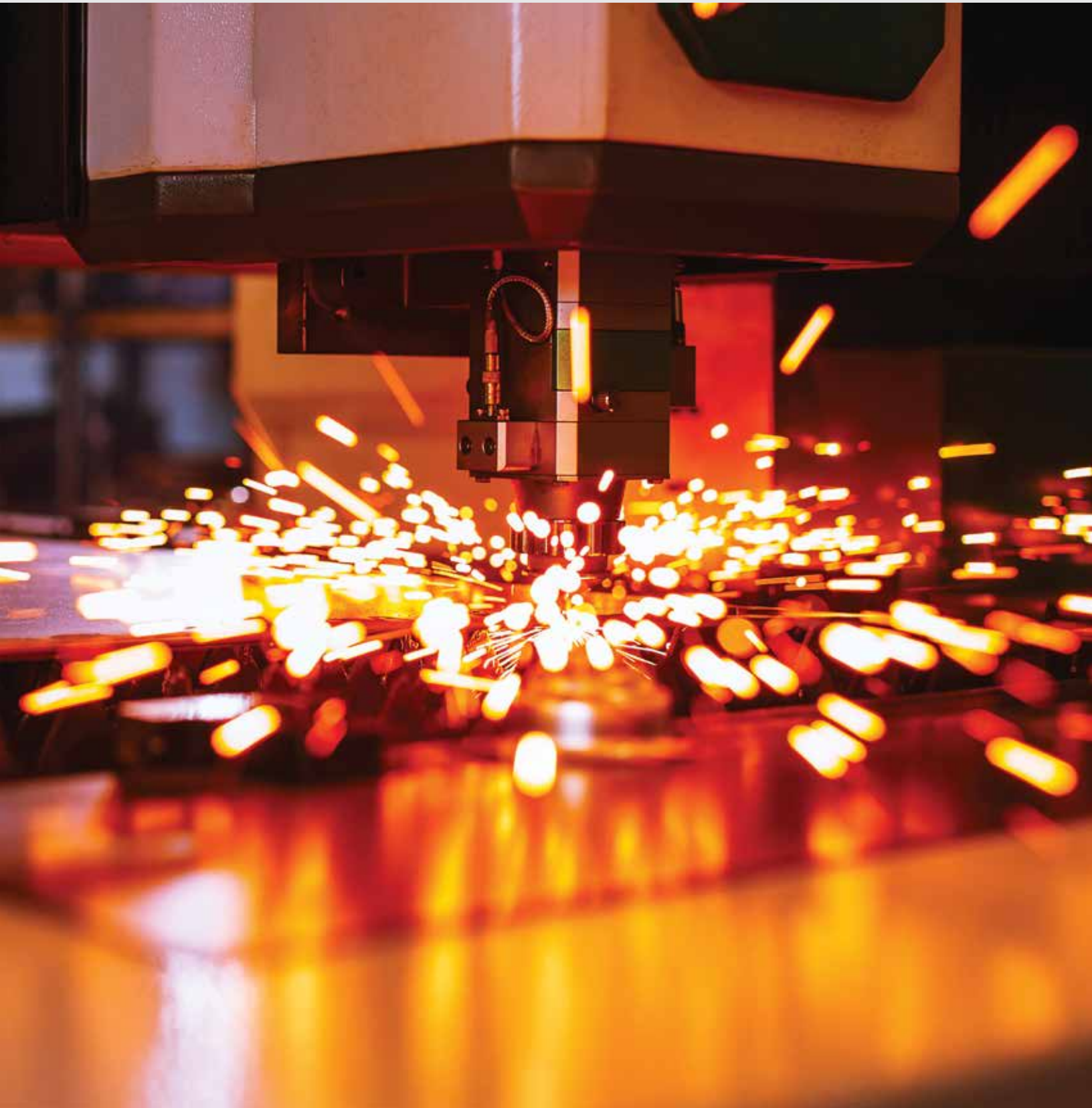
Centricut®
LASER CONSUMABLES

HPT
HOLLAND PRECISION TOOLING

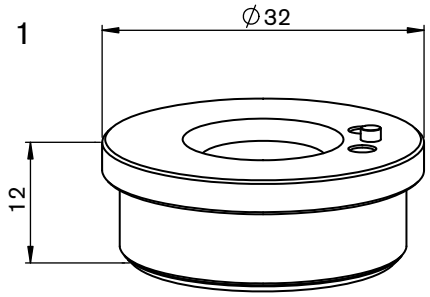
2024 catalog

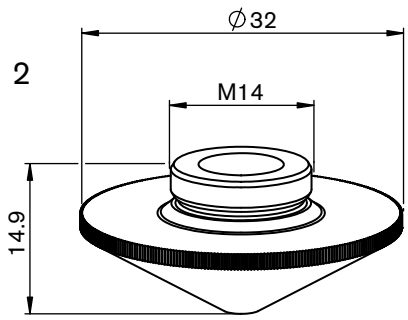
For CO_2 and fiber laser consumables

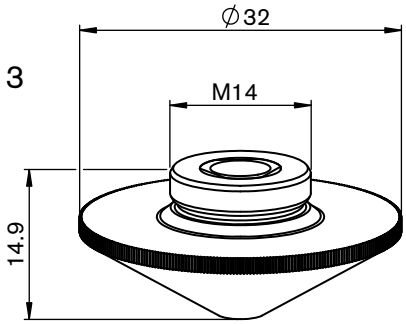


Replacement parts suitable for:

Raytools®

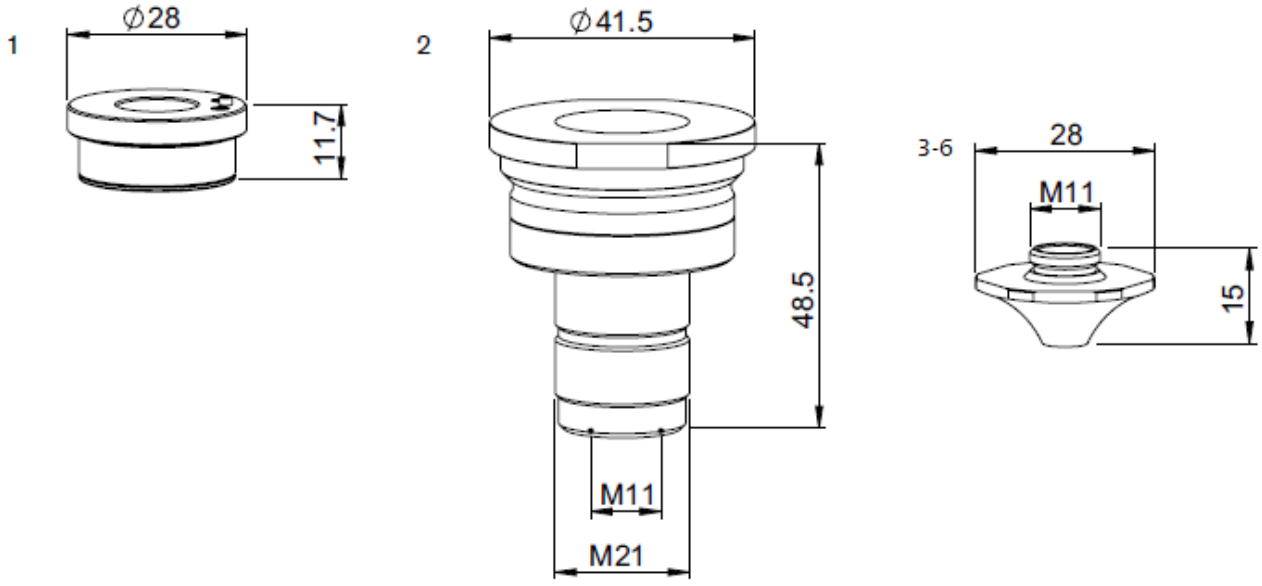






Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	RT120-4100	AL581	120274100B	RT-Nozzle holder M14 original	1
2	RT120-0510	L0510	120GJT0510	RT-Nozzle conical M14, 1.0 mm original	1
	RT120-0512	L0512	120GJT0512	RT-Nozzle conical M14, 1.2 mm original	1
	RT120-0515	L0515	120GJT0515	RT-Nozzle conical M14, 1.5 mm original	1
	RT120-0520	L0520	120GJT0520	RT-Nozzle conical M14, 2.0 mm original	1
	RT120-0525	L0525	120GJT0525	RT-Nozzle conical M14, 2.5 mm original	1
	RT120-0530	L0530	120GJT0530	RT-Nozzle conical M14, 3.0 mm original	1
	RT120-0535	L0535	120GJT0535	RT-Nozzle conical M14, 3.5 mm original	1
	RT120-0540	L0540	120GJT0540	RT-Nozzle conical M14, 4.0 mm original	1
	RT120-0545	L0545	120GJT0545	RT-Nozzle conical M14, 4.5 mm original	1
	RT120-0550	L0550	120GJT0550	RT-Nozzle conical M14, 5.0 mm original	1
3	RT120-0610	L0610	120GJT0610	RT-Nozzle double conical M14, 1.0 mm CP original	1
	RT120-0612	L0612	120GJT0612	RT-Nozzle double conical M14, 1.2 mm CP original	1
	RT120-0615	L0615	120GJT0615	RT-Nozzle double conical M14, 1.5 mm CP original	1
	RT120-0620	L0620	120GJT0620	RT-Nozzle double conical M14, 2.0 mm CP original	1
	RT120-0625	L0625	120GJT0625	RT-Nozzle double conical M14, 2.5 mm CP original	1
	RT120-0630	L0630	120GJT0630	RT-Nozzle double conical M14, 3.0 mm CP original	1
	RT120-0635	L0635	120GJT0635	RT-Nozzle double conical M14, 3.5 mm CP original	1
	RT120-0640	L0640	120GJT0640	RT-Nozzle double conical M14, 4.0 mm CP original	1
	RT120-0645	L0645	120GJT0645	RT-Nozzle double conical M14, 4.5 mm CP original	1
	RT120-0650	L0650	120GJT0650	RT-Nozzle double conical M14, 5.0 mm CP original	1



