

LONGITUDINAL SHEAR CUTTING SYSTEMS AND MODULES



ELIO CAVAGNA s.r.l.

Style meets innovation



*New Style...and
New Technology*

SYSTEM **HELLOS**
DESIGN

OUR MANUFACTURING PROGRAM

...to cut paper, cardboard, plastic film, various bonded materials,
aluminium, textiles, non wovens, fiber glass, carbon-fiber-webs, etc.



Serie J



Type **J2-40** • **J3L-48** • **J3H-75**



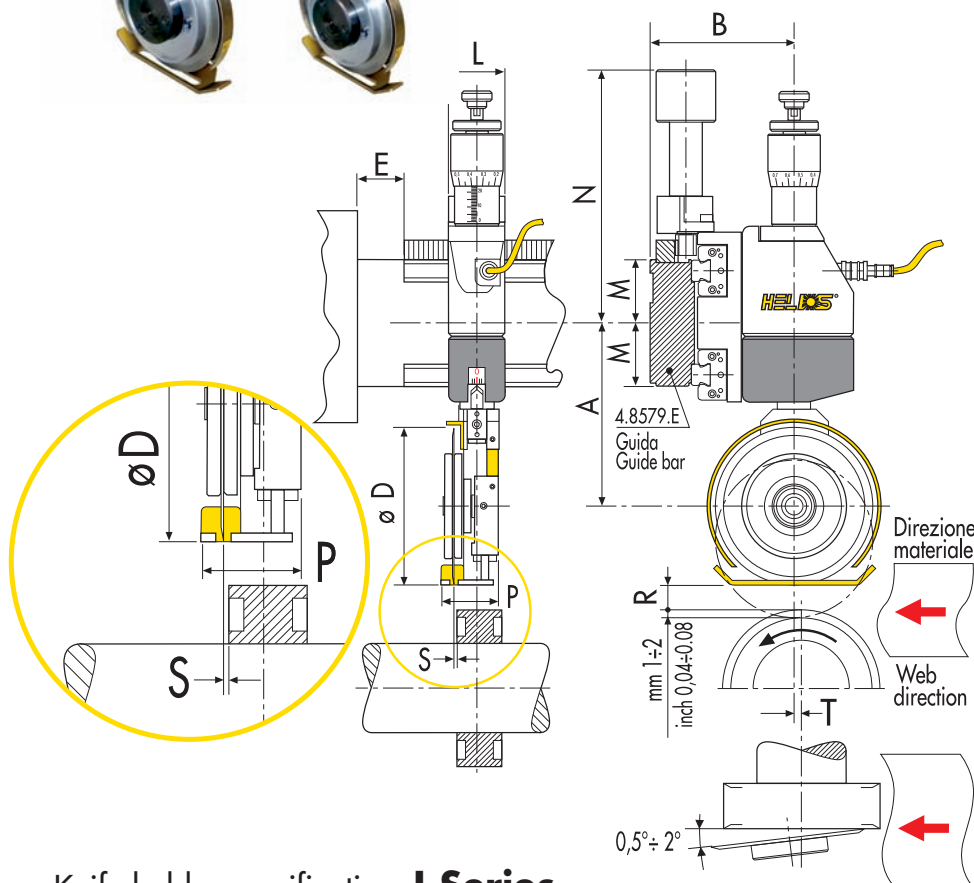
Pneumatic knife holder J Series for longitudinal shear cutting. Bearing mounted on precision ground slides.

Knife holder SELF LOCKING mechanism Automatic knife SAFETY GUARD

The new **J Series** knife holders incorporate all high performance features in a simple and innovative design.

Thanks to the new rugged and stable design **J Series** knife holders can achieve higher cutting capacities, even for strong materials and high operating speeds.

J Series maintains the well known, tried and tested **SOFT-CUT / STILO** system, that makes **HELIOS** products imitable, guaranteeing excellent cutting quality, no dust, and longer knife life.



J Series knife holders are **PATENTED** and incorporate innovative features as standard, such as:

1	Inbuilt self locking brake.
2	Guide bar with rack and double slide rail.
3	Quick manual positioning utilising slides / bearings and pinion knob
4	Precise micrometer knife depth adjustment.
5	Cutting angle adjustment.
6	Graduated scale for cutting angle setting.
7	SOFT-CUT: flexible knife head for precise setting of cutting pressure
8	Quick removal knife head.
9	Automatic knife safety guard.
10	Bayonet knife locking system.
11	Interchangeability with razor cutting.

Knife holder specification **J Series**

STILO TYPE	GUIDE TYPE	A min inch	A max inch	B inch	D inch	E inch	L inch	M inch	N inch	P inch	R inch	S inch	T inch	Min. slit. width inch	Max. paper cutting capacity gr/m ²	Max. plastic film capacity inch	Top speed capacity FPM
J2-40	4.8579.E	4.8	5.79	3.82	3.54÷4.1÷4.72	2.36	1.5	1.67	6.7	1.57	0.47	0.08	0.197	1.58	400	0.024	1100
J3L-48	4.8579.E	6.41	8.0	4.6	5.12÷5.9	3.94	1.89	1.67	7.64	1.89	1.18	0.10	0.315	1.97	800	0.06	2000
J3H-75	4.8579.E	6.41	8.0	4.6	5.12÷5.9÷7.09÷7.9	3.94	2.2	1.67	7.64	2.95	1.18	0.14	0.315	3.15	2000	0.12 (*)	2800

STILO TYPE	GUIDE TYPE	A min mm	A max mm	B mm	D mm	E mm	L mm	M mm	N mm	P mm	R mm	S mm	T mm	Min. slit. width mm	Max. paper cutting capacity gr/m ²	Max. plastic film capacity mm	Top speed capacity m/min
J2-40	4.8579.E	122	147	97	90÷105÷120	60	38	42,5	170	40	12	2	5	40	400	0,6	1100
J3L-48	4.8579.E	163	203	117	130÷150	100	48	42,5	194	48	30	2,5	8	50	800	1,5	2000
J3H-75	4.8579.E	163	203	117	130÷150÷180÷200	100	56	42,5	194	75	30	3,5	8	80	2000	3 (*)	2800

(*) for materials thicker than 3mm please ask for confirmation by Helios

EASY SETTING & MAINTENANCE

Fig.1:

cutting pressure
side load.

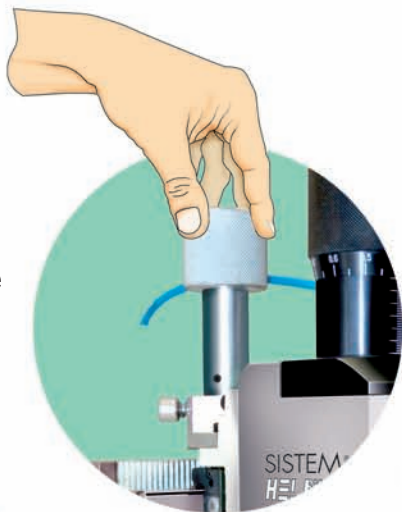


Fig.2:

micrometer
knife cutting
depth.



