



2018 catalog

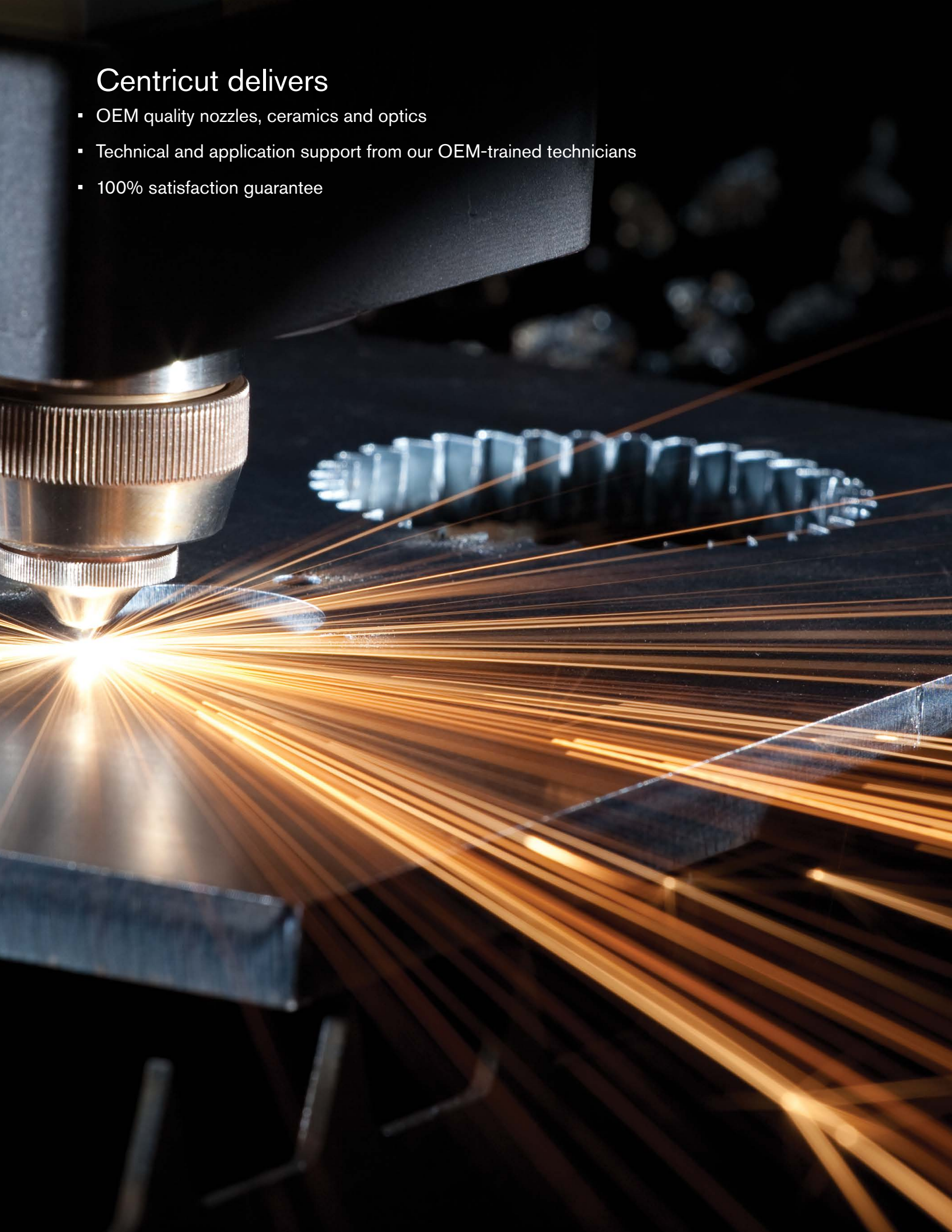
For CO₂ and fiber laser consumables

Replacement parts suitable for Mitsubishi®



Centricut delivers

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



CO₂ 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.

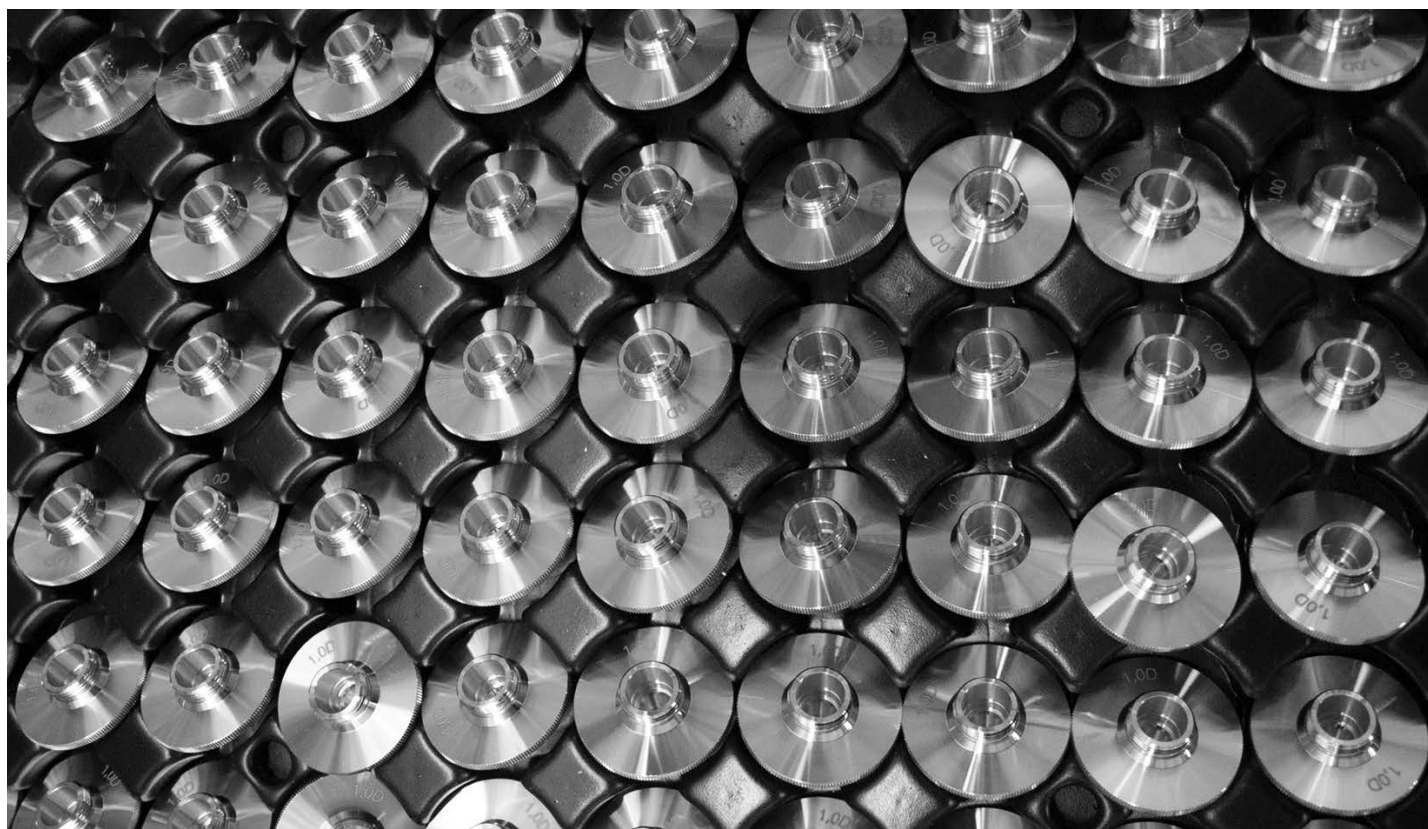
Look for CP in the part number to identify a chrome plated nozzle

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.



CO₂ 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	Sinc-selinide
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.