Cons...

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	RT120-099A NEW	AL199A	120515099A	RT-M11 NOZZLE HOLDER FOR BM115/BS04K/BS08K ORIGINAL PART	1
2	RT120-089A NEW	AL089A	120515089A	RT-M11 CERAMIC BODY FOR BS12K ORIGINAL PART	1
3	RT120-7112 NEW	L0112	120GJT7112	RT-M11 SINGLE NOZZLE 1,2mm ORIGINAL PART	1
	RT120-7113 NEW	L0113	120GJT7113	RT-M11 SINGLE NOZZLE 1,3mm ORIGINAL PART	1
	RT120-7114 NEW	L0114	120GJT7114	RT-M11 SINGLE NOZZLE 1,4mm ORIGINAL PART	1
	RT120-7115 NEW	L0115	120GJT7115	RT-M11 SINGLE NOZZLE 1,5mm ORIGINAL PART	1
	RT120-7116 NEW	L0116	120GJT7116	RT-M11 SINGLE NOZZLE 1,6mm ORIGINAL PART	1
	RT120-7118 NEW	L0118	120GJT7118	RT-M11 SINGLE NOZZLE 1,8mm ORIGINAL PART	1
4	RT120-7210 NEW	L0710	120GJT7210	RT-M11 DOUBLE NOZZLE 1,0mm ORIGINAL PART	1
	RT120-7212 NEW	L0712	120GJT7212	RT-M11 DOUBLE NOZZLE 1,2mm ORIGINAL PART	1
	RT120-7213 NEW	L0713	120GJT7213	RT-M11 DOUBLE NOZZLE 1,3mm ORIGINAL PART	1
	RT120-7214 NEW	L0714	120GJT7214	RT-M11 DOUBLE NOZZLE 1,4mm ORIGINAL PART	1
	RT120-7216 NEW	L0716	120GJT7216	RT-M11 DOUBLE NOZZLE 1,6mm ORIGINAL PART	1
	RT120-7218 NEW	L0718	120GJT7218	RT-M11 DOUBLE NOZZLE 1,8mm ORIGINAL PART	1
	RT120-7220 NEW	L0720	120GJT7220, 120AU3620A	RT-M11 DOUBLE NOZZLE 2,0mm ORIGINAL PART	1
	RT120-7225 NEW	L0725	120GJT7225, 120AU3625A	RT-M11 DOUBLE NOZZLE 2,5mm ORIGINAL PART	1
	RT120-7230 NEW	L0730	120GJT7230, 120AU3630A	RT-M11 DOUBLE NOZZLE 3,0mm ORIGINAL PART	1
	RT120-7235 NEW	L0735	120GJT7235, 120AU3635A	RT-M11 DOUBLE NOZZLE 3,5mm ORIGINAL PART	1
	RT120-7240 NEW	L0740	120GJT7240, 120AU3640A	RT-M11 DOUBLE NOZZLE 4,0mm ORIGINAL PART	1
	RT120-7250 NEW	L0750	120GJT7250	RT-M11 DOUBLE NOZZLE 5,0mm ORIGINAL PART	1

