

# DLC 5000 & DLC 6000 Match-Speed Splicers



*High Performance Paper Handling System  
for Ultra High-Volume Commercial Printing*



**T**he MEGTEC DLC has been the industry's reference high performance splicer since its introduction in 1991 and today there are over 500 units running on commercial presses. With a maximum splicing speed of 3550 fpm (18 m/s) and a roll weight of 11000 lbs (5000 kg), the DLC 5000 with 60" (1524 mm) roll capacity has a proven performance record on the fastest high-volume offset presses in the world since 2005 on web widths of 67"-82" (700-2080 mm). The new DLC 6000, with a maximum roll weight of 13200 lbs (6000 kg) and a maximum web width of 94" (2400 mm) is specifically designed to operate on the full format 80-page press.

*The bottom line is process knowledge*

# DLC 5000 & DLC 6000 Match-Speed Splicers



Standard quick changeover 3" and 6" (76 mm and 150 mm) core chucks ensure flexibility and production safety



Key features include splicer turret with standard split arms, fully automatic quick changing chucks, 4 quadrant motors on each arm for drive and braking, pivoting splice arm and dancer assembly



The splice arm was redesigned to minimize the distance between splice roller and splice knife to increase splice efficiency to over 99.5%

## Performance Benefits

- Fewer rolls to process
- Reduced paper waste
- High press availability
- Reduced consumption of splicing tape and roll preparation waste
- Virtual elimination of splicer-caused web breaks
- Extremely rapid web tension control for reduced waste
- Improved handling of lower grade paper and lightweight stocks
- Improved handling of damaged or out-of-round rolls
- Very low web-up tension reduces web breaks during make ready
- Flexibility to splice small roll diameters
- Simple straight-across splice preparation
- Short web leads and high precision web guiding
- Fast make ready with motorized web-up system
- Extremely robust design
- Low maintenance
- Automation levels up to "100% no operator presence" roll changing

## Lower Operating Cost:

A high percentage of printers opt today for 1524 mm roll capacity when investing in a high-volume offset printing press. They recognize the operational efficiencies and cost-effectiveness of running larger rolls.

- Lower operating costs through reduced paper waste
- Lower splice tape consumption
- More efficient utilization of press time
- Possible reduced manning and more efficient material handling and logistics using 60" (1524 mm) paper rolls
- 31% fewer rolls to handle, store and strip
- 31% fewer roll changes with less associated waste and reduced web break risk

An extremely high level of automation is now included as standard equipment consistent with ultra-high productivity printing plants.

## DFSS (Design for Six Sigma)

MEGTEC Systems has applied DFSS (Design for Six Sigma) methodology for several years in improving existing equipment and in the manufacturing process.

MEGTEC's decades of experience and feedback from end-users and press manufacturers provided a precise specification for the DLC 5000 and DLC 6000.

## New Mechanical Design

The handling of 60" (1500 mm) rolls compared to 50" (1270 mm) required substantial changes to the design of the splicer. A roll weight increase of 44% required a much more robust construction.

The larger paper rolls have more than double the inertia and required larger acceleration motors and chucks to handle the 62% increase in torque. To reduce space requirements to a minimum, a turret frame concept was chosen. This allows the paper rolls to be positioned very close to the center of rotation. The DLC 5000 and DLC 6000 are the most compact 60" (1524 mm) splicer available while maintaining the overall height, length and rotation pit depth of the previous model.

## Optimum Tension Control

The DLC 5000 and DLC 6000 tension control system utilizes AC motors with 4 quadrant vector drives. These highly responsive drives provide consistent tension control regardless of roll diameter. A digital control system ensures precise acceleration of new paper rolls prior to splice.

Plus, automatic rewinding of butt rolls after splicing is another function. Accurate monitoring of web tension is done through a pneumatic dancer roller assembly with potentiometer measurement. Tension is managed by the PLC which controls the 4-quadrant motors to constantly maintain the dancer in balance. Tension performance is further improved by the short web leads of the DLC.



*The benefits of the DLC's combined core drive and braking system include optimum web tension to reduce paper waste, and virtually eliminating paster-caused web breaks and maintenance*

The combination of web tension control improvements results in better process robustness when using lower paper grades or ultra-light weight paper as low as 18 lbs (26 gsm).

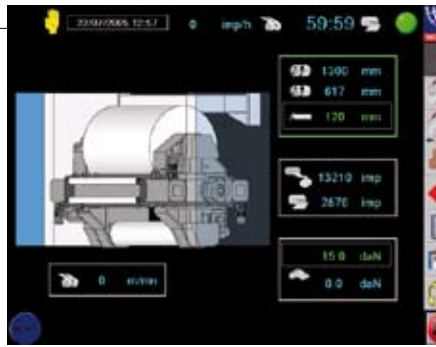
### Easy Roll Loading

Roll loading is direct from the floor into the arms. The minimum roll diameter for splicing has been reduced to 18" (450 mm) and allows significant flexibility for running partial rolls without special handling.

