Centricut®
LASER CONSUMABLES

Hypertherm Associates
Aftermarket Group

2026 catalog

For CO_2 and fiber laser consumables

Centricut delivers

- OEM quality nozzles, ceramics and optics
- Technical and application support from our OEM-trained technicians
- 100% satisfaction guarantee

CO_2 and fiber laser nozzles

Nozzle options

All Centricut nozzles are engineered and manufactured to the highest standards. Select the OEM quality nozzle best suited for your application needs

Copper

Most commonly used nozzle offering good durability and nozzle life. Primary nozzle type for fiber lasers.

Chrome plated

Shiny, mirror-like finish provides increased spatter resistance, improved durability and longer life than copper nozzles. Not recommended for use on fiber lasers.

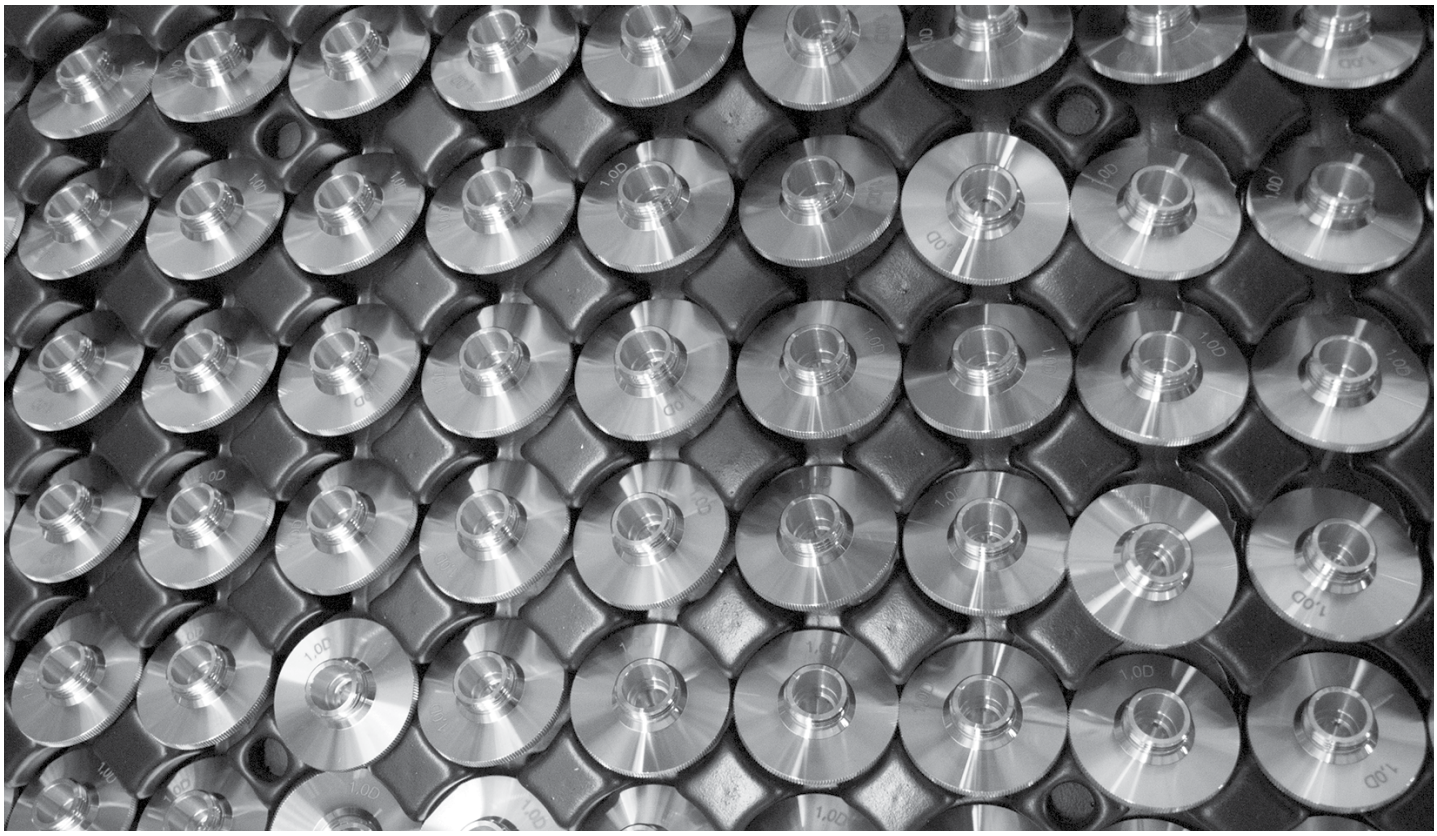
Look for CP in the part number to identify a chrome plated nozzle

Hard chrome plated

Premium nozzles offering the highest level of durability and longest nozzle life. These nozzles are not as shiny as chrome plated and have a dull appearance. Not recommended for use on fiber lasers.

Look for HCP in the part number to identify a hard chrome nozzle.

CP (chrome plated)	Nozzles plated with chrome for increased durability. These nozzles are easier to clean, resist damage due to 'tip-ups' and have better spatter resistance over non-plated nozzles. For use in all laser cutting applications.
Conical	Conical internal geometry for high pressure, non-ferrous cutting applications using nitrogen, air or argon.
Cylindrical	Cylindrical internal geometry for low pressure, mild steel cutting applications using oxygen.
Double	Insert pressed into a standard cylindrical nozzle for improved edge quality, laminar gas flow and spatter resistance. Primarily used in mild steel applications.
HCP (hard chrome plated)	Enhanced durability chrome plated nozzles. These nozzles are easier to clean, resist damage due to 'tip-ups' and have better spatter resistance over non-plated nozzles. For use in all laser cutting applications.
HP (high pressure) HD (high density)	Conical style nozzle for high pressure, non-ferrous cutting applications using nitrogen, air or argon.
Inner	Also referred to as a 'nozzle insert'. Works in conjunction with an outer nozzle to create a double nozzle. Primarily used in mild steel applications.
Low pressure	Cylindrical style nozzle for low pressure, mild steel cutting applications using oxygen.
Outer	Works in conjunction with an inner nozzle to create a double nozzle. Primarily used in mild steel applications.
Shower	Nozzles with a center orifice surrounded by smaller jets. The smaller jets focus the assist gas into the kerf, creating improved edge quality and the ability to cut thicker material. Primarily used in mild steel applications.



CO_2 and fiber laser optics

Optics key

Lens	
MEN	Meniscus
PLX	Plano-convex
MTD	Mounted
Not MTD	Not mounted
PO	Plano
MP5 or ULA	Ultra low absorption
AR	Anti-reflection
ZNSE	Zinc selenide
FS	Fused silica
DIA	Diameter
FL	Focal length
ET	Edge thickness
WD	Working distance

How to handle optics

Follow these easy steps, when cleaning or changing your optic, to help maximize the life and performance of your lens

- Avoid touching coated surfaces of the lens and hold the optic by its sides
- Wear powder-free finger cots or latex gloves when handling
- Do not use any tools or sharp objects when handling the optic or when removing it from its packaging
- Ensure the work surface is clean and free of oils, grease and dirt
- Do not place the optic on hard surfaces as they scratch easily
- Once the optic has been unpacked, carefully place it on the lens tissue in which it was originally wrapped

Optics disposal

It is important to dispose of used laser optics at a licensed industrial waste facility which is in compliance with all local, state, and federal regulations. If you don't have access to a licensed industrial waste facility, and purchased your laser optics through Centricut, you may return them to Centricut for proper disposal. This service is only available to Centricut customers.

