Hardfacing and High Alloy
Product Selection Guide

• Coated Electrodes & Bare Rods
• Open-Arc Wires
• Gas-Shielded Wires
• Submerged Arc Wires
• High Alloy Joining & Cladding
PACKAGING
5 and 10 lb. plastic spools measure 2” I.D. x 8” O.D.
25 lb. and 33 lb. wire baskets measure 2” I.D. x 12” O.D.
50 lb. Polypaks and 60 lb. coils have 12” I.D.
100 lb. coils have a 22-1/2” I.D.

METRIC CONVERSION CHART

| .035 in = 0.9 mm | 1/16 in = 1.6 mm | 1/8 in = 3.2 mm | 7/32 = 5.7 mm |
| .045 in = 1.2 mm | 5/64 in = 2.0 mm | 5/32 in = 4.0 mm | 1/4 in = 6.4 mm |
| .052 in = 1.3 mm | 3/32 in = 2.4 mm | 3/16 in = 4.8 mm | 1 lb = .4536 kg |

TECHNICAL ORDERING DATA
AWS A5.01, "Filler Metal Procurement Guidelines", is recommended for customers ordering AWS materials. Chemical analysis and calculated ferrite for each lot are available without charge (Testing Schedule "H"). Testing Schedules I, J, or K, or other special requirements must be requested at the time the order is placed.

TEST CHARGES
- All Weld Metal Tensile with Xray
- Fillet Weld Tests (per position and current type)
- Actual Ferrite Content
- Actual Nitrogen
- All Weld Metal Tensile with AWS Post Weld Heat Treatment and Xray
- Charpy V Notch Impact
- Longitudinal Face Bend

Call Customer Care for Current Pricing
# Contents

**Selection Guide to Build-Up and Hardfacing Electrodes and Wires** .......................... 4-6

**Coated Electrodes and Bare Rods**
- Group 1: Build-Up and Joining Alloys .................................................. 7-10
- Group 2: Metal to Metal Wear ................................................................. 11-12
- Group 3: Metal to Earth for Moderate to Severe Impact & Moderate to Severe Abrasion .......................... 12-17
- Group 4: Metal to Earth for Extreme Abrasion and Low Impact .......................... 18-20
- Group 5: Abrasion Accompanied by Corrosion and/or High Temperatures ......... 21-22

**Open-Arc and Gas-Shielded Wires**
- Group 1: Build-Up and Joining Alloys .................................................. 23-28
- Group 2: Metal to Metal Wear ................................................................. 29-31
- Group 3: Metal to Earth for Moderate to Severe Impact & Moderate to Severe Abrasion .......................... 32-40
- Group 4: Metal to Earth for Extreme Abrasion and Low Impact .......................... 41-42
- Group 5: Abrasion Accompanied by Corrosion and/or High Temperatures ......... 43-44

**Submerged Arc Wires**
- Introduction ............................................................................................... 45
- Group 1: Build-Up and Joining Alloys .................................................. 46-47
- Group 2: Metal to Metal Wear ................................................................. 47-50
- Group 3: Metal to Earth for Moderate to Severe Impact & Moderate to Severe Abrasion .......................... 51
- Group 5: Abrasion Accompanied by Corrosion and/or High Temperatures ......... 52

**High Alloy Joining and Cladding**
- Stainless Steel Flux Core Wires .............................................................. 53-56
- Speciality Wires & Coated Electrodes ...................................................... 56
- Nickel Flux Core Wires ........................................................................... 57-58
## GROUP 1: BUILD-UP AND JOINING ALLOYS

<table>
<thead>
<tr>
<th>Service Conditions &amp; Wear Resistance</th>
<th>Coated Electrodes &amp; Bare Rods</th>
<th>Open-Arc and Gas-Shielded Wires</th>
<th>Submerged Arc Wires †</th>
<th>Relative Abrasion Resistance &amp; Impact Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LOW</td>
</tr>
<tr>
<td>A. Build-Up of Carbon Steel</td>
<td>BUILD-UP LH • STOODY BUILD-UP*</td>
<td>STOODY BUILD-UP AP-G*</td>
<td>STOODY 104</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DYNAMANG • NICROMANG • NICROMANG PLUS • FOUNDRY CO-MANG • TRACKWEAR</td>
<td>DYNAMANG* • NICROMANG* • NICROMANG PLUS* • FOUNDRY CO-MANG*</td>
<td>TRACKWEAR (Formerly SA Manganese)</td>
<td></td>
</tr>
<tr>
<td>B. Build-Up and Joining of Manganese Steel</td>
<td>STOODY 2110 • STOODY 110*</td>
<td>STOODY 111</td>
<td>STOODY 120*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VERSALLOY PLUS • VERSALLOY GP-O*</td>
<td>VERSALLOY GP-O*</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>C. Build-Up and Joining of Both Carbon and Manganese Steel</td>
<td>CASTWELD 55 • CASTWELD 56 • CASTWELD 57 • CASTWELD 99</td>
<td>CASTWELD Ni55-O/S • CASTWELD Ni30-O/S • CASTWELD Ni30-G • CASTWELD 99-G/S</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>D. Joining and Build-Up of Cast Irons</td>
<td>CASTWELD 55 • CASTWELD 56 • CASTWELD 57 • CASTWELD 99</td>
<td>CASTWELD Ni55-O/S • CASTWELD Ni30-O/S • CASTWELD Ni30-G • CASTWELD 99-G/S</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

(1) Many other Thermaclad products are available. See product literature form 1045 or visit website at www.stoody.com

* Available in .045" and/or .062”.

† In addition to the Automatic Submerged Arc products shown in this guide, Stoody has a line of Automatic Submerged Arc wires designed to run with neutral fluxes. For more information, ask for Stoody ThermaClad Bulletin 1045.
### GROUP 2: METAL TO METAL WEAR

<table>
<thead>
<tr>
<th>Service Conditions &amp; Wear Resistance</th>
<th>Coated Electrodes &amp; Bare Rods</th>
<th>Open-Arc and Gas-Shielded Wires</th>
<th>Relative Abrasion Resistance &amp; Impact Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications: Non-lubricated metal-to-metal rolling or sliding parts where temperature can be a factor such as steel mill rolls and undercarriage parts of earth moving equipment.</td>
<td>STOODY 1105 • STOODY 1102 • RAIL END 932</td>
<td>SUPER BUILD-UP <strong>STOODY 107</strong> • <strong>STOODY 105</strong> • <strong>STOODY 4552</strong> • 426-S • THERMACLAD 104TJ • <strong>STOODY 102</strong> • THERMACLAD 42</td>
<td>LOW MEDIUM HIGH</td>
</tr>
</tbody>
</table>

### GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT & MODERATE TO SEVERE ABRASION (high alloy-iron based)

<table>
<thead>
<tr>
<th>Service Conditions &amp; Wear Resistance</th>
<th>Coated Electrodes &amp; Bare Rods</th>
<th>Open-Arc and Gas-Shielded Wires <em>Available in .045&quot; and/or .062&quot;</em></th>
<th>Relative Abrasion Resistance &amp; Impact Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications: Surfaces subject to abrasion from bulk handling of rock, ore, clay, sand, etc., such as digger teeth, crushing surfaces, grizzlies, millers, conveyor screws, etc.</td>
<td>SELF HARDENING <strong>STOODY 77</strong> • <strong>STOODY 33</strong> • <strong>STOODY 19</strong> • <strong>STOODY 21</strong> • <strong>STOODY 31</strong> • BTS • <strong>STOODY 35</strong> • CTS • <strong>STOODY 2134</strong> • <strong>STOODY 964AP-G</strong> • <em><em>STOODY 965-G</em> STOODY 965 AP-G</em> • <strong>STOODY 117</strong> • <strong>STOODY 133</strong></td>
<td><strong>STOODY 965-G</strong> • <strong>STOODY 965 AP-G</strong> • <strong>STOODY 117</strong> • <strong>STOODY 133</strong></td>
<td>LOW MEDIUM HIGH</td>
</tr>
</tbody>
</table>

(1) Many other Thermaclad products are available.
* Available in .045" and/or .062".
† In addition to the Automatic Submerged Arc products shown in this guide, Stoody has a line of Automatic Submerged Arc wires designed to run with neutral fluxes. For more information, ask for Stoody ThermaClad Bulletin 1045 4/02.
GROUP 4: METAL TO EARTH (EARTH CUTTING & DIGGING)
FOR EXTREME ABRASION AND LOW IMPACT
(tungsten & vanadium carbide)

<table>
<thead>
<tr>
<th>Service Conditions &amp; Wear Resistance</th>
<th>Coated Electrodes &amp; Bare Rods</th>
<th>Open-Arc and Gas-Shielded Wires *Available in .045&quot; and/or .062&quot;</th>
<th>Submerged Arc Wires</th>
<th>Relative Abrasion Resistance &amp; Impact Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications: Cutting edges of digging tools such as augers and rotary rock bits. Surfaces subject to sliding abrasion from rock, sand, ore, cement, etc., such as digging teeth, scraping edges, conveyor screws, etc.</td>
<td>AC-DC BOROD • BARE BOROD • AC-DC TUBE BORIUM • ACETYLENE TUBE BORIUM • TUBE BORIUM H • HORSESHOE BORIUM • STOODY 160E • VAN-CAR E &amp; G • STOODY 160D • STOODY 160DM</td>
<td>STOODY 130* • STOODY 140 • STOODY 160E • VAN-CAR* • STOODY 160D • STOODY 160DM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES (cobalt and nickel based)

<table>
<thead>
<tr>
<th>Service Conditions &amp; Wear Resistance</th>
<th>Coated Electrodes &amp; Bare Rods</th>
<th>Open-Arc and Gas-Shielded Wires *Available in .045&quot; and/or .062&quot;</th>
<th>Submerged Arc Wires</th>
<th>Relative Abrasion Resistance &amp; Impact Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications: Wearing surfaces operating at red heat and/or corrosive environments such as plows in roasting ovens, tong bits handling ingots, steam throttling valves, etc.</td>
<td>STOODY 6 • STOODY 12 • STOODY 1 • STOODY 21 • STOODY 50 • STOODY 60 • STOODY C</td>
<td>STOODY 6* • STOODY 12* • STOODY 1* • STOODY 21* • STOODY 60 • STOODY C*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Available in .045" and/or .062".
GROUP 1: BUILD-UP AND JOINING ALLOYS

A. BUILD-UP OF CARBON STEELS

STOODY BUILD-UP® LH COATED
A solid core electrode with a special low hydrogen coating to provide a high strength fusion bond on carbon and low alloy steels. As a base alloy for hard-surfacing overlays, or for restoring parts to original dimensions, it provides a weld deposit with excellent compressive strength and ductility capable of absorbing heavy impact and/or compressive loads. Can be applied in multiple layers without cracking, spalling or mushrooming. It is machinable in the “as welded” condition with reasonable procedural care and can be forged at red heat. It is not recommended for manganese steel or cast iron and will work harden under high impact loads.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) in stringer or weave beads. Preheat and slow cool prior to machining; carbide tools are recommended. Strongly magnetic on carbon and low alloy steel. This electrode is an all-position electrode.

Applications: Tractor Rollers, Steel Shovel Pads, Tractor and Shovel Idlers, Gear Teeth, Sprockets and Shafts

Typical Chemical Composition:
- Iron Base
- Typical Chemical Composition: Alloy Content – 4.5% (Chromium, Molybdenum, Manganese, Silicon, Carbon)

Typical Mechanical Properties:
- Hardness: 1 Layer (weave beads) - Med. Carbon Steel.............27 HRC
- 2 Layers (weave beads) - Med. Carbon Steel.............29 HRC
- 3 Layers (weave beads) - Med. Carbon Steel.............31 HRC
- Tensile Strength.................................118 KSI
- Yield Strength........................................113 KSI
- Elongation.............................................6%

B. BUILD-UP AND JOINING OF MANGANESE STEEL

DYNAMANG® COATED
DYNAMANG is a carbon steel core electrode with alloys in an extruded coating designed for build-up of austenitic manganese steel parts subject to high impact loading. This out of position electrode workhardens under impact without limitations to deposits thickness. Excellent weldability due to easy slag removal and minimum spatter loss.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Use straight polarity for fastest deposition. AC stability is excellent.. Weave beads 2–3x electrode diameter are preferred. Deposits are non-magnetic and machinability is poor. Interpass temperature should not exceed 500°F maximum. Not recommended for build-up of carbon steel.

Applications: Earth Working Equipment, Bucket Lips, Crusher Jaws, Crusher Rolls, Gyraotory Crushers

Typical Chemical Composition:
- Iron Base
- Typical Chemical Composition: Alloy Content – 21% (Manganese, Nickel, Chromium, Carbon, Silicon)

Typical Mechanical Properties:
- Hardness: 1 Layer (weave bead) - Mang. Steel.............180 BHN
- 2 Layers (weave bead) - Mang. Steel.............200 BHN
- Tensile Strength..................................120 KSI
- Yield Strength.....................................70 KSI
- Elongation..........................................42%

NICROMANG® COATED
NICROMANG is an out of position extruded electrode with excellent impact strength. It work hardens under impact. Deposits can be flame cut. NICROMANG has a high deposition rate. Designed for build-up, and joining of manganese steels. No limit to deposit thickness.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Use straight polarity for fastest deposition. Minimum spatter loss. Produces a thin, non-popping slag that is easily removed. Weave beads 2–3x electrode diameter are preferred. Deposits are non-magnetic and machinability is poor. Interpass temperature should not exceed 500°F maximum. Not recommended for build-up of carbon steel.

Applications: Dipper and Tooth Build-up, Crusher Rolls, Dredge Pump Parts, Rolling Mill Couplers, Rolling Mill Spindles, Crusher Jaws, Impact Breaker Bars, Hammer Mill, Shovel Pads, Railroad Frogs (manganese)

Typical Chemical Composition:
- Iron Base
- Typical Chemical Composition: Alloy Content – 23% (Manganese, Chromium, Nickel, Carbon, Silicon)

Typical Mechanical Properties:
- Hardness: 2 Layers ..................................200 BHN
- Workhardened....................................500 BHN
- Tensile Strength..................................120 KSI
- Yield Strength.....................................70 KSI
- Elongation..........................................42%
GROUP 1: BUILD-UP AND JOINING ALLOYS

B. BUILD-UP AND JOINING OF MANGANESE STEEL

NICROMANG® PLUS  COATED

Stoody Nicromang Plus is similar to Stoody Nicromang except it is formulated to produce a higher hardness in the “as-welded” condition. This higher hardness will reduce the amount of initial metal deformation under heavy loads. Nicromang Plus is not recommended for build-up on carbon steel.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using stringer or weave beads. Weldability is good in the flat and horizontal positions. Multiple layers can be applied without difficulty when proper procedures are followed. Maintain low heat input, do not exceed 500 degrees interpass temperature and pen with the flat face of a hammer, when possible, to relieve weld stress.

Applications: Manganese Railroad Frogs and Crossings, Manganese Steel Castings

Typical Chemical Composition:
Alloy Content – 23% (Manganese, Chromium, Carbon, Molybdenum, Nickel)
Iron Base

Typical Mechanical Properties:
- Hardness: As Deposited .............................................. 250 BHN
- Workhardened ..................................................... 350 HRC
- Tensile Strength .................................................. 128 KSI
- Yield Strength ..................................................... 85 KSI
- Elongation .......................................................... 25%

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions (Diameter x Length)</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11857500</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>100 – 160</td>
</tr>
<tr>
<td>11857700</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>140 – 200</td>
</tr>
<tr>
<td>11873000</td>
<td>10# Vac Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>140 – 200</td>
</tr>
<tr>
<td>11852900</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>170 – 225</td>
</tr>
<tr>
<td>11852000</td>
<td>60# Bulk</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>170 – 225</td>
</tr>
<tr>
<td>11872900</td>
<td>10# Box</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>230 – 330</td>
</tr>
<tr>
<td>11845900</td>
<td>60# Bulk</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>230 – 330</td>
</tr>
<tr>
<td>11876900</td>
<td>10# Box</td>
<td>5/6&quot; (8.0 mm) x 14&quot;</td>
<td>270 – 390</td>
</tr>
</tbody>
</table>

FOUNDRY CO-MANG

Foundry Co-Mang is a manganese steel coated electrode. It is suitable for multi-layer build-up and has excellent work hardening characteristics. It is usable for austenitic manganese steel repair, build-up and joining and provides an excellent color match to the manganese base metal.

Welding Procedures/Characteristics: Can be applied AC or DC reverse polarity. Weave beads 2-3x the electrode diameter are preferred. Deposits are non-magnetic and machineability is poor. Interpass temperature should not exceed 500°F. Not recommended for build-up of carbon steel.

Applications: Rock Crushing and Mining: Crusher Roll, Jaws, Grizzly Bars, Screens, Grates, Impactor Bars, Dredge Pump Parts, Hammer Mill Hammers, Shovel Pads, Latch Pins, Dipper Front Edge and Teeth.

Typical Chemical Composition:
Alloy Content – 18% (Carbon, Manganese, Molybdenum)
Iron Base

Typical Mechanical Properties:
- Hardness: As Deposited ......................................... 170 – 210 HB
- Workhardened ...................................................... 350-450 BHN
- Tensile Strength .................................................. 128 KSI
- Yield Strength ..................................................... 71 KSI
- Elongation .......................................................... 42%

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions (Diameter x Length)</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11814000</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>100 – 140</td>
</tr>
<tr>
<td>44441050</td>
<td>60# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>140 – 180</td>
</tr>
<tr>
<td>11814100</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>175 – 225</td>
</tr>
<tr>
<td>44441250</td>
<td>60# Bulk Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>175 – 225</td>
</tr>
<tr>
<td>44441650</td>
<td>60# Bulk Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>220 – 280</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5/16&quot; (8.0 mm) x 18&quot;</td>
<td>320 – 380</td>
</tr>
</tbody>
</table>

TRACKWEAR® COATED

Trackwear is a high strength manganese steel electrode especially developed for the build-up of parts subject to heavy battering loads, such as railroad frogs and crossings. Its initial strength and hardness is high. It workhardens quickly with minimal flow and roll over. Works well when applied to standard manganese steel alloy castings, nickel manganese steel alloy castings, and molybdenum manganese steel castings. It is also compatible with any other standard manganese steel welding material that may be applied previously.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (straight preferred). Deposits do not respond to heat treatment. Weave beads 2-3x electrode diameter are preferred. Machinability is poor. Not recommended for build-up of carbon steel. Interpass temperature should not exceed 500°F maximum.

Applications: Railroad Frogs, Railroad Crossings, Track Castings, Steel Mill Rolls, Wobbler Spindles, Coupling Boxes, Crusher Equipment Parts

Typical Chemical Composition:
Alloy Content – 19% (Manganese, Vanadium, Carbon)
Iron Base

Typical Mechanical Properties:
- Hardness: 2 Layers ............................................... 240 BHN
- Workhardened ..................................................... 500 BHN
- Tensile Strength .................................................. 128 KSI
- Yield Strength ..................................................... 85 KSI
- Elongation .......................................................... 25%

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions (Diameter x Length)</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>48700810</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>90 – 150</td>
</tr>
<tr>
<td>48701010</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>100 – 160</td>
</tr>
<tr>
<td>48701050</td>
<td>60# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>100 – 160</td>
</tr>
<tr>
<td>48701210</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>140 – 230</td>
</tr>
<tr>
<td>48701250</td>
<td>60# Bulk Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>140 – 230</td>
</tr>
<tr>
<td>48701610</td>
<td>10# Box</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>200 – 300</td>
</tr>
<tr>
<td>48701650</td>
<td>60# Bulk Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>200 – 300</td>
</tr>
</tbody>
</table>
GROUP 1: BUILD-UP AND JOINING ALLOYS

C. Build-Up and Joining of Both Manganese Steel and Carbon Steels

STOODY® 2110 COATED
STOODY 2110 is a solid core extruded electrode with alloys in the coating designed for build-up of austenitic manganese steel parts subject to high impact loading without limitations to deposit thickness. It is a modified high chromium-high manganese steel that combines toughness and wear resistance.

Welding Procedures/Characteristics: Can be applied AC or DC, reverse polarity. Weldability is excellent with low spatter. Build-up is superior to other electrodes of this type. Use stringer or weave beads. Deposits are dense, porosity-free, extremely tough and workhardens rapidly. Cannot be flame cut; machinable with carbide tools, non-magnetic. Not recommended for cast iron.

Applications: Shovel Pads, Roll Crushers, Hammers, Shovel Teeth, Grate Bars, Carbon, Steel Frogs, Switch Points, Manganese Rail, Components

VERSALLOY™ PLUS COATED
VERSALLOY PLUS is a modified austenitic stainless steel recommended for joining, rebuilding or cushion-overlaying on applications involving high strength, heat and corrosion resistance. It is frequently used to join metals in dissimilar applications involving stainless steels and low carbon steels.

Welding Procedures/Characteristics: Can be applied AC or DC, reverse polarity. Can be applied DC, reverse polarity. Weldability is excellent with low spatter. Build-up is superior to other electrodes of this type. Use stringer or weave beads. Deposits are dense, porosity-free, extremely tough and workhardens rapidly. Cannot be flame cut; machinable with carbide tools, non-magnetic. Not recommended for cast iron.

Applications: General purpose electrode used for joining stainless steels to other alloys; also a good cushioning layer for hardfacing.

Typical Chemical Composition:
Alloy Content – 40% (Chromium, Nickel, Silicon, Carbon, Manganese)
Iron Base

Typical Mechanical Properties:
Hardness:
As welded ..................................................... 230 BHN
Workhardened ......................................... 340 BHN
Tensile Strength ................................................... 119 KSI
Elongation......................................................... 40%

D. Build-Up and Joining of Cast Irons

CASTWELD™ 55* (55% Nickel Type) COATED
CASTWELD 55 is for worn cast iron parts requiring build-up or joining. CASTWELD 55 has good strength and tolerance to the high phosphorus often found in cast irons. It is used as a general purpose rod especially when welding thick sections. CASTWELD 55 is also recommended for joining cast iron to dissimilar metals.

Welding Procedures/Characteristics: Must be applied with DC reverse polarity. Must be applied with DC reverse polarity. When welding cast iron always clean the part, preheat and slow cool. Use stringer bead technique (limit weld bead width to 3-4x electrode diameter). It's preferable to run short (approx. 2") weld beads and to use a skip welding technique. Peen immediately after each weld. Short arc is recommended. Remove slag before restriking electrode on previous weld bead.

Applications: Joining or build-up on cast iron parts, i.e. Pump Housings, Engine Blocks, Assorted Castings

Typical Chemical Composition:
Nickel
Iron

Typical Mechanical Properties:
N/A

*Nickel content percentage can vary slightly.
GROUP 1: BUILD-UP AND JOINING ALLOYS

D. Build-Up and Joining of Cast Irons

CASTWELD™ 56
Stoody Castweld 56 is a nickel-iron electrode for welding cast iron in all positions. Stoody Castweld 56 produces welds with higher strengths as ductility than the Castweld 99 electrodes. Deposits are machinability but harder and more resistant to abrasion than Castweld 99.

Stoody Castweld 56 electrodes are recommended for welding cast irons and nodular iron and joining these irons to steel and other ferrous and non-ferrous materials. Also for heavy sections of high strength and engineering grade cast iron. Commonly used to weld high phosphorus irons and steels, ductile iron, and high-nickel alloy cast iron.

Welding Procedure: Preheat cast iron parts to 600°F (315°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 multiple layers. Maintain preheat temperature during entire welding operation; when completed allow parts to cool slowly.

CASTWELD™ 57 (PATENT PENDING)
Stoody Castweld 57 consistently produces weld deposits which exceed the physical properties of standard Castweld 55. These have typical weld deposit impact strengths f 1 to 9 foot pounds. Castweld 57 can achieve impact strengths of 10 to 15 foot pounds. Castweld57 is used on worn cast iron parts requiring build up or joining but not needing tight dimensional control or machining. Castweld 57 has good tolerance for high phosphorus often found in cast iron to dissimilar metals.

Applications: Joining dissimilar metals to cast iron, Joining or build up of cast iron parts, Engine blocks, Pump housings, Assorted castings

Typical Mechanical Properties:
- Tensile Strength: 62 ksi
- Yield Strength: 51 ksi
- Elongation: 7%
- Charpy Impact Strength: 12.5 ft-lbs @ room temperature

CASTWELD™ 99* (99% Nickel Type) COATED
CASTWELD 99 makes a softer deposit than CASTWELD 55 and is preferred if machining of the deposit is required following welding of cast iron parts.

Welding Procedures/Characteristics: Must be applied with DC reverse polarity. When welding cast iron always clean the part, preheat and slow cool. Use stringer bead technique (limit weave width to 3–4x electrode diameter). It’s preferable to run short (approx. 2”) weld beads and to use a skip welding technique. Peen immediately after each weld. Short arc is recommended. Remove slag before restricking electrode on previous weld bead.

Applications: Repair of cast iron, particularly hairline cracks and casting defects.

