

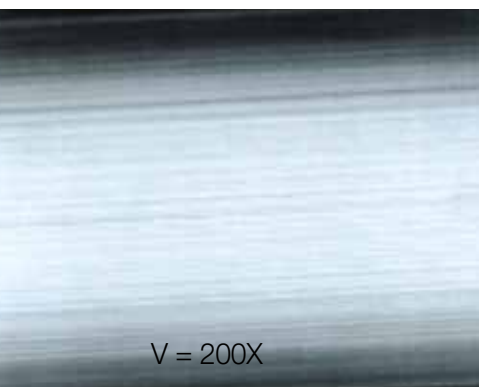
# Aluminium welding quality and knowledge

THE MOST COMPREHENSIVE RANGE  
OF MIG WIRES AND TIG RODS IN THE MARKET



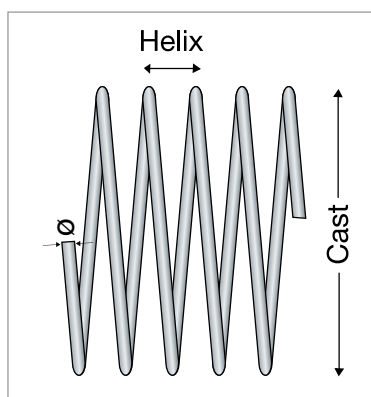
**STRENGTH THROUGH COOPERATION**

# Premium quality MIG wires and TIG rods from the number one supplier



## Wire surface quality

ESAB applies a unique shaving technology that produces a smooth and absolutely clean surface for enhanced feedability and X-ray quality welds.



Precise diameter control and constant cast and helix give constant welding parameters; even between individual LOT numbers. The resulting stable arc provides a consistent weld quality, with minimal spatter, but also protection against moisture pick-up from the surrounding air.

As the world's biggest aluminium welding wire manufacturer, ESAB leads the development of productive, high quality MIG wires and TIG rods and offers the most comprehensive product range. With ESAB, fabricators can rely on the unique support from a welding consumables and equipment manufacturer with worldwide process and applications experience and a global presence.

Successful welding of aluminium starts with the selection of the best available consumable to obtain X-Ray quality welds and to avoid feeding irregularities that can lead to costly downtime and weld rejects.

At ESAB, consumable production starts with the selection of raw materials with the lowest possible content of hydrogen; the principal source of porosity. In production, we apply a unique shaving process to remove the oxide skin and produce a surface free from abnormalities that can trap contaminants that cause porosity. Finally, a special surface finish with a microscopically thin layer of patented hydrogen-free lubricant provides superior feeding and reduced fume. The unique properties make ESAB

aluminium products also very suited for porosity sensitive processes such as laser beam welding or electron beam welding.

Fabricators enjoy longer periods of trouble-free MIG and cold TIG welding when using ESAB aluminium MIG wire from Marathon Pac™ bulk drums, because downtime for replacement of used 7 kg spools is largely avoided, leading to a dramatic increase of productivity. ESAB Marathon Pac™ is the most reliable and most environmentally friendly packaging system on the global market.

- Most comprehensive alloy range
- Technical support
- X-Ray quality welds
- Clean welds with nice wetting
- Superior wire feeding; also over long distances
- Constant welding parameters
- Recyclable Marathon Pac™ bulk drums
- Complete range of accessories

Feedability is further enhanced by special Marathon Pac pay off equipment that avoids tangling and twisting of the wire and enables deposition of long, straight welds, even with the 5000 alloy series. Marathon Pac wire straighteners allow feeding over very long distances (>30m), allowing Marathon Pac

drums to be placed on the work floor instead on gantries.

Using these wires in combination with proper maintenance of the welding system and timely replacement of wear parts such as liners and contact tips, you will enjoy trouble-free welding, time and again.

