TEXTRON Fastening Systems

Avdel® Blind Fastening & Automation Systems

Threaded Insert Power Tools

TEXTRON Fastening Systems

Threaded Insert Power Tools

Textron Fastening Systems offers a highly cost effective and flexible range of hand operated power tools for placing threaded inserts. The range is designed to meet the needs of different applications and assembly environments as well as different types of threaded inserts. Key benefits include:

- Lower in-place costs through high speed, accurate placement of inserts
- Greater production flexibility from batch work to flowline
- Improved product quality through reliable and secure thread installation
- Maximum operator comfort and improved ergonomics

The high performance 74200 places the entire range of Avdel® inserts from M3 – M12

New

The new 74201 with pressure regulation system, eliminating the need to adjust the stroke where sheet thickness varies in the same application

New

The new 74290 blind side, hexagonal punch designed to form round holes into hexagonal holes

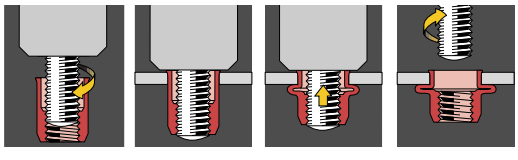
The 74101 in-line grip and 74110 pistol grip, ideal for batchwork and repairs

The 74401 provides a greater amount of power and stroke for large diameter inserts

Textron Fastening Systems Threaded Insert Power Tools offer two types of Technology:

The benefits of 'spin-pull' technology

- Generates high pull forces required to place large diameter and thick wall inserts
- Reduces wear on the drive screw resulting in lower maintenance and longer tool lifetime
- Compact, ergonomically designed tools which can be suspended or hand held
- Allows placement of lubricated and unlubricated inserts



1 2 3

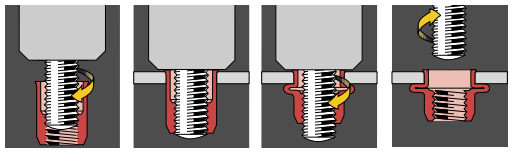
1 The insert is automatically threaded onto the drive screw.

2 On activating the tool, the threaded insert is pulled towards the tool, forming the body radially outwards to clench tightly against the workpiece.

3 The drive screw of the tool reverses and is disengaged from the thread leaving the insert securely in position.

The benefits of 'spin-spin' technology

- Cost-effective for placing smaller thread sizes M3-M5
- Can place inserts in a range of sheet thicknesses, without the need for tool adjustment
- Lightweight design, ideal for on-line suspended applications
- Places lubricated inserts only



1 2 3

1 The insert is automatically threaded onto the drive screw.

2 On activating the tool, the drive screw rotates with the threaded insert. This action pulls up the insert forming the body radially outwards to clench it tightly against the workpiece.

3 At a predetermined torque, the drive screw of the tool reverses and is disengaged from the thread leaving the insert securely in position.

TEXTRON Fastening Systems

74200 'spin-pull' tool

A high performance hydro-pneumatic power tool in heavy duty plastic, designed for rapid, blind sided installation of threaded inserts from M3 to M12.

74200

Features	Benefits
Heavy duty plastic tool body and long-life components	– Durable and robust construction for a long working life – Ideal for demanding production environments
Ergonomic design	– Reduced operator fatigue – Increased productivity – Can be suspended or hand held
Latest 'spin-pull' technology	– Ensures accurate and secure thread installation – Reduces wear on the drivescrew – Places lubricated and unlubricated inserts
Lightweight	– Portable and easy to handle
Quick cycle times - 2.5 secs on average	– Assembly time is reduced to a minimum

New

74201 'spin-pull' tool

The 74201 tool compliments the 74200 model by offering the additional feature of pressure setting so that the insert is always fully formed, regardless of clamping capacity changes. It is designed for applications where inserts are being placed into the same application with varying sheet thicknesses, which is increasingly the case with the use of plastics, composite materials and magnesium and aluminium castings. The 74201 is also advantageous in conditions where swarf may be present at the back of drilled holes and for blind holes (i.e. tubes) where you cannot see if the insert has correctly formed - coach building, IP beams.

The tool installs inserts to a set hydraulic pressure (which may be adjusted), rather than operating to a fixed stroke. This eliminates the need to adjust stroke or to use more than one tool to install inserts into different thicknesses, improving product quality and reducing assembly cycle times.