CASTWELD™ 99* (99% Nickel Type) COATED

Applications: Joining dissimilar metals to cast iron, Joining or build up of cast iron parts, Engine Blocks, Pump housings, Assorted castings

Typical Chemical Composition:
- Carbon, Manganese, Nickel, Silicon, Iron

Part Number | Packaging | Dimensions x Length | Amperage (AC, DC±)
---|---|---|---
11978200 | 10# Vac Pak | 3/16" (4.8mm) x 14" | 120 – 190

CASTWELD™ 99* (99% Nickel Type) COATED

Applications: Joining dissimilar metals to cast iron, Joining or build up of cast iron parts, Engine Blocks, Pump housings, Assorted castings

Typical Chemical Composition:
- Nickel, Iron

Typical Mechanical Properties:
- N/A

Part Number | Packaging | Dimensions x Length | Amperage (AC, DC±)
---|---|---|---
1195800 | 10# Vac Pak | 5/32" (4.0mm) x 14" | 100 – 140
11951100 | 10# Vac Pak | 3/16" (4.8mm) x 14" | 120 – 170
11956900 | 10# Vac Pak | 1/8" (3.2mm) x 14" | 70 – 110

*Nickel content percentage can vary slightly.
GROUP 2: METAL TO METAL WEAR
(low alloy-iron based)

STOODY 1105 COATED

STOODY 1105 is a solid core electrode with an extruded coating containing the alloying elements. It provides good weldability and a high deposition rate. It bonds readily to carbon and low alloy steels. Deposit properties are the same as those of STOODY 105 wire.

Welding Procedures/Characteristics: Can be applied in stringer or weave beads. Runs well on DC, either polarity; highest deposition rate with DC straight polarity. Limit layers to four. Forgeable at red heat. Machinable with carbide tools. Not recommended for manganese steels or cast iron. Deposit is magnetic on carbon and low alloy steels.

Applications: Tractor Rollers, Tractor Idlers, Arch Wheels, Shovel Rollers and Idlers Sprockets, Drive Tumblers, Churn Drills, Charging Car Wheels, Wobblers, Coupling Boxes

Typical Chemical Composition:
Alloy Content – 5% (Chromium, Manganese, Silicon, Molybdenum, Vanadium, Carbon)

Iron Base

Typical Mechanical Properties:
Hardness: .........................................................52-58 HRC

For hot wear applications up to 600°F.

Part Number  Packaging  Dimensions  Amperage
11345100  10# Vac Pak  1/8” (3.2 mm) x 14”  80 – 150
11173800  10# Vac Pak  5/32" (4.0 mm) x 14”  140 – 210
11173900  10# Vac Pak  3/16” (4.8 mm) x 14”  165 – 250
1/4” (6.4 mm) x 18”  230 – 320

STOODY 1102 COATED

STOODY 1102 is a solid core electrode designed for wear resistance in metal to metal applications. It has an extruded coating that contains the alloying elements. Stoody 1102 has an all weld metal composition and physical properties similar to those of H-12 tool steel. Weldability is very good and can be applied in all welding positions. It is good for hot wear applications up to 1100°F and can be machined using carbide tools.

Welding Procedures/Characteristics: Can be applied AC or DC either polarity (reverse preferred) using stringer or weave beads. Weldability is good in all positions. Multiple layers (up to 4 layers) can be applied without difficulty when proper preheat, interpass temperature and cooling rates are observed.

Applications: Cable Sheaves, Forging Dies, Crane Wheels, Hot and Cold Shear Blades, Drill pipe Hard Banding, Hot Work Extrusion Rolls

Typical Chemical Composition:
Alloy Content – 11% (Chromium, Molybdenum, Tungsten, Manganese, Silicon, Carbon, Vanadium)

Iron Base

Typical Mechanical Properties:
Hardness: .........................................................52-58 HRC

Part Number  Packaging  Dimensions  Amperage
11857000  10# Vac Pak  1/8” (3.2 mm) x 14”  125 – 150
11857100  10# Vac Pak  5/32” (4.0 mm) x 14”  140 – 200
GROUP 2: METAL TO METAL WEAR
(low alloy-iron based)

RAILEND 932

STOODY Rail End 932 is a solid cored electrode designed specifically for repair of carbon steel railroad track components. It has excellent tensile strength to maintain the desired rail dimensions. Rail End 932 has fine weldability and a good contour. It has a low hydrogen type of coating and is formulated for welding onto high carbon steel rails and frogs. It is not intended for use on manganese steel.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied in multiple layers with proper preheat and interpass temperature procedures. Designed for high carbon steel rails and frogs, not for use on manganese steel.

**Applications:** Carbon Steel Rail ends, Wheel burns, Frogs, Crossings

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11704800</td>
<td>10# Vac Pak</td>
<td>1/8” (3.2mm) x 14”</td>
<td>100-160</td>
</tr>
<tr>
<td>11704700</td>
<td>10# Vac Pak</td>
<td>5/32” (4.0mm) x 14”</td>
<td>140-240</td>
</tr>
<tr>
<td>11504600</td>
<td>10# Vac Pak</td>
<td>3/16” (4.8mm) x 14”</td>
<td>180-280</td>
</tr>
<tr>
<td>11704600</td>
<td>10# Vac Pak</td>
<td>1/4” (6.4mm) x 14”</td>
<td>200-330</td>
</tr>
</tbody>
</table>

STOODY SELF-HARDENING COATED

STOODY SELF-HARDENING is a solid core electrode with an extruded coating containing the alloying elements. It is magnetic on carbon or low alloy steels.

**Welding Procedures/Characteristics:** Can be applied AC or DC, reverse polarity. Out of position characteristics are limited. Limit weave beads to 3/4” or use stringers. Maximum of three layers if a crack free deposit is desired. Can be applied to plain or alloy steels; magnetic on carbon or low alloy steels. Can be forged at red heat; not readily machinable.

**Applications:** Churn Drills, Trailer Hitch, Machine Components, Bearings, Sliding Metal Parts

**Typical Chemical Composition:**
- Alloy Content – 12% (Chromium, Manganese, Silicon, Carbon)
- Iron Base

**Typical Mechanical Properties:**
- Abrasion Resistance
- Impact Resistance
- Hardness: All Weld Metal 52-58 HRC
- Water-quenched from 1700°F 56-59 HRC
- Furnace-cooled from 1700°F 19-22 HRC
- Water-quenched from 1700°F 56-60 HRC
- Furnace-cooled from 1700°F 19-23 HRC

GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

RAILEND 932

STOODY Rail End 932 is a solid cored electrode designed specifically for repair of carbon steel railroad track components. It has excellent tensile strength to maintain the desired rail dimensions. Rail End 932 has fine weldability and a good contour. It has a low hydrogen type of coating and is formulated for welding onto high carbon steel rails and frogs. It is not intended for use on manganese steel.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied in multiple layers with proper preheat and interpass temperature procedures. Designed for high carbon steel rails and frogs, not for use on manganese steel.

**Applications:** Carbon Steel Rail ends, Wheel burns, Frogs, Crossings

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11704800</td>
<td>10# Vac Pak</td>
<td>1/8” (3.2mm) x 14”</td>
<td>110 – 150</td>
</tr>
<tr>
<td>11704700</td>
<td>10# Vac Pak</td>
<td>5/32” (4.0mm) x 14”</td>
<td>150 – 200</td>
</tr>
<tr>
<td>11504600</td>
<td>10# Vac Pak</td>
<td>3/16” (4.8mm) x 14”</td>
<td>175 – 275</td>
</tr>
<tr>
<td>11704600</td>
<td>10# Vac Pak</td>
<td>1/4” (6.4mm) x 14”</td>
<td>240 – 400</td>
</tr>
</tbody>
</table>

STOODY 33 COATED

STOODY 33 is an all-position tubular electrode recommended where sound deposits with low coefficient of friction are desired. It bonds well with carbon, low alloy, and manganese steels, and polishes to a mirror finish. Multiple layer deposits are sound, and can be heat treated. Stoody 33 has a versatile balance of abrasion wear resistance and impact strength.

**Welding Procedures/Characteristics:** Can be applied AC or DC, either polarity (reverse preferred). Can be applied in multiple layers. With proper welding procedures, can be applied crack-free. The deposit is non-machineable and can be applied to carbon, low alloy and manganese steels.

**Applications:** Cement Mill Gudgeons, Pump Shells, Rendering Screws, Debarking Hammers, Dredge Parts, Friction Type Guides, Hog Anvils

**Typical Chemical Composition:**
- Alloy Content – 32% (Chromium, Carbon, Manganese, Molybdenum, Nickel, Silicon)
- Iron Base

**Typical Mechanical Properties:**
- Abrasion Resistance
- Impact Resistance
- Hardness: On Carbon Steel 42-46 HRC
- On Manganese Steel 37-41 HRC
- Magnetic: On Carbon Steel Slightly
- On Manganese Steel No

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11305700</td>
<td>10# Vac Pak</td>
<td>5/32” (4.0mm) x 14”</td>
<td>120 – 165</td>
</tr>
<tr>
<td>11305600</td>
<td>10# Vac Pak</td>
<td>3/16” (4.8mm) x 14”</td>
<td>160 – 250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4” (6.4mm) x 18”</td>
<td>240 – 325</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 77 COATED
STOODY 77 is a solid core electrode with an extruded coating containing the alloying elements. It is an all position hardfacing electrode which combines good impact strength and abrasive wear. It bonds well with carbon, low alloy and manganese steels and resists spalling.

Welding Procedures/Characteristics: Can be applied AC or DC reverse polarity. Can be used on both manganese and carbon steels. Self lifting slag on carbon steels. Limit layers to three. This is an excellent all position electrode.

Applications: Crusher Rolls, Dredge Pump Shells Impellers, Impact Breaker Bars, Hammermill Hammers, Dipper Teeth/Lips, Dippers/Dragline Buckets, Muller Tires, Scraper Cutter/Sides

Typical Chemical Composition:
- Alloy Content – 24% (Chromium, Carbon, Manganese, Molybdenum, Silicon)
- Iron Base

Typical Mechanical Properties:
- As Deposited 42-50 HRC
- 2 Layers - Mang. Steel 48-52 HRC
- 2 Layers - Carbon Steel 49-54 HRC

For hot wear applications up to 800°F

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Diameter x Length</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42771010</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>110 – 170</td>
</tr>
<tr>
<td>42771210</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>150 – 210</td>
</tr>
<tr>
<td>42771610</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>170 – 230</td>
</tr>
</tbody>
</table>

STOODY 19 COATED
STOODY 19 is a solid core electrode with an extruded coating containing the alloying elements. This electrode has excellent welder appeal. It bonds well with carbon or alloy steel including manganese.

Welding Procedures/Characteristics: Apply in weave beads using AC or DC, either polarity (reverse preferred). Limit to two layers. A severe water quench should be avoided. Easy slag removal with excellent out of position characteristics. Deposits are slightly magnetic on carbon and low alloy steels. Not machinable or forgeable. Deposits will develop cross checks

Applications: Crusher Rolls, Dredge Pump Shells Impellers, Impact Breaker Bars Scrapers

Typical Chemical Composition:
- Alloy Content – 26% (Chromium, Carbon, Molybdenum, Manganese, Silicon)
- Iron Base

Typical Mechanical Properties:
- 2 Layers - Mang. Steel 45-49 HRC
- 2 Layers - Med. Carbon 51-55 HRC

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Diameter x Length</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11360000</td>
<td>10# Vac Pak</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>90 – 130</td>
</tr>
<tr>
<td>11356700</td>
<td>10# Vac Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>120 – 160</td>
</tr>
<tr>
<td>11356800</td>
<td>10# Vac Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>140 – 220</td>
</tr>
<tr>
<td>11356900</td>
<td>10# Vac Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>175 – 300</td>
</tr>
</tbody>
</table>

STOODY 21 COATED
STOODY 21 is a tubular electrode with a graphitic coating. It bonds well with cast iron, carbon or low alloy steel. It is slightly magnetic on carbon and low alloy steels, non-magnetic on manganese. It has good impact and abrasion characteristics.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Limit to two layers. A severe water quench should be avoided. No slag interference. Limited to flat welding only. Stringer beads recommended. Deposits will cross check. Stringer beads recommended. Deposits are not machinable or forgeable.

Applications: Shells, Compactor, Buckets, Mill Hammers, Bucket Teeth, Dredge Pump

Typical Chemical Composition:
- Alloy Content – 23% (Chromium, Carbon, Silicon, Manganese, Molybdenum)
- Iron Base

Typical Mechanical Properties:
- 2 Layers - Mang. Steel 46-50 HRC
- 2 Layers - Med. Carbon 52-56 HRC

For hot wear applications up to 800°F.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Diameter x Length</th>
<th>Amperage (AC, DC±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11172700</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>90 – 130</td>
</tr>
<tr>
<td>10205200</td>
<td>50# Bulk Pak</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>90 – 130</td>
</tr>
<tr>
<td>11172900</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>120 – 160</td>
</tr>
<tr>
<td>10205600</td>
<td>50# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>120 – 160</td>
</tr>
<tr>
<td>11173000</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>140 – 220</td>
</tr>
<tr>
<td>10205700</td>
<td>50# Bulk Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>140 – 220</td>
</tr>
<tr>
<td>11173100</td>
<td>10# Box</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>175 – 300</td>
</tr>
<tr>
<td>10205800</td>
<td>50# Bulk Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>175 – 300</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 31 COATED

STOODY 31 is a tubular electrode containing the alloying elements and has an extruded coating. Welding characteristics are excellent. Deposits have a low coefficient of friction and provide good resistance to corrosion and heat. Can be applied to carbon, alloy and manganese steels. It offers an outstanding balance of abrasion resistance and impact strength.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using either stringer beads or weave beads. Weldability is excellent for out of position work with complete slag coverage that is virtually self-removing. Deposits are not machinable or forgeable.

Applications: Bucket Arms, Chain Links, Rolling Mill Guides, Pulleys, Scrapers, Buckets, Blades

Typical Chemical Composition:
Alloy Content – 34% (Chromium, Molybdenum, Carbon, Silicon, Manganese)
Iron Base

Typical Mechanical Properties:
Hardness:
- 2 Layers - Mang. Steel ......................... 47-49 HRC
- 2 Layers - Carbon Steel ....................... 45-48 HRC
For hot wear applications up to 950°F.

Part Number | Packaging | Dimensions | Amperage (AC, DC±)
--- | --- | --- | ---
10206300 | 10# Vac Pak | 1/8" (3.2 mm) x 14" | 100 – 120
10206400 | 10# Vac Pak | 5/32" (4.0 mm) x 14" | 120 – 180
10206500 | 10# Vac Pak | 3/16" (4.8 mm) x 14" | 170 – 240
10206600 | 10# Vac Pak | 1/4" (6.4 mm) x 18" | 250 – 325

BTS

BTS is a bare tubular rod for oxy-fuel applications. Good for metal-to-metal wear and earth abrasion. Particularly suited where thin deposits are required. Deposits exhibit a low coefficient of friction and polishes to a mirror finish under earth abrasion. Can be applied to carbon, low alloy and manganese steels.

Welding Procedures/Characteristics: Use 20 to 40 drill-size tip; use excess acetylene feather 3x length of inner cone. Clean rust, scale and dirt from part. Heat part to “sweating” temperature and apply with minimum dilution. A minimum deposit thickness of 1/16” is recommended. Deposits are not forgeable or machinable; magnetic on carbon and alloy steels.

Applications: Cultivator Discs, Bird Machine Screws, Plowshares, Conveyor/Classifier Flights, Sand Chutes, Subsoiler Blades, Sweeps, Chisel Points

Typical Chemical Composition:
Alloy Content – 39% (Chromium, Carbon, Nickel, Silicon, Manganese)
Iron Base

Typical Mechanical Properties:
Hardness: As Deposited ......................... 56-60 HRC
For hot wear applications up to 900°F.

Part Number | Packaging | Diameter x Length | Amperage
--- | --- | --- | ---
10207800 | 60# Carton | 5/32" (4.0 mm) x 14" | 100 – 120
10207900 | 60# Carton | 3/16" (4.8 mm) x 14" | 170 – 240
10208000 | 60# Carton | 1/4" (6.4 mm) x 18" | 250 – 325
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 35 COATED

STOODY 35 is a solid core electrode with a heavy extruded coating containing the alloy elements. Weldability is excellent with good out of position characteristics. Can be applied to carbon alloy and manganese steels.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). Use straight polarity to increase deposition rate. Can be applied in stringer or weave beads. A two layer deposit should be made to assure proper chemistry for best wear results. Deposits are not machinable or forgeable.

Applications: Teeth, Screws, Tile Mixer Paddles, Crushing Equipment

Typical Chemical Composition:
Alloy Content – 38% (Chromium, Carbon, Silicon, Manganese)
Iron Base

Typical Mechanical Properties:
Hardness:
- 2 Layers - 1045 plate as welded ..................53-57 HRC
- 2 Layers (weave beads) - Mang. Steel ..........50-53 HRC
Deposits may workharden to .......................58-60 HRC
For hot wear applications up to 950°F

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage (AC, DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11322900</td>
<td>10# Vac Pak</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>125 – 175</td>
</tr>
<tr>
<td>11318200</td>
<td>10# Vac Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>175 – 250</td>
</tr>
<tr>
<td>11318300</td>
<td>10# Vac Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>225 – 300</td>
</tr>
<tr>
<td>11318400</td>
<td>10# Vac Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>275 – 350</td>
</tr>
</tbody>
</table>

CTS

CTS is a tubular electrode containing granular alloying elements. It has a dipped graphitic coating. Because of its high manganese content, deposits offer good resistance to impact as well as abrasion resistance. It is an excellent choice for hardfacing on cast iron.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using either stringer beads or weave beads (1" wide beads preferred). Limit deposits to two layers. Recommended for flat welding only. Can be applied to carbon, low alloy and austenitic manganese steels. Deposits are not machinable or forgeable.

Applications: Crushing Applications, Pug Mill Paddles, Sintering Mill Breakers/Bars, Cement Mill Die Rings, Railroad Tie Tamper Tips

Typical Chemical Composition:
Alloy Content – 38% (Chromium, Manganese, Carbon, Silicon, Molybdenum)
Iron Base

Typical Mechanical Properties:
Hardness:
- 2 Layers (weave beads) - Mang. Steel ..........47-51 HRC
For hot wear applications up to 900°F

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage (AC, DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11276400</td>
<td>10# Box</td>
<td>1/8&quot; (3.2 mm) x 14&quot;</td>
<td>125 – 175</td>
</tr>
<tr>
<td>11276600</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>175 – 250</td>
</tr>
<tr>
<td>11276500</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>225 – 300</td>
</tr>
<tr>
<td>11813600</td>
<td>10# Box</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>275 – 350</td>
</tr>
<tr>
<td>10207300</td>
<td>60# Bulk Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>275 – 350</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 2134 COATED

STOODY 2134 is a tubular electrode containing granular alloying elements. The coating is graphitic. Exhibits excellent abrasion resistance in fine, sandy soils. Also, it is the best choice for high abrasion accompanied by high impact. It is a good choice for hardfacing on cast iron parts.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred). For AC applications welding machines with minimum of 70 volts OCV recommended. Limit deposits to two layers. Welds extremely well at low amperages. Recommended for flat welding only. Weldability is very good when proper procedures are followed. Easy slag removal. For use on carbon, low alloy, and manganese steels. Deposits are not machinable or forgeable.

Applications:  Crusher Rolls, Pit Scraper, Mill Hammers, Bucket Teeth, Impactor Bars (final pass)

Typical Chemical Composition:
Alloy Content – 36% (Chromium, Carbon, Molybdenum, Manganese, Silicon)
Iron Base

Typical Mechanical Properties:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11919100</td>
<td>10# Box</td>
<td>1/8&quot; (3.2mm) x 14&quot;</td>
<td>100 – 150</td>
</tr>
<tr>
<td>11276800</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>100 – 155</td>
</tr>
<tr>
<td>10208300</td>
<td>60# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>100 – 155</td>
</tr>
<tr>
<td>11276700</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>150 – 210</td>
</tr>
<tr>
<td>10208400</td>
<td>60# Bulk Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>150 – 210</td>
</tr>
<tr>
<td>10208500</td>
<td>60# Bulk Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>180 – 300</td>
</tr>
</tbody>
</table>

SUPERCHROME® COATED

Superchrome is a solid steel core electrode with an extruded coating containing the alloying elements. Deposits exhibit excellent resistance to sliding and grinding abrasion.

Welding Procedures/Characteristics: Can be applied AC or DC, either polarity (reverse preferred) using either stringer or weave beads. Hold a slightly longer arc than normal. Minimal spatter loss with easy slag removal. Limit deposit to two layers. For flat welding only. Bonds well with carbon, low alloy and manganese steels. Surface checks which occur relieve stresses and reduce warpage. Deposits are not machinable or forgeable.


Typical Chemical Composition:
Alloy Content – 38% (Chromium, Carbon, Silicon, Manganese)
Iron Base

Typical Mechanical Properties:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>47170810</td>
<td>10# Pak</td>
<td>1/8&quot; (3.2mm) x 14&quot;</td>
<td>110 – 190</td>
</tr>
<tr>
<td>47171010</td>
<td>10# Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>150 – 240</td>
</tr>
<tr>
<td>47171050</td>
<td>60# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>150 – 240</td>
</tr>
<tr>
<td>47171210</td>
<td>10# Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>180 – 300</td>
</tr>
<tr>
<td>47171250</td>
<td>60# Bulk Pak</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>180 – 300</td>
</tr>
<tr>
<td>47171610</td>
<td>10# Pak</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>250 – 370</td>
</tr>
</tbody>
</table>
GROUP 3:  METAL TO EARTH FOR MODERATE TO SEvere IMPACT AND MODERATE TO SEVERE ABRASION

STOODY XHC  COATED

XHC is a solid core electrode with an extruded graphitic coating containing the alloying elements. Deposits are highly resistant to both sliding and grinding abrasion. A very good choice for hardfacing on cast iron.

Welding Procedures/Characteristics: Can be AC or DC, either polarity (reverse preferred) using either stringer or weave beads (1" wide beads preferred). Limit deposits to two layers. Considerable cross checking is normal. Bonds well to manganese, carbon and alloy steels. In addition to its excellent weldability it has a very high deposition rate and good out of position characteristics. Deposits are not machinable or forgeable

Applications:  Grader Blades, Harrow Plows, Slurry Pipe

Typical Chemical Composition:
Alloy Content – 35%  (Chromium, Carbon, Manganese, Silicon, Molybdenum)
Iron Base

Typical Mechanical Properties:
Hardness:
1 Layer (weave beads)
Med. Carbon Steel ........................................60-66 HRC
1 Layers (weave beads) - Mang. Steel ....50-55 HRC
For hot wear applications up to 1000°F.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC-+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11383000</td>
<td>10# Box</td>
<td>1/8&quot; (3.2mm) x 14&quot;</td>
<td>100 – 150</td>
</tr>
<tr>
<td>11382700</td>
<td>10# Box</td>
<td>3/32&quot; (4.8 mm) x 14&quot;</td>
<td>125 – 250</td>
</tr>
<tr>
<td>11382500</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>150 – 300</td>
</tr>
<tr>
<td>11382400</td>
<td>10# Box</td>
<td>1/4&quot; (6.4 mm) x 18&quot;</td>
<td>250 – 375</td>
</tr>
</tbody>
</table>

SUPER 20  COATED

SUPER 20 is a solid core electrode with a heavy extruded coating containing the alloying elements. Its extremely good wear resistance is attributed to the addition of molybdenum, tungsten and chromium.

Welding Procedures/Characteristics: Can be applied DC reverse polarity. Weld with a short arc. Can be applied either as stringer or weave beads. Limit to one layer. Deposits will exhibit cross checking patterns normal for high alloys. At amperages above 150 (5/32" electrodes) SUPER 20 exhibits good out of position characteristics. Deposits are not machinable or forgeable.


Typical Chemical Composition:
Alloy Content – 39%  (Chromium, Molybdenum, Carbon, Tungsten, Silicon, Manganese)
Iron Base

Typical Mechanical Properties:
Hardness:
1 Layer - Mang. Steel ................................58-63 HRC
1 Layer - Carbon Steel ..............................60-65 HRC
For hot wear applications up to 1100°F.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>46520810</td>
<td>10# Box</td>
<td>1/8&quot; (3.2mm) x 14&quot;</td>
<td>70 – 160</td>
</tr>
<tr>
<td>46520850</td>
<td>60# Bulk Pak</td>
<td>1/8&quot; (3.2mm) x 14&quot;</td>
<td>70 – 160</td>
</tr>
<tr>
<td>46521010</td>
<td>10# Box</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>130 – 250</td>
</tr>
<tr>
<td>46521050</td>
<td>60# Bulk Pak</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>130 – 250</td>
</tr>
<tr>
<td>46521210</td>
<td>10# Box</td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>200 – 300</td>
</tr>
</tbody>
</table>

STOODY 45  COATED

STOODY 45 is an alloy coated electrode capable of high abrasion resistance, high corrosion resistance and high hardness at elevated temperatures. This electrode contains high columbium (niobium) and molybdenum, which contributes to its excellent high temperature abrasion resistance.

Welding Procedures/Characteristics: Can be applied in stringer or weave beads using DC reverse polarity. Limit deposits to two layers maximum. Bonds well with carbon, low alloy and manganese steels.

Applications:
Cement and Refractory:  Cement Screws, Cement Dryers, Hot Cement Cones, Cement Furnace Parts, Mixer Blades, Presses
Mining:  Wear Plates, Excavator Bucket Teeth, Conveyor Screws, Slurry Pipes

Typical Chemical Composition:
Alloy Content – 48%  (Chromium, Molybdenum, Columbium (Niobium), Carbon, Tungsten, Manganese, Vanadium, Silicon)
Iron Base

Typical Mechanical Properties:
Abrasion Resistance ...........................................Good
Impact Resistance ..............................................Low
Corrosion Resistance................................. Good
Hardness..........................................................59-61 Hrc
Deposit Layers ......................................................2
For hot wear applications up to 1500°F.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1188260</td>
<td>1# Sample Tube</td>
<td>5/32&quot; (4.0 mm) x 14&quot;</td>
<td>130 – 185</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/16&quot; (4.8 mm) x 14&quot;</td>
<td>170 – 120</td>
</tr>
</tbody>
</table>
Coated Electrodes and Bare Rods

GROUP 4: METAL TO EARTH FOR EXTREME ABRASION AND LOW IMPACT

AC-DC BOROD® COATED

BOROD is similar to Tube Borium in all respects except particle mesh size, which is finer (40 down) to provide deposits resembling a fine grit sandpaper. Its deposit is heterogeneous consisting of tungsten carbide particles suspended in a tungsten steel matrix. BOROD deposits generally provide slightly increased abrasion protection.

