



Welding, brazing and soldering products

Solutions

for maintenance, repair
and fabrication

Product Catalog



Additional Resources from All-State®

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All-State Customer Service	1-800-362-7080
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All-State Application Guide	request ALS-0177
All-State Handbook	request ALS-0029
All-State Selector Wall Chart	request ALS-0030
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Process & Product	Metal Type														Tool Steel	Stainless Steel		Alum. Alloys		Zinc-Based Metals		Magnesium
	Copper	Brass	Bronze	Silicon Bronze	Monel	Nickel Alloys	Inconel	Cast Iron	Wrought Iron	Mild Steel	High Strength Steel	Manganese Steel	Galvanized coated steel	Stainless Steel — Gen see note ¹		Aluminum	Cast Aluminum	Zinc-Based Metals	Die Cast Zinc			
Soldering Products																						
Rubbon 55*																		★	★			
Strongset 390	✓	✓	✓	✓	✓	●	●	●		●	●	●	✓				●	★	★			
Strongset 509*	★	★	★	★	★	●	●	●		●	●	●	✓				●	★	★			
50/50 Paste Solder	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓									
Galvover	✓	✓	✓	✓	✓			✓		✓	✓	✓	★				✓					
AquaSafe 100* ^	★	★	★	✓	✓	✓	✓	✓		✓	✓	✓					✓					
DynaGrip 430* ^	★	★	★	★	★	★	★	★	★	★	★	★					★					
Brazing Products																						
Super 31 & 31 FC*																		★	★			
Sealcor*																		★	★			
No. 11 & 11 FC*	★	★	★	★	★	★	★	★	★	★	★	★	✓	●	★							
No. 41 FC*	★	★	★	★	★		✓	★	★	★	★	★	★	●								
No. 101 & 101 FC*	★	★	★	★	★	★	★	★	★	★	★	★		●	★							
No. 155 & 155 FC*	★	★	★	★	★	★	★	★	★	★	★	★	✓	●	★							
Sil-Flo 15*	★	★	★	★	★																	
Sil-Flo 5 & 0	✓	✓	✓	✓	✓																	
Low-Fuming Bronze	★	★	★	★	★		✓	★	★	★	★	★	★									
No. 13 & 13 FC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	✓							
No. 125	✓	✓	✓	✓	✓	✓	✓	✓	●	✓	✓	✓		●	✓							
RG 45									★	★												
RG 60									★	★	●											
RG 65									✓	✓	★											
Arc Welding — Manual Stick Electrode Products																						
SmoothCote 34*																		★	★			
Super 4-60*						★	★	★		●	●				●							
No. 4 IMP						●	●	★	✓	●					●							
No. 6 IMP								✓		●												
No. 8-60 (55% Ni)						●	●	★	✓	●					●							
No. 8 (99% Ni)	●				●	●	●	★														
No. 16	★	✓	✓	✓	★	✓	✓	★		●												
No. 20	★	★	★	★	★	●	●	✓	✓	✓	✓	✓			●							
No. 24 DC	★	★	★	★	★	●	✓	✓	✓	●					✓							
Super 275*						✓	✓		✓	★	★	★		✓	★							
SteelArc 80LV*							✓			★			✓									
Super 18-HI					●	★	★	●	●	✓	★				✓							
No. 252						✓			✓	✓		✓		✓	★							
No. 616										★	✓											
HY-10										●	★											

★ Best Choice ✓ Good Choice ● Can be used when welding to other metals listed as "Best Choice" or "Good Choice" for this product.

Notes: ¹ Refer to "Stainless Steel Product Selection — Chart 2" for more detailed product selection choices.

[^] Lead and cadmium free. Safe to use on potable water, beverage and food-handling applications.

Process & Product	Metal Type														Tool Steel	Stainless Steel		Alum. Alloys		Zinc-Based Metals		Magnesium
	Copper	Brass	Bronze	Silicon Bronze	Monel	Nickel Alloys	Inconel	Cast Iron	Wrought Iron	Mild Steel	High Strength Steel	Manganese Steel	Galvanized coated steel	Stainless Steel — Gen see note¹		Aluminum	Cast Aluminum	Zinc-Based Metals	Die Cast Zinc			
Arc Welding — Manual Stick Electrode Products <i>continued</i>																						
GlideArc*						✓	✓					✓					★					
SmCote 308L, 309L, 316L																	★					
AS 308L, 309L, 316L																	★					
AS 310, 312																	★					
Air Hardening										•	•					★						
High Speed										•	✓					★						
Arc Welding — Tig (Heliarc) Products																						
Super 31 Tig*																	★	★				
All-State 4043 & 5356																✓	✓					
No. 4-60T						✓	✓	★	✓	✓	✓	✓										
Deoxidized Copper	★	✓	✓	✓	✓					•	•	•	✓									
Silicon Bronze	✓	✓	✓	★	✓	✓	✓	✓	✓	★	•	•	★									
No. 61-T																			★			
AS 70S-2										★	•											
No. 4130-T										•	★			✓								
No. 88-T										★												
No. 252-T						✓			✓	✓		✓		✓	★							
AS 308L, 316L FC																★						
AS 308L, 309L, 316L																★						
AS 310, 312																★						
Air Hardening										•						★						
High Speed										•						★						
Hot Work										•						★						
Oil Hardening										•						★						
Arc Welding — Mig Wire Products																						
Super 31 Mig*																	★	★				
All-State 4043 & 5356																✓	✓					
Core-Cast 8600						★	★	★		•	•			•								
Deoxidized Copper	★	✓	✓	✓	✓					•	•	•	✓									
Silicon Bronze	✓	✓	✓	★	✓	✓	✓	✓	✓	★	•	•	★									
Easy Grind*										★			✓									
Shield-Free Plus*										★			✓									
AS 70S-6*										★												
All-Shield 308L, 309L, 316L																★						
AS 308L, 309L, 316L																★						

★ Best Choice ✓ Good Choice • Can be used when welding to other metals listed as "Best Choice" or "Good Choice" for this product.

Notes: ¹ Refer to "Stainless Steel Product Selection — Chart 2" for more detailed product selection choices.
[^] Lead and cadmium free. Safe to use on potable water, beverage and food-handling applications.

Process & Product	Stainless Steel Base Metal															
	201	202	301	302	304	304L	305	309	309L	310	316	316L	318	321	347	410
Arc Welding — Manual Stick Electrode Products																
SmoothCote 308L-17	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
SmoothCote 309L-17					✓	✓	✓	★	★	●	●	●	●	●	●	
SmoothCote 316L-17	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	✓	✓	✓	
All-State 308L-16	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	✓	✓	
All-State 309L-16					✓	✓	✓	★	★	●	●	●	●	●	●	●
All-State 310-16	✓	✓	✓	✓	✓	✓	✓	●	●	★	●	●	●	●	●	●
All-State 312-16	✓	✓	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●
All-State 316L-16	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	●	●	●	
Arc Welding — Tig (Heliarc) Products																
All-State 308L FC	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
All-State 316L FC	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	✓	●	●	
All-State 308L	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
All-State 309L	✓	✓	✓	✓	✓	✓	✓	★	★	●	●	●	●	●	●	●
All-State 310	✓	✓	✓	✓	✓	✓	✓	●	●	★	●	●	●	●	●	●
All-State 312	✓	✓	✓	✓	✓	✓	✓	●	●	✓	●	●	●	●	●	●
All-State 316L	✓	✓	✓	✓	✓	✓	✓	✓	✓	●	★	★	✓	●	●	
Arc Welding — Mig Wire Products																
All-Shield 308L FCW	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
All-Shield 309L FCW	✓	✓	✓	✓	✓	✓	✓	★	★	●	●	●	●	●	●	●
All-Shield 316L FCW	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	●	●	●	
All-State 308L	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
All-State 309L	✓	✓	✓	✓	✓	✓	✓	★	★	●	●	●	●	●	●	●
All-State 316L	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	●	●	●	
All-State 308L Hi-Sil	✓	✓	✓	✓	★	★	✓	●	●	●	●	●	●	●	●	
All-State 316L Hi-Sil	✓	✓	✓	✓	✓	✓	✓	●	●	●	★	★	●	●	●	

★ Best Choice ✓ Good Choice ● Use if service temperature will be less than 500°F or if corrosion resistance is not required.

Notes: FC Flux Coated — eliminates the need for purging or gas backing.
 FCW Flux Core Wire — higher deposition rates than solid Mig wire and covered electrodes.



Soldering, Brazing and Welding Alloys Solutions for Maintenance, Repair and Fabrication



Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Soldering Products				
for All Metals (not Aluminum)				
All-State 50/50 Paste Solder A 50/50 lead/tin solder for sealing, joining or tinning most common metals, except aluminum. Can be used with soldering iron or torch. Working temperature is 360°F to 375°F. Use Prest-O-Lite air/fuel equipment.			1-lb Jar (1-lb) (plastic)	69070060
All-State Galver Special low-temperature alloy used to restore and protect galvanized area of sheet and angle iron. Smooth, with a firm bond that resists corrosion. Use Prest-O-Lite air/fuel equipment.	1/4sq 1/4sq 1/4sq	14 14 14	1-lb Tube (1-lb) 3-lb Tube (3-lb) 10-lb Tube (10-lb)	69071170 69071070 69070070
for Aluminum				
All-State Rubbon 55 Self-fluxing solder for joining and patching holes in aluminum at low temperatures without flux. Can also be used on zinc-based die-cast "pot" metal. (All-State no. 53 flux will improve flow on pot metal). Provides high strength and long service without galvanic action between base metal and solder. Rubbon 55 also provides good abrasion resistance. Deposit has an excellent color match to the base metal. Use Prest-O-Lite air/fuel equipment.	1/8 1/8	18 18	1-lb Tube (1-lb) 10-lb Box (10-lb)	69071030 69070030
All-State Strongset 390 Solders aluminum to itself and most other metals at 390°F. 40% elongation. Good corrosion resistance. Limited tensile strength. Use Prest-O-Lite air/fuel equipment.	1/16 1/8	18	1-lb Spool (1-lb) 1-lb Tube (1-lb)	69070064 69070065
All-State Strongset 509 A cadmium/zinc solder with high strength, corrosion resistance, including galvanic corrosion. Use Strongset 509 to join aluminum (including anodized) and zinc-based die-cast (pot metal) as well as all combinations of ferrous and nonferrous metals except magnesium or titanium metals. Deposit closely matches color on aluminum. Melts at 509°F. Use with All-State Strongset 509 flux. Not intended for water, beverage, or food handling applications. Use Prest-O-Lite air/fuel equipment.	1/16 1/8 3/32 1/4sq 1/16	18 18 18 14 48	1-lb Spool (1-lb) 1-lb Spool (1-lb) 10-lb Tube (10-lb) 10-lb Tube (10-lb) 1 Kit (1ea)	69070050 69070051 69070028 69070053 69070100
<i>Strongset 509 Solder Kit contains 4-ft 509 solder and 1/2oz Strongset 509 flux.</i>				
for Copper-Based Alloys				
All-State AquaSafe 100 Lead free — cadmium-free solder and flux kit for joining copper and dissimilar metals in potable water lines. Works, melts, and solders better than 50/50 lead/tin solder. Use with AquaSafe flux. Meets all Government and Plumbing Code specs. Flux performs to Fed O-F-506, Form A. Use Prest-O-Lite air/fuel equipment.	1/8 Flux 1/8		1-lb Spool (1-lb) 2oz Bottle (1ea) 1 Kit (1ea)	69070201 69070202 69070200
<i>AquaSafe Solder Kit contains 1-lb spool of AquaSafe solder and 2oz tin of AquaSafe flux.</i>				
All-State DynaGrip 430 Lead free — cadmium-free silver bearing, low-temperature soft solder that can be used on food, potable water and plumbing-related applications. (DynaGrip 430 does not contain any ingredients that have been banned by the FDA.) DynaGrip 430 will join all combinations of ferrous and nonferrous metals except aluminum, magnesium and titanium. Deposits closely match stainless steel and stays bright even after prolonged service. Use with All-State Duzall flux or DynaGrip 430 flux. For electronic applications, use with NCR (non-corrosive residue) flux. Use Prest-O-Lite air/fuel equipment.	1/32 3/64 1/16 3/32 1/8 1/16	48	1-lb Spool (1-lb) 1-lb Spool (1-lb) 1-lb Spool (1-lb) 1-lb Spool (1-lb) 1-lb Spool (1-lb) 1 Kit (1ea)	69070040 69070041 69070042 69070043 69070044 69070090
<i>DynaGrip Solder Kit contains 4-ft DynaGrip solder and 1/2oz Duzall flux.</i>				
All-State DynaGrip 430 Paste Lead free — cadmium-free low-temperature food-grade solder in mesh form premixed with flux. For use with ferrous and nonferrous metals. Use Prest-O-Lite air/fuel equipment.			8oz Jar (1ea)	69070080