# Marathon Pac™ - a complete family for aluminium wires



ESAB Marathon Pac™ is the most advanced bulk wire packaging system available to fabricators. The complete Marathon Pac™ family for aluminium MIG wires consists of:

- Jumbo Marathon Pac
  - Midi Marathon Pac
  - Micro Marathon Pac
- Midi and Micro Marathon Pac™ are the latest additions and the perfect answer

for fabricators with moderate usage of aluminium MAG wires, who wish to minimize the capital tied-up in a bigger drum, without losing the benefits of low downtime and high productivity.

Marathon Pac™ - wire grades and Marathon Pac types

ESAB wire H X W	Alloy type	Jumbo 141 kg 935 x 595 mm	Midi 80 kg 508 x 595 mm	Micro 25 kg 220 x 595 mm	Corresponding TIG rods 1.6-4.8 x 1000mm
OK Autrod 4043	AlSi5	x	x	x	OK Tigrod 1450
OK Autrod 4047	AlSi12	x	x		OK Tigrod 1070
OK Autrod 5554	AlMg2.7Mn	x			OK Tigrod 4043
OK Autrod 5754	AlMg3	x			OK Tigrod 4047
OK Autrod 5356	AlMg5Cr	x	x	x	OK Tigrod 5554
OK Autrod 5183	AlMg4.5Mn	x	x	x	OK Tigrod 5754
OK Autrod 5087	AlMg4.5MnZr	x			OK Tigrod 5356
OK Autrod 5556A	AlMg5Mn	x			OK Tigrod 5183
					OK Tigrod 5087
					OK Tigrod 5556A

Other alloys on request. See page 5 for the extended alloy range, classifications and approvals.

# Marathon Pac™ - the savings quantified



ESAB Marathon Pac™ is designed to enable customers to get the maximum return on capital in robotised, mechanised and manual welding.

The table below gives an overview of typical cost savings when comparing different Marathon Pac types with 7kg aluminum wire spools. Welding station downtime for spool exchange depends on factors such as the set-up (accessibility of the wire feeder), liner length and distance to the location where spools are stored. The table is based on 20 min. exchange

time for booth spools and for Marathon Pac.

Stable feeding and straight wire delivery from Marathon Pac leads to joints that are well positioned, with a good penetration and appearance, less spatter and less post weld repair. Moreover, unfinished work pieces or rejects due to abrupt spool wire ends are largely avoided with Marathon Pac. Together, this results in substantially lower manual rework rates and associated lower repair work costs.

Cost-comparison in between standard 7kg spools, Marathon Pac “Micro” - 25 kg, Marathon Pac “Midi” - 80 kg, Marathon Pac “Jumbo” - 141 kg

Type of Packaging	7 kg Spools	Micro Marathon Pac	Midi Marathon Pac	Jumbo Marathon Pac
Weight of wire per packaging [kg]	7 kg	25 kg	80 kg	141 kg
Welding wire consumption per year [kg]	1.000 kg			
Number of spool replacements per year [units]	143	40	13	7
Replacement time per type of packaging [min]	20	20	20	20
Replacement time per year [min] for a yearly consumption of 1.000 kg	2857.14	800.00	250.00	141.84
Total spool-change time [h] for	47.62	13.33	4.17	2.36
<b>1.Costs related to spool replacements</b>				
Operational costs for robot and operator [€/h]	120.0			
Costs for spool replacement per year [€]	5714.29	1600.0	500.0	283.69
<b>2.Additional costs related to the use of Marathon Pac™</b>				
Purchasing price [€/ kg]	9.00	9.30	9.20	9.10
Weld wire costs per year [€ / year]	9000.00	9300.00	9200.00	9100.00
Total cost per year (Weld wire cost + spool replacement cost)	14714.29	10900.0	9700.00	9383.69
<b>3.Quality / Using grade</b>				
Cost per hour for manual repair work [€]	46			
Manual re-work quantity [%]	2.00%	0.50%	0.30%	0.10%
Cost for repair work per year [€]	3492.00	874.50	524.40	174.70
<b>Total Costs (1+2+3)</b>	<b>18206.29</b>	<b>11774.50</b>	<b>10224.40</b>	<b>9558.39</b>
<b>COST SAVINGS [€]</b>		<b>6431.79</b>	<b>7981.89</b>	<b>8647.90</b>

# Approvals and spool types

Overview of approvals of ESAB aluminium MIG wires and TIG rods.

