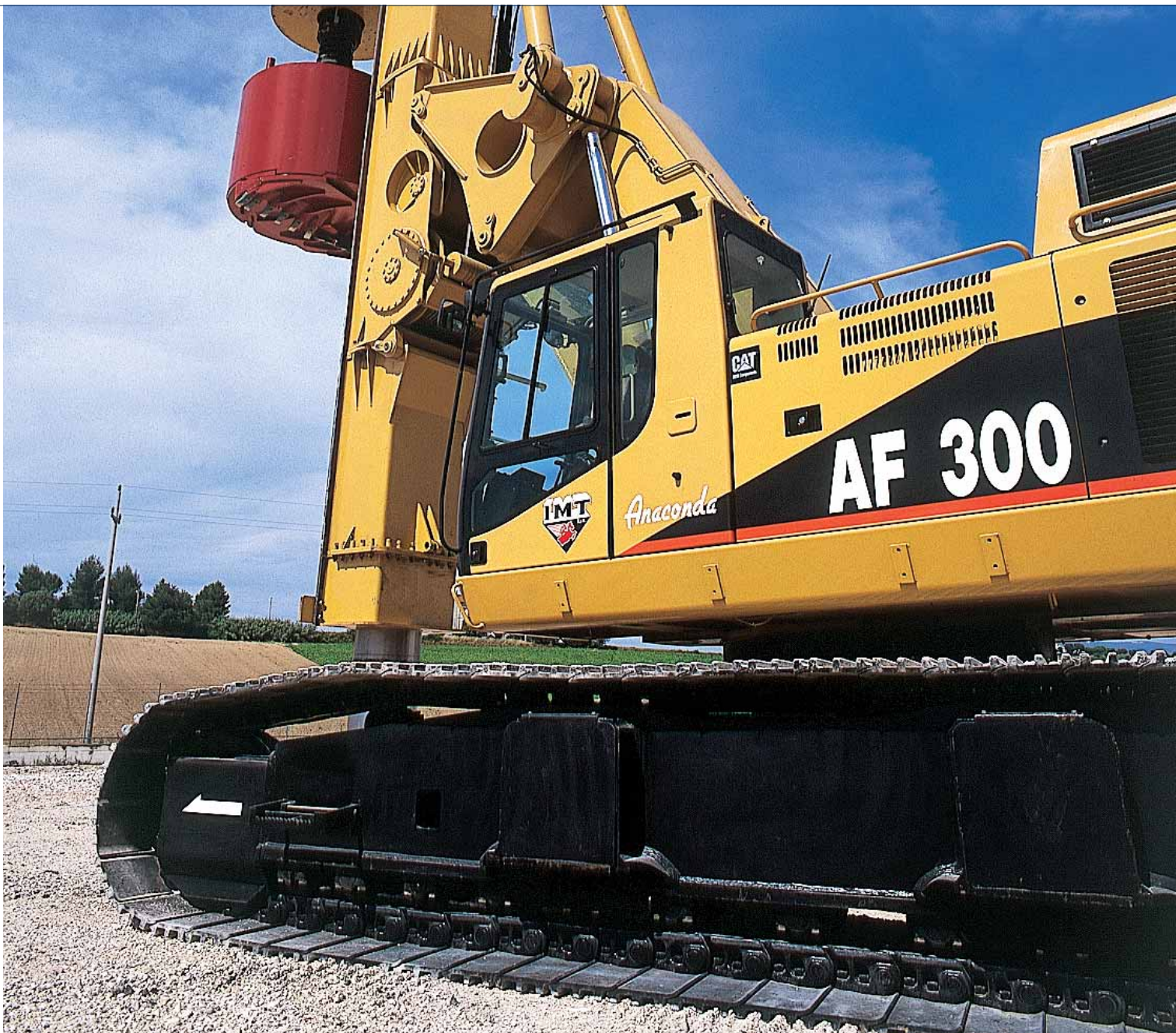
The AF 300 is a very powerful machine which has been created for customers who want top performance combined with top quality and reliability. This drill rig was studied very carefully in order to conceive a machine that can be compared to no other. The AF 300 represents the best solution for job sites with very difficult ground conditions, an extraordinary capability of making drilling foundations piles for diameters up to 3000mm and depth up to 91 metres. This powerful rig is mounted on an exceptional base which is the CAT 365 C HHP, one of the best bases worldwide, with lowers undercarriages extensible from 3,9m to 5,5m. This machine is capable of satisfying all the customers' requirements due to its great reliability and quality combined with incredible power.



