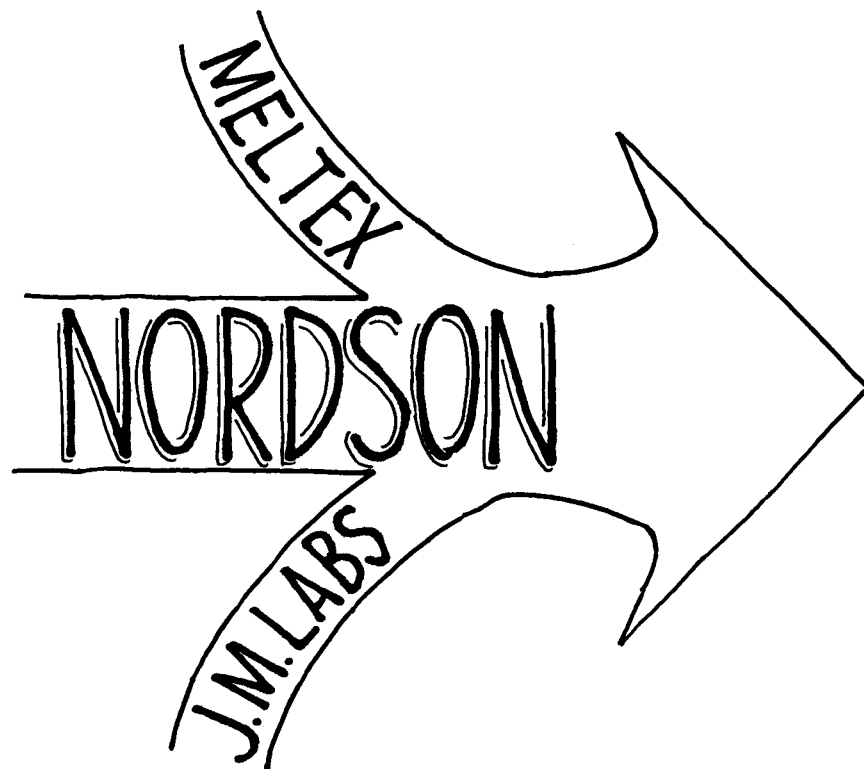


trends

published by Nordson Corporation for the nonwovens industry

March 2001 Vol. 13, No. 1



Synergy

Synergy is defined as the interaction of elements that, when combined, produces a total effect that is greater than the sum of its individual parts.

For an example of synergy, disposable-nonwovens producers need only look to Nordson Corporation and the innovative designs and productivity improvements that have resulted from the union of Nordson, Meltex and JMLaboratories.

The union has allowed the Nordson Nonwovens Systems Group to develop a consolidated product line that takes the best-in-class equipment from each of these individual organizations and bring them together into a three-tiered structure that meets the needs of low-, mid- and upper-tier disposable-products producers.

These products have been envisioned and created through an organizational structure at Nordson that fosters creativity while maintaining the critical mass necessary to support growth and change. This unique structure ensures that new developments continue to come forward to the benefit of Nordson's customers.

To take a broader view of synergy, look at the industry. There's no debate that new product features drive the disposable-products market. To add these new features economically while constantly improving productivity takes a partnership of producer, material suppliers and machinery manufacturers. On everyone's part, innovative thinking is key. But the true value of any partnership lies in the synergy of its participants. Synergy is where the combination of creativity, experience and market understanding join to yield new

solutions that result in a competitive edge for the producer and advancements for the market.

Could a diaper with an elastic leg cuff have been developed without pressure-sensitive hot melt adhesive?

...the true value of [any] partnership lies in the synergy of its participants. Synergy is where the combination of creativity, experience and market understanding join to yield new solutions...

Would we have ultra-thin diapers without the innovations of superabsorbent polymers and engineered fluid-transport layers?

We could answer both questions by saying 'maybe' or 'eventually,' but the reality is that these and many other innovations were realized because of synergy among industry 'partners.' The synergy of three or more parties - one, perhaps, with a need or an idea and others with different pieces of the solution - is what changes and advances the disposable-products market.

In this same way, the companies now aligned under the banner of Nordson Nonwovens Systems Group each bring unique qualities to the table, which will continually expose new market opportunities.