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Soldering Products				
for Zinc-Based Metals				
All-State No. 53 An intermediate temperature range solder for zinc-based die castings. Will produce smooth, dense, porosity-free deposits that will color match on zinc die castings.	1/8	18	1-lb Tube (1-lb)	69070020
Soldering Fluxes				
AquaSafe Flux Meets all Government and Plumbing Code specs. Flux performs to Fed O-F-506, Form A.			2oz Bottle (1ea)	69070202
All-State Duzall Flux Clear liquid general purpose soldering flux for use with all soft solders on stainless steels, copper alloys, gold, silver and galvanized steel. Active at 430°F. Performs to Fed AA51145, Type I Form B.			4oz Bottle (1ea) 16oz Bottle (1ea) 1gal Jug (1ea) 55gal Drum (1ea)	69080161 69080162 69080163 69080164
All-State Duzall NCR Paste Flux Off-white gel. Use in place of Duzall liquid flux if application calls for a non-corrosive flux residue such as required with electronic applications. Active from 250°F to 520°F.			4oz Jar (1ea)	69080181
All-State DynaGrip 430 Acid Flux Clear liquid soldering flux particularly suited for corrosion-resistant steels such as 316, 321, 347 and 430. Active to 430°F. Performs to Fed AA51145, Type II, Form B.			4oz Bottle (1ea) 1gal Plst Jug (1ea)	69080224 69080151
All-State No. 7 Flux Pink powder cast iron soldering tinning flux that can also be used for steel and copper-based alloys (except aluminum bronze). Active temperature to 700°F.			1-lb Can (1ea)	69080206
All-State Strongset 509 Golden viscous flux for ferrous and nonferrous (except magnesium and titanium) soldering. Use with All-State Strongset 509 and Strongset 390 solders. Active at 350°F to 550°F.			4oz Bottle (1ea) 1gal Plst Jug (1ea)	69080226 69080237

For the best results...

use genuine Prest-O-Lite flame soldering and brazing equipment.



...since 1906



Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Brazing Products				
for Aluminum				
All-State Super 31				
A special brazing alloy for joining light-gauge aluminum. Used extensively in production and maintenance brazing of aluminum except 2011, 2014, 2017, 2024 and 7075 types. Alloy is very fluid and has capillary action similar to silver brazing alloys.				
Use with All-State Brazaloy No. 31 flux.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	1/16	18	1-lb Tube (1-lb)	69050073
	1/16	18	5-lb Tube (5-lb)	69050070
	3/32	18	5-lb Tube (5-lb)	69050071
	1/8	18	5-lb Tube (5-lb)	69050072
All-State Super 31FC (Flux Core)				
Super 31FC has a non-corrosive, non-hygroscopic flux inside a tubular rod — no separate flux required. 31FC has a higher strength and ductility than aluminum solders and is a superior choice when heating to brazing temperatures is not objectionable. Use this rod for joining light-gauge aluminum such as used in furniture, truck and trailer bodies, window frames, aircraft instruments, kitchen equipment, HVAC and refrigeration. Very fluid, capillary action similar to silver brazing alloys.				
Provides an excellent color match but will darken if anodized.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	1/16	48	4 ft Coil (1ea)	69010044
	1/16	18	2oz Tube (1ea)	69010042
	3/32	18	2oz Tube (1ea)	69010043
	1/16	18	4oz Tube (1ea)	69010045
	3/32	18	4oz Tube (1ea)	69010046
	1/16	18	1-lb Tube (1-lb)	69010040
	3/32	18	1-lb Tube (1-lb)	69010041
All-State Sealcor				
A special aluminum flux cored brazing alloy for fabrication and repair of all weldable grades of aluminum including cast, sheet, and wrought. Ideal for out-of-position work, building up and joining dissimilar gauges of aluminum. Also a great choice for field repair of aluminum irrigation pipes.				
	1/8	32	2-lb Tube (2-lb)	69050093
	3/16	32	2-lb Tube (2-lb)	69050096
for Cast Iron				
All-State No. 13 (Bare & Flux Coated)				
Brazing alloy designed for wear resistance, overlaying and build-up on ferrous and nonferrous materials. Deposits easily machined; may remelt again when building up without loss of toughness or overheating of base metal.				
Use with No. 1113 flux or Jet Flux.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	<u>Bare:</u>			
	1/8	18	10-lb Ctn (10-lb)	69050031
	3/16	18	10-lb Ctn (10-lb)	69050032
	<u>Flux Coated</u>			
	1/8	18	1-lb Tube (1-lb)	69051041
	3/32	18	10-lb Ctn (10-lb)	69050040
	1/8	18	10-lb Ctn (10-lb)	69050041
	3/16	18	10-lb Ctn (10-lb)	69050042
for Copper-Based Alloys				
All-State No. 101 (Bare & Flux Coated)				
A 45% silver brazing alloy for use on light-gauge material and tight-fitting joints. Excellent capillary flow on ferrous and nonferrous metals or combinations of both (excluding white metals). Excellent for food processing or food handling equipment.				
Use with No. 110 or S-200 flux.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	<u>Coils</u>			
	1/16		2oz Coil (2ea)	69050352
	1/16		4oz Coil (1ea)	69050353
	1/16		1-lb Coil (1-lb)	69050354
	1/16	120	1 Kit w/ 2oz #110 Flux	69050178
	1/16	120	1 Kit w/ 4oz #110 Flux	69050179
	Kits contain 10-ft coil of No. 101 and No. 110 flux.			
	<u>Bare Straight Lengths</u>			
	1/16	18	4oz Tube (1ea)	69050243
	3/32	18	4oz Tube (1ea)	69050244
	1/16	18	1-lb Tube (1-lb)	69050400
	3/32	18	1-lb Tube (1-lb)	69050401
	1/8	18	1-lb Tube (1-lb)	69050402
	<u>Flux Coated Straight Lengths:</u>			
	1/16	18	4oz Tube (1ea)	69050245
	3/32	18	4oz Tube (1ea)	69050263
	1/16	18	1-lb Tube (1-lb)	69050410
	3/32	18	1-lb Tube (1-lb)	69050411
All-State No. 125				
An economical 25% silver brazing alloy for ferrous and nonferrous metals where high ductility and impact strength is not required.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment				
	1/16		4oz Coil (1ea)	69050161
	1/16		1 Kit (1ea)	69050140

Kit contains 4oz coil of No. 125 and 1oz of No. 110 flux.

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Brazing Products				
for Copper-Based Alloys (continued)				
All-State No. 155 (Bare & Flux Coated)				
A cadmium-free, food-grade brazing alloy with low melting temperature. For joining and repair of all combinations of ferrous and nonferrous metals (except aluminum or magnesium) including steels, stainless steels, nickel, copper and high-speed steels.				
Excellent for food-related applications. Provides a good color match to stainless steel.				
No. 155FC (Flux Coated) does not require flux.				
No. 155 Bare should be used with All-State No. 110 or S-200 flux.				
Use with Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
Can be used for torch, furnace or induction applications.				
		<i>Coils</i>		
	1/16		2oz Coil (1ea)	69050190
	1/16		4oz Coil (1ea)	69050191
	1/16		1-lb Ctn (1-lb)	69050307
	1/16		1 Kit (1ea)	69050276
			<i>Kit contains 2oz coil of No. 155 and 1oz of No. 110 flux.</i>	
	<i>Bare Straight Lengths:</i>			
	1/16	18	4oz Tube (1ea)	69050277
	3/32	18	4oz Tube (1ea)	69050278
	1/16	18	1-lb Tube (1-lb)	69050272
	3/32	18	1-lb Tube (1-lb)	69050273
	<i>Flux Coated Straight Lengths:</i>			
	1/16	18	4oz Tube (1ea)	69050130
	3/32	18	4oz Tube (1ea)	69050131
	1/16	18	1-lb Tube (1-lb)	69050280
	3/32	18	1-lb Tube (1-lb)	69050281
All-State No. 41FC (Flux Coated)				
A premium, flux-coated rod widely used for maintenance and in body shops as a general purpose brazing alloy and a favorite for arts and crafts use.				
No. 41FC has a broad working temperature range that can be used as either a bead forming or thin flowing alloy. Perfect for repair, joining or overlay of steel, cast iron, brass, bronze, galvanized and malleable irons or any combination of these metals.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	3/32	10	10 rods / pack (1ea) <i>Convenience Pack</i>	69001008
	3/32	18	1-lb Tube (1-lb)	69051100
	1/8	18	1-lb Tube (1-lb)	69051101
	3/32	18	3-lb Tube (3-lb)	69053100
	1/8	18	3-lb Tube (3-lb)	69053101
	3/32	18	10-lb Tube (10-lb)	69050100
	1/8	18	10-lb Tube (10-lb)	69050101
	3/16	18	10-lb Tube (10-lb)	69050102
All-State Sil-Flo 15				
Use for joints where tight fit-up cannot be held such as HVAC and refrigeration repair and field installation. Select SilFlo 15 when higher strength than can be achieved by solders is required and when heating to brazing temperatures is not a problem. A self-fluxing brazing alloy for copper-to-copper joining. Use All-State Brazaloy 110 flux or S-200 flux when joining brass or bronze metals.				
Grey color as brazed — will turn to polished brass color with acid treatment.				
Do not use on ferrous metals.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
Additional sizes available upon request. Tip of rod colored red.				
	.05-1/8	18	1-lb Tube (1-lb)	69060072
	.05-1/8	18	10-lb Tube (10-lb)	69060071
	1/16	18	10-lb Tube (10-lb)	69060070
	1/8sq	18	10-lb Tube (10-lb)	69060054
	.05-1/8	18	25-lb Ctn (25-lb)	69060053
All-State Sil-Flo 5				
A self-fluxing alloy for copper-to-copper joining. Use where close fit-up cannot be maintained.				
Use All-State Brazaloy 110 flux or S-200 flux when joining brass or bronze metals.				
Additional sizes available upon request. Tip of rod colored light blue.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	.05-1/8	18	1-lb Tube (1-lb)	69060062
	.05-1/8	18	10-lb Tube (10-lb)	69060061
	1/8sq	36	10-lb Tube (10-lb)	69060044
	.05-1/8	18	25-lb Ctn (25-lb)	69060043
All-State Sil-Flo 0				
A self-fluxing brazing alloy for copper-to-copper joining. For tight-fitting (.001" to .002") areas.				
Use All-State Brazaloy 110 flux or S-200 flux when joining brass or bronze metals.				
Tip of rod colored grey.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	.05-1/8	18	1-lb Tube (1-lb)	69050055
	.05-1/8	18	10-lb Tube (10-lb)	69050054
	1/16rnd	36	10-lb Tube (10-lb)	69060030
	1/8rnd	36	10-lb Tube (10-lb)	69060033
	1/8sq	36	10-lb Tube (10-lb)	69060034
	3/32rnd	36	10-lb Tube (10-lb)	69060032