OPERATOR STATION

The operator station of the AF 300 represents the "state of the art" with solutions to guarantee maximum comfort for the operator and the maximum functionality of every part of the machine. Every control has been positioned in the best possible place, giving the operator maximum control on the machine operations. There are also some very comfortable options like the adjustable seat and air conditioning which give an incomparable comfort to the operator. The main controls, such as main winch, upper rotation, rotary, pull down, speed change, foot mast are operated by means of two main joysticks. The controls for the crawler track opening, auxiliary winch, articulation moving and mast turnover are located on the control panel. It is also possible to obtain the mast vertical positioning by simply pushing a button located above the cylinder joystick. It is possible to rotate the upper automatically to go back to the exact drilling position by using a button located on the upper rotation joystick. This device has proven to be very useful both in the presence of casings and fluids which block visibility of the rig.





UNDERCARRIAGE BASE

Manufactured by Caterpillar on the basis of our specifications, the undercarriage used on the AF 300 has the following characteristics:

- it has a central "H" type frame which can widen the lowers from 3,9m (for transportation) to 5,5m (working phase) and guarantees maximum operation and resistance.
- The lowers have a length of 6865 mm and a width of 5,5m which guarantee exceptional stability in any type of ground.
- It has considerable pulling force (300 kN effective) which allows easy movement even in the most difficult job sites (maximum superable gradient 75%).

The AF 300 uses a CAT 365 C HHP base. Caterpillar installs on this base a CAT C 15 type motor which is set to supply a power of 418 HP (312 KW) at 1800 rpm. In order to exploit the power of the diesel to the most and guarantee maximum performance, IMT installs a load sensing hydraulic system together with the Caterpillar original for pull down (as well as for services) which guarantees extremely high productivity.

