

# ROBBINS SBU DIVISION



## SMALL BORING UNIT (SBU-A)

The Small Boring Unit (SBU-A) is a proven solution for medium to hard rock utility installations up to 500 ft in length. The SBU-A can be used with any conventional auger boring machine (ABM) from 24 to 72 inches 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 500 ft [depending on geology]

### CUTTING THROUGH ROCK

Small Boring Units utilize disc cutters from 6.5" to 14" 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

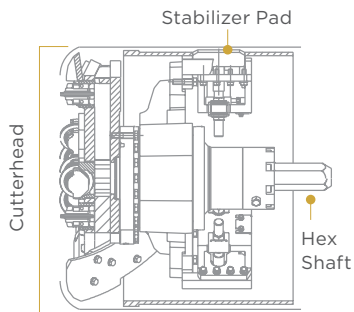
Unlike typical carbide bit or roller cone cutting heads, the SBU-A can power through rock over 25,000 psi UCS. Most tungsten carbide cutting tools tend to break off in rock above 8,000 psi UCS, requiring expensive replacements and machine downtime.

### A COST EFFECTIVE SOLUTION

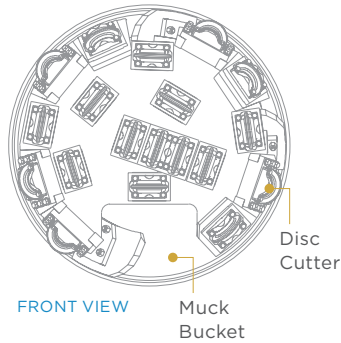
The SBU-A has been successfully used on hundreds of projects around the world to efficiently excavate hard rock. By maximizing machine availability and minimizing labor costs, a typical SBU-A/ABM setup is economically better than carbide bit or roller cone cutting heads.



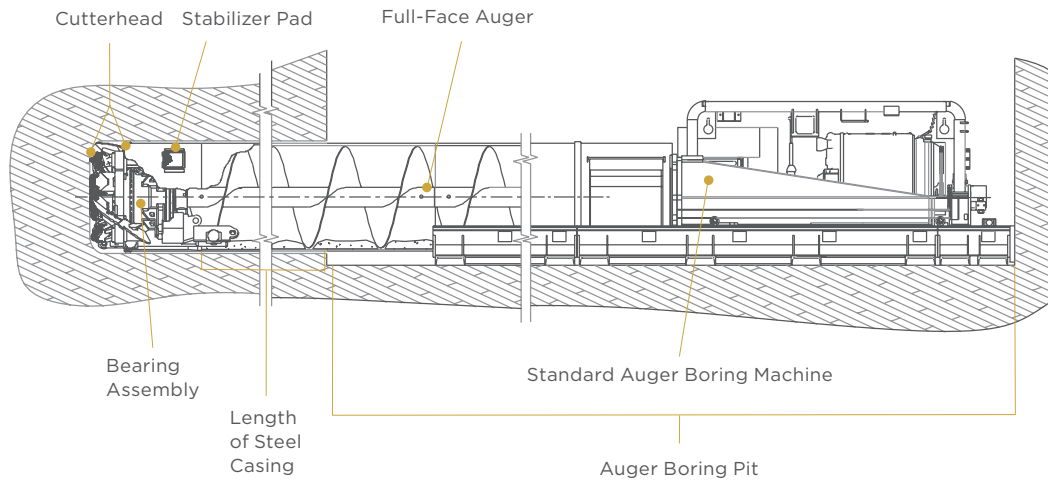
# SMALL BORING UNIT (SBU-A)



SIDE VIEW



FRONT VIEW



## SPECIFICATIONS

**MACHINE DIAMETERS** 24 - 72 inches

**ROCK STRENGTHS** 4,000 to over 25,000 psi UCS

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

### SBU-A 24

Bore Diameter - 26 in  
Hex Size - 4 in or 3 in  
No. Cutters - 9  
Cutter Size - 6.5 in  
Torque Req - 5,800 - 7,800 lb-ft  
Thrust Req - 45,000 - 90,000 lb  
Machine Length - 39.4 in  
Weight - 1,900 lbs

### SBU-A 30

Bore Diameter - 32 in  
Hex Size - 4 in or 3 in  
No. Cutters - 9  
Cutter Size - 6.5 in  
Torque Req - 5,700 - 7,800 lb-ft  
Thrust Req - 45,000 - 90,000 lb  
Machine Length - 40.75 in  
Weight - 2,470 lbs

### SBU-A 36

Bore Diameter - 38 in  
Hex Size - 4 in  
No. Cutters - 13  
Cutter Size - 6.5 in or 9.5 in  
Torque Req - 12,500 - 17,000 lb-ft  
Thrust Req - 65,200 - 130,400 lb  
Machine Length - 37 in  
Weight - 3,400 - 3,550 lbs

### SBU-A 42

Bore Diameter - 44 in  
Hex Size - 4 in  
No. Cutters - 16  
Cutter Size - 6.5 in or 9.5 in  
Torque Req - 19,200 - 25,800 lb-ft  
Thrust Req - 85,400 - 170,800 lb  
Machine Length - 36.5 in  
Weight - 3,800 - 4,950 lbs

### SBU-A 48

Bore Diameter - 50 in  
Hex Size - 5 in or 4 in  
No. Cutters - 19  
Cutter Size - 6.5, 9.5, or 11.5 in  
Torque Req - 24,300 - 32,900 lb-ft  
Thrust Req - 94,400 - 188,800 lb  
Machine Length - 45 in  
Weight - 6,700 - 8,200 lbs

### SBU-A 54

Bore Diameter - 56 in  
Hex Size - 5 in or 4 in  
No. Cutters - 21  
Cutter Size - 6.5, 9.5, or 11.5 in  
Torque Req - 30,600 - 40,600 lb-ft  
Thrust Req - 105,700 - 211,300 lb  
Machine Length - 45 in  
Weight - 7,450 to 9,450 lbs

### SBU-A 60

Bore Diameter - 62 in  
Hex Size - 5 in  
No. Cutters - 14  
Cutter Size - 6.5, 9.5, or 11.5 in  
Torque Req - 38,400 - 50,900 lb-ft  
Thrust Req - 186,600 - 350,700 lb  
Machine Length - 49.8 in  
Weight - 12,250 - 14,600 lbs

### SBU-A 66

Bore Diameter - 68 in  
Hex Size - 5 in  
No. Cutters - 15  
Cutter Size - 11.5 in  
Torque Req - 47,200 - 62,700 lb-ft  
Thrust Req - 200,100 - 375,400 lb  
Machine Length - 55.75 in  
Weight - 17,000 - 17,800 lbs

### SBU-A 72

Bore Diameter - 74 in  
Hex Size - 5 in  
No. Cutters - 16  
Cutter Size - 11.5 or 14 in  
Torque Req - 64,200 - 79,700 lb-ft  
Thrust Req - 224,800 - 400,200 lb  
Machine Length - 56 in  
Weight - 17,500 - 18,200 lbs



CORPORATE HEADQUARTERS The Robbins Company 29100 Hall Street Solon, Ohio 44139 USA  
P + 1 440 248 3303 F + 1 440 248 1702 Email sbusales@robbinstbm.com  
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