From JMLaboratories comes expertise in random adhesive-fiber application and in the incorporation of single minute exchange of

dies (SMED) principles into adhesive-application equipment.

From Meltex comes market leadership in slot-coating technologies and flexible and knowledgeable application engineering resources.

And from Nordson comes industry-leading valve technologies and unique skill in the controlled application of hot melt adhesive fibers.

Elsewhere in this issue, you will find examples of the benefits that the synergy within Nordson is bringing to the market. But, to realize the full benefits offered, you can't sit outside and look in. You must *join* in. Contribute your unique specialties and qualities. Participate. Then, as a Nordson partner, you will share in the true benefits of our synergy, as the total effect will yield more than the sum that each of us as individuals could achieve on our own.

Let us help you find your next market solution.

CONTENTS

Nordson Application Technologies <i>CF, CC, meltblown and Summit spray applicators are highlighted and compared, and slot-coating nozzles see improvements... which one is right for you?</i>	Pages 2 and 3
Value Line Melters Have What it Takes! <i>Nordson's new VL300 and VL500 melters whallop a big cost-saving punch and quality to boot!</i>	Page 4
It's Not Just Hot Melt Anymore <i>LiquiPro 100 precisely applies perfumes and liquids.</i>	Page 4
Come See Us at IDEA 2001	Page 4

Application Technology

Application Choices for Maximum Performance; Profit

With a record of adhesive-spray innovation stretching back two decades, Nordson provides disposable nonwovens-products manufacturers with the application choices they need to optimize the value and performance of their products and process.

Rather than providing manufacturers with a single solution for all applications, Nordson has developed a product line of several adhesive-spray technologies, each of which provide specific features and benefits.

Controlled Fiberization™

The Controlled Fiberization (CF) spray process is one of the oldest and most proven technologies on the market. Introduced in the 1980s, the disposable-products industry quickly embraced this technology and has made it the industry standard.

CF spray technology rapidly replaced fine-line lamination and contact slot coating in many applications due to its application flexibility, precise control and material-cost reduction benefits. These factors, combined with the technology's ability to apply adhesive to fragile substrates with minimal heat-related distortion or burn-through, have reduced manufacturing costs and improved product quality for two decades.

In the CF spray process, the adhesive is drawn into a fine fiber using precisely placed high-velocity air jets. These air jets are oriented such that they act to form the continuous adhesive strand into a series of overlapping spirals. The continuous filament of adhesive exhibits excellent control due to the fact that it remains tethered to the nozzle tip. High bond strengths are achieved while reducing adhesive consumption.

A variety of spray nozzles are available to suit specific applications. The nozzles are available either in a two-piece spray disk type or Unibody construction. Each type is available with several different adhesive orifice diameters, and they are configured for standard, wide and narrow patterns and to either rotate the adhesive filament in a clockwise or counterclockwise direction. Steel disks or Unibody nozzles are also available where increased durability is required. Nordson's manufacturing expertise ensures highly precise and highly repeatable performance from nozzle to nozzle.

The CF spray process is used for many different applications in baby-diaper, feminine-hygiene, training-pant and adult-incontinence production, attesting to its versatility. Applications

include various construction and stabilization applications and elastic attachment.

Control Coat™

The Control Coat (CC) spray process delivers fine-fiber adhesive-spray applications with excellent control of pattern width, edge and placement. This non-contact application can produce either highly dense patterns for maximum bond strength, open low-density patterns for absorbency or fine-fiber, low add-on weight patterns where heat distortion of fragile substrates is a concern.

The CC spray process utilizes a precision-die assembly to form a thin sheet of adhesive. Similar sheets of low-volume high-velocity air are formed within the die and introduced from either side of and at an angle to the adhesive sheet. The air acts to stretch and tear the adhesive into fine fibers that are then cooled and deposited onto the substrate.

CC spray technology has been available in either a die-based or a module-based offering. The die-based CC form continues to offer great value for applications requiring the very best width and edge control in a non-contact application. This high level of performance is made possible by superior design and manufacturing. The module-based CC offering is being phased out in favor of module-based meltblown technology.

Typical CC spray applications in diaper manufacturing include bonding of the elastic waistband and in-line frontal-tape coating. In sanitary-napkin production, CC spray technology is used to bond the pad to the polyester liner, bond or otherwise stabilize the internal pad, and to anchor various superabsorbent materials.