ESAB Autrod	DB	TÜV	GL	BV	KR	DNV	ABS	LR	CWB	NKK	RINA	CE
OK Autrod 5183	X	X	-	-	X	-	X	X	X	X	X	X
OK Autrod 5356	X	X	-	-	X	-	X	X	X	-	X	X
OK Autrod 4043	X	-	-	-	-	-	-	-	X	-	-	X
OK Autrod 4047	-	-	-	-	-	-	-	-	X	-	-	-
OK Autrod 1100	-	-	-	-	-	-	-	-	X	-	-	-
OK Autrod 5087	X	X	-	-	-	-	-	-	-	-	-	X
OK Autrod 5556	-	X	-	-	X	-	X	X	X	X	-	-
OK Autrod 5554	-	-	-	-	-	-	-	-	X	-	-	-
OK Autrod 5754	-	X	-	-	-	-	-	-	-	-	-	-
<b>ESAB Tigrod</b>												
OK Tigrod 5183	X	X	-	-	-	-	X	-	X	-	-	X
OK Tigrod 5356	X	X	-	-	-	-	X	-	X	-	-	X
OK Tigrod 4043	X	-	-	-	-	-	-	-	X	-	-	X
OK Tigrod 4047	-	-	-	-	-	-	-	-	X	-	-	-
OK Tigrod 1100	-	-	-	-	-	-	-	-	X	-	-	-
OK Tigrod 5087	X	X	-	-	-	-	-	-	-	-	-	X
OK Tigrod 5556	-	X	-	-	-	-	X	-	X	-	-	-
OK Tigrod 5554	-	-	-	-	-	-	-	-	X	-	-	-
OK Tigrod 5754	-	X	-	-	-	-	-	-	-	-	-	-

## Spool types and weight

Weight (kg)	ESAB spool type	EN ISO 544	
0.45	21	S100	
2	46	S200	
7	24	S300	
9	24	S300	
7	98	BS300	

In compliance with regional environmental guidelines and requirements, the 300mm plastic spool is not sold in some markets.





