Operating instructions F45 ElmoDrive

1.1/2015

GB

1 Foreword

Please read these operating instructions carefully before commissioning the machine.

No liability will be accepted for any injury, damage or disruption to operations resulting from failure to comply with these operating instructions!

Persons operating this sliding table saw must have had sufficient instruction and be suitably qualified!

These operating instructions cannot be regarded as a binding type description as the manufacturer may have carried out technical modifications.

The operating instructions must always be available where the machine is being used. They must be read and heeded by any person performing the following activities at or on the machine:

- Operating including set-up, troubleshooting during operation, elimination of production waste, care, disposal of operating and auxiliary materials
- Maintenance, repair, inspection
- Transport

It is necessary to comply with national regulations on health and safety at work and environmental protection, in addition to the operating instructions.

The removal of safety devices, especially safety hoods for the saw blade cover and riving knives, will endanger the operator and may lead to accidents.

Safe work is only possible with a clean machine and a clean environment!

2 Identification

2.1 Machine identification

The type plate fitted to the machine frame serves for identifying the machine and other important machine data.

Meaning of the stated descriptions:

Fig. 2-1 Type plate

Type:	Machine designation
Number:	Machine specific identification number
Year of construction:	Year of manufacture
Saw blade min Ø	Diameter of the smallest permissible saw blade
Saw blade max Ø	Diameter of the largest permissible saw blade
Guide slot width of the riving knife:	Diameter of the guide bolts for the riving knife in the riving knife holding fixture

2.2 Certificates

Conformity declaration as defined by the machinery directive, Annex II 1A

-Original / Translation of the original

Manufacturer:	Wilhelm Altendorf GmbH & Co. KG Maschinenbau Wettinerallee 43/45 32429 Minden Germany
Person authorised to compile the technical documentation:	Rolf Tweer, Technology Management, Wilhelm Altendorf GmbH & Co. KG Maschinenbau
Product:	Sliding table saw, type F45
Machine number:	
Authority named for prototype testing according to annex IX:	DGUV Test Prüf-und Zertifizierungsstelle Holz Fachbereich Holz und Metall Vollmoellerstraße 11 70563 Stuttgart Germany Identification number 0392

We hereby declare that the above-mentioned product conforms with all applicable regulations of machinery directive 2006/42/EC. It fulfils the requirements of the following applicable directives:

- Low-voltage directive 2006/95/EC
- EMC directive 2004/108/EC

The following harmonised standards have been applied:

- DIN EN 1870-18:2007:2013, Safety of woodworking machines - Circular sawing machines - Part 18: Dimension saws
- DIN EN ISO 12100 :2011-03 Safety of machinery - General principles for design - Risk assessment and risk reduction
- DIN EN 60204-1:2007:-06, Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Minden, 20/05/2015

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Piotr Szablewski, Manager of Development & Construction

EC prototype testing certificate

Bescheinigung
Nr. **HO 131059**
vom 02.07.2015

DGUV Test
Prüf- und Zertifizierungsstelle
Holz
Fachbereich Holz und Metall

Europäisch notifizierte Stelle
Kenn-Nummer: 0392

EG-Baumusterprüfbescheinigung

Name und Anschrift des Bescheinigungsinhabers: (Auftraggeber)	Wilhelm Altendorf GmbH & Co. KG Maschinenbau Wettinerallee 43/45 32429 Minden
Produktbezeichnung:	**Formatkreissägemaschine**
Typ:	F45 ProDrive, F45 EvoDrive, F45 ElmoDrive
Prüfgrundlage:	GS-HO-01: 08.2013 Holzbearbeitungsmaschinen
Zugehöriger Prüfbericht:	114114
Weitere Angaben:	Bestimmungsgemäße Verwendung: Bearbeiten von Holz und gleichartig zu bearbeitenden Werkstoffen. Mitgeprüfte Ausstattung: siehe Anlage Nachfolgebescheinigung zu Nr. HO 131059 vom 30.09.2013.

Das geprüfte Baumuster entspricht den einschlägigen Bestimmungen der Richtlinie 2006/42/EG **(Maschinen)**.
Diese Bescheinigung ist gültig bis: **10.03.2016**
Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungsordnung.

Frank Hagendorff
Leiter der Prüf- und Zertifizierungsstelle

PZB02 11.14 Deutsche Gesetzliche Unfallversicherung (DGUV) e.V.
Spitzenverband der gewerblichen Berufsgenossenschaften
und der Unfallversicherungsträger der öffentlichen Hand

DGUV Test Prüf- und Zertifizierungsstelle Holz
Fachbereich Holz und Metall
Vollmoellerstraße 11 • 70563 Stuttgart • Deutschland

DGUV Test
Prüf- und Zertifizierungsstelle Holz
Fachbereich Holz und Metall

Anlage zu EG-Baumusterprüfbescheinigung Nr. HO 131059, Ausstellungsdatum 02.07.2015

Sicherheitsrelevante Ausstattung, die in mindestens einem der Typen ProDrive, EvoDrive und ElmoDrive enthalten ist
Bildschirmsteuerung mit 12" Touchscreen
Doppelrollwagenlänge 2.250 / 3.000 / 3.200 / 3.400 / 3.800 / 4.300 / 5.000 mm
TIP-SERVO-DRIVE (kraftbetriebener Doppelrollwagen)
Start-Stop-Taster am Doppelrollwagen
Antrieb der Hauptsäge über Frequenzumrichter
Hauptsägeblattdurchmesser max. 550 mm
Verstärkter Antriebsmotor für die Hauptsäge 7,5 kW bzw. 11 kW
Vorritzsäge mit kraftbetriebener Verstellung
Vorritzaggregat Typ Rapido Plus, Höhen-, Seiten- und Schnittbreitenverstellung kraftbetrieben
Kraftbetriebener Parallelanschlag
Winkelgehrungsanschlag mit Längenmesssystem
Parallelogramm-Querschlitten
Einseitiger Gehrungsanschlag
Duplex-Gehrungsanschlag
Digitalanzeige für den Parallelanschlag
Kraftbetriebener Gehrungsanschlag
Tischverlängerungen, 1.200 / 1.600 / 2.000 mm
Querschlittenverbreiterung
Zusätzlicher Querschlitten mit Bodenstützrolle
Schwenkbarer Vordertisch; nicht in Verbindung mit kraftbetriebenem Parallelanschlag
2. Auflage am Doppelrollwagen
Schnellspanner, manuell
Schnellspanner, elektro-pneumatisch
Vakuumspanneinheiten im Doppelrollwagen; nicht in Verbindung mit TIP-SERVO-DRIVE
Druckbalken, pneumatisch
Parallelschneidvorrichtung
Laser-Richtlicht zur Schnittfugenanzeige
Sprühvorrichtung
Drehstromsteckdose am Maschinenständer, z.B. für Absaugung, Vorschubapparat

Stuttgart, 02.07.2015

Leiter der Prüf- und Zertifizierungsstelle
Frank-Hagendorff

GS test certificate

Bescheinigung
Nr. **HO 131060**
vom 02.07.2015

DGUV Test
Prüf- und Zertifizierungsstelle
Holz
Fachbereich Holz und Metall

GS - Zertifikat

Name und Anschrift des Bescheinigungsinhabers: (Auftraggeber)	Wilhelm Altendorf GmbH & Co. KG Maschinenbau Wettinerallee 43/45 32429 Minden
Produktbezeichnung:	**Formatkreissägemaschine**
Typ:	F45 ProDrive, F45 EvoDrive, F45 ElmoDrive
Prüfgrundlage:	GS-HO-01: 08.2013 Holzbearbeitungsmaschinen
Zugehöriger Prüfbericht:	114114
Weitere Angaben:	Bestimmungsgemäße Verwendung: Bearbeiten von Holz und gleichartig zu bearbeitenden Werkstoffen. Mitgeprüfte Ausstattung: siehe Anlage Nachfolgebescheinigung zu Nr. HO 131060 vom 30.09.2013.

Das geprüfte Baumuster stimmt mit den in § 21 Absatz 1 des Produktsicherheitsgesetzes genannten Anforderungen überein. Der Bescheinigungsinhaber ist berechtigt, das umseitig abgebildete GS-Zeichen an den mit dem geprüften Baumuster übereinstimmenden Produkten anzubringen. Der Bescheinigungsinhaber hat dabei die umseitig aufgeführten Bedingungen zu beachten.
Diese Bescheinigung einschließlich der Berechtigung zur Anbringung des GS-Zeichens ist gültig bis: **10.03.2016**
Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungsordnung.

Frank Hagendorff
Leiter der Prüf- und Zertifizierungsstelle

PZB04 11.14 Deutsche Gesetzliche Unfallversicherung (DGUV) e. V.
Spitzenverband der gewerblichen Berufsgenossenschaften und der Unfallversicherungsträger der öffentlichen Hand
Vereinsregister-Nr. VR 751 B, Amtsgericht Charlottenburg

DGUV Test Prüf- und Zertifizierungsstelle Holz
Fachbereich Holz und Metall
Vollmoellerstraße 11 • 70563 Stuttgart • Deutschland
Telefon: +49 (0) 7 11 13 34-11 171 • Fax: +49 (0) 7 11 13 34-21 171

DGUV Test
Prüf- und Zertifizierungsstelle
Holz
Fachbereich Holz und Metall

Anlage zu GS - Zertifikat Nr. HO 131060, Ausstellungsdatum 02.07.2015

Sicherheitsrelevante Ausstattung, die in mindestens einem der Typen ProDrive, EvoDrive und ElmoDrive enthalten ist
Bildschirmsteuerung mit 12" Touchscreen
Doppelrollwagenlänge 2.250 / 3.000 / 3.200 / 3.400 / 3.800 / 4.300 / 5.000 mm
TIP-SERVO-DRIVE (kraftbetriebener Doppelrollwagen)
Start-Stop-Taster am Doppelrollwagen
Antrieb der Hauptsäge über Frequenzumrichter
Hauptsägeblattdurchmesser max. 550 mm
Verstärkter Antriebsmotor für die Hauptsäge 7,5 kW bzw. 11 kW
Vorritzsäge mit kraftbetriebener Verstellung
Vorritzaggregat Typ Rapido Plus, Höhen-, Seiten- und Schnittbreitenverstellung kraftbetrieben
Kraftbetriebener Parallelanschlag
Winkelgehrungsanschlag mit Längenmesssystem
Parallelogramm-Querschlitten
Einseitiger Gehrungsanschlag
Duplex-Gehrungsanschlag
Digitalanzeige für den Parallelanschlag
Kraftbetriebener Gehrungsanschlag
Tischverlängerungen, 1.200 / 1.600 / 2.000 mm
Querschlittenverbreiterung
Zusätzlicher Querschlitten mit Bodenstützrolle
Schwenkbarer Vordertisch; nicht in Verbindung mit kraftbetriebenem Parallelanschlag
2. Auflage am Doppelrollwagen
Schnellspanner, manuell
Schnellspanner, elektro-pneumatisch
Vakuumspanneinheiten im Doppelrollwagen; nicht in Verbindung mit TIP-SERVO-DRIVE
Druckbalken, pneumatisch
Parallelschneidvorrichtung
Laser-Richtlicht zur Schnittfugenanzeige
Sprühvorrichtung
Drehstromsteckdose am Maschinenständer, z.B. für Absaugung, Vorschubapparat

Stuttgart, 02.07.2015

Leiter der Prüf- und Zertifizierungsstelle
Frank Hagendorff

DGUV Test Certificate

Bescheinigung
Nr. **HO 111007**
vom 02.07.2015

DGUV Test
Prüf- und Zertifizierungsstelle
Holz
Fachbereich Holz und Metall

DGUV Test - Zertifikat

Name und Anschrift des Bescheinigungsinhabers: (Auftraggeber)	Wilhelm Altendorf GmbH & Co. KG Maschinenbau Wettinerallee 43/45 32429 Minden
Produktbezeichnung:	**Formatkreissägemaschine**
Typ:	F45 ProDrive, F45 EvoDrive, F45 ElmoDrive
Prüfgrundlage:	GS-HO-05: 08.2013 Staubemission von Holzbearbeitungsmaschinen
Zugehöriger Prüfbericht:	114114
Weitere Angaben:	Bestimmungsgemäße Verwendung: Bearbeiten von Holz und gleichartig zu bearbeitenden Werkstoffen Hinweis: Holzstaubgeprüft im Sinne von BGI 739-1. Dem DGUV Test-Zeichen muss der Vermerk „holzstaubgeprüft“ angefügt werden. Mitgeprüfte Ausstattung: siehe Anlage Nachfolgebescheinigung zu Nr. HO 111007 vom 30.09.2013.

Das geprüfte Baumuster entspricht der oben angegebenen Prüfgrundlage.
Der Bescheinigungsinhaber ist berechtigt, das umseitig abgebildete DGUV Test-Zeichen an den mit dem geprüften Baumuster übereinstimmenden Produkten sofern zutreffend mit dem oben genannten Zeichenzusatz anzubringen.
Diese Bescheinigung einschließlich der Berechtigung zur Anbringung des DGUV Test-Zeichens ist gültig bis: **10.03.2016**

Weiteres über die Gültigkeit, eine Gültigkeitsverlängerung und andere Bedingungen regelt die Prüf- und Zertifizierungsordnung.

DGUV Test

Frank Hagendorf
Leiter der Prüf- und Zertifizierungsstelle

DGUV Test Prüf- und Zertifizierungsstelle HO Fachbereich Holz und Metall

PZBOB 11.14 Deutsche Gesetzliche Unfallversicherung (DGUV) e.V.
Spitzenverband der gewerblichen Berufsgenossenschaften und der Unfallversicherungsträger der öffentlichen Hand
Vereinsregister-Nr. VR 751 B, Amtsgericht Charlottenburg

DGUV Test Prüf- und Zertifizierungsstelle Holz
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DGUV Test
Prüf- und Zertifizierungsstelle
Holz
Fachbereich Holz und Metall

Anlage zu DGUV Test - Zertifikat Nr. HO 111007, Ausstellungsdatum 02.07.2015

Sicherheitsrelevante Ausstattung, die in mindestens einem der Typen ProDrive, EvoDrive und ElmoDrive enthalten ist
Bildschirmsteuerung mit 12" Touchscreen
Doppelrollwagenlänge 2.250 / 3.000 / 3.200 / 3.400 / 3.800 / 4.300 / 5.000 mm
TIP-SERVO-DRIVE (kraftbetriebener Doppelrollwagen)
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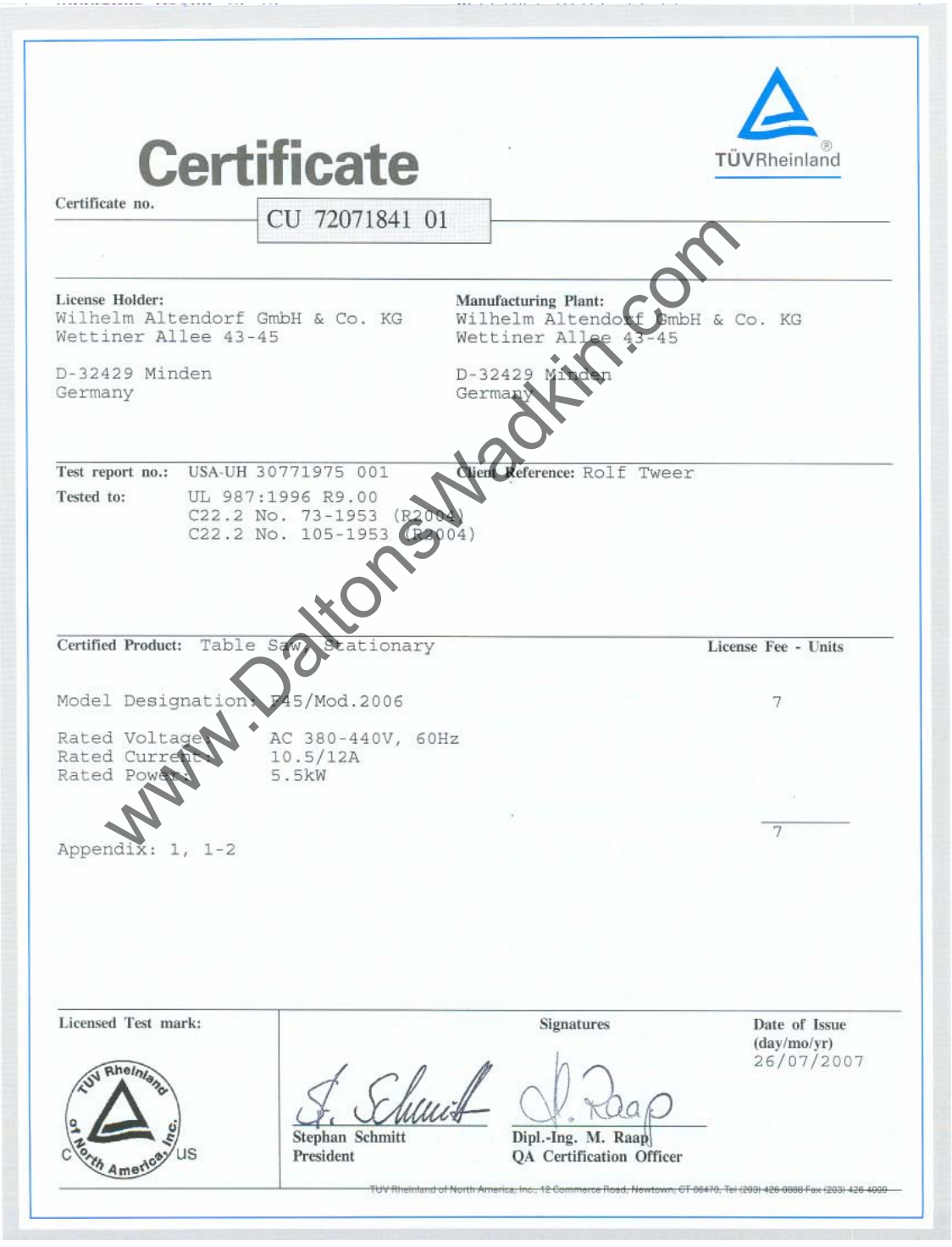
Laser-Richtlicht zur Schnittfugenanzeige
Sprühvorrichtung
Drehstromsteckdose am Maschinenständer, z.B. für Absaugung, Vorschubapparat

Stuttgart, 02.07.2015

Leiter der Prüf und Zertifizierungsstelle
Frank Hagendorff

C US-Certificate



Certificate

TÜVRheinland

Certificate no. CU 72071841 01

License Holder:
Wilhelm Altendorf GmbH & Co. KG
Wettiner Allee 43-45

D-32429 Minden
Germany

Manufacturing Plant:
Wilhelm Altendorf GmbH & Co. KG
Wettiner Allee 43-45

D-32429 Minden
Germany

Test report no.: USA-UH 30771975 001 **Client Reference:** Rolf Tweer

Tested to: UL 987:1996 R9.00
C22.2 No. 73-1953 (R2004)
C22.2 No. 105-1953 (R2004)

Certified Product: Table Saw, Stationary **License Fee - Units**

Model Designation: F45/Mod.2006 7

Rated Voltage: AC 380-440V, 60Hz
Rated Current: 10.5/12A
Rated Power: 5.5kW

7

Appendix: 1, 1-2

Licensed Test mark: TUV Rheinland of North America, Inc. C US

Signatures

Stephan Schmitt
President

Dipl.-Ing. M. Raap
QA Certification Officer

Date of Issue (day/mo/yr) 26/07/2007

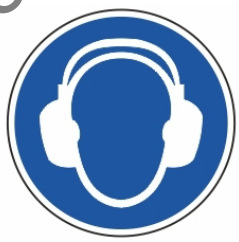
TUV Rheinland of North America, Inc., 12 Commerce Road, Newtown, CT 06470, Tel (203) 426-0888 Fax (203) 426-4999

2.3 Marks of conformity

			
CE symbol	GS symbol	Wood dust approved mark	C US mark

3 Product description

3.1 Marking, pictographs

		
Danger warning	Hand injury warning	Laser beam warning
		
Crushing risk warning	Voltage warning	Note: Wear ear protection

3.2 Intended use

The sliding table saw and the workpiece guide equipment supplied with it are intended to be used for cutting wood and similar materials such as:

- Laminated and unlaminated board materials (e.g. chipboard, coreboard, MDF board, ...)
- Solid wood
- Veneer with a suitable clamping device
- Gypsum plasterboard
- Cardboard
- Dimensionally stable plastics (thermoset plastics, thermoplastics). Sawing these materials does not normally involve any risks in respect of dust, chips, and thermal degradation products.
- Aluminium and aluminium alloys

The sliding table saw and the workpiece guide equipment supplied with it are **not intended** to be used for cutting materials such as:

- Sheet steel
- Sheet brass
- Sheet copper
- Round wood without the use of a suitable clamping device

Tools:

- The chosen saw blade must be suitable both for the specific work cycle (e.g. longitudinal cutting or crosscutting) and for the specific material.
- Only circular blades which are solid chrome vanadium (CV) or tungsten carbide tipped (TCT) and have a maximum width of 20 mm are permitted for the main saw and milling/grooving cutter. The middle table strip and the cushioning disc must be removed when using a milling/grooving cutter.
- Saw blades with a maximum diameter of 120 mm are allowed for the scoring saw.
- ***Saw blades made of high-alloy high-speed steel (HSS) may not be used.***
- ***Wobble units may not be used.***

Usable saw blades:

250 - max. 500 mm diameter with scorer

250 - max. 550 mm diameter without scorer

Site of installation/use:

- The machine is not suitable for use outdoors or in rooms that are subject to moisture or the risk of explosions.
- The intended use of the machine involves connection to a suitably dimensioned extraction system.
- Intended use also involves compliance with ALTENDORF's specified operating, maintenance and repair conditions and adherence to the safety information contained in the operating instructions.
- The sliding table saw may only be used, set up and maintained by persons who are familiar with the machine and aware of the dangers.
- The pertinent accident prevention regulations as well as any other generally recognised technical safety and industrial medicine rules must be observed.
- Repair work must be carried out by our own customer service or by an organisation that we have authorised. Only original ALTENDORF spare parts may be used for this. ALTENDORF will assume no warranty for any damage that is caused by using non-original spare parts.

Coolant spray device: (Option)

It is advisable to use a coolant spray device when sawing aluminium and plastics. When using such a spray device, make sure you only use coolant that does not impair the function of safety-relevant parts such as protection hoods! (The transparent parts of the protection hood are made of polycarbonate, and the grey hood support of polyamide.)

Clamping device:

A suitable clamping device should be used for small workpieces, in particular.

Machine operator positions:

The sliding table saw is intended to be operated from the following operator positions:

1. On the left of the sliding table at the front of the machine, seen in the feed direction (main operator position).
2. At the front cross-end of the machine on the right of the sliding table when working with the rip fence (make sure you do not move your body or parts of it into the blade rotation area).
3. Any person removing the workpieces must stand at the rear cross-end of the machine behind the main table length extension (under no circumstances in the sliding table traverse area)!

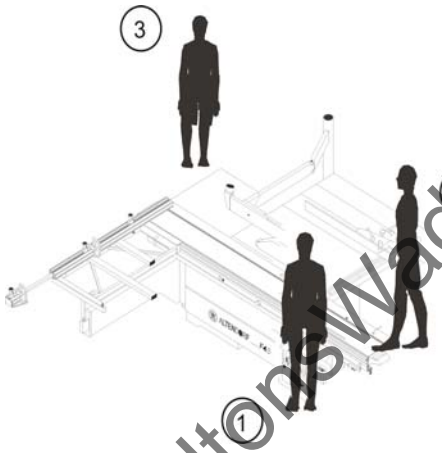


Fig. 3-1 Machine operator positions

Warning!

When removing workpieces at the rear of the machine, ensure that you keep sufficient distance from the extending telescopic tube.

Non-adherence may lead to knee injuries!

Note!

Any other use is deemed as unintended. ALTENDORF will not be liable for any kind of injury or damage that may result from such unintended use; the risk thereof is borne by the user alone.

Unauthorised modifications by users to the machine or its electrical parts and the use of non-original parts on the machine exclude any liability by the manufacturer for any resultant injury or damage.

Foreseeable misuse:

- Working with the safety hood swung up
- Working with the safety hood swung away
- Failure to use the push stick or push block for cuts < 120 mm
- Moving the sliding table without using the handle
- Trimming without the trimming shoe
- Touching or manual infeed with automatically moving stops
- Saws without a riving knife
- Incorrect setting of the straight edge on the rip fence

Warning!

Always, under all circumstances avoid the above-mentioned types of work.

All types of foreseeable misuse can lead to severe injuries!

Residual risk:

Even when the machine is operated in accordance with its intended use and all pertinent safety regulations, the following residual risks may be encountered because of design changes caused by the intended use in question:

- Contact with the main saw blade and the scoring blade in the cutting area, in particular when the saw blade is tilted in the -45° position and the protection hood is not correctly adjusted.
- Contact with the main saw blade and the scoring blade from beneath the table level when the sliding table is pushed fully forward or pulled fully back.
- Kick-back of workpiece or workpiece parts.
- Individual teeth spinning off tungsten carbide tipped blades.
- Breakage and ejection of the saw blade.
- Crushing at the manual or motor-driven sliding table.
- Crushing between the motor-driven tilt movement of the saw blade and the rip fence or workpieces lying in the tilting area.
- Contact with live parts when the electrical installation area is open.
- Damage to hearing as a result of working for long periods of time without hearing protection
- Emission of health-endangering dust from operation without extraction.
- Wear suitable gloves due to the risk of cuts when handling saw blades, grooving tools and when pushing the wood into the machine, as well as during maintenance work
- Do not remove chips while the saw blades are turning
- Do not use the machine before all protective devices/guards required for processing have been installed and are in perfect condition

Warning!

Avoid the potential dangers posed by these remaining risks by paying increased attention when setting up, operating and servicing the machine!

Always adhere to the specified working positions when operating the machine.

3.3 Dimensions and weights

Sliding table length [mm]	Net weight, machine box [kg]	Gross weight, machine box [kg]	Net weight, sliding table [kg]	Gross weight, sliding table [kg]	Net weight, accessories [kg]	Gross weight, accessories [kg]	Dimensions, machine box [mm]	Dimensions, sliding table box [mm]
2250	855-1282	970-1495	114	175	131-142	203-230	2580x660x330	2060x960x500
3000	855-1282	970-1495	158	234	131-142	203-230	3330x660x330	2060x960x500
3200	855-1282	970-1495	170	250	131-142	203-230	3530x660x330	2060x960x500
3400	855-1282	970-1495	205	289	131-142	203-230	3730x660x330	2060x960x500
3800	855-1282	970-1495	212	304	131-142	203-230	4130x660x330	2060x960x500
4300	855-1282	970-1495	249	350	131-142	203-230	4630x660x330	2060x960x500
5000	855-1282	970-1495	269	385	131-142	203-230	5330x660x330	2060x960x500

The weights depend on the machine equipment!

3.4 Auxiliary power/power requirements

The permissible tolerance of the specified mainsvoltage is + 5 % and - 10 %. Greater deviations will impair functionality.

Only connect the machine to a three-phase AC mains with phases L1, L2 and L3, otherwise the brake module or the frequency converter may be destroyed. Operating the machine together with phase converters, frequency converters or transformer-capacitor combinations will destroy the brake module or the frequency converter and power supply unit!

Screw-in fuse links of the type NEOZED D02 (utilisation category gL) should preferably be used as back-up fuses.

The supply line must be dimensioned such that it cannot be overloaded and a max. voltage drop < 3% occurs at nominal current.

The loop impedance and suitability of the overcurrent protection device must be inspected/tested at the machine installation site.

Note!

Devices for differential protection (to be provided by the customer!)

In 230V400V systems, devices are generally used that detect leakage currents < 300 mA. For switch-off in the event of a fault, RCDs (residual current devices) with a rated differential current < 300 mA are normally used, and for indication, fault current indicators (relays) or RCMs (residual current monitors) are used.

Mains voltage independent devices for differential protection that also detect differential currents (leakage currents) with DC components are to be used.

If leakage current indicators or RCMs are used, ensure that additional switch-off devices, e.g. circuit breakers, are provided.

(Extract from VDS Directive 2033)

If there are special safety requirements for persons setting up the equipment, then frequency converters complying with EN 50178 must be replaced by RCMAs with an isolator (preferably) or by type-B RCDs (universal-current-sensitive residual-current circuit breakers).

The following devices can be used:

Manufacturer: Doepke switching devices; these switching devices can also be purchased via Altendorf.

- DFS4 040-4/0,30-B NK, release current 300 mA
- DFS4 040-4/0,03-B NK, for personal protection

Auxiliary power/power requirements

Motor [kW]	Voltage [V]	Frequency [Hz]	Nominal current Without/with scoring blade [A]	Fusing [A]
4	230	50	12.4 / 15.8	25
4	400	50	7.2 / 8.7	20
5.5	200 - 220	50	19.8 / 23.2	35
7.5	200 - 220	50	26.5 / 29.9	35
5.5	380 - 420	50/60	11.5 / 13.5	20
7.5	380 - 420	50	15.5 / 17.5	25
11	380 - 420	50	22.5 / 24.5	35
VARIO tilting to one side	380 - 420	50/60	36.0 / 38.0	35
VARIO 5kW tilting to both sides	380-420	50/60	36.0 / 38.0	35
VARIO 6.5kW tilting to both sides	380-420	50/60	36.0/38.30	35
5.5	200 - 220	60	20.0 / 23.5	35
7.5	200 - 220	60	24.0 / 28.0	35
5.5	600	60	7.5 / 8.5	20
7.5	600	60	9.5 / 10.5	20

3.5 Emissions

3.5.1 Noise - characteristic values

Sound power level [dB (A)]	Emission sound level at the workplace [dB (A)]	Tools
Idling_____L_{WA} = 87.3 Cutting__L_{WA} = 96.6	Idling_____L_{PA} =77.4 Cutting__L_{PA} = 84.0	Circular saw blade 300x3.2/96 WZ n = 3987 rpm
Idling_____L_{WA} = 101.3 Cutting__L_{WA} = 104.2	Idling_____L_{PA} =95.7 Cutting__L_{PA} = 92.1	Circular saw blade 350x3.5/54 WZ n = 3987 rpm
Idling_____L_{WA} = 93.9 Cutting__L_{WA} = 98.7	Idling_____L_{PA} =84.1 Cutting__L_{PA} = 89.9	Circular saw blade 350x3.5/84 WZ n = 3987 rpm
Idling_____L_{WA} = 93.9 Cutting__L_{WA} = 99.1	Idling_____L_{PA} =84.5 Cutting__L_{PA} = 86.0	Circular saw blade 303x3.2/60 DH n = 3987 rpm **LOW NOISE**
Idling_____L_{WA} = 87.7 Cutting__L_{WA} = 96.3	Idling_____L_{PA} =78.1 Cutting__L = 84.6	Circular saw blade 303x3.2/90 WZ n = 3987 rpm **LOW NOISE**

The noise emission values determined according to DIN EN ISO 3746 for the sound power level or DIN EN ISO 11202 and for the sound pressure level at the workplace on the basis of the working conditions stated in ISO 7960 Appendix A are as listed in the table.

A measurement uncertainty allowance of K = 4 dB (A) applies to the stated emission values.

The stated values are emission levels and therefore not necessarily levels for safe working. Although there is a correlation between emission and immission levels, it cannot be reliably deduced from this whether or not additional precautionary measures are needed to protect operators.

Factors that influence the immission level at the workplace include the duration of exposure, room characteristics, other sources of noise such as the type and number of neighbouring machines, and other working processes involving noise emission.

3.5.2 Dust

The dust emission values – measured in accordance with the “Principles for Testing Dust Emission (Concentration Parameters) from Woodworking Machines” issued by the German trade association's technical committee for wood – are below 2 mg/m^3.

When the machine is attached to a correctly functioning extraction system with an air speed of at least 20 m/s (measured after the join of the two extraction connections) you can assume it is and will stay compliant with the technical reference concentration (TRK) limit for wood dust that is in force in Germany.

The machines are tested concerning wood dust in accordance with the BGI 739-1. The machines bear the DGUV mark with the additional wood dust mark "holzstaubgeprüft". Consequently, a company operating the machine in Germany is exempt from the obligation to perform measurements at the workplace in accordance with TRGS 553.

3.5.3 Electromagnetic compatibility

EMC (Electromagnetic Compatibility) is the ability of an electrical device to function in its electromagnetic environment without disruptively influencing this environment, which also includes other devices, or being disturbed by it.

The machine complies with the requirements set out in the European electromagnetic compatibility directive 2004/108/EC (EMC directive).

3.6 Ambient conditions

Transport and storage

The machine must not be used in an environment with explosive or corrosive gases.

The ambient temperatures for transport and storage range from - 25° C to + 55° C, and + 70° C is permissible for a short time.

The maximum air humidity must not exceed 90%, and condensation must be avoided in all cases.

3.7 Safety information

3.7.1 Operational safety

The operation of woodworking machines with manual feed involves a high risk in the event of incorrect handling. Therefore always observe the safety information that is summarised in this chapter as well as government and other industrial safety regulations (e.g. accident prevention regulations)!

Note!

Ensure that the operators are suitably trained in the use, setting and operation of the machine!

- Never operate the machine without the protective devices intended for the specific work cycle (also refer to “Working safely with the sliding table saw – working examples”), and do not make any changes that could impair safety.
- Before all work, make sure that the protective and working devices are securely fitted and are not damaged.
- Before changing a tool, rectifying any faults and carrying out repairs, make sure that the machine cannot be turned on accidentally, for example by padlocking the main switch.
- Only use correctly sharpened tools designed to conform with the requirements of the European standard EN 847-1:2005+A1:2007.
- When grooving with milling tools, only use milling tools for manual feeding with a groove width less than or equal to 20 mm (5 mm for machines with the option "Saw blade tilting to both sides"), marked with MAN according to the European standard EN 847-1:2005+A1:2007.
- Only fit saw blades with the dimensions described in the technical data. The diameter of the mounting hole must always measure 30 mm. Loose intermediate rings are not allowed to be used.
- Select the rotational speed so that the maximum permissible rotational speed specified for the tool is not exceeded when using tungsten carbide tipped saw blades or grooving cutters.
- HSS saw blades and cracked or deformed saw blades may not be used.
- Always wear tight-fitting work clothes and do not wear rings, bracelets or watches.
- Make sure that the workplace is uncluttered, slip-proof and well lit.
- Do not cut workpieces that are too large or too small for the machine to handle.
- When working at the machine, always stand to the side of the saw blade outside a possible kick-back area.

- Remove any loose parts from the vicinity of the saw blade before switching on the machine.
- Only start cutting when the saw blade has reached its full rotational speed.
- Always use the top protection hood!
- Adjust the height of the top protection hood to the thickness of the workpiece to be cut. When operating with a tilted saw blade, exchange the narrow hood for a wide hood. For machines with the option "Saw blade tilting to both sides", move the protective hood to the respective work position by pushing it to the correct side!
- Always guide the workpiece safely and use the appropriate stops/fences.
- Use a push stick when cutting narrow workpieces (< 120 mm) at the rip fence.
- Crosscuts and longitudinal cuts in round wood are not permitted with the standard feeding aids or fences/stops.
- Always use the riving knife except for insert cuts. The riving knife must not be thicker than the cutting line width or thinner than the main blade. Adjust it so that it is at a distance of least 3 mm and at most 8 mm from the gear rim. The guide slot must be 13 + 0.5 mm wide. The riving knives supplied with the machine cover the entire range of diameters for the saw blades that are allowed to be used – from 250 mm to 550 mm. With respect to their thickness, they match the cutting line widths of commercially available tungsten carbide tipped saw blades. If other saw blades, e.g. made of chrome vanadium (CV), are used, select a riving knife thickness that lies between the cutting line width and the main blade thickness. Such riving knifes can be obtained from the trade or directly from ALTENDORF.
- Use an anti-kick device for insert cuts, e.g. the front of the clamping shoe. Fix this in the sliding table groove, ensuring that the sliding table is locked with its interlock to prevent movement. Following insert cutting, refit the riving knife and the top protection hood immediately.
- Only do angle cuts when the cross-slide is fixed to the sliding table. Make sure that small cut-off workpieces cannot be taken up by the gear rim and kick out, for example by using a deflection wedge.
- For trimming, use the clamping shoe fixed to the sliding table to hold down the workpiece.
- When using a feeding unit, use at least the riving knife as an anti-kick device.
- Replace worn-out table strips immediately.
- Wobble units or wobble cutting devices are not allowed to be used.
- The sound pressure level at the workplace generally exceeds 85 dB(A). For this reason, wear hearing protection when working.
- Only qualified electricians are permitted to work on the electrical equipment of the machine.

- Regular cleaning of the machine and, in particular, the main table, sliding table and guides (e.g. rip fence) is an important safety factor. Before starting this work, make sure that the machine cannot be switched on unintentionally.
- The sawdust generated during cutting not only impairs visibility but is partially also hazardous to health. Therefore, the machine must be connected to a chip extraction system with both extraction sockets. The minimum air speed at the lower extraction socket must be at least 20 m/s. When the machine is switched on, the extraction system must switch on at the same time.

Warning!

Always use a deflector wedge fastened to the table top when small waste pieces are produced during cutting that could be kicked out by the saw blade.

Fig. 3-2 Deflector wedge

3.7.2 Safety devices

Altendorf's sliding table saws have been developed in compliance with European standard DIN EN 1870-1 "Safety of woodworking machines – circular sawing machines –: circular saw benches (with and without sliding table) and dimension saws".

During the design stages great importance was attached to creating optimum working conditions, ranging from numerous mechanical and electrical safety devices to noise insulation and reduction of dust emission.

The machine is equipped with all the necessary safety devices to protect against operating risks that could not be eliminated by its design. These safety devices include, in particular:

- Rip fence with straight edge adjustable in cutting direction: Can be pulled back to prevent parts of crosscut workpieces from jamming between the fence and the rising gear rim, or can be switched over to a low guide surface for cutting narrow and flat workpieces, allowing adequate space for the guide hand together with the possibility of lowering the top safety hood onto the workpiece here, too.
- Trimming hold-down to clamp and hold down untrimmed solid wood to secure against slippage in the course of trimming.
- Electrical interlocking of the door in the machine frame to change over the belt to change the rotational speed (only with three-speed model). It is not possible to switch on the machine when the door is open, and if the door is opened while the machine is running, the drives will switch off.
- Sliding table arresting device to prevent workpiece kick-back for insert cuts together with the cross-stop.
- Automatic brake which, after switching off, brings the main saw blade to a standstill in less than 10 seconds, regardless of the saw blade diameter and rotational speed.
- Ergonomic arrangement of the operating elements at readily accessible positions.

3.7.3 Top safety hood/riving knife

For a max. tool diameter of 400/500/550 mm:

- Top safety hood fitted separately from the riving knife for max. saw blade diameter of 400/500/550 mm, available in a narrow and a wide format made of polycarbonate to optimally cover the section of the blade not required for sawing above the machine table with a safeguard against lifting beyond the maximum cutting height of + 5 mm. Rollers integrated in the safety hoods at the leading and trailing ends facilitate both feeding workpieces and pulling back workpieces if workpieces have a slightly different thickness.
- Laterally displaceable protective hood for machines with the option "Saw blade tilting to both sides"
- 3 riving knives for saw blades between 250 and 400/500 (550) mm diameter to avoid workpiece kick-back as a result of jamming in the cutting line.

3.7.4 Handling batteries / accumulators

Information on battery regulations

Note!

Dispose of used batteries according to the applicable laws and regulations at a communal collection point or return them to your retailer free of charge.

Danger caused by lithium batteries

If lithium batteries are used or stored outside of their specification, they may be dangerous. Dangers result primarily from incorrect handling and improper use.

Examples of improper use:

- mechanical damage (internal short-circuit)
- thermal stress (internal short-circuit)
- overloading (strong temperature increase due to exothermic processes).

In Germany:

According to § 5 ArbSchG (German Occupational Safety and Health Law), § 3 BetrSichV (German Industrial Safety Law), the owner/user must create a risk assessment to assess the dangers caused by technical equipment and devices.

Measures for damage prevention

The risk potential of lithium batteries is, in addition to the product design, primarily determined by the module or system capacity. The types used by Altendorf are low-capacity lithium batteries (batteries > 1 kg). The information for damage prevention applies to both new and used batteries.

General safety regulations

Always observe the following safety regulations:

- Adhere to all specifications by manufacturers and on safety data sheets
- Prevent external short-circuits
- Prevent internal short-circuits (protect from mechanical damage)
- Immediately and properly dispose of damaged products (even in case of slight damage)
- Do not expose directly and permanently to high temperatures or sources of heat (e.g. direct sunlight)
- Train employees in the proper handling of lithium batteries (as with hazardous materials)

Source: VdS 3103 : 2012-06 (01)
Lithium batteries - Excerpt of the GDV leaflet for damage prevention

4 Definitions

4.1 Description of machine

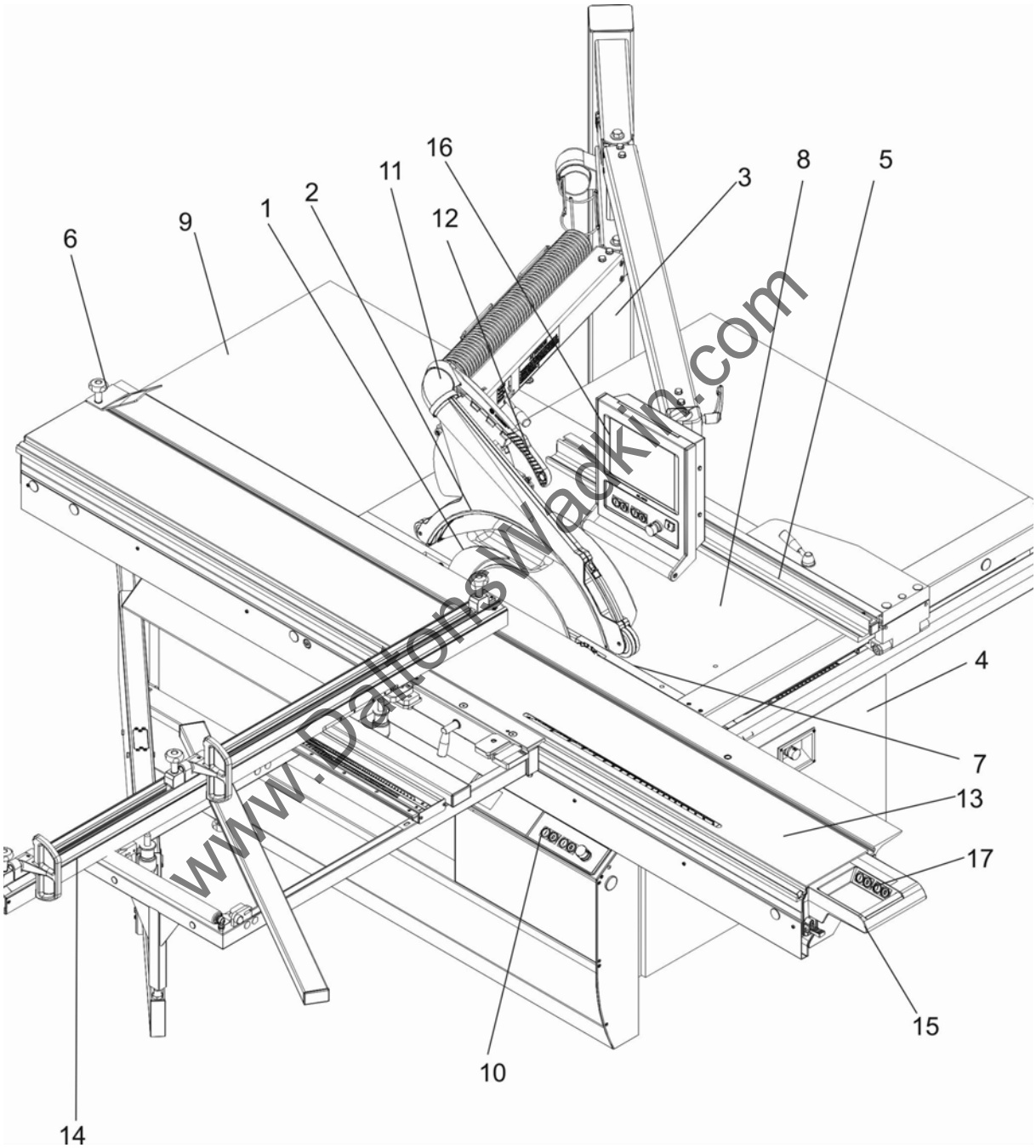


Fig. 4-1 Description of the sliding table saw

1. Riving knife
2. Saw blade, protective hood
3. Protective hood support
4. Fixed guards beneath the table
5. Rip fence
6. Trimming hold-down device (clamping shoe)
7. Table insert
8. Machine table
9. Table length extension
10. Fixing elements
11. Protective hood holding fixture
12. Push stick
13. Sliding table
14. Crosscut fence
15. Sliding table handle
16. Movable operating terminal
17. Additional fixing elements on the rear end of the sliding table (optional)

4.2 Terms

Scoring

Creation of a shallow cut in the surface of a workpiece, deep enough to pass through any coating on the workpiece, so as to prevent damage to the underside when the main saw blade makes its cut.

Scoring blade

A blade that is located in front of the sawing blade, used to score the workpiece and rotate along with the feed direction.

Grooves

Creation of cuts in the surface of the workpiece not deep enough to pass through using the saw blade or a milling tool.

Machine drive

Power driven device to effect a machine movement

Hand feed

Holding and/or guiding the workpiece manually.

Removable feeding device

Feeding mechanism fastened to the machine such that it can be tilted out of the work position without tools or similar equipment

Safety appliance

Additional device that is not an integral part of the machine but helps the operator to feed the workpiece safely, e.g. a push block or push stick.

Kick-back

Unexpected sudden movement of the workpiece or parts of it opposite to the direction of feed in the course of sawing.

Riving knife

Protection against workpiece kick-backs and unintentional contact with the rising gear rim.

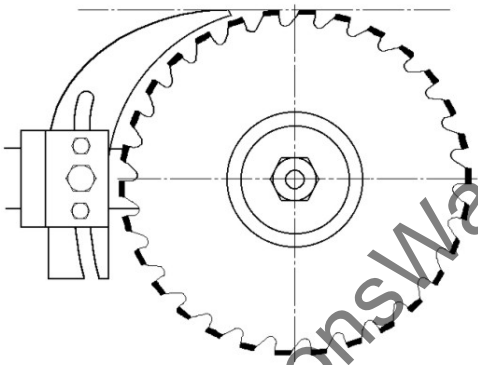


Fig. 4-2 Force-guided riving knife

5 Transport, siting and installation

5.1 Transport

When transporting the sliding table saw by elevating truck or fork lift truck (forks only with unchangeable length), only lift the machine up slightly and secure it against tipping!

Packaging

The type of packaging depends on the type of transport. Unless otherwise contractually agreed, the packaging corresponds to the HPE guidelines established by Bundesverband Holzmittel, Paletten, Exportverpackungen e.V. (the German Association for Wooden Materials, Pellets, Export Packaging) and the VDMA.Observe the symbols on the outside of the packaging!

Degree of dismantling

The degree of dismantling of the sliding table saw depends on the transport conditions and the options supplied with the machine.The sliding table is always shipped dismantled into several installation assemblies.

Sensitivity

Particular care must be taken when transporting the sliding table saw in order to avoid damage from force or poor loading and unloading.Knocks and condensation due to extreme temperature fluctuations must be avoided during transport.

Intermediate storage

If the sliding table saw or its assemblies are not installed immediately after delivery, make sure that they are stored in a protected location.They must be correctly covered to prevent any ingress of dust or moisture.Bare, non-surface-treated parts of the sliding table saw are protected with a conserving agent which will protect them for approx. 1 year. Reconservation is necessary if storage is to last longer than this period.

5.2 Safety measures before use/installation

Installation site

No special foundations are required at the installation site for the sliding table saw. The floor must have a load bearing strength suitable for the machine weight and should be flat and level.

Select an installation site that provides enough clearance around the sliding table saw, allowing for the space requirements shown in the figure and the size of the workpieces to be cut. In addition, observe the safety clearances to parts of the building and other machines in order to eliminate the risk of crushing the operator or other personnel.

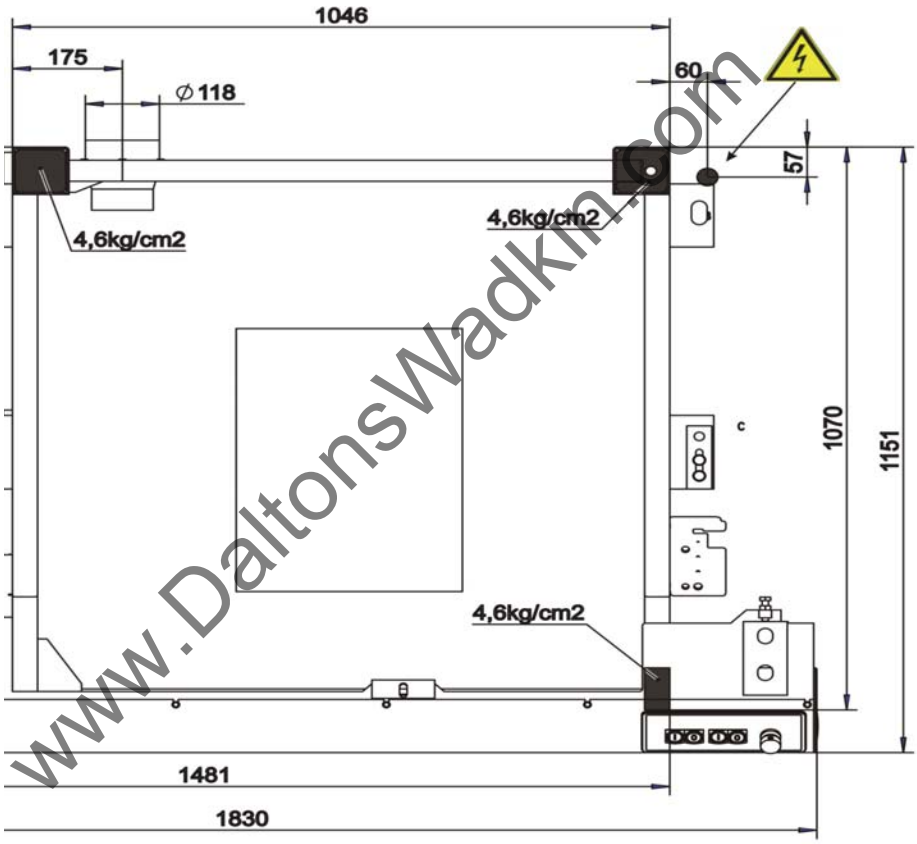


Fig. 5-1 Foundation plan

Danger!