Fig.3:

cutting angle
locking screw.



Fig.5:

knife head
locking
screw.

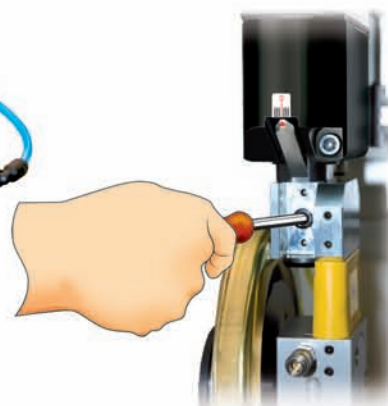


Fig.4:

cutting angle
adjustment.

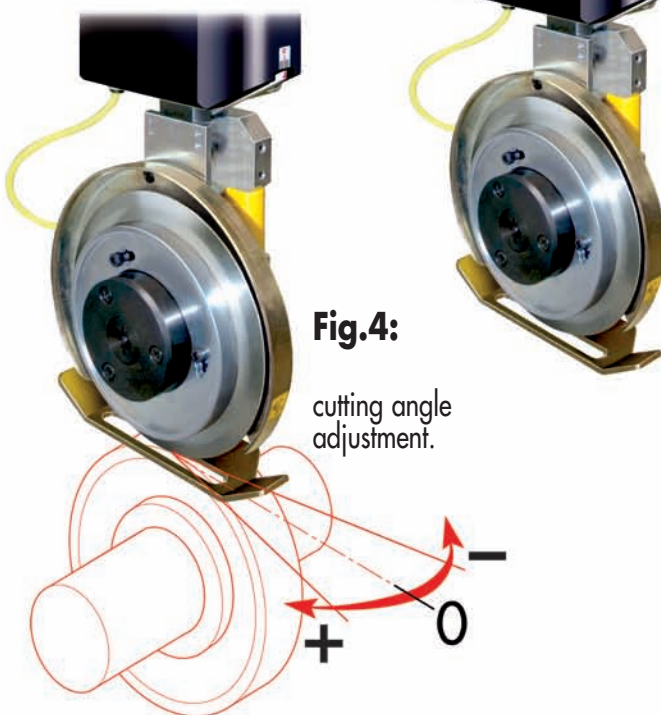


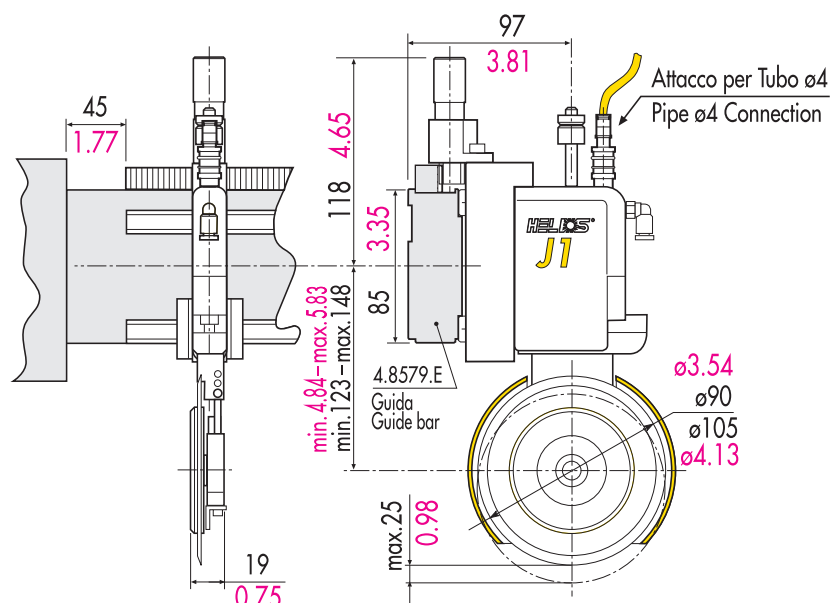
Fig.6:

knife head rotation 180°.



SYSTEM
HELIOS
DESIGN

Bearing mounted on precision ground slides.



Type J 1

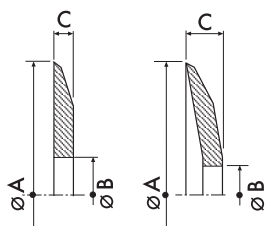
Type	Min cutting width inch	Max paper cutting capacity gr/m ²	Max plastic films cutting capacity inch	Max speed FPM
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J1-19	0.79	300	0.02	1000
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Type	Min cutting width mm	Max paper cutting capacity gr/m ²	Max plastic films cutting capacity mm	Max speed m/min
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J1-19	20	300	0.5	1000
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SHEAR CUT TOP KNIVES



	inch	mm
J1-J2	Ø 3.543 x 2.362 x 0.047	Ø 90 x 60 x 1,2
	Ø 4.133 x 2.362 x 0.047	Ø 105 x 60 x 1,2
	Ø 4.724 x 2.362 x 0.047	Ø 120 x 60 x 1,2
J3L-48 J3H-75	Ø 5.118 x 3.149 x 0.06	Ø 130 x 80 x 1,5
	Ø 5.91 x 3.149 x 0.99	Ø 150 x 80 x 2,5
J3H-75	Ø 7.09 x 3.149 x 0.157	Ø 180 x 80 x 4
	Ø 7.874 x 3.149 x 0.157	Ø 200 x 80 x 4

Type	A inch	B inch	C inch	Type	A mm	B mm	C mm
T 69	2.755	1.574	1.181	T 69	70	40	30
T 72	3.301	1.771	0.924	T 72	77	45	25
T 100	3.543	2.362	0.787	T 100	90	60	20
T 101	3.543	2.362	1.181	T 101	90	60	30
T 200	4.133	2.362	0.787	T 200	105	60	20
T 201	4.133	2.362	1.181	T 201	105	60	30
T 300	4.133	3.149	0.787	T 300	105	80	20
T 301	4.133	3.149	1.181	T 301	105	80	30
T 400	4.724	3.149	1.574	T 400	120	80	40
T 500	5.118	3.149	1.574	T 500	130	80	40
T 504	5.118	3.937	1.180	T 504	130	100	30
T 505	5.118	3.937	1.574	T 505	130	100	40
T 600	6.299	4.000	1.574	T 600	160	101,6	40
T 600C	6.299	4.724	0.197	T 600C	160	120	5
T 601	6.299	3.937	1.574	T 601	160	100	40
T 602	5.905	4.000	1.574	T 602	150	101,6	40
T 603	6.299	4.724	1.574	T 603	160	120	40
T 604	6.299	5.118	1.574	T 604	160	130	40
T 606	5.905	3.937	1.574	T 606	150	100	40

