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FRD
FURUKAWA

Pneumatic Crawler Drill

PCR200



FRD FURUKAWA ROCK DRILL

The Unbeatable Furukawa PCR200 – Facts Behind Its High Performance.



CRAWLER ASSEMBLY

Sure traction on rough sites

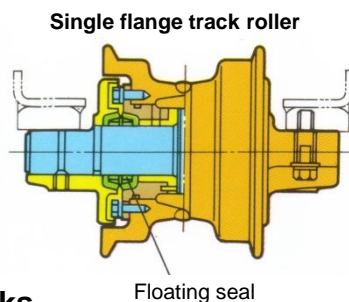
The crawler uses parts originally designed. These include the track-link crawler belts and track rollers. The ruggedly constructed crawler demonstrates effortless maneuverability on rough ground. It is also designed for easy maintenance.

Exceptional stability on soft ground

Shoe plate width is 300mm which is wider than that of any other competitive model. Low ground-contact pressure as well as a low center of gravity further ensure dependable traction on soft ground, too, and maximum stability during the drilling operation.

Lifetime floating seals for minimum maintenance

Lifetime floating seals are employed for the front idlers and track rollers. This makes lubrication unnecessary over an extended period of time.

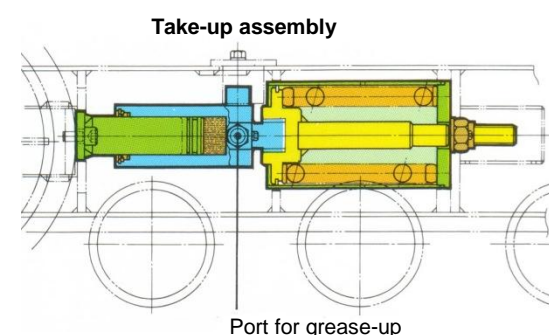


Well-protected shoe links

Track guards prevent the shoe links from dropping off and also help extend the life of the links.

Convenient crawler-tension adjustment

Crawler tension may be hydraulically adjusted with the utmost ease by using a grease gun.



Ample mobility on rough terrain

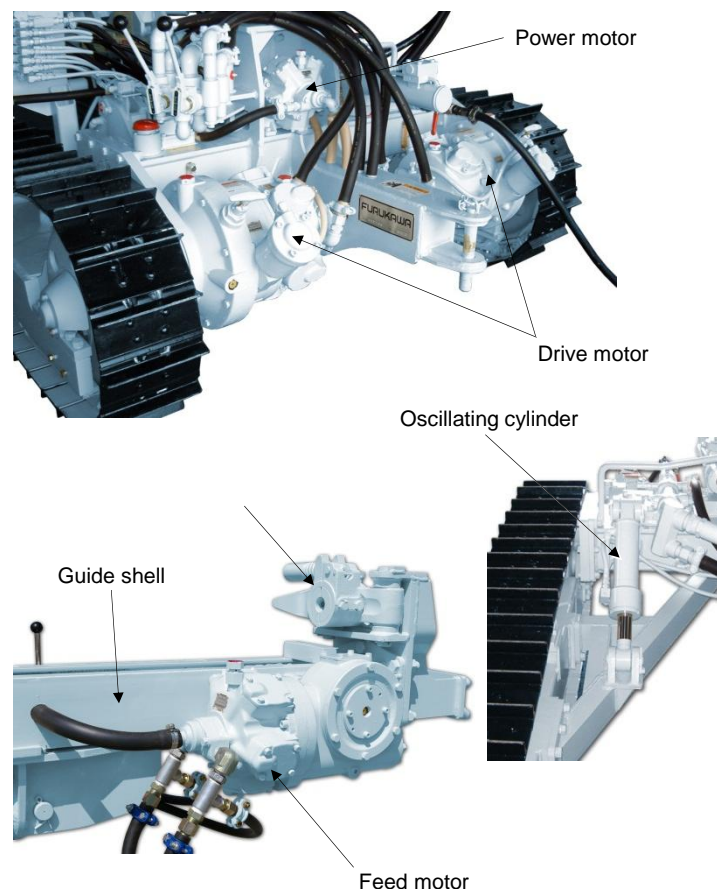
Powerful 12HP air motors and a hydraulic oscillating system permit good mobility and traction even on rough terrain. The motors provide adequate power to climb slopes while towing a compressor.

