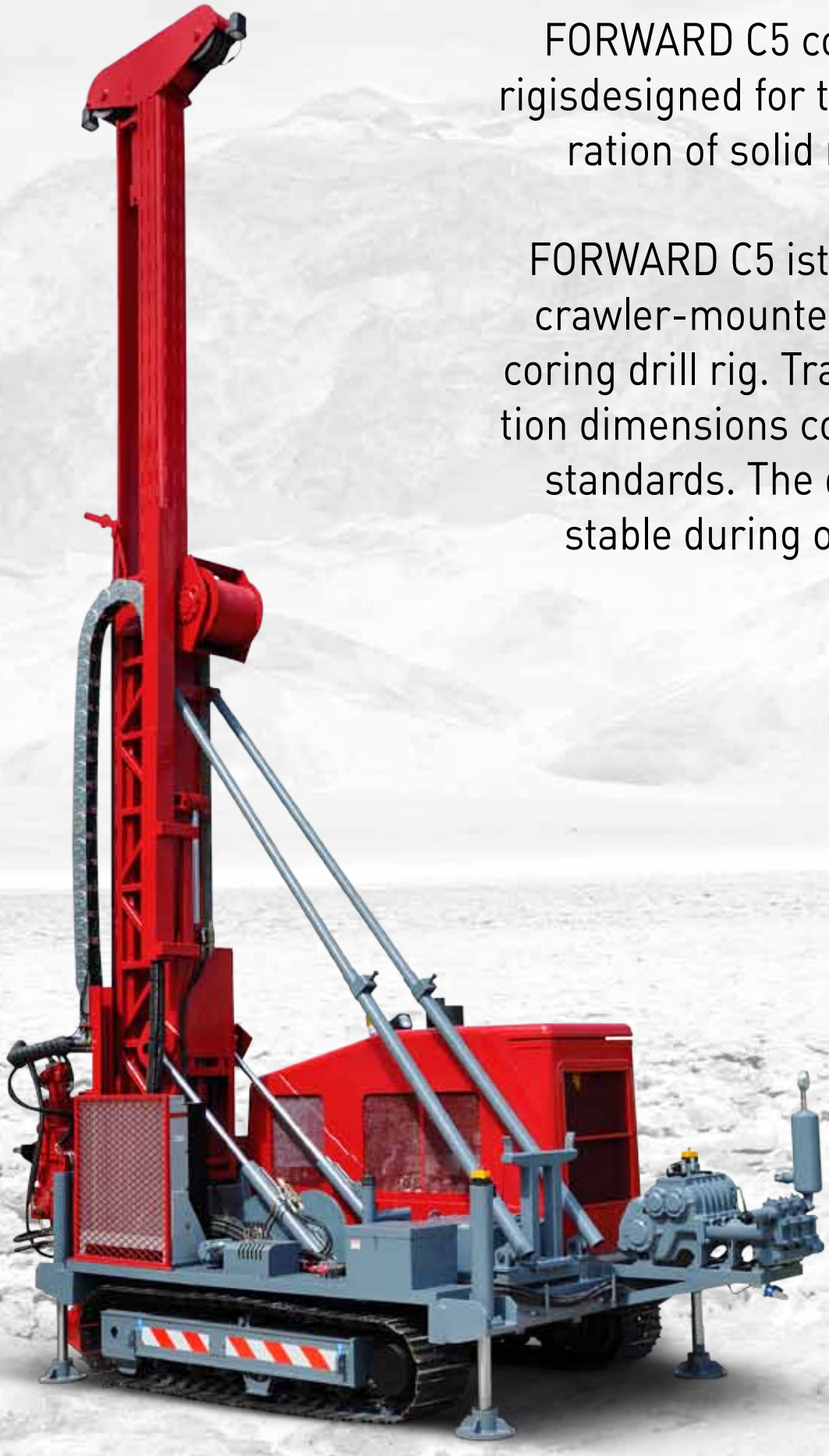
FORWARD C5 CORRING DRILL RIG

FORWARD coring drill rigs of C series are advanced equipment designed and manufactured on the basis of many years' joint research and practical experience of engineers from Australia, Germany, Russia and China. The drilling rigs are compact, adapted for peculiarities of drilling technology, equipped with a lot of useful and practical functions.

