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CATALOGUE

MACHINE RANGE 2020

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CONTENTS

Introduction.....	2
Machine selection.....	3
TPM range.....	4
TPML/TL range.....	5
TPM4.....	6-7
TPM-Lite.....	8-9
TPM-Cub.....	10-11
TPML.....	12-13
TL5-E.....	14-15
TTP.....	16-17
ATL.....	18
Disclaimer.....	19

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TPM RANGE RADIAL TUBE PERFORATION

Sanderson Machines is proud to present our machinery range for 2020. We have updated our range of machines to incorporate exciting new features, upgrades, and improvements on our tried and true technology as well as some all-new machines (including another world-first from Sanderson Machines)

Look inside to find out more. We have a machine to suit every budget, requirement, and application.



ABOUT US

Sanderson machines are designed and produced by Sanpro Industries in New Zealand.

We are a small family run business with a solid reputation within the exhaust manufacturing industry. Our machines have a proven track record for reliability and efficiency, ultimately increasing our customers productivity and saving them time and money.

Sanderson machines are the product of decades of extensive research and development, and our team stands behind every machine we sell with a complete customer satisfaction guarantee and technical support available 24/7.

We know every application has different tooling requirements, so we would love to work closely with you to build a customised solution to suit your particular needs.

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A QUICK LOOK AT OUR RANGE



TPM4

The fastest tube perforation machine on the planet



TPM-Lite

A lower volume, more affordable TPM4



TL5-E

Electro-Pneumatic spiral louvering



TPML

Internal linear tube perforator



TTP

Bent tube perforation made possible



TPM-Cub

The TPM-Lite, made even simpler

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TPM - RANGE

Radial Tube Perforation



Feature:	TPM4	TPM-Lite	TPM-Cub
Minimum diameter	22mm	22mm	22mm
Maximum diameter	102mm*	76mm	76mm
Minimum wall thickness	0.5mm	0.5mm	0.5mm
Maximum wall thickness	2mm†	2mm†	2mm†
Minimum tube length	100mm	100mm	100mm
Maximum tube length	760mm	680mm	680mm
Minimum punch diameter	2mm	2mm	2mm
Maximum punch diameter	8mm	6mm	6mm
Punch speed per minute	6,400	2,500	1,800
Perforation zones	5	1	1
Punches in head	8‡	8	8
Materials	Mild/stainless steels	Mild/stainless steels	Mild/stainless steels
Power	480V	480V	480V
Pneumatics	Yes	Yes	Yes
Hydraulics	No	No	No
Control type	PC based HMI	HMI	Analogue
Punch types	Round, half moon	Round	Round
Straight pattern	Yes	No	No
Staggered pattern	Yes	No	No
Spiral pattern	Yes	Yes	Yes
Length	1500mm	1200mm	1200mm
Width	700mm	785mm	785mm
Height	1350mm	1425mm	1425mm
Weight	1050kg	370kg	330kg

*contact the factory for larger diameter options
†dependent on punch diameter and tube material
‡contact the factory for custom head options

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TPML / TL - RANGE

Linear Tube Perforation / Spiral Tube Louvering



Feature:

	TPML
Minimum diameter	50mm
Maximum diameter	102mm
Minimum wall thickness	0.5mm
Maximum wall thickness	1.8mm*
Minimum tube length	50mm
Maximum tube length	280mm†
Minimum punch diameter	2mm
Maximum punch diameter	4mm
Perforation zones	8
Punches in head	Custom
Materials	Mild/stainless steels
Power	480V
Pneumatics	Yes
Hydraulics	Yes
Control type	PC based HMI
Punch types	Round, walker flat/ double flat louver
Straight pattern	Yes
Staggered pattern	Yes
Spiral pattern	No
Perforating method	Internal
Length	2500mm†
Width	600mm
Height	1400mm
Weight	1600kg

Feature:

