F SERIES™

Product Specification Document

MI9937 rev 006

Document history :

Publication date :	Release version
18-08-2016	prerelease document
24-08-2016	Changed cm to mm; corrected couple of typos
20-04-2018	Added 1832, footprint, sound measurements and updated to options new price list
22-05-2018	Added certifications
15-11-2018	Added F3220 and F3232
15-07-2019	Added F3220 and F3232 specs
16-07-2019	Added GoProduce
09-09-2020	Updated specs to Fxxxx-3x units Added F1432, removed F2630 and F1330
12-10-2020	F1432 working size update
17-11-2020	F1432 spec update

Notice

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1 Introduction

The F Series flatbed cutting tables are capable of cutting rigid materials as well as roll stock.
The cutting table base unit comes equipped with a drag knife tool module and an optical camera recognition system for accurate contour cutting of printed flexible or rigid substrate materials. A laser pointer is also included for manual origin registration.
A variety of tools, modules and knives are also available, depending on different applications.

2 Different Models

The F Series flatbed cutting tables are available in different sizes and different configurations. Depending on the region, certain sizes and or configurations may not be available. Also branding may be different. In this section we refer to the basic model names F1612, F1432, F1832, F3220 and F3232. Where known, it is marked if a specification is configuration depended.

3 Feature List

3.1 Hardware

3.1.1 Basic

- Vacuum pack (pumps(s), sound absorber, selector and switching valve).
- Pneumatic board.
- Conveyor system with media clamps
- Safety pack
- Fixed module with camera and LED pointer.
- Multi tool holder carriage for up to three tools.
- Roll support
- Drag knife module.
- Right ADC
- Left ADC

3.1.2 Options

- Basket (F1612 only)
- Extension table (F1612 only)
- Pump extension connections (not for F1612)
- Wireless controller with charger
- Vacuum cleaner (1400 W or 3000 W)
- Heavy Duty Roll Support (HDRS)

3.1.3 Modules

- Tangential module
- Routing module (part of routing system) HF and standard type
- Rotary module HT

3.1.4 Tools

- Kiss Cutting Tool
- Cut Out Tools (Heavy duty, single edge and double edge)
- V-Cut Tools (0°, 15°, 22.5°, 30° and 45°)
- Creasing Wheels (∅25 8pt, 4pt and 2pt; ∅15 2pt, 1pt and ∅50 R1.5pt)
- Electronic Oscillating Tool (EOT)
- Pneumatic Oscillating Tool (POT)
- Pneumatic Oscillating Tool - Long (POT-L)
- Universal pen holder tool (for pens ∅8 – ∅11).

3.2 Software

- **Axis Control (standard delivered)**
    - Full Control over the cutting table
    - Windows 7, Windows 8 or Windows 10
    - Connection by USB
    - Designed for touch screens for optimum interface for operator
    - Optional wireless controller control
- **GoProduce (Standard Delivered)**
    - Finishing software cut and print and cut jobs
    - Material Database
    - Trial version available
    - Windows 7, Windows 8 or Windows 10 (no home version)
    - Barcode support for automatically retrieving correct cut data
        - For handscanner included
        - For POSTNET barcode – optional, Trial available
    - Action sets to automate the workflow
    - Sorting facilities to shorten the output time
    - Camera recognition with all kind of compensations
    - Camera recognition of several registration mark shapes
    - Interactive milling functions
    - Embossing and engraving possibilities
    - Material Database
    - Vector clean up

4 Technical Specifications

4.1 Machine dimensions

	F1612		F1432		F1832	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**
Height	1100	43.3	1220	48	1220	48
Width	2470	97.2	2304	90.7	2785	109.7
Depth	2195	86.4	4220	166.1	4220	166.1
	kg	**pounds**	**kg**	**pounds**	**kg**	**pounds**
Weight	500	1100	TBD	TBD	1530	3375

	F3220		F3232	
	mm	**inch**	**mm**	**inch**
Height	1220	48	1220	48
Width	4215	165.9	4215	165.9
Depth	3125	123	4220	166.1
	kg	**pounds**	**kg**	**pounds**
Weight	1760	3883	1974	4347

Table 4-1 F Series dimensions

4.2 Shipping dimensions

	F1612									
	Width		Depth		Height		Weight		Weight (tare)	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**kg**	**lbs**	**kg**	**lbs**
Box	2680	105.5	2230	87.8	1245	49	870	1920	270	595

	F1432									
	Width		Depth		Height		Weight		Weight (tare)	
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**kg**	**lbs**	**kg**	**lbs**
Box	4530	178.3	2225	87.6	1785	70.3	TBD	TBD	TBD	TBD

