Rev.1_200330

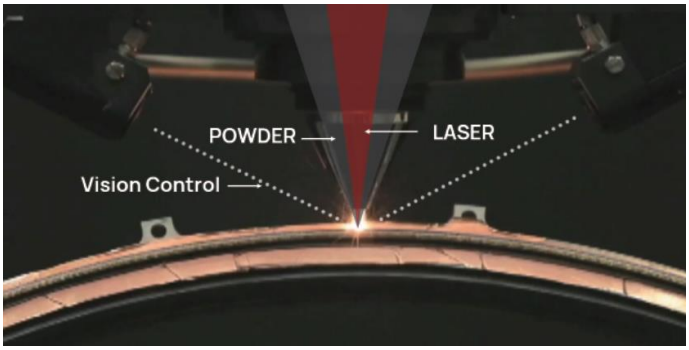
Technical Data

MX-600
MX-1000
MX-Grande

InssTek

DMT® Technology

The most precise DED technology



DMT® is Direct Metal Tooling that it is developed by InssTek's own technical skills and it is classified as directed energy deposition technology by ASTM standard. The technology enables to produce complex-shaped metal products by using high power laser beam from 3D CAD data in a short time. it is applied to various industries such as electronics, automotive, medical, process, aerospace and defense.

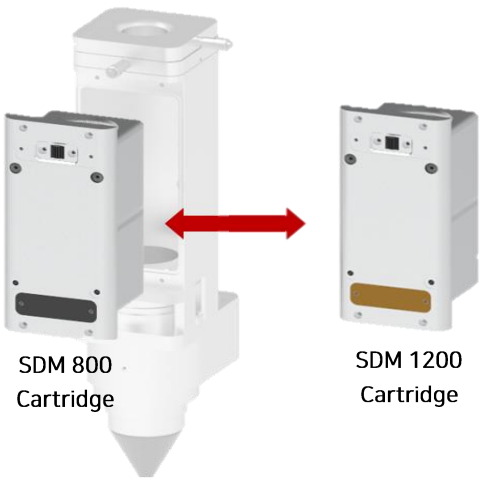
Applicable Materials for DMT® Technology

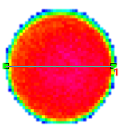
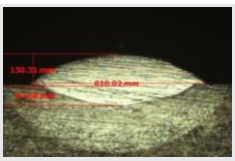
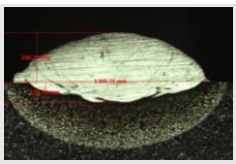
Titanium	CP Ti Gd2, Ti6Al4V
Steel	P20, P21 H13
Stainless Steel	304, 316, 420
Nickel	600, 625, 690, 713, 718
Hastelloy	22, 276
Copper	Cu-Sn, Al Bronze
Cobalt	CoCr, Stellite 21, 25

