

Microtunnel Boring Machines



Akerman's Microtunnel Boring Machines (MTBM) install pipe in ground conditions that are generally below the water table. Microtunneling is referred to as non-manned, remote controlled, continuously supported pipejacking. Applications most suitable for this method are gravity flow pipelines requiring precise line and grade in poor soil conditions. As the only US manufacturer of microtunneling equipment, our systems are a fusion of high productivity, dependability and accuracy in a wide range of soil conditions without the need for dewatering.

The electrically powered, Variable Frequency Drive (VFD) controlled MTBM is operated from the control container. Operators are able to monitor and adjust the cutter head's location, rotation, torque, jetting, pipejacking thrust, steering, slurry flow and various pressures from a three-monitor console. Our MTBMs can be equipped with the appropriate cutter face for soft ground, mixed ground and rock for precise ground excavation.

The active target, housed inside a heavy-duty steel cylinder, is mounted in the back center of the MTBM. The guidance system reports the MTBM's pitch and yaw statistics to a monitor in the control console for operator assessment and anticipates the MTBM's location at the cutter face. The MTBM's articulated steering joint allows for active steering control.

Specifications

Product	Longest/ Overall Length**	Pipe OD	Heaviest Section/ Overall Weight**	Drive Motor	Maximum Torque
MTBM SL30	130/255" (3,302/6,477 mm)	30" (762 mm)	10,000/13,000 lbs (4,536/5,896 kg)	75 HP (56 kW)	0-13 rpm (45,400 lbf-ft)
MTBM SL34	130/255" (3,302/6,477 mm)	34" (864 mm)	12,000/16,000 lbs (5,443/7,257 kg)	75 HP (56 kW)	0-11 rpm (52,800 lbf-ft)
MTBM SL36	130/255" (3,302/6,477 mm)	36" (914 mm)	14,000/18,500 lbs (6,350/8,391 kg)	75 HP (56 kW)	0-8 rpm (74,000 lbf-ft)
MTBM SL44	120/250" (3,048/6,350 mm)	44" (1,118 mm)	15,000/21,500 lbs (6,804/9,752 kg)	75 HP (56 kW)	0-11 rpm (53,000 lbf-ft)
MTBM SL46	120/250" (3,048/6,350 mm)	46" (1,168 mm)	16,000/23,500 lbs (7,257/10,659 kg)	75 HP (56 kW)	0-8 rpm (74,000 lbf-ft)
MTBM SL52.5	126/230" (3,200/5,842 mm)	52.5" (1,334 mm)	20,000/27,500 lbs (9,072/12,474 kg)	100 HP (75 kW)	0-10 rpm (78,000 lbf-ft)
MTBM SL60	161" (4,089 mm)	60" (1,524 mm)	36,000 lbs (16,329 kg)	150 HP (112 kW)	0-7.7 rpm (153,000 lbf-ft)
MTBM SL72	161" (4,089 mm)	72" (1,829 mm)	36,000 lbs (16,329 kg)	250 HP (186 kW)	0-7.7 rpm (255,000 lbf-ft)
MTBM SL74	161" (4,089 mm)	74" (1,880 mm)	36,000 lbs (16,329 kg)	250 HP (186 kW)	0-7.7 rpm (255,000 lbf-ft)

Product	Dimensions w x l x h	Capacity	Pressure	Weight
Control Container	8 x 20 x 8.5' (2.4 x 6 x 2.6 m)	480 VAC/1,200 A	na	21,250 lbs (9,639 kg)
Remote Power Pack	8 x 9.75 x 8.6' (2.4 x 3 x 2.6 m)	150 HP (112 kW)	8,000 psi (550 bar)	13,000 lbs (5,896 kg)
High Pressure Jetting Pump	38 x 37 x 15" (965 x 940 x 381 mm)	75 HP (56 kW)	3,500 psi (240 bar)	1,240 lbs (562 kg)
Cooling Water Tank	6 x 14.5 x 6.5' (1.8 x 4.4 x 2 m)	1,685 gal (6,378 L)	250 psi (1,724 kPa)	2,200 lbs (998 kg)

*Note: Akerman standard sizes can be customized to suit project needs.
**Actual weights may vary based on specific configuration.



The Control Container is the information center for all microtunneling functions. It houses the control console, motor control centers for slurry pumps, MTBM drive motor and the bulkhead panel for electrical and communications connections.

The High Pressure Jetting Pump features a rugged one piece cast iron body and a 75 HP (56 kW) 5-piston pump.

With the cutter face removed, the crushing cone's slurry inlet holes, high pressure jetting nozzles and spoil intake ports are clearly visible. This MTBM SL74 has been skinned to 102-inches (2,591 mm).

Our MTBMs can be equipped with the appropriate cutter face for job requirements. Shown here is the soft ground configuration featuring a combination of carbide drag and bullet bits.

The mixed ground cutter face configuration features bullet bits and cutter discs.

The MTBM operator maintains control of all microtunneling functions during operation from a three-monitor console in a climate controlled environment.