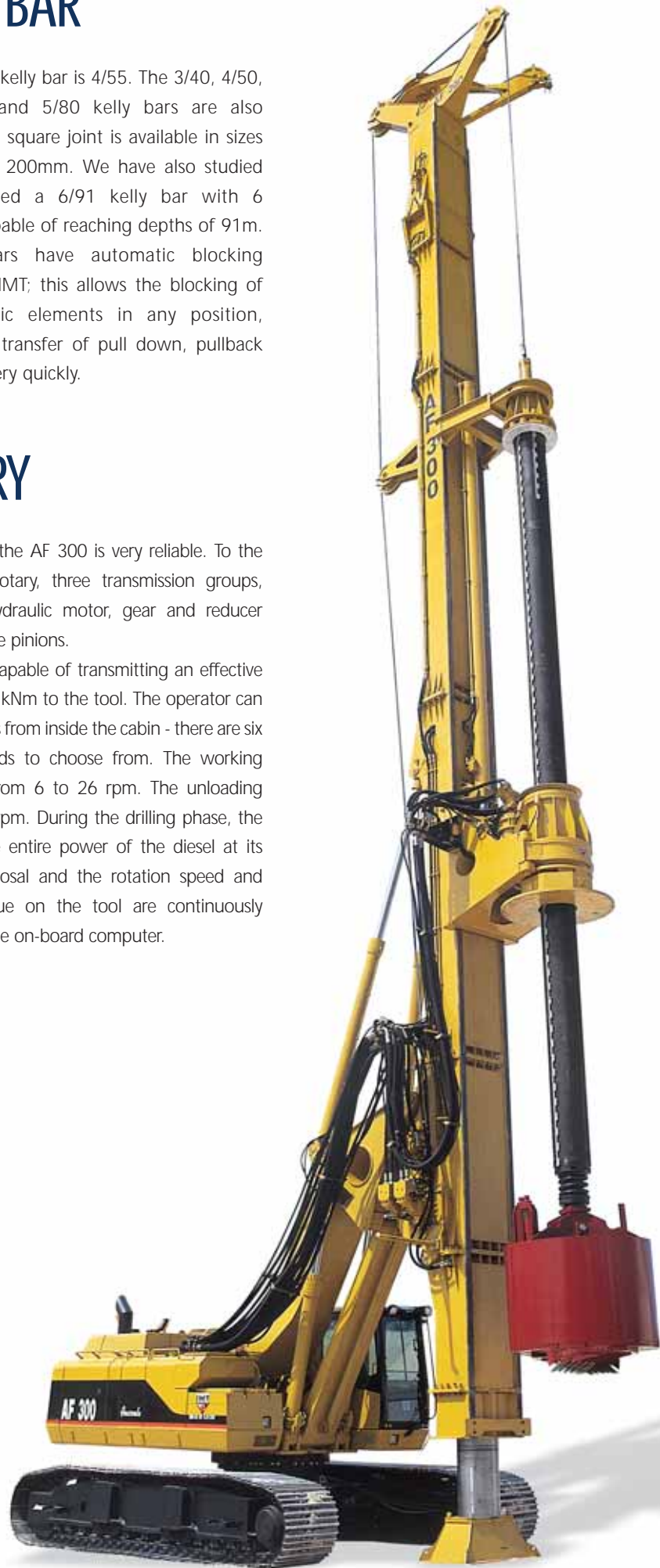
KELLY BAR

The standard kelly bar is 4/55. The 3/40, 4/50, 4/60, 5/70 and 5/80 kelly bars are also available. The square joint is available in sizes of 150, 177, 200mm. We have also studied and developed a 6/91 kelly bar with 6 elements, capable of reaching depths of 91m. All kelly bars have automatic blocking patented by IMT; this allows the blocking of the telescopic elements in any position, allowing the transfer of pull down, pullback and torque very quickly.

ROTARY

The rotary of the AF 300 is very reliable. To the side of the rotary, three transmission groups, formed by hydraulic motor, gear and reducer move the three pinions.

The rotary is capable of transmitting an effective torque of 350 kNm to the tool. The operator can change speeds from inside the cabin - there are six different speeds to choose from. The working speeds vary from 6 to 26 rpm. The unloading speed is 125 rpm. During the drilling phase, the rotary has the entire power of the diesel at its complete disposal and the rotation speed and effective torque on the tool are continuously recorded by the on-board computer.







MAST

It is built with high-resistance material and conceived for heavy duty use, capable of supporting considerable stress with reduced weights, and therefore inertial force. The verticalization of the mast can be obtained automatically at any moment. The head of the mast is positioned at the top and has a "Y" shape for the pulleys of the main and secondary winches. The upper end is hydraulically articulated to change into the transportation phase. The lower extremity (articulated for the transportation phase) can be disassembled when working with casing oscillators of considerable size.

ARTICULATION

All the articulations of the AF 300 use case hardened pins and bushings of large dimensions which guarantee maximum precision. 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. 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 on-board computer constantly displays pullback, speed and tool position. A sound signal warns the operator of improper operation (example: if during the raising phase two elements of the Kelly are inadvertently raised simultaneously). The main winch has a maximum pullback of 300 kN and a speed of 70m/1'. The auxiliary winch has a maximum pullback of 140 kN and a speed of 80 n/1'.