Welding Procedures/Characteristics: For AC-DC BOROD, use minimum amperage to minimize dilution. Use AC or reverse polarity with DC current. Avoid multiple layers, use stringer beads. For hot wear application up to 900°F.

Applications: Log Grapplers, Concrete Pug Mill Paddles, Ash Plows, Ore Chutes, Sand Slinger Buckets

BARE BOROD

BOROD is similar to Tube Borium in all respects except particle mesh size, which is finer (40 down) to provide deposits resembling a fine grit sandpaper. Its deposit is heterogeneous consisting of tungsten carbide particles suspended in a tungsten steel matrix. BOROD deposits generally provide slightly increased abrasion protection.

Welding Procedures/Characteristics: For BARE BOROD adjust excess acetylene flame 3x length of inner cone. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposit to parent metal, applying with minimum dilution. Avoid multiple layers. For hot wear application up to 900°F.

Applications: Irrigation Shovel, Bean Knife, Chisel Tooth, Twisted Chisel, Auger Bits, Conveyor Fans, Anvil Knives

AC-DC TUBE BORIUM®

AC-DC BORIUM is manufactured by metering crushed tungsten carbide particles of controlled mesh size into steel tubes. The AC-DC BORIUM receives a thin graphitic coating. BORIUM is available in a variety of particle sizes; fine mesh sizes increase wear resistance, coarse sizes improve cutting efficiency. BORIUM deposits absorb more impact than the finer BOROD overlays because more matrix is exposed.

Welding Procedures/Characteristics: For AC-DC BORIUM, use minimum amperage to minimize dilution. Can be applied AC or DC reverse polarity. Apply in flat or inclined position. Use a stringer bead. Avoid multiple layers. Maximum working temperature 900°F.

Applications: Furrowing Shovel, Subsoiler Point, Rasp Bars, Tool Joints, Muller Plows

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 60%
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10234400</td>
<td>10# Vac Pak</td>
<td>40 – Down</td>
<td>1/8” (3.2 mm) x 14”</td>
<td>80 – 100</td>
</tr>
<tr>
<td>10234600</td>
<td>10# Vac Pak</td>
<td>40 – Down</td>
<td>5/32” (4.0 mm) x 14”</td>
<td>100 – 120</td>
</tr>
<tr>
<td>10234800</td>
<td>10# Vac Pak</td>
<td>40 – Down</td>
<td>3/16” (4.8 mm) x 14”</td>
<td>120 – 150</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/4” (6.4 mm) x 18”</td>
<td>140 – 165</td>
</tr>
</tbody>
</table>

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 60%
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10231300</td>
<td>10# Boxes</td>
<td>40 – Down</td>
<td>1/8” (3.2 mm) x 14”</td>
<td>80 – 100</td>
</tr>
<tr>
<td>10231700</td>
<td>10# Boxes</td>
<td>20 – 30</td>
<td>5/32” (4.0 mm) x 14”</td>
<td>100 – 120</td>
</tr>
<tr>
<td>10234000</td>
<td>60# Bulk</td>
<td>20 – 30</td>
<td>5/32” (4.0 mm) x 28”</td>
<td>120 – 150</td>
</tr>
<tr>
<td>10231900</td>
<td>10# Boxes</td>
<td>10 – 30</td>
<td>3/16” (4.8 mm) x 14”</td>
<td>140 – 165</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3/16” (4.8 mm) x 28”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/4” (6.4 mm) x 14”</td>
<td></td>
</tr>
</tbody>
</table>

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 60%
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
<th>Dimensions Diameter x Length</th>
<th>Amperage (AC, DC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10229100</td>
<td>10# Vac Pak</td>
<td>30 – 40</td>
<td>1/8” (3.2mm) x 14”</td>
<td>80 – 100</td>
</tr>
<tr>
<td>10229500</td>
<td>10# Vac Pak</td>
<td>20 – 30</td>
<td>5/32” (4.0mm) x 14”</td>
<td>100 – 120</td>
</tr>
<tr>
<td>10229500</td>
<td>10# Vac Pak</td>
<td>20 – 30</td>
<td>3/16” (4.8mm) x 14”</td>
<td>120 – 150</td>
</tr>
<tr>
<td>10229700</td>
<td>10# Vac Pak</td>
<td>10 – 30</td>
<td>1/4” (6.4mm) x 14”</td>
<td>140 – 165</td>
</tr>
</tbody>
</table>
GROUP 4: METAL TO EARTH FOR EXTREME ABRASION AND LOW IMPACT

ACETYLENE TUBE BORIUM  BARE

BARE ACETYLENE TUBE BORIUM is manufactured by metering crushed tungsten carbide particles of controlled mesh size into steel tubes. BORIUM is available in a variety of particle sizes; fine mesh sizes increase wear resistance, coarse sizes improve cutting efficiency. BORIUM deposits absorb more impact than the finer BOROD overlays because more matrix is exposed.

Welding Procedures/Characteristics: For ATB, adjust excess acetylene flame 3x length of inner core. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. Limit to one layer. Maximum working temperature is 900°F.

Applications: Plow Shares, Cane Knives, Teeth, Tool Drill Bits

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 60%
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>11895000</td>
<td>60# Box</td>
<td>30 – 40 7/64” (2.8mm) x 28”</td>
</tr>
<tr>
<td>10227100</td>
<td>10# Box</td>
<td>30 – 40 1/8” (3.2mm) x 14”</td>
</tr>
<tr>
<td>10227500</td>
<td>10# Box</td>
<td>30 – 40 1/8” (3.2mm) x 28”</td>
</tr>
<tr>
<td>10230500</td>
<td>60# Box</td>
<td>20 – 30 5/32” (4.0mm) x 14”</td>
</tr>
<tr>
<td>11429000</td>
<td>10# Box</td>
<td>20 – 30 5/32” (4.0mm) x 28”</td>
</tr>
<tr>
<td>10227900</td>
<td>10# Box</td>
<td>30 Down 5/32” (4.0mm) x 28”</td>
</tr>
<tr>
<td>10230700</td>
<td>60# Box</td>
<td>30 Down 5/32” (4.0mm) x 28”</td>
</tr>
<tr>
<td>10228100</td>
<td>10# Box</td>
<td>30 Down 3/16” (4.8mm) x 28”</td>
</tr>
<tr>
<td>10229000</td>
<td>10# Box</td>
<td>3/16” (4.8mm) x 14”</td>
</tr>
<tr>
<td>11056600</td>
<td>10# Box</td>
<td>3/16” (4.8mm) x 14”</td>
</tr>
<tr>
<td>10227900</td>
<td>10# Box</td>
<td>10 – 20 1/4” (6.4mm) x 14”</td>
</tr>
<tr>
<td>10230700</td>
<td>60# Box</td>
<td>10 – 20 1/4” (6.4mm) x 14”</td>
</tr>
<tr>
<td>10228100</td>
<td>10# Box</td>
<td>30 – 40 1/4” (6.4mm) x 14”</td>
</tr>
</tbody>
</table>

TUBE BORIUM S & H

TUBE BORIUM S & H were developed for special applications. Percentage of tungsten carbide has been reduced in these products, making them more impact resistant allowing the material to be used in multiple layer applications.

Welding Procedures/Characteristics: Designed for multiple layers. Adjust excess acetylene flame 3x length of inner cone. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. For hot wear applications up to 900°F.

Applications: Churn Drills, Cable Tools, Rotary Drill Bits

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 40%, H (40%), S (35%)
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Special</td>
<td>Special 5/32” (4.0mm) x 18”</td>
</tr>
<tr>
<td></td>
<td>Mesh Sizes</td>
<td>3/16” (4.8mm) x 18”</td>
</tr>
</tbody>
</table>

HORSESHOE BORIUM

Weld deposit contains relatively large undissolved tungsten carbide particles which provides a maximum non-slipping surface.

Welding Procedures/Characteristics: Adjust excess acetylene flame 3x length of inner cone. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. Limit to one layer.

Applications: Horseshoes

Typical Chemical Composition:
- Alloy Content: Tungsten Carbide - 60%
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh: Diameter x Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>10228900</td>
<td>10# Box</td>
<td>8 – 10 1/4” (6.4mm) x 14”</td>
</tr>
<tr>
<td>11056600</td>
<td>10# Box</td>
<td>5 – 8 3/8” (9.5mm) x 14”</td>
</tr>
</tbody>
</table>
GROUP 4: METAL TO EARTH FOR EXTREME ABRASION AND LOW IMPACT

**VANCAR E COATED**

VANCAR E deposits contain specially formulated vanadium tungsten carbide particles approximately equal to tungsten carbide in hardness but only half as heavy. VANCAR's advantage over tungsten carbide is that it can be applied in multiple layers and still retain its original hardness due to uniform distribution of the carbide particles. The alloy also offers excellent impact resistance. This provides wear rates that remain very uniform throughout the life of the deposit. VANCAR E is a fabricated electrode with a dipped coating.

**Welding Procedures/Characteristics:** For DC reverse polarity application. Use lowest practical amperage that will assure a good bond to minimize dilution with the base metal. Use mid-range amperage for best possible coverage and best surface appearance. Can be applied up to three layers. For hot wear applications up to 900°F.

**Applications:** Farm Drill Points, Dry Cement Pump Screw, Drill Pipe Stabilizer Wings, Ammonia Injector Wings, Pug Mill Knives, Chisels

**Typical Chemical Composition:**
- Alloy Content: 37% (Vanadium, Tungsten, Carbon, Silicon, Molybdenum, Manganese, Nickel)
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh:</th>
<th>Dimensions</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11327600</td>
<td>10# Vac Pak</td>
<td>-</td>
<td>5/32” (4.0mm) x 14”</td>
<td>80 – 130</td>
</tr>
<tr>
<td>11296500</td>
<td>10# Vac Pak</td>
<td>-</td>
<td>3/16” (4.8mm) x 14”</td>
<td>130 – 165</td>
</tr>
<tr>
<td>11366500</td>
<td>10# Vac Pak</td>
<td>-</td>
<td>1/4” (6.4mm) x 14”</td>
<td>175 – 250</td>
</tr>
</tbody>
</table>

**VANCAR G BARE for OXYACETYLENE**

VANCAR G fabricated rods contain specially formulated vanadium tungsten carbide particles approximately equal to tungsten carbide in hardness but only half as heavy. VANCAR's greatest advantage over tungsten carbide is that it can be applied in multiple layers and still retain its original hardness due to uniform distribution of the carbide particles. This provides wear rates that remain very uniform throughout the life of the deposit.

**Welding Procedures/Characteristics:** Designed for multiple layers. Adjust excess acetylene flame 3x the length of the inner cone. Use torch tip size larger than normally used to weld same diameter mild steel rod. Sweat deposits to parent metal with minimum dilution. For hot wear applications up to 900°F.

**Applications:** Ripper Shanks, Impellers, Stabilizers, PCV Plastic Mixer Paddles

**Typical Chemical Composition:**
- Alloy Content: 41% (Vanadium, Tungsten, Chromium, Carbon, Silicon, Boron, Molybdenum, Nickel, Manganese)
- Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Mesh:</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>11334900</td>
<td>50# Bulk</td>
<td>-</td>
<td>3/32” (4.0mm) x 26”</td>
</tr>
<tr>
<td>11334900</td>
<td>50# Bulk</td>
<td>-</td>
<td>3/16” (4.8mm) x 26”</td>
</tr>
</tbody>
</table>

**STOODY 160-E**

Stoody 160-E coated electrode consists of tungsten carbide particles in a nickel silicon boron matrix. This microstructure (approximately 55% by weight) gives Stoody 160-E superior toughness, corrosion and excellent fine particle erosion resistance in slurry type applications.

**Applications:** Dredge rotary cutter heads, Pipe ID & filtering screens, Drill bits & stabilizers

**Typical Chemical Composition:**
- Tungsten Carbide Particles in a Nickel-Silicon-Boron Matrix

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Dimensions</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11897400</td>
<td>10# Vac pak</td>
<td>3/16” (4.8mm)</td>
<td>130-155</td>
</tr>
</tbody>
</table>

**Typical Mechanical Properties:**
- Abrasion Resistance: Excellent
- Matrix Hardness Single Layer: HRC 50 - 60
- Matrix Hardness Two Layer: HRC 50 - 60
- Deposit Layers: 2 Maximum
- Surface Cross Check: Depends on application
GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES

STOODITE 6 Bare and Coated

The most generally used cobalt alloy, having excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range. Particular attributes are its outstanding self-mated anti-galling properties, high temperature hardness, and a high resistance to cavitation erosion, which result in its wide use as a valve seat material. The alloy is ideally suited to variety of hardFacing processes. Machinable with carbide tools. Bonds well with weldable alloy steels, including stainless. Certification to AWS-A5.13, Type RCoCr-C (Bare) and ECoCr-A (Coated); MIL-R-17131, Type MIL-RCoCr-A-1 (Bare) and AMS 5788 must be requested at time of order.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4” to 1 1/2” wide. For check-free deposits, preheat and slow cool. In applying bare rod, use a larger torch tip than is generally used for same diameter mild steel. Use excess acetylene feather 3x length of inner cone. With the gas tungsten arc process, use 100% Argon. Generally a 2 layer deposit.


Typical Chemical Composition:
Alloy Content: C 1.4, Cr 29, W 8 Cobalt Base

Available Forms & Dimensions
<table>
<thead>
<tr>
<th>Bare Cast</th>
<th>Coated</th>
<th>Dimensions</th>
<th>Packaging</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11336000</td>
<td>10240500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336100</td>
<td>10241000</td>
<td>1/8” (3.2mm)</td>
<td>20# Box</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336200</td>
<td>10241500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>135 – 160</td>
</tr>
</tbody>
</table>

Average Hardness, Rockwell C:
Tungsten Arc, Two Layer Deposit: 40
Oxy Acetylene, One Layer Deposit: 42
Shielded Metal Arc, Two Layer Deposit: 39

STOODITE 12 Bare and Coated

Close to STOODITE 6 in composition with the most significant difference between the alloys being one of carbide volume, hence high hardness and resistance to abrasion. Non-magnetic; not forgeable. Machined with difficulty using carbide tools. Bonds well with weldable alloy steels, including stainless. Certification to AWS-A5.13, Type RCoCr-B (Bare) and ECoCr-B (Coated) must be requested at time of order.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4” to 1 1/2” wide. For check-free deposits, preheat and slow cool. In applying bare rod, use a larger torch tip than is generally used for same diameter mild steel. Use excess acetylene feather 3x length of inner cone. With the gas tungsten arc process, use 100% Argon. Generally a 2 layer deposit.

Applications: Saw Teeth, Saw Bars, Valve Seat
Can be certified to AWS specifications.

Typical Chemical Composition:
Alloy Content: C 1.1, Cr 28, W 4 Cobalt Base

Available Forms & Dimensions
<table>
<thead>
<tr>
<th>Bare Cast</th>
<th>Coated</th>
<th>Dimensions</th>
<th>Packaging</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11336000</td>
<td>10240500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336100</td>
<td>10241000</td>
<td>1/8” (3.2mm)</td>
<td>20# Box</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336200</td>
<td>10241500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>135 – 160</td>
</tr>
</tbody>
</table>

Average Hardness, Rockwell C:
Tungsten Arc, Two Layer Deposit: 40
Oxy Acetylene, One Layer Deposit: 42
Shielded Metal Arc, Two Layer Deposit: 39

STOODITE 1 Bare and Coated

Because of its carbon content of 2.5 percent, STOODITE 1 has a relatively high volume of carbides within its structure. This gives the alloy excellent resistance to abrasion and solid particle erosion, with some sacrifice in toughness. Non-magnetic; not forgeable. Machined with difficulty using carbide tools; grind finish. Bonds well with weldable alloy steels, including stainless. Certification to AWS-A5.13, Type RCoCr-C (Bare) and ECoCr-C (Coated); MIL-R-17131, Type MIL-RCoCr-C-1; must be requested at time of order.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4” to 1 1/2” wide. For check-free deposits, preheat and slow cool. In applying bare rod, use a larger torch tip than is generally used for the same diameter mild steel. Use excess acetylene feather 3x length of inner cone. With the gas tungsten arc process, use 100% Argon. Generally a 2 layer deposit.

Applications: Mixer, Seals, Rotors, Hydrotulper Disc Segments, Carbon Scrapers
Can be certified to AWS and military specifications.

Typical Chemical Composition:
Alloy Content: C 2.5, Cr 30, W 12 Cobalt Base

Available Forms & Dimensions
<table>
<thead>
<tr>
<th>Bare Cast</th>
<th>Coated</th>
<th>Dimensions</th>
<th>Packaging</th>
<th>Amperage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11336000</td>
<td>10240500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336100</td>
<td>10241000</td>
<td>1/8” (3.2mm)</td>
<td>20# Box</td>
<td>90 – 120</td>
</tr>
<tr>
<td>11336200</td>
<td>10241500</td>
<td>1/8” (3.2mm)</td>
<td>10#</td>
<td>135 – 160</td>
</tr>
</tbody>
</table>

Average Hardness, Rockwell C:
Tungsten Arc, Two Layer Deposit: 54
Oxy Acetylene, One Layer Deposit: 53
Shielded Metal Arc, Two Layer Deposit: 49

Coated Electrodes and Bare Rods

www.stoody.com
Coated Electrodes and Bare Rods

GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES

STOODITE 21 BARE AND COATED

A low carbon, molybdenum strengthened cobalt-chromium alloy. Its excellent high temperature strength and stability are responsible for its use as a hot die material, while its inherent resistance to galling (under self-mated conditions), cavitation erosion, and corrosion have made it a popular fluid valve seat facing alloy.

Welding Procedures/Characteristics: Weld DC reverse polarity. Use minimum amperage; apply weave bead 3/4" to 1 1/2" wide. For check-free deposits, preheat and slow cool. In applying bare rod, use gas tungsten arc process with 100% Argon as the shielding gas. Can be machining. Bonds well with weldable alloy steels, including stainless.

Applications: Hot Forming Dies, Valves and Seats, Turbine Runners

Can be certified to MIL-R-17131-TYPE MIL-R-NiCr-B.

Typical Chemical Composition:
Alloy Content: C 0.25, Cr 27, Mo 5, Ni 2.8

Bare Cast
Part Number
812101105125
812101105156
812101105187
812101105250

Amperage (DC+)
1/4" (6.4mm)
1/4" (6.4mm)
1/4" (6.4mm)
1/4" (6.4mm)

Volume
10# 90 – 120
10# 135 – 160
10# 160 – 180
10# 220 – 270

STOODY 50 Bare

A cast rod with a low melting point. It flows easily on to base metals and yields smooth deposits. It can be formed and wiped to sharp edge. Deposits maintain a high level of hardness up to 1200°F and resist galling, pitting and corrosion in addition to abrasion. It can be deposited on low and medium carbon steels, and cast iron (with flux). Deposits have exceptional hot hardness properties.

Welding Procedures/Characteristics: It was developed primarily for oxyacetylene applications because it wets and flows easily in thin deposits or when necessary, can be stacked. Thoroughly clean work piece prior to welding. Observe preheat and postheating requirements where necessary. When deposited use a neutral oxyacetylene flame. Can also be applied with gas tungsten arc (TIG) process. Generally two or three-layer deposits are recommended for maximum effectiveness. When deposited use a neutral oxyacetylene arc. Two or three-layer deposits are recommended for maximum effectiveness.

Applications: Tong Bits, Bleeder Valves, Hot Shear Blades

Can be certified to AWS specifications.

Typical Chemical Composition:
Alloy Content: B 3.0, C 0.75, Cr 15, Fe 4, Si 4

Nickel Base

Bare Cast
Part Number
82407105156
82407105187
82407105250
82407105312

Amperage (DC+)
10# 3/32" (4.0mm)
10# 3/16" (4.8mm)
10# 1/4" (6.4mm)
10# 5/16" (8.0mm)

Volume
10# 55 – 75
10# 65 – 85
10# 75 – 95
10# 85 – 100

STOODY 60 Bare

Has the same basic properties as STOODY 50 but is somewhat harder and more wear resistant.

Welding Procedures/Characteristics: Weldability is the same as STOODY 50 but the deposits are much harder and are therefore much more prone to cracking. Generally grind finish; not machinable.

Applications: Draw Blocks, Expeller Screws

Can be certified to MIL-R-17131-TYPE MIL-R-NiCr-C.

Typical Chemical Composition:
Alloy Content: B 2.5, C 0.5, Cr 12, Fe 3.5, Si 3.5

Nickel Base

Bare Cast
Part Number
82407105156
82407105187
82407105250
82407105312

Amperage (DC+)
10# 3/32" (4.0mm)
10# 3/16" (4.8mm)
10# 1/4" (6.4mm)
10# 5/16" (8.0mm)

Volume
10# 160 – 180
10# 180 – 210
10# 190 – 220
10# 220 – 270

STOODY C Coated

STOODY C coated electrodes are nickel-based electrodes with an alloy coating for DC reverse electric arc applications. Resistant to high heat and corrosion accompanied by abrasion and/or impact. It retains hardness up to 1200°F and has low frictional properties.

Welding Procedures/Characteristics: DC reverse polarity is recommended; AC and DC straight polarity are not advisable. Use a reasonable low current, consistent with good weldability, to minimize penetration and dilution. Hold a very short arc. Two or three-layer deposits are recommended for maximum effectiveness. Normal preheating and post heating requirements should be observed, depending on type of base metal. Slag removal is easy. Deposits are dense, smooth and resistant to high temperature deformation and corrosive agents. Although extremely tough, deposits are readily machinable with high speed or cemented carbide tools. Not recommended for forming.

Applications: Tong Bits, Bleeder Valves, Hot Shear Blades

Can be certified to AWS specifications.

Typical Chemical Composition:
Alloy Content: C 0.1, Cr 17, Fe 6, Mo 17

Nickel Base

Bare Cast
Part Number
11848400
11412800
10245700
10245900

Amperage (DC+)
5# Vac Pak 3/32" (2.4mm)
10# Vac Pak 1/8" (3.2mm)
10# Vac Pak 5/32" (4.0mm)
10# Vac Pak 5/32" (4.8mm)

Volume
50 – 100
80 – 120
110 – 150
130 – 170

U.S. Customer Care: 800-426-1888 / FAX 800-535-0557
Canada Customer Care: 905-827-4515 / FAX 800-588-1714
## GROUP 1: BUILD-UP AND JOINING ALLOYS

### A. BUILD-UP OF CARBON STEELS

**STOODY BUILD-UP**

STOODY BUILD-UP is a low alloy fabricated wire that has excellent compressive strength and resistance to plastic deformation. This is an excellent alloy for use as an underbase for subsequent hardfacing. Several diameters are available for use both with and without shielding gases. This material has good machinability in the “as-welded” condition using carbide tools. It is not recommended for manganese steel or cast iron and will workharden under impact.

**Welding Procedures/Characteristics:** Can be applied AC or DC, either polarity (reverse preferred) in either stringer or weave beads 1/2” to 3/4” wide. Can be applied out of position with proper welding techniques. Slag removal is very good. This wire is not recommended for joining applications. Vertical welding can be done by welding a horizontal shelf approximately 2” wide and then going up.

**Applications:** Hammers, Wheel Burns, Repairing Battered Rail, Steel Mill Wobblers and Pods, Carbon Steel Shovel Pads, Shafting, Rolls, Pump Parts

**Nominal Composition:**
- Alloy Content – 4% (Manganese, Chromium, Silicon, Molybdenum, Carbon)
- Iron Base

### Mechanical Properties Typical Rockwell Hardness:

<table>
<thead>
<tr>
<th>Base Metal</th>
<th>Layers</th>
<th>Hardness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.10% C</td>
<td>2</td>
<td>24-28 HRC</td>
</tr>
<tr>
<td>0.40% C</td>
<td>2</td>
<td>30-35 HRC</td>
</tr>
<tr>
<td>0.80% C</td>
<td>2</td>
<td>38-42 HRC</td>
</tr>
</tbody>
</table>

### Part Packaging         Wire Diameter      Welding Parameters

<table>
<thead>
<tr>
<th>Number</th>
<th>in. mm</th>
<th>Shielding Gas</th>
<th>Wire Ext. Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11090100</td>
<td>0.60 Co</td>
<td>2.8</td>
<td>Open-arc</td>
<td>1&quot;-11/2&quot;</td>
</tr>
<tr>
<td>11142800</td>
<td>1.10 Qt Pak</td>
<td>2.8</td>
<td>Open-arc</td>
<td>1&quot;-11/2&quot;</td>
</tr>
<tr>
<td>11813000</td>
<td>2.00 Half Pak</td>
<td>2.8</td>
<td>Open-arc</td>
<td>1&quot;-11/2&quot;</td>
</tr>
<tr>
<td>11896900</td>
<td>5.00 POP</td>
<td>2.8</td>
<td>Open-arc</td>
<td>1&quot;-11/2&quot;</td>
</tr>
<tr>
<td>11183000</td>
<td>0.60 Co</td>
<td>3/32</td>
<td>Open-arc</td>
<td>1&quot;-11/2&quot;</td>
</tr>
<tr>
<td>11420000</td>
<td>1.00 Plastic Spool</td>
<td>1/16</td>
<td>Open-arc or CO2</td>
<td>1/2&quot;-3/4&quot;</td>
</tr>
<tr>
<td>11249000</td>
<td>3/16 Wire Basket</td>
<td>1/16</td>
<td>Open-arc or CO2</td>
<td>1/2&quot;-3/4&quot;</td>
</tr>
<tr>
<td>11203000</td>
<td>5.00 Poly Pak</td>
<td>1/16</td>
<td>Open-arc or CO2</td>
<td>1/2&quot;-3/4&quot;</td>
</tr>
<tr>
<td>11423000</td>
<td>1.00 Plastic Spool</td>
<td>1/16</td>
<td>98% Ar/2% O2</td>
<td>1/2&quot;-3/4&quot;</td>
</tr>
<tr>
<td>11423800</td>
<td>3/16 Wire Basket</td>
<td>1/16</td>
<td>98% Ar/2% O2</td>
<td>1/2&quot;-3/4&quot;</td>
</tr>
</tbody>
</table>

**STOODY BUILD-UP AP-G**

STOODY BUILD-UP AP-G is a shielded, flux cored, all position, general purpose build up with excellent compressive strength and resistance to plastic deformation, making it ideal for use as an under base subsequent hardfacing. This all position martensitic alloy is used for build up on mild and low alloy steel. It has good machinability in the as welded condition using carbide tools, and it can be forged at red heat. Stoody Build Up AP-G operates in smooth semi-spray transfer which allows high deposition in out-of-position application. Deposits can be applied crack free in multiple layers.