Danger of crushing!

- For operation with the max. workpiece weight, secure the machine against tilting!
- Ensure that there is sufficient safety clearance from building parts and other machines!

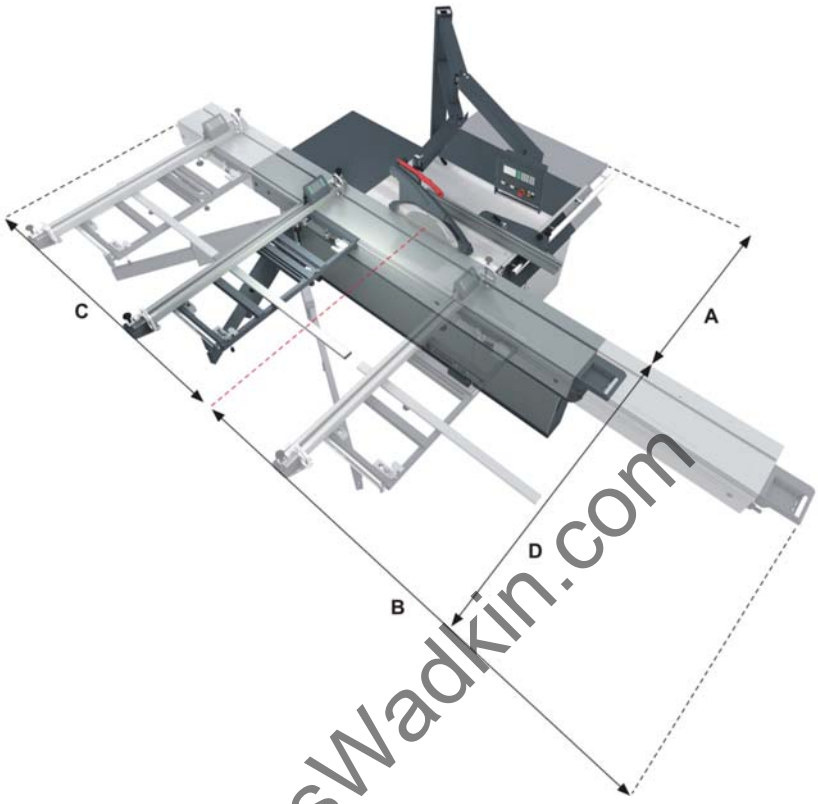


Fig. 5-2 Space requirement

Key

Dimension A:

Manual adjustment PA: Cutting width + 280 mm

Motor-driven adjustment PA: Cutting width + 3600 mm

Dimension B: Sliding table length + 360 mm

Dimension C: Sliding table length + 290 mm; sliding table length + 30 mm with TSD

Dimension D:

Crosscut fence: 1890 - max. 3420 mm

Crosscut mitre fence and PQS: 1960 - max.3690 mm

CNC crosscut fence UNO/DUO: 2200 - max.3670 mm

Fixing

A fixing element is provided on the side of the machine frame to ensure the machine stays in position. Once the sliding table saw has been set up, loosen the screws and lower the fixing down to the floor. Then retighten the two screws.

5.3 Installation

5.3.1 Telescopic tube for swinging arm

Fig. 5-3 Installing the telescopic tube

[1] Undo the cheese head screw
[2] Push in the telescopic tube from the front through the housing for the swinging arm
[3] Insert and tighten the cheese head screw

Fig. 5-4 Installing the telescopic tube, 4th axis

5.3.2 Main table length extension

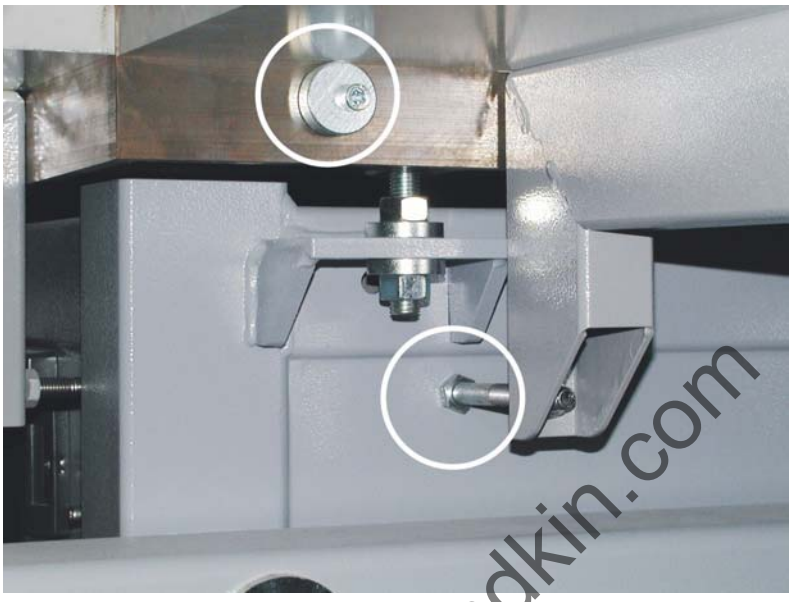


Fig. 5-5 Installing the main table length extension

[1] Guide the bolts of the table length extension into the front holes of the main table.
[2] Loosely secure to the main table with two M10 nuts and U-shaped washers
[3] Place the main table length extension on the eccentrics.
[4] Tighten the M10 nuts.
[5] If necessary, correct the alignment and flushness by readjusting the eccentrics and the support screws.

For table length extensions with floor support:

5.3.3 Rip fence

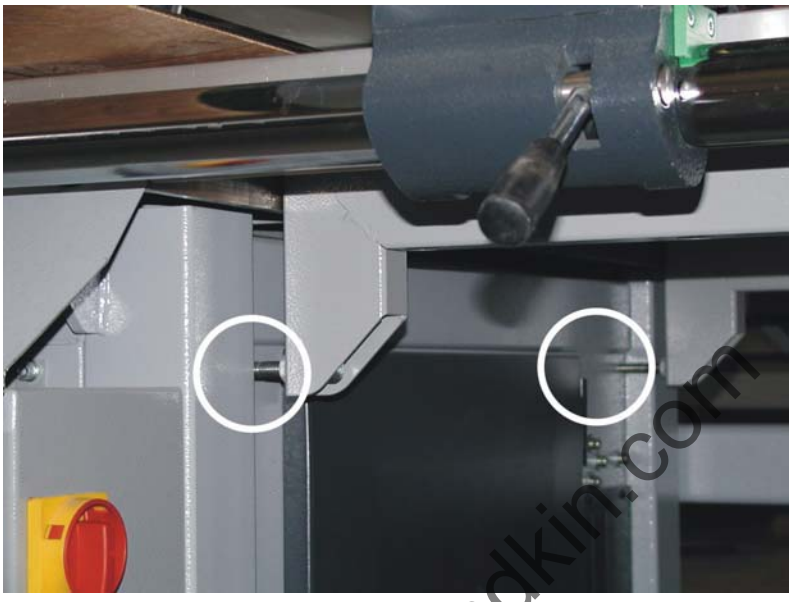


Fig. 5-6 Installing the main table width extension

[1] Guide the bolts of the main table width extension into the front holes in the table, and place the extension on the eccentrics
[2] Loosely secure to the main table with two M10 nuts and U-shaped washers
[3] Tighten the M10 nuts.
[4] If necessary, correct the alignment and flushness by readjusting the eccentrics and the support screws.

Fig. 5-7 Installing the measuring bar

[1] Fit the measuring bar easily with M6x30 countersunk screws (1)
[2] Knock a 6x45 clamping pin (2) through
[3] Tighten the countersunk screws(1)

5.3.4 Cross-slide and crosscut fence

Cross-slide

The cross-slide must be attached to every point of the exterior round bar of the sliding table, and must be clamped.

Carry out installation as follows:

- Place the supporting pipe of the cross-slide on the bolt of the telescopic tube
- tilt the cross slide to the sliding table, hook it in and clamp it using the eccentric lever; for the operation of the eccentric lever, refer to the following pages.

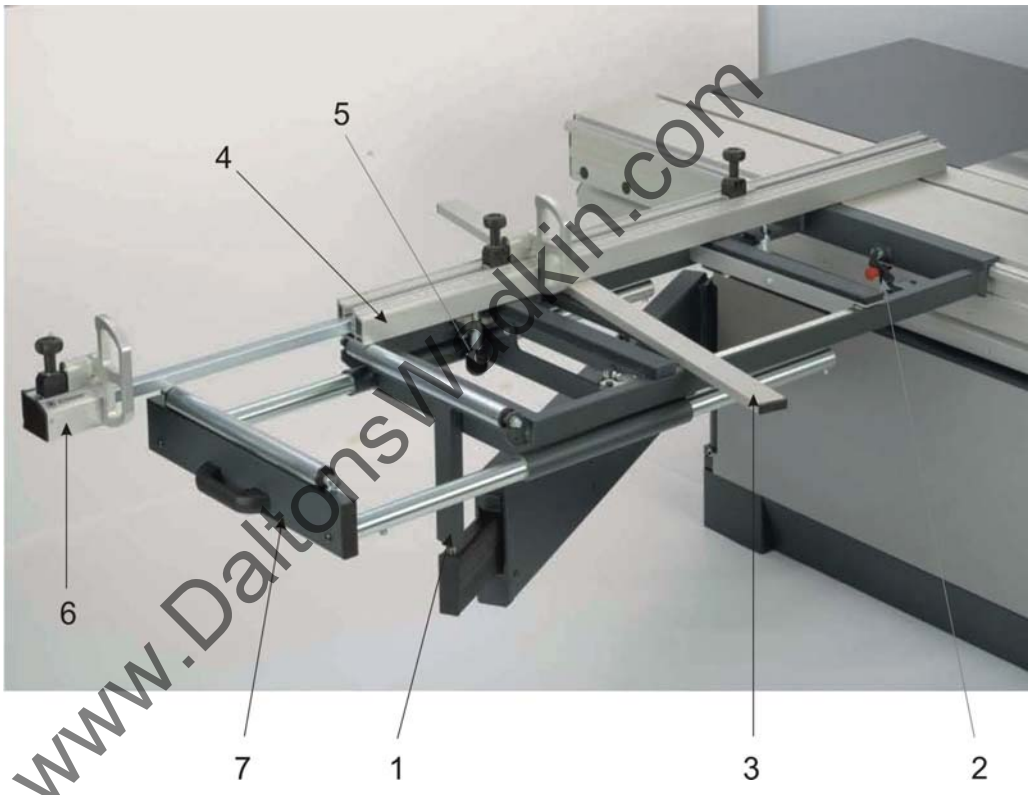


Fig. 5-8 Installing the cross-slide

[1] Support pipe
[2] Eccentric clamping lever
[3] Workpiece support
[4] Crosscut fence
[5] Crosscut fence clamping
[6] Extendable crosscut fence extension
[7] Extendable cross-slide width extension (option)

Description of the cross-slide clamping mechanism WA/WGA/CNC cross-cut fence UNO

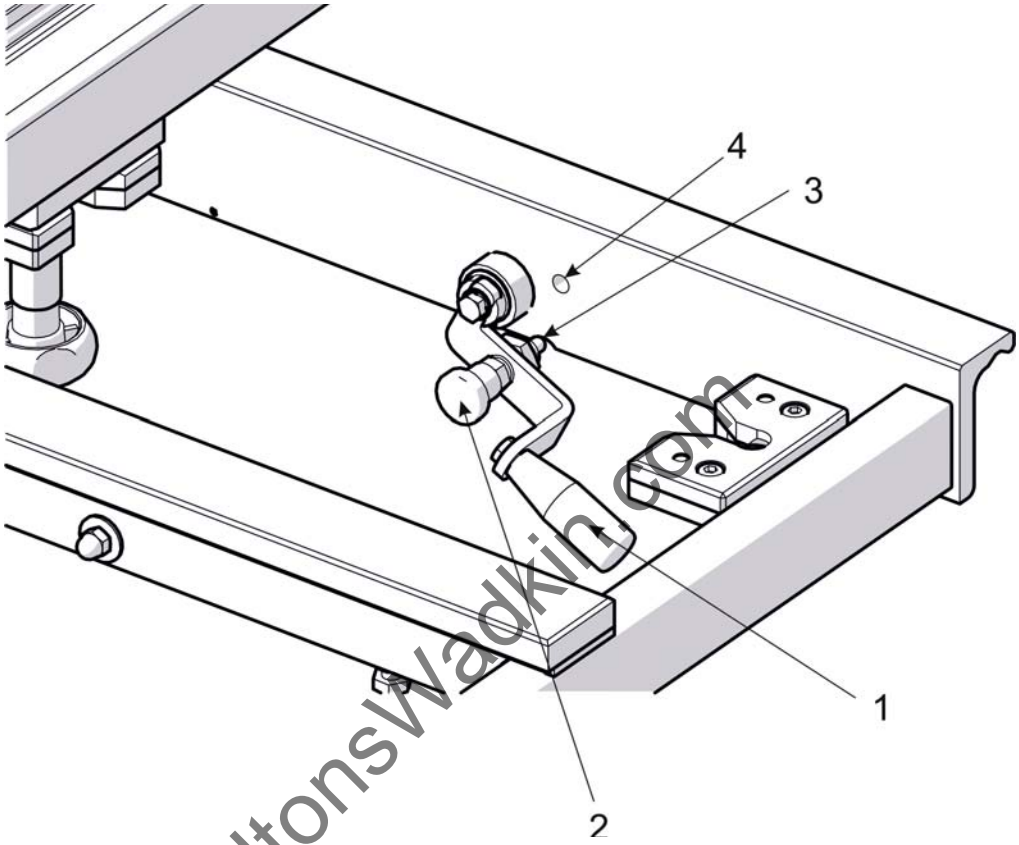


Fig. 5-9 Clamping lever

[1] Clamping lever
[2] Safety locking mechanism
[3] Stop, safety locking mechanism for displacing the cross-slide
[4] Drill hole, safety locking mechanism for removing the cross-slide

To push the cross-slide to other positions on the sliding table, undo the clamping lever [1] up to the stop of the safety locking mechanism. It is now possible to displace the cross-slide without a risk of the cross-slide falling down.

To remove the cross-slide, pull out the safety locking mechanism and push up the clamping lever. The safety mechanism engages in the hole [4]. The cross-slide can now be removed completely.

When assembling the cross-slide, first hook it in, pull out the safety locking mechanism, push the clamping lever all the way to the fixed stop. Release the safety locking mechanism.

Description of the cross-slide clamping mechanism CNC crosscut fence

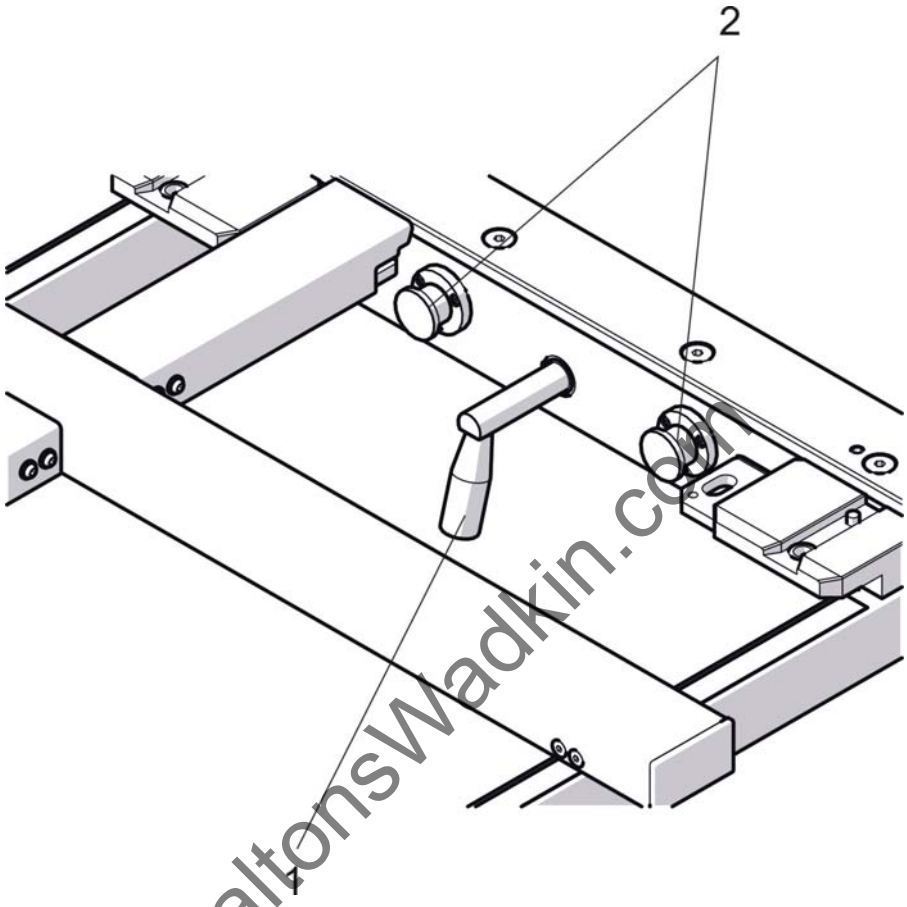


Fig. 5-10 Cross-slide clamping, CNC crosscut fence DUO

[1] Eccentric clamping lever
[2] Safety locking mechanism

To push the cross-slide to other positions on the sliding table, undo the clamping lever [1]. It is now possible to displace the cross-slide without a risk of the cross-slide falling down.

To remove the cross-slide, pull out the safety locking mechanisms and turn them. The safety locking mechanisms engage. The cross-slide can now be removed completely.

When assembling the cross-slide, first hook it in and push the clamping lever all the way to the fixed stop. Undo the safety locking mechanism and turn to engage.

Crosscut fence, 90° only

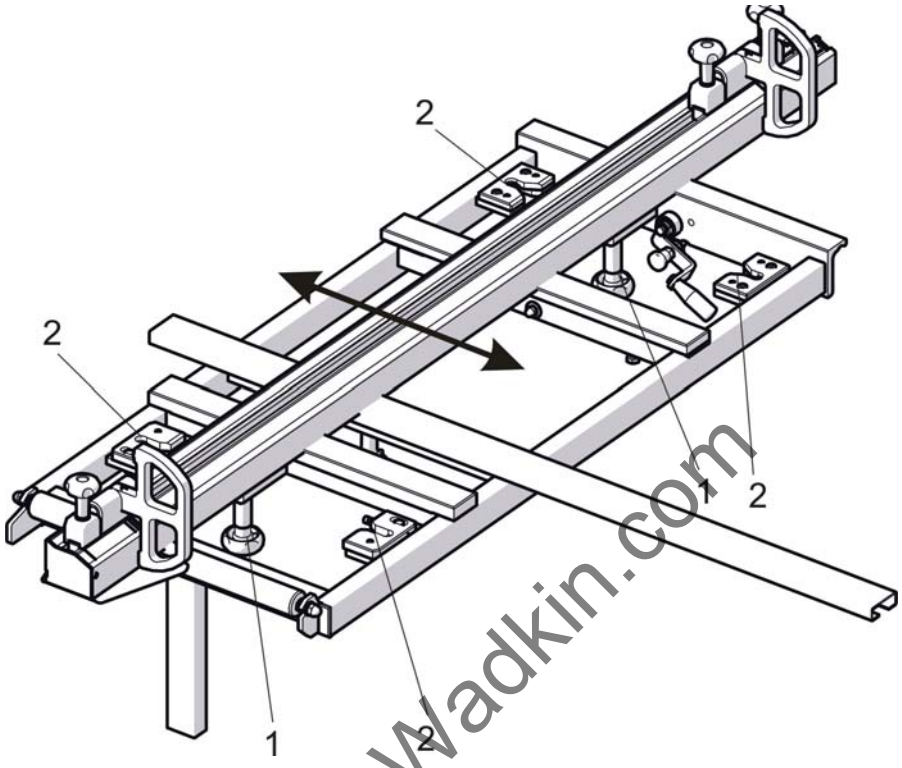


Fig. 5-11 Installing the 90° crosscut fence

1. Place the crosscut fence on the cross-slide such that the clamping bolts [1] can be inserted in the grooves [2]
2. Tighten the clamping bolts [1], positioning is carried out by means of the tapered surfaces

Changing the 90° crosscut fence

1. Undo the clamping bolts [1]
2. Move the crosscut fence to a new position; ensure that the clamping bolts are inserted into the grooves
3. Tighten the clamping bolts, positioning is carried out by means of the tapered surfaces

Warning!

In the case of the "tilting to both sides" option, only use the crosscut fences supplied with this machine!

Crosscut-mitre fence

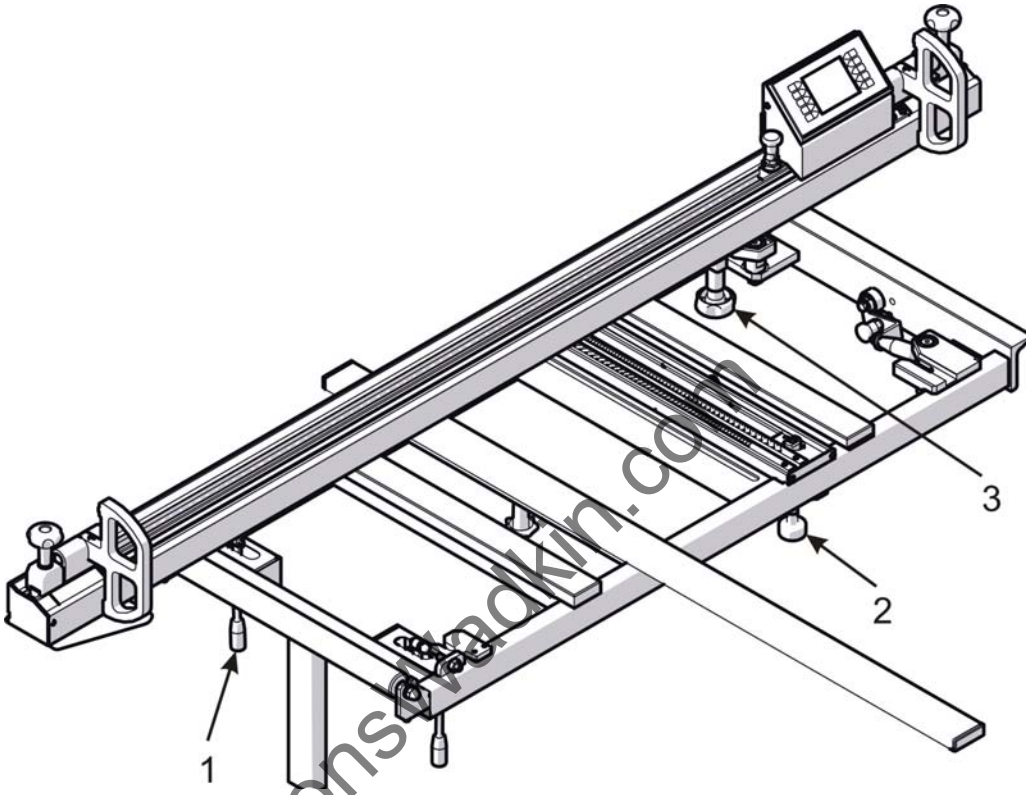


Fig. 5-12 Crosscut-mitre fence operating elements

[1] Clamping lever 90° position
[2] Indexing bolt for angle measurement
[3] Clamping pivot point

Installing the standard crosscut-mitre fence / with DIGIT L + LD:

- Place the crosscut-mitre fence on the rear fence surface
- Push the ball bearing over the groove in the sliding table
- Unscrew the handle of the degree scale clamping
- Carefully turn the crosscut-mitre fence by 90° so that the ball bearing can be inserted in the groove of the sliding table and the threaded bolt of the clamping degree scale in the groove of the profile
- Fasten the handle of the clamping degree scale

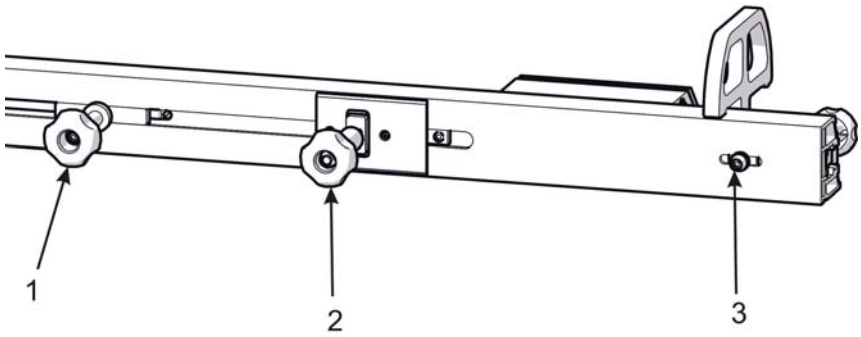


Fig. 5-13 Installing the crosscut-mitre fence

[1] Clamping degree scale
[2] Clamping pivot point
[3] Ball bearing

90° clamping

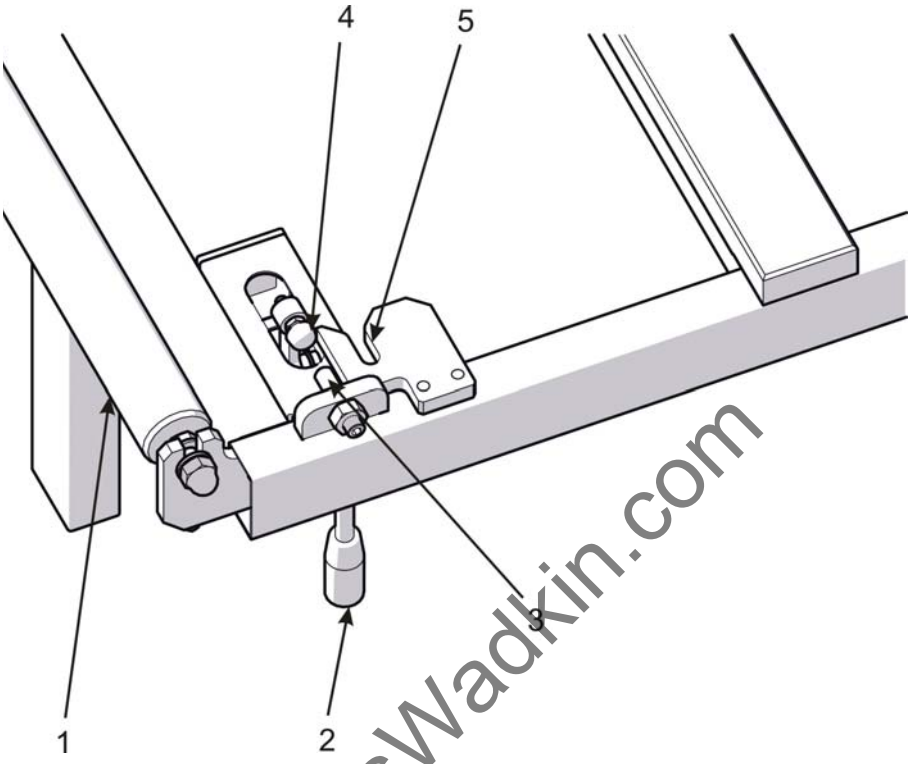


Fig. 5-14 90° clamping

[1] Support roller
[2] Clamping lever
[3] 90° stop
[4] Pressure piece on the clamping lever
[5] Guide groove

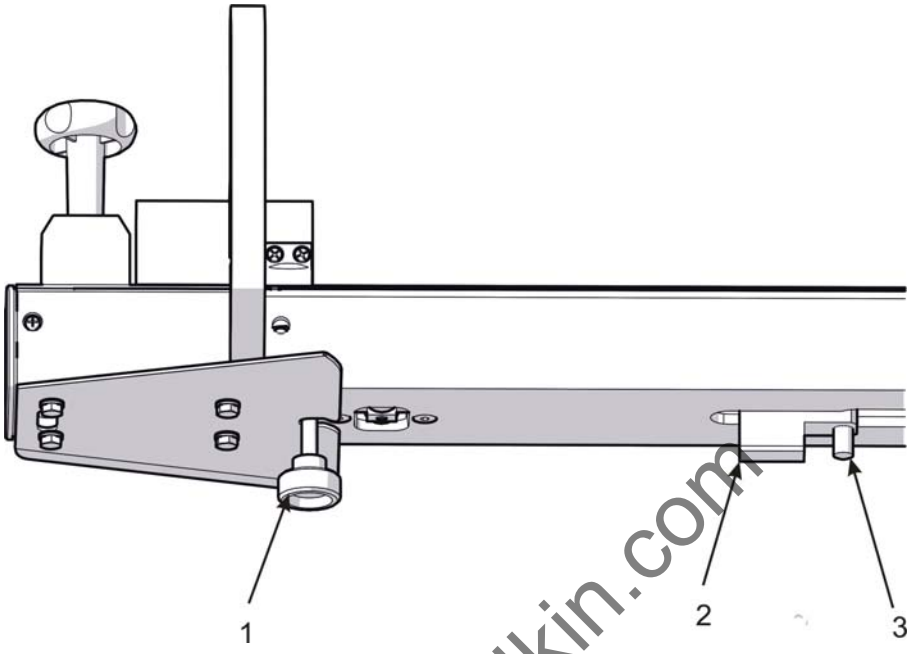


Fig. 5-15 Crosscut-mitre fence left-hand side

[1] Clamping screw, telescopic extension
[2] Clamping piece, 90° position
[3] Guide pin

Crosscut-mitre fence WGA_LD

Crosscut-mitre fence with digital angle and length measurement

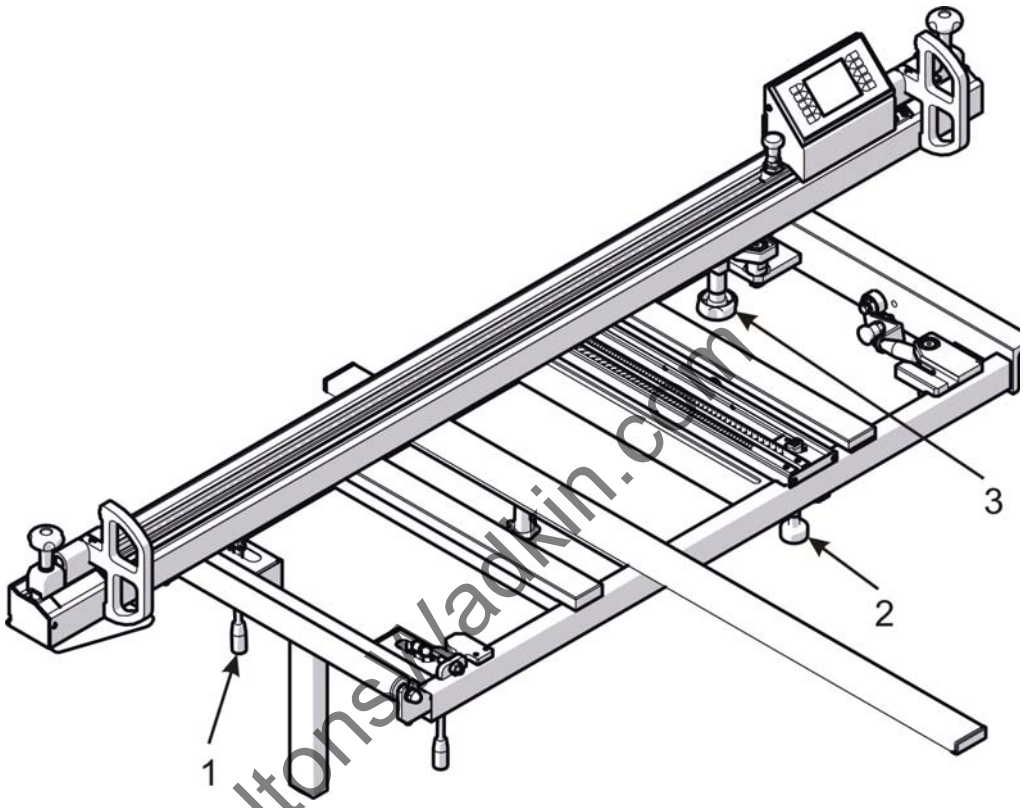


Fig. 5-16 WGA_LD

[1]
[2] Lower the crosscut-mitre fence so that the bolt enters the guide carriage hole
[3] Turn in clamping screw 1 loosely

Operating elements:

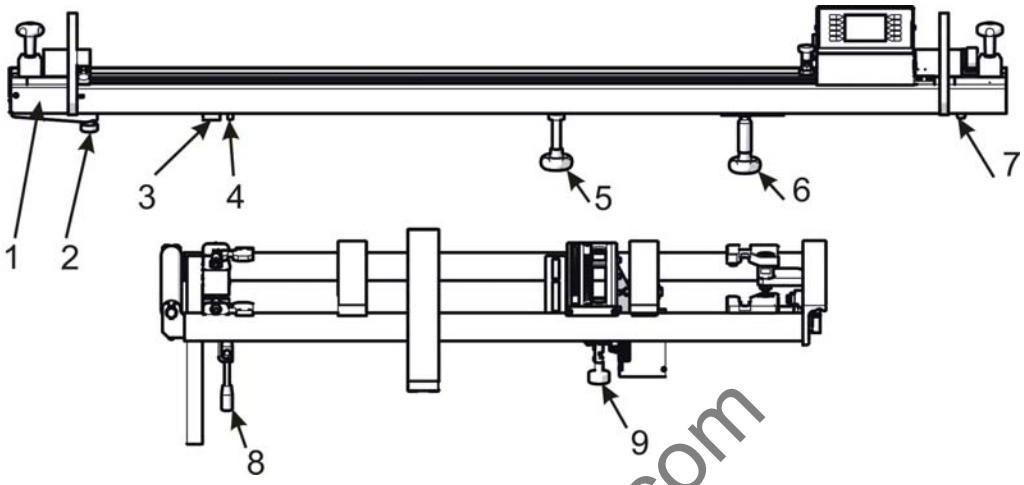


Fig. 5-17 WGA_LD

[1] Telescopic extension
[2] Clamping, telescopic extension
[3] 90° stop
[4] Guide pin, 90° position
[5] Clamping degree scale
[6] Clamping pivot point
[7] Guide roller, sliding table
[8] Clamping lever, 90° position
[9] Indexing bolt, angle measurement

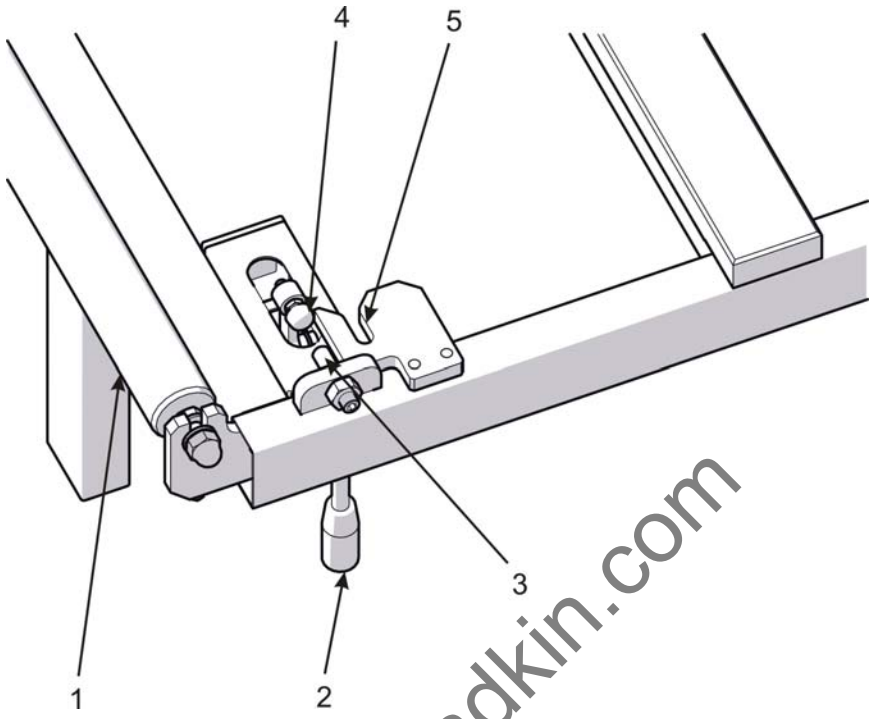


Fig. 5-18 90° clamping

[1] Support roller
[2] Clamping lever
[3] 90° stop
[4] Pressure piece on the clamping lever
[5] Guide groove

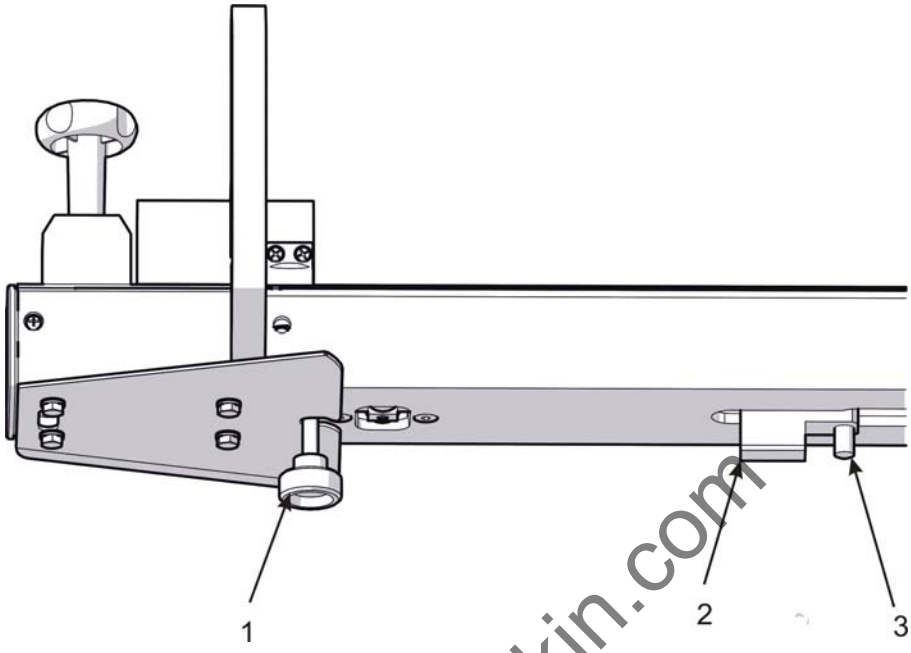


Fig. 5-19 WGA_LD, LH side

[1] Clamping screw, telescopic extension
[2] Clamping piece, 90° position
[3] Guide pin

CNC crosscut fence

Operating elements, CNC crosscut fence UNO

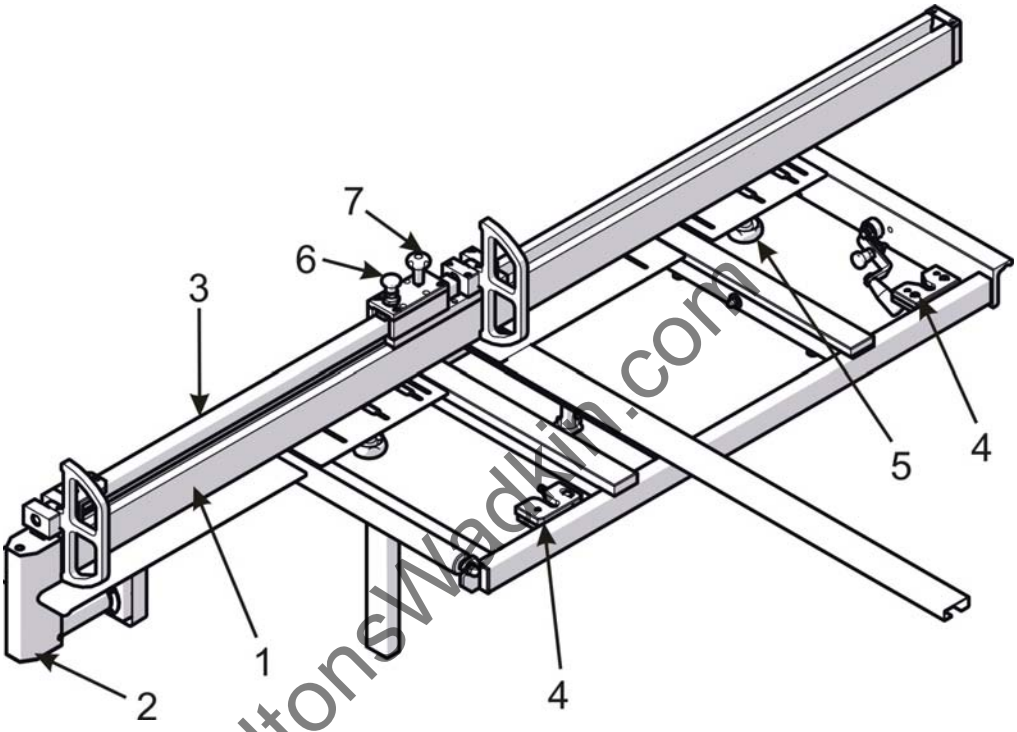


Fig. 5-20 CNC crosscut fence DUO

[1] Stop fence
[2] Axis drive
[3] Axis extension
[4] 90° stop
[5] Clamping screws
[6] Indexing bolt, extension
[7] Clamping screw, extension

Extension:

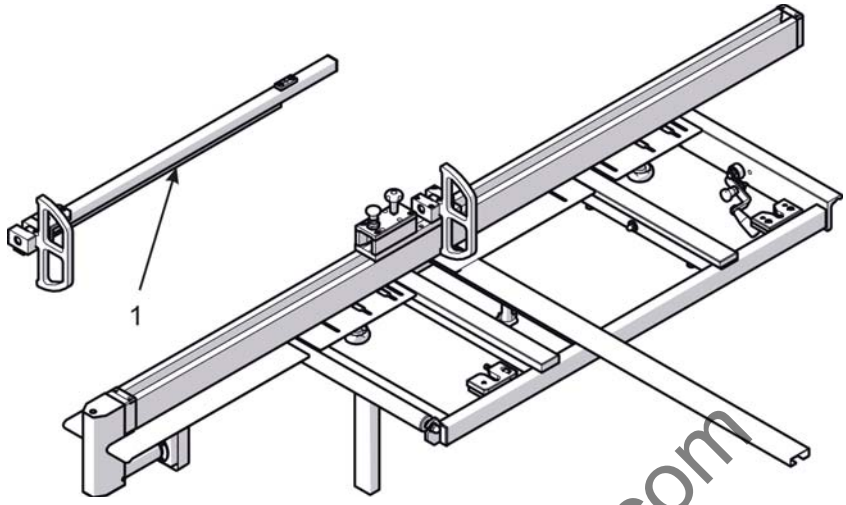


Fig. 5-21 Extension, CNC crosscut fence UNO

[1] 1000 mm extension piece

Installing the extension:

- Insert the extension into the guide until the indexing bolt engages
- Tighten the clamping screw.
- When using the second throw-over stop, the adjustable dimension increases by 1000 mm

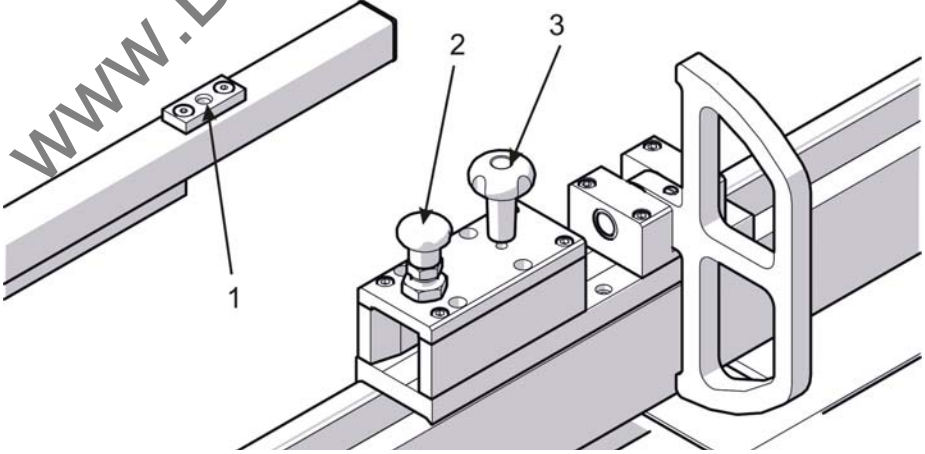


Fig. 5-22 Extension installation

[1] Locking hole, extension
[2] Indexing bolt
[3] Clamping, extension

Operating elements, 4th axis, heavy:

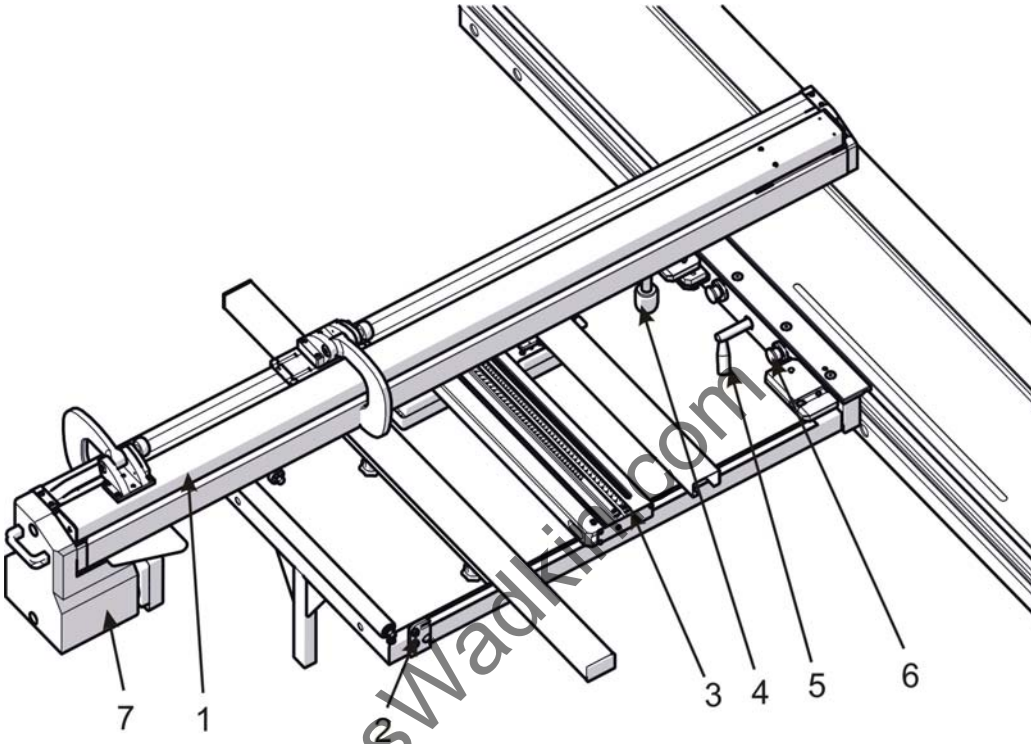


Fig. 5-23 Operating elements, 4th axis

[1] 4th axis
[2] 90° stop
[3] Degree scale
[4] Clamping pivot point
[5] Clamping, cross-slide
[6] Cross-slide, locking mechanism
[7] Drive

Installing the cross-slide:

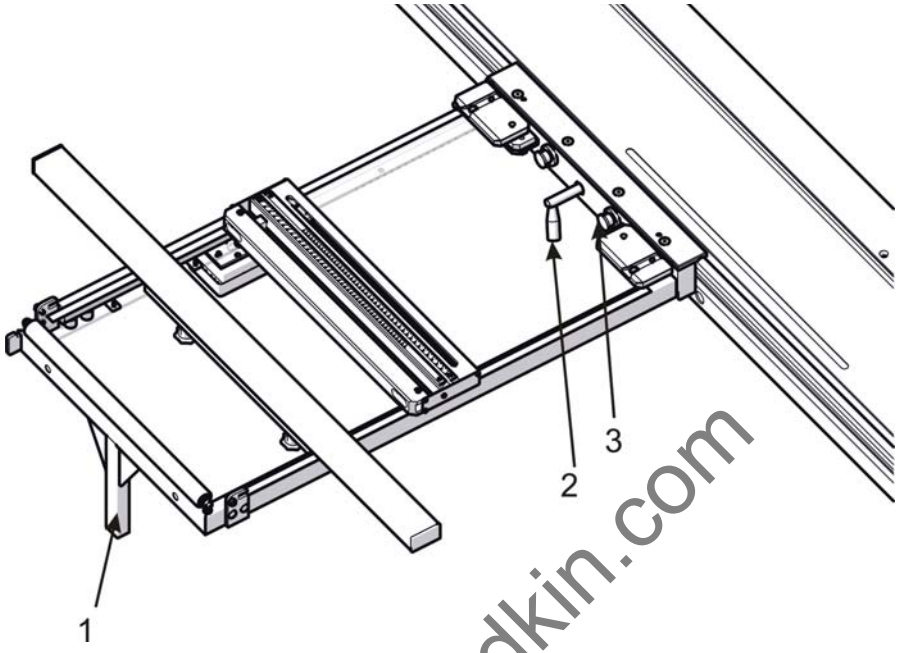


Fig. 5-24 Installing the cross-slide

[1] Support pipe
[2] Clamping, cross-slide
[3] Cross-slide, locking mechanism

The cross-slide can be hooked in and clamped at any position on the sliding table as follows:

- Place the supporting pipe of the cross-slide on the bolt of the telescopic tube.
- Swing the cross-slide to the sliding table, hook it in and clamp it with the clamping mechanism.
- Engage cross-slide locking mechanism

Installing the 4th axis:

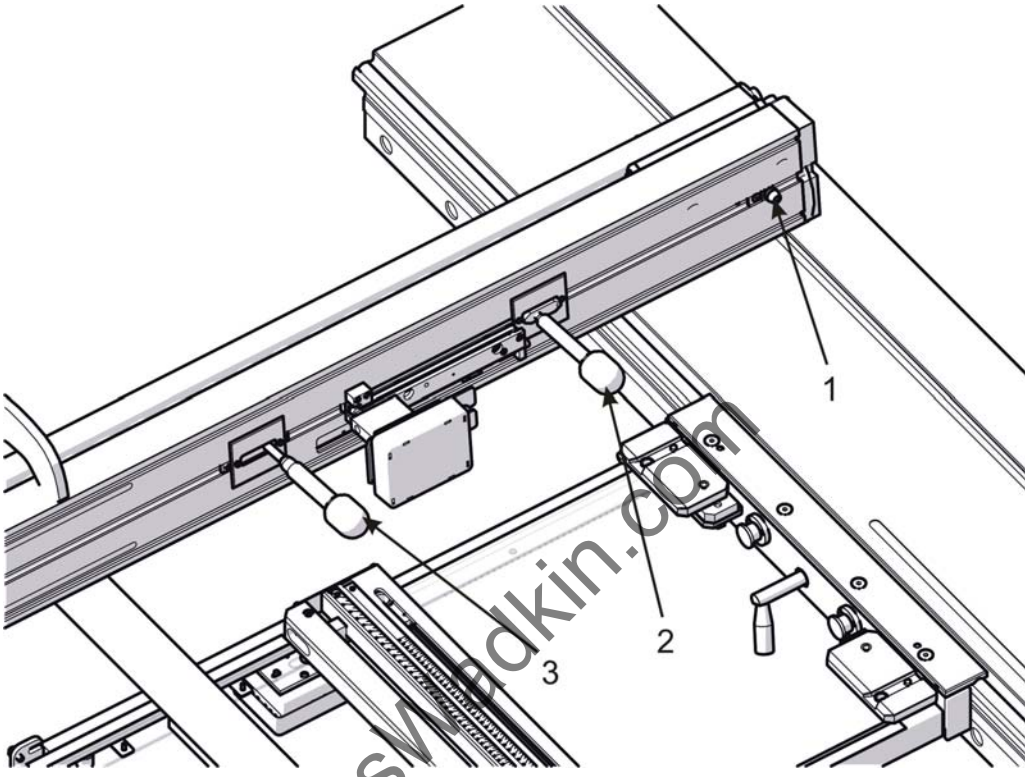


Fig. 5-25 Installing the 4th axis

[1] Guide roller
[2] Clamping pivot point
[3] Clamping degree scale

Prior to assembly, unscrew the handle of the clamping, degree scale [3].

