Bradman Lake Group

Integrated Packaging Technology

Packaging Solutions

Technology you can trust

www.bradmanlake.com

Bradman Lake Group

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About

With engineering and project management that really understands the challenges of today's packaging industry the Bradman Lake Group is synonymous with providing packaging solutions to a client base that demands a partner to help them excel in today's competitive markets.

The Bradman Lake Group is composed of three key brands:

- **Autowrappers** (founded 1948)
- **Europack** (founded 1966)
- **Bradman Lake** (founded 1969)

We have amalgamated the brands to become a major supplier of Integrated Packaging Technology to key industry sectors including bakery & biscuit, chocolate & confectionery, dry foods, chilled and frozen foods, consumer and healthcare.

From product distribution, feeding systems and flow wrapping or roll wrapping, to carton erection, loading and closing and end of line options of case packing and shrink wrapping, time after time the worlds leading companies place their trust in Bradman Lake Integrated Packaging Technology.

Bradman Lake's engineering facilities are based on three sites:

- **Beccles, Suffolk, UK**
- **Bristol, UK**
- **Rock Hill, South Carolina, USA**

Bradman Lake manufacturing facility, UK

A common design platform and universal mechanical and electrical standards are adopted group wide. Our shared research and development successfully brings together cutting edge technologies to offer clients the benefit of placing a single contract with a partner who is able to provide a turnkey system, project managed from initial concept to site acceptance and beyond.

Our aim is clear, maximise your profitability by utilising advanced technology with the experience gained from thousands of Bradman Lake installations around the world. Whether your requirement is a single machine or a totally integrated solution, Bradman Lake makes the ideal partner.

Bradman Lake is a wholly owned subsidiary of the multi-disciplined global UK engineering group, Langley Holdings plc. (www.langleyholdings.com)

Bradman Lake facility, USA

Business areas

Bakery and Biscuits

We initiate major advancements in technology development to not just meet, but exceed the increased demands for speed and accuracy in the production of bakery and biscuits, cakes, snacks and nutritional bars throughout the world. Bradman Lake specialists are available to offer the necessary advice as selecting the appropriate machine depends greatly on the handling characteristics and format of your product.

Chocolate and Confectionery

We have a wealth of experience supplying packaging machinery to the worlds chocolate and confectionery industries. Our knowledge in the gentle handling of all types of chocolate and confectionery products is second to none. From single 'stand alone' machines to complete high speed packaging systems, the Bradman Lake Group offers a comprehensive range of product storage and distribution, orientation and collating, flow and roll wrapping machines, robotic loading, cartoning, wraparound tray and case packing systems.

Consumer and Healthcare

The Bradman Lake Group have designed and manufactured packaging machines and systems to meet the specific needs of the consumer and healthcare industries. We have a portfolio of collators for glass and plastic bottles and irregular shaped containers and devices for the control of unstable products. A wide variety of essential and everyday products in the home are handled by our machine systems including many major brand names in a variety of international markets.

Dry Foods

The packaging solutions offered by the Bradman Lake Group are widely used by the global dry food industries worldwide. Their exceptional performance and reliability is well proven in the packaging of cereals, tea, coffee, spices, powdered milk, soup products, sugar, pasta, pet foods and other similar products.

Chilled and Frozen Foods

All brands within Bradman Lake have extensive experience in the supply of machinery to the chilled and frozen foods sector. Meat, fish, vegetable or ice cream products, Bradman Lake can provide machinery to meet specifications demanded by each industry. Wipe down to full stainless steel construction with wash down capability, machine variations are available to suit specific environmental operating conditions.

Other Industry Sectors

Other industries who place their trust in Bradman Lake technology include; pharmaceutical, automotive, building materials, paper converting and publishing. Whatever your requirement, we can provide the most technically advanced and cost effective turnkey solution.

Individual technologies

Product Handling & Feeding Systems

High volume production lines rightly demand fully automated packaging systems that offer flexibility in operation and are capable of accepting normal irregularities in the product itself and in the product supply rate.

With many years of experience in the handling of delicate, sticky, friable and fractious products, our feeding systems never fail to deliver and present your product perfectly to the next stage of the wrapping cycle.

Automatic Distribution Systems (ADS)

Our distribution systems are specifically developed for production and packaging lines. Technologically sophisticated, but reassuringly simple to use, these systems are engineered to the highest quality and offer unrivalled accuracy and longevity of use.

A typical ADS will include a number of distribution stations automatically programmed to distribute products by a number of methodologies from equal distribution to 'greedy boy' where maximum products are distributed at each successive station. A product storage belt offers protection in the event of downstream stoppages. The product can be automatically re-fed to the final distribution station during production or in bulk at the end of the shift.

Trombone buffer

2 Station ADS

Storage Systems

To ensure maximum production stability protection our storage systems are designed to bridge short term machinery downtime and give 'just in time' product availability.

We offer three storage systems; Our Verso Stor is designed to fit neatly into the available space, stored product can be re-fed as 'first in – first out' or 'last in – first out' depending upon product and application.

Our horizontal buffer and re-feed system are motion controlled conveyors located downstream of the final transfer station and flexible enough to deal with high and low speed applications effortlessly.

Finally, the trombone buffer system, is ideally suited for random product flows and provides a cost effective solution at the front end of a production line. The system employs a 'U' shaped conveyor that automatically lengthens to buffer product and shortens when re-feeding.

Flow Wrapping

Bradman Lake has designed and manufactured flow wrapping machinery and machine systems that have proven to be the best solution for the most demanding of packaging needs. Continuous development and innovative designs ensure unrivalled reliability in operation as well as high production rates.

We can supply a 'stand alone' machine for a low speed hand fed application, up to a fully automatic system to meet the demands of the most sophisticated processing and packaging lines. Systems commonly include automatic feeding, product storage, multiple primary flow wrappers and secondary multi-pack flow wrappers. The Bradman Lake FT series flow wrapping machines operate at the highest levels of efficiency even in the most demanding of environments.

Roll Wrapping

Roll wrapping is an effective way of packaging small round, square and rectangular confectionery products. Bradman Lake has taken this principle and developed a more effective, more efficient and more accessible machine.

Our range of roll wrapping machinery allows for precise adaptation to the clients individual requirements. From a single machine to a multi-machine system, Bradman Lake roll wrappers guarantee quality and reliability.

Shrink Wrapping

Bradman Lake's experience with shrink wrapping is second to none. Our machines are suitable for all industries that require shrink wrapping for presentation, protection and transit purposes. We offer twin reel machines where the film is heat sealed and single reel machines where an overlap seal is employed. The range includes low cost pneumatic machines to high speed full servo machines, both will be equipped with low energy consumption shrink tunnels.

Flow wrapping

Roll wrapping

Shrink wrapping

Individual technologies

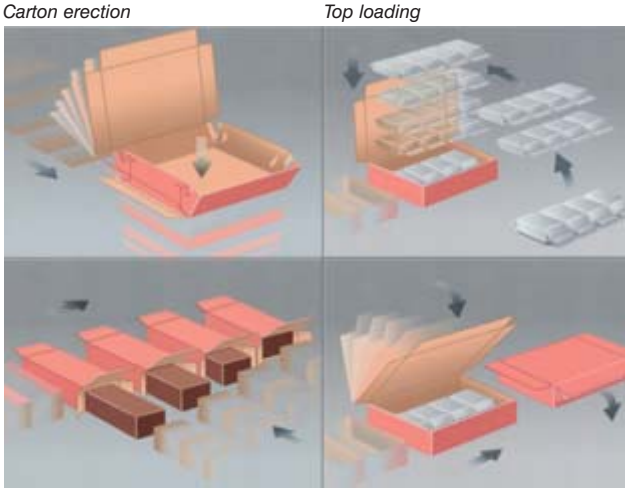
Cartoning

The Bradman Lake name is synonymous with high quality and high efficiency cartoning machines. Supplying equipment to the fast moving consumer market Bradman Lake has proven to be a leading innovator of both top load and end load cartoning including:- carton erectors, robotic top loading, inline and right angled carton closers, indexing and continuous motion end loading, all machines cover a wide spectrum of operating speeds.

To compliment our cartoning machines we manufacture a range of collator / infeed systems such as cascade loading, smart belts and dual race track (DRT) flat pack or on edge collators.

Our custom built robotic handling systems demonstrate Bradman Lake's position as an innovator of flexible automation, along with multi-servo axis technology machine design, not only can we offer high speeds and operational reliability our clients also receive efficiency and productivity gains whilst maintaining the highest quality finished products.

Carton erection *Top loading*



End loading *Carton closing*

Case Packing

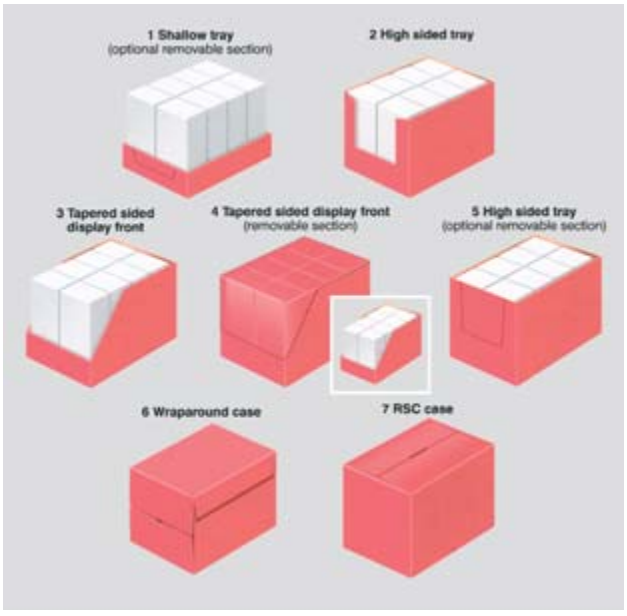
Bradman Lake offer both pre-formed case and wraparound case packers in combination with appropriate collators for a very wide range of products.

Where a pre-formed case is used, there are three machine type options:- side load, bottom load and top load depending upon the nature of the product, its handling ability and the required format within the case.

The 'flag-ship' of our range is the MX robotic top load machine that is a true modular construction machine and can be readily adapted for changing applications offering our clients a totally future-proofed machine.

Our wraparound case packers are multi-servo axis indexing machines and can handle a wide range of case sizes. The wraparound case is a high quality package that is ideally suited for shelf ready designs and provides the smallest case due to minimal internal clearance.

All machines can handle corrugated and carton board materials. RSC cases can be sealed with adhesive tape and / or hot melt adhesive while wraparound machines use hot melt. Our range of case packers delivers flexible solutions to satisfy the demands of modern shelf ready retailing.



Shelf ready tray and case styles

Engineering partners

Bradman Lake works very closely with leading international technology partners to supply industry leading solutions for each packaging system.

Rockwell Automation Machine Builders

Working together with our engineering partner Rockwell Automation, and integral to the success of any manufacturing line, is the automation critical to machine builders. Bradman Lake is committed to providing high quality, innovative solutions incorporating Rockwell automation to give our customers the competitive advantage.

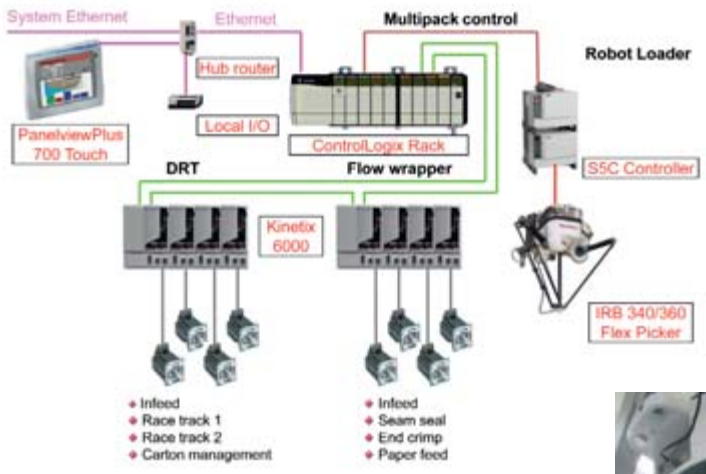


ABB Robot Channel Partner

With our global partner ABB, and with their vast experience in integrating ABB products into production processes, we focus on our customers complete satisfaction above all else. Bradman Lake benefit from full product training and access to ABB's knowledge and information resources, making us well-equipped to work with ABB products.

