



ATLAS COPCO TH60 AND TH60DH

Water Well Drilling Rig

40,000–70,000 lb (18,144–31,751 kg)

Atlas Copco

IT'S MORE THAN A WATERWELL RIG; *IT'S A MULTI-PURPOSE MACHINE—* **TH60**

SINGLE ENGINE DESIGN

USING A SINGLE ENGINE TO POWER the truck and the drill offers several benefits. With up to 600 hp (477 kW)* under the hood and 1850 ft-lb (2508 Nm) torque to the rear wheels, the TH60 will move along at legal highway speeds, have the power to move in the mountains without continuously down-shifting and provide the torque in a range of gears to get on the jobsite. When just getting to the site is the challenge of the day, the TH60 and TH60DH are up to the job.

A single engine design reduces overall rig weight and improves weight balance, plus the deck is less congested. Service and maintenance are simpler and more cost effective. Additionally, a single truck engine rig is quieter and inlet air to the engine is further from the hole.

**Export engines rated to 500 hp (373 kW)*

GOOD PEOPLE MAKE GOOD MACHINES GREAT

THE TH60 IS DESIGNED TO HELP the crew work safer and faster with less manual labor. There are steps so the helper can step up to place the end of the pipe into the slide trough on the pipe rack. The carousel boots are marked to show when the top wrench is lined up with the flats so he doesn't have to look up every time he uses the wrench. As one TH60 driller commented, "It's the small things that add up to make me less tired at the end of the day, and that's a big deal."

SAFETY AROUND THE RIG IS A PRIORITY

THE AIR-OPERATED HOLDING WRENCH at the table and the foot-pedal activated top wrench are "hands-free." The internal carousel doesn't swing through the work space when a pipe is added or removed. Because the rotary head retracts into the derrick, the hoist line is on the centerline of the hole. Heavy tooling can be safely positioned directly over the hole.



ADAPTIVE PIPE HANDLING A BIG ADVANTAGE

IN A CLEAN HOLE, PIPE CHANGES can be made on the bottom of the hole using the carousel or single pipe loader. When mud drilling or air drilling in an unstable formation, pipe can be changed one pipe length off the bottom using the drawworks and hoist plug. The fast feed and drawworks can be operated simultaneously, speeding up the drilling process. These advantages also apply to coming out of the hole. You can trip with the rotary head or the drawworks. The 30,000 lb (13,608 kg) single line drawworks and pipe spinner options provide the fastest way out of the hole. For deeper holes, a two-part line set up is available, giving 60,000 lbs of pull from the main winch.

TWO WAYS TO SET CASING

CASING CAN BE ROTATED AND PUSHED or pulled with the top head. The torque limit control allows the head torque to be matched with threaded casing torque specifications. In clean holes, casing can be set with the drawworks. The table swings out and the back half retracts to open up the whole centralizer for large casing and tools. With the bushings removed, there is a clear 20 in (508 mm) opening at the table and up the derrick.

DERRICK AND FEED SYSTEM

THE TH60 AND TH60DH UTILIZE a single 35 ft (10.6 m) derrick. This derrick enables conventional air-mud-DHD drilling with 20 ft (3 m) pipe. The derrick also handles a casing hammer, dual wall pipe (reverse circulation), simultaneous drill and drive with a DHD or driving casing from the top with a DHD. The drills can be set up for any of these methods and still reduce front overhand and front axle weight.

The derrick and feed system incorporates large-diameter, nylon-composite, top and bottom sheaves with large bearings and shafts. This design greatly reduces fatigue on the feed cables and improves mechanical efficiency. The result: longer cable life and reduced fuel consumption to operate the feed system.

FEED CYLINDER DESIGN

THE CYLINDER(S) ARE INVERTED so the larger side of the piston is used for pullback force. This means that the cylinder(s) will apply more pullback force at the same hydraulic pressure required by the previous design. By increasing hydraulic pump flow to the cylinders, the TH60 maximum fast feed speed has increased to 150 ft/min (45.5 m/min), getting you in and out of the hole quicker.



ADDITIONAL FEATURES

USING PROVEN TECHNOLOGY TO REDUCE OPERATING COST

WHEN DIESEL ENGINE MANUFACTURERS first used electronic control to optimize the fuel-air mixture, engines became more fuel efficient. By applying this same concept to rig hydraulics, the TH60 and TH60DH are more fuel efficient and more productive. We call the concept “ondemand” power. The most significant efficiency improvement is the use of variable displacement hydraulic pumps and a new hydraulic circuit to create the “on-demand” power system. Inefficient fixed displacement pumps have been replaced by variable displacement pumps on all circuits, pumping only the fluid required and operating only when work is being done. When you need power, you immediately get the power you need where you need it. This “on-demand” system increases

component life, reduces operating cost and gives the driller more rapid, precise control of drilling functions. The rigs engine coolant, compressor oil and hydraulic fluid all have an optimum operating temperature range. The cooling system monitors fluid temperatures and operates the cooling fan at the proper speed to maintain optimum fluid temperature. This approach assures proper temperature control (longer component life) and saves fuel by operating the fan only when it is needed. The same technology has been applied to the compressor regulation system. An electronic air regulation system (EARS) continuously monitors compressor volume and pressure output and maintains the required performance. The operator can control the air flow and pressure from the driller’s console.



GENERAL SPECIFICATIONS

	TH60	TH60DH
Pullback	40,000 lbs (18,144 kg)	70,000 lbs (31,751 kg)
Pulldown	25,000 lbs (11,340 kg)	30,000 lbs (13,608 kg)
ROTARY HEAD		
Standard	5,500 ft-lbs/7,458 Nm @ 145 RPM Single-Speed Rotary Head	
Optional	5,500 ft-lbs/7,458 Nm @ 145 RPM Two-Speed Rotary Head (Second Speed) 4,000 ft-lbs/5,424 Nm @ 195 RPM	
Optional	6,250 ft-lbs/8,475 Nm @ 134 RPM Single-Speed Rotary Head	
Optional	6,250 ft-lbs/8,475 Nm @ 134 RPM Two-Speed Rotary Head (Second Speed) 4,650 ft-lbs/6,310 Nm @ 180 RPM	
Optional	8,000 ft-lbs/10,848 Nm @ 105 RPM Single-Speed Rotary Head	
Optional	8,000 ft-lbs/10,848 Nm @ 105 RPM Two-Speed Rotary Head (Second-Speed) 5,500 ft-lbs/7,458 Nm @ 145 RPM	
DRAWWORKS		
Single Line Bare Drum	Standard – 18,000 lbs (8,165 kg) 165 ft/min (50m/min) Optional – 30,000 lbs (13,608 kg) (on TH60) 150 ft/min (45 m/min)	
Compressor	900 or 1070 CFM/120 to 350 psi (425 l/s or 505 l/s / 8.3 to 24.1 bar)	1070 CFM/120 to 350 psi (505 l/s / 8.3 to 24.1 bar)

*900 CFM only available on export TH60

OPTIONS

- Mud pumps
- Floating-Spindle Hub
- No-Air Option
- High-Pressure Air Piping
- Pipe Spinner
- Sand Reel
- Water Injection
- Single-pipe loader
- Service Hoist
- DHD lube injection