	TL5-E
Minimum diameter	38mm
Maximum diameter	76mm/127mm*
Minimum wall thickness	0.8mm
Maximum wall thickness	2.4mm
Minimum tube length	50mm
Maximum tube length	820mm
Perforation zones	1
Cutter wheel tooth count	10, 16, 18, 24
Materials	Mild/stainless steels
Power	480V
Pneumatics	Yes
Hydraulics	No
Control type	Analogue
Punch types	Spiral louver
Straight pattern	No
Staggered pattern	No
Spiral pattern	Yes
Perforation method	External
Length	1000mm
Width	700mm
Height	1200mm
Weight	370kg

*127mm upgrade available for TL5 and TL5-E, 152mm special order head available for TL5

†1300mm length option available

*dependent on punch diameter and tube material

†contact the factory for longer length options

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TPM4

The Fastest Tube Perforation Machine on the Planet

The TPM4 is our flagship machine and sets the standard for the tube perforation industry today. With an 8* punch-array head, independent servo-driven axes, flexible PC-control, 4-inch capacity†, and a staggering 6,400 holes per minute punch speed, the TPM4 is the benchmark in OEM exhaust production.

New changes for the 2020 model year include a high-pressure air operated tube chuck, which negates the need for hydraulics as well as improving dimensional accuracy on perforations, a carriage redesign which enables the first row of holes to be punched just 25mm from the tube edge, an upgraded linear ball-screw for improved durability, and an air-operated system to dump waste slugs from the machine at set intervals, improving ease of maintenance. As well as all this, the machine has been made lighter and with a smaller footprint, making it even easier to set up cell operations in factory. Combine this with one of our automation solutions, and you'll have a fast, reliable system which can fulfil almost all tube perforation needs.



Within the TPM4's 8-punch head are 8 tube clamps, which ensure positive alignment of the tube regardless of how many punches are actually being used. The TPM4 is controlled by an integrated Windows based PC, which allows the user to program a part, and quickly save it for future part runs. Within the system, a user can program the number of holes around the tube, the angle and distance between rows of holes, and have up to 5 individual perforation zones, each capable of having its own unique pattern on a single tube. Spiral patterns, staggered patterns, and straight rows are all easily created by simply programming the machine via the touch screen interface.

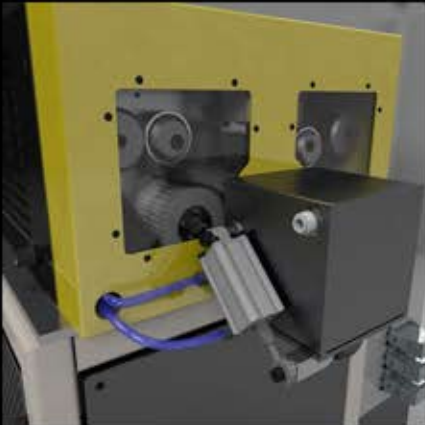
*Contact the factory for custom punch head options
†6 inch capacity available upon ordering TPM4 - not available as upgrade

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TPM4

The Fastest Tube Perforation Machine on the Planet



The TPM4 is easier to operate than ever. Not only are tool changes outstandingly quick at under two minutes. All tooling elements are designed to be changed as quickly as possible, including the collets and head tooling, which can be removed without the use of tools. The mandrel and die have been redesigned too, allowing for quick die changes without having to recalibrate, all while using the same mandrel.

The linear and radial axes are servo-controlled, while the punch drive has a powerful A/C motor, allowing for incredibly fast and accurate perforation. Maintenance is made easier on the TPM4 too, with an automated slug-dumper for clean operation, and no hydraulics, making for simpler and cleaner maintenance. All greasing, cooling, and lubrication systems are automatic, and the machine will lock-out when a regular maintenance interval is reached, or if the machine senses that other maintenance is required. This makes the TPM4 perfect for high-volume production on the factory floor and provides accountability that only qualified maintenance personnel have performed maintenance on the machine, ensuring the longevity of the machine.

The TPM4 can also optionally be ordered as a TPM6, with the addition of a larger 6" (152mm) capacity head*. Not only that, but we also offer custom head options if your application requires it, or we can work with you to come up with a solution to solve your complex perforation requirements.