- Place the 4th axis on the rear fence surface
- Position the guide roller over the groove in the sliding table
- Position the degree scale clamping over the groove in the degree scale
- Position the guide carriage such that the distance between the stop fence and the hole in the guide carriage is 100 mm
- Turn the clamps 90° in the longitudinal direction
- Turn the 4th axis by 90°
- Check the guide roller in the roller carriage groove
- Push the pivot clamp to the right into the clamping plate and tighten the bolts
- Fasten the handle of the 'Degree scale clamping'
- Insert the plug connectors of the 4th axis underneath the telescopic tube.

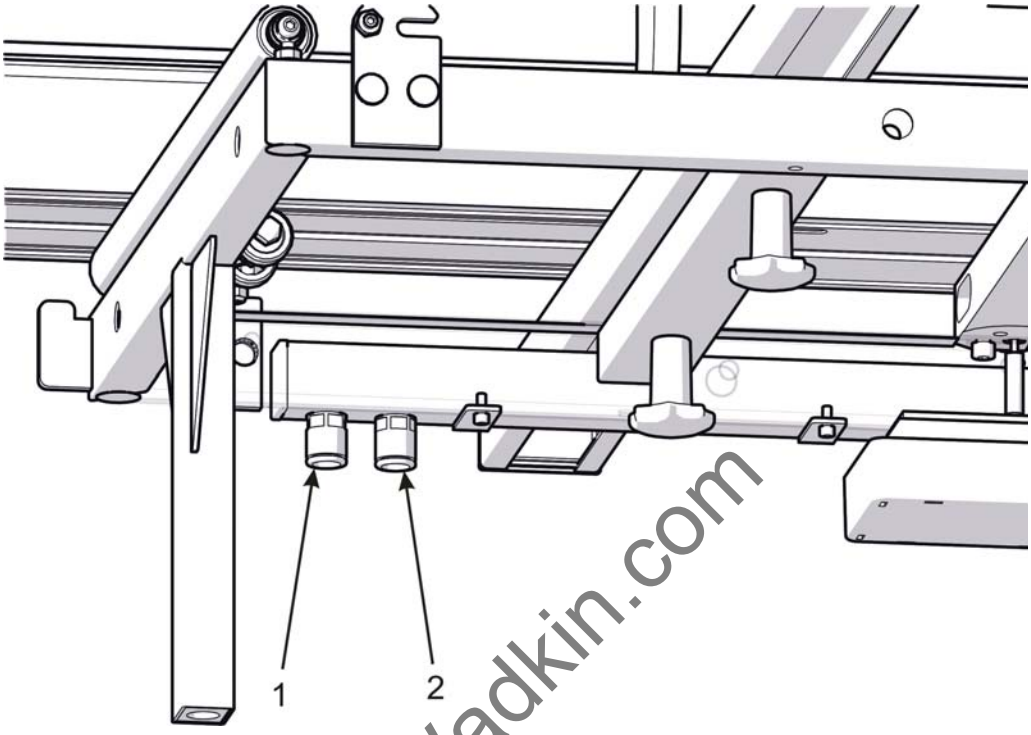


Fig. 5-26 Electrical connection

[1] Socket 1
[2] Socket 2

Warning!

The plug connectors have 3 and 5 poles, are marked in different colours and must only be connected or disconnected when the main switch is switched off.

Non-adherence can lead to destruction of the plug connectors or the electronics.

5.3.5 Sliding table

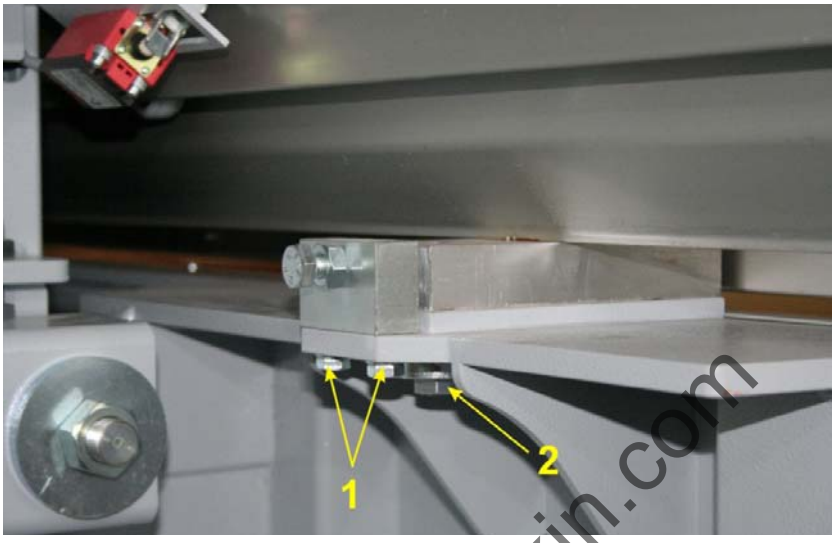


Fig. 5-27 Bottom carriage stop

[1] Place the bottom carriage on the machine frame and push against the stop screws.
[2] Screw on the bottom carriage using the outer fixing screws.
[3] Only tighten the middle fixing screw loosely.

Fig. 5-28 Installing the middle carriage

[1] Place the middle carriage on the bottom carriage so that the interlock is pointing to the right.
[2] Push the middle carriage to the right until the 1st double roller is still just resting on the round bars. If this is not observed, in the case of the TIP-SERVO-DRIVE the end position sensors could be destroyed when the top carriage is pushed on!

Fig. 5-29 Installing the top carriage

[1] Carefully push on the top carriage making sure it is not skewed, watch the e-chain.
[2] Carefully push the guide rails onto the double rollers.
[3] Push the top carriage towards the left, all the way to the stop.

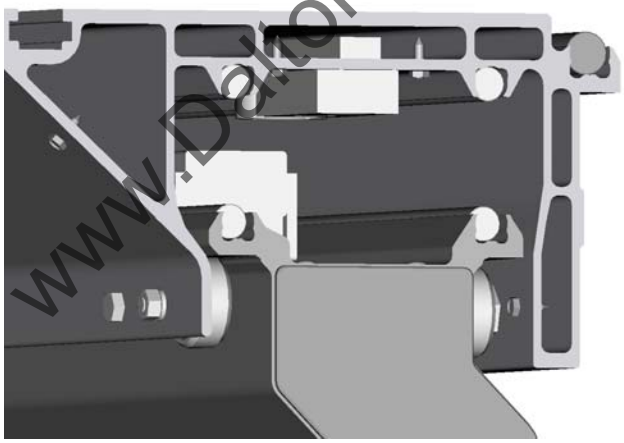


Fig. 5-30 Back stop

[1] Fit the back stop

Fig. 5-31 Central fixing

[1] Tighten the central fixing screw.
[2] Check that the sub-rollers are correctly adjusted.

Fig. 5-32 Bracket on the bottom carriage

[1] Fix the bracket to the bottom carriage with 3 screws.

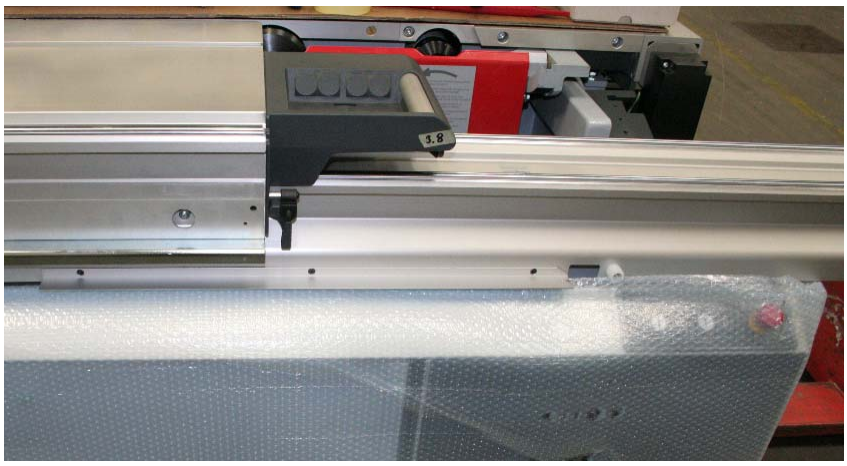


Fig. 5-33 Bracket on the bottom carriage

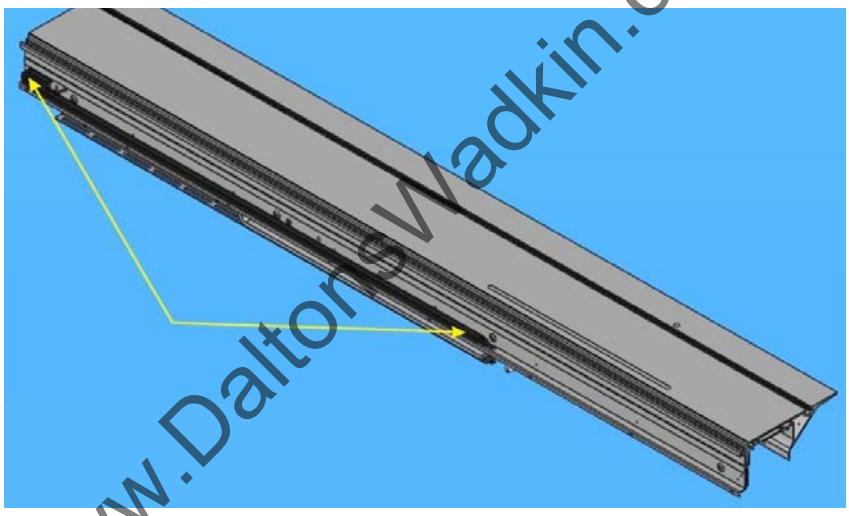


Fig. 5-34 Position of e-chain

[1] Place the bottom e-chain on the bracket on the bottom carriage.
[2] Run the cable into the machine frame through the opening in the bottom carriage.

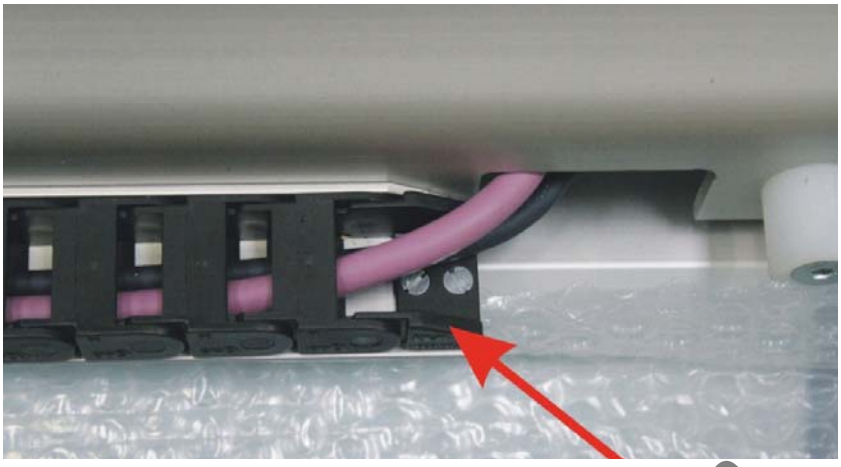


Fig. 5-35 Fastening the e-chain

[1] Screw the first link of the e-chain onto the bracket using 2 screws.

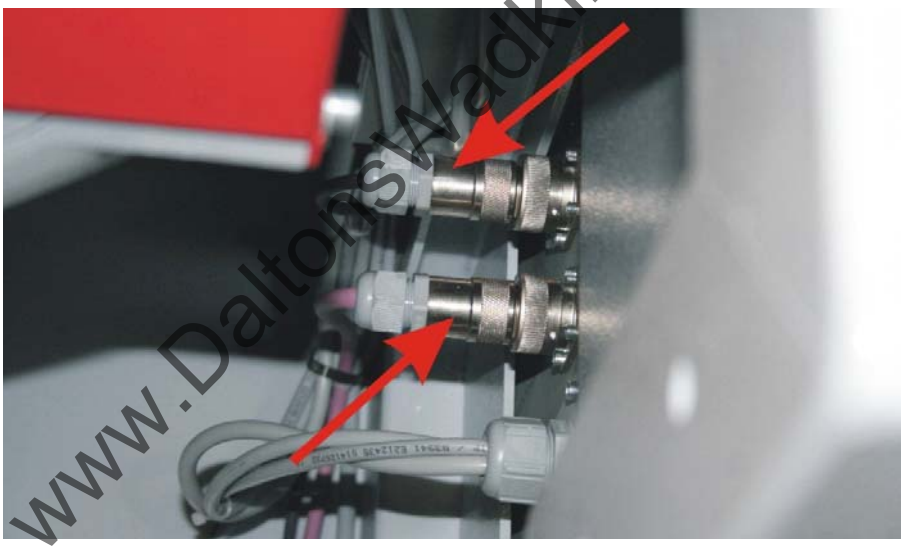


Fig. 5-36 Switch cabinet

[1] Connect the plug to the switch cabinet.
[2] Tighten the cap nut.

Warning!

The connectors have 3 and 5 poles.

Ensure you plug the 3-pole connector into the 3-pole socket, otherwise the connector will be destroyed!

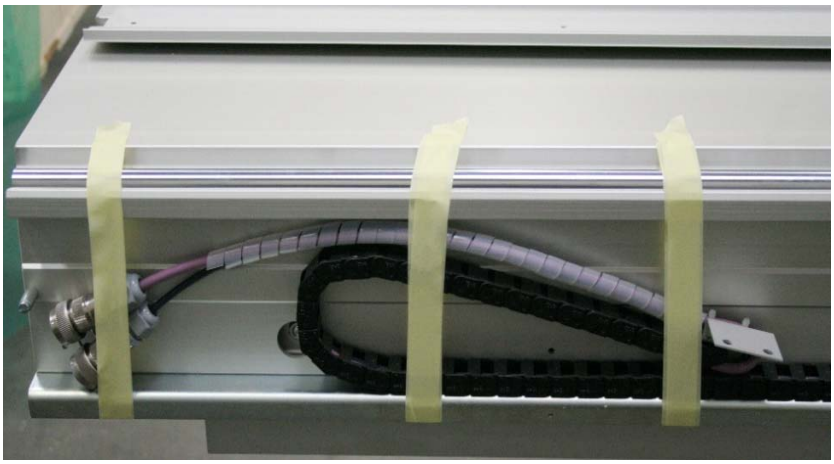


Fig. 5-37 Fastening the e-chain / cable

[1] Remove all the packing tape.
[2] Screw on the cover profile.

5.3.6 Electrical connection

Warning!

Dangerous electric voltage!

All work on the electrical equipment, including connection to the mains supply, may only be performed by a qualified electrician.

Disconnect the machine from the mains supply before working on the electrical equipment.

- After connecting the supply line, check the rotationaldirection of the main saw motor by briefly starting up and, if necessary, correct it by interchanging the two outer conductors in the mains connection box.
- Pay attention to the rotational direction arrow on the saw blade cover!
- As far as machines with a VARIO drive are concerned, check the rotational direction of the scoring saw motor, because the frequency converter ensures that the directional rotation of the main saw motor is always correct, regardless of the phase position.
- Only connect or disconnect plug-in connectors when the main switch has been turned off or disconnected!

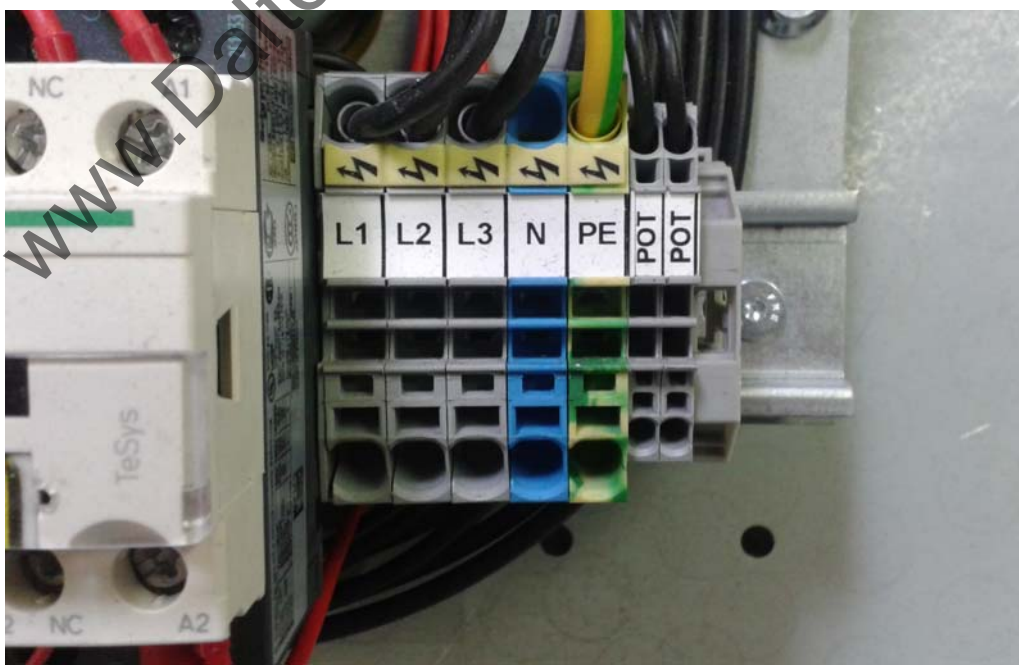


Fig. 5-38 Mains connection

The mains connection is in the RH switch cabinet on the right-hand side. The terminals for the supply line are marked L1, L2, L3, N and PE, the terminalsfor the potential-free contact with the control system of an extraction system are marked POT. The supply line cross-section and the fuses to be fitted by the user depend on the installed motor rating.

If the machine is connected via a flexible supply line, a rubber-sheathed cable (wire marking H07RN-F) must be used. Required plug-in device: Round connector in accordance with DIN 49463.

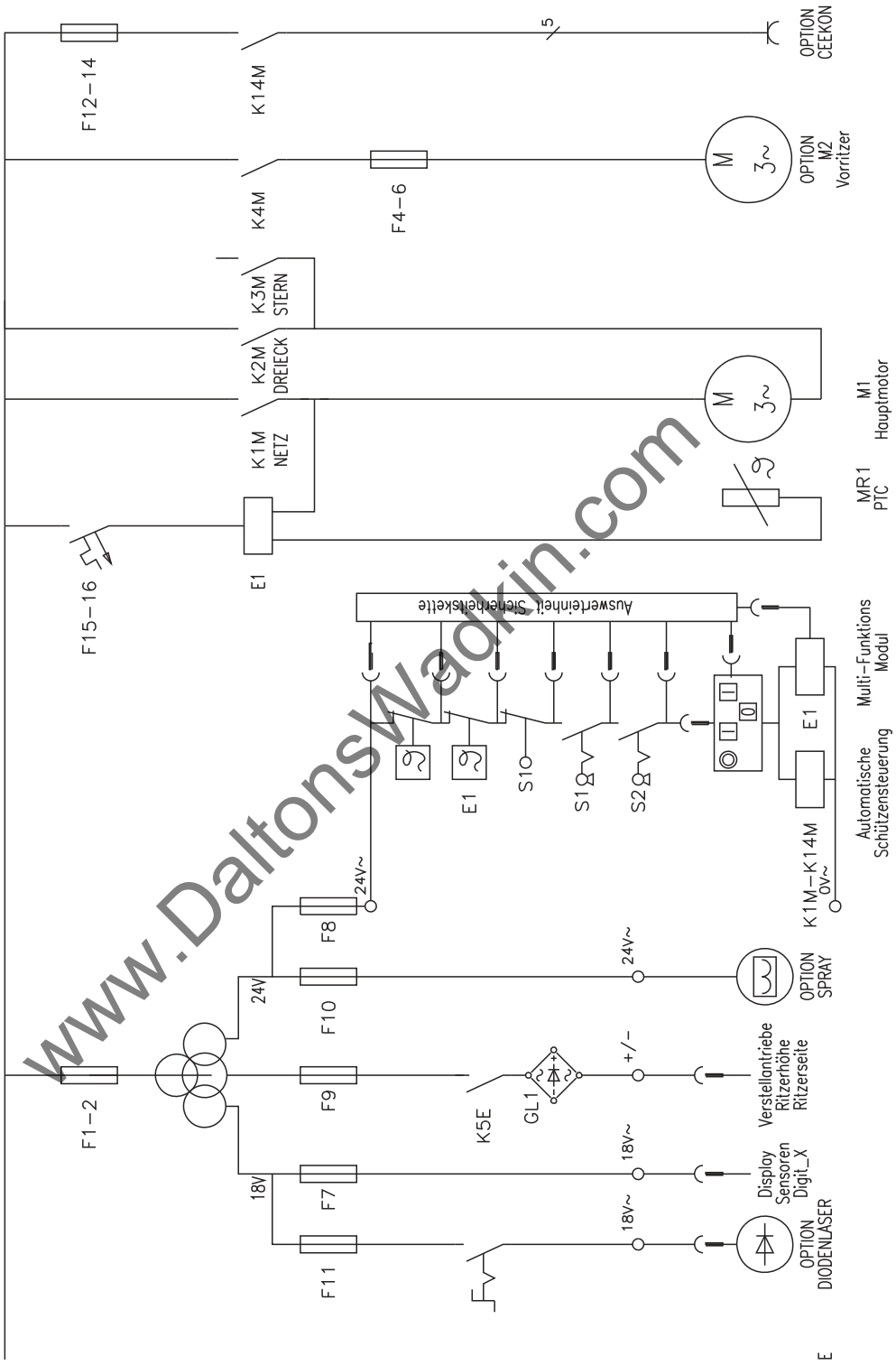


Fig. 5-39 Circuit diagram

Designation	Designation
GL 1	Rectifier
Q 1	Main switch
S 26	LASER option switch
M 1	Main saw motor
M 2	Scoring saw motor
MR 1	Temperature monitor for main saw motor
S 1	Sliding table safety switch
S 2	EMERGENCY STOP button
S 3	Temperature monitor for scoring saw motor
S 1	Machine door/cover plate safety switch
E 1	Multifunction module
F 1 - F 2	Control fuses (primary)
F 4 - F 6	Scorer motor (option)
F 7 - F 9	Control fuses (secondary)
F 10 - F11	SPRAY / LASER control fuse (option)
F 12 - F 14	CEKON (option)
K 1 M - K 5 M	Motor contactors
K 5 E	Supply voltage contactor for adjustment drives
K 14 M	CEKON contactor (option)

5.3.7 Connecting the extraction system (customer side!)

Fig. 5-40 Bottom extraction connection

Total extraction system connection D = 140 mm

Vmin = 1150 m^3/h at 20 m/s

Bottom extraction connection D =120 mm

The hoses and Y-tube are not supplied as standard with the machine.

The dust emission values – measured in accordance with the “Principles for Testing Dust Emission (Workplace-Related Dust Concentration) from Wood-working Machines” issued by the German trade association's technical committee for wood – are under 2 mg/m^3. When the machine is attached to a correctly functioning extraction system with an air speed of at least 20 m/s (measured at the connection socket) you can assume it is and will stay compliant with the technical reference concentration (TRK) value for wood dust that is in force in Germany. For perfect and safe operation, the machine must be connected to the extraction system at the extraction sockets (rear of machine frame and protection hood support). The minimum air speed at the extraction sockets must be 20 m/s. The 80 mm extraction hose from the hood to the connection socket on the support tube is not supplied as standard. The extraction socket and hoses are not supplied as standard!

Make sure that the extraction system is switched on together with the machine. For this, you can use the existing potential-free contact (POT - refer to circuit diagram) or a current transformer installed in the supply line. When using spray device (SPRAY), make sure that you use a suitable moisture extraction system in order to avoid faults.

5.4 Basic machine setting

5.4.1 Sub rollers on the sliding table

Basic machine setting is carried out at our factory during final assembly. It may be necessary to correct the machine's basic settings due to removal of various assembly groups, and transport and installation on site. The machine elements to be checked are described below.

Check the sub-rollers

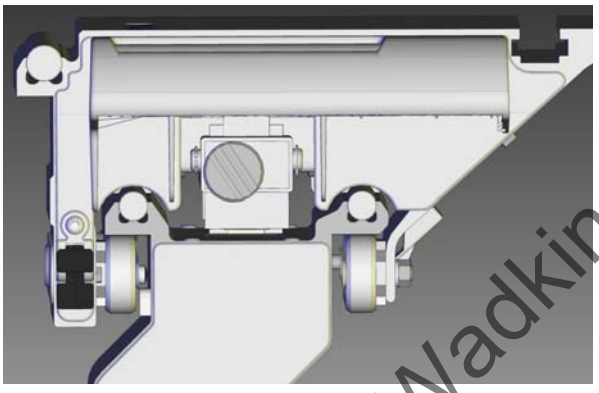


Fig. 5-41 Sub-rollers

The sub-rollers must run smoothly against the start slope at the start and end of the raceway. They should be set so that they can be held by hand with noticeable force and that they slip while the sliding table is moved.

Setting of the sub-rollers

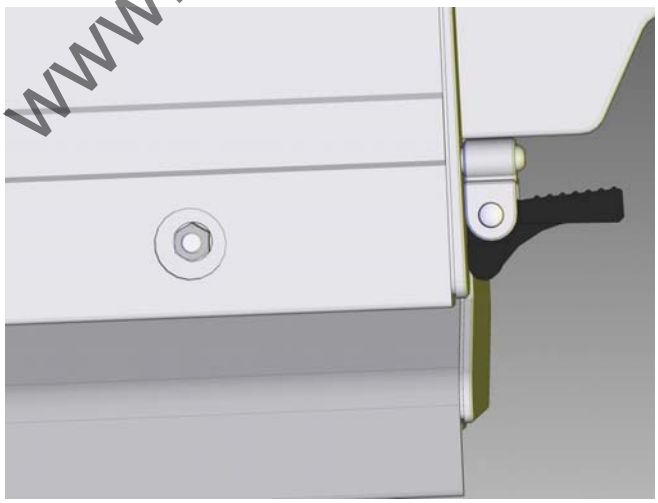


Fig. 5-42 Sub-rollers

The sub-rollers have eccentric bearings and can be adjusted.

The sub-rollers are set so that they can be held by hand with noticeable force and that they slip while the sliding table is moved. Adjusting them too tightly will result in stiff movement of the sliding table, and can lead to unwanted cutting results.

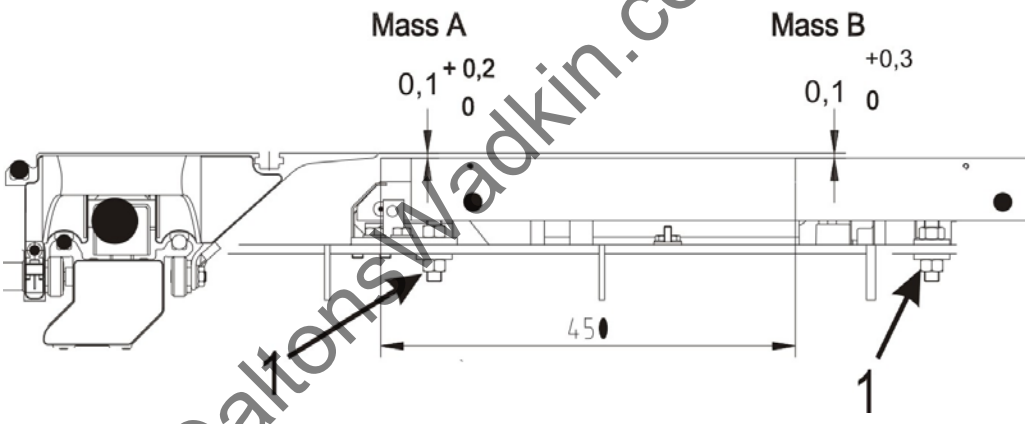
5.4.2 Main table

Checking the main table

Place a rip fence straight edge on the sliding table, and move the table into the middle position. Move the sliding table forward and backward; the main table must be approx. 1/10 mm lower.

Adjusting the main table

Release the lock nuts (1) of the 4 stay-bolts, adjust the main table, and tighten the lock nuts.



5.4.3 Swinging arm

Check

Rest the swinging arm against the machine frame, fully extend the telescopic tube of the swinging arm and check dimensions A and B. Set dimensions A and B with a tolerance of 0.5 mm, if necessary correct the setting with EX 1 and EX 2.

The dimension between the bottom edge of the crosscut fence profile and the top edge of the top carriage profile (see fig. 2) is a feature for the tolerance of the swivel arm setting. The dimension must not exceed the cut length possible with the cross-slide between 0.1 and 0.9 mm (check with feeler gauge).

5.4.4 Cross-slide height

Check

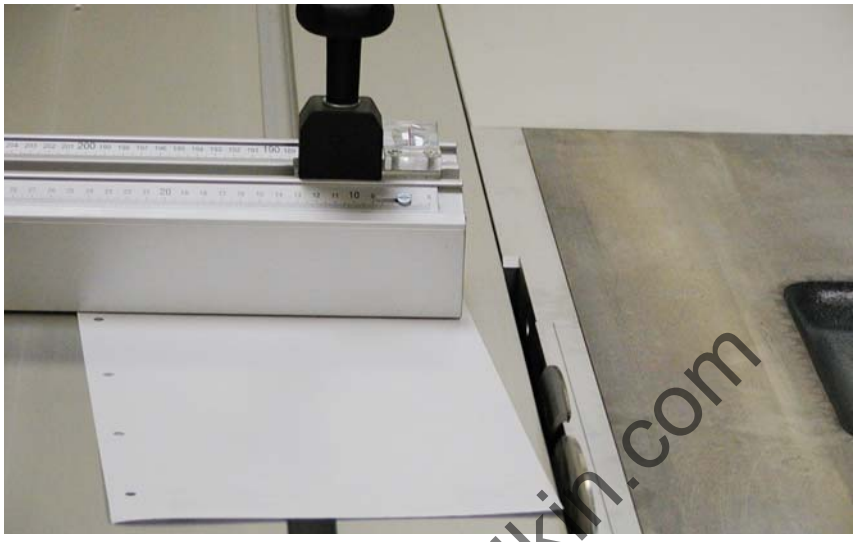


Fig. 5-43 Checking the cross-slide height

Push a piece of cardboard of approx. 0.5 mm thickness between the crosscut fence and the sliding table; it must be possible to move the cardboard freely in every position. The crosscut fence must be parallel to the surface of the sliding table!

Setting

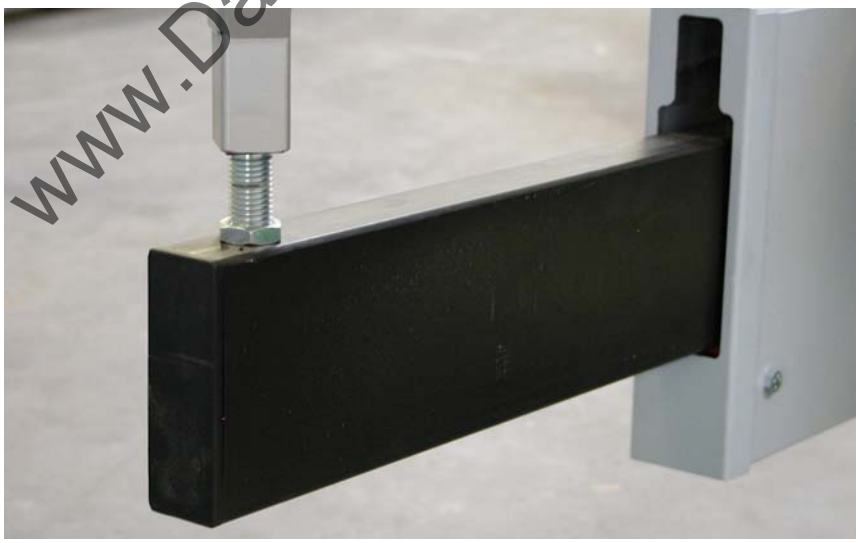


Fig. 5-44 Adjusting the cross-slide height

Adjust the height of the swinging arm bolt and fix it with a lock nut. Check that the swinging arm is parallel if the gap changes in accordance with the position of the sliding table!

5.4.5 Setting free cut

Sliding table

Definition:

The sliding table, the saw blade and the rip fence are not parallel to each other, so the crosscut fence and the rip fence do not form a 90° angle. The sliding table runs to the left out of the direction, by a fraction of a millimetre. in the same way, the rip fence points slightly to the right so that a gap is created behind the saw blade.

The rising saw blade tooth must not recut, but free cut should be set as small as possible. When using a scorer, make sure that both free cuts are of an equal size.

Check:

Set the saw blade to maximum cutting height, and cut off an approx.100 mm piece from an MDF test piece at the cross-cut fence. The noise difference between the cutting and non-cutting teeth lets you identify whether the sliding table is set correctly. When the rising teeth pass, only a slight fluttering should be heard compared to the noise of the cutting teeth.

Setting:

Release the sliding table mounting components at both ends **and** in the centre (if installed). Release the lock nuts of the stop screws. Adjust them as required and fix them with lock nuts again. Then push the sliding table against the stop screws and re-tighten all fastening screws.

Rip fence

Check:

Set the saw blade to maximum cutting height, and cut off a test piece of about 300 x 450 mm (if possible MDF) at the rip fence. The sound of the rising teeth must be the same as when cutting free on the left, with the sliding table correctly set.

Cross-check:

Move the rip fence approx. 0.5 mm closer to the saw blade, push the riving knife with the workpiece slightly to the side and cut in backward approx. 50 – 80 mm. Pull out again in the normal direction, turn it once around the cross-axis, and cut in approx. 20 mm deep in the normal way. The difference between these two cuts should be almost invisible but easily felt.

When using a scorer, make sure that both free cuts are set as equal as possible!

Setting: Manually adjustable rip fence

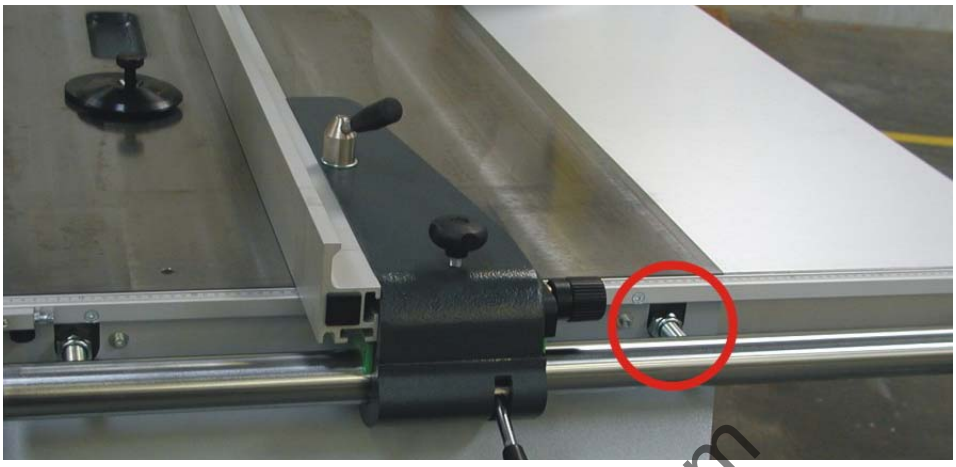


Fig. 5-45 Setting free cuts, standard rip fence

- Undo the nuts on the bolts connecting the round bar and the table width extension
- The degree of free cut on the rip fence can be altered by adjusting the middle lock nuts
- Tighten the nuts on the bolts connecting the round bar and the table width extension

Setting: Electromotive rip fence

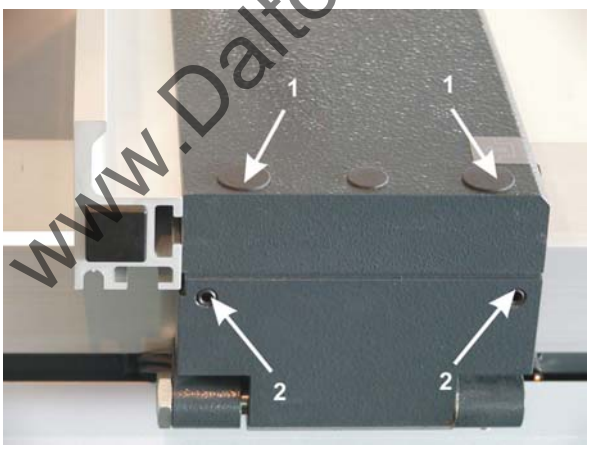


Fig. 5-46 Free cut setting, electromotive PA

- Release clamping screws 1
- Set the free cut by adjusting setscrews 2
- Tighten clamping screws 1

5.4.6 Angle cut

Checking the angle cut

Before checking the angle cut, check the settings of the sliding table and of the swinging arm, and correct them if necessary.

Carry out the check as follows:

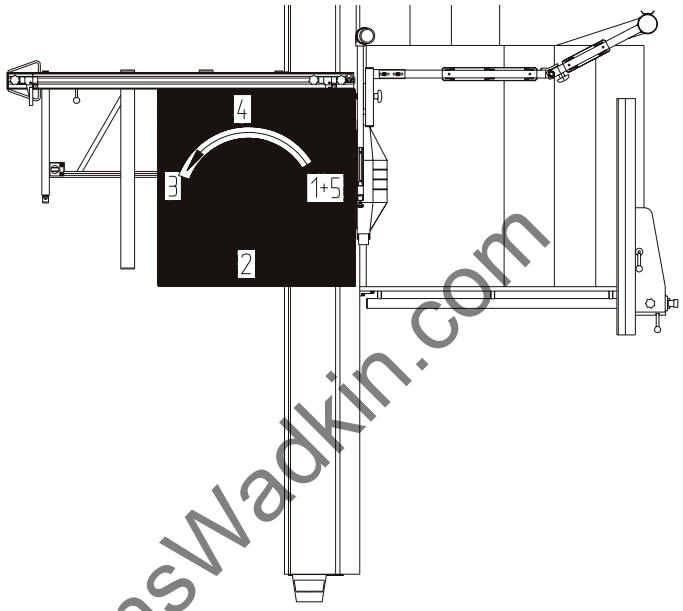


Fig. 5-47 Angle cut

As the tool, use a sharp saw blade, D = 350 mm/ 3.5/2.5/72 teeth alternate bevel at n = 5000 rpm. Take a 1000 x 1000 mm chipboard or MDF board, minimum board thickness 19 mm. Perform 5 cuts (see fig.), laying the last cut side at the crosscut fence for the next cut (turn the board counterclockwise). For the 5th cut, cut off a strip with a width of approx. 10 mm. Measure the thickness at both ends of the strip with a vernier caliper. The difference between the two dimensions divided by 4 gives the angular error per metre cut length.

Check:

The angle cut must be checked at a minimum of 2 different positions on the cross-slide of the sliding table.

Factory setting:

The cross-slide is clamped to positions of approx. 300 mm and 1300 mm from the sliding table end. In these two positions, the angle cut is checked and adjusted as described above. Ensure that the setting does not exceed the maximum permissible tolerance of **< 0.2 mm** (for the 5th cut (dimension 1 - dimension 2)).

5.4.7 0° setting of the saw blade

Check:

- Set the tilt adjustment to 0°.
- Position 2 strips (approx. 100 mm wide) **vertically** in front of the crosscut fence, cut in this position and butt the cut surfaces against each other.
- If the setting is correct, the cut surfaces should be parallel, i.e. no gap can be seen between the cut surfaces.

Fig. 5-48 Cutting a test piece

Fig. 5-49 Checking the 0° -setting

Setting:

Recalibrate the machine if a gap is detectable!

6 Operating

6.1 Working safely with the dimension saw

6.1.1 Cross-slide/crosscut fence

Fig. 6-1 Cutting boards

The crosscut fence can be installed at two positions on the cross-slide.

Position 1: Cutting boards

The operator presses the workpiece against the fence in the cutting direction.

Fig. 6-2 Cutting solid wood

Position 2: Cutting solid wood and boards up to 600 mm wide

The operator pulls the workpiece along the fence against the cutting direction.

Function description of the crosscut-mitre fence

- The crosscut-mitre fence can be swung by 49° (angle indicated on scale), plus angle-dependent adjustable length compensation via a scale.
- Ball bearings run in the sliding table groove, preventing the stop fence coming into the cutting plane when swung
- Clamping of the stop profile at the pivot and on the degree scale
- Additional clamping at the 90° position
- Movable, fixable C profile as an additional workpiece support

Operating elements

Fig. 6-3 Position of clamping screws

[1] Clamping screw 1
[2] Clamping screw 2

Adjusting the angle

- Release the clamping screws
- Set the crosscut-mitre fence to the desired angle
- Carry out length compensation
- Tighten clamping screw 1
- Set and tighten clamping screw 2

Length compensation

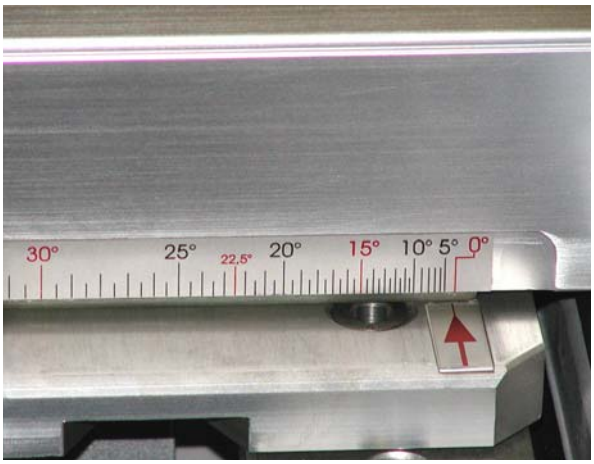


Fig. 6-4 Length compensation scale

By shifting the crosscut-mitre fence, the length dimension can be adjusted for the set angle.

Changing the crosscut-mitre fence

- Release the clamping screw and clamping lever
- Push the crosscut-mitre fence to the 2nd position
- Push the guide piece of the eccentric clamping system into the pivot groove as far as it will go and clamp it
- Tighten the clamping screws

Note!

When dimensions need to be adjusted with the stop bar, make sure that the flip stop is against the fence of the extension!

6.1.2 Rip fence

Fig. 6-5 Position of the clamping screw

For cutting parallel, the rip fence is pushed up to the required dimension. The set dimension is read off from the edge of the aluminium profile.

The dimension scale can be adjusted to the individual tool thickness after releasing the knurled screw.

Stop fences

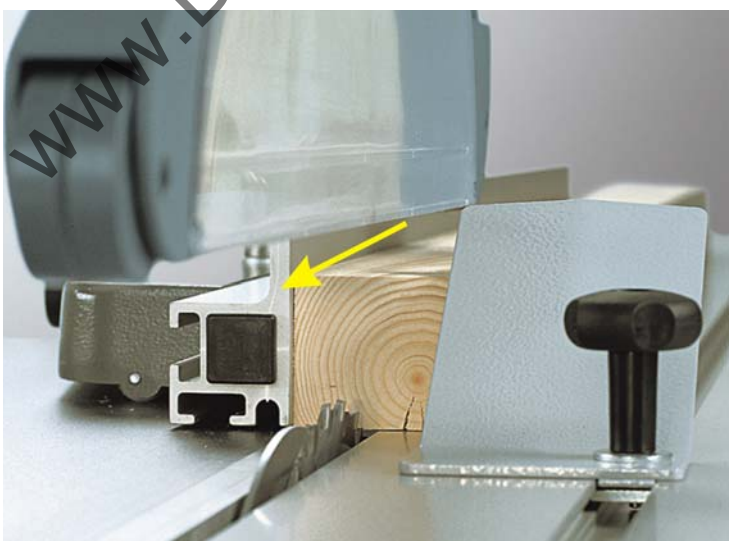


Fig. 6-6 Upright position of the stop fence

The stop fence of the rip fence can be adjusted in the cutting direction and to the profile height. Clamp it in the required position with the top eccentric lever.

For crosscutting short workpieces and for recessing or other work cycles during which offcuts can become jammed between the stop and the saw blade, the stop fence is moved forward until its rear end is in front of the saw blade.

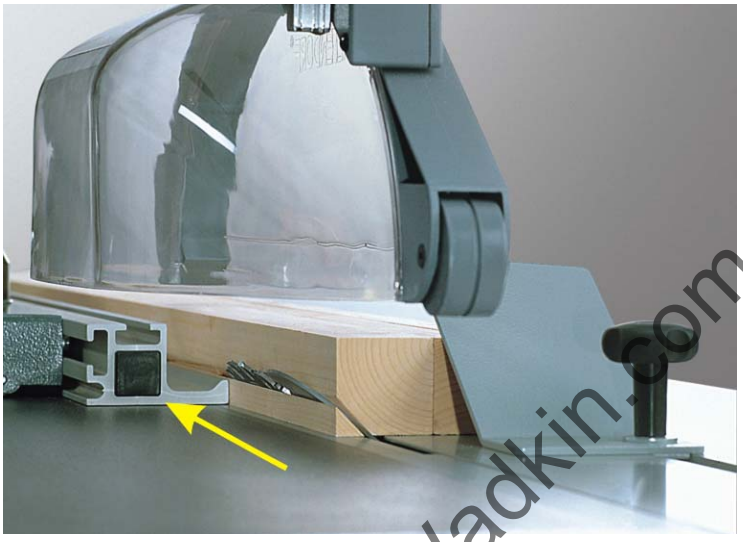


Fig. 6-7 Flat position of the stop fence

The stop fence is moved into the flat position when cutting flat and narrow workpieces. This means there is more space for workpiece guidance and the fence can be moved closer to the saw blade, in particular when the saw blade is tilted, without hitting the protection hood.

Warning!

Danger of injury!

When cutting widths of less than 120 mm, make sure that the material is fed with a push stick and that the stop fence is laid flat.

6.1.3 Double roller carriage

Sliding table operating elements:

Fig. 6-8 Sliding table operating elements, manual

Fig. 6-9 Sliding table operating elements, TIP SERVO

Fig. 6-10 Sliding table operating elements, vacuum suction cups

The vacuum suction cups are exclusively operated by means of the operating panel.

6.2 Working examples

General information

The Altendorf sliding table saw is a universal machine that can be used for various saw cuts. However, the machine must be set up appropriately.

Tools

First, make sure that you only use saws in perfect condition, that the riving knife is correctly set and that the top protection hood is lowered close above the workpiece to be cut. The latter is also particularly important for ensuring perfect functioning of the top extraction system.

Rotational speed

Note!

Make sure that the correct rotational speed is set and, after the machine has been switched on, do not start pushing the workpiece forward until the saw blade has reached its full rotational speed.

Position of the hands

Lay your hands flat on the workpiece with fingers and thumbs close together, and with sufficient safety clearance from the saw blade.

For further information about safe working, refer to the following description of the individual work steps.

Edge cutting (trimming)

Fig. 6-11 Edge cutting

Tool: Circular saw blade for longitudinal cuts

Work cycle: Fit the clamping shoe on the sliding table. Lay the workpiece with the hollow side down, and press underneath the clamping shoe. Push the workpiece forward by applying pressure with the ball of your right hand on the workpiece edge. Place your hands with sufficient safety clearance from the tool.

