Guided Boring - 308A/339A System

Akkerman's Guided Boring Machine (GBM) method, also known as pilot tube microtunneling, offers customers extended and accurate drive lengths in various ground conditions. The GBM provides the spoil removal process of the auger boring machine and the same level of accuracy as traditional microtunneling—all in one compact, multifaceted system.

The 308A/339A latching frames allows operators to install up to 30-inch OD (762 mm) pipe from an 8 or 9-foot (2.4/2.7 m) shaft. Our distinctive dual-walled pilot tube allows liquid lubrication throughout installation, thus minimizing jacking force and rotational torque. A guidance system consisting of a theodolite and digital camera, mounted behind the jacking frame, allow operators to view the illuminated LED target on a computer monitor in the launch pit, ensuring that line and grade tolerances are met. The 308A/339A systems are hydraulically powered with a P100Q or P150Q Power Pack and controlled with an in-shaft pendant.

The guided boring method is typically a three-step process. First, pilot tubes, with a soil appropriate steering head mounted on the front, establish line and grade. Next, the bore diameter is increased as the casings and augers perform excavation of the soils. The third step is where the final product pipe is installed directly behind the casings and augers. As pilot tubes, casings and augers, then final product pipe is installed and advanced, a section is removed from the reception shaft. This three-step method continues until the final product pipe is in place. If a Powered Cutter Head (PCH) or Powered Reaming Head (PRH) is used, it is placed behind the casings and augers and before the final product pipe. The auger spoil flow is reversed toward the reception shaft for removal. The PRH or PCH's rotating cutter bits excavate the soil to the final pipe diameter while minimizing jacking force and accelerating the speed of the drive. PCH models PCH 22.5-inch (572 mm) and PCH 28.5-inch (724 mm) and all PRH sizes operate with the 308A/339A frames.

Specifications

Product	Minimum Shaft Size	Pipe OD	Maximum Torque	Maximum Thrust
308A	8' (2.4 m)	28.5" (724 mm)	10,500 lbf-ft (14,238 N•m)	100 ton (91 mt)
339A	9' (2.7 m)	31.5" (800 mm)	10,500 lbf-ft (14,238 N•m)	100 ton (91 mt)
PRH 14, 16, 20	8' (2.4 m)	14-20" (356- 508 mm)	10,500 lbf-ft (14,238 N•m)	na

Product	Diesel Engine	Electric Motor	Jet/Lub Tanks	Weight
Jet/Lub Pump	3,000 rpm @ 30 HP (7kW)	1,750 rpm @ 30 HP (7kW)	325 gal (1,230 L)	8,300 lbs (3,765 kg)

Product	Minimum Shaft Size	Pipe OD	Maximum Torque	Weight
PCH 22.5	8' (2.4 m)	22.5"** (572 mm)	10,500 lbf-ft (14,238 N•m)	3,000 lbs (1,361 kg)
PCH 28.5	8' (2.4 m)	28.5"** (724 mm)	10,500 lbf-ft (14,238 N•m)	4,700 lbs (2,132 kg)

*Note: Akkerman standard sizes can be customized to suit project needs.
**Bolt-on increase kits are available to meet specific pipe diameters.

The PRH system allows customers to bore multiple pipe diameters while utilizing 11-inch (279 mm) casings and augers.

The P100Q features a 99 HP (74 kW) four-cylinder diesel engine and a tandem-pump to deliver maximum flow for both jacking and rotational duties.

The PCH models 22.5-28.5 inch (572-724 mm) OD allow customers to bore pipe diameters larger than the PRH's capacity in challenging ground conditions with 11-inch (279 mm) casings and augers.

The 30-inch (762 mm) pilot tubes feature a unique dual-walled design. The 2-inch (51 mm) ID inner tube diameter allows for viewing of the target during the drive while the 2.4 square inch annular space (1,548 sq. mm) allows for fluid passage.

The compact Jetting and Lubrication pump allows customers to maintain optimum production rates in variable soil conditions.

The 308A latching frame fits in a compact, 8-foot (2.4m) shaft.