Integrated packaging technology

Bradman Lake integrated packaging technology is sub-divided into two sections:-

Flexible packaging technology, machines that use flexible packaging materials for example, co-extruded OPP films or polythene shrink film, and **rigid packaging technology**, machines that use rigid packaging materials such as carton board or various grades of corrugated board. The following 'flexible' and 'rigid' sections detail the range of equipment supplied by Bradman Lake. The navigation table below categorises and lists the machines with reference numbers (F1 – F17 and R1 – R21) that correspond to data sheets available for each product.

Flexible Packaging Technology

F1	Automatic Distribution System - ADS
F2	Infeeds - POF
F3	Infeeds – BTU
F4	Infeeds – ILPF
F5	Infeeds - SPF
F6	Infeeds - AF
F7	Collators - LC
F8	Collators - SBS
F9	Flow Wrapper - FT120
F10	Flow Wrapper - FT130BOE
F11	Roll Wrapper – S2000
F12	Roll Wrapper – S2000S
F13	Roll Wrapper – S3000
F14	Shrink Wrapper – RTSW
F15	Shrink Wrapper – ITSW
F16	Shrink Wrapper – SRW
F17	Shrink Wrapper – board & film monobloc - TLSW

Rigid Packaging Technology

R1	Infeeds – Smartbelts / Cascade
R2	Carton Erector – HS
R3	Carton Erector – HSS
R4	Top loader – SRT
R5	Top loader – DRT
R6	Right Angled Closer – RA60 / RA90 / RA120
R7	Inline Closer – IL120 / IL180 / IL250
R8	Single Flap Closer – SF120
R9	End Flap Sealer – SL50
R10	End Load Cartoner – SL80 / SL802
R11	End Load Cartoner – SL902 / SL903
R12	End Load Cartoner – SL904 / SL906
R13	Sleever – SW702
R14	Case Packer – Robotic top load – MX600 / MX1200
R15	Case Packer – Side load - SLCP
R16	Case Packer – Bottom load - BLCP
R17	Wraparound Case Packer – WR2
R18	Wraparound Case Packer – WR3 / WR4 / WR5
R19	Case Erector – MX600CE
R20	Tray Erector - TE
R21	Tray Erector Loader – erect & load monobloc - TETL

Integrated Packaging Technology

Turnkey Solutions

Flexible packaging

Distribution systems

Automatic Distribution System (ADS)

The ADS is designed to handle products presented in regimented rows. It may operate in conjunction with a single flow wrap machine but more commonly, is used in multiple machine arrangements. There is also the option of having a storage and refeed facility.

See data sheet – F1

As each row is transferred onto the primary belt they are conditioned by a pneumatic/servo row aligner (depending on speed).

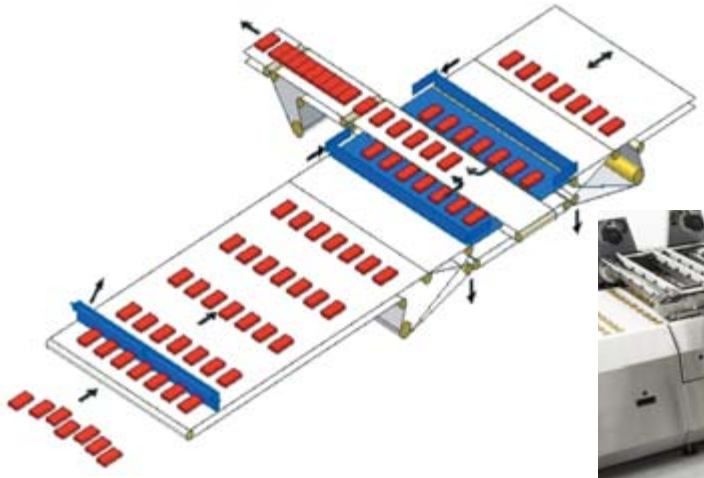
ADS:- The row is transferred to the required flow wrapping leg distribution belt.

ADS-SP:- The row is transferred into a holding area to allow storage and timing, where it is transferred by a servo driven pusher onto the distribution belt.

ADS-RT:- The two rows are transferred into the holding area, where they are transferred by an overhead twin servo pusher to the distribution belt.

Storage / Refeed

Should one flow wrapping leg stop, the remaining stations are increased in speed and any remaining rows are delivered onto the storage belt. Once full wrapping capacity returns, the whole system is allowed to run at the higher rate, to allow the final flow wrapping leg to re-feed the product rows held in storage. Once the rows held in storage have been depleted, the system returns to match the production rate.



ADS-RT with twin row output

ADS cross belt into wrapping leg

Technical Details:

MODEL	ADS	ADS-SP	ADS-RT
Minimum Product Length	45mm	45mm	45mm
Maximum Product Length	250mm	250mm	100mm
Minimum Product Height	5mm	5mm	5mm
Maximum Product Height	50mm	50mm	30mm
Minimum Belt Width	900mm	900mm	900mm
Maximum Belt Width	1600mm	1600mm	1600mm
Maximum Production Rate (rows/min)	60	140	140
Unloading Rate (rows/min/station)	30	40	70 (twin rows)

Feeding systems

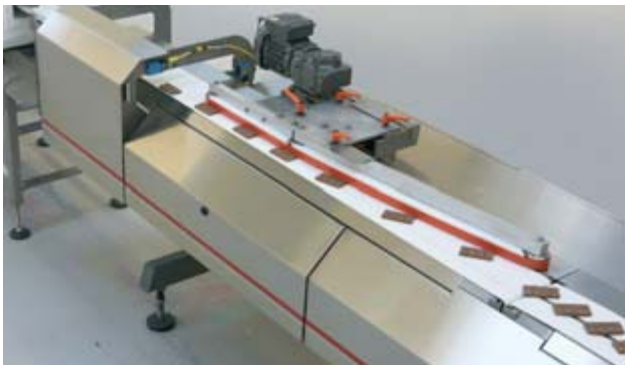
Product Orientation Feeder (POF)

The POF is available in a variety of widths and lengths and the number of base and side belts can be changed to suit the specific application. The POF is designed to accept the products either in regimented rows or randomly distributed on a delivery conveyor and to configure them into a single stream, narrow edge leading. Typical product sizes range between 40mm and 175mm in length with speeds up to 1200 products per minute. However, due to the flexibility of the design it may be possible to accommodate products and speeds outside these ranges.

See data sheet – F2

Technical Details:

	Minimum	Maximum
Product Length	40mm	175mm
Product Width	12mm	150mm
Product Height	5mm	50mm



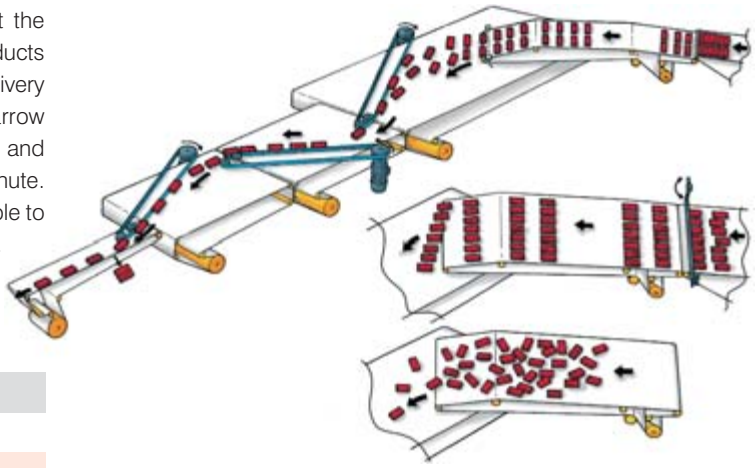
Bar turn unit

In-Line Phase Feeder (ILPF)

The ILPF is designed to interface to a FT120 flow wrapper with the product being presented in a narrow edge leading format from either a BTU, POF, or an ADS. It is designed to form a queue of products and then to phase individual product into the infeed flights of the FT120 flow wrapper. It also controls the speed of the machines by monitoring the level of product presented to the wrapping leg.

For high speed applications vacuum is applied to the underside of the final transfer belt to ensure no slippage of the product occurs.

See data sheet – F4



Bar Turn Unit (BTU)

The BTU is designed to interface with the ADS. It is required when the product has to be turned from a wide edge leading to a narrow edge leading orientation before being presented to a phase feeder and onto a FT120 flow wrapper.

See data sheet – F3

Technical Details:

	Minimum	Maximum
Product Length	45mm	250mm
Product Width	12mm	150mm
Product Height	5mm	50mm

In-line phase feeder

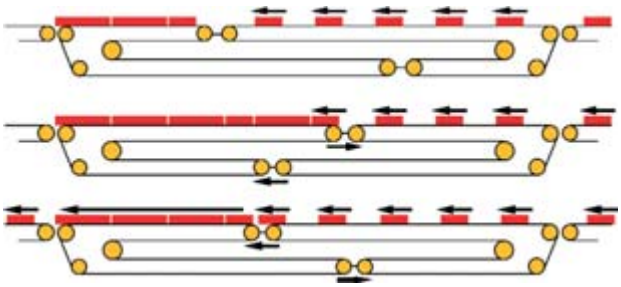
Feeding systems

Shuttle Phase Feeder (SPF)

The SPF is ideal for delicate products, sticky products or products in trays products where a pressureless queue is required prior to the phasing section in order to reduce potential damage to the product and minimise rejects.

See data sheet – F5

The shuttle is a servo controlled moving belt joint between two conveyors. Sensors monitor the leading edge of the incoming product and dynamically moves the belt joint a known dimension, to deposit the product into a uniform and pressure-less queue on the trailing belt.



Technical Details:

	In-Line Phase Feeder		Shuttle Phase Feeder	
	Minimum	Maximum	Minimum	Maximum
Product Length	40mm	300mm	40mm	300mm
Product Width	12mm	150mm	12mm	150mm
Product Height	5mm	50mm	5mm	50mm
Speed Range	10ppm	1200ppm	10ppm	600ppm

Angle Feeder (AF)

The AF is designed to interface with an ADS or it can be manually presented with product, either directly from the main production conveyor or as an off-line machine. The product is presented to the first gap closing belt in a wide edge leading format. The AF then takes the product narrow edge leading and transfers it as an individual or as multiple products into the infeed section of a FT120 flow wrapper. An overhead transfer option can be used to aid transfer of narrow products, and to give flexibility when twin packs are required.

See data sheet – F6

Technical Details:

	Minimum	Maximum
Product Length	40mm	175mm
Product Width	12mm	150mm
Product Height	5mm	50mm

FT120 flow wrapper with AF including overhead transfer

Collating

Layer Collator (LC)

The LC is designed to interface with a Phase Feeder, taking individual products and collating them into single or multiple stacks before flow wrapping on a FT120 flow wrapper.

Product is presented by primary infeed carriers, then positioned onto the various support shelves by a servo controlled pivoting ramp. When the required collation is achieved the complete collation(s) is transferred into the main infeed of the FT120 flow wrapper by a servo controlled overhead transfer. It is possible to run individual products through the unit simply by deactivating the ramp mechanism.

See data sheet – F7

Layer collator

Layer collator

Side by side collator

Side by Side Collator (SBS)

The SBS is designed to interface with a phase feeder, taking individual products and collating them into pairs in a “side by side” format, before flow wrapping them on a FT120 flow wrapper.

See data sheet – F8

Technical Details:

	Layer Collator (LC)		Side by Side Collator (SBS)	
	Minimum	Maximum	Minimum	Maximum
Product Length	40mm	250mm	40mm	250mm
Product Width	25mm	150mm	12mm	60mm
Product Height	2mm	20mm	5mm	50mm
Speed Range (Input rate)	10ppm	500ppm	10ppm	600ppm

High Speed Product Collators

For the more demanding higher speed applications Bradman Lake has been at the forefront of continuous motion product merging utilising twin stacked shuttle phase feeders. Product is collated in a side by side or stacked format without the need for intermittent mechanical motion.

The system can be fed by either Bradman Lake’s ADS-RT or twin POF feeder, lane balancing is achieved by dynamic speed control and the utilisation of pressureless product queues which are held within each shuttling system.

High speed layer collator

High speed side by side collator

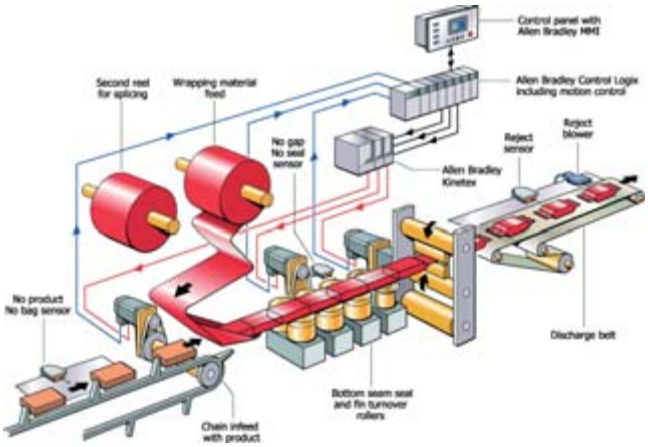
Flow wrapping

FT120 system machine with servo driven paper feed and auto web tracking

FT120

The FT120 range sets the benchmark for horizontal form fill and seal flow wrapping machines. We can supply anything from a 'stand alone' machine for low speed, hand fed applications, up to a fully automatic system to meet the demands of the most sophisticated high-tech processing and packaging lines. Systems can include automatic feeding, product storage, and multiple flow wrapping for primary wrapping and multi-packing. The FT120 operates at the highest level of efficiency incorporating a PLC control system with three axis servo drive and motor package. The FT120 has clean modern lines, is simple to operate and maintain as well as being able to accommodate a wide range of product sizes with simple and quick change over.

See data sheet – F9



Technical Details:

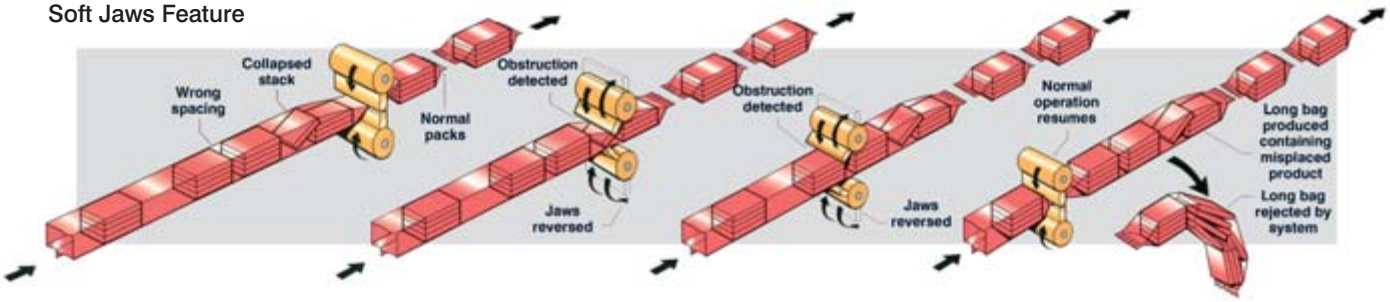
	Minimum	Maximum†		Minimum	Maximum[3]
Product Length	40mm	500mm	Speed Range	10ppm	1200ppm
Product Width	12mm	300mm	Jaw Centers	90mm	190mm
Product Height	1mm	130mm	Film Width	50mm	700mm

† *Maximum dimensions are not possible in combination*

Flow wrapping

Examples of Flow Wrap Options

Soft Jaws Feature



The soft jaw feature, unique to Bradman Lake, prevents misplaced products from jamming in the end seal jaws. The drive motor torque is constantly monitored and any increase above normal running level causes the jaw to reverse direction. This allows the misplaced product to pass through the jaws and produces a long pack that is rejected from the machine discharge. When the obstruction is clear of the jaws the machine automatically resumes normal operation.

Other electronic features include 'No gap' 'No crimp' and 'No product' 'No gag'.

Automatic splice unit using adhesive tape

Automatic web tracking

Reel to Reel Splicing

Automatic splicing is a standard feature on a system machine and optional on a 'stand alone' machine. A manual splice is also available for 'stand alone' machines.

Tear Tape Application

Self-adhesive tape is applied to the wrapping material which provides a more consistent method for opening the pack.

Automatic Web Tracking

Maintains position of wrapping material presentation from the reel providing increased efficiency and productivity whilst keeping material width to a minimum.

Servo Reel Unwind

Utilises servo driven reel mandrels which replaces the mechanical braking system, used on high linear wrapping material speeds.

Discharge Top Control

Provides a consistent transfer onto the discharge conveyor therefore ensuring a regular pitch between product when interfacing with downstream equipment.

Discharge Batch Counter

Delivers a pre-selected count of wrapped product to aid the hand packing process.

Coder Brackets

To mount various coders.

Empty Bag Removal

Vacuum system removes empty flow wraps prior to discharge.

Primary & Secondary ‘Multi-Pack’ flow wrapping

Primary and secondary ‘multi-pack’ flow wrapping

Twin leg flow wrapping system

Typical flow wrapping system comprising primary flow wrapper feeding DRT top loader collating individual products, picking and placing multiple collations into secondary multi-pack flow wrapper infeed.

The system is one of two identical systems that are fed from a two station ADS complete with product storage and refeed, each wrapping leg also includes bar turn units and phase feeders.

The primary flow wrapper includes all features to enable maximum line efficiency, servo top control to ensure a consistent flow of product, long bag reject, empty bag removal and out of position pack reject.

Product transfers from the FT120 directly onto the DRT infeed which is servo driven and incorporates vacuum assist to ensure the product is positively driven. The DRT comprises 2 pairs of servo driven transmission belts with one or two trains of product specific pockets attached. Depending upon the infeed position the DRT can produce either ‘flat pack’ or ‘on edge’ collations. The dual drives provide independent functionality at both the infeed and un-loading positions.

The pick and place motion is provided by ABB IRB 360 Delta Robot (FlexPicker) and removes product from the DRT and places the product into the continuous motion infeed of the multi-pack flow wrapper.

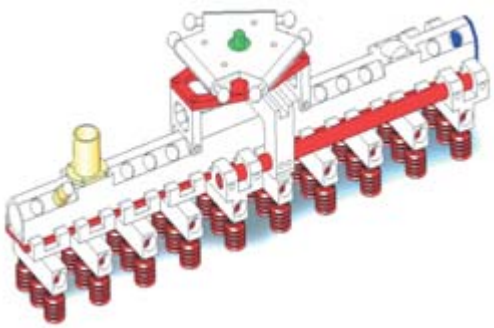
The tool is precision engineered and lightweight.

Product picking is achieved via vacuum.

Tooling motion, the bringing together of the groups of product is achieved by the use of the robot central (fourth) axis.

All attachments are quick release and easy to change.

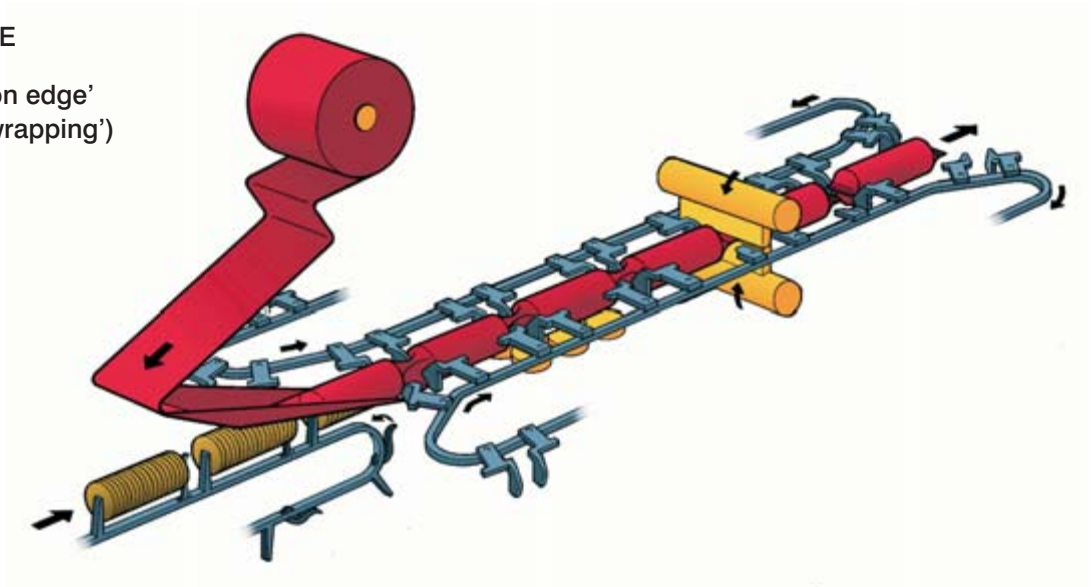
DRT collator and robotic ‘multi-pack’ loading



Flow wrapping

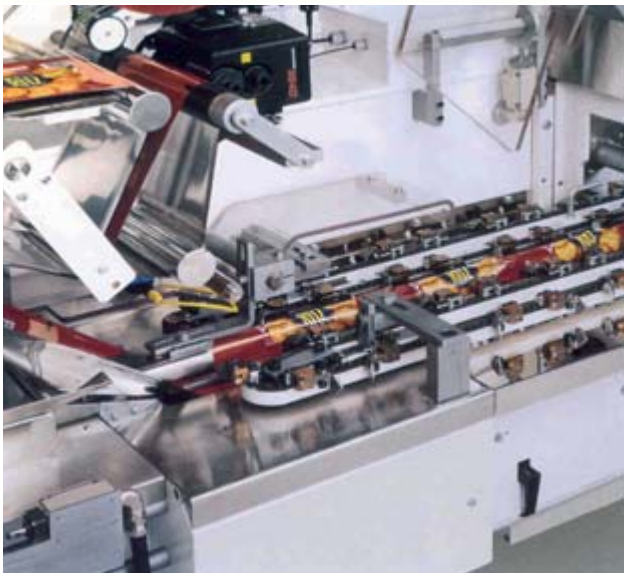
FT130 BOE

‘Biscuits on edge’ (or ‘slug wrapping’)



The operation of the FT130 BOE flow wrap machine is generally the same as the FT120 but the product feed system and handling during the wrapping process is adapted to suit the ‘biscuit on edge’ collation. The collation of biscuits are manually or automatically fed into the infeed of the FT130 BOE and are supported at the rear by the infeed carrier and at the front by a spring loaded finger. As the biscuits travel through the FT130 BOE flow wrapper the front and rear support transfers to side supports ensuring the collation stays in place while the pack travels through the end seal jaws and is completely sealed. The side supports also automatically gusset the end seals. The FT130 BOE incorporates the same PLC control system with three axis servo drive and motor package as the FT120.

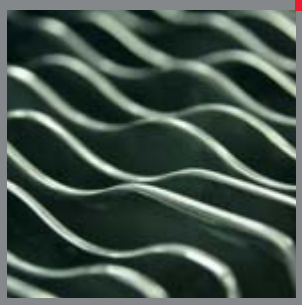
See data sheet – F10



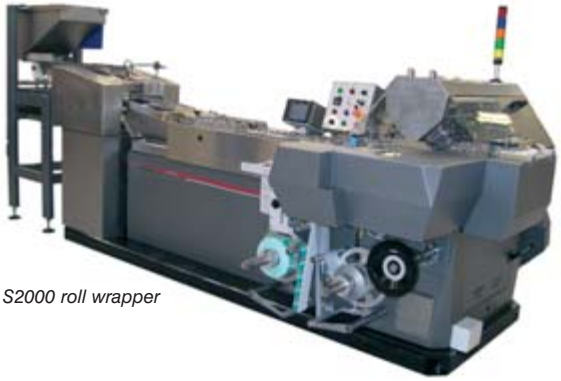
Technical Details:

	Minimum	Maximum†
Pack length	90mm	90mm
Pack width	35mm	90mm
Pack height	30mm	85mm
Speed range		200ppm
Film width		340mm

† *Maximum dimensions are not possible in combination*



Roll wrapping



S2000 roll wrapper

Roll and stick wrapping is the conventional way to package small round, square and rectangular products.

A variety of feed systems, including colour or flavour sequence are available for most models.

S2000

Round product

The basic and most versatile using the rolling head belt wrapping principle.

Packs can be produced with either single overall wraps or overall wraps with outer label. Pack ends can be point folded with or without heat seal or twisted ends.

See data sheet – F11

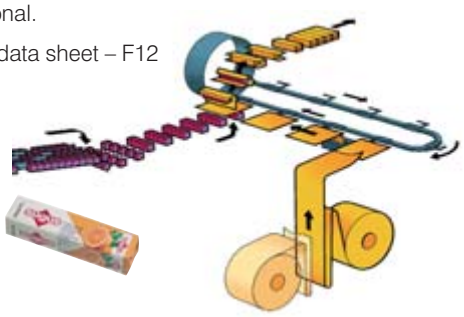
S2000S

Square and rectangular product, packs with folded ends

This uses a four pocket mould wheel system.

