

AF 190

HYDRAULIC
DRILL RIG



INVT[®]
INTERNATIONAL



IMT International S.p.A. was founded in 1974 by Mr. Giulio Accorroni. Since then, the Company has concentrated on the acquisition of specific know-how for the planning and construction of hydraulic drill rigs, in constant search of high quality products and customer satisfaction.

IMT has always invested in technology and design. This policy has given life to a new plant that is on the cutting edge and whose objective is that of raising production quality even more.

In 1999, IMT International S.p.A. was certified ISO 9001. This important, official recognition was given to IMT International S.p.A. following strict inspections carried out by authorised institutions. This confirms the quality level, which has already been appreciated over the years, all over the world.

IMT International S.p.A., like very few other companies in the field, has a global commercial and assistance network, present in over 30 countries in the world. From anywhere in the world, IMT customers know they can always count on fast and efficient 24-hours service, which ensures that all inquiries are taken care of immediately. Furthermore, all IMT models are mounted on the best known bases in the field, which gives our products reliability as well as the guarantee that spare parts can be easily found all over the world.

IMT's main goal, today, is not only to improve technology, but also to make our growing family of customers satisfied for have chosen IMT.



AF 190

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THE PERFECT BLEND
OF TECHNOLOGY
AND PERFORMANCE

The AF 190 is the machine that is best known by the biggest contractors of the world. Its success is due to its characteristics of operative comfort, stability, reliability and, most importantly, productivity.

The AF 190 drill rig was conceived to meet the requirements of numerous clients that need a machine with high performance which considerably surpasses that our competitors' drill rigs of the same class on the market at the moment.

The AF 190 drill rig is mounted on Caterpillar base model 329 D excavator base with a Caterpillar undercarriage with extensible lower from 3 to 4,3m.

The AF 190 can drill with maximum diameter of 1800mm for a maximum depth of 60m.



OPERATOR STATION

The operator station of the AF 190 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.



BASE

The AF 190 uses a CAT 329D base. Caterpillar installs a CAT C 7.2 type motor on this base which is set to supply a power of 250 HP (187 KW) at 1800 rpm. In order to utilize the power of the diesel to the most so as to guarantee maximum performance, IMT installs a load sensing hydraulic system, together with the Caterpillar original for crowd system (as well as for services); this translates into extremely high productivity. The diesel is in compliance with U.S. EPA Non-Road Regulation norms type TIER III.

UNDERCARRIAGE

IMT has chosen to use an expandable carriage made by Caterpillar on the basis of our technical specifications, giving enormous advantages. The actual traction force is 380 kN; this allows the AF 190 to move freely even in the toughest grounds. The length of the undercarriage is 5210mm, the shoes are 800 mm. The width during the transportation phase is 3000mm and 4300mm during working operations. Thanks to its configuration, the undercarriage of the AF 190 guarantees optimal resistance and stability.





