

MG 200 - AC or DC straight polarity (electrode negative)

Recommended for low temperature welding of cast iron in all positions.

Tensile Strength Up to 50,000 psi (35 kg/mm2)

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	30-70	MG1093425811238	
1/8"	55-110	MG1093425811337	MG1093425811344
5/32"	75-135	MG1093425811436	MG1093425811443

Procedures – Clean weld area if possible. Bevel joint to form a “U” groove. A bead hole must be welded at right angles to each end of all cracks to prevent spreading during welding. Select lowest possible amperage. Maintain a medium long arc with electrode tilted slightly in the direction of travel. Short stringer beads or narrow weave beads should be used to prevent excessive heat build-up. When breaking the arc, always fill the crater and drag rod back over the weld deposit. Peening while still hot will help to reduce stress. When restriking the arc, start on previously deposited weld metal, not on the base material. Allow part to cool slowly.

MG 210 - AC or DC straight polarity (electrode negative)

Commonly used to weld ductile iron, “Ni-Resist” and “Meehanite” to themselves or to steel. Also suitable for joining nickel alloys to gray cast iron, malleable cast iron and cast steel.

Tensile Strength Up to 80,000 psi (56 kg/mm2)

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	35-80	MG1093425814239	
1/8"	65-120	MG1093425814338	MG1093425814345
5/32"	75-140	MG1093425814437	MG1093425814444

Procedures – Clean weld area if possible. Bevel joint to form a “U” groove. A bead hole must be welded at right angles to each end of all cracks to prevent spreading during welding. Select lowest possible amperage. Maintain a medium long arc with electrode tilted slightly in the direction of travel. Short stringer beads or narrow weave beads should be used to prevent excessive heat build-up. When breaking the arc, always fill the crater and drag rod back over the weld deposit. Peening while still hot will help to reduce stress. When restriking the arc, start on previously deposited weld metal, not on the base material. Allow part to cool slowly.

MG 250 - AC or DC reverse polarity (electrode positive)

Welds can be satisfactorily produced on light and medium-size casting if there is no severe stress or high phosphorus content encountered in the parent material.

Specifications AWS A5.15 Class ENi-CI

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32	40-75	MG1093425817230	
1/8	65-115	MG1093425817339	MG1093425817346
5/32	100-150	MG1093425817438	MG1093425817445

Procedures – In most cases, preheating or postheating will not be necessary, but in cold weather or when special machining qualities are desired, the part should be preheated to 400 °F (204 °C). Stringer beads and intermittent welds should be employed to reduce stress and cracks; peening while still hot also helps reduce these problems. Allow part to cool slowly.



MG 260 - AC or DC reverse polarity (electrode positive)

Commonly used to weld high-position irons and steels, ductile iron and high-nickel alloy cast iron.

Specifications AWS A5.15 Class ENiFe-CI

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32	40-95	MG1093425818237	MG1093425818244
1/8	70-125	MG1093425818336	MG1093425818343
5/32	110-160	MG1093425818435	MG1093425818442

Procedures

Preheat cast iron parts to 600 °F (326 °C). Steels and other materials usually do not require preheat unless they are complicated and contain excessive stresses. Use stringer beads or narrow weave beads. Remove slag between passes when making multi-layered. Maintain preheat temperature during entire welding operation; when completed, allow part to cool slowly.

MG 289 - AC or DC reverse polarity (electrode positive)

For use on dirty cast iron like sewer pipe, machine bases, transmission or gear housings, sprockets, repair of build-up on gears and any repair of cast iron to steel.

Tensile Strength Up to 75,000 psi (53 kg/mm2)

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	40-70	MG1093425819234	MG1093425819241
1/8"	70-110	MG1093425819333	MG1093425819340
5/32"	90-130	MG1093425819432	MG1093425819449

Procedures – On heavy sections remove worn, cracked metal and bevel joint using MG 570 or a grinding wheel. When repairing cracks, drill “stop” hole at either end to prevent crack travel while welding. On very heavy sections, preheat to approximately 400 °F. Use short stringer beads for root pass and peen lightly after removing slag. Use a short to medium arc and the lowest amperage possible to minimize base metal overheating. When breaking arc, always back-whip into weld crater. Weaving two times rod diameter is acceptable for cover beads on multi-pass work. Weld joints should be allowed to slowly cool for maximum strength and machinability.



