DSI

Laser Wires

LASER WELDING

WIRES

DSI LASER SERVICE (THAILAND) CO.,LTD.

dsilaser.com

MADE IN GERMANY

DVS SLV HANNOVER

INSPECTION CERTIFIED EN 10204-3.1 2005

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LASER WELDING WIRES

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DSI Laser Wires Catalog

Edition 03/2026

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LASER WELDING WIRES

DSI Laser Wires

Table of Content

Committed to Quality 02

Applicable for any Industry 03

Material Groups ..... 04 - 05

Technical Data Sheets ..... 06 - 56

DSI Laser Wires - How to select 57

Hardness Conversion Table 58

DSI Total Solution ..... 59 - 60

DSI
LASER WELDING WIRES

DSI Laser Wires

Committed to Quality

DSI Laser Wires are …

> *“The selection of the appropriate Laser Wire is a major factor to provide premium weld quality“*

- Made in Germany
- Drawn-down by DSI-Thailand
- Incoming inspection by XRF (X-ray fluorescence) for to determine and confirm the elemental composition
- Randomly checks of Hardness Vickers (HV 0.3) by third party
- Available in different diameters on spools and as rods
- Vacuum packed and corrosion protected
- EN 10204 / 3.1 Quality Certified
- Obtainable for customers in whole Southeast Asia and beyond

25 years experience in Pulse Laser Welding

MADE IN GERMANY

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EN 10204 / 3.1 Quality Certified

DSI
LASER WELDING WIRES

DSI Laser Wires

Applicable for any Industry

25 years experience in Pulse Laser Welding

“Trust in those Laser Wire supplier who also provides Welding Service“

- Molds & Dies
- Aerospace
- Power Generation
- Oil & Gas
- DSI Laser Wires

DSI
LASER WELDING WIRES

DSI Laser Wires - Material Groups

M & D Required for Molds & Dies

Steel	Steel Unalloyed		DSI M 96	06
	Steel Low Alloyed	M & D	DSI M 90	07
		M & D	DSI M 90PK	08
			DSI M 93Plus	09
			DSI M 94Plus	10
			DSI M 95Plus	11
			DSI M Connect 8	12
			DSI M Connect 9	13
	Steel High Alloyed	M & D	DSI M 20	14
		M & D	DSI M 20Plus	15
		M & D	DSI M Connect 2	16
			DSI M 410	17
			DSI M 410NiMo	18
			DSI M 309L Si	19
			DSI M 316L Si	20
			DSI M Connect 3	21
			DSI M Connect 3Plus	22
			DSI M Connect 4	23
			DSI M 347	24
	Steel High Alloyed Intermediate Hardfacing		DSI M Connect HF	25
			DSI M CroMan307	26
	Steel High Alloyed Hardfacing	M & D	DSI M 10	27
		M & D	DSI M 10Plus	28
			DSI M 50	29
		M & D	DSI M 55	30
		M & D	DSI M 55Plus	31
		M & D	DSI M 70/12	32

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DSI Laser Wires - Material Groups

M & D Required for Molds & Dies

Cobalt	Cobalt / Hardfacing	DSI M ST6	33
		DSI M ST12	34
		DSI M ST21	35
Nickel	Nickel-based Alloyed	DSI M NiTi3	36
		DSI M NiCr65	37
		M & D DSI M NiCr625	38
		DSI M NiCr718	39
		DSI M HasC276	40
		DSI M HasX	41
	Nickel-Copper Alloyed	DSI M NiCu70/30	42
	Nickel-Iron Alloyed	DSI M Connect 6	43
Copper	Copper Alloyed	M & D DSI M 100	44
		DSI M 120Yellow SR	45
		DSI M Ampcoloy940	46
Aluminium	Aluminium Alloyed	M & D DSI M AluCA	47
		M & D DSI M AluCF	48
		DSI M Alu99.5Ti	49
Titanium	Titanium Unalloyed	DSI M Titan Grade1	50
		DSI M Titan Grade2	51
	Titanium Alloyed	DSI M Titan Grade5	52
		DSI M Titan Grade7	53
Tin	Lead-free soft solder	DSI M Tin Sn89SbCu	54
		DSI M Tin Sn97Cu3	55
		DSI M Tin Sn95Sb5	56

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DSI
LASER WELDING WIRES

DSI M 96

TECHNICAL DATA

DIN Material Nr. 1.5125

Standards

EN ISO 14341-A :	G 42 4 M21 3Si1
AWS A 5.18 :	ER 70S-6

General Properties / Field of Applications

DSI M 96 is an unalloyed martensitic Laser Welding Wire of general structural steels, pipe and cast steels. General areas of application are steel, shipbuilding, mechanical engineering, tank and boiler construction and the automotive industry.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	460
Tensile strength R_m	[MPa] / [N/mm²]	560
Elongation A ($L_0 = 5d_0$)	[%]	27
Notch impact work	[J]	75 at -40°C

Chemical Composition (Standard Values in %)

C	Si	Mn
0.07	0.9	1.45

Compatible Materials (Selection)

S185 - P355T1 / S235JR - S355J0 / S235JR - S355J2 / P235G1TH - P265G1TH
P235GH / P265GH / P235TR2 - P355T2 / E295 / L210 - L360NB / S255N - S380N
P295GH, P355GH and similar steels with a yield strength of up to 420MPa.

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M 90

TECHNICAL DATA

Standards

DIN Material Nr. 1.5424

EN ISO 21952-A :	G Mo Si
AWS A5.28 :	ER80S-G

General Properties / Field of Applications

DSI M 90 is a martensitic Laser Welding Wire made of low-alloy steel containing molybdenum for welding of 16Mo3 and similar high-temperature steels. Operating temperatures up to 500°C (short-term up to 550°C). The weld is carburisable, resistant to ageing and alkali cracking and applicable for nitride coating. High performance in etching surfacing process, mirror surface finishing.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	530
Tensile strength R_m	[MPa] / [N/mm²]	640
Elongation A ($L_0 = 5d_0$)	[%]	27

Chemical Composition (Standard Values in %)

C	Si	Mn	Mo
0.1	0.6	1.1	0.5

Compatible Materials (Selection)

16Mo3 / 20MnMoNi4-5 / 15NiCuMoNb5 / S235JR-S355JR / S450JO / S355J2
NAK55 / NAK 80 / HPM50 / 40CMD8S / 40CMD8 / SP300 / M238 / MAS1C / P20
PX-5 / EM38 / SPM-20 / FC25 / N238 / MP20 / KD20 / S50C/ Toolox33 / M300
S136 / DH2FP20 / M300 / S136 / DH2F / 1.2311 / 1.2312 / 1.2738 / 1.2767

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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Steel Low Alloyed

EN 10204 / 3.1

DSI
LASER WELDING WIRES

DSI M 90PK

TECHNICAL DATA

Steel Low Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 1.5424

EN ISO 21952-A	G Mo Si
AWS A5.28	ER80S-G

General Properties / Field of Applications

DSI M 90PK is a martensitic Laser Welding Wire wire which has developed from DSI M 90 Laser Welding wire. Its provide a higher proof and tensile strength. Its carburisable, aging resistant and its perform up to 550°C heat resistant. Beside its provide high performance in etching surfacing process and mirror surface finishing. The wire is applicable for carburising and nitride coating.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	570
Tensile strength R_m	[MPa] / [N/mm²]	680
Elongation A ($L_0 = 5d_0$)	[%]	28

Chemical Composition (Standard Values in %)

C	Si	Mn	Mo	Fe
0.1	0.6	1.4	0.5	Rest

Compatible Materials (Selection)

NAK55 / HPM50 / 40CMD8S / 40CMD8 / SP300 / M238 / MAS1C / P20 / M300
PX-5 / EM38 / SPM-20 / FC25 / N238 / MP20 / KD20 / S50C/ Toolox33
S136 / DH2FP20 / M300 / S136 / DH2F / 1.2311 / 1.2312 / 1.2738

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 93Plus

TECHNICAL DATA

Standards

DIN Material Nr. 1.4937

EN ISO 16834-A :	G 62 4 M21 Mn3Ni1Mo)
AWS A5.28 :	ER100S-G

General Properties / Field of Applications

DSI M 93Plus is a martensitic Laser Welding Wire made of low-alloy steel tempered fine-grain structural steels up to a yield strength of a yield strength of 620 MPa. Weld metal for operating temperatures from -40 to +350°C.

