Setting tool for plugs, rivet nuts and blind rivets

Ing-D.B. GmbH
Engineering Office
Dirk Brinkmann

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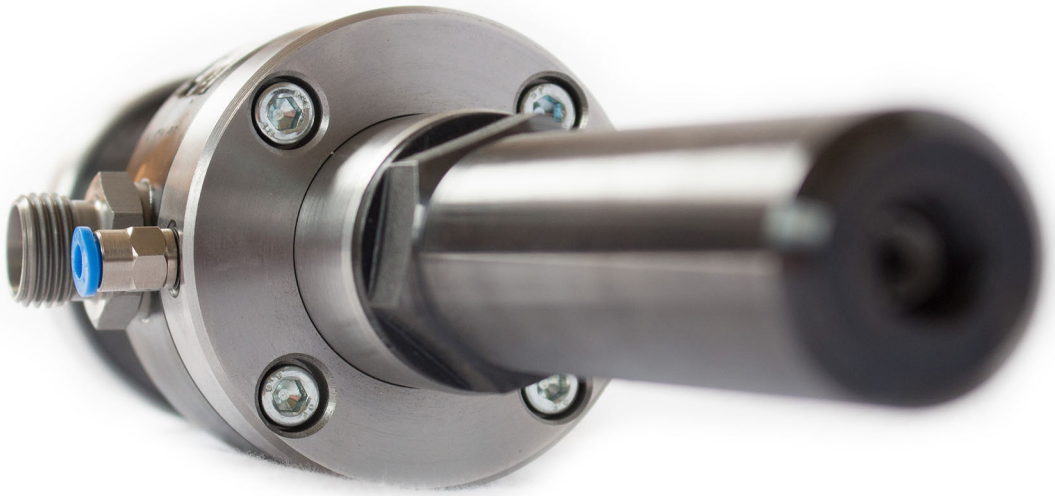

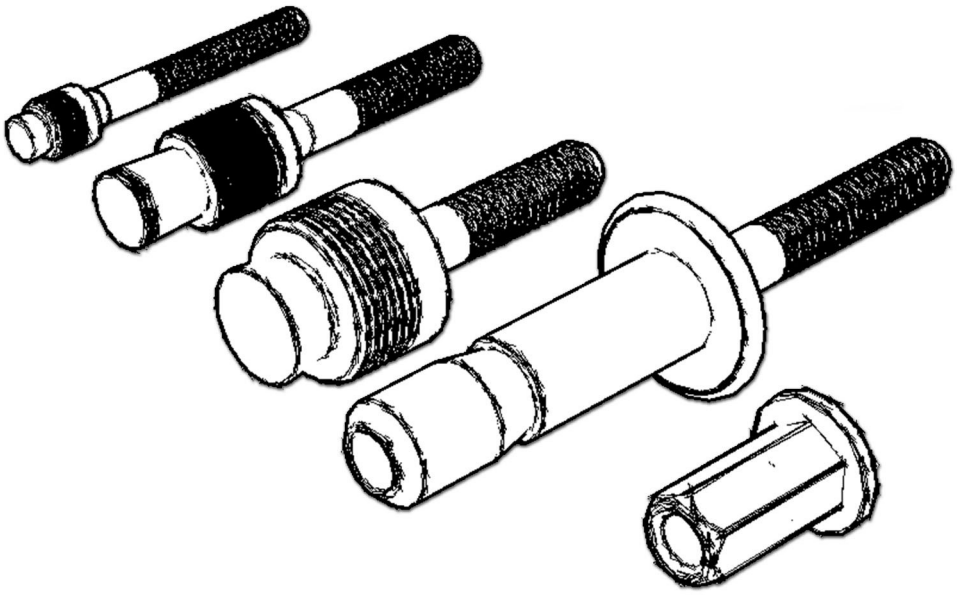

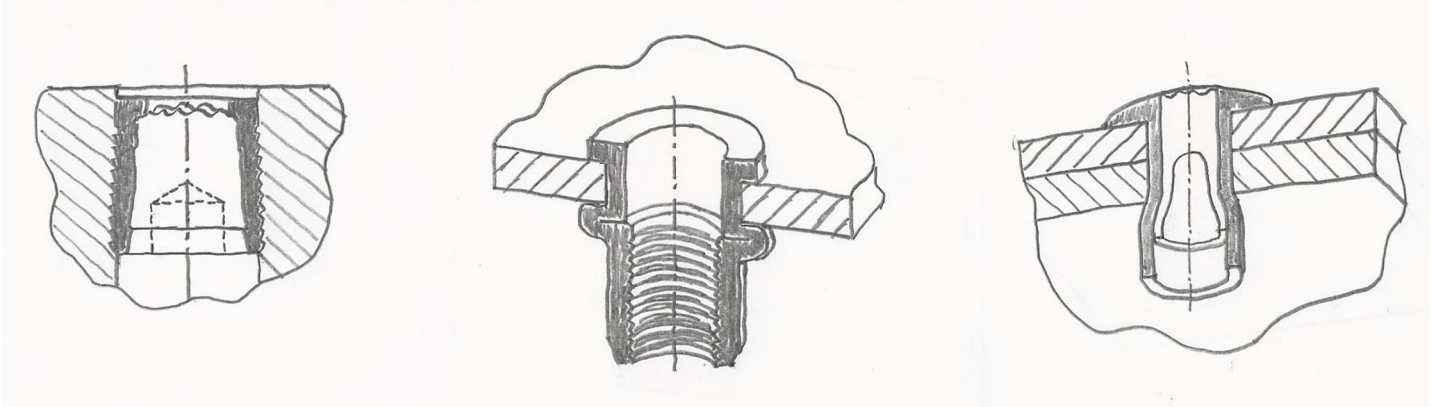

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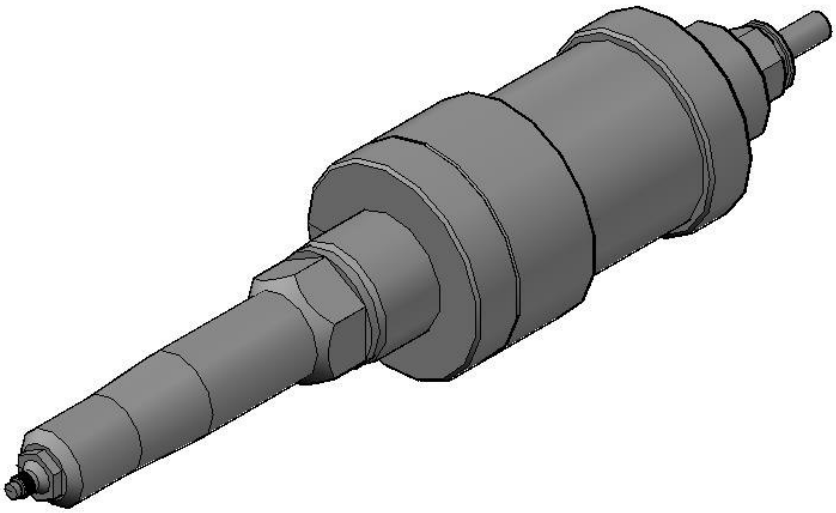
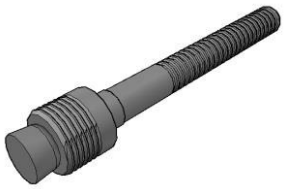
Tool for plugs Ø 4-6 mm



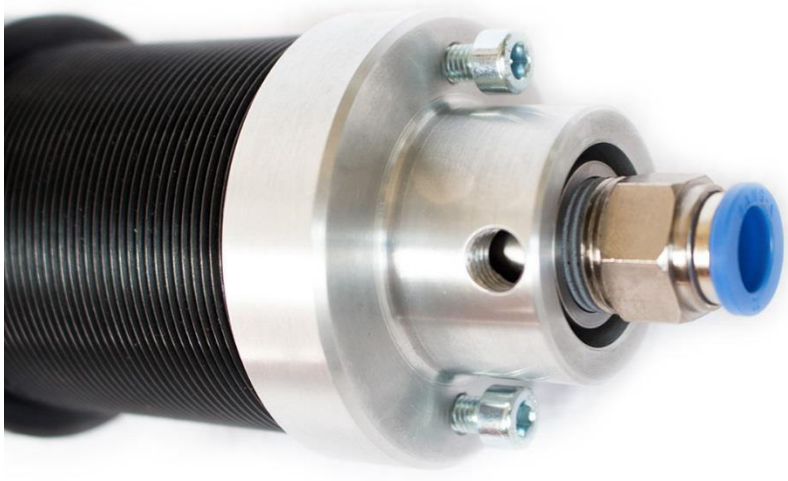


Characteristics / features:

- tool for plugs with mandrel derivation
- double bearing of the piston rod
- large distance between bearings
- power reserve by piston Ø 40 mm
- applicable for linear units
- ideal for robotic applications
- optionally with automatic feeding system
- ready for process monitoring
- pressure booster with integrated oil reservoir

Specifications:

plug-Ø	4-6	mm
setting force (5/195 bar)	16	kN
setting force (6/234 bar)	19	kN
stroke	18	mm
mandrel derivation-Ø	4	mm
division	0,794	mm
sleeves-Ø	23/26	mm
cylinder-Ø	65	mm
total length	281	mm
connection, hydraulic	G1/4	
connection, pneumatic	M5	
weight	2,65	kg



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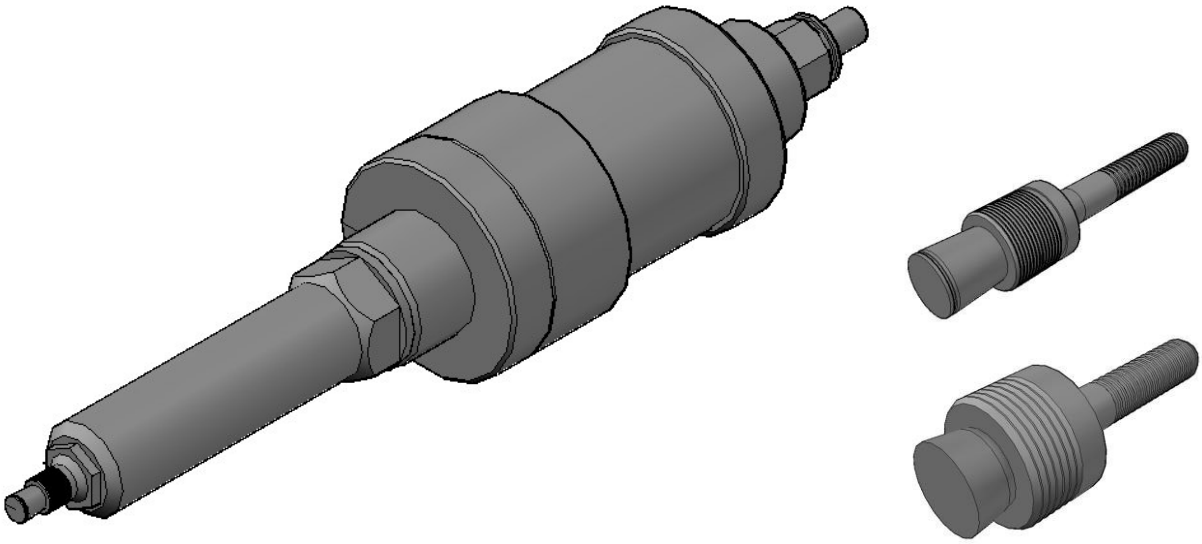
Tool for plugs Ø 7-10 or 12-16 mm



Characteristics / features:

- tool for plugs with mandrel derivation
- double bearings of the piston rod
- large distance between bearings
- power reserve by piston Ø 40 mm
- applicable for linear units
- ideal for robotic applications
- optionally with automatic feeding system
- ready for process monitoring
- pressure booster with integrated oil reservoir

Specifications:

plug-Ø	7-10 or 12-16	mm
setting force (6/234 bar)	19	kN *)
setting force (5/305 bar)	26	kN *)
stroke	18	mm
mandrel derivation-Ø	7	mm
division	0,794 or 1,2	mm
sleeves-Ø	28	mm
cylinder-Ø	65	mm
total length	285	mm
connection, hydraulic	G1/4	
connection, pneumatic	M5	
weight	2,75	kg

*) depending on pressure booster

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Workplace plugs

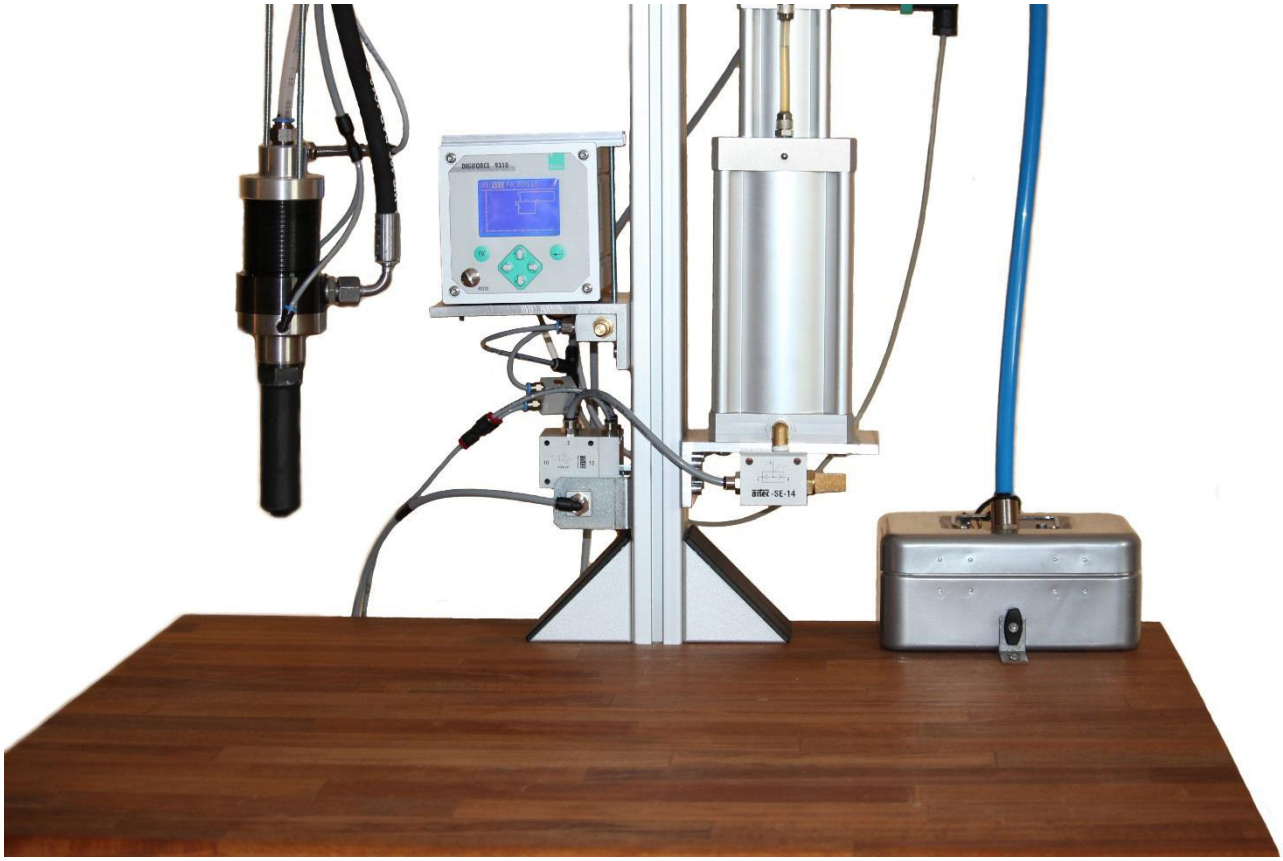
- plug Ø 4-6, 7-10, 12-16
- setting force, depending on pressure booster 16, 19, 26 kN
- stroke 18 mm
- mandrel derivation-Ø 4 bzw. 7 mm
- division 0,794 or 1,2 mm
- sleeves-Ø 23/26 or 28 mm
- cylinder-Ø 65 mm
- total length 285 mm
- connection, hydraulic G1/4
- connection, pneumatic M5

Options:

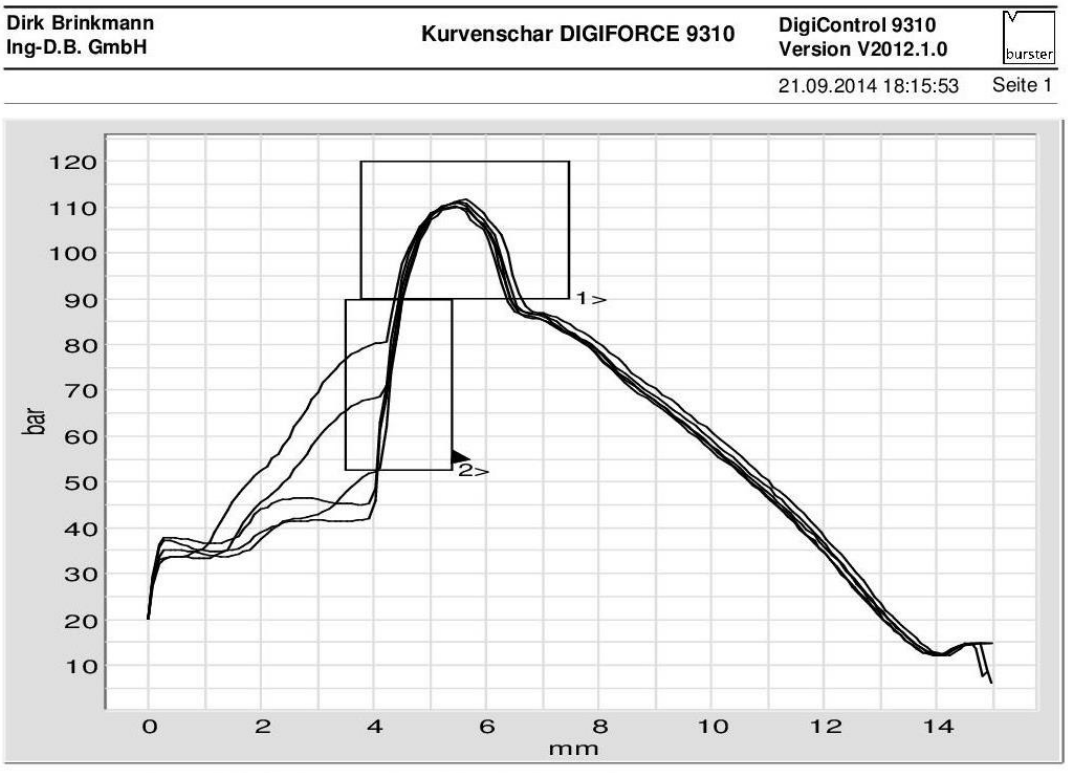
- tool holder with balancer to compensate the weight height approx. 1.270 mm boom approx. 700 mm
- pneumatic control with foot valve and mandrel derivation
- mandrel container and discharge tube
- full process monitoring DIGIFORCE 9311 with pressure and position sensor
- process monitoring with intelligent pressure sensor

Tool for plugs without mouthpiece

YouTube



Tool for plugs, process monitoring Digiforce 9310, pressure booster and mandrel container



Beschreibung: LK950-100 10,0; 10,1; 10,2; 10,3; in Luft

Kurve	Bezeichnung	Messwerte	Ergebnis
1	10,0	141	IO
2	10,1	141	IO
3	10,2	142	NIO
4	10,3	140	NIO
5	Luft	141	NIO

Setting curves placed in the bore diameters 10.0, 10.1, 10.2, 10.3 mm and in air

Automation rivet plugs

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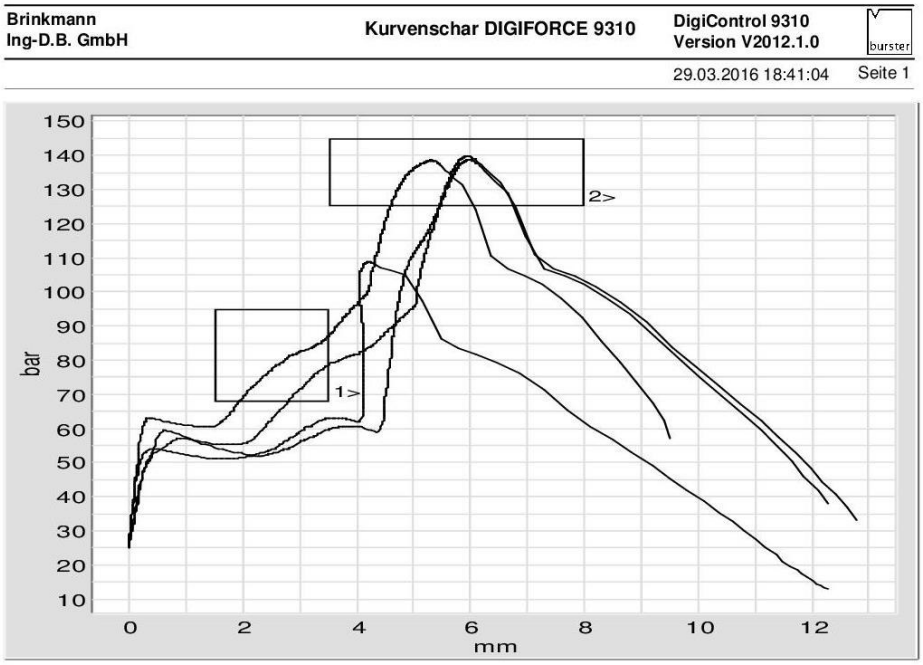
Rivet tool, automatic transfer and linear unit

Feeding system with feed section and separation

YouTube

Process monitoring, pressure booster and mandrel container



Beschreibung: LK 950-140 alle Fälle

Kurve	Bezeichnung	Messwerte	Ergebnis
1	14mm Bohrung	582	IO
2	geschwaechter Dornquerschnitt	404	NIO
3	in Luft	717	NIO
4	2mm Abstand	751	IO

Setting curves placed in the bore diameters 14.0 mm and in air

Automation conical plugs

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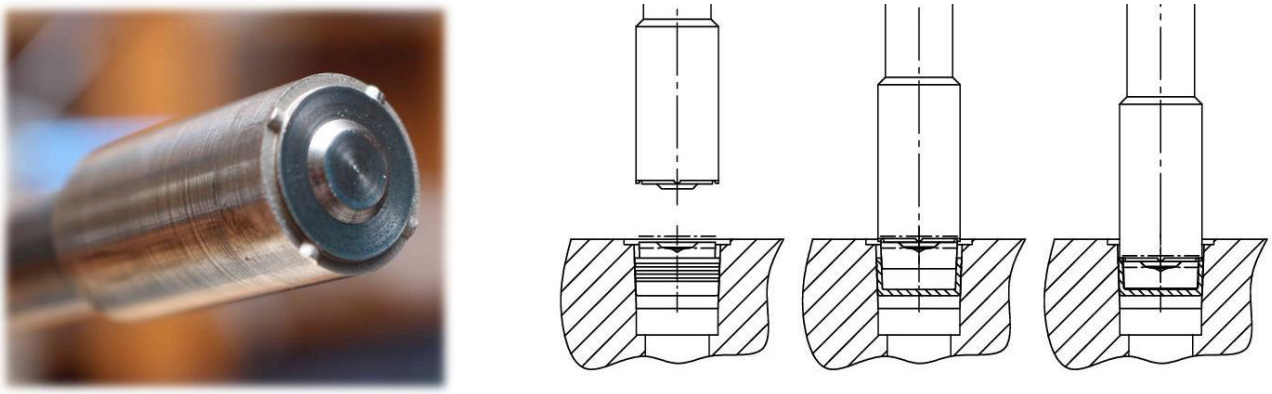
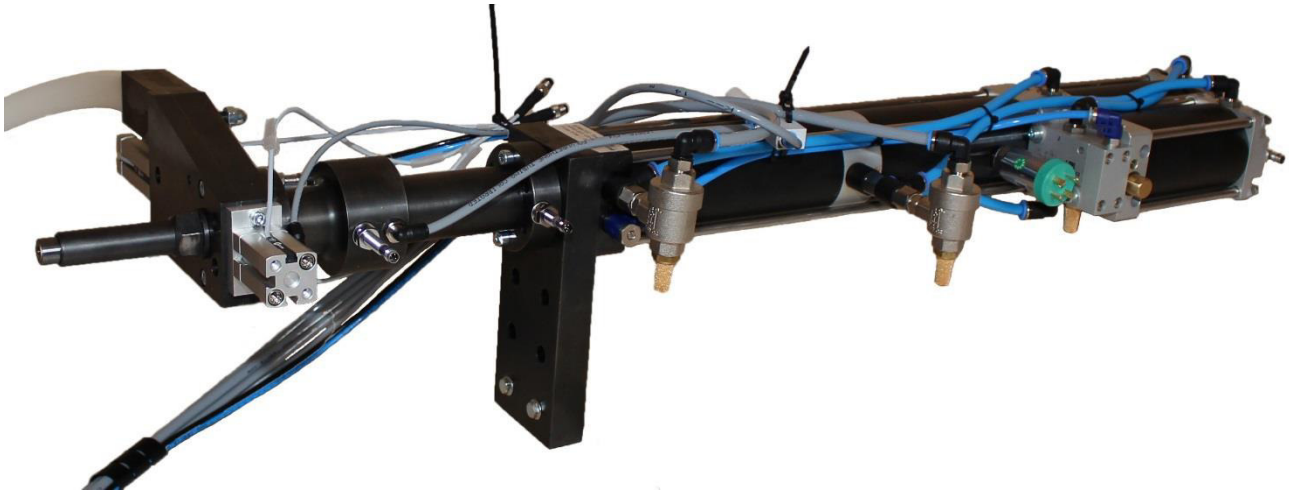


Conical plug ø16 mm and installation tool

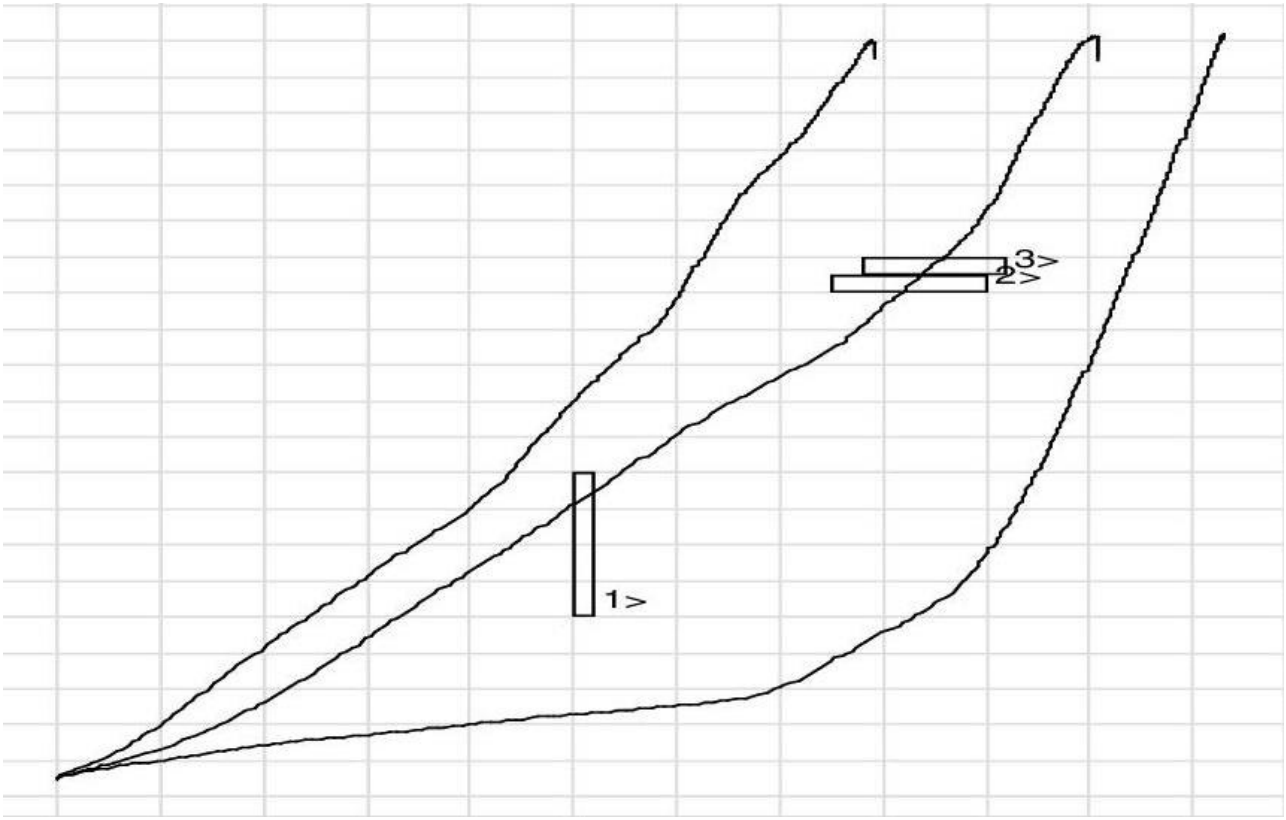


Powercylinder, 120 mm total stroke, 8 mm power stroke, 13 kN with 6 bar

Feeding system with sound insulation and separation

YouTube

Process monitoring Digiforce 9310



Conical plug 16 mm various faults

Order picking small parts

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An alternative to counting scale is picking of small parts with a camera system. After the correct setting of the parameters of the computer determines the quantity of the packaging process. The change of the parts is easily available and the system is easy to keep clean. Auto parts in small groups, which can protrude into each other, are correctly identified in limits.

YouTube

Touch Screen LCD to display the number of items and to set the parameters

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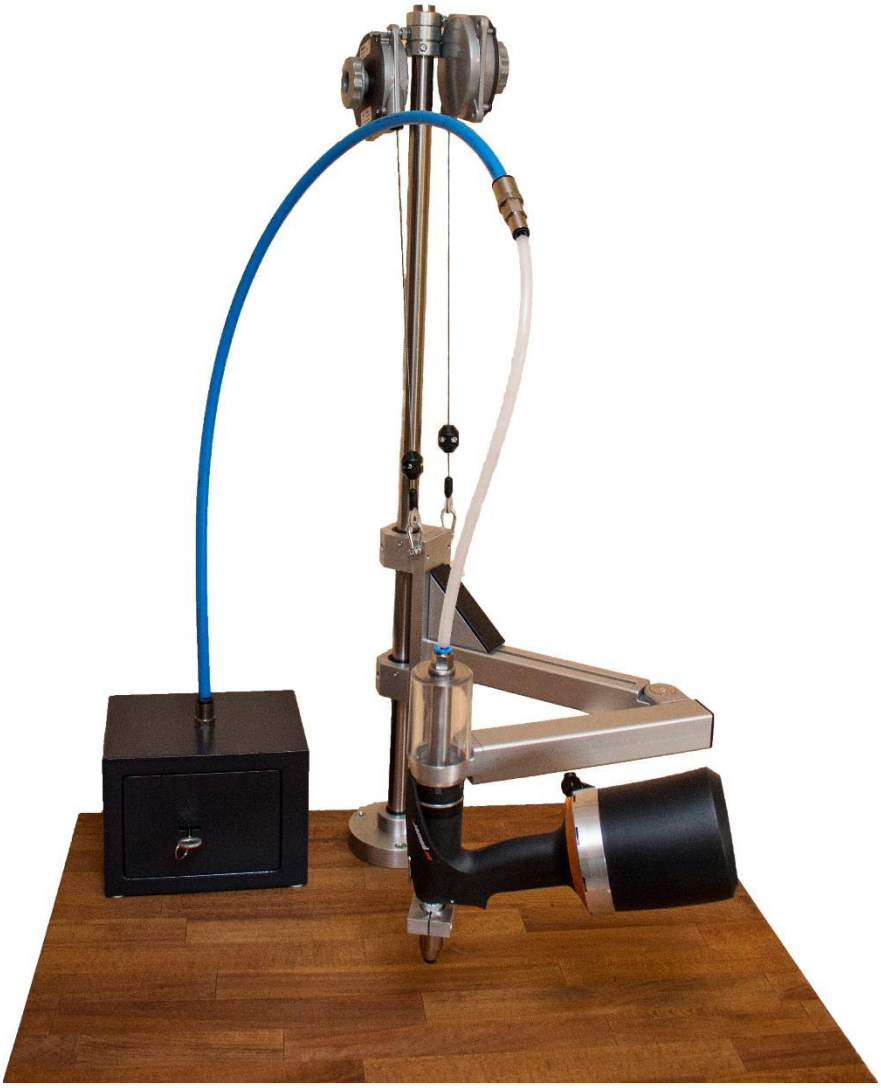


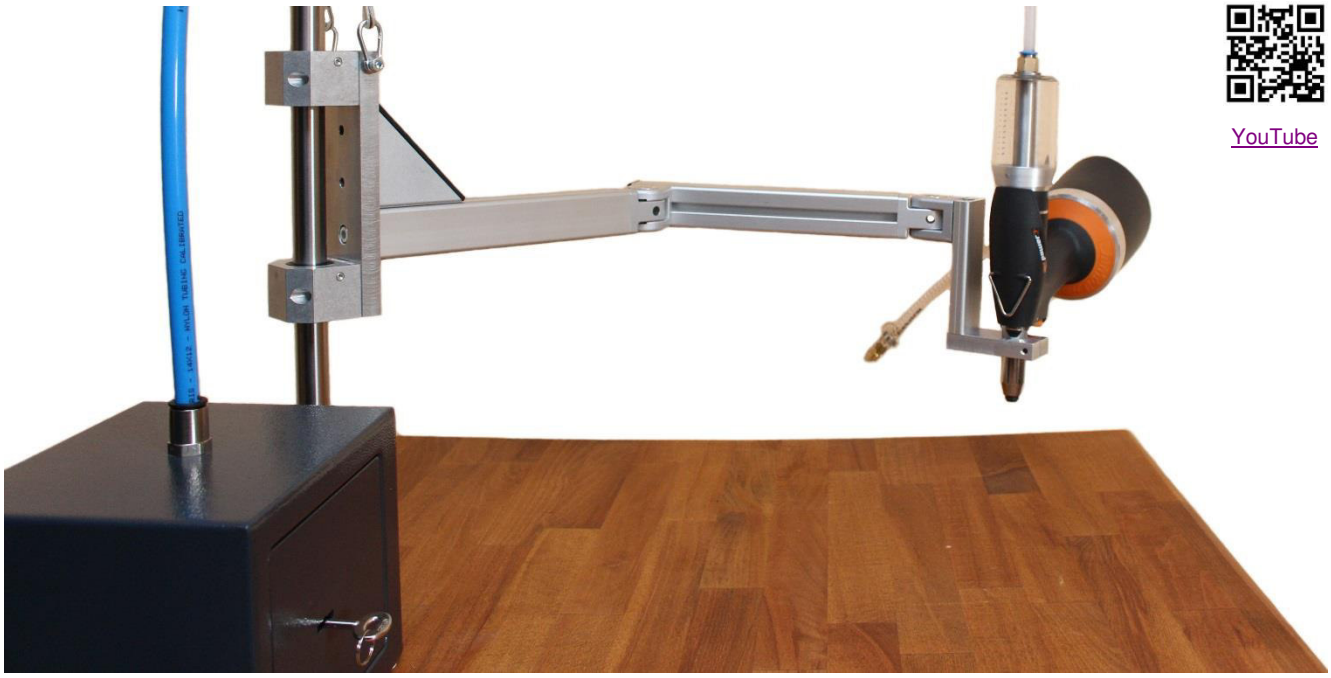
Workplace rivets

- rivet tool D4-6, 7-10, 12-16
- rivet tool M5, M6, M8, M10, M12
- rivet tool RPT03A, RPT23A, RPT33A, RPT43A
- sleeves-Ø 22,5/23/26 bzw. 28 mm
- tool holder with 2 balancer to compensate the weight
  height approx. 1.000 mm
  boom approx. 680 mm

Optionen:

- pneumatic control with foot valve and mandrel derivation
- mandrel container and discharge tube
- full process monitoring DIGIFORCE 9311 with pressure and position sensor
- process monitoring with intelligent pressure sensor

YouTube



Large operating range with the articulated arm

Setzgeräte Zug-Dichtstopfen Ø 3-18 mm

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YouTube

Rivet plug tool	RPT03A	RPT23A	RPT33A	RPT43A
Working pressure	7 bar	7 bar	7 bar	7 bar
Min-max. working pressure	5/7 bar	5/7 bar	5/7 bar	5/7 bar
Stroke	18 mm	25 mm	18 mm	18 mm
Force with 7 bar	11.700 N	18.700 N	24000 N	24000 N
Weight	1,8 kg	2,34 kg	2,34 kg	2,34 kg
Air volume / stroke	2,4 liter	3,5 liter	3,5 liter	3,5 liter
Noese level	<75 dB(A)	<75 dB(A)	<75 dB(A)	<75 dB(A)
Max. mandrel Ø	3,8 mm	4,8 mm	4,8 mm	6,5 mm
Noise-piece ø	1,9/2,3/2,8/3,4 mm	2,8/3,4/3,8/4,5 mm	2,8/3,4/3,8/4,5 mm	

Battery-operated tool	Plugdom I	Plugdom II
Stroke	21 mm	30 mm
Force	10.000 N	20.000 N
Weight	1,54 + 0,33/0,53 kg	1,63 + 0,37 kg
Charging time 1,5 Ah	<1h	<30 minutes
Max. mandrel Ø	3,4 mm	4,8 mm
Noise-piece ø	1,9/2,3/2,8/3,4 mm	2,8/3,4/3,8/4,5 mm

Supplier – Rivet plug / Tools

Ing-D.B. GmbH
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Suppl. S	rivet plug ø		4	5	6	7	8	9	10		12					
Suppl . S	d2 (SK)		2,5	3	3,4	4,1	4,2	4,5	4,75		5,7					
Suppl . S	division		0,794	0,794	0,794	0,794	0,794	0,794	0,794							
Ing-D.B.	**R**ivet **P**lug **T**ool		03A	03A	23A	23A	33A	43A	43A		*43A*					
Ing-D.B.	Plugdom		I	I	II	II	(II)									
Ing-D.B.	nose-piece ø		2,8	3,4	3,8	4,5	4,7	5,1	5,5		6,3					
Suppl . S	rivet plug ø		4	5	6	7	8	9	10		12		14	15	16	18
Suppl . S	d2 (LK)		2,2	2,95	3,4	4,2	4,3	4,7	5,1		5,9		5,9	5,9	5,9	6,15
Suppl . S	division		0,794	0,794	0,794	0,794	0,794	0,794	0,794		1,2		1,2	1,2	1,2	1,2
Ing-D.B.	**R**ivet **P**lug **T**ool		03A	03A	23A	23A	23A	43A	43A		*43A*		*43A*	*43A*	*43A*	43A
Ing-D.B.	Plugdom		I	I	II	II	II									
Ing-D.B.	nose-piece ø		2,8	3,4	3,8	4,5	4,7	5,1	5,5		6,3		6,3	6,3	6,3	6,5

Suppl . E	rivet plug ø		4	5	6	7	8	9	10
Suppl . E	d2		2,5	3	3,4	4,1	4,2	4,5	4,75
Suppl . E	division		0,8	0,8	0,8	0,8	0,8	0,8	0,8
Ing-D.B.	**R**ivet **P**lug **T**ool		03A	03A	23A	23A	33A	43A	43A
Ing-D.B.	Plugdom		I	I	II	II			
Ing-D.B.	nose-piece ø		2,8	3,4	3,8	4,5	4,5	4,9	5,1

special

Suppl . K	rivet plug ø	3	4	5	6	7	8	9	10
Suppl . K	d2	2,0	2,65	3,15	3,65	4,35	4,25		
Suppl . K	division	0,85	0,85	0,85	0,85	0,85	0,85	0,85	0,85
Ing-D.B.	**R**ivet **P**lug **T**ool	03A	03A	23A	23A	33A	33A		
Ing-D.B.	Plugdom	I	I	II	II				
Ing-D.B.	nose-piece ø	2,3	2,8	3,4	3,8	4,7	4,7		

Suppl . A	rivet plug ø		4	5	6	7	8	9	10	11	12				
Suppl . A	d2 (H)		1,9	2,2	2,6	3,0	3,6	3,9	4,4	4,8	5,3				
Suppl . A	division		0,6	0,6	0,6	0,8	0,8	0,8	0,8	0,8	0,8				
Ing-D.B.	**R**ivet **P**lug **T**ool		03A	03A	03A	23A	23A	33A	33A	*43A*	*43A*				
Ing-D.B.	Plugdom		I	I	I	II	II	(II)							
Ing-D.B.	nose-piece ø		2,3	2,3	2,8	3,4	3,8	4,5	4,5	5,1	5,5				
Suppl . A	rivet plug ø							9	10	11	12	13	14		16
Suppl . A	d2 (N)							3,58	3,9	4,4	4,4	4,8	5,3		6,0
Suppl . A	division							0,8	0,8	0,8	0,8	0,8	0,8		
Ing-D.B.	**R**ivet **P**lug **T**ool							23A	33A	*43A*	*43A*	*43A*	*43A*		*43A*
Ing-D.B.	Plugdom							II							
Ing-D.B.	nose-piece ø							3,8	4,5	4,5	4,5	5,1	5,5		6,3

Installation system plugs, small

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Installation system plugs, small

YouTube

Conical plug with tool

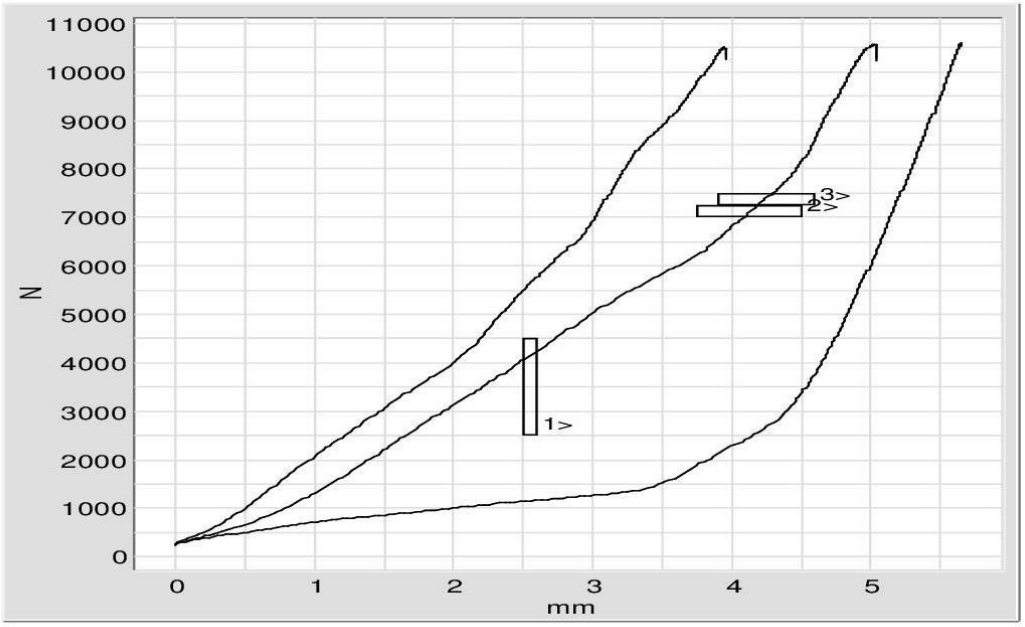
Installation system plugs, small

- suitable for conical plugs
- suitable for ball plugs
- manuell stroke approx. 200 mm
- force approx. 19 kN
- setting stroke approx. 12 mm
- workpiece height approx. 200 mm
- worktable 440x240 mm
- Frame made of aluminum profiles
- pneumatic control
- Two-hand operation

Options:

- process monitoring (force and stroke)
- signaling device for IO and NIO
- electrical control
- workpiece holder

Brinkmann Ing-D.B. GmbH	Kurvenschar DIGIFORCE 9310	DigiControl 9310 Version V2012.1.0
		08.10.2015 12:11:22 Seite 1



Beschreibung: konisch 16 mm alle Fehlerfälle

Kurve	Bezeichnung	Messwerte	Ergebnis
1	vorgedrueckt	290	NIO
2	in Luft	340	NIO
3	IO	334	IO

Conical plug 16 mm various faults

Installation system plugs

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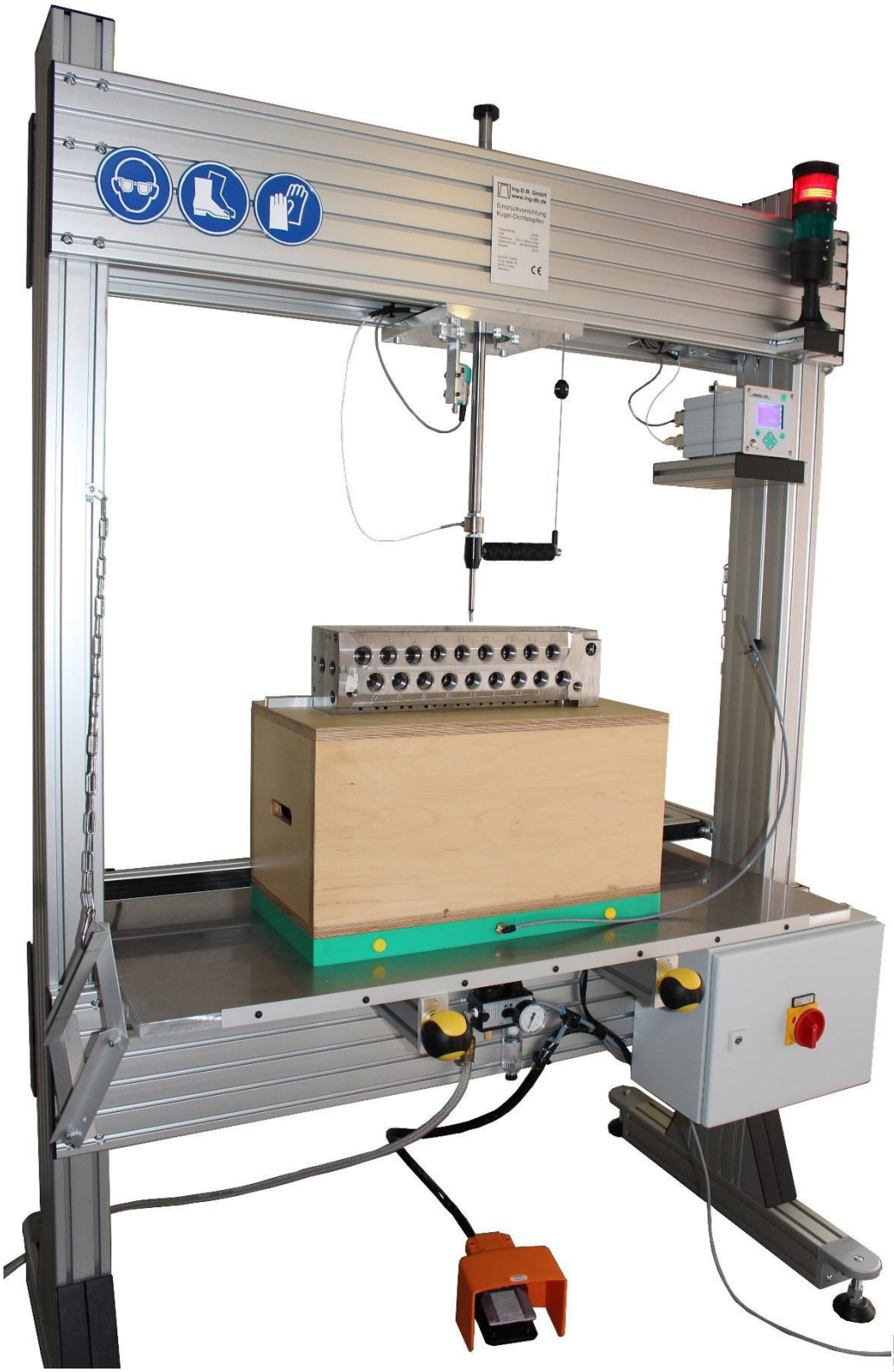
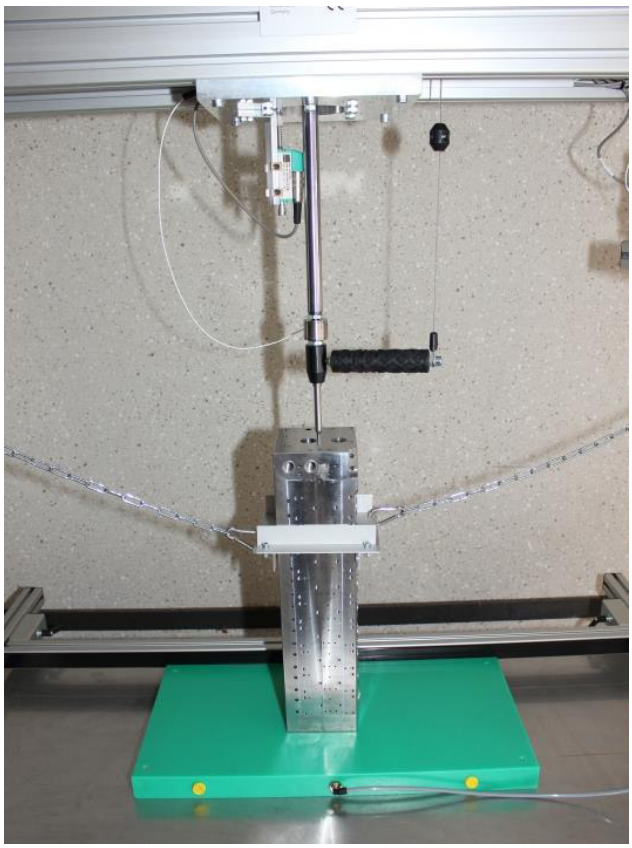


Installation system plugs for large workpieces

YouTube



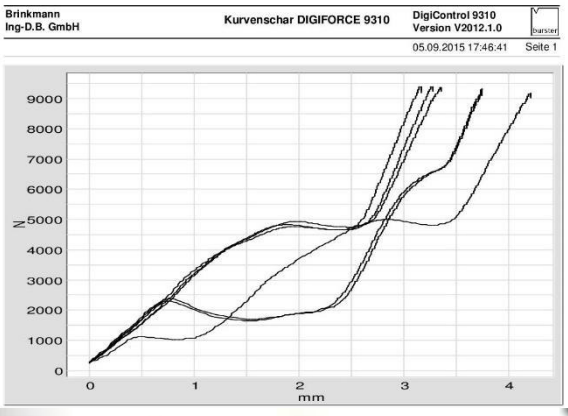
placed workpiece vertically

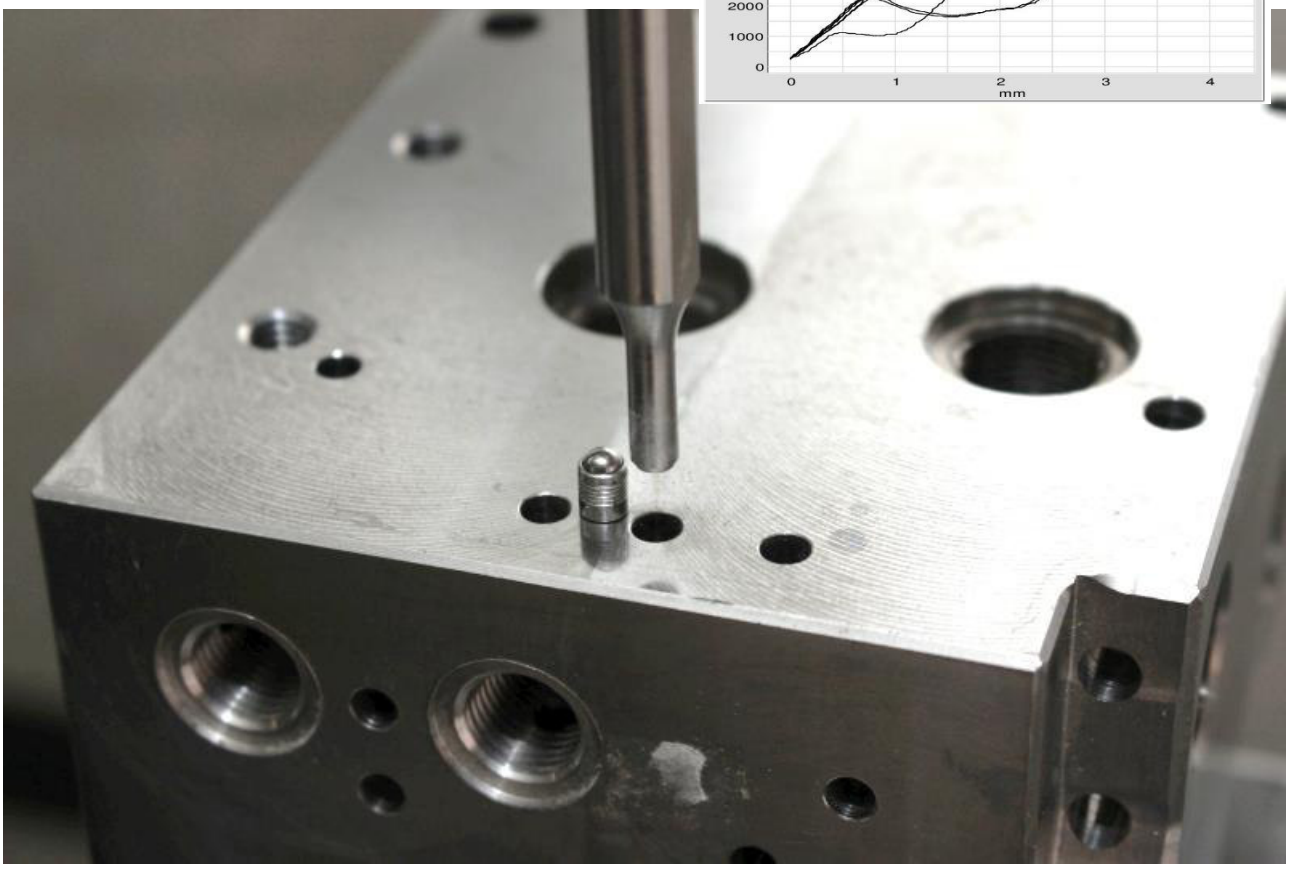
Installation system sealing plugs

- suitable for conical plugs
- suitable for ball plugs
- manuell stroke approx. 200 mm
- force approx. 19 kN
- setting stroke approx. 12 mm
- workpiece height approx. 500 mm
- worktable 1200x600 mm
- Frame made of aluminum profiles
- pneumatic control
- Two-hand operation

Options:

- aerostatics for easy positioning of heavy workpieces
- process monitoring (force and stroke)
- signaling device for IO and NIO
- electrical control
- workpiece holder





workpiece and tool with ball plugs ø 5 mm

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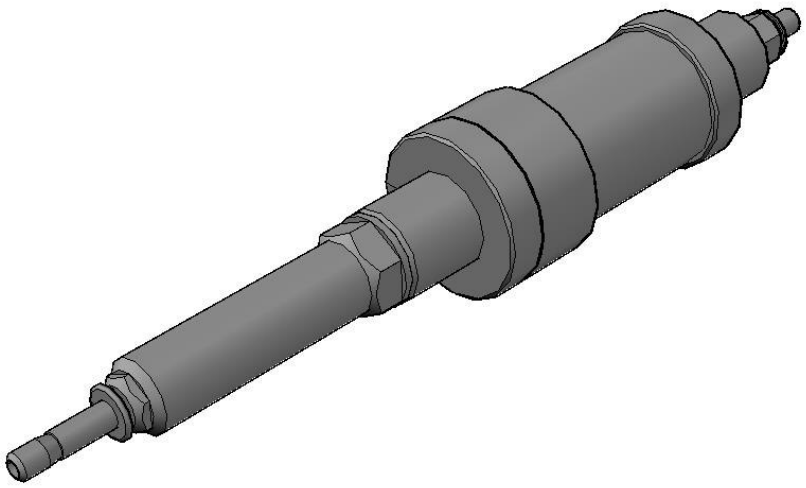
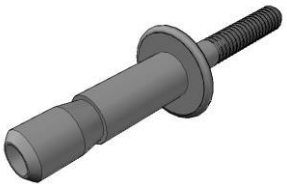
Tool for blind rivets Ø 9,8 mm





Characteristics / features:

- tool for blind rivets with mandrel derivation
- double bearings of the piston rod
- large distance between bearings
- power reserve by piston Ø 40 mm
- applicable for linear units
- ideal for robotic applications
- optionally with automatic feeding system
- ready for process monitoring
- pressure booster with integrated oil reservoir

Specifications:

blind rivet-Ø	9,8	mm
setting force (6/366 bar)	31	kN
stroke	30	mm
mandrel derivation-Ø	7	mm
division	1,2	mm
sleeves-Ø	28	mm
cylinder-Ø	65	mm
total length	327	mm
connection, hydraulic	G1/4	
connection, pneumatic	M5	
weight	3,24	kg

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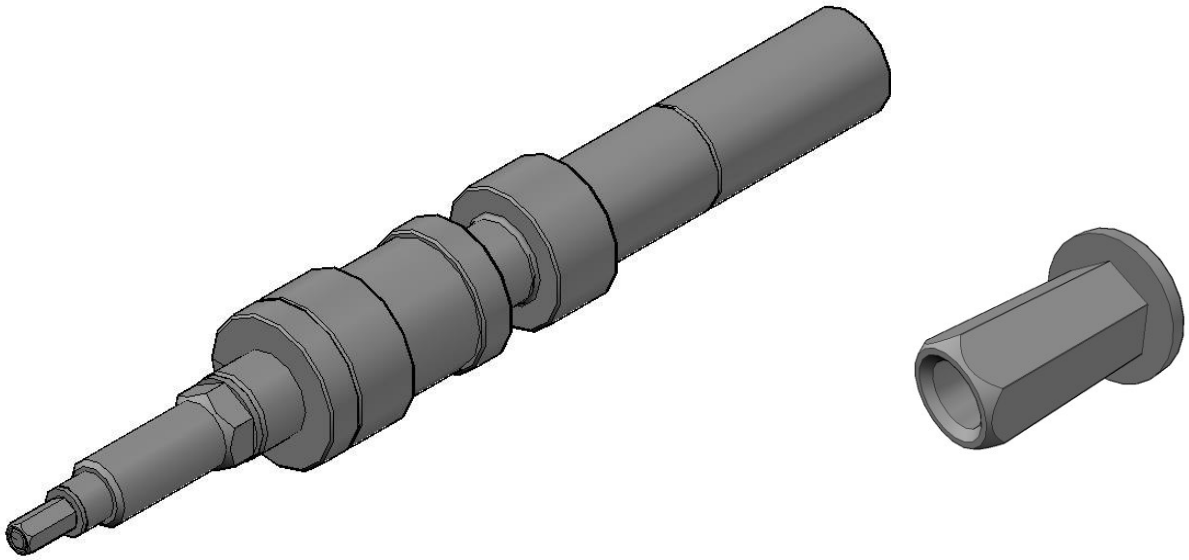
Tool for rivet nuts M6/M8/M10



Characteristics / features:

- tool for rivet nuts
- double bearings of the piston rod
- large distance between bearings
- power reserve by piston Ø 40 mm
- brushless DC servomotor
- planetary gear
- applicable for linear units
- ideal for robotic applications
- optionally with automatic feeding system
- ready for process monitoring
- pressure booster with integrated oil reservoir

Specifications:

Rivet nuts	M6/M8/M10	
setting force (5/195 bar)	16	kN *)
setting force (6/366 bar)	31	kN *)
stroke	12	mm
speed of rotation, max.	1100	rpm
sleeves-Ø	28	mm
cylinder-Ø	65	mm
total length	415	mm
connection, hydraulic	G1/4	
weight	4,95	kg

*) depending on pressure booster

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Workplace rivet nuts

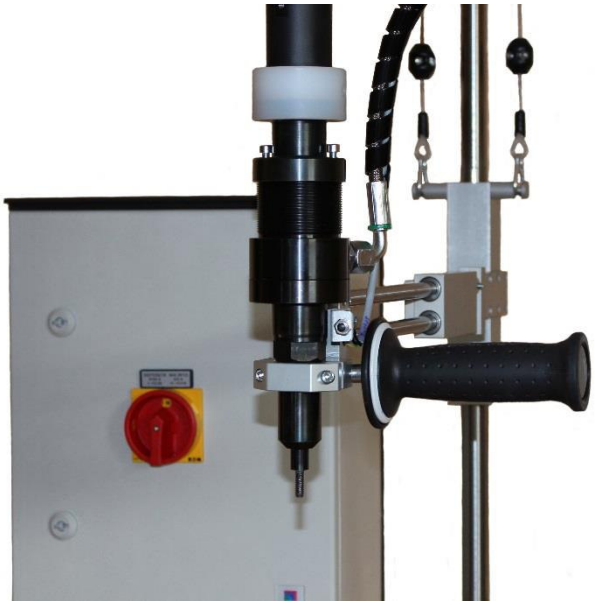
- rivet nuts M6, M8, M10 or M12
- setting force, depending on pressure booster 16, 31 kN
- stroke 12 mm
- speed right 500 1/min
- speed left 1000 1/min
- front sleeve-Ø 28 mm
- cylinder-Ø 65 mm
- total length 415 mm
- connection, hydraulic G1/4