Meltblown

Nordson's meltblown spray technology is used to create fine-fiber adhesive patterns that result in reliable bonds at low add-on weights. Fibers ranging from 10 to 100 microns are possible, as are add-on weights as low as 0.5 grams/meter². This non-contact application exhibits good edge control and excellent cross-web pattern uniformity.

Meltblown spray utilizes air jets positioned on either side of a bank of adhesive orifices to draw and shred the adhesive into fine fibers that are subsequently cooled and deposited onto the substrate.

Meltblown dies are available in a variety of density configurations as are the partial dies.

Meltblown technology is used in backsheet lamination applications in disposable products, including heat-sensitive substrates, and in applications requiring bonding that are critical to product performance.

Summit™

Summit spray is the latest addition to the Nordson line of spray technologies. This application method is made CF technology.

Like the CF technology, Summit provides a great deal of flexibility in fiber deposition for a wide range of applications. Produced as a repeating or as random pattern.

Summit spray technology is positioned around a substrate and oscillate the adhesive filament. The adhesive remains tethered to the nozzle tip.

When used for elastic attachment, Summit is applied directly to the substrate, resulting in reduced adhesive consumption.

When used for patterned applications, Summit provides precise control of pattern density for increased bond strength. Dense patterns may be used for open patterns when a high bond strength is applying to thermally sensitive substrates.

Summit spray technology is used in applications and a series of partial-width dies. Each elastic die is designed for common elastic widths. Lamination dies are available for partial-width widths.

The Summit spray technology is used for stabilization or lamination.

Summary

Contact your Nordson representative for more information or to schedule a demonstration. Nordson has primary demonstration facilities in North America (Atlanta, Georgia) and Asia (Tokyo, Japan) and demonstration facilities throughout the world.

Nordson Spray Technology Comparison						
Spray Technology	Add-On Weight (GSM)	Typical Air Consumption (SCFM)	Intermittent Performance	Edge Control (+/- mm)	Orifice Size (inch)	Typical Applications
Controlled Fiberization™	1.5 - 2.3	0.3 - 0.9	Good	2 - 4	.012 - .030	Elastic Attachment, Construction / Stabilization
Control Coat™	1.5 - 10	0.5 - 2.3	Very Good	1	Slit	Construction / Stabilization
MeltBlown	1 - 10	0.5 - 2.5	Good	3 - 4	0.020	Construction / Stabilization
Summit™	1 - 10	0.1 - 0.7	Very Good	1 - 2	0.018	Elastic Attachment, Construction / Stabilization

Note: Spray technology performance is adhesive dependent. Nordson recommends application testing to determine actual performance.

The spray-comparison chart (above) includes basic specifications for each of Nordson's adhesive-spray technologies. Which one suits your needs? Call today for application-specific information or to schedule lab testing or machine trials.



gies: The Nordson Way

ies are available in either high-density or low-
rations. Full-width lamination dies are available,
l dies needed to produce various pattern widths.
echnology is ideally suited for clothlike
ation or tissue and acquisition-layer attachment
roducts. The fine fibers minimize distortion of
ubstrates and provide the numerous points of
e critical to enhancing absorbency performance.

s the very
o the
spray
his



ethod shares many of the characteristics that have
ology a popular choice for years.

echnology, Summit spray technology offers a
xibility. Summit spray delivers precise adhesive-
for elastic attachment and laminating
oduced patterns can either be very uniform and
andom as may be desired.

ay technology uses radially tangential air jets
nd a single extruded strand of adhesive to draw
e adhesive. Control is excellent, as the fiber
d to the nozzle tip.

for elastic coating, filaments of adhesive are
to the individual elastic strands, resulting in
ve consumption, creep and over spray.

for product lamination, Summit spray technology
e control of adhesive pattern width, fiber size and
eased bond strength and pattern flexibility. Highly
may be produced for maximizing bond strength,
hen absorbency is important or fine fibers for
rmally sensitive substrates.

ay utilizes a family of dies for elastic-coating
d a separate family for lamination applications.
is designed for the exact elastic configuration.
on elastic configurations are available from stock.
s are available in full-width configurations as well
width configurations needed for changing product

t spray technology may be used for any
lamination application and for elastic attachment.

ordson representative for application-specific
o schedule lab testing or machine trials. Nordson
onstration facilities on three continents - North
ta, Georgia, USA), Europe (Lüneburg, Germany)
o, Japan). Nordson also has many smaller test
hout the world. Let us know which one suits you!