Mechanical Properties

Yield strength Rp0.2	[MPa] / [N/mm²]	680
Tensile strength Rm	[MPa] / [N/mm²]	750
Elongation A (L0 = 5d0)	[%]	21
Maximum operating temp.	[°C]	-40 to +350

Chemical Composition (Standard Values in %)

C	Si	Mn	Ni	Mo
0.1	0.7	1.7	1.1	0.4

Compatible Materials (Selection)

S500Q-S620Q / 20MnMoNi5-5 (1.6310) / 11NiMoV5-3 (1.6341) / API 5 L X70
G24Mn6 / ASTM A 572 Gr. 65 / A 633 Gr. E / 15NiCuMoNb5-6-4

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 94Plus

TECHNICAL DATA

Steel Low Alloyed

EN 10204 / 3.1

Standards

Brand Name : TURBALLOY 120

AWS A5.28 :	ER120S-1
ASME :	SFA 5.28

General Properties / Field of Applications

DSI M 94Plus is a low alloyed Laser Welding Wire with supreme performance. Its applicable for welding high-strength fine-grain steels for components exposed to high stress and critical operation conditions while exhibiting excellent toughness down to -60°C. Typical applications are steam turbines, military and defence equipment, marine (shipbuilding), concrete pumps, pressure vessels.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥725
Tensile strength R_m	[MPa] / [N/mm²]	≥830
Charpy-V-Value (ISO-V)	[J]	RT ≥70 / -50°C ≥68
Elongation (4d/5d)	[%]	≥14

Chemical Composition (Standard Values in %)

C	Si	Mn	Ni	Cr	Mo
0.09-0.11	0.30-0.50	1.40-1.80	1.6-2.5	0.10-0.35	0.30-0.55

Compatible Materials (Selection)

QT and HY steels (HY80, HY100) / ASTM A592 / A514 / A517 / S690Q-S890Q
S690QL-S890QL / S600QLN-890QLN

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 95Plus

TECHNICAL DATA

DIN Material Nr. 1.8988

Standards

EN ISO 16834-A :	G 89 4 M21 / Mn4Ni2CrMo
AWS A5.28 :	ER120S-G

General Properties / Field of Applications

DSI M 95Plus is a high-strength low-alloyed (HSLA) Laser Welding Wire for supreme performance in etching surfacing process, mirror surface finishing. Designed to reduce micro porosity. Applicable for carburising and nitride coating. For welding of high-strength, quenched and tempered fine-grained structural steels. Weld metal for operating temperatures from -40 to 450°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	900
Tensile strength R_m	[MPa] / [N/mm²]	960
Hardness	[HRC]	30 - 38
Elongation A ($L_0 = 5d_0$)	[%]	17

Chemical Composition (Standard Values in %)

C	Si	Mn	Ni	Cr	Mo
0.1	0.7	1.8	2.0	0.4	0.5

Compatible Materials (Selection)

S500ML / S690Q-S890Q / S690QL-S890QL / S960Q / S960QL / HPS 100W
ASTM A 709 Gr. 100 Type B, E, F, H, Q / S460Q / S460QL / S460QL1

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

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EN 10204 / 3.1 Quality Certified

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DSI
LASER WELDING WIRES

DSI M Connect 8

TECHNICAL DATA

Steel Low Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 1.7339

EN ISO 21952-A :	G CrMo1Si
AWS A5.28 :	ER80S-B2 mod.

General Properties / Field of Applications

DSI M Connect 8 is a Laser Welding Wire made of low-alloy chromium-molybdenum steel for welding 13CrMo4-5 and similar high-temperature steels for operating temperatures up to 570°C. The weld metal is heat treatable, has good strength and toughness values and is also resistant to alkali cracking and nitriding.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	510
Tensile strength R_m	[MPa] / [N/mm²]	620
Maximum operating temp.	[°C]	570
Elongation A ($L_0 = 5d_0$)	[%]	24

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo
0.1	0.7	1.0	1.1	0.5

Compatible Materials (Selection)

1.7335 13CrMo4-5 / 1.7262 15CrMo5 / 1.7728 16CrMoV4 / 1.7225 42CrMo4
ASTM A 182 Gr. F12 / A 217 Gr. WC6 / A355 Gr. P11, P12 / A426 Gr. CP12

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M Connect 9

TECHNICAL DATA

Standards

DIN Material Nr. 1.7384

EN ISO 21952-A :	G CrMo2Si
AWS A5.28 :	ER90S-B3 mod.

Steel Low Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M Connect 9 is a Laser Welding Wire made of low-alloy chrome-molybdenum steel for welding of 10CrMo9-10 and similar heat-resistant steels for operating temperatures up to 600°C. The weld metal can be tempered and has good strength and toughness values.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	550
Tensile strength R_m	[MPa] / [N/mm²]	650
Maximum operating temp.	[°C]	600
Elongation A ($L_0 = 5d_0$)	[%]	22

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo
0.1	0.6	1.0	2.4	1.0

Compatible Materials (Selection)

1.7380 10CrMo9-10 / 1.7276 10CrMo11 / 1.7379 G17CrMo9-10
ASTM A 182 Gr. F22 / A 213 Gr. T22 / A355 Gr. P22 / A426 Gr. CP22

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 20

TECHNICAL DATA

Steel High Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 1.4115

EN ISO 14343-A :	G Z17Mo
DIN 8555 :	MSG 6-GZ-45-ZR
AWS A5.9 :	ER430 mod.

General Properties / Field of Applications

DSI M 20 is a martensitic Laser Welding Wire for corrosion and scale resistant chromium steel. Heat and scale resistant up to 900°C, temperature resistant up to 550°C. High resistance against abrasion, adhesion, cavitation and combined wear mechanism. Corrosion resistance against many saline solution, particularly sea water.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	490
Tensile strength R_m	[MPa] / [N/mm²]	690
Elongation A ($L_0 = 5d_0$)	[%]	15
Hardness	[HRC]	35 - 45

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo
0.21	0.4	0.3	17.5	0.5	1.1

Compatible Materials (Selection)

STAVAX / MIRRAX / HPM38 / Z35CD17S / Cobalt68 / M310 / X50CrMoV15
1.2083 / 1.2316 / 1.2082 / 1.2085 / 1.4057 / 1.4125 / AISI 440A / AISI 420

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 20Plus

TECHNICAL DATA

Standards

DIN Material Nr. 1.4122

EN ISO 14343-A :	G Z17MoH/G
DIN 8555 :	MSG 6-GZ-50-ZR
AWS A5.9 :	ER430 mod.

Steel High Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M 20Plus is a Laser Welding Wire with 17.5% Cr-Alloy, corrosion resistance. For joining and deposit welding on homogeneous or similar alloyed. For depositing stainless sealing surfaces on gas, water and steam fittings made of unalloyed or low-alloy steels and cast steels for operating temperatures up to 500°C. High heat resistance, wear resistant, seawater and scale resistant up to 900°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	550 (after HT 760°C/2hrs)
Tensile strength R_m	[MPa] / [N/mm²]	900 (after HT 760°C/2hrs)
Elongation A ($L_0 = 5d_0$)	[%]	12 (after HT 760°C/2hrs)
Hardness untreated	[HRC]	47 - 52

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	Ni
0.4	0.5	0.5	17.5	1.0	0.5

Compatible Materials (Selection)

STAVAX / KSP1 / HPM38 / KTSM60 / SUS420J2 / STAVAX (Edge and hard areas)

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M Connect 2

TECHNICAL DATA

Standards

EN ISO :	-
AWS A5.9 :	ER630

DIN Material Nr. 1.4542

Steel High Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M Connect 2 is a Chromium-Nickel steel Laser Welding Wire. Suitable for precipitation hardening. Use for medical industry, space and aerospace (MRO) industry, power generation, turbine components and pumps industry.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥725
Tensile strength R_m	[MPa] / [N/mm²]	≥930
Elongation A ($L_0 = 5d_0$)	[%]	≥5
Hardness	[HRC]	35 - 40

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo	Cu	Nb
0.03	0.4	0.6	16.3	4.8	0.2	3.5	0.2

Compatible Materials (Selection)

SUS630 (medical grade) / Stainless steel / 1.0204 / 1.4542 / S17400 Type 630
17-4PH / 15-5PH / 410 / 420 / 400C / 904L / 304 / 316 / 347 / D2 / H13 / A2
1.4525 (GX5CrNiCu16-4) / 1.4542 (X5CrNiCuNb16-4) / 1.4548 (X5CrNiCuNb17-4-4)
J92180 Gr. CB Cu-1 / SAE J467 / Precipitation-hardenable forged and cast steels

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 410

TECHNICAL DATA

DIN Material Nr. 1.4009

Standards	
EN ISO 14343-A :	G 13
AWS A5.9 :	ER410

General Properties / Field of Applications

DSI M 410 is a Pulse Laser Wire suitable for welding stainless steels with 12-14% Cr. Primarily used for sealing surfaces on fittings made of unalloyed or low-alloy steels. The machinability of the weld metal largely depends on the degree of dilution. Outstanding sliding and feeding characteristics. Color matching on joint welds of 13% Cr-steels of the same type, with very good polishing properties.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	480 (annealed 720°C/2hr)
Tensile strength R_m	[MPa] / [N/mm²]	630 (annealed 720°C/2hr)
Elongation A ($L_0 = 5d_0$)	[%]	22 (annealed 720°C/2hr)
Hardness	[HB]	310 at RT (untreated, as welded)
Maximum operating temp.	[°C]	450

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr
0.11	0.4	0.5	13.2

Compatible Materials (Selection)

Ferritic chrome steels as 1.4000 X7Cr13 / 1.4008 G-X12Cr14 / 1.4001 X7Cr14
1.4021 X20Cr13 / 1.4002 X7CrAl13 / 1.4024 X15Cr13 / 1.4006 X10Cr13

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 410NiMo

TECHNICAL DATA

DIN Material Nr. 1.4351

Steel High Alloyed

EN 10204 / 3.1

Standards

EN ISO 14343-A :	G 13 4
AWS A5.9 :	ER410NiMo

General Properties / Field of Applications

DSI M 410NiMo is a Laser Welding Wire suitable for similar corrosion-resistant, martensitic and martensitic-ferritic rolled, forged and cast steels. Application in water turbine and compressor construction, in steam power plant construction and as well as other chemical and petrochemical applications. Resistant to water and steam atmospheres, also resistant to cavitation. Excellent laser welding and flow behaviour.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥500
Tensile strength R_m	[MPa] / [N/mm²]	≥750
Elongation A ($L_0 = 5d_0$)	[%]	≥15
Impact work KV	[J]	≥32 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo
0.02	0.4	0.5	12.2	4.5	0.5

Compatible Materials (Selection)

Martensitic chrome steels such as 1.4317 GX4CrNi13-4 / 1.4313 X3CrNiMo13-4 /
1.4407 GX5CrNiMo13-4 / 1.4414 GX4CrNiMo13-4 / ACI Gr. CA6NM