Each TPM4 is made to order, and you may choose from a range of accessories or upgrades when ordering a new machine. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

*6 inch head only available when ordering new TPM4
not possible to install as retrofit upgrade part

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TPM-Lite

For Lower-Volume Perforation

The TPM-Lite takes the main features from the TPM4 and refits them in to a smaller, more economical package. Perfect for lower volume production numbers, the TPM-Lite can still produce straight, staggered, or spiral patterns similar to the TPM4, but with a lower speed and slightly limited tube specification. Fitted with a 3-inch capacity head, the TPM-Lite still utilises the same design and 8-punch array as the TPM4. Like the TPM4, the TPM-Lite is able to be used with fewer punches without sacrificing accuracy or tube alignment.

Tooling is simple to set up and tool changes can be achieved in under 15 minutes.

Both linear and radial axes are controlled from a single servo motor, linking the radial and linear pitch values, while the distance between rows (linear pitch) is controlled via the touch screen HMI.

Within the HMI, a user can set axes home, open and close the chuck, check for machine faults, and control other parameters. A user can also set up quickly set up and save a new part for future production, with the ability to save up to 45 individual parts.

The TPM-Lite is smaller and lighter than the TPM4, with an integrated electronics cabinet. It is equipped with sturdy locking castors and is able to be moved easily about the shop floor, making setting up cell operations incredibly simple.



The TPM-Lite has an automatic coolant system, while lubrication of the tooling, gears, and slides is done manually. The mandrel is designed to accept a standard shop-vac for waste slug collection.

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TPM-Lite

For Lower-Volume Perforation

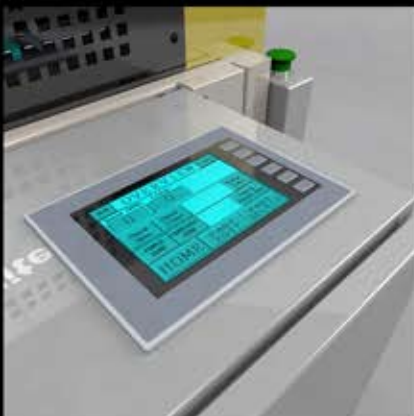


The TPM-Lite is the ideal solution for custom tuning shops, smaller exhaust manufacturers, or those looking to enter the aftermarket exhaust and muffler market. It has enough capabilities to satisfy most perforation applications, while still being small, light, mobile, and competitively priced to suit smaller businesses. It is also simple and fast enough to set up and produce prototype parts with ease. Once satisfied with a prototype part, the user can save those parameters to the on-board HMI with the push of a button, ready to be recalled at any time for future production.



The TPM-Lite is simple and user friendly. Programs are controlled via the intuitive touch-screen interface, and protections can be added to lock out unauthorised access, ensuring only approved users can access the programming and maintenance screens if required.

Although lower specified than its big brother the TPM4, the TPM-Lite still packs a punch. A 3" capacity, 2,500 holes per minute punch speed, powerful AC drive punch motor, responsive servo-motor linear drive, minimal tube distortion and burring, and a quick tool-change speed with only 2 bolts to remove to access the head tooling, the TPM-Lite is a robust, versatile, and quick machine.



Each TPM-Lite is made to order, and you may choose from a range of accessories or upgrades when ordering a new machine. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

When you order a TPM-Lite, a Sanderson technician will provide installation and training support. We can also provide support over the internet or send out a technician within 48 hours to anywhere in the world.

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TPM-Cub

Low Cost Tube Perforation

The TPM-Cub is the best solution for affordable tube perforation. Borrowing the head from the TPM-Lite, which itself is derived from the world benchmark TPM4, the TPM-Cub manages to do away with all non-essential features to provide a robust, consistent and fast perforation system while being very economically priced.

Ideally suited for use in emerging markets, or companies just entering the custom exhaust market, the TPM-Cub provides a reliable, simple, and easy to use platform for perforating tube. Mounted on sturdy locking castors, the TPM-Cub can be positioned anywhere within a factory to set up production cells with ease.