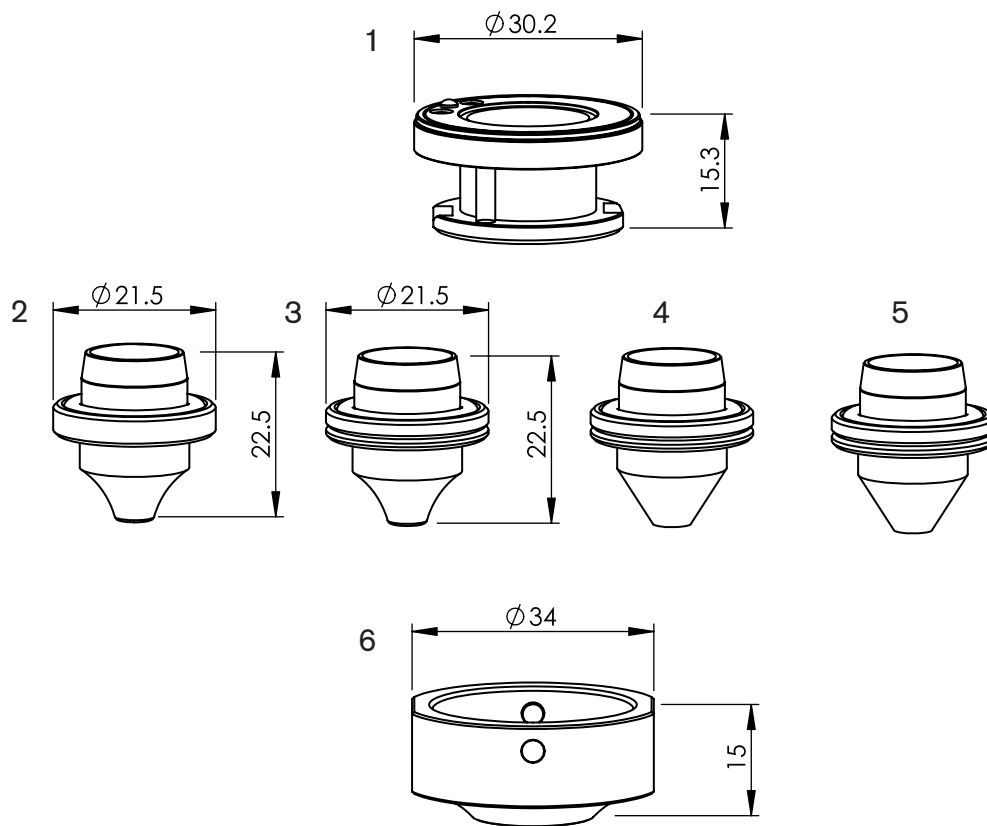
If you don't have access to a licensed industrial waste facility, and purchased your laser optics through Centricut, you may return them to Centricut for proper disposal. This service is only available to Centricut customers.

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

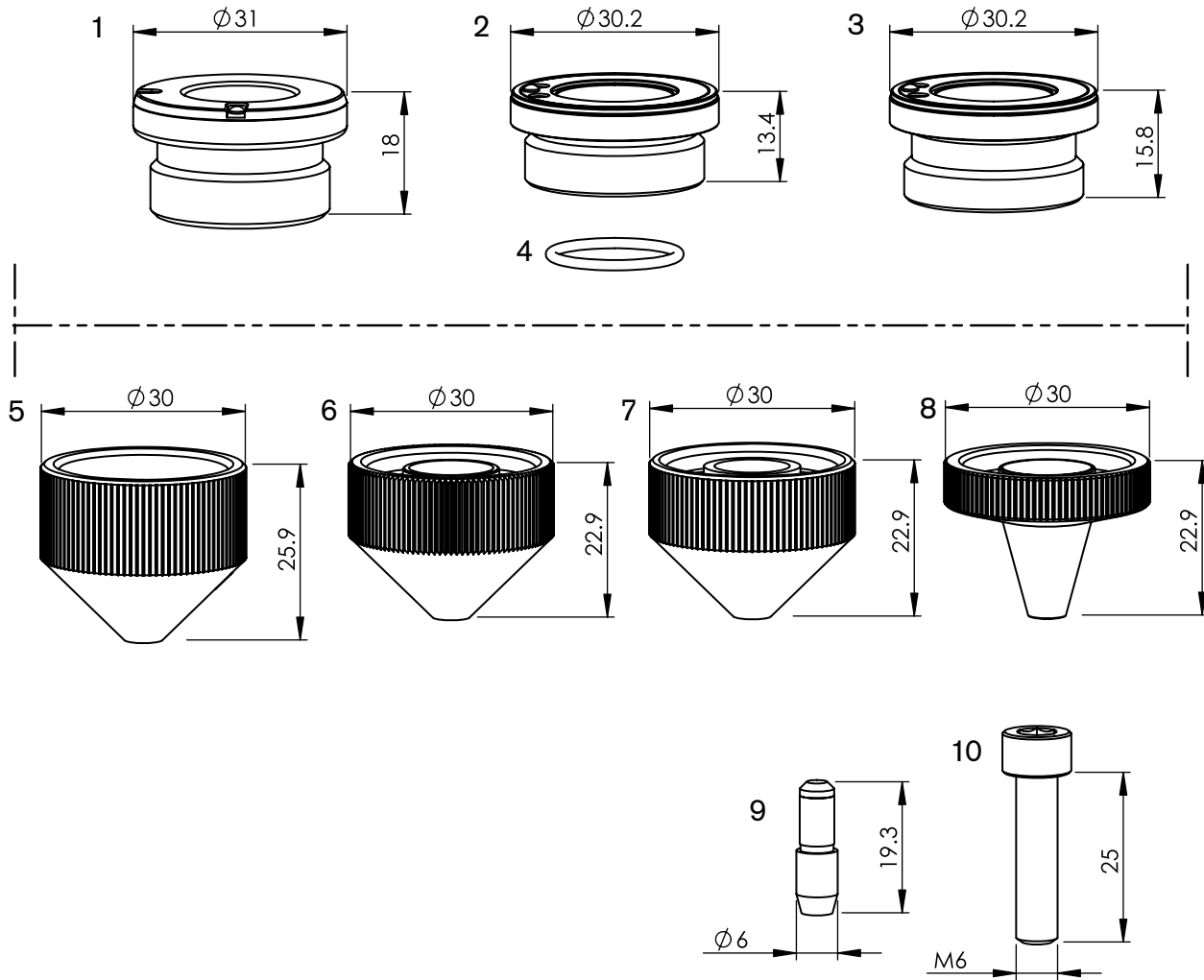
*Acceptance of goods will be refused if not packaged correctly or if the return authorization number isn't included





Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	MB327-0311	AL460	BQ980D311G02, LX54300	MB-Nozzle holder, EX insulation	1
2	MB327-1620	L1620	BQ983D150-H01, LX53100	MB-Nozzle w/o-ring, 1.0 mm	1
	MB327-1633	L1633	BQ983D314-H01	MB-Nozzle w/o-ring, 1.4 mm	1
3	MB327-1621	L1621	BQ983D151-H01, LX53200	MB-Nozzle w/o-ring, 1.2 mm	1
4	MB327-1622	L1622	BQ983D152-H01	MB-Nozzle w/o-ring, 1.7 mm	1
5	MB327-1623	L1623	BQ983D153-H01	MB-Nozzle w/o-ring, 1.5 mm	1
	MB327-1624	L1624	BQ983D153-H02	MB-Nozzle w/o-ring, 2.0 mm	1
	MB327-1625	L1625	BQ983D153-H03, LX53500	MB-Nozzle w/o-ring, 2.5 mm	1
	MB327-1626	L1626	BQ983D153-H04	MB-Nozzle w/o-ring, 3.0 mm	1
	MB327-1627	L1627	BQ983D153-H05	MB-Nozzle w/o-ring, 3.5 mm	1
6	MB327-0328	AL467	BQ980D328G01, LT10700	MB-Nozzle EX outer for single MB-nozzle	1