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

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DSI
LASER WELDING WIRES

DSI M 309L Si

TECHNICAL DATA

Standards

DIN Material Nr. 1.4332

EN ISO 14343-A :	G 23 12 L Si
AWS A5.9 :	ER309LSi

General Properties / Field of Applications

DSI M 309L Si is a Laser Welding Wire of austenitic chromium-nickel steel with low carbon content. Applicable for corrosion-resistant and dissimilar steel joins. Corrosion resistance already from the first layer (deposition and buffer layers). Resistant to intergranular corrosion up to 300°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	320
Tensile strength R_m	[MPa] / [N/mm²]	510
Elongation A ($L_0 = 5d_0$)	[%]	25
Impact Work KV	[J]	55 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni
0.03	0.95	1.7	23.5	12.5

Compatible Materials (Selection)

1.4710 G-X 30CrSi 6 / 1.4825 G-X 25CrNiSi 18 9 / 1.4729 G-X 40CrSi 13
1.2780 X 15 CrNiSi 20 12 / 1.4740 G-X 40 CrSi 17 / 1.4828 X 15 CrNiTi 20 12
In specific suitable for dissimilar metal joints (CS-SS), deposition and buffer layers

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 316L Si

TECHNICAL DATA

Standards

DIN Material Nr. 1.4430

EN ISO 14343-A :	G 19 12 3 L Si
AWS A5.9 :	ER316LSi

General Properties / Field of Applications

DSI M 316L Si is a Laser Welding Wire of austenitic chromium-nickel-molybdenum steel with low carbon content. Applicable for corrosion-resistant, cryogenic, austenitic Cr-Ni-Mo steels. The welding metal is cryogenic down to -196°C and resistant to intergranular corrosion up to 400°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	440
Tensile strength R_m	[MPa] / [N/mm²]	360
Elongation A ($L_0 = 5d_0$)	[%]	35

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo
0.02	0.9	1.8	18.3	11.4	2.6

Compatible Materials (Selection)

1.4306 X2CrNi19-11 / 1.4301 X5CrNi18-10 / 1.4311 X2CrNiN18-10 / 1.4580
1.4541 X6CrNiTi18-10 / 1.4401 X5CrNiMo17-12-2 / 1.4404 X2CrNiMo17-12-2
ASTM A 182 Gr. F316, F316L, F316LN, F316Ti / A213 Gr. TP316, TP316L
A 403 Gr. WP316, WP316L / A 351 Gr. CFMN / UNSS31600 / UNS S31603

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

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DSI M Connect 3

LASER WELDING WIRES

TECHNICAL DATA

Standards

DIN Material Nr. 1.4462

EN ISO : 14343-A	G 22 9 3 N L
AWS A5.9 :	ER2209

General Properties / Field of Applications

DSI M Connect 3 is a Duplex steel Laser Welding Wire with an ferritic-austenitic structure with both components in approximately the same ratio. This material combines high strength performance of ferritic Cr-steel with the corrosion resistance of austenitic CrNiMo-steels. The material perform parallel the high strength and toughness as well as high resistance of corrosion and tension crack corrosion for operating temperature up to 250°C.

Steel High Alloyed

EN 10204 / 3.1

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	600
Tensile strength R_m	[MPa] / [N/mm²]	780
Elongation A ($L_0 = 5d_0$)	[%]	28
Impact Work KV	[J]	75 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo	N
0.01	0.5	1.6	22.9	8.7	3.1	0.15

Compatible Materials (Selection)

DUPLEX steel / Stainless ferritic-austenitic steel / cast steel / 1.4462

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M Connect 3Plus

TECHNICAL DATA

Steel High Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 1.4501

EN ISO 14343-A :	G 2594 N L
AWS A5.9 :	ER2594

General Properties / Field of Applications

DSI M Connect 3Plus is a Super Duplex Laser Wire, containing ferrite-austenitic CrNiMo-steels for welding of stainless ferrite-austenitic super duplex steels for operating temperatures up to 250°C. Very good resistance to pitting and stress corrosion cracking. High resistant to phosphoric acid. Protect abrasive erosion for casting sand patterns. Applicable for offshore, chemical and petrochemical.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	620
Tensile strength R_m	[MPa] / [N/mm²]	770
Elongation A ($L_0 = 5d_0$)	[%]	24
Impact Work KV	[J]	120 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo	Cu	W	N
0.02	0.4	0.6	25.1	9.1	3.9	0.1	<0.1	0.25

Compatible Materials (Selection)

25% Cr super duplex steels / 1.4507 X2CrNiMoCuN25-6-3 / 1.4515 / 1.4517
1.4410 X2CrNiMoN25-7-4 / 1.4539 / ASTM A 182 Gr. F59 / A 240 Gr. 255

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M Connect 4

TECHNICAL DATA

Standards

DIN Material Nr. 1.4519

EN ISO 14343-A :	G 20 25 5 Cu L
AWS A5.9 :	ER385

Steel High Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M Connect 4 is a fully austenitic Laser Welding Wire for highly corrosion-resistant joints and deposits on similar austenitic CrNiMoCu steels, castings and for similar CrNiMo steels. It has a pronounced resistance to pitting and crevice corrosion in chloride-containing media, to sulphuric, phosphoric, acetic and formic acid, sea and brackish water. Very good resistance to stress corrosion cracking due to high Ni content.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	420
Tensile strength R_m	[MPa] / [N/mm²]	650
Elongation A ($L_0 = 5d_0$)	[%]	38
Impact Work KV	[J]	120 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo	Cu
0.01	0.4	1.8	20.0	25.0	4.3	1.4

Compatible Materials (Selection)

1.4539 X1NiCrMoCu25-20-5 / 1.4537 X1CrNiMoCuN25-25-5 / 1.4438 X2CrNiMo18-15-4
ASTM A 182 Gr. F317L, F904L / A 213 Gr. TP317L / A 312 Gr. TP317L
A 403 Gr. WP317L / A 813 Gr. TP317L / A 988 Gr. UNS 31307

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 347

TECHNICAL DATA

Standards

DIN Material Nr. 1.4551

EN ISO 14343-A :	G 19 9 Nb Si
AWS A5.9 :	ER347Si

Steel High Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M 347 is a Laser Welding Wire with austenitic delta ferrite structure applicable in all industries, for similar steels and for steels of higher quality. Carbonized and ferritic 13% Cr-steels are welded e.g. chemical apparatus. Excellent lubricity and conveying properties. IK-resistant up to +400°C. Tough at low temperatures down to -120°C.

Mechanical Properties

Yield strength Rp0.2	[MPa] / [N/mm²]	440
Tensile strength Rm	[MPa] / [N/mm²]	640
Elongation A ($L_0 = 5d_0$)	[%]	32
Intergranular corrosion resistance	[°C]	400
Cold-tough resitant	[°C]	-120

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Nb
0.04	0.8	1.3	19.2	9.8	0.6

Compatible Materials (Selection)

Stainless austenitic Cr-Ni steel/cast steel e.g. 1.4306 X2CrNi19-11 / 1.4301 X5CrNi18-10
1.4311 X2CrNiN18-10 / 1.4312 GX10CrNi18-8 / 1.4541 X6CrNiTi18-10 /
1.4546 X5CrNiNb18-10 / 1.4550 X6CrNiNb18-10 / ASTM A 182 Gr. F304, F304L, F321, F347
A 403 Gr. WP304, WP304L / A 813 Gr. TP304L, 304, TP321, TP347, A 988 UNS 30400

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M Connect HF

TECHNICAL DATA

Standards

DIN Material Nr. 1.4337

EN ISO 14343-A :	W 29 9 / G 29 9
AWS A 5.9 :	ER 312 mod.

Steel High Alloyed
Intermediate Hardfacing

EN 10204 / 3.1

General Properties / Field of Applications

DSI M Connect HF is a Laser Welding Wire made of ferritic-austenitic chromium-nickel steel for welding of different types of steel and for deposition. Due to high ferrite content and high particularly suitable for difficult-to-weld materials. For materials with higher strength, also on tools suitable. Joints of different alloyed steels, tough intermediate layers for hard surfacing. Due to high strength and work hardening ability also suitable for wear resistant coatings on couplings, gear wheels, shafts and tools.

Mechanical Properties

Yield strength Rp 0.2	[MPa] / [N/mm²]	540
Tensile strength Rm	[MPa] / [N/mm²]	760
Elongation A ($L_0 = 5d_0$)	[%]	25
Notch impact work	[J]	30 at +20°C
Hardness untreated	[HRC]	29-31

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni
0.1	0.4	1.7	30.4	9.0

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M CroMan307

TECHNICAL DATA

Steel High Alloyed
Intermediate Hardfacing

EN 10204 / 3.1

Standards

EN ISO 14343-A :	W 18 8 Mn / G 18 8 Mn
AWS 5.9 :	ER307 mod.

DIN Material Nr. 1.4370

General Properties / Field of Applications / Important Base Materials

DSI M CroMan307 is a fully austenitic Laser Welding Wire for different alloyed, difficult-to-weld steels and 14% Mn steels. Tough intermediate layers for hard surfacing, wear and corrosion resistant coatings and cavitation protection armour. Resistant to work hardening, very good cavitation resistance, crack-proof, resistant to thermal shock, resistant up to +850°C. Cryogenic down to -110°C. Excellent sliding and conveying properties. Applicable for high-strength, unalloyed and alloyed structural, quenched and tempered steels; unalloyed and alloyed steels with high-alloy Cr and Cr-Ni steels, Austenitic manganese hard steels.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	430
Tensile strength R_m	[MPa] / [N/mm²]	640
Impact Work KV	[J]	100 at +20°C
Elongation A ($L_0 = 5d_0$)	[%]	35

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni
0.06	0.8	6.4	18.5	8.1

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 10

TECHNICAL DATA

Standards

DIN Material Nr. 1.4718

DIN EN 14700 :	S Fe8
DIN 8555 :	MSG 6-GZ-60-S

General Properties / Field of Applications

DSI M 10 is a ferritic stainless steel Laser Welding Wire with heat strength up to 500°C, scale resistant up to 800°C. High wear resistance against adhesive and abrasive. Highly wear resistant on cutting, bending, forming tools. Used for crack-, cut-, and abrasion-resistant. Deposit welding on wear parts which are exposed to heavy impact and medium abrasion stress, e.g. rock processing plants, mining-, cement- and steelworks. The weld metal can only be machined by grinding.

Steel High Alloyed Hardfacing

EN 10204 / 3.1

Mechanical Properties

Hardness untreated	[HRC]	58-60
Soft annealed (780°C - 820°C, 2-4 hr)	[HRC]	27
Hardened (compressed air 1,180°C - 1,220°C)	[HRC]	63
Tempered twice (540°C - 560°C, 1hr, air)	[HRC]	65

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr
0.5	3.0	0.4	9.2

Compatible Materials (Selection)

SKD11 / HPM31 / GGG70L / DC53 / SKH51 / Z160CDV12 / 1.4724 / 1.4841

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

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DSI
LASER WELDING WIRES

DSI M 10Plus

TECHNICAL DATA

DIN Material Nr. 1.3348

Standards

DIN EN 14700 :	S Fe4
AWS A5.21 :	ERFe-6 mod.

Steel High Alloyed Hardfacing

EN 10204 / 3.1

General Properties / Field of Applications

DSI M 10Plus is a martensitic Chrome steel Laser Welding Wire with good heat strength up to 500°C. Scale resistant up to 800°C. High resistance against adhesive and abrasive wear. Resists impact stress and hardenable. For highly wear resistant welding on cutting and bending tools. Weld can be machined after soft annealing, otherwise only machinable by grinding.

Mechanical Properties

Hardness untreated	[HRC]	55 - 63
Soft annealed (780°C - 820°C, 2-4 H)	[HRC]	27
Hardened (compressed air 1,180°C - 1,220°C)	[HRC]	63
Tempered twice (540°C-560°C, 1H, air)	[HRC]	65

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	V	W
1.0	0.4	0.3	3.9	8.4	1.9	1.8

Compatible Materials (Selection)

SKD11 / HPM31 / GGG70L / DC53 / SKH51 / Z160CDV12 / Vanadis23 / Vanadis30
ASP23 / ASP30 / Toolox33 / High speed cutting tools / 1.2379 / 1.2363 / 1.2080

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 50

TECHNICAL DATA

Standards

DIN EN 14700 :	S Fe3
AWS :	-

DIN Material Nr. 1.2606

Steel High Alloyed Hardfacing

EN 10204 / 3.1

General Properties / Field of Applications

DSI M 50 is a Laser Welding Wire used for highly wear-resistant deposit welds on components exposed to severe abrasion as well as impact and shock stress. Suitable for temperatures up to 500°C. The weld is machinable by grinding. The wire is applicable e.g. for hammer drills and chisels, shredder hammers and cutting tools. Beside of this also suitable for reinforcement on work surfaces and cutting edges of hot and cold forming tools.

Mechanical Properties

Hardness	[HRC]	55 - 60
Maximum operating temperature	[°C]	500

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	V	W
0.35	1.1	0.4	5.5	1.2	0.25	1.3

Compatible Materials (Selection)

SKD61 / AISI D2 / 1.2343 / 1.2365 / 1.2714 / 1.2885 / 1.2344

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

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DSI
LASER WELDING WIRES

DSI M 55

TECHNICAL DATA

DIN Material Nr. 1.2567

Standards

EN 14700 :	S Fe3
JIS :	SKD5 (similar but not identical)

Steel High Alloyed Hardfacing

EN 10204 / 3.1

General Properties / Field of Applications

DSI M 55 is a Laser Welding Wire for wear resistant and crack repairing on hot work tools which has stressed of friction, impact and pressure e.g. die casting and plastic molds, press sleeves, press disks, press or impact dies, punches, upsetting tools. For welding on both hot and cold tools with universal applicable using. Best compromising between hardness and crack resistance in even hot work.

Mechanical Properties

Hardness untreated	[HRC]	42 - 46
Hardness soft annealed	[HB]	230
Hardened 1,080°C/Oil	[HRC]	52
Tempered 600°C	[HRC]	48

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	V	W
0.2	0.2	0.3	2.4	0.6	4.5

Compatible Materials (Selection)

S55C / SKD61 / KP4M / Z38CDV5 / S50C / DAC10 / M310 / DH3-15 / DHA1 / 8407
Toolox44 / 1.2343 / 1.2344 / 1.2479 / 1.2767 / AISI H13 / X40CrMoV5-1 / BH13

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

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DSI
LASER WELDING WIRES

DSI M 55Plus

TECHNICAL DATA

Standards

DIN Material Nr. 1.2343

EN ISO 14700 :	S Fe3

General Properties / Field of Applications

DSI M 55Plus is a Laser Welding Wire for high temperature hard face welding on cold and hot work tools which heavily stressed of pressure, friction and moderate impact stress especially Thixomolding. Operating temperatures up to 550°C. Application e.g. for continuous casting rollers, hot shear blades, die casting molds etc. Applicable for nitride coating.

Mechanical Properties

Hardness untreated	[HRC]	55 - 60
Hardness soft annealed	[HB]	230
Tensile strength R_m	[MPa] / [N/mm²]	≈1,300

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	V
0.38	1.0	0.4	5.0	1.1	0.45

Compatible Materials (Selection)

S55C / SKD61 / KP4M / Z38CDV5 / S50C / DAC10 / M310 / DH3-15 / DHA1
Toolox44 / 1.2343 / 1.2344 / 1.2479 / 1.2767

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

wires@dsilaser.com

Made in Germany

DVS GERMAN WELDING SOCIETY

EN 10204 / 3.1 Quality Certified

e-version

DSI
LASER WELDING WIRES

DSI M 70/12

TECHNICAL DATA

DIN Material Nr. 1.6356

Standards

EN 14700 :	S ZFe5
DIN 8556 :	W/MSG 3-GZ-350-T

Steel High Alloyed Hardfacing

General Properties / Field of Applications

DSI M 70/12 is a high-alloy, maraging steel Laser Welding Wire used for Aluminium die-casting molds and trimming tools. Good capable of being machine. Applicable for Nitride coating. For high stressed cold and hot work tools. Best for high pressure hot wear resistance, crack repairing, good machinability after welded and wear resistance upgrading is available after artificial aging.

EN 10204 / 3.1

Mechanical Properties

Hardness of filler material at 20°C	[HRC]	32-35
Hardness after artificial aged 3-4 H	[HRC]	50-54
Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	885
Tensile strength R_m	[MPa] / [N/mm²]	980

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	Ni	Co	Ti
0.01	0.4	0.1	0.2	4.0	18.0	12.0	1.6

Compatible Materials (Selection)

Maraging steel / SKD61 / MAS1C / 1.2343 / 1.2344 / AISI H13 / BH13 / 8407 DHA1

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M ST6

TECHNICAL DATA

Standards

Material : Stelite 6

AWS 5.21 :	ERCoCr-A
UNS :	R30006

General Properties

DSI M ST6 is a Cobalt-base alloyed Laser Welding Wire with an excellent wear resistance to abrasion and in metal to metal application. Resistance to galling and corrosion, retain at high temperatures. Resistant to oxidation up to its melting range, satisfactorily specified in sour gas as well as other corrosive applications.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	600
Tensile strength R_m	[MPa] / [N/mm²]	900
Elongation A ($L_0 = 5d_0$)	[%]	3 - 6
Hardness (as cast)	[HRC]	40 - 44
Elevated temperature / 400°C	[HRC]	32
Elevated temperature / 600°C	[HRC]	28
Elevated temperature / 800°C	[HRC]	22
Elevated temperature / 900°C	[HRC]	20

Chemical Composition (Standard Values in %)

Co	Cr	W	C	Ni	Fe	Mn	Si	Mo
Base	27-32	4-6	0.9-1.4	≤ 3	≤ 3	≤ 1	≤ 2	≤ 1

Field of Applications (Selection)

Valve seats, flow control components. Turbine engine parts, exhaust valves. Steam and gas turbine blades. Surgical instruments and implants. Cutting tools, dies, and wear-resistant coatings.

Packaging and available Sizes*

Rod : 500 / 1000 mm	Ø mm	1.2

* Other dimensions available on request

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LASER WELDING WIRES

DSI M ST12

TECHNICAL DATA

Standards

Material : Stelite 12

AWS 5.21 :	ERCoCr-B

General Properties

DSI M ST12 is an Cobalt-base Laser Welding Wire with an excellent resistance to many forms of chemical and mechanical degradation over a wide temperature range. Its attributes its anti- galling properties, abrasion, corrosion and oxidation resistant up to its melting range due to its age fraction of hard, brittle chromium.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	500 - 700
Tensile strength R_m	[MPa] / [N/mm²]	1000
Elongation A ($L_0 = 5d_0$)	[%]	2 - 5
Hardness (as cast)	[HRC]	40 - 45
Elevated temperature / 400°C	[HRC]	44
Elevated temperature / 600°C	[HRC]	40
Elevated temperature / 800°C	[HRC]	37
Elevated temperature / 900°C	[HRC]	35

Chemical Composition (Standard Values in %)

Co	Cr	W	C	Ni	Fe	Mn	Si
Base	26-30	8-10	1.4-1.8	≤ 3	≤ 3	≤ 1	≤ 1.5

Field of Applications (Selection)

Applications that require to endure abrasion, heat, corrosion. Cutting and wear-prone environments. Harsh chemical and marine. Guides in engines. Cutting tools and saw teeth. Pump components, valve seats, bearings and bushings.

Packaging and available Sizes*

Rod : 500 / 1000 mm	Ø mm	1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M ST21

TECHNICAL DATA

Standards

Material : Stelite 21

AWS 5.21 :	ERCoCr-E

General Properties

DSI M ST21 is a Cobalt-base Laser Welding Wire known for its excellent wear resistance, corrosion resistance, including acidic and saline conditions, and ability to maintain hardness and mechanical properties at elevated temperatures. Excellent Wear Resistance – High resistance to metal-on-metal wear and galling. Good Toughness and Ductility. Biocompatibility.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	460 - 600
Tensile strength R_m	[MPa] / [N/mm²]	880 - 1030
Elongation A ($L_0 = 5d_0$)	[%]	8 - 15
Hardness (as cast)	[HRC]	28 - 40
Max. operating temperature	[°C]	~850

Chemical Composition (Standard Values in %)

Co	Cr	Mo	Ni	Fe	C	Mn	Si	W
Base	27.0	6.0	4.0	2.0	0.25	1.5	1.0	0.5

Field of Applications (Selection)

Gas-/steam turbine components. Engine-, pump parts, valve seats, drilling tools. Implants, prosthetics. Wear-resistant cutting tools. Biocompatibility, used in medical implants due to its corrosion resistance and non-magnetic properties.

Packaging and available Sizes*

Rod : 500 / 1000 mm	Ø mm	1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M NiTi3

TECHNICAL DATA

DIN Material Nr. 2.4155

Standards

EN ISO 18274 :	S Ni 2061 (NiTi3)
AWS A5.14 :	ERNi-1

Nickel-based Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M NiTi3 is a Laser Welding Wire, Nickel-based with 3% Titanium, particularly low carbon content, weld to material for operating temperature unto +450°C; tough at sub-zero down to -196°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	300
Tensile strength R_m	[MPa] / [N/mm²]	500
Elongation A ($L_0 = 5d_0$)	[%]	30
Notch impact work	[J]	150 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Fe	Ti	Ni
0.02	0.3	0.3	≤ 0.1	3.2	Base

Compatible Materials (Selection)

Pure nickel, as well as LC nickel e.g. Ni99.6 (2.4061), low-alloyed Ni alloys such as NiMn1 (2.4106) and NiMn5 (2.4116), G-Ni95 (2.4170) as well as joints with steel, cast steel, copper and copper with high-alloy steel, cladding and buffer layers.

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M NiCr65

TECHNICAL DATA

Standards

DIN Material Nr. 2.4806

EN ISO 18274 :	S Ni 6082 (NiCr20Mn3Nb)
AWS A5.14 :	ERNiCr-3

General Properties / Field of Applications

DSI M NiCr65 is a Laser Welding Wire for welding of nickel-based alloys, creep resistant steels, cryogenic materials and dissimilar joints. Suitable for operating temperatures down to -196°C and up to +900°C. Cleanliness of the workpiece in the weld seam area is a prerequisite for a crack-free connection.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	410
Tensile strength R_m	[MPa] / [N/mm²]	640
Elongation A ($L_0 = 5d_0$)	[%]	40
Suitable of operating temperatures	[°C]	-196 up to +900

Chemical Composition (Standard Values in %)

Ni	C	Cr	Fe	Mn	S	Si	Nb + Ta
Base	0.02	20.0	1.0	3.0	<0.1	0.2	2.5

Compatible Materials (Selection)

NiCrFe alloys NiCr15Fe (2.4816) / NiCr23Fe (2.4851) / Alloy 600 / Alloy 601 / Alloy 75
Creep resistant austenitic steels X10NiCrAlTi32-20 (1.4876) / X5NiCrAlTi31-20 (1.4958)
Cryogenic steels X8Ni9 (1.5662) and dissimilar joints with operating temp. >300°C
Incoloy 800 / Incoloy 800H / Incoloy 800HT / UNS N06600 / UNS N06601 / UNS N 06075

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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LASER WELDING WIRES

DSI M NiCr625

TECHNICAL DATA

Nickel-based Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 2.4831 / Brand Name : Inconel 625

EN ISO 18274	S Ni 6625 (NiCr22Mo9Nb)
AWS A5.14	ERNiCrMo-3

General Properties / Field of Applications

DSI M NiCr625 is a Nickel-based Laser Welding Wire, corrosion and oxidation resistant. For welding of same and similar nickel-based alloys. Suitable for operating temperatures from -196°C up to +1000°C. Due to the risk of embrittlement between 600°C and 850°C, use in this temperature range should be avoided. For welding on heat shields, seawater applications, gas turbine engine ducting and other heat and corrosion affected applications.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	500
Tensile strength R_m	[MPa] / [N/mm²]	760
Hardness	[HRC]	26-30
Elongation A ($L_0 = 5d_0$)	[%]	35

Chemical Composition (Standard Values in %)

Ni	C	Cr	Mo	Mn	Si	Nb + Ta	Fe
Base	0.02	22.0	9.0	0.2	0.2	3.3	1.5

Compatible Materials (Selection)

Inconel 625 / Cast iron / NiCrMo-alloys like NiCr22Mo9Nb (2.4856) / X8Ni9 (1.5662)
NiCrofer 4221hMo / Hastelloy G / Hastelloy G3 / Incoloy 800 / UNS N06625

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M NiCr718

TECHNICAL DATA

Standards

DIN Material Nr. 2.4668 / Brand Name : Inconel 718

AMS :	5832
AWS :	ERNiFeCr-2

Nickel-based Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M NiCr718 is a Nickel-based superalloyed Pulse Laser Welding Wire primarily with chromium, iron, niobium and molybdenum. Mainly used for welding components which encounter cryogenic temperatures including aircrafts and rocket components (MRO). This alloys displays good tensile and fatigue strength at temperatures from cryogenic -423°C to 700°C. This alloy can be age hardened and is resistant to post weld cracking.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	915
Tensile strength R_m	[MPa] / [N/mm²]	1090
Elongation A ($L_0 = 5d_0$)	[%]	22

Chemical Composition (Standard Values in %)

Ni	Cr	Fe	Nb	Mo	Co	Ti	Si	Mn
Base	19.0	17.0	5.0	3.0	1.0	1.0	<1.0	<1.0

Compatible Materials (Selection)

Aircraft components / liquid fuel rocket systems / cryogenic tanks / springs

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M HasC276

TECHNICAL DATA

DIN Material Nr. 2.4886

Nickel-based Alloyed

EN 10204 / 3.1

Standards

EN ISO 18274 :	S Ni 6276 (NiCr15Mo16Fe6W4)
AWS A5.14 :	ERNiCrMo-4

General Properties / Field of Applications

DSI M HasC276 is a Nickel-base alloy Laser Welding Wire with high corrosion resistance in primarily oxidised media. For joints and deposits on alloys of same or similar characteristics and cast alloys. The structure is created austenitic but ferrite-free. Exceptional resistance to sulphurous acids at high chloride containing media and strong oxidising solutions which contain e.g. ferric and cupric chlorides.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥450
Tensile strength R_m	[MPa] / [N/mm²]	≥720
Elongation A ($L_0 = 5d_0$)	[%]	≥30
Impact Work KV	[J]	≥70 at +20°C

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Ni	Mo	W	Fe
< 0.01	0.02	0.4	16.0	Base	16.2	3.4	5.9

Compatible Materials (Selection)

NiMo16Cr15W (2.4819) and for cladding on low alloyed and hot working steels
Alloy C276 / UNS N10276 / oil and gas industry / chemical processing equipment

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M HasX

TECHNICAL DATA

Standards

DIN Material Nr. 2.4665

AMS :	5798
AWS A5.14 :	ERNiMoCr-2

Nickel-based Alloyed

General Properties

DSI M Has X is a Nickel-based superalloy Laser Welding Wire. Primarily alloyed with chromium, iron and molybdenum that possesses an exceptional combination of oxidation resistance, fabric-ability and high- temperature strength. It has also been found to be exceptionally resistant to stress- corrosion cracking in petrochemical applications. X-alloy exhibits good ductility after pro-longed exposure at temperatures of 650°C, 760°C and 870°C for 16,000 hours.

EN 10204 / 3.1

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	379
Tensile strength R_m	[MPa] / [N/mm²]	765
Elongation A ($L_0 = 5d_0$)	[%]	44

Chemical Composition (Standard Values in %)

Ni	Cr	Fe	Mo	Co	Si	Mn	W	C
Base	22.0	19.0	9.0	2.0	1.0	1.0	1.0	<1.0

Field of applications (Selection)

Jet engine components / combustion chambers / afterburners / gas turbines / heat exchangers / heat-treating equipment / furnace parts / high-temperature reactors.

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M NiCu70/30

TECHNICAL DATA

Nickel-Copper Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr.: 2.4377 / Brand Name: Monel

EN ISO 18274 :	S Ni 4060 / NiCu30Mn3Ti
AWS A5.14 :	ERNiCu-7

General Properties / Field of Applications

DSI M NiCu70/30 is a Nickel-copper-alloy Laser Welding Wire for joint and overlay weldings of nickel-copper alloys and claddings of similar composition for operating temperatures up to 425°C tough at sub-zero down to -196°C. The cleanliness of the workpiece Ni the weld seam area is a requirement for a crack-free joint.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	300
Tensile strength R_m	[MPa] / [N/mm²]	500
Elongation A ($L_0 = 5d_0$)	[%]	35
Notch impact work	[J]	150 at +20°C

Chemical Composition (Standard Values in %)

Ni	C	Cu	Fe	Mn	Si	Ti
Base	0.02	30.0	1.0	3.3	0.2	2.0

Compatible Materials (Selection)

Nickel-copper alloys, e.g. NiCu 30 Fe (2.4360), and joints with copper alloys and

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M Connect 6

TECHNICAL DATA

Standards

DIN Material Nr. 1.3912 / Generic Name: Invar36

ASTM :	F1684-06
UNS :	K93600 / K93603

General Properties

DSI M Connect 6 is a nickel-iron alloyed Laser Welding Wire called ’Invar36’ for high mechanical properties and very low thermal elongation. For similar welding on cast iron with 34-40% Nickel content. It has a low coefficient of expansion from cryogenic temperatures to about 260°C.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥310
Tensile strength R_m	[MPa] / [N/mm²]	≥490
Elongation A ($L_0 = 5d_0$)	[%]	≥30
Hardness	[HB]	150

Chemical Composition (Standard Values in %)

C	Ni	Mn	Mo	Cr	Cu	Si	P	S
0.1	36.0	0.6	0.5	0.5	0.5	0.35	0.025	0.025

Compatible Materials / Field of Applications (Selection)

Cast iron steel / Invar36 / aerospace and satellites / cryogenic fuel tank (spacecrafts rockets, LNG tanks) / medical equipment / molds and dies / military

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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Nickel-Iron Alloyed

EN 10204 / 3.1

DSI
LASER WELDING WIRES

DSI M 100

TECHNICAL DATA

DIN Material Nr. 2.1461

Copper Alloyed

EN 10204 / 3.1

Standards

EN ISO 24373 :	S Cu 6560 (CuSi3Mn1)
AWS A5.7 :	ERCuSi-A

General Properties / Field of Applications

DSI M 100 is a BeCu-Alloy (bronze) Laser Welding Wire based on copper-silicon alloy, often with alloying elements of iron, nickel and manganese. Mainly used in molds and dies industry and the chemical industry, wherever a wear-resistant, low friction weld surface is required.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	120
Tensile strength R_m	[MPa] / [N/mm²]	350
Elongation A ($L_0 = 5d_0$)	[%]	40
Hardness	[HB]	80

Chemical Composition (Standard Values in %)

Cu	Si	Sn	Fe	Mn
Base	2.9	0.01	0.06	0.9

Compatible Materials (Selection)

Beryllium copper / galvanized steel sheets and copper-silicon and copper-manganese alloys of the same type. CuSi2Mn / CuSi3Mn / CuZn5 , CuZn10

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M 120Yellow SR

TECHNICAL DATA

DIN Material Nr. 2.0923

Standards

EN ISO 24373 :	S Cu 6560 (CuAl9Ni5Fe3Mn2)
AWS A5.7 :	ERCuNiAl

General Properties / Field of Applications

DSI M 120Yellow SR is a Laser Welding Wire for surfacing of complex aluminum bronzes, copper aluminum and nickel alloy, non-alloy and low-alloy steels. High resistance against erosion and abrasion. Corrosion and seawater resistant. For joining and repair on offshore and desalting equipment, marine industry, reactor construction and similar applications.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	380
Tensile strength R_m	[MPa] / [N/mm²]	600
Elongation A ($L_0 = 5d_0$)	[%]	16
Hardness	[HB]	200

Chemical Composition (Standard Values in %)

Cu	Al	Ni	Fe	Mn
Base	8.8	4.4	3.2	1.4

Compatible Materials (Selection)

Copper-Aluminium-Nickel-alloys, seawater resistant deposit welding on unalloyed and low alloyed steels. As well for cast steels and dissimilar joints of aluminium bronze with steel.

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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LASER WELDING WIRES

DSI M Ampcoloy940

TECHNICAL DATA

DIN Material Nr. 2.1247

Standards

EN 12163/12167	CW112C
USA :	RWMA Class 3

General Properties / Field of Applications

DSI M Ampcoloy940 is a Copper-based, specifically a copper-nickel-silicon-chromium alloy Laser Welding Wire. For joints and deposition welding in any industry. It is commonly used in applications requiring high mechanical properties, like high strength, excellent thermal conductivity, and good corrosion resistance, such as mold components in plastic injection molding.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	515
Tensile strength R_m	[MPa] / [N/mm²]	690
Hardness	[HB]	94
Elongation A ($L_0 = 5d_0$)	[%]	13

Chemical Composition (Standard Values in %)

Co	Ni	Si	Cr
Base	2.5	0.7	0.4

Compatible Materials (Selection)

Beryllium copper / galvanized steel sheets / copper-silicon and copper-manganese alloys of the same type, e.g. CuSi2Mn / CuSi3Mn / CuCr1Zr

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.2 / 0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M AluCA

TECHNICAL DATA

Standards

DIN Material Nr. 3.3548

EN ISO 18273 :	S Al 5183 / AlMg4,5Mn0,7 (A)
AWS A5.10 :	ER5183

General Properties / Field of Applications

DSI M AluCA is a Laser Welding Wire for Magnesium and Manganese alloyed Aluminium with a max. Magnesium content of 5%. It shows an excellent weldability and mechanical strength combined with good corrosion resistance against seawater. For joint and deposition welding of Al-Mg alloys and for Al-casting alloys.

Aluminum Alloyed

EN 10204 / 3.1

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	130
Tensile strength R_m	[MPa] / [N/mm²]	280
Elongation A ($L_0 = 5d_0$)	[%]	18
Hardness	[HB]	85

Chemical Composition (Standard Values in %)

Al	Mg	Mn	Cr	Ti
Basic	4.9	0.6	0.1	0.08

Compatible Materials (Selection)

EN AW-5083 (AlMg4.5Mn0,7) / EN AW-5019 (AlMg5) / EN AW-6005A (AlSiMg(A))
EN AW-6061(AlMg1SiCu) / EN AW-6082 (AlSi1MgMn) / EN AW-7020 (AlZn4,5Mg1)

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M AluCF

TECHNICAL DATA

Aluminum Alloyed

EN 10204 / 3.1

Standards

DIN Material Nr. 3.2585

EN ISO 18273 :	S Al 4047 (AlSi12)
AWS A5.10 :	ER4047

General Properties / Field of Applications

DSI M AluCF is a Laser Welding Wire for Aluminum alloy, cast alloy up to 12% Si, strong prevention of cracking after welding. The weld area must be metallically bright.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	60
Tensile strength R_m	[MPa] / [N/mm²]	130
Elongation A ($L_0 = 5d_0$)	[%]	6
Hardness	[HB]	110

Chemical Composition (Standard Values in %)

AL	Si
Base	11.7

Compatible Materials (Selection)

G-AlSi10Mg / G-AlSi12 / G-AlSi8Cu3

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M Alu99.5 Ti

LASER WELDING WIRES

TECHNICAL DATA

Standards

DIN Material Nr. 3.0805

EN ISO 18273 :	S Al 1450 (Al99,5Ti)
AWS 5.10 :	-

General Properties / Field of Applications

DSI M Alu99.5 Ti is a pure Aluminum Laser Welding Wire with Titanium content for improving weldability by a fine grain structure. For welding joints and depositing on Aluminum base materials. The weld seam area must be bare metal.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	30
Tensile strength R_m	[MPa] / [N/mm²]	65
Elongation A ($L_0 = 5d_0$)	[%]	35
Hardness	[HB]	90 - 120

Chemical Composition (Standard Values in %)

Al	Ti
99.5	0.17

Compatible Materials (Selection)

Pure aluminum e.g. EN AW-1050A (Al 99.5) / EN AW-1200 (Al 99.0) / A356 / AlSi12
EN AW-1350 (Al 99.5A) / AlSi6Cu4 / ER4045 / ER4047 / ER5356

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M Titan Grade1

TECHNICAL DATA

DIN Material Nr. 3.7025

Standards

ASTM :	Ti-Grade 1
UNS :	R50250

General Properties / Field of Applications

DSI M Titan Grade1 is an unalloyed (pure Titanium) Laser Welding Wire which comes from the group of reactive metals and has a high affinity to react with oxygen. As a result, a firmly adhering and durable oxide layer forms on the surface of the material, which is responsible for the excellent corrosion resistance of the material. Due to its special properties, titanium 3.7025 is used primarily in the field of chemical and petrochemical apparatus engineering. Other areas of application include medical technology, motorsports, electroplating and the outdoor sector. The metal is also used in heat exchangers and for maritime applications.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥ 170
Tensile strength R_m	[MPa] / [N/mm²]	≥ 240
Elongation A ($L_0 = 5d_0$)	[%]	24
Hardness	[HB 30]	≥ 120

Chemical Composition (Standard Values in %)

C	N	Ti	Fe	O	H
≤ 0.08	≤ 0.03	Rest	≤ 0.02	≤ 0.18	≤ 0.015

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M Titan Grade2

LASER WELDING WIRES

TECHNICAL DATA

Standards

DIN Material Nr. 3.7035

ASTM :	TI-Grade 2
UNS :	R50400

General Properties / Field of Applications

DSI M Titan Grade2 is a pure titanium grade Laser Welding Wire feature an excellent strength-to-density ratio and good corrosion resistance. This makes them suitable for the manufacture of components in weight-saving structures with reduced mass forces, and also for components requiring high corrosion resistance. In addition, thermal stresses in titanium structures are lower than in other metallic materials, due to the low thermal expansion of titanium. The materials are also widely used in the medical sector because of their outstanding biocompatibility.