	F1832								Weight (tare)	
	Width		Depth		Height		Weight			
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**kg**	**lbs**	**kg**	**lbs**
Box	4030	159	980	39	1090	43	870	1918	250	552
Box	2450	97	980	39	1090	43	470	1036	150	330
Box	1980	78	1180	47	890	35	415	915	150	330
Box	1980	78	1180	47	890	35	325	717	150	330
Box	1980	78	1180	47	890	35	300	661	150	330
Total							2380	5247	850	1872

	F3220								Weight (tare)	
	Width		Depth		Height		Weight			
	mm	**inch**	**mm**	**inch**	**mm**	**inch**	**kg**	**lbs**	**kg**	**lbs**
Box	4580	181	1280	51	1090	43	706	1557	250	552
Box	4040	160	990	39	1110	44	944	2082	200	441
Box	2500	99	1200	48	910	36	500	1103	150	330
Box	2640	104	1200	48	910	36	360	794	150	330
Total							2510	5536	750	1653

	F3232								Weight (tare)	
	Width		Depth		Height		Weight			
	mm	**inch**	**m**	**inch**	**m**	**inch**	**kg**	**lbs**	**kg**	**lbs**
Box	4570	180	1290	51	1090	43	830	1830	250	552
Box	4030	159	980	39	1090	43	900	1985	200	441
Box	1980	78	1180	47	1200	48	625	1378	150	330
Box	1980	78	1180	47	890	36	286	631	150	330
Box	1980	78	1180	47	890	36	233	514	150	330
Total							2874	6330	900	2205

Table 4-2 F series shipping dimensions

4.3 Media handling

	F1612	F1432	F1832
Media Width	Up to 1650 mm – 65”	Up to 1420 mm – 55.9”	Up to 1900 mm – 74.8”
Working Area (1)	1600 x 1200 mm 63” x 47.2”	1365 x 3200 mm 53.7” x 126”	1840 x 3200 mm 72.4” x 126”
Max. working length Single Panel(1)	1200 mm – 47.2”	3200 mm – 126”	3200 mm – 126”
Multi Panel(2)	50000 mm – 164 ft		
Media Weight	maximum 300 kg - 661 lbs maximum 100kg/m2 - 20.5 lbs/ft²		
Media Weight using Conveyor	maximum 60 kg – 132 lbs maximum 30 kg/m2 – 6.1 lbs/ft²		
Roll Specifications with Roll Support & Flanges	Diameter: maximum 17 cm – 6.7” Weight: maximum 25 kg – 55.1 lbs Inner Core Diameter: 7,5 cm – 3”		
Maximum Roll Weight with Roll Support	50 kg – 110.2 lbs		
Vacuum	1.3 kW (50Hz) 1,5 kW (60Hz)	2,2 kW (50Hz) 2,55 kW (60Hz)	2x 2,2 kW (50Hz) 2 x 2,55 kW (60Hz)
Vacuum Zones	Variable over width of machine	6 zones (2 rows x 3 columns)	8 zones (2 rows x 4 columns)
Repeatability	Within ± 0.05 mm – 0.002” on plots		
Accuracy	0.05 % of move or 0.05 mm – 0.002”, whichever is greater		
Clearance (3)	50 mm - 1.9”		

(1) Maximum working area can be smaller, depending on the mounted tools

(2) Connecting panels can have a shift of up 1 mm (0.004 in)

(3) Distance between vacuum table and Y-beam. Not taking into account the thickness of a cutting matt or conveyor belt

	F3220	F3232
Media Width	Up to 3320 mm – 130.7”	Up to 3320 mm – 130.7”
Working Area(1)	3270 x 2100 mm 128.7” x 82.7”	3270 x 3200 mm 128.7” x 126”
Max. working length Single Panel(1)	2100 mm 82.7”	3200 mm 126”
Multi Panel(2)	50000 mm – 164 ft	
Media Weight	maximum 300 kg - 661 lbs maximum 100kg/m2 - 20.5 lbs/ft²	
Media Weight using Conveyor	maximum 60 kg – 132 lbs maximum 30 kg/m2 – 6.1 lbs/ft²	
Roll Specifications with Roll Support & Flanges	Diameter: maximum 17 cm – 6.7” Weight: maximum 25 kg – 55.1 lbs Inner Core Diameter: 7,5 cm – 3”	
Maximum Roll Weight with Roll Support	50 kg – 110.2 lbs per side or 100 kg – 220.5 lbs if roll is equally carried by both sides	
Vacuum	4 kW (50Hz) 4,6 kW (60 Hz)	2x 2,2 kW (50Hz) 2 x 2,55 kW (60Hz)
Vacuum Zones	zones (1 row x 7 columns)	zones (2 rows x 7 columns)
Repeatability	Within ± 0.05 mm – 0.002” on plots	
Accuracy	0.05 % of move or 0.05 mm – 0.002”, whichever is greater	
Clearance (3)	50 mm - 1.9”	

