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At MTS we have used an extensive array of automatic feeders and tightening systems, which were created by other manufacturers, since our inception in 1996 until the present day. Therefore, a considerable amount of experience in this area has been accrued, and subsequently used in the development of our products.

In 2019, we received numerous orders for collaborative applications with automatic-tightening systems. Since current delivery times from standard suppliers can often frustratingly take more than 20 weeks; we started to develop our own products, and can now

efficaciously aid in helping to satisfy the growing demand for tightening technologies.

Hitherto, we have produced hundreds of tightening systems and automatic feeders; all of which function impeccably for our customers' diverse operations. We presently have four different types of automatic feeders, and ten different types of tightening systems, within our portfolio.

Our main objective is: to develop automatic-tightening technologies and automatic-feeding systems that work flawlessly, and also completely satisfy the intricate needs of all of our customers.



Production facility, MTS Krivá

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We are developing the TIXON product range to help solve the issue of the limited availability of devices, and the lack of services for automatic tightening technologies.

Standard Solutions

✗ Long delivery times

Delivery times from standard suppliers can be in excess of 20 weeks.

✗ Insufficient support

Service and response times are inadequate, and in most cases; the device needs to be sent back to the supplier — painstakingly prolonging the time needed to restore operations.

✗ Lack of spare parts

The availability of specific spare parts for a particular fastening is in excess of 8 weeks.

TIXON from MTS

✓ Fast delivery

The delivery time for TIXON devices is approximately **10 weeks**.

✓ Excellent service

We can provide both warranty and post-warranty services **within 48 hours**.

✓ Availability of spare parts

Standard spare parts are shipped **within 48 hours**. Bespoke spare parts for specific fastenings will be delivered **within 6 weeks**.

The additional benefits of TIXON automatic tightening technology from MTS:

- ✓ Reliability.
- ✓ Unbeatable prices.
- ✓ Our automatic feeders are already equipped with both pneumatic and electrical circuits.
- ✓ We utilise a visual feedback system so that the user can easily determine the current volume of fastenings within the device.
- ✓ A backlit version of your company logo can be embellished on any of our automatic feeders for no additional cost.



MTS currently has four types of feeders in its portfolio to efficaciously facilitate the feeding of various types of components.

Among the most commonly used is the vibratory feeder TIXON VIBRO, which is designed to allow the feeding of components for a vast range of applications.

Another type of feeder is the TIXON STEP, which uses linear movements instead of vibration to transport its components. This significantly reduces the noise levels of the feeder, and at the same time; decreases the levels of dust involved in the tightening process.

Our third feeder is the TIXON SWORD, which uses the rotary motion of a pneumatic cylinder to feed and separate the supplied components. This feeder also achieves significantly lower noise levels, and also produces far less dust.

The fourth type of feeder is designed for pick & place applications. It is used when it is not possible to feed the component directly through the appropriate tube. The component is taken from a retrieval point where only one fastening or component is prepared at a time. This feeder allows for the feeding of more complex parts in terms of shape and size. The TIXON PICK & PLACE feeder can be produced in either the STEP version or the VIBRO version.



We are able to manufacture feeders for these components:

Screws & Bolts



Nuts



Dowel pins



Sleeves



TIXON VIBRO

Vibratory Feeders for fastenings and components



The vibratory feeder works by separating and feeding the components using the action of a vibration drive. It has a wide range of uses for the various types of materials being fed. The feeder has the ability to control the amount of components in the feeder's hopper. It is also possible to attach additional sensors to the feeder in order to accurately monitor the position of the components, and to accelerate the feeding process itself.

With the TIXON VIBRO vibratory feeder; we can handle fastenings ranging in the sizes M3 to M6.



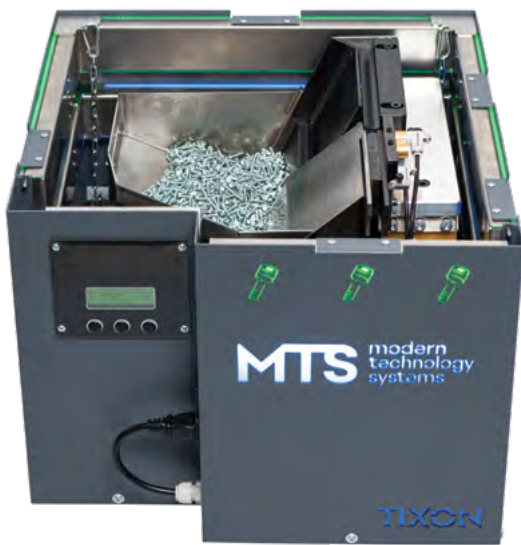
TIXON-V 0.8-AC: includes both the control unit and the pneumatic valves, feeding initiated by one external instruction, visual feedback for the volume of fastenings, volume 0.8L.

