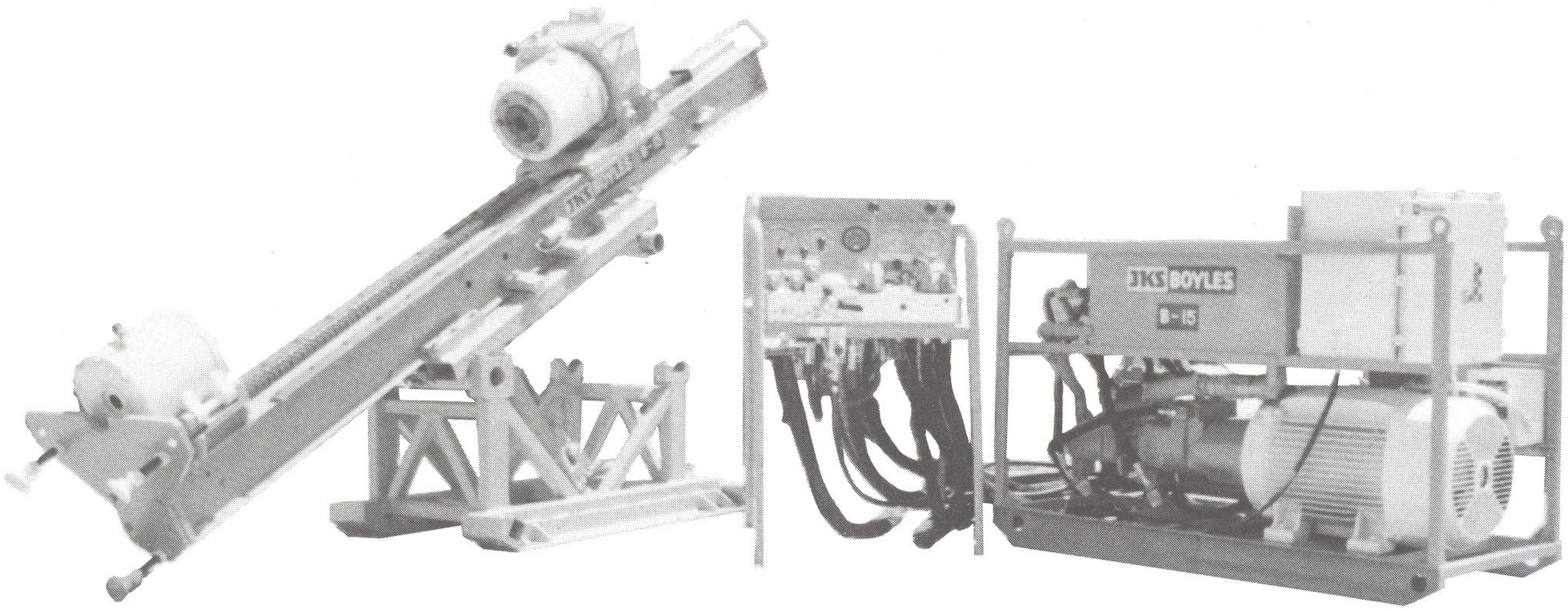
JKS BOYLES

B-15 Drill



Features

- Medium capacity underground electric hydraulic drill.
- Drilling capacity to 600 m (2000 ft) of B† Rod.
- Suitable for drilling up to and including H† wireline or conventional coring systems.
- Reversible feedframe features extra heavy leaf-type chain.
- Three separate modules for fast, convenient moving and set up. Power pack, control console and drill unit.
- Variable speed motor combined with 2 speed gearbox allows user to match spindle speed and torque to hole depth and size.
- Integral skid with hydraulic raise and extension of feed-frame provides convenient 360° capability.
- All hydraulic controls are located in control console.
- Incorporates the standard JKS Boyles drill components for reliability and easy servicing.
- Rod clamp and chuck pass B† and N† reaming shell and diamond bit.
- Rod handling feature (automatic chuck and clamp synchronization).
- All hydraulic hoses utilize quick disconnects for fast set up.

† Refers to "O", "Q", "T" or similar wireline rod systems.

JKS BOYLES

B-15 Drill

DRILL UNIT

The two speed drill head is powered by a piston type variable displacement motor. Two gear ratios available to suit rod size and drilling conditions. The motor displacement can be adjusted from the console to change speeds and torques. With maximum displacement, the two speed drill head generates sufficient torque to break the rod joints.

A hollow drive sleeve is mounted in the drill head housing in heavy duty bearings which are oil bath lubricated. The drive sleeve is fitted with a patented nine jaw chuck. The chuck is hydraulically opened and spring closed which is fail safe in the event of loss of hydraulic pressure. The jaws are easily changed with simple hand tools.

The drill head carriage is fitted with low friction elastomer wear strips which run on replaceable steel slides. The drill head is hinged enabling it to be pivoted to one side.

The steel feed frame is of rugged construction using structural steel main members. The feed cylinder is of heavy welded construction and forms part of the feed frame structure. It is easily removed for maintenance.

The feed cylinder drives the drill head by means of an extra heavy leaf type chain and hardened pulleys mounted on needle bearings. The pulleys are mounted in modular ends so that the relative position of the feed cylinder can easily be reversed depending on whether maximum thrust is required for uphole drilling or maximum pull is required for downhole drilling. The feed cylinder circuit is equipped with dual counterbalance valves for smooth control of heavy rod loads.

The hydraulic clamp assembly is fitted with carbide set jaws held in the gripped position by springs and is released by hydraulic pressure. In the event of hydraulic system failure, the clamp is fail safe. The clamp is hinged in a similar manner to the drill head to facilitate the introduction of large diameter casing when space ahead of the drill is limited. Both chuck and clamp use interchangeable jaws. The jaws retract sufficiently to pass reaming shells up to N† size.

The feedframe is mounted on an integral skid. Hydraulic raising/lowering and extension of the feedframe provides fast and easy set ups through 360°. The feed frame is mechanically locked in the drilling position by adjustable backstay legs.

CONTROL CONSOLE

The console contains the valves which control direction and speed (continuously variable) of rotation, fast travel and wireline hoist. The console also contains the manifold blocks and valving for rod handling (torque up and break out of the rods and automatic sequencing of chuck and rod clamp for rod running). The unique circuit design prevents release of the chuck before the foot clamp has fully gripped the rods and vice versa. This results in smooth rod handling even at high rod loads.

Gauges are provided for rotation pressure, bit weight, and drilling water pressure. An electronic tachometer is provided as standard equipment and gives continuous readout of bit rpm. Water pump flow is continuously variable from the console.

All hydraulic hose connections to the power pack, drill head and feed frame are through quick disconnect couplings for convenience in moving and setting up.

POWER PACK

The power pack consists of a compact frame in which is mounted the 100 HP electric motor, and two hydraulic pumps. The main pump powers rotation, head fast travel and the wireline hoist. The auxiliary pump powers slow feed, the manual chuck and clamp release and the water pump.

The large 150 L (40 gal US) hydraulic oil reservoir provides flooded suction for all pumps. Lockable full bore valves in the suction lines permit easy servicing. Hydraulic oil can only be added to the tank through a hand pump and in-line filter preventing contamination of the hydraulic system. An external sight gauge allows easy monitoring of hydraulic oil level and temperature.

A full flow, 10 micron Beta rated return filter keeps the hydraulic oil clean. A water type heat exchanger cools the hydraulic oil.

The electric starter comes complete with ground fault protection. A 1.5 kVA power transformer and duplex outlet is supplied as standard.

OPTIONS/ACCESSORIES

- Wireline Hoist (Hydraulic) with LEVELWIND.