Longitudinal cutting of narrow workpieces

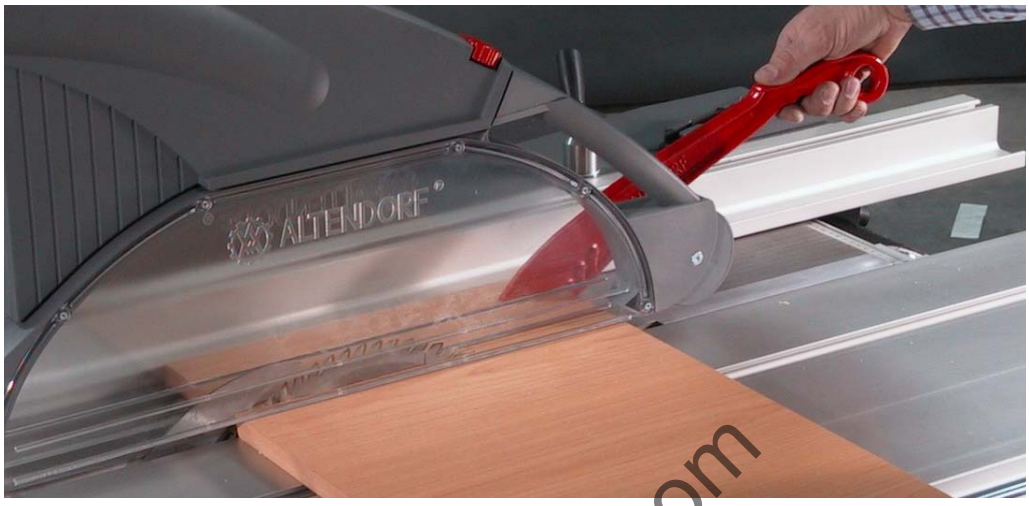


Fig. 6-12 Longitudinal cutting

Workpiece width < 120 mm

Tool: Circular saw blade for longitudinal cuts

Work cycle: Set the rip fence to the required cutting width. Lower the top protection hood according to the workpiece height. Push the workpiece (aligned along the fence) and sliding table forward, using the push stick in the vicinity of the saw blade, and push the parted workpiece beyond the riving knife. Use the push stick from the very beginning when cutting short workpieces.

Cutting strips

Fig. 6-13 Cutting strips

Tool: Circular saw blade for fine cuts

Work cycle: Set the aluminium straight edge of the rip fence to the low guide surface. Lay the workpiece on the sliding table and press against the rip fence with your left hand. Push the workpiece forward with the sliding table; use the push stick in the vicinity of the saw blade to push the strip beyond the riving knife.

Crosscutting wide workpieces

Fig. 6-14 Crosscutting

Tool: Circular saw blade for crosscuts

Work cycle: Lay the workpiece against the crosscut fence; when pushing forward, push firmly against the fence with your left hand. When using the throw-over stop, raise the stop and remove the workpiece from the saw blade before pulling back after the cut, or remove the workpiece behind the rising gear rim.

Concealed cutting, rebating

Fig. 6-15 Concealed cutting

Tool: Circular saw blade for fine cuts

Work cycle: When rebating, select the cutting sequence so that the cut-out strip is produced on the side of the blade opposite the fence. Lower the protection hood onto the workpiece and ensure good workpiece guidance (left hand presses the workpiece against the rip fence).

Concealed cutting, grooves

Fig. 6-16 Grooves

Tool: Grooving tool permitted for manual feeding (max. width 20 mm)

Work cycle: Close the table opening with a table strip matched to the grooving tool. Set the tool to the required groove depth. Leave the riving knife in as a rear tool cover. When pushing forward, firmly press the workpiece onto the table (otherwise danger of unintentional insert operation.).

Note!

Always use the crosscut fence when cross-grooving narrow workpieces.

Crosscutting against the rip fence

Fig. 6-17 Crosscutting

Lay the material against the crosscut fence of the cross-slide. Set the required dimension at the rip fence, pulling back the stop fence to the front of the saw blade after releasing the clamping, and guide the workpiece with the sliding table. When the stop fence is pulled back, the workpiece cannot jam between the saw blade and fence.

Crosscutting short and narrow workpieces

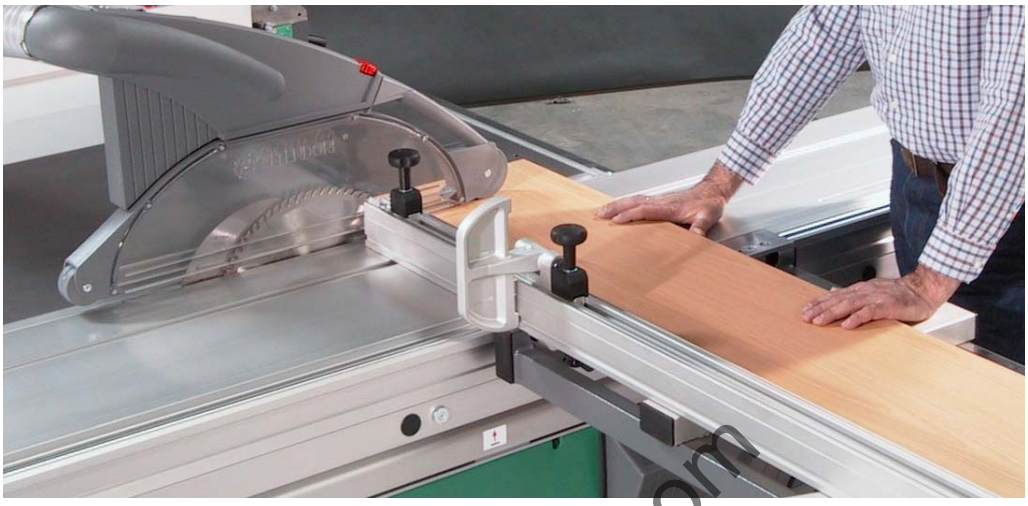


Fig. 6-18 Crosscutting

Tool: Circular saw blade for fine cuts

Work cycle: Adjust the deflector wedge featuring a magnet (not part of the scope of supply) such that the workpiece cuts cannot touch the rising section of the saw blade. Only feed workpieces using the crosscut fence. Never remove off-cuts by hand from the vicinity of the tool.

Dividing large boards

Fig. 6-19 Dividing

For this work cycle, the dimension can be set both on the rip fence and on the crosscut fence. If several pieces of the same size are to be cut from a large board, it is best to first cut off parallel strips at the rip fence and then cut them to the required dimension. However, if the workpieces exceed the cutting width of the machine, the dimension is set at the machine's crosscut fence.

Cutting with a negative cutting angle

Fig. 6-20 Cutting with a negative angle

For this work cycle only the crosscut fence or crosscut-mitre fence is used.

Do **not** use a DUPLEX fence!

Do not use a clamping shoe as the saw blade is tilted above the sliding table for a negative cutting angle.

6.3 Machine operation

6.3.1 Main switch

Fig. 6-21 Main switch

The main switch is located on the outside of the RH switch cabinet.

Before turning on the saw drives, the main switch must be moved to setting I. The machine control unit carries out a self-test, after which the available axes and their current values are displayed.

Grey/black main switch

The main switch does not have an EMERGENCY STOP function! When the machine is turned off with the main switch, the saw drives run down unbraked!

Red/yellow main switch

The main switch has an EMERGENCY STOP function! When the machine is turned off at the main switch, the main saw drive is braked.

6.3.2 Switching the saw drives on and off

Fig. 6-22 Switches for saw drives

Warning!

- Before switching on the machine, make sure that all protective devices required for the respective work cycle are attached and operative. In addition, check that the saw blades are correctly fitted and that there are no workpieces or other objects in their vicinity. Check whether the correct rotational speed has been preselected to match the saw blade and the work cycle to be performed. Check that the circular saw blade is running in the correct direction by briefly switching on.
- Make sure that the extraction system switches on at the same time as the saw drives.

Press the white push button I with the main saw symbol in the operating panel to start the main saw drive. After switching on the main saw, this button is lit. The scoring saw can only be started when the main saw has reached its operating speed. To do so, press the white push button I with the symbol of the scoring saw. This button lights up when the scoring saw has been switched on.

To switch off, press the black button marked “0”.

Fig. 6-23 Switches for sliding table saw drives

The drives can also be turned on and off with the switches on the sliding table (option).

In addition, the machine can be switched off with one of the EMERGENCY STOP buttons. However, this possibility should only be used in case of an emergency.

6.3.3 Setting the speed

Three rotational speeds can be set for the main saw drive by moving over the V-ribbed belt:

- 3000 / 4000 / 5000 rpm

Changing the rotational speed

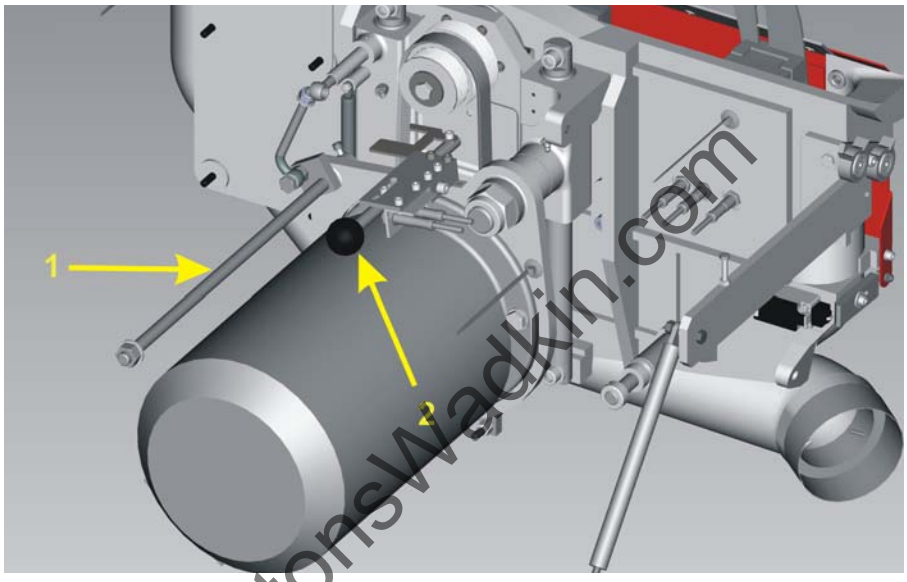


Fig. 6-24 Changing the rotational speed

[1] Switch off the drive.
[2] Open the machine door.
[3] Turn screw 1 counterclockwise until it engages.
[4] Set belt guide 2 to the required rotational speed.
[5] Place the V-ribbed belt so that it runs in the recess of the belt guide and into the vertical opposite grooves of the belt pulley.
[6] Turn screw 1 clockwise.

The belt tension is automatically set when the screw is turned back!

A rotational speed of only 3000 rpm is permissible with a saw blade diameter of D = 550 mm (only for machines without scoring unit), for VARIO 3500 rpm.

Optimum position for changing speed/belt: Tilt saw unit to 25°!

6.3.4 Fitting the main saw blade

AKE clamping system

Warning!

The following points must always be observed:

Non-adherence may lead to severe injuries!

- Do not fit any saw blades that are cracked or damaged in any way.
- Only fit saw blades with a diameter between 250 and 550 mm. Machines with a scoring unit have a maximum saw blade diameter of only 500 mm!
- The maximum rotational speed n max stated on the tool must not be exceeded.

Fig. 6-25 Front flange

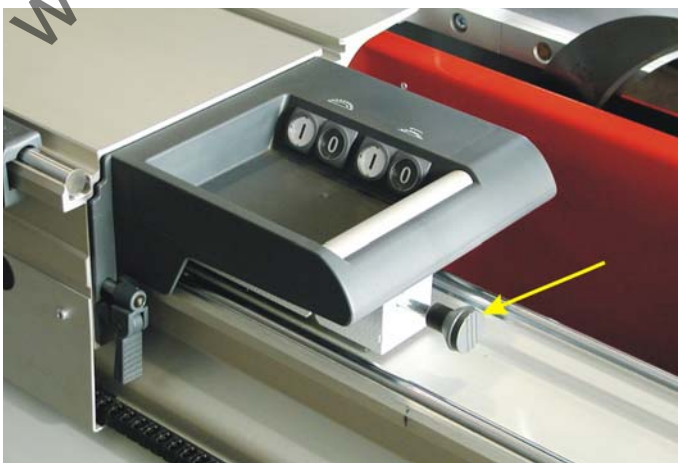


Fig. 6-26 Lock on the middle carriage

1. Switch off the drive.
2. Set the saw blade to the maximum cutting height and tilt to 0°.
3. **Turn off the main switch.**
4. Move the top carriage to the middle of the saw shaft, and unlock the lock at the saw blade centre by pressing the knob on the middle carriage.
5. Move the top carriage to the end position in the cutting direction.
6. Raise the red cover plate.
7. Use the wrench to release the screw in the expansion-head screw.
8. Undo the expansion-head screw by turning it counterclockwise with the flange.
9. Before fitting the new saw blade, remove any adhering chips and dust from both flanges.
10. Place the saw blade and front flange onto the saw shaft, turn in the expansion-head screw by hand and tighten it with the wrench.
11. Check the riving knife for strength and distance from the saw blade.
12. Close the red protective cover and perform a short test run to see whether the saw blade is running freely. Do this by lowering the top protection hood down to the table so that the saw blade is completely covered.

Warning!

Check that saw blade clamping system is tight before operating the machine!

Fitting a milling tool

In order to use a milling tool (max. cutting width 20mm), first proceed as described in point 1-8 in the previous section.

Then proceed as follows:

1. Remove the riving knife, cushioning disc and screws in the centre table strip

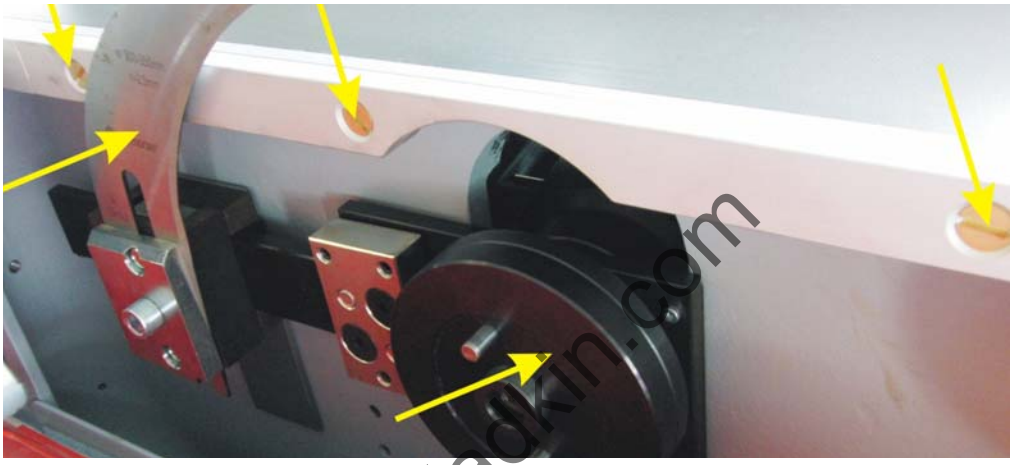


Fig. 6-27 See point 1

2. Remove the front part of the centre table strip
3. Place the milling cutter and front flange onto the saw shaft, turn in the expansion-head screw by hand and tighten it with the wrench.
4. Retract the riving knife block completely and tighten the clamping screw of the riving knife holding fixture
5. Close the red protective cover and perform a short test run to see whether the milling cutter is running freely. Do this by lowering the top protection hood down to the table so that the milling cutter is completely covered.

Warning!

When returning to normal processing with a saw blade, adhere to the following:

Non-adherence to these points may lead to severe injuries of the operator!

- Reinsert the disassembled centre table strip; only use original brass screws for fastening
- Reinstall the cushioning disc
- Reinstall and correctly adjust the riving knife

Warning!

After changing a saw blade, always check that the riving knife is correctly set.

Non-adherence to these points may lead to severe injuries of the operator!

- Select the riving knife according to the saw blade size and main blade thickness
- Ensure that the riving knife thickness is min. 0.2 mm larger than the main blade thickness
- The distance of the riving knife from the gear rim must be between 3 mm and 8 mm.
- The highest point of the riving knife must be set to between 0 and -2 mm beneath the topmost tooth.
- The riving knife must be at least 0.2 mm thicker than the main saw blade.

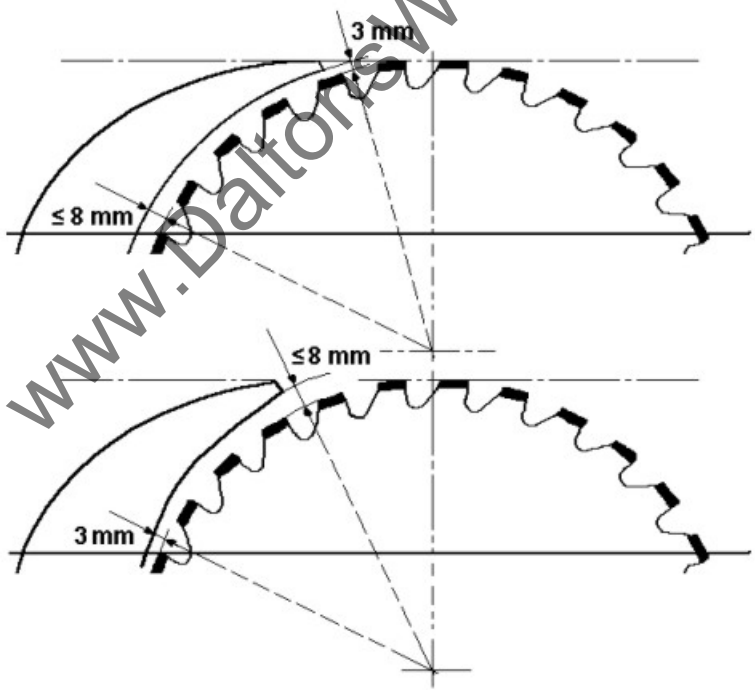


Fig. 6-28 Adjusting the riving knife

6.3.5 Saw blade recommendation

Warning!

Please note that only main saw blades with side holes can be fitted.

This is necessary to prevent loosening of the saw blade mounting in the course of braking!

- Do not use high-speed steel (HSS) saw blades!
- The tools require a hole diameter of 30 mm and carrier holes of 10 mm diameter on a pitch circle diameter of 60 mm!
- The scoring blades have different diameters and are described in the respective chapters of this manual.

Choosing the correct saw blade in accordance with the material to be cut and its thickness, alongside the correct cutting speed, is very important for a clean cut and low stress for the operator. For a selection of saw blades for ALTENDORF sliding table saws, refer to the tool manufacturers' documentation. As some of the stated cutting speeds cover large ranges, it is indispensable to empirically determine the best speed for optimum cutting results!

Cutting speed in m/sec. for the adjustable rotational speeds and saw blade diameters:

Diameter [mm]	3000 rpm	4000 rpm	5000 rpm
250	39	52	65
300	47	63	79
350	55	73	92
400	63	84	105
450	71	94	118
500	80	106	132
550	86	115	144

Tbl. 6-1 Cutting speed

The areas marked grey may not be adjusted!

6.3.6 Table locking

The sliding table interlock can lock the sliding table in any position, so that the workpiece can be pushed against the crosscut fence without the easy-running sliding table being set in motion unintentionally. It is actuated by means of a handle at the end of the top carriage.

Fig. 6-29 Sliding table unlocked

Fig. 6-30 Sliding table locked

6.4 Monitor controls ElmoDrive

Fig. 6-31 Monitor controls P-terminal

The buttons for the saw motor controls and the EMERGENCY STOP button are located on the LH side beneath the touch screen.

A key block containingwith 4 keys for theaxes is arranged on the RH side. The start/stop key can be used to start or interrupt positioning. The start button is also required for positioning in the safetyarea in the inching mode. A selected axis can be moved to any position using the - or + keys. During this, the axis moves at slow speed for 3 seconds and automatically changes over to a faster traverse speed afterwards. Touching the keys causes an adjustment of 0.1 mm or 0.1°.

A USB interfacefor data transfer is fitted above the keypad.

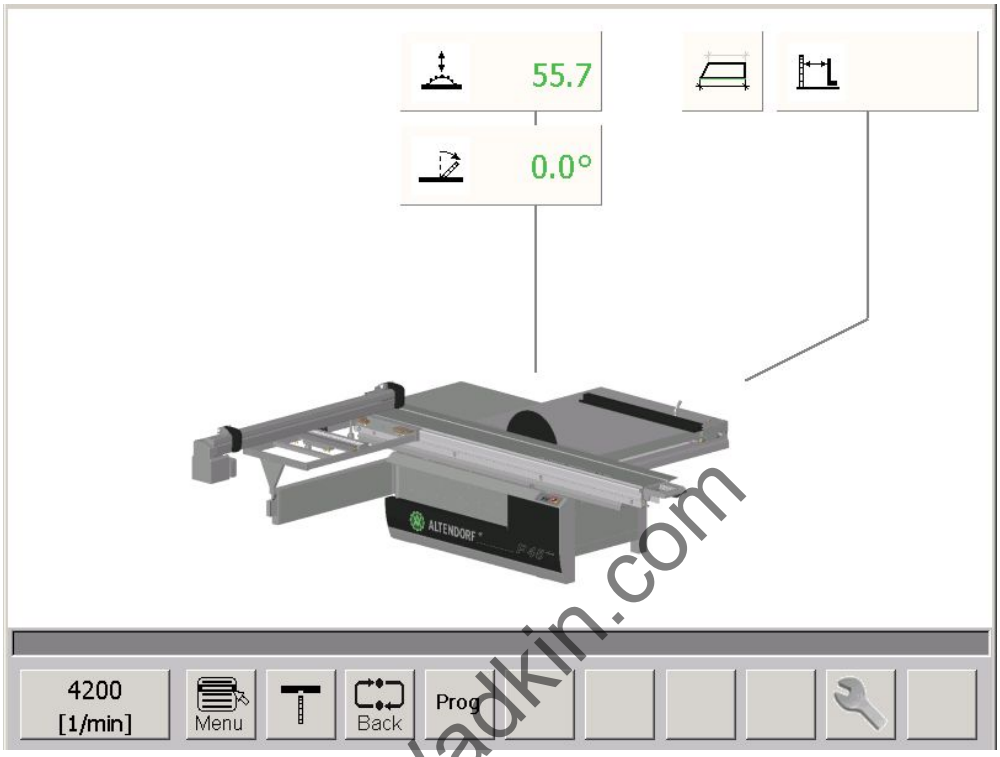


Fig. 6-32 ELMO II start screen

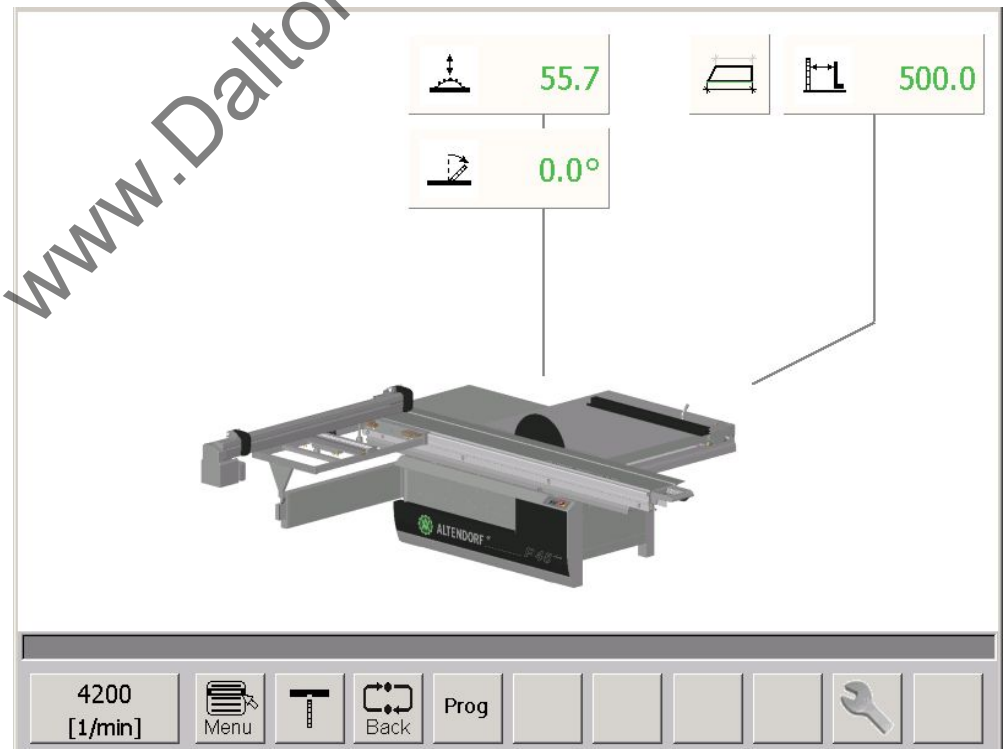


Fig. 6-33 Start screen

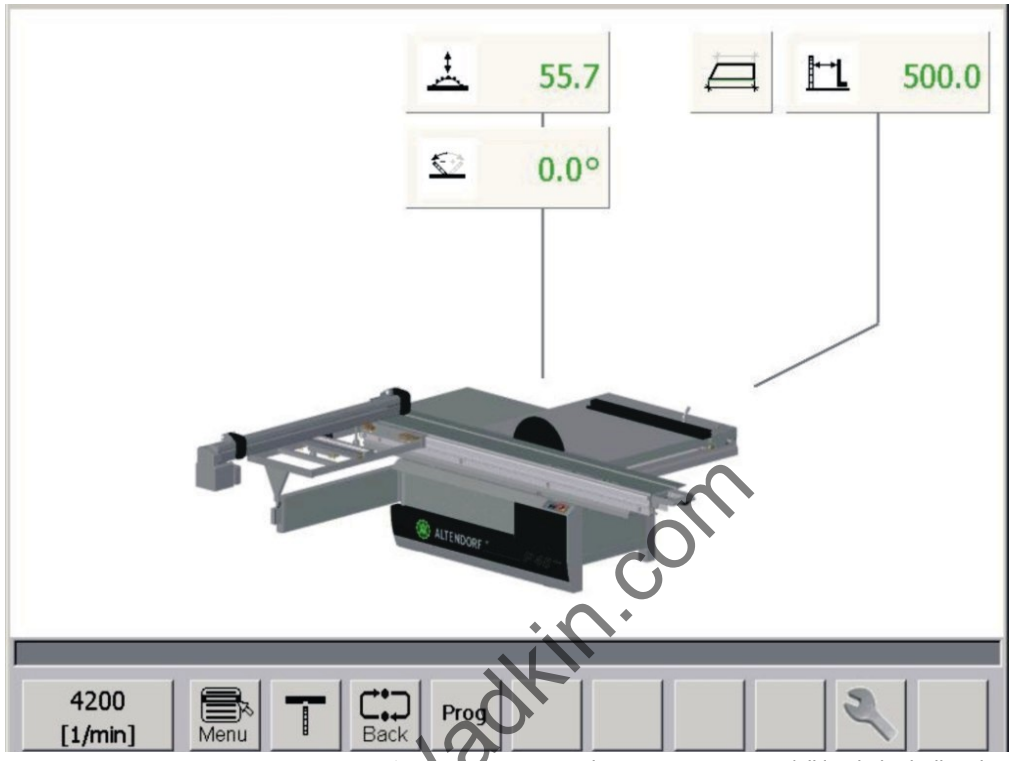


Fig. 6-34 Start screen / tilting in both directions

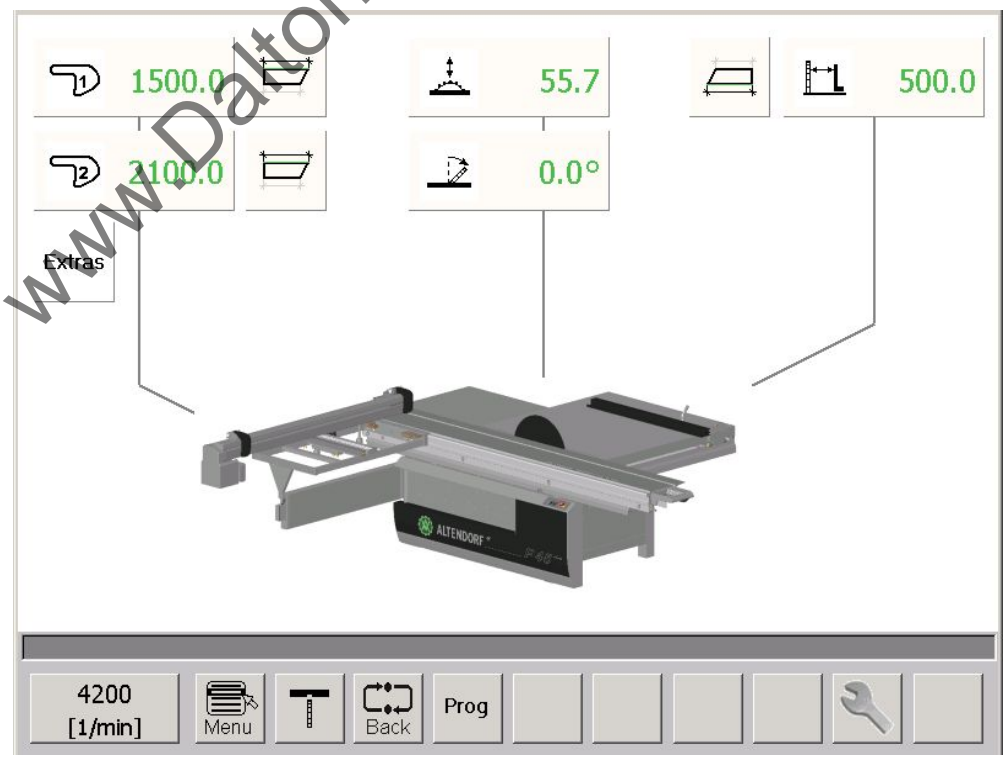


Fig. 6-35 Start screen / CNC crosscut fence DUO

The menu bar with fixed programmed buttons and freely programmable buttons is located in the bottom screen section.

The following buttons are programmed fixed:

- Rotational speed
- Menu
- Scorer (if present)
- Back
- Prog

When the machine has been switched on, the basic mask appears after approx. 10 seconds. The middle part of the display shows the outline of the sliding table saw. The adjustable axes are highlighted. On the top screen margin, buttons containing axis symbols and the respective axis values are located. The colours of the axis values have the following meaning:

- Green <> Axis in position
- Red <> Axis not in Position
- Yellow <> Axis being positioned

Note!

It is also possible to change several axes in their dimension and then pressing the start button to displace them simultaneously. Positioning is completed once the dimension display changes over from yellow to green.

Safety area / Inching mode

In the safety area, the operator is told to press the Start button to continue positioning. For clarity, a flashing start symbol is displayed in the bottom right-hand corner of the screen and, in this case, the START key is lit.

Description of numeric keypad functions

After pressing an *axis selection* button, a window opens showing a numeric keypad for entering dimensions.

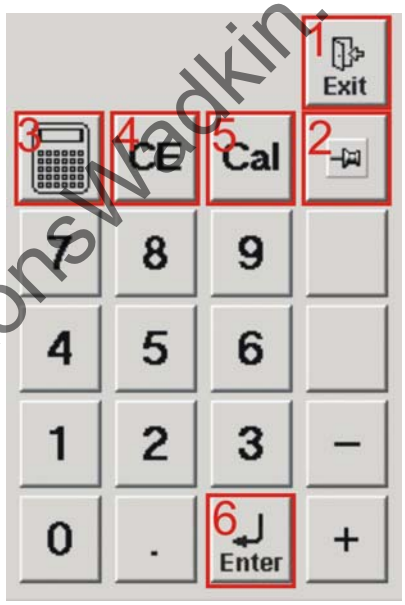


Fig. 6-36 Numeric keypad

[1] Exit the numeric keypad
[2] Prevents automatic closing of the input window after the Enter or Start button is pressed.
[3] Calculator
[4] Delete input
[5] Cal button
[6] Input confirmation

6.4.1 Calibration

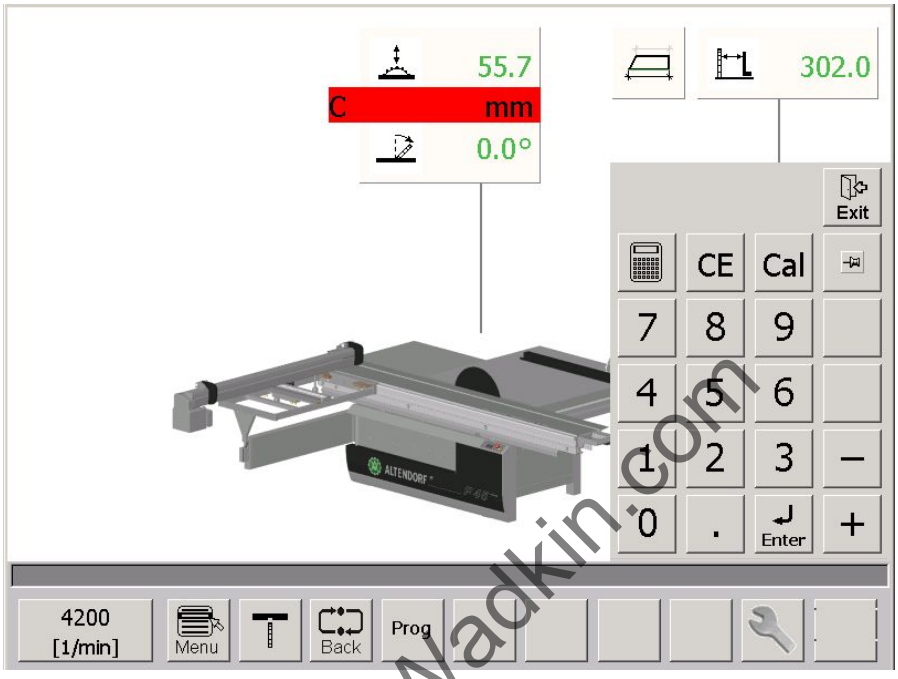


Fig. 6-37 Calibration

The dimensions of the axes must be checked and possibly calibrated every time the saw blade is changed.

Select the axis to be calibrated by touching and press the *Cal* button in the right-hand window for more than 1 seconds. Enter the dimension that was ascertained via a test cut and confirm this by pressing *Enter*.

Fig. 6-38 Tool Management

If, for example, you change the value of the cutting height and select a saw blade in Tool management, a tool management window opens. The new saw blade diameter calculated by the calibration process (after calibrating the cutting height) is displayed and can be applied by pressing (green background) *Save*. It then changes the saw blade diameter in tool management.

If the corrected saw blade diameter is not to be applied, press the top button with the original diameter and press *Exit* to close the window.

6.4.2 Height adjustment

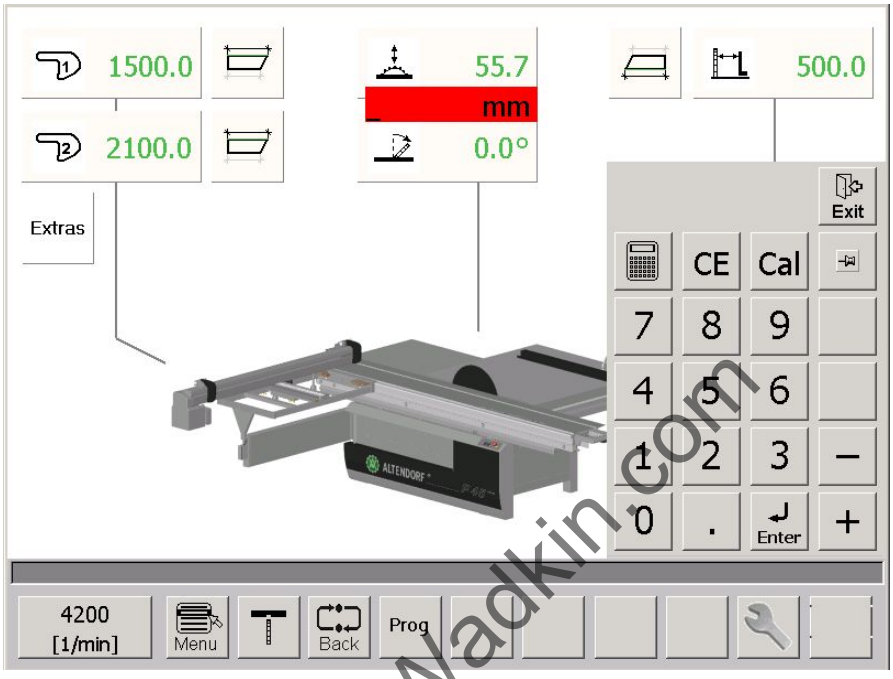


Fig. 6-39 Height adjustment (ElmoDrive)

- Touch the *Height Adjustment* button, the numeric keypad and a separate input window appear next to the axis in the RH section of the screen.
- Enter the desired figure and confirm with Enter, or press the START button immediately for positioning
- You can also use the + / - buttons (above the START button) to make fine adjustments

6.4.3 Tilt adjustment

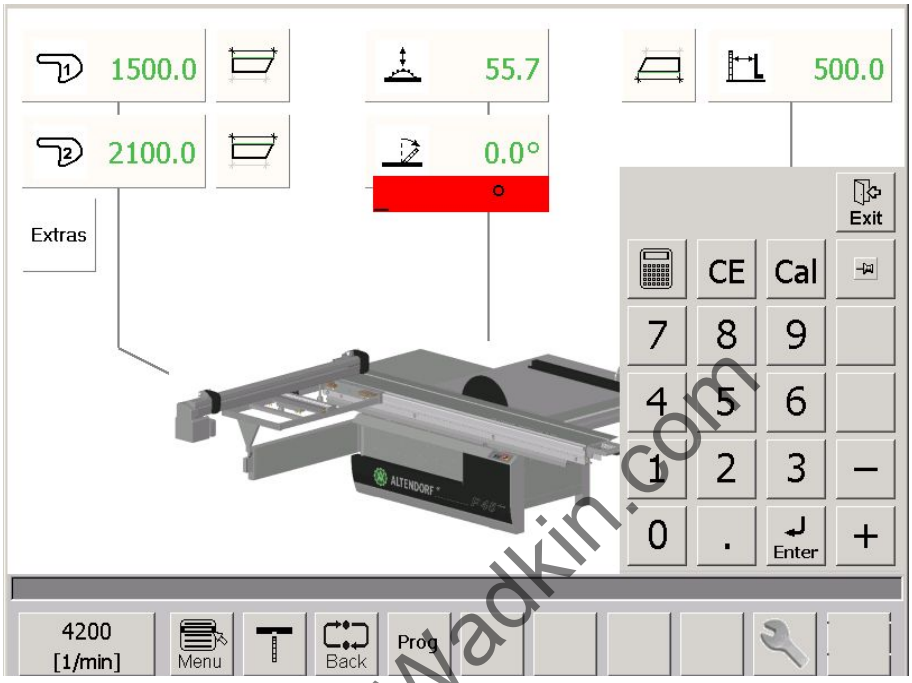


Fig. 6-40 Tilt adjustment_ElmoDrive, tilting to one side

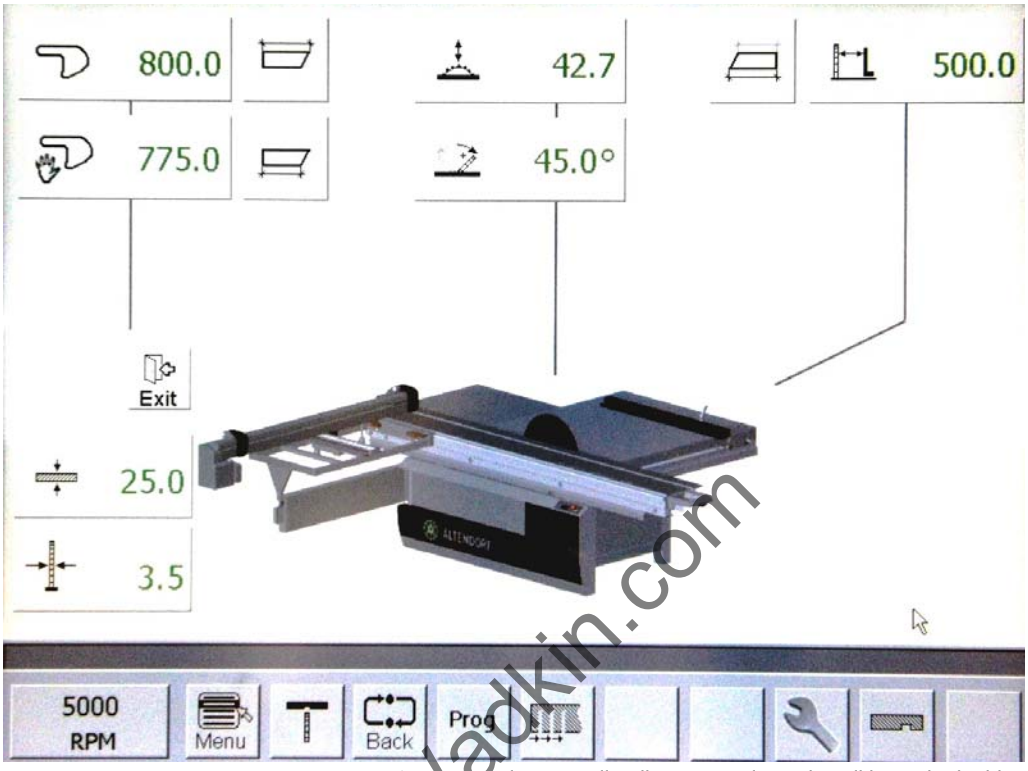


Fig. 6-41 Tilt adjustment_ElmoDrive, tilting to both sides

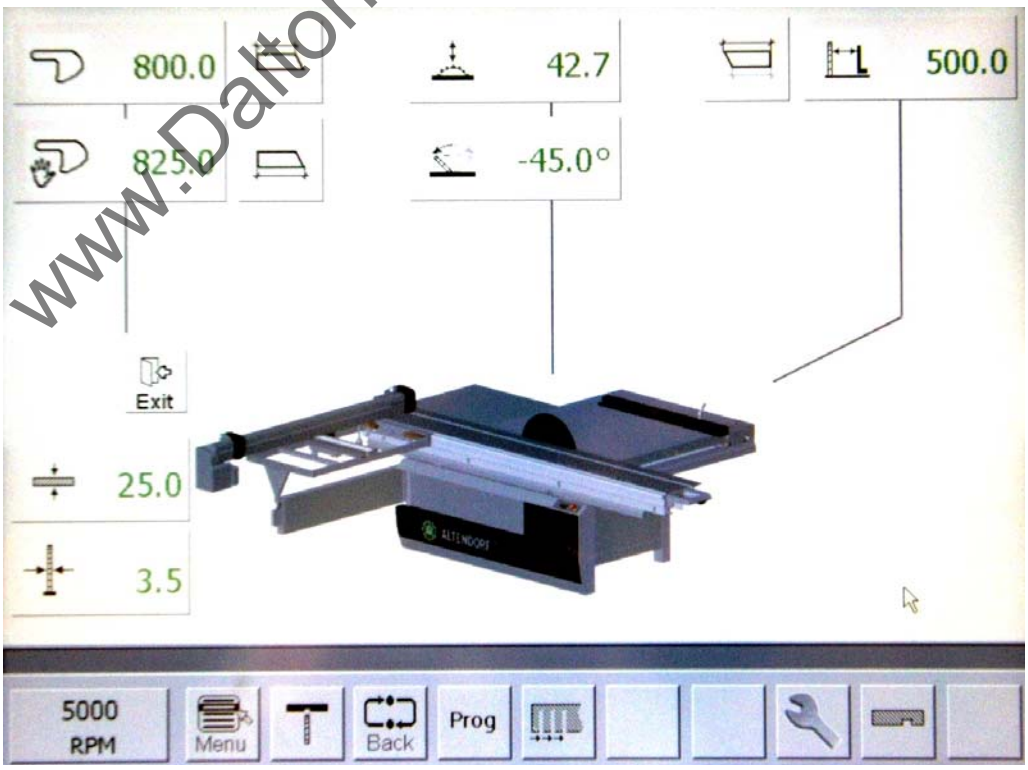


Fig. 6-42 Tilt adjustment_ElmoDrive, tilting to both sides

- Touch the *Tilt Adjustment* button in the RH section of the screen, the numeric keypad and a separate input window appear next to the axis.
- Enter the required dimension and confirm it with Enter
- Press the START button for positioning
- You can also use the + / - buttons (above the START button) to make fine adjustments

Attention!

It is imperative to ensure the following before tilting:

- Use the wide safety hood!
- When tilting to negative angles, observe the correct lateral position of the wide protective hood
- Clear the main table of any workpieces in the tilting area
- When cutting widths less than 180 mm, set the rip fence straight edge in the flat position

Note!

When the tilt angle is changed, the position control automatically adjusts the cutting height that has been set.

6.4.4 Motor driven rip fence (option)

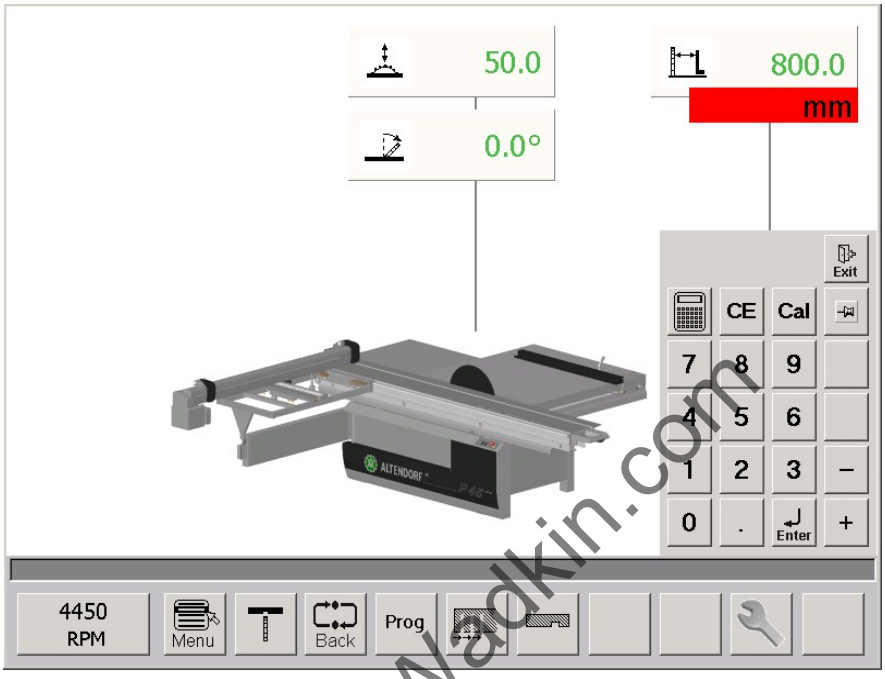


Fig. 6-43 Rip fence adjustment

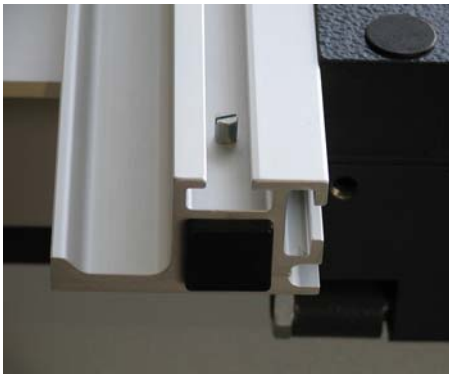
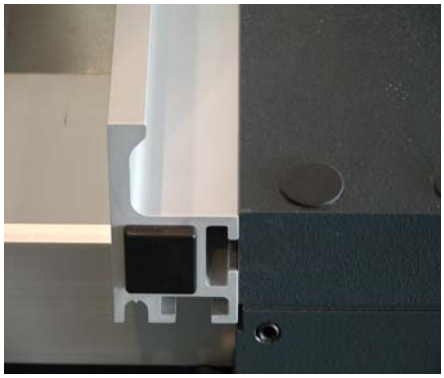
- Touch the *Rip fence* button, the numeric keypad and a separate input window appear next to the axis in the RH section of the screen.
- Enter the required dimension and confirm it with Enter
- Press the START button for positioning
- You can also use the + / - buttons (above the START button) to make fine adjustments

Note!

The low guide surface of the fence is used when sawing thin and narrow workpieces.

In the case of cuts less than 120 mm wide, the material must be fed with a push stick and the low guide surface of the fence must be used.

For work cycles in which cut-offs can get jammed between the saw blade and the fence, the stop fence must be adjusted so that the rear end is in front of the saw blade

	
Flat guide surface	High guide surface

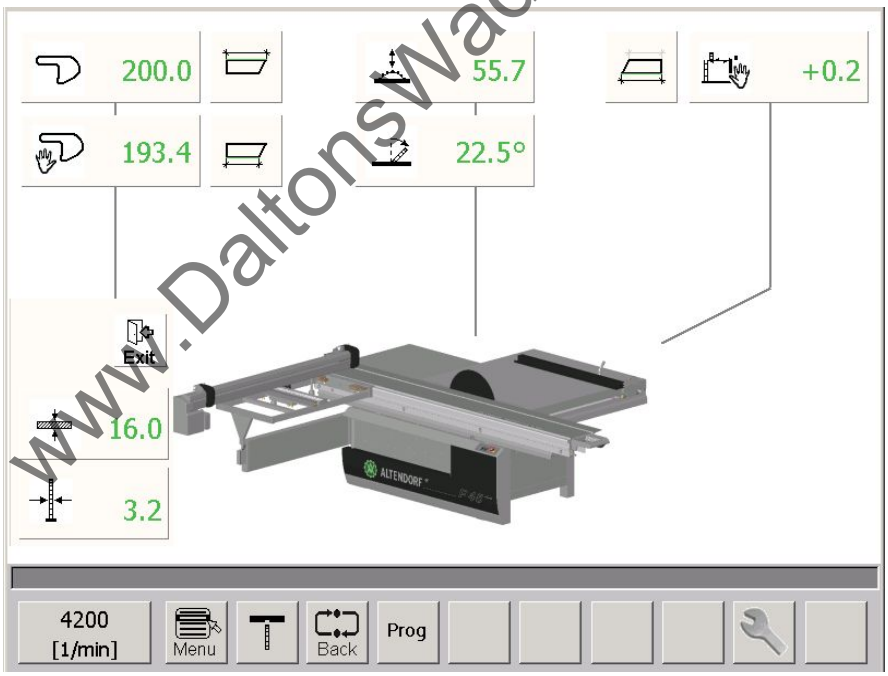


Fig. 6-44 ElmoDrive monitor with man. Rip fence

When the saw blade is tilted, the rip fence and crosscut fence is mapped in and the correction values for the setting are displayed.

