LONGITUDINAL SLITTING SYSTEMS AND MODULES

ELIO CAVAGNA s.r.l.

HELIOS®

When slits meets style

SYSTEM HELIOS ELIO CAVAGNA s.r.l.

OUR PRODUCTION
Serie J

Type J2-40 • J3L-48 • J3H-75

Pneumatic knife holder J Series for longitudinal shear cutting. Bearing mounted on precision ground slides. 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 which guarantees an excellent cut quality, no dust and prolonged 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.
10. Bayonet knife locking system.
11. Interchangeability with razor cutting.

Knife holder specification J Series

<table>
<thead>
<tr>
<th>STILO TYPE</th>
<th>GUIDE TYPE</th>
<th>A min mm</th>
<th>A max mm</th>
<th>B inch</th>
<th>D inch</th>
<th>E inch</th>
<th>L inch</th>
<th>M inch</th>
<th>N inch</th>
<th>P mm</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>Min. slit. width mm</th>
<th>Max. paper cutting capacity gr/m²</th>
<th>Max. plastic film capacity mm</th>
<th>Top speed capacity min/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>J2-40 48579.E</td>
<td>4.8 5.79 3.82</td>
<td>5.24 4.72 6.1</td>
<td>2.36 1.5 1.67 6.7</td>
<td>1.57 0.47 0.08 1.58</td>
<td>400</td>
<td>0.024</td>
<td>3.609</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J3L-48 48579.E</td>
<td>6.41 8.0 4.6</td>
<td>5.12 5.9</td>
<td>3.94 1.89 1.67 1.89 1.18 0.10</td>
<td>0.315</td>
<td>1.97</td>
<td>800</td>
<td>0.06</td>
<td>6.562</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J3H-75 48579.E</td>
<td>6.41 8.0 4.6</td>
<td>6.05 5.9 7.09 7.9</td>
<td>3.94 2.2 1.67 7.64 2.95 1.18 0.315</td>
<td>3.15</td>
<td>2.000</td>
<td>0.12 (*)</td>
<td>9.842</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) for materials thicker than 3mm please ask for confirmation by Helios
**EASY SETTING & MAINTENANCE**

**Fig.1:** Easy and fast blade positioning through knob and runners

**Fig.2:** Cutting depth adjustment

**Fig.3:** Screw unlocking for cutting angle adjustment

**Fig.4:** Cutting angle adjustment

**Fig.5:** Screw unlocking for head disassembly

**Fig.6:** 180° Head Rotation

**New Style... and New Technology**
New pneumatic knifeholder series J2B-J3B for longitudinal shear cut.

The J3B is a blade holder version equipped with mechanisms for moving the blade along with the Bottom Knives, e.g.: FAST-MAN and AUTOMATIC trim elimination systems; in all these solutions blade and Bottom Knive move in lockstep. This allows to achieve:

• A fixed blade holder with exact regulation of the cutting pressure, due to the possibility of reading the exerted force on the gauge;

As a consequence, the following is also achieved:

• Precision in adjusting the side pressure of the blade.

• The adjustment always stays the same and constant over time;

• There can not be calibration errors, hence increasing the blade lifetime.
Serie J

Type J1-19

Patented pneumatic knife holder J1 Series for longitudinal shear cutting. Bearing mounted on precision ground slides.

Knife holder specification J1 Series

<table>
<thead>
<tr>
<th>Type</th>
<th>Min cutting width inch</th>
<th>Max paper cutting capacity gr/m²</th>
<th>Max plastic films cutting capacity inch</th>
<th>Max speed FPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1-19</td>
<td>0.79</td>
<td>300</td>
<td>0.02</td>
<td>1,830</td>
</tr>
</tbody>
</table>