KELLY BAR

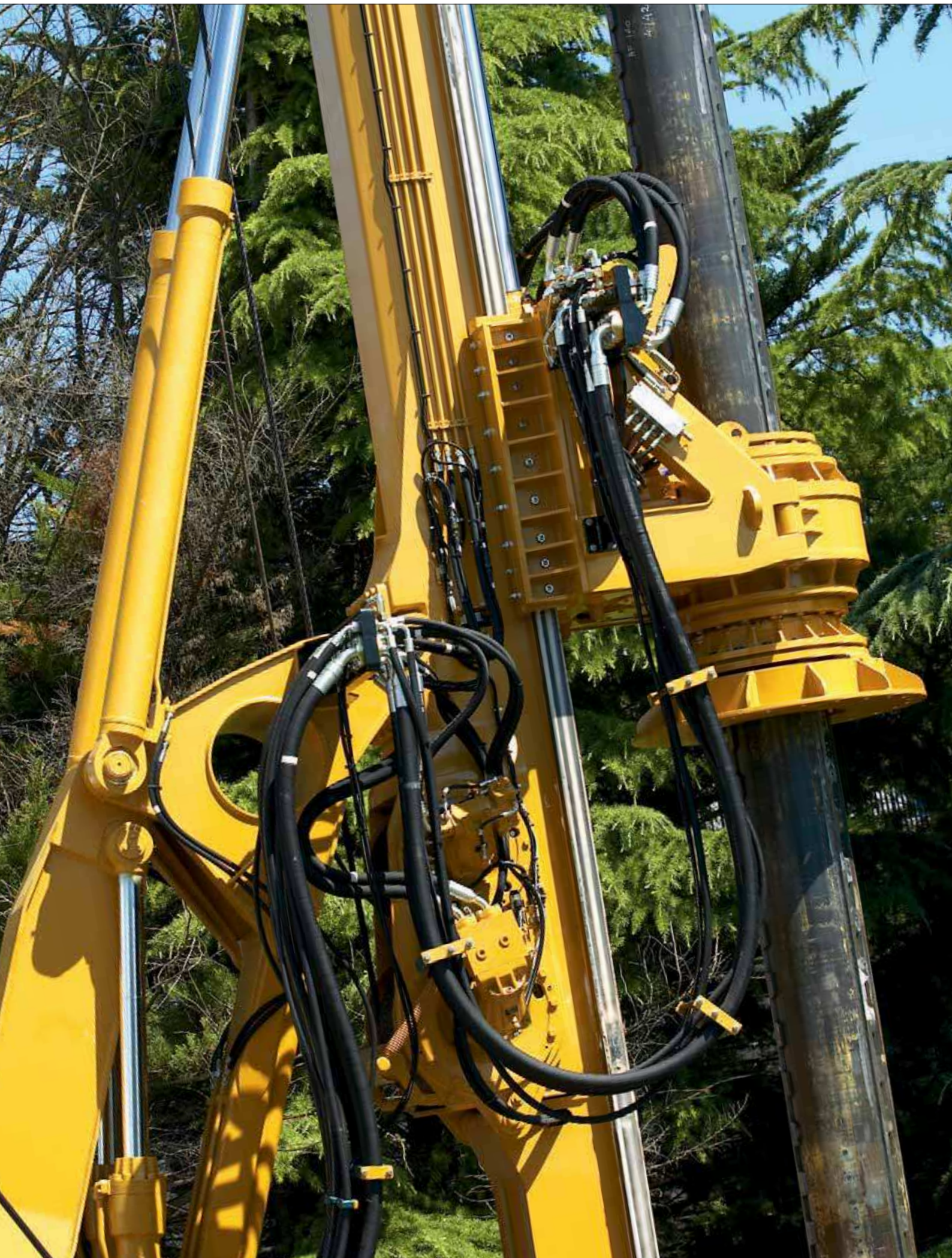
The standard Kelly bar is 4/42. The 4/46 and 4/48 are also available. These Kelly bars guarantee maximum torque up to the maximum depth. The lower part of the Kelly bars is reinforced with special steel rings and has an interlocking system patented by IMT. Upon request it is possible to use a 5/60 Kelly bar reducing the maximum rotary torque.

ROTARY

The rotary of the AF 190 was conceived for unlimited duration. To the side of the rotary, two transmission groups, formed by hydraulic motor and reductor gear, move the two pinions. The rotary is capable of transmitting a nominal torque of 205 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 7 to 25 rpm. During the drilling phase, the rotary has the entire power of the diesel at its complete disposal. The rotation speed and effective torque on the tool are continuously recorded by the on-board computer. With the rotary it is possible to supply a universal joint for the direct installation of casings.







MAST

It is built with high-resistance material, capable of supporting considerable stress with reduced weights (and therefore inertial force). It has great frontal (+5-15°) and lateral (+8°) range; this allows the machine to work in uneven grounds as well. 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 transportation phase) is usually disassembled when working with casing oscillators of considerable size.

