

BLUE MAX[®] 2100

Maintenance and Repair

KEY FEATURES

- High resistance to cracking
- High strength
- Designed for joining difficult to weld steel

TYPICAL APPLICATIONS

- High carbon, low alloy, high strength, manganese steels
- Base for hardfacing or stainless steel cladding

WELDING POSITIONS

All, except vertical down

DIAMETERS / PACKAGING

Diameter mm (in)	Length in (mm)	10 lb (4.5 kg) Easy Open Can
2.5 (3/32)	14 (350)	ED032298
3.2 (1/8)	14 (350)	ED032299

MECHANICAL PROPERTIES⁽¹⁾

	Yield Strength ⁽²⁾ MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Ferrite Number
Typical Results ⁽³⁾	670 (97)	805 (117)	22	> 50

TYPICAL OPERATING PROCEDURES

Polarity ⁽⁴⁾	Current (Amps)	
	2.4 mm (3/32 in)	3.2 mm (1/8 in)
DC+	40 - 80	75 - 110
AC	40 - 80	75 - 110

⁽¹⁾Composition and properties depend upon dilution. Single layer deposit properties depend upon base metal and/or build-up material.

⁽²⁾Measured with 0.2% offset ⁽³⁾See test results disclaimer ⁽⁴⁾Preferred polarity is listed first.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

WEARTECH® WT-1 TIG

Cobalt ▪ AWS A5.21 ERCoCr-C

KEY FEATURES

- Cobalt, chrome, high tungsten
- Electrode excellent for abrasion and corrosion resistance
- Retains hardness at temperatures exceeding 1400°F (760°C)
These key features can be used on all Wearthech WT-1 products
- stick, wire, etc.

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Wear Pads
- Mixer Rotors
- Pump Sleeves

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
3/32 (2.4)	B1010-240X915
1/8 (3.2)	B1010-320X915
5/32 (4.0)	B1010-400X915
3/16 (4.8)	B1010-480X915
1/4 (6.4)	B1010-640X915
5/16 (7.9)	B1010-800X915

WIRE COMPOSITION

	%C	%Mn	%Si	%Cr	%Ni
Requirements AWS A5.21 ERCoCr-C	2.0-3.0	1.0 max	2.0 max	26-33	3.0 max
Typical Results⁽²⁾	2.2	0.1	1.0	29.5	2.4
	%Fe	%Mo	%W	%Co	Hardness, Rc
Requirements AWS A5.21 ERCoCr-C	3.0 max	1.0 max	11-14	Balance	Not Required
Typical Results⁽²⁾	2.5	0.1	12.4	50	52

TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps) 1/8 in (3.2 mm)
DC-	115-135

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WEARTECH® WT-6 TIG

Cobalt ▪ AWS A5.21 ERCoCr-A

KEY FEATURES

- Cobalt, high chromium, tungsten electrode
- Excellent for corrosion resistance, wear and galling
- Most flexible and widely used of the cobalt alloys due to overall performance
- Retains hardness up to 930°F (500°C)

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Shear Blades
- Fluid Flow Valves
- Extrusion Screws
- Roll Bushings
- High Temperature
- Valve Bearing Surface

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
3/32 (2.4)	B1060-240X915
1/8 (3.2)	B1060-320X915
5/32 (4.0)	B1060-400X915
3/16 (4.8)	B1060-480X915
1/4 (6.4)	B1060-640X915
5/16 (7.9)	B1060-800X915

WIRE COMPOSITION

	%C	%Mn	%Si	%Cr	%Ni
Requirements AWS A5.21 ERCoCr-A	0.9-1.4	1.0 max	2.0 max	26-32	3.0 max
Typical Results⁽²⁾	1.1	0.1	1.3	28.2	2.5
	%Fe	%Mo	%W	%Co	Hardness, Rc
Requirements AWS A5.21 ERCoCr-A	3.0 max	1.0 max	3.0-6.0	Balance	Not Required
Typical Results⁽²⁾	2.5	0.1	4.7	59	42

TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps)		
	1/8 in (3.2 mm)	5/32 in (4.0 mm)	3/16 in (4.8 mm)
DC-	115-135	145-165	175-195

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WEARTECH® WT-12 TIG

Cobalt ▪ AWS A5.21 ERCoCr-B

KEY FEATURES

- Cobalt, very high chromium, high carbon, high tungsten electrode
- Very resistant to wear, corrosion, and galling at high temperatures
- Intermediate alloy between WT-1 and WT-6
- Maintains hardness up to 1300°F (700°C)

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Chain Saw Bars
- Saw Teeth
- Extrusion Dies

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
3/32 (2.4)	B1120-240X915
1/8 (3.2)	B1120-320X915
5/32 (4.0)	B1120-400X915
3/16 (4.8)	B1120-480X915
1/4 (6.4)	B1120-640X915

WIRE COMPOSITION

	%C	%Mn	%Si	%Cr	%Ni
Requirements AWS A5.21 ERCoCr-B	1.2-1.7	1.0 max	2.0 max	26-32	3.0 max
Typical Results⁽²⁾	1.4	0.1	1.4	29.5	2.5
	%Fe	%Mo	%W	%Co	Hardness, Rc
Requirements AWS A5.21 ERCoCr-B	3.0 max	1.0 max	7.0 -9.5	Balance	Not Required
Typical Results⁽²⁾	2.6	0.1	8.8	53	47

TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps) 1/8 in (3.2 mm)
DC-	115-135

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WEARTECH® WT-21 TIG

Cobalt ▪ AWS A5.21 ERCoCr-E

KEY FEATURES

- Cobalt, high chromium, molybdenum electrode
- Excellent for corrosion resistance, galling, cavitation, and metal to metal wear resistance
- Not recommended for severe abrasion

TYPICAL APPLICATIONS

- Steam Valves
- Hot Shears
- Chemical and Petrochemical Valves
- Cavation Repair
- Forging Dies

WELDING POSITIONS

All

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
3/32 (2.4)	B1210-240X915
1/8 (3.2)	B1210-320X915
5/32 (4.0)	B1210-400X915
3/16 (4.8)	B1210-480X915
1/4 (6.4)	B1210-640X915

WIRE COMPOSITION

	%C	%Mn	%Si	%Cr	%Ni
Requirements AWS A5.21 ERCoCr-E	0.15-0.40	2.0 max	1.5 max	25-30	1.5 -4.0
Typical Results⁽²⁾	0.22	0.9	0.9	27.5	2.9
	%Fe	%Mo	%W	%Co	Hardness, Rc
Requirements AWS A5.21 ERCoCr-E	5.0 max	4.5-7.0	0.50 max	Balance	Not Required
Typical Results⁽²⁾	1.5	5.6	0.1	60	27

TYPICAL OPERATING PROCEDURES

Polarity	Current (Amps) 1/8 in (3.2 mm)
DC-	115-135

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WEARTECH® WT-40 TIG

Nickel ▪ AWS A5.21 ERNiCr-A

KEY FEATURES

- Undiluted weld metal exhibits a structure containing chromium-carbides and carbides in a nickel rich matrix
- Deposits exhibit good heat and corrosion resistance
- Smooth and machinable deposits

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Glass Industry
- Mold Parts
- Glass Molds
- Blushing's
- Plastic Extrusion
- Flight Screws

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/8 (3.2)	B2400-320X915
5/32 (4.0)	B2400-400X915
3/16 (4.8)	B2400-480X915

WIRE COMPOSITION

	%C	%Mn		%Si	%Cr	%Ni
Requirements - AWS A5.21 ERNiCr-A	0.20-0.60	-		1.2-4.0	6.5-14.0	Remainder
Typical Results ⁽¹⁾	0.40			2.2	11	Balance
	%Fe	%Mo	%W	%Co	%B	Hardness, Rc
Requirements - AWS A5.21 ERNiCr-A	1.0-3.5	-	-	-	1.5-3.0	Not Required
Typical Results ⁽¹⁾	2.5	-	-	<1.5	2	35-45

