



C U T T I N G S Y S T E M S



LOADING

JOGGING

BUFFERING

CUTTING

TRANSPORTING

UNLOADING

**CUTTERS
POLAR ED**

N U M B E R O N E W O R L D W I D E

The top-of-the-line model suitable even for the most difficult jobs



POLAR sets new standards in the medium and large-size formats. With the new generation of high-speed cutters POLAR meets current and future demands. POLAR high-speed cutters are available in version ED with cutting lengths of 92/36 $\frac{1}{4}$ " , 115/45 $\frac{1}{2}$ " , 137/53 $\frac{15}{16}$ " , 155/61" and 176/69 $\frac{5}{16}$ " cm.

They offer the following advantages:

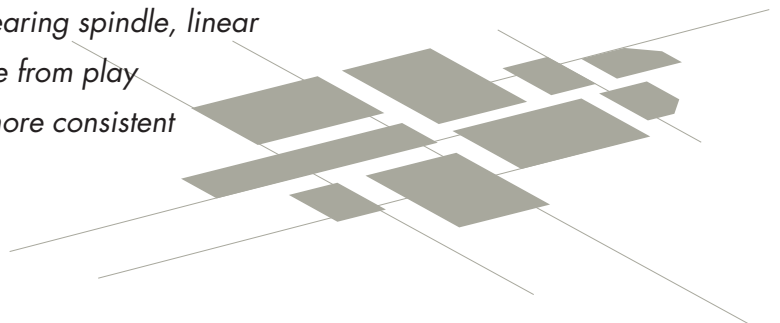
- Shorter production times due to an optimized production flow (fast and smooth backgauge positioning)*
- Short set-up times*
- High-precision positioning thanks to the frequency controlled drive unit, ball-bearing spindle, linear guiding free from play*
- Easy and more consistent operation*

POLAR ED

The programmable top-of-the-line model for all cutting jobs

This model goes beyond the basic technology of the POLAR E, offering various additional functions and operating modes, such as a full-function keyboard – process visualization – programmable parameters specific to the job (clamping pressure, preclamping time, backgauge speed) automatically displayed for each cut size – backgauge compensation (longitudinal/ crosswise), programmable for each program or a series of options for special tasks that provide more convenience and additional efficiency even for specialized cutting work.

The POLAR ED serves also as a control center for complete cutting lines and is equipped for external programming (Compucut) as well as networking with Data Control.



Standard Equipment of POLAR ED Machines

Positioning system

Rotary transducer, frequency controlled drive motor with precision spindle with recirculating ball bearings and a linear guide provide utmost positioning precision.

- ▮ Utmost cutting precision

Backgauge drive unit

Fitted with frequency-controlled drive motor. Precision spindle with recirculating ball bearings with play-free operation ensures both high backgauge speed and maximum precision. Deceleration and acceleration ramps of the backgauge can be adjusted to match movement to the different kinds of materials to be cut. The backgauge speed can be controlled individually. This allows easy processing of materials that tend to slip and slide.

- ▮ High cutting quality via precise alignment of reams
- ▮ High efficiency due to fast cutting sequence

Backgauge drive

Linear ball bearing results in low wear, no play: precision guiding and precise alignment and angles of backgauge.

- ▮ High precision
- ▮ Low maintenance
- ▮ Running smoothly
- ▮ Long working life

Color Display (TFT)

The Color Display is fitted with a graphic operator guidance system.

- ▮ Radiation-free, high-resolution, flicker-free and large-size

Block programming

Programming assistance with user guidance and graphic display of the cutting sequence. Preset sizes (DIN series, offset sizes, company standards etc.) directly retrievable.

Once the initial sheet sizes and final sizes have been input, program is generated automatically with additional functions and plain-text commands.