*Other Alloys can be applicable by experimental internal process

Multi Optic

Cartridge type optic system

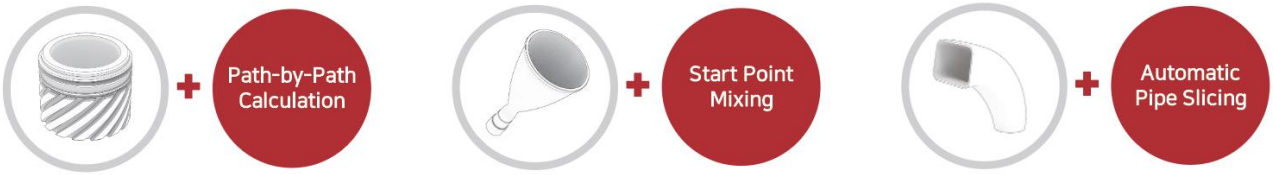


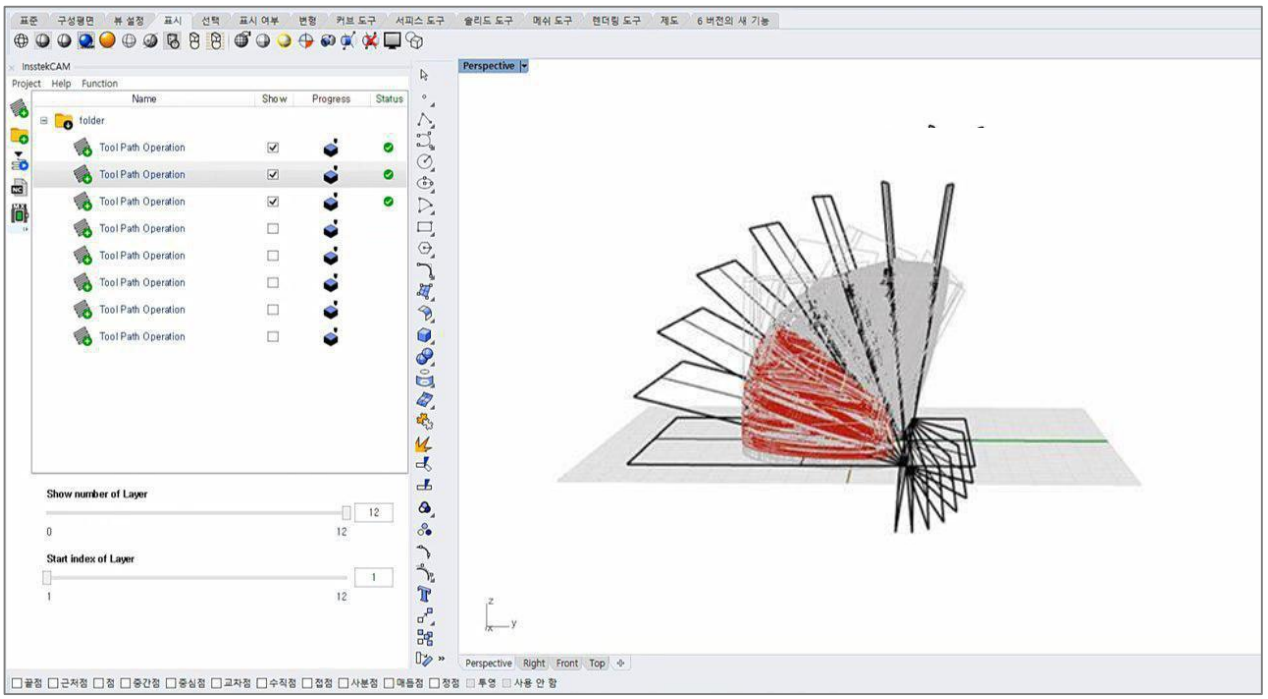
Type	SDM800	SDM1200
Beam Size	800 um	1200 um
Build Speed	4.3 cm^3/h	12cm^3/h
Layer Height	250 µm	450 µm
Beam Profile		
Line Section View		

Simultaneous 5-Axis AM-CAM

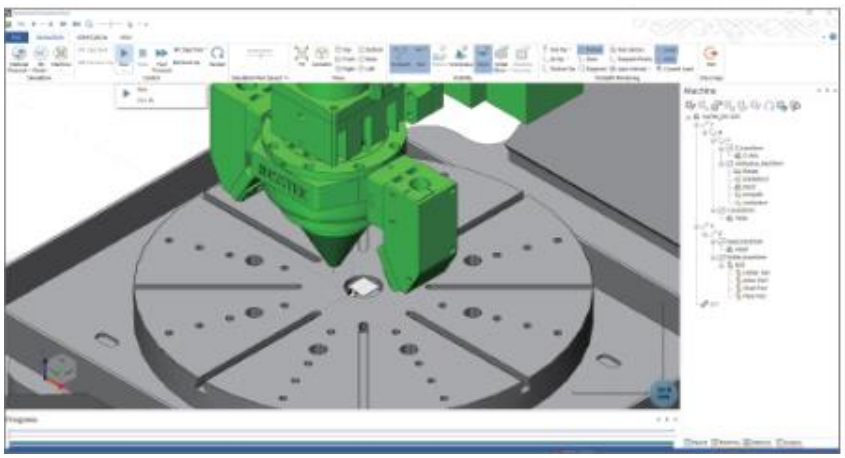
Perfect solution for Simultaneous 5-Axis AM-CAM

Simultaneous 5-Axis AM-CAM is one of the most important part of DED Additive manufacturing. It makes us overcome the limitation of DED technology. It enables the application of complex shapes that could not be manufactured by DED technology. Combine of INSSTEK's years of Know-how and new software technology make this possible. Let's try to break the limitation of DED with InssTek.





5-Axis AM Toolpath Generation



5-Axis AM Simulator

MX-600 (Standard)

DED Machine with DMT & 5-Axis AM CAM

Features

Highly functional component production, re-modeling, repairing and special coatings

