



# LFS/QFS with FLBK SC

## Fiber Laser-Based Sub-System for Combustion Engine Conrod Scribing

This Class 4, fiber laser-based sub-system is the worldwide standard for fast, consistent scribing of engine conrods (for subsequent hydraulic cracking). It includes the laser source, beam focussing optics, a swiveling gas nozzle, and a controller. Mating this with customer supplied part handling and motion yields a complete, automated solution.

There are two laser options to apply the crack initializing scribes. The LFS with FLBK SC uses a 150 W,  $\mu$ s pulsewidth source, for processing truck or other large engine conrods. The QFS with FLBK SC has a 50 W, ns pulsewidth laser and is intended for most automobile and other small engine conrods.



### FEATURES & BENEFITS

- Reduced cracking force minimizes conrod deformation
- Complete laser solution simplifies integration
- High speed (as little as 0.5 seconds per scribe)
- Robust construction minimizes field service
- Lowers cost through high uptime and process consistency

### APPLICATIONS

- Auto Engine Conrod Scribing
- Truck Engine Conrod Scribing
- Crankshaft Housing Scribing

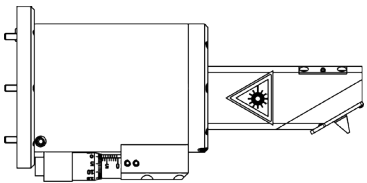
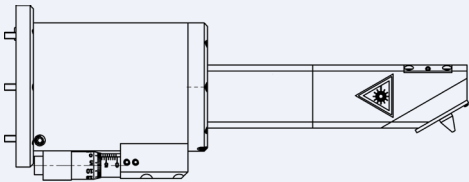
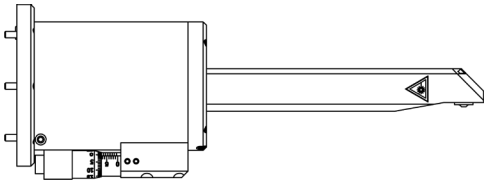
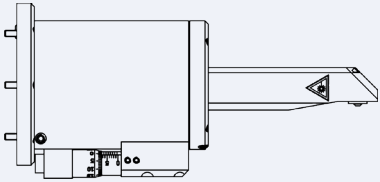
SPECIFICATIONS	LFS150	QFS50
Laser Output (nm)	1070 Single mode pulsed fiber laser	1055 to 1070 Q-switched pulsed fiber laser
Beam Quality	1.05	1.5
Repetition Rate	<50% duty cycle	50 to 200 kHz
Pulse Duration	0.01 to 50 ms	150 to 200 ns
Pulse Energy	15 J	1 ±0.02 J
Output Power	Max. 1.5 kW peak, 150 W average (±1% long term stability)	Max. 10 kW peak, 50 W average (at 1% long term stability)
Dimensions	19" OEM rack (8HU) depth 610 mm or Cabinet 600 x 730 x 1200 mm	19" OEM rack (6HU) depth 482 mm or Cabinet 600 x 660 x 950 mm
Weight	OEM rack version 43 kg cabinet version 95 kg	OEM rack version 21 kg cabinet version 75 kg
Supply	208 to 230 V ±10% 50/60 Hz 1P+E Air cooled	110 to 230 V ±10% 50/60 Hz 1P+E Air cooled
Power Consumption (kW)	1.1	0.9