TIXON-V 0.8 NC: without the control unit, but including the pneumatic valves, has to be controlled by an external PLC, visual feedback for the volume of fastenings included, volume 0.8L.

TIXON-V 1.1-AC: includes both the control unit and the pneumatic valves, feeding initiated by one external instruction, visual feedback for the volume of fastenings, volume 1.1L.

TIXON-V 1.1 NC: without the control unit, but including the pneumatic valves, feeding initiated by one external instruction, visual feedback for the volume of fastenings, volume 1.1L.

TIXON STEP



Linear Feeders for fastenings and components

This linear feeder feeds and separates the supplied components in a linear movement through the use of a pneumatic cylinder. This paves the way for a wide range of applications for various types of supplied materials. It is possible to control the quantity of the components in this feeder's hopper. This feeder produces significantly lower levels of noise and dust compared to a vibratory feeder— making it highly suitable for clean environments.

With the TIXON STEP linear feeder; we can handle fastenings ranging in the sizes M3 to M10.

TIXON-S 1.7 NC: without the control unit and the pneumatic valves, has to be controlled by an external PLC, visual feedback for the volume of fastenings included, volume 1.7L.

TIXON PICK & PLACE



Pick & Place feeders for fastenings and components

These are some of the most intricate and impressive devices in the Tixon product range. Our Pick & Place feeders are always designed according to our customers' specific requirements—mainly taking into account the desired installation dimensions. In terms of the material being fed; it is possible to choose a vibratory feeder, which is supplemented by a vibratory rail; or a step feeder, which will contain a pair of linear rails.