MG 400 - DC reverse polarity (electrode positive)

Repair of aluminum machining errors and build-up of missing sections of castings, extrusions, plates, etc.

Tensile Strength Up to 34,000 psi (24 kg/mm2)
Elongation % 15-25

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	50-80	MG1093425834237	
1/8"	80-130	MG1093425834336	
5/32"	100-160	MG1093425834435	

Procedures – Clean weld area. Parts 1/8" or heavier should be beveled 70°-90°. No preheat is necessary on thin gauges but faster, flatter, smoother welds are produced on heavier sections if they are preheated to approximately 400 °F (205 °C). Hold electrode vertical to workpiece, maintain a short arc and fast travel speed. Use either stringer beads or weaving technique. Remove slag between passes. Restart arc on existing weld deposits. Allow part to cool slowly. Chip off all slag before quenching. For complete slag removal use a wire brush with a 10% sulfuric acid and hot water solution. Rinse with clean hot water.

MG 500 - AC or DC either polarity

Commonly used on applications requiring short, intermittent and spot welds because of the outstanding restarting characteristics.

Tensile Strength Up to 80,000 psi (56 kg/mm2)
Yield Strength Up to 68,000 psi (47 kg/mm2)
Elongation % Approx. 24

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	35-80	MG1093425842232	MG1093425842249
1/8"	65-125	MG1093425842331	MG1093425842348
5/32"	90-160	MG1093425842430	MG1093425842447

Procedures – Remove as much foreign material as practical from the weld area. DC reverse polarity (electrode +) produces deep penetration; DC straight polarity (electrode -) will have limited penetration and a flatter bead. AC prevents arc blow. A medium arc length should be maintained with either stringer or weave beads. Slag is easily removed with a light chipping hammer.

MG 518 - AC or DC reverse polarity (electrode positive)

Used extensively on construction grades, for shipbuilding, pipelines, boiler plate and cast steel.

Tensile Strength 76,000 psi (54 kg/mm2)
Yield Strength 69,000 psi (49 kg/mm2)
Elongation % 31-33

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	60-100	MG1093425847237	MG1093425847244
1/8"	110-150	MG1093425847336	MG1093425847343
5/32"	140-200	MG1093425847435	MG1093425847442

Procedures – Area to be welded should be clean and free of surface contamination such as rust, scale, grease, etc. On DC, use reverse polarity (electrode +). Preheat of 300 °-450 ° should be employed with heavy sections and hardenable grades of base metal. For highest x-ray quality, maintain a short arc gap. On vertical welds, start at bottom and weave slightly while pausing at the edges. For root passes, set a minimum gap (3/32" for 1/6" electrodes), and run stringer beads. For fill and cover passes, a weaving technique is best employed.

MG 540 - AC or DC reverse polarity (electrode negative)

For "tramp" and "problem" steels high in sulphur, phosphorus or other elements added to improve the machinability of the steel.

Tensile Strength Up to 80,000 psi (56 kg/mm2)

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	60-100	MG1093425849231	MG1093425849248
1/8"	110-150	MG1093425849347	
5/32"	140-200	MG1093425849446	

Procedures – Area to be welded should be cleaned thoroughly. Surface contamination must be removed and bevel or chamfer where required. Maintain close arc length. Vertical joints should be welded from bottom up, using rapid weave technique. Do not whip. Use drag technique to make horizontal fillet welds. Slag is easily removed.

MG "Super" 600 - AC or DC reverse polarity (electrode positive)

Due to its exceptional strength and crack resistance, it is ideal for repairing tools, spring steel, and any dissimilar metal combinations.

Tensile Strength Up to 1,280,000 psi (88 kg/mm2) (as welded)
Yield Strength Up to 90,000 (63 kg/mm2)
Elongation % Approx. 32

Diameter	Amperage	5 lb (2.3 kg)	10 lb (4.5 kg)
3/32"	35-70	MG1093425857236	
1/8"	60-110	MG1093425857335	MG1093425857342
5/32"	75-140	MG1093425857434	MG1093425857441

Procedures – The area in which the weld is to be made should be free of rust, grease, paint and other materials which cause weld contamination. A 90° V joint should be used when joining heavy sections. Preheat is necessary only for high carbon steels, which should be preheated to 350 °F (204 °C). The interpass temperature should be kept below 500 °F (260 °C). Alignment should be maintained by the use of fixtures, tack welds or other types of mechanical support. Maintain a short arc length and use stringer beads. Avoid weaving whenever possible.