(Continued on next page)

Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
5	RT120-8116 NEW	L0816	120GJT8116	RT-M11 SINGLE NOZZLE BOOST 1,6mm ORIGINAL PART	1
	RT120-8118 NEW	L0818	120GJT8118	RT-M11 SINGLE NOZZLE BOOST 1,8mm ORIGINAL PART	1
	RT120-8120 NEW	L0820	120GJT8120	RT-M11 SINGLE NOZZLE BOOST 2,0mm ORIGINAL PART	1
	RT120-8125 NEW	L0825	120GJT8125 - 120GJT5125	RT-M11 SINGLE NOZZLE BOOST 2,5mm ORIGINAL PART	1
	RT120-8130 NEW	L0830	120GJT8130	RT-M11 SINGLE NOZZLE BOOST 3,0mm ORIGINAL PART	1
	RT120-8140 NEW	L0840	120GJT8140	RT-M11 SINGLE NOZZLE BOOST 4,0mm ORIGINAL PART	1
	RT120-8150 NEW	L0850	120GJT8150	RT-M11 SINGLE NOZZLE BOOST 5,0mm ORIGINAL PART	1
	RT120-8160 NEW	L0860	120GJT8160	RT-M11 SINGLE NOZZLE BOOST 6,0mm ORIGINAL PART	1
	RT120-8170 NEW	L0870	120GJT8170	RT-M11 SINGLE NOZZLE BOOST 7,0mm ORIGINAL PART	1
6	RT120-5112 NEW	L0V12	120GJT5112	RT-M11 Single nozzle 1.2 Hex Boost ORIGINAL PART	1
	RT120-5113 NEW	L0V13	120GJT5113	RT-M11 Single nozzle 1.3 Hex Boost ORIGINAL PART	1
	RT120-5115 NEW	L0V15	120GJT5115	RT-M11 Single nozzle 1.5 Hex Boost ORIGINAL PART	1
	RT120-5117 NEW	L0V17	120GJT5117	RT-M11 Single nozzle 1.7 Hex Boost ORIGINAL PART	1
	RT120-5121 NEW	L0V21	120GJT5121	RT-M11 Single nozzle 2.1 Hex Boost ORIGINAL PART	1
	RT120-5125 NEW	L0V25	120GJT5125	RT-M11 Single nozzle 2.5 Hex Boost ORIGINAL PART	1