LFS150 OEM



QFS50 OEM

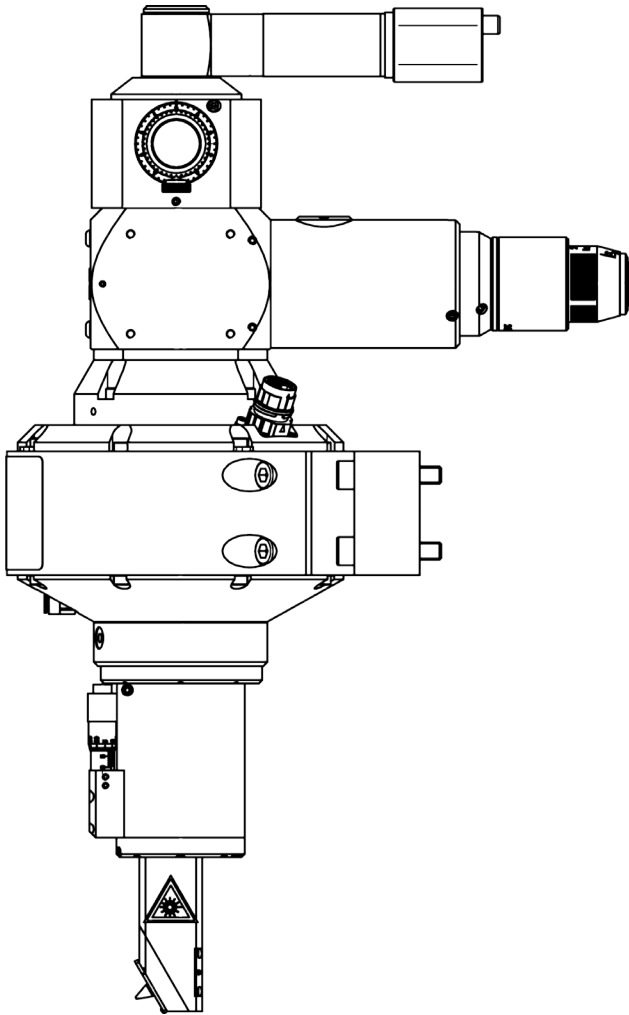


SPECIFICATIONS				
FLBK SC – the conrod scribing solution – swivel unit		Conrod Eye Diameter (mm)	Scribing Angle (degrees, °)	Scribing Length (mm)
60/60		>46	60	<60
60/110		>46	60	<110
90/110 (for QFS50 laser only)		>25	90	<110
90/60 (for QFS50 laser only)		>25	90	<60
Gas Supply	typical 3 bar (max 6 bar) dry oil free compressed air - gas nozzle Ø0.5 mm or Ø1.0 mm			
Swivel Motor	Torque motor (rotating programmable – repeatability precision 0.02°)			
Dimensions (W x H x D)	200 mm x 540 mm x 550 mm (depends on scribing lance)			
Weight	~9 kg			

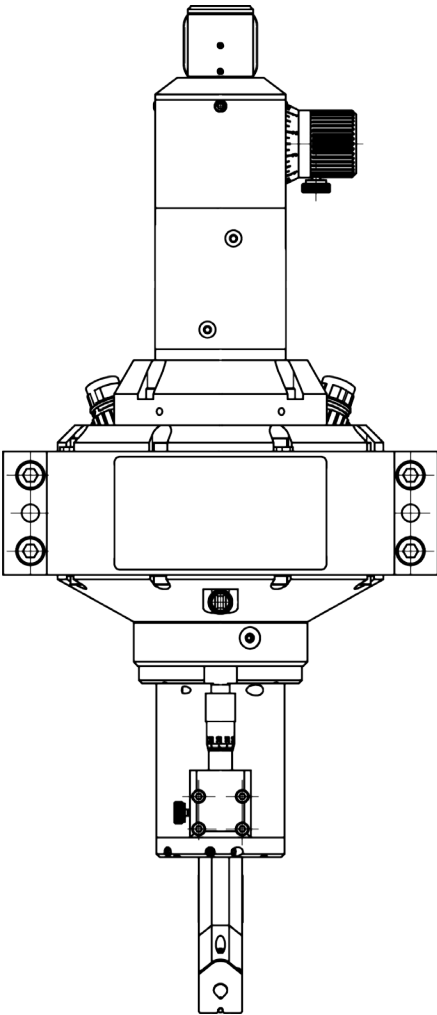
**MECHANICAL SPECIFICATIONS**

**FLBK SC-QB**

Side View



Front View



Coherent, Inc.,  
5100 Patrick Henry Drive Santa Clara, CA 95054  
p. (800) 527-3786 | (408) 764-4983  
f. (408) 764-4646

[tech.sales@coherent.com](mailto:tech.sales@coherent.com) [www.coherent.com](http://www.coherent.com)

Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all LFS/QFS Sub-Systems. For full details of this warranty coverage, please refer to the Service section at [www.coherent.com](http://www.coherent.com) or contact your local Sales or Service Representative. MC-002-21-0M0621 Copyright ©2021 Coherent, Inc.