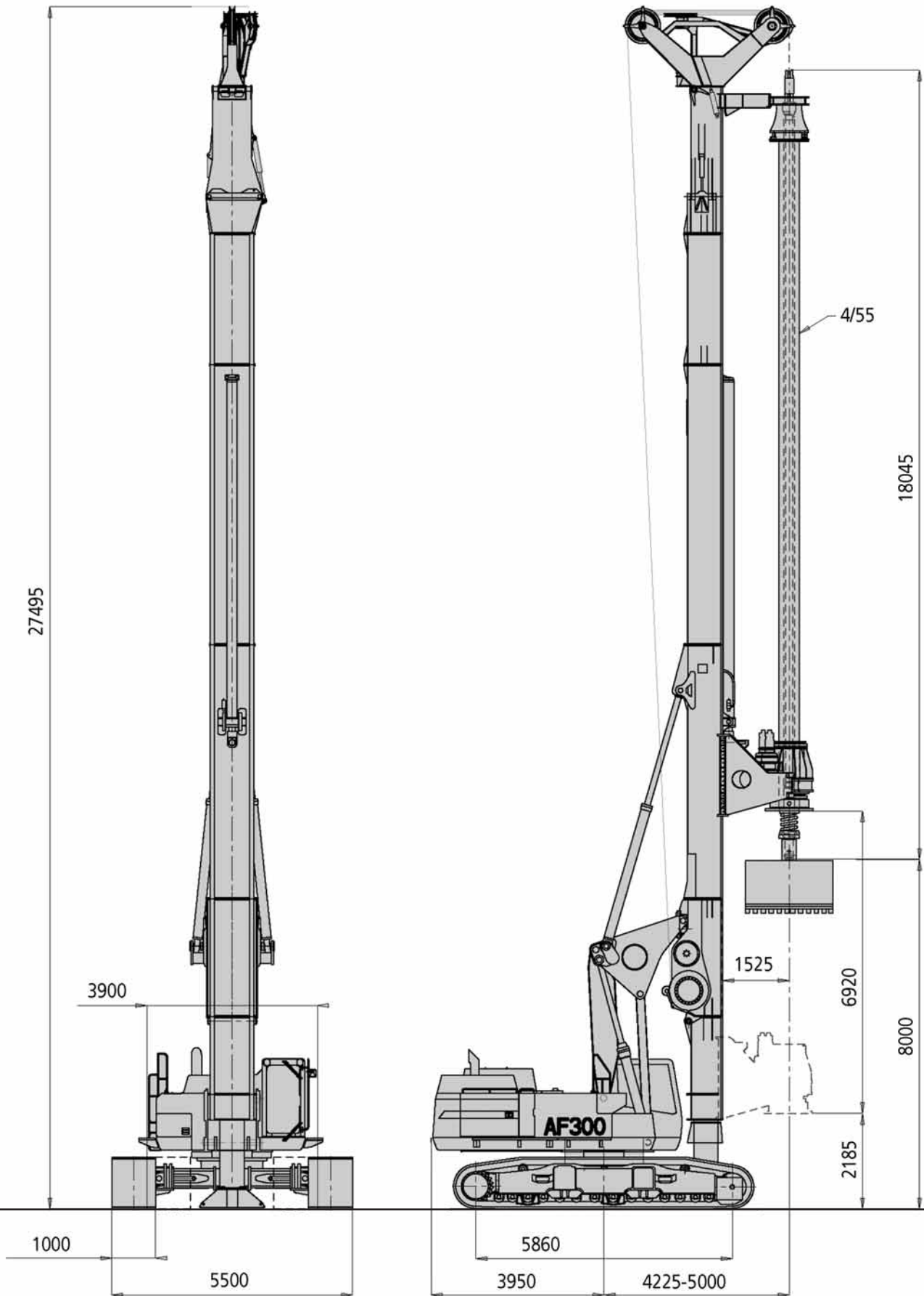
CROWD SYSTEM

The crowd system of the AF 300 is positioned on the mast and is used to transfer push and pull on the rotary. Thanks to the automatic blocking system patented by IMT, the push of 400 kN and pull of 400 kN are transferred directly on the tool.