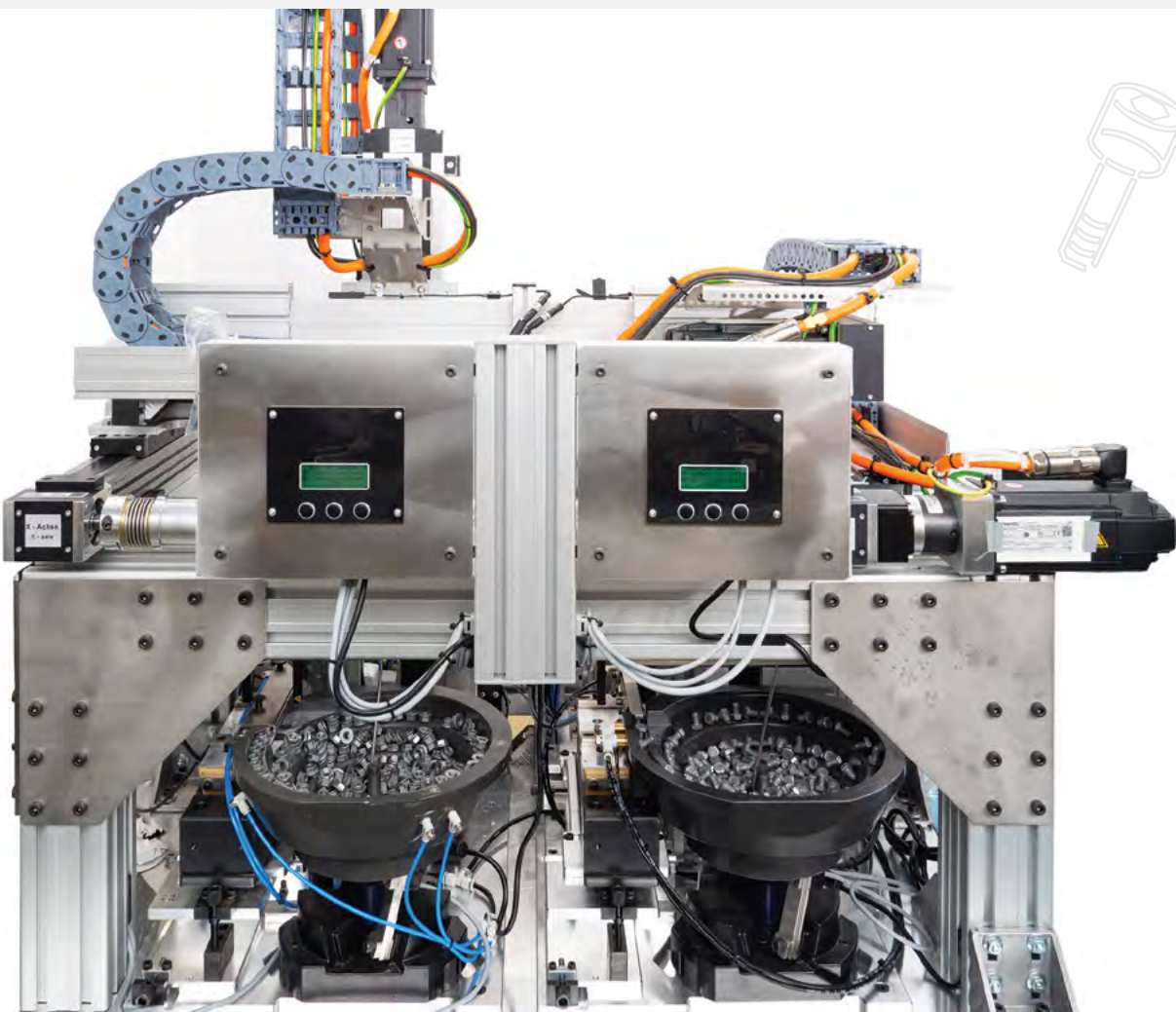
TIXON SWORD



Sword feeders for fastenings and components

This feeder uses the rotary motion of a pneumatic cylinder to feed and separate the supplied components. It provides a wide range of applications for a variety of supplied materials. It is possible to control of the quantity of the components in this feeder's hopper. This type of feeder produces significantly lower noise and dust levels compared to a vibratory feeder— making it highly suitable for clean environments.

TIXON-SW 1.7 NC: without the control unit, but including pneumatic cylinders, has to be controlled by an external PLC, visual feedback for the volume of fastenings included, volume 1.7L.



TIXON HOPPER



Hoppers for Feeders

This is a conveyor storage unit designed for feeders, which increases the volume of components held by the feeder by up to an impressive 6 litres.

- Powered by a 24V motor.
- Possible to add a manual button for starting the conveyor.
- Option for the motor to be placed on the left or right side.

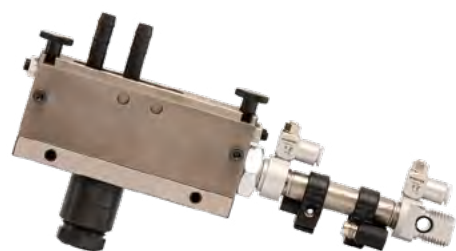
TIXON CLEANER



Cleaner for fastenings and components

If increased cleanliness is part of the specification for the tightening process, we can integrate this device with each of the feeders. In the first position; the fastening is stopped, and the contaminants are vacuumed away. In the second position; the newly cleaned fastening leaves the cleaning unit, and then continues to the tightening section.

TIXON SWITCHER



Switcher for fastenings and components

This is a device that can be integrated between the feeder and the tightening unit. If the use of one feeder for two tightening units is desired; a splitter can be used to distribute the fastenings for both units simultaneously. This splitter is also used when we want to feed different fastenings from two feeders into one tightening unit.



Our tightening units are always specifically designed and constructed according to our customers' requirements.

The 'compact' series of tightening units is intended to equip workplaces populated by people, or where collaborative robots work alongside operators on assembly activities.

The 'classic' series of tightening units is designed for mechanical use in both semi-automatic and fully-automatic production lines. These units are often carried by electric or pneumatic manipulators, or even by industrial robots.



TIXON COMPACT



Tightening Units for Collaborative Operations

This version is suitable for collaborative robot applications, or for work initialised by an operator. The tightening system's head does not include vacuum suction.

TIXON COMPACT VACUUM



Tightening Units for Collaborative Operations

This version is suitable for collaborative robot applications, or for work initialised by an operator. The tightening system's head includes vacuum suction with cup lengths of 50 mm, 70 mm and 100 mm.

TIXON MANUAL

Tightening Units for Manual Operations



This version is suitable for manual workstations where the operator works with the tightening unit. To start the tightening process; a handle with a start button is used. The movement of the tightening system's head is initiated by manually advancing the tightening unit using an internal spring.

TIXON COMPACT PICK & PLACE

Pick & Place for Collaborative Operations



This model is suitable for applications where there is an issue automatically feeding fastenings through a hose. It is suitable for workstations where humans work alongside collaborative robots. The fastenings are relocated using magnetic force rather than a vacuum. This version also has the option to integrate a manual tool-changing system.