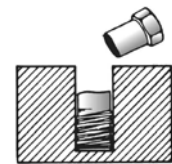
Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Brazing Products				
for Copper-Based Alloys (continued)				
All-State Low-Fuming Bronze				
All-State Low-Fuming Bronze is available in two types: Bare and Flux Coated (FC). The flux-coated rods have a waterless coating that gives a superior cleaning action and promotes wetting qualities. In either form, the alloy is designed to meet today's high industrial standards. Typical applications include fabricating or repairing steels, cast iron, copper base metals, galvanized and malleable irons or any combination of these metals.				
*use with All-State Brazo flux, Brazaloy No. 1 flux, Brazaloy No. 5 flux or All-State Jet flux.				
Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.				
	<i>Bare Straight Lengths:</i>			
	3/32	36	1-lb Tube (1-lb)	69160511
	1/8	36	1-lb Tube (1-lb)	69160510
	1/16	36	5-lb Tube (5-lb)	69063000
	3/32	36	5-lb Tube (5-lb)	69063001
	1/8	36	5-lb Tube (5-lb)	69063002
	1/16	36	50-lb Ctn (50-lb)	69060000
	3/32	36	50-lb Ctn (50-lb)	69060001
	1/8	36	50-lb Ctn (50-lb)	69060002
	5/32	36	50-lb Ctn (50-lb)	69060003
	3/16	36	50-lb Ctn (50-lb)	69060004
	1/4	36	50-lb Ctn (50-lb)	69060005
	<i>Flux Coated Straight Lengths:</i>			
	3/32	36	1-lb Tube (1-lb)	69063006
	1/8	36	1-lb Tube (1-lb)	69063007
	3/32	36	5-lb Tube (5-lb)	69063020
	1/8	36	5-lb Tube (5-lb)	69063021
	3/32	36	50-lb Ctn (50-lb)	69060020
	1/8	36	50-lb Ctn (50-lb)	69060021
	5/32	36	50-lb Ctn (50-lb)	69060025
	3/16	36	50-lb Ctn (50-lb)	69060022
	1/4	36	50-lb Ctn (50-lb)	69060023

Feature Product... All-State Stud Plus®
for Removal of Broken Studs, Snapped Drills or Taps

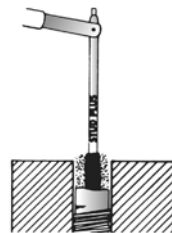
Stud Plus is a unique metal working electrode that provides a low cost method of removing broken studs, bolts or taps from holes without any damage to the threads or base metal. Works with any common DC or AC stick welding machine.

Procedures

1. Select the correct electrode size from the table below. Set the welding current on your DC or AC stick welding machine. For DC machines, put the electrode connections on the + terminal.
2. Strike an arc precisely at the center of the broken stud and begin build-up. Take your time. Continue re-striking "dead center" on the built-up material (see Figure 2). *Caution: Striking the arc and welding the build-up off center will cause the stud to be welded to sides of cavity.* Do not overheat.
3. Before building up the deposit above the top of the cavity, allow weld deposit to cool. This precaution will help avoid welding the deposit to top edges of the cavity.
4. Carefully chip away only the top center of the slag (glass like material.) Build-up enough deposit above the top edge of the cavity to be able to weld a nut and washer to the deposit without welding them to edges of your part.
5. Allow deposit to cool slightly. Weld a washer and nut of the same or smaller size to the built-up column of metal at the center of the deposit (see Figure 3). *Caution: Do not weld nut and washer to part edges.*
6. Allow assembly to cool before using a wrench or other appropriate tool to unscrew the broken part. If there are any problems removing the broken part, the weld deposit build-up was probably improperly centered in cavity (see Figure 2).
7. Slag is easily chased from cavity by using a tap.



(Fig. 1)



(Fig. 2)



(Fig. 3)

up to 3/8" (9.5mm)	use 3/32" (2.4mm)	50 - 75 amps
3/8" (9.5mm) to 1/2" (13mm)	use 1/8" (3.2mm)	80 - 120 amps
over 1/2" (13mm)	use 5/32" (4.0mm)	100 - 140 amps

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Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Brazing Products				
for Steel — Carbon & Low Alloy				
All-State No. 11 (Bare & Flux Coated)				
<p>A high strength brazing alloy for joining of ferrous and nonferrous metals (except white metals.) Higher strength than ordinary bronze rods. Also has thin-flowing and high capillary attraction qualities that allow this alloy to be substituted for higher-cost silver brazing alloys.</p> <p>No. 11FC (Flux Coated) does not require flux.</p> <p>No. 11 Bare should be used with No. 1113 flux or Jet Flux.</p> <p>Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.</p>	<i>Bare:</i>			
	1/16	18	1-lb Tube (1-lb)	69051010
	3/32	18	1-lb Tube (1-lb)	69051011
	1/8	18	1-lb Tube (1-lb)	69051012
	1/16	18	10-lb Tube (10-lb)	69050010
	3/32	18	10-lb Tube (10-lb)	69050011
	1/8	18	10-lb Tube (10-lb)	69050012
	<i>Flux Coated:</i>			
	3/32	18	10rods / pack (1ea) <i>Convenience Pack</i>	69001007
	3/32	18	1-lb Tube (1-lb)	69051020
	1/8	18	1-lb Tube (1-lb)	69051021
	3/32	18	3-lb Tube (3-lb)	69053020
	1/8	18	3-lb Tube (3-lb)	69053021
	1/16	18	10-lb Tube (10-lb)	69050019
	3/32	18	10-lb Tube (10-lb)	69050020
1/8	18	10-lb Tube (10-lb)	69050021	
All-State RG-45				
<p>(Copper Finish)</p> <p>For oxy-fuel welding on steel plate, sheet and pipe wrought iron where strength up to 45 ksi is required. Meets AWS A5.2, Class R45.</p> <p>Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.</p>	1/16	36	1-lb Tube (1-lb)	69740212
	3/32	36	1-lb Tube (1-lb)	69740214
	1/8	36	1-lb Tube (1-lb)	69740216
	1/16	36	5-lb Tube (5-lb)	69710212
	3/32	36	5-lb Tube (5-lb)	69710214
	1/8	36	5-lb Tube (5-lb)	69710216
	1/16	36	50-lb Ctn (50-lb)	69700212
	3/32	36	50-lb Ctn (50-lb)	69700214
1/8	36	50-lb Ctn (50-lb)	69700216	
All-State RG-60				
<p>(Bare Finish)</p> <p>For oxy-fuel welding on steel pipe, plates, and structural shapes in 50-60 ksi range and castings. Meets AWS A5.2, Class R60.</p> <p>Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.</p>	1/16	36	1-lb Tube (1-lb)	69703206
	3/32	36	1-lb Tube (1-lb)	69703203
	1/8	36	1-lb Tube (1-lb)	69703207
	1/16	36	5-lb Tube (5-lb)	69710200
	3/32	36	5-lb Tube (5-lb)	69710202
	1/8	36	5-lb Tube (5-lb)	69710204
	1/16	36	50-lb Ctn (50-lb)	69700200
	3/32	36	50-lb Ctn (50-lb)	69700202
	1/8	36	50-lb Ctn (50-lb)	69700204
All-State RG-65				
<p>(Bare Finish)</p> <p>For oxy-fuel welding of tubes, pipes, sheets, pressure vessels, and tanks in the 65-75 ksi range. Higher weld strengths on low alloy steels. Meets AWS A5.2, Class R65.</p> <p>Use Prest-O-Lite air/fuel or oxy/fuel brazing equipment.</p>	1/16	36	5-lb Tube (5-lb)	69710310
	3/32	36	5-lb Tube (5-lb)	69710312
	1/8	36	5-lb Tube (5-lb)	69710314
	1/16	36	50-lb Ctn (50-lb)	69700310
	3/32	36	50-lb Ctn (50-lb)	69700312
	1/8	36	50-lb Ctn (50-lb)	69700314
	5/32	36	50-lb Ctn (50-lb)	69700316
for Hard-facing, Wear-facing & Overlay				
All-State RUF-KUT				
<p>Deposits hard tungsten carbides in a tough nickel-silver matrix for maximum abrasion resistance and superior cutting action. Use for drill bits, overlaying horse shoes and cutting tools.</p>	1/4x3/16	15	5-lb Ctn (5-lb)	69010517