**DIMENSIONS UPON
REQUEST**

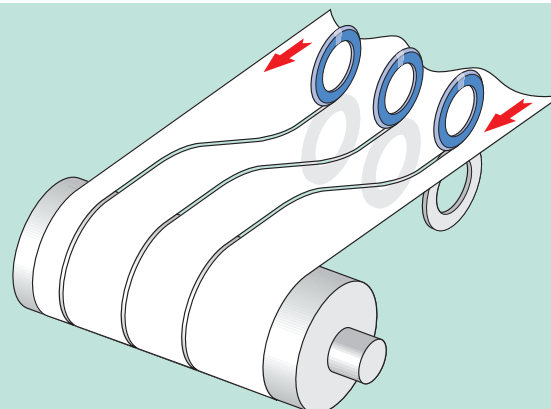
CUTTING MODULE FOR **AUTOMATIC** FORMAT CHANGE

TRV **NON-STOP** System

The patented **TRV system** has been used for many years in various different applications and utilises industry proven Helios technology.

This automatic system was designed to allow:

- . Format changes with material in line.
- . Format changes during cutting, i.e. during production
- . Simultaneous positioning of all cutting groups to centre with reference to material



As you can see from schematic drawing (left), this solution allows you to move the blades without disengaging the top and bottom knife, consequently without breaking the material or stopping the line.

In short:

- **productivity increase** (there are no machine stops except to replace worn knives);
- **waste reduction** (machine is not stopped during format changes so normal production continues);
- **production processes speed up** (If line is continuous, there's no need to slow it down or stop it);

The patented **TRV system** achieves high precision positioning and long lasting life, even when the machine is not regularly or properly cleaned. **TRV** requires no specific maintenance.

The Helios **HMB system** has been designed to be compact and versatile so that it can be assembled on small machines or in areas with limited overall space.

Thanks to its clever design, **HMB** has a minimum cutting width of between 30 and 50mm.

The main feature is ease of use. The system is very user friendly and does not need specific maintenance, except ordinary cleaning.

FORMAT CHANGE can be carried without breaking the material.

This reduces waste as the material does not need to be removed from the machine to change the slit pattern.

Helios Software



Helios software has been written to be predictive and instant.

The operator Interface is simple to use and requires only basic training to enter data so that everybody can quickly learn how to use it.

Working formats (slit width configurations) can be saved and recalled later via their name or number.

The recalled format can then be instantly loaded and set.

Software can be individually customised upon request.

HMB System



TRV System

Main features:

Format change:

- material in line: Yes
- during cutting production: Yes

Minimum cutting width:	100mm
Maximum cutting width:	5600mm
No. cutting units:	no limit
Positioning accuracy:	+/-0.2mm

Speed:

- shaft drive: 1100m/min
- independent motor drive 2600m/min

HMB System

Main features:

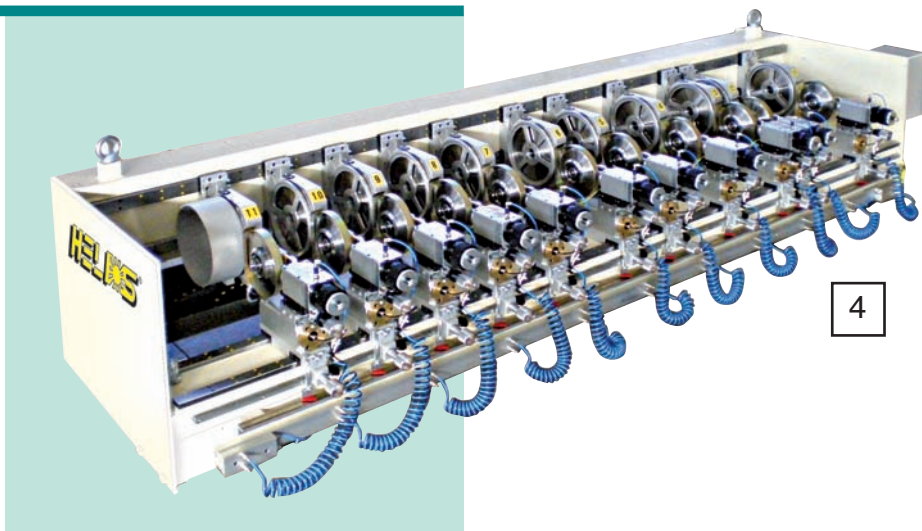
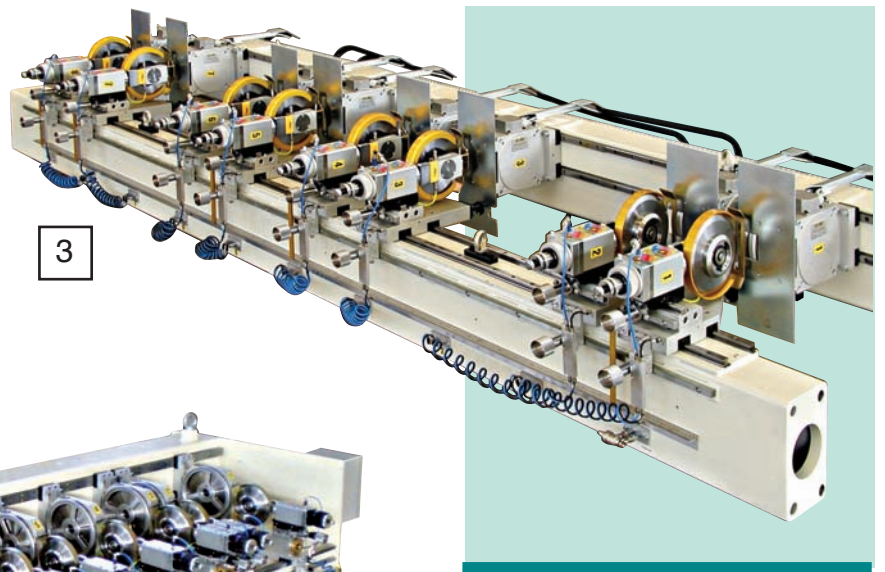
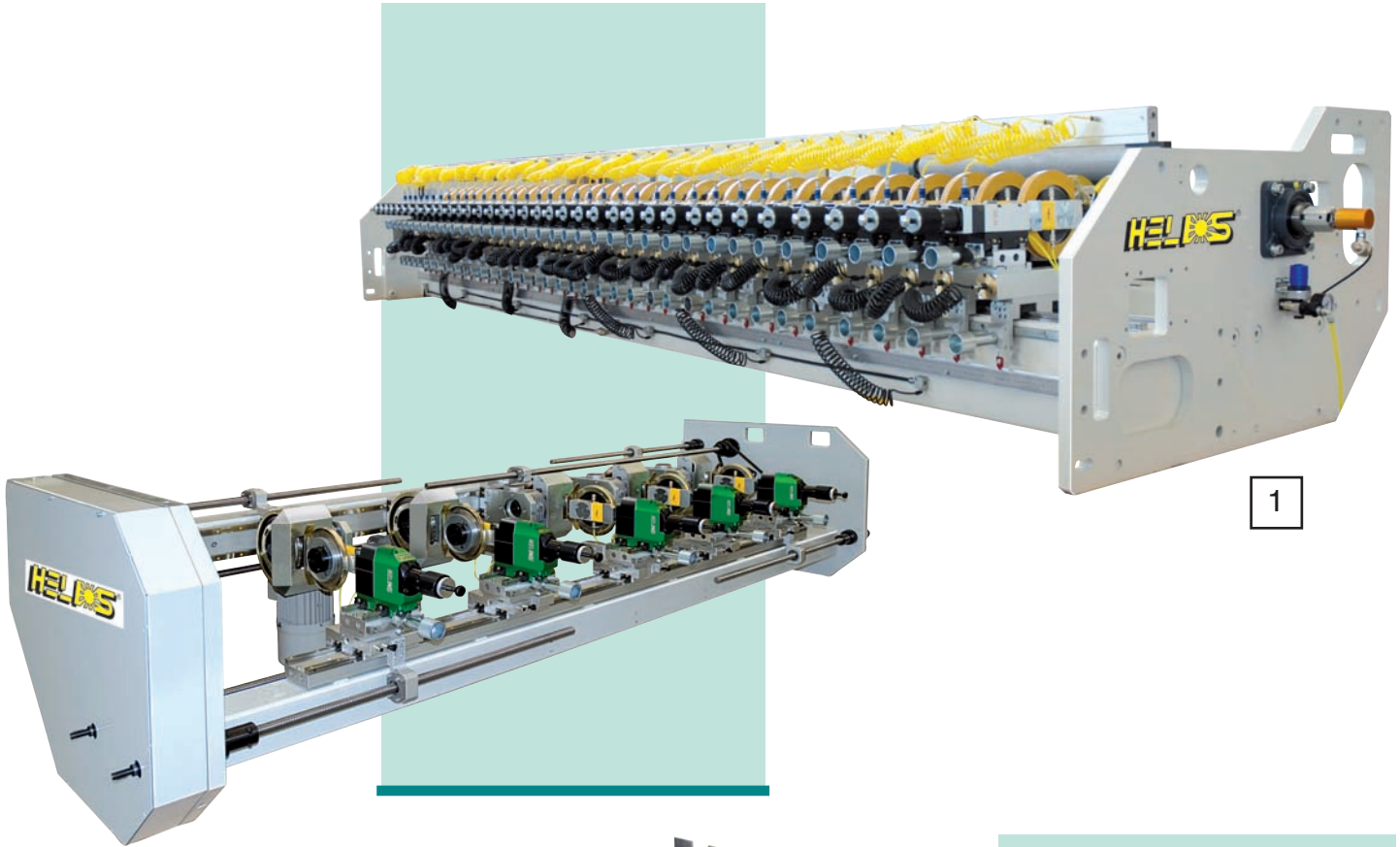
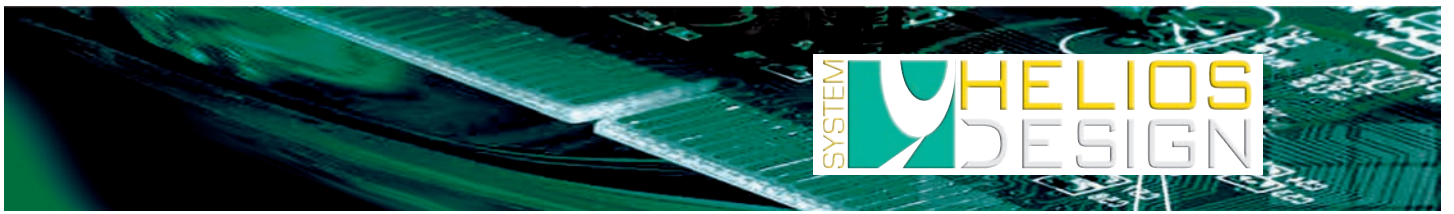
Format change:

- material in line: Yes
- during cutting production: No

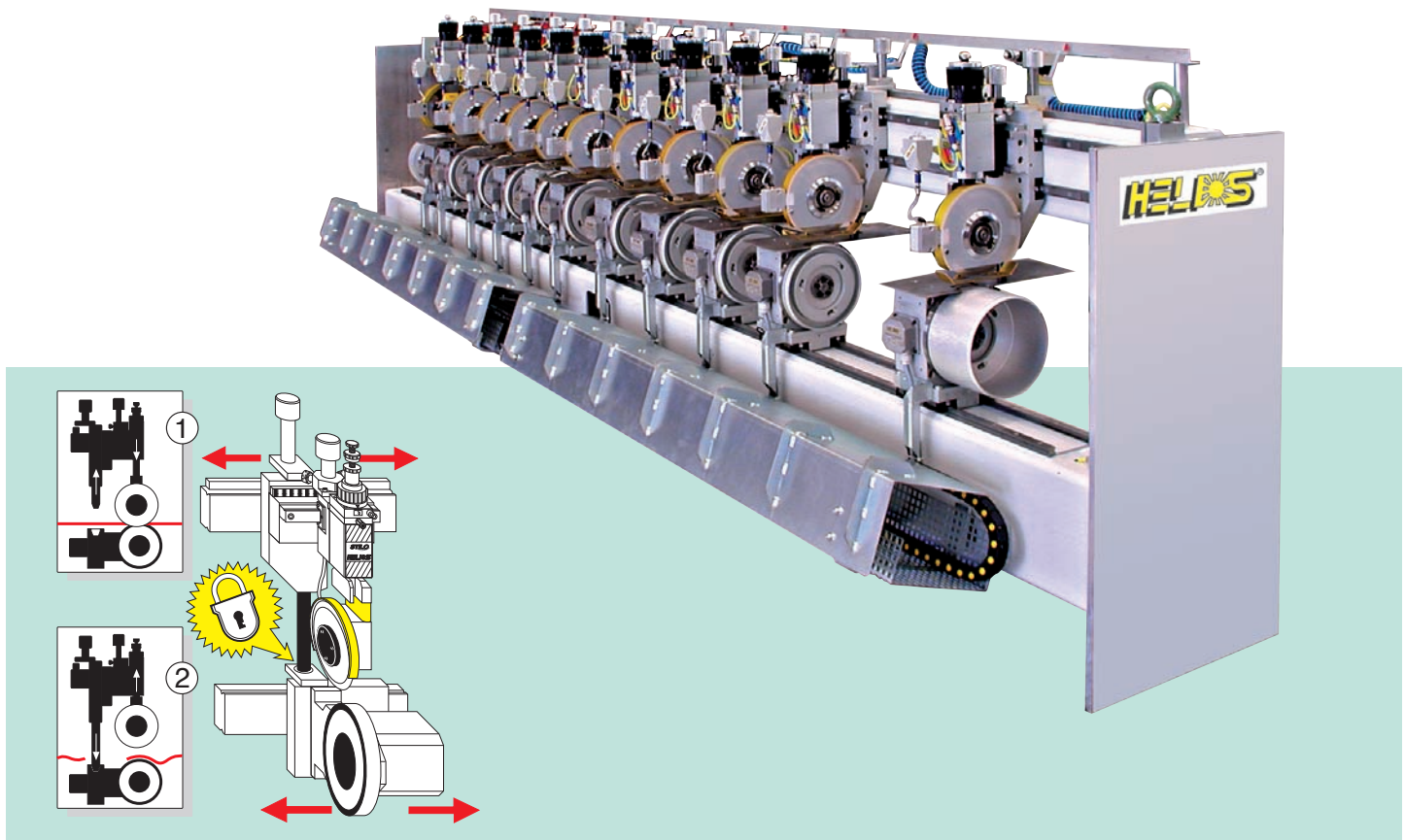
Minimum cutting width:	30÷50mm
Maximum cutting width:	5600mm
No. cutting units:	no limit
Positioning accuracy:	+/-0.2mm

