

# ROBBINS SBU DIVISION

Metric Version



## SMALL BORING UNIT (SBU-A)

The Small Boring Unit (SBU-A) is a proven solution for medium to hard rock utility installations up to 150 m in length. The SBU-A can be used with any conventional auger boring machine (ABM) from 0.6 to 1.8 m in diameter and utilizes a full-face auger for spoils removal. Before excavation, the SBU-A is welded to the lead casing. A full-face auger is added to the casing and the assembly is lowered onto the ABM track. In hard rock, the circular cutterhead is fitted with disc cutters, while in mixed ground a combination of ripper teeth, drag, bits, and disc cutters are used.

### SBU-A APPLICATIONS

- Full-face auger boring
- Replacement for carbide bit and roller cone cutterheads
- Bore lengths up to 150 m [depending on geology]

### CUTTING THROUGH ROCK

Small Boring Units utilize disc cutters from 165 mm to 356 mm in diameter to excavate rock. Disc cutters penetrate the rock face and create a "crush zone" through which fractures propagate. Material between adjacent crush zones is then chipped from the face. Muck scrapers scoop the muck into openings on the cutterhead (called muck buckets), which transfer the material to a full-face auger for removal.

### IMPROVED BORING EFFICIENCY

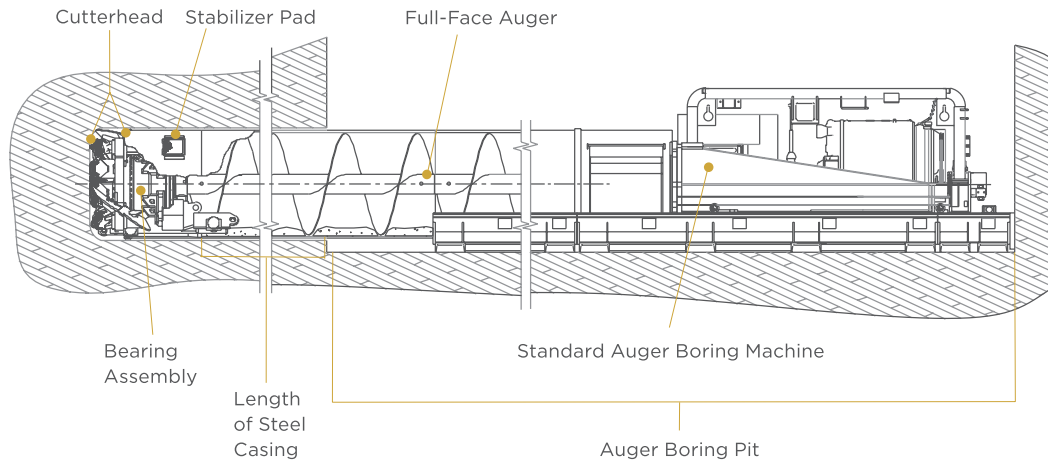
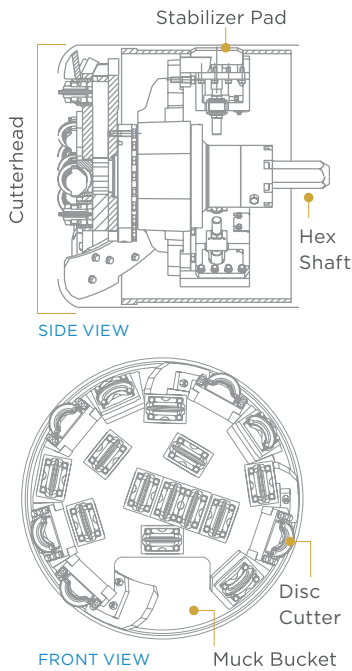
Unlike typical carbide bit or roller cone cutting heads, the SBU-A can power through rock over 175 MPa UCS. Most tungsten carbide cutting tools tend to break off in rock above 50 MPa UCS, requiring expensive replacements and machine downtime.