Quick changeover, fully-automatic chucks to handle 3" (76 mm) and 6" (150 mm) cores are standard to insure high production flexibility and safety.

Split arms slide on very precise, linear bearings when loading or unloading a roll instead of moving chucks. For operational safety, the chucks will not release even if electricity and compressed air supply is interrupted.

Optional automated handling system allows up to "100% no operator presence" roll changing. The benefits of operation include reduced paper waste, higher efficiency and enhanced safety.



*The touchscreen control provides the operator with easy control and rapid access to information*

### Control System

The splicing cycle, tension and running operations are PLC controlled. Operating status and diagnostic messages are displayed on the operator screen. Special software helps efficiently organize maintenance.

Like all MEGTEC weblines products, the splicer can be integrated with the press control system. A paper management data system is also available.

### Pasting

The gapless splice pattern is simple to prepare. It can be either a straight, V or W pattern. The detection system uses a photocell with black biodegradable tabs. Cut and paste functions are made simultaneously under tension with a consistently short tail length to minimize folder jams. The splice arm was redesigned to minimize the distance between the splice roller and the splice knife. These design modifications increase the splice efficiency to over 99.5%, proven in day-to-day operation on the fastest high-volume offset presses in the world.

### Roll Alignment

Accurate alignment of the incoming roll to the running web prior to splicing is essential to eliminate overlapping edges, which is a significant cause of web breaks. On the DLC 5000 and DLC 6000, automatic roll alignment prior to splicing is standard.



*Control panel and WEBVIEW*

### Integrated Infeed & Web Guide

The DLC 5000 is equipped with the proven DSA 210 integrated infeed. The DSA's extremely stable tension of 1.1 lbs ( $\pm 0.5$  daN) is made possible by the use of high dynamic servo regulation with low inertia mechanical element dancer roller and a nipping roller. The DSA infeed does not depend on an external speed signal, further simplifying installation. For the DLC 6000 with its increased web width a new integrated infeed version, with a maximum web tension of 290 daN, has been developed.

A digital web guide is integrated into the splicer providing high precision and quick reaction time for accurate web control.

The web guide is connected to the splicer sidelay control, providing automatic web pre-alignment. This eliminates any counter correction between the sidelay and the web guide.

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## Standard Equipment & Features

- Match-speed splicer with split arms to load 2 full rolls
- Core acceleration and braking by 4 quadrant AC motors
- Control and regulation by PLC
- Modem for remote diagnostics
- Splice pattern straight-across, V or W
- Black pasting tabs with photocell detection
- Simultaneous cut & paste under tension
- Local push-button panel and WEBVIEW
- Simple roll loading directly from floor
- Arm automatic positioning
- Auto load pre-position and auto chucks
- Automatic roll alignment before splicing (aligns on operator side)
- Normal and symmetric arrangement for center loading
- MEGTEC motorized web-up device or provision for press system with web-up assist
- Motorized cocking roller adjustment to assist running deformed rolls
- Independent frames, no mechanical connection to the press
- Fully assembled, pre-wired, pre-piped and tested for easy installation
- Splice efficiency data counter
- CE/UL compliant

## Versions at Additional Cost

- Remote control panel for sidelay, web tension and brakes
- WEBCOM (WEBVIEW + interface for press communication i.e. Ethernet, Profi bus, Serial Link)
- Integrated DSA Infeed 1700 mm width (180 daN) or 2080 mm width (210 daN) for DLC 5000
- Integrated DSA Infeed 290 daN for DLC 6000
- Automatic roll-load system/interface
- Arm web feedback (splicer sidelay interfaced to web guide)
- UL508A certification
- 6-roll web-over assembly (MEGTEC standard design)
- QUALIROLL Paper Management System
- Load bearing splicer (press supporting)

## Operating Specifications

	DLC 5000		DLC 6000	
Maximum roll weight	11000 lbs	5000 daN	13200 lbs	6000 daN
Maximum web width	67– 82"	1700 -2080 mm	94"	2400 mm
Maximum running & splicing speed	3550 fpm	18 m/s	3550 fpm	18 m/s
Sidelay adjustment	± 7/8"	± 20 mm	± 7/8"	± 20 mm
Maximum roll Ø	60"	1524 mm	60"	1524 mm
Minimum roll Ø for splicing	18"	450 mm	18"	450 mm
Minimum roll width for splice	20"	500 mm	20"	500 mm
Roll core inner Ø	3 or 6"	76 or 150 mm	3 or 6"	76 or 150 mm
Standard tension range	18-90 lbs	8-40 daN	18-90 lbs	8-40 daN
Option web tension range: Integrated infeed	18 - 400 or 475 lbs	8 - 180 or 210 daN	18 - 635 lbs	8 - 290 daN
Minimum controlled tension during webup	7 lbs	3 daN	7 lbs	3 daN
E-stop rate	330 fpm/s	100 m/mn/s	330 fpm/s	100 m/mn/s
Paper weight range	18-100 lbs	26-150 gsm	18-100 lbs	26-150 gsm