Direct motor-connected final drive

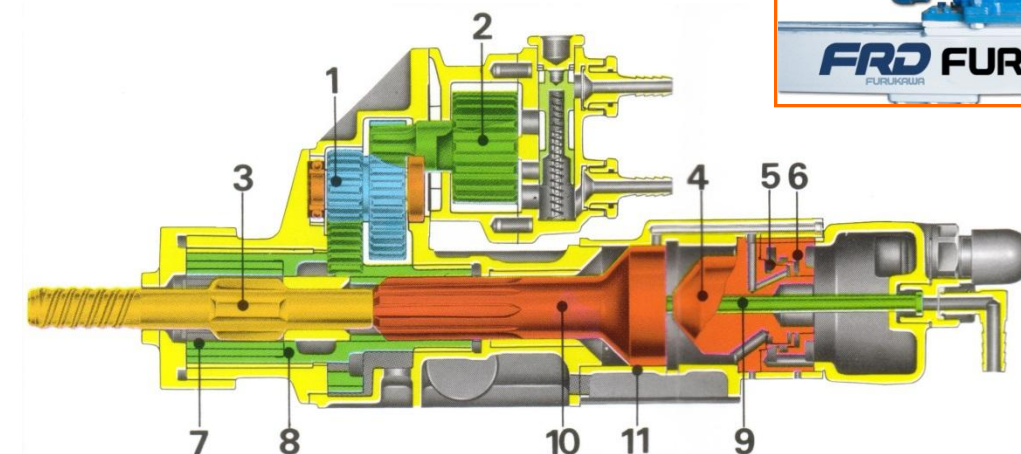
The final drive is directly connected to the air motor to minimize power loss and ensure drive efficiency.

Highly reliable automatic brake

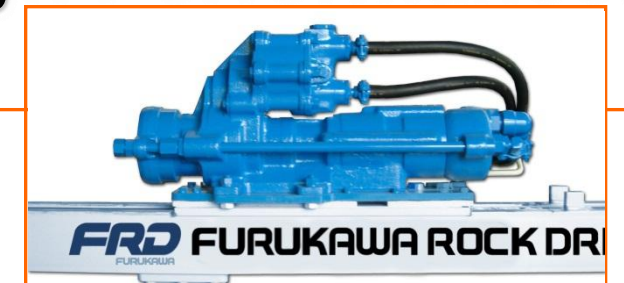
An automatic brake is incorporated inside the air motor and interlocked with the traction control valve.



Sectional view and main parts



1. Reduction gear
2. 2-rotor gear motor
3. Shank rod
4. Valve plug
5. Valve
6. Valve chest
7. Chuck
8. Chuck driver
9. Blow tube
10. Piston
11. Cylinder



PNEUMATIC DRIFTER (PD200)

Super high-speed drilling

The PD200 pneumatic drifter, newly perfected for PCR200 crawler drill by FRD, has a large bore (130mm) cylinder, providing a powerful drive for the rapid and reliable hammering action. A dependable and durable geared motor as well as an independent rotation device further ensure outstanding drilling performance. The drifter can withstand severe working conditions, and can also easily handle a wide range of jobs involving various kinds of rock. A variety of bits range in size from 65mm to 100mm is available.

Triple noise-muffling system

Two-stage noise diffusion takes place within the drifter to reduce the exhaust noise. The exhaust then passes through a muffler hose and another diffusion-muffling device, located in the guide shell, which reduce the noise level even lower.

Streamlined piston

The piston has a streamlined design a unique FRD development that has successfully increased hammering power and efficiency. The special piston has been in use in different drifter models, as well as in other FRD products, such as air leg drills, and has proved its superiority. Less stress is placed on the rod and a consistently high long-hole drilling performance is achieved.