6.4.5 Infinitely variable speed adjustment (option)

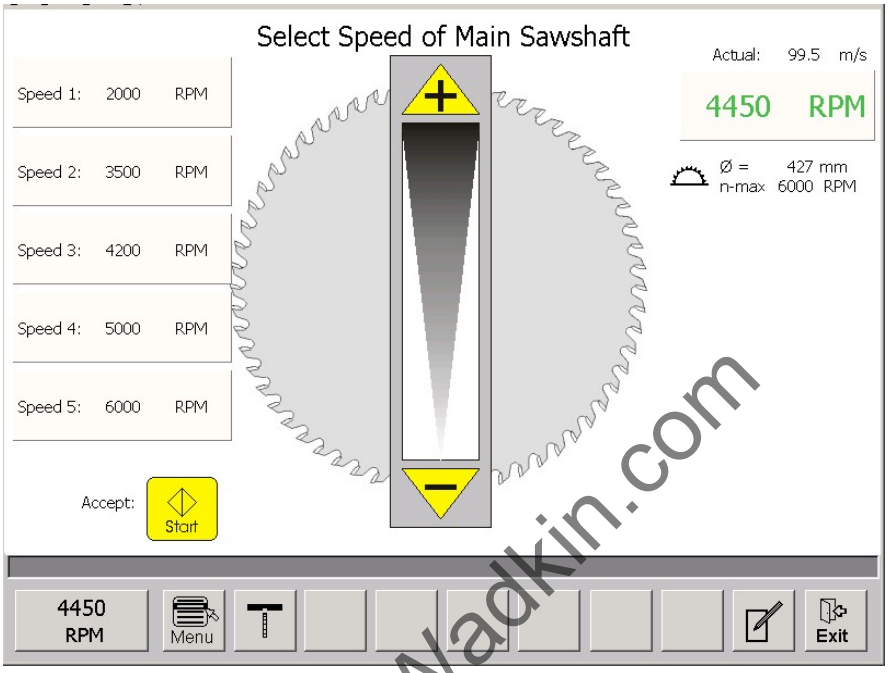


Fig. 6-45 Selecting the rotational speed for the main saw blade

The VARIO drive supports infinite adjustment of the speed so that the cutting speed can be set optimally for the different materials.

Pressing the *Rotational Speed* button on the menu bar takes you to the Rotational Speed Selection function.

The circumferential speed of the saw blade is shown in addition to the rotational speed. The saw blade diameter obtained from the position of the riving knife is used to calculate the speed.

Set/change speed

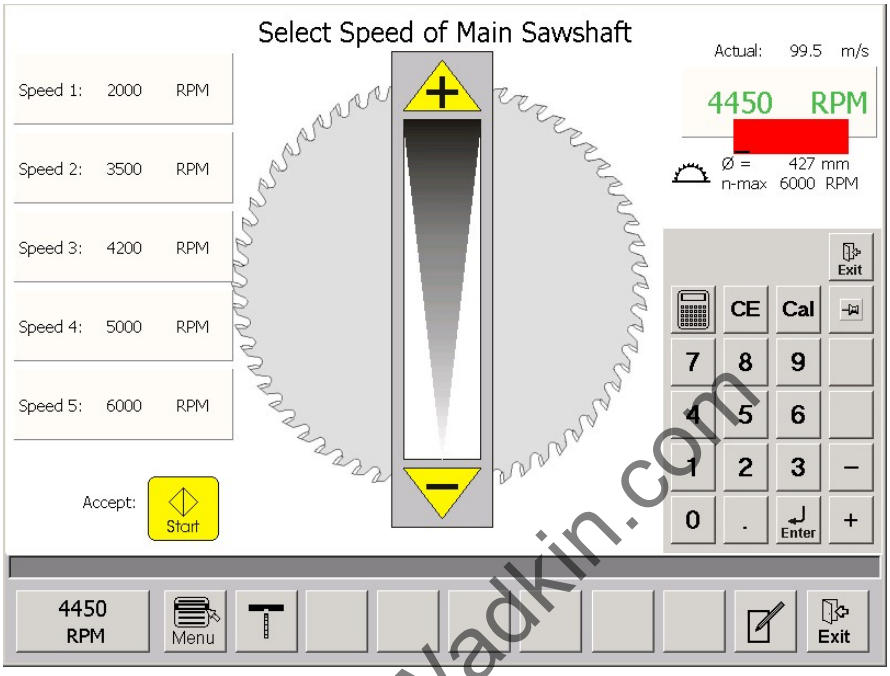


Fig. 6-46 Entering the rotational speed for the main saw blade

The speed can be influenced in the following ways:

- Press the Plus or Minus symbol in the middle of the screen to increase or reduce the rotational speed (within the permitted limits) by 50 rpm or to the next 50 increment.
- Press the button with the current speed display at the top right of the screen (green font) to map in a numerical keypad on the right side of the screen. You can enter the speed here in increments of 5, and confirm by pressing the *Enter* button.
- Select one of the 5 stored speeds displayed on the left-hand side of the screen.

Selecting a stored speed

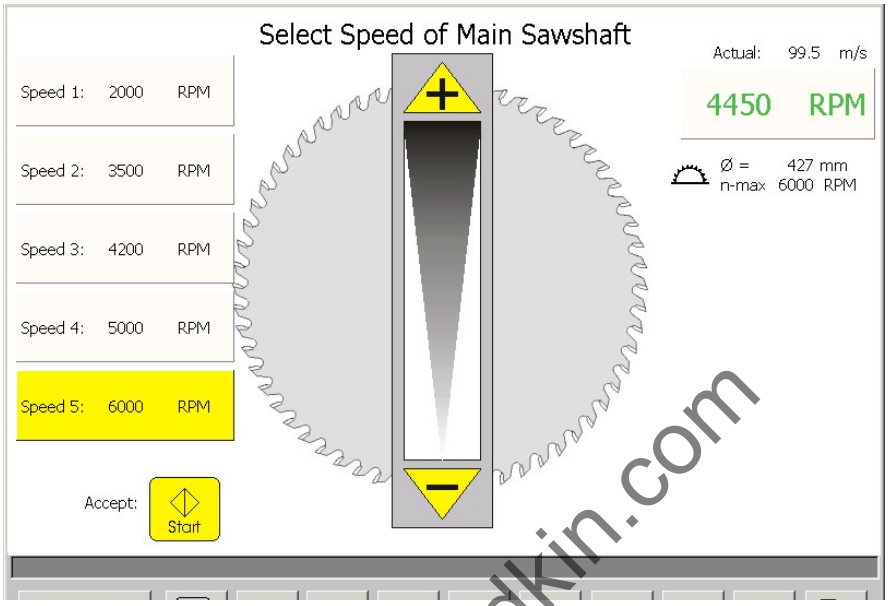


Fig. 6-47 Selecting a stored speed

- Press the desired speed button on the left of the screen; the button is displayed with a yellow background
- Press the START button and the stored speed will be set.

Storing a rotational speed

Fig. 6-48 Edit button (editing / changing)

- Press the *Edit button*
- Actuate the desired rotational speed button

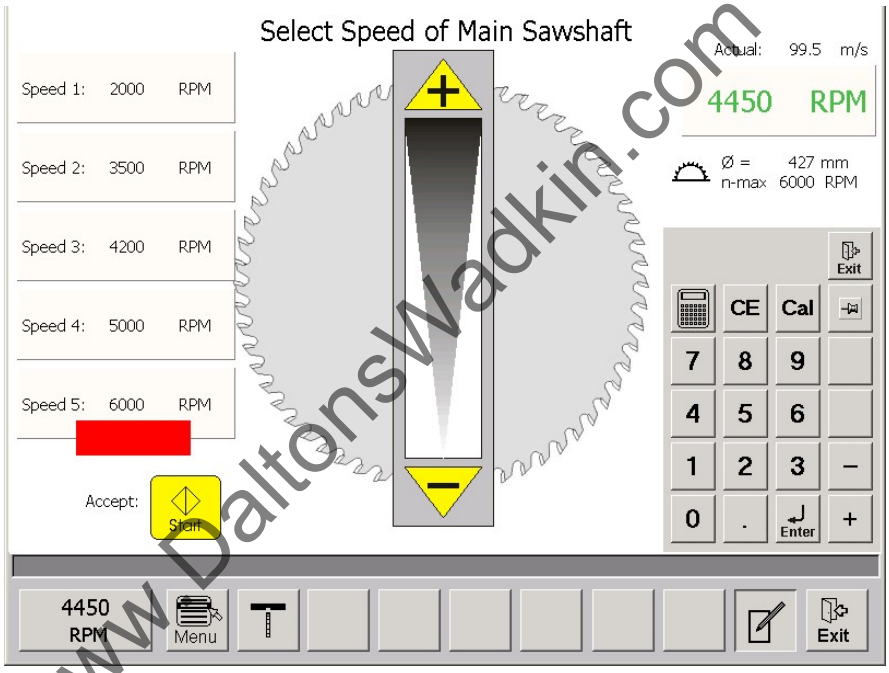


Fig. 6-49 Storing a rotational speed

- Enter a value and press *Enter*
- The value is accepted and stored

6.4.6 Crosscut fences

Manual crosscut fence

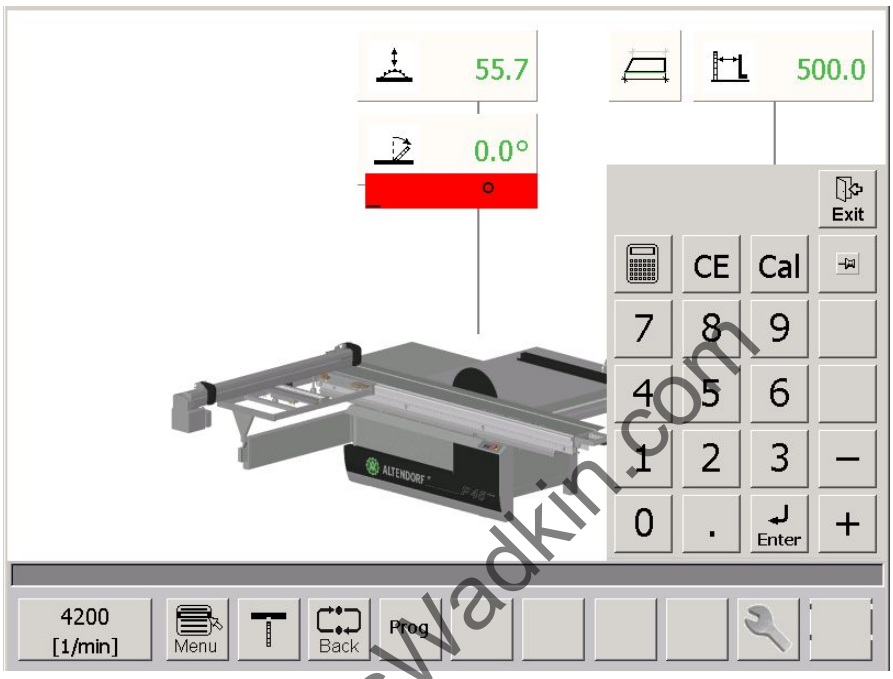


Fig. 6-50 Screen displayed for tilt angle 0°

If the machine does not feature motorised adjustment of the crosscut-mitre fence's throw-over stops, the temporary sizes for setting the crosscut-mitre fence are displayed, provided the tilt angle is ≤ 0°.

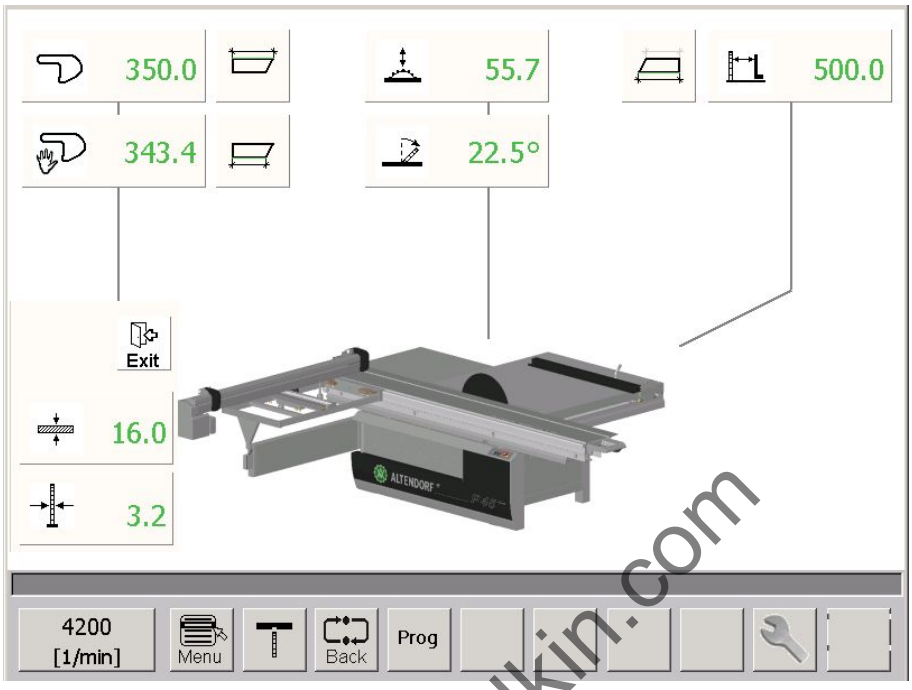


Fig. 6-51 Screen after entry of tilt angle 22.5°

Once the saw blade has been tilted, 2 new buttons each appear at the top left and bottom of the screen.

The two bottom buttons specify the material thickness and saw blade width. These values must be entered to allow effective use of the top functions.

These buttons can be hidden by pressing *ExitExtras* (which can be used for opening the window again) then appears under the buttons at the top left of the screen.

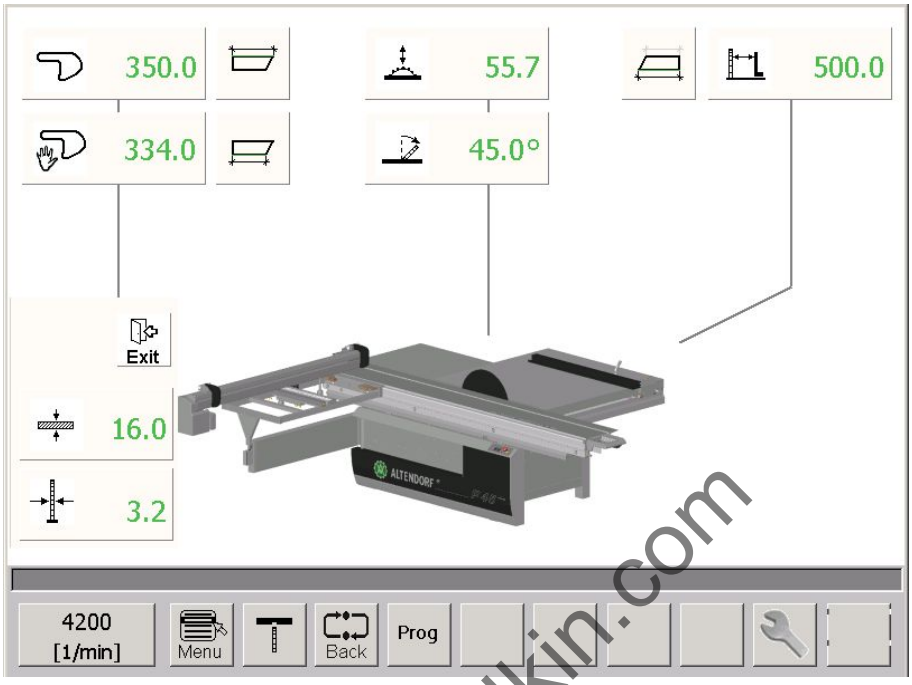


Fig. 6-52 Screen after entry of tilt angle 45°

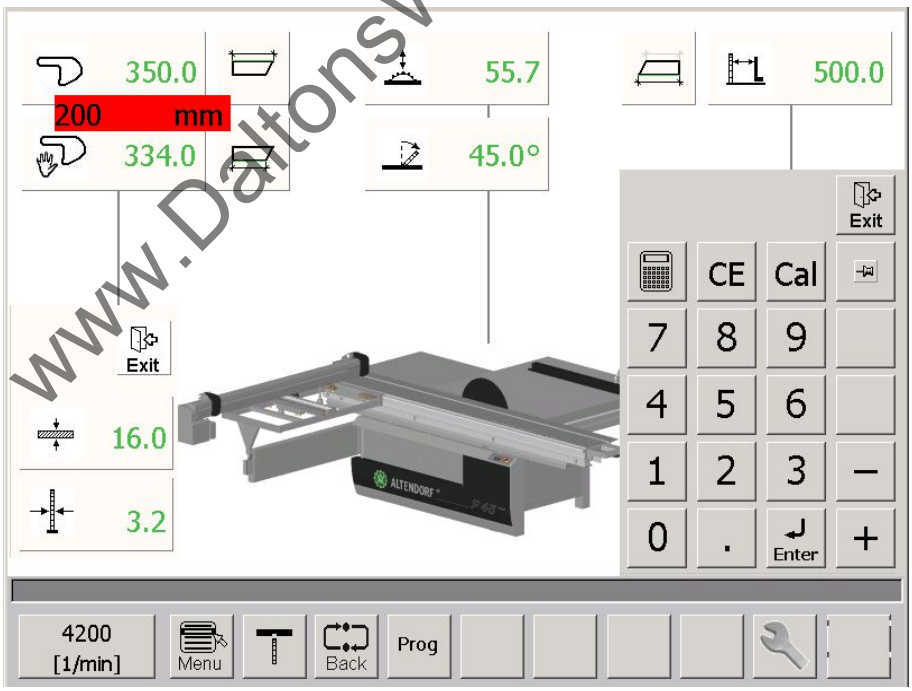


Fig. 6-53 Entry of the acute angle

To specify the finished size, press the top left-hand button and enter the acute angle.

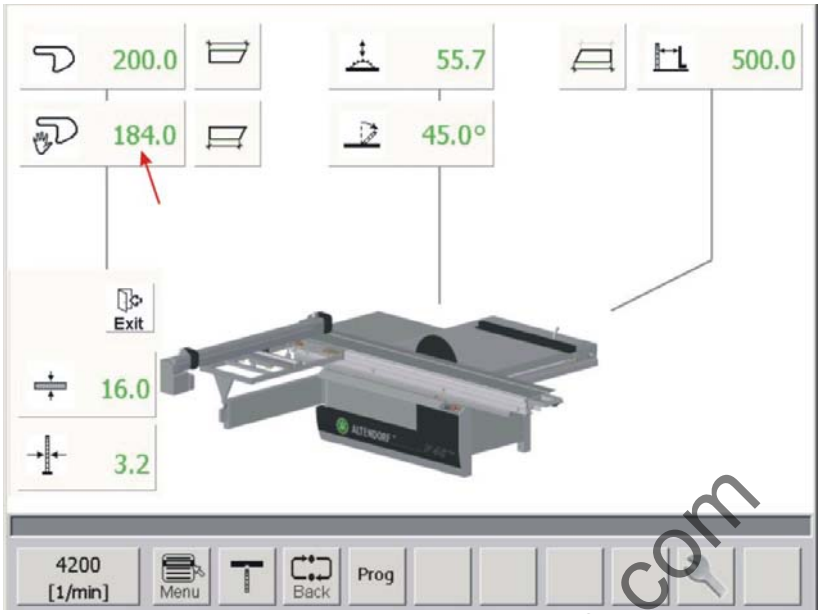


Fig. 6-54 Correction dimension

The dimension to be set manually will be calculated and displayed. This dimension not only depends on the tilt angle but also on the cutting width and material thickness.

CNC crosscut fence UNO 90

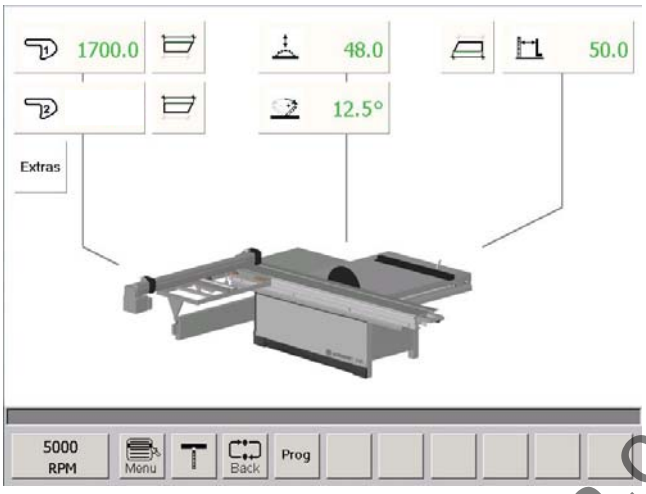


Fig. 6-55 CNC crosscut fence UNO

- Actuate CNC crosscut fence. A red input window and the numeric keypad appear.
- Enter the required dimension via the numeric keypad; the new dimension is shown in red.
- Press the START button to carry out positioning.
- The dimension depending on the tilting angle is automatically corrected.

Infinitely variable fine adjustment is possible by pressing the Plus or Minus button. Adjustment takes place in creep speed mode. Pressing the button for more than 3 seconds switches adjustment to rapid speed mode. Briefly touching the Plus or Minus button causes adjustment of 0.1 mm.

CNC crosscut fence DUO 90

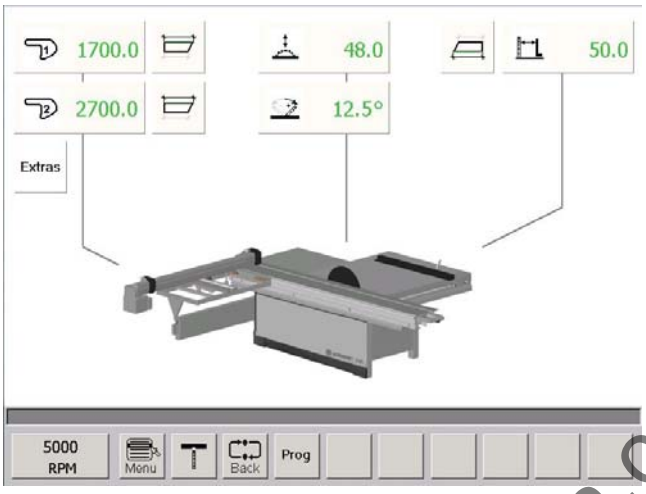


Fig. 6-56 CNC crosscut fence DUO

- Actuate the CNC crosscut fence button. A red input window and the numeric keypad appear.
- Enter the required dimension via the numeric keypad; the new dimension is shown in red.
- Press the START button to carry out positioning.
- The dimension depending on the tilting angle is automatically corrected.

Infinitely variable fine adjustment is possible by pressing the Plus or Minus button. Adjustment takes place in creep speed mode. Pressing the button for more than 3 seconds switches adjustment to rapid speed mode. Briefly touching the Plus or Minus button causes adjustment of 0.1 mm.

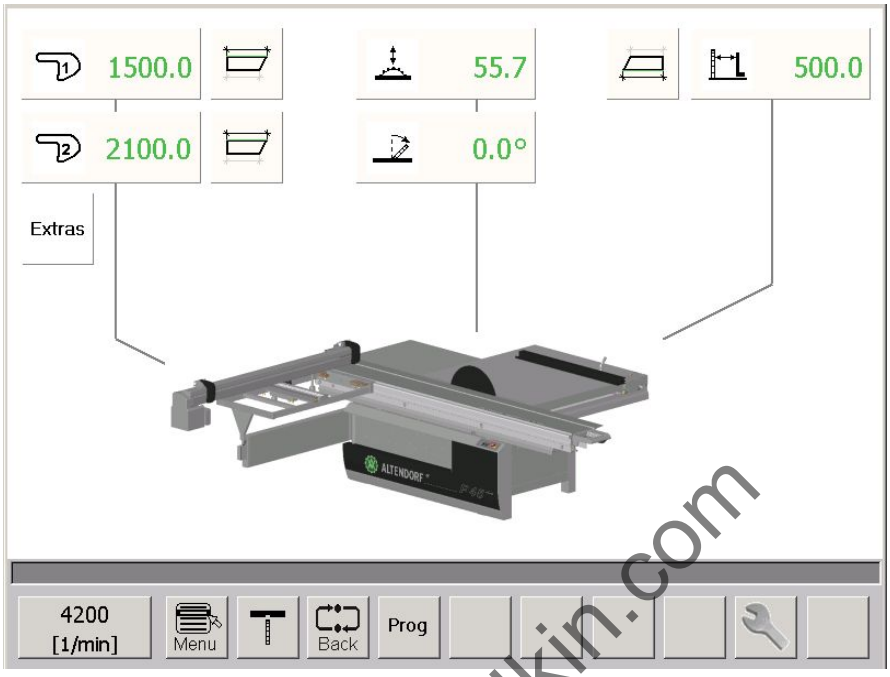


Fig. 6-57 0° position

Setting the dimension for the throw-over stops

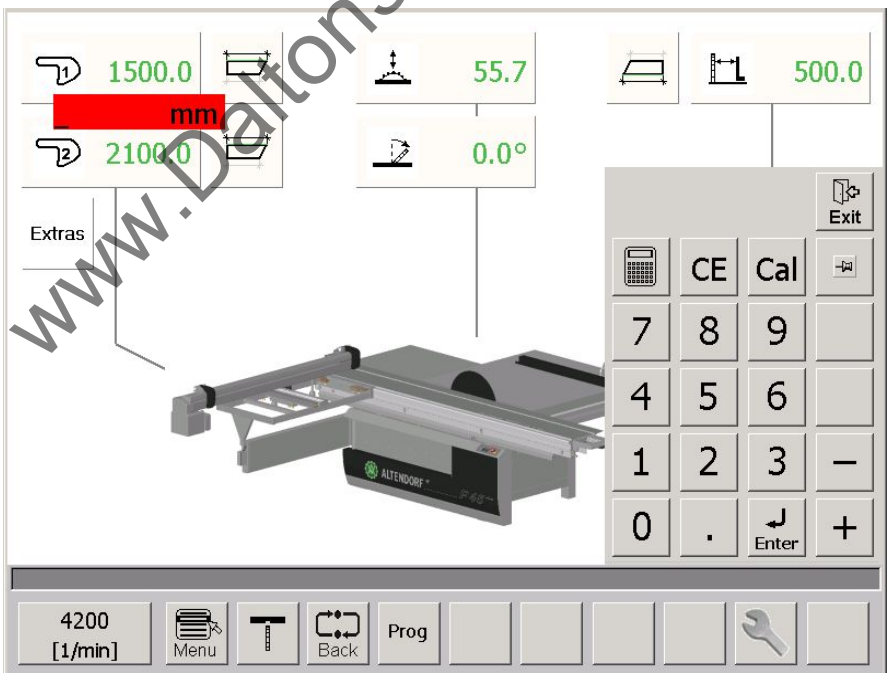


Fig. 6-58 Setting the dimension for the throw-over stop

- Touch the *Crosscut-Mitre Fence* button (throw-over stop 1 or 2), the numeric keypad and a separate input window are shown next to the axis on the right of the display.
- Enter the required dimension and confirm it with Enter
- Press the START button for positioning

CNC crosscut-mitre fence DUO FLEX

The crosscut-mitre fence can be swung from 0.00 to ± 47.00°. The angle can be set and calibrated manually.

The entire crosscut fence can be moved by about 260 mm to get closer to the saw blade when the fence has been swung.

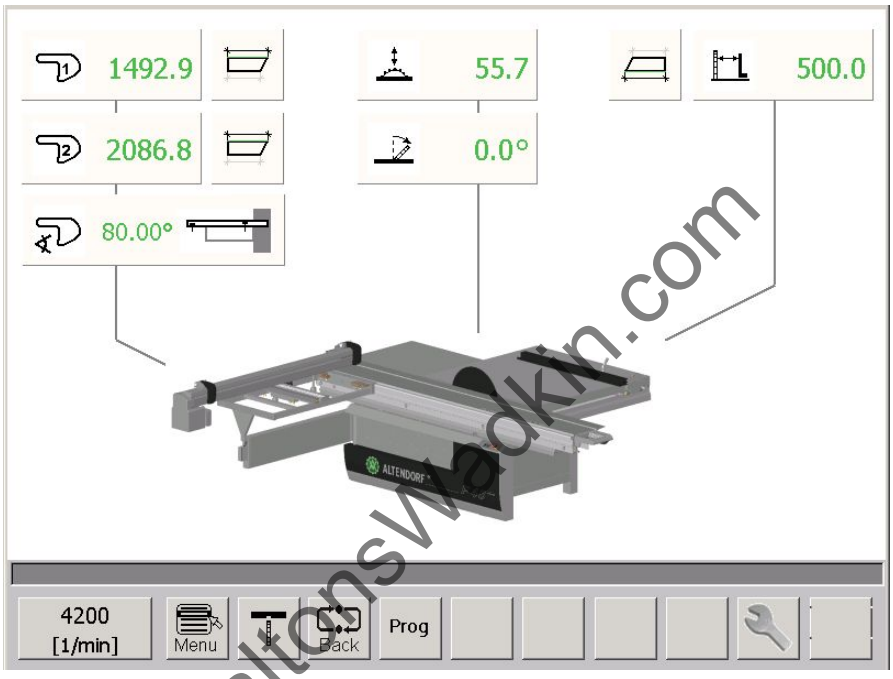


Fig. 6-59 Crosscut-mitre fence 0° position

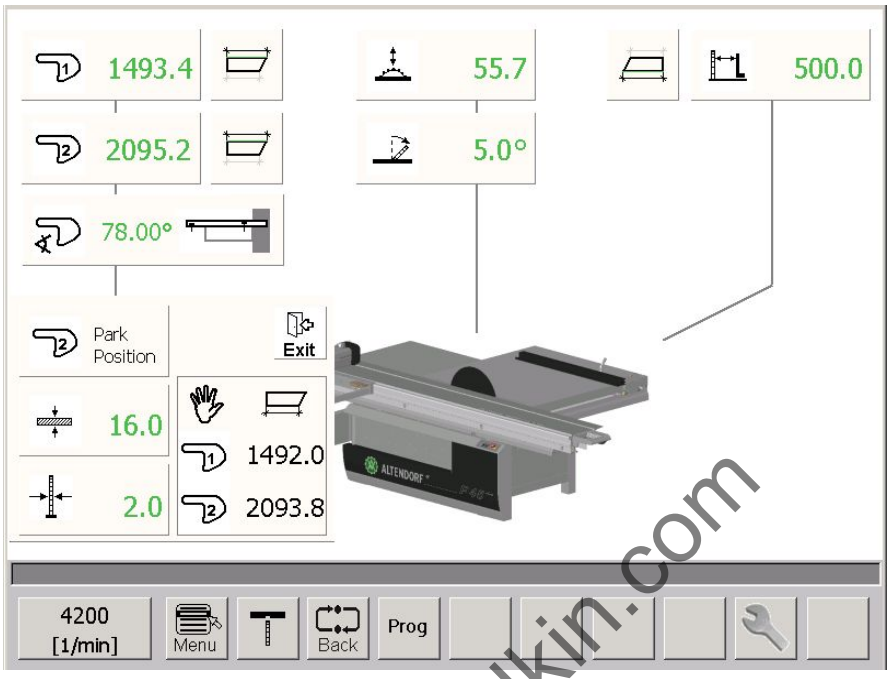


Fig. 6-60 Screen after pressing the EXTRAS field

Pressing the *Extras* button opens a window at the bottom left which shows the additional fields for the crosscut-mitre fence.

The following settings are possible:

- Parking position for 2nd throw-over stop (1900 mm)
- Material thickness
- Saw blade cutting width
- Acute or obtuse angle

Calibrating the crosscut-mitre fence

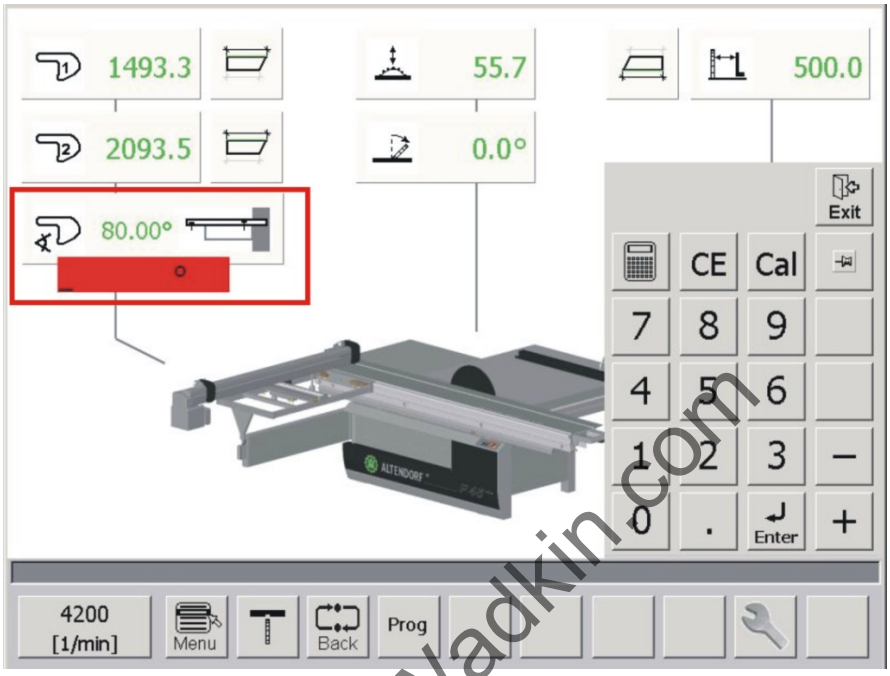


Fig. 6-61 Calibrating the crosscut-mitre fence

Once you have pressed the *Crosscut-Mitre Fence* button (outlined in red), you can calibrate the angle of the straight edge. This is carried out at 90°.

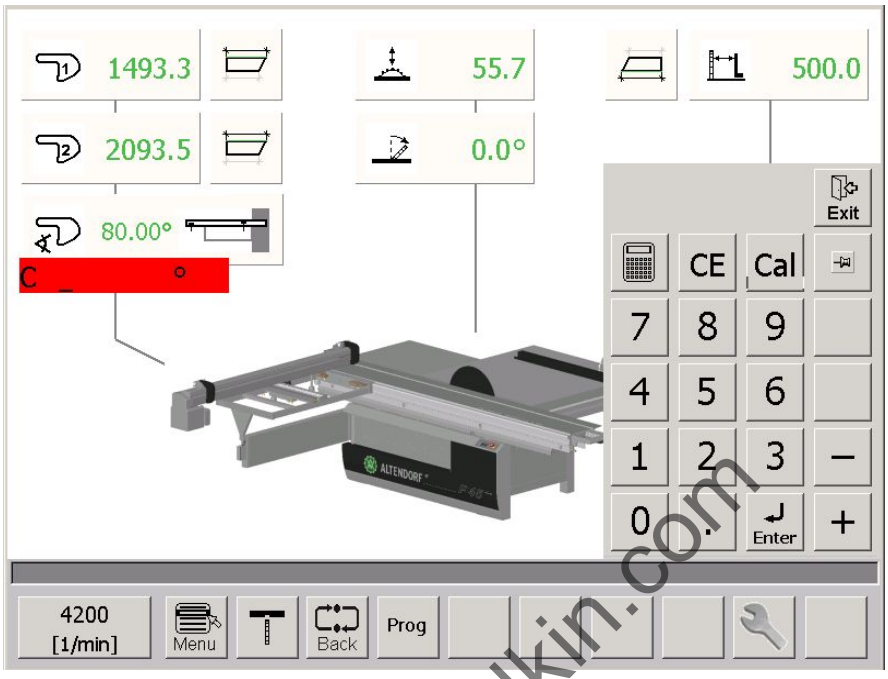


Fig. 6-62 .

- Press the *Cal* button for > 3 seconds

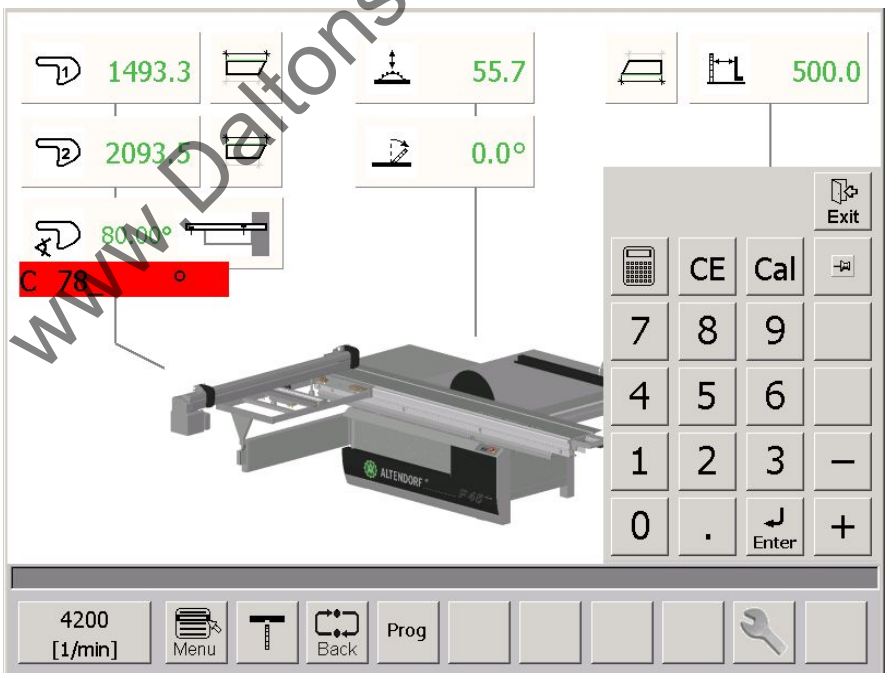


Fig. 6-63 .

- Enter the new value

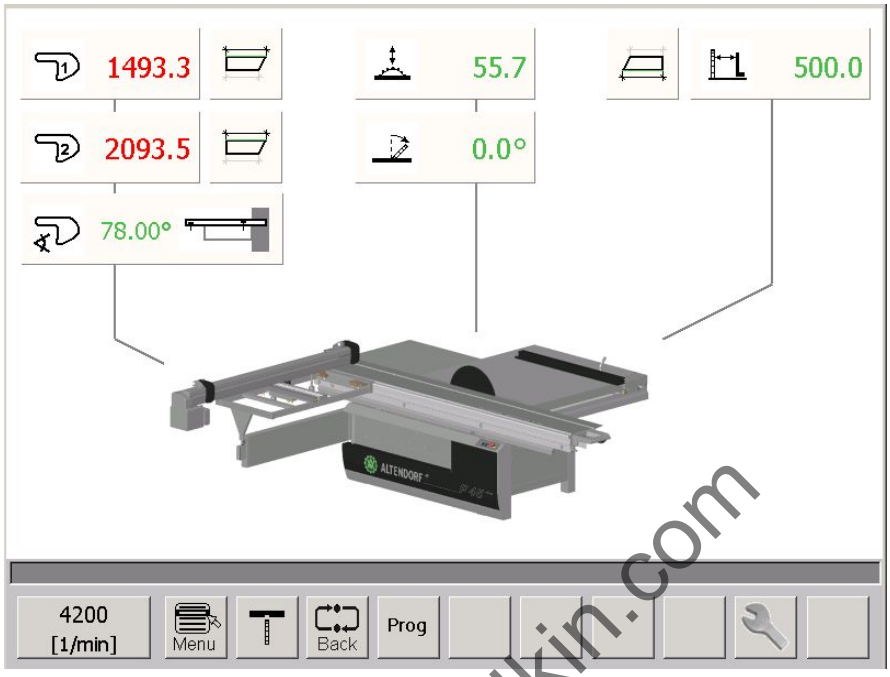


Fig. 6-64 .

- Press the *Cal* button and the new value will be accepted

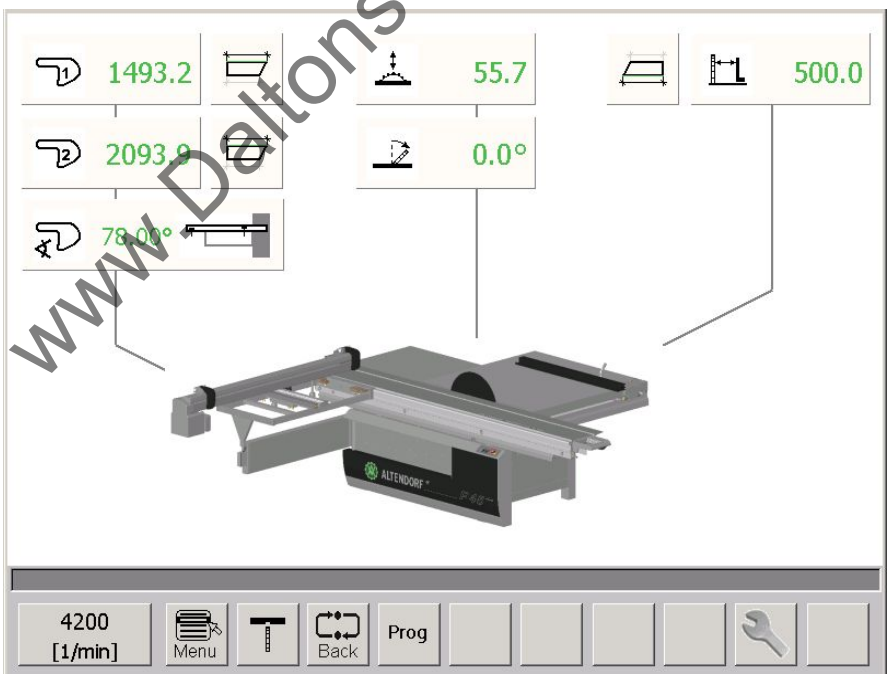


Fig. 6-65 .

- Press the START button

6.4.7 2-axis scoring unit

Fig. 6-66 Scorer menu button

Press the *Scorer* menu button to display the "Adjust Rapido scorer system" function.

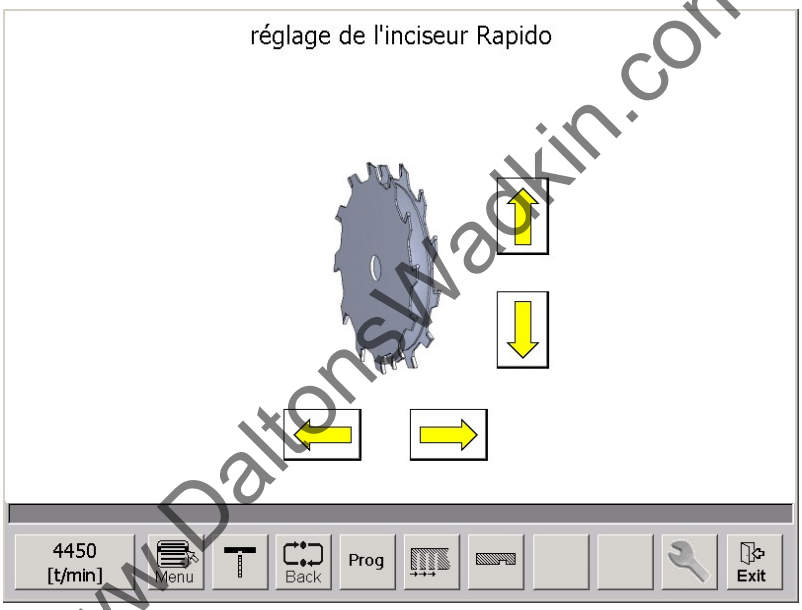


Fig. 6-67 2-axis scoring saw

When the scorer motor is switched on, the scorer is in its top position. Otherwise it is raised when the function is selected.

The cutting height of the scorer and its lateral position can now be defined by means of the arrow buttons.

When leaving this function (press *Exit* button), the scorer lowers once the motor is switched off.

Otherwise it lowers when the scorer motor is switched off, on returning from an EMERGENCY STOP, and when the machine is switched on. The set height position is saved.

Fig. 6-68 Switches for saw drives

6.4.8 3-axis scoring unit

RAPIDO Plus is a 3-axis scoring system with motorised adjustment of the cutting height and the right and left-hand side of the scoring saw blade. All settings can be made while the machine is running, so they can be done very quickly.

Fig. 6-69 RAPIDO Plus

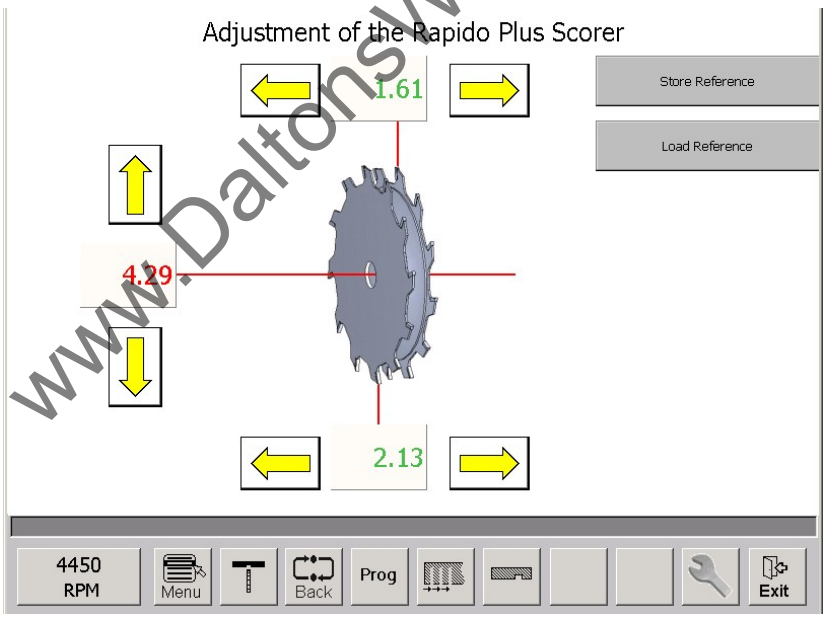


Fig. 6-70 Scoring saw setting

Pressing the *Scorer* menu button calls up the Adjust Rapido Plus Scorer System function.

Function of the axis position buttons:

- Top button <> Sets the position of the right-hand saw blade side
- Middle button <> Sets the cutting height
- Bottom button <> Sets the position of the left-hand saw blade side

Note!

The positions given for the saw blade sides are guide figures only.

Adjustment:

The arrow keys can be used to position the 3 axes of the scorer. If you press the button with the axis position, the numeric keypad will appear on the right of the screen and you can enter position values. Briefly pressing the side arrow buttons causes movement of 0.02 mm each time. Briefly pressing the height arrow buttons results in movement of 0.1 mm.

Calibrating the scoring saw

- Press the Axis Position button to select the position of the saw blade to be calibrated.
- Press the *Cal* button in the numeric keypad for > 1 second. C appears in the red input field.
- Enter a value and press the *Cal* button. The entered value is shown on the display.

Setting the scoring saw blade

- Setting the cutting height
  - Set the blade protrusion
- Set the position of the right saw blade side
  - such that both cutting edges are congruent when a test cut is made.
  - Enter + 0.05 so that the scorer cuts wider than the main saw blade.
- Set the position of the left saw blade side.
  - Set the scoring blade to the thickness of the main saw blade.
  - If a test cut is OK, increase the cutting width by + 0.05.

When you exit the menu, the electronics saves the last values set. When the scoring saw is switched on, the scoring blade is automatically moved to the previously set values. When the saw drives are switched off, the scoring blade is automatically moved to its lowest position.

If you select this menu item when the scoring saw is running, the scorer will not travel down to its lowest position when the saw drives are switched off!

Reference

The reference is the 2nd way of storing the scoring saw blade positions.

- Pressing the *Save Reference* button saves the currently set values. The button briefly flashes red during the storage process. These positions are moved to when the START key is pressed.
- Pressing the *Load Reference* button loads the previously saved reference. The field briefly flashes red. These positions are moved to when the START key is pressed.

Saving the reference with the active saw blade of the tool management

- If the tool management is activated, the scorer position is saved for the saw blade currently active.

Loading the reference with the active saw blade of the tool management

- If the tool management is activated, the scorer position is read out for the saw blade currently active.

6.4.9 Vacuum clamping in the sliding table

Vacuum clamping in the sliding table (vacuum table)

Note!

If the option ***Vacuum clamping in the sliding table*** is selected, separate instructions are enclosed!