JKS BOYLES

B-15 Drill

SPECIFICATIONS

Capacity

Drill Rod A†	770 m (2600 ft)
B†	610 m (2000 ft)
N†	470 m (1550 ft)
H†	300 m (1000 ft)

Drill Head

Motor Displacement	rpm	Torque
High Torque - H + N † Drilling		
Minimum	1400	310 Nm (230 ft lbf)
Maximum	360	1200 Nm (890 ft lbf)
High Speed - A + B † Drilling		
Minimum	1800	230 Nm (178 ft lbf)
Maximum	460	935 Nm (690 ft lbf)
Speed/Torque Control	Speed and Torque continuously variable between minimum and maximum values	

Hydraulic Chuck

Operation	Spring closed, Hydraulic opened
Axial Thrust Capacity	11565 daN (26,000lbf)
No. of Jaws	9 (carbide set)
Maximum Rod Size	89 mm (3½ in)

Drill Slide & Feed Cylinder

Maximum Pull and Thrust	7370 daN (16,580 lbf)
Maximum Rate of Feed	2.8 m/min. (9.3 fpm)
Maximum Rate of Fast Travel	56 m/min. (185 fpm)
Feed Cylinder Stroke	1.6 m (64 in)

Hydraulic Clamp

Operation	Spring closed, Hydraulic opened
Axial Thrust Capacity	11565 daN (26,000lbf)
No. of Jaws	9 (carbide set)
Maximum Rod Size	89 mm (3½ in)

Power Pack

Electric Motor	75 kW (100 hp)
Hydraulic Tank Capacity	150 L (40 gal US)
Main Pump Output	113 L/min. (30 gpm US)
Aux. Pump (Feed/Water pump)	37 L/min. (10 gpm US)
Max Operating Pressure	24130 kPa (3500 psi)
Hydraulic Oil Cooling	Water cooling

Options/Accessories

Brahma Water Pump (Hydraulic) Max Flow 90 L/min (24 gpm US) Max Pressure 5515 kPa (800 psi)		Optional
Wireline Hoist (Hydraulic) with LEVELWIND	840 m (2755 ft) of 4.8 mm (3/16 in) cable 470 m (1540 ft) of 6.4 mm (1/4 in) cable	Optional
Electric Motor Starter with Ground Fault Protection, 1.5 KVA Power Transformer and Duplex Outlet		Standard

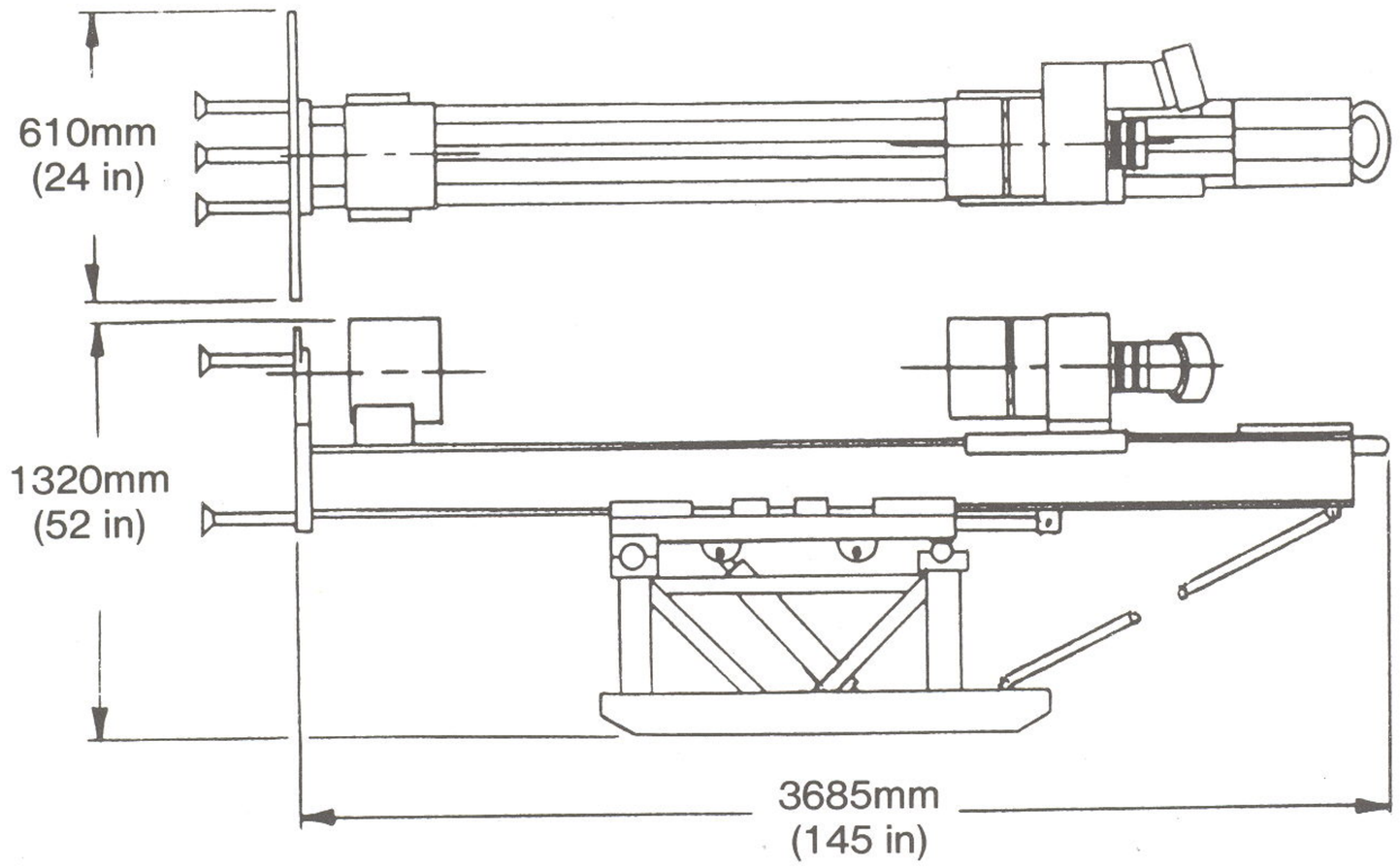
† Refers to "O", "Q", "T" or similar wireline rod systems.

