DEPRAG, Inc.
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Press Release

Efficient placement and positioning of fastening elements

Press-insertion system in combination with suitable feeding machines

Press-insertion devices for handheld and stationary assembly tasks

If you have ever punched a hole in a cover or pushed a tack or pin on a wall, then you will know how much stress it causes your thumbs. It can be painful if your thumb is strained like this repeatedly over time. There are many applications in industrial production where it is often left to workers to push together fastening elements by hand to attach two components. Fitters may repeat the movements hundreds of times per day. For automotive assembly, interior trim is predominantly attached using trim clips, expanding plastic rivets or push-fit panel pins. These fasteners have one thing in common: They must be pressed into a pre-drilled hole to connect two components. Press-insertion joining processes can be found in many other sectors as well as the automotive industry: from the aviation and aerospace industries or machine building, telecommunication and apparatus engineering up to modular assembly for electronics and vehicle technology.

To make the positioning and placement of fastening elements more ergonomic for fitters and to make the assembly process more efficient, manual workstations can be equipped with manually-operated press-insertion devices. These tools support operators, making the process simpler by using an insertion stroke for press-in procedures. Also, any attachment points which are difficult to access, can be reached more easily using the tool rather than using fingers. The specialists for automatic feeding and screwdriving technology, DEPRAG SCHULZ GmbH from Amberg, Germany have developed two press-insertion devices for handheld use: Type EDG with an insertion stroke and type EDGZ with an insertion stroke and additional locking stroke. Both devices are characterized by the convenient & ergonomic shape of the handle. The operator guides the entire downstroke of the press-insertion procedure when using type EDG. The pressure exerted by the operator supports the down-pressure. Whereas, when using the insertion tool, Model EDGZ, the operator only moves the device a short distance for actuation. An integrated cylinder performs the locking stroke ensuring that pressure is kept directly on the fastener as it protrudes from the nosepiece. The fastener cannot retract.

Press-Insertion Device with suitable parts

In addition to the manual press-insertion devices, DEPRAG also supplies stationary press-insertion modules. In stationary applications, both the feed and insertion strokes are carried out by cylinders. Sensors, which recognize the features of various fasteners, can be used to realize many applications, processing rivets, pins, sleeves, and balls, as well as asymmetric components. The press-insertion module can also be enhanced with integrated depth sensors, presence monitors, and position controls, thereby creating a complete versatile solution for complex assembly applications.

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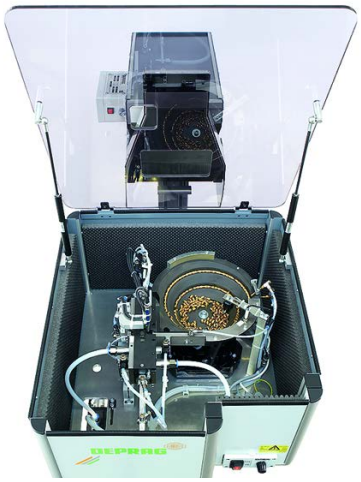
One specific advantage of DEPRAG press-insertion devices and modules is the option for integration into a complete press-insertion system, in combination with a suitable DEPRAG feeding machine. These machines feature outstanding efficiency and reliability as well as shortened cycle times. Positioning and loading procedures can be carried out quickly and reliably either by hand or in an assembly system.


Press-Insertion Automation

DEPRAG press-insertion systems consist of a handheld press-insertion device or stationary press-insertion module, a maintenance unit, an electronic controller and a feeder. Select either a vibratory spiral feeder or a sword feeder allowing the jaw-tooling to be specifically tailored to the application and fastening element. Sword feeders are particularly suitable for applications which require gentle handling, low-friction, and a quiet noise level. Standard DEPRAG sword feeders are available with bowl sizes 0.15 l and 1.5 l. The feeders are especially suited for the processing of M2 to M6 screws with a maximum shaft length of 25 mm, as well as for cylindrical pins, rivets, and balls with a diameter of 1 to 12 mm.

For the processing of screws, threaded pins, nuts, and O-rings, we recommend the use of a vibratory spiral feeder. DEPRAG offers a particular energy-efficient feeder in their "eacy feed" product-line. The "eacy feed" drive uses 24 V vibratory magnets which significantly reduce maximum power consumption, enabling an energy saving of approx. 80 percent. The 24-volt technology guarantees reliable operation even with an inferior mains supply – regardless of the supply voltage or frequency. The universal power supply enables the universal application. Furthermore, the "eacy feed" is communicative and prepared for application in an Industry 4.0 concept. The spiral feeder is suitable for screw sizes smaller than M1 up to M8, with shaft lengths of 5 mm to 60 mm. There are four standard bowl sizes available for "eacy feed" handheld devices and seven for stationary operation.



eacy feed – both handheld and stationary

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Whether in complex automated production in assembly systems or manually-operated handheld press-insertion devices – both DEPRAG feeding machines supply conveyed parts precisely and reliably at high feed rates. The combination of feeder and press-insertion device or module as an adaptive press-insertion system provides an attractive complete solution for diverse assembly applications. DEPRAG has been developing this technology over decades, and further enhancements are continually being made. All essential key-technologies originate in-house and are therefore optimally coordinated with one another. The press-insertion of grooved pins to attach child seat covers, positioning of steel rivets to enable subsequent riveting or press-insertion of expanding rivets to attach circuit boards to housing frames are just some examples of applications where DEPRAG used this type of system.

If you cannot visit us at a show or in person, please use the following links to read more about this product:

Press-Insertion Systems - Catalog Link

Eacy Feed - Feeder Catalog Link

Background information:

DEPRAG SCHULZ GMBH u. CO. based in Amberg/Germany was founded in 1931 and today has 600 employees and representatives in over 50 countries around the world. There are production facilities in Germany, the Czech Republic and China as well as distribution and service companies in France, Sweden, the USA and the United Kingdom all providing support to their international clients around the globe. DEPRAG is gradually developing its market share through innovation and cutting-edge technology in the classic product lines of screwdriving technology automation, air motors and air tools and are thereby increasing their market leadership.

Exceptional precision and quality standards in production ensure the outstanding reliability of their products. Numerous renowned international companies have therefore chosen DEPRAG as their assembly partner. From standardized devices to customized special designs, DEPRAG has solutions for a full spectrum of applications for complex assembly and production tasks – always with the focus on sustainability. DEPRAG quality management is certified according to ISO 9001:2008 and accredited to ISO 17025:2005.

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