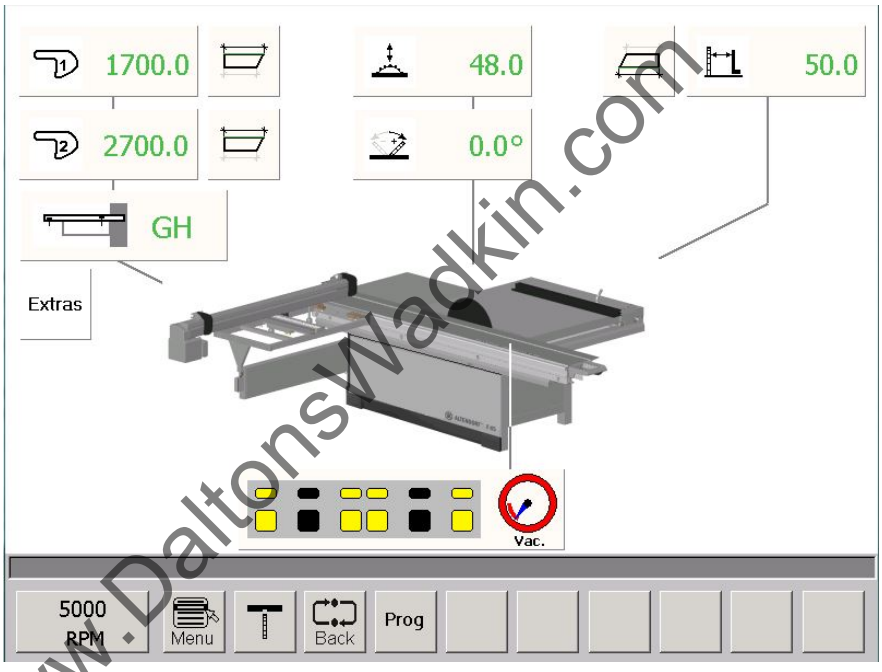


Fig. 6-71 Monitor for vacuum table

6.4.10 Menu

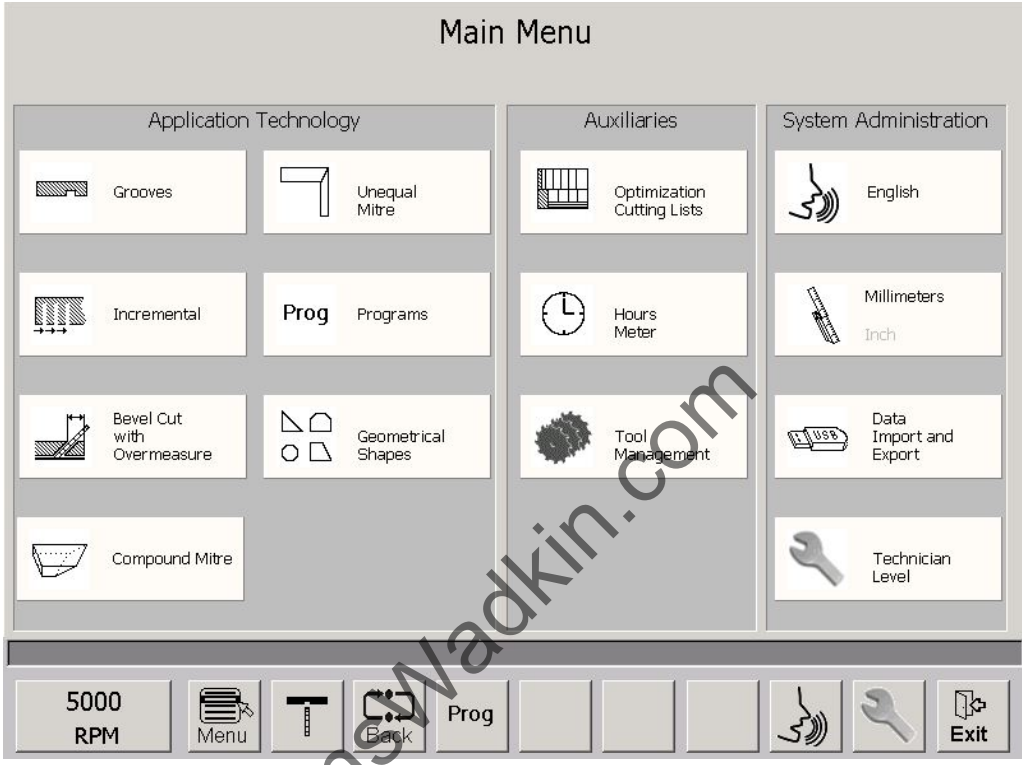


Fig. 6-72 Main menu

Applications

Grooves

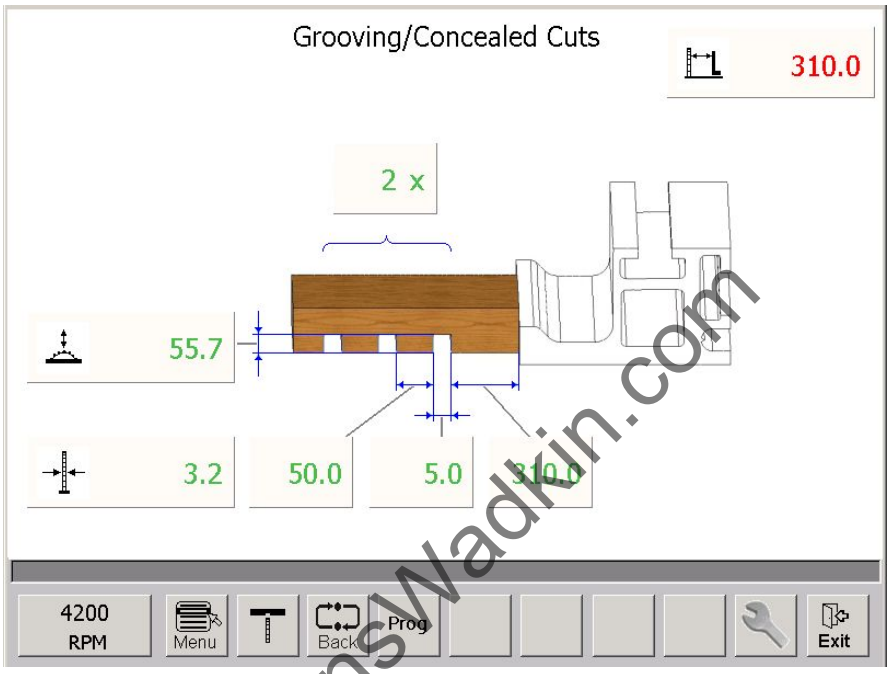


Fig. 6-73 Grooves

It is possible with all saw blade thicknesses to cut grooves that are wider than the saw blade thickness.

Pressing the *Grooves* button under Main Menu/Application Technology takes you to the Grooves function.

Enter the start, width and spacing of the grooves, the number of the grooves as well as the height of the saw blade. The current position of the rip fence is shown on the right, as is the number of the current cut.

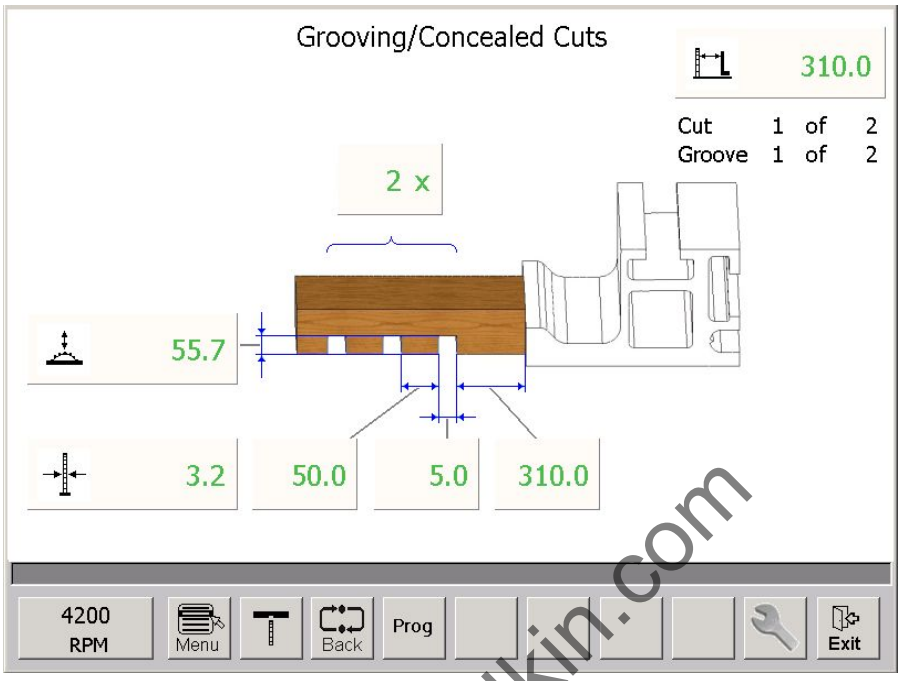


Fig. 6-74 Groove_display Cut...of...cuts

“Cut .. of ..” only appears if a setting has actually been positioned. Otherwise the flashing start symbol is shown, apart from during value entry. The Start symbol is also hidden for step z of z (after final positioning).

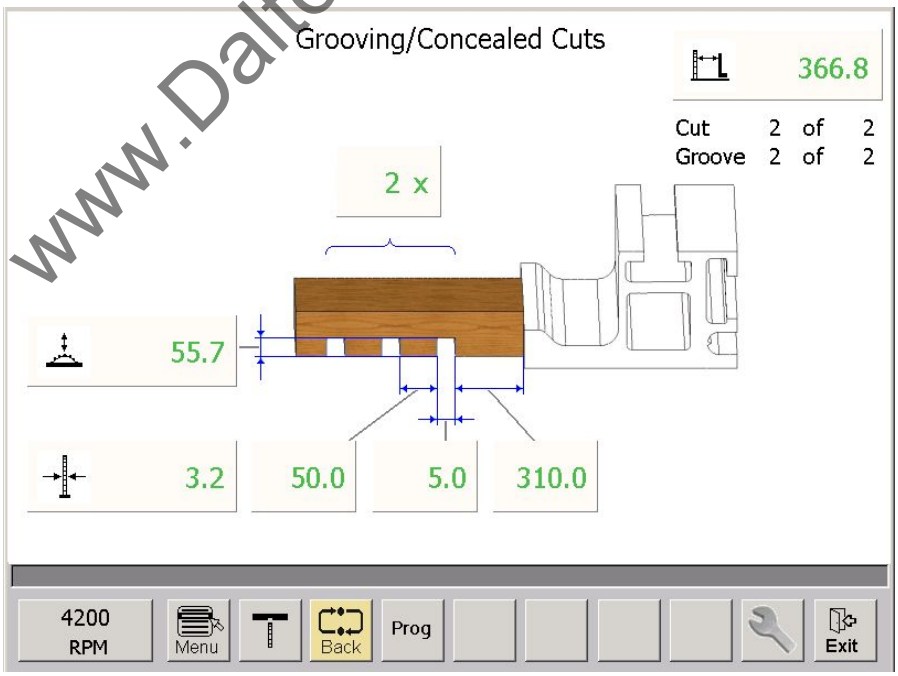


Fig. 6-75 Grooves_after last cut

Pressing the Back button takes you back to cut 1. This also happens if you exit the menu and call it up again.

The values in this menu are also retained when the machine is switched off.

When you return to the normal display, the old actual values are retained there as setpoints, and positioning can take place again with the Start button.

Incremental dimensions

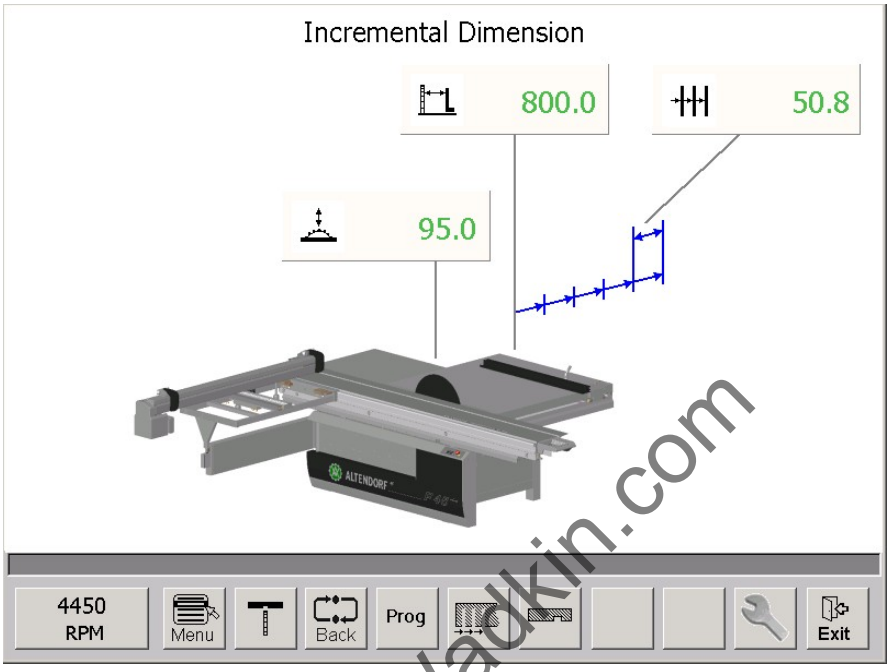


Fig. 6-76 Incremental dimension

The Incremental Dimensions function supports cutting sequences at an identical distance on the rip fence in both directions.

Pressing the *Incremental Dimensions* button in the Main Menu/Applications field takes you to the Incremental Dimensions function.

The current position of the rip fence is displayed. The incremental dimension is retained in storage. Every time the Start button is pressed, the fence moves by the increment entered and the current actual position is shown in the left display.

Angle cut with oversize

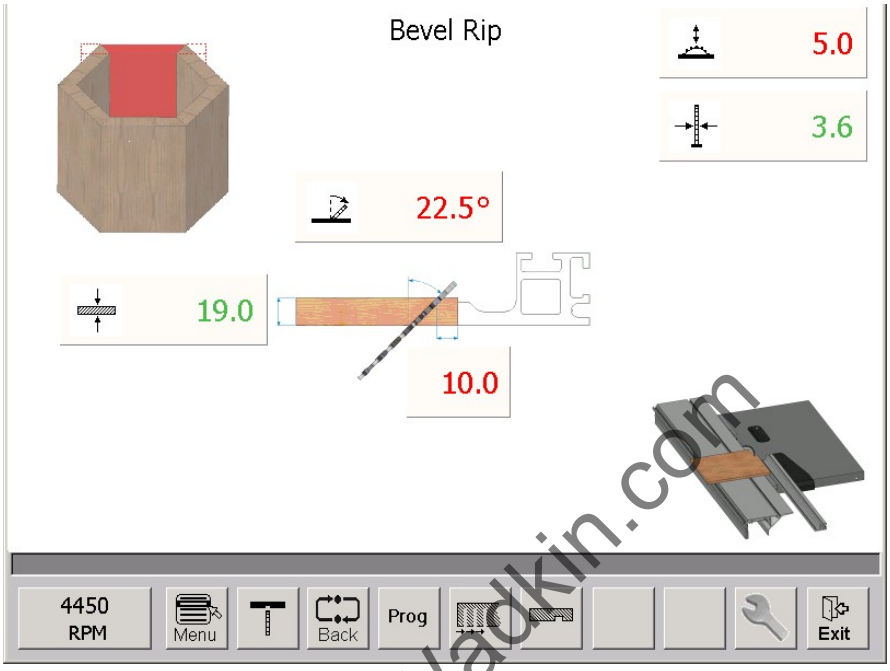


Fig. 6-77 Angle cut with oversize

This function enables you to cut mitres using the motorised rip fence, finished size F, with or without an oversize. Pressing the "Angle Cut With Oversize" button in the Main Menu/Applications button takes you to the Angle Cut With Oversize function.

The following values have to be entered after the respective function key is pressed:

- **Workpiece oversize**
- **Workpiece thickness** (measured)
- **Cutting height**
- **Tilt angle**

Note!

You must enter the saw blade thickness, otherwise the dimensions will be wrong!

Note that saw blades generally cut wider than the blade thickness indicated on the saw blade.

Shifter cut

Once the *Shifter cut* button is pressed, the following screen appears:

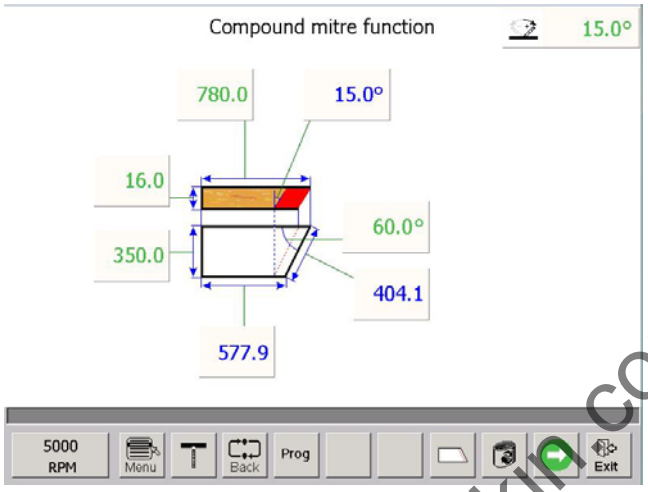


Fig. 6-78 Shifter cuts

Enter the respective values here, missing values are calculated and displayed in blue.

When the green key with arrow is pressed, the following screen appears:

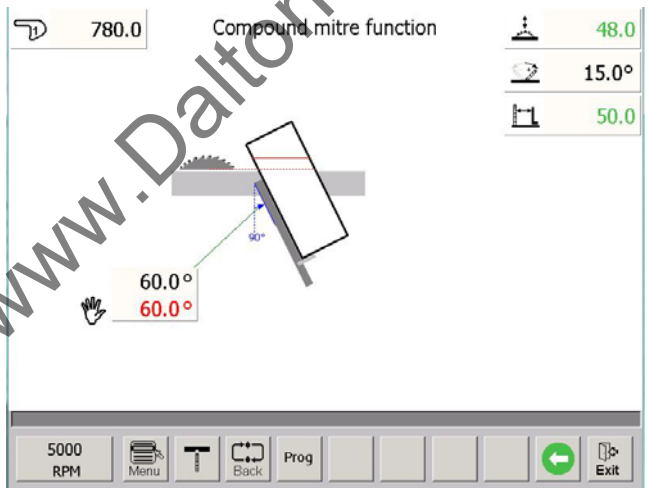


Fig. 6-79 Workpiece positioning

The workpiece infeed is described and the setting values for tilting and fences/ stops are displayed here.

“False” Mitre function

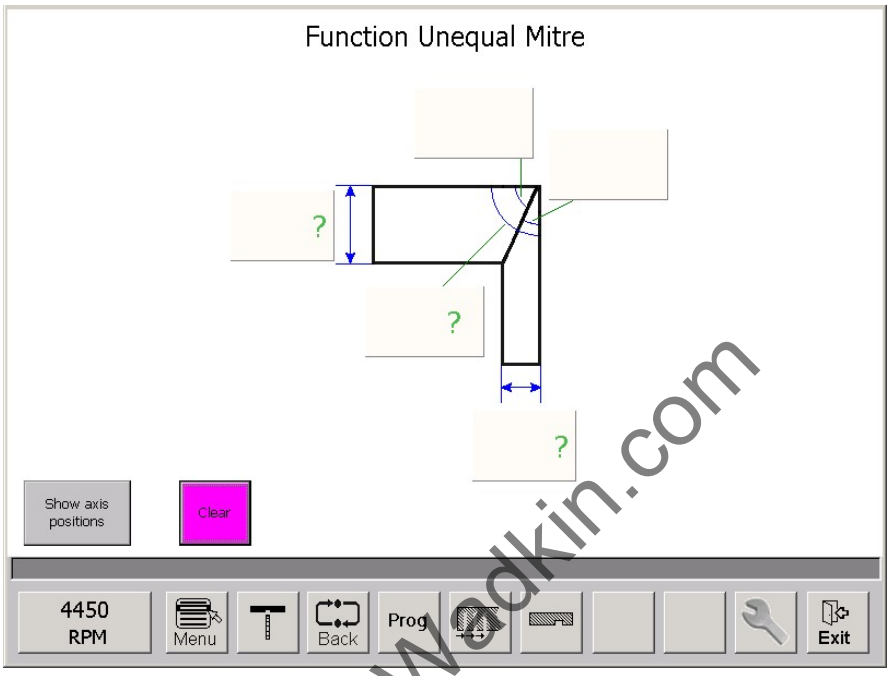


Fig. 6-80 “False” mitre

Pressing the *False Mitre* function key under Main Menu/Applications takes you to the "False" Mitre function.

This function can be used to calculate "false" mitres of any angle.

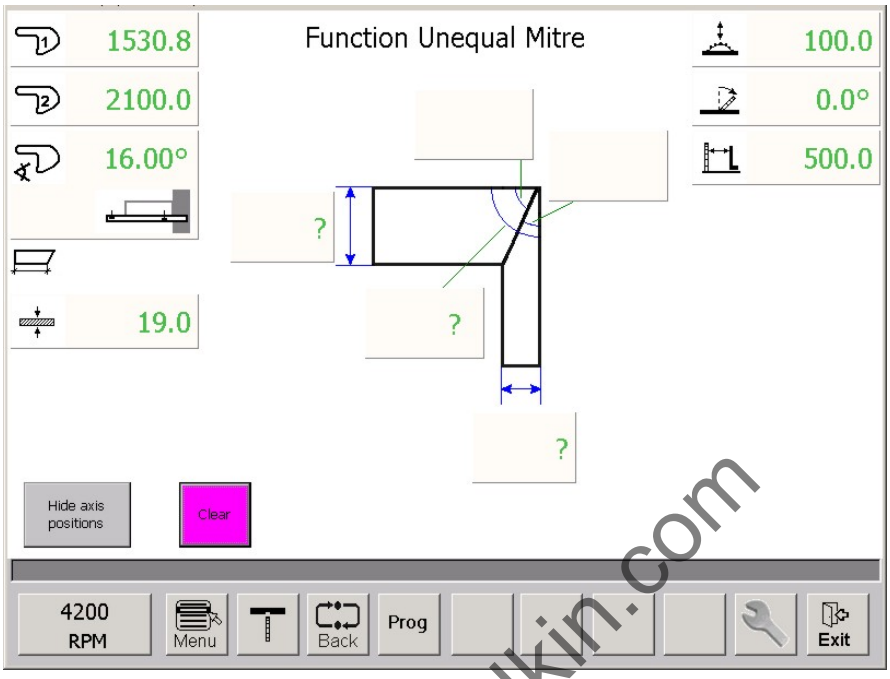


Fig. 6-81 “False” mitre with axis display

This menu consists of 2 basic components, the graphic with the 5 assigned dimension windows, and the axis positions that can be mapped in or out with the *Show Axis Positions* or *Hide Axis Positions* button.

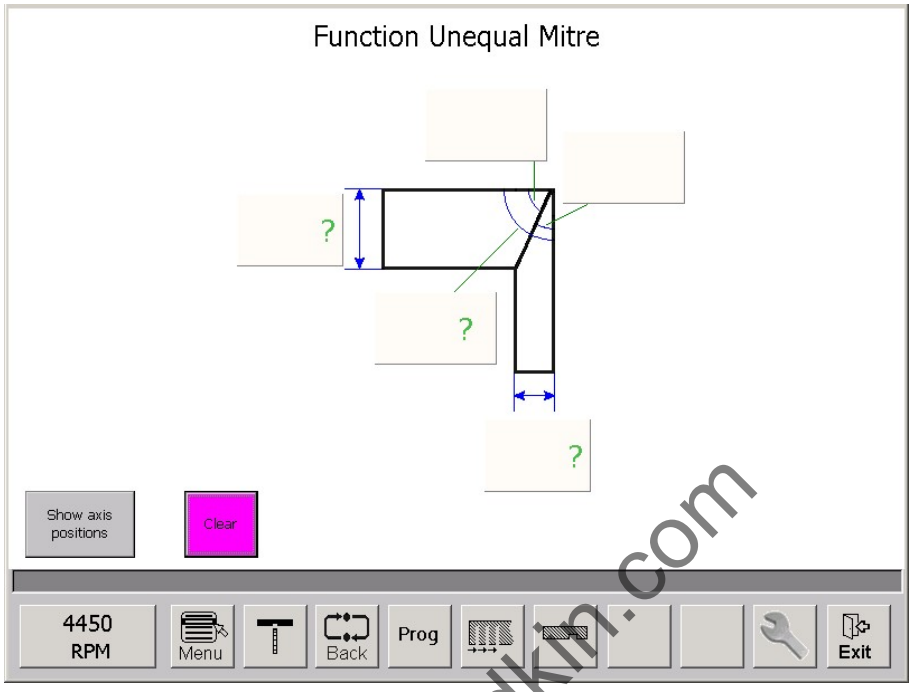


Fig. 6-82 “False” mitre

Press the *Clear* button to delete the false mitre values entered. A green "?" is written to the 3 dimension windows.

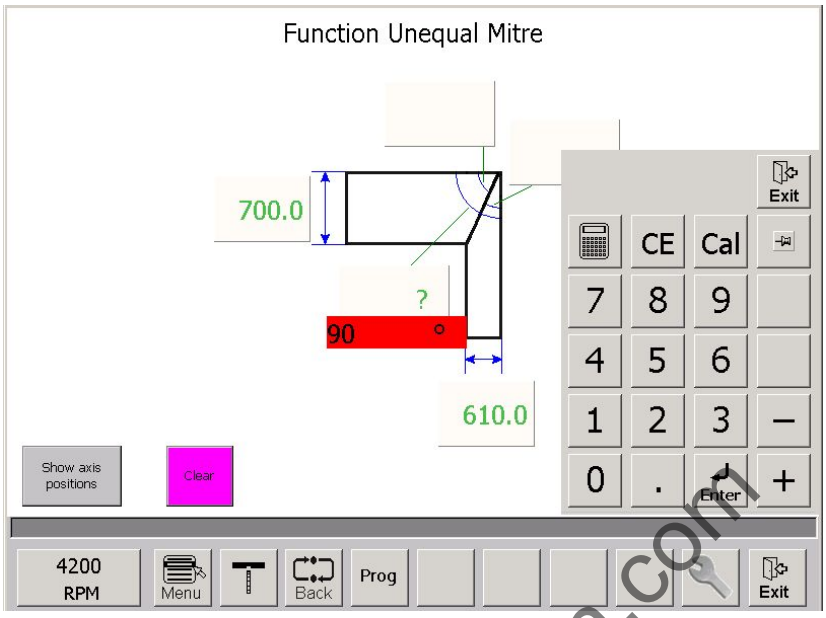


Fig. 6-83 “False” mitre

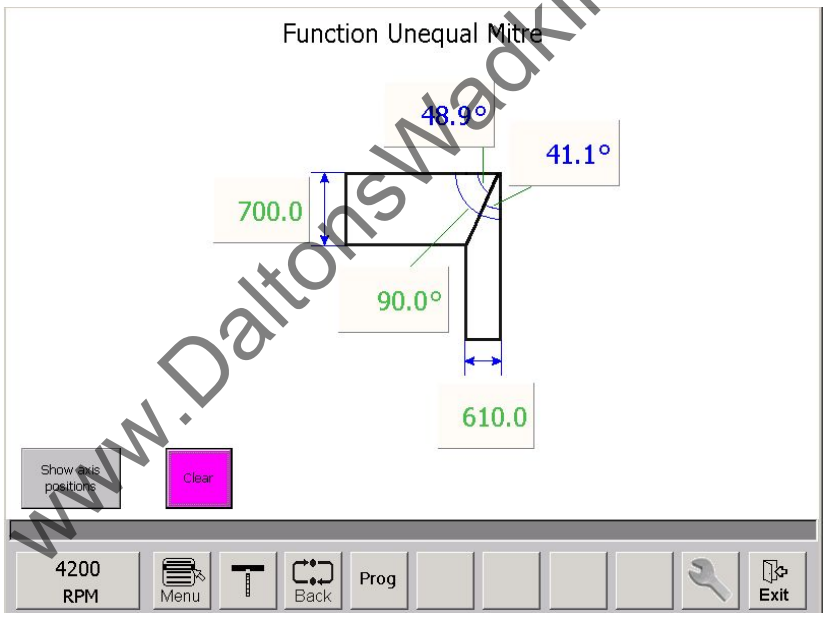


Fig. 6-84 “False” mitre

For this graphic, it is necessary to enter 3 values (buttons with question marks). They are shown in green. The missing angles are calculated automatically and are shown in blue. The green numbers can be changed repeatedly later. Recalculation takes place.

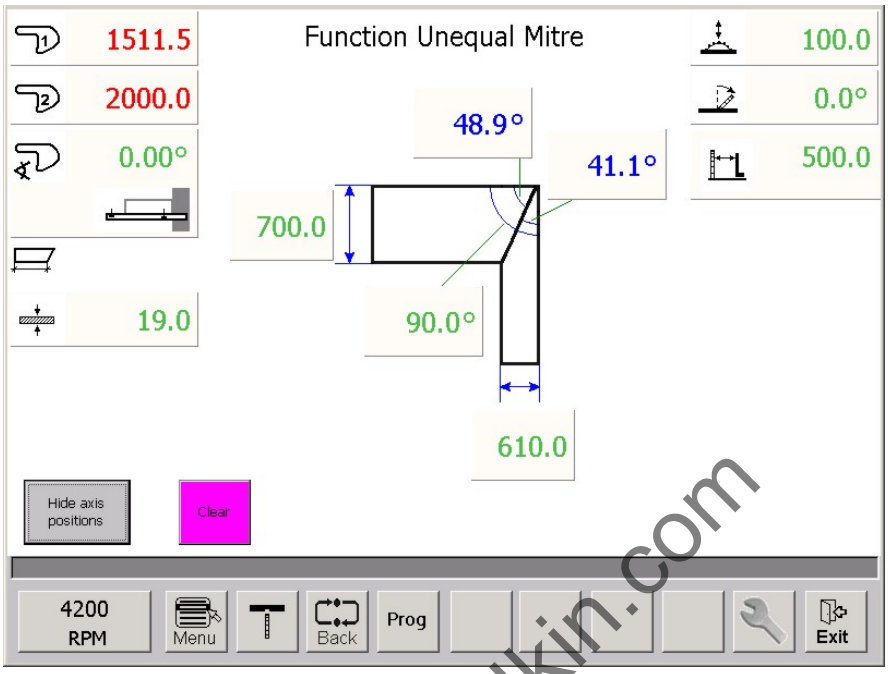


Fig. 6-85 “False” mitre

Press the *Show Axis Positions* button to display the current axis positions at the top right of the screen. The axes can now be positioned.

Programs function

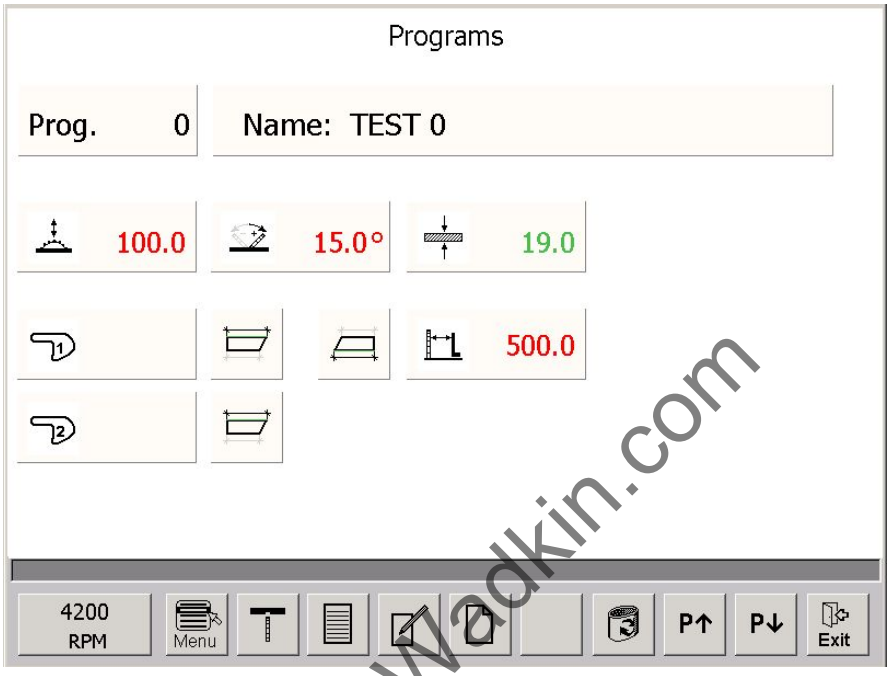


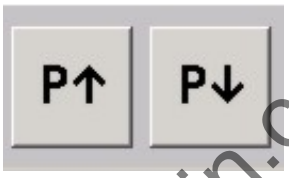
Fig. 6-86 Programs

Pressing the *Programs* function button under Main Menu/Applications takes you to the Programs function.

The program used last is displayed.

Press the START button to start the positioning process.

			
Program selection list	Edit/change program *EDIT button*	Create new program	Save

		
Delete program	Scroll through programs	Exit page

Changing or creating programs

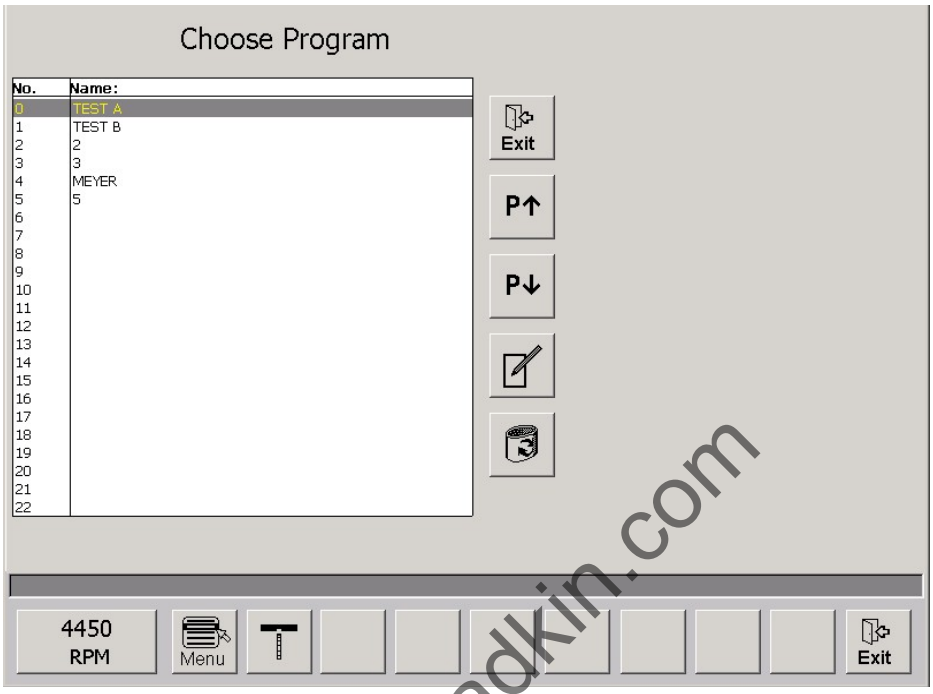


Fig. 6-87 Selecting a program

Pressing the *Program Selection List* button opens the selection window with the list of assigned programs.

The currently selected program is marked in this window.

Press the button EDIT to display the program marked in the program list.

This program can be changed by entering new axis values.

Proceed as follows to create a new program:

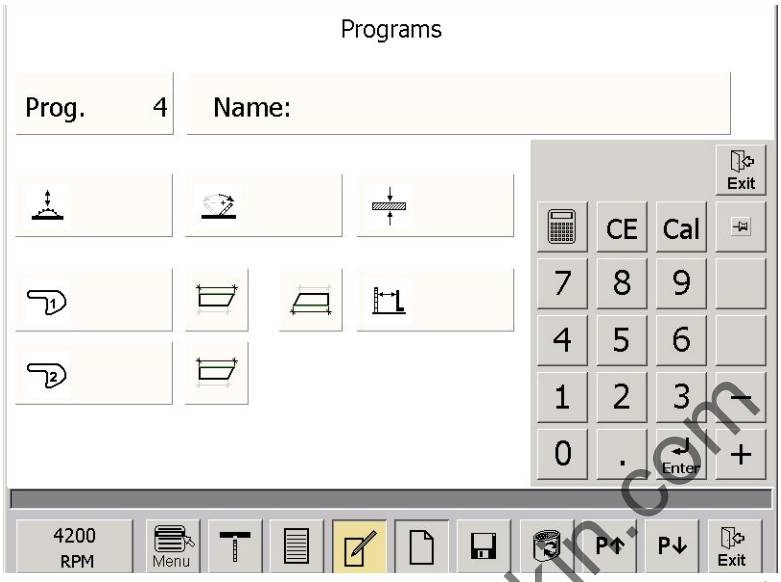


Fig. 6-88 Creating a program

Press the *Create Program* button to open the screen shown.

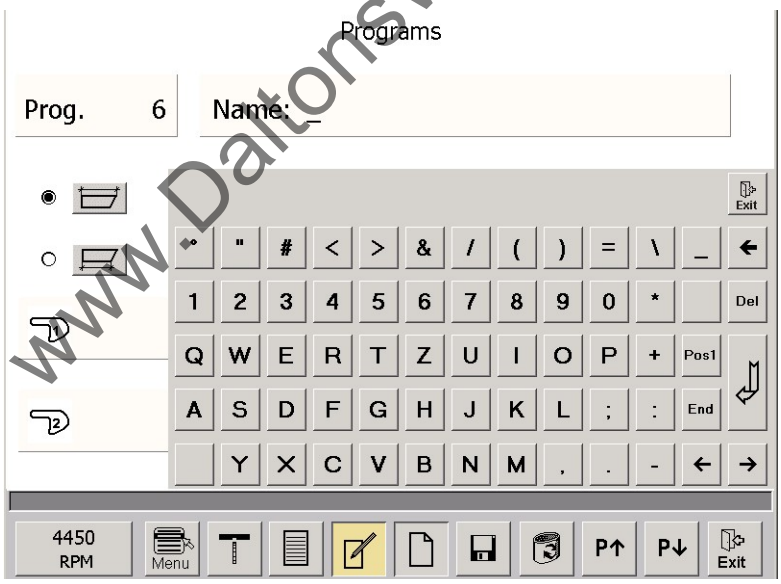


Fig. 6-89 Creating a program

After pressing the *Name* button, a window with a keypad for entering letters and digits opens. Once the program name has been entered, close the window by pressing the *EXIT* button.

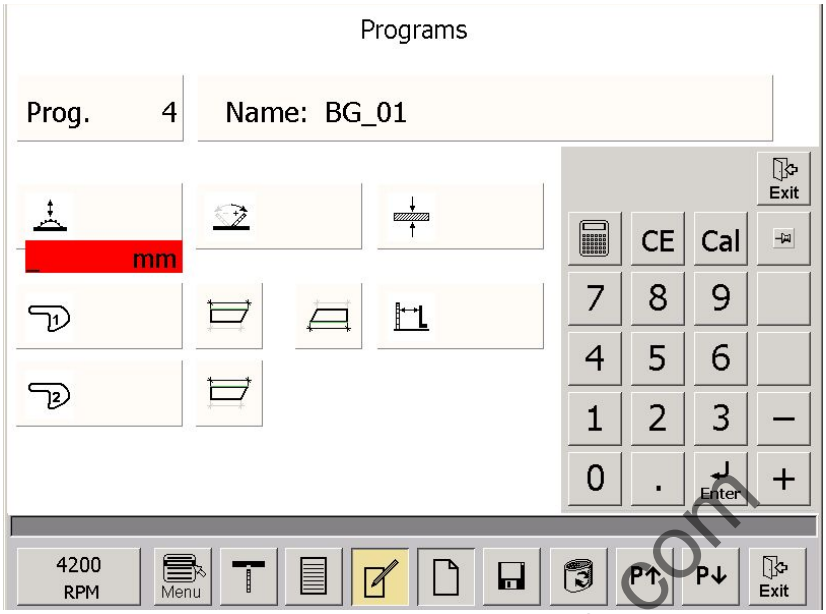


Fig. 6-90 Creating a program

You can now press an axis selection button to enter the desired dimensions. No value is assigned to axes that are not required.

Save the newly created program by pressing the *Save* button.

Geometric shapes

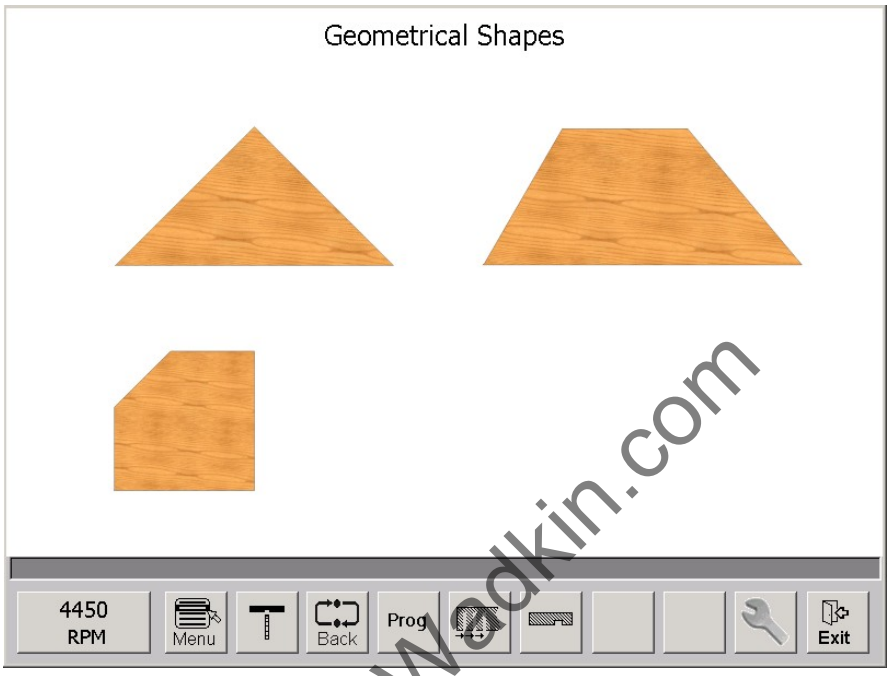


Fig. 6-91 Geometric shapes

Pressing the *Geometric Shapes* function button under Main Menu/Applications takes you to the Geometric Shapes function. 3 geometric shapes, triangle, trapezoid and pentagon, can be selected here.

Select a geometric shape by pressing it.

The following applies to all geometric shapes:

- Enter known dimensions (these are displayed in green)
- Calculated dimensions are shown in blue

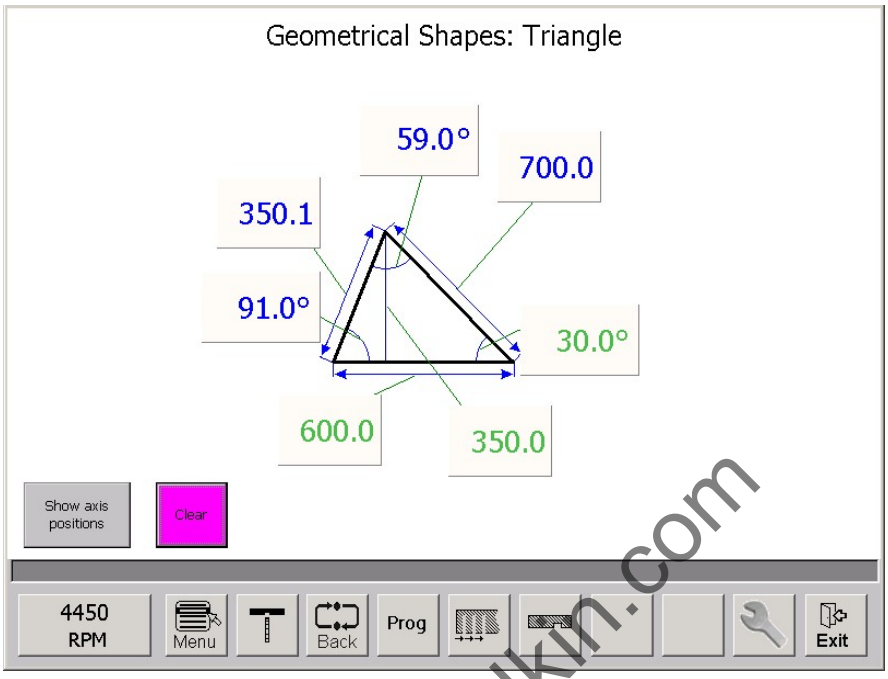


Fig. 6-92 Geometric shapes, triangle

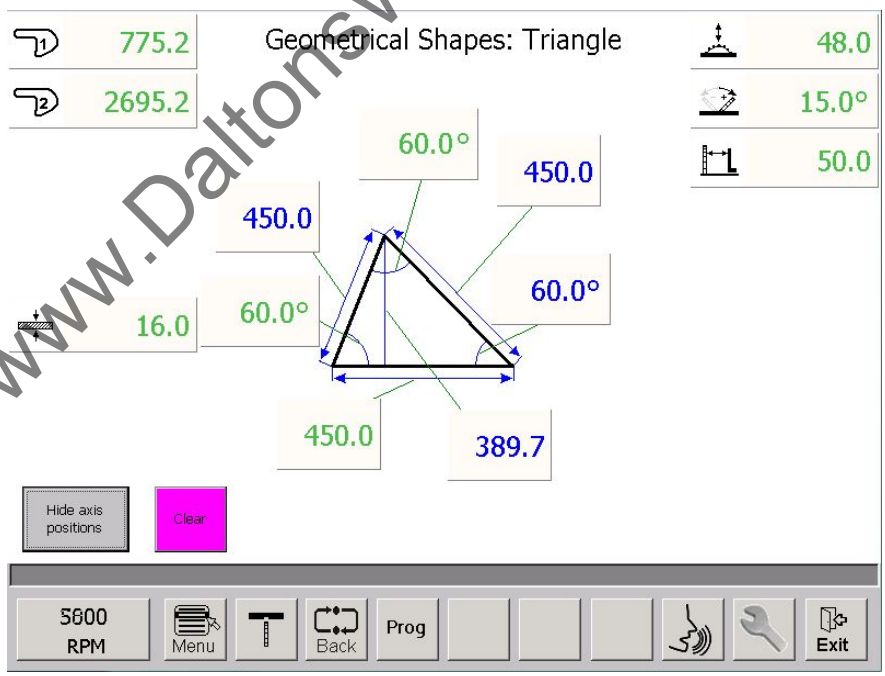


Fig. 6-93 Axis function mapped in

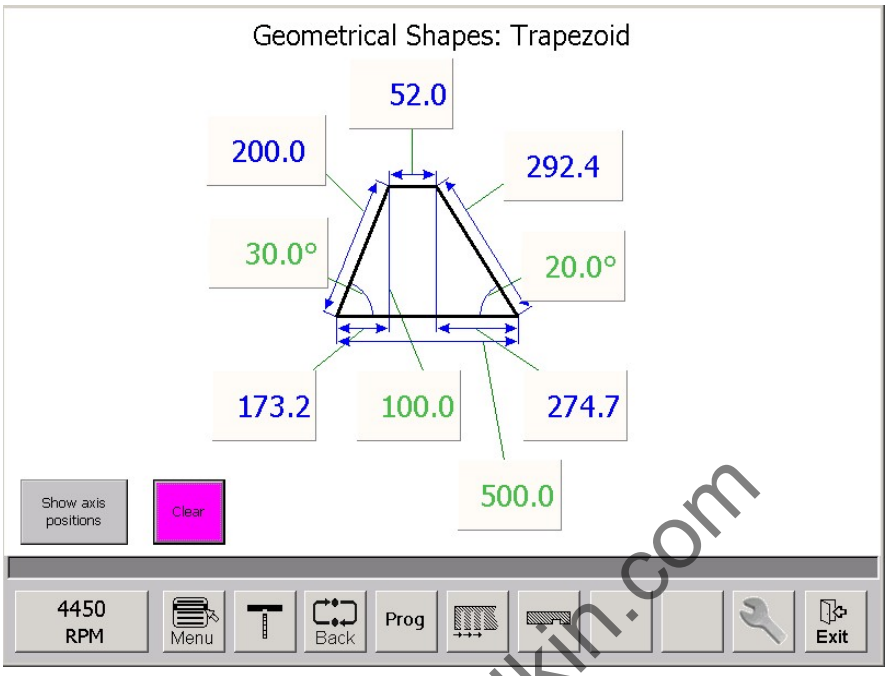


Fig. 6-94 Geometric shapes, trapezoid

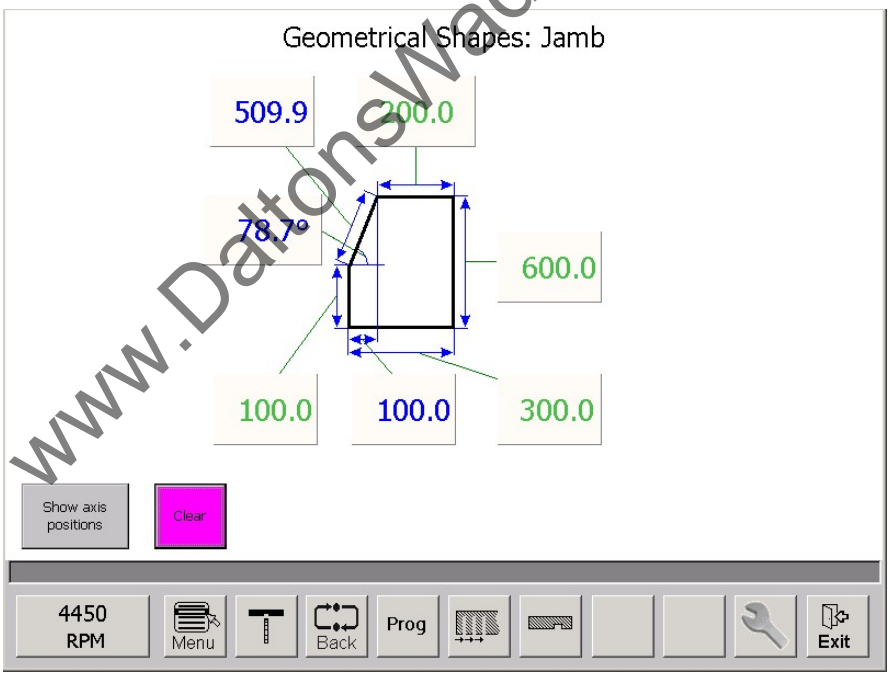


Fig. 6-95 Geometric shapes, pentagon

Vacuum clamping in the sliding table (vacuum table)

Note!

If the option ***Vacuum clamping in the sliding table*** is selected, separate instructions are enclosed!