- ▮ Automatic programming

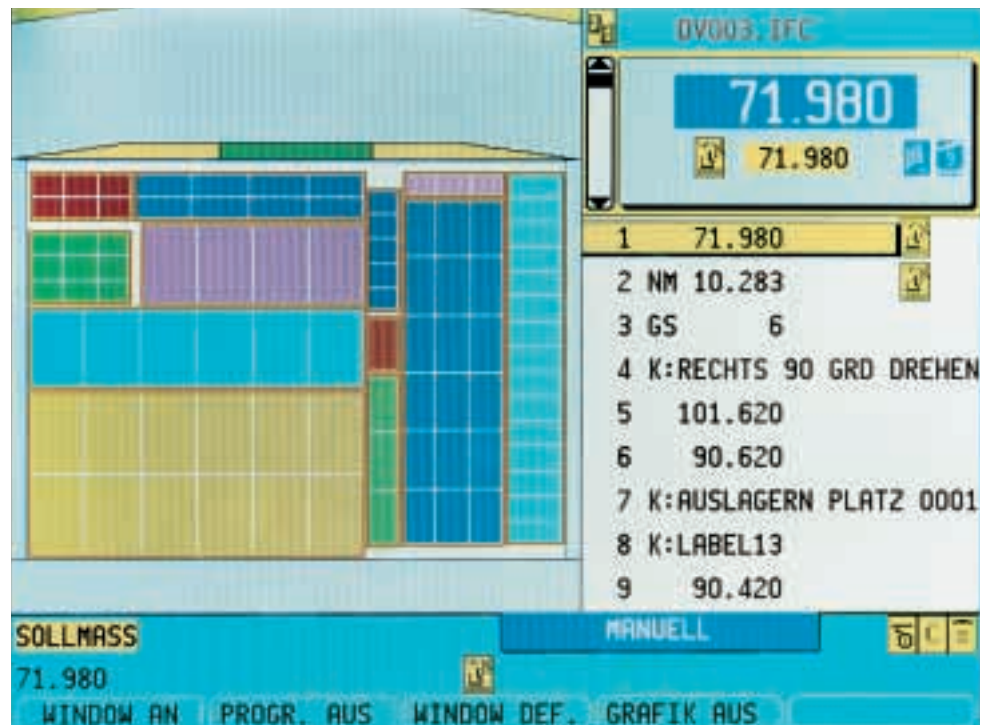
Process visualization

Following the course of the cutting program the operator is given graphic information about cutting sequence and material handling.

Backgauge compensation/ Gripper margin adjustment I + II

Easy, practical correction of stack positioning (e. g. repeat orders, change of plate) that can be added to every cutting program.

- ▮ Time savings, since no additional programming of cut orders is required.



Full-function keyboard

Plain-text information and graphic operator guidance allow "cutting to be performed by everyone".

Machine control system

POLAR has developed a new control system that meets all safety standards. All of our machine variants have a uniform control setup. Interfaces for connecting peripheral equipment, external programming (Compucut) and networking with Data Control are standard. The modular design of the control system facilitates future updates.

- ▀ Convenient operation
- ▀ Future-oriented control system
- ▀ Easy, quick and practical programming (window technology)
- ▀ Step-by-step program cycle (pictographs, clear arrangement)

Clamping

Infinitely adjustable to any kind of material to be cut. Wide range, from a low minimum clamp pressure for sensitive materials to a high maximum clamp pressure for materials that are difficult to handle. Cutting cycle can be adjusted to deal with spongy or soft stock. The extended clamping time ensures that the entire stack of material is properly positioned. Sheets will not be drawn out by the knife.

- ▀ Accurate cuts
- ▀ Knife saving
- ▀ Designed to deal a wide range of applications

Safety

Self-checking light curtain with individual circuit and computer; guards against override by operator; finger protection at the pressure clamp; rear table protection; two-channel hydraulic system with knife upstroke control; in addition to EC standards: German safety certificate (GS).

- ▀ Utmost safety

Finished machine table

Perfectly bonded nickel-plating (sealing all around). Corrosion-proof. Good sliding properties (easy handling).

- ▀ No marking of lowest sheets.