TOP AND BOTTOM KNIVES

SHEAR CUT TOP KNIVES

<table>
<thead>
<tr>
<th>Type</th>
<th>A inch</th>
<th>B inch</th>
<th>C inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1-J2</td>
<td>3.543</td>
<td>2.362</td>
<td>0.047</td>
</tr>
<tr>
<td>J3L-48</td>
<td>5.118</td>
<td>3.149</td>
<td>0.06</td>
</tr>
<tr>
<td>J3H-75</td>
<td>5.91</td>
<td>3.149</td>
<td>0.99</td>
</tr>
</tbody>
</table>

DUAL-EDGE SHEAR CUT BOTTOM KNIVES WITH GRUB SCREW LOCKING

<table>
<thead>
<tr>
<th>Type</th>
<th>A mm</th>
<th>B mm</th>
<th>C mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 69</td>
<td>70</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>T 72</td>
<td>77</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>T 100</td>
<td>90</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>T 101</td>
<td>90</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>T 200</td>
<td>105</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>T 201</td>
<td>105</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>T 300</td>
<td>105</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>T 301</td>
<td>105</td>
<td>80</td>
<td>30</td>
</tr>
<tr>
<td>T 400</td>
<td>120</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>T 500</td>
<td>130</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>T 504</td>
<td>130</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>T 600</td>
<td>160</td>
<td>101.6</td>
<td>40</td>
</tr>
<tr>
<td>T 600C</td>
<td>600C</td>
<td>160</td>
<td>120</td>
</tr>
<tr>
<td>T 601</td>
<td>160</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>T 602</td>
<td>150</td>
<td>101.6</td>
<td>40</td>
</tr>
<tr>
<td>T 603</td>
<td>130</td>
<td>130</td>
<td>40</td>
</tr>
<tr>
<td>T 604</td>
<td>160</td>
<td>130</td>
<td>40</td>
</tr>
<tr>
<td>T 606</td>
<td>150</td>
<td>100</td>
<td>40</td>
</tr>
</tbody>
</table>

MULTI GROOVE BOTTOM KNIVES

<table>
<thead>
<tr>
<th>Type</th>
<th>A Ø</th>
<th>B Ø</th>
<th>C Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 600</td>
<td>6.299</td>
<td>4.000</td>
<td>1.574</td>
</tr>
<tr>
<td>T 600C</td>
<td>6.299</td>
<td>4.724</td>
<td>0.197</td>
</tr>
<tr>
<td>T 601</td>
<td>6.299</td>
<td>3.937</td>
<td>1.574</td>
</tr>
<tr>
<td>T 602</td>
<td>5.905</td>
<td>4.000</td>
<td>1.574</td>
</tr>
<tr>
<td>T 603</td>
<td>6.299</td>
<td>4.724</td>
<td>1.574</td>
</tr>
<tr>
<td>T 604</td>
<td>6.299</td>
<td>5.118</td>
<td>1.574</td>
</tr>
<tr>
<td>T 606</td>
<td>5.905</td>
<td>3.937</td>
<td>1.574</td>
</tr>
</tbody>
</table>

DIMENSIONS UPON REQUEST

New Style... and New Technology
### Serie JS2-JA2

**Interchangeable with old series**

**E2-A2-S2**

**Mounting example, JS2 Series interchangeable with S2 Series**

<table>
<thead>
<tr>
<th>STILO TYPE</th>
<th>Guide Type</th>
<th>A min mm</th>
<th>A max mm</th>
<th>B mm</th>
<th>D mm</th>
<th>L mm</th>
<th>M mm</th>
<th>N mm</th>
<th>P mm</th>
<th>Min. cutting length mm</th>
<th>Max. paper cutting capacity gr/m²</th>
<th>Max. plastic films cutting mm</th>
<th>Max. cutting speed m/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>JS2-40C</td>
<td>4.7282</td>
<td>97</td>
<td>1109</td>
<td>80</td>
<td>90-105</td>
<td>40</td>
<td>30</td>
<td>128</td>
<td>29.7</td>
<td>40</td>
<td>400</td>
<td>0.6</td>
<td>600</td>
</tr>
</tbody>
</table>