AF 300

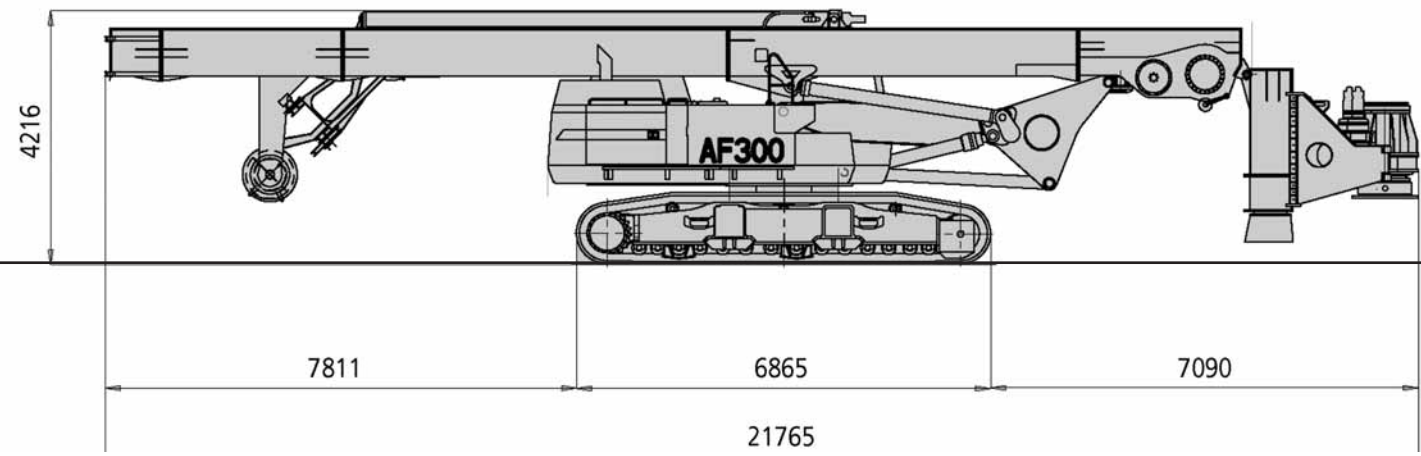
TECHNICAL DATA





Base		CAT 365 CHHP		CAT 365 CHHP	
Undercarriage length / widening range / shoe	mm	CAT 6865/3900 - 5500/1000		in	270/153,5 - 216,5/39
Engine type		CAT C15		CAT C15	
Power		312 KW (418 HP) at 1800 rpm.		312 KW (418 HP) at 1800 rpm.	
Rotary					
Installed torque	kNm	350		lbf ft	258146
Working speed	rpm	6 - 26		rpm	6 - 26
Discharge speed	rpm	50 - 115		rpm	50 - 115
Winches					
Main winch pull force	kN	300		lbf	67443
Main winch speed	m/min	70		ft/min	230
Main winch Cable diameter	mm	34		in	/
Auxiliary winch pull force	kN	140		lbf	31473
Auxiliary winch Speed	m/min	80		ft/min	262
Auxiliary winch Cable diameter	mm	22		in	/
Crowd system					
Kelly crowd push	kN	400		lbf	89923
Kelly crowd pull	kN	400		lbf	89923
Stroke	mm	6920		in	272,4
Mast					
Mast raking forward		5°		5°	
Mast side raking		±5°		±5°	
Mast raking backwards		15°		15°	
Pile max. diameter	mm	3000		in	118
Kelly bar					
Standard		4/55		4/55	
Options available		3/40 - 4/50 - 4/60 - 5/70 - 5/80 - 6/91		3/40 - 4/50 - 4/60 - 5/70 - 5/80 - 6/91	
Operating Weight w/standard kelly bar	t (metric)	110		lbs	242508

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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