**Welding Procedures/Characteristics:** DC reverse polarity recommended using 75 Argon/25 CO2 shielding gas, this wire has excellent out-of-position characteristics in the vertical, overhead and horizontal positions. It has a smooth semi-spray transfer and can be applied to carbon and low alloy steels.

**Applications:** Mild and low alloy steels, Hammers, Wheel Burns, Repairing Battered Rail, Steel Mill Wobblers and Pods, Carbon Steel Shovel Pads, Shafting, Rolls, Pump Parts

**Nominal Composition:**
- Alloy Content – 4% (Carbon, Manganese, Chromium, Molybdenum, Silicon)
- Iron Base

### Mechanical Properties Typical Rockwell Hardness:

<table>
<thead>
<tr>
<th>Abrasion Resistance</th>
<th>Impact Resistance</th>
<th>Deposit Layers</th>
<th>Hardness (2 Layers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Moderate</td>
<td>Multiple</td>
<td>24-27 HRC</td>
</tr>
</tbody>
</table>

### Part Packaging         Wire Diameter      Welding Parameters

<table>
<thead>
<tr>
<th>Number</th>
<th>in. mm</th>
<th>Shielding Gas</th>
<th>Wire Ext. Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11845000</td>
<td>.045</td>
<td>75% AR/25% CO2</td>
<td>1/2&quot;</td>
<td>140-225</td>
</tr>
</tbody>
</table>
GROUP 1: BUILD-UP AND JOINING ALLOYS

B. BUILD-UP AND JOINING OF MANGANESE STEEL

DYNAMANG

DYNAMANG is an austenitic manganese material containing chromium and nickel. It produces a tough, high strength deposit that workhardens under impact. Primarily used for the build-up, repair and joining of manganese steel. Deposit thickness is unlimited and can be flame cut without difficulty.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads 1/2” to 3/4” wide. Wire extension (arc length) is very important. If it becomes too long, excessive spatter results; if too short, “stubbing” will occur. The use of CO2 shielding gas reduces the amount of spatter with the 1/16” diameter wire. Limit interpass temperature to 500°F maximum.

Applications: Crusher Rolls, Jaw Crushers, Hammer Crushers, Dredge Pump, Cutters, Shovel Pads, Buckets and Teeth, Gyratory Crusher Mantles

Nominal Composition:

- Alloy Content – 20% (Manganese, Chromium, Nickel, Carbon)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:

- Tensile Strength ............................................. 120 KSI
- Yield Strength ............................................... 70 KSI
- Elongation in 2 in. ........................................... 42%
- Hardness:
  - All weld metal ............................................. 200 BHN
  - Workhardened to ........................................ 500 BHN

NICROMANG

NICROMANG is a typical 11-1/4% manganese alloy with additions of chromium, nickel and minor elements to improve its weldability and physical properties. Primarily used for the build-up, repair and joining of manganese steels. Deposit thickness is unlimited and can be flame cut without difficulty. Workhardens under impact.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads 1/2” to 3/4” wide. Wire extension (arc length) is very important. If it becomes too long, excessive spatter results; if too short, “stubbing” will occur. The use of CO2 shielding gas with the 1/16” diameter wire reduces the amount of spatter and improves the weldability. Limit interpass temperature to 500°F maximum.

Applications: Manganese Wear Plates to Dipper Lip, Rebuilding Frogs and Other Track Components, Manganese Steel Crossing, Frog Heel Extension, Steel Mill Crane Wheels, Trunnions

Nominal Composition:

- Alloy Content – 23% (Manganese, Chromium, Nickel, Carbon)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:

- Tensile Strength ............................................. 120 KSI
- Yield Strength ............................................... 70 KSI
- Elongation in 2 in. ........................................... 42%
- Hardness:
  - All weld metal ............................................. 200 BHN
  - Workhardened to ........................................ 500 BHN

NICROMANG PLUS

STOODY NICROMANG PLUS is similar to Stoody NicroMang except it is formulated to produce a higher hardness in the “as-welded” condition. This higher hardness will reduce the amount of initial metal deformation under heavy loads. NicroMang Plus is not recommended for buildup on carbon steels.

Welding Procedures/Characteristics: DC reverse polarity recommended (electrode positive). Use stringer or weave beads 3/8” - 5/8” wide. Weldability is good in the flat position. Multiple layers can be applied without difficulty when proper procedures are followed. Maintain low heat input, do not exceed 500°F interpass temperature.

Applications: Manganese Railroad Frogs and Crossings, Manganese Steel Castings

Nominal Composition:

- Alloy Content – 23% (Manganese, Chromium, Carbon, Molybdenum, Nickel)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:

- All weld metal ............................................. 230 BHN
- Workhardened to ........................................ 55 HRC

---

U.S. Customer Care: 800-426-1888  /  FAX 800-535-0557
Canada Customer Care: 905-827-4515  /  FAX 800-588-1714
GROUP 1: BUILD-UP AND JOINING ALLOYS

B. BUILD-UP AND JOINING OF MANGANESE STEEL

FOUNDRY CO-MANG-O

FOUNDRY CO-MANG-O is a manganese steel wire. It is suitable for multi-layer buildup and has excellent work hardening characteristics. It is usable for austenic manganese steel repair, buildup and joining and provides an excellent color match to the manganese base metal.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads 1/2" to 3/4" wide. Wire extension (arc length) is very important. If it becomes too long, excessive spatter results; if too short, “stubbing” will occur. Limit interpass temperature to 500°F maximum.

Applications: Rock Crushing and Mining, Dredge Pump Parts, Hammer Mill Hammers, Shovel Pads, Crusher Rolls, Jaws, Grizzly Bars, Screens, Grates, Impactor Bars, Manganese Railroad Frogs, Latch Pins

Nominal Composition:
- Alloy Content – 18% (Carbon, Manganese, Molybdenum)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:
- Tensile Strength ................................................... 128 KSI
- Yield Strength ..................................................... 71 KSI
- Elongation in 2 in.................................................42%
- Hardness:
  - As Deposited ...........................................170-210 BHN
  - Workhardened to .....................................350-450 BHN

Part Packaging | Wire Diameter | Shielding Gas | Wire Ext. | Amps | Volts
--- | --- | --- | --- | --- | ---
11847800 | 33# Wire Basket | 1/16 | Open-arc | 200-250 | 25-27
11863600 | Poly Pak | 1/16 | Open-arc | 200-250 | 25-27
11908300 | 60# Coil | 3/32 | Open-arc | 225-275 | 25-27

TRACKWEAR (Formerly S/A Manganese)

TRACKWEAR is a very high strength austenitic manganese containing vanadium developed for the build-up of manganese steel castings. Deposits have a higher initial yield strength than other austenitic manganese steel wires, workhardens much faster and also develops minimal flow and rollover in service.

Welding Procedures/Characteristics: DC reverse polarity recommended. This alloy can be deposited in multiple layers although if build-up of more than a 1/2" is required, NICROMANG would be preferred. Machinability is very poor and deposits can be flame cut. Limit interpass temperature to 500°F maximum.

Applications: Top Layer on Frog Heel Extension, Manganese Insert, Top 2 Layers on Build-up of Manganese Steel Frog Point, Crusher Rolls, Dredge Pump Parts, Dipper Fronts and Teeth, Impact Breaker Bars, Hammer Mill Hammers, Latch Pins, Roll Wobblers and Spindles, Shovel Pads, Crusher Jaws, Railroad Frogs and Crossings

Nominal Composition:
- Alloy Content – 19% (Manganese, Carbon, Vanadium)
- Iron Base

Mechanical Properties Typical Rockwell Hardness:
- Tensile Strength ................................................... 128 KSI
- Yield Strength ..................................................... 85 KSI
- Elongation in 2 in.................................................42%
- Hardness:
  - All weld metal .................................................200 BHN
  - Workhardened to ......................................500 BHN

Part Packaging | Wire Diameter | Shielding Gas | Wire Ext. | Amps | Volts
--- | --- | --- | --- | --- | ---
11821000 | 33# Wire Basket | 1/16 | Open-arc or CO2 | 225-275 | 23-27
61800655 | 60# Coil | 3/32 | Open-arc | 250-300 | 23-27
61800755 | 60# Coil | 7/64 | Open-arc | 200-450 | 23-26
GROUP 1: BUILD-UP AND JOINING ALLOYS

C. BUILD-UP AND JOINING OF BOTH CARBON AND MANGANESE STEELS

STOODY 110 OR 110MC

STOODY 110 is a modified high chromium high manganese steel widely used in the rebuilding of manganese steel parts subject to severe impact loading. This material offers excellent cavitation resistance; good toughness and wear resistance; is sometimes used as the final hardfacing layer in extreme impact situations.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stronger or weave beads 1/2" to 3/4" wide. Deposits cannot be flame cut, are machinable with carbide tools, are non-magnetic and are not recommended for cast iron. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Drive Tumblers, Shovel Pads, Shovel Teeth, Turbine Cone, Wobbler Feeder, Manganese Frogs, Crusher Rolls

Nominal Composition:
Alloy Content – 35% (Chromium, Manganese, Nickel, Silicon, Carbon) Iron Base

Mechanical Properties Typical Rockwell Hardness:
Tensile Strength .................................................... 133 KSI
Yield Strength .................................................... 91.5 KSI
Elongation in 2 in. .................................................... 29%
Hardness: All weld metal ............................................ 18 HRC
Workhardened to ................................................... 55 HRC

STOODY 111-0

STOODY 111-0 is an open arc wire that produces a austenitic chromium manganese steel deposit containing titanium alloy carbides. STOODY 111-0 deposit is used in the rebuilding of manganese steel parts subject to severe impact loading combined with abrasion. The abrasion resistance of STOODY 111-0 deposit is 5-6 times superior to that of an austenitic manganese deposit as measured in the G65 test. This material offers good toughness and wear resistance, and is sometimes used as the final hardfacing layer in extreme impact situations. It can be used on carbon and manganese steels.

Applications: Drive Tumblers, Wobbler Feeders, Turbine Cones, Crusher Rolls, Shovel Pads, Fluid Components

Nominal Composition: Austenitic Chromium Manganese Steel with a high volume of tightly packed titanium alloy carbides.

Typical Deposit Characteristics:
Hardness: As Deposited ............................................ 30 HRC
Work Hardened ................................................... 49 HRC
Abrasion Resistance .............................................. Good
Impact Toughness .................................................. Good
Cross Checks .......................................................... No
Machinable............................................................. Yes
Deposit Layers ...................................................... Up to 3 Layers

STOODY 120

STOODY 120 is a high manganese wire recommended for applications involving severe wear and impact. Deposits are austenitic whether applied to manganese steel or carbon steel. This is an excellent alloy for the rebuilding of crusher rolls, hammers, impactor nuts, cone crusher nuts and railroad track components.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stronger or weave beads. Welding can be done out-of-position with the smaller diameter wires; vertical up requires a wide weave technique. Deposits are non-magnetic, machinable with carbide tools and can be flame cut. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Crusher Hammers Rolls, Impactor Bars and Rotors, Crusher Cone Nuts and Mantles, Track Components

Nominal Composition:
Alloy Content – 25% (Manganese, Chromium, Carbon, Silicon) Iron Base

Mechanical Properties Typical Rockwell Hardness:
Tensile Strength .................................................... 133 KSI
Yield Strength .................................................... 91.5 KSI
Elongation in 2 in. .................................................... 29%
Hardness: All weld metal ............................................ 18 HRC
Workhardened to ................................................... 55 HRC
GROUP 1: BUILD-UP AND JOINING ALLOYS

C. BUILD-UP AND JOINING OF BOTH CARBON AND MANGANESE STEELS

VERSALLOY AP

VERSALLOY is a modified austenitic stainless steel used for joining, rebuilding and/or as an overlay in dissimilar applications involving stainless and low alloy steels. It’s an excellent all-purpose wire used for a wide variety of applications.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. The addition of CO2 shielding gas with the 1/16” diameter wire reduces the amount of spatter and improves the weldability.

Applications: Used for joining stainless steel to other alloys.

Nominal Composition:
Alloy Content – 37% (Chromium, Nickel, Manganese)
Iron Base

Mechanical Properties Typical Rockwell Hardness:
Ultimate Tensile Strength ........................................... 94 KSI
Reduction in area .................................................... 51%
Elongation in 2 in. ................................................... 35%

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11895600</td>
<td>33# WB, LLW</td>
<td>.045</td>
<td>98% Ar/2% O2, or 1/2” - 3/4”</td>
<td>140-220 16-26</td>
</tr>
<tr>
<td>11858700</td>
<td>33# WB, LLW</td>
<td>.023</td>
<td>75% Ar/25% CO2</td>
<td>150-285 20-24</td>
</tr>
</tbody>
</table>

Note: When welding cast iron, always preheat and slow cool. Convex stringer beads desired. Peen after each weld.

Versaloy Ni 55-0/G

Stoody Castweld Ni 55-0 wire is used on worn cast iron parts requiring joining or build-up. It has good tolerance for the high phosphorus often found in cast irons. It works well when welding thick sections, and is also recommended for joining cast iron to dissimilar metals.

Welding Procedures/Characteristics: Must be applied using DC reverse polarity (OCEP). When welding cast iron always grind clean the part, preheat and slow cool. Use stringer bead technique and make short, convex weld beads. Use of the ‘skip welding’ technique is preferred. Peen deposits immediately after welding. Remove slag before re-striking on the previous bead. Addition of CO2 gas will reduce spatter and improves weldability. Can be applied in multiple layers. Composition of this one meets AWS A5.15 NiFeT3-CZ.

Applications: Joining, Build-Up and Repair of Cast Iron Parts, Engine Blocks and Heads, Cast Iron Universal Joints Welding to Steel Drive Shafts, Pump Housings, Assorted Castings

Nominal Composition:
Alloy Content – 59% (Carbon, Manganese, Nickel, Silicon)
GROUP 1: BUILD-UP AND JOINING ALLOYS

CASTWELD Ni 30-O/S
Stoody Castweld Ni 30-O/S open arc wire is used on worn cast iron parts requiring joining or build up. It has good tolerance for the high phosphorus often found in cast irons. Castweld Ni 30-O/S can also be submerged arc welded using a neutral flux.

Applications: Joining, Build up & repair of cast iron parts, Pump housings, Assorted castings

Nominal Composition:
- Carbon, Manganese, Nickel, Silicon, Iron

CASTWELD Ni 30-G
Stoody Castweld Ni 30-G ‘Shielded’ iron-nickel wire is a tubular alloy cored wire for GMAW of cast iron. The tubular wire provides deposition rates equal to that of solid wire at lower amperage. The feature reduces heat input into the work piece.

Stoody Castweld Ni-30-G wire is used on worn cast iron parts requiring joining or build up. It has good tolerance for the high phosphorus often found in cast irons.

Applications: Joining, Build up & repair of cast iron parts, Pump housings, Assorted castings

Nominal Composition:
- Carbon, Manganese, Nickel, Phosphorus, Sulfer, Silicon, Iron

CASTWELD Ni 99-G
Stoody Castweld Ni-99-G ‘Shielded’ nickel wire is a tubular alloy cored wire for GMAW of cast iron. The tubular wire provides deposition rates equal to that of solid wire at lower amperage. The feature reduces heat input into the work piece.

The composition of this wire meets the chemistry requirement of AWS A5.15 ENi-CI coated electrodes, although the carbon content of the wire is lower than that of the coated electrode. It can be used for some of the same applications as ENi-CI electrodes. The GMAW weld process, with CO2 requires little or no part cleaning as with SMAW coated electrodes

Applications: Joining, build up & repair of cast iron parts, Engine blocks & heads, Cast iron universal joints welding to steel drive shafts, Pump housings, Assorted castings

Nominal Composition:
- Carbon, Manganese, Silicon, Copper, Nickel
### STOODY SUPER BUILD-UP

STOODY SUPER BUILD-UP is used both as a build-up and hardfacing material because it has good compressive strength, hardness, and wear resistance. It is not intended to be used as an underbase for subsequent hardfacing. When a shielding gas is used, machinability is very good with carbide tools.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out-of-position. The addition of CO₂ shielding gas with the 1/16” diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

**Applications:** Gear Teeth, Sprockets, Steel Shovel Pads, Overlaying Carbon Steel Shafts

**Nominal Composition:**
- Alloy Content – 5% (Chromium, Manganese, Molybdenum, Silicon, Carbon)
- Iron Base

**STOODY 105-G & 105-O**

STOODY 105-G (GMAW) and 105-O (FCAW) are a low alloy wire developed for the rebuilding of carbon and low alloy parts used in applications involving metal-to-metal wear. Requires carbide tools for machining. Good for hot wear application up to 600°F.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out-of-position. The addition of CO₂ shielding gas with the 1/16” diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

**Applications:** Tractor Rollers, Undercarriage parts, Shovel Idlers and Rollers, Shovel House Rolls (Hook Rolls), Top Carrier Rolls, Crane Wheels, Mine Car Wheels

**Nominal Composition:**
- Alloy Content – 7% (Chromium, Manganese, Silicon, Molybdenum, Carbon)
- Iron Base

**STOODY 102**

STOODY 102 has an all weld metal composition and physical properties that are very similar to those of H-12 tool steel. Good for hot wear application up to 1000°F. Has very good compressive strength and abrasion resistance. Requires carbide tools for machining.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied out-of-position. The addition of CO₂ shielding gas with the 1/16” diameter wire reduces the amount of spatter and improves the weldability. Multiple layers can be applied without difficulty when proper preheat and interpass temperatures are maintained.

**Applications:** Cable Sheaves, Hot and Cold Shear Blades, Forging Dies, Drillpipe Hardbanding, Crane Wheels, Hot Work Extrusion Rolls

**Nominal Composition:**
- Alloy Content – 14% (Chromium, Manganese, Molybdenum, Tungsten Carbon, Vanadium)
- Iron Base

---

### Welding Procedures/Characteristics

**DC reverse polarity**

- Recommended for stringer or weave beads.
- Improves weldability and reduces spatter.
- Can be applied out-of-position.

**Shielding Gas:**

- CO₂ (98% Ar/2% O₂) or (75% Ar/25% CO₂)
- Improves weldability and reduces spatter.

**Welding Parameters:**

- **Amps:** 250-350
- **Volts:** 24-28

---

### Mechanical Properties

**Typical Rockwell Hardness:**

- **Base Metals:** 41-46 HRC
- **Layers:** 2
- **Hardness:** 35-40 HRC

---

### Welding Parameters

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11428600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11428600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11837900</td>
<td>50# PP</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11837900</td>
<td>50# PP</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1144100</td>
<td>50# PP</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1144100</td>
<td>50# PP</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11428800</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11428800</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11428800</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>11428800</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>None</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
</tbody>
</table>

---

### STOODY SUPER BUILD-UP

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
</tbody>
</table>

---

### STOODY 102

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
<tr>
<td>1142600</td>
<td>33# WB</td>
<td>.045</td>
<td>1.6</td>
<td>98% Ar/2% O₂</td>
<td>3/4’’</td>
<td>200-250</td>
</tr>
</tbody>
</table>
GROUP 2: METAL TO METAL WEAR

STOODY RAIL END 932

STOODY Rail End 932 semi-automatic open arc wire is designed specifically for repair of carbon steel railroad track components. It has excellent tensile strength to maintain the desired rail dimensions. Rail End 932 is formulated for welding on high carbon steel rails and frogs and is not intended for use on manganese steel.

Welding Procedures/Characteristics: DC reverse polarity recommended, using either stringer or weave beads. Weldability is very good and can be applied in multiple layers with proper preheat and interpass temperature procedures. Designed for high carbon steel rails and frogs, not for use on manganese steel.

Applications: Rail Ends, Wheel Burns, Frogs, Crossings

Nominal Composition:
Alloy Content – 5% (Carbon, Chromium, Manganese, Molybdenum, Silicon)
Iron Base

Deposit Characteristics:
Impact Resistance: Moderate
Machinability: Yes
Deposit Layers: Multiple
Surface Cross Checks: No
Magnetic: Yes

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11802500</td>
<td>33# WB</td>
<td>1/16</td>
<td>Open-arc</td>
<td>1/2”</td>
<td>125-180</td>
<td>18-20</td>
</tr>
<tr>
<td>11887000</td>
<td>25# FS</td>
<td>5/64</td>
<td>None</td>
<td>1”-1/4”</td>
<td>250-350</td>
<td>24-26</td>
</tr>
<tr>
<td>11950300</td>
<td>33# WB</td>
<td>3/32</td>
<td>None</td>
<td>1”-1/2”</td>
<td>300-400</td>
<td>26-28</td>
</tr>
</tbody>
</table>

STOODY M7-G

STOODY M7-G is a molybdenum high speed tool similar to AISI M7 grade. It is a martensitic alloy with small sized precipitated carbides. This material is characterized by a high hardenability (58 to 66 HRC) and excellent wear resistance. Can be used at elevated temperatures up to 1000°F, with condition of moderate thermal shock.

Welding Procedures/Characteristics: DC reverse polarity (DCEP) using 75% Argon/25% CO2 shielding gas. Preheat high speed tool steels from 750°F to 1200°F. On other steels, preheat and post heat accordingly. Deposits should be limited to 2 or 3.

Applications: Hot and Cold Dies, Blanking Dies, Piercing Dies, Tire Shredders, Cutting and Shaving Knives, Shear Blades, Cladding High Wear Areas on Equipment and Building up Composite dies and Tools.

Nominal Composition:
Alloy Content – 19% (Carbon, Manganese, Silicon, Chromium, Molybdenum, Tungsten, Vanadium)
Iron Base

Deposit Characteristics:
Abrasion Resistance: Good
Impact Resistance: Good
Deposit Layers: 2-3
Hardness: 58-66 HRC

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11810800</td>
<td>33# WB</td>
<td>.045</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”</td>
<td>125-180</td>
<td>18-20</td>
</tr>
<tr>
<td>11849400</td>
<td>50# PP</td>
<td>.045</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”</td>
<td>125-180</td>
<td>18-20</td>
</tr>
<tr>
<td>11868500</td>
<td>33# WB</td>
<td>1/16</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”-3/4”</td>
<td>220-300</td>
<td>24-28</td>
</tr>
<tr>
<td>11834200</td>
<td>50# PP</td>
<td>1/16</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”-3/4”</td>
<td>220-300</td>
<td>24-28</td>
</tr>
<tr>
<td>11917900</td>
<td>33# WB</td>
<td>5/64</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”-3/4”</td>
<td>220-300</td>
<td>24-28</td>
</tr>
<tr>
<td>11925500</td>
<td>400# NTP</td>
<td>1/6</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”-3/4”</td>
<td>220-300</td>
<td>24-28</td>
</tr>
<tr>
<td>11916500</td>
<td>33# WB</td>
<td>5/32</td>
<td>75%Ar / 25% CO2</td>
<td>1/2”-3/4”</td>
<td>220-300</td>
<td>24-28</td>
</tr>
</tbody>
</table>
GROUP 2: METAL TO METAL WEAR

STOODY 964-G (PATENT PENDING)

Stoody 964-G deposit is a specially formulated wear resistant alloy which produces a uniform distribution of small primary carbides in a martensitic matrix. The small carbides provide greatly improved wear resistance over martensitic steel, many tool steels, and some conventional chromium carbide alloys. 964-G possesses excellent resistance to impact and plastic deformation. Deposits are crack free on carbon 300 stainless and manganese steels. Other base metals should be preheated and post heated appropriately. The material is characterized by a high hardness and excellent wear resistance. 964-G is recommended for parts where cross checking is undesirable. 964-G offers improved weldability over chromium carbide and many other tool steel welding wires.