In design of FORWARD coring drill rigs of C series, we made our best to take into account all peculiarities of core drilling that affect the performance. Careful designing and strict quality control guarantee excellent technical parameters and high degree of reliability of FORWARD coring drill rigs.

FORWARD C5 CORRING DRILL RIG
TECHNICAL INFORMATION



FORWARD C5 coring drill rigisdesigned for the exploration of solid minerals.

FORWARD C5 isthemobile crawler-mounted surface coring drill rig. Transportation dimensions conform to standards. The drill rig is stable during operation.

MAST

Rigid design of the mast provides superior performance and reliability even under the toughest geological conditions. Separate allocation of operator work place and mast lift/extend control valve seriously reduces malfunction probability during work.

Hydraulic hoses transporter excludes hoses' damage probability during operation.

Mast is installed in working position for drilling using two hydraulic cylinders, which are equipped with balancing valves to increase security.

The telescopic mast ensures the reliability of drilling. The underside end of the drilling mast anchors the ground surface while drilling, providing additional stability. While transportationthe mast can be moved to center of gravity of the rig for more safety.

OPERATOR PANEL

While transportationthe operator panel is in closed position in order to avoid breakdowns.

The operator panel is equipped with non-fixing control joysticks, which provide additional safety for the operator. Drilling and rotation joystick with friction damper and non-fixing hoist joystick provide convenience and safe operation. There is auto alarm function forlow level of hydraulic oil.

HOOD

Fiberglass hood provides excellent sound and heat insulation. Hood tilts with two fixing hydraulic props, which ensure easy access to maintenance of engine and hydraulic system.

HYDRAULIC SYSTEM

Hydraulic pumps are directly connected to PTO-driven auxiliary pump, ensuring easy maintenance.

DRILL HEAD

Drillheadis suitable for drillingwithrods of B-Ps-eries, rods diameter is from 55,5mmto 114,3mm, inner diameter from main axle is 121mm.

Patentedjaws with chuck and hydraulic opening/ spring closing function insure fail-safe operation. Spring clap and disk chuck clutch drill rods securely.

Drill head with direct drive from hydraulic cylinder ensure stability during drilling process, as well as more accurate and reliable pressure regulation while drilling withpressure increase or decrease.

OIL COOLING RADIATOR

Separately located radiator is equipped with fan adjust-ment function according to environment temperature.

Radiators placed along increase the hydraulic oil's cooling efficiency. The drill head is equipped with a separate radiator section.

MAIN WINCH

Mounting of main winch on mast minimizes coring drill rig's vibration.

CRAWLER CHASSIS

Crawler chassis of the drill rig is equipped with hydraulic motors of Korean production, which guarantee high operation quality.

Drilling Depth Guidelines				
	Dry Hole		Fluid Filled	
	Hole Depth (Meters)	Hole Depth (Feet)	Hole Depth (Meters)	Hole Depth (Feet)
BRQ/BQ	1 310	4 298	1 500	4 920
BRQTK/BQTK	1 648	5 400	1 880	6 170
NRQ/NQ/NQ2	1 006	3 300	1 151	3 800
NRQ V-WALL	1 139	3 700	1 291	4 230
HRQ/HQ	683	2 240	781	2 560
HRQ V-WALL	860	2 800	972	3 180
PHD/PQ	451	1 480	515	1 690
PHD V-WALL	615	2 010	690	2 260

The figures in these tables have been calculated, based on field experiences, based on a vertical, straight, clean down hole using a 8000Kg hoist (single line pull). Actual drilling capacity will depend on in-hole tools, conditions, drilling techniques and equipment used.

Prime Mover		
Standard Unit	DEUTZ BF6M2012, liquid cooled, turbo changed, inter-Cooled, diesel engine	
Displacement	6.06 L	370 in3
Power (maximum) at 2,500 RPM	147 KW	200 HP
Emissions Certification	EUIII	EUIII

Torque and RPM Ratings		
	Speed (no load) RPM	Torque (stall) Nm
1st Gear	175 - 210	5 500 – 4 800
2nd Gear	260 - 300	3 300 – 2 800
3rd Gear	540 - 640	1 850 – 1 600
4th Gear	850 - 1000	1 100 – 950
5th Gear	1 300 – 1 500	700 - 600
NOTE: Drill head output speed and torque are infinitely variable in each gear range as indicated. Actual rotation speed is affected by engine RPM and hydraulic motor displacement setting.		

Hydraulic System		
	Metric	U.S.
Primary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	220 L/min	58 gpm
Maximum Pressure (factory setting)	31 Mpa	4 495 psi
Secondary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	132 L/min	34.8 gpm
Maximum Pressure (factory setting)	28 Mpa	4 060 psi
Tertiary Pump	Axial piston, variable displacement load sensing, pressure compensated with low pressure standby.	
Max Flow	132 L/min	34.8 gpm
Maximum Pressure (factory setting)	28 Mpa	4 060 psi
Auxiliary Pump I	Gear, matic axial clearance compensation mechanism assures high volumetric efficiency for long time	
Max Flow	44 L/min	11.6 gpm
Maximum Pressure (factory setting)	20 Mpa	2 900 psi
Auxiliary Pump II	Gear, matic axial clearance compensation mechanism assures high volumetric efficiency for long time	
Max Flow	18 L/min	4.75 gpm
Maximum Pressure (factory setting)	20 Mpa	2 900 psi

Drill Head		
Stand PQ – Hollow Spindle		
Rotation Motor	SAM hydraulic motor – variable/reversible	
Mechanical Transmission	Funk 5 speed	
Ratios	1st	7.31 : 1
	2nd	4.31 : 1
	3rd	2.45 : 1
	4th	1.54 : 1
	5th	1.00 : 1
Final Drive	Straight cut gears	
Ratio	2.564 : 1	
Head lateral movement	Hydraulically operation	
Hydraulic PQ Chuck	Hydraulically opened. Disk spring closed.	
	Axial holding capacity of 244 640 N (55 000 lbf)	
Drill Head Lubrication	Force fed bearings, oil bath for gears	
Drill Head Lubricating Oil Filtration	25 micron high pressure oil filter	

FORWARD

Drill Mast And Feed System		
	Metric	U.S.
Feed Stroke	3.6 m	11.8 ft
Feed Pull	181 300 N	40 800 lbf
Feed Thrust	88 200 N	19 850 lbf
Rod pull	6 m	20 ft
Drilling Angle	30° off horizontal to 90°vertical down	700 - 600

Draw Works		
	Metric	U.S.
Main Line Hoist	Double speed motor	
Hook Load (single part line)		
Bare Drum	8 000 Kg	17 640 lb
Hoisting Speed (single part line)		
High Speed (Bare Drum)	85 m/min	278 ft/min
Low Speed (Bare Drum)	50 m/min	164 ft/min
Main Hoist Cable	18mm	0.7 in
Minimum Breaking Strength	25 600 Kg	56 448 lb
Foot Clamp Capacity	PWT	
Wireline Hoist		
Line Pull		
Bare Drum	1 500 Kg	3 300 lb
Full Drum	425 Kg	940 lb
Line Speed		
Bare Drum	121 m/min	395 m/min
Full Drum	430 m/min	1 410 m/min
Drum Capacity		
(6mm swaged)	1 600 m	5 250 ft
Minimum Breaking Strength	3 420 Kg	7 540 lb

Additional Information		
	Metric	U.S.
Fuel Tank Capacity	200 L	52 US gal

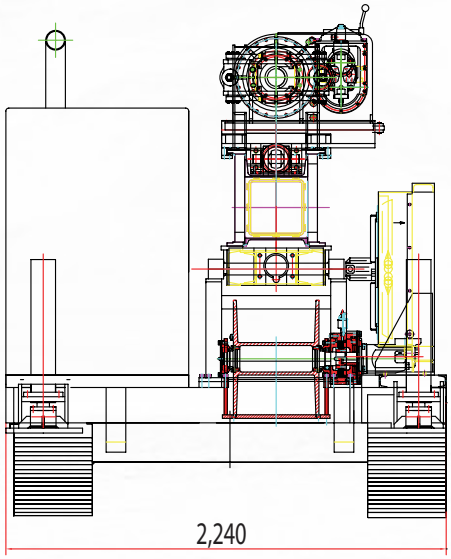
FLUID CIRCULATION PUMP		
Single-Action Triplex Piston Pump, Manual shift, Pump Speed are infinitely variable.		
	Metric	U.S.
Displacement	0 - 250 LPM	0 - 66 gpm
Pressure	0 - 7 Mpa	0 - 1 015 psi

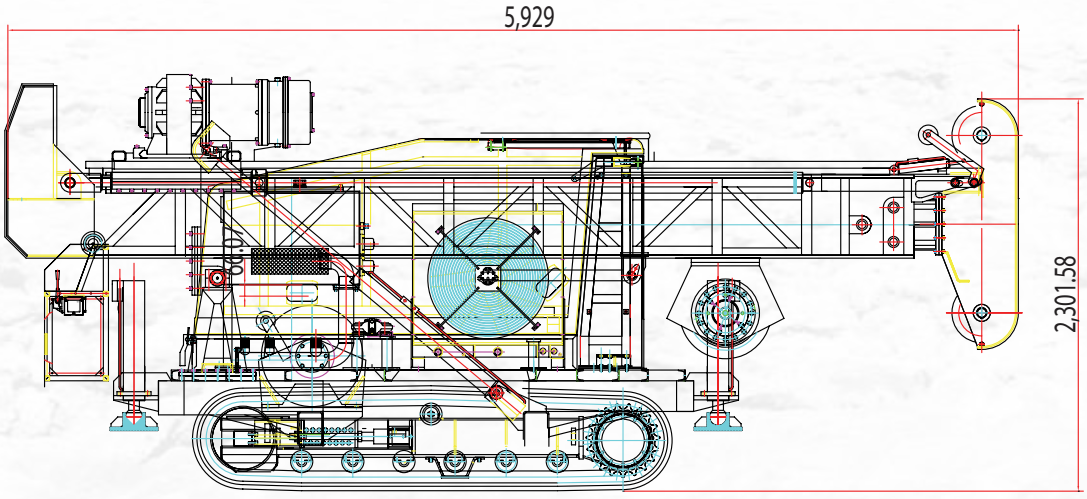
DIMENSIONS AND WEIGHTS

Dimensions and Weight	
Weight	8 500 Kg
Transportation Dimensions (LxWxH)	5 920 x 2 250 x 2 505 mm

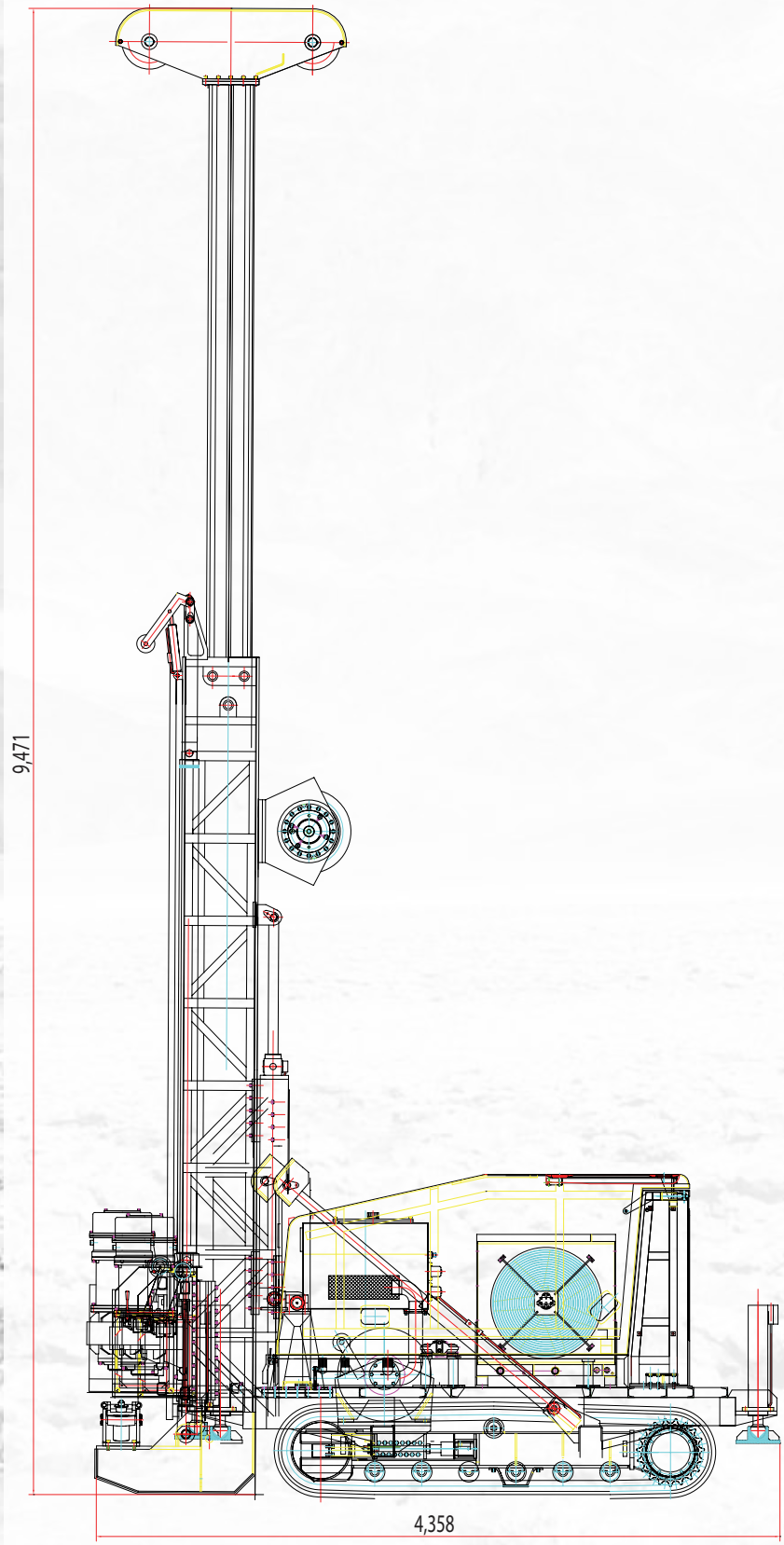
Options
Rod Racking Platform
Hydraulic Leveling Jacks
Crawler Track Unit – Max. travelling speed 4 Km/h
Hot Weather Hydraulic Cooling Group
Cold Weather Hydraulic Heating And Heat Preservation Group
CE Certification
Decals available in multiple languages
Fluid circulation pumps (diesel supply and pressure)
Mud Mixer

Drill – Mast At 90⁰





Drill – Mast At 90°



FORWARD

CONTACT INFORMATION: FORWARD GROUP

HEAD OFFICE
Russia, Kazan city, Universitetskaya street, 14
Tel.: +7 843 238 73 00, +7 843 238 73 01,
+7 843 238 73 06, +7 843 238 75 04
Fax: +7 843 238 73 00
E-mail: info@forward-corp.com
Web-site: www.forward-corp.com

FACTORY
Lianyungang Forward Heavy Industrial Machinery Co., LTD
99#, New East Rod, Lianyungang Economic
and Technological Development Zone,
Lianyungang city, Jiangsu province, China, 222047
Tel: +86 518 81089618
Fax: +86 518 81599918
E-mail: info@forward-corp.com
Web-site: www.forward-corp.com