JKS BOYLES

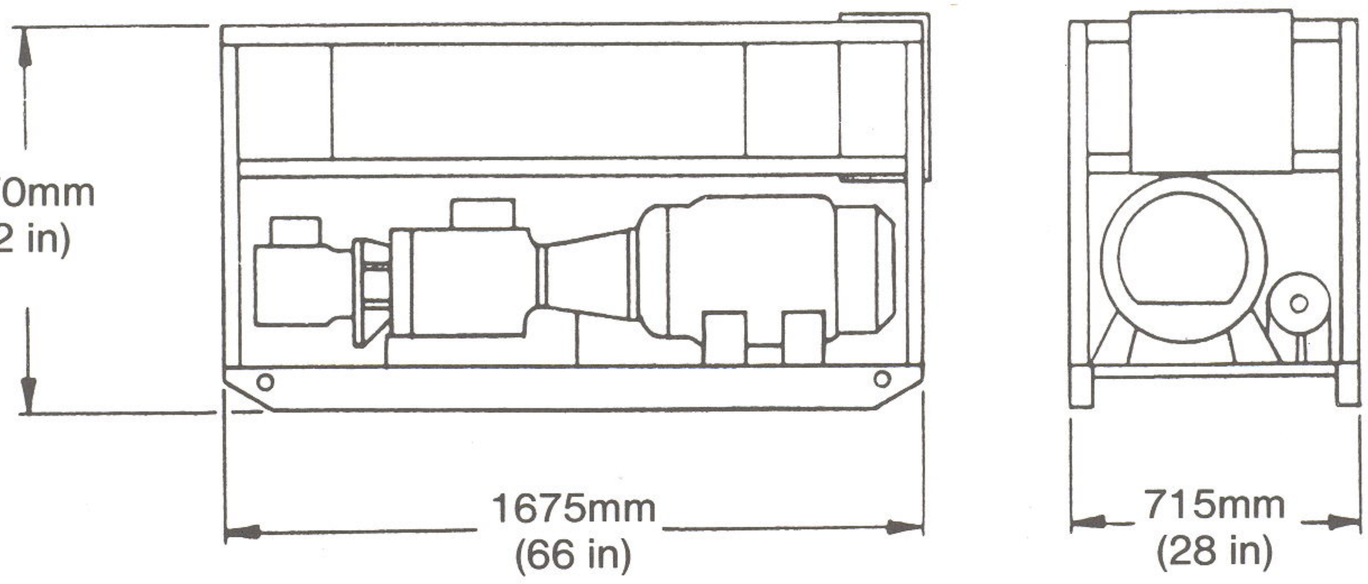
B-15 Drill

WEIGHTS AND DIMENSIONS

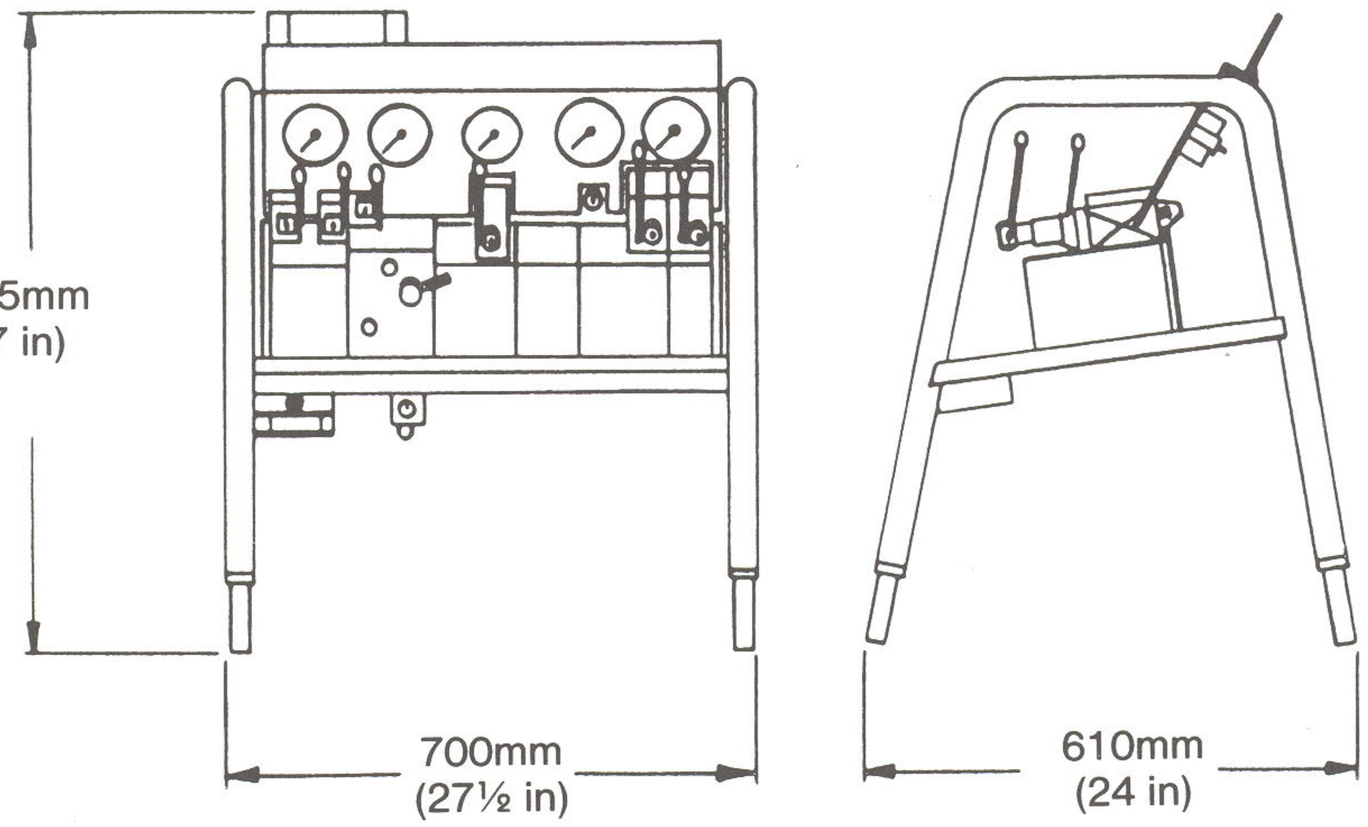
DRILL FEED FRAME



POWER PACK



CONSOLE



ITEM	WEIGHT	
DRILL FEED FRAME ASSEMBLY (INCL. SKID)	1090 kg	2400 lbs
POWER PACK	725 kg	1600 lbs
CONSOLE (INCL. HOSES)	170 kg	375 lbs