⁽¹⁾ See test results disclaimer

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

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WEARTECH® WT-50 TIG

Nickel ▪ AWS A5.21 ERNiCr-B

KEY FEATURES

- Deposits provide higher hardness and abrasion than WT-40 TIG
- Resists abrasion, corrosion, galling and pitting
- Exhibits good heat and corrosion resistance
- Can be deposited on cast iron and low-to-medium carbon steel

TYPICAL APPLICATIONS

- Liners
- Valve Components
- Oil Extrusion Screws
- Centrifuges

WELDING POSITIONS

All

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/8 (3.2)	B2500-320X915
5/32 (4.0)	B2500-400X915
3/16 (4.8)	B2500-480X915
1/4 (6.4)	B2500-640X915
5/16 (8.0)	B2500-800X915

WIRE COMPOSITION

	%C	%Mn		%Si	%Cr	%Ni
Requirements - AWS A5.21 ERNiCr-B	0.30-0.80	-		3.0-5.0	9.5-16.0	Remainder
Typical Results ⁽¹⁾	0.60	-		3.7	13	Balance
	%Fe	%Mo	%W	%Co	%B	Hardness, Rc
Requirements - AWS A5.21 ERNiCr-B	2.0-5.0	-	-	-	2.0-4.0	Not Required
Typical Results ⁽¹⁾	3.5	-	-	1.0	3	45-56

⁽¹⁾ See test results disclaimer

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WEARTECH® WT-56 TIG

Nickel

KEY FEATURES

- Deposits provide slightly higher hardness than WT-50 TIG
- Resists abrasion, corrosion, galling and pitting
- Smooth and machinable weld deposits

TYPICAL APPLICATIONS

- Plastic Extrusion Flight Screws
- Impeller Screws
- Valve Components
- Shaft Sleeves

WELDING POSITIONS

All

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/8 (3.2)	B2560-320X915
5/32 (4.0)	B2560-400X915
3/16 (4.8)	B2560-480X915
1/4 (6.4)	B2560-640X915
5/16 (8.0)	B2560-800X915

WIRE COMPOSITION

	%C	%Mn		%Si	%Cr	%Ni
Requirements - AWS A5.21 ERNiCr-B	0.30 - 0.80	-		3.0-5.0	9.5-16.0	Remainder
Typical Results ⁽¹⁾	0.55	-		4.0	13.0	Balance
	%Fe	%Mo	%W	%Co	%B	Hardness, Rc
Requirements - AWS A5.21 ERNiCr-B	0.30-0.80	-	-	-	2.0-4.0	Not Required
Typical Results ⁽¹⁾	4	-	-	1.0	2.7	50-55

⁽¹⁾ See test results disclaimer

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WEARTECH® WT-60 TIG

Nickel ▪ AWS A5.21 ERNiCr-C

KEY FEATURES

- Deposits provide higher hardness and abrasion resistance than WT-40, WT-50, WT-56 TIG
- Resists abrasion, corrosion, galling, and pitting
- Smooth and machinable weld deposits

WELDING POSITIONS

All

TYPICAL APPLICATIONS

- Liners
- Thrust Shoes
- Slurry Pipe & Elbows
- Valve Components
- Expellers Screws

WELDING PROCESSES

- Gas Tungsten Arc Welding
- Oxyfuel Welding

DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Carton
1/8 (3.2)	B2600-320X915
5/32 (4.0)	B2600-400X915
3/16 (4.8)	B2600-480X915
1/4 (6.4)	B2600-640X915
5/16 (8.0)	B2600-800X915

WIRE COMPOSITION

	%C	%Mn		%Si	%Cr	%Ni
Requirements - AWS A5.21 ERNiCr-C	0.50-1.00	-		3.5-5.5	12-18	Remainder
Typical Results ⁽¹⁾	0.75	-		4.5	14.0	Balance
	%Fe	%Mo	%W	%Co	%B	Hardness, Rc
Requirements - AWS A5.21 ERNiCr-C	3.0-5.5	-	-	-	2.5-4.5	Not Required
Typical Results ⁽¹⁾	4.5	-	-	1.0	3	54-62

⁽¹⁾ See test results disclaimer

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