Speed:

- shaft drive: 1100m/min
- independent motor drive 2600m/min



FAST-MAN SHEAR CUTTING MODULES



TECHNICAL FEATURES

• Minimum cutting width:	50 mm
• Max. cutting width:	no limit
• Max. no of cutting units:	no limit
• Top speed shaft driven system:	1100 m/min
• Top speed on independent motors driven system:	2600 m/min
• Format change with material in line:	Yes
• Format change during production:	Yes

FAST MAN means **QUICK FORMAT CHANGES** in manual mode

These are carried out during machine stop without material in the cutting area, i.e. web interrupted.

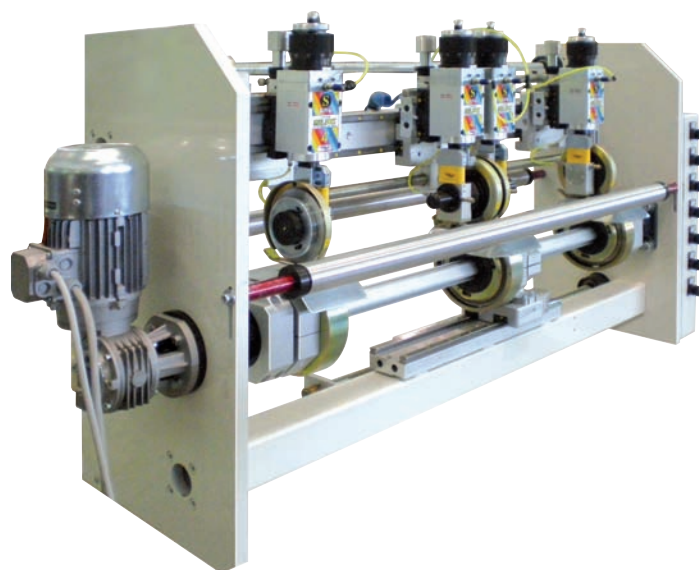
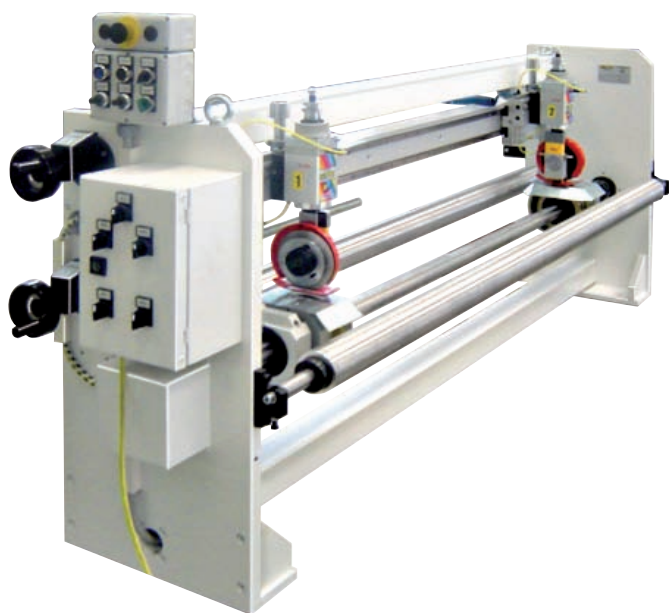
This is the ideal solution for new rewinders as well as old ones that need to be retrofitted.

FAST MAN is the best solution to reduce downtimes drastically, in manual mode.

WHAT'S FAST MAN?

- it's **QUICK** cutting format measures change, blades and bottom knives move together;
- it's **QUICK** blades & b/knives' replacement, they're independent;
- it's **FAST**, the operator must only position blades & bottom knives to desired measure, no other settings are required;
- it's **TIME SAVING**, only 2-3 minutes are required to position 20 cutting units;
- it's **HIGH PERFORMING**, thanks to independent motors You can reach high speed and minimum cutting width down to 50 mm
- it's **FLEXIBLE**, this system can be integrated with an automatic format change system

STS SHEAR CUT SYSTEM FOR **SIDE TRIM** AND **CENTRE CUT** WITH **NON-STOP MANUAL** POSITIONING



TECHNICAL FEATURES

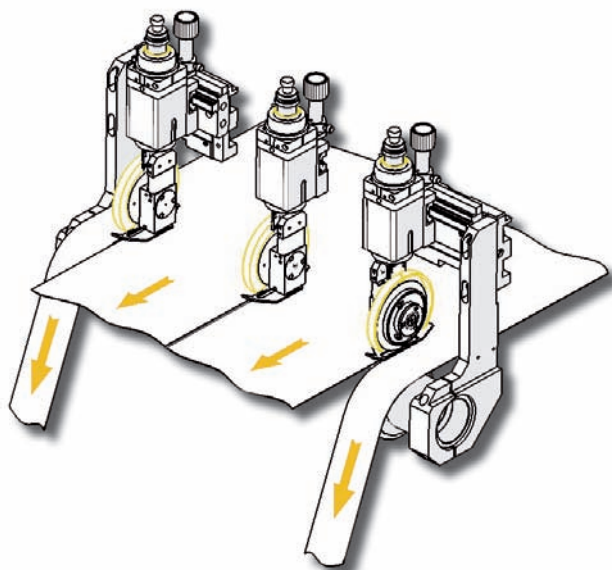
• Minimum cutting width:	50 mm
• Max. cutting width:	no limit
• Max. no of cutting units:	6 (if more please ask for confirmation)
• Top speed shaft driven system:	1100 m/min
• Top speed on independent motors driven system:	2600 m/min
• Format change with material in line:	Yes
• Format change during production:	Yes

HELIOS STS allows manual format changes **WITHOUT STOPPING PRODUCTION** while the knives are cutting.

