

### **Couplings and connections**

The necessary parts lists, diagrams and operating manuals from our suppliers are in the Chapter 10.

### **Noise emissions**

The noises caused by the ultrasonic cutting machine during operation are under the 70 dB(A) limit value specified in the applicable EC directive for machines.

No protective measures are therefore required for the installation.

However, note that motions/functions in conjunction with the ultrasonic cutting machine may cause a higher sound pressure level and can lead to hearing loss. This can be exacerbated by operation of the ultrasonic cutting machine in a workshop together with other machines.

The operating company is obliged to check this and, if necessary, to order personal protective equipment (ear protection) to be worn.





# Operating manual

**ULTRASONIC  
CUTTING MACHINE**

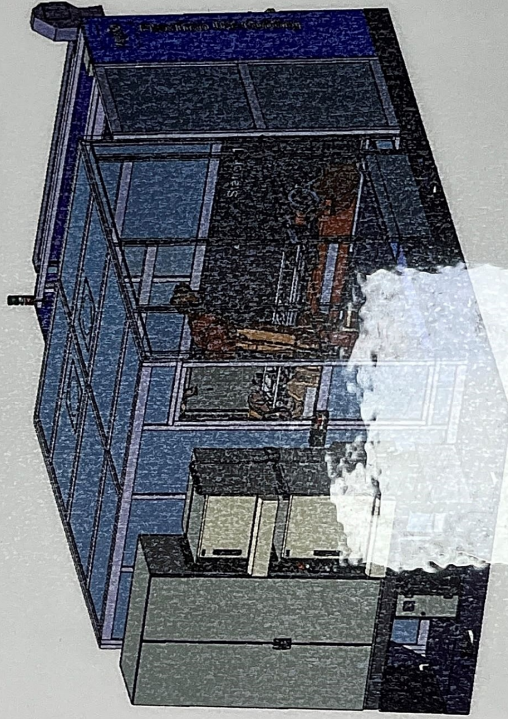
**with  
PRODUCT FIXTURES**

**and  
TOOL CHANGE  
TROLLEY**

**for**

**HONDA 2WS**

**INSTRUMENT PANEL  
LHD / RHD**



**Order No.:**

L.22888.02 /

L.22888.03 / L.22888.04 /

L.22888.05

Customer / Factory



DJK Europe GmbH

FRIMO Lotte GmbH

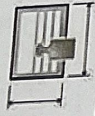
Hansaring 1  
49504 Lotte, Germany

Tel. +49 (0)5404 / 886-0  
Fax +49 (0)5404 / 886-137

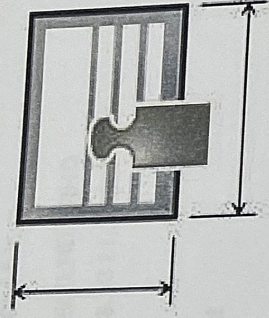
<http://www.frimo.com>

(Translation of the Original Operating Manual)





## 8 Technical data







**General information:**

Machine type/  
model designation:

ULTRASONIC CUTTING MACHINE with  
PRODUCT FIXTURES and  
TOOL CHANGE TROLLEY  
for HONDA 2WS  
INSTRUMENT PANEL LHD / RHD  
L.22888.02 / L.22888.03 / L.22888.04 /  
L.22888.05

Order number:

Year of construction:

2012

Manufacturer:

FRIMO Lotte GmbH

Layout:

CPL ULTRASONIC CUTTING MACHINE L67909

Layout:

CPL ULTRASONIC CUTTING SUPPORT L68275

2WS IP LHD/RHD

Layout:

CPL TOOL CHANGE TROLLEY L68255

Wiring diagram:

ULTRASONIC CUTTING MACHINE EFFAN0003

ULTRASONIC CUTTING SUPPORT

EFFAU0009

Pneumatics diagram:

L68482

**Ultrasonic cutting machine installation surface:**

Max. width:

Approx. 2670 mm

Max. depth:

Approx. 5325 mm

Max. height:

Approx. 2700 mm

**Ultrasonic cutting support dimensions:**

Max. width:

Approx. 1570 mm

Max. depth:

Approx. 750 mm

Max. height:

Approx. 355 mm

**Tool change trolley dimensions:**

Max. width:

Approx. 1445 mm

Max. depth:

Approx. 1230 mm

Max. height:

Approx. 1230 mm





**Weight:**

Ultrasonic cutting machine, complete:

Approx. 5000 kg

**Connected loads:**

Supply voltage:

3 x 400 V AC/N/PE

Frequency:

50 Hz

Control voltage:

24 V DC

Connected load:

20 kW

Rated current:

63 A

Compressed air:

6 – 12 bar, 1200 l/min

clean, dry, oil-free





**Robot:**

Type: IRB 2400 / 16  
Manufacturer: ABB  
Payload: 20 kg  
Reach: 1.55 m  
Protection type / version: Standard, IP 54  
Supplementary load  
Upper arm: 10 kg  
Wrist end: 2 kg  
Number of axes: 6  
Supply voltage: 200 – 600 V, 50 / 60 Hz  
Robot footprint: 723 x 600 mm  
Weight: 380 kg

**Power:**

Position repeatability (PR): 0.03 – 0.07 mm (average from ISO test)  
Path repeatability: 0.11 – 0.15 mm (average from ISO test)

**Axis speed:**

Axis 1 150 °/s  
Axis 2 150 °/s  
Axis 3 150 °/s  
Axis 4 360 °/s  
Axis 5 360 °/s  
Axis 6 450 °/s

**Working range:**

Axis 1 360°  
Axis 2 210°  
Axis 3 125°  
Axis 4 400°  
Axis 4 option unlimited  
Axis 5 240°  
Axis 6 800°  
Axis 6 option unlimited

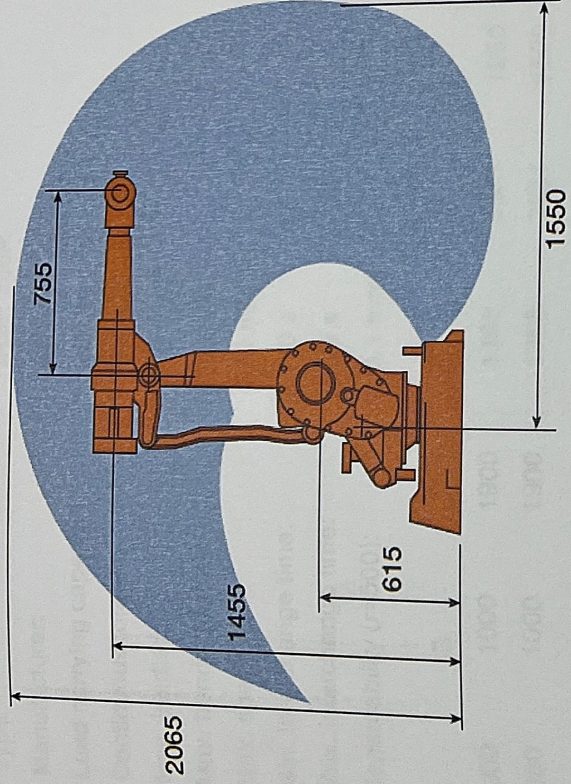
**Operating conditions:**

Ambient temperature: +5 °C to +45 °C  
Relative humidity: max. 95 %  
Noise level: max. 70 dB (A)  
Emission: EMC / EMI-shielded





Working range:





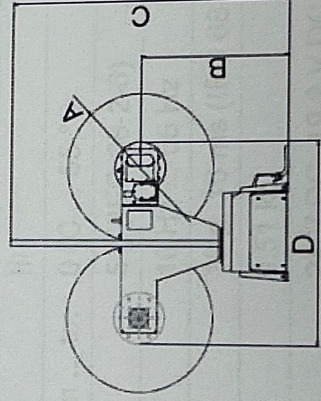
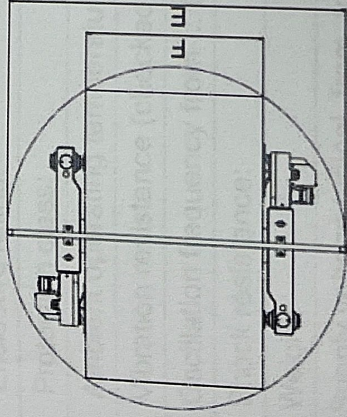


**Positioner:**

- Type: IRBP 250R
- Manufacturer: ABB
- Load carrying capacity: 250 kg
- Continuous torque: 350 Nm
- Max. inertia: 40 kgm<sup>2</sup>
- Max. bending torque: 650 Nm
- Max. speed: 30 min<sup>-1</sup>
- Min. interchange time: 3.0 s
- Max. interchange time: 3.5 s
- Repeatability (r=500): 0.1 mm