Options:

- tool holder with ball guide and two balancers to compensate the weight
  height approx. 1.020 mm
  boom approx. 360 - 580 mm
- electric control with Siemens Logo!
- pneumatic control with solenoid valve
- full process monitoring DIGIFORCE 9310 with pressure and position sensor
- force controlled shutdown with intelligent pressure sensor

Intelligent pressure sensor at the pressure booster

YouTube



Tool on the tool holder

Rivet nut

Cabinet with Siemens Logo! and controller for brushless DC gear motor

Ing-D.B. GmbH
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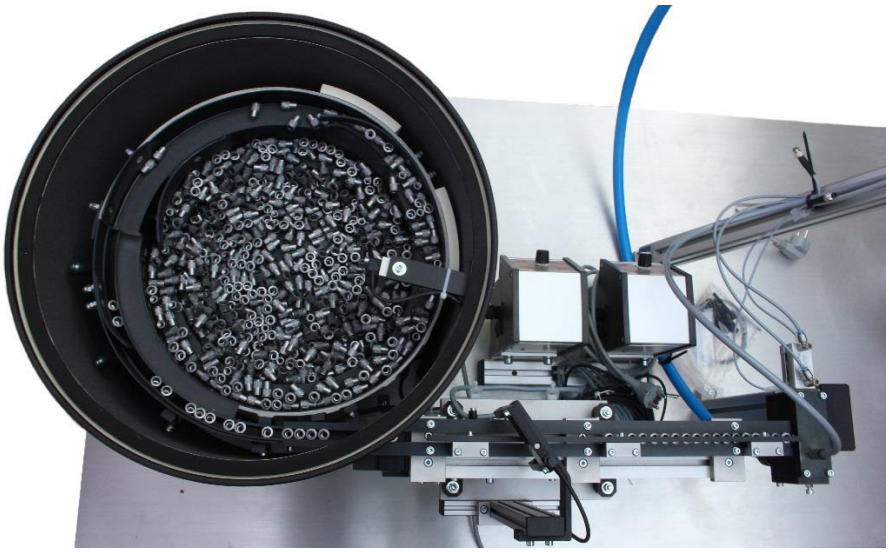
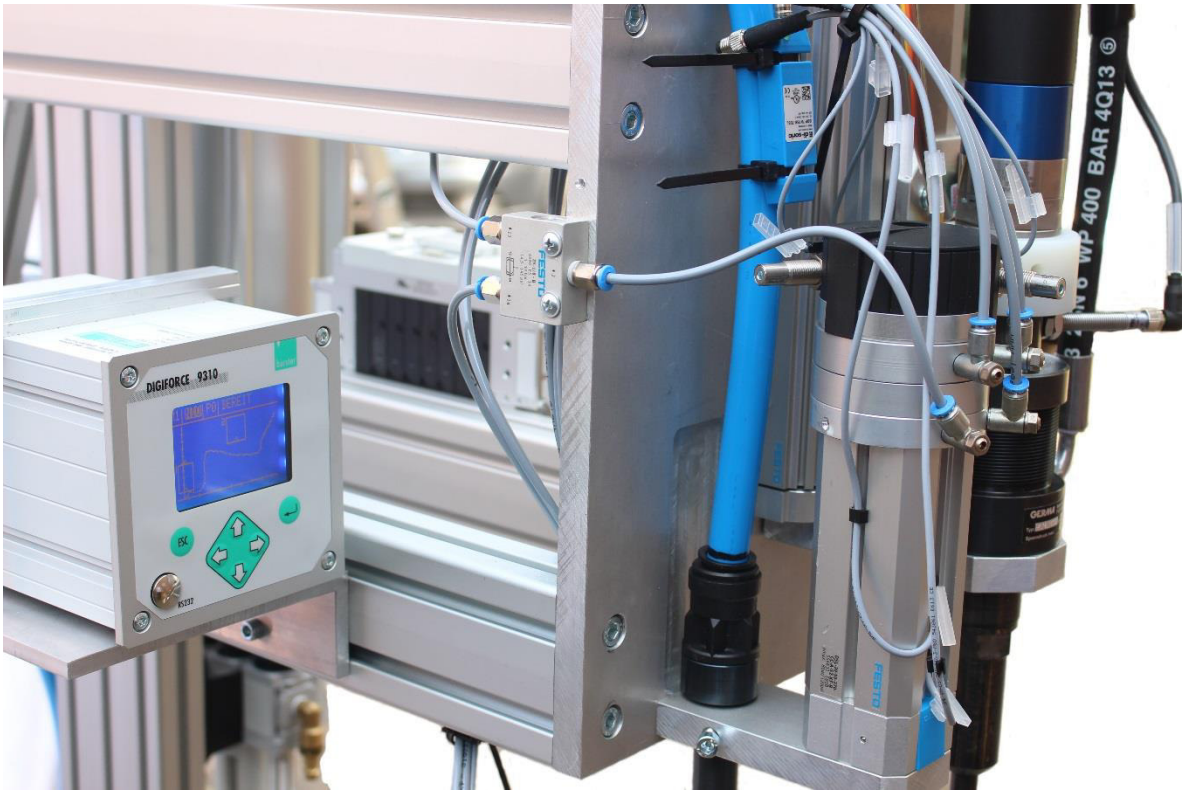
YouTube

Automation rivet nut M6

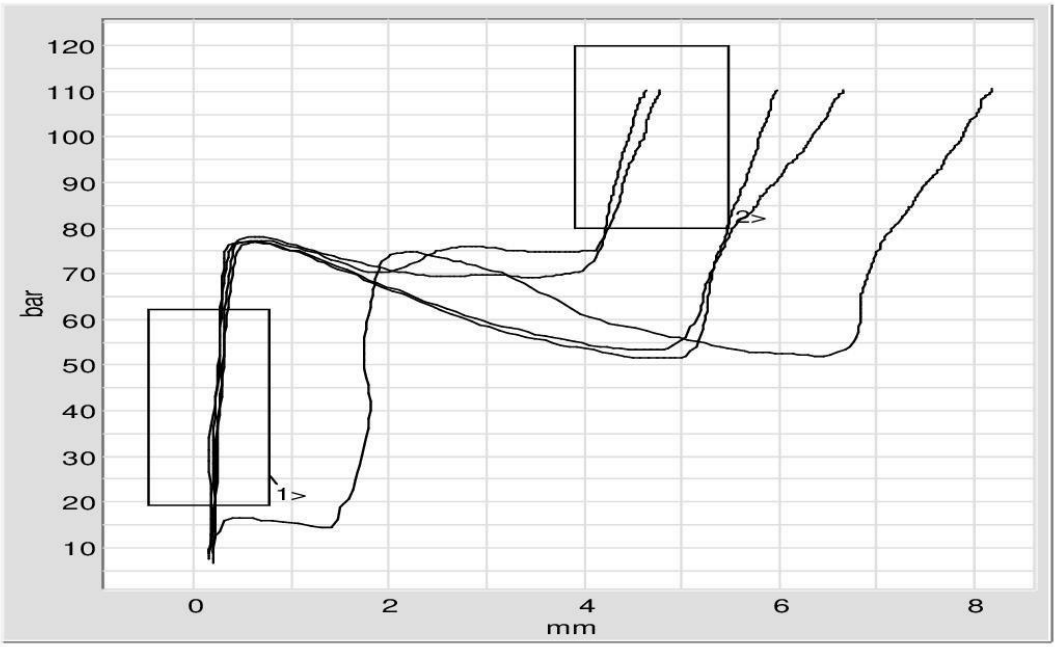


Feeding system for rivet nuts with spiral conveyors, linear conveyors and separation



Prozess control Digiforce 9310

Dirk Brinkmann Ing-D.B. GmbH	Kurvenschar DIGIFORCE 9310	DigiControl 9310 Version V2012.1.0	burster
		01.10.2014 19:20:29	Seite 1



Beschreibung: BNM M6-D10

Kurve	Bezeichnung	Messwerte	Ergebnis
1	in Luft	206	NIO
2	2mm Klemmbereich	184	NIO
3	3,5mm Klemmbereich	156	IO
4	4mm Klemmbereich	159	IO
5	1mm Abstand	236	NIO

Setting curves for workpiece thickness 0mm, 2mm, 3.5mm, 4mm and 1mm distance

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Overview of services

- planning
- development
- construction
- control
- calculation
- assembly
- service
- advice
- training

of / for customized solutions