The same material feed as S2000, sealing is either by the same glue wheel and dauber system or the use of a heat sealable wrapping material and heat seal discharge. Hot melt glue jetting optional.

See data sheet – F12

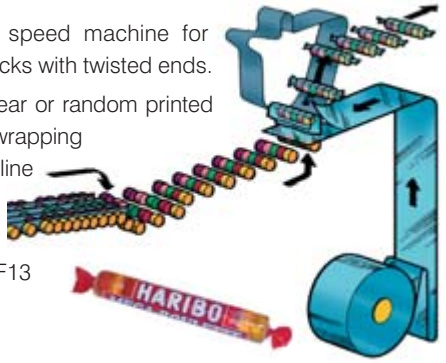


S3000

Specialised high speed machine for small diameter packs with twisted ends.

A single reel of clear or random printed twist quality wrapping material is fed inline producing a more compact machine.

See data sheet – F13



Max / Min Pack Dimensions:

MODEL	S2000	S2000L (Long)	S2000S	S2000SL (Long)	S3000
Minimum diameter	12mm	12mm	60mm	60mm	12mm
Maximum diameter	32mm	32mm	92mm	92mm	14mm
Minimum pack length	20mm	30mm	44mm	127mm	30mm
Maximum pack length	165mm†	200mm†	140mm†	190mm†	76mm†
Minimum tablet thickness	3mm	3mm	3mm	3mm	3mm
Maximum reel diameter	330mm	330mm	330mm	330mm	330mm
Reel core diameter	76mm	76mm	76mm	76mm	76mm
Maximum speed	180ppm	150ppm	150ppm	150ppm	200ppm

† *Maximum pack length is dependent on the type and shape of the product*

Right angle shrink wrapping

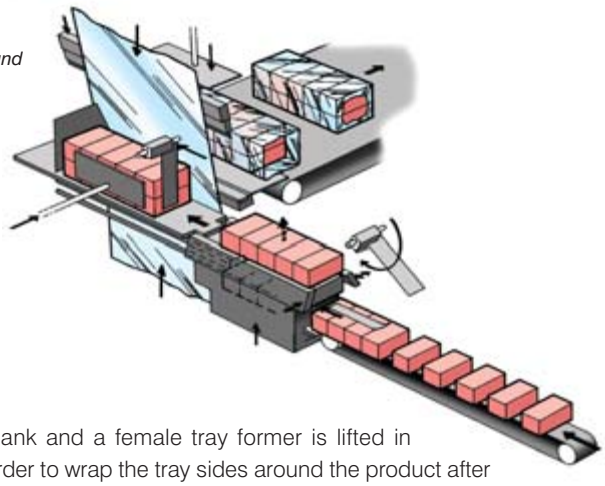
RTSW with integral tray wrap around

Right Angle Shrink Wrapping (RTSW)

The RTSW is a side fed, fully automatic, tight sleeve wrapper with an angled sealing/cutting jaw which reduces film and energy usage compared to standard shrink systems. The wrapper has an integral shrink tunnel and typically operates at up to 35 packs per minute and faster using a twin lane machine. The machine comes in two variants, the RTSW (pneumatic) and RTSWS (servo) and three sealing jaw widths as standard. Although the RTSW can be supplied as a 'stand alone' machine it is ideally suited as part of an integrated system and complements other machines within the Bradman Lake Group.

See data sheet – F14

This machine can also be adapted to include an integral tray wraparound facility where the product is collated onto the tray



blank and a female tray former is lifted in order to wrap the tray sides around the product after having hot melt glue applied.

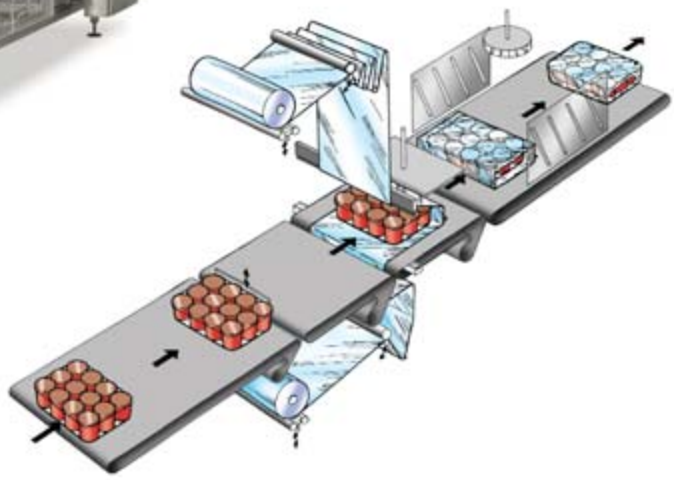
This application is particularly useful when factory space is at a premium and a shelf ready option is required.

Operating Specification:

Machine Model	Maximum Film Width	Maximum Film Reel Diameter	Infeed Conveyor Width	Tunnel Aperture Height	Maximum Operating Speed
RTSW 500 / RTSW 500S	495mm	300mm	300mm	200mm	25 / 35
RTSW 635 / RTSW 635S	630mm	300mm	300mm	320mm	25 / 35
RTSW 762 / RTSW 762S	755mm	300mm	300mm	320mm	25 / 35

Inline shrink wrapping

ITSW built to full wash-down dairy specification



Inline Shrink Wrapping (ITSW)

The ITSW is an inline fed, fully automatic, tight sleeve wrapper with an angled sealing/cutting jaw which reduces film and energy usage compared to standard shrink systems. The wrapper has an integral shrink tunnel and typically operates at up to 35 packs per minute and faster using a twin lane machine.

The machine comes in two variants which is the ITSW and ITSWS, which is a servo controlled version of the standard ITSW, which allows the machine to operate at a faster speed via precisely controlled motors on the sealing jaw and either a flight bar infeed assembly or belt to belt infeed conveyors. Although the ITSW can be supplied as a 'stand alone' machine it is ideally suited as part of an integrated system and compliments other machines within the Bradman Lake Group.

See data sheet – F15

This style of machine can also be offered with a seal on the belt system to minimise the risk of any unstable products falling during a belt to belt transfer. Any of our shrink wrapping machines can also be manufactured in stainless steel and to a rating of IP65/NEMA4X, making them suitable for the dairy industry.

Operating Specification:

Machine Model	Maximum Film Width	Maximum Film Reel Diameter	Infeed Conveyor Width	Tunnel Aperture Height	Maximum Operating Speed
ITSW 635 / ITSW 635S	630mm	300mm	500mm	320mm	25 / 35
ITSW 762 / ITSW 762S	755mm	300mm	650mm	320mm	25 / 35

High speed shrink wrapping

SRW50 shrink wrapper

Single Reel Shrink Wrapper (SRW)

This machine is designed to wrap a collation of products at speeds up to 50 packs per minute. These machines use a different film application method to a conventional shrink wrapper and operate without any form of sealing jaw.

See data sheet – F16

The film is taken from a single reel cut to length and then applied around the product with an overlap underneath the pack. This overlap is sealed as the pack passes through a heat tunnel. Apart from the higher speeds obtainable, the absence of a sealing jaw leads to lower maintenance. Also, the film which is pre-cut to length facilitates the use of printed and registered film.

This type of machine is normally supplied with appropriate collating equipment and often works in conjunction with tray packing equipment. Certain products can be wrapped unsupported.

Although suitable for a wide range of applications, the equipment is most likely to be used for the wrapping of cans, jars and bottles.

Bottle collator

Trayed product gating

Combined tray packing and shrink wrapping

Tray Loader Shrink Wrapper (TLSW)

This machine is ideally suited for a variety of shelf ready applications with the flexibility to produce shrink wrapped bundles, product in tray and a combination of the two.

The TLSW is a fully automatic, small footprint combination of a tray wraparound loader and shrink wrapper, allowing cartons to be collated into the required format prior to loading into a tray and / or film.

Although the TLSW can be supplied as a stand alone machine it is ideally suited as part of an integrated system and complements other machines such as carton loaders from Bradman Lake.

See data sheet – F17

The dual race track (DRT) collator comprises 2 pairs of servo driven transmission belts with one or two trains of product specific pockets attached. Depending upon the infeed position the DRT can produce either 'flat pack' or 'on edge' collations. The dual drives provide independent functionality at both the infeed and unloading positions.

The product is loaded into a wraparound tray then transferred with a servo driven flight bar through the vertical film curtain. The sealing jaw is servo driven and capable of producing up to 35 packs per minute.

DRT collator

Servo pusher system

Tray loaded and shrink wrapped pack

Max / Min Pack Dimensions:

	Minimum	Maximum
Collation width	370	525
Collation length	75	275
Collation height	80	250

Rigid packaging

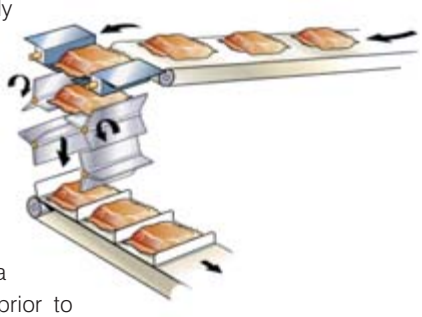
Feeding systems

Bradman Lake hold significant product handling experience and has developed a range of feeding systems that suit a wide variety of applications and compliment our range of end load and top load cartoners.

The most widely used automatic feeding systems are shown below, variations to these designs and bespoke designs for specialist products are also available.

Cascade Loader

Typical product for this device is bags containing loose products. Normally linked to a VFFS bagging machine, an inclined conveyor will feed the cascade loader. Product that is either not sufficiently spaced apart or is out of specification, will be rejected prior to entry into the first infeed pocket. The product descends progressively through the servo driven pockets and are perfectly synchronised into the target pockets of the cartoners infeed conveyor.



The final cascade pocket can collate a number of products prior to deposition into cartoner infeed.

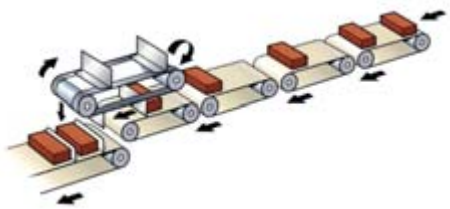
Single or multiple cascade loaders can be interfaced to a single cartoner infeed.

See data sheet R1

Smart Belts

An inline automatic infeed that receives product at random and using a series of servo controlled belts, will correct the random position of each product relative to its target pocket of the cartoners infeed conveyor. The final transfer is aided by an overhead paddle. The product would normally be presented to the smart belts wide edge leading.

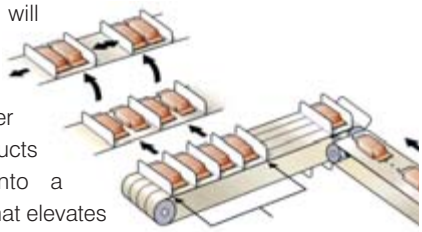
See data sheet R1



Collator Loader

This infeed utilises our dual race track (DRT) and single (SRT) technology, individual or a combination of products are driven into pockets mounted onto one or two servo driven fast indexing turbo trains.

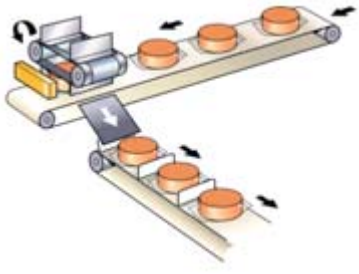
The pockets advance (indexing) as they are filled and when the required amount are present, that train of pockets will transfer to the carton loading position.

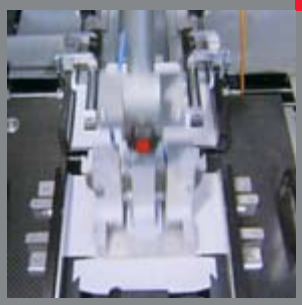


A servo driven pusher will transfer the products from the DRT onto a product positioner that elevates and separates the products into the required collations and the correct pitch of the cartoner infeed. A second servo pusher transfers these products into the cartoner infeed conveyor.