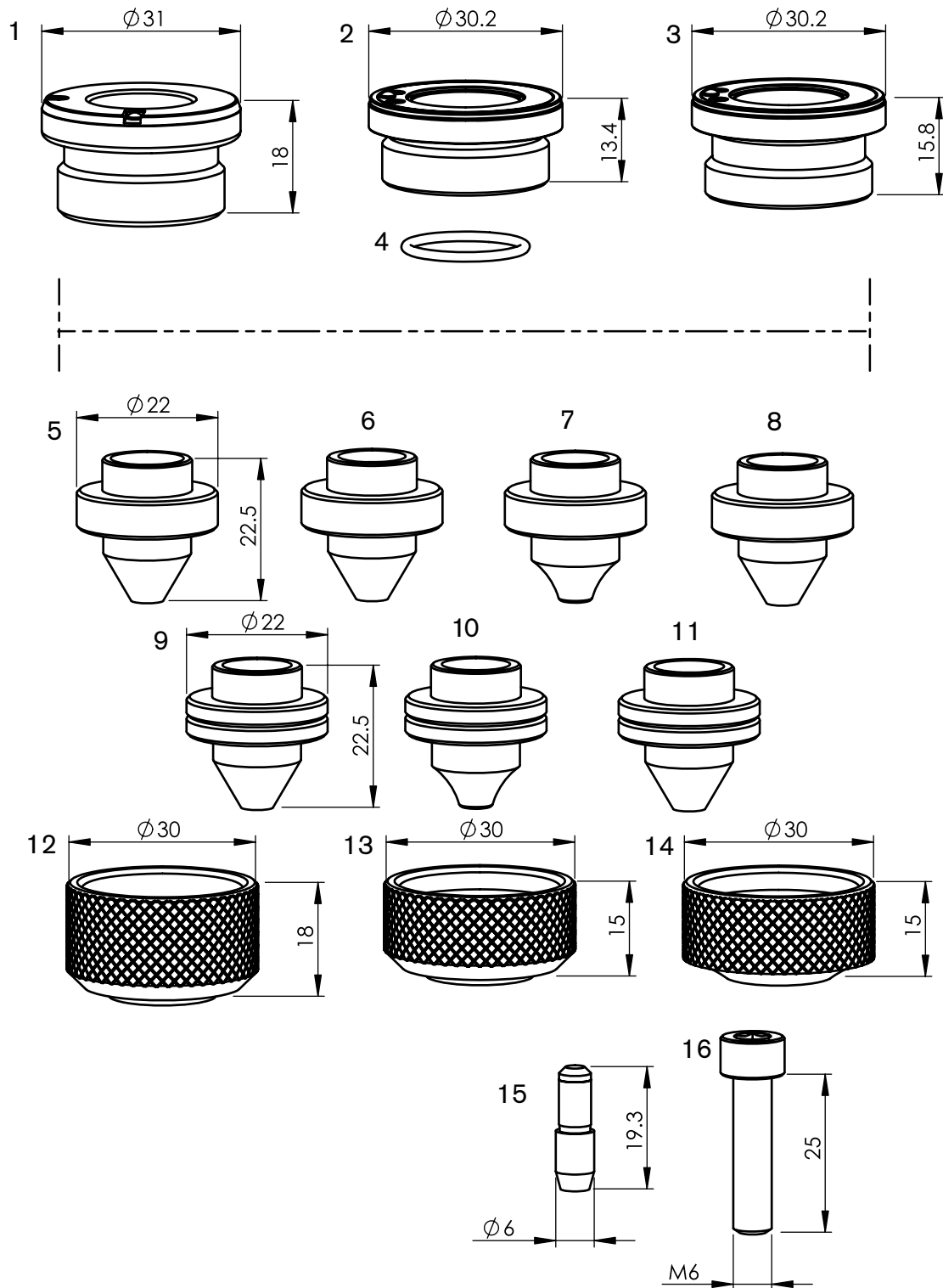


Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	MB334-0830	AL373		MB-Nozzle holder IT461	1
2	MB334-0001	AL267	P0594-860-00001, PHX-INS, 71800010	MB-Nozzle holder	1
3	PT347-0895 Recommended	AL401	P0593-895-00001	PT-Nozzle holder IT HP2" ZP/MeI	1
	PT347-0895OEM		P0593-895-00001	PT-Nozzle holder IT HP2" ZP/MeI OEM	1
4	MB334-W290	AL388	W290, 71800107	MB-O-ring	1
5	MB334-1249	L398	W1249	MB-Nozzle, 1.0 mm	1
	MB334-1256	L397	W1256	MB-Nozzle, 1.2 mm	1
	MB334-1250	L399	W1250	MB-Nozzle, 1.5 mm	1
	MB334-1251	L702	W1251	MB-Nozzle, 2.0 mm	1
	MB334-1252	L703	W1252	MB-Nozzle, 2.5 mm	1
	MB334-1253	L704	W1253	MB-Nozzle, 3.0 mm	1
	MB334-1254	L705	W1254	MB-Nozzle, 3.5 mm	1
	MB334-1255	L706	W1255	MB-Nozzle, 4.0 mm	1

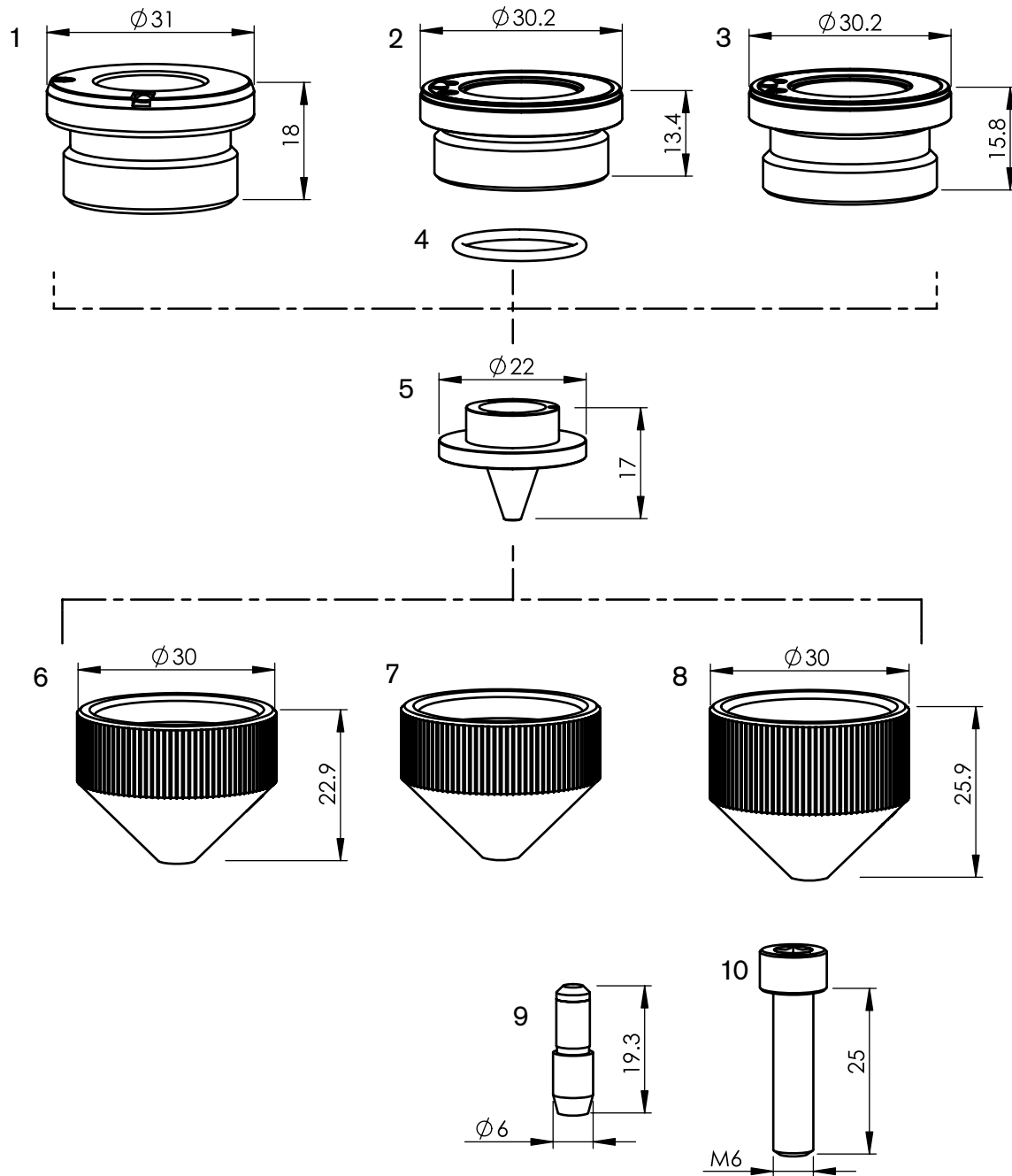
Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
6	MB334-1626	L910	W1626	MB-Nozzle, 1.0 mm	1
	MB334-1627	L911	W1627	MB-Nozzle, 1.2 mm	1
	MB334-1625	L908	W1625	MB-Nozzle, 1.4 mm	1
	MB334-1628	L912	W1628	MB-Nozzle, 1.5 mm	1
	MB334-1661	L918	W1661	MB-Nozzle, 1.7 mm	1
	MB334-1629	L913	W1629	MB-Nozzle, 2.0 mm	1
	MB334-1630	L914	W1630	MB-Nozzle, 2.5 mm	1
	MB334-1664	L915	W1664	MB-Nozzle, 3.0 mm	1
	MB334-1665	L916	W1665	MB-Nozzle, 3.5 mm	1
	MB334-1666	L917	W1666	MB-Nozzle, 4.0 mm	1
	MB334-1662	L909	W1662	MB-Nozzle, 4.5 mm	1
	MB334-1663	L919	W1663	MB-Nozzle, 5.0 mm	1
	MB334-1626CP	L910X	W1626	MB-Nozzle, 1.0 mm CP	1
	MB334-1627CP	L911X	W1627	MB-Nozzle, 1.2 mm CP	1
	MB334-1628CP	L912X	W1628	MB-Nozzle, 1.5 mm CP	1
	MB334-1661CP	L918X	W1661	MB-Nozzle, 1.7 mm CP	1
	MB334-1629CP	L913X	W1629	MB-Nozzle, 2.0 mm CP	1
	MB334-1630CP	L914X	W1630	MB-Nozzle, 2.5 mm CP	1
	MB334-1664CP	L915X	W1664	MB-Nozzle, 3.0 mm CP	1
	MB334-1665CP	L916X	W1665	MB-Nozzle, 3.5 mm CP	1
	MB334-1666CP	L917X	W1666	MB-Nozzle, 4.0 mm CP	1
7	MB334-1626B	L1078	W1626B	MB-Nozzle low pressure, 1.0 mm	1
	MB334-1627B	L1079	W1627B	MB-Nozzle low pressure, 1.2 mm	1
	MB334-1628B	L1080	W1628B	MB-Nozzle low pressure, 1.5 mm	1
	MB334-1629B	L1081	W1629B	MB-Nozzle low pressure, 2.0 mm	1
	MB334-1630B	L1082	W1630B	MB-Nozzle low pressure, 2.5 mm	1
	MB334-1665B	L1084	W1665B	MB-Nozzle low pressure, 3.5 mm	1
	MB334-1666B	L1085	W1666B	MB-Nozzle low pressure, 4.0 mm	1
8	MB334-1631	L1715	NCW1626C	MB-Nozzle narrow cone, 1.0 mm	1
	MB334-1632	L1716	NCW1627C	MB-Nozzle narrow cone, 1.2 mm	1
	MB334-1633	L1718	NCW1629C	MB-Nozzle narrow cone, 2.0 mm	1
9	AM416-0009	AL345	71800009, P921K000P25, JPZA5-6, LC47400	AM-Safety pin	1
10	AM416-A005	AL346	71800008, L2490A005, LC50700, P903K001P72	AM-Safety screw	1



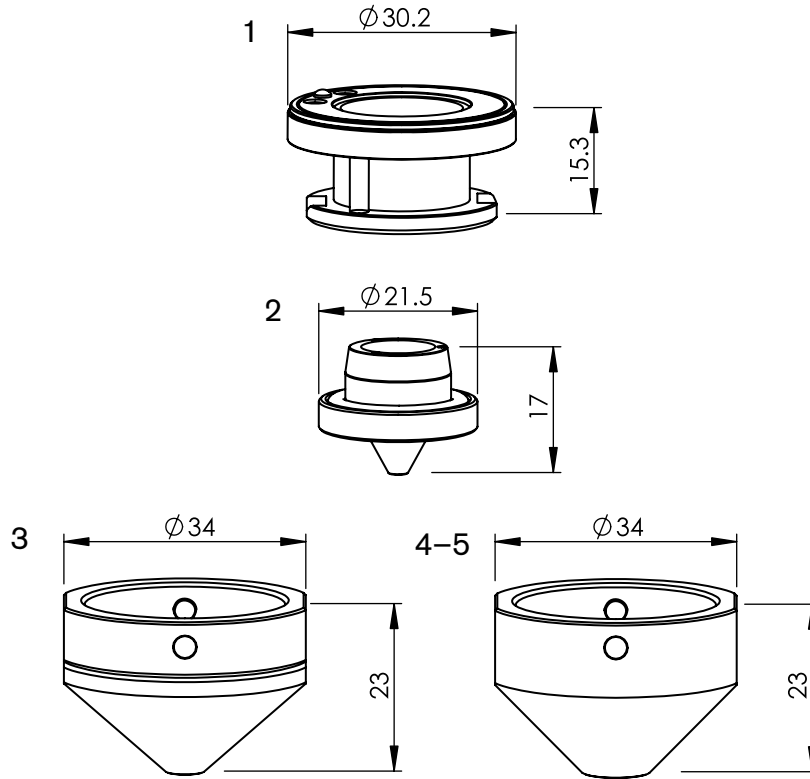
Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	MB334-0830	AL373		MB-Nozzle holder IT461	1
2	MB334-0001	AL267	P0594-860-00001, PHX-INS, 71800010	MB-Nozzle holder	1
3	PT347-0895 Recommended	AL401	P0593-895-00001	PT-Nozzle holder IT HP2" ZP/Mel	1
	PT347-0895OEM		P0593-895-00001	PT-Nozzle holder IT HP2" ZP/Mel OEM	1
4	MB334-W290	AL388	W290, 71800107	MB-O-Ring	1
5	AM326-0017	L1131		AM-Nozzle, 1.7 mm	1
	AM326-0018	L1134	71800018, BQ943D157H01	AM-Nozzle, 1.5 mm	1
	AM326-0019	L1135	71800019, BQ943D157H02	AM-Nozzle, 2.0 mm	1
	AM326-0020	L1136	71800020, BQ943D157H03	AM-Nozzle, 2.5 mm	1
	AM326-0021	L1137	71800021, BQ943D157H04	AM-Nozzle, 3.0 mm	1
	AM326-0022	L1138	71800022, BQ943D596H01	AM-Nozzle, 3.5 mm	1
	AM326-0023	L1139		AM-Nozzle, 4.0 mm	1
	AM326-0024CP	L1140X	71800109, BQ943D714H01, W18Q94371401	AM-Nozzle for focus point, 4.0 mm CP	1
6	AM387-0016	L1125	71800016, BQ943D897H01, W18Q94389701	AM-Nozzle HV, 1.0 mm	1
	AM387-1901	L1128	W18Q93309101	AM-Nozzle HV, 2.5 mm	1
	AM387-1902	L1129	W18Q93309102	AM-Nozzle HV, 3.0 mm	1
7	AM387-0001	L1126	71800016A0, BQ933D283H01	AM-Nozzle w/radius no groove, 1.0 mm	1
8	MB327-327-1	L354	W777	MB-Nozzle, 1.0 mm	1
	MB327-777	L363	W777	MB-Nozzle, 1.2 mm	1
	MB327-266	L355	W266	MB-Nozzle, 1.5 mm	1
	MB327-267	L356	W267	MB-Nozzle, 2.0 mm	1
	MB327-776	L357	W776	MB-Nozzle, 2.5 mm	1
	MB327-268	L358	W268	MB-Nozzle, 3.0 mm	1
	MB327-268-3.5	L359	W268-3.5	MB-Nozzle, 3.5 mm	1
9	MB327-0010	L965		MB-Nozzle, 1.0 mm	1
	MB327-0012	L966		MB-Nozzle, 1.2 mm	1
	MB327-0015	L967		MB-Nozzle, 1.5 mm	1
	MB327-0017	L964		MB-Nozzle, 1.7 mm	1
	MB327-0020	L968		MB-Nozzle, 2.0 mm	1
	MB327-0025	L969		MB-Nozzle, 2.5 mm	1
10	AM387-0017	L1130	71800017, BQ943D269H01, W18Q93326901	AM-Nozzle HV w/radius, 1.2 mm	1
11	AM387-2701	L1132	W18Q93302701	AM-Nozzle HV, 1.7 mm	1
12	MB327-263	AL116	W263	MB-Nozzle nut	1
13	MB327-263S	AL240	P0593-865-00001	MB-Nozzle nut short	1
14	AM367-0269	AL269	71800026, BQ933D94H01	AM-Nozzle nut short	1
15	AM416-0009	AL345	71800009, P921K000P25, JPZA5-6, LC47400	AM-Safety pin	1
16	AM416-A005	AL346	71800008, L2490A005, LC50700, P903K001P72	AM-Safety screw	1