The punch head is driven by a powerful AC motor and gearbox, which also drives both the linear and radial axes of the machine through a mechanical transmission, while cooling and lubrication are performed manually. There is no computer control interface in the machine, meaning the TPM-Cub is extremely simple to use and operate.

Spacing between rows of holes is controlled by selecting the correct pulley from the provided set and installing it via the lockable rear door. The TPM-Cub produces a spiral pattern from factory but is also capable of replicating staggered or straight patterns by simply changing the pulleys. Linear spacing pulleys are quick release, and there is no need to change belts as you change pulleys, the belt simply needs to be re-tensioned and the machine is ready to go again. Because the axes are mechanically linked, the TPM-Cub can only produce rows of 8 holes around, unlike the TPM4.

The perforation zone along the tube can be set with the sliding back and front stops, which need no tools to be adjusted.



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TPM-Cub

Low Cost Tube Perforation



The TPM-Cub is perfectly suited for emerging markets and economies. By doing away with complicated computer control systems and expensive servo motors, machine maintenance and upkeep has been made as simple as possible.

The TPM-Cub is fully lockable to restrict access to only those authorised if required. It is mounted on sturdy locking castors, and is lightweight and easy to move around, making setting up production cell operations in factory a breeze.



The TPM-Cub comes with a range of pulleys for creating different linear pitches along the tube, as well as a pulley selection guide for creating the correct pitch for your specification. From factory, the TPM-Cub is able to produce linear pitches from 1mm-10mm, in 1mm increments. If your application requires something else, Sanderson Machines is happy to custom machine a set of pulleys for your specific application.

Just like the TPM-Lite, the TPM-Cub has a 3" capacity, punches at 2,500 holes per minute, has a powerful AC drive motor, and quick-change tooling with only 2 bolts to remove and a tool change time of under 15 minutes.



Each TPM-Cub is made to order, and you may choose from a range of accessories or upgrades when ordering a new machine. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

Every TPM-Cub is provided with a comprehensive set of video and written instructions, while a Sanderson Technician is available to provide installation and training support online. We can also provide after sales support over the internet or send out a technician within 48 hours to anywhere in the world if required.

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TPML

Linear Internal Tube Perforation

The TPML is the most versatile machine in the Sanderson Machines range. It is able to cut round holes, slots, and double- and single-flat louvers as standard and is designed to run all day in serious manufacturing environments. Not only that, but if you require a custom formed louver, our experienced toolmakers can help realise almost any vision. The TPML does all this while punching from the inside of the tube out.

Sanderson Machines' unique linear punch action allows for extreme flexibility in perforation type, even within a single tube. If you require slots, holes, and louvers in the single tube, it's possible with the TPML.

Because the TPML punches from the inside out, any burring which may occur will be on the outside of the tube, resulting in finished tubes which are extremely easy to deburr if necessary. This, coupled with the total flexibility of perforation type and pattern, gives you total control over the flow dynamics of products.

As standard, the TPML can accommodate tubes between 2-4" (50-102mm) in diameter and up to 280mm in length, with options to increase the length capacity if required. Within the tooling, which can be changed in as little as 10 minutes, the punches are housed, which can be removed or replaced for punches of a different form with no detrimental effect to the perforated tube. The TPML's unique clamp and mandrel and die design ensures there is minimal tube distortion and clean and true punch or louver forms.

Like the TPM4, the TPML is controlled and programmed via an intuitive touch screen PC-based interface, which can be password protected for manufacturing environments, ensuring only qualified personnel are able to access the machine control.