Applications: Slitter Blades, Auger Flights, Rendering Screws, Tamper Tools, Extruder Screws, Tamper Feet, Tillage Tools, Dredge parts, Drag Line Bucket Lips

Alloy Type: Small Primary Carbides in a Martensitic Matrix

STOODY 964 AP-G (PATENT PENDING)

Stoody 964 AP-G is a gas shielded, flux cored, all position, general purpose, hardfacing wire. The deposit is a specially formulated wear resistant alloy which produces a uniform distribution of small primary carbides in a martensitic matrix. The small carbides provide greatly improved wear resistance over martensitic steel, many tool steels, and some conventional chromium carbide alloys. 964 AP-G possesses excellent resistance to impact and plastic deformation. Deposits are crack free on carbon 300 stainless and manganese steels. Other base metals should be preheated and post heated appropriately. The material is characterized by a high hardness and excellent wear resistance. 964 AP-G is recommended for parts where cross checking is undesirable. 964 AP-G offers improved weldability over chromium carbide and many other tool steel welding wires.

Applications: Slitter Blades, Auger Flights, Rendering Screws, Tamper Tools, Extruder Screws, Tamper Feet, Tillage Tools, Dredge Parts, Drag Line Bucket Lips

STOODY 966-G (PATENT PENDING)

Stoody 966-G is a molybdenum-tungsten high speed tool steel with a high concentration of uniformly distributed small primary carbides. The presence of the small carbides greatly improve the wear resistance when compared to M-7 tool steel. Stoody 966-G provides wear resistance greater than or equal to that of conventional chromium carbides but does not cross check when proper preheat and welding procedures are used. It is recommended for parts where cross checking is undesirable. It can be applied crack free without preheat on carbon, 300 series stainless and manganese steels, when proper preheat and interpass temperatures are maintained. Post weld heat treatment may be required for other base metals. The deposit will crack on cast irons. The material is characterized by a high hardness (62-67).

Applications: Tillage Tools, Tire Shredders, Hard Banding, Cutting and Shaving knives, Extruder Screws, Shear Blades, Blanking Dies, Piercing Dies, Excellent for cladding high wear areas on equipment

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness: 60-65 HRC
- Impact Resistance: Good
- Deposit Layers: 2 Max
- Surface Cross Checks: None
- Magnetic: on Stainless Steel: Slightly on Carbon Steel: Yes on Manganese Steel: Yes

Nominal Composition:
- Small Primary Carbides in a Martensitic Matrix

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness: 58-64 HRC
- Impact Resistance: Good
- Deposit Layers: 2 Max
- Surface Cross Checks: None
- Magnetic: on Stainless Steel: Slightly on Carbon Steel: Yes on Manganese Steel: Yes

Nominal Composition:
- Small Primary Carbides in a Martensitic Matrix

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness: 62-67 HRC
- Impact Resistance: Moderate
- Deposit Layers: 2
- Surface Cross Checks: None
- Magnetic: on Stainless Steel: Slightly on Carbon Steel: Yes on Manganese Steel: Yes

Nominal Composition:
- Small Primary Carbides in a high speed tool steel matrix

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness: 98/2 Ar-02
- Impact Resistance: Moderate
- Deposit Layers: 2
- Surface Cross Checks: None
- Magnetic: on Stainless Steel: Slightly on Carbon Steel: Yes on Manganese Steel: Yes

Table:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11965300</td>
<td>33# WB</td>
<td>.045</td>
<td>75Ar/25CO2</td>
<td>1/2-3/4&quot;</td>
<td>125-230</td>
<td>18-22</td>
<td></td>
</tr>
<tr>
<td>11965800</td>
<td>33# WB</td>
<td>1/16</td>
<td>75Ar/25CO2</td>
<td>1/2-3/4&quot;</td>
<td>275-500</td>
<td>18-22</td>
<td></td>
</tr>
<tr>
<td>11970600</td>
<td>33# WB</td>
<td>.045</td>
<td>75Ar/25CO2</td>
<td>1/2-3/4&quot;</td>
<td>140-225</td>
<td>25-29</td>
<td></td>
</tr>
<tr>
<td>11983700</td>
<td>33# WB</td>
<td>1/16</td>
<td>75Ar/25CO2</td>
<td>1/2-3/4&quot;</td>
<td>180-250</td>
<td>25-29</td>
<td></td>
</tr>
<tr>
<td>11965900</td>
<td>33# WB</td>
<td>.045</td>
<td>75Ar/25CO2</td>
<td>1/2-3/4&quot;</td>
<td>220-250</td>
<td>19-21</td>
<td></td>
</tr>
<tr>
<td>11985200</td>
<td>50# PP</td>
<td>1/16</td>
<td>98/2 Ar-02</td>
<td>5/8-3/4&quot;</td>
<td>250-300</td>
<td>17-24</td>
<td></td>
</tr>
</tbody>
</table>
GROUP 3: Metallic to Earth for Moderate to Severe Impact and Moderate to Severe Abrasion

STOODY 965-G & 965-O

STOODY 965-G can be categorized as a general purpose hardfacing alloy that offers a good balance of impact and abrasion resistance. Analysis and properties are very similar to STOODY SELF-HARDENING. Applications would include both metal-to-metal and metal-to-earth. Deposits are martensitic, forgeable, and are not readily machinable. Can be applied to carbon, low alloy and manganese steel.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Weldability is very good in flat and horizontal applications. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

Applications: Tillage Tools, Drag Line Bucket Lips, Tamper Feet, Chisel Plows, Dredge Parts, Extruded Screws, Muller Tires

Nominal Composition:
- Alloy Content – 10% (Chromium, Manganese, Silicon, Carbon)
- Iron Base

STOODY 965 AP-G

STOODY 965 AP-G is a gas-shielded, flux cored, all position, general purpose hardfacing alloy that offers a good balance of impact and abrasion resistance. It can be used in both metal-to-metal and metal-to-earth applications. Deposits are forgeable but not readily machinable. STOODY 965 AP-G has a smooth semi-spray transfer and can be applied to carbon, low alloy, and manganese steels. It is magnetic on carbon and low alloy steels but not on manganese steels. Analysis and properties are similar to STOODY Self Hardening covered electrode.

Welding Procedures/Characteristics: DC reverse polarity recommended using 75 Argon/25 CO2 shielding gas, this wire has excellent out-of-position characteristics in the vertical, overhead and horizontal positions. It has a smooth semi-spray transfer and can be applied to carbon and low alloy steels.

Applications: Tillage Tools, Dredge Parts, Sliding Metal Parts, Tire Shredder Knives, Drag Line Bucket Lips, Extruded Screws, Tamper Feet, Churn Drills, Muller Tires

Nominal Composition:
- Alloy Content – 11% (Carbon, Chromium, Manganese, Molybdenum, Silicon)
- Iron Base

Deposit Characteristics:
- Abrasion Resistance: Good
- Impact Resistance: Good
- 2 Layer Hardness: 57-62 HRC

STOODY 965-G

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11929300</td>
<td>5# PS-LLW</td>
<td>.035</td>
<td>75/25, CO2</td>
<td>15-20</td>
</tr>
<tr>
<td>11142300</td>
<td>10# PS</td>
<td>.045</td>
<td>98/2 or 75/25</td>
<td>25-29</td>
</tr>
<tr>
<td>11423100</td>
<td>33# WB</td>
<td>.045</td>
<td>98/2 or 75/25</td>
<td>25-29</td>
</tr>
<tr>
<td>11501500</td>
<td>33# WB</td>
<td>1/16</td>
<td>98/2 or 75/25</td>
<td>27-31</td>
</tr>
<tr>
<td>11823900</td>
<td>50# PP</td>
<td>1/16</td>
<td>98/2 or 75/25</td>
<td>27-31</td>
</tr>
<tr>
<td>11864500</td>
<td>200# HP</td>
<td>1/16</td>
<td>98/2 or 75/25</td>
<td>27-31</td>
</tr>
<tr>
<td>11875500</td>
<td>400# NTP Drum</td>
<td>1/16</td>
<td>98/2 or 75/25</td>
<td>27-31</td>
</tr>
</tbody>
</table>

STOODY 965-O

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11427100</td>
<td>33# WB</td>
<td>1/16</td>
<td>None or CO2</td>
<td>27-31</td>
</tr>
<tr>
<td>11427200</td>
<td>10# PS</td>
<td>1/16</td>
<td>None or CO2</td>
<td>27-31</td>
</tr>
<tr>
<td>11427100</td>
<td>50# PP</td>
<td>1/16</td>
<td>None or CO2</td>
<td>27-31</td>
</tr>
<tr>
<td>11427000</td>
<td>50# PP</td>
<td>1/16</td>
<td>None or CO2</td>
<td>27-31</td>
</tr>
</tbody>
</table>

Mechanical Properties Typical Rockwell Hardness:
- Base Metals: 20% C
- Layers: 2
- Hardness: 56-60 HRC
**GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION**

**STOODY 117**

STOODY 117 gives a semi-austenitic matrix with uniformly dispersed chromium carbides that provides a deposit with very good impact, abrasion and anti-galling properties. Frequently used as both a build-up and hardfacing alloy on manganese and low alloy materials.

**Welding Procedures/Characteristics:** DC reverse polarity recommended using stringer beads and fast travel. Light cross-checking pattern develops which allows this material to be applied in multiple layers without difficulty. Weldability is very good and deposits are not machinable.

**Applications:** Crusher Rolls, Hammers, Bell Type Gyrotrary Cones, Bucket Lips, Mantles, Dredge pump shells

**Nominal Composition:**
- Alloy Content – 17% (Chromium, Carbon, Molybdenum, Manganese, Silicon, Copper)
- Iron Base

**Mechanical Properties Typical Rockwell Hardness:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packing</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11809400</td>
<td>33# WB</td>
<td>1/16</td>
<td>1.6</td>
<td>1”-1 1/4”</td>
<td>190-230</td>
<td>24-25</td>
</tr>
<tr>
<td>11835900</td>
<td>60# Coil</td>
<td>3/32</td>
<td>2.4</td>
<td>None</td>
<td>175-225</td>
<td>26-28</td>
</tr>
<tr>
<td>11289100</td>
<td>60# Coil</td>
<td>7/64</td>
<td>2.5</td>
<td>None</td>
<td>200-300</td>
<td>36-35</td>
</tr>
<tr>
<td>11320600</td>
<td>110# Qtr pak</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
<td>1”-1/4”</td>
<td>300-300</td>
</tr>
<tr>
<td>11289000</td>
<td>200# Half Pak</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
<td>1”-1/4”</td>
<td>300-300</td>
</tr>
<tr>
<td>11832400</td>
<td>500# POP</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
<td>1”-1/4”</td>
<td>300-300</td>
</tr>
</tbody>
</table>

**STOODY 121**

STOODY 121 gives good resistance to corrosion, heat, and galling and can be applied in multiple layers crack free. Deposits are machinable with carbide tools and will polish to a mirror finish in service. Can be applied to manganese, carbon and low alloy steels. Recommended for parts where low coefficient of friction is desirable and where cross checking is undesirable.

**Welding Procedures/Characteristics:** DC reverse polarity recommended using either stringer or weave beads. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

**Applications:** Hog Hammers, Chipper Knife Components, Debarking Hammers, Log Anvils, Rendering Flights

**Nominal Composition:**
- Alloy Content – 35% (Chromium, Nickel, Carbon, Manganese, Silicon, Molybdenum)
- Iron Base

**Mechanical Properties Typical Rockwell Hardness:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packing</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11867600</td>
<td>33# WB</td>
<td>0.045</td>
<td>1.2</td>
<td>98%Ar 2%O2</td>
<td>1/2-3/4”</td>
<td>175-225</td>
</tr>
<tr>
<td>11319000</td>
<td>33# WB</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-arc or O2</td>
<td>1/2-1”</td>
<td>175-350</td>
</tr>
<tr>
<td>11288200</td>
<td>50# Poly Pak</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-arc or O2</td>
<td>1/2-1”</td>
<td>175-350</td>
</tr>
<tr>
<td>11288100</td>
<td>60# Coll</td>
<td>3/32</td>
<td>2.4</td>
<td>Open-arc</td>
<td>3/4-11/4”</td>
<td>200-350</td>
</tr>
</tbody>
</table>

**STOODY 133**

STOODY 133 offers good resistance to corrosion, heat, and galling and can be applied in multiple layers crack free. Deposits are machinable with carbide tools and will polish to a mirror finish in service. Can be applied to carbon, low alloy and manganese steels.

**Welding Procedures/Characteristics:** DC reverse polarity recommend using either stringer or weave beads. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves the weldability.

**Applications:** Scraper Sides, Scraper Cutters, Vibrator Ditcher Shank, Post Hole Augers, Augers, Pug Mill Paddles, Tamper Tools

**Nominal Composition:**
- Alloy Content – 21% (Chromium, Carbon, Manganese, Silicon)
- Iron Base

**Mechanical Properties Typical Rockwell Hardness:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packing</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11423000</td>
<td>10# PS</td>
<td>0.045</td>
<td>1.2</td>
<td>98% or 75%</td>
<td>1/2-3/4”</td>
<td>175-200</td>
</tr>
<tr>
<td>11423000</td>
<td>33# WB</td>
<td>0.045</td>
<td>1.2</td>
<td>98% or 75%</td>
<td>1/2-3/4”</td>
<td>175-200</td>
</tr>
<tr>
<td>11420700</td>
<td>10# PS</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-arc or C2</td>
<td>1/2-1”</td>
<td>205-255</td>
</tr>
<tr>
<td>11408300</td>
<td>33# WB</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-arc or C2</td>
<td>1/2-1”</td>
<td>205-255</td>
</tr>
<tr>
<td>11420600</td>
<td>50# PP</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-arc or C2</td>
<td>1/2-1”</td>
<td>205-255</td>
</tr>
<tr>
<td>11088000</td>
<td>60# Coll</td>
<td>3/32</td>
<td>2.4</td>
<td>Open-arc</td>
<td>3/4-11/4”</td>
<td>200-350</td>
</tr>
<tr>
<td>11087700</td>
<td>200# HP</td>
<td>3/32</td>
<td>2.4</td>
<td>Open-arc</td>
<td>3/4-11/4”</td>
<td>200-350</td>
</tr>
<tr>
<td>11000500</td>
<td>60# Coll</td>
<td>7/64</td>
<td>2.8</td>
<td>Open-arc</td>
<td>3/4-11/4”</td>
<td>200-350</td>
</tr>
<tr>
<td>11143700</td>
<td>100# GP</td>
<td>7/64</td>
<td>2.8</td>
<td>Open-arc</td>
<td>3/4-11/4”</td>
<td>200-350</td>
</tr>
</tbody>
</table>
**GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION**

**STOODY 131**

STOODY 131 is recommended for parts where a low coefficient of friction and minimum cross checking are desirable. Deposits provide excellent bearing surfaces on friction type guides, cement mill gudgeons, etc. Can be applied to carbon, low alloy and manganese steels. Deposits are not machinable or forgeable.

**Welding Procedures/Characteristics:** DC reverse polarity recommended (downhand only) using either stringer or weave beads. Can be applied out-of-position. Generally limited to 2 layers although multiple layers can be applied with proper procedures (fast travel and preheat control).

**Applications:** Gyro Cross Heads, Guides, Dredge Parts, Pumps

**Nominal Composition:**

<table>
<thead>
<tr>
<th>Alloy Content</th>
<th>Chromium, Molybdenum, Carbon, Silicon, Manganese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Base</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Properties Typical Rockwell Hardness:**

- Hardness: 2 Layers on mild steel..........................40-45 HRC
- Hardness: 2 Layers on Mang. steel..........................37-40 HRC

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>in.</td>
<td>mm</td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>1164900</td>
<td>33# WB</td>
<td>1/16</td>
<td>1.6</td>
<td>Open-air</td>
</tr>
<tr>
<td>11000700</td>
<td>60# Coil</td>
<td>7/64</td>
<td>2.8</td>
<td>Open-air</td>
</tr>
<tr>
<td>11143800</td>
<td>110# QP</td>
<td>7/64</td>
<td>2.8</td>
<td>Open-air</td>
</tr>
<tr>
<td>11141400</td>
<td>200# HP</td>
<td>7/64</td>
<td>2.8</td>
<td>Open-air</td>
</tr>
</tbody>
</table>

**STOODY 135**

STOODY 135 open arc wire is a high chromium-carbon, iron based tubular alloy wire recommended for metal-to-earth applications subject to severe abrasion. It develops a tight cross-checking pattern (3/8"-1/2") and is frequently used in crushing and construction application. It can be applied to carbon, low alloy, or manganese steels and can be used in hot wear applications up to 900°F. Deposits cannot be machined or forged.

**Welding Procedures/Characteristics:** DC reverse polarity recommended, using either stringer or weave beads. Can be applied out-of-position. Generally limited to 2 layers although multiple layers can be applied with proper procedures (fast travel and preheat control).

**Applications:** Scraper sides, cutters and blades, Shovel bucket tooth adapters, Tillage tools, augers and auger flights, Crushing and grinding equipment, Ripper shanks and teeth, Bucket sides and lips, Conveyor screws, Fan Blades

**Nominal Composition:**

<table>
<thead>
<tr>
<th>Alloy Content</th>
<th>Chromium, Molybdenum, Carbon, Silicon, Manganese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Base</td>
<td></td>
</tr>
</tbody>
</table>

**Deposit Characteristic:**

- Abrasion Resistance.................................Excellent
- Impact Resistance .........................................Low
- Hardness 2 Layers 1020 Carbon Steel...............54-62 HRC

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>in.</td>
<td>mm</td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>11862600</td>
<td>33# WB</td>
<td>1/16</td>
<td>1.6</td>
<td>None</td>
</tr>
<tr>
<td>11835100</td>
<td>50# PP</td>
<td>1/16</td>
<td>1.6</td>
<td>None</td>
</tr>
</tbody>
</table>

**STOODY 134**

STOODY 134 is a high chromium-carbon, iron alloy recommended for applications subject to severe abrasion, moderate impact and high compressive loads. Deposits are generally limited to 2 layers, develop cross checks and are not machinable or forgeable. Can be used in hot wear applications up to 900°F.

**Welding Procedures/Characteristics:** DC reverse polarity recommended using either stringer or weave beads. Can be applied to low alloy and manganese steels. Recommended for downhand welding only.

**Applications:** Shovel Bucket Tooth Adapters, Vertical Screen Deflector Grates, Grizzly Bars, Gyro Cross Heads or Concaves, Hammer Mill Rotor Discs, Sizing/Scalping Screens, Crushing Equipment (Rolls, Hammers, Impellers), Bucket Teeth, Lips, Rippers

**Nominal Composition:**

<table>
<thead>
<tr>
<th>Alloy Content</th>
<th>Chromium, Carbon, Molybdenum, Manganese, Silicon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Base</td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical Properties Typical Rockwell Hardness:**

- Hardness: 1 Pass on mild steel.........................42-46 HRC
- Hardness: 2 Passes on mild steel......................56-60 HRC
- Hardness: 1 Pass on Mang. steel.......................43-47 HRC
- Hardness: 2 Passes on Mang. steel.....................45-50 HRC

- On carbon or low alloy steel: Slightly magnetic

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>in.</td>
<td>mm</td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>11000900</td>
<td>60# Coil</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
</tr>
<tr>
<td>11143880</td>
<td>110# QP</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
</tr>
<tr>
<td>11141500</td>
<td>200# HP</td>
<td>7/64</td>
<td>2.8</td>
<td>None</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 964-G (PATENT PENDING)

Stoody 964-G deposit is a specially formulated wear resistant alloy which produces a uniform distribution of small primary carbides in a martensitic matrix. The small carbides provide greatly improved wear resistance over martensitic steel, many tool steels, and some conventional chromium carbide alloys. 964-G possesses excellent resistance to impact and plastic deformation. Deposits are crack free on carbon 300 stainless and manganese steels. Other base metals should be preheated and post heated appropriately. The material is characterized by a high hardness and excellent wear resistance. 964-G is recommended for parts where cross checking is undesirable. 964-G offers improved weldability over chromium carbide and many other tool steel welding wires.

Applications: Slitter Blades, Auger Flights, Rendering Screws, Tamper Tools, Extruder Screws, Tamper Feet, Tillage Tools, Dredge parts, Drag Line Bucket Lips

Alloy Type: Small Primary Carbides in a Martensitic Matrix

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness HRC: 60-65
- Impact Resistance: Good
- Deposit Layers: 2 Max
- Surface Cross Checks: None
- Magnetic:
  - on Stainless Steel: Slightly
  - on Carbon Steel: Yes
  - on Manganese Steel: Yes

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11965300</td>
<td>33# WB</td>
<td>.045</td>
<td>75/25Ar-CO2</td>
<td>1/2&quot;-3/4&quot; 120-210 18-22</td>
</tr>
<tr>
<td>11965800</td>
<td>33# WB</td>
<td>1/16</td>
<td>75/25Ar-CO2</td>
<td>1/2&quot;-3/4&quot; 275-500 18-22</td>
</tr>
</tbody>
</table>

STOODY 964 AP-G (PATENT PENDING)

Stoody 964 AP-G is a gas shielded, flux cored, all position, general purpose, hardfacing wire. The deposit is a specially formulated wear resistant alloy which produces a uniform distribution of small primary carbides in a martensitic matrix. The small carbides provide greatly improved wear resistance over martensitic steel, many tool steels, and some conventional chromium carbide alloys. 964 AP-G possesses excellent resistance to impact and plastic deformation. Deposits are crack free on carbon 300 stainless and manganese steels. Other base metals should be preheated and post heated appropriately. The material is characterized by a high hardness and excellent wear resistance. 964 AP-G is recommended for parts where cross checking is undesirable. 964 AP-G offers improved weldability over chromium carbide and many other tool steel welding wires.

Applications: Slitter Blades, Auger Flights, Rendering Screws, Tamper Tools, Extruder Screws, Tamper Feet, Tillage Tools, Dredge Parts, Drag Line Bucket Lips

Alloy Type: Small Primary Carbides in a Martensitic Matrix

Deposit Characteristics:
- Abrasion Resistance: Excellent
- Hardness HRC: 58-64
- Impact Resistance: Good
- Deposit Layers: 2 Max
- Surface Cross Checks: None
- Magnetic:
  - on Stainless Steel: Slightly
  - on Carbon Steel: Yes
  - on Manganese Steel: Yes

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11970600</td>
<td>33# WB</td>
<td>.045</td>
<td>75Ar/25CO2</td>
<td>1/2&quot;-3/4&quot; 140-225 25-29</td>
</tr>
<tr>
<td>11983700</td>
<td>33# WB</td>
<td>1/16</td>
<td>75Ar/25CO2</td>
<td>1/2&quot;-3/4&quot; 180-250 25-29</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 100HC

STOODY 100HC is a high chromium-iron alloy recommended for applications subject to severe abrasion and moderate impact and heat. Develops very tight cross checking pattern and is frequently used in crushing applications. Generally limited to 2 layers although in the rebuilding of coal pulverizer rolls multiple layers can be applied using specific welding procedures. Deposits are not machineable or forgeable and can be used in hot wear applications up to 900°F.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Increased deposition can be achieved using straight polarity but weld soundness will suffer. Can be applied to carbon, low alloy, and manganese steels. Recommended for downhand welding only. When multiple layers are to be run, stringer beads must be run and deposit must have tight (3/8”-1/2”) cross checking pattern in order to be successful.

Applications: Gyratory Mantles, Cage Pins, Scrubbers, Crusher Rolls

Nominal Composition:
Alloy Content – 34% (Chromium, Carbon, Manganese, Silicon, Molybdenum)
Iron Base

Mechanical Properties Typical Rockwell Hardness:
Hardness:
2 Passes on mild steel................. 58-62 HRC
2 Passes on Mang. steel............. 51-55 HRC

On carbon or low alloy steel: Slightly magnetic
On Mang. steel: Non-magnetic

Part Number Packaging Wire Diameter Wire Ext. Shielding Gas in. mm in. Volts
11240700 2WF PS 3/32 2.4 None 3/4”-1 1/16” 200-400 26-30
11312400 6WF Coll 3/32 2.4 None 3/4”-1 1/16” 200-400 26-30
11001000 6WF Coll 7/64 2.8 None 3/4”-1 1/16” 200-400 26-30
11141100 11WF QP 7/64 2.8 None 3/4”-1 1/16” 200-400 26-30
11141100 20WF HP 7/64 2.8 None 3/4”-1 1/16” 200-400 26-30
11235400 50WF POP 7/64 2.8 None 3/4”-1 1/16” 200-400 26-30
11867100 11WF QP 1/8 3.2 None 1 1/4”-1 1/2” 400-550 31-34
11807700 50WF POP 1/8 3.2 None 1 1/4”-1 1/2” 400-550 31-34
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 101HC
STOODY 101HC is a high chromium-iron alloy recommended for applications subject to severe abrasion and moderate impact and heat. Develops very tight cross checking pattern and is frequently used for applications involving severe metal-to-earth abrasion. Generally limited to 2 layers. Deposits are not machinable or forgeable and can be used in hot wear applications up to 900°F.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Can be applied to carbon, low alloy, and manganese steels. The small diameter (.045" and 1/16") wires can be run out of position using relatively fast travel speeds and no oscillation. The addition of CO2 shielding gas with the 1/16" diameter wire reduces the amount of spatter and improves its weldability for out of position work.