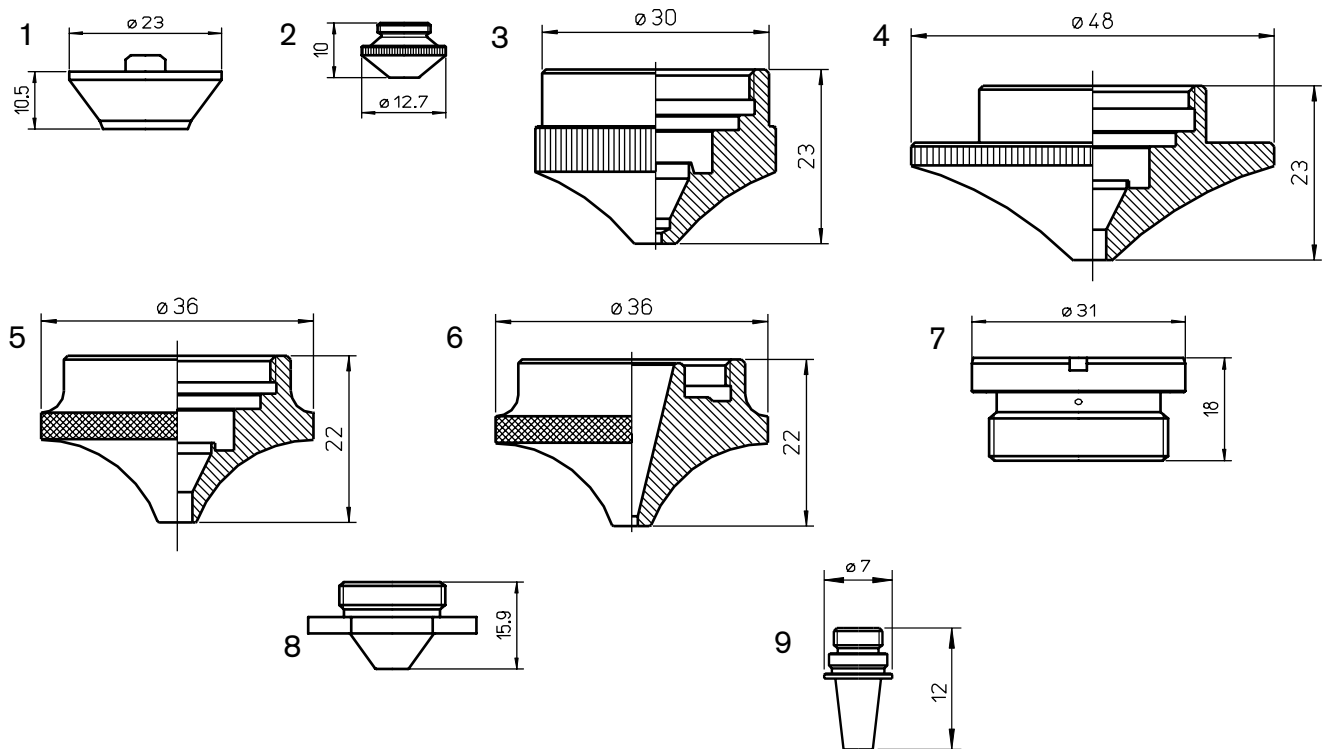
Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	MB334-0830	AL373		MB-Nozzle holder IT461	1
2	MB334-0001	AL267	P0594-860-00001, PHX-INS, 71800010	MB-Nozzle holder	1
3	PT347-0895 Recommended	AL401	P0593-895-00001	PT-Nozzle holder IT HP2" ZP/Mel	1
	PT347-0895OEM		P0593-895-00001	PT-Nozzle holder IT HP2" ZP/Mel OEM	1
4	MB334-W290	AL388	W290, 71800107	MB-O-ring	1
5	MB316-390	L288	W390	MB-Nozzle inner 4 holes, 1.3 mm	1
	MB316-2706	L835	W270-6	MB-Nozzle inner 6 holes, 1.3 mm	1
	MB316-270	L280	W270	MB-Nozzle inner 8 holes, 1.3 mm	1
	MB316-387	L289	W387	MB-Nozzle inner 12 holes, 1.3 mm	1
	MB316-388	L290	W388	MB-Nozzle inner 16 holes, 1.3 mm	1
	MB316-389	L836	W389	MB-Nozzle inner 20 holes, 1.3 mm	1
	MB316-515	L291	W515	MB-Nozzle inner 24 holes, 1.5 mm	1
	AM387-0026	L1124		MB-Nozzle inner 24 holes, 2.0 mm	1
	MB316-1121	L1121		MB-Nozzle inner 3 holes, 1.5 mm	1
	MB316-1127	L1127		MB-Nozzle inner 4 holes, 1.5 mm	1
	MB316-1117	L1117		MB-Nozzle inner 5 holes, 1.5 mm	1
	AM387-0023	L1119	71800023, BQ943D156H01	MB-Nozzle inner 8 holes, 1.5 mm	1
	MB316-1122	L1122		MB-Nozzle inner 3 holes, 2.0 mm	1
	MB316-1116	L1116		MB-Nozzle inner 4 holes, 2.0 mm	1
	MB316-1118	L1118		MB-Nozzle inner 6 holes, 2.0 mm	1
	AM387-0025	L1120		MB-Nozzle inner 8 holes, 2.0 mm	1
6	MB316-0508	AL508		MB-Nozzle outer, 1.2 mm	1
	MB316-0510	AL510		MB-Nozzle outer, 1.5 mm	1
	MB316-0509	AL509		MB-Nozzle outer, 1.7 mm	1
	MB316-0511	AL511		MB-Nozzle outer, 2.0 mm	1
	MB316-0515	AL515		MB-Nozzle outer, 2.3 mm	1
	MB316-0512	AL512		MB-Nozzle outer, 2.5 mm	1
	MB316-0513	AL513		MB-Nozzle outer, 3.0 mm	1
	MB316-0514	AL514		MB-Nozzle outer, 3.5 mm	1
7	MB316-268	AL239		MB-Shield cap, short w/o step	1
	MB316-268CP	AL239X		MB-Shield cap, short w/o step CP	1
8	MB316-269	AL65	W269	MB-Shield cap	1
	MB316-269CP	AL65X		MB-Shield cap, CP	1
9	AM416-0009	AL345	71800009, P921K000P25, JPZA5-6, LC47400	AM-Safety pin	1
10	AM416-A005	AL346	71800008, L2490A005, LC50700, P903K001P72	AM-Safety screw	1



Consumables

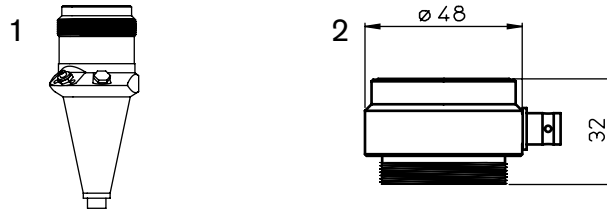
	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	MB327-0311	AL460	BQ980D311G02, LX54300	MB-Nozzle holder, EX insulation	1
2	MB327-1749	L1749		MB-Nozzle EX inner 3 holes w/o-ring, 1.5 mm	1
	MB327-1751	L1751		MB-Nozzle EX inner 4 holes w/o-ring, 1.5 mm	1
	MB327-1753	L1753		MB-Nozzle EX inner 6 holes w/o-ring, 1.5 mm	1
	MB327-1755	L1755	BQ983D206H03	MB-Nozzle EX inner 8 holes w/o-ring, 1.5 mm	1
	MB327-1757	L1757	BQ983D206H04	MB-Nozzle EX inner 24 holes w/o-ring, 1.5 mm	1
	MB327-1750	L1750		MB-Nozzle EX inner 3 holes w/o-ring, 2.0 mm	1
	MB327-1752	L1752		MB-Nozzle EX inner 4 holes w/o-ring, 2.0 mm	1
	MB327-1754	L1754		MB-Nozzle EX inner 6 holes w/o-ring, 2.0 mm	1
3	MB327-0472	AL472		MB-Nozzle EX outer for thick material, 1.5 mm	1
	MB327-0473	AL473		MB-Nozzle EX outer for thick material, 2.0 mm	1
	MB327-0474	AL474		MB-Nozzle EX outer for thick material, 2.5 mm	1
	MB327-0475	AL475		MB-Nozzle EX outer for thick material, 3.0 mm	1
	MB327-0476	AL476		MB-Nozzle EX outer for thick material, 3.5 mm	1
	MB327-0434	AL468	BQ980D434G01	MB-Nozzle EX outer for thick material, 4.0 mm	1
4	MB327-4423	AL469	BQ980D442G03	MB-Nozzle EX outer, 4.0 mm	1
5	MB327-4421	AL470	BQ980D442G01	MB-Nozzle EX outer, 7.0 mm	1



Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
1	PT344-1079	AL138	281079, P0492-430-00003, W149	PT-Nozzle holder KT M1.5" S F2.5" OEM	
	PT344-0013X	L30400	280013, P0492-441-00008, W222	PT-Nozzle FP, 0.8 mm (10 pk)*	1
	PT344-0014X	L30401		PT-Nozzle FP, 1.0 mm (10 pk)*	10
	PT344-0015X	L30402	280015, P0492-443-00012	PT-Nozzle FP, 1.2 mm (10 pk)*	10
	PT344-0016X	L30403X		PT-Nozzle FP, 1.5 mm (10 pk)*	10
	PT344-0018X	L30543	P0492-447-00018	PT-Nozzle FP, 1.8 mm (10 pk)*	10
2	PT344-0937X	L30544		PT-Nozzle FP, 2.0 mm (10 pk)*	10
	PT344-1791X	L30545		PT-Nozzle FP, 2.5 mm (10 pk)*	10
	PT344-0027X	L30547		PT-Nozzle FP, 3.0 mm (10 pk)*	10
	PT344-0010CPX	L30401X	280014, P0492-442-00010, W223	PT-Nozzle FP, 1.0 mm CP (10 pk)*	10
	PT344-0015CPX	L30403X	280016, P0492-444-00015, W224	PT-Nozzle FP, 1.5 mm CP (10 pk)*	10
	PT344-0022CPX	L30544X	280937, P0492-445-00020, W225	PT-Nozzle FP, 2.0 mm CP (10 pk)*	10
	AM416-0002	AL302		AM-Nozzle outer, 1.7 mm	1
	AM416-0003	AL303		AM-Nozzle outer, 2.0 mm	1
3	AM416-0004	AL304		AM-Nozzle outer, 2.5 mm	1
	AM416-0005	AL305		AM-Nozzle outer, 3.0 mm	1
	AM416-0006	AL306		AM-Nozzle outer, 4.0 mm	1
4	MB316-0440	AL266	BQ933D044H01, 71800101, W18Q93304401	MB-Nozzle outer, high speed pierce	1
5	AM416-2197	AL270	71802197, BQ933D044H01	AM-Nozzle outer	1
6	AM416-5400	L1262	7180015400, BQ023D020H01	AM-Nozzle high speed pierce, 1.7 mm	1
7	MB334-0830	AL373	P0461-230-00001, W830	MB-Nozzle holder IT461	1
	MB330-001	L549	W001	MB-Nozzle, 1.5 mm	1
8	MB330-002	L550	W002	MB-Nozzle, 2.0 mm	1
	MB330-004	L551	W004	MB-Nozzle, 2.5 mm	1
	MB330-003	L552	W003	MB-Nozzle, 3.0 mm	1
9	MB336-0018	L1710	BKO-NB8358H03, BQ949D117, P0352-377-00018	MB-Nozzle DE M1.5" 1.8H, 1.8 mm	1

*Available in single packs. To order single packs, remove the 'X' at the end of the part number (e.g. AM123-4567X would be AM123-4567)



Consumables

	Centricut part number	Esse A part number	Reference number	Description	Pkg qty
Sensor cones					
1	PT347-0011		P0354-110-00002	PT-Sensor cone HNZ (Mitsubishi)	1
2	MB334-W429A		P0461-270-00001	MB-Sensor cone W429A	1

Optics

Centricut part number	Reference number	Type	Diameter	Focal length	Edge thickness
Lenses					
MB312-018	W018	PLX	1.5"	7.5"	.310"
MB312-500	W500	PLX	1.5"	5.0"	.310"
MB312-505	W505	PLX	2.0"	5.0"	.310"
MB312-510	W510	PLX	2.0"	7.5"	.310"
MB312-8858	6418858	PLX	2.0"	7.5"	.45"
Ultra low absorption lenses					
MB312-018MP5	W018	PLX	1.5"	7.5"	.300"
MB312-505MP5	W505	PLX	2.0"	5.0"	.310"
MB312-510MP5	W510	PLX	2.0"	7.5"	.310"

Optics care

Centricut part number	Reference number	Description	Pkg qty
TR300-6452		Lens cleaning Tiffen paper (50 pcs)	1
TR300-1115		Lens cleaning pre-cut cotton (100 pcs)	1
TR300-1010	AL1010	Dropper, lens cleaning fluid	1
TR300-1112		Optical cleaning fluid	1
TR300-0699	70675699 REVA	Lens cleaning swabs (25 pcs)	1
TR300-7991	27991	Polyester wipes 4" x 4" (100 pcs)	1
TR301-0282		Injector	1
TR300-LSA		Lens stress analyzer	1
TR300-255	AL255	Magnifying loop	1
TR300-271	AL271	Base, mirror maintenance	1
TR300-7388	787388	Mirror polish .1UM 250ML	1



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

Centricut part number	OEM	Reference number	Description
AM343-0091	Amada	71360091	AM-Sensor cone, HS95 mini
AM343-1621	Amada	71341621	AM-Sensor cone, HS95
AM343-9107	Amada	ECO cone	AM-Sensor cone, ECO
AM343-1690	Amada	71341690	AM-Sensor cone, HS98
AM343-L3015C	Amada	71374509	AM-Sensor cone, LC3015
PT347-3323	Mazak	HNP	PT-Sensor cone, HNP
MZ335-HNPS	Mazak	HNPS	MZ-Sensor cone, HNP short version
PT347-0007	Mazak	56743300500	PT-Sensor cone, HNZ (Mazak)
PT347-0011	Mitsubishi	P0354-110-00002	PT-Sensor cone, HNZ (Mitsubishi)
MB334-W429A	Mitsubishi	P0461-270-00001	MB-Sensor cone, W429A
PT347-0238	Precitec	BQ930D238G01	PT-Sensor cone, HNZ SMA
PT347-8001	Precitec	P0361-203-00001	PT-Sensor cone, 2.5/J
PT347-0522	Precitec	P0599-520-00002	PT-Sensor cone, LRC
PT347-1145	Precitec	P0380-140-0002, P0380-130-00001, 281145	PT-Sensor cone, DZ

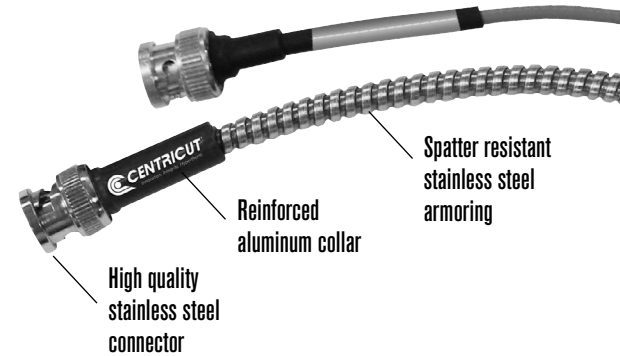
*Sensor cone repair service is available for most sensor cones in North America and select international regions. For more information contact Ctlaser@Hypertherm.com.