A	B	C	D	E	F
1000	1000	1900	1368	2381	1250
1000	1000	1900	1368	2581	1600

**Working range:**







**Sick safety light curtains:**

Type: C20S-045103D41  
Manufacturer: Sick  
Transmitter: 1041581

**Technical Data-Sender**

Protective field height:	450 mm
Resolution:	30 mm
Scanning range from ... to:	0 m ... 6 m
Housing cross-section:	34 mm x 29 mm
Type:	Type 2 (IEC 61496)
Safety integrity level:	SIL2 (IEC 61508), SILCL2 (IEC 62061)
Category:	category 2 (EN ISO 13849)
Test rate (internal test):	13 /s (EN ISO 13849)
Maximum demand rate:	8 /min (EN ISO 13849) <sup>1)</sup>
Performance level:	PL d (EN ISO 13849)
PFHd:	2.2 * 1E-08
TM (mission time):	20 a
Enclosure rating:	IP 54 (EN 60529)
Protection class:	III
Ambient operating temperature from ... to:	0 °C ... 55 °C
Vibration resistance (checked to):	5 g (IEC 68-2-6)
Oscillation frequency from ... to:	10 Hz ... 55 Hz
Shock resistance:	10 g, 16 ms (IEC 68-2-29)
Weight:	0.51 kg
Supply voltage typical, from, to:	24 V DC, 19.2 V DC, 28.8 V DC
Power consumption:	6.2 W
Wave length:	950 nm
System connection:	plug M12 x 5
Maximum connection cable cross-section:	0.25 mm <sup>2</sup>

<sup>1)</sup> Between two demands on a safety-related response of the device, at least 100 internal or external tests must be carried out.





Type: C20E-045103D41

Manufacturer: Sick

Receiver: 1041582

### Technical Data-Receiver

Protective field height:	450 mm
Resolution:	30 mm
Housing cross-section:	34 mm x 29 mm
Type:	Type 2 (IEC 61496)
Safety integrity level:	SIL2 (IEC 61508), SILCL2 (IEC 62061)
Category:	category 2 (EN ISO 13849)
Test rate (internal test):	13 /s (EN ISO 13849)
Maximum demand rate:	8 /min (EN ISO 13849) <sup>1)</sup>
Performance level:	PL d (EN ISO 13849)
PFHd:	2.2 * 1E-08
TM (mission time):	20 a
Enclosure rating:	IP 54 (EN 60529)
Protection class:	III
Ambient operating temperature from ... to:	0 °C ... 55 °C
Vibration resistance (checked to):	5 g (IEC 68-2-6)
Oscillation frequency from ... to:	10 Hz ... 55 Hz
Shock resistance:	10 g, 16 ms (IEC 68-2-29)
Weight:	0.51 kg
Response time:	8.5 ms
Supply voltage typical, from, to:	24 V DC, 19.2 V DC, 28.8 V DC
Power consumption:	8 W
Maximum switching current:	250 mA
Wave length:	950 nm
System connection:	plug M12 x 5
Maximum connection cable cross-section:	0.25 mm <sup>2</sup>

<sup>1)</sup> Between two demands on a safety-related response of the device, at least 100 internal or external tests must be carried out.





**Captron fork light barriers:**

Type: OGL-50T-PU6 / AIR, fork light barrier with blast pipe  
(air connection prevents contamination of the optics),  
through-beam

Manufacturer: Captron

Fork opening: 50 mm

Type of light: Red light, laser class 2

Leg length: 55 mm

Switching frequency: 10 kHz

**Technical data at +20°C, DC 24 V**

Supply voltage: DC 10...30V

Load current: 400 mA, short-circuit protection

Output: PNP - NO/NC switchable

Status display: yellow 4-fold LED

Voltage drop: 2.5 V at 200 mA

Current consumption: max. 60 mA typ. 40 mA

Switching frequency: 10 kHz

Resolution: Ø 0.05 mm

Switching hysteresis: < 0.02 mm

Reproducibility: 0.01 mm

Ambient temperature: -10...+60°C

Degree of protection: IP 65

Housing material: Aluminium, black anodized





**Roller door:**

Type:	RapidProtect 300
Manufacturer:	Albany
Clear door height:	1900 mm
Clear door width:	1950 mm
Door control unit:	MCC VectorControl – with frequency converter for dynamic door operation with quiet running performance
Opening speed:	max. 2.4 m/s
Closing speed:	approx. 1.2 m/s
Control unit attachment:	near the door
Control side:	left
Drive side:	left
Side parts:	Aluminium
Door curtain:	RollTex Plus
Power supply:	400 V 3-phase
Main frequency:	50 Hz
Motor output:	0.75 kW
Control voltage:	24 V DC
Protection type:	IP 55
Limit switch:	1x, Schmersal, SRB 301MC safety monitoring module
Miscellaneous:	stationary light curtain in side housing to monitor the closing plane