Applications: Scooper Sides, Cutters, Blades, Ripper Shanks and Teeth, Shovel Bucket Tooth Adapters, Clam Shell Bucket, Bucket Sides and Lips, Tillage Tools, Augers and Auger Flights, Conveyor Screws

Nominal Composition: Alloy Content – 26% (Chromium, Carbon, Manganese, Silicon)
Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>11882000</td>
<td>5# PS-LiW</td>
<td>.035</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11934000</td>
<td>25# WB</td>
<td>.035</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11440300</td>
<td>10# PS</td>
<td>.045</td>
<td>19% O2</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11436300</td>
<td>33# WB</td>
<td>.045</td>
<td>19% O2</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11874600</td>
<td>50# PP</td>
<td>.045</td>
<td>19% O2</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11891500</td>
<td>30# NTB</td>
<td>.045</td>
<td>19% O2</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11421000</td>
<td>10# PS</td>
<td>1/16</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11344700</td>
<td>33# WB</td>
<td>1/16</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11348800</td>
<td>50# PS</td>
<td>11/16</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11865500</td>
<td>33# WB</td>
<td>5/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11352500</td>
<td>50# PP</td>
<td>6/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11901700</td>
<td>50# POP</td>
<td>5/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11849200</td>
<td>110# POP</td>
<td>5/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11862500</td>
<td>60# coil</td>
<td>7/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11861300</td>
<td>200# half Pak</td>
<td>7/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11873200</td>
<td>50# POP</td>
<td>7/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
</tbody>
</table>

STOODY 100HD
STOODY 100HD is a high chromium-iron alloy developed for high deposition rate hardfacing of large surface areas for extreme abrasion resistance. It develops a very tight cross checking pattern. Stoody 100HD is generally limited to 3 layers. Deposits are not machinable or forgeable and can be used in hot wear applications up to 900°F.

Welding Procedures/Characteristics: DC reverse polarity (electrode positive) recommended using stringer or weave beads. Multiple layers require stringer bead technique and deposits must show a tight (3/8" - 1/2") cross check pattern.

Applications: Wear Plate Manufacturing, Crusher Roll Rebuilding, Large Tillage Tool Repair, Coal Pulverizer Rolls and Grinding Rings.

Nominal Composition: Alloy Content – 36.5% (Chromium, Carbon, Manganese, Silicon)
Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>11905800</td>
<td>75# POP</td>
<td>7/64</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11484500</td>
<td>50# POP</td>
<td>7/64</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11501100</td>
<td>200# half Pak</td>
<td>7/64</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11848200</td>
<td>60# coil</td>
<td>7/64</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11489700</td>
<td>500# POP</td>
<td>1/8</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11438700</td>
<td>500# POP</td>
<td>1/8</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11859600</td>
<td>60# coil</td>
<td>1/8</td>
<td>97.5% CO2 or 98% Ar</td>
<td>Open-arc</td>
</tr>
</tbody>
</table>

STOODY 100XHC
STOODY 100XHC is a high chromium-iron alloy recommended for applications subject to severe abrasion and moderate impact and heat. Develops very tight cross checking pattern and is frequently used in crushing applications. Generally limited to 2 layers. Deposits are not machinable or forgeable and can be used in hot wear applications up to 900°F.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Increased deposition can be achieved using straight polarity but weld soundness will suffer. Can be applied to carbon, low alloy, and manganese steels. Recommended for downhand welding only.

Applications: Backhoe Sidecutters, Clinker Grinding Rolls, Catalyst Piping, Crushers, Tool Joints

Nominal Composition: Alloy Content – 34% (Chromium, Carbon, Manganese, Silicon, Molybdenum)
Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wire Ext.</td>
</tr>
<tr>
<td>11370000</td>
<td>60# coil</td>
<td>7/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
<tr>
<td>11384700</td>
<td>200# HP</td>
<td>7/64</td>
<td>None</td>
<td>Open-arc</td>
</tr>
</tbody>
</table>
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 966-G (PATENT PENDING)

Stoody 966-G is a molybdenum-tungsten high speed tool steel with a high concentration of uniformly distributed primary carbides. The presence of the small carbides greatly improve the wear resistance when compared to M-7 tool steel. Stoody 966-G provides wear resistance greater than or equal to that of conventional chromium carbides but does not cross check when proper preheat and welding procedures are used. It is recommended for parts where cross checking is undesirable. It can be applied crack free without preheat on carbon, 300 series stainless and manganese steels, when proper preheat and interpass temperatures are maintained. Post weld heat treatment may be required for other base metals. The deposit will crack on cast irons. The material is characterized by a high hardness (62-67).

Applications: Tillage Tools, Tire Shredders, Cutting and Shaving knives, Extruder Screws, Shear Blades, Blanking Dies, Piercing Dies, Excellent for cladding high wear areas on equipment

STOODY 101HD

STOODY 101HD open arc wire is a higher carbon version of our 100HD. This alloy is ideal for hardface plate applications requiring higher alloy content in 1 or 2 layer deposits. 101HD is normally deposited on low carbon steel plate and used in severe abrasion applications. Deposits are not machinable or forgeable and can be used in hot wear applications up to 900°F.

Welding Procedures/Characteristics: DC reverse polarity (electrode positive) recommended using stringer or weave beads. Limit to 2 layers maximum. For stringer beads use 25-50% step over, for weave beads use 25-30% step over.

Applications: Wear Plate Manufacturing

STOODY CP-2000

Stoody CP2000 is a specially formulated chromium carbide alloy designed to produce a high concentration of uniformly distributed small primary chromium carbides in an austenitic matrix. The formulation has been optimized to result in superior weldability for a broad range of single and multiple layer applications. The high concentration of small primary carbides greatly improves wear resistance and toughness over conventional chromium carbides alloys. It can be applied to carbon, low alloy and manganese steels. In special applications such as coal pulverizer rebuilding, it can be applied to cast irons. The deposits can not be machined or forged and can be used in hot wear applications up to 900°F.

Applications: ID pipe & elbow cladding, Hardface plate cladding, Gyatory mantles, Multiple layer hardface build up application on coal & cement pulverizer roofs & grinding rings

Nominal Composition:

Primary Chromium Carbides in an Austenitic Matrix
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY 600

STOODY 600 is an open arc wire which produces a titanium carbide bearing deposit. It has excellent abrasion resistance, yet maintains toughness for good impact resistance. Stoody 600 exhibits good operational characteristics and excellent slag removal when compared to other titanium carbide wires. It is particularly suited to high stress application such as cement clinker crusher rolls.

Welding Procedures/Characteristics: An open arc wire designed for DC reverse polarity. It can be applied in multiple layers to carbon and low alloy steel as well as manganese.

Applications: High Pressure Cement Rolls, Bucket lips, Muller Tires, Hammer Crushers, Tillage Tools, Chisel Plows, Tamper Feet, Hard Banding

Nominal Composition:
Alloy Content – 19% (Carbon, Manganese, Silicon, Chromium, Molybdenum, Titanium)
Iron Base

Deposit Characteristic:
Abrasion Resistance: Very Good
Impact Resistance: High
Deposit Layers: Up to 3
Hardness (3 layer)*: 50 HRC

Part Number | Packaging | Wire Diameter | Shielding Gas | Wire Ext. | Amps | Volts
--- | --- | --- | --- | --- | --- | ---
11803000 | 33# WB | .045 | 1.2 | None | 1/2"-3/4" | 150-225 | 22-26
11804000 | 200# HP | .045 | 1.2 | None | 1/2"-3/4" | 150-225 | 22-26
11886000 | 33# WB | 1/16 | 1.6 | None | 1/2"-3/4" | 200-300 | 22-26
11928000 | 200# HP | 1/16 | 1.6 | None | 1/2"-3/4" | 200-300 | 22-26
11846000 | 60# Coil | 3/32 | 2.4 | None | 1/4"-1/2" | 300-400 | 25-27
11916000 | 500# POP | 3/32 | 2.4 | None | 1/4"-1/2" | 300-400 | 25-27
11814400 | 60# Coil | 7/64 | 2.8 | None | 1/4"-1/2" | 400-500 | 26-28
11929400 | 500# POP | 7/64 | 2.8 | None | 1/4"-1/2" | 400-500 | 26-28

SA/SUPER 20

SA/SUPER 20 is a very highly alloyed chromium-tungsten-moly-iron wire used for service involving very severe abrasive conditions and hot wear up to 1100°F. The abrasion resistance of this alloy approaches that of a tungsten carbide deposits are not machinable or forgeable and develop a tight cross check pattern.

Welding Procedures/Characteristics: DC reverse polarity recommended using either stringer or weave beads. Can be applied to carbon, low alloy, and manganese steels. Recommended as a single layer wire and for flat welding only.

Applications: Shredder Wear parts, Ash Fans, Feed Mill Hammers, Pulverizers

Nominal Composition:
Alloy Content – 38% (Chromium, Molybdenum, Carbon, Tungsten, Manganese, Silicon)
Iron Base

Deposit Characteristic:
Abrasion Resistance: Very Good
Impact Resistance: High
Deposit Layers: Up to 3
Hardness (3 layer)*: 50 HRC

Part Number | Packaging | Wire Diameter | Shielding Gas | Wire Ext. | Amps | Volts
--- | --- | --- | --- | --- | --- | ---
11456000 | 33# WB | 1/6 | 1.6 | None or CO2 | 11/4" | 200-250 | 24-28
11896900 | 50# PP | 1/6 | 1.6 | None or CO2 | 11/4" | 200-250 | 24-28
64706765 | 60# Coil | 7/64 | 2.8 | None | 11/4" | 300-500 | 26-30
GROUP 3: METAL TO EARTH FOR MODERATE TO SEVERE IMPACT AND MODERATE TO SEVERE ABRASION

STOODY CP-2001
Stoody CP-2001 is a specially formulated chromium carbide alloy designed to produce a high concentration of uniformly distributed small primary chromium carbides and secondary niobium and vanadium carbide in an austenitic matrix. The formulation has been optimized to result in superior weldability for a broad range of single and multiple layer applications. The high concentration of small carbides greatly improves wear resistance and toughness over conventional chromium carbide alloys. It can be applied to carbon, low alloy, and manganese steels. In special applications such as tar sand slurry pipes, coal pulverizer rebuilding, it can be applied to cast irons. The deposits can not be machined or forged.

Applications: ID pipe & elbow cladding, Hardface plate cladding, Gyroratory mantles, Multiple layer hardface build up application on coal & cement pulverizer rolls & grinding

Nominal Composition:
Primary Chromium Carbides and Secondary Niobium and Vanadium Carbides in an Austenitic Matrix

STOODY 143
The STOODY 143 deposit consists of primary chromium carbides and secondary columbium (Niobium) carbides in an austenitic matrix. Deposits posses high abrasion resistance and maintain hardness up to 1400°F.

Welding Procedures/Characteristics: DC reverse polarity (DCEP) is recommended using stringer or weave beads. Can be applied to carbon, low alloy or manganese steels. Limited to three layers maximum.

Applications:
- Coal and Steel Industry: Exhaust Fan Blades, Crushers, Coke Pusher Shoes, Wear Plates, Hoppers, Shoots and Screens
- Cement and Refractory: Cement Screws, Cement Dryers, Hot Cement Cones, Cement Furnace Parts, Mixer Blades, Presses
- Non-Ferrous Metals: Copper Ladels, Zinc Pots, Tin Mill Parts, Copper Bar Guides, Zinc Scrapers
- Mining: Wear Plates, Excavator Bucket Teeth, Conveyor Screws, Slurry Pipes

Nominal Composition:
Alloy Content – 37% (Carbon, Chromium, Manganese, Columbium (Niobium), Silicon)
Iron Base

STOODY 145
The STOODY 145 is a highly alloyed open arc wire with high abrasion resistance, high corrosion resistance and high hardness at elevated temperatures. The STOODY 145 alloyed wire contains columbium (niobium), which contributes to its excellent high temperature abrasion resistance up to 1500°F (816°C).

Welding Procedures/Characteristics: DC reverse polarity (DCEP) is recommended using stringer or weave beads. Can be applied to carbon, low alloy or manganese steels. Limited to two layers maximum.

Applications:
- Cement and Refractory: Cement Screws, Cement Dryers, Hot Cement Cones, Cement Furnace Parts, Mixer Blades, Presses
- Non-Ferrous Metals: Copper Ladels, Slag Ladels, Zinc Pots, Tin Mill Parts, Copper Bar Guides, Zinc Scrapers
- Mining: Wear Plates, Excavator Bucket Teeth, Conveyor Screws, Slurry Pipes

Deposit Characteristic:
- Abrasion Resistance: Excellent
- Impact Resistance: Low
- Hardness (2 layers): 60 HRC

Mechanical Properties Typical Rockwell Hardness:
- Abrasion Resistance: Excellent
- Impact Resistance: Low
- Hardness (3 layers): 60 HRC
GROUP 4: METAL TO EARTH FOR EXTREME ABRASION AND LOW IMPACT

STOODY 130
STOODY 130 wire provides the ultimate wear resistance and the ability to cut earth formations because of the tungsten carbide particles contained in the wire.

Welding Procedures/Characteristics: To maximize the benefits of this open arc wire, the welding current should be kept to an absolute minimum. DC reverse (18-24 volts) polarity is recommended using stringer beads in a single layer; relief checks. Bonds readily to carbon and low alloy steels

Applications: Scoop Lips and Teeth, Ripper, Muller Plows Augers, Pug Mill Knives, Chisel Plow, Ammonia Injectors, Auger Flights, Cultivator Chisels, Ditcher Teeth, Swing Hammers, Ensilage Knife, Raymond Mill Plows, Tillage Tools of All Types

STOODY 140
Stoody 140 wire consists of tungsten carbide particles in a nickel chrome boron matrix. This microstructure gives Stoody 140 superior toughness, corrosion and excellent fine particle erosion resistance in slurry type applications

Applications: Dredge rotary cutter heads, Pipe ID & filtering screens, Drill bits & stabilizers, Augers, Rotor

Deposit Characteristic:
Abrasion Resistance…………………………………….Excellent
Matrix Harness Single Layer…………………………HRC 50-60
Matrix Hardness Two Layer……………………………HRC 50-60
Deposit Layers ……………………………………………2 Maximum
Surface Cross Check ……………………………………Depends on application
Machinability…………………………………………………No

VANCAR
VANCAR deposits contain vanadium carbides. Vanadium carbide is close to the wear resistance of tungsten carbide, with superior impact resistance. A unique feature of this product is that the vanadium carbides dissolve and reform in the deposit.

Welding Procedures/Characteristics: An open arc wire for DC reverse polarity welding that can be applied in multiple layers.

Applications: Ripper Shanks and Teeth, Dozer End Bits, Auger Bits, Tiller Tines, Dry Cement Pump Screw, Ammonia Injector, Pug Mill Knife, Cultivator Chisel

Nominal Composition:
Alloy Content – 29% (Vanadium, Tungsten, Carbon, Silicon, Manganese, Molybdenum, Nickel)
Iron Base

STOODY 130
Nominal Composition:
Alloy Content – 60% (Tungsten Carbide)
Iron Base

Welding Procedures Typical Rockwell Hardness:
Hardness of Borium
Particles .............................................................. 9.9 on Moh's Scale
On carbon or low alloy steel: Magnetic
Not recommended for Mang. steel.
Not forgeable or machinable.

Part Number Packaging Wire Diameter Shielding Gas Welding Parameters
11420800 10# PS 1/16 None 1/2" 90-120 18-24
11413200 33# WB 1/16 None 1/2" 90-120 18-24
11001100 60# Coil 7/64 None 1/2" 120-150 18-24

STOODY 140
Nominal Composition:
Alloy Content – 29% (Vanadium, Tungsten, Carbon, Silicon, Manganese, Molybdenum, Nickel)
Iron Base

Welding Procedures Typical Rockwell Hardness:

Part Number Packaging Wire Diameter Shielding Gas Welding Parameters
11883800 25# WB 1/16 1.6 75-80%Ar, Bal. CO2 5/8"-1" 190-230 18-20

VANCAR
Nominal Composition:
Alloy Content – 60% (Tungsten Carbide)
Iron Base

Welding Procedures Typical Rockwell Hardness:

Part Number Packaging Wire Diameter Shielding Gas Welding Parameters
11420300 10# PS 1/16 1.6 None or CO2 1/2"-3/4" 150-200 22-26
11994300 25# PS 1/16 1.6 None or CO2 1/2"-3/4" 150-200 22-26
11420200 33# WB 1/16 1.6 None or CO2 1/2"-3/4" 150-200 22-26
11420100 50# PP 1/16 1.6 None or CO2 1/2"-3/4" 150-200 22-26
11333700 60# Coil 3/32 2.4 None 1 1/4"-1 1/2" 200-300 25-27
11418500 200# HP 1/8 3.2 None 1 1/4"-1 1/2" 500-600 28-30

International Customer Care: 940-381-1212 / FAX 940-483-8178
www.stoody.com
GROUP 4: METAL TO EARTH FOR EXTREME ABRASION AND LOW IMPACT

STOODY 160D/160

Stoody 160D wire consists of coarse and fine tungsten carbide particles in a nickel silicon boron matrix. This microstructure gives Stoody 160D superior toughness, corrosion and excellent fine particle erosion resistance in slurry type applications. Micro constituents add to increased wear resistance.

Applications: Dredge rotary cutter heads, pipe ID & filtering screens, Drill bits & stabilizers

Deposit Characteristic:

<table>
<thead>
<tr>
<th>Abrasion Resistance</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix Harness Single Layer</td>
<td>50-60 HRC</td>
</tr>
<tr>
<td>Matrix Hardness Two Layer</td>
<td>50-60 HRC</td>
</tr>
<tr>
<td>Deposit Layers</td>
<td>2 Maximum</td>
</tr>
<tr>
<td>Surface Cross Check</td>
<td>Depends on application</td>
</tr>
<tr>
<td>Machinability</td>
<td>No</td>
</tr>
</tbody>
</table>

Applications:

Dredge rotary cutter heads, pipe ID & filtering screens, Drill bits & stabilizers

STOODY 160 DM

Stoody 160DM wire consists of a mixture of cast and macrocrystalline tungsten carbide particles in a nickel silicon boron matrix. This microstructure gives Stoody 160DM superior toughness, corrosion and excellent fine particle erosion resistance in slurry type applications. Micro constituents add to increased wear resistance.

Applications: Dredge rotary cutter heads, pipe ID & filtering screens, Drill bits & stabilizers

Deposit Characteristic:

<table>
<thead>
<tr>
<th>Abrasion Resistance</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix Harness Single Layer</td>
<td>50-60 HRC</td>
</tr>
<tr>
<td>Matrix Hardness Two Layer</td>
<td>50-60 HRC</td>
</tr>
<tr>
<td>Deposit Layers</td>
<td>2 Maximum</td>
</tr>
<tr>
<td>Surface Cross Check</td>
<td>Depends on application</td>
</tr>
<tr>
<td>Machinability</td>
<td>No</td>
</tr>
</tbody>
</table>
GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES (cobalt and nickel)

STOODITE 6-M

STOODITE 6 is the most widely used cobalt alloy having excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range. Particular attributes are its outstanding self-mated anti-galling properties, high temperature hardness and high resistance to cavitation erosion. Certification to AWS A5.21, Type ErCoCr-A.

Welding Procedures/Characteristics: A gas metal arc wire (DC reverse polarity) requiring proper preheat, controlled interpass temperatures and cooling rates. Special power supplies (i.e. pulsed arc, etc.) are used to reduce penetration and base metal dilution. Crack free deposits up to 2 layers.

Applications: Flights of Extrusion Screws, Sinker Roll Bushings in Steel Mill, Soaking Pit Tong Bit, Shafts

Can be certified to AWS A5.21-2001 ErCoCr-A.

STOODITE 12-M

STOODITE 12 is an alloy cored wire for GMAW applications. The composition differs from the bare rod slightly in the silicon, manganese and iron levels in that they are higher. It is more wear resistant than 6 (contains a higher volume of carbides) but with lower impact strengths. Certification to AWS A5.21, Type ErCoCr-B.

Welding Procedures/Characteristics: A gas metal arc wire (DC reverse polarity) requiring strict adherence to correct preheat, interpass temperatures and controlled cooling rates in mandatory to insure crack free deposits. It is more crack-sensitive than STOODITE 6.

Applications: Valve Parts, Pump Parts, Tips of Aircraft Turbine Blades, Chain Saw Bars, Saw teeth, Carpet Knives, Cutter Rolls, Bar Mill Twist Rolls

Can be certified to AWS A5.21-2001 ErCoCr-B.

STOODITE 1-M

STOODITE 1 wire has the greatest volume of carbides because of the carbon content producing excellent resistance to abrasion with some sacrifice in toughness. The manganese, silicon, and iron levels are somewhat higher than the other wires. Certification to AWS A5.21, Type ErCoCr-C.

Welding Procedures/Characteristics: Should be welded with direct current reverse polarity. M type wires can be used either automatic or semi-automatic. Two layer deposits are required to achieve hardness. Preheat is necessary to control or minimize cracking.

Applications: Screw Components, Pump Sleeves, Cross Heads, Valves, Pumps, Mixer Rotors, Bodies and Tip Sides, Hydrodumper Disc Segments, Soaking Pit - Tong Bits

Can be certified to AWS A5.21-2001 ErCoCr-C.
GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES (cobalt and nickel)

STOODITE 21-M

STOODITE 21 is a continuous alloy cored wire for GMAW applications with excellent high temperature strength making it suitable for use on hot die parts. The deposits are inherently resistant to galling, cavitation erosion, and corrosion. Abrasion resistance is lower than the other wires but its impact strength at high temperatures, anti-galling properties and corrosion resistance are outstanding.

Welding Procedures/Characteristics: A gas metal arc wire (DC reverse polarity) requiring proper preheat, interpass temperatures and controlled cooling to minimize or produce a crack free deposit.

Applications: Fluid Valve Seats, Tube Mill Piercing Plugs, Hot Shears, Erosion Shields, Forging Dies. Certification to AWS A5.21, Type ErCoCr-E.

STOODY 60

STOODY 60 semi-automatic wire is a tubular nickel-based hardfacing wire with a nominal hardness of RC60. It flows easily onto base metals and yields smooth deposits. Deposits maintain a high level of hardness up to 1200°F and resist galling, pitting, and corrosion in addition to abrasion. It can be deposited on low and medium carbon steels, stainless steels, and cast irons.

Welding Procedures/Characteristics: A gas shielded tubular wire for welding with DC reverse polarity (DCEP). It can be deposited in multiple layers on low and medium carbon steels and cast iron.

Applications: Draw Blocks, Slurry Pipe Elbows, Impeller Screws

STOODY C

STOODY C is a fabricated alloy cored wire for automatic/semi-automatic welding that produces a deposit resistant to high heat and corrosion accompanied by abrasion and/or impact. It has good hardness up to 1200°F. It is machinable but workhardens.

Welding Procedures/Characteristics: An automatic/semi-automatic wire for DC reverse polarity welding that can be applied in multiple layers.

Applications: Hot Forge Dies, Hot Shear Blades, Forging Hammer Dies, Mill Guided, Shafts

Can be certified to AWS A5.21-2001 ErCoCr-E.

Nominal Composition:
Alloy Content – 96% (Chromium, Molybdenum, Iron, Nickel, Manganese, Silicon, Carbon, Tungsten)

Cobalt Base

Mechanical Properties Typical Rockwell Hardness:
Abrasion Resistance ................................ Excellent
Impact Resistance ........................................ Fair
Corrosion Resistance ................................. Good
Hardness (2 Layers)................................. 55-60 HRC

STOODY & GAS-SHIELDED Wires
**STOODY ALLOYS FOR AUTOMATIC SUBMERGED ARC APPLICATION**

Deposit characteristics of Stoody submerged-arc alloys are affected by welding procedure and flux. The data presented here is based on typical deposits made with recommended procedures and proper preheat, interpass temperature and post weld cooling of the work piece.

Stoody submerged arc wires can be applied with AC or DC welding current. When applied with DC welding current either DCEN or DCEP may be used with but one exception—DCEP polarity only is recommended for Stoody 103CP. Straight polarity produces faster deposition speed while reverse polarity offers smoothest surface appearance. Hardnesses obtained with straight polarity will be slightly higher than those obtained with reverse polarity.

Certain sizes other than those shown are available on special order. Standard package for 7/64” (2.8 mm) wire is 60 pound 12” I.D. coil Standard package for 1/8” (3.2 mm) and 5/32” (4.0 mm) wires are 100 pound 22 1/2” I.D. coils, 200 pound Halfpaks and 500 pound Payoffpaks. All materials listed are for use on weldable grades of carbon and alloy steels. Stoody 103CP can also be used on Hadfield manganese.

**STOODY TYPE S FLUX AND ROLL RITE FLUX**

Type S and Roll Rite Fluxes are manufactured to Stoody specifications and are designed specifically for alloy overlays. Use of Type S Flux and Roll Rite Flux with Stoody automatic submerged-arc wires insures designed deposit chemistry. Slag removed is excellent at elevated temperatures. Type S Flux (PN 11008400) and Roll Rite Flux (PN 11257000) are packed in 50 pound bags, shipped 3,000 pounds to a pallet.

**STOODY THERMACLAD WIRES**

Stoody ThermaClad wires are designed to run in a neutral flux, Stoody R-20 (PN 11810900 55# Bag, 11915900 65# Bag). This wire/flux combination results in a better control of chemistry as the process is less sensitive to welding parameter variations. ThermaClad wires should, in general, be run DCEP. They can be run DCEN under controlled conditions.

For a more detailed description to ThermaClad wires please refer to ThermaClad Bulletin 1045.