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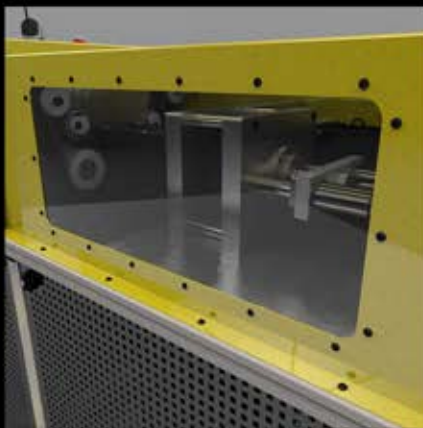
TPML

Linear Internal Tube Perforation



The TPML is the ultimate solution for total perforation flexibility. Sanderson Machines are able to work with you to custom-make punches and dies to suit your unique tube requirements. Parameters and specifications for each part can be set, programmed, and saved on the built-in PC HMI to be recalled quickly for future jobs.

All feed axes are servo-driven, while the punch drive and clamping system are hydraulic, with power transferred through durable ball-screws. Accuracy, speed, and minimal distortion are key focuses of the TPML, with parts being produced to the most demanding specifications.



The TPML is easy to use, with tool changes achievable in under 10 minutes, and a new guard design which includes a viewing window to see the punch drive, sliding main cover for full access to the carriage, and a lockable front door for tooling inspection and changes.



The TPML can be integrated with one of Sanderson Machines' loading solutions for total automation. It is a perfect solution for large scale factory production of parts in the most demanding environments, and it offers total protection and accountability from unauthorised access, with all access panels being lockable and isolated, and programming parameters being password protected in the PC interface.

Each TPML is made to order, and you may choose from a number of accessories or upgrades when ordering a new machine. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

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TL5E Electric Spiral Tube Louvering

The TL5E is an electro-pneumatic version of our TL5, doing away with the need for a hydraulic system while still maintaining the flexibility and durability of the TL5 in a lighter, smaller package. The cutter wheel is engaged by a powerful air ram to pierce the tube, and it is driven by a robust AC drive motor and reduction gearbox. Like the TL5, the TL5E operates with very little vibration and noise. The TL5E is mounted on sturdy locking castors and with its low weight it can be moved to any position in the factory as required with ease.

The TL5E creates a unique patented spiral louver pattern, beloved by the motorcycle and performance car communities. The pattern is customisable in louver size, spiral angle, and cut depth, and these parameters can be quickly adjusted on the machine to find your preference. All adjustment axes come equipped with handy scales, ensuring quick and accurate setup every time. Cutter depth, tube guide-roller position, and die position can all be set without tools, while cutter angle can be adjusted with just 2 bolts. As standard, the TL5E comes with 4 different cutter wheels in 10, 16, 18, and 24 tooth counts, with custom options available to order.

The TL5E is fast, able to produce louvers at a rate of 0.635m/s or 125ft/min. Its simple operation ensures parts are made quickly, with little setup time. There is no computer interface on the TL5E, and all set up is mechanical, making the TL5E very easy to operate. There is the option to control louver patch length with the adjustable back stop and position sensor, or you can program the number of louvers along the tube to your liking using the integrated programmable counter on the control panel.



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TL5E

Electric Spiral Tube Louvering



The TL5E comes as standard with a capacity of up to 3" (76.2mm) but can be ordered with the optional 5" (127mm) upgrade kit, to give even more flexibility, while the standard-length capacity is up to 820mm. The easy to read scales for support roller position and cutter depth (which must be adjusted based on tube diameter) allow for quick setup and accurate repeatability between different tube sizes. There is also a scale for end stop and tube position sensor, meaning louver start/end position and length can be controlled easily and accurately. The programmable counter gives the option to control louver patch length by controlling the number of individual louvers in the tube too.



Tool life on the TL5E is impressive, with durable hardened cutter wheels for creating louvers, and a robust die which can be refaced as needed to ensure accurate and consistent louver forms. The TL5E is a robust machine, with few moving parts and a simple and strong operating system. It is perfect for regular production while also being small, lightweight, and affordable enough to suit smaller production volumes, or those who want to enter the performance exhaust market. Operation of the machine is simple, and it is very quick and easy to learn how to use the machine successfully.



Each TL5E is made to order, and you may choose from a range of accessories or upgrades when ordering a new machine. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

Every TL5E is provided with a comprehensive set of video and written instructions, while a Sanderson Technician is available to provide installation and training support online. We can also provide after sales support over the internet or send out a technician within 48 hours to anywhere in the world if required.

