

Twin Arc/Laser Hybrid Welding System

High Speed Welding Challenges

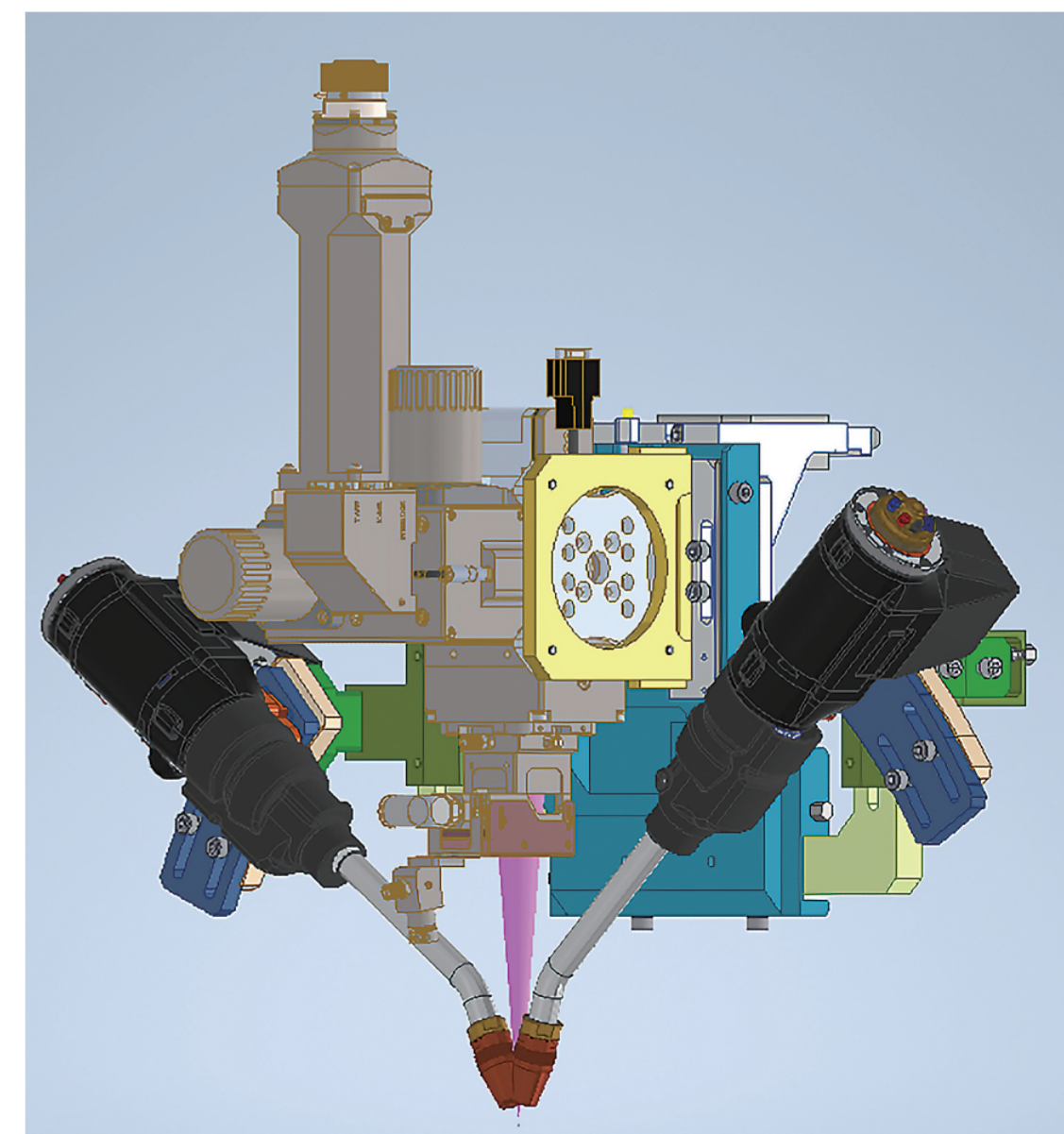
- Increased welding speed is required to improve productivity.
- High-speed welding has difficulty in handling gaps and securing weld volume.