ORDE 1: DRESS ONLY	2. POSITIONAL POINT L/S
TS PRODUCTION 100.00.00	1 AUTOMATIC KNIFE ON
PRDI: 500	2 AUTOMATIC KNIFE OFF
STEP 44	3 CLAMPING WITHOUT CUT
	4 JOGGING MARK
1 8' JOGGING MARK	5 AIR FRONT TABLE ON
2 17.000	6 COMPLETE FOR TABLE ON
3 30.000	7 COMPL. AIR TABLE OFF
4 70' 10.000	8 EJECTOR OFF
5 9' 1000 R/L	9 ROTORIN (LONKETS 7)
6 45.000	
7 70' 20.000	
8 9' 1000 R/L	
9 27.000	



**Ease of operation**

- At a glance convenience
- High-resolution color display (TFT)
- Block programming with graphic operator guidance
- Optional distortion correction to correct sizes when sheets have suffered changes due to certain climatic conditions
- Nominal sizes remain unchanged
- Optional cut correction – to correct repeat sizes when sheets have suffered changes
- Information given in 29 languages

**Future-oriented control system**

- Modular system for all machines
- User friendly operation
- Easy programming (window technology)
- Step-by-step program cycle

Reduced set-up times

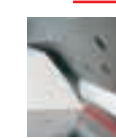
- Fast and easy knife change with operator prompting, and automatic stop at dead center

**Improved production times**

- Due to an optimized workflow
- Frequency-controlled backgauge
- Programmable clamping pressure (optional for 92–155, on 176 included) individual for each cut
- Automatic clamping pressure (optional for 115–176) selectable for every cutting width, in all programs. No manual makeready
- Cut optimization (optional for 115–176): increase in productivity, especially with low layer height