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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	OEM	Reference number	Description
AM308-8965	Amada	71398965	AM-Sensor cable, 305 mm (12")
AM308-8965A	Amada	71398965	AM-Sensor cable, 305 mm (12") premium, armored
AM313-1901	Amada		AM-Sensor cable, 305 mm (12")
AM313-1901A	Amada	71341630	AM-Sensor cable HS-5, 305 mm (12") premium, armored
AM313-8292	Amada	71398292	AM-Sensor cable dual shield, 7 meters
AM313-9851A	Amada	71369851	AM-Sensor cable, 230 mm (8") premium
CN306-0654A	Cincinnati	909654, 922686	CN-Sensor cable, 114 mm (4.5") armored
CN306-0951A	Cincinnati	842951	CN-Sensor cable, 140 mm (5.5") armored
CN306-2951	Cincinnati	842951, PLTTW0015	CN-Sensor cable, 140 mm (5.5")
CN306-9654	Cincinnati	909654, 922686, PLTTW0002	CN-Sensor cable, 114 mm (4.5") armored
MZ335-0111A	Mazak	4674330111	MZ-Sensor cable, 280 mm (11") armored
MZ335-0181A	Mazak	46743300181	MZ-Sensor cable, 317.5 mm (12.5") armored
MZ335-1330A	Mazak	46683301330	MZ-Sensor cable, 305 mm (12") armored
MZ335-1980A	Mazak	46683301980	MZ-Sensor cable, 280 mm (11") armored
MZ335-5320	Mazak	6143355320	MZ-Sensor cable, 70 mm (2.8") armored
MZ335-630A	Mazak	00BSBA630MNC	MZ-Sensor cable, 630 mm (25") armored
MZ335-8290	Mazak	46143308290	MZ-Sensor cable, 75 mm (3")
NT426-1682	NTC	4R029911-001, J482D	NT-Sensor cable, 216 mm (8.5")
NT426-4991	NTC	3-0104991	NT-Sensor cable 0-OBNC/MCX, 482 mm (19")
NT426-7492	NTC	3-0117492	NT-Sensor cable 90BNC/90BNC, 482 mm (19")
NT426-8677	NTC	4R028677-001	NT-Sensor cable, 508 mm (20") armored
PR361-3150	Prima	820.63.150	PR-Sensor cable, 150 mm (6")
PT347-0014	Precitec	P36015000300, KE 300 gw Z MM	PT-Sensor cable OEM
PT347-0015A	Precitec	00B-15	PT-Sensor cable, 380 mm (15")
PT347-0040	Precitec	00BB-A-17i, BEC004-000.4	PT-Sensor cable, 431 mm (17") armored
PT347-0101A	Precitec	P0360-100-00500	PT-Sensor cable, 500 mm (20") armored
PT347-0181	Precitec	46743300181	PT-Sensor cable
PT347-0250	Precitec	342475	PT-Sensor cable, 250 mm (10") armored
PT347-0300A	Precitec	P0492-014-00300	PT-Sensor cable KE, 300 mm (12") armored
PT347-0450	Precitec	P0497-002-00450	PT-Sensor cable, 450 mm (17.7")
PT347-KS13	Precitec/Gunkyo	00BMTKA-A-HS500mm	PT-Sensor cable, 390 mm (15.5") armored
PT347-0600OEM	Precitec	P0360-210-00600	PT-Sensor cable, 600 ZWW OEM
PT347-1250	Precitec	D5001-040-00250	PT-Sensor cable, 250 mm (10") armored
PT348-0390	Precitec		PT-Sensor cable, 390 mm (15.5")
TR301-0930	Trumpf	280930	TR-Sensor cable, 152 mm (6") armored
TR301-1086	Trumpf	351086, S0492-001-00000	TR-Sensor cable
TR301-7833	Trumpf	227833	TR-Sensor cable, 432 mm (17")
TR301-9983	Trumpf	359983, 342474	TR-Sensor cable, 190 mm (7.5") armored

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Lens cleaning tips



Centricut supplies suitable for all OEM CO₂ 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 CO₂ and fiber lenses and windows (interchangeable with polyester swabs and lens paper).

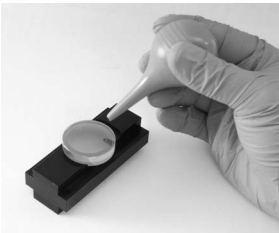
Product description	Part number	Quantity per order
Optical cleaning fluid (3 oz.)	TR300-1112	1
Lens cleaning swab	TR300-0699	25
Lens cleaning paper, Tiffen	TR300-6452	50
Polyester wipes 4" x 4"	TR300-7991	100
Base, lens maintenance	TR300-271	1

Lens paper

Recommended for the routine maintenance cleaning of flat lenses.

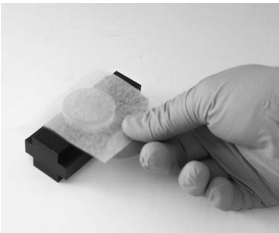
You will need:

- 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.



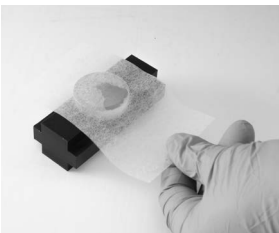
Step 1

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.

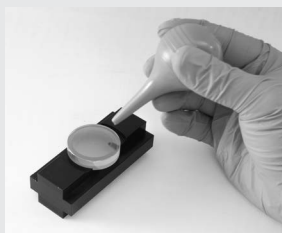
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Polyester swabs

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



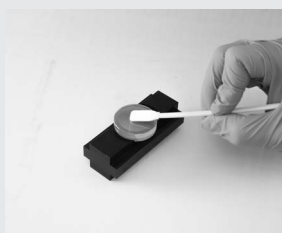
To get started

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 CO₂ 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.



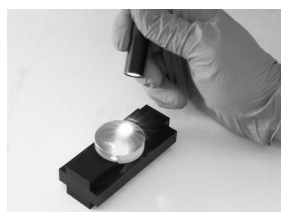
Step 1

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 CO₂ 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 O₂ on a 2 kW fiber laser with one variable changed to show how cut quality is affected. The adjustments will be similar for all CO₂ and fiber laser, cutting mild steel with O₂.

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

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 feed rate 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.

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

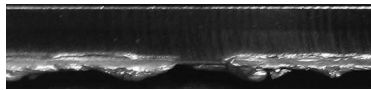
3.2 mm (10 ga.) mild steel cut resulting in too narrow kerf

Factory cut chart settings



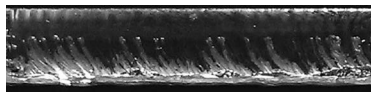
Focus is too low

The kerf is too narrow and doesn't allow enough O₂ into the cut to remove all the molten material.



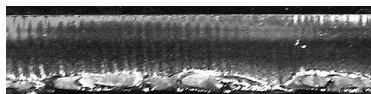
Feed rate is too fast

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



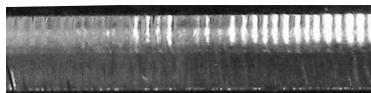
Gas pressure is too low

There is not enough O₂ to remove all the molten material.



Stand off is too low

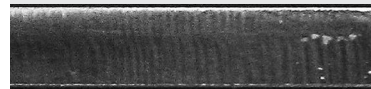
The focus spot is in the wrong location, causing the rough edge.



Cut direction

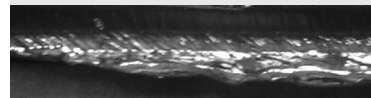
3.2 mm (10 ga.) mild steel cut resulting in too wide kerf

Factory cut chart settings



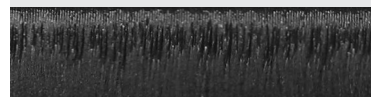
Focus is too high

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.



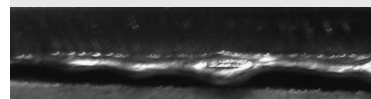
Gas pressure is too high

Too much O₂ results in overheating of the cut and causes intermittent gouges.



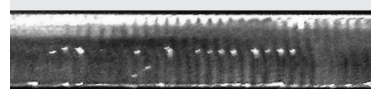
Stand off is too high

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



Nozzle size is too big

Too much O₂ results in overheating of the cut and causes intermittent gouges.

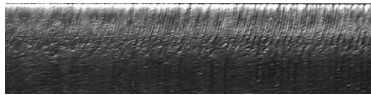


Cut direction

*Above samples have been cut with O₂ on 2 kW fiber laser. Results will be similar for CO₂ laser cutting mild steel with O₂.

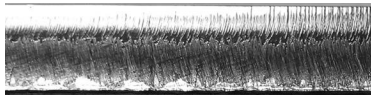
6 mm (1/4") mild steel cut resulting in too narrow kerf

Factory cut chart settings



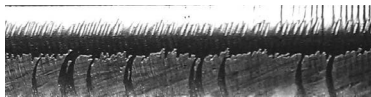
Focus is too low

The kerf is too narrow and doesn't allow enough O₂ into the cut to remove all the molten material.



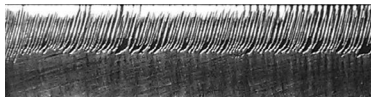
Feed rate is too fast

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



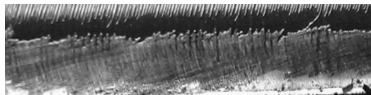
Gas pressure is too low

There is not enough O₂ to remove all the molten material.



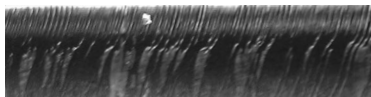
Stand off is too low

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



Nozzle size is too small

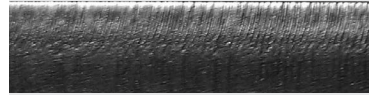
There is not enough O₂ to cut uniformly



Cut direction

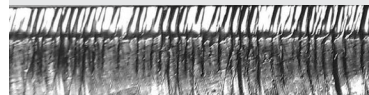
6 mm (1/4") mild steel cut resulting in too wide kerf

Factory cut chart settings



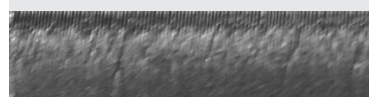
Focus is too high

The wider focus spot is letting too much O₂ into the cut and burning the material.