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Brazing Products				
<u>Brazing Fluxes</u>				
All-State Brazaloy No. 1 Flux A blue powder general purpose brazing flux for cast iron, steel, brass, bronze and copper brazing. Active from 1400°F to 2000°F. Performs to AWS A5.31, Type FB3-F			1-lb Can (1-lb)	69080200
All-State Brazaloy No. 5 Flux Red powder welding flux for cast iron, cast steels, mild and low alloy steels, and stainless steel to cast iron joining. Active from 1400°F to 2000°F. Performs to AWS A5.31, Type FB3-F.			1-lb Can (1-lb)	69080204
All-State Brazaloy No. 31 Light blue powder flux for sheet and extruded aluminum. Removes oxides at just below the melting point of aluminum. Active from 1050°F to 1250°F. Performs to AWS A5.31, Type FB1-A and AMS 3412D.			4oz Plst Jar (1ea) 8oz Plst Jar (1ea) 14oz Plst Jar (1ea)	69080208 69080209 69080210
All-State Brazaloy No. 31NCR Non-corrosive residue brazing flux that requires minimum clean-up. Effective on aluminum and aluminum alloys with up to 1% magnesium, such as 6061. Non-hygroscopic. Water and/or alcohol may be added to form a slurry. Active from 1050°F to 1100°F.			8oz Plst Jar (1ea)	69080229
All-State Brazaloy No. 35 White powder for cleaning aluminum at welding temperatures. Active from 1080°F to 1350°F. Performs to AWS A5.31, Type FB1-A and AMS 3412D.			8oz Plst Jar (1ea)	69080211
All-State Brazaloy No. 53 White powder flux for removing oxides of aluminum and zinc-based alloys. Active to 700°F. Performs to AWS A5.31, Type FB1-A.			8oz Plst Jar (1ea) 25-lb Pail (1ea)	69080212 69080045
All-State Brazo Flux White powder flux for brazing on steel, cast iron, copper and brass. Active from 1400°F to 2000°F. Performs to AWS A5.31, Type FB3-F.			1-lb Can (1-lb)	69080205
All-State Ferro Flux Red powder flux for cast iron welding. Combines with iron and silicon oxides to draw slag to top of molten weld puddle. Active from 1400° F to 2200°F. Performs to Mil-F-16135B.			1-lb Can (1-lb) 25-lb Pail (25-lb)	69080214 69080301
All-State Jet Flux Clear liquid welding and brazing flux for use on steels, copper, and cast iron with the Jet Fluxing system. Active from 1400°F to 1800°F. Flammable. Performs to MIL-F-16135B.			1gal metal cntr (1ea) 5gal drum (1ea)	69080170 69080171
All-State Brazaloy No. 110 Blue paste brazing flux for stainless steel, nickel, monel, copper alloys, and silver alloys. Active at 1000°F, protects up to 1600°F. Performs to AWS A5.31, Type FB3-A, AMS 3410F, Mil-F-4483, and Fed OF499D.			7oz Bottle (1ea) 8oz Jar (1ea) 1-lb Jar (1ea)	69080215 69080216 69080217
All-State Brazaloy No. 1113 Gray paste flux for welding and brazing on cast iron, mild steel, nickel silvers, and copper. Use with All-State No. 11 bare and No. 13 bare brazing rods. Active from 1400°F and protects up to 2200°F. Performs to AWS A5.31, Type FB3-G.			1-lb Plst Jar (1ea)	69080227
All-State No. 61 White powder flux for welding or brazing most magnesium alloys. Active from 950°F to 1200°F. Performs to AWS A5.31, Type FB1-A.			8oz Plst Jar (1ea)	69080213
All-State S-200 White paste brazing flux for stainless steels, monel, copper alloys, and silver alloys. Active at 1100°F and protects to 1800°F. Performs to AWS A5.31, Type FB3-A, AMS 3410F, Mil-F-4483, and Fed OF499D.			8oz Jar (1ea) 1-lb Jar (1ea)	69080218 69080219

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Manual “Stick” Electrodes				
for Aluminum				
All-State SmoothCote 34				
<p>A universal aluminum electrode for repair of all common weldable aluminum alloys including cast aluminum. This rod can also be used for build-up, cladding or reinforcing. Particularly useful when Tig or Mig equipment is unavailable, inconvenient or ineffective (permanently contaminated metal). Provides a smooth, spatter-free arc and a weld deposit with good color match to base metal.</p> <p>Can also be used as a bead-forming or free-flowing brazing alloy or, if the flux is removed, a Tig rod. Use DC (electrode +)</p>	1/8	14	8 rods / pack (1ea) <i>Convenience Pack</i>	69001006
	3/32	14	1-lb Tube (1-lb)	69011049
	1/8	14	1-lb Tube (1-lb)	69011053
	3/32	14	5-lb Box (5-lb)	69010049
	1/8	14	5-lb Box (5-lb)	69010053
	5/32	14	5-lb Box (5-lb)	69010054
for Cast Iron				
All-State No. 4 IMP				
<p>A premium AC/DC (electrode +), all-position electrode for welding thin sections of cast iron. Provides dense, machinable non-cracking, porosity free welds. For filling defects, repairing cracks, and build-up repair.</p>	3/32	9	5-lb Box (5-lb)	69200014
	1/8	14	5-lb Box (5-lb)	69200015
	5/32	14	5-lb Box (5-lb)	69200016
	1/8	14	10-lb Box (10-lb)	69200017
	5/32	14	10-lb Box (10-lb)	69200018
All-State No. 6 IMP				
<p>An AC/DC (electrode +), all-position electrode for cast iron. For high strength, dense, sound welds where machinability is not needed. Excellent for dirty or grease-soaked castings.</p>	1/8	14	5-lb Box (5-lb)	69015026
	1/8	14	10-lb Box (10-lb)	69010026
	5/32	14	10-lb Box (10-lb)	69010027
All-State No. 8				
<p>An all-position AC/DC (electrode +) 99% nickel electrode for thin sections of cast iron. Provides a high nickel, machinable deposit. For volume welding of defects, filling holes, and salvaging imperfect castings.</p> <p>Meets AWS A5.15, Class ENi-CI-A.</p>	1/8	14	8 rods / pack (1ea) <i>Convenience Pack</i>	69001054
	3/32	9	1-lb Box (1-lb)	69023100
	1/8	14	1-lb Box (1-lb)	69021101
	3/32	9	5-lb Box (5-lb)	69020000
	1/8	14	5-lb Box (5-lb)	69020001
	5/32	14	5-lb Box (5-lb)	69020003
	1/8	14	10-lb Box (10-lb)	69020002
	5/32	14	10-lb Box (10-lb)	69020004
3/16	14	10-lb Box (10-lb)	69020006	
All-State No. 8-60				
<p>An all-position, AC/DC (electrode +) 55% nickel electrode for heavy sections of cast iron and ductile iron. For production welding requiring machinable deposits with high strength and good ductility.</p> <p>Meets AWS A5.15, Class ENiFe-CI-A.</p>	1/8	14	8 rods / pack (1ea) <i>Convenience Pack</i>	69001053
	3/32	9	1-lb Box (1-lb)	69021110
	1/8	14	1-lb Box (1-lb)	69021012
	3/32	9	5-lb Box (5-lb)	69020010
	1/8	14	10-lb Box (10-lb)	69020012
	5/32	14	10-lb Box (10-lb)	69020014
3/16	14	10-lb Box (10-lb)	69020016	
All-State Super 4-60				
<p>A premium electrode for repairing grey, malleable and ductile cast irons. Also use for welding cast iron to steels. Produces a strong, machinable, crack-resistant deposit without porosity. Unique coating does not overheat at rated welding current.</p> <p>Use AC or DC (electrode + or —) in the flat position.</p> <p>Typical applications: Repair engine blocks, pump housings, manifolds, and other cast iron parts.</p>	1/8	14	8 rods / pack (1ea) <i>Convenience Pack</i>	69001001
	3/32	12	1-lb Box (1-lb)	69011023
	1/8	14	1-lb Box (1-lb)	69011022
	3/32	12	5-lb Box (5-lb)	69010001
	1/8	14	5-lb Box (5-lb)	69010018
	1/8	14	10-lb Box (10-lb)	69010019
5/32	14	10-lb Box (10-lb)	69010024	

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Manual “Stick” Electrodes				
for Copper-Based Alloys				
All-State No. 16				
A DC (electrode +), all-position electrode for welding nickel-copper alloys to steel and nickel-copper clad steel; and overlay where strength, toughness and resistance to corrosion are required. Provides sound, porosity free deposits with minimum spatter loss. (ENiCu-7)	3/32	9	5-lb Box (5-lb)	69100020
	1/8	14	5-lb Box (5-lb)	69100021
	5/32	9	5-lb Box (5-lb)	69100022
All-State No. 20				
This DC (electrode +) electrode is used for welding aluminum bronze, manganese bronze, silicon bronze, bronze to steel and cast iron, and ferrous alloys. Deposits are strong, dense, ductile, crack free, have good resistance to corrosion, salt water, and many acids and alkalis. AWS A5.6, Class ECuAl-A2.	1/8	14	10-lb Box (10-lb)	69100040
	5/32	14	10-lb Box (10-lb)	69100041
All-State No. 24 DC				
A DC (electrode +) phosphor bronze electrode for welding bronze, brass, copper, cast iron, steel, and dissimilar metals. Smooth, high-strength deposits can be made in all positions.	3/32	9	5-lb Box (5-lb)	69201408
	1/8	14	5-lb Box (5-lb)	69210241
	5/32	14	5-lb Box (5-lb)	69210242
for Hard-facing, Wear-facing & Overlay				
All-State HS-61P				
A hard-facing electrode for mild and low alloy steels. Designed for high abrasion, light impact applications. Two layers on mild steel typically results in 55-59 Rc surface hardness. Deposits are non-machinable. Convex bead. Limit to 2 passes to prevent spalling. Use AC or DC (electrode +) in the flat position. Typical applications: Quick repairs on earthmoving and farm implements (blades, points, discs, buckets, etc).	1/8	14	7 rods / pack (1ea) <i>Convenience Pack</i>	69001005
	3/32	14	1-lb Box (1-lb)	69011074
	1/8	14	1-lb Box (1-lb)	69011075
	1/8	14	10-lb Box (10-lb)	69010504
	5/32	14	10-lb Box (10-lb)	69010505
	3/16	14	10-lb Box (10-lb)	69010506
1/4	18	10-lb Box (10-lb)	69010507	
All-State HS-2C				
A smooth-running electrode that lays a beautiful bead composed of complex carbides for long-lasting protection against wear. Designed for severe abrasion and light impact. Deposits have low coefficient of friction. Ideal for severe wear caused by sand and other abrasive minerals. Good hot hardness at 1100°F. Hardness 58 to 62 Rockwell C. Use HS-2C in all positions with AC or DC (electrode +). Build-up: 2 to 3 passes. Typical applications: Hard surfacing large areas in earthmoving and rock crushing equipment, augers, asphalt feed screws, sand pumps, slurry pumps, mixer blades, crushing and pulverizing mills, scrapers, paddles and wear pads.	1/8	14	10-lb Box (10-lb)	69010700
	5/32	14	10-lb Box (10-lb)	69010701
	3/16	14	10-lb Box (10-lb)	69010702
All-State Hard-Tuff 56				
An AC/DC electrode for heavy impact and abrasion on carbon and manganese steels. Hardness up to 54-56 Rockwell C.	1/8	14	10-lb Box (10-lb)	69210524
	5/32	18	10-lb Box (10-lb)	69001061
All-State HS-65W				
A highly alloyed AC/DC (electrode +) electrode for superior wear resistance involving extreme abrasion. Hardness up to 63-67 Rockwell C.	1/8	14	10-lb Box (10-lb)	69010710
	5/32	18	10-lb Box (10-lb)	69010712
	3/16	18	10-lb Box (10-lb)	69010714
All-State KoreBide 6000				
Chromium carbide alloy used in high abrasion, compressive impact loads and erosion found in: shovel buckets, dredge bucket lips, crusher mantles and liners, clutch jaws, manganese steel swing hammers, sprocket teeth, pressure rolls, grinder rings, grizzly bars and feeder sprouts. Rc 55 to 60 hygroscopic coating and tubular construction eliminates moisture problems and rebaking	1/4	18	10-lb Box (10-lb)	69109000 Non-
All-State KoreBide 6100				
Deposits of extremely hard chromium carbides and nodular columbium carbides will withstand abrasion and high-impact loads. This alloy can also be applied to bucket teeth. Rc 58 to 61 hygroscopic coating and tubular construction eliminates moisture problems and rebaking.	1/4	18	10-lb Box (10-lb)	69109004 Non-
All-State KoreBide 6200				
Outstanding abrasion resistance on steel or grey cast iron in brick extrusion augers, pump impellers, snowplow shoes, feed screws, dozer end bits, mixer paddles, scraper blades. Rc 58 to 62 hygroscopic coating and tubular construction eliminates moisture problems and rebaking.	1/4	18	10-lb Box (10-lb)	69109010 Non-