**Certified safety (GS)**

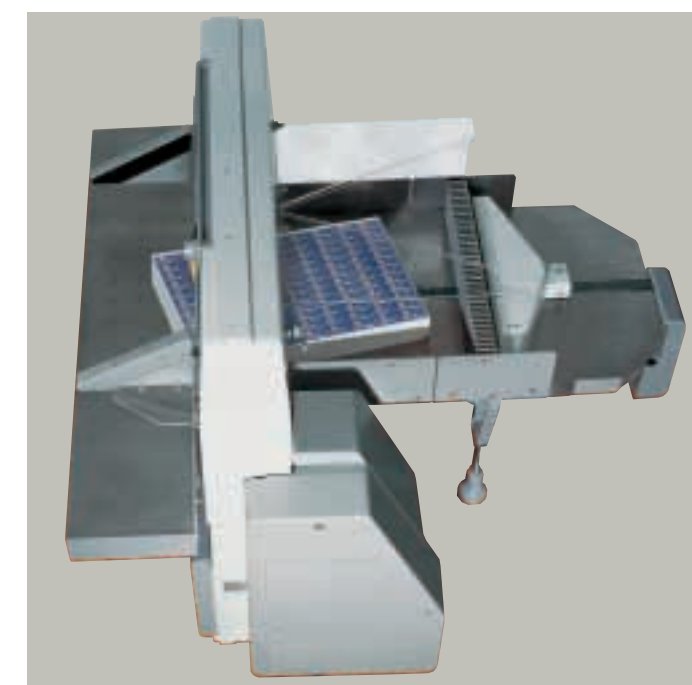
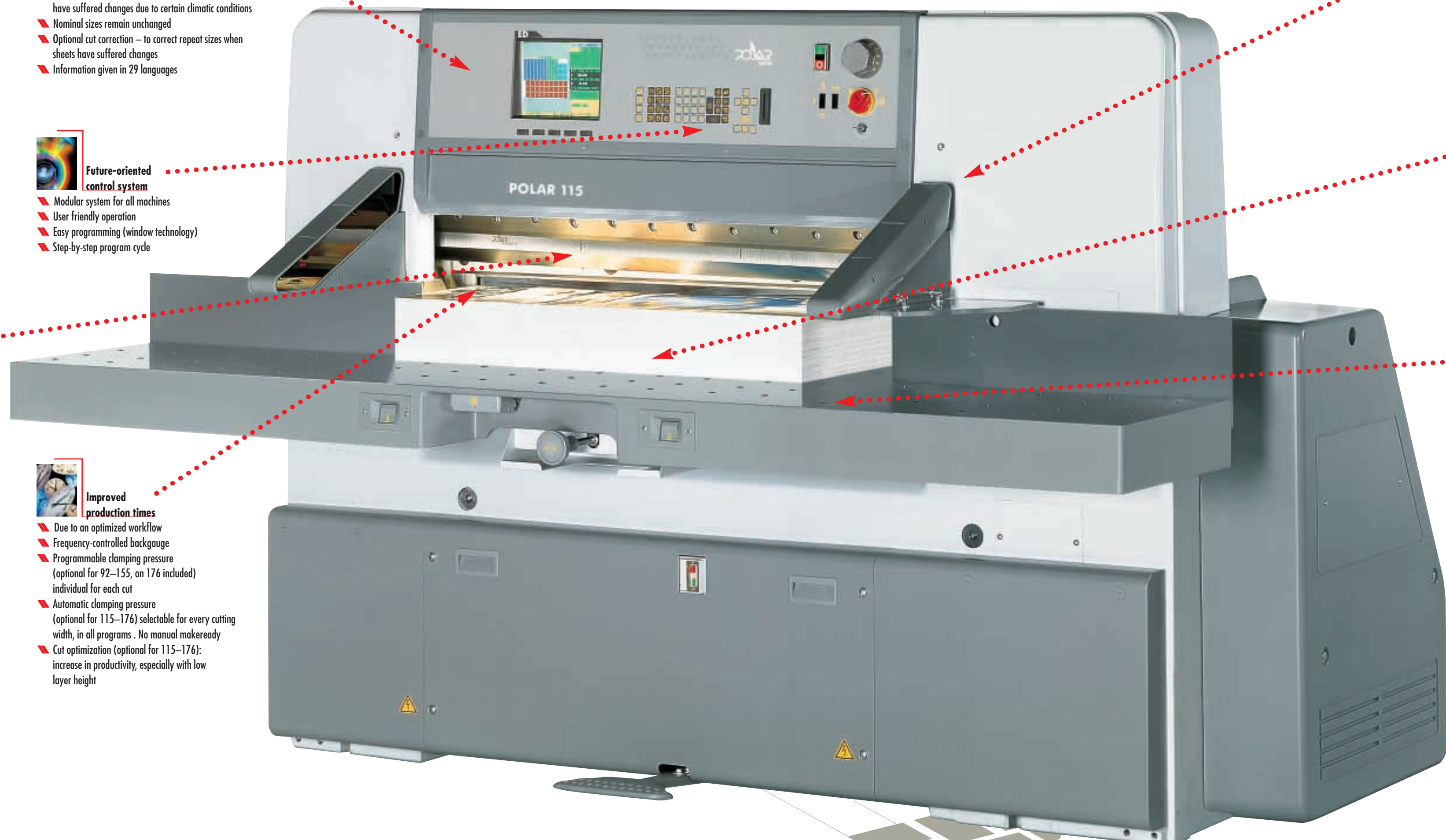
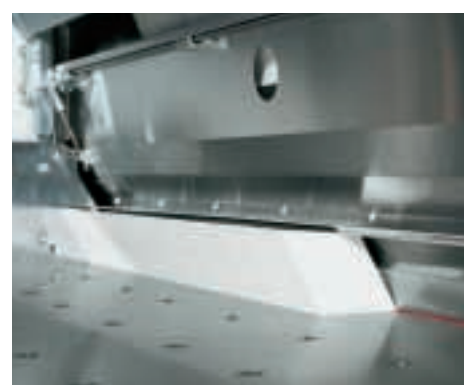
- Self-checking light curtain with individual circuit and computer
- Guards against override by operator
- Finger protection at the pressure clamp
- Rear table protection
- Two-channel hydraulic system with knife upstroke control

**Optimal cutting precision**

- Rotary transducer
- Frequency controlled drive motor
- Precision spindle with recirculating ball bearings
- Linear roller guide

**Long service intervals**

- Sophisticated technology
- Low-maintenance bearings and guidings
- Only one lubricant required

**Other options on the POLAR ED:****Hold-down clamp in front of knife (115–176)**

- Prevents small-size labels from getting mixed up, drifting away or tipping over.
- Immediate processing of labels after cutting
- Higher productivity due to improved workflow