ARTICULATION

The articulation of the AF190 is the parallelogram type. Besides allowing movements of the working axis without losing the verticality of the mast, it also allows to connect the mast at a high point, reducing the oscillating movements of the mast during rotations and while moving on the job site.

WINCHES

The winches are positioned in the lower part of the mast. This solution, which characterizes IMT, allows the operator to directly control the correct operation and movements of the cables. During the lowering and lifting phases, the main winch has the total power of the diesel at its disposal; this gives the machine optimal productivity despite the "heavy duty" Kelly bars. The main winch has maximum pull of 180 kN and maximum speed of 85 m/l'. It is equipped with a "down the hole" system, which can be excluded, that prevents the cable from unwinding as soon as the tool touches the bottom of the hole. It is also equipped with a "free flow" systems which allows the Kelly bars to advance proportionally to the advancement of the rotary. The depth of the tool is constantly recorded by the on board computer. The auxiliary winch has a maximum pull of 80 kN and maximum speed of 85 m/l'. The extremity of the cable can be positioned in the center of the rig by means of a slight rotation of the upper.





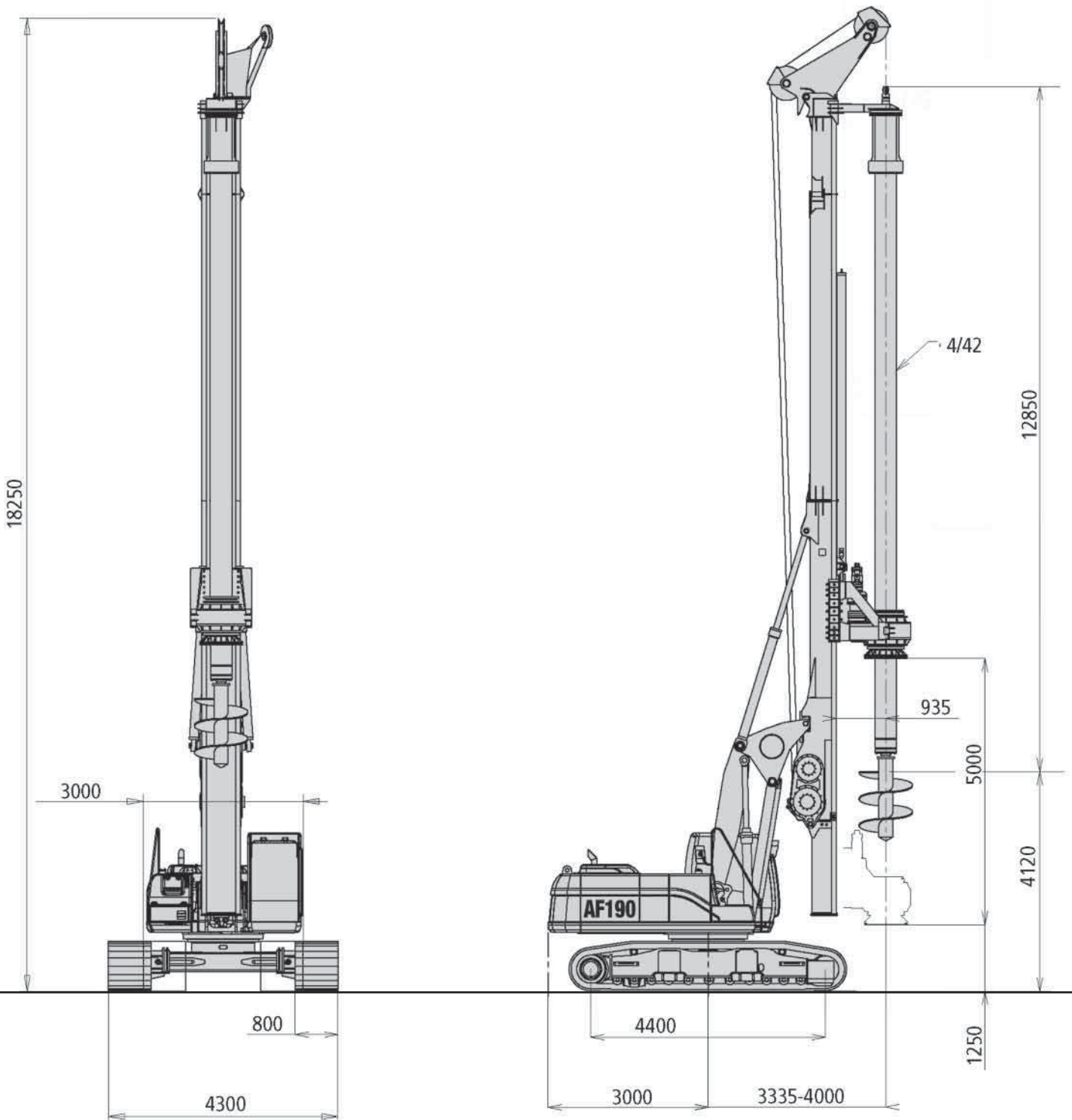
CROWD SYSTEM