Titanium Alloyed

EN 10204 / 3.1

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥ 275
Tensile strength R_m	[MPa] / [N/mm²]	≥ 345
Elongation A ($L_0 = 5d_0$)	[%]	20
Hardness	[HB 30]	≥ 150
Modulus of elasticity	[kN/mm]	105

Chemical Composition (Standard Values in %)

C	N	Ti	Fe	O	H
≤ 0.08	≤ 0.03	Rest	≤ 0.3	≤ 0.25	≤ 0.015

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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LASER WELDING WIRES

DSI M Titan Grade5

TECHNICAL DATA

DIN Material Nr. 3.7165

Standards

ASTM :	Ti-Grade 23 6 Al-4V ELI
UNS :	R56401

Titanium Alloyed

EN 10204 / 3.1

General Properties / Field of Applications

DSI M Titan Grade5 is a Laser Welding Wire Ti-Grade 23 ELI (Extra-Low Interstitials), a variant of Ti-Grade 5. Used in medical technology because of its good biocompatibility, excellent fracture toughness and crack propagation behaviour. It maintains its good toughness even at low temperatures down to -253°C. These properties, as well as its low elastic modulus and good fatigue strength, are due to the alloy's relatively low contents of oxygen and iron.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	760
Tensile strength R_m	[MPa] / [N/mm²]	825 - 860
Elongation A ($L_0 = 5d_0$)	[%]	8 - 10
Modulus of elasticity	[kN/mm]	110

Chemical Composition (Standard Values in %)

C	V	N	Ti	Al	Fe	O	H
≤ 0.08	3.5-4.5	≤ 0.25	Rest	5.5-6.5	≤ 0.25	≤ 0.13	≤ 0.015

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI M Titan Grade7

TECHNICAL DATA

Standards

DIN Material Nr. 3.7235

ASTM :	Ti-Grade 7
UNS :	RS52400

General Properties / Field of Applications

DSI M Titan Grade7 is a low alloyed Titanium Laser Welding Wire. The addition alloys of Pd and Ni + Mo increases resistance to solutions and reduces the risk of corrosion, especially in media containing chloride. Due to its special properties, titanium 3.7235 is used primarily in the field of chemical and petrochemical apparatus engineering. Other areas of application include medical technology, motorsports, electroplating and the outdoor sector. The metal is also used in heat exchangers and for maritime applications.

Mechanical Properties

Yield strength $R_{p0.2}$	[MPa] / [N/mm²]	≥ 275
Tensile strength R_m	[MPa] / [N/mm²]	≥ 345
Elongation (A $L_0 = 5d_0$)	[%]	20
Hardness	[HB 30]	≤ 150

Chemical Composition (Standard Values in %)

C	N	Ti	Fe	O	H	Pd
≤ 0.08	≤ 0.03	Rest	≤ 0.30	≤ 0.25	≤ 0.015	0.12-.25

Packaging and available Sizes*

Spool : MA125 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2
Rod : 500 / 1000 mm	Ø mm	0.3 / 0.4 / 0.5 / 0.6 / 0.7 / 0.8 / 1.0 / 1.2

* Other dimensions available on request

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DSI
LASER WELDING WIRES

DSI M Tin Sn89SbCu

TECHNICAL DATA

Tin lead-free

EN 10204 / 3.1

Standards

Bearing Metal Alloy

EN ISO 3677 :	S-Sn89Sb7.5Cu3.5
ASTM B32 :	SnSBCu

General Properties

DSI M Tin Sn89Sb7.5Cu3.5 is a lead free solder alloy composed of tin, antimony and copper. It is commonly used for the production and refurbishment of radial/ axial plain bearings, segment and connecting rod bearings, planetary bolts and bushes. It has a very good emergency running properties (low static friction, good impact resistance). Suitable for medium and high sliding speeds, medium static load capacity. It has a good resistance to vibrations, alternating bending stresses and on top it's low sensitivity to edge pressure.

Mechanical Properties

Flexural strength	[MPa] / [N/mm²]	+/- 29
Tensile strength R_m	[MPa] / [N/mm²]	77
Hardness at 20 °C	[HB]	22

Chemical Composition (Standard Values in %)

Sn (Tin)	Sb (Antimony)	Cu
89 (%)	7.5 %	3.5

Filed of applications (Selection)

Babbitt bearing repair / Steam- Gas Turbines / Motors / Generators / Transformers
Gear Boxes Rolling Mill Bearings / Automotive electronic components

Packaging and available Sizes*

Spool : SH253	Ø mm	2.0
Rod : 500 / 1000 mm	Ø mm	N.A.

* Other dimensions available on request

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DSI M Tin Sn97Cu3

TECHNICAL DATA

Standards

DIN Material Nr. N.A.

DIN EN 29453 :	Sn97Cu3
ASTM B32 :	Sn97Cu3

General Properties

DSI M Sn97Cu3 is a lead free solder alloy composed of 97% tin (Sn) and 3% Copper (Cu). It is commonly used in industrial applications due to its good mechanical strength, durability and corrosion resistance.

Mechanical Properties

Tensile strength R_m	[MPa] / [N/mm²]	35 - 45
Hardness	[HB]	11 - 15

Chemical Composition (Standard Values in %)

Sn (Tin)	Cu (Copper)
97 (%)	3%

Field of Applications

Babbit bearing repair / Heavy-duty soldering / Motors / Industrial Sensors
High temperature soldering in aerospace electronics / Automotive electronic comp.

Packaging and available Sizes*

Spool :	Ø mm	1.6
Rod : 500 / 1000 mm	Ø mm	N.A.

* Other dimensions available on request

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e-version

Tin lead-free

EN 10204 / 3.1

DSI
LASER WELDING WIRES

DSI M Tin Sn95Sb5

TECHNICAL DATA

DIN Material Nr. 2.3695

Standards

EN ISO 3677 :	S-Sn95Sb5
ASTM B32 :	Sn95Sb5

General Properties / Field of Applications

DSI M Tin Sn95Sb5 is a lead free solder alloy composed of 95% tin (Sn) and 5% antimony (Sb). It is commonly used in industrial applications where high-temperature resistance and mechanical strength are required.

Mechanical Properties

Shear strength	[MPa] / [N/mm²]	38 - 45
Tensile strength R_m	[MPa] / [N/mm²]	55 - 62
Hardness	[HB]	15 - 17

Chemical Composition (Standard Values in %)

Sn (Tin)	Sb (Antimony)
95 (%)	5%

Compatible Materials (Selection)

Babbit bearing repair / Heavy-duty soldering / Motors / Generators / Transformers
High temperature soldering in aerospace electronics / Automotive electronic comp.

Packaging and available Sizes*

Spool :	Ø mm	1.5
Rod : 500 / 1000 mm	Ø mm	N.A.

* Other dimensions available on request

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Tin lead-free

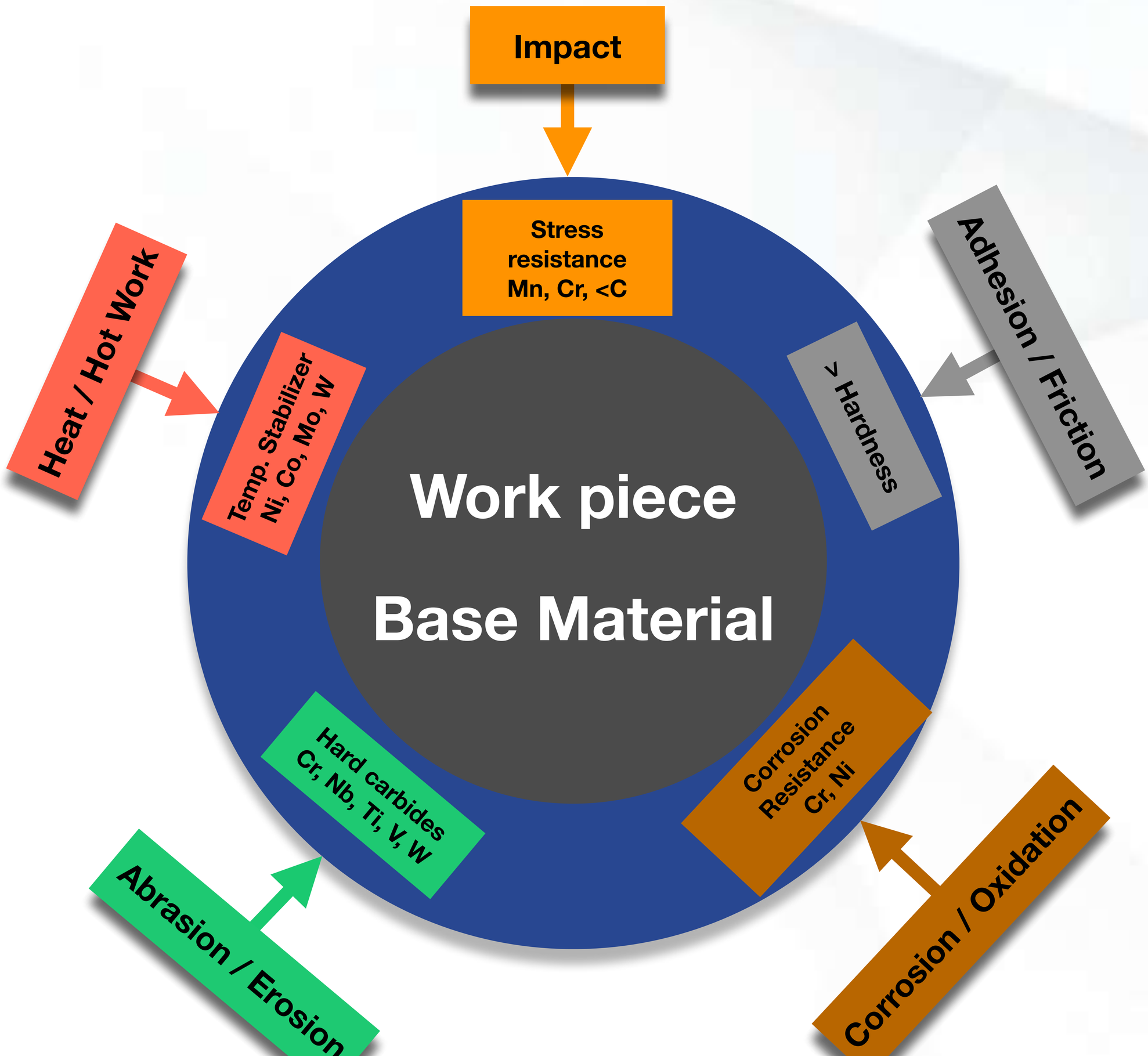
EN 10204 / 3.1

DSI Laser Wires

How to select the right Filler Material ?