**...the E2 Series and A2 Series blade holders may also be replaced by the new JA2 Series blade holder**

**E2 SERIES**

**JA2 SERIES**

**4.296.E guide type; in case of replacement, please ask Helios for availability**

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### Serie JS3-JA3

**Interchangeable with old series**

**E3-A3-S3**

**Mounting example, JS2 Series interchangeable with S2 Series**

<table>
<thead>
<tr>
<th>STILO TYPE</th>
<th>Guide Type</th>
<th>A min mm</th>
<th>A max mm</th>
<th>B mm</th>
<th>D mm</th>
<th>L mm</th>
<th>M mm</th>
<th>N mm</th>
<th>P mm</th>
<th>Min. cutting length mm</th>
<th>Max. paper cutting capacity gr/m²</th>
<th>Max. plastic films cutting mm</th>
<th>Max. cutting speed m/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>JS3-48</td>
<td>4.7283.E</td>
<td>142</td>
<td>167</td>
<td>88.5</td>
<td>130-150</td>
<td>48</td>
<td>42.5</td>
<td>170</td>
<td>48</td>
<td>50</td>
<td>800</td>
<td>1.5</td>
<td>1300</td>
</tr>
</tbody>
</table>

**...the E3 Series and A3 Series blade holders may also be replaced by the new JA3 Series blade holder**

**E3 SERIES**

**JA3 SERIES**

**3.111.E guide type; in case of replacement, please ask Helios for availability**

---

* (*) for materials thicker than 2mm please ask for confirmation by Helios

**New Style... and New Technology**
Fig. 1: Easy and fast blade positioning through knob and runners

Fig. 2: Cutting depth adjustment

Fig. 3: Screw unlocking for cutting angle adjustment

Fig. 4: Cutting angle adjustment

Fig. 5: Screw unlocking for head disassembly

Fig. 6: 180° Head Rotation. Possibility to assemble razor head.
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.

As you can see from schematic drawing, 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.

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**HMB System**

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 50 mm (1.18 inch and 1.97 inch).

The main feature is easiness 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.

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**Software Helios**

Helios software has been designed 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.

---

**TRV System**

**Main features:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>TRV</th>
<th>HMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format change:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Material in line:</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>During cutting production:</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Minimum cutting width:</td>
<td>100 mm</td>
<td>30÷50 mm</td>
</tr>
<tr>
<td>Maximum cutting width:</td>
<td>5600 mm</td>
<td>8000 mm</td>
</tr>
<tr>
<td>No. cutting units:</td>
<td>no limit</td>
<td>no limit</td>
</tr>
<tr>
<td>Positioning accuracy:</td>
<td>+/-0.2 mm</td>
<td>+/-0.2 mm</td>
</tr>
<tr>
<td>Top speed capacity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft drive:</td>
<td>1100 m/min</td>
<td>1100 m/min</td>
</tr>
<tr>
<td>Independent motor drive:</td>
<td>2600 m/min</td>
<td>2600 m/min</td>
</tr>
</tbody>
</table>

**HMB System**

**Main features:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>TRV</th>
<th>HMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format change:</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Material in line:</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>During cutting production:</td>
<td></td>
<td></td>
</tr>
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<td>Positioning accuracy:</td>
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<tr>
<td>Top speed capacity:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaft drive:</td>
<td>1100 m/min</td>
<td>1100 m/min</td>
</tr>
<tr>
<td>Independent motor drive:</td>
<td>2600 m/min</td>
<td>2600 m/min</td>
</tr>
</tbody>
</table>

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**Serie J**

CUTTING MODULE FOR **AUTOMATIC** FORMAT CHANGE

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**New Style... and New Technology**
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 & bottom knives are 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 (1.97 inch);
- it’s **FLEXIBLE**, this system can be integrated with an automatic format change system.