(1) Maximum working area can be smaller, depending on the mounted tools

(2) Connecting panels can have a shift of up 1 mm (0.004 in)

(3) Distance between vacuum table and Y-beam. Not taking into account the thickness of a cutting matt or conveyor belt

Table 4-3 F Series media specifications

4.4 Performance

	F series
Speed	Up to 1000 mm/s (40 ips)
Acceleration	Up to 1 G
Repeatability	Within ± 0.05 mm – 0.002” on plots
Accuracy	0.05 % of move or 0.05 mm – 0.002”, whichever is greater
Mechanical resolution	0.005 mm – 0.0002”
Maximum Allowed Forces	Vertical: 120 Newton (27 Pounds) Horizontal: 200 Newton (45 Pounds)

Table 4-4 F Series performances

4.5 Modules

4.5.1 Camera Module

The camera module has a Class II laser pointer in it to help with setting origin and size. Do not stare directly into it.

4.5.2 Drag Module

Type	Coil	
Control	Electronic pressure control	
Maximum Pressure	600gr.	
Maximum tool-lift (1)	7 mm	0.16”
Maximum Module lift (manual adjustment)	20 mm	0.8”

(1) Electronic controlled.

4.5.3 Tangential Module

Type	Spindle-motor	
Control	Electronic height control	
Maximum allowed vertical force	12kg – 26.5 lbs	
Maximum allowed horizontal force	20kg – 44.1 lbs	
Maximum tool-lift (1)	50mm	1.97”

(1) Electronic controlled.

4.5.4 Router Module

Type	Spindle-motor	
Control	Electronic height control	
Maximum allowed vertical force	12kg – 26.5 lbs	
Maximum allowed horizontal force	20kg – 44.1 lbs	
Maximum tool-lift (1)	70mm	2.7”
Maximum clearance	32mm	1.25”
Maximum bit diameter	11mm	7/16

(1) Electronic controlled.

4.6 Noise level

4.6.1 F1612

Measurement (operator position) 1 pump active: 70 dBA
Measurement at 1 m from active pump: 70 dBA
When pump is blowing: +10 dBA
When POT is cutting: +8 dBA

4.6.2 F1432

Information not available at the time of publication.

4.6.3 F1832

Information not available at the time of publication.

4.6.4 F3220

Information not available at the time of publication.

4.6.5 F3232

Measurement (operator position) 1 pump active: 72,5 dBA
Measurement (operator position) 2 pump active: 76 dBA

Measurement at 1 m from 1 active pump: 83,5 dBA
Measurement at 1 m from 2 active pumps: 85,7 dBA

When pumps are blowing: +5 dBA
When POT is cutting: +8 dBA

During operating or servicing the machine the operator should use appropriate protective equipment, which includes: Ear protection if the continuous sound level pressure is above 80dB.

4.7 Interface

Communication	USB
USB I/O Port connector Mating connector	USB series “B” receptacle (female plug) USB series “B” plug (male plug)
Axis Control	Acts as control panel
Remote Controller (optional)	Wireless controller

