



Laser welding consumables

Solutions
From a single source

Metallurgy

Filler metals

Know - how



Welding systems

Laser

TIG-, MIG-MAG

Equipment

Service



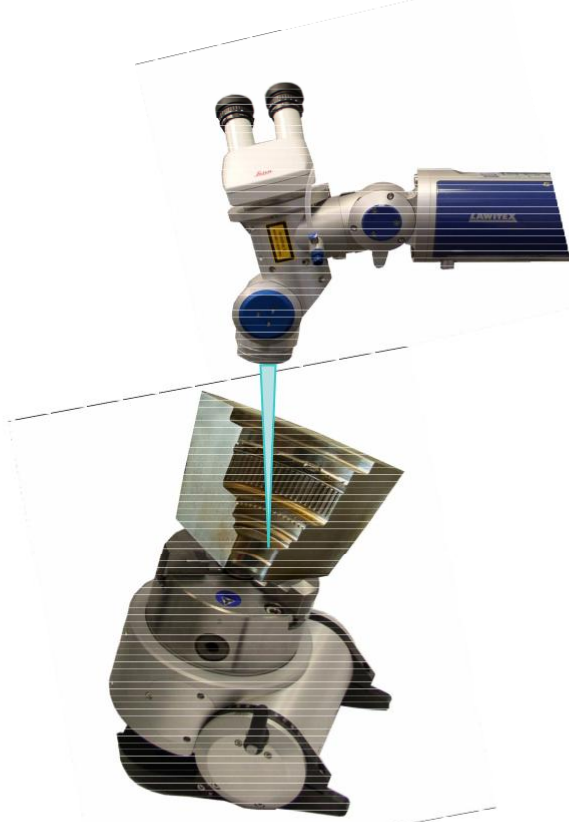
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Open and closed laser systems

From competent advice in the selection of the appropriate laser system,
For your business, to quick response times by our fully trained technical
Support team.



Modifying of the contour
Focusing lens 150 mm



Welding in deep cavities
Focusing lens 300 mm



AL & ALT 500



Flak Mobil



ALW 200-300

Our team of application engineers will elaborate process parameters and
complete solutions for the individual problems of our customers.



Mobile repair welding



ALW 100-150



ALV

Source of utilities for welding systems

LAWITEX
Tel.: 02173-3991780

NEW! LAWI 62 EROD the special wire for subsequently eroded surfaces.



Fast and precise positioning of workpieces with the Flexarm.

Self-adhesive copper foil for protection of edges and surfaces.

Our wire holder makes it possible to work faster and precisely, without working breaks.



Manual Laser wire feeder
„ManFeed“ for diameter 0, 3 - 0, 6 mm
order no.: 1106



Extension needle for manual wire holder order no.: 1110



Rotation device
order no. 1053



Magnetic positioning bowl
order no. 1251 d= 160 mm
order no. 1252 d= 140 mm



Flexarm
order no. 1108, small
order no. 1109, big



Wire holder
order no. 1101



Fibre glas brush
order no. 1102



Ceramic nozzle order no. 2182
Copper nozzle order no. 2161



Special alu vice
order no. 1114



Protection gloves
order no. 1111



Copper foil, self-adhesive
order no. 1105



Natural hair refill for cleaning brush order no. 1112



Brass refill for cleaning brush order no. 1113



Fibre refill for brush order no. 1103

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 10 M 1.2082 1.2083 1.2343 1.2344 1.2367 1.2606 similar steels	Martensitic Cr-Mn Laser welding wire with anticorrosion properties. Polishable, erodable, nitrable, etchable and heat treatable. Hardenable up to the 2. layer. For repairs of plastic, blowing- and injection moulds, also for compression moulding dies. Hardness 1-st layer approx. 48-56 HRC	0,1	1499	
		0,2	1500	150000
		0,3	1501	150100
		0,4	1502	150200
		0,5	1503	150300
		0,6	1504	150400
		0,7	1694	150900
		0,8	1676	150810
		1,0	1702	150003
LAWI 12 M 1.2713 1.2714 1.2740 1.2743 1.2744 1.2747 1.2764 1.2766 1.2767 similar steels	Cr-Ni-Mo-Mn filler metal with a lowered C-content. Including stabilizing elements to moderate hard carbide rims. Hardable up to the 2. layer, polishable, erodable, nitrable, etchable and heat treatable. For repairs of plastic and injection moulds color synchronous for 2-5% nickeliferous tool steels. The welding deposit is resistant to alternating temperatures. Hardness 1-st layer approx. 360-420 HB.	0,1	1495	
		0,2	1496	
		0,3	1505	150500
		0,4	1506	150600
		0,5	1507	150700
		0,6	1508	150800
		0,7	1409	
		0,8	1701	150910
LAWI 13 M 1.1730 1.2311 1.2312 1.2162 1.2738 similar steels	Cr-Mo-Mn-Si filler metal with highly lowered c-content. Including stabilizing elements to moderate hard carbide rims. Polishable, erodable, nitrable, etchable and heat treatable. Due to higher chrome content higher hardness and thus a bit darker than Lawi 14 M. The weld is synchronously to the base metal regarding microstructure and treatment. Hardness 1-st layer approx. 390-450 HB.	0,2	1722	172200
		0,3	1723	172300
		0,4	1724	172400
		0,5	1725	172500
		0,6	1726	172600
		0,8	1727	172700
LAWI 14 M 1.2162 1.2311 1.2312 1.2738 similar steels	Cr-Mo-Mn filler metal. Covered carbon and silicon content. Additional elements which reduce the development of carbides. Polishable, erodable, nitrable, etchable and heat treatable. The laser welding deposit has synchronous structural and treatment properties as the parent steel. Hardness 1- st layer approx. 360-400 HB.	0,1	1509	
		0,2	1514	151400
		0,3	1510	151000
		0,4	1511	151100
		0,5	1512	151200
		0,6	1513	151300
		0,7	1614	151407
		0,8	1615	151800
		1,0		151950
LAWI 15 M 1.2162 1.2311 1.2312 1.2738 similar steels	Mo-Mn- filler metal with a lowered c-content and silicon content. Minimized chromium content below 0,15 %, therefore nearly chromium and carbide free. Polishable, erodable, nitrable, etchable and heat treatable. Hardness 1- st layer approx. 300-360 HB. Welding deposit is softer and brighter than filler metal Laser 14 M.	0,2	1741	162300
		0,3	1624	162400
		0,4	1625	162500
		0,5	1626	162600
		0,6	1627	162700
		0,8	1695	162800

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 16 Several steels	Cr-Ni-Mo-Mn filler metal. Heat-, rust-rg, non hardenable welding depsit, strain-hardening by pressure and impacts. Polishable, erodable can not be nitrided or chromium-plated. For basic, intermediate and joining layers different tool steels. Hardness 1-st layer approx 320-370 HB. Stretching up to 33%. Tensile strength 820-880 N/qmm	0,2	1761	151400
		0,25	1762	
		0,3	1515	151500
		0,4	1516	151600
		0,5	1524	152400
		0,6	1517	151700
		0,7	1618	
LAWI 17 Ni Several alloys	Ni-based laser filler metal with Cr-Mo-Mn-Fe-Co-Nb and elements to avoid hard carbide transitions. Rust- acid-, heatresisting and extremely cold resisting. Erodable and polishable. Cannot be nitrided, hardened and chromium-plated. For elastic basic, intermediate and joining layers. Crack safe welding of different steels and cast iron: GS, GG up to GG 70. Also best way to go on Alloy 625, 718, 725, 750 and 751. Hardness 1-st layer approx. 210-250 HB, depending of energy and the diameter of the wire. Stretching up to 46% max. Tensile strength approx. 650-760 N/qmm².	0,3	1733	
		0,4	1734	
		0,5	1735	
		0,6	1736	
LAWI 18 Several alloys	Ni-basis laser filler metal with Cr-Mo-Mn-Fe-Nb and elements to avoid hard carbide transitions. Rust-, acid-, heatresisting and extremely cold resisting. Erodable and polishable. Can not be nitrided or chromium-plated. For elastic basic, intermediate and joining layers. Crack safe welding of different steels and cast iron: GS, GG-GGG 70. Hardness 1-st layer approx. 220-250 HB. Stretching up to 46%!! Tensile strength approx. 700-760 N/qmm².	0,1	1518	
		0,2	1519	151900
		0,3	1520	152000
		0,4	1521	152100
		0,5	1522	152200
		0,6	1523	152300
		0,7	1524	152407
		0,8	1677	157700
LAWI 19 Ni copper alloys several steels	NiTi-filler metal for applications at nickel-copper alloys as well as connections of steels with nickel-copper alloys. Excellent anti-stress corrosion. For applications in the field of chemical and petrochemical Industry as well as in nautical construction (desalination plants). Tensile strength approx. 470 RmN/mm², dilating >30 %	0,3	1703	170300
		0,4	1704	170400
		0,5	1705	170500
		0,6	1706	170600
		0,7	1707	170700

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 20 1.2343 1.2344 1.2360 1.2362 similar steels	Cr-Mo-Mn-V filler metal for hot-work steels Polishable, erodable, nitrable, etchable and heat treatable. Hardenable till approx 58 HRC. For plastic moulds, blowing and injection moulds. Hardness 1-st layer approx. 46-52 HRC. Unproblematic machining and resisting to thermal shocks.	0,25 0,3 0,4 0,5 0,6 0,8	1525 1526 1527 1528 1529	152500 152600 152700 152800 152900 153000
LAWI 22 Several steels	Co-Cr-Mo-Mn-W-Fe filler metal for Tempering-, hardening steels and hot-work with universal properties. For nitrided steels, has edge stability and is resisting towards acid. Can not be chromium-plated. Polishable, delayd erodability. Small thermal changeability of the structure. Hardness 1-st layer approx. 24-36 HRC. Increase of hardness by compression stress and dynamic compression stress till 35%!! Stretching approx. 18-25%.	0,1 0,2 0,3 0,4 0,5 0,6 0,8	1533 1534 1530 1531 1532 1633 1743	153010 153100 153200 153300 153308
LAWI 24 1.2343 1.2344 1.2362 1.2363 1.2367 similar steels	Cr-Mo-V-W filler metal with stabilizing elements. Air hardenable and shock hardenable. Edge stable and resistant at elevated temperatures. Qualificatorily chromium-platable, it is polishable, erodable, nitrable, etchable and temperable good heat conducting properties. For Aluminium diecasting forging dies, slide tolls. Hardness 1-st layer approx. 56-59 HRC. Hardenable up to approx. 58 HRC.	0,25 0,3 0,4 0,5 0,6 0,7 0,8	1535 1536 1537 1634 1538 1645 1742	153500 153600 153700 163400 153800 153900
LAWI 25 1.2080 1.2083 1.2343 1.2344 similar steels	Cr-Mo-Mn-Ti filler metal with low c-content. Because of the extreme wear resistant properties and also of high toughness suitable for repair or production of hot working steels, as plastic, pressure casting tools. High abrasive, mechanical, thermal strenght. Hardness 1-st layer approx. 42-50 HRC	0,2 0,3 0,4 0,5 0,6 0,7 0,8	1629 1630 1631 1632 1640 1641	162800 162900 163000 163100 163200
LAWI 26 STAVAX 1.2083 1.2316 1.4115 1.4120 similar steels	Martensitic chromium filler metal with elements for structure stabilization. Polishable, erodable, nitrable, etchable and heat treatable. Can not be chromium-plated. Hardness 1-st layer approx. 48-54 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 60 HRC.	0,1 0,15 0,2 0,25 0,3 0,4 0,5 0,6 0,8 1,0	1542 1613 1543 1696 1544 1539 1540 1541 1697 1698	154300 154400 153900 154000 154100 154200

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 28 1.2710 1.2721 1.2743 1.2762 1.2842 similar steels	Cr-Mn-Al-Ti universal filler metal for cold-cutting steels and tempering steels. Nitrate, crack resistant and abrasionproof, induction and flame gardenable. Very suitable for closing edges of plastic blowing moulds. Hardness 1-st layer approx. 56-60 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 62 HRC.	0,2	1642	164100
		0,3	1643	164300
		0,4	1644	164400
		0,5	1545	154500
		0,6	1546	154600
LAWI 30 CARMO CALMAX 1.2358 1.2363	Cr-Mn-Mo-V-W filler metal with extreme tough-hardened and wear resistant properties. For cold work steels with approx. 5% chromium. Crack resistant and hardenable. Edge stable, nitrate, erodable, chromium-platable and heat treatable. Hardness 1-st layer approx. 56-60 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 62 HRC.	0,2	1548	154800
		0,3	1549	154900
		0,4	1550	155000
		0,5	1551	155100
		0,6	1552	155200
		0,8	1699	155800
LAWI 32 1.2080 1.2379 1.2436 1.2601 similar steels	Cr-Mn-Si-V filler metal with elements for structure stabilization. The welding deposit is similar to the 12% chromium-cold cutting steels. Can not be chromium-plated. Nitrate and erodable. Hardness 1-st layer approx. 58-60 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 62 HRC.	0,1	1553	
		0,2	1554	155400
		0,3	1555	155500
		0,4	1556	155600
		0,5	1558	155800
		0,6	1557	155700
		0,7	1559	
		0,8	1660	155708
LAWI 34 1.2080 1.2379 1.2436 1.2601 similar steels	Cr-Mn-Mo-V filler metal with fast hardening properties. High tenacity and edge retention. For fast repairs of cutting tools. Nitrate, erodable and chromium-platable, air- and flame hardenable. Hardness 1-st layer approx. 56-59 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 60 HRC.	0,25	1560	156000
		0,3	1561	156100
		0,4	1562	156200
		0,5	1564	156400
		0,6	1563	156300
		0,8		156610
LAWI 36 1.2343 1.2344 similar steels	Ni-Co-Mo filler metal especially for aluminium- and zinc diecasting moulds. Martensitic welding deposit is crack resistant and very tough. Hardness increase of the welding deposit up to 50-54 HRC after thermal treatment. Can not be chromium-plated. Hardness 1-st layer approx. 40-46 HRC, can differ, depending on the extent of mingling.	0,2	1666	155900
		0,3	1664	156600
		0,4	1565	156500
		0,5	1646	157300
		0,6	1567	156700
		0,8		156808
		1,0		157410

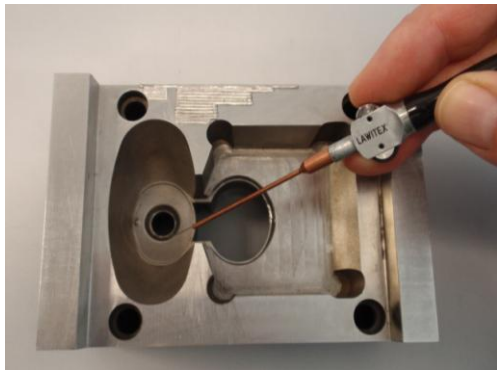
Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 37 IN several alloys	Ni-Fe-Mn filler metal especially for Laser-welding on INVAR qualities, similar steels, Cast-iron and diecasting moulds with 34 – 40 % nickel in it. A special field of application is the repair welding of housing made of Plates with a nickel content of 36 %. Hardness: first layer approx. 150 HB, can differ, depending on energy and welding time. Stretching: up to 25 %. Tensile strength approx. >350 RmN/mm ² . Yield strength: >280 RmN/mm ² .	0,3	1722	172200
		0,4	1723	172300
		0,5	1724	172400
		0,6	1725	172500
LAWI 38 1.4301 1.4541 1.4571 Similar steels	Cr-Ni-Mo filler metal for basic and joining on different Cr-Ni steels. Rust- acid resisting. Polishable and erodable. Suitable for buffer layers on hard materials. Hardness 1-st layer 300-350 HB. Stretching max. approx. 35%. Tensile strength approx. 720-760 N/mm ² .	0,2	1568	156800
		0,3	1569	156900
		0,4	1570	157000
		0,5	1571	157100
		0,6	1572	157200
		0,8	1700	157308
		1,0		157310
LAWI 50 1.2311 1.2312 1.2343 1.2344 1.2738 1.2767 Similar steels	Cr-Mo-W-Si filler metal for aluminium- and zinc diecasting moulds, especially 5% chromium steels, also for plastic moulds on worn edges when hardness and tenacity should be achieved. Is not etchable and limited chrome-plated. Resistant to effects of temperature. Hardness 1-st layer approx. 52-58 HRC can differ, depending on the extent of mingling. Hardenable up to approx. 60 HRC. Soft annealed approx. 230 HB at 770°C.	0,1	1598	
		0,15	1606	
		0,2	1599	159900
		0,3	1600	160000
		0,4	1601	160100
		0,5	1602	160200
		0,6	1603	160300
		0,8		160400
LAWI 56 1.2316 1.4115 1.4120 1.4122 STAVAX MOLDMAX and similar	Cr-Mo-Mn filler metal special for the 17 % martensitic chrome-steels. Highly resistant to rust and wear. The welding deposit is polishable, erodable, nitrable, etchable and heat- treatable. Cannot be chromium-plated. For plastic- and blow molds. The welding material is crack-free and harmonizes with the base materials in the melting zone. Hardness 1-st layer approx. 50 - 58 HRC can differ, depending on the extent of mingling.	0,2	1675	
		0,3	1647	164600
		0,4	1635	164700
		0,5	1648	164800
		0,6	1649	164900

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 58 1.4015 1.4021 1.4028 1.4031 1.4037 STAVAX MOLDMAX And similar	Cr- Filler metal with low c-content. Free of nickel! Rust and high wear resistant. Well compatible and crack resistant with 12-17 % Cr. stells. Polishable, erodable, nitrable, etchable and heat treatable. Can not be chromium-plated! Ideal repair alloy for tough hardened mold steels. Hardness 1- st layer approx. 48-56 HRC, can differ depending on the extant of mingling.	0,15	1608	
		0,2	1650	
		0,3	1651	165300
		0,4	1609	165400
		0,5	1610	165500
		0,6	1611	165600
		0,8		165800
LAWI 62 EROD Several material numbers	Martensitic Cr filler metal with lowered C-content and added stabilizing elements. Especially developed for repairs of GRP injections and blow molded plastic, as well as for their insets which are to be eroded after welding. Transitions and differences in colour are no more visible if used properly. The weld is rust- and wear-resistant! Hardness 1-st layer approx. 45-55 HRC, depending on the extent of mingling and diameter of the wire (energy). Hardenable up to approx. 60 HRC.	0,1	1710	
		0,15	1711	171150
		0,2	1712	171200
		0,25	1719	
		0,3	1713	171300
		0,4	1714	171400
		0,5	1715	171500
		0,6	1716	171600
		0,7	1717	
		0,8	1718	171700
		1,0		171800
LAWI 64 1.3243, 1.3246, 1.3249, 1.3333, 1.3340, 1.3344, 1.3348	Cr-Mo-W-V filler metal, high alloyed, with microstructure stabilizing elements. The warm hardness corresponds to the HSS-Material. The welding deposit is pressure, rub off and impact resistant. Also extremely crack-resistant and multilayer. High hardnesses can be achieved according to the quantity and the wire diameter. To avoid cracks in the layers, please use the pulse forming adjustment from the laser Machine with down sized parameters. Hardness 1 st layer is approx. 57 – 62 HRC. depending on the mixture different! The welding material is up to 66 HRC post-curable. Hardness annealed is between 230 and 280 HB.	0,3	1669	
		0,4	1670	167000
		0,5	1671	167100
		0,6		167200
		0,8		167300

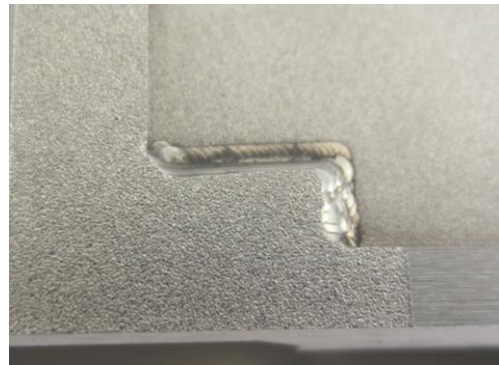
New ! LAWI 62 EROD the special wire
for subsequently eroded surfaces

The Laser seam visibility after eroding, as well as the connection faults of fusion in transition to the base material can be avoided, differences in color between deposit metal and base material are also not visible.

A crack free solidification is forming a homogeneous surface.



The manual Laser wire feeder „Man Feed” allows a precise and uninterruptible wire feeding



Crack free eroded surface
welded with LAWI 62 EROD

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 40 Electrolytic copper and different copper alloys	Cu-Ag-Cr-Fe, best heat and electricity conducting properties. By low cooling (-20°) The hardness of the welding deposit increase up to 30%. For joining of copper and bronzes with steels. Hardness 1-st layer approx. 70-90 HB. Stretching approx. 25-35%. Tensile strength approx. 290-340 N/qmm².	0,2	1573	
		0,3	1574	157400
		0,4	1575	157500
		0,5	1576	157600
		0,6	1577	
LAWI 41 LOY Ampcoloy Moldmax and different copper alloys	Cu-Ni-Si- filler metal with good heat conducting properties. Loy specific color characteristic.By low cooling -20° the hardness increase up to 30%. Hardness 1-st layer approx. 60-84 HB Stretching approx. 23-32% Tensile strength approx. 200-280 N/qmm	0,3	1620	162000
		0,4	1621	162100
		0,5	1622	162200
		0,6	1693	
LAWI 42 For welding on steels, cast steels, Cast iron. Joining of bronzes	Al-Mn-Cu-Cr-Fe filler metal. Multi alloy bronze with excellent dry running properties on steels and good heat conductive. For crack- and pore- free weldings. Direct build-up layers without the junctions taking the hardening with minimum contraction. Also suitable for joining cracks on mould cooling channels. Hardness 1-st layer on steel approx. 220-280 HB. Hardness 1-st layer on bronze	0,2	1578	
		0,3	1579	157900
		0,4	1580	158000
		0,5	1581	158100
		0,6	1582	158200
		0,8	1583	158300
		1,0		158400
LAWI 43 BE Copper alloys with higher strength	Be-Cu filler metal with excellent electrical and thermal conductivity, high solidity and Low wearing. Deep-freezing from -20° centigrade brings up to 30% more hardness! Suitable for connecting copper/bronze with Steel. Hardness 1-st layer approx. 70-150 HB depending on energy/curing. Dilatation solution- annealed: approx. 35% dilatation Hard: approx. 1%. Tensile strength: solution- annealed 400-550 RmMPa, hard 820-1100 RmMPa For eroding electrodes, pixel electrodes as well as copper materials containing beryllium. Mind the safety data sheet!	0,2		167100
		0,3	1672	167200
		0,4	1673	167300
		0,5	1674	167400
		0,6	1675	167500
		0,7	1676	
LAWI 44 AL Al-alloys till F 30	Al filler metal for repairs of aluminium casting Moulds, fine flowing. For build up and joining layers o fall aluminium alloys.	0,3	1584	158400
		0,4	1585	158500
		0,5	1583	158700
		0,6	1586	158600
		0,7	1587	
		0,8	1588	158800
		1,0		158900

Filler metal	Application	Diameter	Article no.	
			spools	rods
LAWI 45 AL AlSi 3 AlSi 5 AlSi 7 and similar	Al filler metal for aluminium alloys with up to 7 % silicon, when similarity of colour is required. Hardness 1-st layer on steel approx. 90-140 HB.	0,4 0,5 0,6	1614 1615 1616	161400 161500 161600
LAWI 46 AL Al-alloys from F 28	Al special filler metal for aluminium wrought alloys. Property of changing of state by age-, hot-, or cold compression hardening. Hardness depends on the degree of mingling with the parent metal.	0,3 0,4 0,5 0,6 0,8	1589 1590 1660 1591 1701	158900 159000 166000 159100 159200
LAWI 47 AL Al 99,5 Al 99,8 Similar aluminium materials	Al filler metal for pure aluminium 99,5 % or higher. Suitable for crack free welding on Cu-, Zr-, Mn- and Mg- alloyed aluminium basic material. Hardness 1-st layer on steel approx. 70-110 HB.	0,4 0,6	1617 1619	
LAWI 48 3.7025 3.7035 3.7065 and similar	Ti –filler metal, for joining and build-up layers on titanium materials. Fe- content :< 0,15%. Suitable for laboratory and medicine requirements.	0,2 0,3 0,4 0,5 0,6 0,8 1,0	1594 1595 1598 1596 1599 1593 1597	
LAWI 49 AL	Al-filler metal for several aluminium alloys. This wire forms a very high hardness, which is very important for shaped aluminium, as well as aluminium surfaces which are exposed to rubbing and abrasive wear.	0,4 0,5 0,6	1754 1755 1756	
LAWI CoCr dental-sections copper alloys	Cr-Co filler metal for the application in the dental and implant area. Nickel free! Very good Suitability for the repair of hot runner nozzles, where highly abrasive plastics like PVC, Macrolon, etc. are processed. Double tool life possible. Hardness: approx. 190-210 HV, melting point: approx. 1400°, hardness in Rm: approx. 900 MPa. Delivery on micro spools = 2 m length.	0,35 0,5	1607 1608	



Welding technology

For copper/ brass and aluminium and titanium

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Fax: 02173 3991781

Conversion table

	steel/100 g	copper/100 g	Diameter	aluminium/100g	AL-bronze/100g
0,1 mm	1612 m	-	0,1 mm	-	-
0,2 mm	400 m	-	0,2 mm	-	-
0,25 mm	256 m	-	0,25 mm	-	-
0,3 mm	178 m	162 m	0,3 mm	556 m	178 m
0,4 mm	100 m	90 m	0,4 mm	302 m	102 m
0,5 mm	72 m	58 m	0,5 mm	218 m	-
0,6 mm	45 m	-	0,6 mm	138 m	66 m