Caution: Do not mix wire-flux combinations. i.e. Do not run Stoody wires with R-20 flux or ThermaClad wires with Stoody S-Flux. Resulting deposits may crack or will have vastly different properties than those reported in the literature.
GROUP 1: BUILD-UP AND JOINING ALLOYS

A. BUILD-UP OF CARBON STEELS

STOODY 104 / THERMACLAD 104

Deposit Characteristics: Excellent resistance to impact and plastic deformation. Ideal for build-up and for under base to support hard-facing. Deposits are crack-free, can be machined with high speed tools, easily machinable with carbide tools. Can be flame cut. Maximum thickness is unlimited. Nominal hardness of all-weld deposit made with Stoody Type S Flux is 29 Rc.

Applications: Build-up prior to hard-facing of tractor rollers, idlers, trunnions, rolls, cable drums. Used as final overlay on rail links. Table rolls. Shaft rebuilding—such areas as journals, packing glands, splines and threads.

Nominal Composition:
Alloy Content 6% (Manganese, Silicon, Chromium, Carbon)
Iron Base

STOODY 104

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>mm</th>
<th>Flux</th>
<th>Weld Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11451100</td>
<td>500# POP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody S</td>
<td>1&quot;-11/16&quot;</td>
<td>250-300</td>
<td>28-30</td>
</tr>
<tr>
<td>11001400</td>
<td>60#/ Coil</td>
<td>7/64</td>
<td>2.9</td>
<td>Stoody S</td>
<td>1&quot;-1/4&quot;</td>
<td>300-325</td>
<td>28-30</td>
</tr>
<tr>
<td>11820300</td>
<td>60#/ Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>350-400</td>
<td>28-30</td>
</tr>
<tr>
<td>11001500</td>
<td>100#/ Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>350-400</td>
<td>28-30</td>
</tr>
<tr>
<td>11004000</td>
<td>200#/ HP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>350-400</td>
<td>28-30</td>
</tr>
<tr>
<td>11039500</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>350-400</td>
<td>28-30</td>
</tr>
<tr>
<td>11902800</td>
<td>750# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>350-400</td>
<td>28-30</td>
</tr>
<tr>
<td>11001600</td>
<td>100#/ Coil</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>425-475</td>
<td>28-30</td>
</tr>
<tr>
<td>11119500</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody S</td>
<td>1&quot;-1/16&quot;</td>
<td>425-475</td>
<td>28-30</td>
</tr>
</tbody>
</table>

THERMACLAD 104

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>mm</th>
<th>Flux</th>
<th>Weld Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11826700</td>
<td>500# POP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
<td>1-11/16&quot;</td>
<td>300-400</td>
<td>25-29</td>
</tr>
<tr>
<td>11857500</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
<td>1%-1/16&quot;</td>
<td>400-500</td>
<td>26-30</td>
</tr>
<tr>
<td>11863300</td>
<td>50#/ PP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
<td>1%-1/16&quot;</td>
<td>325-400</td>
<td>31-33</td>
</tr>
<tr>
<td>11828100</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody R-20</td>
<td>1%-1/16&quot;</td>
<td>450-600</td>
<td>28-32</td>
</tr>
</tbody>
</table>

CASTWELD™ Ni55-O/S

Stoody Castweld Ni 55-O/S open arc wire is used on worn cast iron parts requiring joining or build up. It has good tolerance for the high phosphorus often found in cast irons. It works well when welding thick sections, and is also recommended for joining cast iron to dissimilar metals. Castweld Ni 55-O/S can also be submerged arc welded using a neutral flux.

Applications: Joining, build up & repair of cast iron parts, Engine blocks & heads, Cast iron universal joints welding to steel drive shafts, Pump housings, Assorted castings

Deposit Characteristic:
Machinability ................................................................. Poor
Number of Deposit Layers .............................................. Unlimited
Tensile Strength, Ksi .................................................. 75
Yield Strength, Ksi .................................................. 46
Elongation ................................................................. 18%

CASTWELD™ Ni30-O/S

Stoody Castweld Ni 30-O/S open arc wire is used on worn cast iron parts requiring joining or build up. It has good tolerance for the high phosphorus often found in cast irons. Castweld Ni 30-O/S can also be submerged arc welded using a neutral flux.

Applications: Joining, build up & repair of cast iron parts, Pump housings, Assorted castings

CASTWELD™ Ni55-S (55% Nickel Type)

Deposit Characteristics: Castweld Ni55-S is used on worn cast iron parts requiring joining or build up. It has good tolerance for the high phosphorus often found in cast irons. It works well when welding thick sections, and is also recommended for joining cast iron to dissimilar metals. When welding cast iron always preheat and slow cool. Convex beads preferred. Peen when possible to relieve stresses.

Applications: Joining or build up on cast iron parts, i.e. Pump Housings, Engine Blocks. Also for joining cast iron to steels.

Nominal Composition:
Nickel
Iron Base

CASTWELD™ Ni55-O/S

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>mm</th>
<th>Flux</th>
<th>Weld Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11895600</td>
<td>33#/ WB, LLW</td>
<td>.045</td>
<td>1.2</td>
<td>None</td>
<td>1-1/8&quot;-4&quot;</td>
<td>140-170</td>
<td>23-26</td>
</tr>
<tr>
<td>11858700</td>
<td>33#/ WB, LLW</td>
<td>1/16</td>
<td>1.6</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>250-300</td>
<td>18-30</td>
</tr>
<tr>
<td>11863300</td>
<td>50#/ PP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>325-400</td>
<td>31-33</td>
</tr>
</tbody>
</table>

CASTWELD™ Ni55-S

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>mm</th>
<th>Flux</th>
<th>Weld Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11962300</td>
<td>50#/ PP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>325-400</td>
<td>31-33</td>
</tr>
</tbody>
</table>

CASTWELD™ Ni30-O/S

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>mm</th>
<th>Flux</th>
<th>Weld Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11902500</td>
<td>50#/ PP</td>
<td>3/32</td>
<td>(2.4)</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>325-400</td>
<td>31-33</td>
</tr>
</tbody>
</table>
GROUP 1: BUILD-UP AND JOINING ALLOYS

CASTWELD Ni 99-G

Stoody Castweld Ni-99-G “Shielded” nickel wire is a tubular alloy cored wire for GMAW of cast iron. The tubular wire provides deposition rates equal to that of solid wire at lower amperage. The feature reduces heat input into the work piece.

The composition of this wire meets the chemistry requirement of AWS A5.15 ENi-CI coated electrodes, although the carbon content of the wire is lower than that of the coated electrode. It can be used for some of the same applications as ENi-CI electrodes. The GMAW weld process, with CO2 requires little or no part cleaning as with SMAW coated electrodes.

Applications: Joining, build up & repair of cast iron parts, Engine blocks & heads, Cast iron universal joints welding to steel drive shafts, Pump housings, Assorted castings

Typical Composition:
Carbon, Manganese, Silicon, Copper, Nickel

Typical Mechanical Properties:
Machinability: Fair, Number of Deposit Layers: Unlimited

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11976000</td>
<td>50# Poly Pak</td>
<td>3/32</td>
<td>CO2</td>
<td>4/4-1/2</td>
</tr>
</tbody>
</table>

D. JOINING AND BUILD-UP OF CAST IRONS

CASTWELD Ni 99-G

GROUP 2: METAL TO METAL WEAR

(STOODY 107 / THERMACLAD 107)

Deposit Characteristics: Good compressive strength and resistance to plastic deformation. Excellent impact resistance. Good abrasion resistance in metal to metal wear. Multiple layer, check-free deposits up to 3/4" thick can be obtained with proper procedure. Readily machinable with carbide tools. Can be flame cut. Can be used for both build-up and hard-facing on rollers and idlers. Nominal hardness of two-layer deposit on 1040 steel with Stoody Type S Flux is 38 Rc.

Applications: Same as 105. Also recommended for tractor rails when used with premium rail rebuilding procedure.

Nominal Composition:
Alloy Content 6% (Chromium, Manganese, Silicon, Molybdenum, Carbon)
Iron Base

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11633000</td>
<td>60# Coil</td>
<td>3/32</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11474000</td>
<td>500# POP</td>
<td>3/32</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11001700</td>
<td>60# Coil</td>
<td>7/64</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11001800</td>
<td>100# Coil</td>
<td>1/8</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11041200</td>
<td>200# HP</td>
<td>1/8</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11039800</td>
<td>500# POP</td>
<td>1/8</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11112200</td>
<td>500# POP</td>
<td>5/32</td>
<td>Stoody S</td>
<td>1/4-1/2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11645000</td>
<td>500# POP</td>
<td>1/8</td>
<td>Stoody R-20</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11867000</td>
<td>200# HP</td>
<td>5/32</td>
<td>Stoody R-20</td>
<td>1/4-1/2</td>
</tr>
<tr>
<td>11868100</td>
<td>500# POP</td>
<td>5/32</td>
<td>Stoody R-20</td>
<td>1/4-1/2</td>
</tr>
</tbody>
</table>
GROUP 2:  METAL TO METAL WEAR
(low alloy iron based)

STOODY 105B / THERMACLAD 105B

Deposit Characteristics: Excellent resistance to cold deformation. Good compressive strength and impact resistance. Very good abrasion resistance in metal to metal wear. Multiple layer, check-free deposits obtained with proper procedure. When more than four layers are required, an under base of 104 is recommended. Readily machinable with carbide tools. Difficult to flame cut. Very consistent in mechanical properties—reasonable changes in cooling rate have little effect on as-deposited hardness. Nominal hardness of two-layer deposit on 1040 steel with Stoody Type S Flux is 43Rc.

Applications: Same as 105. Also recommended for tractor rails when used with premium rail rebuilding procedure.

Nominal Composition:  
Alloy Content 6% (Chromium, Manganese, Silicon, Molybdenum, Vanadium, Carbon)  
Iron Base

STOODY 105 / THERMACLAD 105

Deposit Characteristics: Very good resistance to abrasion in metal to metal wear. Resists cold deformation. Multiple layer, check-free deposits are obtained with proper procedures. When more than three layers are required, an under base of 104 is recommended. Tungsten carbide tools and rigid, well powered equipment are required for machining. Difficult to flame cut. Reasonable changes in post weld cooling rate have little effect on mechanical properties. Nominal hardness of two-layer deposit on 1040 steel with Stoody Type S Flux is 45Rc.

Applications: Rollers, idlers, mine car wheels, charging car wheels, and similar equipment involving severe abrasion in metal to metal wear.

Nominal Composition:  
Alloy Content 7% (Chromium, Manganese, Silicon, Molybdenum, Vanadium, Carbon)  
Iron Base

STOODY 4552 / THERMACLAD 4552


Applications: Brake drums, pinch rolls, collar rolls, packing glands, rams and other parts subject to sliding wear.

Nominal Composition:  
Alloy Content 12% (Chromium, Manganese, Silicon, Carbon)  
Iron Base

STOODY 105B

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11002000</td>
<td>100# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11041900</td>
<td>200# HP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11040100</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11902600</td>
<td>750# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11112500</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody S</td>
<td>1-1/16&quot;</td>
<td>425-475</td>
</tr>
</tbody>
</table>

THERMACLAD 105B

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11880000</td>
<td>60# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11868000</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11967800</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody R-20</td>
<td>1-1/16&quot;</td>
<td>425-475</td>
</tr>
</tbody>
</table>

STOODY 105

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11002200</td>
<td>60# Coil</td>
<td>7/64</td>
<td>2.8</td>
<td>Stoody S</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>350-350</td>
</tr>
<tr>
<td>11002300</td>
<td>100# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11041000</td>
<td>200# HP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11039000</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11112000</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody S</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>425-475</td>
</tr>
</tbody>
</table>

THERMACLAD 105

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11967900</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody R-20</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>425-475</td>
</tr>
</tbody>
</table>

STOODY 4552

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11003100</td>
<td>100# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11047000</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11902700</td>
<td>750# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
<td>1-1/4&quot;</td>
<td>350-400</td>
</tr>
<tr>
<td>11112500</td>
<td>100# Coil</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody S</td>
<td>1-1/4&quot;</td>
<td>500-600</td>
</tr>
</tbody>
</table>

THERMACLAD 4552

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in.</th>
<th>Flux</th>
<th>Wire Ext.</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11824700</td>
<td>500# POP</td>
<td>3/32</td>
<td>3.2</td>
<td>Stoody R-20</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>300-400</td>
</tr>
<tr>
<td>11825100</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>400-500</td>
</tr>
<tr>
<td>11825000</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody R-20</td>
<td>1-1/4&quot;-1-1/2&quot;</td>
<td>450-500</td>
</tr>
</tbody>
</table>
Submerged Arc Wires

GROUP 2: METAL TO METAL WEAR
(low alloy iron based)

STOODY 420 / THERMACLAD 420

STOODY 420 is a 420 stainless steel submerged arc wire with very good abrasion resistance and good impact resistance. Deposits polish in service to reduce friction and minimize wear of a mating part. It is readily machinable. Check-free deposits can be made up to 3/4” thick.

Applications: Brake Drums, Coiler Rolls, Rams, Pinch Rolls, Packing Glands

Nominal Composition:
Alloy Content 14% (Carbon, Chromium, Manganese, Silicon)
Iron Base

STOODY 420

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11407500</td>
<td>100# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>350-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28-30</td>
</tr>
</tbody>
</table>

THERMACLAD 420

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111827100</td>
<td>100# Coil</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26-28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111810400</td>
<td>500# POP</td>
<td>3/32</td>
<td>2.4</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>26-28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111827200</td>
<td>100# Coil</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400-500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27-30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111832200</td>
<td>500# POP</td>
<td>1/8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400-500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27-30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111832300</td>
<td>500# POP</td>
<td>5/32</td>
<td>4.0</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>450-600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>29-32</td>
</tr>
</tbody>
</table>

STOODY THERMACLAD 104TJ

Stoody ThermaClad 104TJ is a submerged arc wire intended for use on oil drilling tool joints. It has excellent resistance to impact and plastic deformation. Deposits are crack-free, can be machined with high speed tools, are readily machinable with carbide tools, and can be flame cut. It can be applied in multiple layers.

Applications: Tool Joints

Deposit Characteristic:

<table>
<thead>
<tr>
<th>Abrasion Resistance</th>
<th>Impact Resistance</th>
<th>Compressive Strength</th>
<th>Hardness, As-Welded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>Excellent</td>
<td>Excellent</td>
<td></td>
</tr>
</tbody>
</table>

- 2 Layers After 4 Hours at 1050°F .......... HB 310
- 6 Layers After 4 Hours at 900°F .......... HB 305

Surface Cross Checks................................. No
Magnetic..................................................... Yes
Deposit Layers.......................................... Multiple
Machinability............................................ Good

STOODY THERMACLAD 104TJ

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111901100</td>
<td>60# Coil</td>
<td>1.8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>350-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28-30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>111897800</td>
<td>750# POP</td>
<td>1.8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1”-1/4”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>350-400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28-30</td>
</tr>
</tbody>
</table>
GROUP 2: METAL TO METAL WEAR
(low alloy iron based)

STOODY THERMACLAD 42

ThermaClad 42 is a new improved alloy designed for build up and overlay of undercarriage components. The alloy composition gives an optimum combination of strength, toughness, temper resistance and insensitivity to cooling rate. It also resists metal-to-metal frictional wear. Deposit hardness is approximately 40-42 HRC in two layers.

Deposit Characteristics: The deposits possess excellent resistance to cold deformation, good compressive strength and impact resistance. The deposits are ideally suited for metal-to-metal wear. Multiple layer, check-free deposits up to 1" (25mm) thick can be obtained with proper procedures. The deposits are readily machinable with carbide tools. It can be used for both build-up and hardfacing on rollers and idlers.

Applications: Idlers, Rollers, Crane wheels, Mine car wheels

Nominal Composition: Low Alloy Steel

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Flux</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11888000</td>
<td>500# POP</td>
<td>1.8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
<tr>
<td>11820000</td>
<td>250# HP</td>
<td>1.8</td>
<td>3.2</td>
<td>Stoody R-20</td>
</tr>
</tbody>
</table>

Deposit Characteristics:
The deposits possess excellent resistance to cold deformation, good compressive strength and impact resistance. The deposits are ideally suited for metal-to-metal wear. Multiple layer, check-free deposits up to 1" (25mm) thick can be obtained with proper procedures. The deposits are readily machinable with carbide tools. It can be used for both build-up and hardfacing on rollers and idlers.
**STOODY 103CP**

**Deposit Characteristics:** Excellent abrasion resistance. Moderate impact resistance. Deposit has fine relief check pattern which reduces distortion. Not machinable. Cannot be flame cut. Nominal hardness of two-layer deposit on 1040 steel is 54 Rc.

**Applications:** Crusher mantles and bowl liners. Pulverizer rings and rolls. Steel mill guides and other parts subject to extreme abrasion where relief checking can be tolerated.

**Nominal Composition:**
- Alloy Content 12% (Chromium, Manganese, Silicon, Tungsten, Molybdenum, Carbon)
- Iron Base

---

**STOODY 143-S**

**Deposit Characteristics:** This deposit consists of primary chromium carbides and secondary columbium (niobium) carbides in an austenitic matrix. Deposits possess high abrasion resistance and maintain hardness up to 1400°F.

**Applications:** Crushers, Coke Pusher Shoes, Wear Plates, Cement Screws, Mixer Blades, Excavator Bucket Teeth, and other high abrasion applications.

**Nominal Composition:**
- Alloy Content 36% (Chromium, Columbium (Niobium), Carbon, Manganese, Silicon)
- Iron Base

---

**STOODY 145-S**

**Deposit Characteristics:** The deposit consists of primary chromium carbides and secondary columbium (niobium), molybdenum, tungsten and vanadium carbides in an austenitic matrix. Deposits possess very high abrasion resistance and maintain hardness up to 1500°F.

**Applications:** Crushers, Coke Pusher Shoes, Wear Plates, Cement Screws, Mixer Blades, Excavator Bucket Teeth, and other high abrasion applications.

**Nominal Composition:**
- Alloy Content 36% (Chromium, Carbon, Columbium (Niobium), Molybdenum, Tungsten, Manganese, Vanadium, Silicon)
- Iron Base
GROUP 5: ABRASION ACCOMPANIED BY CORROSION AND/OR HIGH TEMPERATURES (cobalt and nickel)

STOODITE 6-S
STOODITE 6-S is the most widely used cobalt alloy having excellent resistance to many forms of mechanical and chemical degradation over a wide temperature range. Particular attributes are its outstanding self mated anti-galling properties, high temperature hardness and high resistance to cavitation erosion. Certification to AWS-A5.21, Type ERCrCo-A.

Welding Procedures/Characteristics: A sub arc wire (DCEP) requiring proper preheat, controlled interpass temperatures and cooling rates. Crack free deposits up to 2 layers.

Applications: Flights of Extrusion Screws, Sinker Roll Bushings in Steel Mill, Soaking Pit Tong Bit, Shafts

STOODITE 12-S
STOODITE 12-S is an alloy cored wire for SAW applications. The composition differs from the bare rod slightly in the silicon, manganese and iron levels in that they are higher. It is more wear resistant than 6 (contains a higher volume of carbides) but with lower impact strengths. Certification to AWS-A5.21, Type ERCrCo-B.

Welding Procedures/Characteristics: A SAW (DCEP) requiring strict adherence to correct preheat, interpass temperatures and controlled cooling rates in mandatory to insure crack free deposits. It is more crack-sensitive than STOODITE 6.

Applications: Valve Parts, Pump Parts, Tips of Aircraft Turbine Blades, Chain Saw Bars, Saw teeth, Carpet Knives, Cutter Rolls, Bar Mill Twist Rolls

STOODITE 21-S
STOODITE 21-S is a continuous alloy cored wire for SAW with excellent high temperature strength making it suitable for use on hot die parts. The deposits are inherently resistant to galling, cavitation erosion, and corrosion. Abrasion resistance is lower than the other wires but its impact strength at high temperatures, anti-galling properties and corrosion resistance are outstanding. Certification to AWS-A5.21, Type ERCrCoCr-E.

Welding Procedures/Characteristics: A SAW (DCEP) requiring proper preheat, interpass temperatures and controlled cooling to minimize or produce a crack free deposit.

Applications: Fluid Valve Seats, Tube Mill Piercing Plugs, Hot Shears, Erosion Shields, Forging Dies

STOODY C-S
STOODY C-S is a fabricated alloy cored wire for SAW that produces a deposit resistant to high heat and corrosion accompanied by abrasion and/or impact. It has good hardness up to 1200°F. It is machinable but workhardens. Certification to AWS-A5.21, Type ERCrNiCrMo-5A.

Welding Procedures/Characteristics: An SAW wire for DCEP welding that can be applied in multiple layers.

Applications: Hot Forge Dies, Hot Shear Blades, Forging Hammer Dies, Mill Guided, Shafts

Note: 1/16" diameter Stoodite 12-M can also be used with the sub arc process

Nominal Composition:
Alloy Content – 96% (Chromium, Molybdenum, Iron, Nickel, Silicon, Cobalt Base)

Mechanical Properties Typical Rockwell Hardness:
1 Layer ......................................16-19 HRC
2 Layers .....................................22-26 HRC
Workhardened..............................40-45 HRC

Part Number Packaging Wire Diameter in. mm Flux Ext. Amps Volts
812102184094 50# Coil 3/32 2.4 R-20 1"-1½" 250-450 25-33

Note: 1/16" diameter Stoodite 12-M can also be used with the sub arc process

Nominal Composition:
Alloy Content – 94% (Molybdenum, Chromium, Iron, Silicon, Cobalt Base)

Mechanical Properties Typical Rockwell Hardness:
Deposit hardness (2-Layer):
As deposited .................................95 HRB
Workhardened..............................35 HRC

Part Number Packaging Wire Diameter in. mm Flux Ext. Amps Volts
827322284094 50# Coil 3/32 2.4 R-20 1"-1½" 250-300 24-30

Note: 1/16" diameter Stoodite 12-M can also be used with the sub arc process

Nominal Composition:
Alloy Content – 96% (Chromium, Tungsten, Iron, Carbon, Manganese, Silicon, Nickel, Cobalt Base)

Mechanical Properties Typical Rockwell Hardness:
1 Layer .......................................27-33 HRC
2 Layers .....................................36-39 HRC

Part Number Packaging Wire Diameter in. mm Flux Ext. Amps Volts
810602184094 50# Coil 3/32 2.4 R-20 1"-1½" 250-450 25-33

Nominal Composition:
Alloy Content – 96% (Chromium, Tungsten, Iron, Carbon, Manganese, Silicon, Nickel, Cobalt Base)

Mechanical Properties Typical Rockwell Hardness:
1 Layer ......................................39-41 HRC
2 Layers .....................................44-45 HRC

Part Number Packaging Wire Diameter in. mm Flux Ext. Amps Volts
811212184094 50# Coil 3/32 2.4 R-20 1"-1½" 250-450 25-33

Nominal Composition:
Alloy Content – 94% (Molybdenum, Chromium, Iron, Silicon, Cobalt Base)

Mechanical Properties Typical Rockwell Hardness:
Deposit hardness (2-Layer):
As deposited .................................95 HRB
Workhardened..............................35 HRC

Part Number Packaging Wire Diameter in. mm Flux Ext. Amps Volts
827322284094 50# Coil 3/32 2.4 R-20 1"-1½" 250-300 24-30

Note: 1/16" diameter Stoodite 12-M can also be used with the sub arc process
Stainless Steel Flux Core Wires

BRILLIANT 410NiMo T-1 AP

Stoody AP stainless steel wires are designed for welding in all positions with Argon/CO2 gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters. AWS classification A5.22-95 410NiMoTi-4.

Stoody 410NiMoT-1 AP wires can be used to join martensitic stainless steels such as 410 used in valve and pump manufacturing. These wires can also be used for the repair and joining of CA-6NM castings.

Typical Composition:
Carbon, Manganese, Silicon, Chromium, Nickel, Molybdenum

BRILLIANT 2209 T-1 AP

Stoody AP stainless steel wires are designed for welding in all positions with either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters.

Stoody 2209T-1 AP wires can be used to weld duplex stainless steels which contain approximately 22% chromium. The composition is balanced to achieve a microstructure of approximately 50% ferrite and 50% austenite in the weld deposit. AWS classification A5.22-95 E2209TO-X.

Typical Deposit Chemistry:
Carbon, Manganese, Silicon, Chromium, Nickel, Molybdenum, Nitrogen

Typical Deposit Characteristics:
- Tensile Strength, Ksi (MPa).......................... 122 (842)
- Yield Strength, Ksi (MPa).......................... 101 (670)
- Elongation (%) .................................................. 27.5
- Charpy Impact Toughness @ -40°F (-40°C) ....33ft-lbs (20 Joules)

308L T-1 AP

Stoody AP stainless steel wires are designed for welding in all positions with either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters.

Stoody 308LT-1 AP wires can be used to join AISI 301, 302, 304 commonly used in the chemical industry and food processing applications. AWS classification A5.22-95 E308LT1-X.