Table 4-5 F Series INTERFACE SPECIFICATIONS

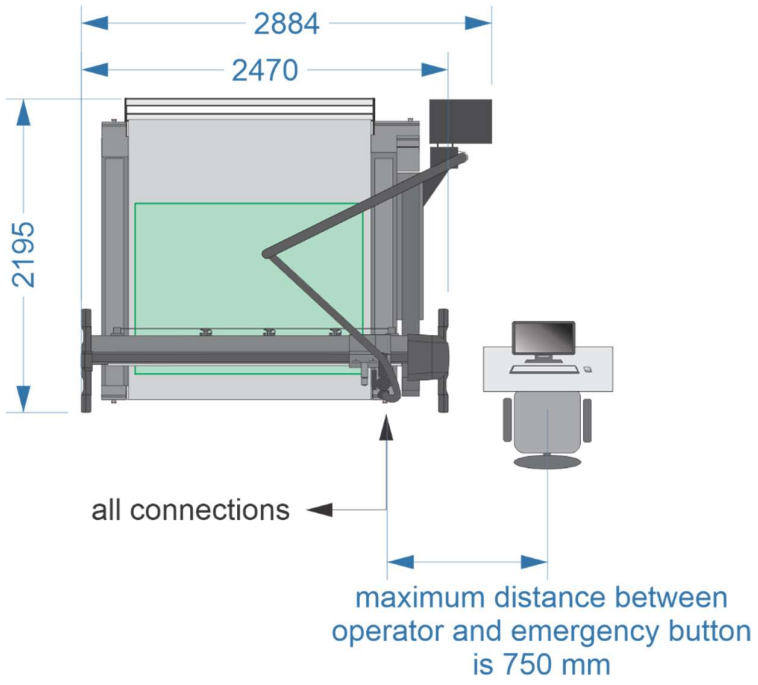
4.8 Environmental

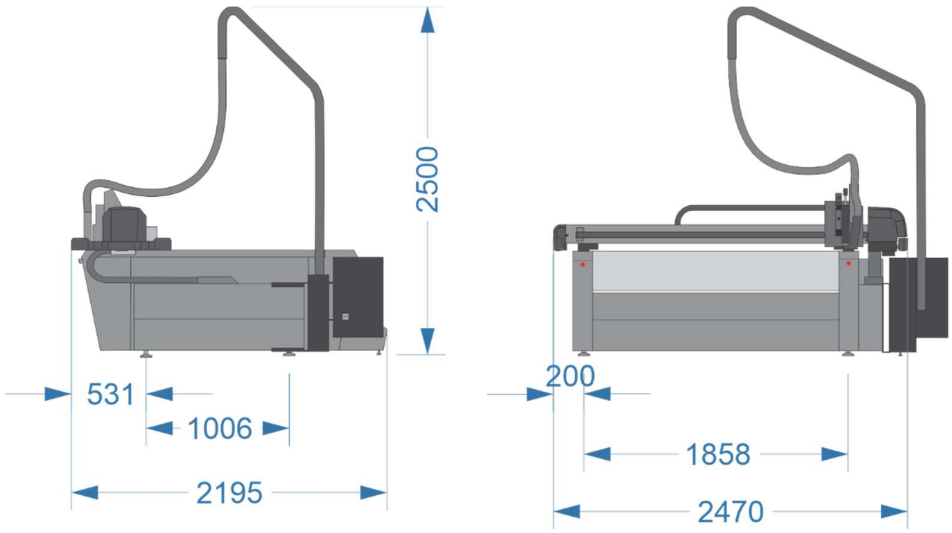
Operating Temperature	15 to 35 °C	59 to 95 °F
Storage temperature	-30 to 70 °C	-22 to 158°F
Vacuum pump	If installed separately: ambient temperature maximum 40 °C or 104 °F	
Relative humidity	35 - 75 %, non-condensing	