EP Line Offers Unparalleled Slot Coatings

Nordson continues to improve the industry-standard EP slot-coating nozzle product line. EP
coaters are already recognized as providing the most uniform coatings with the best
intermittent performance at the highest speeds in the industry. These exciting changes expand that
capability even further!

EP15 Lotion Applicator. One of the major new developments is the EP15 lotion applicator.
Together with DX or MX lotion tanks, this system yields outstanding performance when applying
skin-care lotions onto nonwoven materials during the production of baby diapers, adult-
incontinence products and other nonwovens disposables.

The EP15 lotion applicator has an optimized nozzle design with a round profile and snuff-back
control modules for applying lotions with very low viscosities while still achieving clean
intermittent performance. As an added feature, a constant flow of application air out of the
mouthpiece prevents a build-up of lotion at the nozzle.

EP15 lotion applicators can apply lotions at widths up to 160 millimeters. Multiple lotion stripes
can be achieved by using segmented shim plates.

EP10 Flange-On Module. To further improve
the high-speed performance of EP12 and EP11
adhesive applicators, Nordson has developed the
EP10 flange-on module (EP10-F).

Depending on adhesive viscosity, this improved
design allows approximately 10- to 20-percent faster
response times than the standard EP10 module.

Furthermore, the compact size of the EP10-F
module requires less space and allows faster and
easier maintenance as the whole module, including
solenoid, now comes as one complete assembly.

EP10-D Control Module. Another major new
development is the EP10-D control module (EP10-
D). This control module incorporates a double-action
feature comparable with the functionality of the EP12
applicator but requiring only one module per section.

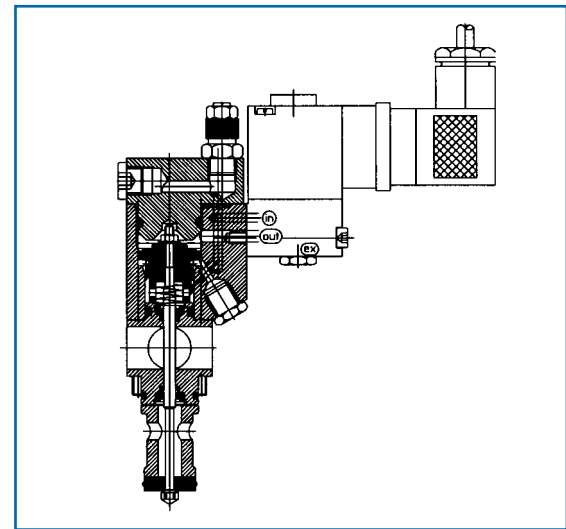
The advantages are numerous.

First, the double-action feature allows minimum
gap times of approximately two milliseconds
(depending on adhesive viscosity), and it provides
excellent application-weight consistency from
product to product.

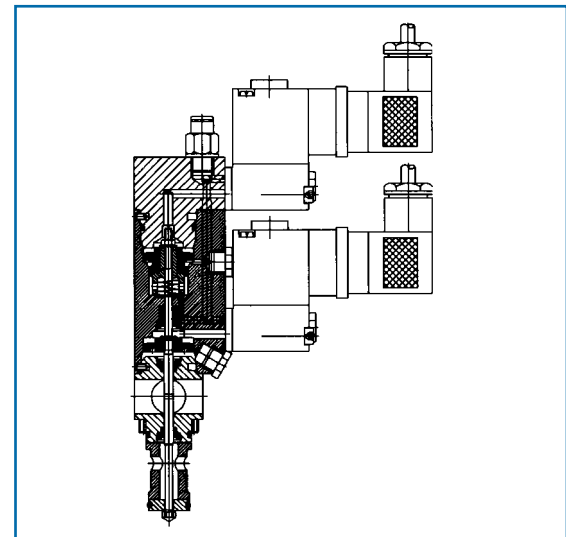
Furthermore, the compact design of the EP10-D
control module requires less space in the machine
than a standard EP12 applicator.

One other major advantage of the EP10-D control
module is that it can be retrofitted on existing EP11
guns, permitting users to increase the application
speed of existing equipment without major
investments in completely new applicators. And, the
new module includes flange-on solenoids.