Typical Deposit Chemistry:
Carbon, Manganese, Silicon, Chromium, Nickel

Typical Deposit Characteristics:
- Tensile Strength, Ksi (MPa).......................... 88 (610)
- Yield Strength, Ksi (MPa).......................... 66 (450)
- Elongation (%) .................................................. 39
- Charpy Impact Toughness @ -40°F (-40°C) ....63ft-lbs (40 Joules)

Part Packaging Wire Diameter Shielding Gas Welding Parameters

<table>
<thead>
<tr>
<th>Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11921000</td>
<td>33# WB, VP</td>
<td>1/16</td>
<td>1.6</td>
<td>190-250</td>
<td>26-27</td>
</tr>
<tr>
<td>11921200</td>
<td>33# WB, LLW</td>
<td>.045</td>
<td>1.2</td>
<td>190-250</td>
<td>26-27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11953600</td>
<td>25# WB</td>
<td>.035</td>
<td>11.3</td>
<td>115</td>
<td>245</td>
</tr>
<tr>
<td>11819000</td>
<td>33# WB</td>
<td>.045</td>
<td>1.2</td>
<td>115</td>
<td>245</td>
</tr>
<tr>
<td>11819100</td>
<td>33# WB</td>
<td>1/16</td>
<td>11.3</td>
<td>115</td>
<td>245</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Amps</th>
<th>Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>11963000</td>
<td>25# WB</td>
<td>.035</td>
<td>11.3</td>
<td>115</td>
<td>245</td>
</tr>
<tr>
<td>11819000</td>
<td>33# WB</td>
<td>.045</td>
<td>1.2</td>
<td>115</td>
<td>245</td>
</tr>
<tr>
<td>11819100</td>
<td>33# WB</td>
<td>1/16</td>
<td>11.3</td>
<td>115</td>
<td>245</td>
</tr>
</tbody>
</table>

Notes:
- Electrical stick-out 1/2" 1. Flat and vertical welding 2. Flat welding only
**STAINLESS STEEL FLUX CORE WIRES**

### 308L T-1 FH

Stoody FH stainless steel flux cored wires are designed for flat and horizontal welding applications, using either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer with very low levels of spatter, a slag system that is essentially self-releasing, a smooth evenly ripped bead appearance, and deposition rates which are obtained at lower levels of heat input than competitive products.

Stoody 308LT-1 FH wires can be used to join AISI 301, 302, 304 commonly used in the chemical industry and food processing applications. AWS classification A5.22 E308LT0-X.

**Typical Deposit Chemistry:**
- Carbon, Manganese, Silicon, Chromium, Nickel

**Typical Deposit Characteristics:**
- 75 AR/25 CO2
  - Tensile Strength, Ksi (MPa)................. 87 (600)
  - Elongation (%)................................. 37
  - Yield Strength, Ksi (Mpa)................... 62 (430)
- 100% CO2
  - Tensile Strength, Ksi (MPa)................. 84 (573)
  - Elongation (%)................................. 38
  - Yield Strength, Ksi (Mpa)................... 60 (415)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11709100</td>
<td>25# WB, VP</td>
<td>.035  0.9</td>
</tr>
<tr>
<td>11869400</td>
<td>33# WB, VP</td>
<td>.045  1.2</td>
</tr>
<tr>
<td>11869300</td>
<td>33# WB, VP</td>
<td>1/16  1.6</td>
</tr>
</tbody>
</table>

### 309L T-1 AP

Stoody AP stainless steel wires are designed for welding in all positions with either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters.

Stoody 309LT-1 AP wires can be used to join AISI 309 steels. It is also used to join AISI 304 to carbon and low alloy steels. AWS classification A5.22 E309LT1-X.

**Typical Deposit Chemistry:**
- Carbon, Manganese, Silicon, Chromium, Nickel

**Typical Deposit Characteristics:**
- 75 AR/25 CO2
  - Tensile Strength, Ksi (MPa)................. 88 (610)
  - Elongation (%)................................. 34
  - Yield Strength, Ksi (Mpa)................... 69 (480)
- 100% CO2
  - Tensile Strength, Ksi (MPa)................. 86 (600)
  - Elongation (%)................................. 38
  - Yield Strength, Ksi (Mpa)................... 64 (440)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11953000</td>
<td>25# WB</td>
<td>.035  0.9</td>
</tr>
<tr>
<td>11919300</td>
<td>33# WB</td>
<td>.045  1.2</td>
</tr>
<tr>
<td>11919300</td>
<td>33# WB</td>
<td>1/16  1.6</td>
</tr>
</tbody>
</table>

### Notes:
- 3/8" - 1/2" (10-12mm) electrical stickout
- When using Argon / Carbon Dioxide mixtures, voltage may be reduced by up to one volt to improve weldability and bead appearance.

---

Stoody FH stainless steel flux cored wires are designed for flat and horizontal welding applications, using either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer with very low levels of spatter, a slag system that is essentially self-releasing, a smooth evenly ripped bead appearance, and deposition rates which are obtained at lower levels of heat input than competitive products.

Stoody 308LT-1 FH wires can be used to join AISI 301, 302, 304 commonly used in the chemical industry and food processing applications. AWS classification A5.22 E308LT0-X.

**Typical Deposit Chemistry:**
- Carbon, Manganese, Silicon, Chromium, Nickel

**Typical Deposit Characteristics:**
- 75 AR/25 CO2
  - Tensile Strength, Ksi (MPa)................. 87 (600)
  - Elongation (%)................................. 37
  - Yield Strength, Ksi (Mpa)................... 62 (430)
- 100% CO2
  - Tensile Strength, Ksi (MPa)................. 84 (573)
  - Elongation (%)................................. 38
  - Yield Strength, Ksi (Mpa)................... 60 (415)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11709100</td>
<td>25# WB, VP</td>
<td>.035  0.9</td>
</tr>
<tr>
<td>11869400</td>
<td>33# WB, VP</td>
<td>.045  1.2</td>
</tr>
<tr>
<td>11869300</td>
<td>33# WB, VP</td>
<td>1/16  1.6</td>
</tr>
</tbody>
</table>

### .035" (0.9mm) Low Optimum High

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>24</td>
<td>375</td>
</tr>
<tr>
<td>150</td>
<td>25/26</td>
<td>460</td>
</tr>
<tr>
<td>180</td>
<td>28</td>
<td>550</td>
</tr>
</tbody>
</table>

### .045" (1.2mm) Low Optimum High

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>23</td>
<td>200</td>
</tr>
<tr>
<td>200</td>
<td>26/28</td>
<td>350</td>
</tr>
<tr>
<td>250</td>
<td>28/30</td>
<td>450</td>
</tr>
</tbody>
</table>

### .1/16" (1.6mm) Low Optimum High

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>25</td>
<td>250</td>
</tr>
<tr>
<td>300</td>
<td>30</td>
<td>250</td>
</tr>
</tbody>
</table>

### Notes:
- 3/8" - 1/2" (10-12mm) electrical stickout
- When using Argon / Carbon Dioxide mixtures, voltage may be reduced by up to one volt to improve weldability and bead appearance.

---

Stoody AP stainless steel wires are designed for welding in all positions with either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters.

Stoody 309LT-1 AP wires can be used to join AISI 309 steels. It is also used to join AISI 304 to carbon and low alloy steels. AWS classification A5.22 E309LT1-X.

**Typical Deposit Chemistry:**
- Carbon, Manganese, Silicon, Chromium, Nickel

**Typical Deposit Characteristics:**
- 75 AR/25 CO2
  - Tensile Strength, Ksi (MPa)................. 87 (600)
  - Elongation (%)................................. 37
  - Yield Strength, Ksi (Mpa)................... 62 (430)
- 100% CO2
  - Tensile Strength, Ksi (MPa)................. 84 (573)
  - Elongation (%)................................. 38
  - Yield Strength, Ksi (Mpa)................... 60 (415)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>11953000</td>
<td>25# WB</td>
<td>.035  0.9</td>
</tr>
<tr>
<td>11919300</td>
<td>33# WB</td>
<td>.045  1.2</td>
</tr>
<tr>
<td>11919300</td>
<td>33# WB</td>
<td>1/16  1.6</td>
</tr>
</tbody>
</table>

### .035" (0.9mm)

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>25</td>
<td>275</td>
</tr>
<tr>
<td>120</td>
<td>26</td>
<td>347</td>
</tr>
<tr>
<td>150</td>
<td>27</td>
<td>400</td>
</tr>
<tr>
<td>170</td>
<td>27</td>
<td>600</td>
</tr>
</tbody>
</table>

### .045" (1.2mm)

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>24</td>
<td>227</td>
</tr>
<tr>
<td>165</td>
<td>26</td>
<td>315</td>
</tr>
<tr>
<td>190</td>
<td>26</td>
<td>445</td>
</tr>
<tr>
<td>220</td>
<td>27</td>
<td>565</td>
</tr>
</tbody>
</table>

### .1/16" (1.6mm)

<table>
<thead>
<tr>
<th>Amps</th>
<th>Volts</th>
<th>WFS (in/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>170</td>
<td>25</td>
<td>115</td>
</tr>
<tr>
<td>210</td>
<td>26</td>
<td>195</td>
</tr>
<tr>
<td>250</td>
<td>27</td>
<td>245</td>
</tr>
<tr>
<td>300</td>
<td>28</td>
<td>320</td>
</tr>
</tbody>
</table>

### Notes:
- 3/8" - 1/2" (10 - 12mm) Electrical stick-out.
- 1. Flat and vertical welding
- 2. Flat welding only
High Alloy Joining & Cladding

**STAINLESS STEEL FLUX CORE WIRES**

### 309L T-1 FH

Stoody FH stainless steel flux cored wires are designed for flat and horizontal welding applications, using either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer with very low levels of spatter, a slag system that is essentially self-releasing, a smooth evenly ripped bead appearance, and deposition rates which are obtained at lower levels of heat input than competitive products.

Stoody 309LT-1 FH wires can be used to join AISI 309 steels. It is also used to join AISI 304 to carbon and low alloy steels. AWS classification A5.22 E308LT-1X.

**Typical Deposit Chemistry:**
Carbon, Manganese, Silicon, Chromium, Nickel

**Typical Deposit Characteristics:** 75 AR/25 CO2 100% CO2
- Tensile Strength, Ksi (MPa)............. 84 (585) 83 (580)
- Elongation (%).......................... 34 33
- Yield Strength, Ksi (Mpa)................... 61 (420) 61 (420)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>.035 0.9</td>
</tr>
<tr>
<td>110703400</td>
<td>25# WB, VP</td>
<td>120 150 180</td>
</tr>
<tr>
<td>11869600</td>
<td>33# WB, VP</td>
<td>24 25/26 28</td>
</tr>
<tr>
<td>11869500</td>
<td>33# WB, VP</td>
<td>375 460 550</td>
</tr>
</tbody>
</table>

### 316L T-1 AP

Stoody AP stainless steel wires are designed for welding in all positions with either 100% CO2 (X=1) or Argon/CO2 (X=4) gas mixtures. These wires exhibit a spray like arc transfer, easy slag removal and can be welded within a wide range of parameters.

Stoody 316LT-1 AP wires can be used to join AISI 316 and 316L commonly used in the rubber, chemical, petrochemical and dye industries. AWS classification A5.22 E308LT-1X.

**Typical Deposit Chemistry:**
Carbon, Manganese, Silicon, Chromium, Nickel, Molybdenum

**Typical Deposit Characteristics:** 75 AR/25 CO2 100% CO2
- Tensile Strength, Ksi (MPa)............. 88 (590) 86 (590)
- Elongation (%).......................... 36 39
- Yield Strength, Ksi (Mpa)................... 66 (450) 62 (430)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter in. mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>.035 0.9</td>
</tr>
<tr>
<td>11093500</td>
<td>25# WB</td>
<td>100 120 150 170</td>
</tr>
<tr>
<td>11819600</td>
<td>33# WB</td>
<td>24 26 27 28</td>
</tr>
<tr>
<td>11819700</td>
<td>33# WB</td>
<td>175 250 325</td>
</tr>
</tbody>
</table>

### Notes:

- 1/2" Electrical stick-out
- When using Argon / Carbon Dioxide mixtures, voltage may be reduced by up to one volt to improve weldability and bead appearance.
HYDROLOY 914

Stoody Hydroloy 914 is a high strength stainless steel alloy designed specifically to combat cavitation erosion in hydropower systems, particularly on turbine runn ers. The proprietary composition produces the same microstructural deformation characteristics that give more expensive cobalt base alloys their outstanding cavitation resistance.

Applications:  Turbine Rinnlers, Pump Components

Nominal Composition: High Strength Stainless Steel

SPECIALITY WIRES & COATED ELECTRODES

HYDROLOY 914

Stoody Hydroloy 914 is a high strength stainless steel alloy designed specifically to combat cavitation erosion in hydropower systems, particularly on turbine runn ers. The proprietary composition produces the same microstructural deformation characteristics that give more expensive cobalt base alloys their outstanding cavitation resistance.

Applications:  Turbine Rinnlers, Pump Components

Nominal Composition: High Strength Stainless Steel

TYPICAL DEPOSIT CHEMISTRY:
Carbon, Manganese, Silicon, Chromium, Nickel, Molybdenum

TYPICAL DEPOSIT CHARACTERISTICS:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Wire Diameter</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11831600</td>
<td>25/16 WB, VP</td>
<td>.035</td>
<td>1.2</td>
<td>75Ar/25CO2</td>
</tr>
<tr>
<td>11957600</td>
<td>25/16 WB, VP</td>
<td>.045</td>
<td>1.2</td>
<td>75Ar/25CO2</td>
</tr>
<tr>
<td>11834800</td>
<td>25/16 WB, LLW</td>
<td>.045</td>
<td>1.6</td>
<td>75Ar/25CO2</td>
</tr>
</tbody>
</table>

Notes:
- 3/8" - 1/2" (10-12mm) electrical stickout
- When using Argon / Carbon Dioxide mixtures, voltage may be reduced by up to one volt to improve weldability and bead appearance.
NICKEL FLUX CORE WIRES

STOODY 82-T1

Stoody 82-T1 is a gas shielded All Position Flux Cored Wire that meets the requirements of AWS A5.34, Class ENiCr3TX-Y.

Applications: Joining nickel-chromium-iron alloys, Clad side of joints in steels clad with nickel-chromium-iron weld metal, Surfacing steel with nickel-chromium-iron weld metal, Joining Inconel 600, 601 and Incoloy 800 to themselves or to stainless and carbon steels

Typical Deposit Chemistry: Carbon, Manganese, Silicon, Chromium, Iron, Niobium, Sulfur, Phosphorus, Nickel

Typical Deposit Characteristics:
Tensile Strength .........................89 ksi (614 Mpa)
Yield Strength .........................58 ksi (400 Mpa)
Elongation .....................................26 %

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11872700</td>
<td>33# WB</td>
<td>.045</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11872600</td>
<td>33# WB</td>
<td>1/16</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>

STOODY 182-T1

Stoody 182-T1 is a gas shielded All Position Flux Cored Wire that meets the requirements of AWS 5.34 ENiCrFe3TX-Y.

Applications: Joining nickel-chromium-iron alloys, Clad side of joints in steels clad with nickel-chromium-iron weld metal, Surfacing steel with nickel-chromium-iron weld metal, Joining Alloys 600, 601 and Incoloy 800 to themselves or to stainless and carbon steels

Typical Deposit Chemistry: Carbon, Manganese, Silicon, Chromium, Iron, Niobium, Sulfur, Phosphorus, Nickel

Typical Deposit Characteristics:
Tensile Strength .........................94 ksi (649 Mpa)
Yield Strength .........................58 ksi (400 Mpa)
Elongation .....................................35 %

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11916200</td>
<td>33# WB</td>
<td>.045</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11916100</td>
<td>33# WB</td>
<td>1/16</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>

STOODY A-T1

Stoody A-T1 is a gas shielded All Position Flux Cored Wire that meets the requirements of AWS 5.34 ENiCrFe2TX-Y.

Applications: Joining nickel-chromium-iron alloys, Joining nickel steels, Joining Inconel 600, 601 and Incoloy 800 to themselves or to stainless and carbon steels

Typical Deposit Chemistry: Carbon, Manganese, Silicon, Chromium, Iron, Molybdenum, Niobium, Sulfur, Phosphorus, Nickel

Typical Deposit Characteristics:
Tensile Strength .........................89.5 ksi (595 Mpa)
Yield Strength .........................51.0 ksi (340 Mpa)
Elongation .....................................45 %
Charpy Impact Toughness ............67 Ft.-lbs. (92 Joules) at -320°F (-196°C)
Lateral Expansion .......................46 mils (1.2mm) at -320°F (-196°C)

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Packaging</th>
<th>Wire Diameter</th>
<th>Shielding Gas</th>
<th>Welding Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11896500</td>
<td>33# WB, LLW</td>
<td>.045</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11896700</td>
<td>33# WB, LLW</td>
<td>1/16</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>
NICKEL FLUX CORE WIRES

STOODY 625-T1
Stoody 625-T1 is a gas shielded All Position Flux Cored Wire that meet the requirements of AWS 5.34 ENiCrMo3TX-Y.

Applications: Joining nickel-chromium-molybdenum alloys, Clad side of joints in steels clad with nickel-chromium-molybdenum weld metal, Surfacing steel with nickel-chromium-molybdenum weld metal, Joining steels to nickel based alloys, Joining 9% nickel steel for cryogenic applications

Typical Deposit Chemistry:
Carbon, Manganese, Silicon, Chromium, Molybdenum, Iron*, Noibium, Sulfer, Phosphorus, Nickel

*For Iron <1%, please request Stoody 625LI-T1 (PDS SP-029)

Typical Deposit Characteristics:

<table>
<thead>
<tr>
<th>Tensile Strength</th>
<th>112 ksi (773 Mpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield Strength</td>
<td>72 ksi (497 Mpa)</td>
</tr>
<tr>
<td>Elongation</td>
<td>38 %</td>
</tr>
</tbody>
</table>

Part Number | Packaging | Wire Diameter | Shielding Gas | Welding Parameters |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11872500</td>
<td>33# WB, LLW</td>
<td>.045 in. 1.2 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11872400</td>
<td>33# WB, LLW</td>
<td>1/16 in. 1.6 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>

STOODY C276-T1
Stoody C276-T1 is a gas shielded All Position Flux Cored Wire that meet the requirements of AWS 5.34 ENiCrMo4TX-Y.

Applications: Joining nickel-chromium-molybdenum alloys, Clad side of joints in steels clad with nickel-chromium-molybdenum weld metal, Surfacing steel with nickel-chromium-molybdenum weld metal, Joining higher molybdenum - high nitrogen containing stainless steels

Typical Deposit Chemistry:
Carbon, Manganese, Silicon, Chromium, Molybdenum, Iron, Tungsten, Sulfer, Phosphorus, Nickel

Typical Deposit Characteristics:

<table>
<thead>
<tr>
<th>Tensile Strength</th>
<th>106 ksi (705 Mpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield Strength</td>
<td>70 ksi (470 Mpa)</td>
</tr>
<tr>
<td>Elongation</td>
<td>42 %</td>
</tr>
</tbody>
</table>

Part Number | Packaging | Wire Diameter | Shielding Gas | Welding Parameters |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11953700</td>
<td>33# WB, LLW</td>
<td>.045 in. 1.2 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11953400</td>
<td>33# WB, LLW</td>
<td>1/16 in. 1.6 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>

STOODY 622-T1
Stoody 622-T1 is a gas shielded All Position Flux Cored Wire that meet the requirements of AWS 5.34 ENiCrMo4TX-Y.

Applications: Joining nickel-chromium-molybdenum alloys, Clad side of joints in steels clad with nickel-chromium-molybdenum weld metal, Surfacing steel with nickel-chromium-molybdenum weld metal, Joining higher molybdenum - high nitrogen containing stainless steels

Typical Deposit Chemistry:
Carbon, Manganese, Silicon, Chromium, Molybdenum, Iron, Tungsten, Sulfer, Phosphorus, Nickel

Typical Deposit Characteristics:

<table>
<thead>
<tr>
<th>Tensile Strength</th>
<th>112 ksi (773 Mpa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield Strength</td>
<td>72 ksi (497 Mpa)</td>
</tr>
<tr>
<td>Elongation</td>
<td>38 %</td>
</tr>
</tbody>
</table>

Part Number | Packaging | Wire Diameter | Shielding Gas | Welding Parameters |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11953800</td>
<td>33# WB, LLW</td>
<td>.045 in. 1.2 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 150-200 25-26</td>
</tr>
<tr>
<td>11953400</td>
<td>33# WB, LLW</td>
<td>1/16 in. 1.6 mm</td>
<td>75% AR-25% CO2 or 100%CO2</td>
<td>1/2 200-250 26-27</td>
</tr>
</tbody>
</table>
WARNINGS

WARNING: Protect yourself and others. Before you use this product, read and understand this label, the appropriate Material Safety Data Sheet (MSDS), the manufacturer’s instructions and your employer’s safety practices. The MSDS is available upon request from your distributor or employer.

- **ELECTRIC SHOCK** can kill. Arcs/Rays can injure eyes and burn skin. FUMES AND GASES can be hazardous to your health. Keep your head out of fumes, the primary entry route for welding fumes and gases to be inhaled. Inhaling or swallowing the welding fumes may result in fever, dizziness, nausea, or depression or irritation of the throat or eyes and may aggravate pre-existing respiratory conditions. Long-term inhalation is believed to cause lung cancer and respiratory disease. Fumes and gases may also lead to siderosis (iron deposits in the lungs). Manganese over-exposure may affect the central nervous system resulting in impaired speech and movement. OSHA considers chromium and nickel compounds carcinogenic.

- Always wear ventilation and exhaust at the arc (Rays) to keep fumes and gases from your breathing zone and general area. If you are concerned about the ventilation of your work area, request that your employer conduct appropriate testing.

- This product contains or produces a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health and Safety Code 25249.6 et seq.)

- Wear protective eyewear and body protection.

- Do not permit electricity in parts to touch skin, clothing or gloves.

- IN CASE OF EMERGENCY: Immediately call for medical aid. Employ first aid techniques recommended by the Red Cross.

- This information is intended for the end user of this product. DO NOT REMOVE OR OBSTRUCT THIS INFORMATION.

ADVERTISSEMENTS

Préférez-vous ainsi que ceux qui vous entourent. Avant d’utiliser ce produit, veuillez lire bien compréhensivement cette étiquette. La fiche signalétique (MSDS), les directives du fabricant et les mesures de sécurité pratiquées par votre employeur. La fiche signalétique est disponible sur demande auprès de votre distributeur ou employeur.

**LES RAISONS CAUSANTES (L’ÉCLATEMENT INFRAORDINÉ) de la flamme ou du métal chaud**, s’embranchont du procédé oxygène peuvent causer des blessures aux yeux et brûlure la peau.

**LES RAISONS D’ARC** peuvent causer des blessures aux yeux et brûlure la peau. **LES ÉMANTHÈSES ET LES GAZ** peuvent poser un risque de santé.

- Conservez la tête hors de la zone des émanations; la pose de pièces prises n’est pas recommandé. La super exposition à court terme aux émanations de la fumée peut causer la lissé, les irritations, la nausée ou faire enlevage ou irritation du nez, du corps ou des yeux et peut aggraver les conditions respiratoires pré-existant. La super exposition à long terme aux émanations de la fumée peut causer des douleurs respiratoires et pulmonaires, et causer la sécheresse (défis de fer dans les poumons). La super exposition au manganèse peut affecter le système nerveux central, aboutissant en des troubles d’élocution et de mouvement. OSHA considère le chrome et le nickel comme étant cancérogènes.

**ADVERTENCIA** Protejase usted mismo y proteja a las demás. Antes de usar este producto lea atentamente esta etiqueta, las Instrucciones de seguridad del material (MSDS), las instrucciones del fabricante y las normas de seguridad de su emisario. Las Instrucciones de seguridad (MSDS) están disponibles con su distribuidor.

**RAYOS INFRARROJOS** (provocantes de llama o metal candente) de combustión de oxígeno puede darzaus sah. **DESCARGA ELECTRICA** puede terminar con su vida. **RAYOS DE ARCO** pueden darzaus sah o quemar la piel. **HUMO Y GASES** pueden ser peligrosos para su salud.

- Mantenga su cabeza fuera del área caliente. La principal ruta de entrada de las humitas de saldateo es por inhalación. Exposició peo corte tiempos este puede provocar lesiones respiratorias; fatiga, mareos, nauseas o enfermedad de la nariz. Garganta y ojos puede agravar previas problemas respiratorios. Exposición prolongada al humo puede darzaus las funciones pulmonares respiratorias y dañar en el oxigeno del aire. Exposició de manganuro puede afectar el sistema nervioso central, causando dificultades de habla y movimientos. OSHA considera el razon y nikel como materiales canceores.

Use ventilación con salida al exterior para mantener al mínimo el humo y los gases en la zona donde usted trabaja. Si tiene dudas de la calidad de aire que respira, pida a su emisario que se realicen pruebas de aire. Este producto contiene elementos que pueden ser peligrosos durante el proceso de saldateo. Corrobore con la norma MSDS.

CUABADO: Este producto contiene elementos químicos que según el Estado de California, causa cancer y defectos fetales. (California Health and Safety Code 25249.6 et seq.)

- Use adecuada protección para sus ojos, oídos y resto del cuerpo.
- No permita que las partículas de electrodo entre en contacto con la piel, ropa o guantes. Use adecuada electodades.


Esta información es para el uso del consumidor. NO QUITAR U OCULTAR ESTA INFORMACION.
Quality Packaging Quality Products – from Stoody

Stoody Manual electrodes are stamped, inspected and delivered factory fresh in rugged high strength packages. Special care is taken with the packaging of all stoody wires to insure safe delivery to the customer.

Standard packages for .045” (1.2 mm) and .062” (1.6 mm) wires are 10 lb. plastic spools, 33 lb. wire spools and 50 lb. Polypaks (12” I.D.)

Packaging for automatic and semi-automatic wires are 60 lb. 12” I.D. coils, 100 lb. 22-1/2” I.D. coils, 110 lb. Quarterpaks, 200 lb. Halfpaks and 500 lb. Payoffpaks.

Packaging will vary with different diameters. Consult your Stoody price list or call Stoody Customer Service for specific packaging and ordering requirements.