**Hold-down clamp in front of backgauge (115–176)**

- Prevents sheets that tend to roll up from "shifting upwards." Fixomat or hold-down clamp can be used as an alternative. They can be programmed for each step:
- Higher cutting precision is achieved by accurate alignment

**Autotrim (115–155)**

POLAR Autotrim is the most efficient way to automate your cutting process max. (80 mm/3 1/8", depending on material). Cutting waste is automatically separated from the labels during the cutting process. In this way the cutting time can be reduced by up to 30 % at first cuts, angular cuts, four-side trim and intermediate cuts in all cutting

programs. With the retractable front gauge, labels can be pushed directly onto a support plate (firmly held by air suction) and immediately converted or buffered after that.

- Higher productivity
- No irksome accumulation of waste cuttings
- Easier, faster and safer transportation of labels on support plates to the finishing units (Transomat E, diecutter etc.).

POLAR Fixomat (115–176)

Two infinitely adjustable front lay marks and one side lay mark make sure the material is positioned in the POLAR high-speed cutter as it was on press. This is of great importance when handling concave, convex or non right-angled sheets.

POLAR Swivel/Tilting Backgauge (115–176)

This unit aligns the print parallel to the cutting line and compensates for overcuts or undercuts.

**Possible combinations**

- Swivel backgauge – Fixomat/hold-down clamp*
- Swivel backgauge/Fixomat
- Swivel backgauge/Fixomat/tilting backgauge/hold-down clamp

**Gripper Loading System (115–176)**

- Automatic loading of layers onto the rear table via a retractable side gauge, from piling shelf, air-pallet lift and Transomat B.
- Production of higher layers results in a higher output
- Eased load on the operator
- Higher cutting quality, since layers remain

* alternative function: Fixomat or hold-down clamp

Technical Data of POLAR ED Machines:

	92	115	137	155	176
Cutting width	92 cm/36 1/8"	115 cm/45 1/8"	137 cm/53 7/8"	155 cm/61"	176 cm/69 1/8"
Clamp opening	13 cm/5 1/8"	16.5 cm/6 1/2"	16.5 cm/6 1/2"	16.5 cm/6 1/2"	16.5 cm/6 1/2"
Feed depth	92 cm/36 1/8"	115 cm/45 1/8"	145 cm/57 1/8"	155 cm/61"	200 cm/78 3/4"
Power	3 kW/4.1 H.P.	4 kW/5.5 H.P.	4.5 kW/6.2 H.P.	5.5 kW/7.6 H.P.	5.5 kW/7.6 H.P.
Weight, net	1890 kg/4165 lbs	3200 kg/7050 lbs	4120 kg/9082 lbs	4950 kg/10910 lbs	5850 kg/12895 lbs
Width,					
without side tables	177 cm/69 3/4"	233 cm/91 3/4"	254 cm/100"	279 cm/109 3/4"	300 cm/118 1/4"
with side tables	212 cm/83 1/2"	265 cm/104 1/2"	288 cm/113 3/8"	355 cm/139 3/4"	376 cm/148 1/8"
Length	216 cm/85 1/8"	254 cm/100"	282 cm/111 1/8"	295 cm/116 1/8"	343 cm/135 1/8"
Height	154 cm/60 5/8"	165 cm/64 5/8"	165 cm/64 5/8"	173 cm/68 1/8"	173 cm/68 1/8"
Front table length	65 cm/25 5/8"	71.5 cm/28"	73 cm/28 3/4"	75 cm/29 1/2"	75 cm/29 1/2"
Table height	90 cm/35 1/4"	90 cm/35 1/4"	90 cm/35 1/4"	90 cm/35 1/4"	90 cm/35 1/4"
Clamping pressure, min.	150 daN/330 lbs	150 daN/330 lbs	150 daN/330 lbs	150 daN/330 lbs	150 daN/330 lbs
max.	3500 daN/7700 lbs	4500 daN/9900 lbs	5500 daN/12125 lbs	6000 daN/13225 lbs	7000 daN/15430 lbs
Smallest cut					
without false clamp plate, min.	2.5 cm/1"	2.5 cm/1"	2.5 cm/1"	3.5 cm/1 3/8"	3.5 cm/1 3/8"
with false clamp plate, min.	9 cm/3 1/2"	9 cm/3 1/2"	9 cm/3 1/2"	12 cm/4 3/4"	12 cm/4 3/4"

* Option: 200 cm/78 3/4"



The high-speed cutter as part of a cutting system

Selecting the right machine size depends on the diagonal of the largest sheet you want to cut. Turning of the cutting material on the rear table also must be taken into consideration.