Consumables

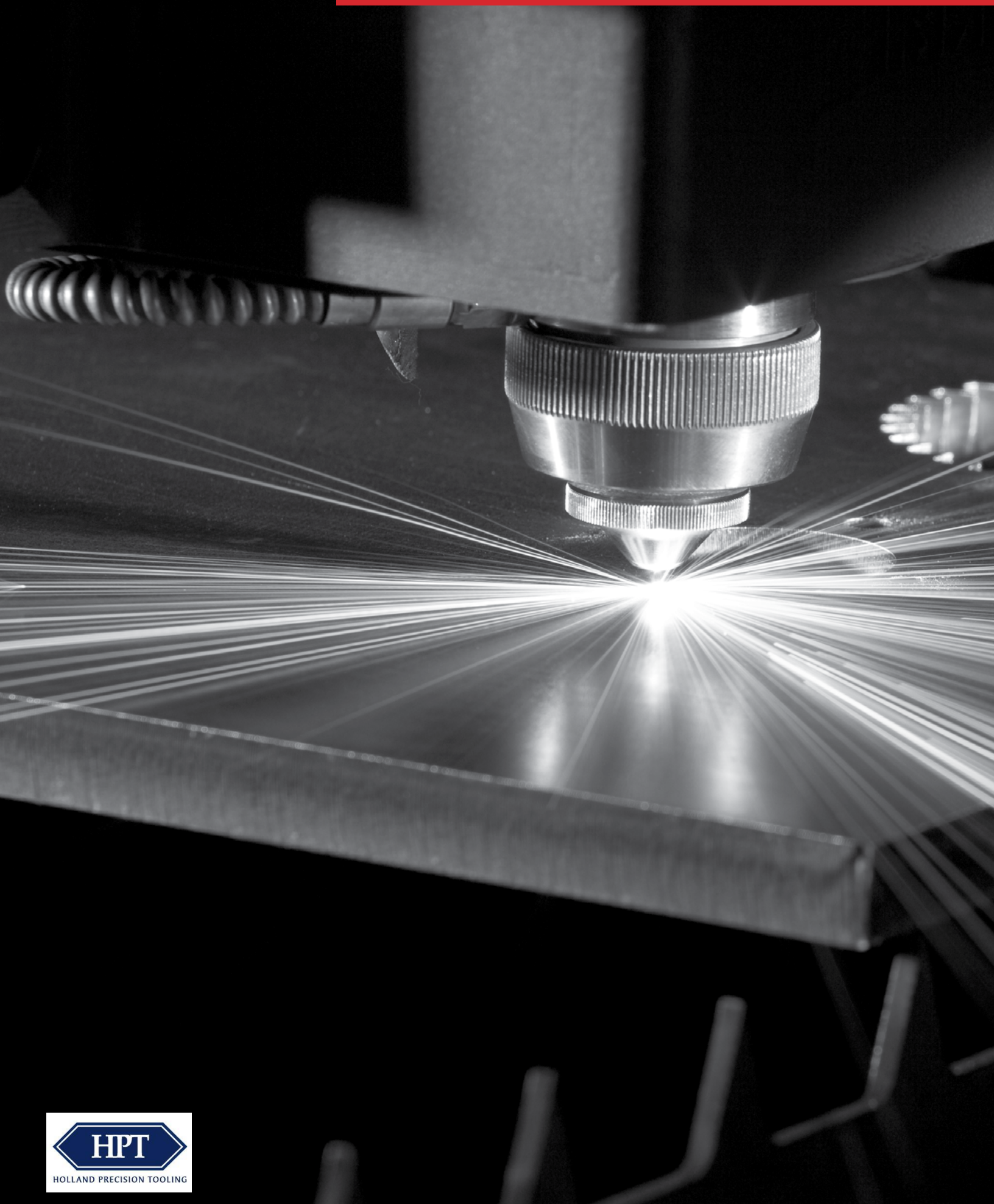
	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	RT120-2008	AL008B	120572008B	RT-M8 3D CERAMIC D19,5 NOZZLE HOLDER ORIGINAL PART	1
2	RT120-5093	AL093A	120515093A	RT-M8 3D CERAMIC D21,4 NOZZLE HOLDER ORIGINAL PART	1
3	RT120-0910	L0910	120GJT0910	RT-M8 3D SINGLE NOZZLE 1,0mm ORIGINAL PART	1
	RT120-0912	L0912	120GJT0912	RT-M8 3D SINGLE NOZZLE 1,2mm ORIGINAL PART	1
	RT120-0915	L0915	120GJT0915	RT-M8 3D SINGLE NOZZLE 1,5mm ORIGINAL PART	1
	RT120-0920	L0920	120GJT0920	RT-M8 3D SINGLE NOZZLE 2,0mm ORIGINAL PART	1
	RT120-0925	L0925	120GJT0925	RT-M8 3D SINGLE NOZZLE 2,5mm ORIGINAL PART	1
	RT120-0930	L0930	120GJT0930	RT-M8 3D SINGLE NOZZLE 3,0mm ORIGINAL PART	1
	RT120-0935	L0935	120GJT0935	RT-M8 3D SINGLE NOZZLE 3,5mm ORIGINAL PART	1
	RT120-0940	L0940	120GJT0940	RT-M8 3D SINGLE NOZZLE 4,0mm ORIGINAL PART	1
4	RT120-0208	L0208	120GJT0208	RT-M8 3D DOUBLE NOZZLE 0,80mm CP ORIGINAL PART	1
	RT120-0210	L0210	120GJT0210	RT-M8 3D DOUBLE NOZZLE 1,0mm CP ORIGINAL PART	1
	RT120-0212	L0212	120GJT0212	RT-M8 3D DOUBLE NOZZLE 1,2mm CP ORIGINAL PART	1
	RT120-0215	L0215	120GJT0215	RT-M8 3D DOUBLE NOZZLE 1,5mm CP ORIGINAL PART	1
	RT120-0220	L0220	120GJT0220	RT-M8 3D DOUBLE NOZZLE 2,0mm CP ORIGINAL PART	1
	RT120-0225	L0225	120GJT0225	RT-M8 3D DOUBLE NOZZLE 2,5mm CP ORIGINAL PART	1
	RT120-0230	L0230	120GJT0230	RT-M8 3D DOUBLE NOZZLE 3,0mm CP ORIGINAL PART	1
	RT120-0235	L0235	120GJT0235	RT-M8 3D DOUBLE NOZZLE 3,5mm CP ORIGINAL PART	1
	RT120-0240	L0240	120GJT0240	RT-M8 3D DOUBLE NOZZLE 4,0mm CP ORIGINAL PART	1

Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
		PW0022II	211LCG0020	RT- Cover glass D24.9x1.5 ORIGINAL PART	1
	RT300-0035	PW0023II	211LCG0037	RT- Cover glass D27.9x 4.1 ORIGINAL PART	1
	RT120-0068	PW0031II	211LCG0068	RT- Cover glass D30.0x5.0 ORIGINAL PART	1
	RT120-0076	PW0024II	211LCG0076	RT- Cover glass D38.1x1.6 ORIGINAL PART	1
	RT120-0004	PW0027II	211LCG0078 - 110255IAG0004	RT- Cover glass D37x7.0 ORIGINAL PART	1
		PW0029II	211LCG0045	RT- Cover glass D37x1.6 ORIGINAL PART	1
	RT120-0086	PW0030II	211LCG0086	RT- Cover glass D24.9x1.5 15kw ORIGINAL PART	1

Centricut®
LASER CONSUMABLES

Resources



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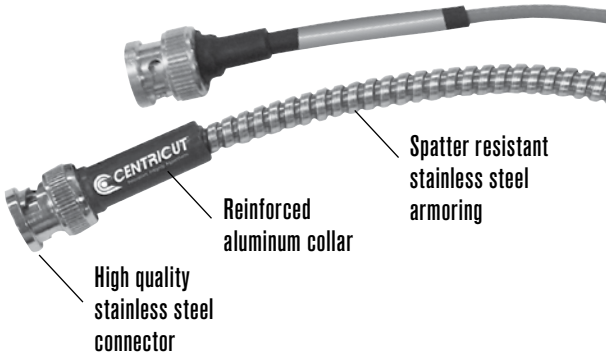
Armored sensor cables

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

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

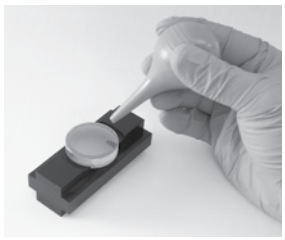
Product description	Part number	Quantity per order
Optical cleaning fluid (3 oz.)	TR300-1112	1
Lens cleaning swab	TR300-0699	25
Lens cleaning paper, Tiffen	TR300-6452	50
Polyester wipes 4" x 4"	TR300-7991	100
Base, lens maintenance	TR300-271	1

Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

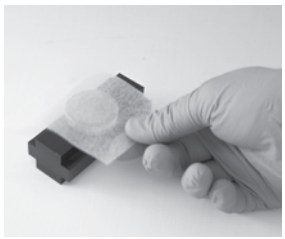
You will need:

- 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.

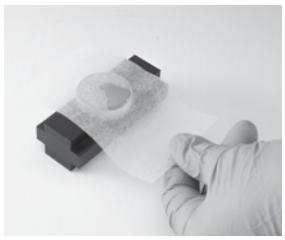


Step 1

Place lens paper over the optic, covering it completely.

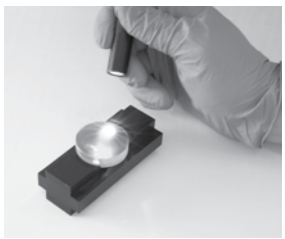
Step 2

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:

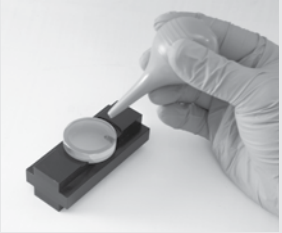
Place the cleaned lens in the machine quickly to avoid contamination from airborne particles. If spots, pits, or scratches are still noticeable, the lens may need to be replaced.

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

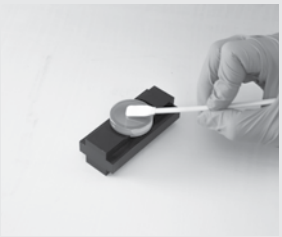


To get started

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.

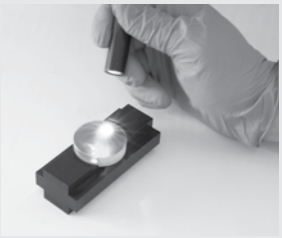
Step 1

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

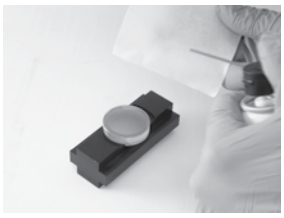
Recommended for cleaning CO_2 and fiber lenses and windows. Interchangeable with polyester swabs and lens paper.

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.

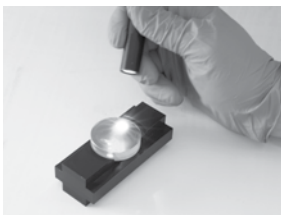


Step 1

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:

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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.

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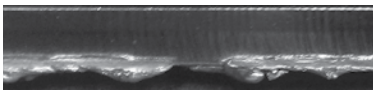
3.2 mm (10 ga.) mild steel cut resulting in too narrow kerf

Factory cut chart settings

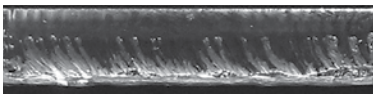
Focus is too low

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



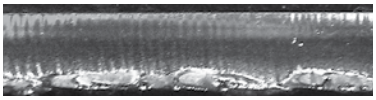
Feed rate is too fast

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



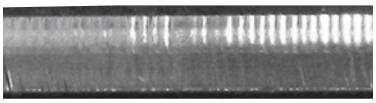
Gas pressure is too low

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.



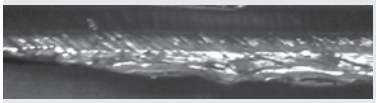
Cut direction

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

Factory cut chart settings

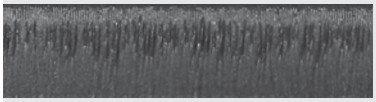
Focus is too high

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.

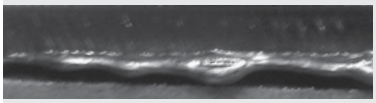


Gas pressure is too high

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

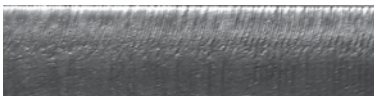
Too much O_2 results in overheating of the cut and causes intermittent gouges.

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.

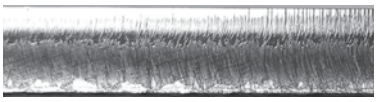
6 mm (1/4") mild steel cut resulting in too narrow kerf

Factory cut chart settings



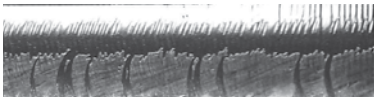
Focus is too low

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



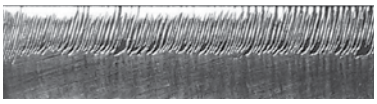
Feed rate is too fast

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



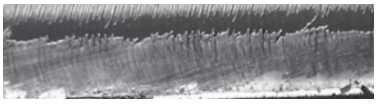
Gas pressure is too low

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.

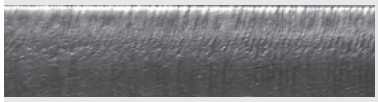


Nozzle size is too small

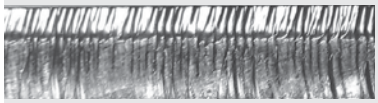
There is not enough O_2 to cut uniformly.