**The ideal solution for cardboard and tissue rewinder.**
TRIMS AND CENTRAL CUTTING

STJ-TYPE, SCISSOR CUTTING FOR TRIMS AND CENTRAL CUTTINGS WITH MANUAL NON-STOP DISPLACEMENT

WITHOUT STOPPING THE PRODUCTION, change operated while the blades are cutting. They can be supplied with various combinations.

1) TRIMS only;
2) TRIMS + CENTRAL CUTTINGS
3) CENTRAL CUTTINGS only

Ideal solutions for extruders or wherever the format must be changed with no downtime.

It is also possible to move manually the cuts from the machine, so that the operator can always work safely and without wasting time.

It can be enhanced by the addition a display knob for viewing the cutting positions, in such a way as to:
- Move the cutting units with no downtime;
- Move the cutting units without having to remove any material;
- Move the cutting units in complete safety.
- Fine positioning unit thanks to digital.

TECHNICAL FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min. cutting width</td>
<td>50 mm</td>
</tr>
<tr>
<td>Max. cutting width</td>
<td>no limit</td>
</tr>
<tr>
<td>No. of cuts</td>
<td>6 (ask for confirmation if higher)</td>
</tr>
<tr>
<td>Speed with transmission shaft</td>
<td>1100 m/min</td>
</tr>
<tr>
<td>Speed with independent motors</td>
<td>2600 m/min</td>
</tr>
<tr>
<td>In-line material format change</td>
<td>Yes</td>
</tr>
<tr>
<td>Format change during production</td>
<td>Yes</td>
</tr>
</tbody>
</table>

New Style... and New Technology
Multi-blade cutting with patented, automatic safety protection

TYPE TL 107 SELF-LOCKING

The TL 107 type, MULTI-BLADE CUTTING system is recommended for cutting plastic films up to 25µ thickness. For cutting plastic materials beyond 25µ, shear cutting system is preferable.

Single blade cutting for high-thickness materials

WITH PATENTED, AUTOMATIC, SAFETY PROTECTION

TYPE J3 RB SELF-LOCKING

For cutting high-thickness, plastic materials up to 2mm, the RB, single-blade cutting system is preferable.
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 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.

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**TYPE EK-30**

Screw manual blocking with trapezoidal guide

- Suggested maximum speed: 400 m/min
- Max. cutting capacity: 600 g/m²
- STROKE: 30Kg with 6 bar pressure

**TYPE EKJ-30**

Pneumatic blocking on linear guide. Knob for movement

- Suggested maximum speed: 400 m/min
- Max. cutting capacity: 600 g/m²
- STROKE: 30Kg with 6 bar pressure

**TYPE EK30-QR**

Level blocking on trapezoidal guide

- Suggested maximum speed: 400 m/min
- Max. cutting capacity: 600 g/m²
- STROKE: 30Kg with 6 bar pressure

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**TYPE JCS3 TP48**

Pneumatic knifeholder for pressure cut

Interchangeable with old Series EPS 48 and EPS 75
Max. cutting capacity: 400 m/min - STROKE: 90 Kg with 6 bar pressure

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**WORKING MODALITY OF PRESSURE CUTTING**

- **TAGLIO CUT**
- **1/2 TAGLIO CUT**
- **HALF CUT**
- **Mezzotaglio**
- **Half cut**
- **Dashed cut**
RETROFIT

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, we can:

Modify old machines.
Return to original cutting efficiency.

Increases production
When our ‘Fast man’ or automatic cutting modules are installed.
With our innovative cutting solutions we can help to solve your cutting problems.
New Style... and New Technology

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ELIO CAVAGNA s.r.l.
I - 26832 GALGAGNANO (LODI) - ITALY - Via Curioni, 1
Tel. (+39) 0371 68099 (r.a.) - Fax (+39) 0371 68254
www.helioscavagna.com e-mail: info@helioscavagna.com

Agent: