



AUTOMATED BOREWELDING





Automated BoreWelders – Designed for speed, efficiency and productivity

The Bortech BoreWelder was created in 1982, after 600 hours of development and testing by the operator of a machine shop that offered heavy equipment repair for local construction contractors. The BoreWelder was the answer to the obvious need for a machine to rebuild worn holes on large parts.

Bortech BoreWelders produce a weld overlay on the worn section of the workpiece. The workpiece can then be machined back to its original size.

Automated BoreWelders are superior to hand-welding. They are faster, provide smoother welds, and allow you to access hard-to-reach or small bores.

BoreWelders also provide a superior repair to inserting bushings or sleeves. They do not distort nor weaken the base metal and provide a longer lasting solution.

Bortech's BoreWelders are portable and can be used in both field and shop repairs. The BoreWelder mounts to the workpiece while the part remains stationary.

Bortech BoreWelders can be used with your existing GMAW power supply – they are compatible with all 300 Amp, Constant Voltage (CV) power supplies that have remote voltage and contactor control capability.

Bortech BoreWelders interface with all leading boring bars. One quick set-up allows you to align either the BoreWelder or the boring bar. You can even weld one bore while you machine another.

Bortech also offers BoreCladders, which can be used to clad round surfaces, such as nozzles for pressure vessels and pumps. When the nozzles require protection against caustic substances or erosion from steam or abrasive slurry, they can be built out of mild steel and then coated (or clad) with stainless steel, nickel alloys, or other exotic metals. BoreCladders produce void-free welds.

BoreWelder highlights include:

- ID's from $\frac{3}{4}$ " to 12' diameters
- Weld ID's, OD's, faces or conical surfaces.
- GMAW process with short arc or spray transfer modes
- Weld in all positions – horizontal, vertical, or inverted
- Weld with all base and filler metals
- 50-75% time reduction vs. hand welding

THE UPPER HAND

Advantages of Bortech BoreWelders vs. Hand Welding

BoreWelder Feature	Benefit
Continuous welding with a very consistent arc length and deposition	<ul style="list-style-type: none"> • Reduce welding time and labor cost
More consistent weld build-up	<ul style="list-style-type: none"> • Smooth, consistent welds • Reduce machining time by up to 50% • Less wear and tear on your tooling
Operates at a lower voltage	<ul style="list-style-type: none"> • Less heat distortion of the workpiece • Extend the life of consumables
Automatic out-of-round correction (pie mode and carriage return)	<ul style="list-style-type: none"> • No need to manually fill a void or to oversize the bore to make it round
Ability to focus on other tasks while BoreWelding	<ul style="list-style-type: none"> • Free up operator to work on other tasks • Weld one bore while machining another • Cut your time on the job in half
Bore diameter range of .75" to 144"	<ul style="list-style-type: none"> • Repair bores that are too small to weld by hand, or are too large to weld with good consistency
Extended reach of up to 5'	<ul style="list-style-type: none"> • Repair bores that you can't reach by hand
Better working conditions	<ul style="list-style-type: none"> • No need to keep your face in the smoke and gas • Eliminate tedious, repetitive motion
Quick set-up	<ul style="list-style-type: none"> • Interfaces with most portable machine tools • Light, portable equipment for field operation
Multi-axis welding	<ul style="list-style-type: none"> • Weld in horizontal, vertical or inverted axes

The Bortech Model 306-P can lay 5 lbs of metal per hour — hour after hour! Can you do that by hand?



Automated BoreWelders get your equipment back to work. Faster!

Repairing worn bores is a fact of business life in virtually every industry. Portable, versatile Bortech Automated BoreWelders have revolutionized bore repair by producing precision welds in less time and at lower cost.

Bortech BoreWelders can be found enhancing productivity in almost every industry:

- Buckets, sticks, hitches, pivot bores and tracks on earth moving equipment
- Cones and rings in crushers, and gearboxes in draglines
- Valves and pressure vessel nozzles in oil and gas fields, refining operations and process manufacturing operations
- Blow-out preventers, grapples and clamps in drilling operations
- Cylinders in presses in manufacturing operations
- Pulverizers, stud holes and steam chests in power plants, and tube sheets and heat exchangers in boilers
- Locomotive traction motors and couplings
- Castings and moldings in foundries
- Propeller shaft bores in shipyards

This is just a small, representative list. Other applications are limited only by your imagination.

Patented Step Process provides unrivaled flexibility

Bortech invented and patented the step method of BoreWelding. With the step method, the operator controls the bead placement and travel speed, as well as the voltage and wire feed rate.

The BoreWelder will make a 360° pass in one plane, and then step to the next plane. You control the size of that step, from .040" to .220".

Other borewelders that use a spiral method leave unwelded spots at the beginning and end of the job, and have a fixed bead placement.

Controlling the weld bead placement, along with weld direction, travel speed, voltage and wire feed rate provides complete control over your welding parameters. This control is necessary in applications where you desire very little deposition (such as cladding with exotic alloys) and where you desire massive deposition (such as build-up of large diameter parts).



EXTENDED RANGE TORCH
ID build-up from 26" - 54".



TRAMMEL TORCH ~ OD build-up to 14" diameters
as much as 10" from end of OD.



TORCH EXTENSION SUPPORT KIT ~ Steady rest and satellite offset head for extension lengths greater than 60".

BoreWelder Packages Offer Greater Flexibility

Bortech's standard packages provide a range of torches and extensions. You can select a standard package, or customize a package to your specific workload.

Optional kits from Bortech include:

- OD Welding
- Face Welding
- Conical Seat Welding
- Small diameter welding lathe (10" swing)
- Mini MIG Gun for tack welding
- Stick Electrode Holder for tack welding
- Wire Straightener
- Push-Pull Feeder

Patented System for Quick Changeovers

Most important, the change over from one torch to another is simple. Bortech's patented captive liner system provides torches and extensions with the liner already installed! Gone are the days of threading liner through torches and extensions.

For example, if you are welding a 12" deep bore with a 6" stroke machine, you can weld the first six inches, unscrew the torch, remove the 6" extension, screw your torch back on, and be welding again in less than a minute!

Or, you can reconfigure the machine to switch from 2" diameter bores to 6" bores just as quickly, with no need to snake the liner through the torches, conduit or welding head.

This simplicity and ease of use makes Bortech BoreWelders the machine of choice by all high volume users.

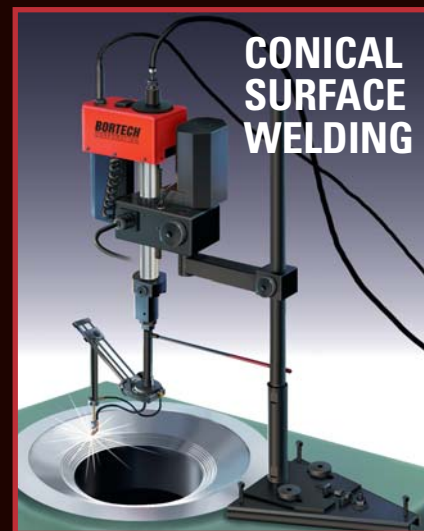
Bortech's Commitment of Quality and Satisfaction

Included with the purchase of any BoreWelder is one day of training in your facility by a factory-trained Bortech representative. Additional training is available free of charge at Bortech headquarters in Keene, NH. Experienced staff can provide technical or application assistance via phone, internet or on-site.

APPLICATIONS



**FACE TORCH ~ Allows spiral face build-up to 20".
TORCH COUNTERBALANCE KIT ~ for horizontal
use of torches #6 and larger, Face, Trammel and
Extended Range torches.**



**CONICAL BORE ATTACHMENT ~
allows weld build-up of valve seats
and other conical surfaces to 20".**

Bortech Models 306-P and 106-P

Bortech's flagship models are the 306-P and its "sister" model, the 106-P. These models provide greatest control over welding parameters, along with the most flexibility for accessories.

The 306-P provides a complete welding system, other than the power supply:

- BoreWelder
- Control Box (90 - 250V AC, 45 - 400 Hz)
- Wire Feeder

With the 106-P, the user utilizes their own CV wire feeder.

Both models are compatible with all 300 Amp, Constant Voltage (CV) power supplies that have remote voltage control capability.

Patented "Step" Process

The 306-P and 106-P models weld a complete 360° in a single plane, before "stepping" to the next plane. This technology allows for complete weld coverage at the start and finish of the bore. Adjusting the size of the step allows you to control bead-to-bead overlap, or to weld in either the clockwise or counter-clockwise direction. Combined with adjustments to travel speed and wire speed (amperage), you have

complete flexibility over welding parameters for your most challenging applications.

Auto-Skip, Pie Mode and Carriage Return

The stepping technology also enables:

- Auto-skip – designate "weld-only" or "skip-weld" sections for working with keyways and slots
- Pie Mode – bi-directional welding in only a section of the bore for correcting out-of-round conditions
- Carriage Return – similar to Pie Mode, but only welds in one direction while "rapid returning" in the other direction, for welding "always uphill" or "always downhill"

**CE approved
models are
available.**

**Model 306-P
BoreWelder equipped
with major components
for ID and OD build-up.**



Shown with optional OD Welding Torch

**Torches: #6-12, #000,
Extended Range Torch.**



Face Torch.



Conical Bore Attachment.



**Torch Counter Balance,
10" Radial Mount,
Extension Support Kit.**

Patented Off-Set Head

For simple adjustment of torch diameter, the 306-P includes an off-set head. This type of radial adjustment of the torch maintains the proper torch angle in relation to the work piece.

The 106-P uses a swivel head in place of the off-set head.

Versatility

- Weld in any axis (vertical, horizontal or inverted)
- Weld in either direction (clockwise or counter-clockwise), which is important for multiple pass welding
- Compatible with all leading boring bars, so you can weld one bore while machining another

Options and Accessories

- Long stroke machines – 12", 18", 24" or 36" strokes
- Face Torch – for faces up to 20" diameters
- OD Torch (Trammel Torch) – for OD welding up to 14" diameters (within 10" of an open end of a workpiece)
- Conical Seat Torch – for tapered seats up to 20"
- Push/Pull Feeder – for use with low column strength wire
- Torch Extensions and Extension Support kits – for extended reach over 50"
- Hand held MIG guns - for use with Bortech wire feeders and control boxes
- Wire Feeder Suspension Brackets – to suspend the Wire Feeder
- Enclosed (suitcase style) wire feeder

See the
Model Selection Guide
on page 10 for further
detailed specifications.



MODELS 306 & 106



Horizontal Application.



"Pie Mode" weld utilizing Bortech's Auto-Skip function.

Bortech DOZER Model

Bortech's entry-level BoreWelder is the DOZER model. No longer do you have to choose between Quality and Low Start-up Costs. With the DOZER, quality becomes affordable.

The DOZER can be used with Bortech's DOZER wire feeder, or with any wire feeder that provides burnback capability. With simplified controls (one knob and one switch), set up and operation is quick and easy.

Spiral Welding Process

Whereas higher end BoreWelders provide increased flexibility with stepping technology, the DOZER provides simplified operation using spiral technology.

The welding torch is simply attached to a lead screw – as the screw rotates, so does the torch. For every 360° rotation, .125" of axial feed is attained.

The only adjustments the operator needs to make are to the rotation speed and wire speed. The axial feed is fixed at .125", with no adjustment (whereas the 306-P and 106-P models allow you to adjust the step size).

Quality at a Low Price

DOZERS from Bortech include:

- Needle bearings to support the spindle, providing longer life and more consistent speed under axial loads, than plastic bushings
- Steel torches are more durable and less subject to galling in thread areas than aluminum torches
- Patented captive liner system for quickly installing extensions and torches
- Quick disconnect wire feeder attachments for quick set-up and changeovers
- Nose cone allows easy welding from either direction and infinite orientation of the BoreWelder case in the mount

Versatility

- Weld in any axis (vertical, horizontal or inverted)
- Compatible with all leading boring bars, so you can weld one bore while machining another
- Lightweight (20 lbs) and portable for field or shop use

Options and Accessories

- Adjustable base for 3-dimensional alignment to the bore
- Small bore kit for welding bores as small as .75" ID
- Extended reach package (includes an 18" extension and a torch extension support)



DOZER with optional adjustable base



Standard DOZER package

Upgrade/Trade-In Program

Within twelve months of your purchase of any DOZER package, you can upgrade to a 306-P model. If you return your DOZER to Bortech in working condition, Bortech will credit 100% of your DOZER purchase toward the 306-P!

