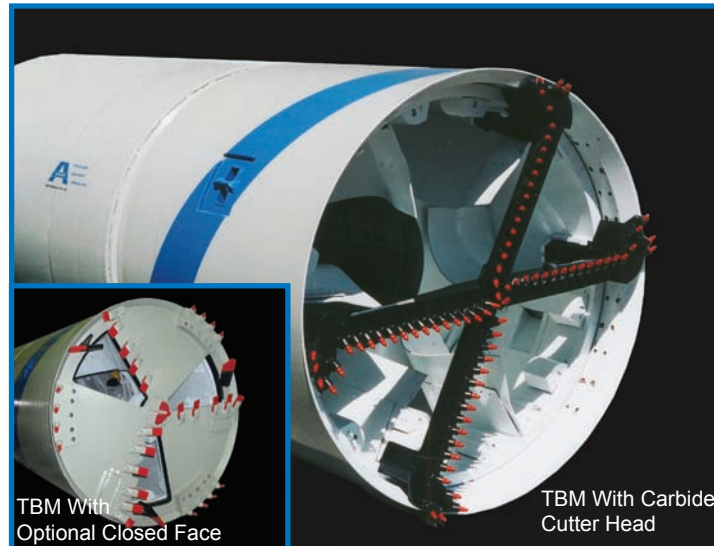


Tunnel Boring Machine



- **Operator Controlled Steering & Spoil Removal** •
- **Cutter Heads Fully Interchangeable Underground** •
- **Steering Joint Allows For Full Articulation** •



FEATURES

- Tunnel Boring Machines (TBM) are suitable where manned entry is permitted.
- Operator station controls TBM steering and spoil removal process. Also allows constant monitoring of spoil conditions and line and grade accuracy.
- Hydraulic motors rotate the inner drum and cutter face to excavate soils.
- Driven by hydraulics supplied by a remote power pack eliminates the need for high voltage electricity in the TBM.
- Steering joint allows the TBM to be articulated and hydraulically steerable in any direction.
- Target on the face of the TBM provides strict line and grade with laser system (customer supplied).
- Cutter head can be accessed from the front of the TBM and the face of the bore for ease of obstruction removal, changing the cutter head and to perform routine maintenance, all while underground.
- Torque wings provide an anti-roll function.
- Equipped with a methane gas detection system.
- Standard cutter heads: Dirt, carbide and sand shelves.
- Optional closed face attachment is available for unstable ground conditions.
- Increaser kits are available to match specific pipe OD.

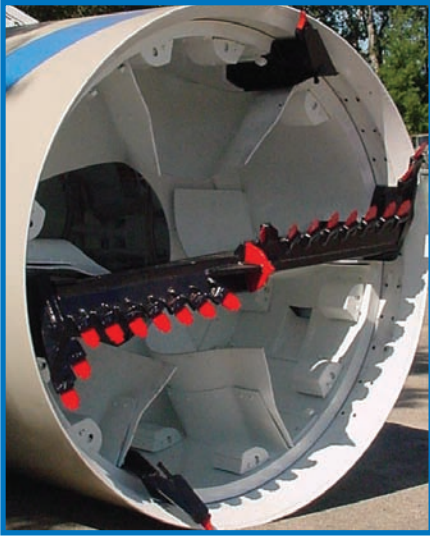
SPECIFICATIONS

| TBM Model | Wall Thickness | Pipe ID | Machine OD | Cutting Diameter | Drive Motors (57 CID) Min. | Min. Cutting Torque (ft-lbs) * | Cutting Speed |
|-----------|----------------|---------|------------|------------------|----------------------------|--------------------------------|-------------------|
| 48SC | * | N/A | 48" | 49.5" | 2 | 19,000* | 0-23 rpm w/60gpm |
| 420 | B | 42" | 51" | 52.5" | 2 | 20,950* | 0-19 rpm w/60gpm |
| 480 | B | 48" | 58" | 59.5" | 3 | 36,600* | 0-11 rpm w/60gpm |
| 540 | B | 54" | 65" | 66.5" | 3 | 41,895* | 0-15 rpm w/120gpm |
| 600 | B | 60" | 72" | 73.5" | 4 | 62,500 | 0-13 rpm w/120gpm |
| 660 | B | 66" | 79" | 80.5" | 4 | 69,400 | 0-11 rpm w/120gpm |
| 720 | B | 72" | 86" | 87.5" | 4 | 75,500* | 0-8 rpm w/120gpm |
| 780 | B | 78" | 93" | 94.5" | 5 | 103,438* | 0-7 rpm w/120gpm |
| 960 | B | 96" | 114" | 115.5" | 8 | 205,500* | 0-4 rpm w/120gpm |

Maximum Operating Pressure2,800 psi

Min. - Minimum

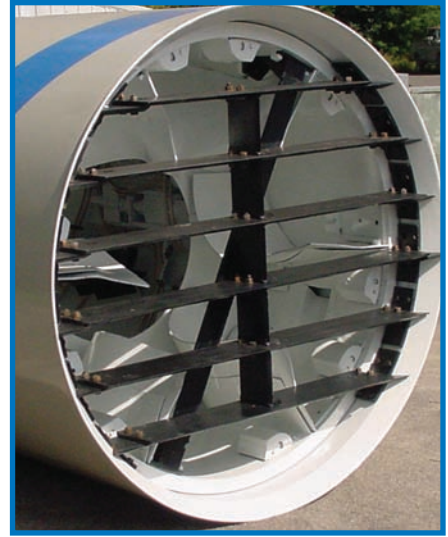
* Higher torque available with optional motor. Contact your Akkerman Sales Representative for more information.



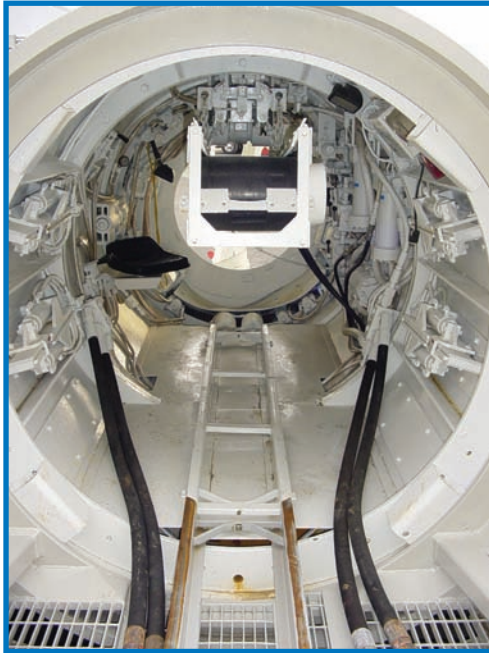
Dirt cutter head attachment for clay, slit and sand.



Carbide cutter head attachment for soft to medium hard rock.



Sand shelf attachment for loose, ununstable soil, but not flowing.



TBM Interior With Conveyor



The operator station is located along the inside of the TBM wall beside the conveyor. The operator can control the TBM steering and monitor or adjust the spoil removal as necessary.



Operator station with six-way control valve. This valve controls the inner drum, conveyor, steering, dirt wing, and closed face doors.



Methane Gas Detection System

Akkerman Inc. reserves the right to improve its product without notice or obligation.