Right Angled Infeed

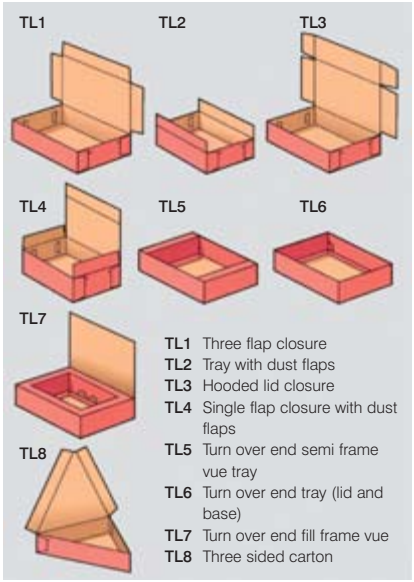
Product is normally presented narrow edge leading and at 90° to the cartoner infeed. Two or more servo driven smart belts will correct the position of the product prior to a powered right angled overhead pusher transferring each product into its target pocket of the cartoners infeed conveyor.





Carton erection

HSS glue (double head) carton erector

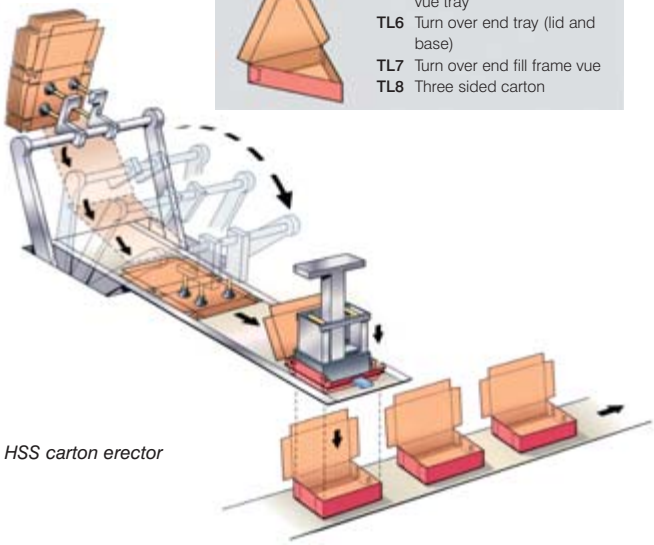


Consistent and perfect carton or tray erection is critical to the efficient operation of a top load cartoning system. Bradman Lake offer two carton / tray erectors, the mechanical model HS that uses a direct placement system and an operating speed of up to 60 strokes per minute, and the fully servo driven model HSS utilising a reciprocating shuttle carton feed with an operating speed of up to 75 strokes per minute.

Both machines use factory set tooling that are both quick and easy to size change and ensure repeatability.

See data sheets R2 and R3

Both carton erectors will erect cartons secured by glue or self locking tabs. The HS can be supplied as single, double or triple head and the HSS as double and triple head, giving maximum output rates of 180 and 210 cartons per minute respectively.



HSS carton erector

Technical Details:

Model	Carton Size		Carton	Speed
	Blank W x L	Height min/max	Type	cpm
HS (single head)	762 x 1000	22 / 165	Locking	60
HS (double head)	520 x 1000	22 / 165	Locking	120
HS (triple head)	280 x 1000	22 / 165	Locking	180
HS Glue (single head)	762 x 1000	22 / 165	Glued	50
HSS (double head)	600 x 800	22 / 110	Locking	150
HSS (triple head)	600 x 800	22 / 110	Locking	225
HSS Glue (double head)	600 x 800	22 / 110	Glued	130
HSS Glue (triple head)	600 x 800	22 / 110	Glued	180

Top loading

Bradman Lake produce two variants of top loader machines, the dual race track (DRT) top loader and the single race track (SRT) top loader.

Both machines employ the ABB FlexPicker IRB 360 delta robot for the picking and placement of product. In combination with a precision end of arm tool (EOAT) groups of product can be top loaded at rates up to 85 cycles per minute with a maximum payload of 3kg.

Intelligent belt technology provides a unique carton management system of servo driven belts that accurately spaces pre-erected cartons and delivers them to the carton loading stations.

A servo driven vacuum infeed belt conveys product into the DRT. Misaligned and out of position products are automatically rejected ensuring high operating efficiencies.

The DRT incorporates servo driven transmission belts with one or two trains of product specific pockets attached. Depending upon the infeed position, the DRT can produce either 'flat pack' or 'on edge' collations. While product is feeding into indexing pockets on one train, collated product is being picked from the second train and loaded into cartons, the empty train returns to the infeed station and the collating cycle continues. Groups of filled cartons exit the machine for closing.

See data sheets R4 and R5

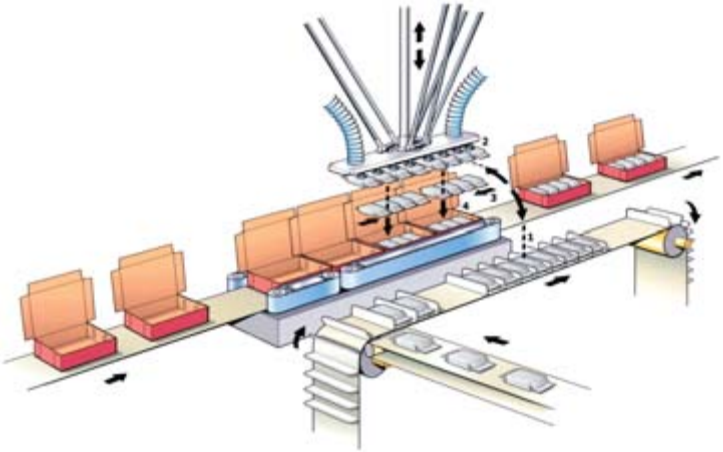
Top Loader (DRT)

The top loader is a multi-functional machine capable of top loading products into multiples of cartons, trays and cases or collating, position synchronising and transferring product into a moving infeed of an end load cartoner or multi-pack flow wrapper infeed.

Model		Carton Dimensions			Max
		A	B	C	Speed
SRT Top Loader	min	102	60	20	400
	max	405	325	175	
DRT Top Loader	min	102	60	20	800
	max	405	325	175	

Top Loader (SRT)

The SRT top loader comprises one pair of servo driven transmission belts with one continuous set of product specific pockets attached. The footprint of this machine is very compact with the infeed speeds up to 400 ppm.



Dual Loading Top Loader

For ultimate secondary packaging flexibility, this DRT top loader provides dual loading functionality. Loading either side of the race track typically with a carton management system on one side and a multipack flow wrapper infeed on the other.

Dual Infeed Top Loader

This version of DRT top loader is equipped with dual infeeds feeding overlapping DRT's with a common robot designed to accept product from two primary sources.

Dual infeed top loader

Closers - right angled

Bradman Lake's range of flightless right angled carton closing machines (RA) comprises of 3 models with speed capacities ranging from 60 to 120 cartons per minute. The RA60 single servo (turn correction) machine has a compact footprint while the RA90 dual servo (turn correction) machine and RA120 full servo machine, share a slightly larger footprint.

Each machine is equipped with a variable speed infeed system comprising two pairs of side belts to meter and accelerate the cartons, correctly gapped, into each machine.

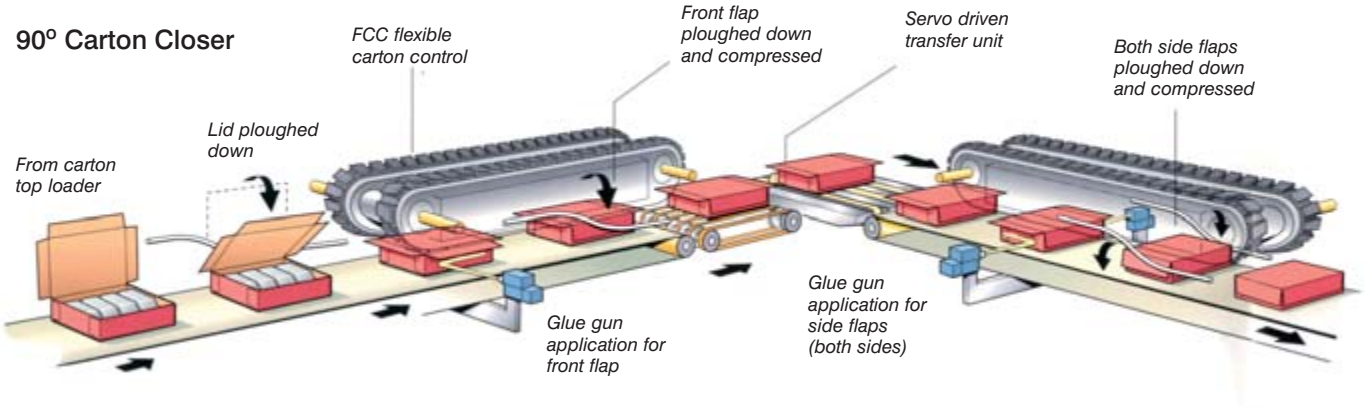
Bradman Lake's unique 'flexible carton control' (FCC) technology system allows for cartons containing product of inconsistent size and protruding above the carton base wall height to be closed.

Servo driven 90° transfer system ensures a positive transition into the second stage closing conveyors.

The cartons are sealed using hot melt adhesive.

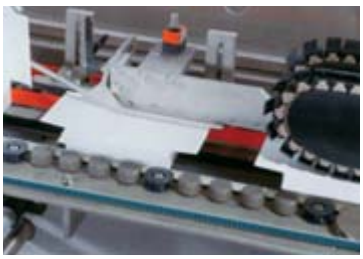
See data sheet R6

90º Carton Closer



The RA range of top load three flap carton closers are designed to handle all types of board. Thin or heavy gauge chipboard or microflute corrugated board.

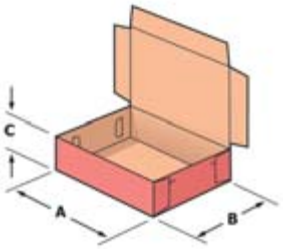
The Bradman Lake closers will produce perfectly closed square, mark free and secure cartons suitable for shipping and shelf or freezer display.



Flexible carton control (FCC)

RA120 closer

Model		Carton Dimensions A	B	C	Max Speed cpm
RA60	min	100	76	25	60
	max	350	305	120	
RA90	min	100	76	19	90
	max	325	300	120	
RA120	min	100	76	19	120
	max	325	300	120	



Closers - inline

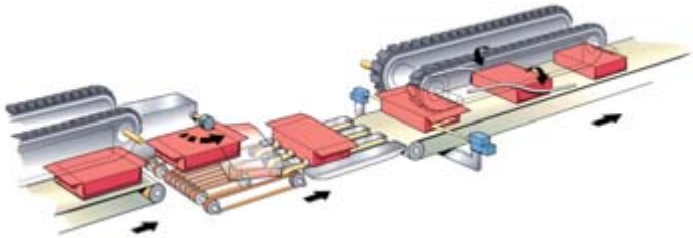
Bradman Lake's range of flightless inline carton closing machines (IL) comprises 3 models with speed capacities ranging from 120 to 250 cartons per minute. The IL120 single servo (turn correction) machine has a compact footprint while the IL180 dual servo (turn correction) machine and IL250 full servo machine, share a slightly larger footprint.

In common with the RA range, the IL range utilises the same variable speed infeed system, comprising side running 'flexible fingers' that automatically spaces the cartons and meters them into the machine, and the FCC technology system of overhead conveyors comprising independent rubber fingers that flex and control the carton flap squareness. These overhead conveyors are cantilever mounted and supported on gas struts for easy access when cleaning. The IL range utilises a servo driven turn correction system that has the capacity to offer higher operational speeds.

Each machine closes and seals cartons using a hot melt glue jetting system.

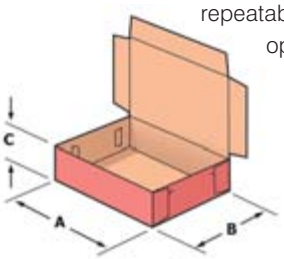
See data sheet R7

IL250 closer



Model		Carton Dimensions			Max Speed
		A	B	C	cpm
IL120	min	100	90	19	120
	max	300	300	150	
IL180	min	100	90	19	180
	max	340	300	150	
IL250	min	100	90	19	250
	max	340	300	156	
SW702	min	70	76	20	120
	max	265	215	76	

Size changing can be achieved in less than 10 minutes. The major axis of the machines are independently adjusted via handwheels incorporating digital readouts for accurate repeatability. Servo automatic adjustment options are available.



The machines can be easily upgraded to handle larger than standard sizes and are also available in full wash down specification.

