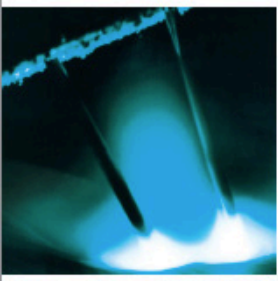

coregas

Shield*pro*

and Core*gas*

shielding gases

troubleshooting

guide

Wesfarmers Energy

Coregas is part of Wesfarmers Energy

industrial gases

Core*gas* shielding gases

WELD FAULT	CAUSE	SOLUTION
CRACKS		
	Weld bead too small	Decrease travel speed
	Poor fit up	Control joint tolerance
	Lack of pre/post heat on alloy steels	Apply heat as advised by material supplier
	High joint restraint	Modify design and/or application technique
	Removal of torch before weld crater has solidified	Keep torch in position over molten crater until gas flow stops
	Presence of grease, paint, foreign matter on work	Clean workpieces/ surfaces prior to welding
	Excessive voltage	Reduce voltage so a faint 'crackle' can be heard in the arc
	Welding over SMA tack welds	Completely remove all SMA slag and grind tacks
POROSITY		
	Insufficient gas coverage	Increase flow rate to afford effective shielding
	Excessive flow rates	Reduce to max. 15 litres/ min (spray transfer) 12 litres/min (short arc) If helium mixtures are being used, check and apply correction factors to flow rates
	Spatter in nozzle	Clean gas nozzle
	Ineffective gas shielding through draughts, winds etc.	Erect screens to protect weld area
	Excessive stick-out distance	Maintain recommended torch–work distances
	Inefficient gas hoses and/or connections	Check, replace and tighten as required
	Excessive current and/or voltage	Adjust for optimum conditions

troubleshooting guide

WELD FAULT	CAUSE	SOLUTION
	Contaminated or wet shielding gas	Use high purity Coregas and Shieldpro shielding gas mixture
	Contaminated wire	Ensure wire is free from excessive drawing lubricant
	Wrong wire analysis	Select to suit workpiece
	Rust, oil, grease, paint or contaminants on work	Clean work prior to welding
	Acute torch to work angle	Hold torch at 10° from vertical for downhand welding
SLAG INCLUSIONS		
	Excessive travel speeds where heavy oxides are present	Reduce travel speeds
	Contaminants on work surface	Clean prior to welding
	Lack of interpass cleaning	Remove slag deposits between passes
	Weaving too wide	Reduce weave width. Use stringer passes.
INCOMPLETE FUSION		
	Voltage too low Weld pool too large	Increase voltage Increase travel speed. Reduce weave width.
	Excessive wire protrusion	Maintain at 15–20mm (spray transfer) 7–10mm (short arc)
	Misdirected wire	Direct wire carefully
	Cold deposits	Increase voltage. Adjust inductance value (short arc).
INCOMPLETE PENETRATION		
	Poor joint design	Provide access to bottom of weld preparation
	Inadequate butt joint root gap	Ensure adequate root gap
	Weld pool too large	Increase travel speed.
	Preparation too small	Increase preparation angle

WELD FAULT	CAUSE	SOLUTION
	Incorrect torch angle	Maintain torch at 10° maximum to vertical
	Excessive wire (protrusion)	Limit to 15–20mm range (spray transfer), 7–10mm range (short arc)
	Excessive root face	Reduce root face
	Current too low	Increase current (wire feed speed)
	Poor current pick up	Check contact tip bore
	Inefficient work return clamp	Attach efficiently. Clean workpiece before attaching
UNDERCUTTING		
	Torch angle too low	Raise torch angle
	Travel speed too slow	Increase travel speed
	Voltage too high	Lower voltage
	Travel speed too fast	Reduce travel speed
	Excessive current	Reduce current
EXCESSIVE PENETRATION		
	Excessive heat input	Reduce current and voltage. Increase travel speed.
	Incorrect joint preparation	Reduce root gap. Increase root face.
SPATTER		
	Current too low	Increase current
	Voltage too high	Decrease voltage
	Acute torch to work angle	Maintain at 10° maximum to vertical
	Incorrect inductance setting	Set at correct value
	Work return clamp inefficient	Ensure clamp and cable are efficient

The above is guide only. Contact your Coregas representative for further advice.

Coregas line of shielding gases selection chart

Preference rating:
1 = first
2 = second

Note:
a critical applications
b non critical applications

	Coregas 5/2	Coregas 07	Coregas 18	Coregas 16/3	Coregas 10	Coregas 25	Coregas He30
Steels, mild and alloy	1	1	1	1	1	1	1
High deposition rates	1	1	1	1	1	1	1
All positions	1	2	2	2	1	2	2
Penetration	2	1	1	2	1	1	1
Rapid solidification	1	1	2	2	1	2	2
Hot arc	2	1	1	1	2	1	1
Flux cored wires	2	2	1	2	2	1	2
X-ray quality	1	1	1	1	1	2	1
Low spatter	1	1	2	2	1	2	1
Thin guage material	1	2	2	2	1	2	2
Rust/scale tolerance	2	1	1	1	2	1	1
Zinc coated steel	2	1	1	2	2	1	1
Galvanised coated steel	2	1	1	2	2	1	1
Stainless steels/duplex	2b						

SIX- AND TWELVE-PACKS
Cylinder packs, complete with pipeline systems, offer substantial savings for the larger user.
Ask your Coregas representative for details.

Safety in welding

Ventilation

- Ensure adequate ventilation in welding area.
- Use exhaust fans where necessary.
- Provide clean, dry air supply in confined spaces.

Helmets

- To be of approved types.
- To be fitted with filter lens of suitable shade.
- Space gasket to be fitted between front clear lens and filter lens.

Personnel protection

- Dark coloured clothing advised.
- Woollen materials preferable to synthetics or cotton.
- Cover body completely.
- Gloves are essential and must be dry.
- Wear robust footwear, not thongs, sandals etc.
- Screen the work to protect others from the arc flash.

Electrical

- Only licenced electricians to attend to electrical repairs.
- Ensure all cables are sound and free from defects.
- Ensure all electrical connections are efficient and tight.

Cleaning

- Do not use carbon tetrachloride or trichloroethylene (toxic). Use white spirit or acetone.

Location

- Ensure welding area is dry.
- Do not weld in wet locations.
- Ensure area is free of combustibles and flammable materials.

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Wesfarmers Energy
Coregas is part of Wesfarmers Energy

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