High-speed welding by laser welding

- Keyhole welding with heat concentration by laser
- Ultra high-speed welding of over 10 m/min, which is impossible with arc welding

Twin arc welding secures deposition

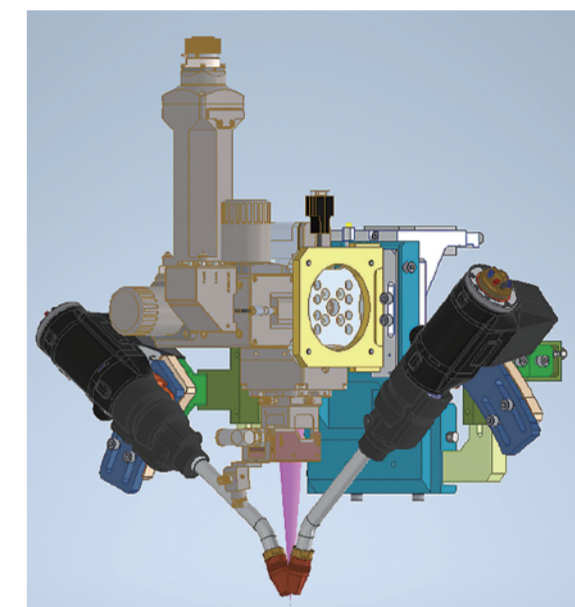
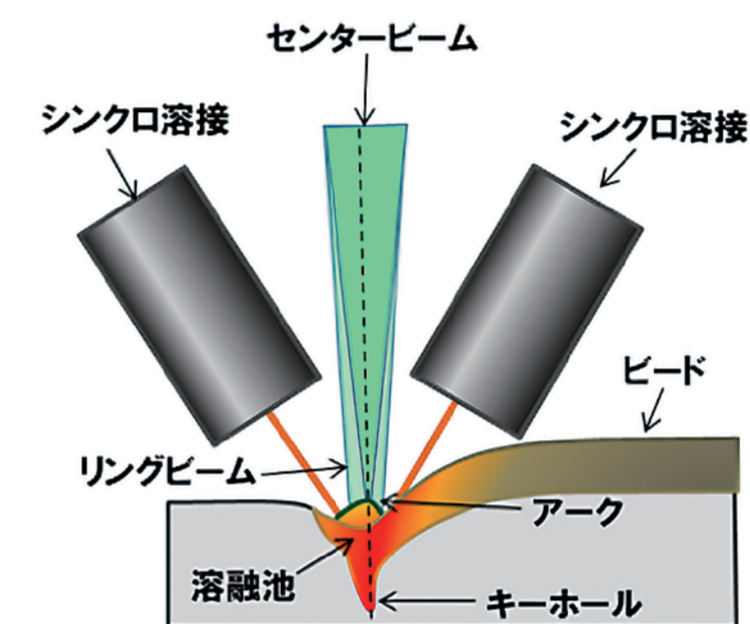
- Increased deposition by twin arc welding
- Expansion of gap margin by heat input control



Twin Arc/Laser Hybrid Welding System

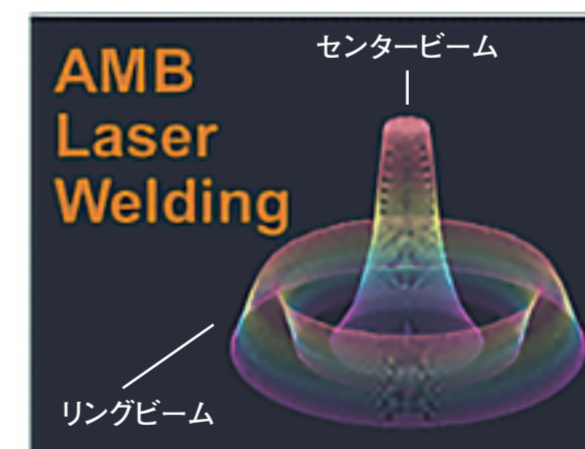
Ultra high-speed welding at 10 m/min

- Deep penetration by laser
- Twin arcs ensure extra height and improve the gap margin
- **New Hybrid Head** with improved shielding



Beam-tunable mode lasers

- Center beam for deep penetration and ring beam for spatter suppression
- Residual heat effect of the ring beam stabilizes the molten pool during high-speed welding and reduces spatter