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Manual “Stick” Electrodes				
for Hard-facing, Wear-facing & Overlay (continued)				
All-State KoreBide 6400 Deposits from this electrode resist extreme abrasion at temperatures up to 1500F and provides outstanding erosion resistance. Use on scrapers, blast furnace feed chutes, sinter crushers, mill guide rolls, hopper teeth and shanks, cement handling equipment. RC 62-64 Non-hygroscopic coating and tubular construction eliminates moisture problems and rebaking.	1/4	14	10-lb Box (10-lb)	69109013
All-State Ni-Matrix An all-position AC/DC electrode for fabrication and build-up of manganese steels. For constant heavy impact and abrasion. Hardness to 48 Rockwell C.	1/8	14	10-lb Box (10-lb)	69010522
	5/32	14	10-lb Box (10-lb)	69010520
	3/16	14	10-lb Box (10-lb)	69010521
All-State Roll Matrix An AC/DC all-position electrode that provides a machinable deposit for heavy impact and compression. Use on carbon and low alloy steels. Hardness 25 to 30 Rockwell C.	1/8	14	10-lb Box (10-lb)	69010500
	5/32	14	10-lb Box (10-lb)	69010501
	3/16	14	10-lb Box (10-lb)	69010502
All-State Super Join-M This AC/DC (electrode +) electrode provides deposits for severe impact on manganese steel and unknown iron base metals. Resistant to corrosion from water, steam and mild corrosives	1/8	14	10-lb Box (10-lb)	69010527
	5/32	14	10-lb Box (10-lb)	69010528
	3/16	14	10-lb Box (10-lb)	69010529
All-State WearHard High-alloy, high-strength deposit. For both work-hardening, wear-resistant build-up and attachment welding. Use on LaBounty Shear blades to build up cutting edge. Extremely deformation resistant on both carbon and manganese steels.	1/8	14	10-lb Can (10-lb)	69914180
	5/32	14	10-lb Can (10-lb)	69914530
	3/16	14	10-lb Can (10-lb)	69914310
<u>Metal Working Electrodes</u>				
All-State Green Blaster A unique “All-In-One” metal removal electrode. Use on all metals for cutting, chamfering, and gouging where oxy/fuel, plasma or grinder is unavailable or inconvenient to use. Use AC or DC (electrode —) in all positions. Typical application: Commonly used to remove existing cracks or defects prior to welding with electrodes like All-State Super 4-60 or Super 275.	3/32	14	1-lb Box (1-lb)	69010167
	1/8	14	1-lb Box (1-lb)	69010168
	5/32	14	1-lb Box (1-lb)	69010169
	3/32	14	5-lb Box (5-lb)	69010163
	1/8	14	5-lb Box (5-lb)	69010162
	5/32	14	5-lb Box (5-lb)	69010165
	3/16	14	5-lb Box (5-lb)	69010164
	All-State Stud Plus A unique electrode specifically formulated to be a cost-effective way of removing broken studs, bolts or taps from holes. Works on all grades of steel fasteners including stainless steel, grades 2, 5, 8 and casehardened steel bolts. <i>*Kit package contains 8-ea 3/32” electrodes, 5-ea 1/8” electrodes and 4-ea 5/32” electrodes.</i> Featured Product — go to page 8 for details.	3/32	9	4 rods / pack (1ea)
1/8		14	4 rods / pack (1ea)	69001051
5/32		14	4 rods / pack (1ea)	69001052
Kit*			Convenience Packs	
3/32		9	1-lb Box (1ea)	69001015
1/8		14	1-lb Box (1-lb)	69201006
5/32		14	1-lb Box (1-lb)	69201007
3/32		9	1-lb Box (1-lb)	69201005
3/32		9	5-lb Box (5-lb)	69200006
1/8		14	5-lb Box (5-lb)	69200007
5/32	14	5-lb Box (5-lb)	69200005	
All-State Chamfer Rod An AC/DC (electrode —), all-position electrode for chamfering and gouging both ferrous and nonferrous metals.	3/32	14	5-lb Box (5-lb)	69010138
	1/8	14	5-lb Box (5-lb)	69010147
	5/32	14	5-lb Box (5-lb)	69010148
	3/16	14	5-lb Box (5-lb)	69010149
	1/8	14	50-lb Box (50-lb)	69010130
	5/32	14	50-lb Box (50-lb)	69010131
	3/16	14	50-lb Box (50-lb)	69010132
	1/4	18	50-lb Box (50-lb)	69010150

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Manual “Stick” Electrodes				
Metal Working Electrodes <i>continued</i>				
All-State Cutting Rod An AC/DC (electrode —), all-position electrode for cutting and piercing of all metals.	1/8 5/32 3/16 1/8 5/32 3/16 1/4	14 14 14 14 14 14 18	5-lb Box (5-lb) 5-lb Box (5-lb) 5-lb Box (5-lb) 50-lb Box (50-lb) 50-lb Box (50-lb) 50-lb Box (50-lb) 50-lb Box (50-lb)	69010118 69010119 69010120 69010121 69010122 69010123 69010124
for Nickel Alloys				
All-State Super 18-HI An AC/DC (electrode +), all-position, machinable electrode for high-heat and high-corrosion resistance in joining and cladding most nickel alloys, carbon and stainless steels.	3/32 1/8	12 14	5-lb Box (5-lb) 5-lb Box (5-lb)	69010055 69010056
for Steel — Carbon & Low Alloy				
All-State Super 275 A high-strength, universal electrode for welding or repairing all steels including low carbon, medium carbon, high carbon, low alloy, stainless, tool, manganese, spring steels, nickel-clad and any dissimilar combination of these metals. Particularly useful for welding steels of unknown analysis. Use as a build-up rod on any steel prior to capping with a hard-facing rod or to build up tool steels prior to capping with a tool steel rod for heat treatment compatibility. Good for welding over dirt, grease or rust. Machinable deposit. Do not use on cast iron. Use AC or DC (electrode +) in all positions.	1/8 3/32 1/8 3/32 1/8 1/8 5/32	14 9 14 9 14 14 14	7 rods / pack (1ea) <i>Convenience Pack</i> 1-lb Box (1-lb) 1-lb Box (1-lb) 5-lb Box (5-lb) 5-lb Box (5-lb) 10-lb Box (10-lb) 10-lb Box (10-lb)	69001002 69201011 69201012 69200011 69200030 69200012 69200013
All-State No. 252 This AC/DC (electrode +), all-position electrode is used for welding 310 and 314 stainless subjected to corrosion and elevated temperatures, as well as dissimilar steels and stainless of unknown analysis. Also available as a Tig rod.	3/32 1/8 5/32 1/8 5/32	9 14 14 14 14	5-lb Box (5-lb) 5-lb Box(5-lb) 5-lb Box (5-lb) 10-lb Box (10-lb) 10-lb Box (10-lb)	69010061 69015062 69015063 69010062 69010063
All-State No. 616 A special AC/DC (electrode +), all-position electrode for joining high sulphur, low alloy, enameling and cold rolled steels. Provides better properties than mild steel electrodes, and can replace stainless steel electrodes in many applications.	3/32 1/8 5/32 3/16	14 14 14 14	10-lb Can (10-lb) 10-lb Can (10-lb) 10-lb Can (10-lb) 10-lb Can (10-lb)	69010100 69010101 69010102 69010103
All-State HY-10 A special AC/DC (electrode +), all-position high-strength electrode for low alloy and sulphur steels. Machinable and ideal for joining or build-up.	1/8 5/32	14 14	5-lb Box (5-lb) 5-lb Box (5-lb)	69015155 69015153
All-State SteelArc 80LV A premium, all-purpose electrode that provides smooth, spatter-free, X-ray quality welds even when welding over rust, oil, dirt or galvanized metal. Excellent strikes and re-strikes make it a good choice for tacking. Also a great choice when using a welder with low open circuit voltage. Use AC or DC (electrode + or —) in all positions. Typical applications: General steel fabrication. Any type of maintenance job including small parts or repairing heavy equipment such as farm or earthmoving machinery.	1/16 3/32 1/8 3/32 1/8 3/32 1/8 5/32 3/16	12 12 14 12 14 12 14 14 14	1-lb Box (1-lb) 1-lb Box (1-lb) 1-lb Box (1-lb) 5-lb Box (5-lb) 5-lb Tube (5-lb) 10-lb Box (10-lb) 10-lb Box (10-lb) 10-lb Box (10-lb) 10-lb Box (10-lb)	69011108 69011145 69011140 69015145 69015140 69010145 69010140 69010143 69010142