Feed rate is too slow

The cut surface is too rough and productivity is decreased.



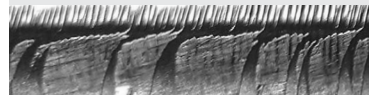
Gas pressure is too high

Too much O₂ is entering the cut, causing a rougher edge and inconsistent cutting.



Stand off is too high

Too much O₂ is entering the cut, causing a rougher edge and inconsistent cutting.



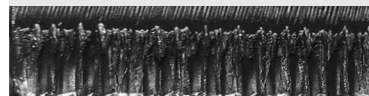
Nozzle size is too big

Too much O₂ 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.



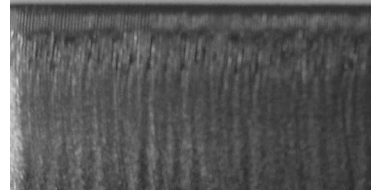
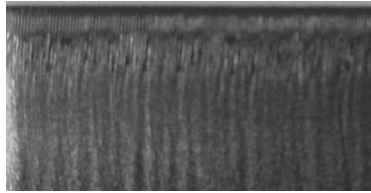
Cut direction

*Above samples have been cut with O₂ on 2 kW fiber laser. Results will be similar for CO₂ laser cutting mild steel with O₂.

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

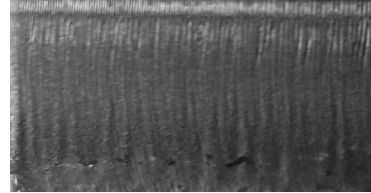
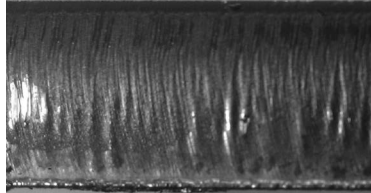
Factory cut chart settings



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.

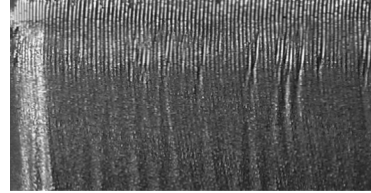
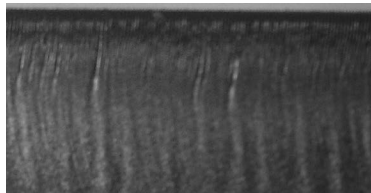


Stand off is too low

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 .

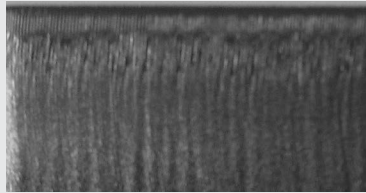
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12 mm (1/2") mild steel cut resulting in too wide kerf

Factory cut chart settings

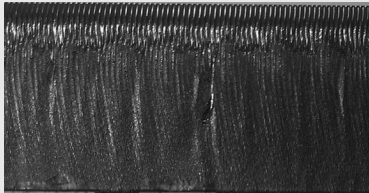


Factory cut chart settings



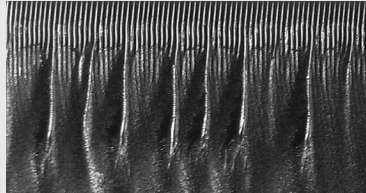
Focus is too high

Too much O₂ is entering the cut causing intermittent over burning.



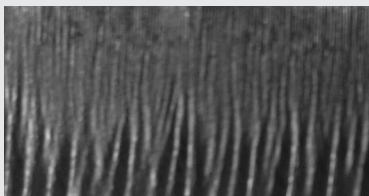
Stand off is too high

Too much O₂ is entering the cut resulting in intermittent over burning.



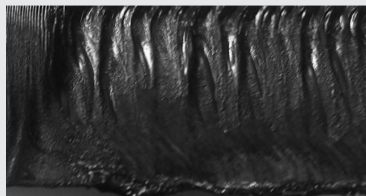
Feed rate is too slow

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.



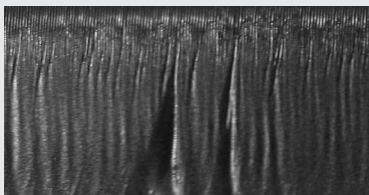
Incorrect nozzle type

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



Gas pressure is too high

Too much O₂ is entering the cut resulting in intermittent over burning.



Cut direction

Cut direction

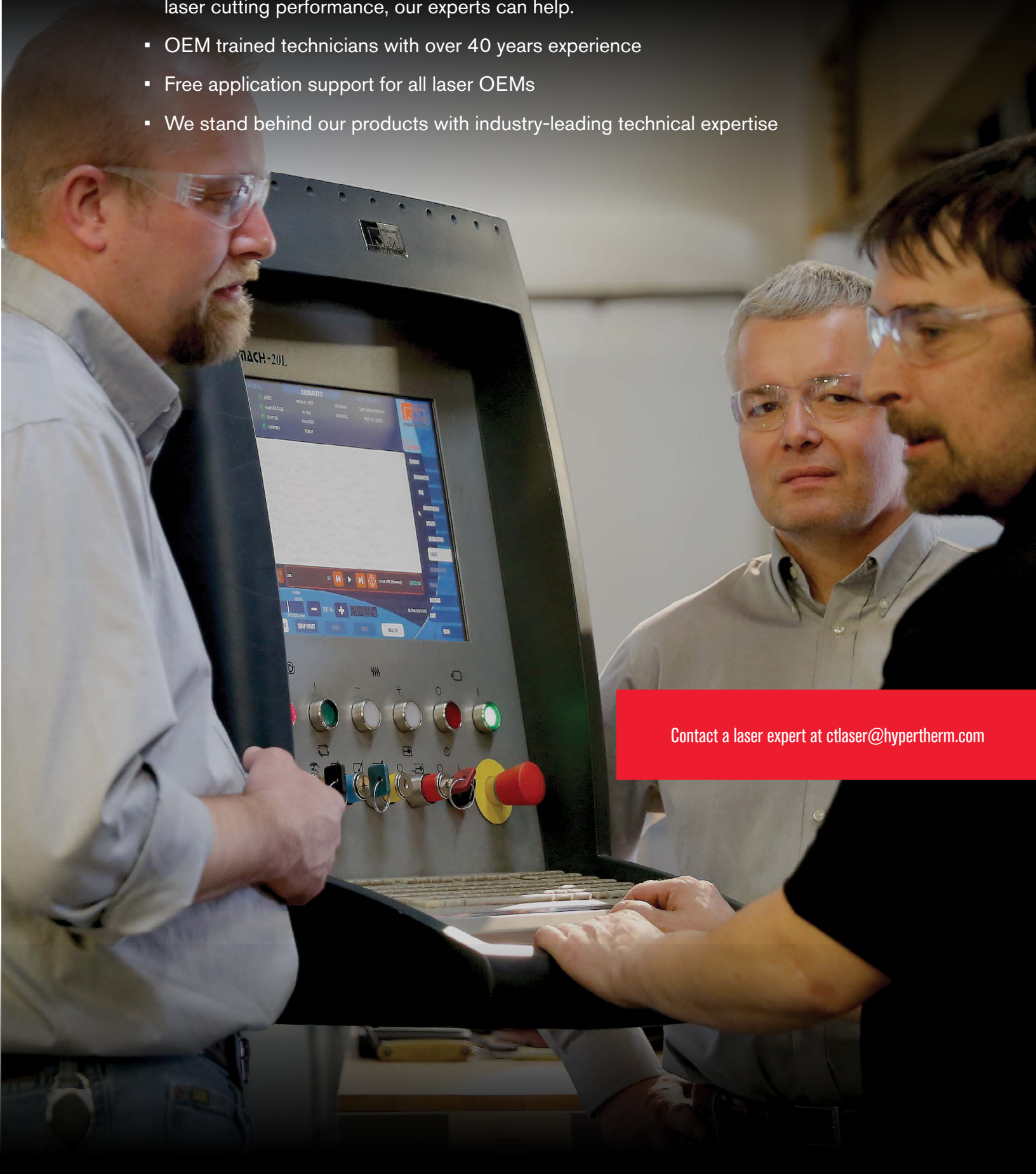
*Above samples have been cut with O₂ on 2 kW fiber laser. Results will be similar for CO₂ laser cutting mild steel with O₂.

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