Base Alloys	Filler Alloys	1060 1070 1080 1350	1100	2014 2036	2219	3003 ALCLAD 3003	3004	5005 5050	5052 5652
Characteristics		WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM
319.0 333.0 354.0 355.0 C355.0 380.0	2319 4043/4047 4145	BAAAAA AABAAA	BAAAAA AABAAA	BAAAAA CCBCAA ABCBA A	BAAAAA CCBCAA ABCBA A	BBAAAA AABAAA	BBAAAA AABAAA	BBAAAA AABAAA	AAAAAA
413.0 443.0 444.0 356.0 A356.0 A357.0 359.0	4043/4047 4145 A356.0	AAAAAA AABBA	AAAAAA AABBA	BBAAAA AABAA	BBAAAA AABAA	AAAAAA AABBA	AAAAAA	AAAAAA	ABAAAA
7005 7021 7039 7046 7146 710.0 711.0	4043/4047 4145 5183 5356 5554 5556 5654	AACAA BABA A BAAA A BABA A	AACAA BABA A BAAA A BABA A	BBAAA AABAA	BBAAA AABAA	ABCAA BABA A BAAA A BABA A	ADCB A BABA A BBAA A CAAAAA BABA A CCAA B	ABCB A BABA A BAAA A CAAAAA BABA A CAAA A	BDCBA AABA A ABAA A BCAAAA AABA A BCAA A
6061 6070	4043/4047 4145 4643 (1) 5183 5356 5554 5556 5654	AACAA AADBA BAB A BAA A BAB A	AACAA AADBA BAB A BAA A BAB A	BBAAA AABAA	BBAAA AABAA	ABCAA AADBA BAB A BAA A BAB A	ADCAA BCDBA BAB A BBA A BAB A	ABCAA ABDBA BAB A BAA A BAB A	ADCAA BABC B BBAC A CCABAB BABC B CCAB A
6005, 6063, 6101, 6151, 6201, 6351, 6951	4043/4047 4145 4643 (1) 5183 5356 5554 5556 5654	AACAA AADBA BAB A BAA A BAB A	AACAA AADBA BAB A BAA A BAB A	BBAAA AABAA	BBAAA AABAA	ABCAA AADBA BAB A BAA A BAB A	ADCAA BCDBA BAB A BBA A BAB A	ABCAA ABDBA BAB A BAA A BAB A	ADCAA BABC B BBAC A CCABAB BABC B CCAB A
5454	5183 5356 5554 5556 5654	BABB A BAAB A CAAAAA BABB A	BABB A BAAB A CAAAAA BABB A			BABB A BAAB A CAAAAA BABB A	BABB A BBAB A CAAAAA BABB A	BABB A BAAB A CAAAAA BABB A	AAAB A ABAB A CAAAAA AABB A BCAB B
511.0, 512.0, 513.0, 514.0, 535.0, 5154, 5254	5183 5356 5554 5556 5654	BABB A BAAB A CAAA A BABB A CAAA B	BABB A BAAB A CAAA A BABB A CAAA B			BABB A BAAB A CAAA A BABB A CAAA B	BABB A BBAB A CAAA A BABB A CAAA B	BABB A BAAB A CAAA A BABB A CAAA B	AABB B ABAB A CAAA B AABB B BCAA A
5086, 5056	5183 5356 5554 5556 5654	AABA A AAAA A AABA A	AABA A AAAA A AABA A			AABA A AAAA A AABA A	AABA A ABAA A AABA A	AABA A AAAA A AABA A	AABA A ABAA A CCAA A AABA A BCAA B
5083, 5456	5183 5356 5554 5556 5654	AABA A AAAA A AABA A	AABA A AAAA A AABA A			AABA A AAAA A AABA A	AABA A ABAA A AABA A	AABA A AAAA A AABA A	AABA A ABAA A CCAA A AABA A BCAA B
5052, 5652	4043/4047 5183 5356 5554 5556 5654	ABCAA BAB A BAA A BAB A	ABCAA BAB A BAA A BAB A			ABCAA BAB A BAA A BAB A	ABCAA BAB A BAA A BAB A	ABCAA BAB A BAA A BAB A	ADCB A AABC B ABAC A CCAAAB AABC B BCAB A
5005, 5050	1100 4043/4047 4145 5183 5356 5556	CBAAAA AACAA BADBA CAB B CAB B CAB B	CBAAAA AACAA BADBA CAB B CAB B CAB B			CCAAAA ABCAA BBDDBA CABC B CABC B CABC B	ABCAA BAB A BAA A BAB A	B AAAA ABDAA BAC B BAB B BAC B	1100 4043/4047 4145 5183 5356 5556
3004	1100 4043/4047 4145 5183 5356 5554 5556	DBAAAA AACAA BADDBA CAB B CAB B CAB B	DBAAAA AACAA BADDBA CAB B CAB B CAB B			CCAAAA ABCAA BBDDBA C BC A CABC A C BC A	ABDAA BACC A BBBC A CCABAA BACC A	1100 4043/4047 4145 5183 5356 5554 5556	
3003 ALCLAD 3003	1100 4043/4047 4145	BBAAAA AABAA AACBA	BBAAAA AABAA AACBA	BAAAA AABAA	BAAAA AABAA	BBAAAA AABAA AACBA	1100 4043/4047 4145		
2219	2319 4043/4047 4145	BAAAA AABAA	BAAAA AABAA	BAAAAA BCBCA ABCBA	AAAAAA BCBCA ABCBA	2319 4043/4047 4145			
2014 2036	2319 4043/4047 4145	BAAAA AABAA	BAAAA AABAA	CAAAAA BCBCA ABCBA	2319 4043/4047 4145				
1100	1100 4043/4047	BBAAAA AABAA	BBAAAA AABAA	1100 4043/4047					
1060 1070 1080 1350	1100 1188 4043/4047	BBAAAB CAAAAA AABAA	1100 1188 4043/4047						