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Manual “Stick” Electrodes				
for Steel — Stainless				
All-State GlideArc Special vertical up, vertical down, and overhead stainless steel for maintenance applications.	3/32	12	1-lb Box (1-lb)	69001055
	1/8	14	1-lb Box (1-lb)	69001056
	3/32	12	5-lb Box (5-lb)	69010160
	1/8	14	5-lb Box (5-lb)	69010166
All-State SmoothCote 308/308L-17 An AC or DC (electrode +) all-position stainless steel electrode for welding Cr/Ni steels such as 304L, 308L, 301, 303, 304 and 308 found in paper and chemical industries, food processing equipment, dairies, breweries, distilleries, kitchens and hospitals. Arc characteristics are superior to all other stainless steel electrodes. AWS A5.4, Class E308L-17	3/32	14	1-lb Box (1-lb)	69001057
	1/8	14	1-lb Box (1-lb)	69001058
	3/32	12	10-lb Can (10-lb)	69103535
	1/8	14	10-lb Can (10-lb)	69103536
	5/32	14	10-lb Can (10-lb)	69103537
All-State SmoothCote 309/309L-17 An AC or DC (electrode +) all-position stainless steel electrode for welding dissimilar steels that must meet oxidation at high temperatures and retain high strength. Arc characteristics are superior to all other stainless steel electrodes. AWS A5.4, Class E309L-17	3/32	12	10-lb Can (10-lb)	69807425
	1/8	14	10-lb Can (10-lb)	69807426
	5/32	14	10-lb Can (10-lb)	69807427
All-State SmoothCote 316/316L-17 An AC or DC (electrode +) all-position stainless steel electrode, low carbon stainless steel electrode for joining high-corrosion type stainless. Arc characteristics are superior to all other stainless steel electrodes. AWS A5.4, Class E316L-17	3/32	14	1-lb Box (1-lb)	69001059
	1/8	14	1-lb Box (1-lb)	69001060
	3/32	12	10-lb Can (10-lb)	69131100
	1/8	14	10-lb Can (10-lb)	69131101
	5/32	14	10-lb Can (10-lb)	69131102
All-State 308/308L-16 For welding 304L stainless, and 321 and 347 steels if service temperature is less than 500°F (260°C). Weld metal deposits have a maximum of .04% carbon which minimizes the formation of Chromium Carbides. Used extensively for chemical plant equipment.	1/16	9	6-lb Can (6-lb)	69103116
	3/32	9	6-lb Can (6-lb)	69103336
	1/8	14	10-lb Can (10-lb)	69103180
	5/32	14	10-lb Can (10-lb)	69103530
	3/16	14	10-lb Can (10-lb)	69103310
All-State 309/309L-16 Primarily used in the overlay of steel where intergranular corrosion must be kept to a minimum. Also for welding mild or carbon steel to stainless steel provided the service temperature is less than 600°F (316°C).	3/32	9	6-lb Can (6-lb)	69807666
	1/8	14	10-lb Can (10-lb)	69807564
	5/32	14	10-lb Can (10-lb)	69807571
	3/16	14	10-lb Can (10-lb)	69105310
All-State 310-16 For welding type 310 stainless, as well as 410, 430, and 502 stainless where preheat or annealing is not possible after welding.	3/32	9	6-lb Can (6-lb)	69110336
	1/8	14	10-lb Can (10-lb)	69110180
	5/32	14	10-lb Can (10-lb)	69110530
All-State 312-16 For welding high-tensile alloys to high-temperature heat-resisting alloys on turbojet engines. Also for high-yield steels, abrasion-resisting steels and dissimilar steels. The weld deposit has the highest tensile and yield strength of any stainless welding electrode commonly in use.	3/32	9	6-lb Can (6-lb)	69116336
	1/8	14	10-lb Can (10-lb)	69116180
	5/32	14	10-lb Can (10-lb)	69116530
All-State 316/316L-16 Used for welding 316L and 318 type steels. Weld deposit has a maximum of .04% carbon. Widely used in the chemical industry. .	1/16	9	6-lb Can (6-lb)	69122116
	3/32	9	6-lb Can (6-lb)	69118336
	1/8	14	10-lb Can (10-lb)	69122180
	5/32	14	10-lb Can (10-lb)	69122530
for Steel — Tool Steels				
All-State Air Hard Designed for repairs to high chromium type tool steels. Deposits are wear-resistant and porous-free. May be annealed, reheat-treated, drawn or tempered.	3/32	14	5-lb Box (5-lb)	69010180
	1/8	14	5-lb Box (5-lb)	69010181
	5/32	14	10-lb Box (10-lb)	69010182
All-State High Speed This is a great Tig electrode for repairing or rebuilding high speed tools without hardening the tool. Deposits a tungsten-moly high speed steel that may be annealed, reheat-treated, drawn or tempered.	3/32	14	5-lb Box (5-lb)	69010400
	1/8	14	10-lb Box (10-lb)	69010401

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Tig (Heliarc) Rods				
for Aluminum				
Super 31 Tig				
<p>Super 31 has the smoothest characteristics of all the aluminum alloys and, due to a narrow freezing range, Super 31 will significantly reduce hot cracking. Special manufacturing techniques provide unsurpassed wire feedability. Super 31 provides excellent color match to base metal and produces uniform fillet welds and almost smut-free deposits. Will darken if anodized.</p>	1/16	36	1-lb Tube (1-lb)	69050079
	3/32	36	1-lb Tube (1-lb)	69050080
	1/8	36	1-lb Tube (1-lb)	69050081
	1/16	36	5-lb Tube (5-lb)	69050082
	3/32	36	5-lb Tube (5-lb)	69050083
	1/8	36	5-lb Tube (5-lb)	69050084
All-State 4043				
<p>All-State 4043 is a popular general purpose aluminum filler metal that produces fluid, bright and almost smut-free deposits. Excellent base metal color match. Maximum salt water corrosion 6061/6063. Will darken if anodized. Meets AWS A5.10, Class ER4043</p>	1/16	36	1-lb Tube (5-lb)	69931000
	3/32	36	1-lb Tube (5-lb)	69931001
	3/32	36	1-lb Tube (5-lb) 69931002	resistance on base metals
	1/16	36	5-lb Tube (5-lb)	69030000
	3/32	36	5-lb Tube (5-lb)	69030001
	1/8	36	5-lb Tube (5-lb)	69030002
All-State 5356				
<p>All-State 5356 is typically used on 5XXX series base alloys welded to themselves or to the 6XXX series heat treatable alloys. Provides high strength and great color match after anodizing. Because of its 5% Mg content, it is unsuitable for use on components operating at a service temperature exceeding 150° F. Meets AWS A5.10, Class ER5356</p>	1/16	36	1-lb Tube (5-lb)	69031030
	3/32	36	1-lb Tube (5-lb)	69031031
	1/8	36	1-lb Tube (5-lb)	69031032
	1/16	36	5-lb Tube (5-lb)	69030030
	3/32	36	5-lb Tube (5-lb)	69030031
	1/8	36	5-lb Tube (5-lb)	69030031
<p>3/32 1/8</p>	1/16	36	10-lb Box (10-lb)	69040013
	3/32	36	10-lb Box (10-lb)	69040011
	1/8	36	10-lb Box (10-lb)	69040012
for Cast Iron				
All-State No. 4-60-T				
<p>A unique AC/DC (electrode + or —) Tig rod that provides a machinable, crack resistant deposit with maximum strength and ductility on heavy sections of cast iron. Due to its iron content, it is excellent for welding ferrous metals which are high in phosphorus content and ductile iron. It can also be used to join these cast irons to steel.</p>	1/16	36	1-lb Tube (1-lb)	69702010
	3/32	36	1-lb Tube (1-lb)	69701011
	1/16	36	5-lb Tube (5-lb)	69700010
	3/32	36	5-lb Tube (5-lb)	69700011
for Copper-Based Alloys				
All-State Deoxidized Copper				
<p>A bare filler rod that produces high purity deposits for fabricating deoxidized copper. Also used to join copper to steel or for overlaying them. Provides high electrical conductivity and excellent corrosion resistance. Use with a 100% Argon or a 25% Argon / 75% Helium shielding gas.</p>	1/16	36	5-lb Tube (5-lb)	69700080
	3/32	36	5-lb Tube (5-lb)	69700081
	1/8	36	5-lb Tube (5-lb)	69700082
	1/16	36	50-lb Box (50-lb)	69030200
	3/32	36	50-lb Box (50-lb)	69030201
1/8	36	50-lb Box (50-lb)	69030202	
All-State Silicon Bronze				
<p>A bare filler metal for fabricating and joining silicon bronze, copper alloys, some iron-base metals, and thin-gauge galvanized steel. Deposits are high strength, ductile, and crack resistant. Use with a 100% Argon or a 25% Argon / 75% Helium shielding gas.</p>	1/16	36	1-lb Tube (1-lb)	69701090
	3/32	36	1-lb Tube (1-lb)	69701091
	1/8	36	1-lb Tube (1-lb)	69701092
	.045	36	5-lb Tube (5-lb)	69030214
	1/16	36	5-lb Tube (5-lb)	69700090
	3/32	36	5-lb Tube (5-lb)	69700091
	1/8	36	5-lb Tube (5-lb)	69700092
	.045	36	50-lb Ctn (50-lb)	69030213
	1/16	36	50-lb Ctn (50-lb)	69030210
	3/32	36	50-lb Ctn (50-lb)	69030211
	1/8	36	50-lb Ctn (50-lb)	69030212

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Tig (Heliarc) Rods				
for Magnesium				
All-State No. 61-T A general alloy for Tig welding magnesium sheets, plates, extrusions and castings. Use on bare metals such as A2318, A261A, A280A, A263A, A292A, A292C, and A281A. Argon or Argon/Helium shielding gas is recommended.	3/32 1/8	36 36	1-lb Tube (1-lb) 1-lb Tube (1-lb)	69701161 69701162
for Steel — Carbon & Low Alloy				
All-State 70S-2 Triple deoxidized for welding over rust and mill scale. For all position welding of small diameter pipe. Ideal out of position puddle control. Copper coated.	1/16 3/32 1/8 1/16 3/32 1/8	36 36 36 36 36 36	5-lb Tube (5-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb) 50-lb Ctn (50-lb) 50-lb Ctn (50-lb) 50-lb Ctn (50-lb)	69740250 69740251 69740255 69700250 69700251 69700253
All-State No. 88-T A mild steel, copper coated Tig rod with good wetting characteristics, and excellent bead appearance. Can be used on uncleaned metal.	1/16 3/32 1/16 3/32 1/8	36 36 36 36 36	1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb)	69701150 69701151 69700150 69700151 69700152
All-State No. 4130-T Low alloy Tig rod for medium and high carbon steels where complete heat treatment is desired such as SAE 4130, 4140, 4330, 4340, 8620, and 8630 steels. Hardness from 36 to 38 Rockwell C. Copper coated.	1/16 3/32 1/8 1/16 3/32	36 36 36 36 36	1-lb Tube (1-lb) 1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb)	69701140 69701141 69701142 69700140 69700141

Feature Product... All-State *Hot Metal Powder Spray Kit* for build-up or repair of cast iron, steel or stainless steel

The All-State TorchWeld® Hot Metal Spray Kit provides a quick, effective and easy-to-use method for joining, repairing, overlaying and filling in defects. The Hot Metal Spray Powders are nickel based and can be used on **cast iron, steel and stainless steel**. Each of the kit's torch tips and powders were selected for the most common uses in the field.