All optics returned to Centricut must:

- Include return authorization and invoice numbers
- Be sealed in a plastic bag to minimize any hazards
- Remove excess ZnSe powder prior to sealing

*Acceptance of goods will be refused if not packaged correctly or if the return authorization number isn't included

Optics

ESSE A part number	Reference number	OEM	Description
Fiber laser lens			
LT510	71566490 OPTIC165 6044806	Amada	FS PO/CX LENS 1.5" DIA 7.48" FL NAR/NAR ET=.331"
LT610	OPTIC164 71571525 6037969 71565737 771043800	Amada	FS PO/CX LENS 2" DIA 7.48" FL AR/AR @ 1.08µm ET=.45"
LH968988PVL	1057.81000.070 - 470321	Prima Industrie, Finn Power	LNPX38.1-124.94FS-2000-1064&633-0
LH968987PH	1057.81000.071 - 1058.55047.310 - 470321	Prima Industrie, Finn Power	LNPX38.1-187.41FS-2000-1064&633-0
LH970128PVL	3163010022	Salvagnini	LNPX25.4-200FS-2000-1064&632.8-0
LT810	OPTIC183 - 6758368	Amada	FS PO/CX LENS 50.8MMDIA 190MMFL ET=11.44MM
LH6554759P	6007348 - 71568226 - 7710714 OPTIC162	Amada	AXICON LENS 2" DIA 185.3FL ET=6mm
LH6042850P	6044677 - 71566488 - 6042850 - OPTIC163	Amada	AXICON LENS 1.5" DIA 185.3FL ET=6mm
LH6979795PH	P0591-1263-00001	Precitec	MOUNTED LENS 200MM FOCUS MODULE
LH5188954P	PENTZG1324CH	Penta	LENSFS-7980 PO-CX 38.1 DIA 100mm FL
LH5309006P		Penta	LENSFS-7980 PO-CX 38.1 DIA 125mm FL
LH5214522P	PENTZG817CH	Penta	LENSFS-7980 PO-CX 38.1 DIA 250mm FL
LH5478919P		Penta	LENSFS-7980 PO-CX 38.1 DIA 300mm FL

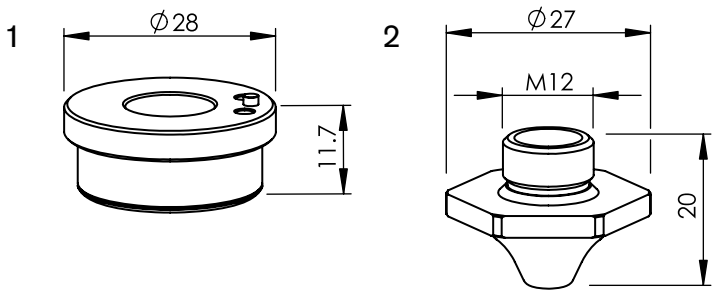
ESSE A part number	Reference number	OEM	Description
Fiber laser windows			
PW0010II	71570026 - OPTIC156	Amada	PROTECTIVE WINDOW Octangular
PW0032II	OPTIC194 - 71576076	Amada	PROTECTIVE WINDOWWINDOW 46.0MM DIA, 10.0MM ET
PW0025II		Eagle	PROTECTIVE WINDOW 62MM DIA, 9.50MM ET
PW0026II		Mitsubishi	PROTECTIVE WINDOW 25.4MM DIA, 4.0MM ET
PW0017II	71571308 - OPTIC173	Amada	PROTECTIVE WINDOW 45MM DIA, 3.0MM ET
PW0006II	10045746 ; 1057.81000.135 ; 29100397	Bystronic	PROTECTIVE WINDOW 36MM DIA, 5.0MM ET
PW0021II	10086368; 10071591; 10145862	Bystronic	PROTECTIVE WINDOW 34MM DIA, 3.0MM ET
PW0003II		CY Laser	PROTECTIVE WINDOW 38.1MM DIA, 5.0MM ET
PW0012II	Z50SA015350,W495, Z50ZZE00010	Mazak	PROTECTIVE WINDOW 42MM DIA, 9.0MM ET
PW0022II	211LCG0020	Raytools	PROTECTIVE WINDOW 24.9MM DIA, 1.5MM ET
PW0023II	211LCG0037	Raytools	PROTECTIVE WINDOW 27.9MM DIA, 4.1MM ET
PW0024II	211LCG0076	Raytools	PROTECTIVE WINDOW 38.1MM DIA, 1.6MM ET
PW0027II	211LCG0078; 110255IAG0004; 31200000090; P0595-58601	Raytools	PROTECTIVE WINDOW 37MM DIA, 7.0MM ET
PW0029II	211LCG0045	Raytools	PROTECTIVE WINDOW 37MM DIA, 1.6MM ET
PW0030II	211LCG0086	Raytools	PROTECTIVE WINDOW 24.9MM DIA, 1.5MM ET 15KW
PW0031II	211LCG0068, P0795-1201-00002	Raytools	PROTECTIVE WINDOW 30MM DIA, 5.0MM ET
PW0018II		Mitsubishi	PROTECTIVE WINDOW 50.0MM DIA, 8.0MM ET
PW0016II		Orotig	PROTECTIVE WINDOW 28MM DIA, 4.1MM ET
PW0013II	P0589-360-00001 , P0589-360-00002	Precitec	PROTECTIVE WINDOW 22.35MM DIA, 4.0MM ET
PW0014II	P0595-58601	Precitec	PROTECTIVE WINDOW 37MM DIA, 7.0MM ET
PW0009II		Penta	PROTECTIVE WINDOW 25.4MM DIA, 5.0MM ET
PW0008II	105781000089 , 1057.81000.200	Prima Industrie	PROTECTIVE WINDOW 35MM DIA, 1.5MM ET
PW0019II		Prima Industrie	PROTECTIVE WINDOW 30MM DIA, 1.5MM ET
PW0020II	105781000085	Prima Industrie	PROTECTIVE WINDOW 25.4MM DIA, 3.0MM ET
PW0004II	3163040008 - 3163040010 - 3163040013	Salvagnini	PROTECTIVE WINDOW 32MM DIA, 6.35MM ET
PW0002II	614767 - 2602937	Trumpf	PROTECTIVE WINDOW 34MM DIA, 5.0MM ET
PW0007II	0766719 ; P0795-1201-00002	Trumpf	PROTECTIVE WINDOW 30MM DIA, 5.0MM ET