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TTP

Total Perforation Flexibility

The TTP, or Table Top Perforator, is our latest machine, and offers an all new breakthrough in tube perforating technology, **the ability to perforate tubes along a bend**. Different solutions to bent tube perforation have always had their drawbacks, from the dimensional inaccuracies and warping of bending pre-perforated tube, to the slow and costly process of laser perforation. Now, the Sanderson TTP offers accurate and fast bent tube perforation through the use of a new patent-pending design incorporating innovative unique tooling design and the flexibility of robot-guided tube paths. Sanderson Machines' speed and reliability can be used on the most demanding and intricate perforation specifications.

Due to the integration with a 6-axis industrial robot arm, the TTP can not only perforate along the bend of a tube, but also between bends for tubes with multiple bends. This allows for a great level of flexibility in baffle and exhaust design, with more perforations possible in a smaller package.

Tool paths can be programmed and stored in the PC-based machine controller (not pictured) for later recall. The integrated robot can be programmed to guide the tube along almost any path imaginable to ensure that your tube can be perforated as required along nearly any bend. The robot will pause and hold tube position during punch strokes to ensure accurate perforations. Tubes with a bend angle of up to 90° may be perforated.



The perforation head of the machine is hydraulically powered, and houses up to 12 punches* which can be individually shut off via the controller. The TTP robot arm can also be integrated with the TPM4 and a tube hopper to create a fast, flexible tube perforation cell in your factory.

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TTP

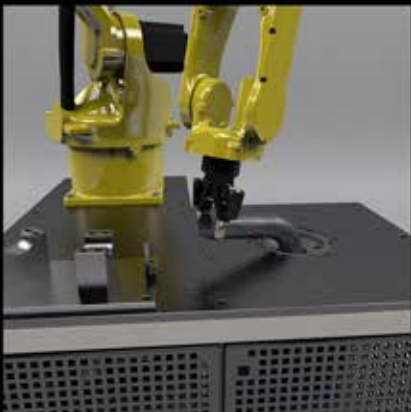
Total Perforation Flexibility



The TTP shares the same speed, reliability, and durability as all other Sanderson Machines. Punches are easy to replace when worn, as is the die. Tool changes can be performed in under 15 minutes, while programming the robot arm is highly intuitive.



The TTP is equipped with the latest industrial robot technology, which can integrate with modern manufacturing environments seamlessly to ensure safe and smooth workflow. Sanderson Machines also offers a range of automatic feeding solutions, from hoppers to auto-loaders, to streamline and speed up production. These can also be used in conjunction with the TPM4, which can be fed with the TTP's robot arm. We also offer a range of integrated tube grippers to meet your individual needs. In certain applications, the TTP may be used without the robot arm. Sanderson Machines will assess your needs to determine what solution will be best for you.



Each TTP is made to order, and you may choose from a range of accessories or upgrades when ordering a new machine. Due to the innumerable different forms bent tubes can take, Sanderson Machines will work with you directly to create a bespoke tooling solution to fulfil your specification. This includes the number of punch housings in the head, and we can create different interchangeable punch heads to suit your tube specifications. Ordering tooling is hassle free, and we can provide tooling via expedited air mail worldwide, if it is not available locally in your region.

When you order a TTP, a Sanderson technician will provide installation and training support. We can also provide support over the internet or send out a technician within 48 hours to anywhere in the world.

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ATL Automated Tube Loading Solutions



Introducing our all new automatic tube loading solution from Sanderson Machines. This machine is electro pneumatically controlled for consistent, clean and reliable operation. By utilising a bulk hopper feeding system you can simply fill the hopper with raw material, press start and walk away. With our new twin gripper design this machine can effortlessly load tubes up to 3 feet in length. With a consistent 4 second load and unload time you can ensure that your deliveries will be made on time everytime.

Get in contact with Sanderson Machines today to see how we can help streamline your production process.

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