TIXON CLASSIC

Tightening Units for Machine Operations



This model is suitable for machine applications that use electric or pneumatic positioning systems; as well as industrial robots. The tightening unit does not use a vacuum to hold the fastenings in place.

TIXON CLASSIC VACUUM MOVEMENT



Tightening Units for Machine Operations

This version is suitable for machine applications that use electric or pneumatic positioning systems; as well as industrial robots. The tightening unit comes complete with a vacuum extractor that has an extra pneumatic cylinder to provide an additional linear feed.

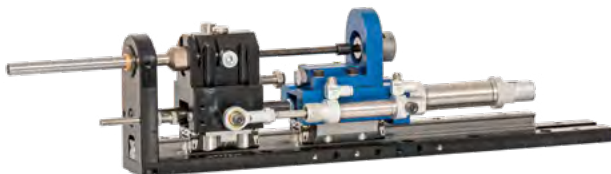
TIXON CLASSIC MOVEMENT



Tightening Units for Machine Operations

This is suitable for machine applications that use electric or pneumatic positioning systems; as well as industrial robots. The tightening unit does not use a vacuum to hold the fastenings, but is equipped with an additional pneumatic cylinder that provides additional linear feeding.

TIXON CLASSIC PICK & PLACE



Pick & Place for Machine Operations

This version is suitable for machine applications that use electric or pneumatic positioning systems; as well as industrial robots. The tightening unit uses a vacuum to hold the fastenings in place. It is also possible to add another pneumatic cylinder to provide an additional linear feed.

TIXON CLASSIC VACUUM



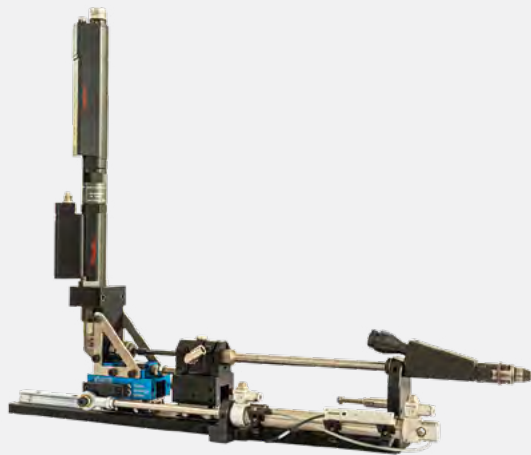
Tightening Units for Machine Operations

This version is suitable for machine applications that use electric or pneumatic positioning systems; as well as industrial robots. The tightening unit comes complete with vacuum extraction.



To cater for bespoke customer requirements; we have ensured that it is possible to add various types of auxiliary equipment to each tightening unit. In cases where there is insufficient space present above the tightening unit; the power unit can be fixed using a 180-degree gearbox, which reduces the overall footprint of the equipment.

Similarly, when integrating tightening units into various linear positioning devices; it is possible to combine a handle with an integrated button for the operator to control the tightening process.



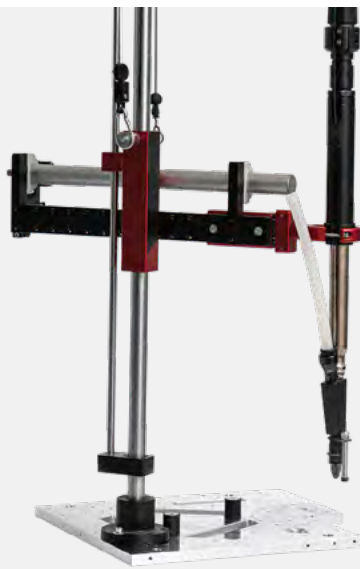
TIXON CLASSIC VACUUM MOVEMENT

with an angled configuration of 90°



TIXON COMPACT

on a vertical stand



TIXON MANUAL

on a vertical stand



TIXON COMPACT

with an angled configuration of 180°





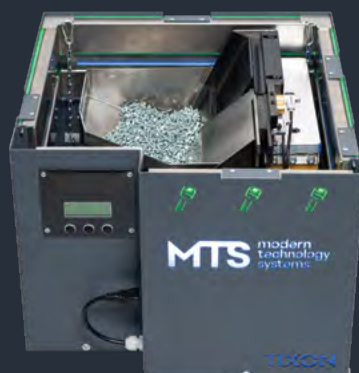
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