ESSE A part number	Reference number	OEM	Description
CO_2 lenses			
LH123397M	4-07475	Bystronic	ZNSE MEN LENS 1.5"DIA 5.0"FL MP-5AR/MP-5AR@ 10.6 ET=.354" CA=1.24"
LH602033M	4-07476-2	Bystronic	ZNSE MEN LENS 1.5"DIA 7.5"FL MP-5AR/MP-5AR@ 10.6 ET=.354" CA=1.24"
LH784964M		Bystronic	ZNSE MEN LENS1.5"DIA FL 7,5" ET 0,236" AR/AR
LH621644M	120216, 4-05094, 360033	Bystronic, Prima Industrie, Finn	ZNSE MEN LENS 1.5"DIA 5"FL ET 0,354" AR/AR
LH698637M	4-05095, 360039	Bystronic, Prima Industrie, Finn	ZNSE MEN LENS 1.5"DIA 7.5"FL ET 0,354" AR/AR
LH480176M		LVD	ZNSE MEN LENS 1.75"DIA 5.0"FL AR/AR ET=.354"
LH578662P	OPTIC029	Mazak	ZNSE PO/CX LENS 1.5"DIA 5"FL ET 0.300 AR/AR
LH306068P		Mazak	ZNSE PO/CX LENS 1.5"DIA 7.5"FL AR/AR@10.6 ET=.300"
LH741363P	Z50ZZ013480	Mazak	ZNSE PO/CX LENS 2"DIA 5"FL ET 0.380 AR/AR
LH892020P	OPTIC126	Mazak	ZNSE PO/CX LENS 2.0"DIA 7.5"FL AR/AR@10.6 ET=.310"
LH232771P	OPTIC031, Z50ZZ005200, z50zz00520a	Mazak	ZNSE PO/CX LENS 2.0"DIA 7.5"FL AR/AR@10.6 ET=.380"
LH458138M	LH52450-025M	Prima Industrie, Messer	ZNSE MEN LENS D2" FL5" AR/AR@10.6ET.380"
LH695399M	LH52450-026M 29100055	Prima Industrie, Messer	ZNSE MEN LENS DIA.2.0" FL 7.5" ET=0.380" AR/AR
LH831393M	346104	Trumpf	ZNSE MEN LENS 1.5"DIA 3.75"FL AR/AR@10.6 ET=.290"*
LH312503M		Trumpf	ZNSE MEN LENS 1.5"DIA 5.0"FL MP-5-AR/MP-5-AR@10.6 ET=.290"**
LH474644M		Trumpf	ZNSE MEN LENS 1.5"DIA 7.5"FL MP-5 ARMP5AR ET=.290"
LH977976M	141972	Trumpf	ZNSE MEN LENS 1.5"DIA 8.858"FL ET=.290"AR/AR
LH406294M	088114	Trumpf, Prima Industrie, LVD	ZNSE MEN LENS 1.5"DIA 5"FL ET 0,290" AR/AR
LH702232M	097517	Trumpf, Prima Industrie, LVD	ZNSE MEN LENS 1.5"DIA 7.5"FL ET 0,290" AR/AR
LH861143M	350163		ZNSE MEN 1.5"DIA, 10"FL .29"THK AR/AR
LH769062P	Z50ZZ013470	Mazak	LENS PLX 2.0"DIA/7.5"FL/.380"ET HA
LH158039P	Z50ZZ013480	Mazak	LENS PLX 2.0"DIA/5.0"FL/.380"ET HA
LH628275P		Amada, Mazak	LENS Ø 2.0" - FL 10" - ET 7.87MM PO/CX
LH726477M		Bystronic, Prima Industrie	LENS Ø 1.5" - FL 10" - ET 9.0MM MEN
LH304725P		Amada, Mazak	LENS Ø 2,0" - FL 5,0" - ET 7,87mm
LH5008858M	1383925	Trumpf	LENS Ø 40 MM - FL 155 MM- ET 7,5 MM MEN
LH471041M			LENS D 1.1"-FL2.5" - ET 0.85" MEN
LH400130M	1772319	Trumpf	ZNSE MEN LENS D40 1.575"DIA 5.118"FL AR/AR ET=.295" CUT
LH400250M	1770805	Trumpf	ZNSE MEN LENS D40 1.575"DIA 250MMFL AR/AR ET=.295" CUT
LH500170LMAM	1830767	Trumpf	ZNSE MEN LENS D50 1.968"DIA 6.7"FL AR/AR ET=.350" CUT
LH500250M	1796128	Trumpf	ZNSE MEN LENS D50 1.968"DIA 250MMFL AR/AR ET=.350" CUT
LH471041M			ZNSE MEN LENS 1.100"DIA 2.5"FL AR/AR ET=.085"
LH726477M			ZNSE MEN LENS 1.5"D 10"FL 10.6 ET.354"
LH5008858M	1383925		ZNSE MEN LENS 1.575"DIA 6.102"FL AR/AR ET=0.295" **
LH304725P			ZNSE PO/CX LENS 2"DIA-5"FL-AT=.310"
LH628275P			ZNSE PO/CX LENS 2.0"DIA 10.0"FL AR/AR@10.6 ET=.31"
LH158039P	Z50ZZ013480		ZNSE PO/CX LENS 2.0"DIA 5"FL ET=.380" AR/AR *HIGH ACCURACY* ETV<.000175" & D +0,-.0010
LT410	797341900-71710030000-OPTIC039		ZNSE PO/CX LENS 2.0"DIA 7.5"FL AR/AR@10.6 ET=.380"
LT415	71710061		ZNSE PO/CX LENS 2.0"DIA10.0"FL AR/AR@10.6 ET=.380"
LH769062P	Z50ZZ013470		ZNSE PO/CX LENS 2.0"DIA 7.5"FL ET=.380" AR/AR *HIGH ACCURACY* ETV<.000175" & D +0,-.0010

Accessories

Esse A part number	Centricut part number	Reference number	Description	Pkg qty
AL1100			Laser CO_2 glasses ce approved	1
AL1003-100		240568-100	Lens cleaning polish – ml 100	1
AL1003-200		240568-200	Lens cleaning polish – ml 200	1
AL1010	TR300-1010		Dropper, lens cleaning fluid	1
AL1120			Latex gloves (10 pcs)	10
SC50	AM313-SC50		Lens cleaning tissue (50 sheets)	50
SC100	AM313-SC100		Lens cleaning tissue (50 sheets)	50
SC20	TR300-SC20		Cotton swabs (20 pcs)	20
AL1115	TR300-1115		Lens cleaning pre-cut cotton (80 sheets)	80
AL255	TR300-255	91860	Magnifying loop	1
AL271	TR300-271		Base, mirror maintenance	1
AL370			Base, mirror maintenance	1
AL282	TR301-0282		Injector	1
AL276	TR300-276	6910010029/00	Base, mirror maintenance	1
TX762			Lens cleaning swabs	100
TX714A			Large lens cleaning swabs	100
TX759B			Micro lens cleaning swabs	500

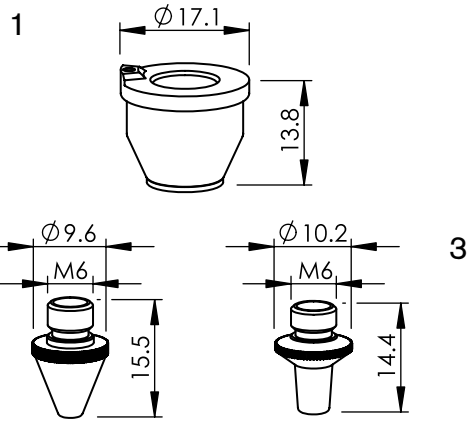
Replacement parts suitable for: BLM®-Adige*