Please contact your Nordson Nonwovens System
Group representative or the Nordson Nonwovens
Business Group in Lüneburg, Germany, for further
information about these new slot-coating products.



The new EP10-F module (above) improves upon the
high-speed performance of Nordson's EP12 and EP11
adhesive applicators.



The new EP10-D control module (above) incorporates a
double-action feature that is comparable with the
performance of the EP12 adhesive applicator, but it
requires only one module per section.

eNordson.com Puts Parts On-Line

For U.S. customers, Nordson parts-
purchasing and order-status information
is now just a mouse click away.

In test since last year, the secure web site
is now available for any customer with an
Internet connection, log-on name and
password. The site includes a parts catalog,

order-entry screens and the ability to get
shipping information directly from the carrier.

To try out the site, please contact your
Nordson representative and complete the
initial application process.

See us at
DEA01
INTERNATIONAL NONWOVENS CONFERENCE AND EXPOSITION
29, 2001 Miami Beach Convention Center Miami Beach, Florida, USA

New from Nordson: Value Line (VL) Melter Systems

In its continual quest to satisfy market requirements, Nordson has introduced a new value line (VL) series of melters!

With its new VL300 and VL500 melters, Nordson expands its product offerings to meet today's diverse market requirements. These melters are CE-certified and designed for maximum performance and reliability, all within a value-priced package. Equipped with the field-proven Vista™ temperature-control system and variable-speed AC motors, VL melters represent a quality alternative.

The VL300 Melter

The VL300 melter is specifically designed for customers seeking a low-cost melt system with enough flexibility to meet application requirements.

The VL300 melter, like the VL500, uses the Nordson Vista temperature-control system and variable-speed AC motors. VL300 melters use a tank or grid melter design and process up to 30 kilograms of adhesive per hour. Each melter can include two single-stream gear pumps with a variety of capacities, permitting the user to accurately configure the system for its application.

In conjunction with the VL300 melter, a standardized ordering configuration (SOC) package is available. This SOC package allows one-stop shopping for each application, allowing a variety of hoses and applicators to be ordered as a packaged system. This concept greatly reduces lead times and cost, and it allows customers to specify a turnkey value package customized for each application.

The VL500 Melter

VL500 melters utilize proven Nordson technology in a system that is easy to operate, simple to maintain and

flexible enough to meet a variety of adhesive-application needs.

Equipped with a Vista temperature-control system and one or two variable-speed AC motors, VL500 melters are ideally suited for producing a wide range of nonwovens disposable products.

VL500 melters use a grid melter design that has a large-volume warm hopper to process up to 50 kilograms of adhesive per hour. A variety of single- and dual-stream gear pumps are available, providing the capability to customize system output to match application requirements.

The VL500 melter is based on the highly successful and field-proven Series 6000 product line. Although the temperature and motor drive controllers are new to the melter, all pumps, filters, valves, hoses, applicators and other common service components are the same as used on the Series 6000 products. Thus, melters can be added or upgraded without requiring the purchase of new mechanical spares.

Together, these two new VL products fill the needs of manufacturers looking for proven adhesive-application solutions that are simple to operate and maintain, but flexible enough to meet the challenges of an ever-changing market.

Please call your Nordson representative or visit us at our web site, www.nordson.com/nonwovens, for more information.

VL300 SOC PACKAGE

BASE PRICE : **US\$ 11,670**

Box 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
VL3	Melter	Voltage	Options	Pmp#1	Pmp#2	Hose 1	Hose 2	Hose 3	Hose 4	Hose 5	Hose 6	Gun 1	Gun 2	Gun 3	Gun 4	Gun 5	Gun 6

Code	Configuration	Adder
10	VL310	
15	VL315	\$2,440
30	VL330	\$3,015

Code	Voltage	Adder
2	230 VAC 3 phase Delta	
4	400 VAC 3 phase Wye	\$250

Code	Voltage	Adder
X	None	
4	Casters	\$175

Code	Pump	gm/rev	Adder
A	PR2m1	0.28	
B	PR3m1	0.45	
C	PR4m1	0.55	
D	PR6m1	0.83	
E	PR12m1	1.80	
F	PR12m2	3.30	
G	PR25m2	7.00	
X	None	NA	(\$463)