Table 4-6 F Series environmental specifications

4.8.1 Typical setup F1612

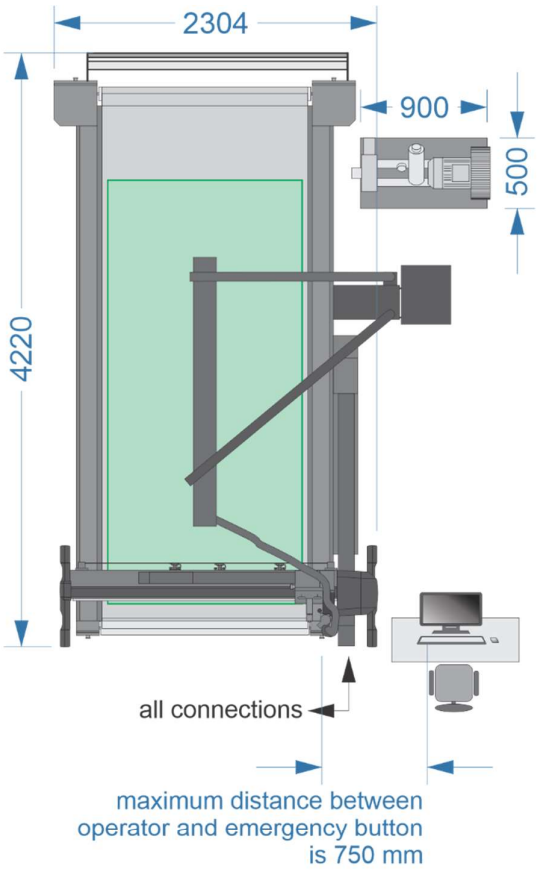
All values are in mm

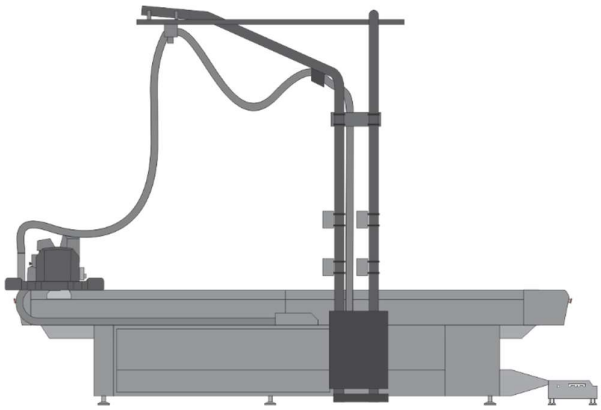


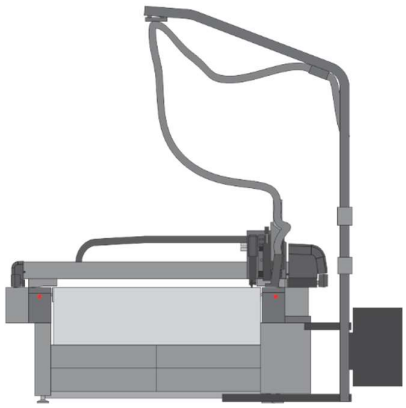


4.8.2 Typical setup F1432

All values are in mm

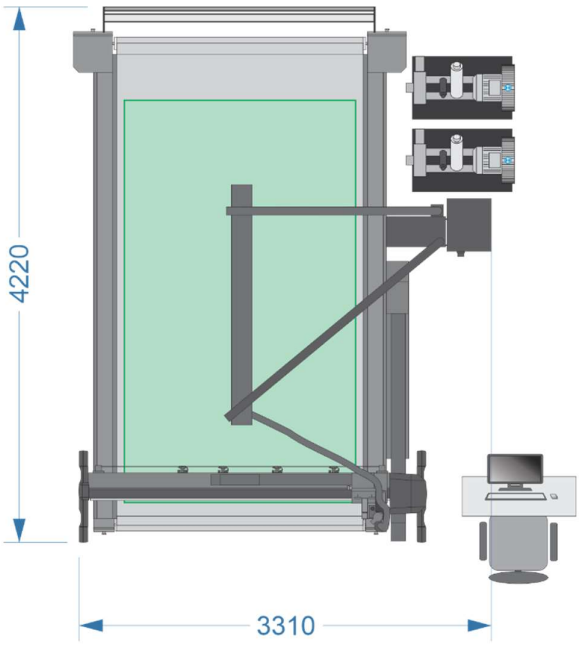


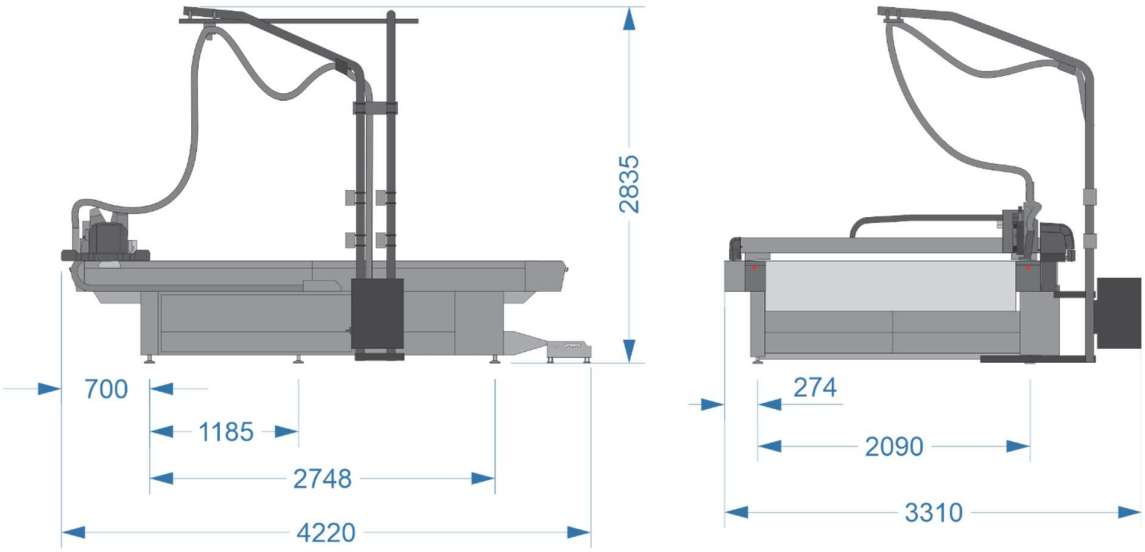




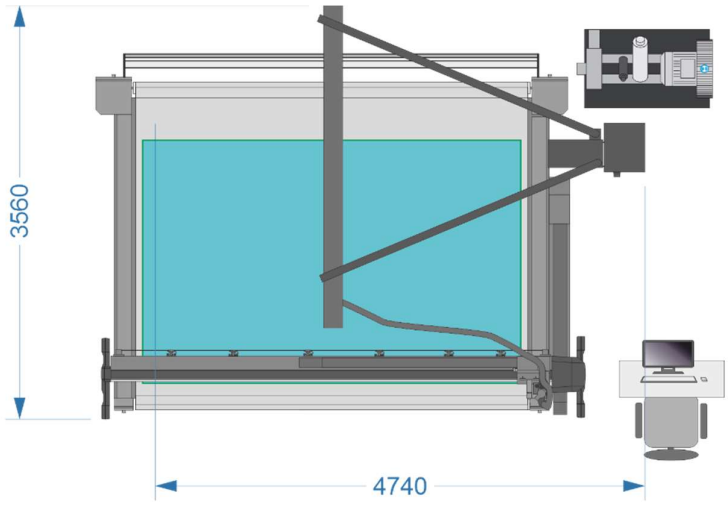
4.8.3 Typical setup F1832

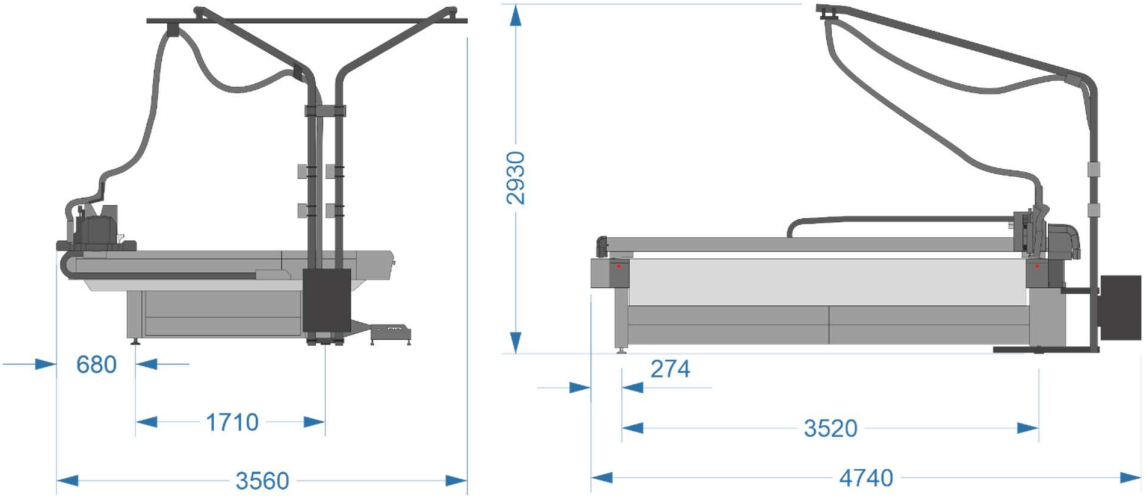