5083 5456	5086 5056	511.0 512.0 513.0 514.0 535.0 5154 5254	5454	6005 6063 6101 6151 6201 6351 6951	6061 6070	7005 7021 7039 7046 7146 710.0 711.0	413.0 443.0 444.0 356.0 A356.0 A357.0 359.0	319.0 333.0 354.0 355.0 C355.0 380.0	
WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	WSDCTM	
AAAA A	AAAA A	AAAA A	AAAAAA	BBAAAA AABAAA	BBAAAA AABAAA	BBAAAA AABAAA	BBAAAA AABAAA	BAAAAA ABBBAA	2319 4043/4047 4145
				ABAAAA AABBA	ABAAAA AABBA	ABBBAA AABBA	ABAAAA AABBA AAAAAA	4043/4047 4145 A356.0	
AABA A ABAA A	AABA A ABAA A	AABA A ABAA A BCAA A AABA A BCAA A	AABA A ABAA A BCAAAA AABA A BCAA A	ADCBA AABA A ABAA A BCAAAA AABA A BCAA A	ADCBA AABA A ABAA A BCAAAA AABA A BCAA A	BDCBA AABA A ABAA A BCAAAA AABA A BCAA A	4043/4047 4145 5183 5356 5554 5556 5654		
AABA A ABAA A BCAA A AABA A BCAA B	AABA A ABAA A BCAA A AABA A BCAA B	BABC B BBAC A CCAB B BABC B CCAB A	BABC A BBAC A CCAAAA BABC A CCAB B	ACBAA ACBAA BAAC A BAAC A CBABBA BAAC A CBAB B	ACBAA ACBAA BAAC B BBAC A CBABBB BAAC B CBAB B	4043/4047 4145 4643 (1) 5183 5356 5554 5556 5654			
ABCA	ABCA	ABCA	ABCBA	ACBAA ACBAA BAAC A BAAC A CBABBA BAAC A CBAB B	4043/4047 4145 4643 (1) 5183 5356 5554 5556 5654				
AABA A AAAA A BAAA A AABA A BAAA B	AABA A AAAA A BAAA A AABA A BAAA B	BABC A BAAC A CAAB A BABC A CAAB B	BABC A BAAC A CAAAAA BABC A CAAB B	5183 5356 5554 5556 5654					
AABB A ABAB A BCAA A AABB A	AABB A ABAB A BCAA A AABB A	AABB A ABAB A BCAA A AABB A BCAA B	AABB A ABAB A BCAAAA AABB A BCAB B						
AABA A ABAA A BCAA A AABA A BCAA B	AABA A ABAA A BCAA A AABA A BCAA B	AABB B ABAB A BCAA B AABB A BCAA A	5183 5356 5554 5556 5654						
AABA A ABAA A	AABA A ABAA A	5183 5356 5554 5556 5654							
AABA A	AABA A								
A(2)BA A A AA A	5183 5356 5554								
AABA A	5556 5654								
4043/4047 5183 5356 5554 5556 5654									

## Aluminum filler metal selection chart

SYMBOL		CHARACTERISTIC
W		Ease of welding (relative freedom from weld cracking)
S		Strength of welded joint (as-welded condition). (Rating applies particularly to fillet welds. All rods & electrodes rated will develop presently specified minimum strengths for butt welds.)
D		Ductility (Rating is based upon the free bend elongation of the weld)
C		Corrosion resistance in continuous or alternate immersion in fresh or salt water
T		Recommended for service at sustained temperatures above 150 °F (65.5 °C)
M		Color match after anodizing
A, B, C, & D are relative ratings in decreasing order of merit. The ratings have relative meaning only within a given block.		