SW702 wraparound sleever

The Bradman Lake SW702 wraparound sleever is an inline continuous motion machine designed for applications that require a user-friendly, flexible and fully automatic machine for speeds up to 120 sleeves per minute.

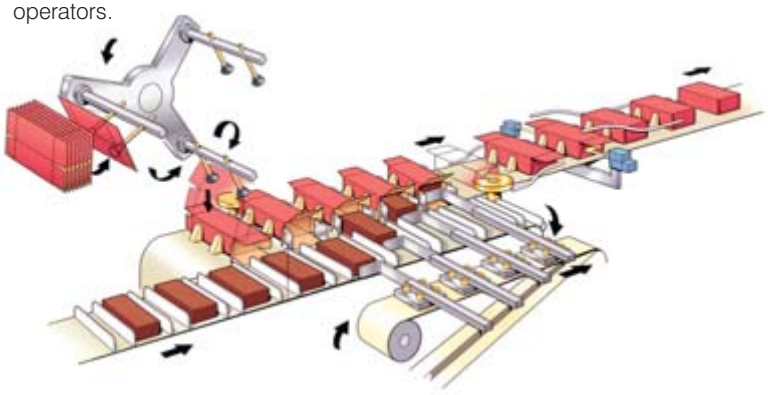
The sleeve closure allows for the maximum useable area for artwork and offers the facility for alternative sleeve designs.

See data sheet R13

End loading

The Bradman Lake SL range of end load cartoners comprise the SL50 manually loaded end flap sealer, the semi-automatic SL802 hand pack machine, the fully automatic SL902/903 medium speed end load cartoners and the SL904/906 high speed full servo end load machines.

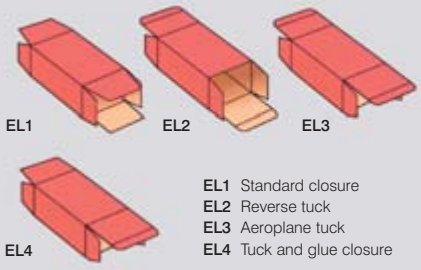
The SL802 semi-automatic cartoner is equipped with a 2 head rotary carton feeder and has a loading station for up to 3 operators.



SL902/903 machines are equipped with 2 head and 3 head rotary carton feeders respectively. The carton hoppers are motorised and include 'slide in' change part gates for quick and repeatable size changes.

See data sheets R9, R10, R11 and R12

End load carton styles (lock or glue secured)
- other carton styles on request

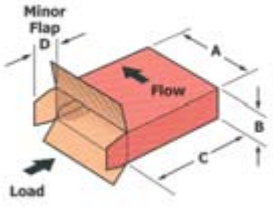


EL1 Standard closure
EL2 Reverse tuck
EL3 Aeroplane tuck
EL4 Tuck and glue closure

Model		Carton Dimensions A	B	C	D	Max Speed cpm
SL50	min	40	20	140	n/a	60
	max	254	110	305		
SL80/SL802	min	50	19	130	19	80
	max	254	100	305	40	
SL902	min	50	19	130	19	90
	max	254	100	305	40	
SL903	min	50	19	130	19	130
	max	254	100	305	40	
SL904	min	76	19	116	19	180
	max	254	115	305	40	
SL906	min	76	19	116	19	225
	max	254	115	305	40	

SL904/906 are fully servo machines that employ 3 and 4 head carton feeders respectively. With a standard 12" pitch the SL906 can operate at 225 cpm.

Standard features include automatic lubrication, servo assisted and tool-less size changing.



Robotic solutions

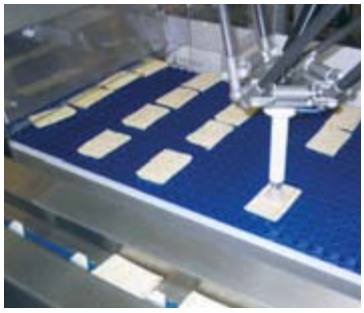
Bradman Lake is an innovator of flexible automation using parallel axis robotics technology. The company not only offers top load cartoning solutions using the proven robot picking of products from a racetrack mechanism but we supply the ever increasing demand for pick and place feeding from a random source, using vision based technology.

Robots can replace manual feeding in many applications. Automation using robots provides a strong case for use in the food industry where incidences of repetitive strain injury and lost time in production are key factors for companies moving to use robot technology. Robots have become simpler to use, cost significantly less and the technology has evolved for use in a broad range of industries.

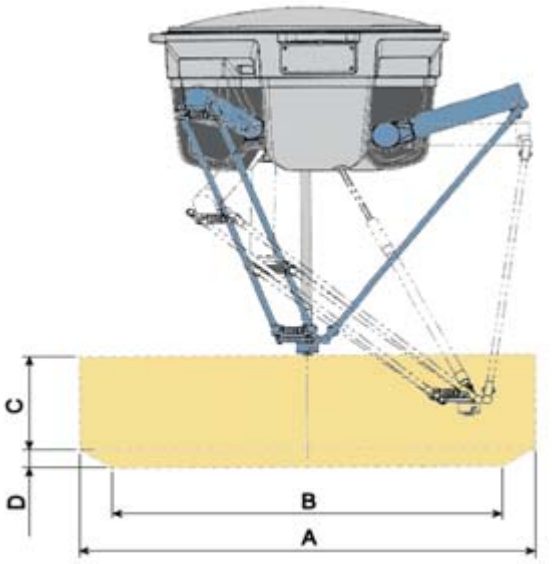
The increasing demand for user operational plant flexibility without sacrificing performance has given the Bradman Lake Group significant opportunity in the core industry sectors in which it operates.

The group's end and top load cartoning machine range, flow wrapping machines and case packers interfaces seamlessly with the new robot technology that we can offer our world wide customers.

With our global partner ABB we have developed equipment that detects an object using vision technology which enables the robot to track fast moving conveyor belts with high speed accuracy. Using the IRB 360 FlexPicker™ from ABB, this robot is the latest Delta style robot with 4-axis robot kinematics.



Product presented from cooler for robot picking and placing into flow wrapping machine infeed or empty case.



The robot's key motors and gear drives are fitted in the body of the robot, minimising the mass of the moving arm and allowing for fast acceleration. Although the robot picks the product, the individual item must be recognised first. This is achieved using single or multiple cameras along with highly scaleable PC application software and appropriate controller to steer the robot.

The Bradman Lake / ABB system robotic vision package can be integrated into our complete range of end and top load cartoning machines, flow wrapping and case packing machines as stand alone units or as part of a system.

- **Repeatability to within 1mm (depending upon speed)**
- **Wash down and stainless steel versions available**
- **Lubrication free joints**
- **Industry proven control systems**
- **The robot arms and end effectors are made of high performance plastics and aluminium and have been optimised for low weight, high strength and long life**
- **Monobloc integrated machine system**

Technical data

Robot model	Capacity kg	Dimensions mm A	B	C	D
IRB 360-1/800	1	800	n/a	200	n/a
IRB 360-1/1130	1	1130	967	250	50
IRB 360-3/1130	3	1130	967	250	50
IRB 360-1/1600	1	1600	1440	300	50

Top load case packing

MX1200 case packer, flat pack loading multiple cases

Flat pack infeed to DRT

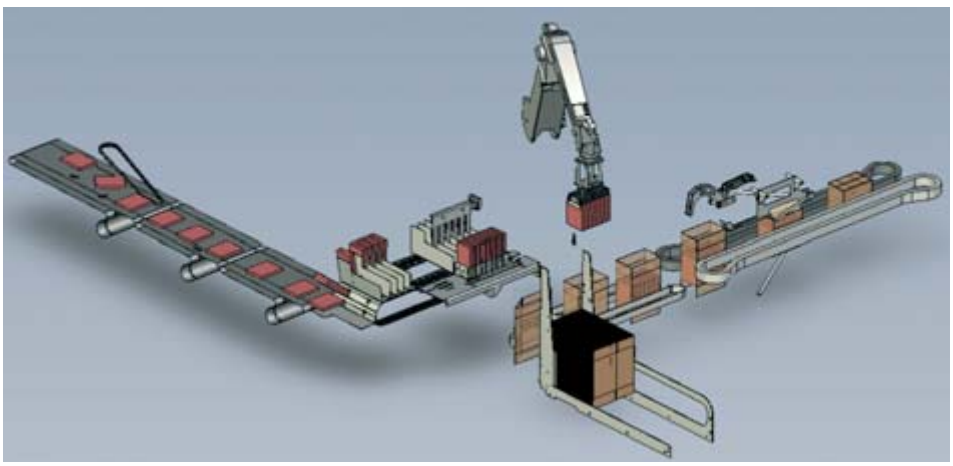
Robotic top load case packers are available in two variants, the MX600 and the MX1200. Each of these variants comprises three main modules: case erection, case loading and case closing. Both machines employ an ABB model IRB260 industrial robot complete with vacuum and/or mechanical end of arm tooling (EOAT).

Case erection and delivery is via a dual axis servo system that synchronises each case into 'lugged' case management belts. The lugs confine and transport the case ensuring case squareness. Cases are indexed progressively to each loading station with precise servo motion.

The machines can be supplied with flat belt or dual race track (DRT) infeeds to suit a variety of product types and collation formats. Machines can also be supplied with two infeeds for example a flat belt and a DRT infeed to allow production to switch from 'flat packing' to 'on edge' packing for shelf ready display packs. The machines can pack both RSC and HSC cases with case closing by tape, hot melt glue or both.

Size changing is tool-less via hand-wheels and digital indicators.

See data sheet R14



On edge infeed to DRT

MX600 & MX1200 case packers

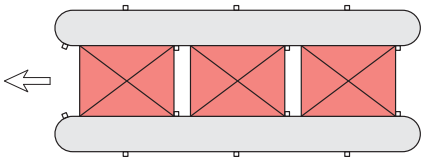
MX1200 robotic top load case packers load multiple cases at a time using progressive loading principle to fill the cases as they are indexed through the loading station. This method is generally used for flat packing layers of product where the collation is formed inside the case with each robotic placement cycle. Progressive loading maximises the machine's throughput and ensures that filled cases are released one at a time into the flap closing and sealing module.

MX600 robotic top load case packers are primarily designed to pre-collate a single layer collation, normally product 'on-edge' or 'on-end'. A single case is loaded with each robot cycle. Multiple cases can be loaded in certain circumstances.

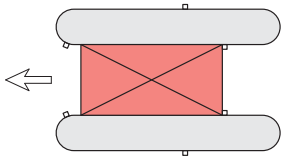
See data sheet R14

Mechanical / vacuum EOAT lifting a product on edge collation for shelf ready display

MX600 case packer with DRT collator

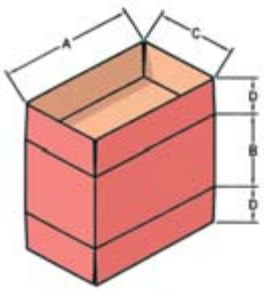


MX1200 loading 3 cases

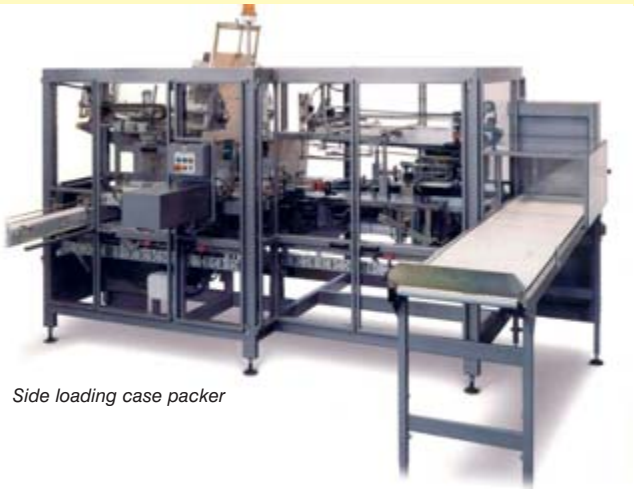


MX600 loading a single case

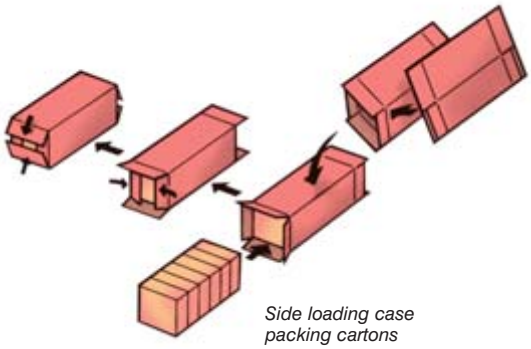
Model		Carton Dimensions				Max
		A	B	C	D	Speed
MX600	min	200	125	150	75	24
	max	600	450	400	200	
MX1200	min	200	125	150	75	24
	max	600	450	400	200	