74201

Features	Benefits
Pressure setting	– Allows operators to install same fastener into varying material thickness without any adjustment to stroke – Eliminates operator responsibility for setting tool stroke – Overcomes rear sheet swarf issues
Utilises standard 74200 nose equipment	– Can install M3 to M8 inserts
Ergonomic design	– Reduced operator fatigue – Increased productivity – Can be suspended or hand held
Plastic covered cast aluminium body	– Highly impact resistant when dropped – Tool does not rely on plastic casing to take loading from pneumatic cylinder action
Steel tie rods	– Increased structural integrity
Lightweight	– Portable and easy to handle
Heavy duty rubber base	– Increased impact resistance and durability

Pressure setting adjustment dial

Steel tie rods for increased structural integrity

Tool Selection – 74201 vs 74200

There are certain applications where the 74201 should be used as opposed to the 74200. The table below gives instances where each tool should be utilised.

	74201	74200
Where the material thickness remains constant in an application and none of the conditions below are present		✓
Applications where thin sheet inserts or turned inserts are used		✓
Where the fastener size is M10 or greater		✓
Blind holes (i.e. tubes) where you cannot see if the fastener has been correctly formed	✓	
Drilled holes where swarf may be present at the back of the hole	✓	
If more than one material thickness exists in the same application	✓	

New

74290 tool

The 74290 tool compliments and extends the range of TFS hand tools for installing threaded inserts, by offering the capability of producing hexagonal holes for threaded Hexsert® inserts into materials where access is only possible from one side. The 74290 tool allows customers to benefit from the non-rotational properties of hexagonal inserts compared with round inserts. This is achieved by drilling a round hole, then inserting the 74290 tool and forming a hex hole as follows:

74290

Operating Procedure

Workpiece with round hole

Insert the punch (fixed onto the 74290 tool) into the round hole

Workpiece with the hexagonal hole stamped by the 74290, ready to take a threaded insert

Application Dimensions

The table below indicates the dimensions of round holes to be drilled into the workpiece, in order to be transformed into the required hexagonal hole.

		Thickness range (mm) of the workpiece to be punched		
Threaded Hexsert® size	**Required hole ø (mm) to be drilled**	**Light Alloys (Aluminium)**	**Steel**	**Stainless Steel**
M4	6.2 – 6.3	0.5 – 3.0	0.5 – 1.5	0.5 – 1.5
M5	7.2 – 7.3	0.5 – 5.0	0.5 – 3.0	0.5 – 1.5
M6	9.3 – 9.4	0.5 – 5.0	0.5 – 3.0	0.5 – 1.5
M8	11.3 – 11.5	0.5 – 5.0	0.5 – 3.0	0.5 – 1.5
M10	13.4 – 13.6	0.5 – 5.0	0.5 – 3.0	0.5 – 1.5

Autosert®

TEXTRON Fastening Systems

74401 'spin-pull' tool

A high performance hydro-pneumatic power tool designed for installing large diameter threaded inserts and/or inserts requiring more setting stroke. This tool offers a greater amount of power and stroke, whilst maintaining lightweight and ergonomic features as a result of the split intensifier.

74101 & 74110 'spin-spin' tools

74110

74101

These cost-effective pneumatic tools place a range of M3 to M8 inserts and are ideal for batchwork or flowline. They are quick and simple to operate with average cycle times of just three seconds. For maximum production flexibility and operator comfort both tools can be suspended or hand held and offer a choice of pistol grip or in-line (straight) grip.

Autosert® 'spin-pull' system

The Autosert® automated system is a modular design for M3-M10 threaded inserts, reducing assembly time and costs. The integral processing diagnostics ensure the assembly process is highly controlled for improved product quality. The feeder bowl holds up to 2000 inserts for continuous fastener feed.

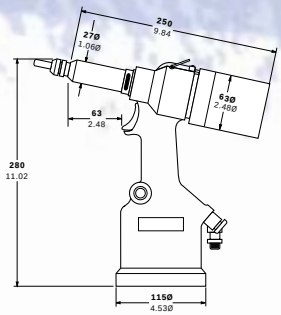
Features	Benefits
Modular design of placing head, blow feed unit and PLC control cabinet	– For quick and simple integration into assembly lines – Will work as a stand-alone unit – Can be used to fasten a wide range of applications
Flexible electric, pneumatic and hydraulic connections between the three main components	– For quick and simple interface with a wide range of assembly systems
The compact, lightweight placing head is quick to reconfigure, can be mounted separately and used at any angle	– For maximum production flexibility and minimum tool downtime
Integral processing diagnostics at all stages with clear and simple PLC displays	– High precision, highly reliable assembly – Improved product quality