Features:

- Joins and overlays cast iron, stainless steel and carbon steel.
- Can be used out-of-position.
- Eliminates burn-through.
- Hardens surfaces to close tolerances.
- Corrects machining errors.
- Deposits corrosion, erosion, abrasion or heat resistant overlays.
- Repairs broken cast iron parts.
- Increases service life and improves performance of repaired parts.
- Applies easily and economically.

The All-State TorchWeld® Kit consists of a Purox W-300 torch handle, powder hopper, flow control unit, 3 popular tips (20, 30 and 40 single orifice) and 3 nickel alloy metal powders (All-State RC-20, RC-30 and RC-60.) The torch attaches to existing oxyacetylene equipment without special adaptors.



1 kit (1ea) complete **69320000**
1 kit (1 ea) w/o handle **69300096**

Metal Spray Powder	Machinability	Rockwell C Hardness
All-State RC-20	machinable	16 — 20 Rc
All-State RC-30	machinable	26 — 32 Rc
All-State RC-60	non-machinable	55 — 60 Rc
All-State RC-60WC	same as RC-60 with Tungsten Carbide particles	

go to page 23 for ordering information

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Tig (Heliarc) Rods				
for Steel — Carbon & Low Alloy <i>continued</i>				
All-State No. 252-T This Tig rod is used for welding 310 and 314 stainless subjected to corrosion and elevated temperatures, as well as dissimilar steels and stainless of unknown analysis.	1/16	36	1-lb Tube (1-lb)	69701030
	3/32	36	1-lb Tube (1-lb)	69701031
	1/16	36	5-lb Tube (5-lb)	69700030
	3/32	36	5-lb Tube (5-lb)	69700031
for Steel — Stainless				
All-State 308/308L Flux Coated Especially designed for pipe welding applications. Flux coating eliminates the need for purging gas. Length of 23" for easier control and less waste. 316/316L also available. Other alloys available by special order only.	3/32	23	5-lb Tube (5-lb)	69601460
	1/8	23	5-lb Tube (5-lb)	69601461
All-State 308/308L For welding 304L stainless, and 321 and 347 steels if service temperature is less than 500°F (260°C). Weld metal deposits have a maximum of .04% carbon which minimizes the formation of Chromium Carbides. Used extensively for chemical plant equipment. Flag tagging is also available.	1/16	36	1-lb Tube (1-lb)	69601113
	3/32	36	1-lb Tube (1-lb)	69610332
	1/8	36	1-lb Tube (1-lb)	69610333
	1/16	36	5-lb Tube (5-lb)	69602113
	3/32	36	5-lb Tube (5-lb)	69602333
	1/8	36	5-lb Tube (5-lb)	69602183
All-State 309/309L Primarily used in the overlay of steel where intergranular corrosion must be kept to a minimum. Also for welding mild or carbon steel to stainless steel provided the service temperature is less than 600°F (316°C). Flag tagging also available.	1/16	36	1-lb Tube (1-lb)	69603568
	3/32	36	1-lb Tube (1-lb)	69603569
	1/8	36	1-lb Tube (1-lb)	69603567
	1/16	36	5-lb Tube (5-lb)	69603113
	3/32	36	5-lb Tube (5-lb)	69603333
	1/8	36	5-lb Tube (5-lb)	69603183
All-State 310 For welding type 310 stainless, as well as 410, 430, and 502 stainless where preheat or annealing is not possible after welding. Flag tagging also available.	1/16	36	5-lb Tube (5-lb)	69604182
	3/32	36	5-lb Tube (5-lb)	69604333
All-State 312 For welding high-tensile alloys to high-temperature heat-resisting alloys on turbojet engines. Also for high-yield steels, abrasion resisting steels and dissimilar steels. The weld deposit has the highest tensile and yield strength of any stainless welding electrode commonly in use. Flag tagging also available.	3/32	36	5-lb Tube (5-lb)	69605333
	1/8	36	5-lb Tube (5-lb)	69605185
All-State 316/316L Flux Coated Especially designed for pipe welding applications. Flux coating eliminates the need for purging gas. Length of 23" for easier control and less waste. 308/308L also available. Other alloys available by special order only.	3/32	23	5-lb Tube (5-lb)	69606460
	1/8	23	5-lb Tube (5-lb)	69606461
All-State 316/316L Used for welding 316L and 318 type steels. Weld deposit has a maximum of 04% carbon. Widely used in the chemical industry. Flag tagging also available.	1/16	36	1-lb Tube (1-lb)	69617342
	3/32	36	1-lb Tube (1-lb)	69617343
	1/8	36	1-lb Tube (1-lb)	69617344
	1/16	36	5-lb Tube (5-lb)	69607113
	3/32	36	5-lb Tube (5-lb)	69607333
	1/8	36	5-lb Tube (5-lb)	69607183
	1/16	36	10-lb Tube (10-lb)	69607112
	3/32	36	10-lb Tube (10-lb)	69607332

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Tig (Heliarc) Rods				
for Steel - Tool Steels				
<p>All- State Air Hard- wear-resistant and porous-free. May be annealed, reheat-treated, drawn or tempered.</p>	<p>1/16 3/32 1/16 3/32</p>	<p>36 36 36 36</p>	<p>1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb)</p>	<p>Deposits are high-chromium type tool steels. 69701070 69701071 69700071</p>
<p>All-State High Speed-T This is a great Tig electrode for repairing or rebuilding high-speed tools without hardening the tool. Deposits a tungsten-moly high-speed steel that may be annealed, reheat-treated, drawn or tempered.</p>	<p>1/16 3/32 1/16 3/32</p>	<p>36 36 36 36</p>	<p>1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb)</p>	<p>69701040 69701041 697000796 69700041</p>
<p>All-State Hot Work-T The versatile electrode that provides sound, porosity-free deposits with excellent hot work air — are abrasive resistant, tough, and withstand alternate heating and cooling. May be annealed, reheat-treated, drawn or tempered.</p>	<p>1/16 3/32 1/16 3/32</p>	<p>36 36 36 36</p>	<p>1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb)</p>	<p>69701050 69701051 69700050 69700051</p>
<p>All-State Oil Hard-T A unique and tough electrode for repairing oil hardening class die units, or fabrications requiring oil hardening steel. Deposit is sound and homogeneous. May be annealed, reheat-treated, drawn or tempered to various degrees of hardness.</p>	<p>3/32 1/16 1/16 3/32</p>	<p>36 36 36 36</p>	<p>1-lb Tube (1-lb) 1-lb Tube (1-lb) 5-lb Tube (5-lb) 5-lb Tube (5-lb)</p>	<p>69701061 69701160 69700060 69700061</p>

for Aluminum

Super 31 Mig

Super 31 has the smoothest characteristics of all the aluminum alloys and, due to a narrow freezing range, Super 31 will significantly reduce hot cracking. Special manufacturing techniques provide unsurpassed wire feedability. Super 31 provides excellent color match to base metal and produces uniform fillet welds and almost smut-free deposits. Will darken if anodized.

.030	1-lb Spool (4") (18-lb)	69050067
.035	1-lb Spool (4") (18-lb)	69050068
3/64	1-lb Spool (4") (18-lb)	69050069

All-State 4043

All-State 4043 is a popular general purpose aluminum filler metal that produces fluid, bright and almost smut-free deposits. Excellent base metal color match. Maximum salt water corrosion resistance on base metals 6061/6063. Will darken if anodized.

.035
A5.10, Class ER4043

.030	1-lb Spool (4") (1-lb)	69020110
.035	1-lb Spool (4") (1-lb)	69020111
3/64	1-lb Spool (4") (1-lb)	69020112
16-lb WireSpool	(16-lb) 69040000	Meets AWS
3/64	16-lb WireSpool (16-lb)	69040001
1/16	16-lb WireSpool (16-lb)	69040001

All-State 5356

All-State 5356 is typically used on 5XXX series base alloys welded to themselves or to the 6XXX series heat treatable alloys. Provides high strength and great color match after anodizing.

Because of its 5% Mg content, it is unsuitable for use on components operating at a service temperature exceeding 150° F.

Meets AWS A5.10, Class ER5356

.030	1-lb Spool (4") (1-lb)	69020120
.035	1-lb Spool (4") (1-lb)	69020121
3/64	1-lb Spool (4") (1-lb)	69020122
.035	16-lb WireSpool (16-lb)	69040004
3/64	16-lb WireSpool (16-lb)	69040004
1/16	16-lb WireSpool (16-lb)	69040004

for Cast Iron

All-State Core-Cast 8600

A continuous flux cored DC (electrode +) composite electrode for joining cast iron to itself or mild steel. Use with 98% Argon/2% Oxygen shielding gas. Machinable.

.035	33-lb Spool (33-lb)	69807051
.045	33-lb Spool (33-lb)	69807050

for Copper-Based Alloys

All-State Silicon Bronze

A bare filler metal for fabricating and joining silicon bronze, copper alloys, some iron-base metals, and thin-gauge galvanized steel. Deposits are high strength, ductile, and crack resistant.

Use with a 100% Argon or a 25% Argon / 75% Helium shielding gas.

.030	25-lb Spool (25-lb)	69040230
.035	25-lb Spool (25-lb)	69040231
.045	25-lb Spool (25-lb)	69040232
1/16	25-lb Spool (25-lb)	69040232
.035	500-lb Drum (500-lb)	69040232
.045	500-lb Drum (500-lb)	69040232
1/16	500-lb Drum (500-lb)	69040247

All-State Deoxidized Copper

A bare filler rod that produces high-purity deposits for fabricating deoxidized copper. Also used to join copper to steel or for overlaying them. Provides high electrical conductivity and excellent corrosion resistance.

Use with a 100% Argon or a 25% Argon / 75% Helium shielding gas.