Minimized rotation stress

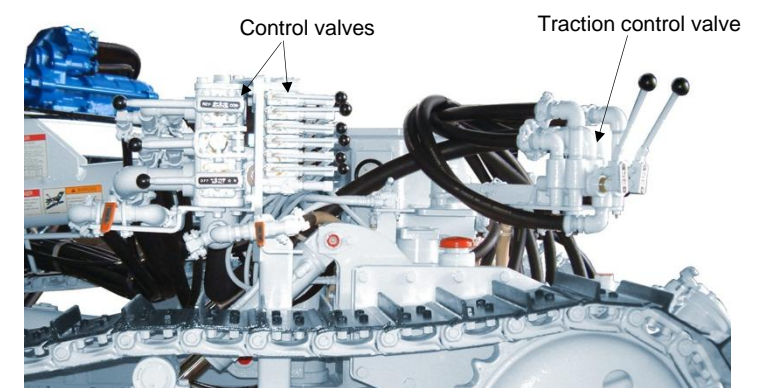
The integrated motor speed-reduction unit and front head are fixed onto the carriage, which means that the front head moment is not exerted on the through bolt. This greatly reduces rotation stress on the bolt and on the entire drifter.

CONTROLS

Centralized control valves and cocks

Hydraulic and pneumatic control valves and cocks are laid out in a centralized location for top operability and high operational efficiency.

The fine control valve offers more precise feed control for coping with variations in drilling conditions.



Swing arm traction control valve

The swing arm type traction control valve allows operation from a position freely selected by the operator. A detachable operator step provides further operator convenience when moving over an extended distance.

Sub valve for rod change

To improve efficiency and simplify rod mounting/removal, a remote control valve is installed on the guide shell to control both the drifter rotating motor and feed motor.





BOOM

Easy 180 degree power dumping

The guide shell is hydraulically operated within a 180 degree range without inconvenient index pin change.

Toe-hole drilling made simple

Changeover from vertical drilling to toe-hole drilling can be made easily without changing the pin.



Guide swing cylinder

GUIDE SHEEL

Sturdy structure incorporating the third muffler

The box-type guide shell, which incorporates the third-stage of the diffusion muffling system, has been developed by FRD and patents have been applied for. The firmly supported foot pad and other design features provide top rigidity for the guide shell. The third muffler is incorporated along almost the entire length of the guide shell to guarantee complete muffling efficiency.