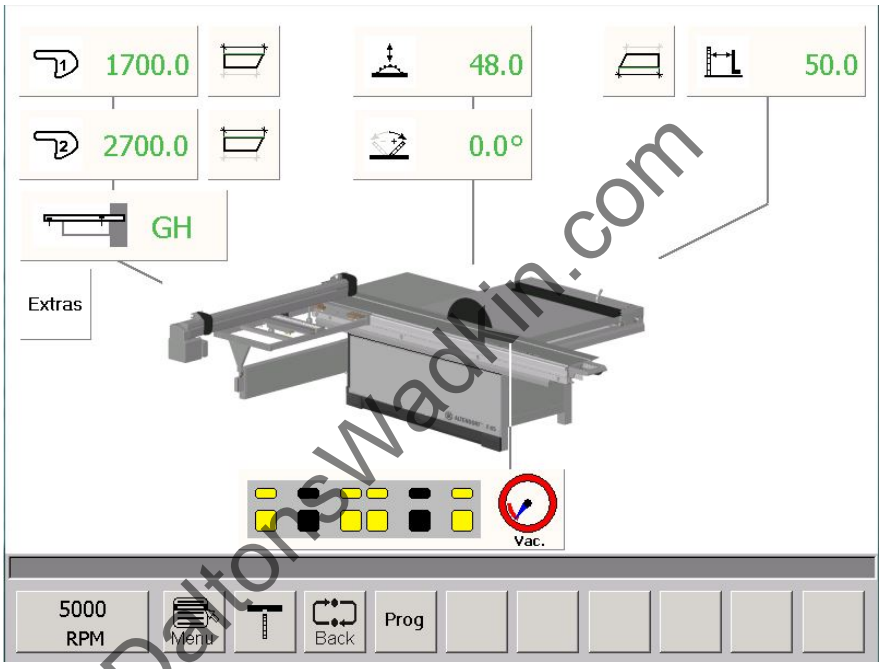


Fig. 6-96 Monitor for vacuum table

Utilities

Optimisation/Cutting Lists function

Fig. 6-97 Optimisation / cutting points

Pressing the *Optimisation/Cutting Lists* function button under Main Menu/Utilities takes you to the Optimisation/Cutting Lists function.

There is an additional operating manual which is supplied along with the option.

Total process time

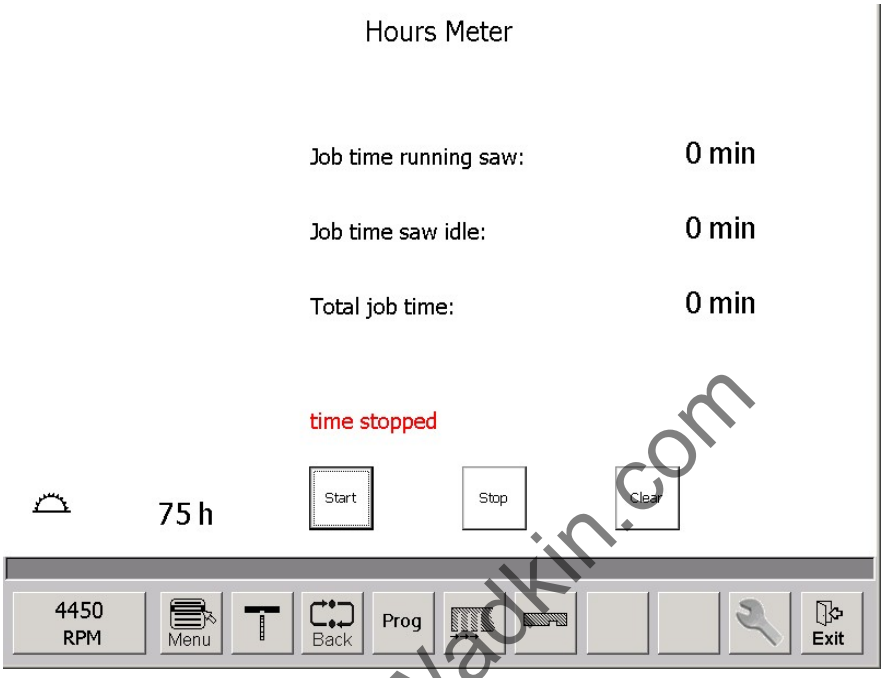


Fig. 6-98 Total process time

Pressing the *Total Process Time* function button under Main Menu/Utilities takes you to the Total Process Time function.

Time date capture is started by pressing the *START* button and stopped by pressing the *STOP* button. Pressing the *Clear* button resets the time in the 3 lines to 0 min.

The running time of the main saw blade is displayed at the bottom left (operating hours counter). It is not possible to reset this time.

Tool Management

Note!

It is essential to use the Tool Management to ensure malfunction-free machine operation.

It is important to observe the following:

- Select the tool (saw blade) used and the attendant storage space in the Tool Management. This ensures that different operators are informed about the current tool.
- Calibrate the cutting height (e.g. after sharpening)

Pressing the *Tool Management* function button under Main Menu/Utilities takes you to the Tool Management function.

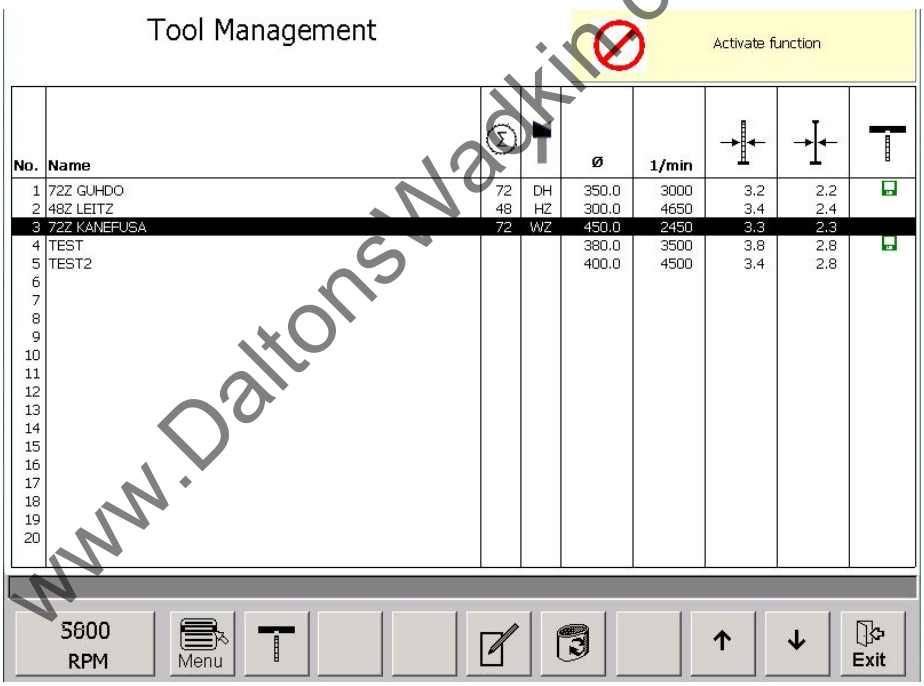


Fig. 6-99 Tool Management deactivated

Actuate the *Activate function* button to use the tool management.

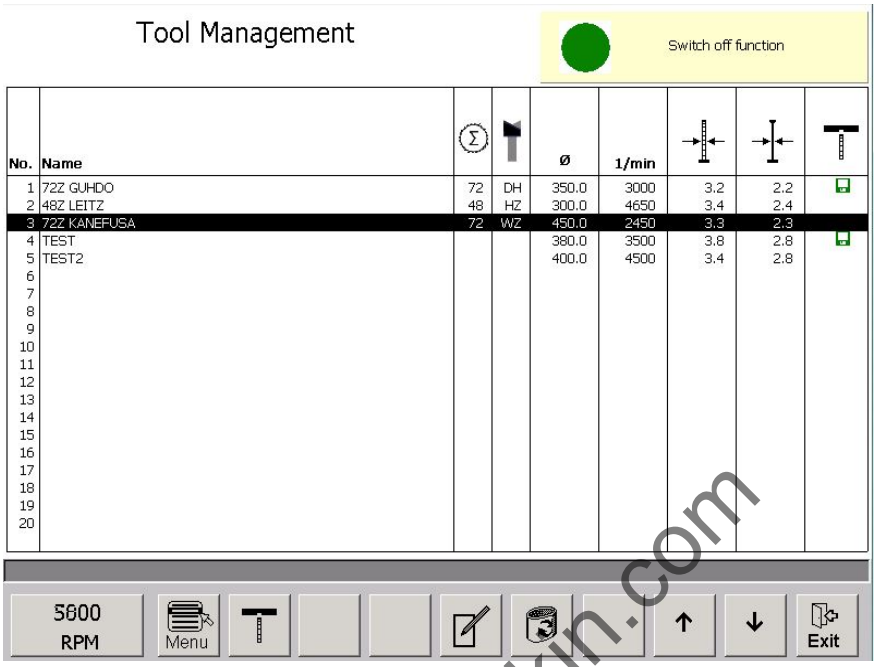


Fig. 6-100 Tool Management activated

The tool management is shut down by pressing the *Deactivate function* button.

Create tool:

- Select the tool number with the arrow button.
-  Touch and a new window will open.

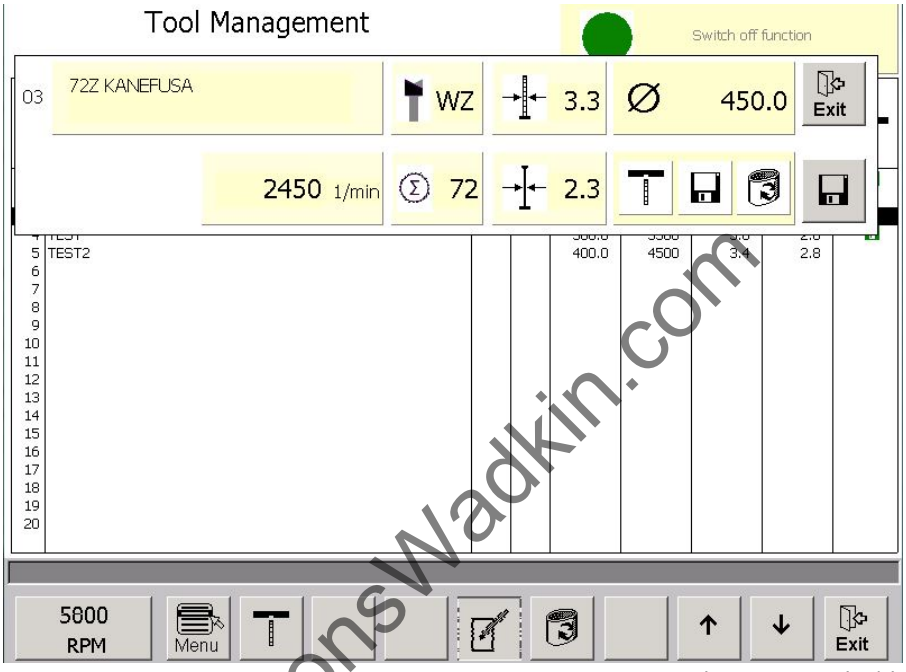


Fig. 6-101 Creating/changing a tool

Various input fields are mapped in that can be used to enter the name/designation and values. Inputs for the cutting width and the saw blade diameter are obligatory.

Fig. 6-102 Entering designation

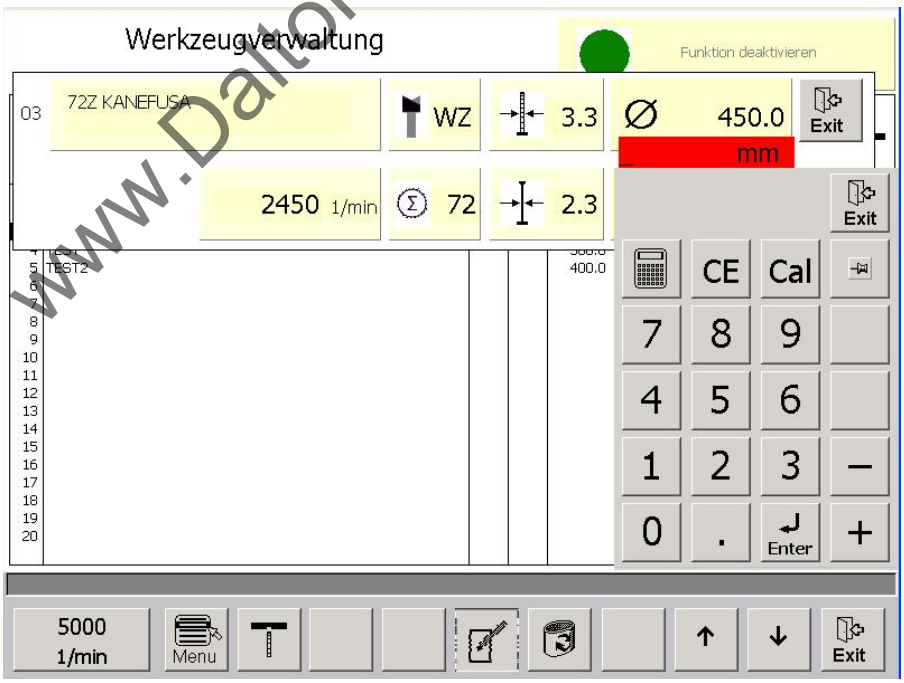


Fig. 6-103 Entering diameter

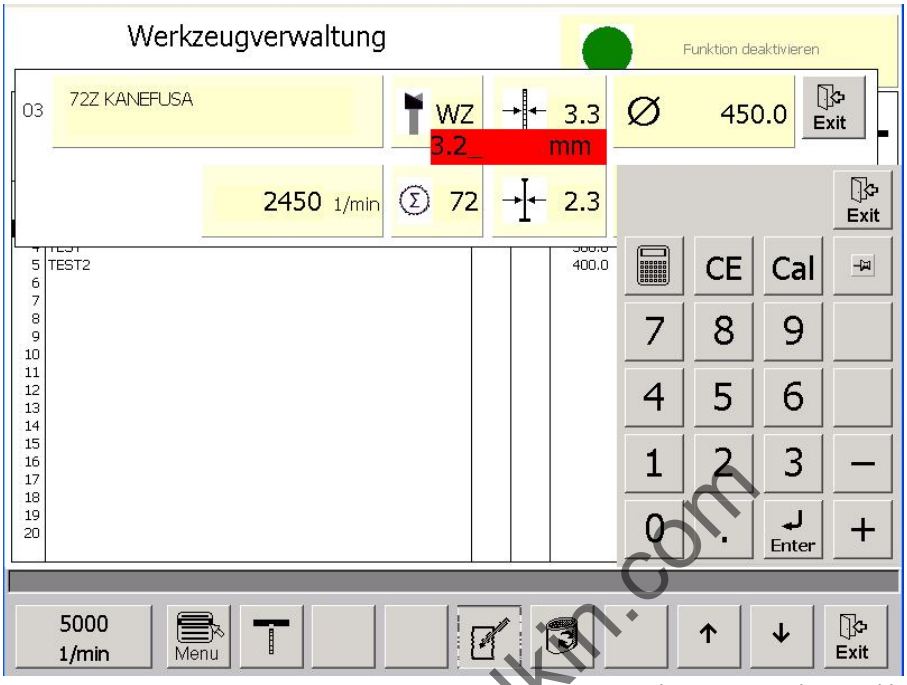


Fig. 6-104 Entering saw blade thickness

Fig. 6-105 Input of a rotational speed

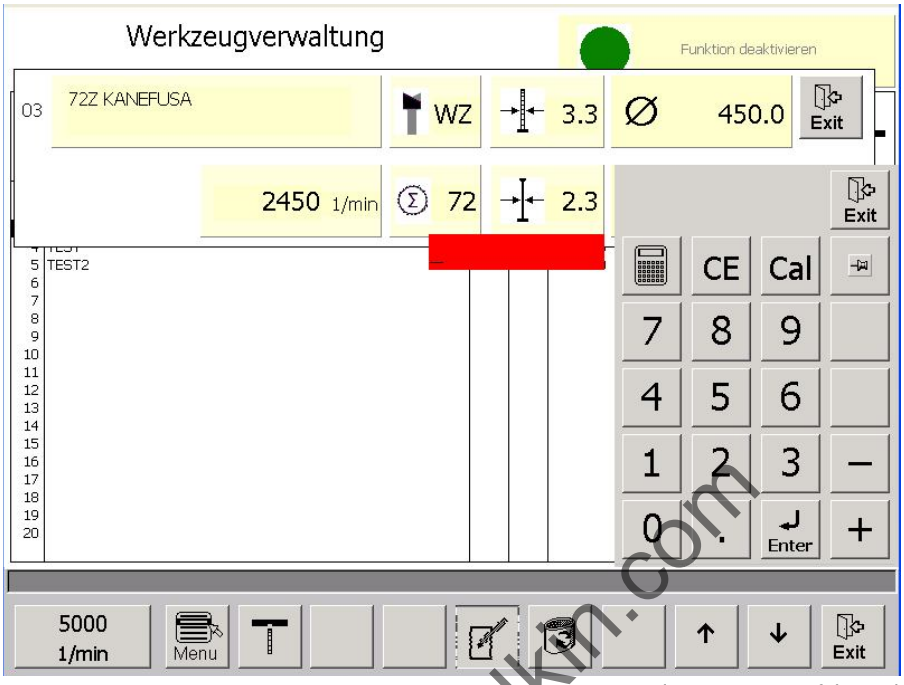


Fig. 6-106 Input of the main blade width

- The name/designation and value have been entered but not yet saved.
- Exit by pressing *Exit*

The following display appears:

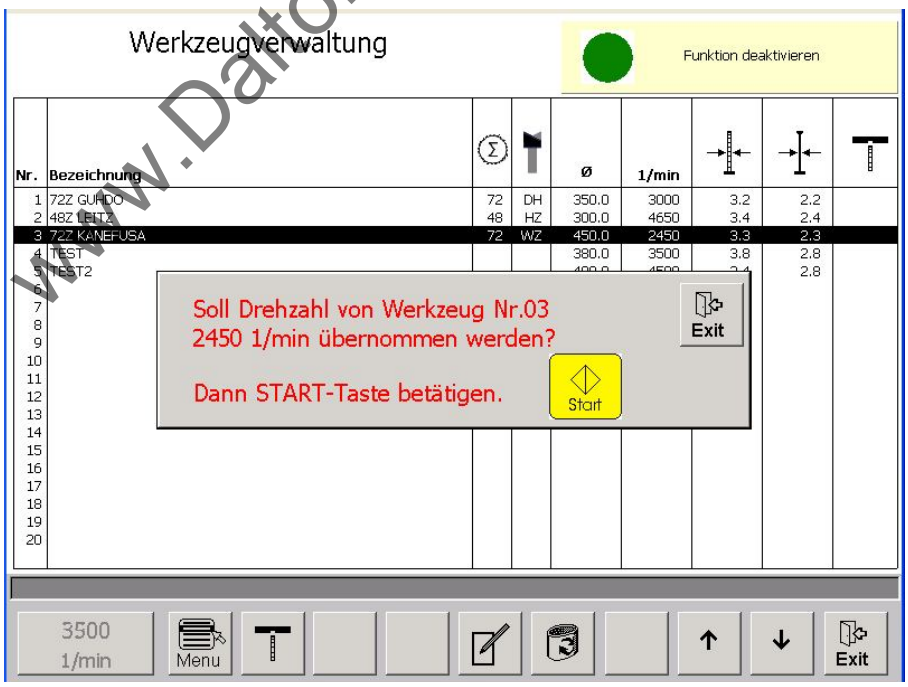


Fig. 6-107 Inquiry when the tool management is left

- Actuate the *START* button to apply the rotational speed
- Actuate the *EXIT* button, if the rotational speed is to be discarded

For option 3-axes scorer RAPIDO-Plus:

The scorer is saved with  in the field with the green frame.

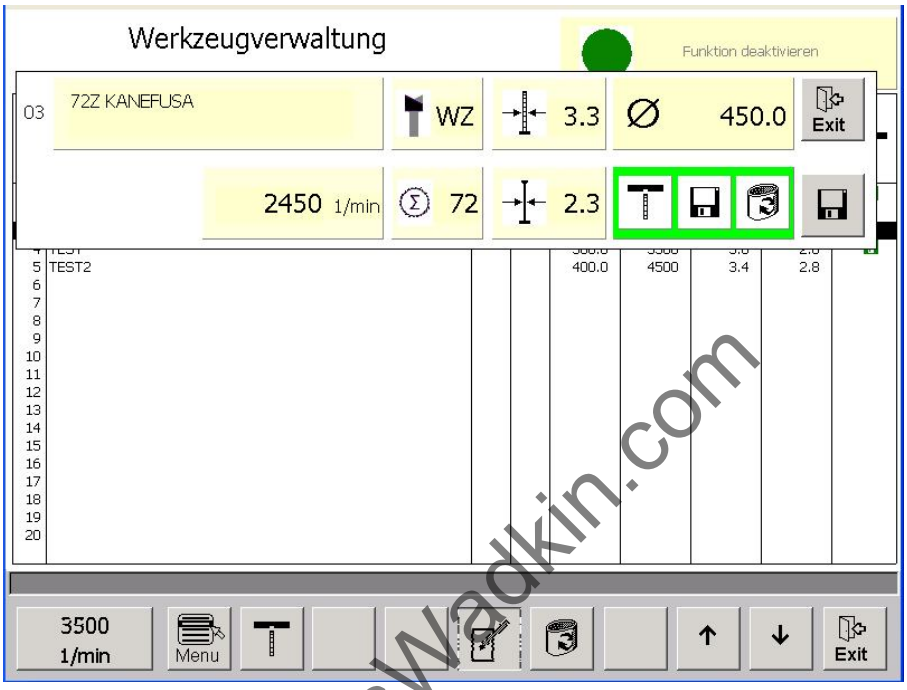


Fig. 6-108 Storing the scorer

Use the  symbol to delete the scorer position for this saw blade.

Adjusting dimensions following a tool change

After changing a saw blade it is necessary to calibrate the cutting height to the actual value.

How to proceed:

1. Fit the saw blade
2. Enter the cutting height in the field, e.g. 70 mm
3. then measure the cutting height **precisely**.
4. Keep the Cal button pressed for approx. 1 seconds until a C appears.
5. Enter the measured value.
6. Press the Cal button.

The following window will open:

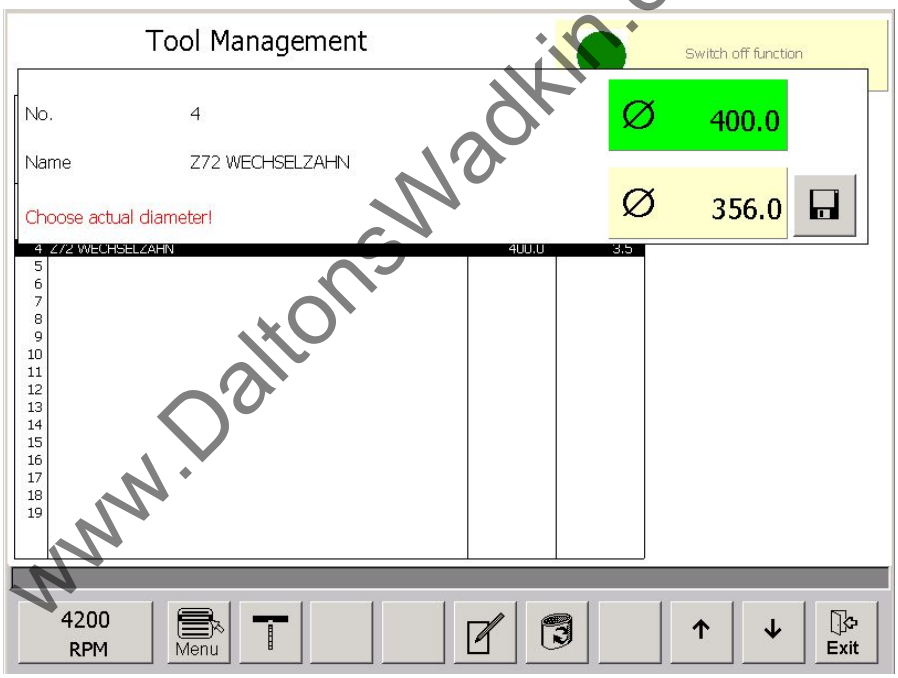


Fig. 6-109 Screen after calibration of the cutting height

As the value of the cutting height has been changed, this also changes the diameter which then has to be adjusted. If the saw blade diameter is identical, keep the original diameter.

- Confirm actual diameter

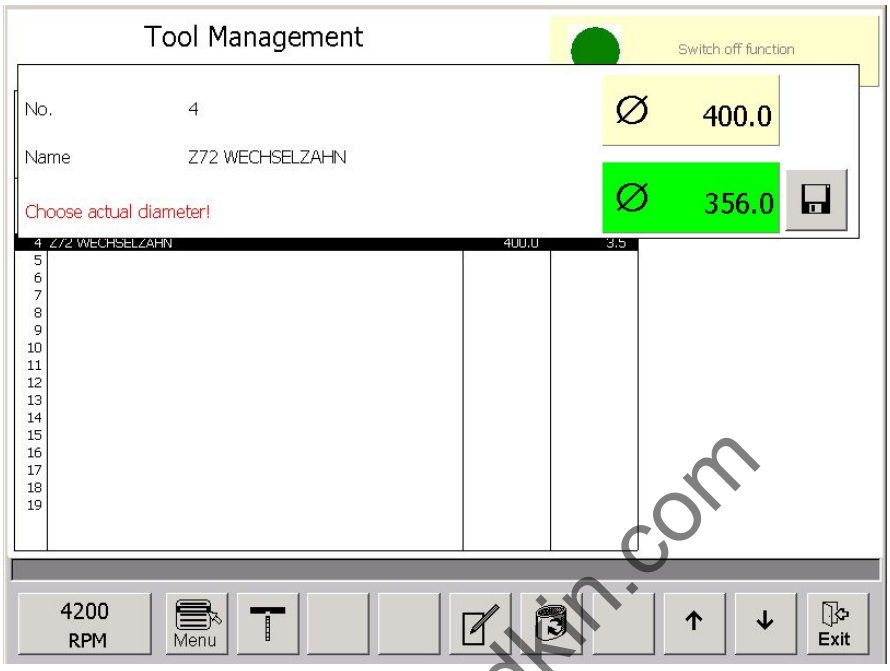


Fig. 6-110 Actual diameter confirmed

- with  and saved.

The height automatically appears in the field. The new, changed saw blade diameter is displayed in the Tool Management.

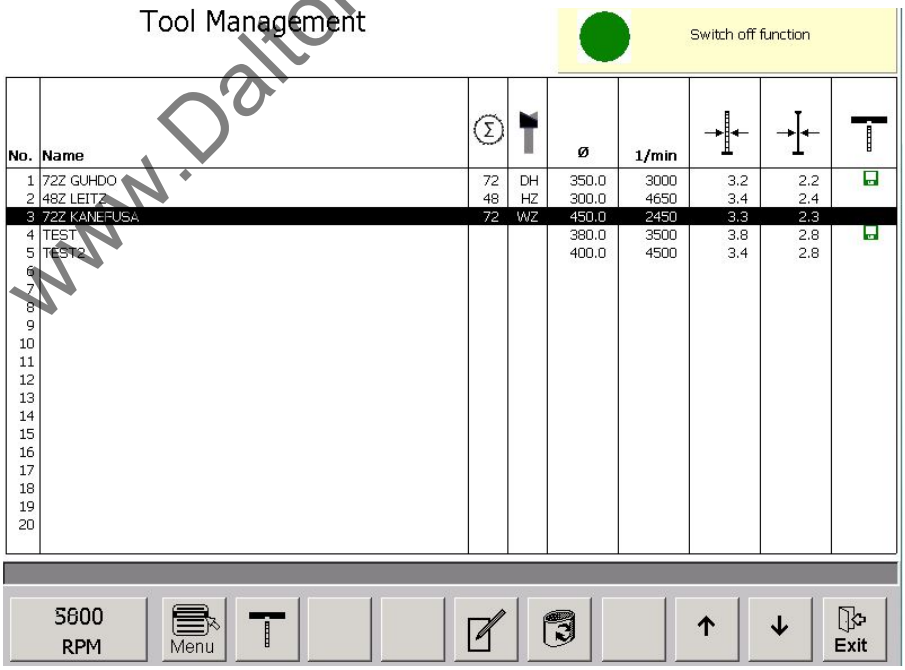


Fig. 6-111 Actual diameter saved

- Exit the Tool Management by pressing *EXIT*.

The actual values of the fences are adjusted in line with the saw blade diameter and the saw blade thickness. The actual values in question are shown in red.
Press the Start button and the fences will travel to the new dimensions.

Note!

Tool Management is deactivated if an empty tool location is selected.

Basic settings

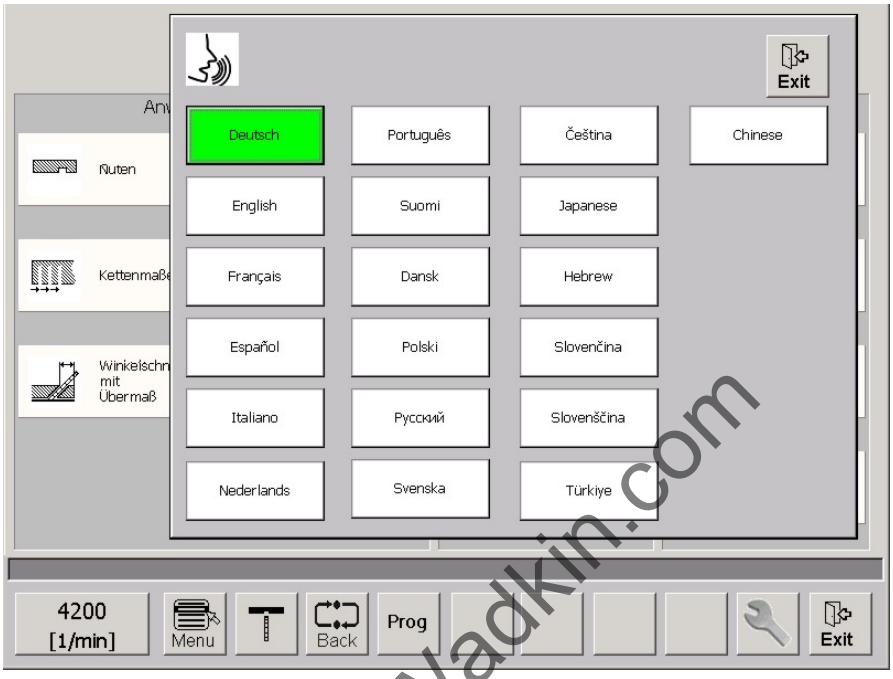


Fig. 6-112 Language

Pressing the *Language* button under Main Menu/Basic Settings takes you to the Language function.

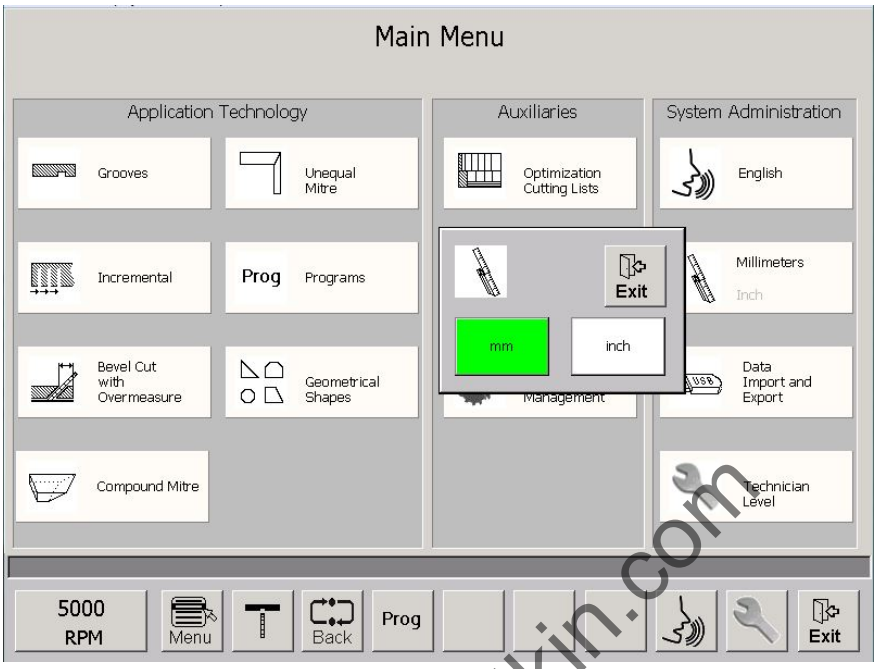


Fig. 6-113 Setting of mm/inch

Pressing the *Millimetre/Inch* button under Main Menu/Basic Settings takes you to the mm/inch function.

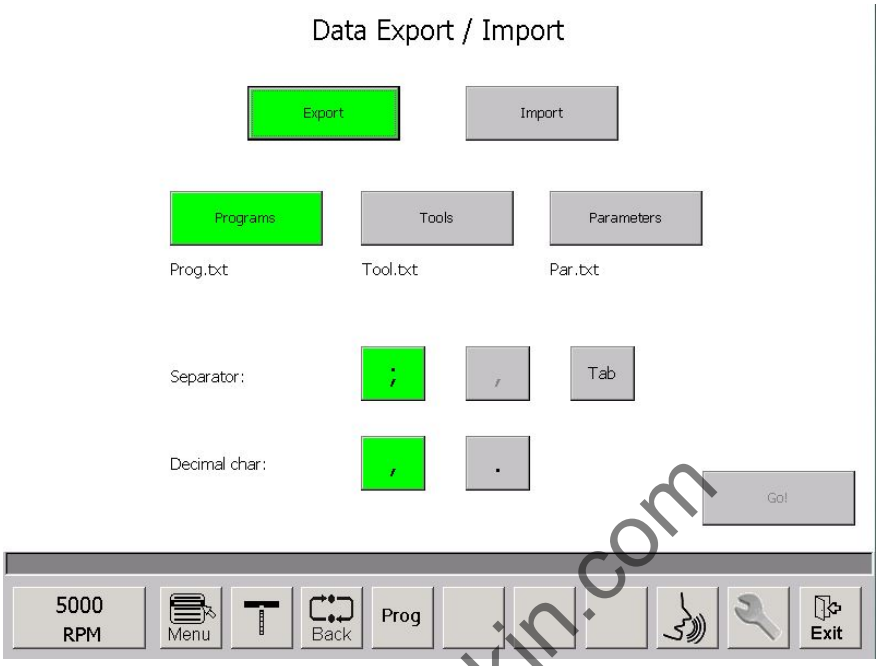


Fig. 6-114 Setting of mm/inch

Pressing the *Data export/import* button under Main Menu/Basic Settings takes you to the data transmission function.

Programs, tools, machine parameters can be written (exported) to a USB stick here.

This data can also be read in (imported) from a USB stick here.

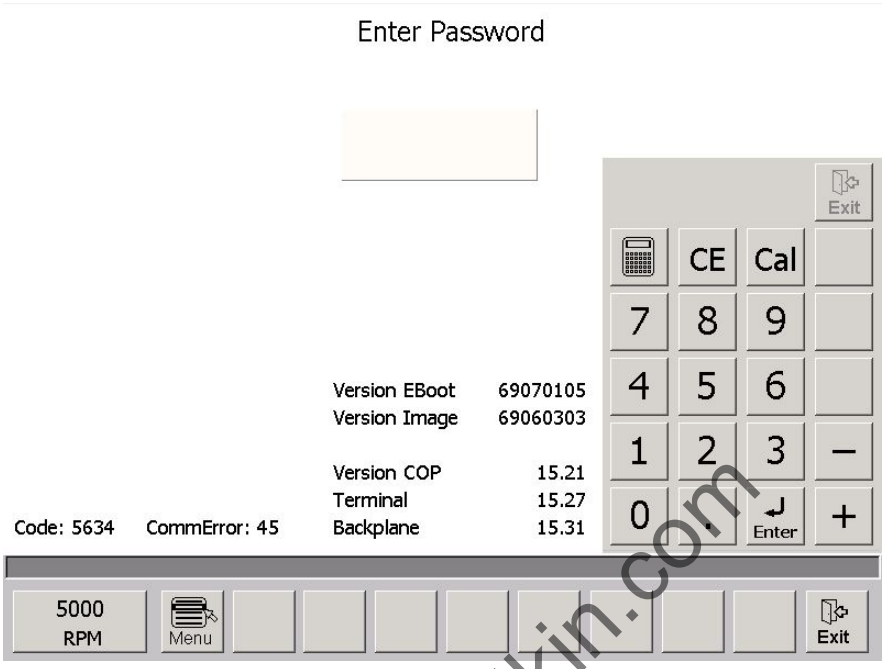


Fig. 6-115 Technician level

Pressing the *Technician level* button under Main Menu/Basic Settings takes you to the technician level function.

The technician level is password protected and is not required for operating the machine.

6.5 Protection hood

Fig. 6-116 Protection hood swung away

Swing away the protection hood as follows:

- Turn off the main switch and secure against turning on again
- Actuate the release lever
- Swing the protection hood away

Warning!

You may only work with the protection hood swung away in special cases and with increased caution, e.g. for bulky workpieces.

Fig. 6-117 Normal working position

[1] Unlocking/locking lever

Note!

After completing the work cycle, immediately swing the protection hood back into the normal working position and lock it with the lever.

Pull the lever forward until it noticeably engages.

Changing the protection hood sections

Fig. 6-118 Swivel out the hood section

When changing between wide and narrow, it is not necessary to completely exchange the hood but only the respective hood section by means of a snap fit.

For exchanging the hood section, press the red pusher down and swivel out the hood section. Suspend the other hood section and swivel in until the snap fit engages.

Fig. 6-119 Large protection hood with wide hood section

Protection hood, machine tilting to both sides

Installing the wide protection hood, see photo and text on previous page.

For tilting in the negative range (-), the protection hood is pulled out after unlocking the lever at the rail guide.

Fig. 6-120 Lateral displacement, protection hood

6.6 Optional modules

6.6.1 Scorer, tilting to one side

When processing boards coated on both faces, the scoring unit makes it possible to cut without breakouts on the underside of the board. The scorer cuts into the material from below approx. 1-2 mm; then the main saw blade cuts through it. Make sure that the scoring blade is exactly in line with the main blade and is set to the corresponding width. To achieve optimum cutting results, the scoring blade runs in the workpiece advance direction, i.e. the opposite direction to the main saw blade.

The scoring saw can only be started once the main saw has reached its operating speed (after approx. 5 sec.). It is started by pressing push-button I labelled with the scoring saw symbol on the panels.

Saw blades

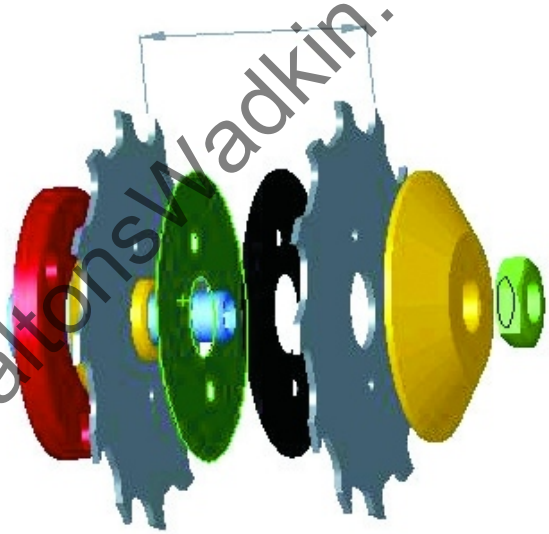


Fig. 6-121 Two-part scoring blade

We recommend using two-part scoring blades which can be set to the required blade thickness by inserting spacer discs. The cutting line of the scoring blade should be approx. 1/10 mm wider than the main saw blade, i.e., 5/100 mm to each side. In addition, the two scoring blades should have carrier pins and their thickness should be marked on the spacer discs.

The **RAPIDO scoring tool** facilitates and accelerates cutting width adjustment. Compared with two-part scoring blades, this represents a potential saving of up to 30 minutes since the cutting width can (without removing the saw blades) be adjusted infinitely to the cutting width of the main saw blade.

Fig. 6-122 RAPIDO scoring tool

Fitting the saw blade

The description for fitting the saw blade applies both to two-part scoring blades and to **RAPIDO** scoring tools.

Only use saw blades with a diameter of 120 mm and a hole diameter of 22 mm!

- Switch off the drives.
- Move the scoring saw up to its highest position.
- Move the sliding table in the cutting direction.
- Unlock the lock in the middle of the saw blade by pressing the knob on the middle carriage.
- Move the sliding table to the end position in the cutting direction.
- Open the bottom hinged safety cover (orange coloured cover plate).
- Release the nuts with a special wrench by turning counterclockwise.
- Before fitting the new scoring blade, remove any adhering chips from both flanges.
- Place the saw blade and front flange on the saw shaft, and tighten the nut clockwise.

Attention!

The following must also be observed when using RAPIDO scoring blades with infinitely variable cutting width adjustment:

- Failure to comply with the operating instructions inadmissibly reduces Health and Safety at Work and excludes any claims for liability.
- Incorrect use and use other than that intended is forbidden.
- Permissible cutting widths 2.8 - 3.8 mm
- Take particular caution when unpacking and packing the adjustment unit, danger of injury!
- Only store the adjustment unit in the original packaging!
- Fit the scoring blade outside of the machine.
- Make sure that all connection elements are fitted.
- Only use original spare parts in the case of loss or damage to the connection elements!

Adjusting a two-part scoring blade

The cutting width of the scorer should be set to the cutting width of the main saw blade (+ 0.05 mm). Carry out the adjustment toward the left side of the main saw blade. The cutting width is adjusted with the spacing discs that are supplied.

Adjusting the scoring blade for the RAPIDO scoring tool

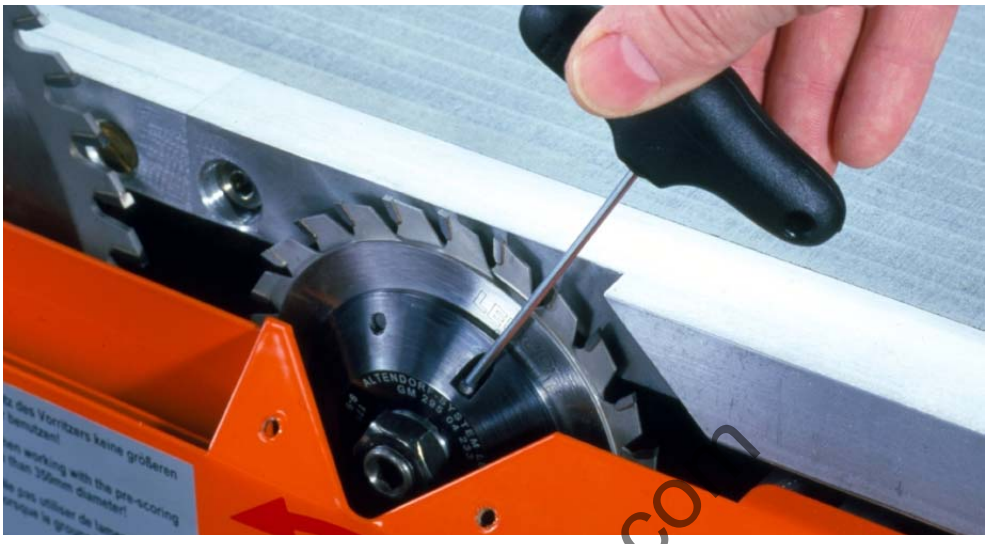


Fig. 6-123 Release the clamping screw.

Fig. 6-124 Adjust the spindle.

Note!

Only use the supplied tools for adjustment work!

- Release the clamping screw, approx. 2 turns.
- Turn the spindle until the required dimension is reached. (1 turn = 0.5 mm)
- Tighten the clamping screw.
- Make a test cut and, if necessary, correct the cutting width again as described above.

Replacing the scoring blade for RAPIDO

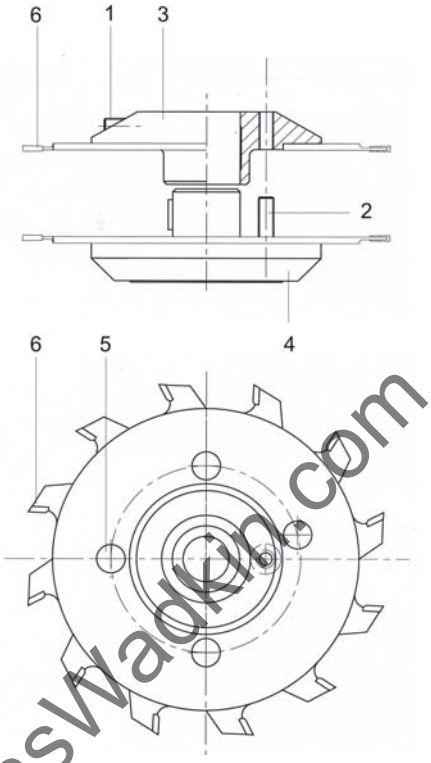


Fig. 6-125 RAPIDO saw blades

Remove the adjustment unit from the machine. It may be necessary to loosen the clamping screw because an excessively tight clamping screw can cause the adjustment unit to jam on the shaft!

Dismantling

Using the Allen wrench:

- Release the clamping screw (1), turn the spindle (2) approx. 3 – 4 turns clockwise until the flange (3) can be removed from the holder (4).

Using the internal torx wrench:

- Undo the screws (5).
- Remove the circular saw blade (6).
- Carefully clean the flange (3) and screws (5). Make sure that the running and flange surfaces are dry and free of dust.

- Fit a new saw blade, paying attention to the rotational direction and hole pattern: The circular saw blade (6) is in full contact with the flange (3) and the shoulder on the circular saw blade must point to the contact surface.
- Turn in the screws (5) and tighten with a torque of 8.6 Nm.
- Proceed in the same manner for the other half of the adjustment unit.

Prohibitory!

Do not apply oil or grease!

Installation

- The clamping screw (1) is released.
- Fit the flange (3) vertically onto the holder (4) so that the spindle (2) engages in the threaded hole (7).
- Turn the spindle (2) counterclockwise with the Allen wrench. The flange (3) is drawn onto the holder (4); the force applied must not increase.
- Continue turning the spindle (2), until the two circular saw blade halves are in contact.
- Install the adjustment unit on the machine.
- Set the cutting width, see above.
- Slightly tighten the clamping screw (1).

Note!

A red anodised table strip is integrated in the area of the scorer (optionally available with LED lighting).

This strip marks the hazard zone of the scoring tool.

Fig. 6-126 Red table strip (standard)

Fig. 6-127 Red table strip with lighting (optional)

RAPIDO - PLUS

The 3-axis scoring system allows motorised positioning of the cutting height, width and cutting width. All settings can be entered via the keypad while the machine is running, and are shown on the display.

Replacing saw blades

Fig. 6-128 RAPIDO Plus

[1] Remove the adjustment unit from the machine.
[2] Undo the screws and remove.
[3] You can now pull the adjustment unit apart

Fig. 6-129 Disassembled RAPIDO Plus

Fig. 6-130 RAPIDO-Plus, fitting the saw blade

[1] Undo the screws
[2] Remove circular saw blade
[3] Carefully clean the flange and screws
[4] Fit a new saw blade, paying attention to the rotational direction and hole pattern!
[5] Insert screws and tighten with a torque of 8.6 Nm
[6] Proceed in the same manner for the other half of the adjustment unit

6.6.2 Scorer, tilting to both sides

The following scorer systems are available for machines tilting to both sides:

Scorer diameter: 180 mm!

Duet set

Main saw blade and scorer blade ground to the same width in pairs

RAPIDO-BS

Width-adjustable scoring system with two saw blades, the spacing of which is adjustable

3-axis scorer

In this case, the width and side adjustment is carried out electrically in the control system.

6.6.3 Mitre fences

Single-sided mitre fence

Fig. 6-131 Single-sided mitre fence

The fence can be fitted quickly and easily to the sliding table with an eccentric clamping system. Dimension scales are inclined in order to stay in the operator's field of vision. Crosscutting to 2500 mm.

Double-sided mitre fence DUPLEX

Fig. 6-132 Double-sided mitre fence DUPLEX

The DUPLEX mitre fence can be infinitely adjusted from 0° to 90°. The circular scale with a radius of 350 mm has 0.25° graduation, allowing precise and fast setting of the mitre angle. The DUPLEX mitre fence can be fitted at any position of the sliding table due to its eccentric clamping system.

The stop bar (2 throw-over stops) can be used in both stop profiles. It is possible to crosscut workpieces of up to 1350 mm in length or, when the extended stop fence is used, up to 2150 mm in length.

In addition, the DUPLEX and DUPLEX D mitre fence features a length compensation scale with which the length dimension is set in accordance with the mitre angle.

Note!

Separate instructions are enclosed for the selected options DUPLEX, DUPLEX D or DUPLEX DD.

6.6.4 DIGIT L dimension display unit

Fig. 6-133 DIGIT L

The dimensions that have been set are displayed digitally in the 150 mm to 3200 mm range to an accuracy of ± 0.1 mm. The proximity sensor operates wear-free and is not sensitive to dust. A precise adjustment system is used for precision setting in 1/10 mm increments.

Operating the display electronics

Fig. 6-134 DIGIT L display unit

Press button 1: switches over the throw-over stop side. Pressing button 2, 3 or 4 changes the measuring range on the display electronics. Throw-over stop 1 is permanently connected to the measuring system and the display unit. The measuring range is from approx. 150 mm to approx. 1630 mm. Throw-over stop 2 is a flip stop and, when it makes contact at the left of throw-over stop 1, it is at a distance of 295.0 mm from throw-over stop 1. This results in a measuring range of approx. 445 mm to approx. 1750 mm. If throw-over stop 2 is pushed onto the length extension, this results in a measuring range of about 1750 mm to 3200 mm; if necessary, the length extension can be connected to throw-over stop 1 with the aid of the detent bolt.

Power supply

Power is supplied by a rechargeable battery. The charging state is shown in the bottom right hand corner of the display. The batteries can be recharged using the supplied charger.

Changing the rechargeable battery

Fig. 6-135 Changing the rechargeable battery for DIGIT L , DIGIT LD

Fig. 6-136 Battery charger

Note!

For information on how to handle batteries, see chapter 3.6.4

Basic setting / calibration of the display unit

The basic setting of the display unit is needed in order to adapt the measuring system to the machine situation. Check and, if necessary, re-enter the basic settings following each tool change.

How to proceed:

- Push throw-over stop 1 with the display unit to the right against the mechanical stop.
- Fix throw-over stop 1 with a clamping screw.
- Cut a test piece, measure the workpiece width with a calliper and enter the precise value as follows:
- Press key 2; after three seconds the following calibration menu will appear (only the first throw-over stop can be calibrated).