.035	30-lb Spool (30-lb)	69040221
.045	30-lb Spool (30-lb)	69040222
1/16	30-lb Spool (30-lb)	69040223

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Mig Wires				
for Hard-facing, Wear-facing & Overlay				
All-State Overlay 3038 A strong, tough, low-alloy, build-up wire for carbon and low-alloy steels. Weld deposits are exceptionally sound and dense. Heavy thicknesses are possible without danger of cracking. Machinable with hardness of 33-38 RC. For parts that must be rebuilt prior to hard-facing or back to original dimensions.	.045 .045 1/16		10-lb Spool (10-lb) 25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870448 69870446 69870447
All-State Overlay 4550 A metal-cored, gas-shielded, hard-surfacing wire for use on carbon, stainless and manganese steels. Tough, shock-resistant, tool steel type deposit offers good corrosion resistance, excellent metal-to-metal wear and abrasion characteristics. Deposits polish in service to reduce friction and minimize wear of mating parts. Excellent resistance to heat checking. Multilayer, crack-free deposits. Typical applications are forging dies, ingot buggy car wheels, kiln trunnions, steel mill rolls, cable sheaves, dredge ladder rolls, and overlaying of shafts. Welding Power DC (electrode +). Shielding Gas 75% Argon / 25% CO ₂ or 98% Argon / 2% Oxygen gas. Hardness 45 — 50 RC.	.045		25-lb Spool (25-lb)	69870458
All-State Overlay 5560 High-carbon, high-chromium, metal-cored hard-facing alloy produces a wear-resistant chromium carbides in a tough alloy matrix designed for high abrasion or abrasion combined with moderate impact 1/16 Typical applications: screw conveyors, bulldozer blades, dragline buckets, power shovel buckets and teeth, ore and coal chutes, road rippers, scraper blades. Deposits are slag-free. Use deposit thickness of 2 to 3 layers. Deposits cannot be flame cut and will check-crack to relieve stresses. Use a 75% Argon/ 25% CO ₂ or 98% Argon/ 2% Oxygen shielding gas. Deposit hardness is 55-60RC.	.045 25-lb Spool (25-lb)		25-lb Spool (25-lb) 69870468	69870467
All-State Overlay 5659 General purpose hard-facing metal-cored gas shielded overlay with excellent abrasion and impact resistance. Can be applied to carbon, alloy and manganese steels as well as cast iron on plowing tools, augers, bucket teeth, screw conveyors, dozer blades, and coal chutes. Best with Argon/CO ₂ mixtures, 100% CO ₂ okay. Deposit hardness 55-59 RC.	.045 1/16		25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870460 69870465
All-State Overlay 5759HW Excellent toughness metal-cored hard overlay with good abrasion resistance and heat resistance to up to 1100°F (599°C) and still maintains a good cutting edge. Typical applications: Hot working shear blades, forging dies, damaged or hot working punches, headers, trimmers, shear knives in hot work operations, mandrels, piercers, ejecting rods, augers, dozer blades, and earthworking tools. Use with CO ₂ , but best results are obtained with Argon/CO ₂ mixtures. Deposit hardness 57-59 RC.	.045 1/16		25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870462 69870466
All-State Overlay 5862 A high-carbon, chromium-carbide, metal-cored, open-arc hard-facing wire for abrasion and abrasion with mild impact on tillage tools, blades, paddles, chutes and teeth. Slag-free deposits cannot be flame-cut. Deposit hardness 58-62 RC.	.045 1/16		25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870464 69870471
All-State Overlay 6065 Provides extremely good earth abrasion resistance. May be applied to steels, stainless steels, manganese steels, and cast iron. Wire runs through rust and other surface contaminants, and will operate in conditions where wind may blow shielding away. Non-machinable with hardness of 60-65 RC. Heat resistant to 1000°F.	.045 .045 1/16		10-lb Spool (10-lb) 25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870444 69870440 69870442
All-State Overlay Ni-Matrix CR Work-hardening austenitic manganese steel flux cored wire is designed for all-position build-up & fabricating of wear plates, blades, hammers, crusher liners, dipper teeth and lips, dragline buckets, railroad frogs and switches. Excellent weld ability. Can be flame cut. Can weld multi-pass without deslagging. Non-machinable. Deposit hardness 15-20 RC. Work-hardened 50-55 RC.	.045 1/16		25-lb Spool (25-lb) 25-lb Spool (25-lb)	69870437 69870438

Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products — Mig Wires				
for Steel — Carbon & Low Alloy				
All-State EasyGrind				
An excellent small diameter wire for auto body repair. Meets all HSLA requirements. Welds over rust and paint. Copper coated.	.025 .030		2-lb Spool (2-lb) 2-lb Spool (2-lb)	69130051 69130058
All-State 70S-6				
All-State 70S-6 is a copper-coated solid Mig welding wire containing high levels of manganese and silicon. The high levels of deoxidizers provide excellent tolerance of rust and mill scale. The high levels of manganese and silicon also provide excellent wetting action and a fluid weld puddle. Shielding gas choices for All-State 70S-6 are 100% carbon dioxide, argon/carbon dioxide mixtures, argon/oxygen mixtures and other argon based mixed gas blends. All-State 70S-6 excels in HVAC duct work, heavy equipment fabrication, structural, and other general steel fabrication. Meets AWS/ASME SFA5.18, Class ER70S-6	.023 .030 .035 .023 .030 .035 .030 .035		2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 11-lb Spool (11-lb) 11-lb Spool (11-lb) 11-lb Spool (11-lb) 33-lb Spool (33-lb) 33-lb Spool (33-lb)	69040020 69040021 69040022 69040023 69040024 69040025 69040026 69040028
045	33-lb Spool (33-lb)			
All-State Shield-Free Plus SP				
Self-shielding flux cored wire. No gas required. All-position, DC (electrode —). Ideal for thin-gauged galvanized and mild steels, light to moderate rusty steels. Welds over oil, grease, and mill scale. Single pass only. Meets AWS A5.20, Class E71T-GS.	.030 .035 .030 .035		2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69870418 69870420 69870416 69870415
for Steel — Stainless				
All-State All-Shield 308/308L				
An all-position, DC (electrode +), flux cored stainless steel wire with self-peeling slag. Excellent for welding stainless types 301, 302, 304, 304L, 308 and 308L. Also for use on types 321 and 347, provided the service temperature does not exceed 500°F (260°C). For best results, use with a 75% Argon/25% CO ₂ shielding gas. Meets AWS A5.22. Class E308LT-1.	.035 .045		10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69220044 69220017
All-State 308/308L				
For welding 304L stainless, and 321 and 347 steels if service temperature is less than 500°F (260°C). Weld metal deposits have a maximum of .04% carbon which minimizes the formation of Chromium Carbides. Used extensively for chemical plant equipment.	.023 .030 .030 .035 .045		2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69130011 69130036 69130010 69802552 69130033
All-State All-Shield 309/309L				
An all-position, DC (electrode +), flux cored stainless steel wire with self-peeling slag. Designed for welding stainless 304 to mild or carbon steel, 309 wrought or cast forms, 304 clad sheets, and for applying stainless steel sheet linings to carbon steel. For best results, use with a 75% Argon/25% CO ₂ shielding gas. Meets AWS A5.22. Class E309LT-1.	.035 .045		10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69220043 69220032
All-State 309/309L				
Primarily used in the overlay of steel where intergranular corrosion must be kept to a minimum. Also for welding mild or carbon steel to stainless steel provided the service temperature is less than 600°F (316°C).	.023 .030 .030 .035 .045		2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69802600 69802599 69803304 69803303 69803305
All-State All-Shield 316/316L				
An all-position, DC (electrode +), flux cored stainless steel wire with self-peeling slag. Excellent for welding type 316 stainless. Resists corrosion from sulphuric and sulphurous acids, cellulose solutions, and chlorides. For best results, use with a 75% Argon/25% CO ₂ shielding gas. Meets AWS A5.22. Class E316LT-1.	.035 .045		10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69220046 69220038
All-State 316/316L				
Used for welding 316L and 318 type steels. Weld deposit has a maximum of .04% carbon. Widely used in the chemical industry.	.023 .030 .035 .035 .045		2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 2-lb Spool (4") (2-lb) 10-lb Spool (8") (10-lb) 10-lb Spool (8") (10-lb)	69130038 69130035 69130012 69806302 69807112



**Soldering, Brazing and Welding Alloys
Solutions for Maintenance, Repair and Fabrication**



Product Type and Description	Dia. (in.)	Length (in.)	Standard Package (min. order qty)	Item No.
Arc Welding Products - Mig Wires				
for Steel — Stainless <i>continued</i>				
All-State 308/308L Hi-Sil				
A smooth drawn, uniform surfaced stainless steel wire useful in applications where uniform appearance is essential. For use on stainless steel types 304, 305, 308, 308L, 321 and 347 as well as other 18-9 stainless steels where carbide precipitation may arise.	.023		2-lb Spool (4") (2-lb)	69130020
	.030		2-lb Spool (4") (2-lb)	69130021
	.035		2-lb Spool (4") (2-lb)	69130019
	.023		10-lb Spool (8") (10-lb)	69130022
	.030		10-lb Spool (8") (10-lb)	69130023
All-State 316/316L Hi-Sil				
A smooth flowing, high deposition stainless wire with low carbon content. Excellent for corrosion resistance when used on equipment subject to sulphuric, sulphurous, cellulosic and citric acids.	.023		2-lb Spool (4") (2-lb)	69130040
	.030		2-lb Spool (4") (2-lb)	69130042
	.035		2-lb Spool (4") (2-lb)	69130041
	.023		10-lb Spool (8") (10-lb)	69130044
	.030		10-lb Spool (8") (10-lb)	69130045
Welding Aids				
All-Guard Anti-Spatter Spray				
A quickly applied weld spatter preventative spray. Spatter adhering to weld beads, jigs, and fixtures is virtually eliminated. <i>Environmentally Safe Formula.</i>			16oz Can (1ea)	69300502
All-Guard Nozzle-Gel				
Helps eliminate weld spatter build-up on gas nozzles and contact tubes. Provides better control of gas shielding and reduces filler wire snarling.			16oz Jar (1ea)	69300600
All-Guard Handi-Jig				
Heat-resistant compound for insulating metals from heat and for positioning parts for brazing and soldering.			2-lb Jar (1ea)	69300650
Hot Metal Spray Powder				
All-State TorchWeld Hot Metal Powder Spray Kit				
The All-State TorchWeld Kit consists of a Purox W-300 torch handle, powder hopper, flow control unit, three popular tips (20, 30 and 40 single orifice) and three nickel alloy metal powders. The torch attaches to existing oxy-acetylene equipment and can be used for the joining and overlay of, cast iron stainless steel and carbon steel. Kit includes All-State RC-20, RC-30 and RC-60 metal spray powders.			1 kit (1ea) complete 1 kit (1 ea) w/o handle	69320000 69300096
Featured Product — go to page 17 for details.				
All-State RC-20 Metal Spray Powder				
A machinable nickel based build-up powder for cast iron, steels, stainless steels and nickel alloys. 16 to 20 Rockwell C.			1-lb Jar (1-lb) 5-lb Jar (1-ea)	69320003 69320013
All-State RC-30 Metal Spray Powder				
A machinable nickel based build-up powder for cast iron, steels, stainless steels and nickel alloys. 26 to 32 Rockwell C.			1-lb Jar (1-lb)	69320004
All-State RC-60 Metal Spray Powder				
Non-machinable, nickel based powder for carbon steel, alloy steel, stainless steels, cast iron, copper, monel, nickel and cobalt based alloys. 55 to 60 Rockwell C.			1-lb Jar (1-lb)	69320005
All-State RC-60WC Metal Spray Powder				
RC-60 with tungsten carbide particles.			1-lb Jar (1-lb)	69320006



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