The right equipment depends on your applications. If you frequently handle special orders, you should use optional equipment to increase your performance.

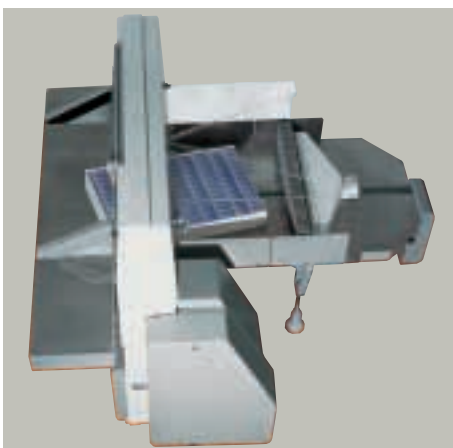
What kinds of material can be cut?

Not only paper, cardstock, paperboard, but also floor covering (tiles), packing materials, veneers, plastic foils or trim panels.

	SYSTEM 1	SYSTEM 2	SYSTEM 3	SYSTEM 4	SYSTEM 5	SYSTEM 6	SYSTEM 7	
LOADING	●	●	●	●	●	●	●	○ = possible
JOGGING		●		●	●	●		
BUFFERING		○		●	●	●		
CUTTING	●	●	●	●	●	●		
TRANSPORTING		●	○	●	●	●		
UNLOADING	●	●	●	●	●	●		
	<p>SYSTEM 1: High-speed cutter with side tables, stack lift or conveyor unit.</p> <p>SYSTEM 2: Jogging at the high-speed cutter and automatic unloading.</p> <p>SYSTEM 3: High-speed cutter with automatic loading and unloading units.</p> <p>SYSTEM 4: Separate preparation of cutting material in layers/cutting station.</p> <p>SYSTEM 5: Separate preparation of cutting material in piles/cutting station.</p> <p>SYSTEM 6: Jogging at the high-speed cutter, buffering and automatic unloading.</p> <p>SYSTEM 7: POLAR Autocut.</p>							

Knife and cutting stick are decisive for your cutting quality. We supply standard high-quality HSS knives and ORIGINAL self-adhesive sine-shaped POLAR cutting sticks.

This original equipment ensures optimum number of cuts with sharp knife while minimizing cutting costs.



POLAR is certified to ISO
The POLAR facility as a whole is certified to DIN EN ISO 9001.

Optional Equipment



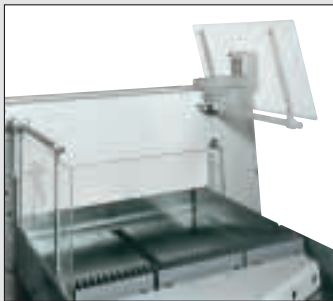
Stack lifts S (E + ED 115–176)

Lifts are supplied via the hydraulic system of the machine. To improve loading, lift forks can be swivelled 90°. Reduced space requirements.



Retractable side gauges (E + ED 115–176)

Hydraulically operated the gauges allow direct loading and enlarge the cutter rear table. Even material with a diagonal larger than the cutting width can be turned. Best possible workflow.



Rear table protection, tiltable (E + ED)

Guard is integrated into machine control system. No cutting is possible while guard is open. Rear of knife can be cleaned safely (e. g. when handling adhesive paper).



PMS Card (E + ED)

Mobile data medium for exchanging cutting programs on compatible POLAR high-speed cutters. Shorter setup times, unlimited program storage.

Special false clamp plates with control system (E + ED)

To clamp small-size labels all over (e. g. business cards). Precise cutting. Material surfaces are saved.

Knife adjustment from the front (E + ED)

All settings can be made conveniently from the operating side. Fast and easy knife change. Very convenient operation of machines integrated in cutting systems.