TEXTRON Fastening Systems

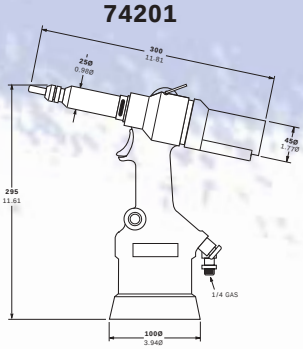
Specifications of Threaded Insert Power Tools

	74200	74201	74290
Weight	2.2Kg (4.9lbs)	2.1Kg (4.6lbs)	2.2Kg (4.9lbs)
Pull Force	19.1kN (4300lbf)	17.7kN (4000lbf)	23.5kN (4300lbf)
Stroke	7mm (0.276ins)	7mm (0.276ins)	6.5mm (0.256ins)
Motor Speed ON	2000 RPM	2000 RPM	–
Motor Speed OFF	2000 RPM	2000 RPM	–
Cycle Time	2.5 secs	2.5 secs	2.5 secs
Air Supply Press	5 - 7 bar	5 - 7 bar	5 - 7 bar
Free Air Volume	8.0 litres	7.5 litres	7.5 litres
Noise Level	75 dB(A)	75 dB(A)	< 80 dB(A)
Vibration	<2.5m/s^2	<2.5m/s^2	–

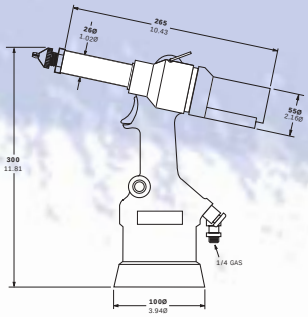
74200



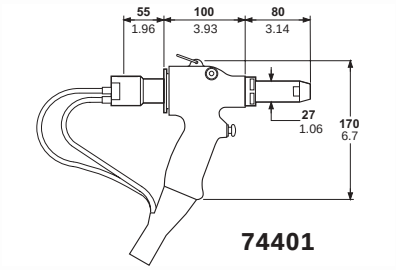
74201



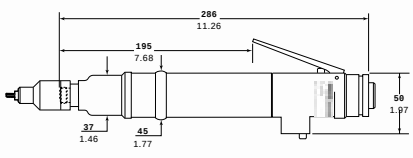
74290



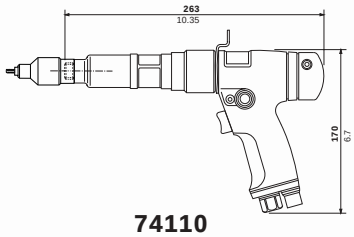
	74401	74101	74110	Autosert®
Weight	2Kg (4.4lbs)	1.05Kg (2.3lbs)	1.6Kg (3.5lbs)	12Kg (26lbs) placing head 250 kg (551lbs) supply unit
Pull Force	36.6kN (8220lbf)	–	–	27.6kN (6204lbf)
Stroke	14mm (0.552ins)	–	–	2-10mm (0.07ins - 0.39ins)
Motor Speed ON	2500 RPM	1100 RPM	600 RPM	–
Motor Speed OFF	3000 RPM	–	–	–
Cycle Time	3.0 secs	3.0 secs	3.0 secs	5 secs
Air Supply Press	5 - 7 bar	4 - 6.3 bar	4 - 6.3 bar	6 bar
Free Air Volume	15 litres	8.7 litres	7.5 litres	–
Noise Level	65 dB(A)	73 dB(A)	82 dB(A)	85 dB(A)
Vibration	2.5m/s^2	–	–	–
Intensification Ration	51:1	–	–	–
Power Supply	–	–	–	220v – 50Hz



74401



74101



74110

Dimensions shown in bold are in millimetres. Other dimensions are in inches.