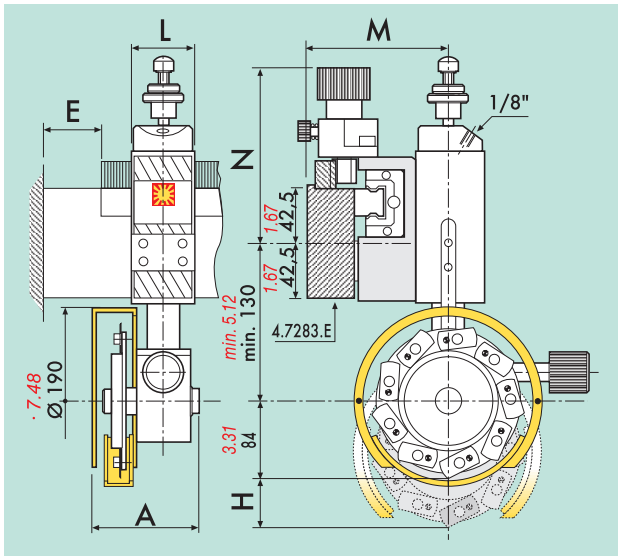
STS can be supplied in various configurations: **SIDE TRIM** only, **SIDE TRIM + CENTRE CUT** or **CENTRE CUT** only

STS is the best solution for continuous operation machines such as extruders where slit width format changes are required during the production run.

The cutting units can be manually moved from the side of the machine, so that operators can work in total safety and without time loss when changing slit width.



MULTIPLE RAZOR BLADE HOLDER WITH PATENTED SAFETY PROTECTIONS



TYPE S3 a S4 TL SELF LOCKING
MULTIPLE RAZORBLADE-HOLDER
WITH AUTOMATICALLY CLOSING SAFETY SYSTEM

TYPE		A	E	H	L	M	N
S3 TL 60 C	mm	60	90	20	48	88	130
	inch	2.36	3.54	0.79	1.89	3.47	5.12
S3 TL 107 C	mm	107	90	20	48	88	130
	inch	4.21	3.54	0.79	1.89	3.47	5.12
S4 TL 107 C	mm	107	110	45	75	101	160
	inch	4.21	4.33	1.77	2.95	3.98	6.30



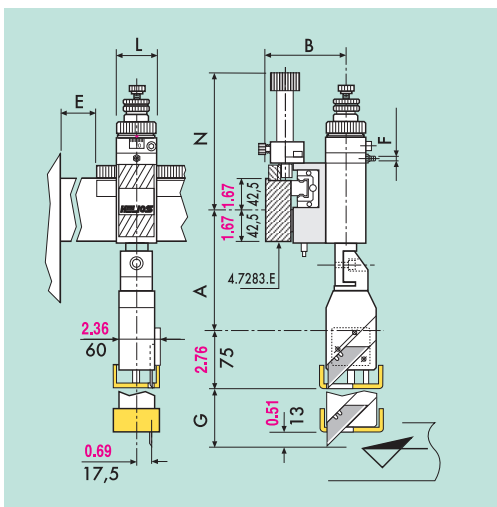
A: IDLE PHASE



B: WORK PHASE

The **MULTIPLE RAZOR BLADE HOLDER** type S3 and S4 TL is recommended for cutting thin plastic film up to a thickness of 25 μ .
To cut plastic film over 25 μ and up to 2mm **SOFT-CUT®** - STILO shear cutting system is preferable.
All multiple razor blade holders type TL (S3 and S4) are equipped with patented safety protections with automatic closure.

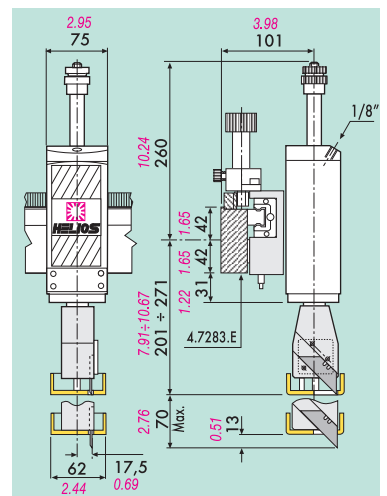
SINGLE RAZOR BLADE HOLDER WITH PATENTED SAFETY PROTECTIONS



To cut very thick plastic materials, over 2mm, we recommend using our single razor blade cutting system type RB.
All single razor blade holders Type S4-RB are equipped with patented safety protections with automatic closure.

TYPE S3 RB STROKE 20 - S4 RB STROKE 25

TYPE		A	B	E	F	G	L	N
S3 RB	mm	142	80	90	M5	20	48	165
	inch	5.60	3.15	3.54	M5	0.79	1.89	6.50
S4 RB	mm	163	95	110	1/8"	25	75	190
	inch	6.42	3.74	4.33	1/8"	0.98	2.95	7.48



TYPE S4 RB STROKE 70

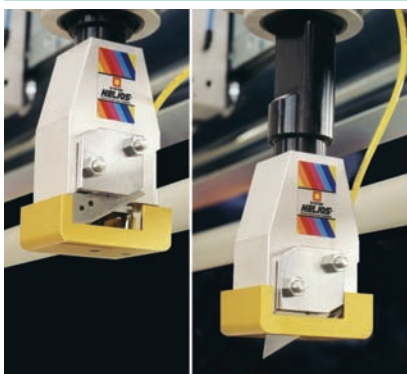
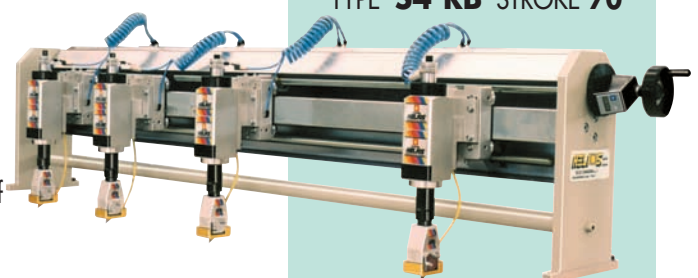


fig. A: IDLE PHASE

RAZOR BLADE CUTTING SYSTEM
WITH AUTOMATICALLY
CLOSING SAFETY SYSTEM

...for **VERY THICK** plastic material!
The operator runs **no risk** of cutting himself when changing material, because the razor blade is enclosed in a protective housing (fig.A). (PATENTED SYSTEM)