**NOTE:** Combinations having no rating are not usually recommended. Ratings do not apply to these alloys when heat treated after welding.

listed at the top of each column – W, S, D, C, T and M (see Legend at right for explanation of each letter).

4. Analyze the weld characteristics afforded by each filler alloy. You will find that you can “trade off” one

## Aluminum filler metal selection chart

SYMBOL	CHARACTERISTIC
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<b>D</b>	<b>Ductility</b> (Rating is based upon the free bend elongation of the weld)
<b>C</b>	<b>Corrosion resistance</b> in continuous or alternate immersion in fresh or salt water
<b>T</b>	Recommended for service at <b>sustained temperatures</b> above 150 °F (65.5 °C)
<b>M</b>	<b>Color match</b> after anodizing
<b>A, B, C, &amp; D are relative ratings in decreasing order of merit. The ratings have relative meaning only within a given block.</b>	

listed at the top of each column – W, S, D, C, T and M (see Legend at right for explanation of each letter).

- Analyze the weld characteristics afforded by each filler alloy. You will find that you can “trade off” one characteristic for another until you find the filler that best meets your needs.

### Example

When joining base alloys 3003 and 1100, find the intersecting block. Note that filler alloy 1100 provides an (A) rating for ductility (D), corrosion resistance (C), performance at elevated temperatures (T), and color match after anodizing (M), and a (B) rating for ease of welding (W) and strength (S). However, if ease of welding and shear strength are important, and ductility and color match can be sacrificed slightly, then filler alloy 4043 can be used.

### How to Use

- Select base alloys to be joined (one from the side blue column, the other from the top blue row).
- Find the block where the column and row intersect.
- This block contains horizontal rows of letters (A, B, C or D) representative of the alloy directly across from them in the filler alloy box at the end of each row. The letters in each line give the A-to-D rating of the characteristics

**NOTE:** Combinations having no rating are not usually recommended. Ratings do not apply to these alloys when heat treated after welding.

(1) 4643 is a heat-treatable filler alloy and gives higher strength in 6xxx series weldments after postweld solution heat treatment and aging.

(2) An “A” rating for alloy 5083 to 5083 and 5083 to 5456. No rating for alloy 5456 to 5456.

4047 can be used in lieu of 4043. Alloy 4047 provides increased fluidity for welding leak-tight joints, minimizes solidification cracking, and has a slightly higher fillet weld shear strength.

# A full range of accessories for successful use of Marathon Pac™

## ESAB aluminium Marathon Pac system

Accessories for 4XXX Series Products		Setup Micro Marathon Pac	Setup Midi Marathon Pac	Setup Jumbo Marathon Pac
Item No.	Product	25 kg	80 kg	141 kg
F103900-880	Trolley	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
F102537-880	Lifting yoke	-	X	X
F103901-001	Plastic hood	-	-	X
9901000014	Plastic hood	X	X	X
9901000015	Extender	X	X	-
9901000003	Pak connector	X	X	X
9901000012	Feeder assist unit incl. spinner	X	X	X
9901000005	Wire conduit - 5 m	X	X	X
9901000010	Wire conduit - 9 m	X	X	X
9901000030	Wire conduit - 30 m	X	X	X

X<sup>2</sup> For more mobility in production, use a trolley








Accessories for 5XXX Series Products		Setup Micro Marathon Pac	Setup Midi Marathon Pac	Setup Jumbo Marathon Pac
Item No.	Product	25 kg	80 kg	141 kg
F102900-880	Trolley	X	X	X
F102537-880	Lifting yoke	-	X	X
9901000002	Pak ring	X	X	X
9901000014	Plastic hood	X	X	X
F103901-001	Plastic hood	X	X	X
9901000003	Pak connector	X	X	X
9901000005	Wire conduit - 5 m	X	X	X
9901000010	Wire conduit - 9 m	X	X	X
9901000030	Wire conduit - 30 m	X	X	X
Optional - For long straight welds or to avoid tangling - 5xxx Series				
9901000007	Pak trak	X	X	X
9901000006	Pak straighthener	X	X	X
Optional - Further optimisation of Marathon Pac feedability - 5xxx Series				
9901000019	Spinner for Inside PAK-CONE	-	-	X
9901000020	Fiber core riser for Jumbo Marathon Pac	-	-	X
9901000015	Extender	-	X	-
9901000021	Fiber core riser for Midi Marathon Pac	-	X	-
Optional - For welding long welds or have a installation of a wire conduit lengh over > 10 m				
9901000022	Powered Pak Trak	X	X	X