Consumables

	Esse A part number	Centricut part number	Reference number	Description	Pkg qty
1	AL407	BL350-3224	6930003224	PT-Nozzle holder KT B2" – M12	1
	L1851	BL350-0846	6930250846/00	BL-Nozzle SCB, 1.2 mm	1
	L1852	BL350-0847	6930250847/00	BL-Nozzle SCB, 1.5 mm	1
	L1853	BL350-0848	6930250848/00	BL-Nozzle SCB, 1.8 mm	1
	L1854	BL350-0849	6930250849/00	BL-Nozzle SCB, 2.0 mm	1
	L1855	BL350-0850	6930250850/00	BL-Nozzle SCB, 2.3 mm	1
	L1856	BL350-0851	6930250851/00	BL-Nozzle SCB, 2.5 mm	1
	L1850XH	BL350-0800	6930250800/00	BL-Nozzle SCB, 1.0 mm CP	1
	L1851XH	BL350-0801	6930250801/00	BL-Nozzle SCB, 1.2 mm CP	1
	L1852XH	BL350-0802	6930250802/00	BL-Nozzle SCB, 1.5 mm CP	1
	L1853XH	BL350-0803	6930250803/00	BL-Nozzle SCB, 1.8 mm CP	1
	L1854XH	BL350-0804	6930250804/00	BL-Nozzle SCB, 2.0 mm CP	1
	L1855XH	BL350-0805	6930250805/00	BL-Nozzle SCB, 2.3 mm CP	1
	L1856XH	BL350-0806	6930250806/00	BL-Nozzle SCB, 2.5 mm CP	1
	L1857XH	BL350-0807	6930250807/00	BL-Nozzle SCB, 3.0 mm CP	1
	L1858XH	BL350-0808	6930250808/00	BL-Nozzle SCB, 3.5 mm CP	1
	L1859XH	BL350-0809	6930250809/00	BL-Nozzle SCB, 4.0 mm CP	1
	L1870XH	BL350-0810	6930250810/00	BL-Double Nozzle D3F, 1.0 mm – 1.0 CP	1
	L1871XH	BL350-0811	6930250811/00	BL-Double Nozzle D3F, 1.2 mm – 1.0 CP	1
	L1872XH	BL350-0812	6930250812/00	BL-Double Nozzle D3F, 1.5 mm –1.0 CP	1
	L1873XH	BL350-0813	6930250813/00	BL-Double Nozzle D3F, 1.8 mm – 1.0 CP	1
2	L1874XH	BL350-0814	6930250814/00	BL-Double Nozzle D3F, 2.0 mm – 1.0 CP	1
	L1876XH	BL350-0816	6930250816/00	BL-Double Nozzle D3F, 2.5 mm – 1.5 CP	1
	L1877XH	BL350-0817	6930250817/00	BL-Double Nozzle D3F, 3.0 mm – 1.5 CP	1
	L1878XH	BL350-0818	6930250818/00	BL-Double Nozzle D3F, 3.5 mm –1.5 CP	1
	L2140XH	BL350-0878	6930250878/00	BL-Double Nozzle D3F, 1.0 mm –1.5 CP	1
	L2141XH	BL350-0879	6930250879/00	BL-Double Nozzle D3F, 1.2 mm –1.5 CP	1
	L2142XH	BL350-0880	6930250880/00	BL-Double Nozzle D3F, 1.5 mm –1.5 CP	1
	L2143XH	BL350-0881	6930250881/00	BL-Double Nozzle D3F, 1.8 mm –1.5 CP	1
	L2144XH	BL350-0882	6930250882/00	BL-Double Nozzle D3F, 2.0 mm –1.5 CP	1
	L2145XH	BL350-0883	6930250883/00	BL-Double Nozzle D3F, 2.3 mm –1.5 CP	1
	L1840XH	BL350-0820	6930250820/00	BL-Nozzle NCB 1.5 mm CP	1
	L1841XH	BL350-0821	6930250821/00	BL-Nozzle NCB, 1.8 mm CP	1
	L1843XH	BL350-0823	6930250823/00	BL-Nozzle NCB, 2.3 mm CP	1
	L1844XH	BL350-0824	6930250824/00	BL-Nozzle NCB, 2.5mm CP	1
	L1846XH	BL350-0826	6930250826/00	BL-Nozzle NCB, 3.5 mm CP	1
	L1847XH	BL350-0827	6930250827/00	BL-Nozzle NCB, 4.0 mm CP	1
	L1864XH	BL350-0841	6930250841/00	BL-Nozzle NCB, 5.0 mm CP	1
	L1832XH	BL350-0840	6930250840	BL-Double Nozzle ACB, 2.5 mm CP	1
	L1833XH	BL350-0839	6930250839	BL-Double Nozzle ACB, 4.0 mm CP	1
	L1864XH	BL350-0841	6930250841/00	BL-Double Nozzle NCB, 5.0 mm CP	1
	L1865XH	BL350-0819	6930250819/00	BL-Double Nozzle NCB, 7.0 mm CP	1