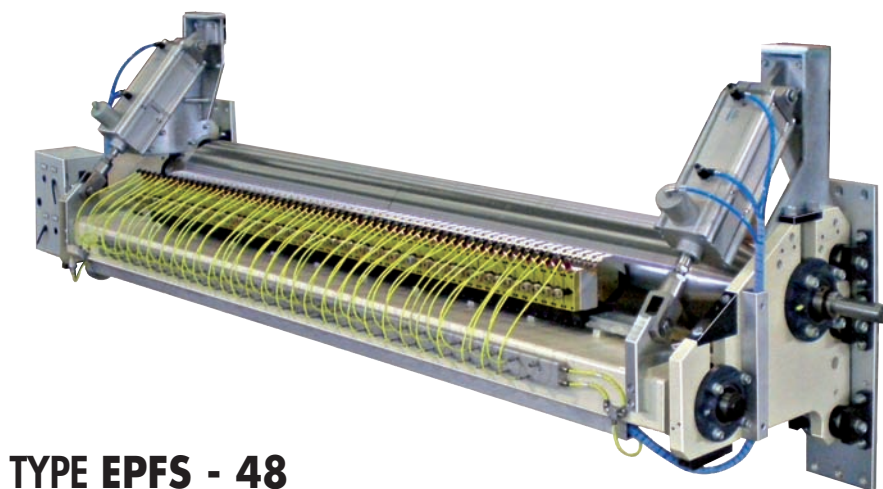
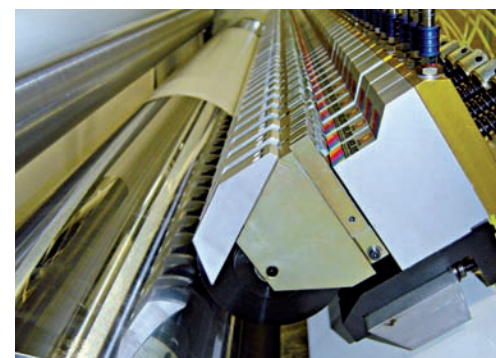
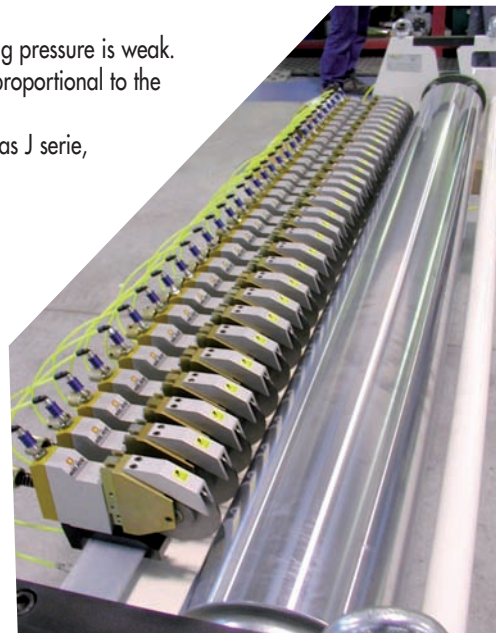
Manual unit positioning module

PRESSURE CUTTING

The **PRESSURE CUTTING** system is a traditional one, used for perforation-, half- and groove-cutting. Pressure cutting is used where high speed is not paramount, cutting material are of soft and when cutting pressure is weak. With direct contact between the blade and the counter-blade cylinder, blade wear is high and directly proportional to the pressure employed.

In the event of the cutting and production qualities are determining factors a shear cutting system, such as J serie, is necessary.

To obtain optimum scoring a special blade is used and air pressure must be carefully regulated. Helios can satisfy all needs, by supplying shear- or half-cutting systems or modules.

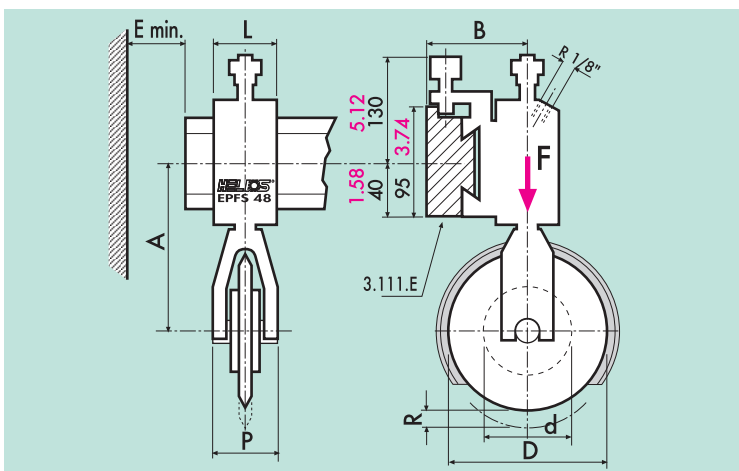


TYPE EPFS - 48

PNEUMATIC BLADE HOLDER FOR PRESSURE CUTTING

- Max. speed: 400 m/min

TYPE		A	B	E	L	P	R	D	d	Max.Cut	F	Pressure
									gr/m ²	6 bar		
EPFS 48	mm	140	78	55	48	50	20	130/150	70	800	32 Kg	
	inch	5.51	3.07	2.17	1.89	1.97	0.79	5.12/5.9	2.76	800	32 Kg	
EPFL 100	mm	173	95	80	75	60	25	150/180	70	1000	60 Kg	
	inch	6.81	3.74	3.15	2.95	2.36	0.98	5.9/7.09	2.76	1000	60 Kg	