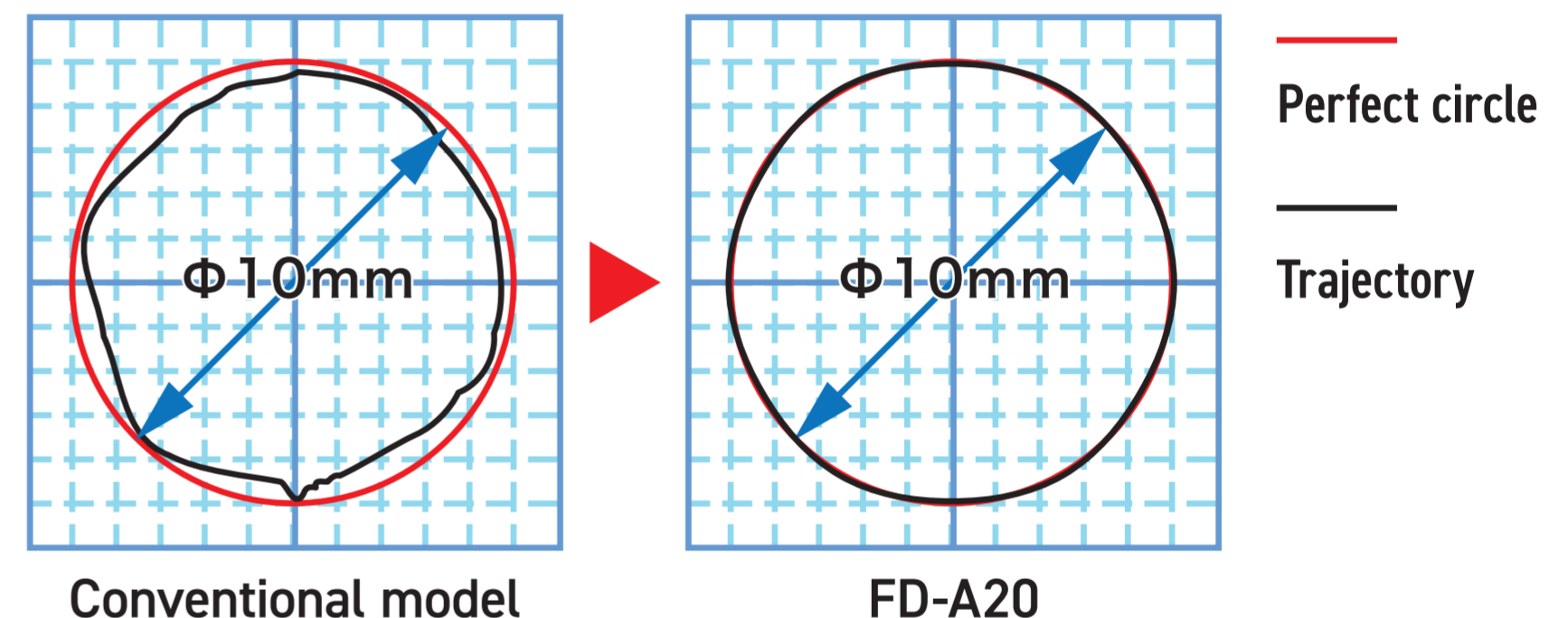
High accuracy Robot FD-A20

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- Significantly improved trajectory accuracy in a wide range
Precise processing of small circles less than 10mm in diameter



Greatly improved accuracy of trajectory



Conventional model

FD-A20

Moving speed 200cm/min

Easy teaching with laser-specific instructions

- Simplified teaching of complex sequences with dedicated instructions equipped as standard. Automatic generation of various cutting pattern programs such as circles and rectangles.

Simple teaching of laser processing

プログラム	ステップ	2018/12/13 19:18	U1
2102 [有]	13 STEPS 2	切断5-1	M1: A20
LPS			
ON	レーザー加工		
11 ロボットプログラム			
50.0 %	JOINT A8 T3		
2	REN["5-1"]	FN99; コメント	
3	50.0 % JOINT A8 T3		
4	500 cm/m LIN A8 T3		
5	LPS[L1, OFF, 00, 250W, 200cm/m, →]	FN706; レー	
6	500 cm/m LIN A8 T3		
7	500 cm/m LIN A8 T3		
8	500 cm/m LIN A8 T3		
9	500 cm/m LIN A8 T3		
10	LPE[L1, OFF, 100W, 1.0s, 2.0s, →]	FN707; レー	
11	DELAY[0.1]	FN50; タイマ	
12	50.0 % JOINT A8 T1		

Laser-specific instructions