Side load and bottom load case packing



Side loading case packer

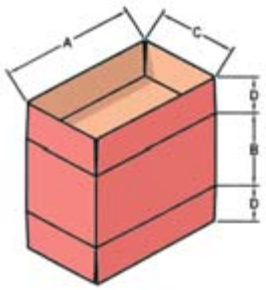


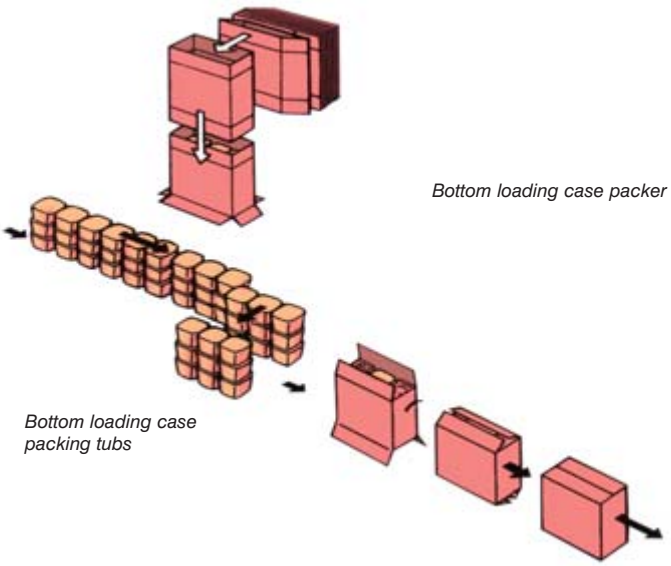
Side loading case packing cartons

Side load and bottom load case packers pre collate products into the required formats before loading them into standard RSC cases. Selection of the style of machine is dependant upon the type of product, for example bottom loading is used for bottles or applications where a product must remain upright. Side loading is particularly suitable for cartons especially where the top end of the cartons must be visible upon opening the case flaps. Both machine types can be supplied with either tape or glue closure.

See data sheets R15 & R16

Model		Carton Dimensions A	B	C	D	Max Speed
SLCP	min	200	125	150	75	15
	max	600	450	400	200	
BLCP	min	200	125	150	75	12
	max	600	450	400	200	



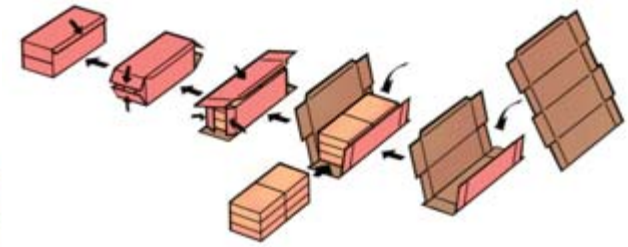


Bottom loading case packing tubs

Bottom loading case packer

Wraparound case packing

WR5 wraparound case packer inline version



WR5 wraparound case packer producing full cases

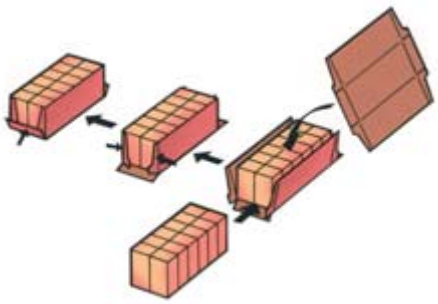
Wraparound case packing is an alternative to loading products into pre formed cases or trays. Advantages that come from using this process are higher speed of operation and a minimal clearance between product and case.

The Bradman Lake range of wraparound case packers is a family of indexing machines consisting of 4 models ranging from a 2 station model capable of packing at 10 cases per minute up to a 5 station model that can produce up to 30 cases per minute.

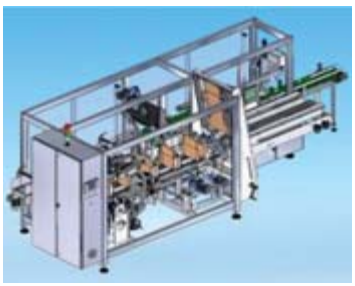
All models are capable of producing full wraparound cases, skeletal cases, low wall trays and high wall trays. Case designs incorporating tear off sections for shelf ready display packs can also be accommodated.

All models can be supplied with a dedicated infeed collator to handle various product types, including cartons, cans and bottles.

See data sheets R17 & R18



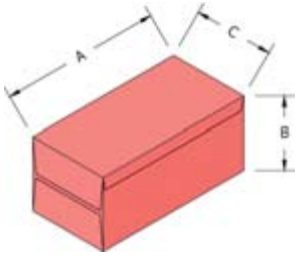
WR3 wraparound case packer producing high wall trays

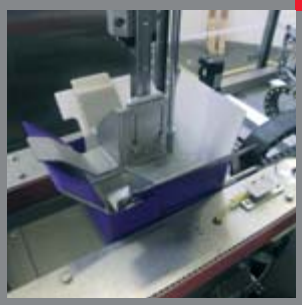


Model		Carton Dimensions			Max
		A	B	C	Speed
WR2	min	200	100	150	10
	max	560	320	330	
WR3	min	140	100	100	15
	max	600	350	400	
WR4	min	140	100	100	20
	max	600	350	400	
WR5	min	140	100	100	30
	max	600	350	400	

Wraparound tray packing can also be integrated with shrink wrapping

See data sheet F17





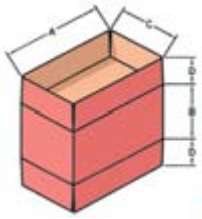
Case and tray erecting

Case Erecting

The MX600CE case erector erects RSC and HSC cases and seals the bottom flaps with hot melt glue (tape seal optional). To maximise its throughput speed the machine incorporates servo drives for case extraction and case delivery.

See data sheet R19

Model		Case Dimensions A	B	C	D	Max Speed
MX600CE	min	200	100	125	60	30
	max	600	450	400	200	



MX600CE case erector

Tray Erecting

A lower speed machine capable of erecting heavier gauge end of line packaging trays. The Bradman Lake range of tray erectors can produce either low wall or high wall trays using hot melt glue to seal the corners. These machines can be used as stand alone equipment or can be supplied as part of a tray erecting, tray loading and shrink wrapping system. Change part tooling is generally dedicated to a particular tray size but for applications where many different tray sizes are required an adjustable female former can also be supplied to reduce the number of change parts required.

See data sheet R20

Model		Blank Dimensions Length	Width	Speed
TE 50/30	min	220	100	40
	max	500	300	
TE 60/40	min	220	100	30
	max	600	400	
TE 90/70	min	220	100	20
	max	900	700	

TE60/40 tray erector

TETL monobloc tray erector/loader

Combined Tray Erecting / Tray Loading (TETL)

The Bradman Lake TETL was initially designed for the tray packing of aerosol and other related products in line with legislation for transportation. It combines a TE 60/40 tray erector with a pick and place tray loader, forming an integrated single machine.

The Bradman Lake TETL combines a TE 60/40 tray erector with a pick and place tray loader, forming an integrated single monobloc machine.

To maximise throughput the machine loads more than one tray at a time.

See data sheet R21

Model		Blank Dimensions Length	Width	Speed
TETL	min	220	100	30
	max	600	400	

Case erecting integration & typical end of line collators

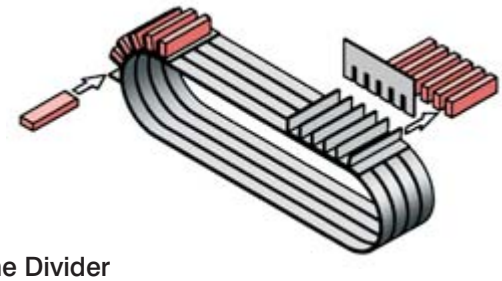
Case Erection Integration

Bradman Lake 'crash lock' carton / case erector interfaced with a DRT collator top loader.

The system loads flow wrapped products into either corrugated board cartons or the infeed of a multipack flow wrapper.

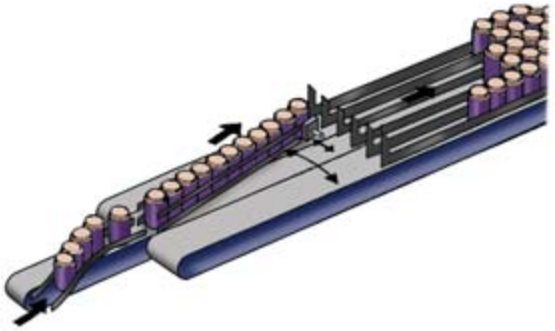
Dual Race Track (DRT)

A DRT is used to create collations of cartons, bags or flow wrapped packs and can produce either 'flat pack' or 'on edge' collations. The DRT consists of two pairs of servo driven belts or chains with flights attached to each pair to form pockets that are sized to suit the product. The dual drive ensures that the infeed collating process is totally independent from the collation discharge process.



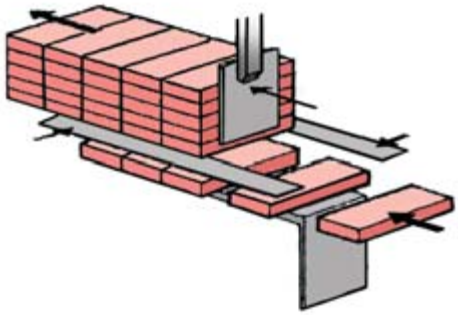
Lane Divider

Lane dividers are used to create multiple lanes of products from a single lane infeed and can be used to pre collate cartons, bottles or cans. The lane divider arm is servo controlled to ensure accurate repeatability and simple size changing.



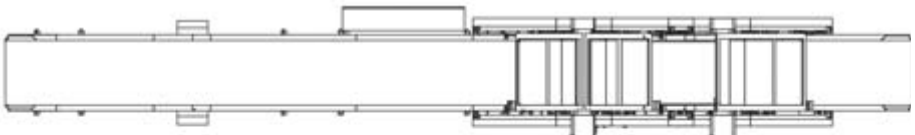
Stacker

Stackers are used to create collations of flat or on edge cartons by lifting and latching them a row at a time. The lifting operation is servo controlled, while the latching is by spring loaded latch plates. For lower speed applications a stacker will produce a single collation whereas for higher speed applications it is normal to create multiple collations at the same time.



Turnkey solutions

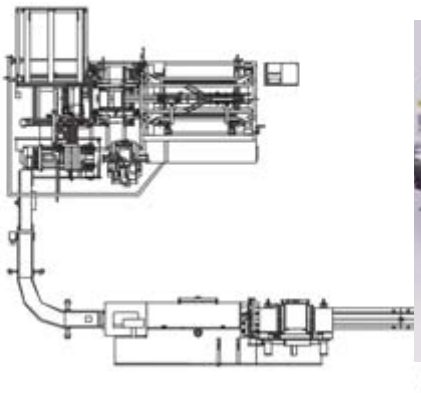
Systems



The system comprises:

- 2 station ADS c/w in production refeed
- Bar turn units
- Inline phase feeders
- FT120 primary wrap flow wrappers
- DRT top loaders
- FT120 multi-pack flow wrappers
- MX600 case packers

The system flow wraps, multi-pack flow wraps and case packs moulded chocolate bar products.



Bradman Lake Group
Integrated Packaging Technology

Turnkey solutions

Systems

The system comprises:

- **Trombone buffer**
- **Product orientation feeder (POF)**
- **Inline phase feeder**
- **FT120 primary wrap flow wrapper**
- **MX600CE case erector**
- **Dual loading DRT**
- **FT120 multi-pack flow wrapper**

The system buffers, orientates and flow wraps randomly fed product. The flow wrapped packs are then either loaded into cases or the infeed of a multi-pack flow wrapper.

The system comprises:

- **Cascade loaders**
- **SL904 end load cartoner**
- **Twisted slat conveyors**
- **Lane divider**
- **WR5 wraparound case packer**

The system accepts bags of cereal from two VFFS bagging machines and loads into the infeed of a high speed cartoning machine. Cascade loaders buffer and synchronise the product into the infeed without the need of timing the VFFS with the cartoner. The cartons are then up-ended, collated and case packed.