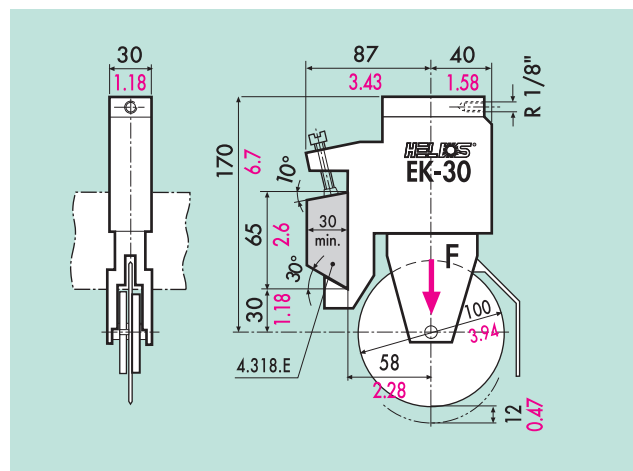
TYPE EK - 30

PNEUMATIC BLADE HOLDER FOR PRESSURE CUTTING

Minimum cutting width: 1.18 inch - Max. speed: 400 m/min

Max. cutting capacity: 600 g/m² - Blade dimensions: 3.94 x 0.098 mm

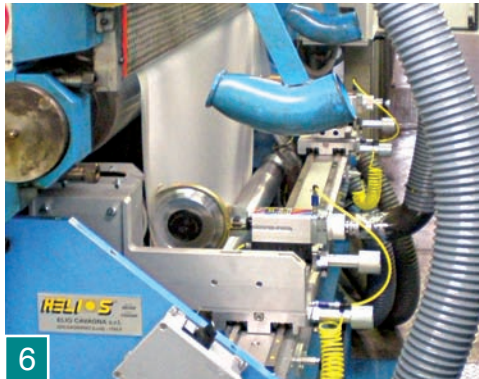
-Pressure: 30 Kg with compressed air pressure at 6 bar



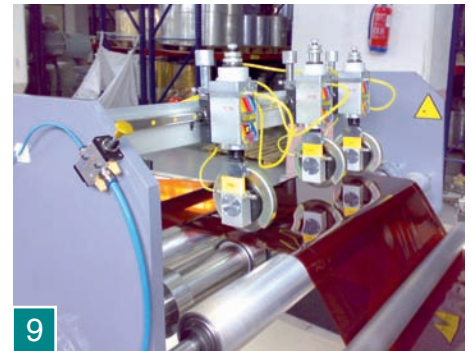
1, 10, 100, 1000... RETROFIT



1



6



9



2

HELIOS Elio Cavagna srl are specialists in the retrofit of slitting systems to a wide variety of converting machines such as winders, extruders, calendar lines & coaters etc. Thanks to our extensive application knowledge and wealth of experience built up over many years.

Old machines
Return to original cutting efficiency.

Production increases
When our 'Fast man' or automatic cutting modules are installed.



10



3



7



11



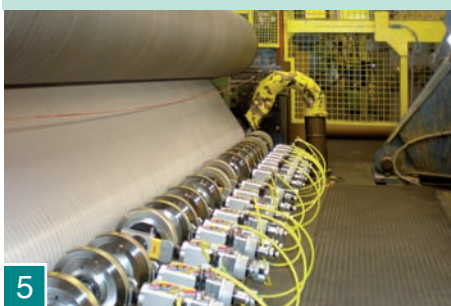
4

I N N O V A T I O N

With our innovative cutting solutions we can help to solve your cutting problems.



12



5

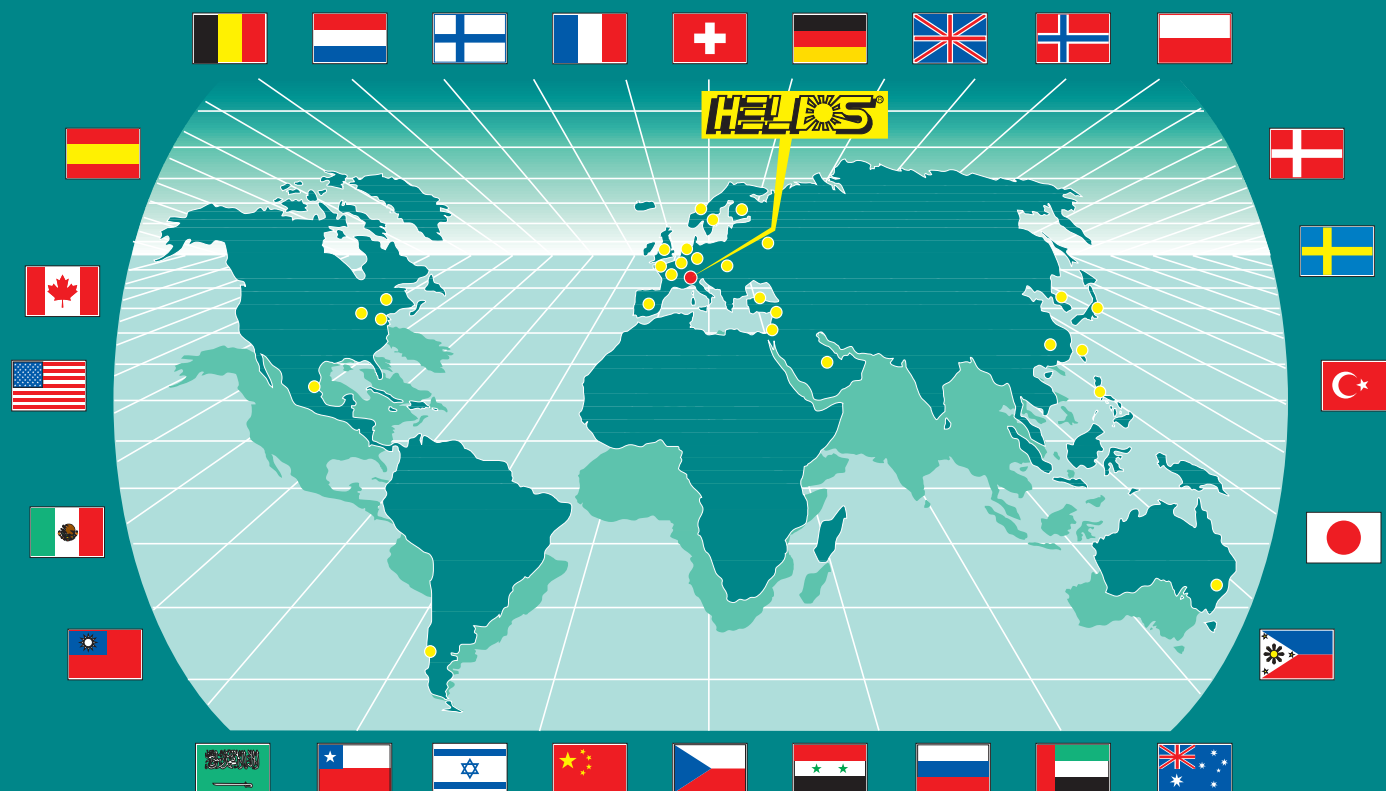


8



13

New Style... and New Technology



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