Replacement parts suitable for: BLM®-Adige*



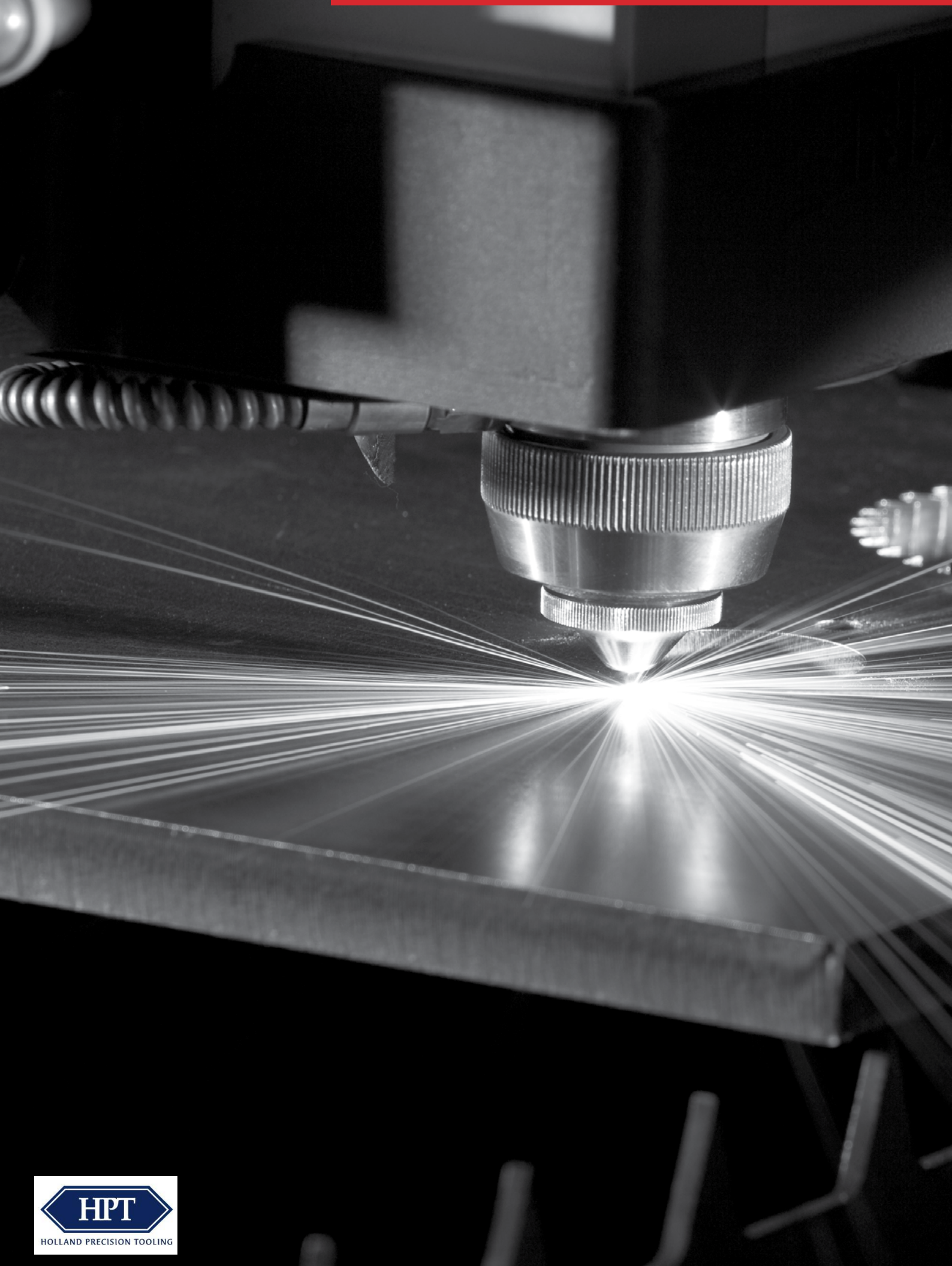
Consumables

	Esse A part number	Centricut part number	Reference number	Description	Pkg qty
1	AL653	TR302-2406 Recommended	280408, 092405, P0494-752-00001, 6930300016	TR-Nozzle holder KT M1.5" KN	1
	AL53	TR302-2405	280408, 092405, P0494-752-00001, 6930300016	TR-Nozzle holder KT M1.5" KN OEM	1
2	L1720	BL360-0031	6930250031/00	BL- Long Nozzle TCL, 1.0 mm	1
	L1721	BL360-0032	6930250032/00	BL- Long Nozzle TCL, 1.2 mm	1
	L1722	BL360-0033	6930250033/00	BL- Long Nozzle TCL, 1.5 mm	1
	L1723	BL360-0034	6930250034/00	BL- Long Nozzle TCL, 1.8 mm	1
	L1724	BL360-0035	6930250035/00	BL- Long Nozzle TCL, 2.0 mm	1
	L1726	BL360-0043	6930250043/00	BL- Long Nozzle TCL, 2.3 mm	1
	L1725	BL360-0036	6930250036/00	BL- Long Nozzle TCL, 2.5 mm	1
	L1727	BL360-0044	6930250044/00	BL- Long Nozzle TCL, 3.0 mm	1
	L2100	BL355-0862	6930250862	BL-Nozzle KNL,1.0 mm	1
	L2101	BL355-0863	6930250863	BL-Nozzle KNL,1.2 mm	1
	L2102	BL355-0835	6930250835	BL-Nozzle KNL,1.5 mm	1
	L2104	BL355-0836	6930250836	BL-Nozzle KNL, 2.0 mm	1
	L2105	BL355-0865	6930250865	BL-Nozzle KNL, 2.5 mm	1
	L2106	BL355-0866	6930250866	BL-Nozzle KNL, 3.0 mm	1
	L2110	BL355-0857	6930250857	BL- Double Nozzle KNL, 1.0 mm	1
	L2111	BL355-0858	6930250858	BL- Double Nozzle KNL, 1.2 mm	1
	L2112	BL355-0837	6930250837	BL- Double Nozzle KNL, 1.5 mm	1
	L2113	BL355-0859	6930250859	BL- Double Nozzle KNL, 1.8 mm	1
	L2114	BL355-0838	6930250838	BL- Double Nozzle KNL, 2.0 mm	1
	L2115	BL355-0860	6930250860	BL- Double Nozzle KNL, 2.5 mm	1
	L2116	BL355-0861	6930250861	BL- Double Nozzle KNL, 3.0 mm	1
3	L2061	BL355-5054	0455054	BL-Nozzle 1.0 mm	1
	L2067	BL355-5044	0455044	BL-Nozzle 1.2 mm	1
	L2062	BL355-5034	0455034	BL-Nozzle 1.5 mm	1
	L2063	BL355-5024	0455024	BL-Nozzle 1.8 mm	1
	L2064	BL355-5014	0455014	BL-Nozzle 2.0 mm	1
	L2065	BL355-0762	C50762A	BL-Nozzle 2.5 mm	1

HPT
HOLLAND PRECISION TOOLING

Centricut®
LASER CONSUMABLES

Resources



HPT
HOLLAND PRECISION TOOLING

Sensor cones

Centricut sensor cones provide substantial cost savings without sacrificing performance or quality

- Available for Amada, Mazak, Mitsubishi and Precitec
- Delivers the same OEM performance at a lower cost
- Unmatched performance and reliability
- Engineered and manufactured to Hypertherm's precise quality standards
- Backed by our one-year warranty and 100% satisfaction guarantee

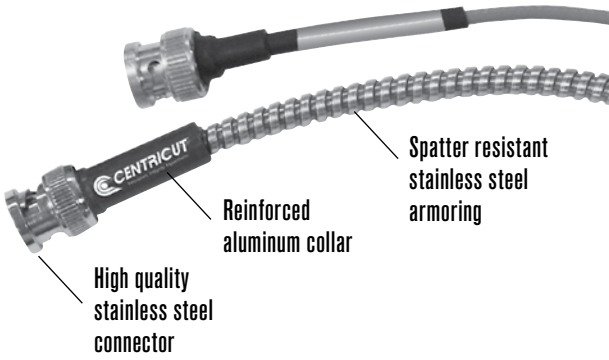
Esse A part number	Centricut part number	OEM	Reference number	Description
AL600	AM343-0091	Amada	71360091	AM-Sensor cone, HS95 mini
AL601	AM343-1621*	Amada	71341621	AM-Sensor cone, HS95
AL603	AM343-9107	Amada	ECO cone	AM-Sensor cone, ECO
AL602	AM343-1690	Amada	71341690	AM-Sensor cone, HS98
AL550	AM343-L3015C	Amada	71374509	PT-Sensor cone, LC3015
	AM343-2443	Amada	7172443, 771041	AM-Sensor cone, HPL Blue
AL551	AM343-4233B*	Amada	71564233	AM-Sensor cone, HPL Black
AL552	AM343-4233G*	Amada	71564233	AM-Sensor cone, HPL Gold
AL611	PT347-3323	Mazak	HNP	PT-Sensor cone, HNP
AL605	MZ335-HNPS*	Mazak	HNPS	MZ-Sensor cone, HNP short version
	PT347-0007	Mazak	56743300500	PT-Sensor cone, HNZ (Mazak)
AL607	PT347-0011*	Mitsubishi	P0354-110-00002	PT-Sensor cone, HNZ (Mitsubishi)
AL604	MB334-W429A	Mitsubishi	P0461-270-00001	MB-Sensor cone, W429A
AL608	PT347-0238*	Precitec	BQ930D238G01	PT-Sensor cone, HNZ SMA
AL612	PT347-8001	Precitec	P0361-203-00001	PT-Sensor cone, 2.5Z/J
AL609	PT347-0522*	Precitec	P0599-520-00002	PT-Sensor cone, LRC
AL610	PT347-1145	Precitec	P0380-140-0002, P0380-130-00001, 281145	PT-Sensor cone, DZ

*Sensor cone repair service is available for most sensor cones in North America and select international regions. For more information contact Ctlaser@Hypertherm.com.

Armored sensor cables

Centricut armored sensor cables outlast standard OEM cables

- Available for all major brands
- Robust design with extreme temperature rating (900–1200°)
- Longer life reduces downtime and production loss
- Spatter resistant stainless steel armoring
- Reinforced collars and high-quality connector



Armored sensor cables

Esse A part number	Centricut part number	OEM	Reference number	Description
AL260	AM308-8965	Amada	71398965	AM-Sensor cable, 305 mm (12")
AL613	AM308-8965A	Amada	71398965	AM-Sensor cable, 305 mm (12") armored
AL200	AM313-1901	Amada	71341630	AM-Sensor cable HS-5, 305 mm (12")
	AM313-1901A	Amada	71341630	AM-Sensor cable HS-5, 305 mm (12") armored
AL615	AM313-8292	Amada	71398292	AM-Sensor cable dual shield, 7 m (275.6")
	AM313-9851A	Amada	71369851	AM-Sensor cable, 203 mm (8") armored
AL616	CN306-0654A	Cincinnati	909654, 922686	CN-Sensor cable, 114 mm (4.5") armored
AL617	CN306-0951A	Cincinnati	842951	CN-Sensor cable, 140 mm (5.5") armored
AL618	CN306-2951	Cincinnati	842951, PLTTW0015	CN-Sensor cable, 140 mm (5.5")
AL619	CN306-9654	Cincinnati	909654, 922686, PLTTW0002	CN-Sensor cable, 114 mm (4.5")
AL620	MZ335-0111A	Mazak	4674330111	MZ-Sensor cable, 280 mm (11") armored
AL621	MZ335-0181A	Mazak	46743300181	MZ-Sensor cable, 317.5 mm (12.5") armored
AL622	MZ335-1330A	Mazak	46683301330	MZ-Sensor cable, 305 mm (12") armored
AL643	MZ335-1980A	Mazak	46683301980	MZ-Sensor cable, 280 mm (11") armored
	MZ335-5320	Mazak	6143355320	MZ-Sensor cable, 61.5 mm (2.4") armored
AL623	MZ335-630A	Mazak	00BSBA630MNC	MZ-Sensor cable, 630 mm (25") armored
AL368	MZ335-8290	Mazak	46143308290	MZ-Sensor cable, 75 mm (3")
AL624	NT426-1682	NTC	4R029911-001, J482D	NT-Sensor cable, 216 mm (8.5")
AL625	NT426-4991	NTC	3-0104991	NT-Sensor cable 0-0BNC/MCX, 482 mm (19")
AL626	NT426-7492	NTC	3-0117492	NT-Sensor cable 90BNC/90BNC, 482 mm (19")
AL627	NT426-8677	NTC	4R028677-001	NT-Sensor cable, 508 mm (20") armored
AL628	PR361-3150	Prima	820.63.150	PR-Sensor cable, 150 mm (5.9")
AL629	PR361-3151	Prima	820.63.150	PR -Sensor cable, 150 mm (6") high profile
AL560	PR361-3160	Prima	555.63.150	PR-Sensor cable, 210 mm (8 17/64")
AL633	PT347-0101A	Precitec	P0360-100-00500	PT-Sensor cable, 500 mm (20") armored
AL358	PT347-0181	Precitec	46743300181	PT-Sensor cable, 305 mm (12") armored
AL635	PT347-0300A	Precitec	P0492-014-00300	PT-Sensor cable KE, 300 mm (11.8") armored
	PT347-0450	Precitec	P0497-002-00450	PT-Sensor cable, 450 mm (17.7")
AL639	PT347-KS13	Precitec/ Gunkyo	00BMTKA-A-HS500mm	PT-Sensor cable, 390 mm (15.5") armored
AL637	PT347-1250	Precitec	D5001-040-00250	PT-Sensor cable, 250 mm (9.8") armored
AL640	TR301-0930	Trumpf	280930	TR-Sensor cable, 152 mm (6") armored
AL641	TR301-7833	Trumpf	227833	TR-Sensor cable, 432 mm (17")
AL642	TR301-9983	Trumpf	359983, 342474	TR-Sensor cable, 190 mm (7.5") armored