Fig. 6-137 Calibration

[1] Press the adjacent function key to select the required decade. If the highest decade has been selected and the function key is reactivated, the lowest decade is automatically selected.
[2] Press the "+" key to increment the display value of the active decade.
[3] Press the "-" key to decrement the display value of the active decade.
[4] Press the adjacent function key to store the new throw-over stop value under parameter L-L1; this value is also automatically calculated with the throw-over stop values displayed on the user interface.

Switching the display unit from mm to inches or inches to mm

- Press the Menu button
- Select inch (or mm) as the measuring unit.

6.6.5 Digital angle and length display DIGIT LD

Fig. 6-138 Crosscut-mitre fence display unit WGA_LD

The angle is shown in the display to an accuracy of 0.01° and the dimensions set in the 150 mm to 3200 mm range are shown in the display to an accuracy of ±0.1 mm. The length dimensions shown are automatically corrected when the angle is changed.

Operating the display electronics

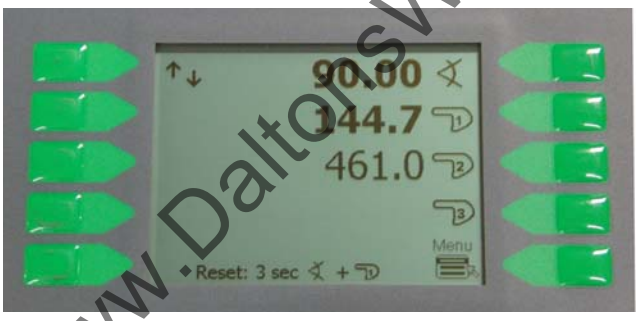


Fig. 6-139 Display unit

Pressing buttons 2, 3, 4 on the right hand side changes the measuring range on the display electronics. The dimension of the current throw-over stop is shown in bold. Throw-over stop 1 is firmly connected to the measuring system and the display unit. Throw-over stop 2 is a flip stop and, when it makes contact at the left of throw-over stop 1, it is at a distance of approx. 200.0 mm from throw-over stop 1. If throw-over stop 2 is pushed onto the length extension, this results in a measuring range of about 1750 mm to 3200 mm; if necessary, the length extension can be connected to throw-over stop 1 with the aid of the detent bolt.

Pressing button 1 (RH side) for more than 3 seconds switches over the degree display.

The fence position is switched over on the cross-slide by pressing the button on the left hand side.

Power supply

Power is supplied by a rechargeable battery. The charging state is shown in the bottom right hand corner of the display. The batteries can be recharged using the supplied charger.

Changing the rechargeable battery

Fig. 6-140 Changing the rechargeable battery for DIGIT L , DIGIT LD

Fig. 6-141 Changing the rechargeable battery for WGA DIGIT LD

Fig. 6-142 Battery charger

Note!

For information on how to handle batteries, see chapter 3.6.4

Basic setting / calibration of the display unit

The basic setting of the display unit is needed in order to adapt the measuring system to the machine situation. Check and, if necessary, re-enter the basic settings following each tool change.

How to proceed:

- Push throw-over stop 1 with the display unit to the right against the mechanical stop.
- Fix throw-over stop 1 with a clamping screw.
- Cut a test piece, measure the workpiece width with a calliper and enter the precise value as follows:
- Press key 2; after three seconds the following calibration menu will appear (only the first throw-over stop can be calibrated).

Fig. 6-143 Calibration

[1] Press the adjacent function key to select the required decade. If the highest decade has been selected and the function key is reactivated, the lowest decade is automatically selected.
[2] Press the "+" key to increment the display value of the active decade.
[3] Press the "-" key to decrement the display value of the active decade.
[4] Press the adjacent function key to store the new throw-over stop value under parameter L-L1; this value is also automatically calculated with the throw-over stop values displayed on the user interface.

Switching the display unit from mm to inches or inches to mm

- Press the Menu button
- Select inch (or mm) as the measuring unit.

6.6.6 Rip fence with DIGIT X digital dimension display

Fig. 6-144 Rip fence with Digit X

The electronic measuring system with digital display and fine setting system ensures precise and fast setting of the rip fence. The display is always in the field of vision. The touch-free measuring system is not sensitive to dust. When the guide surface of the stop fence is changed, the dimensions are corrected automatically in the measuring system.

Changing the batteries

Fig. 6-145 Release the clamping screws

Fig. 6-146 Remove the housing with the display unit

Note!

For information on how to handle batteries, see chapter 3.6.4

Fig. 6-147 Undo the screws and remove the cover.

Fig. 6-148 Change the batteries, ensuring correct polarity

Basic setting of the display unit

Fig. 6-149 Operating the Digit X

The basic setting of the display unit is needed in order to adapt the measuring system to the machine situation. Check and, if necessary, re-enter the basic setting for each tool change. The basic setting can only be carried out together with the tools used so it cannot be done at the factory.

- Push the rip fence to the left against the mechanical stop
- Hold the F button down and press the Reset button
- Set the rip fence to a cutting width of 130 mm (straight edge in the position of the low guide surface)
- Cut a test piece and measure the workpiece width with a sliding calliper
- Hold the F button down; the right-hand digit of the display starts flashing after approx. 3 seconds
- Pressing the + button increases the flashing digit by 1 each time. When the maximum number value 9 is passed, the numbers start again with 0.
- Pressing the Minus button decreases the flashing digit by 1 in each case.
- Release the F key.
- The dimension that has been set is saved as the basic setting.

Calibrating the display unit

Calibration of the display unit is required when the fence has been moved under the main table.

- Push the rip fence to the left against the mechanical stop
- Hold the F button down and briefly press the Reset button; the display shows the basic setting again.

Switching the display unit from mm to inches or inches to mm

- Hold the + button down for more than 3 seconds; the display shows inches (or mm).
- Release the + key; the display unit now shows the set dimension in inches (or mm).

6.6.7 Parallel cutting device

Parallel cutting device

Fig. 6-150 PALIN parallel cutting device

Parallel cutting of long, narrow parts is done to the left of the saw blade. The PALIN and PALIN_D parallel cutting devices are good for this. In parallel cutting, the flip stop is set to the same dimension at the crosscut fence and at the PALIN. The workpiece can be placed safely and be guided easily on the left of the saw blade.

Parallel cutting device with digital dimension display and precision setting system

Fig. 6-151 PALIN D parallel cutting device

PALIN_D with digital dimension display and precision setting system A precise adjustment system is used for precision setting in 1/10 mm increments. Both parallel cutting devices can be adjusted to a workpiece width of up to 900 mm.

Alkali manganese batteries have an operating life of approx. 1 year. A battery capacity display provides a timely reminder of a battery change.

We do not recommend the use of rechargeable batteries of any type as their voltage and capacity differ from that of alkaline batteries. As a result, the estimated operating life of approx. 12 months would not be reached, and the symbol in the battery capacity display would not show the battery status correctly.

Note!

For information on how to handle batteries, see chapter 3.6.4

		
Carefully push out the display unit.	Undo the screws and remove the cover.	Change the batteries, ensuring correct polarity!

Tbl. 6-1 Changing the batteries

Calibrating the display unit

- Push the fence to the right against the mechanical stop.
- Fix the fence with a clamping screw.
- Hold the F button down and briefly press RESET.
- The basic setting value reappears on the display unit.

Basic setting of the display unit

The basic setting of the display unit is needed in order to adapt the measuring system to the machine situation. Check and, if necessary, re-enter the basic settings following each tool change. The basic setting can only be carried out together with the tools used so it cannot be done at the factory.

- Push the fence including the display unit to the right against the mechanical stop and fix with a clamping screw.
- Cut a test piece, measure the workpiece width with a vernier calliper and enter the precise value as follows:
- Press the F button, all digits of the display will light up after 3 seconds.
- Hold the F button down.
- The right-hand digit of the display starts flashing.
- Pressing the + button increases the flashing digit by 1 each time. When the maximum number value 9 is passed, the numbers start again with 0.
- Pressing the - key reduces the flashing digit by 1 each time; when the maximum numeric value (9) is passed, the numbers start again with 0.
- Release the F key.
- The dimension that has been set is saved as the basic setting.
- The display unit is now ready for operation.

Switching the display unit from mm to inches or inches to mm

- Hold the + button down for more than 3 seconds; the display shows inches (or mm).
- Release the + key; the display unit now shows the set dimension in inches (or mm).

6.6.8 Workpiece hold-down device

Manual quick-action clamp

Fig. 6-152 Manual quick-action clamp

The manual quick-action clamp fixes the workpiece to the crosscut fence.

Klemmfix

Fig. 6-153 Altendorf Klemmfix

Altendorf Klemmfix consists of two collets for fixing narrow and small workpieces on the sliding table. They securely hold workpieces from 0-70 mm. The collets can be used as required throughout the full length of the sliding table.

Electro-pneumatic hold-down device

Fig. 6-154 Electro-pneumatic hold-down device

The electro-pneumatic hold-down device fixes the workpiece to the crosscut fence and operates with a clamping force of max. 100 kp at a pressure of 6 bar. The maximum clamping height is 90 mm.

The safety cylinder only clamps the workpiece when the pressure plate is positioned vertically in relation to the cylinder axis. If the pressure plate is offset by more than 2° from the vertical position, e.g. by contact with the back of the hand, no clamping force builds up.

Warning!

Danger of crushing fingers!

- Ensure that the pressure plate can freely move in all directions, otherwise, the safety function will be impaired.
- Never reach beneath the pressure plate on purpose!
- Never use two fingers to reach opposite to, parallel or centred beneath the clamping plate!

Fig. 6-155 Remote control, hold-down device

Movement up and down is controlled wirelessly via a small hand-held radio transmitter.

The operating status of the hold-down device is shown on the switch box of the protection hood support.

Yellow lamp: Cylinder pressurised

White lamp: Cylinder not under tension

If the remote control fails, the hold-down device can be controlled directly by pressing the illuminated push button.

Pneumatic hold-down device

Fig. 6-156 Pneumatic hold-down device

The split hold-down beam can be controlled separately. This ensures optimum adjustment to differing workpiece lengths with one or both hold-down beams. The hold-down beam stroke is 80 mm; the customer-provided pneumatic connection is 6 bar.

The customer must provide a pneumatic connection of 6 bar.

Sliding table length [mm]	Beam length [mm]
2250	1975
3000	2725
3200	2925
3400	3125
3800	3525

Tbl. 6-1 Beam length

Operation

The pneumatic hold-down beam consists of two segments and can be operated by 2 control levers to ensure optimum holding down of different workpiece lengths.

When valve V1 has been actuated, the two compressed-air cylinders lower the short part of the hold-down beam onto the workpiece.

The entire length of the hold-down beam is controlled via valve V2. After actuation, the two segments of the pressure beam are lowered simultaneously. The rubber coating of the hold-down beam prevents the workpiece from slipping.

Installation

- Place the hold-down beam onto the sliding table.
- Insert the two T-nuts into the sliding table groove.
- Align the hold-down beam in parallel with the protection hood.
- The distance between the hold-down beam and the protection hood should be 15 mm; the length of the slots prevents contact with the protection hood.
- Tighten the M12 nuts.
- Connect the compressed-air supply to the air servicing unit, and set the pressure reducer to 3 bar.

Vacuum fastening in the sliding table

Fig. 6-157 Suction cup rows

A vacuum is generated in one or more suction cup rows via a high-capacity vacuum pump to reliably hold the workpiece on the sliding table. Each suction area can be individually controlled, the workpiece can be released at the press of a button.

Note!

Separate instructions are enclosed for the selected option Vacuum fastening!

6.6.9 Cross-slide width extension

Fig. 6-158 Cross-slide width extension

The cross-slide width extension is intended to facilitate work with large format or long workpieces. It extends the width of the workpiece support surface to max. 700 mm by means of two telescopic tubes. Long boards can be securely loaded and crosscut. The additional horizontal roller allows the workpiece to be easily pushed throughout the entire length.

6.6.10 Additional cross-slide

Fig. 6-159 Additional cross-slide

Optional equipment for optimum support extension for large format or particularly unwieldy boards. The additional cross-slide can be easily fitted at any point of the sliding table due to its quick-action clamping system.

Max. workpiece weight up to 250 kg.

The guide is not supplied as standard with the machine!

6.6.11 LASER cutting line display

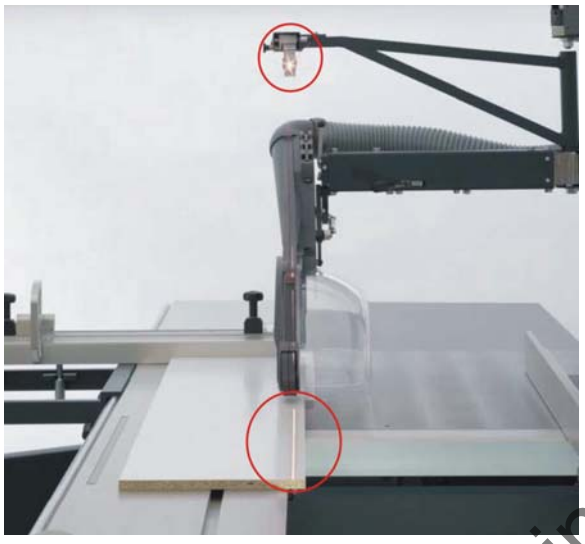


Fig. 6-160 Laser cutting line display

The laser beam shows the run of the cutting line over a length of approx. 5000 mm. For trimming or cutting along a marked line (e.g. for stairs/steps) in particular, valuable set-up time and material can be saved.

Warning!

Laser beams!

The laser creates a red luminous beam with a width of approx. 3 mm. The intensity of this laser is sufficiently low that looking into it briefly is harmless. The eye is protected by its natural reflex to close.

Never observe the laser beam using optical aids or instruments, e.g. glasses, binoculars or magnifying glasses etc. which could bundle the light, and then possibly damage the eye.

- Never attach mirror surfaces in the laser area!
- Never carry out any modifications to the laser optics!
- Furthermore, make sure that the warning signs attached to the laser are always legible. They must not be removed!
- Never replace the laser with a laser unit of a different type!
- Defective laser units may only be repaired by the manufacturer!

Aligning the laser beam with the cutting line

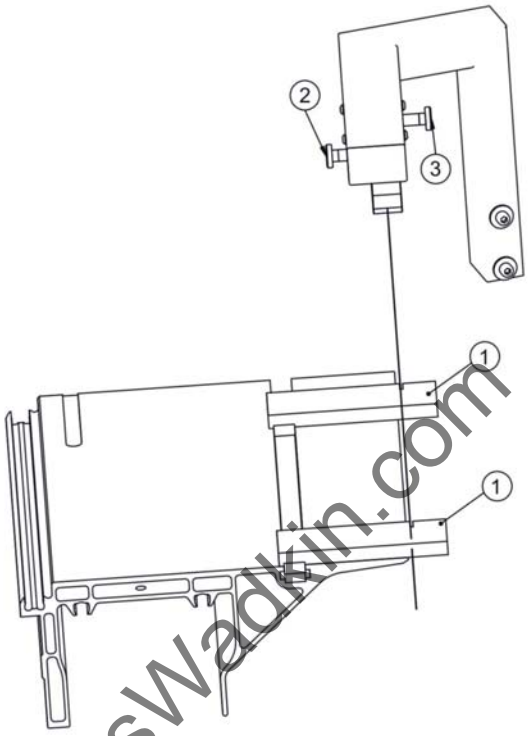


Fig. 6-161 Aligning the laser

At the factory the laser is set so that the beam is perpendicular and parallel to the sliding table.

When the hood has been swung away and this has been followed by positioning, it is necessary to check and possibly correct the laser settings.

Setting:

- Place wooden gauges (1) in the sliding table groove, and saw for approx. 15 mm
- Set the laser beam parallel to the cutting line with the left setscrew (2)
- Move the laser in parallel with the right-hand setscrew (3) until the beam aligns with the cutting line

6.6.12 Coolant spray device

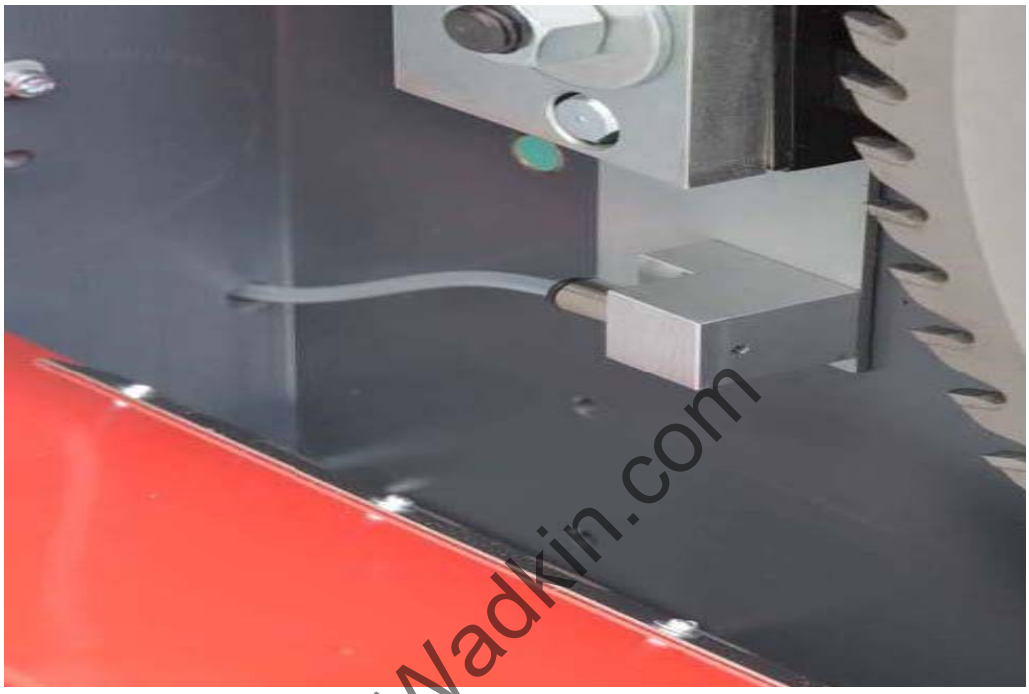


Fig. 6-162 Coolant spray device

To improve the cutting quality, we recommend the use of a coolant spray device for plastics with a low melting point and for certain light metal alloys, especially in conjunction with the infinitely variable speed adjustment.

A sensor is fitted in the front table strip to detect the workpiece. It will interrupt the coolant supply when not obstructed by a workpiece.

Note!

Separate instructions are enclosed for the selected option Coolant spray device.

6.6.13 TIP-SERVO-DRIVE

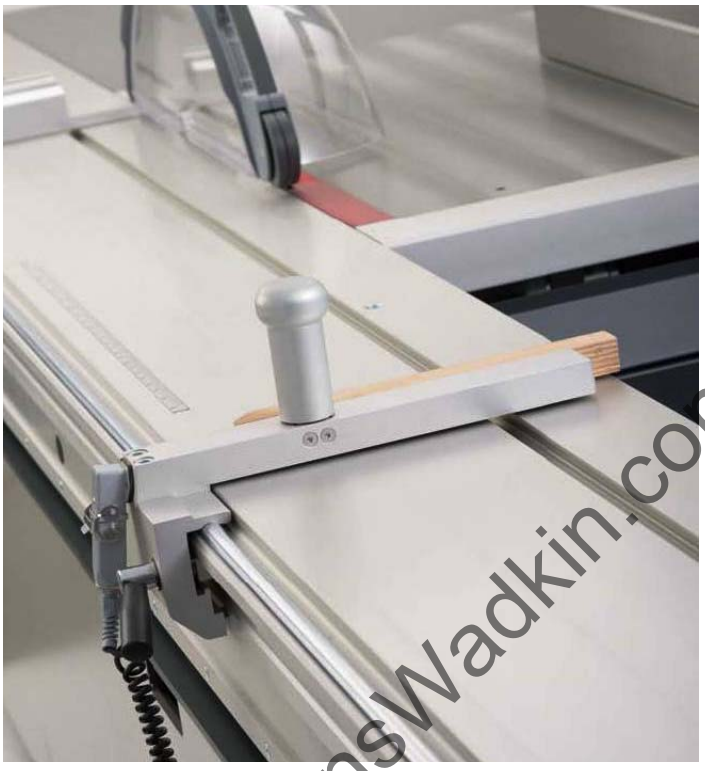


Fig. 6-163 TIP-SERVO-DRIVE

The drive serves to assist the operator during sawing and is activated as soon as the joystick fitted on the sliding table is actuated (pressing = forward, pulling = backward). Operation is carried out from the usual workplace of the machine upstream of the sliding table.

Note!

Separate instructions are enclosed for the selected option TIP-SERVO-DRIVE.

7 Cleaning/care

7.1 Safety measures

Attention!

- ***Always turn off the main switch and secure it against being turned on again before doing any maintenance work!***
- ***Before using solvents and cleaning agents, make sure that these substances do not cause damage to the painted, anodised or galvanised surfaces as well as plastic parts. For information on these substances, please refer to the safety data sheets available from the manufacturers of the solvents or cleaning agents.***

7.2 Maintenance/cleaning by the user

Note!

Regular cleaning of the **machine** and the **machine environment** prolongs the life of the machine, is prerequisite for perfect cutting results and reduces the risk of accidents.

Pay attention to the following:

- Machine table
- Sliding table
- Sliding table guides
- Tilt segments
- Stop bar of rip fence
- Machine interior
- Machine environment

Carry out cleaning/care measures as follows:

Regularly:

Fig. 7-1 Remove chips and dust from the **sliding table + machine table** with a brush

Fig. 7-2 Remove chips from the **bottom carriage of the sliding table**

Once a month:

Sliding table

Fig. 7-3 Remove dirt and resin residue from the **guide of the sliding table** using a cloth soaked in spirit

Fig. 7-4 Remove dirt from the **bottom of the guide of the sliding table**

Fig. 7-5 Dirt from the bottom of the sliding table guide

Fig. 7-6 Cleaning of the **sub-rollers of the sliding table**

Swinging arm

Fig. 7-7 Open the **swinging arm** compartment

Fig. 7-8 Clean the roller

Fig. 7-9 Clean the roller from below

Note!

DO NOT APPLY OIL TO THE SWINGING ARM, just clean (dry)!

Segments

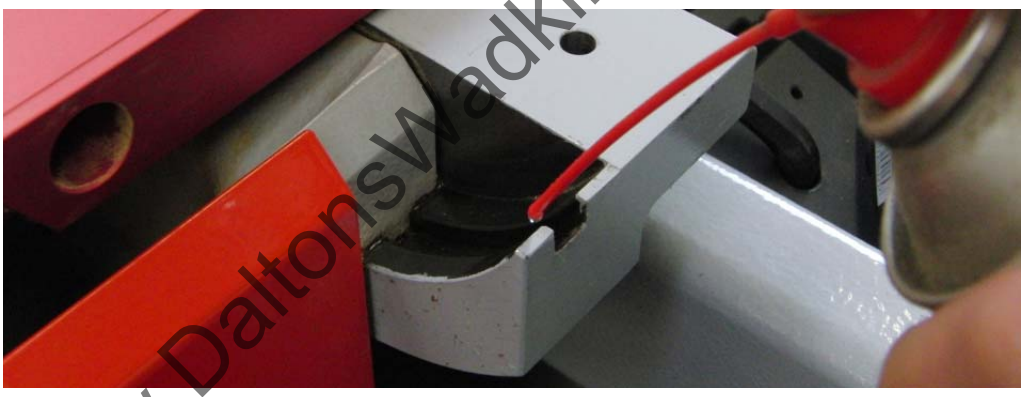


Fig. 7-10 Remove chips/dirt from the **tilt segments** (right and left-hand side) and spray with universal oil

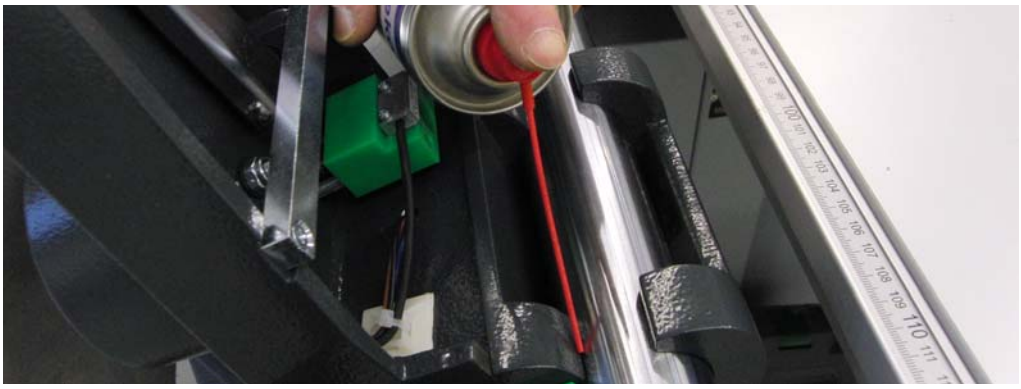


Fig. 7-11 Spray round bar. Subsequently move the block up and down.

Every 6 months
Sliding table

Fig. 7-12 Spray **guides** with universal oil

Note!

Remove the oil from all lubricated points using a cloth!

Note!

Clean the monitor controls/screen using screen cleaning equipment such as a microfibre cloth, cleaning spray or cleaning pad (available from PC or mobile phone shops).

Type of soiling	**Remove/clean with**
Chips and dust	Vacuum cleaner, brush, cleaning cloth
Resin residue	Nitro thinner
Resin residue *on the sliding table guide*	Cleaning cloth, petroleum, spirit
On the monitor	Microfibre cloth, display cleaning spray or pad
Avoidance of	**Necessary subsequent treatment**
Rust formation	Universal oil

Warning!

NEVER APPLY RESIN REMOVER TO ANODIZED SURFACES!

- Do not allow resin removing cleaning agents to corrode the aluminium surfaces!
- It is very important to adhere to the manufacturer's specifications!

Quantity of lubricant

When lubricating, **max. 5 strokes** are required for applying the required 7 g of lubricant.

The filled grease gun is included in the scope of delivery.

Attention!

- Adhere to the precise lubricant quantity and time interval specified for each relubrication cycle.
- Excessive lubrication as a result of shorter intervals and/or too much lubricant will lead to malfunctions!

Note!

If you want to save time and money,

sign up for the annual Altendorf *inspection*, the "check-up" for your sliding table saw.

The lubrication measures will be carried out by our maintenance staff within the framework of the professional maintenance.

Motor driven rip fence (X axis)

The rail guide is lubricated via lubricating nipples on the carriage.

Time interval :

After travel of 1500 m a message is shown on the display indicating that relubrication is necessary.

Lubrication is necessary every 12 months, irrespective of the distance travelled.

Clearing the message

To temporarily clear the message: Actuate the STOP button.

After 10 adjustments or an interruption to the power, the message reappears!

To clear the message after lubrication: Press the START button 3x

Remove the protective cover and relubricate the lubricating nipples with the provided grease gun.

Warning!

Turn off the main switch before removing the cover plate!

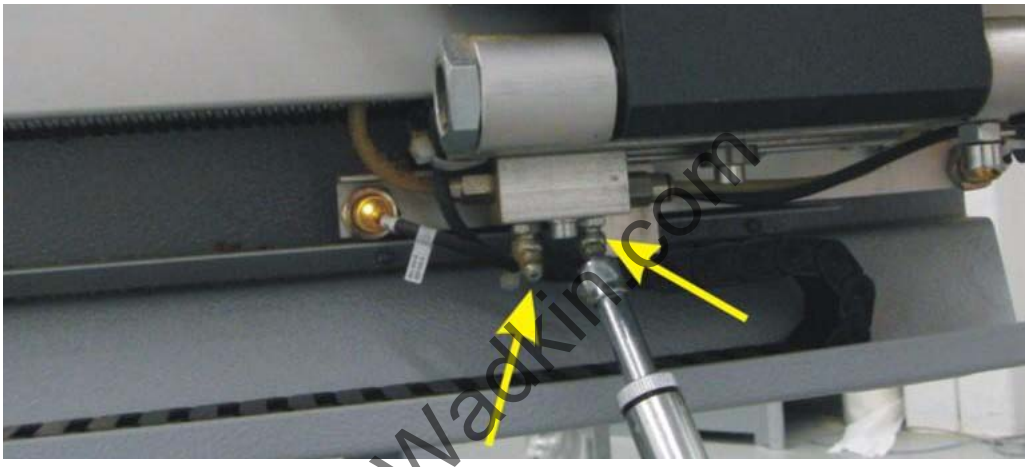


Fig. 7-13 Lubricating nipple, linear guide X axis

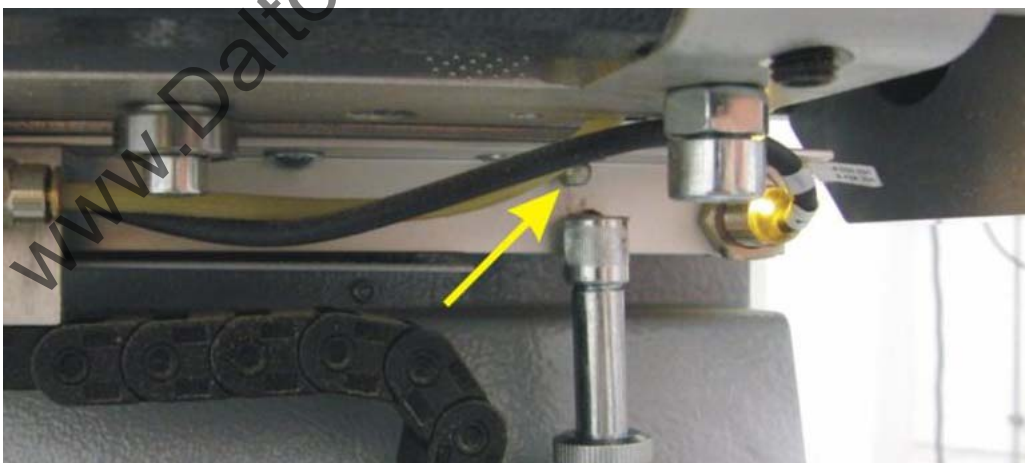


Fig. 7-14 Lubricating nipple, spindle drive F45

Lubrication of the main saw

Time interval:

After a travel path of 100 m has been reached, a message is shown on the display indicating that relubrication of the height adjustment unit is necessary.

Lubrication is necessary once a year, irrespective of the distance travelled.

How to proceed:

To relubricate, set the tilt of the saw blade to 45° and the cutting height to 0 mm. Open the machine door or remove the protective cover plate (VARIO). This allows optimum access to the lubricating nipples.

Fig. 7-15 Lubricating nipple (1) height adjustment

Remove any emerging grease and chips from the guides (2).

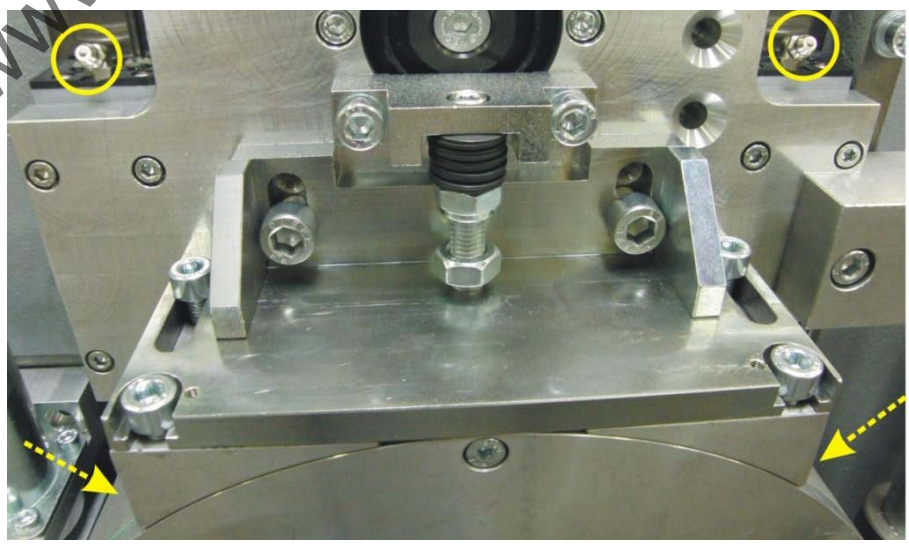


Fig. 7-16 Lubricating nipples, saw unit tilting to both sides

Lubricating the scorer

Note!

Lubricating the scorer is only required for machines tilting to both sides (option).

Fig. 7-17 Lubricating nipple, scorer

Note!

No relubrication of the saw shaft is necessary!

Choice of lubricants

Lubricant	Manufacturer
Aralub HL 2	Aral
BEACON 2	Esso
BP Energrease LS 2	BP
ELF ROLEXA 2	Elf
Gulfcrown Grease No. 2	Gulf
Marson EPL 2	Wintershall
Shell Alvania grease R 2	Shell
Extreme pressure-bearing grease LGEP 2	SKF
Way Lubricant 220	Texaco

Tbl. 7-1 Choice of lubricants

Attention!

Lubricants containing graphite or MoS2 additives are not allowed to be used!

7.3 Maintenance/cleaning by qualified persons

7.3.1 Checking the winding shield

Checking the winding shield

The resistance of the PTC resistors must be checked in the motor terminal box by an electrician at least once a year. Resistance must be measured with a cold motor, and should be 750 ohms ± 200 ohms.

8 Faults/problems/troubleshooting

8.1 Machine diagnosis

The display shows when limit switches have been actuated at protective devices and so on. There are two function groups.

Function group 1:

- Motor temperature
- Machine door
- Lower saw blade cover
- EMERGENCY STOP button
- Sliding table limit switch

Function group 2:

- Brake unit

Response by function group 1:

Machine drives are switched off or cannot be started

Response by function group 2:

Machines will not start

Indication to request a service technician to check the functioning

8.2 Motor overload protection

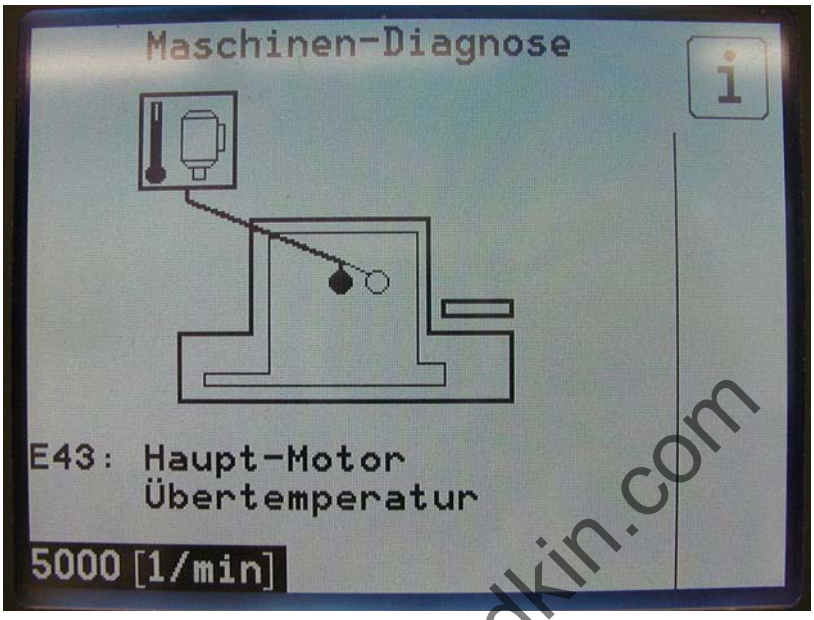


Fig. 8-1 Motor overload protection

The drive motors are protected against overload by a winding shield. This switches a motor off automatically if it overheats. In the case of machines equipped with a scorer, the scorer drive is also switched off even if this motor was not overloaded. The motor can only be switched on again when it has cooled down. It may take several minutes (max. 10) for the motor to cool down!

8.3 Troubleshooting/faults/messages

Fault	Cause	Troubleshooting
The machine cannot be switched on.	The main switch is not turned on.	Turn the main switch to switch position “I”.
	Power failure or phase failure	Wait for power to be reinstated, or eliminate cause for loss of power, check factory fuses.
	Overload protection has responded.	Allow motor to cool down, also refer to machine diagnosis display.
	Sliding table moved over saw blade centre line.	Move the sliding table back to the saw blade centre line; also refer to machine diagnosis display.
	EMERGENCY STOP button pressed.	Rearm the EMERGENCY STOP button again by pulling, also refer to machine diagnosis display.
	Door in machine frame or lower base plate in front of saw blades opened.	Close the machine door or cover plate; also refer to machine diagnosis display.
	Control circuit fuses defective	Turn off the main switch, open the switch cabinet and identify which of the fuses F1, F2, F8 is defective. Find and eliminate the cause. Replace defective fuses, only using fuses of the same rating!
The machine switches off automatically during operation.	Power failure in one or several phases due to responding factory fuses.	Eliminate cause of phase failure.
	Overload protection has responded due to blunt saw blade or excessive feed speed.	Change saw blade or reduce feed speed. Allow motor to cool down, also refer to machine diagnosis display.
	Control circuit fuses defective	Turn off the main switch, open the switch cabinet and identify which of the fuses F1, F2, F8 is defective. Find and eliminate the cause. Replace defective fuses, only using fuses of the same rating!
Workpiece jammed while feeding forward.	Blunt saw blade	Fit a sharp saw blade.
	Riving knife thickness does not match the saw blade used.	Fit the correct riving knife; it must be thicker than or equal to the thickness of the main saw blade.

Fault	Cause	Troubleshooting
The finished size of the cut workpiece does not match the cutting width set on the rip fence.	Dimension scale for cutting width display is misadjusted. Incorrect calibration for DIGIT_X, CONTROL	Reset the dimension scale: Cut a workpiece at the rip fence, precisely measure the cut width and position the measuring scale so that the measured cutting width is displayed on the fence edge. Recalibrate
The finished size of the cut workpiece does not match the cutting width set on the crosscut stop.	Dimension scale for cutting width display is misadjusted. Incorrect calibration for DIGIT_X, CONTROL	Reset the dimension scale: Cut a workpiece at the crosscut stop, precisely measure the cut width and position the measuring scale so that the magnifying glass display matches the measured cut width. Recalibrate
Swinging arm does not move smoothly.	Soiled telescopic tube or track rollers	Clean telescopic tube or track rollers; check wiper.
Sliding table has lateral play.	Sub-rollers incorrectly set.	Set the sub-rollers.
In its end positions, the sliding table is higher than the machine table.	Sub-rollers incorrectly set.	Set the sub-rollers.
Saw blade burns on the sliding table side.	Insufficient free cut on sliding table Excessive free cut on the rip fence	Readjust the free cut. Readjust the rip fence.
Saw blade burns on the rip fence side.	Insufficient free cut on rip fence	Readjust the free cut.
Saw blade burns on both sides.	Incorrect free cut setting. Workpiece jammed. Operating error	Readjust the free cuts. Insert a riving knife in the cutting line or use a wider riving knife. Guide the workpiece either at the LH or the RH fence. Do not guide the workpiece on the rip fence when cutting with the sliding table.
Workpiece has burn marks.	Blunt saw blade	Change the saw blade.

Fault	Cause	Troubleshooting
	Feed too low	Increase the feed rate.
	Saw blade has too many teeth.	Change the saw blade.
	Incorrect free cut	Readjust the free cut.
Break-outs in spite of scorer	Scorer not aligned with main saw blade	Readjust free cuts; the free cut should be almost “0”.
	Scoring blade too narrow	Adjust saw width.
Workpiece rises when cut with the scorer.	Blunt scoring blade	Exchange the sawing blade.
	Cutting height too low	Set the scoring blade higher.

Tbl. 8-1 Fault

Fault message	Cause	Troubleshooting
B000 - B063	Internal faults	Request a service technician to check the function.
E01	Limit switch ES_MIN1 reached	
E02	Limit switch ES_MIN2 reached	
E03	Limit switch ES_MAX reached	
E06	Fault, collision, fast shutdown	
E07	Drive positioning fault	
E08	Axis reference run error	Perform new reference run
E18	Fresh oil lubricator empty	Change cartridge
E21	Error during update: File error on the USB stick	
E22	Error during update: File errors on the USB stick (various)	
E40	20VAC control voltage missing	Check fuse F9
E41	24VAC control voltage missing	Check fuse F8

Fault message	Cause	Troubleshooting
E42	Scoring saw motor overheated	Allow motor to cool down.
E43	Main saw motor overheated	Allow motor to cool down.
E44	Sliding table limit switch	
E45	Saw blade cover open	
E46	Machine door open	
E47	EMERGENCY STOP button 1 pressed	
E48	EMERGENCY STOP button 2 pressed	
E49	EMERGENCY STOP button 3 pressed	
E51	Brake unit fault: Phase failure/rotational direction	Check fusing in the factory and fuses F15 / F16.
E53	Brake unit fault: Mains contactor not in neutral position.	Request a service technician to perform a repair.
E54	Operating error, incorrect riving knife position or speed setting, e.g. too fast for 450 mm saw blade. Drives cannot be started!	Check rotational speed and riving knife position.
E55	Brake unit fault: Communication problem with machine control unit - brake unit is operating in default mode, 450 mm saw blade / 4000 rpm.	Request a service technician to check the function.
E56	Frequency converter phase failure/ overvoltage	Press any button on the control unit.
E57	Frequency converter excessive speed	Restart the machine. If this does not remedy the fault, request a service technician.
E58	Frequency converter communication fault	Request a service technician to check the function.
E59	Emergency running block 3500 rpm	Switch the main saw blade off and on again.
E61	Malfunction, drive positioning, current consumption evaluation	Lubricate the axle

Fault message	Cause	Troubleshooting
E81	Malfunction, shaft encoder A/B channel evaluation error	Request a service technician to check the function.
E91K	K contact error of the STOP button	If the fault occurs repeatedly, request a service technician to check the function.
E92	K-n stop signal missing Check the AC stop circuit	Request a service technician to check the function.
E93K	K contact error of the START button	If the fault occurs repeatedly, request a service technician to check the function.
E94	K free signal missing	Request a service technician to check the function.
E99	Excess temperature of the control electronics	Switch off machine and allow to cool down before restarting. If fault occurs again, request a service technician to check the function.

Tbl. 8-2 Fault messages

8.4 Electronic brake module

The main saw shaft is braked with an electronic brake module. This brake module is located in the contractor control housing, and is accessible when the rear panels have been removed.Braking is controlled in such a way that there is a high brake current at the beginning of braking. This is reduced over time to ensure smooth braking. In addition, a standstill monitoring facility switches off the brake current if the motor is standing still. The brake module contains various function blocks for control and monitoring tasks. There is also a communications connection for machine control.

9 Technical data

9.1 Standard equipment

Saw blade heights: Standard up to 450 mm

Features
Electromotive height and tilt adjustment 0 - 46 ° for the main saw blade, for tilting in both directions from -46° to +46°, with automatic correction of the cutting height when tilting the saw unit, and with display of tilt angle and cutting height.
F45 display control system with dimension input via the keypad Saving of 99 programs
Sliding table incl. infinitely variable top carriage locking Sliding table length 3000 mm
Rip fence Cutting width 1000 mm, table width extension, aluminium anodised • Manual adjustment with precision setting
Crosscut fence • manual adjustment, crosscutting up to 3200 mm, 2 operating positions on the cross-slide frame
Drive power / rotational speed of main saw shaft With automatic brake and display of rotational speed • 4kW (5.5 PS) with a rotational speed of 4200 rpm
Tool clamping system for main saw blade
Max. cutting height 150 mm, max. saw blade diameter 450 mm Cutting heights: see table
Table length extension 840 mm, aluminium anodised
USB-A port for data and program transfer
Machine diagnosis and operating hours meter
Aluminium parts in anodised finish
Clamping shoe, push stick, push block handle and pull-back handle

Saw blade diameter [mm]	Standard			Option: Extended cutting height		
	0°	+ 45°	- 45°	0°	+ 45°	- 45°
250	0 - 55	0 -30	0 -1	0 - 55	0 - 30	0 - 1
300	0 - 80	0 - 47	0 - 18	0 - 80	0 - 47	0 - 18
350	0 - 105	0 - 64	0 - 35	0 - 105	0 - 64	2,5 - 35
400	0 - 130	0 - 81	2 - 52	25 - 130	17,5 - 81	20,5 - 52
450	25 - 155	16 - 98	20 - 69	50 - 155	35,5 - 98	38 - 69
500	-----	-----	-----	75 - 180	53 - 115	56 - 86
550	-----	-----	-----	100 - 205	70,5 - 132	73,5 - 103

Note!

1) For machines with a scoring unit, the scoring blade, including the front and rear flange, or RAPIDO must be removed.

Technical data:

Main saw	Tool holder diameter	30 mm
	Saw blade tilting range	0-46°
	Idling speed	4000 rpm
	Tool edge width	max.20 mm
Sliding table	Sliding table cutting length	See table
Crosscut fence	Crosscutting at 90° crosscut fence	3200 mm
Rip fence	Cutting width at rip fence	1000
Extraction	Connection socket diameter below table	120 mm
	Connection socket diameter at top safety hood	80 mm
	Overall vacuum connection ∅ 140 mm	1500 PA
	Air speed	20 m/s
	Minimum air volume	1150 m^3/h
Ambient conditions	Operating temperature	10 - 40 °C
	Max. relative humidity ***Do not expose the machine to a gaseous environment which is explosive or may cause corrosion!***	90 %, no condensation

Weight	Machine weight, dependent upon equipment	Approx. 1100 kg
Electrical equipment	Lockable main switch	
	Contactor control with pushbutton operation	Control voltage 24 VAC
	Rotational speed, tilt angle, cutting height	Digital display
	Braking of main motor, monitoring of winding temperature	Electronic multifunction module/frequency converter
	Adjustment of tilt and cutting height for the main saw	CNC-controlled

Sliding table cutting lengths

Maximum cutting length with use of clamping shoe or crosscut-mitre fence
Does not apply to crosscut fence, crosscutting up to 2500 mm.

Sliding table length [mm]	2250	3000	3200	3400	3800	4300	5000
Cutting length [mm] for WA,WGA,PQS, UNO	2155	2905	3105	3305	3705	3705	3705
Cutting length [mm] for DUO and DUO Flex	2100	2850	3050	3250	3650	3650	3650
TIP-SERVO-DRIVE							
Cutting length [mm] without scoring blade	1840	2590	2790	2990	3390	3870	3870
Cutting length [mm] with scoring blade	1725	2475	2675	2875	3275	3775	3775

9.2 Special equipment

Available special equipment
Main saw drive Heavy-duty motors up to 11 kW (for machines tilting to one side) Infinite rotational speed adjustment (VARIO, adjustable in increments of 5, power for machines tilting to one side: 5.5kW, 7.5kW , power for machines tilting to both sides: 5kW and 6.5 kW)
Sliding table Sliding table lengths from 2250 mm to 5000 mm Second support (STEG), support width extension by 400 mm On/Off switch at the end of the sliding table
Crosscut-mitre fence Length dimension adjustable via digital display with fine adjustment (DIGIT L), setting accuracy 0.1 mm, crosscutting up to 3200 mm Length dimension, angle, length compensation via digital display (DIGIT LD), setting accuracy 0.1 mm / 0.1°, crosscutting up to 3200 mm
Mitre fences One-sided mitre fence, angle adjustable via scale from - 30° to 45°, crosscutting up to 2500 mm Double-sided mitre fence (DUPLEX), angle adjustable via scale from 0° to 90°, crosscutting up to 1350 mm or 2150 mm, length compensation Double-sided mitre fence (DUPLEX D), angle digitally adjustable, setting accuracy 0.01°, crosscutting up to 1350 mm or 2150 mm, length compensation Double-sided mitre fence (DUPLEX DD), angle and length digitally adjustable, setting accuracy 0.01° / 0.1 mm, length display is adapted automatically in accordance with the angle that is set, crosscutting up to 1350 mm or 2150 mm
Rip fence With digital dimension display and fine adjustment, setting accuracy 0.1 mm
Parallel cutting device Parallel cutting device (PALIN), crosscutting up to 900 mm, adjustable via scale Parallel cutting device (PALIN_D), crosscutting up to 900 mm, digitally adjustable, setting accuracy 0.1 mm

Available special equipment
Pneumatic hold-down beam For sliding table length 2250 mm, clamping length 1975 mm For sliding table length 3000 mm, clamping length 2725 mm For sliding table length 3200 mm, clamping length 2925 mm For sliding table length 3400 mm, clamping length 3125 mm For sliding table length 3800 mm, clamping length 3525 mm Max. clamping height 80 mm, min. pneumatic connection 6 bars
Electro-pneumatic hold-down device with 1 cylinder with 2 cylinders Max. workpiece height 0 – 90 mm or 80 – 170 mm, min. pneumatic connection 6 bar, wireless remote control
Manual quick-action clamp Max. clamping height 175 mm
Cross-slide Telescopic cross-slide width extension for up to 700 mm extra Additional cross-slide with floor supporting roller, max. workpiece weight 250 kg
LASER cutting line display Light beam width approx. 3 mm, light beam length approx. 5 m
Three-phase A/C socket In European standard version, fuses 10 A, can be switched via the main switch
Coolant spray device Minimal cooling lubrication, operating pressure 0.5 – 5 bars
Support roller, tilting Positioned on the sliding table in front of the machine table
Parallelogram cross-slide Additional cross-slide with digital display
Vacuum suction cup in sliding table 5 individually selectable suction areas for all table lengths

10 Maintenance and repairs

10.1 General

Keeping a supply of the most important spare and wear parts on site is an important prerequisite for the constant functioning and operating capability of the sliding table saw. We only accept a guarantee for original spare parts supplied by us. We expressly point out that original spare parts and accessories not supplied by us have not been checked and released by us. Therefore, the fitting and/or use of such products may negatively influence the properties of the sliding table saw and thus impair its active and/or passive safety. Wilhelm Altendorf GmbH&Co. KG will not accept any liability or guarantee for damage resulting from the use of non-original spare parts and accessories.

Please note that special production and delivery specifications exist for our own and our suppliers' parts, and that we always supply spare parts that meet the latest state of the art and comply with the latest statutory regulations.

Please refer to the spare parts list when ordering spare parts.

For further information please refer to the spare parts drawings included in the spare parts list.

When ordering spare parts, please state the following information:

- Machine no.
- Article no.

10.2 Customer service addresses

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Service department

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