## Powered Pak Trak advantages:

- use of 141kg Jumbo Marathon Pac
- stable arc
- no dog tailing of wire extension
- simple setup
- installation in every environment
- adjustable cast
- no disruption during welding process
- no twists in bulk packages during wire pay off
- straight welding seams



Aluminium Marathon Pac™ standard accessories

Product	Item number	
Lifting yoke	F102 537-880	
Trolley	F103 900-880	
Pak connector plastic hood	9901000003	
Pak-feed-assist for 4XXX wires	9901000017	
Wire conduit 5m length 10m length 30m length	9901000005 9901000010 9901000030	
Plastic hood cone	F103 901-001	
Plastic hood	9901000014	

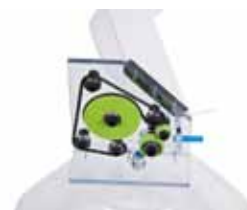
Product	Item number
Extender	9901000015



Pak-ring for 5XXX wires	9901000002
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<b>Pak-track for 5XXX wires</b> 5-series, e.g. 5356, 5183, in special applications.	9901000007
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Powered pak track	9901000022
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Product	Item number
<b>Wire straightener</b> 5-series, e.g. 5356, 5183 , in special applications	9901000006



<b>Roller guide rubber</b>	9901000008
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<b>Feeder assist spinner</b>	9901000011
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**For alloy specific and welding machine specific set-up instructions please contact your local ESAB sales office or representative.**

The Tipnology Kit (vet) is an easy-to-use tool to remove burs or edges inside the contact tip in a few seconds, thereby avoiding costly downtime due to burnback of the welding wire. The Polish Kit (vet) is used to restore the surface of wire drive rolls. Burrs or edges on wire drive rolls are the course of wire shaving, resulting in contamination of the feeding system and eventually leading to feeding problems. They may not be visible to the naked eye, but yet present on the surface of the wire drive rolls. The Polish Kit contains a magnifying glass, tools to remove defects and diamant paste plus rope to polish the surface of feeding rolls.



**Tipnology Kit 9901000017**



**Polish kit for drive roller 9901000016**

# World leader in welding and cutting technology and systems.



Aluminium is increasingly being used in shipbuilding. The photo shows the MIG-welding of aluminium webs for a patrol vessel at Swede Ship Marine AB Djupvik, in Sweden, using OK Autrod 5183 and AristoMig digital power source with U8 control unit.

ESAB operates at the forefront of welding and cutting technology. Over one hundred years of continuous improvement in products and processes enables us to meet the challenges of technological advance in every sector in which ESAB operates.

## Quality and environment standards

Quality, the environment and safety are three key areas of focus. ESAB is one of few international companies to have achieved the ISO 14001 and OHSAS 18001 standards in Environmental,

Health & Safety Management Systems across all our global manufacturing facilities.

At ESAB, quality is an ongoing process that is at the heart of all our production processes and facilities worldwide.

Multinational manufacturing, local representation and an international network of independent distributors brings the benefits of ESAB quality and unrivalled expertise in materials and processes within reach of all our customers, wherever they are located.

ESAB Sales and Support Offices worldwide



\* Includes manufacturing facilities of ESAB North America, a wholly owned subsidiary of Anderson Group Inc.



## ESAB AB

Box 8004, SE-402 77 Gothenburg, Sweden.  
Phone: +46 31 50 90 00. Fax: +46 31 50 93 90.  
E-mail: [info@esab.se](mailto:info@esab.se)  
[www.esab.com](http://www.esab.com)