

Microtunneling Jacking Frames



Our family of keyhole jacking frames allows the customer to operate a high-capacity jacking frame out of a minimal launch shaft.

Collectively, keyhole jacking frames will operate out of a 16-24 foot (4.87 – 7.3 m) shaft and feature 800-1,200 tons (726-1089 mt) of thrust capacity at 8,000 psi (550 bar) while advancing pipe with a maximum OD of 102-inch (2,591 mm). All frames are able to push 10-feet (3 m) of laid length pipe sections, expanding for longer lengths with add-on components and a larger shaft size. The keyhole frame utilizes keyed blocks on the jacking cylinders to continuously advance the machine. The thrust block is pulled back to the retracted position with an in-line hydraulic winch. The thrust block features a guidance system notch for protection and to ensure the accuracy of the bore.

The forward advancement from the jacking frame on the pipe, combined with the rotating action of the MTBM's cutter head removes spoils and forces them to the crusher cone. If required, the 75 HP (56 kW), five-piston high pressure jetting pump provides high velocity jetting to the cutter face for clay and silty soil. Inside the crusher cone, cobbles are crushed to a size that passes through the slurry inlet holes for transport in the slurry lines. Feed, return, and booster pumps keep the slurry moving to the separation tank and re-circulated back to the cutter face

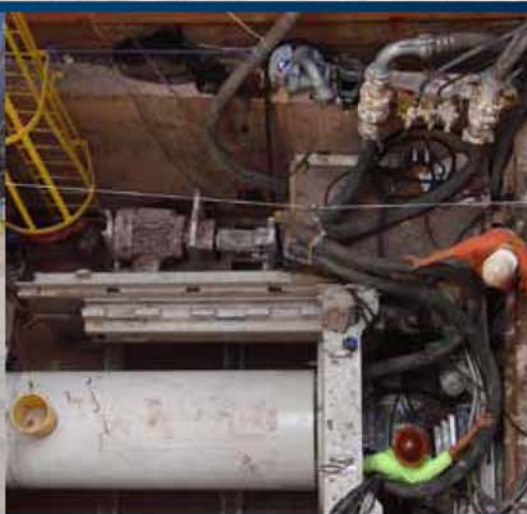
in a closed system. Sensors and flow meters monitor the slurry pressures and flows to avoid spoil settlement. This system can also be reversed to flush out the slurry lines.

Akkerman microtunneling system components are manufactured to maximize usage options. MTBMs can be fitted with increase kits to accommodate larger diameter pipes. We work closely with our customers, thoroughly analyzing the project and recommending a system to help complete the job efficiently and on budget. Our highly experienced staff of engineers, technicians, and salespeople is committed to providing solutions customized for your specific needs.

Specifications

Product	Dimension w x l x h	Pipe OD	Thrust Capacity	Minimum Shaft Size
MT860K	9 x 15.6 x 6.5' (2.7 x 4.8 x 2 m)	60" (1,524 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	16" (4.9 m)
MT875K	10.9 x 15.9 x 7.3' (3.3 x 4.8 x 2.2 m)	75" (1,905 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	20" (6.1 m)
MT890K	12.7 x 16.3 x 8.5' (3.9 x 5 x 2.6 m)	90" (2,286 mm)	800 ton @ 8,000 psi (726 mt @ 550 bar)	20" (6.1 m)
MT8102K	13 x 16.4 x 9.6' (4 x 5 x 2.9 m)	102" (2,591 mm)	800 ton @ 8,000 psi*** (726 mt @ 550 bar)	24" (6.1 m)

*Note: Akkerman standard sizes can be customized to suit project needs.
 **Shaft size is dependent upon launch seal and reaction block configuration.
 ***The thrust capacity on the MT8102K frame can be increased to 1,200 tons (1,090 mt) with the addition of a cylinder kit.



The MT875K operates out of a mere 20-foot (6.1 m) shaft while jacking pipe with 800 tons @ 8,000 psi (726 mt @ 550 bar) of force.

The keyhole jacking frames feature keyed blocks on the jacking cylinders to continuously advance the machine.

The thrust block features a notched area for placement of the guidance system. A winch pullback option is also available.

The laser guidance slot is visible here along with the frame's hydraulics and the winch pullback for the thrust block.

The Remote Hydraulic Power Pack houses a 27 gpm @ 8,000 psi (550 bar) high pressure pump. The main displacement pump contains a 150 HP (112 kW) electric motor and variable frequency drive for output flow control.

Feed, return and booster pumps keep spoils moving to the separation tank where they are re-circulated in a closed system.