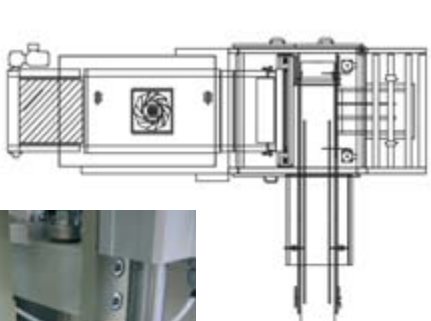
Turnkey solutions

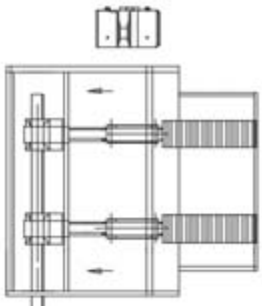
Systems

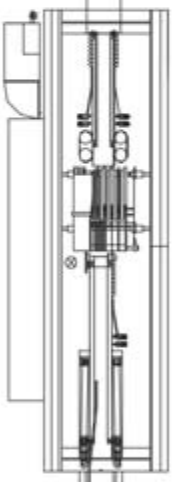
The system comprises:

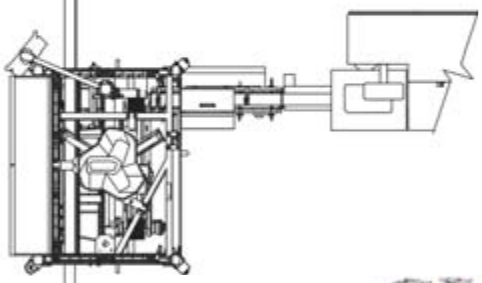
- **HSS carton erector**
- **FT120 flow wrapper**
- **Top loader - DRT**
- **IL250 inline closer**
- **RTSW shrink wrapper**

The system erects cartons and top loads flow wrapped product. The cartons are automatically closed, an on edge collation is formed and finally shrink wrapped.





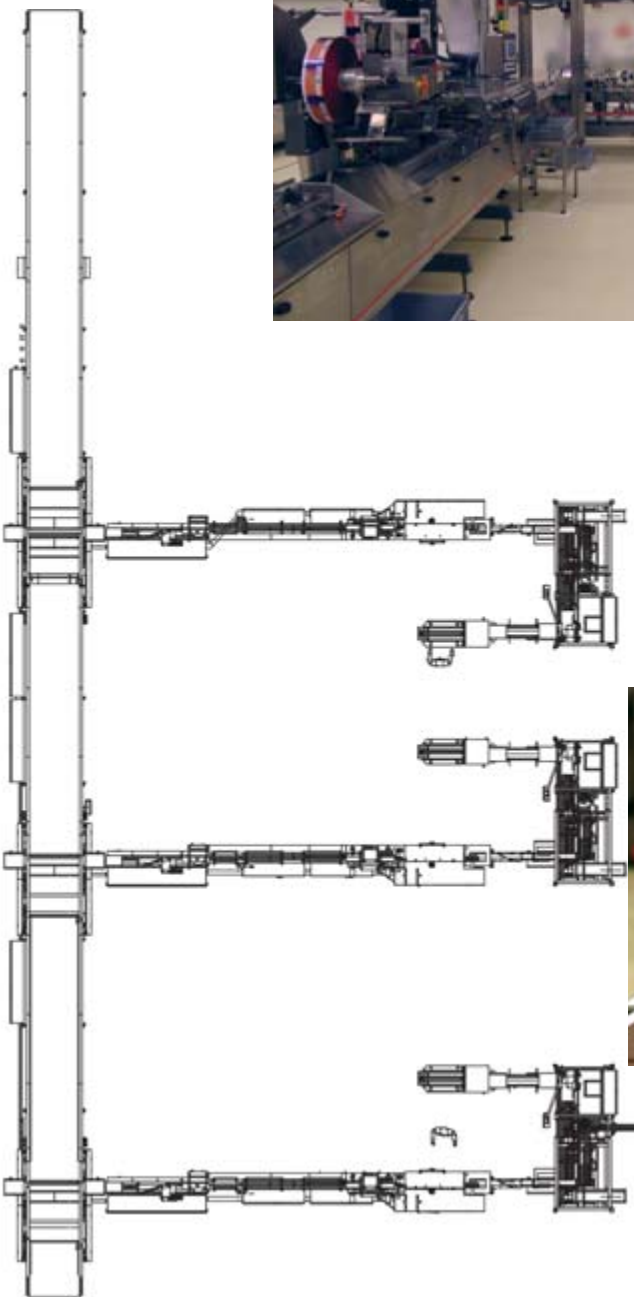


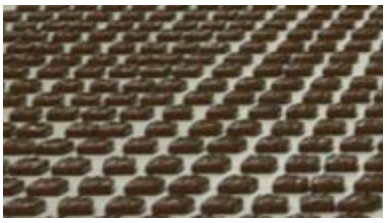


The system comprises:

- **Multi-station ADS with “in production” refeed**
- **Primary FT120 flow wrappers**
- **Crash lock case erector**
- **DRT top loader (non robotic)**
- **FT120 multi-pack flow wrapper**

The system automatically distributes to one of three wrapping legs. Each leg primary wraps flow packs, then either top loads into erected cartons or feeds collations in line to a multi-pack flow wrapper.





Turnkey solutions

Systems

The system comprises:

- FT120 flow wrapper
- HS carton erector
- Dual loading robotic top loader with flat pack and on edge configuration
- Lid applicator

The system comprises:

- MX600CE case erector
- Dual loading DRT top loader cartoner and multi-pack loader
- Primary flow wrapper
- Multi-pack flow wrapper

Dual loading of product into either multi-pack flow wrapper infeed or directly into a carton

Alternative machine configurations

Based on a top loader, this alternative configuration uses an extended length DRT complete with 2 trains of pockets per pair of belts (4 trains) multiple carton layers are collated (flat pack style) and transferred to either the 'on edge' servo loading station or the 'flat pack' robot loading station.

On edge – Product is pushed from the DRT into a lowerator (down stacking). The mechanism lowers allowing subsequent rows to be collated above. When complete, the collations are loaded into three cartons that have been inverted through 90°. The loaded cartons are lowered and replaced onto the conveyor and exit the loader.

Flat pack – Product is transferred to the robotic loading station by the DRT. Multiple products are picked, separated into groups by the robot end of arm tool and placed into multiple cartons. When the required number of layers are present in each carton, the cartons are discharged.

The top loader is also designed to load collations of flat pack product into the infeed of a FT120 multi-pack flow wrapper. The multi-pack infeed will extend into the top loader alongside (LHS) the DRT. (see above) The robot will pick and place groups of product directly into the infeed pitch by tracking the infeed speed and depositing at synchronised velocity.

An MX600CE carton erector produces the two styles of shelf ready cartons. For 'on edge' packing the cartons will be push diverted onto the declined carton feed conveyor, whilst conventional 'flat pack' cartons will progress around the curve and enter at a standard level (900mm +/- 50).

Another example of alternative top loading system is pictured right. The DRT has two infeed positions; track level, to collate 'flat pack' layers or DRT centre line level which will up end the product and create an 'on edge' collation.

The illustration shows 'on edge' product pushed from the DRT onto a pre-load station. The product is 'conditioned' (gaps closed), a vacuum platen lowers, collects the product and continues downward through opening 'bomb doors' into a pre erected corrugated high wall tray below.

This machine will also layer collate products flat using an ABB FlexPicker robot.

Trays are loaded on the same conveyor as previous format but managed downstream at the robot load station. Filled cartons that exit this machine receive glued lids applied by a variation of an RA60 closer.

Servo pusher and servo vertical loader

Lid applicator with glue closing

Total customer care

At the Bradman Lake Group we understand the challenges facing our customers and pride ourselves on our exemplary service. Our specialist after sales teams are dedicated to supporting you and your business with commitment and professionalism.

With the Bradman Lake Group, you can be confident that our support and expertise continue well beyond the initial installation phase. Whether you need remote or on-site technical service and support; spares, or change parts; training; equipment modifications; or any other form of support we are here to support you.

Spare Parts and Ancillaries

Genuine Spares

As the original manufacturer of your machinery, we are the sole supplier of original parts - all designed to our high standard to 'fit first time', securing optimum performance and lifespan efficiencies.

Advantages include:

- Maximum production 'uptime'
- Eliminates the false economy of 'non genuine' spares
- Our fastest moving spares are available ex-stock

In order that we can remain responsive to your requirements we hold complete machine records to ensure full back-up, technical support so that advice for your equipment is readily available.

Change Tooling

We recognise that all products have a lifecycle, which means that our machines are designed to be versatile and adaptable to suit your changing requirements.

Our after sales teams have in-depth, expert knowledge and we can advise you on product and pack format changes as well as upgrades available for your equipment.

Services include:

- Dedicated design change process and manufacture.
- Quick delivery of conversion and upgrade equipment ensuring your new products are launched to specification and to budget.
- Installation and commission of change parts to suit new applications and subsequently improve the skill base of your operators/engineers to ensure optimum line productivity.

Service Visits

The ongoing development of our multi-skilled Service Teams ensures that we are equipped to respond quickly and effectively to your service requirements, on-site training and repairs.

Naturally, our field service engineers work alongside your own engineers and operators to communicate adjustments, amendments and additions made to your equipment; provide training where required; recommend improvements in procedures and suggest best practices to ensure that your equipment continues to perform in a way that not only meets, but exceeds your expectations.

Service Agreements

We will be pleased to review your individual circumstances and requirements to tailor a specific service profile to suit you and your production demands.

Our service agreements provide a proven range of service engineering support products including:

- Preventative maintenance plans
- Spares discounts
- Agreed response times
- Remote monitoring
- Refresher training programmes

Please contact our Service Teams to discuss how a Bradman Lake Group service agreement can help maintain your equipment in peak condition.

Training

We believe that the best way to enhance the efficiency of your installation is through the training and development of your people.

To secure optimum performance of our installations, we offer a range of training programmes which facilitate operator and engineer development and provide you with consistent 'in-house' capabilities. Training solutions are bespoke and can be delivered on a one-to-one or group basis and to staff at all levels of your organisation.

Our training packages include:

- Initial installation training/equipment familiarisation
- Operator training; efficient day to day operation including troubleshooting

- Maintenance engineer training
- Routine refresher training; maintaining consistent employee skills standards

Health Checks

To ensure that your machinery and systems perform at optimum performance and to establish effective business relationships, we can offer a programme of 'Health Checks' on your equipment by our skilled and experienced service teams including:

- Scheduled survey visits with reports and recommendations
- Complete system overviews and process evaluation
- Project reviews to identify potential solutions and potential cost savings
- Cost/benefit reviews
- Updates on immerging technologies; recommendations for new solutions and/or improvements

Performance Upgrades

We can provide expert advice on packaging solutions, conversions and upgrades to maintain and increase your commercial advantage. Following years of providing this service to the owners of Bradman Lake equipment, we have now expanded this to incorporate other manufacturers flow wrapping and robotic cartoning equipment.

These services include:

- Integration of leading edge servo motion and control package
- Enhanced user interfaces
- Improved fault diagnostics
- Enhanced performance and efficiency
- Delivery of increased output and uptime
- Upgrade bulletins to keep you informed of the latest developments
- Design out obsolescence to extend the working life and productivity of your valued assets

Refurbishment Services

Our comprehensive refurbishment programmes are designed to provide cost effective solutions to upgrade your machinery, return it to an 'as new' condition and ultimately deliver improvements in performance and output.

- Graded refurbishment programmes with transparent specifications/costing
- Service exchange module schemes to minimise production downtime
- Return to base refurbishment projects offering full technical design/manufacturing resources on hand
- On-site refurbishment programmes
- Rotational refurbishment schemes with the benefit of minimal production downtime

Process Improvement Programmes

As a direct result of our success supplying applications to the global marketplace, we have acquired a comprehensive knowledge and experience in the packaging industry.

Our engineers are specialists in all principals of design, technology and control process disciplines. Our skilled team are equipped to work in all packaging line environments (not just Bradman Lake Group equipment systems) and have the expertise to recommend and implement improvements to your entire process line.

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DISTRIBUTION SYSTEMS
STORAGE SYSTEMS
FLOW WRAPPING
CASE PACKING
SHRINK WRAPPING
CARTONING
ROBOTICS
ROLL WRAPPING

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