Lens cleaning tips

Centricut supplies suitable for all OEM CO_2 and fiber laser lenses

- Lens maintenance base is designed to secure a wide range of optics sizes for the cleaning process
- Centricut optical cleaning fluid is a safe, economical alternative to traditional high-purity and reagent-grade solvents
- Cleaning materials suited for all lens cleaning needs; lens paper, polyester swabs and polyester wipes

Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

Polyester swabs

Recommended for cleaning curved lenses and where a more aggressive cleaning is required (interchangeable with polyester wipes).

Polyester wipes

Recommended for cleaning CO_2 and fiber lenses and windows (interchangeable with polyester swabs and lens paper).

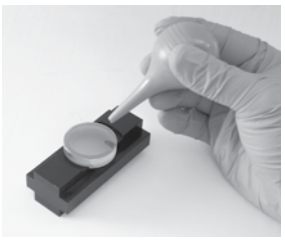
Product description	Part number	Quantity per order
Optical cleaning fluid (3 oz.)	TR300-1112	1
Lens cleaning swab	TR300-0699	25
Lens cleaning paper, Tiffen	TR300-6452	50
Polyester wipes 4" x 4"	TR300-7991	100
Base, lens maintenance	TR300-271	1

Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

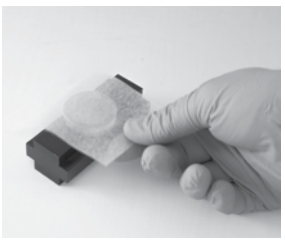
You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Lint-free lens paper
- Latex or rubber gloves



To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.

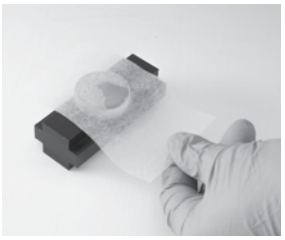


Step 1

Place lens paper over the optic, covering it completely.

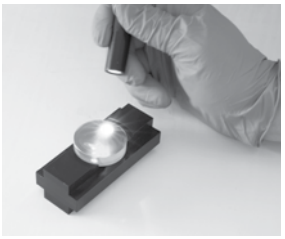
Step 2

Apply a couple drops of lens cleaning fluid to the lens paper (far side of the lens).



Step 3

Slowly pull the lens paper across the lens so the cleaning fluid comes in contact with the entire lens surface. Finish pulling the paper across so all of the fluid has dried from the lens.



Step 4

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

Final step:

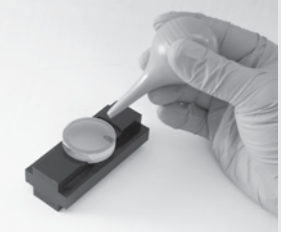
Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

Polyester swabs

Recommended for cleaning curved lenses and where more aggressive cleaning is required. Interchangeable with polyester wipes.

You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Polyester swabs
- Latex or rubber gloves

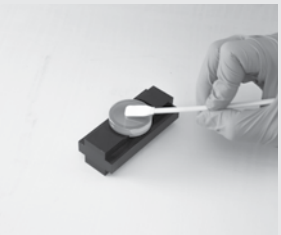


To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.

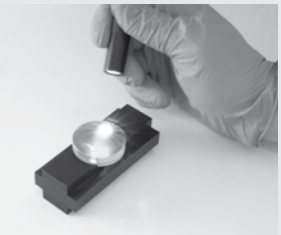
Step 1

Place a few drops of the optical cleaning fluid onto the swab.



Step 2

Move the larger dirt particles and then finer contaminants to the edge of the lens using the swab. Do not rest the swab on the lens or on the work table. Do not reuse swabs.



Step 3

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

Final step:

Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

Polyester wipes

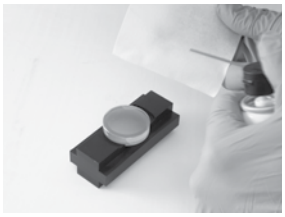
Recommended for cleaning CO_2 and fiber lenses and windows. Interchangeable with polyester swabs and lens paper.

You will need:

- Lens maintenance base (lens holder)
- Optical cleaning fluid
- Air bulb
- Polyester wipes
- Latex or rubber gloves

To get started

Using rubber gloves, place the lens in the lens holder and remove all loose contaminants with an air bulb. When contaminants are no longer visible, begin the cleaning process.

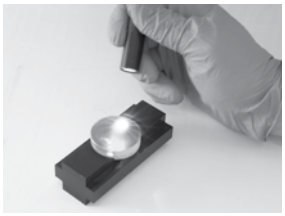


Step 1

Place a few drops of the optical cleaning fluid onto the polyester wipe

Step 2

Place the wipe with the wet side down on the lens and slide it across the lens, applying light pressure to the top of the wipe. Avoid contamination to the wipe and do not reuse wipes.



Step 3

Inspect the surface of the lens for dust and cleaning residue using a flashlight. Examine the lens from different angles. Repeat the process on the other side of the lens.

Final step:

Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

Steps to help optimize cut quality.

Striation marks, angularity and dross tell the story.

Optimizing CO_2 and fiber lasers to achieve maximum cut quality is a very important step in the overall cutting process. The critical points that produce good cuts are the width of the kerf (the material that is lost during the cut), oxidation and roughness of the cut surface, the geometry of the cut parts and the allowable tolerances. Some factors to be considered are the cut speed or 'feed rate', beam focus, gas pressure, standoff and nozzle size/ type.

Factory cut chart settings

The following samples show 12 mm, 6 mm and 3.2 mm (1/2", 1/4" and 10 ga.) mild steel, cut with O_2 on a 2 kW fiber laser with one variable changed to show how cut quality is affected. The adjustments will be similar for all CO_2 and fiber laser, cutting mild steel with O_2.

Is the kerf too narrow?

When the kerf is too narrow the cut will have a very smooth edge on the top, a lack of oxidation on the bottom and/or heavy dross.

Probable causes:

- Focus is too low
- Feed rate is too fast
- Gas pressure is too low
- Nozzle size is too small
- Standoff is too low

Is the kerf too wide?

When the kerf is too wide the cut will have a rougher edge, more self burning in the corners of the part, more angularity on the cut edge and occasionally, dross.

Probable causes:

- Focus is too high
- Feed rate is too slow
- Gas pressure is too high
- Nozzle size is too big
- Standoff is too high
- Incorrect nozzle type

Follow these steps to optimize cut quality:

1. Use the closest known settings for the material being cut.
2. Use a test part that has both interior and exterior features.
3. Verify that the lens and/or window is clean and in good condition.
4. Verify that the nozzle is centered properly and is in good condition.
5. Adjust the focus up and down until the cut quality starts to get bad and then set to the middle of that range.
6. Adjust the gas pressure up and down until the cut starts to get bad and then set to the middle of that range.
7. Adjust the federate up by 5% increments. When the cut starts to get bad, set the feed rate 10% slower.

Strike a balance between heat levels and gas flow

Cutting mild steel with a laser is a balance of how much material is heated by the laser beam and how much assist gas flows through the cut.

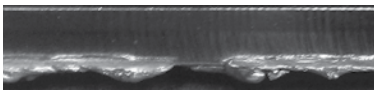
- Heating up too small of an area, or not having enough assist gas flow through the cut will result with the kerf (width of the cut) being too narrow.
- Heating up too large of an area or having too much assist gas flow through the cut will result in the kerf being too wide.

3.2 mm (10 ga.) mild steel cut resulting in too narrow kerf

Factory cut chart settings

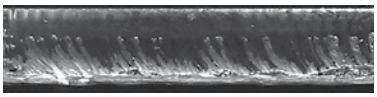
Focus is too low

The kerf is too narrow and doesn't allow enough O_2 into the cut to remove all the molten material.



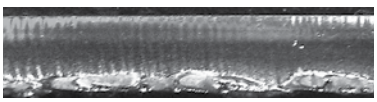
Feed rate is too fast

The cut striations are trailing the direction of cutting and there is not enough time to remove all the molten material.



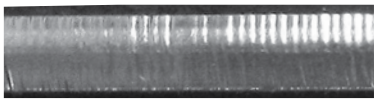
Gas pressure is too low

There is not enough O_2 to remove all the molten material.



Stand off is too low

The focus spot is in the wrong location, causing the rough edge.



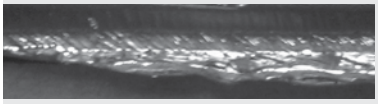
Cut direction

3.2 mm (10 ga.) mild steel cut resulting in too wide kerf

Factory cut chart settings

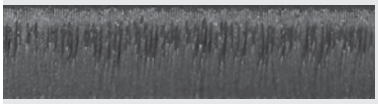
Focus is too high

The laser is melting more material than can be removed from the cut.



Feed rate is too slow

The cut surface is too rough and productivity is decreased.

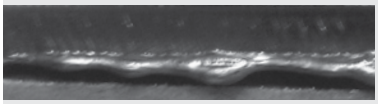


Gas pressure is too high

Too much O_2 results in overheating of the cut and causes intermittent gouges.

Stand off is too high

The laser is melting more material than can be removed from the cut.



Nozzle size is too big

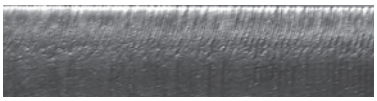
Too much O_2 results in overheating of the cut and causes intermittent gouges.

Cut direction

*Above samples have been cut with O_2 on 2 kW fiber laser. Results will be similar for CO_2 laser cutting mild steel with O_2.

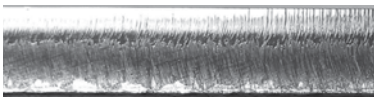
6 mm (1/4") mild steel cut resulting in too narrow kerf

Factory cut chart settings



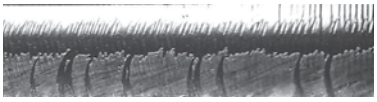
Focus is too low

The kerf is too narrow and doesn't allow enough O_2 into the cut to remove all the molten material.



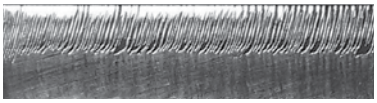
Feed rate is too fast

The cut striations are trailing the direction of cutting and there is not enough time to remove all the molten material.



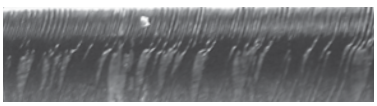
Gas pressure is too low

There is not enough O_2 to remove all the molten material.



Stand off is too low

The focus spot is in the wrong location, causing the rough edge.

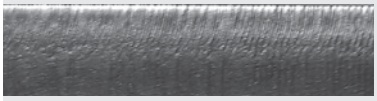


Nozzle size is too small

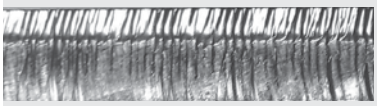
There is not enough O_2 to cut uniformly.

Cut direction

6 mm (1/4") mild steel cut resulting in too wide kerf

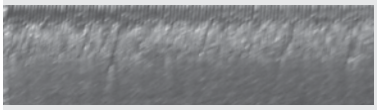


Factory cut chart settings



Focus is too high

The wider focus spot is letting too much O_2 into the cut and burning the material.

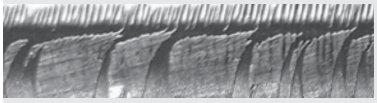


Feed rate is too slow

The cut surface is too rough and productivity is decreased.

Gas pressure is too high

Too much O_2 is entering the cut, causing a rougher edge and inconsistent cutting.



Stand off is too high

Too much O_2 is entering the cut, causing a rougher edge and inconsistent cutting.

Nozzle size is too big

Too much O_2 results in overheating of the cut and causes intermittent gouges.

Nozzle type is incorrect

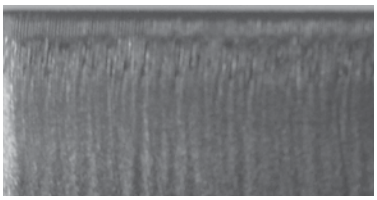
The shape of the gas flow is incorrect, causing a rougher edge.

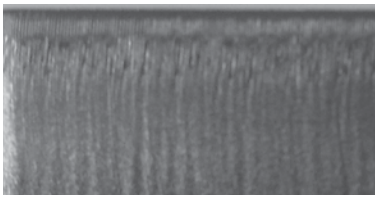
Cut direction

*Above samples have been cut with O_2 on 2 kW fiber laser. Results will be similar for CO_2 laser cutting mild steel with O_2.

12 mm (1/2") mild steel cut resulting in too narrow kerf

Factory cut chart settings

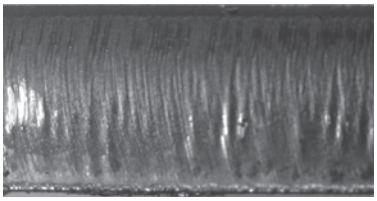


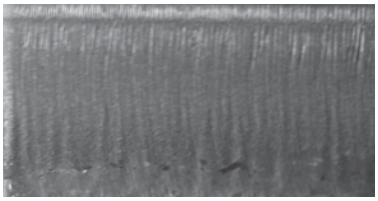


Factory cut chart settings

Focus is too low

The kerf is too narrow and doesn't allow enough O_2 into the cut to remove all the molten material.



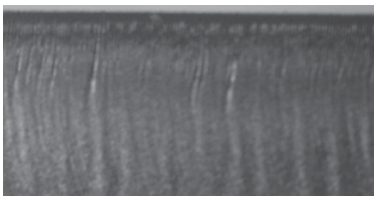


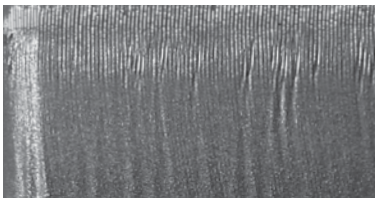
Stand off is too low

The kerf is too narrow to allow enough O_2 into the cut. The oxidation is not covering the entire surface and cutting will be inconsistent.