All values are in mm



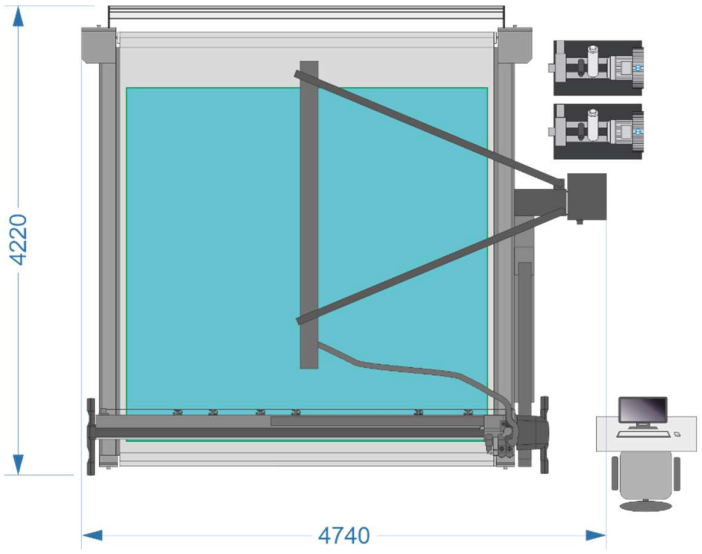


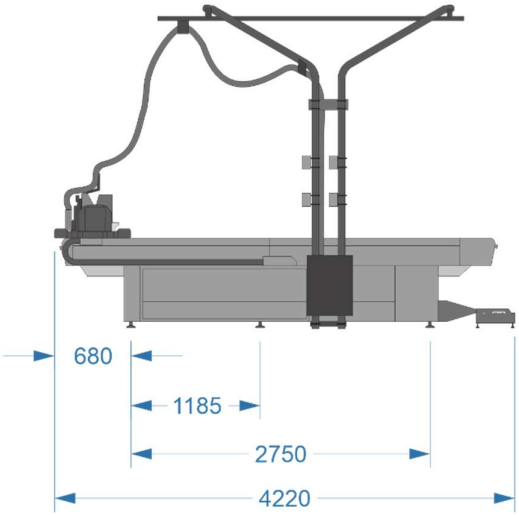
4.8.4 Typical setup F3220

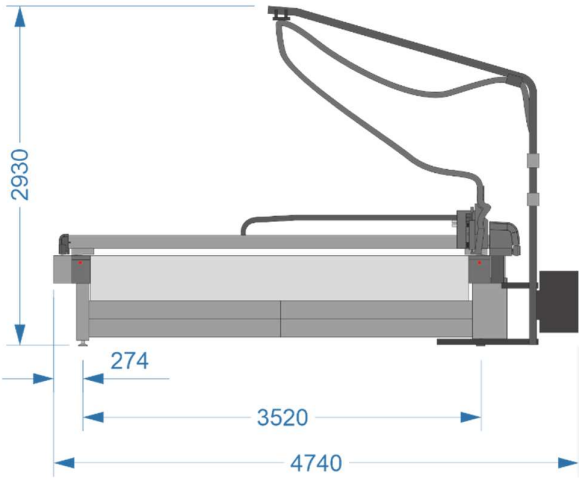




4.8.5 Typical setup F3232

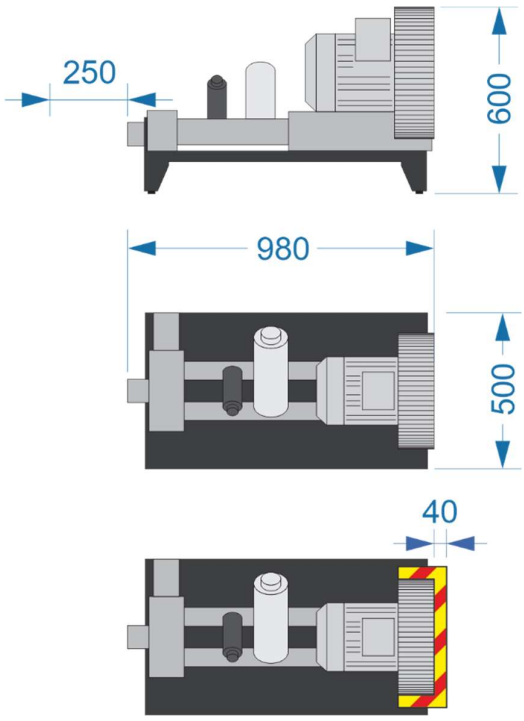






4.8.6 Pump assy dimensions

F1432 – F1832 - F3232



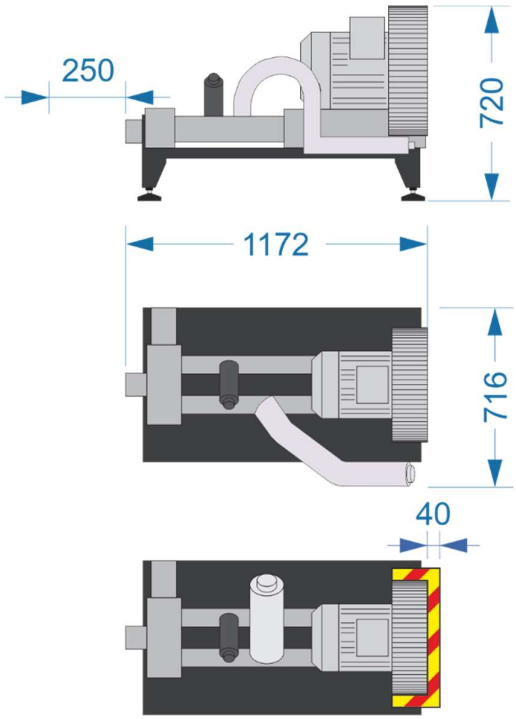
Dimensions are displayed in mm

Weight of the pump assembly is 62 kg – 152 lbs

Leave 250 mm – 10 inch of distance for connecting the pump with the connection kit hose.

Make sure there is a minimum space of 40 mm – 1.6 inch between the fan hood and the surrounding objects.

F3220



Dimensions are displayed in mm

Weight of the pump assembly is 150 kg – 330 lbs

Leave 250 mm – 10 inch of distance for connecting the pump with the connection kit hose.

Make sure there is a minimum space 40 mm – 1.6 inch between the fan hood and the surrounding objects.