CE approved models are available.

Model 1201 and 1202 BoreWelders

Bortech's Models 1201 and 1202 are designed for your largest welding projects – diameters ranging from 12" to 12'. Using the same "step" process as the model 306-P, the 1201 and 1202 provide control over all welding parameters. Options and accessories are available for I.D., O.D. Face, and Conical Seat welding.

- The Model 1201 is designed for repetitive jobs in a shop environment
- The Model 1202 is designed for set up in a field location using the "erector set" concept for easy installation

In either case, the workpiece remains stationary as the welding torch and wire feeder rotates around it.

Like smaller BoreWelders, the 1201 and 1202 rotate the torch around a stationary workpiece. Axial motion is provided using Bortech's patented "step" process. Various size Radial Rods are available for different diameter workpieces. In addition to continual build-up, the operator can manually or automatically interrupt the arc at selected locations.

Models 1201 and 1202 are compatible with all GMAW (MIG) welding power supplies of 400 amps or greater with remote voltage control capabilities. Solid or flux-cored wires can be used. Spray transfer or short-arc processes can be used.

With a maximum continuous welding current of 450 amps, the 1201 and 1202 can lay a very large bead – adjustable from .125" to .350" – to greatly reduce your welding time.

Typical applications include:

- Cone crushers
- Large valve seats
- Idler wheels
- Rolling mill chocks
- Dragline walker cams

**The 1201 and 1202
can lay 12 lbs of
metal per hour —
hour after hour!!!**



DOZER, 1201, 1202



Models 613-L and 610-A Welding Lathes

Bortech's welding lathes use Bortech's "step" process to apply a consistent weld on the entire outer diameter of any cylindrical part. The "step" process holds the torch stationary while the workpiece rotates a full 360°, applying the weld in a single plane. The torch then "steps", applies another 360° weld in the next parallel plane, and repeats the process until the workpiece is completed.

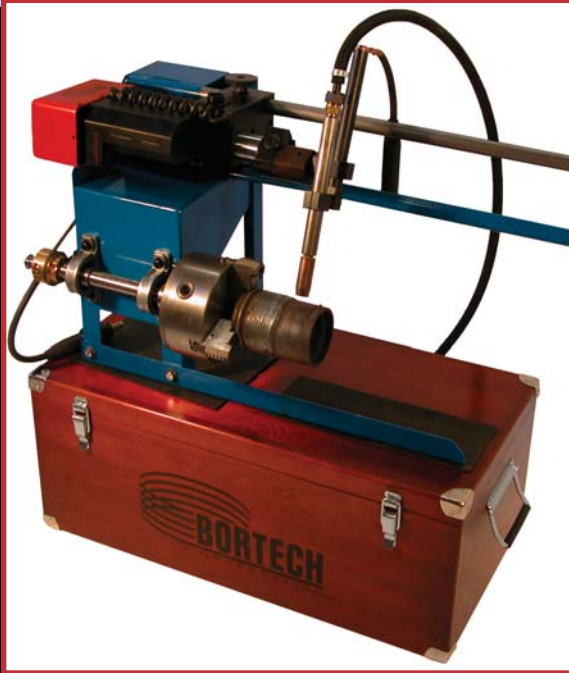
- The Model 613-L is a complete, stand-alone welding system
- The Model 610-A is an accessory that converts any Bortech 306-P BoreWelder to a lathe

Features of the 613-L include:

- Travel carriage can be disengaged for rapid re-positioning
- Three positioning adjustments (Vertical, for stick-out and multi-pass welding; Horizontal, for bead offset from centerline; and Angular, for arc weld angle)
- Steady rests for longer workpieces
- All steel construction, 26" wide x 42" high

Features of the 610-A include:

- Vertical and Horizontal positioning adjustments
- All steel construction



610-A Welding Lathe attachment

Specifications

	613-L	610-A
Workpiece length (max)	Standard: 3' Optional: up to 12' (6' torch travel)	16"
Swing	13.5"	10"
Workpiece weight (max)	300 lbs	100 lbs
Welding Process	GMAW, short circuit, pulse, or spray transfer modes	GMAW, short circuit, pulse, or spray transfer modes
Jaw Chuck Size	Standard: 6" Optional: 8"	Standard: 6" Optional: 8"
Max Weld Current (100% duty cycle)	Standard: 175 amps Optional: 300 amps	175 amps
Weld Bead Placement	Adjustable, .04" to .22"	Adjustable, .04" to .22"
Wire Diameter Range	.023" to .045" (Optional: .062")	.023" to .045"
Welding Torches	Brass	Steel
Power Supply	User supplied: compatible with all common Constant Voltage (CV) power supplies. Optional: Supplied by Bortech	User supplied: compatible with all common Constant Voltage (CV) power supplies. Optional: Supplied by Bortech
Voltage	115VAC or 230VAC, single phase	115VAC or 230VAC, single phase

BoreCladders for ID Overlays

Combining the best features of its industry-leading BoreWelders and Welding Lathes, Bortech's BoreClad systems are designed for your most demanding applications.

Often, nozzles and other pressure vessel components are made from mild steel, but they need to be coated with an exotic metal to prevent corrosion or erosion. Stainless steel, Inconel, and nickel/brass/aluminum composites are often used. While welding with these materials can be challenging, the final product must be completely defect free.

BoreCladders from Bortech solves this problem. Similar to the Welding Lathes, the BoreClad rotates the workpiece. Automated axial feed is provided, using Bortech's "step" process. With water cooled torches, workpieces as long as 36" can be welded without a single stop.

The non-rotating head can be purchased separately, for use with your welding positioner.



Specifications

	BoreClad
Workpiece length (max)	36"
Swing	18"
Workpiece weight (max)	300 lbs with Steady Rests
Welding Process	GMAW, short circuit, pulse, or spray transfer modes
Jaw Chuck Size	Standard: 6" Optional: 8"
Max Weld Current (100% duty cycle)	200 Amps
Weld Bead Placement	Adjustable, .04" to .22"
Wire Diameter Range	.023" to .045" Optional: .062"
Welding Torches	Steel
Power Supply	User supplied: compatible with all common Constant Voltage (CV) power supplies. Optional: Supplied by Bortech
Voltage	115VAC or 230VAC, single phase

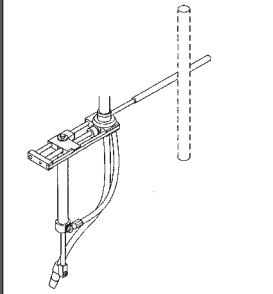


BoreWelder Model Selection Guide

Specifications	Model 1202	Model 306-P	Model 106-P	Dozer
ID Range (standard)	24" to 72"	.88" to 13"	2.75" to 12"	2.75" to 12"
ID Range (min to max)	12" to 144" (or beyond)	.5" to 54"	.88" to 54"	.88" to 50"
OD Range (optional)	12" to 144" (or beyond)	0" to 36"	0" to 36"	0" to 36"
Face Welding (optional)	12" to 144" (or beyond)	0" to 20"	0" to 20"	Not available
Extensions (standard)	Not applicable	57"	39"	21"
Extensions (w/support h/w)	Not applicable	156"	72"	42"
Weld stroke (standard)	30"	6"	6"	9" feed screw
Weld stroke (optional)	up to 50"	12", 18", 24" or 36"		
Maximum weld current	450 amp	175 amp	175 amp	140 amp
Weld Bead Placement (Bead to bead overlap)	Adjustable, .125" to .350"	Adjustable, .04" to .22"	Adjustable, .04" to .22"	Fixed, .125"
Wire Diameter Range	.045" to .062"	.023" to .045"	.023" to .045"	.023" to .045"
Features				
Indexing Technology	Stepping (Patented)	Stepping (Patented)	Stepping (Patented)	Spiral
Bi-directional Welding	Standard	Standard	Standard	Not Available
Auto Skip (for keyways, etc.)	Optional	Optional	Optional	Not Available
Pie Mode (for out-of-round bores)	Optional	Optional	Optional	Not Available
Carriage Return (for less than 180°, one-directional welding)	Optional	Optional	Optional	Not Available
Torch Adjustment	Off-set head	Off-set head	Swivel head	Swivel head
Control Box	Standard, allows remote control of all BoreWelder and welding functions	Standard, allows remote control of all BoreWelder and welding functions	Standard, allows remote control of all BoreWelder functions	Not applicable (self-contained on/off and rotation switches)
Welding Torches	Steel	Steel	Steel	Steel
MIG liners	Encased liners are standard (patented), allowing for super quick set-up and changeovers	Encased liners are standard (patented), allowing for super quick set-up and changeovers	Encased liners are standard (patented), allowing for super quick set-up and changeovers	Encased liners are standard (patented), allowing for super quick set-up and changeovers