Feed rate is too fast

The machine is moving too fast to allow enough O_2 into the cut for consistent cutting.



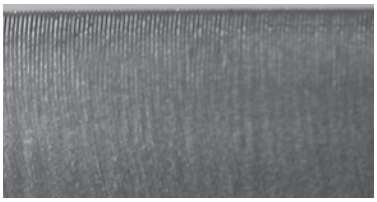


Nozzle size is too small

There is not enough O_2 to cut uniformly.

Gas pressure is too low

The pressure is too low to allow enough O_2 into the cut. The oxidation is not covering the entire surface and cutting will be inconsistent.



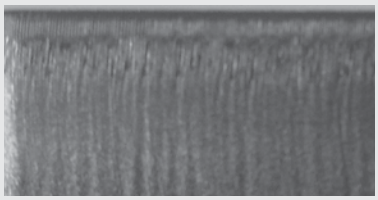
Cut direction

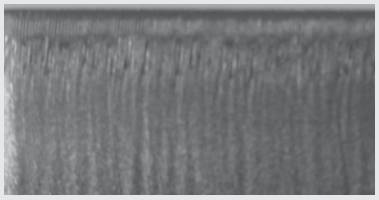
Cut direction

*Above samples have been cut with O_2 on 2 kW fiber laser. Results will be similar for CO_2 laser cutting mild steel with O_2.

12 mm (1/2") mild steel cut resulting in too wide kerf

Factory cut chart settings

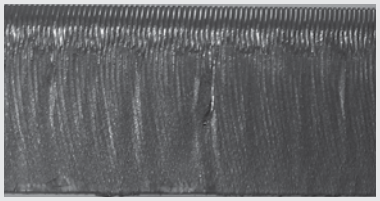


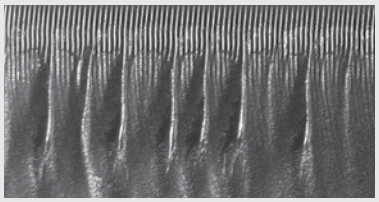


Factory cut chart settings

Focus is too high

Too much O_2 is entering the cut causing intermittent over burning.



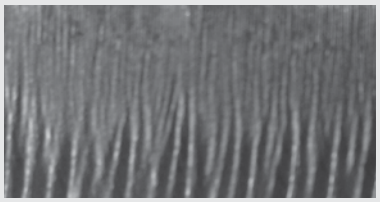


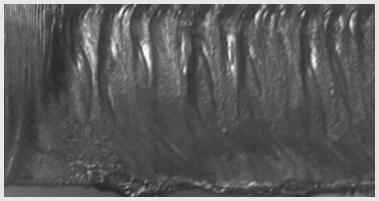
Stand off is too high

Too much O_2 is entering the cut resulting in intermittent over burning.

Feed rate is too slow

The machine is moving too slow resulting in the over burning of the bottom half of the cut. The slower feed rate also reduces productivity.



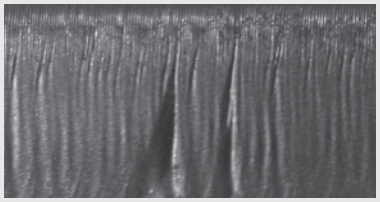


Incorrect nozzle type

The gas flow shape is not correct resulting in inconsistent cutting.

Gas pressure is too high

Too much O_2 is entering the cut resulting in intermittent over burning.



Cut direction

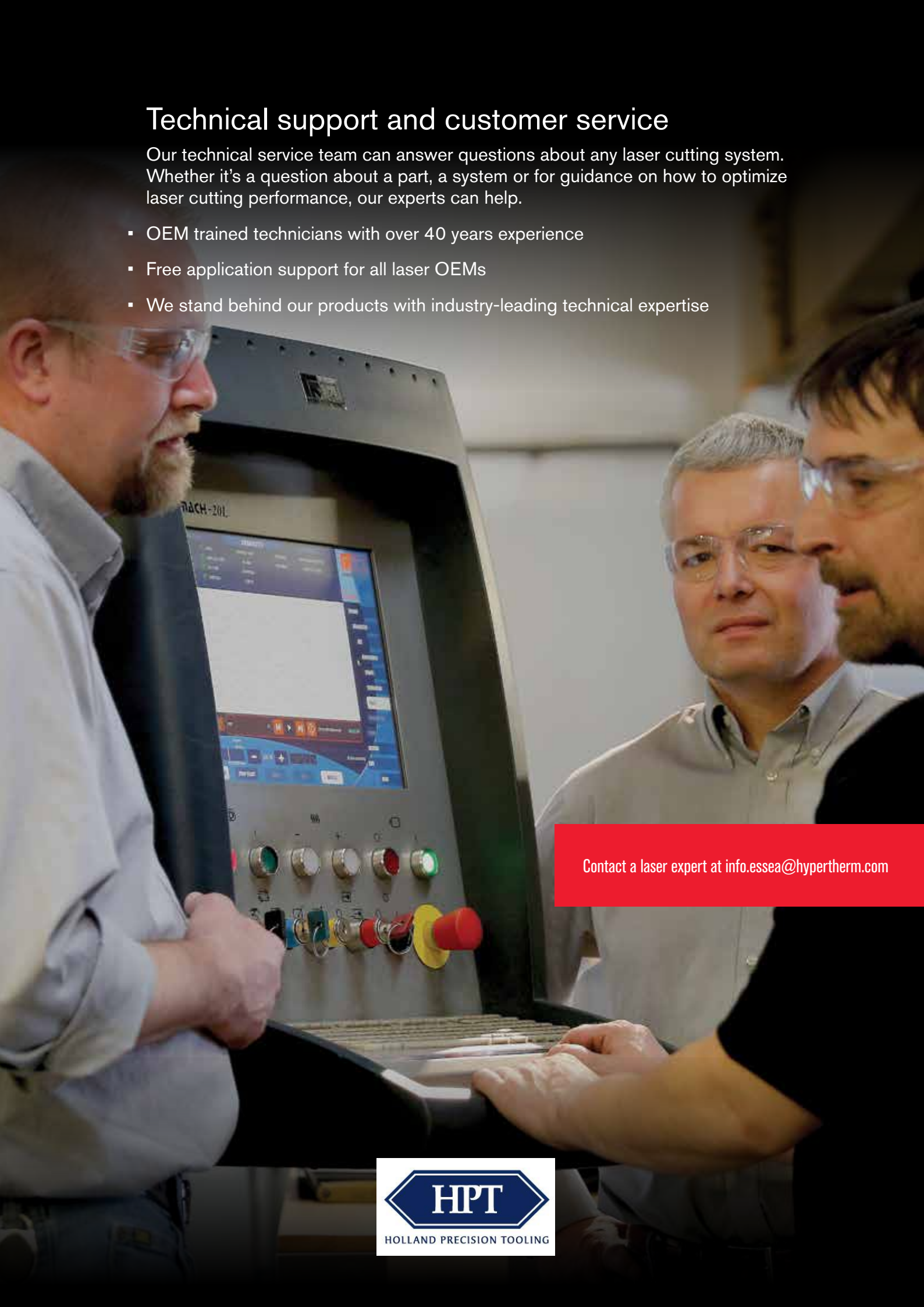
Cut direction

*Above samples have been cut with O_2 on 2 kW fiber laser. Results will be similar for CO_2 laser cutting mild steel with O_2.

Technical support and customer service

Our technical service team can answer questions about any laser cutting system. Whether it's a question about a part, a system or for guidance on how to optimize laser cutting performance, our experts can help.

- OEM trained technicians with over 40 years experience
- Free application support for all laser OEMs
- We stand behind our products with industry-leading technical expertise



Contact a laser expert at info.essea@hypertherm.com

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