Code	Length (ft)	Adder
A	4	0
B	6	\$30
C	8	\$60
D	10	\$90
E	12	\$120
F	16	\$190
G	20	\$300
H	24	\$480
X	-	(\$220)

Code	Description	Price ea
A	CF201	\$505
B	CFE03-T2VCXC/022.3	\$2,800
C	CFE06-T2VCXD/022.3	\$3,835
D	CFE07-T2VCXE/022.3	\$5,175
E	CFS14-T2VCXF/022.3	\$6,050
F	MBE03-T2VCXC/022.3	\$3,200
G	MBE07-T2VCXE/022.3	\$6,575
H	H201	\$260
I	H20, 1.25" slot pattern	\$817
J	H20, 2" slot pattern	\$903
K	H20-2, 2" slot pattern, 118m	\$1,418
L	EP34	\$1,253
M	EP45-1/65	\$1,310
N	EP45-2/100NX2DS33	\$1,969
O	EP51-02/200NX2DS33	\$3,250
P	EP45-03/150NX2DS33	\$4,250
Q	EP51-04/350NX2DFN3	\$7,478
R	H20-3-T, SLOT, 2", 85MM	\$4,622
S	H20-3-T, SLOT, 1.25", 95mm	\$4,618
T	MBE03-T2VCXE/085.0	\$5,050
U	EP51-04/350NX2DS33	\$6,722
V	EP51-02/200N12DFV3	\$4,796
W	CFX01-T2VCXA	\$1,350
Y	CFX02-T2RCXC/035.0	\$2,146
X	None	\$0

Pricing US Retail

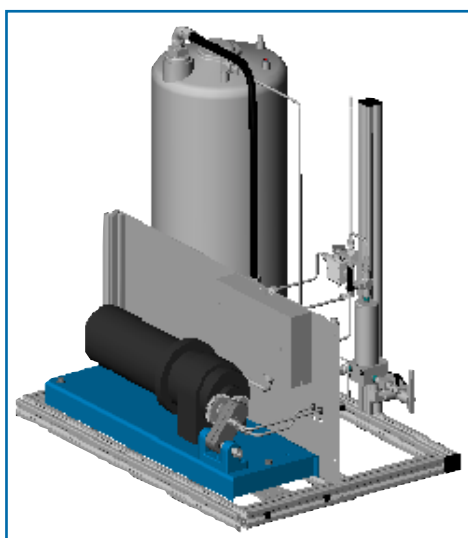
Some changes to the VL300 product line

1. 380 VAC is now available
2. The melter configurations have changed to VL310/315/330 to reflect capacity in KG

It's Not Just Hot Melt Anymore: Introducing LiquiPro 100

As your products evolve to meet the ever-changing requirements of today's disposable-products market, know that Nordson will continue to evolve into a partner that shares your global vision.

Added to a full range of products designed specifically for applying various skin-care lotions to disposable products (See the article *EP Line Offers Unparalleled Slot Coatings* on page 3),



Nordson's LiquiPro 100 (above) precisely applies lotions and perfumes.

Nordson now also offers systems for precisely applying perfumes and other liquids.

With the new Nordson LiquiPro 100 fluid-application system, materials such as perfume can be accurately added to your products. This system includes a stainless-steel tank and a single-stream gear pump with AC or DC motor and drive controller. The precision gear pump accurately meters the fluid,

ensuring that your product meets specifications without waste. The fluid is applied by Nordson applicators, which are available in stainless steel, if required.

A full-system manual is available. Please contact your local Nordson representative for further information or to schedule a test or demonstration.

What Else is New From Nordson?

To experience first-hand what is new from Nordson, attend the IDEA 2001 industry conference and trade show in Miami Beach, Florida (USA), on March 27, 28 and 29.

The Nordson booth will feature active demonstrations of new technologies including the ES400 applicator, Summit adhesive-spray process and the Universal Slice metered applicator.

Static displays will include the VL300 SOC melter package and the Universal hose and module product lines.

If you can't attend the show, watch for the next issue of trends, which will include information on these and many other innovations from Nordson. You can also see much of this new equipment on our worldwide web site at www.nordson.com/nonwovens.

trends is published by the Nonwovens Systems Group of Nordson Corporation.

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