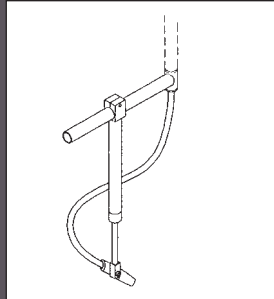
Model 306-P BoreWelder Accessories

SELECTION GUIDE & ACCESSORIES

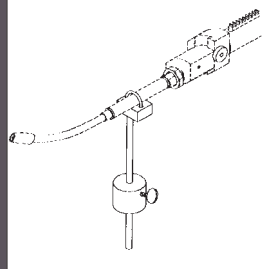


Part # A1035
Face Torch
Use for face buildup. Diameter range 0-21" (53.34cm). Requires 2 Radial Mounts and Mounting Rod Extender #10239.

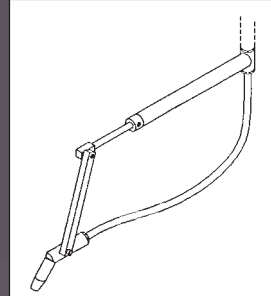
Part # A1084
Conical Valve Seat Torch
Similar to Face Torch but allows conical surfaces to be built up.



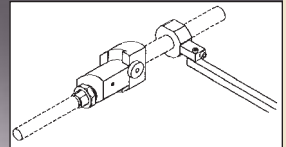
Part # A1020
Trammel Torch
Use for OD buildup. Will build up 14" (35.6cm) diameter as much as 10" (25.4cm) from end of OD. Generally requires 2 Radial Mounts and Mounting Rod Extender #10239.



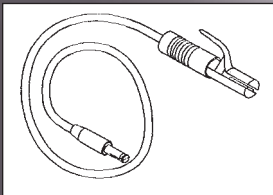
Part # A1079
Torch Counter Balance
Used to balance torch when doing horizontal axis welding thereby eliminating variation in rotation speed caused by gear backlash. Suggest using with #6 ID torch and larger, and the Face and Trammel torches.



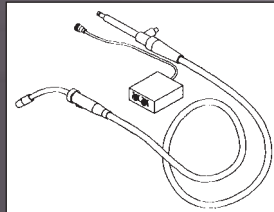
Part # A1082
Torch # 13/14
Extended Range Torch
ID range 26"-54" (66cm - 137.2cm) Requires Slow Rotation Pulley # 10348 and Slow Rotation Belt # 10372.



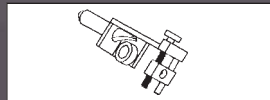
Part # A1031
Torch Extension Support
Used for torch support when it is necessary to project the torch a long distance from the BoreWelder mounting location. Usually used for horizontal axis bores when more than 60" (152cm) of combined extension length is required.



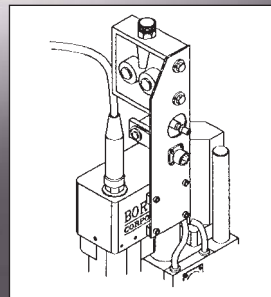
Part # A1086
Stick Electrode Holder
Use for quick tack welds and touch-ups. Plugs into same cable quick-couple that attaches to BoreWelder.



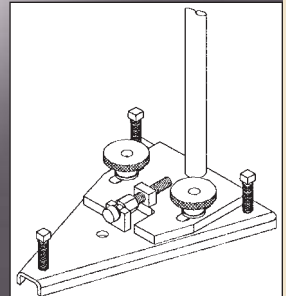
Part # A1092
Hand Held MIG Gun
Use the BORTECH wire feeder and control box for manual MIG welding.



Part # A1091
Wire Straightener
Attached to the wire feeder, this component can be used to diminish the effects of the wire's natural cast.



Part # A1067
Push/Pull Feed System
Particularly suitable for hard-to-feed wires (e.g. Inconel & Aluminum Bronze). Also helps with high heat processes such as pulse spray.



Part # A1000
Adjustable Base
Provides support and alignment capabilities for BoreWelder. Can be mounted in any position.



Consumables

Other Consumables

Description	Part #
Diffusers, pack of 5	10040
Liner, .023/.045, 16'	A1164
Welding Wire	10429
(Cast Controlled, .035", 33 lb spool, National Standard ER70-S6)	

Torches, Tips and Nozzles

Desc.	Torches		Tips		Nozzles		
	Bore ID	Part #	Description	Part #	Part #		
#00	.88 - 1.8"	A1008	.035, 5 pk .045, 5 pk	10038 10251	10068-2		
#0	1.75 - 3"	A1009	.035, 5 pk .045, 5 pk	10227 10248	10241-2		
#1	2.75 - 5.5"	A1007	(for difficult-to-feed wires or high heat)				
#1A	3 - 5.5"	A1071					
#2	4.5 - 7.5"	A1010					
#3	6 - 9"	A1011					
#4	8 - 11"	A1012					
#5	10 - 13"	A1013				.030, 25 pk	10174
#6	12 - 15"	A1021				.035, 25 pk	10081
#7	14 - 17"	A1022				.045, 25 pk	10141
#8	16 - 19"	A1017					
#9	18 - 21"	A1053					
#10	20 - 23"	A1054					
#11	22 - 25"	A1077					
#12	24 - 27"	A1078					
#13/24	26 - 54"	K1082					
(includes 10" radial mount and slow rotation belt & pulley)							
#000	.5 - 1"	A1058	.023, 5 pk .030, 5 pk	10254 10255			
(requires dedicated BoreWelder w/fast rotation motor & push/pull feeder. Use with .023 wire and weld at ~ 75 amps)							

Specialty Torches

Torch		Required Accessories	
Description	Part #	Description	Part #
Trammel Torch (for O.D's)	A1020	Torch Counter Balance	A1079
Face Torch	A1035	Radial Mount, Opposite	A1115
Conical Torch	A1084	Mounting Rod Extender	10239
Extended Diameter Trammel Torch (up to 20" O.D.)	A1145	Torch Counter Balance	A1079
		10" Radial Mount	A1099
		Mounting Rod Extender	10239
#1 Swivel Torch (2.75 - 8.2"), Model 106 and DOZER	A1138	None	
#2 Swivel Torch (8 - 12"), Model 106 and DOZER	A1139		

Torch Accessories

Description	Part #	Application
Std Torch Adapter	A1143	Model 106 and DOZER (standard torch to Swivel Head)
Spec. Torch Adapter	A1128	Standard torch to face and trammel torches
Torch Counterbalance	A1079	Model 306-P and 106
Swivel Head Ass'y	A1137	Model 106 and DOZER
Torch Support Arm	A1124	Model 106 and DOZER
Torch Extension Supp.	A1031	Model 306-P
Handheld MIG Gun	A1092	For manual MIG welding with Bortech wirefeeder & control box
Stick Electrode Holder	A1086	Connects to same cable quick-couple attached to BoreWelder
Torch Rebuild	n/a	For #00 and #0 torches – (torches must be returned to factory)

Torch Extensions

Description	Part #
3" Extension	A1019
6" Extension	A1014
12" Extension	A1015
18" Extension	A1016

Mounting Hardware

Description	Part #
Adjustable Base	A1000
Mounting Rod	10004
Mounting Rod Extender	10239
Radial Mount - 5"	A1023
Radial Mount Opposite	A1115
Radial Mount - 10"	A1099
Radial Mount - DOZER	A1152

Bortech Wire Feeders

Description	Part #
Bortech Wire Feeders	Contact us
Wire Straightener	A1091
Suspension Bracket	A1075 & A1114
Feed Roll .035/.045	10233
Feed Roll .024/.030	10138
Conduit - 2'	A1055
Conduit - 3'	A1056
Conduit - 4'	A1057
Conduit - 5'	A1005
Conduit - 10'	A1103