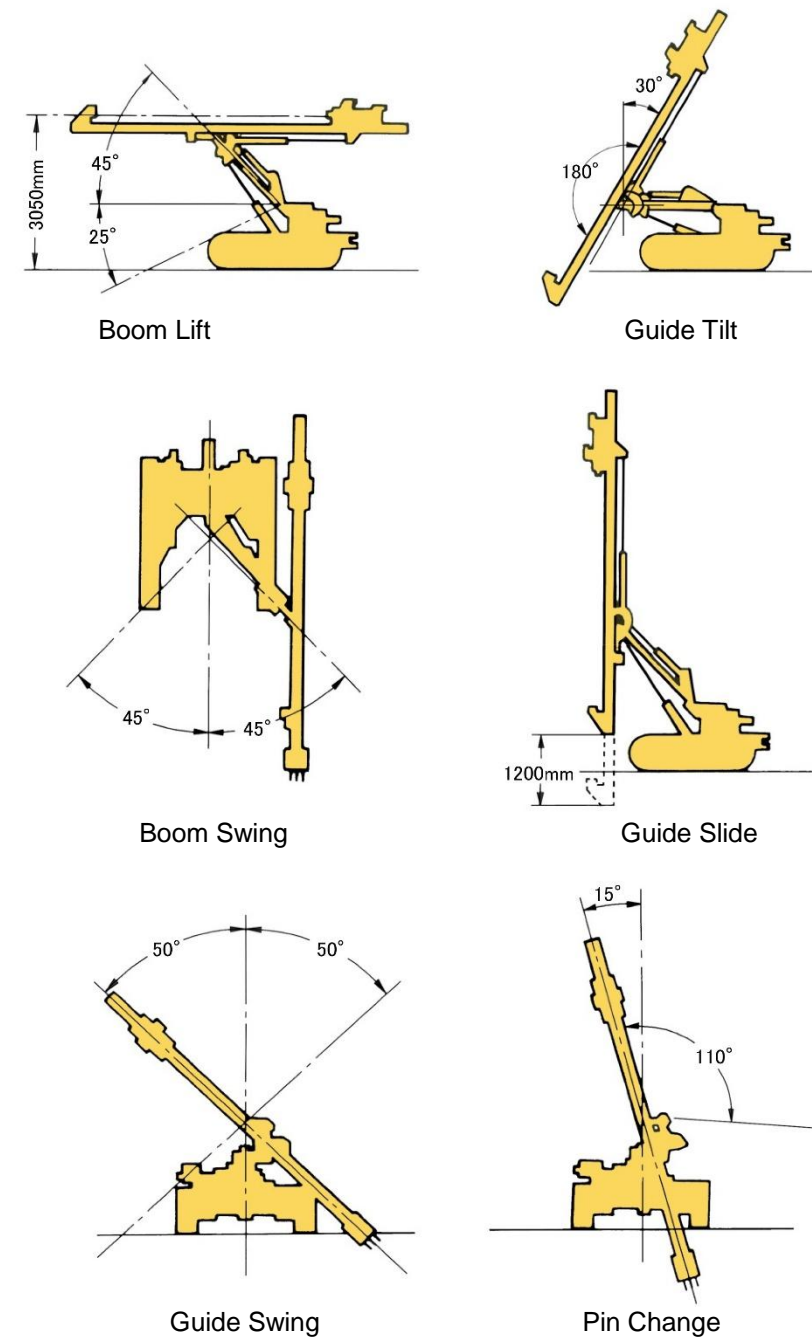
Quick and powerful rod pull-out

The piston-type air motor with an output of 5HP provides an extremely high rod retracting force and ensures rapid operation. This air motor is interchangeable with the power pump motor to reduce your parts stock requirements.

Extra-long Guide Shell Slide

The extra-long 1200mm guide shell slide facilitates drilling and drill-extending operations. It permits easier drilling with the foot pad firmly pressed against the rock – even on rough and irregular surfaces. It also ensures safe guide shell retraction with no danger of damage to the guide shell tip.

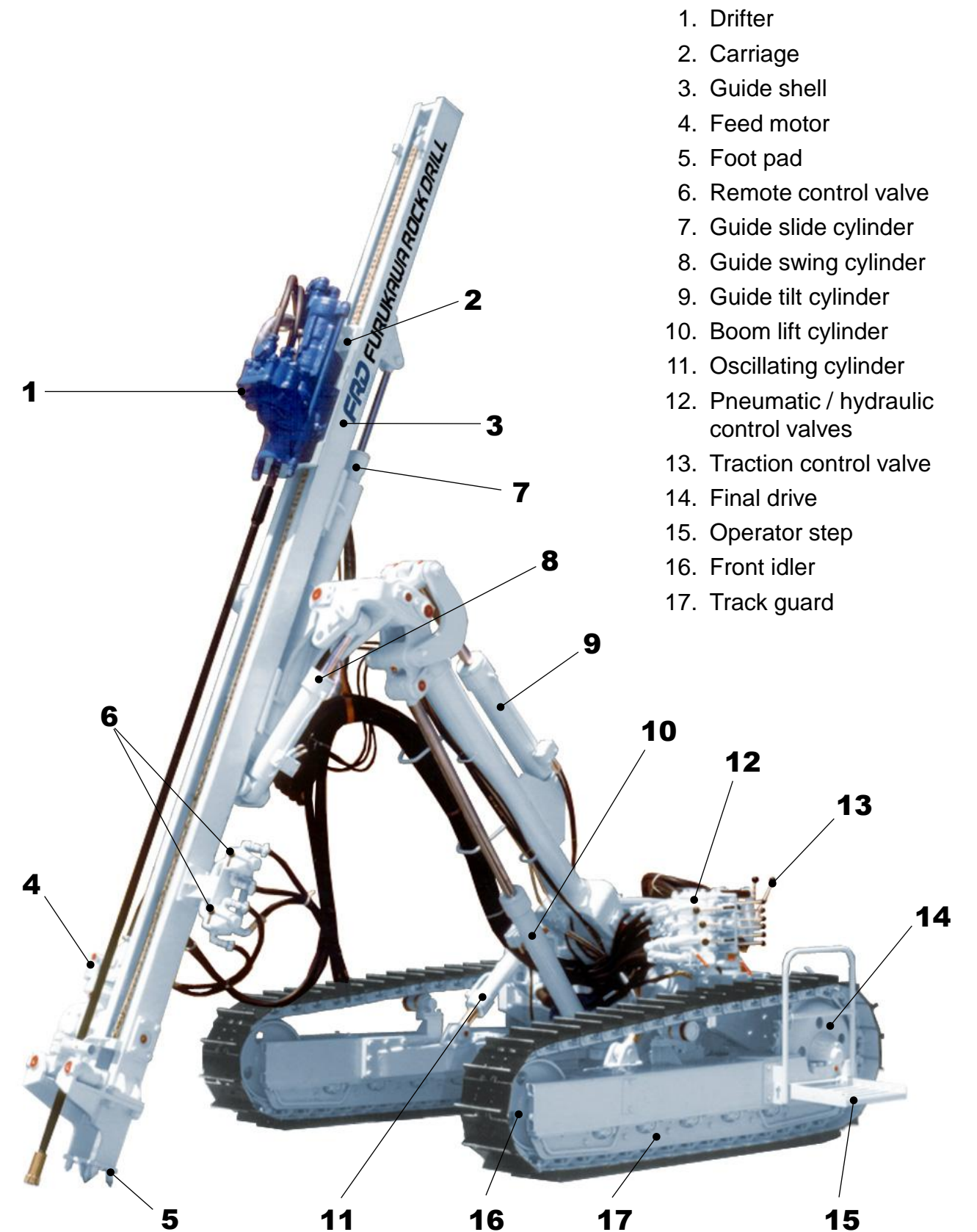
Wide Drilling Coverage and Versatile Application



The advanced design of the boom and hydraulic system assures outstanding versatility and high performance for handling all types of drilling operations. Road construction, dam work, open area drilling, mining, quarrying operations, tunneling and other drilling operations are all performed with unsurpassed efficiency.



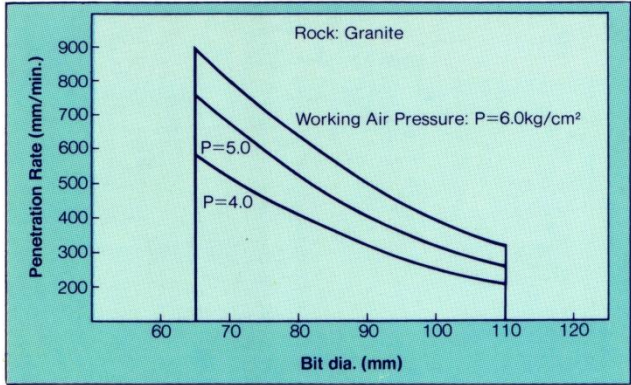
Main Parts of PCR200



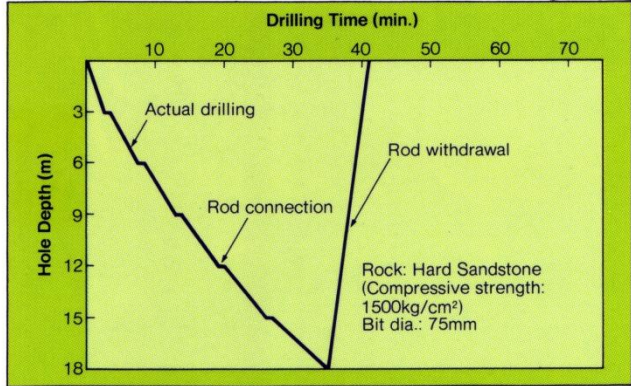
Outstanding Drilling Performance

The powerful PCR200 crawler drill features a high-performance PD200 drifter. It's capable of high maneuverability and exceptional operation ease on any site to assure you a total drilling capability that ranks as the best in this class. Check the drilling performance data shown right, if you are not quite convinced. All figures were compiled during consecutive factory/on-site actual-use testing.

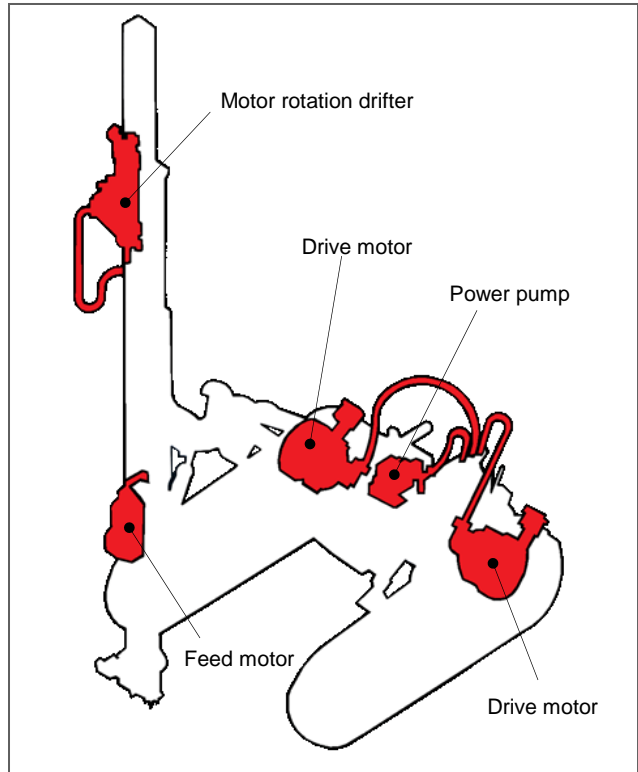
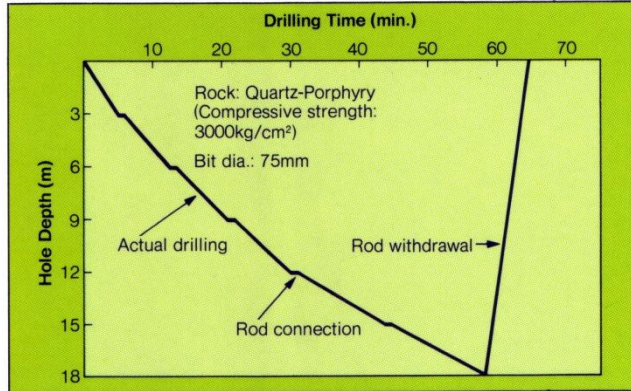
Performance of PD200 Drifter