### A COST EFFECTIVE SOLUTION

The SBU-A has been successfully used on hundreds of projects around the world to efficiently excavate hard rock. By maximizing machine availability and minimizing labor costs, a typical SBU-A/ABM setup is economically better than carbide bit or roller cone cutting heads.



# SMALL BORING UNIT (SBU-A)



## SPECIFICATIONS

**MACHINE DIAMETERS** 0.6 to 1.8 m

**ROCK STRENGTHS** 25 to over 175 MPa UCS

**GROUND CONDITIONS** Medium to hard rock, or mixed ground

### SBU-A 24

Bore Diameter - 660 mm  
Hex Size - 102 mm or 77 mm  
No. Cutters - 9  
Cutter Size - 165 mm  
Torque Req - 7,865 to 10,575 N-m  
Thrust Req - 200 to 400 kN  
Machine Length - 1,000 mm  
Weight - 0.861 metric tons

### SBU-A 30

Bore Diameter - 810 mm  
Hex Size - 102 mm or 77 mm  
No. Cutters - 9  
Cutter Size - 165 mm  
Torque Req - 7,865 to 10,575 N-m  
Thrust Req - 200 to 400 kN  
Machine Length - 1,040 mm  
Weight - 1.12 metric tons

### SBU-A 36

Bore Diameter - 970 mm  
Hex Size - 102 mm  
No. Cutters - 13  
Cutter Size - 165 or 241 mm  
Torque Req - 17,085 to 22,915 N-m  
Thrust Req - 290 to 580 kN  
Machine Length - 940 mm  
Weight - 1.54 to 1.61 metric tons

### SBU-A 42

Bore Diameter - 1,120 mm  
Hex Size - 102 mm  
No. Cutters - 16  
Cutter Size - 165 or 241 mm  
Torque Req - 26,170 to 34,980 N-m  
Thrust Req - 380 to 760 kN  
Machine Length - 930 mm  
Weight - 1.72 to 2.25 metric tons

### SBU-A 48

Bore Diameter - 1,270 mm  
Hex Size - 127 mm or 102 mm  
No. Cutters - 19  
Cutter Size - 165, 241, or 292 mm  
Torque Req - 33,355 to 46,610 N-m  
Thrust Req - 420 to 840 kN  
Machine Length - 1140 mm  
Weight - 3.04 to 3.72 metric tons

### SBU-A 54

Bore Diameter - 1,420 mm  
Hex Size - 127 mm or 102 mm  
No. Cutters - 21  
Cutter Size - 165, 241, or 292 mm  
Torque Req - 41,490 to 55,460 N-m  
Thrust Req - 470 to 940 kN  
Machine Length - 1140 mm  
Weight - 3.38 to 4.29 metric tons

### SBU-A 60

Bore Diameter - 1,570 mm  
Hex Size - 127 mm  
No. Cutters - 14  
Cutter Size - 165, 241, or 292 mm  
Torque Req - 51,800 to 69,000 N-m  
Thrust Req - 830 to 1,560 kN  
Machine Length - 1,265 mm  
Weight - 5.56 to 6.62 metric tons

### SBU-A 66

Bore Diameter - 1,730 mm  
Hex Size - 127 mm  
No. Cutters - 15  
Cutter Size - 292 mm  
Torque Req - 63,800 to 85,100 N-m  
Thrust Req - 890 to 1,670 kN  
Machine Length - 1,416 mm  
Weight - 7.71 to 8.07 metric tons

### SBU-A 72

Bore Diameter - 1,880 mm  
Hex Size - 127 mm  
No. Cutters - 16  
Cutter Size - 292 mm or 356 mm  
Torque Req - 86,920 to 108,200 N-m  
Thrust Req - 1,000 to 1,780 kN  
Machine Length - 1,422 mm  
Weight - 7.94 to 8.26 metric tons