Cut direction

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

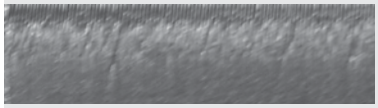


Factory cut chart settings



Focus is too high

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

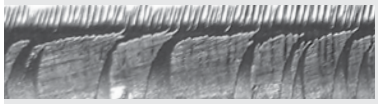


Feed rate is too slow

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.

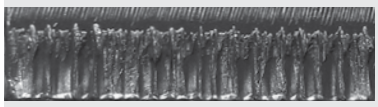


Stand off is too high

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

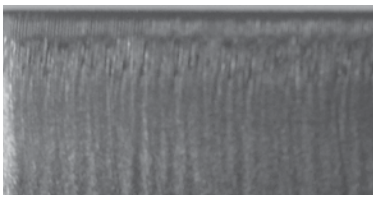
The shape of the gas flow is incorrect, causing a rougher edge.

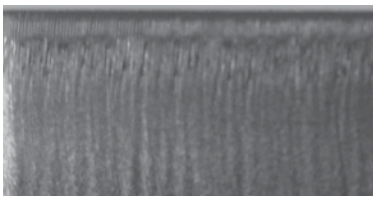
Cut direction

*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

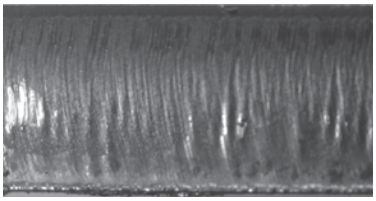


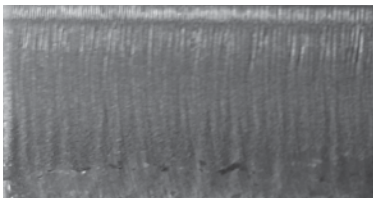


Factory cut chart settings

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.



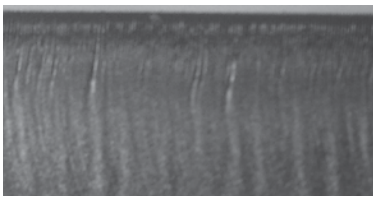


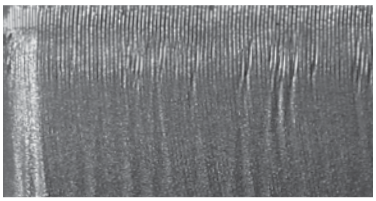
Stand off is too low

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.

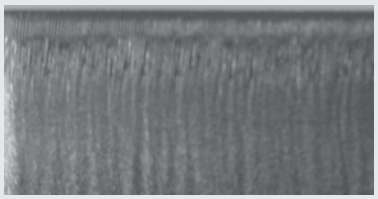
Cut direction

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

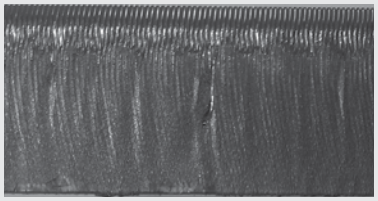
Factory cut chart settings

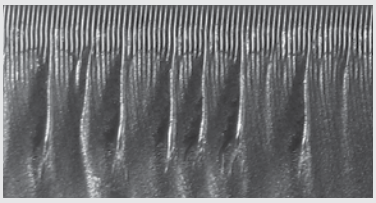


Factory cut chart settings

Focus is too high

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



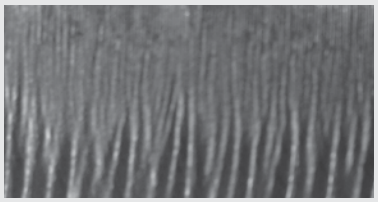


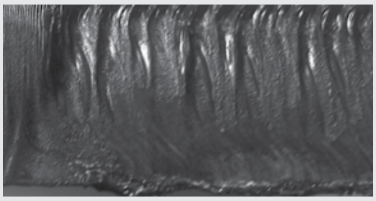
Stand off is too high

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.



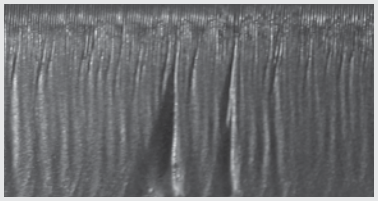


Incorrect nozzle type

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.

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