The crowd system of the AF 190 is positioned on the mast and it is used to transfer push and pull on the rotary. Thanks to the automatic blocking system patented by IMT, the push of 180 KN and pull of 200 KN are transferred directly to the tool.



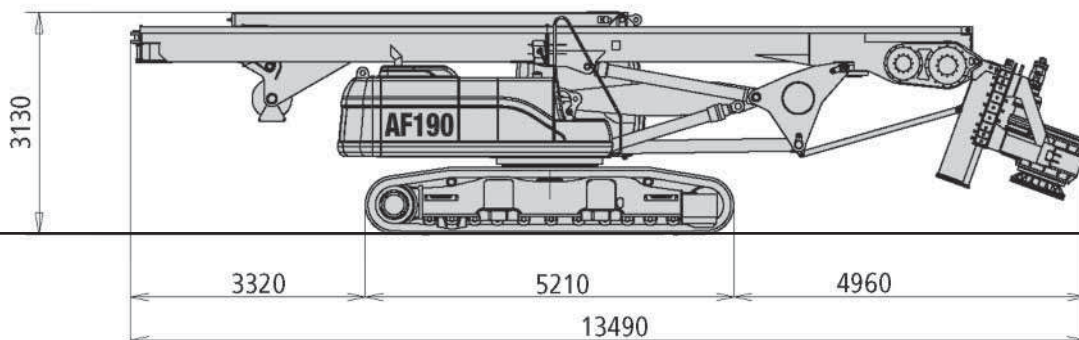
AF 190

TECHNICAL DATA



Base		Caterpillar 329D		Caterpillar 329D	
Undercarriage length / widening range / shoe	mm	CAT 5210/3000 - 4300/800	in	205/118 - 169/31,5	
Engine type		CAT C 7.2		CAT C 7.2	
Power		187 KW (250 HP) @1800 rpm		187 KW (250 HP) @1800 rpm	
Rotary					
Nominal torque	kNm	205		lbf ft	151205
Working speed		7-25		7-25	
Discharge speed		40 - 120		40 - 120	
Winches					
Main winch pull force	kN	180		lbf	40470
Main winch speed	m/min	85		ft/min	279
Main winch Cable diameter	mm	26		in	/
Auxiliary winch pull force	kN	80		lbf	17985
Auxiliary winch Speed	m/min	85		ft/min	279
Auxiliary winch Cable diameter	mm	18		in	/
Crowd system					
Kelly crowd push	kN	180		lbf	40470
Kelly crowd pull	kN	200		lbf	44965
Stroke (mm)	mm	5000		in	197
Mast					
Mast raking forward		5°		5°	
Mast side raking		±8°		±8°	
Mast raking backwards		15°		15°	
Pile max. diameter	mm	1800		in	71
Kelly bar					
Standard		4/42		4/42	
Options available		4/46 - 4/48 - 5/60		4/46 - 4/48 - 5/60	
Operating Weight w/standard kelly bar	t (metric)	54		lbs	119050

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.





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