Conduits for Non-Bortech Wire Feeders

Description	Part #	
Tweco Gun Back End	A1141	Model 106
Miller Gun Back End	A1147	Model 106
Lincoln Gun Back End	A1148	Model 106
Euro Gun Back End	A1149	Model 106
Tweco Gun Back End	A1157	DOZER
Miller Gun Back End	A1155	DOZER
Lincoln Gun Back End	A1158	DOZER
Euro Gun Back End	A1156	DOZER
Hobart Gun Back End	A1159	DOZER
ITW/Hobart Gun Back End	A1161	DOZER

Control Box

Description	Part #
Control Box	A1025

Cables

Description	Part #	Length
Power Cord, 110V	10202	5'
BoreWelder Control	A1074	8'
BoreWelder Control, Remote Arc Interrupt Ready	A1102	8'
Remote Arc Interrupt (for use with A1102)	A1100	n/a
Wire Feed Control	A1090	12'
Push/Pull Wirefeeder	A1070	6'
90 deg Power Connector (Weld Power Positive)	A1098	n/a
Power Supply, Blank End	A1061	25'
Power Supply, Miller 14 Pin	A1062	25'
Power Supply, Pow Con 14 Pin	A1065	25'
Power Supply, Pow Con 17 Pin	A1073	25'
Power Supply, Lincoln 14 pin	A1088	25'
Power Supply, Hobart 19pin	A1131	25'
Power Supply, Esab 19 Pin	A1135	25'
Power Supply, Miller 14 pin w/ 110V	A1072	25'
Power Supply, Lincoln 14 pin w/ 110V	A1122	25'

BORTECH Makes BoreWelding Easier

Factory Trained Representatives

Bortech BoreWelders are sold by a world-wide network of factory trained representatives. These representatives can provide on-site demonstrations, model selection assistance, post-sale training and technical support. To locate your nearest representative, visit www.bortech.com or call 1-888-265-1202

Boring Bar Interface

Bortech's BoreWelders are designed to work well with all leading boring bars. Bortech's representatives can help you select a new boring bar, or assist you in interfacing your BoreWelder to your existing boring bar.

Enhance Feeding of Low Column Strength Wire

If you are welding with low column strength wire such as stainless steel, Bortech recommends the "Push-Pull Wire Feeder" option.

Hand Welding Attachments

To mount your BoreWelder to the workpiece, you must tack weld Bortech's adjustable base or your boring bar's alignment bearings to the workpiece. Bortech offers several options so you can use your BoreWelder to hand weld:

- Mini MIG guns
- Stingers

WeldCalc

With every machine purchased, Bortech provides a software program called "WeldCalc." WeldCalc can be used to help calculate build-up times and weights of welding wire for bores and faces. It is not designed to figure settings for weld parameters, but will estimate the thickness of the buildup and how long it will take to do a job.

#000 Torch for Small Diameters.

To weld diameters of less than .875", Bortech provides the #000 torch, a retrofit to increase the rotation speed of the BoreWelder, and the Push/Pull Feed System. We recommend welding parameters of 75 amps at 15 volts with .023 wire.

In addition, the #000 torch can be modified for plug welding applications.

Weld Time Chart

Bore Diameter	Length of Bore					
	1"	2"	3"	4"	6"	10"
1	1.3	2.5	3.8	5.0	7.5	12.6
2	2.5	5.0	7.5	10.0	15.1	25.1
3	3.8	7.5	11.3	15.1	22.6	37.7
4	5.0	10.0	15.1	20.1	30.1	50.2
5	6.3	12.6	18.8	25.1	37.7	62.8
6	7.5	15.1	22.6	30.1	45.2	75.4
8	10.0	20.1	30.1	40.2	60.3	100.5
10	12.6	25.1	37.7	50.2	75.4	125.6
12	15.1	30.1	45.2	60.3	90.4	150.7
16	20.1	40.2	60.3	80.4	120.6	201.0
20	25.1	50.2	75.4	100.5	150.7	251.2

Weld Times (in minutes) All times are calculated with rotation speed of 20"/min and step size of .125"



66 Victoria Street

Keene, New Hampshire 03431

Tel: 888-265-1202 ♦ Fax: 603-358-4007

Email: info@bortech.com ♦ www.bortech.com