Excellent mechanical properties

Available using commercial metal powders

Enables to manufacture of complex shapes structure

DMT

2nd Gen AM Module

5Axis Simultaneous

Group	Specification			
	No.	Item	Specification	Unit
1. Laser	1.1	Type	Ytterbium Fiber Laser	-
	1.2	*Laser Power	1,000 (*Max. 2,000)	W
	1.3	Safety Standard	EN60825-1	-
2. Stage	2.1	X, Y, Z Stroke	450 x 600 x 380	mm
	2.2	A, C Stroke	-100 ~ +5/360	Deg.
	2.3	Worktable size	350	Ø
3. Module	3.1	Optical Module	SDM 800	-
	3.2	*Beam Diameter	800	μm
	3.3	Build rate	4.7	cm3/h
	3.4	Layer Thickness	250	μm
4. Feeding System	4.1	Powder feeding Rate (for Ti-6Al-4V)	0.8~6.8	g/min
	4.2	Powder Hopper Volume	Approx. 0.7	liter
	4.3	*Number of Powder Feeder and hopper	3	Set
5. Software	5.1	Operating System	Window 7	-
	5.2	HMI Program	MX-OS	-
	5.3	*CAM Software	MX-CAM	-
	5.4	Feedback System	DMT® Closed-Loop Control	-
6. Electrical Specification	6.1	Electrical Power type	3P + N + PE (at 50-60 Hertz)	-
	6.2	Main machine voltage	380	V
	6.3	Full load current	100	A
7. Mechanical Specification	7.1	Machine Dimensions (without accessories)	2,000 x 2,900 x 2,550	mm
	7.2	Machine Weight	6.5	Ton

(*Optional Item)

MX-1000 (Standard)

DED Machine with DMT & 5-Axis AM CAM

Features

Highly functional component production, re-modeling, repairing and special coatings

Excellent mechanical properties

Available using commercial metal powders

Enables to manufacture of complex shapes structure

DMT

2nd Gen AM Module

5Axis Simultaneous

Group	Specification			
	No.	Item	Specification	Unit
1. Laser	1.1	Type	Ytterbium Fiber Laser	-
	1.2	*Laser Power	1,000 (*Max. 2,000)	W
	1.3	Safety Standard	EN60825-1	-
2. Stage	2.1	X, Y, Z Stroke	800 x 1,000 x 650	mm
	2.2	A, C Stroke	-100 ~ +5/360	Deg.
	2.3	Worktable size	450	Ø
3. Module	3.1	Optical Module	SDM 1200	-
	3.2	*Beam Diameter	1,200	µm
	3.3	Build rate	14	cm3/h
	3.4	Layer Thickness	450	µm
4. Feeding System	4.1	Powder feeding Rate (for Ti-6Al-4V)	0.8~6.8	g/min
	4.2	Powder Hopper Volume	Approx. 0.7	liter
	4.3	*Number of Powder Feeder and hopper	3	Set
5. Software	5.1	Operating System	Window 7	-
	5.2	HMI Program	MX-OS	-
	5.3	*CAM Software	MX-CAM	-
	5.4	Feedback System	DMT® Closed-Loop Control	-
6. Electrical Specification	6.1	Electrical Power type	3P + N + PE (at 50-60 Hertz)	-
	6.2	Main machine voltage	380	V
	6.3	Full load current	100	A
7. Mechanical Specification	7.1	Machine Dimensions (without accessories)	2,420 x 3,780 x 3,455	mm
	7.2	Machine Weight	11	Ton

(*Optional Item)

MX- Grande (Custom)

DED Machine with DMT & 5-Axis AM CAM

Group	Specification			
	No.	Item	Specification	Unit
1. Laser	1.1	Type	Ytterbium Fiber Laser	-
	1.2	*Laser Power	Max. 3,000	W
	1.3	Safety Standard	EN60825-1	-
2. Stage	2.1	X, Y, Z Stroke	4,000 x 1,000 x 1,000	mm
	2.2	A, C Stroke	-100 ~ +5/360	Deg.
	2.3	Worktable size	650	Ø
3. Module	3.1	Optical Module	SDM 1800	-
	3.2	*Beam Diameter	1,800	µm
	3.3	Build rate	42	cm3/h
	3.4	Layer Thickness	750	µm
4. Feeding System	4.1	Powder feeding Rate (for Ti-6Al-4V)	0.8~6.8	g/min
	4.2	Powder Hopper Volume	Approx. 0.7	liter
	4.3	*Number of Powder Feeder and hopper	3	Set
5. Software	5.1	Operating System	Window 7	-
	5.2	HMI Program	MX-OS	-
	5.3	*CAM Software	MX-CAM	-
	5.4	Feedback System	DMT® Closed-Loop Control	-
6. Electrical Specification	6.1	Electrical Power type	3P + PE (at 50-60 Hertz)	-
	6.2	Main machine voltage	220 (Customized)	V
	6.3	Full load current	200 (Customized)	A
7. Mechanical Specification	7.1	Machine Dimensions (without accessories)	Custom	mm
	7.2	Machine Weight	30	Ton

MX-Grande (Custom) Specification is revising internally. (*Optional Item)

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