Which operating conditions does the workpiece face ?

Which wire-alloys improves the performance ?



Both similar and dissimilar filler materials can be used for (Pulse) Laser Welding

DSI
LASER WELDING WIRES

Hardness Conversation Table for Non- Austenitic Steels

(Rockwell C Hardness)

Rockwell C	Vickers	Brinell Hardness Number C		Rockwell Hardness Number		Rockwell Superficial Hardness Number		
		10-mm	10-mm					
Hardness	Hardness	Standard	Carbide	A Scale,	D Scale,	15 N Scale,	30 N Scale,	45 N Scale,
Number 150 kgs	Number	Ball, 3000-kgs	Ball, 3000-kgs	60-kgf (HRA)	100-kgf	15-kgf	30-kgf	45-kgf
(HRC)	(HV)	(HBS)	(HBS)	(HRA)	(HRD)	(HR 15-N)	(HR 30-N)	(HR 45-N)
68	940	…	…	85.6	76.9	93.2	84.4	75.4
67	900	…	…	85.0	76.1	92.9	83.6	74.2
66	865	…	…	84.5	75.4	92.5	82.8	73.3
65	832	…	(739)	83.9	74.5	92.2	81.9	72.0
64	800	…	(722)	83.4	73.8	91.8	81.1	71.0
63	772	…	(705)	82.8	73	91.4	80.1	69.9
62	746	…	(688)	82.3	72.2	91.1	79.3	68.8
61	720	…	(670)	81.8	71.5	90.7	78.4	67.7
60	697	…	(654)	81.2	70.5	90.2	77.5	66.6
59	674	…	634	80.7	69.9	89.8	76.6	65.5
58	653	…	615	80.1	69.2	89.3	75.7	64.3
57	633	…	595	79.6	68.5	88.9	74.8	63.2
56	613	…	577	79.0	67.7	88.3	73.9	62.0
55	595	…	560	78.5	66.9	87.9	73	60.9
54	577	…	543	78.0	66.1	87.4	72	59.8
53	560	…	525	77.4	65.4	86.9	71.2	58.6
52	544	(500)	512	76.8	64.6	86.4	70.2	57.4
51	528	(487)	496	76.3	63.8	85.9	69.4	56.1
50	513	(475)	481	75.9	63.1	85.5	68.5	55.0
49	498	(464)	469	75.2	62.1	85	67.6	53.8
48	484	451	455	74.7	61.4	84.5	66.7	52.5
47	471	442	443	74.1	60.8	83.9	65.8	51.4
46	458	432	432	73.6	60	83.5	64.8	50.3
45	446	421	421	73.1	59.2	83	64	49.0
44	434	409	409	72.5	58.5	82.5	63.1	47.8
43	423	400	400	72.0	57.7	82	62.2	46.7
42	412	390	390	71.5	56.9	81.5	61.3	45.5
41	402	381	381	70.9	56.2	80.9	60.4	44.3
40	392	371	371	70.4	55.4	80.4	59.5	43.1
39	382	362	362	69.9	54.6	79.9	58.6	41.9
38	372	353	353	69.4	53.8	79.4	57.7	40.8
37	363	344	344	68.9	53.1	78.8	56.8	39.6
36	354	336	336	68.4	52.3	78.3	55.9	38.4
35	345	327	327	67.9	51.5	77.7	55	37.2
34	336	319	319	67.4	50.8	77.2	54.2	36.1
33	327	311	311	66.8	50	76.6	53.3	34.9
32	318	301	301	66.3	49.2	76.1	52.1	33.7
31	310	294	294	65.8	48.4	75.6	51.3	32.5
30	302	286	286	65.3	47.7	75	50.4	31.3
29	294	279	279	64.8	47	74.6	49.5	30.1
28	286	271	271	64.3	46.1	73.9	48.6	28.9
27	279	264	264	63.8	45.2	73.3	47.7	27.8
26	272	258	258	63.3	44.6	72.8	46.8	26.7
25	266	253	253	62.8	43.8	72.2	45.9	25.5
24	260	247	247	62.4	43.1	71.6	45	24.3
23	254	243	243	62.0	42.1	71	44	23.1
22	248	237	237	61.5	41.6	70.5	43.2	22.0
21	243	231	231	61.0	40.9	69.9	42.3	20.7
20	238	226	226	60.5	40.1	69.4	41.5	19.6

DSI Laser Welding

DSI Laser Wires

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DSI Service & Maintenance

DSI Laser Academy
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DSI Total Solution for Pulse Laser Welding with DSI Laser Wires

Pulse Laser Welding Service

DSI Laser Wires

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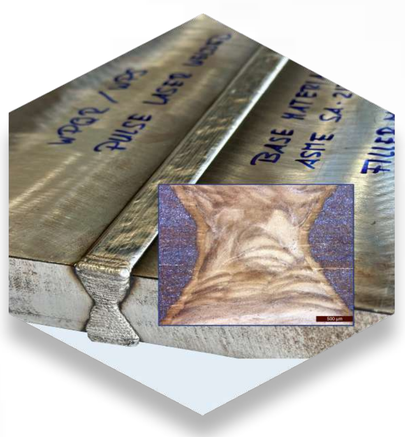

DSI Total Solution for *Pulse Laser Welding* with *DSI Laser Wires*

DSI Laser Welding

DSI Laser Wires

ALPHALASER SOUTHEAST ASIA

DSI Service & Maintenance

DSI Laser Academy
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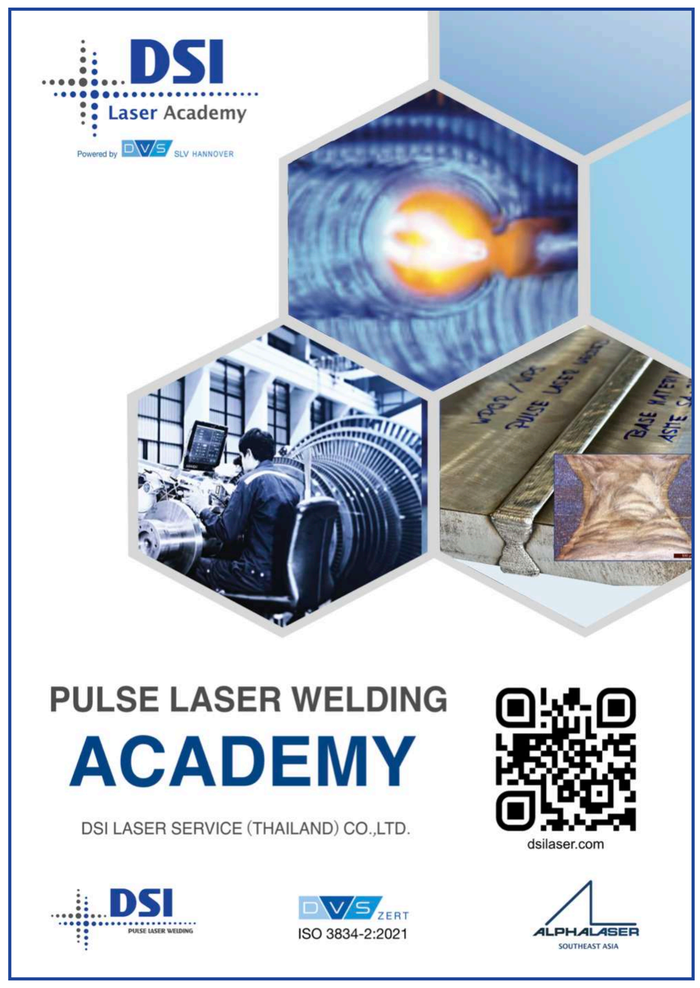

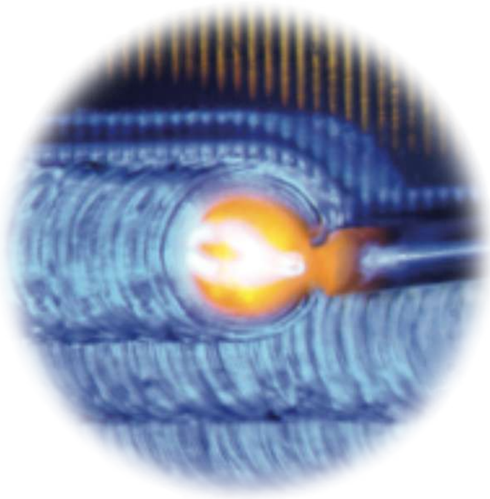

DSI

LASER WELDING WIRES

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DSI Laser Wires Catalog

Edition 04/2025