4.9 Electrical

4.9.1 Vacuum cleaner router option

F1612

Type	3x400V + N , 50Hz	3 x 230V, 50Hz	3x 208V + N ,60 Hz	3x 208V ,50-60 Hz
Metabo	OK	OK	Cannot be used	Cannot be used
3Flow	OK	OK	Cannot be used	Cannot be used
Hercules	OK main breaker 20A (1)	Extra socket (2)	Cannot be used	Cannot be used
Delfin DM3EL	Cannot be used	Cannot be used	Max 2250W (4) with: Extra socket (2) Relay 30A (3)	Max 2250W (4) with: Extra socket (2) Relay 30A (3)
3rd party	Max. 3000W Main breaker 20A (1) Relay 30A (3)	Max. 2400W or Max. 3000W with: Extra socket (2) Main breaker 20A (1) Relay 30A (3)	Max 1500W (4) or Max 2250W (4) with: Extra socket (2) Relay 30A (3)	Max 1500W(4) or Max 2250W (4) with: Extra socket (2) Relay 30A (3)

(1) Models build before September 2017 may contain a main circuit breaker of 15A. If this is the case, then it has to be replaced with one of 20A (MF9017)
(2) Extra socket means that a secondary wall socket (single phase) needs to be provided for the vacuum cleaner.
(3) Router option boards build before September 2017 may have a relay for the vacuum cleaner of 12A. In this case, the relay needs to be changed by a relay 30A (kit 500-9346).
(4) Specifications given for a 110V vacuum cleaner.

F1432 - F1832 – F3220 – F3232

Type	3x400V + N , 50Hz	3 x 230V, 50Hz	3x 208V + N ,60 Hz	3x 208V ,50-60 Hz
Metabo	OK	OK	Cannot be used	Cannot be used
3Flow	OK	OK	Cannot be used	Cannot be used
Hercules	OK	Extra socket (1)	Cannot be used	Cannot be used
Delfin DM3EL	Cannot be used	Cannot be used	Max 2250W (4) with: Extra socket (2) Relay 30A (3)	Max 2250W (4) with: Extra socket (2) Relay 30A (3)
3rd party	Max. 3000W	Max. 2400W or Max. 3000W with: Extra socket (1)	Max 1500W (2) or Max 2000W (2) with: Extra socket (1)	Max 1500W(2) or Max 2000W(2) with: Extra socket (1)

(1) Extra socket means that a secondary wall socket (single phase) needs to be provided for the vacuum cleaner.
(2) Specifications given for 110V vacuum cleaner.

4.9.2 Recommendations for extra power supply devices

Ups recommendations

table	Max load	UPS
F1612	5kW (*)	7.5kW
F1432	6-8 Kw (*)	9 – 12kW
F1832	8-10 Kw (*)	12 – 15kW
F3220	8-10 Kw (*)	12 – 15kW
F3232	8-10 Kw (*)	12 – 15kW

(*) depending on used vacuum cleaner. For the F1612 a standard vacuum cleaner of 1400W is assumed.

3 Phase converter

Due to the load (vacuum pumps) it is recommended to use a rotary 3 phase converter instead of a static one. However, the best way is to contact the local dealer of 3 phase converters and ask them what they recommended. Just use the table above to tell them the maximum load and tell them it is a mixed load where about 30 percent is used by vacuum pumps.

5 F Series: Certifications.

Conforms to ANSI/UL Standard 62368-1 and CAN/CSA Standard C22.2 No 62368-1.

FCC Class A

CE Marking
Applicable Directives:

Directive 2006/42/EC of the European Parliament and of the Council on machinery (MD)

Directive 2014/35/EU of the European Parliament and of the Council
on electrical equipment designed for use within certain voltage limits (LVD)

Directive 2014/30/EU of the European Parliament and of the Council
on electromagnetic compatibility (EMC)

Directive 2011/65/EU of the European Parliament and of the Council
on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS2)

Harmonized Standards to which Conformity is declared:
EN ISO 12100:2010,
EN 60204-1:2006+A1:2009+AC:2010,
EN 62368-1:2014+AC:2015
EN 55032:2012+AC:2013,
EN 55035:2017,
EN 61000-3-2:2014,
EN 61000-3-3:2013,
EN 50581:2012.

Conforms to Directive 2012/19/EU of the European Parliament and of the Council on Waste Electrical and Electronic Equipment (WEEE)

Conforms to Directive 2006/66/EC of the European Parliament and of the Council on Batteries and Accumulators and Waste Batteries and Accumulators

Contains no substances, in a concentration above 0.1 % weight by weight, included on the candidate list according to article 59 (1, 10) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

For the conformity assessment of the above directives all published amendments were taken into account.