TEXTRON Fastening Systems

Placing Matrix for Threaded Insert Power Tools

	Insert Series	Thread Size	74200	74201	74401	Autosert®	74101	74110
					Steel			
	Thin Sheet NUTSERT® 9658	M3	✓		✓	✓	✓	✓
		M4	✓		✓	✓	✓	✓
		M5	✓		✓	✓	✓	✓
		M6	✓		✓	✓	✓	✓
		M8	✓		✓	✓	✓	✓
		M10	✓		✓	✓		
		M12	✓					
	Closed End Thin Sheet NUTSERT® FS38	M4	✓		✓	✓		
		M5	✓		✓	✓		
		M6	✓		✓	✓		
		M8	✓		✓	✓		
	Closed End, Large Flange, Thin Sheet NUTSERT® FS58	M4	✓		✓	✓		
		M5	✓		✓	✓		
		M6	✓		✓	✓		
		M8	✓		✓	✓		
	Splined EUROSERT® 39006	M4	✓	✓	✓	✓		
		M5	✓	✓	✓	✓		
		M6	✓	✓	✓	✓		
		M8	✓	✓	✓			
		M10	✓		✓	✓		
	DKS	M4	✓		✓	✓		
		M5	✓		✓	✓		
		M6	✓		✓	✓		
		M8	✓		✓	✓		
		M10	✓		✓	✓		
	Large Flange Splined EUROSERT® 9408	M3	✓	✓	✓			
		M4	✓	✓	✓			
		M5	✓	✓	✓	✓		
		M6	✓	✓	✓	✓		
		M8	✓	✓	✓	✓		
		M10	✓		✓	✓		
	DLS	M4	✓		✓			
		M5	✓		✓	✓		
		M6	✓		✓	✓		
		M8	✓		✓	✓		
		M10	✓		✓	✓		
	Euro HEXSERT® 39101	M4	✓	✓	✓	✓		
		M5	✓	✓	✓	✓		
		M6	✓	✓	✓	✓		
		M8	✓	✓	✓	✓		
		M10	✓			✓		
	Closed End, Large Flange, Euro HEXSERT® 49141	M6	✓		✓	✓		
		M8	✓		✓	✓		
	Euro HEXSERT® 9688	M3	✓		✓	✓		
		M4	✓		✓	✓	✓	✓
		M5	✓		✓	✓	✓	✓
		M6	✓		✓	✓	✓	✓
		M8	✓			✓	✓	✓
	Large Flange Euro HEXSERT® 9498	M4	✓	✓	✓		✓	
		M5	✓	✓	✓	✓	✓	✓
		M6	✓	✓	✓	✓	✓	✓
		M8	✓	✓	✓	✓		
		M10	✓		✓	✓		
		M12	✓		✓			
	High Strength HEXSERT® 39301	M6	✓	✓	✓	✓		
		M8	✓	✓	✓	✓		
		M10	✓			✓		
	SQUARESERT® GK08	M5	✓	✓	✓	✓		
		M6	✓	✓	✓		✓	✓
		M8	✓		✓	✓	✓	✓
	SUPERSERT® FB08	M3	✓		✓	✓	✓	✓
		M4	✓		✓	✓	✓	✓
		M5	✓		✓	✓	✓	✓
		M6	✓	✓	✓	✓	✓	✓
		M8	✓		✓	✓	✓	✓

TEXTRON Fastening Systems

Placing Matrix for Threaded Insert Power Tools

	Insert Series	Thread Size	74200	74201	74401	Autosert®
			Stainless Steel			
	Thin Sheet NUTSERT® 9468	M3	✓		✓	
		M4	✓		✓	✓
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓
		M10	✓		✓	✓
	EUROSERT® 39002	M4	✓	✓	✓	✓
		M5	✓	✓	✓	✓
	Euro HEXSERT® 39102	M6	✓	✓	✓	✓
			Aluminium Alloy			
	Thin Sheet NUTSERT® GM17	M4	✓		✓	✓
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓
	Large flange, Thin Sheet NUTSERT® FW78	M3	✓		✓	
		M4	✓		✓	
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓
		M10	✓		✓	✓
	Closed end, large flange, Thin Sheet NUTSERT® GM68	M3	✓		✓	✓
		M4	✓		✓	✓
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓
	Countersunk, Thin Sheet NUTSERT® FW96	M3	✓		✓	✓
		M4	✓		✓	✓
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓
		M10	✓		✓	✓
	Closed End, Countersunk, Thin Sheet NUTSERT® GM57	M4	✓		✓	✓
		M5	✓		✓	✓
		M6	✓		✓	✓
		M8	✓		✓	✓

New

Versa-Nut™ Insert Series 0VN01

The new range of Versa-Nut™ inserts for soft materials, plastics and composites can be placed with the following tools:

	Thread Size	74200	74401	Autosert®
	M4	✓*	✓	✓
	M5	✓*	✓	✓
	M6		✓	✓
	M8		✓*	✓
	M10		✓*	✓

* Depends on material thickness. We strongly recommend you test your application to determine exact performance levels.