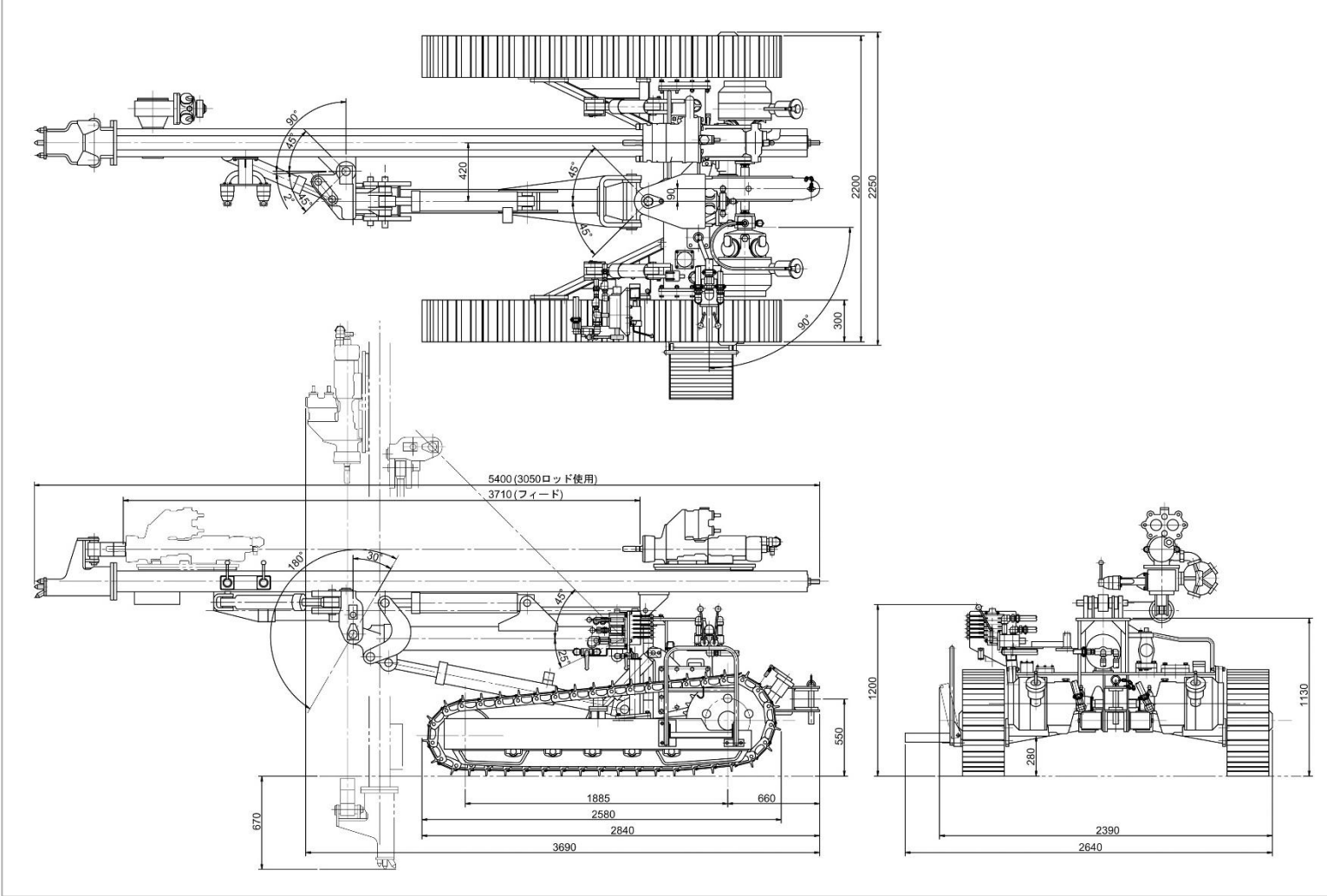
Performance Data of Long Hole Drilling



Performance Data of Long Hole Drilling



Dimensions



Specifications

Dimensions & Weight	
Weight	Approx. 5,000kg
Overall length	5,400mm
Feed travel	3,710mm
Track length	2,580mm
Length of ground contact	1,885mm
Tow hitch height	550mm
Overall width	2,390mm
Track width	2,200mm
Width of grousers	300mm
Overall height (Boom lowered)	1,250mm
Ground clearance	280mm
Crawler traction	
Ground pressure	0.45kg/cm ²
Traveling speed	3.2km/h
(towing a compressor on level ground)	
Gradeability	22°
Oscillating angle	15°
Traction air motor (Model MR13,piston-type)	12HP x 2
Guide Shell	
Max. horizontal drill height	3,050mm
Guide slide travel	1,200mm
Air feed motor (Model MC2)	5HP
Steel change	3,050mm

Hydraulic Units	
Boom length	2,000mm
Boom lift	45° up, 25° down
Boom swing	45° right, 45° left
Guide swing	50° right, 50° left
(95° right, 15° left with pin change)	
Guide tilt	180° without pin change
Power pump (Model MP12)	5HP
Drifter (Model PD200)	
Weight without shank rod	180kg
Length without shank rod	1,020mm
Cylinder diameter	130mm
Piston stroke	80mm
Air consumption	Approx. 16m ³ /min
Blows / min	Approx. 1600
Main air hose connection	50mm



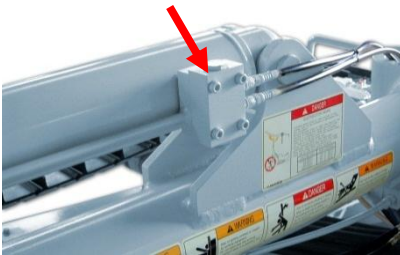
Total Muffling System for Operator Comfort

Exhausts of the drifter and all other motors are channeled through mufflers. A portion of the exhaust is recycled and used to lubricate the guide shell and chain of the sprocket. The rest is discharged after passing through the muffling system.

SAFETY DEVICES

Double pilot check valve

A double pilot check valve is incorporated in the boom lift cylinder and the guide tilt cylinder to prevent accidental falling due to oil hose breakage or other causes. At the same time the boom and the guide shell are prevented from free-falling even in the event of leakage from the valve or oil hose.



Oscillation circuit pilot check valve

A pilot check valve in the oscillation circuit protects the equipment against damage due to free-falling.

Oscillating Lock valve

This valve cuts off the oscillating circuit of the oscillating cylinders to prevent sway and also fixes the track frame and center frame. It's manually operated when doing work involving right-to-left boom movement. At other times, it should be open.