

*Innovative ideas
for your success!*

KAMATEC[®]
Consulting - Innovation - Production

A close-up photograph of a metal surface with several circular holes. One hole in the center contains a metal ring. In the bottom left corner, there is a large, shiny metal rivet. The background is slightly blurred, showing more holes and the texture of the metal.

BONDING & RIVETING THE WELDING OF TOMORROW



BONDING & RIVETING.

A modern joining process.

More and more frequently, adhesive technology is being used in automotive engineering. Thus, more effort is put on „gluing & riveting“ in the repair sector.

A well-known automotive manufacturer from Munich has already introduced this system for the repair of some vehicles. The manufacturer provides this new repair method as the manufacturer's specification for the areas, which need to be repaired. Thus, no more welding is needed. This method of repair was tested and approved.

The repair method results in a simplified repair and reduced assembly and service life. Furthermore, a better corrosion protection is ensured by the surface bonding of the KTL layers.

FURTHER ADVANTAGES:

- No temperature effects due to welding
- No heat distortion in the bonding area
- Material-independent bondings are possible
- Higher strength, stability and durability
- No harmful vapors and gases



PNP 90

The external compressed air supply.

The hydraulic pump is a pneumatic driven pressure intensifier with a pressure ratio of 1:100. This means that hydraulic output pressure of 600 bars is generated with an input pressure of 6 bars. When the equipment's preset final pressure is reached, the pump stops automatically and keeps the pressure constant. The hydraulic pump has a pneumatic controlled pressure relief valve.

HYDRAULIC ACTUATOR

Where tons are being generated.

The actuator generates the pressure for punching and riveting. The hydraulic actuator is connected to the hydraulic pump via a high-pressure hose. Thus, you have less weight to lift during the riveting process and are more flexible.



Hydraulic actuator (PNP 90 XT ²)	
Compressive force	10 t (100 kN)
Tensile force	8 t (80 kN)
Two-circuit-hydraulic	yes
Travel	50 mm
Weight	4,6 kg

Hydraulic actuator (PNP 90 UN 2.0)	
Compressive force	6 t (60 kN)
Tensile force	-
Two-circuit-hydraulic	no
Travel	15 mm
Weight	2,9 kg

TKR – the manufacturer

Long-lasting quality from Germany.

For many years, TKR has been a trusted partner of automotive manufacturers in the field of special tools. The manufacturer TKR stands for high quality and longevity – Made in Germany.

2008:

Year of publication of the first PNP 90 SNW-RIV with a pressure of 60 kN. The rivet clamp NB115 was firmly connected to the hydraulic actuator.



2009:

The PNP 90 SNW-RIV receives a BMW approval and is officially available by BMW.

2010:

A universal version of the PNP 90 SNW-RIV appears - the PNP 90 UN 2.0. It is possible to use three different sized rivets.



2010:

The PNP 90 UN 2.0 receives an official approval from Daimler AG.



2014:

The PNP 90 UN 2.0 receives an official approval from Daimler AG.

2014:

In the same year, the BNW 25 kN riveting tool receives an official approval from BMW and Audi (VAS).



2015:

The PNP 90 XT² has been launched. Thanks to the modular design, existing riveting punches of the PNP 90 UN 2.0 can still be used.

2015:

The PNP 90 XT² gets the approval from Daimler AG.



2017:

The docking station for the PNP 90 XT² has been launched. The accessory ensures a consistent rivet pattern - even if the inlet pressure drops significantly. The PNP 90 XT² is now also approved for Jaguar and Land-rover.



PNP 90 SNW-RIV

The first generation (BMW version).

The pneumatic driven punching and riveting tool, model PNP 90 SNW-RIV, is used to set rivets. This kit of tool is specially designed to rivet sheet metal in the automotive sector. The rivet bracket is firmly connected to the hydraulic actuator.

SCOPE OF DELIVERY

- Pressure intensifiers
- Hydraulic actuator incl. rivet clamp NB115
- Hose package
- RIVKIT
- Transport case
- Instruction manual

TECHNICAL DATA

Compressive force	5,5 t (55 kN)
Tension force	-
Two-circuit-hydraulik	no
Travel	25 mm
Clamp opening	78 mm
Opening depth (riveting clamp)	125 mm
Max. inlet pressure	6 bar
Max. work pressure	600 bar

OEM APPROVAL

- BMW AG

*Exclusive distribution: BMW



PNP 90 UN 2.0

The universal version with exchangeable riveting clamps.

The pneumatic/hydraulic universal tool PNP 90 UN 2.0 was specially developed for all common riveting processes in thin sheet metal structures. The universal technology of the device allows the adaptation of many attachments and rivets for different applications.

SCOPE OF DELIVERY

- Pressure intensifiers PNP 90 UN 2.0
- Hydraulic actuator HP 35
- Hose package UN 2.0
- RIVKIT UN 2.0
- Ball lock pins (2 pcs.)
- Riveting clamp NB 40
- Riveting clamp NB115
- Riveting clamp NB230
- Transport cases (3 pcs.)
- Instruction manual

TECHNICAL DATA

Compressive force	6 t (60 kN)
Tension force	-
Two-circuit-hydraulik	Nein
Travel	15 mm
Max. inlet pressure	6 bar
Max. work pressure	600 bar

OEM APPROVAL

- DAIMLER AG



PNP 90 IS UPGRADEABLE.

Now even stronger and more extensive in the application.

Simply upgrade and continue to use existing riveting tools. The previous version PNP 90 UN 2.0 was often sold. Therefore, the PNP 90 product line was developed so that the 6-ton version (UN 2.0) can easily be upgraded to 10 tons.





PNP 90 XT²

Strongest mobile hydraulic tool for the bodywork repair.

The pneumatic, hydraulic universal stamping and riveting tool PNP 90 XT² is specifically designed all common riveting operations for sandwich panels, thin sheets and high-strength sheet. Furthermore, the setting of blind rivet nuts and screws and working in hard-to-reach areas is no problem for this equipment. The previous model, PNP 90 UN 2.0, is upgradeable to the new version PNP 90 XT². Even existing punches can still be used. Due to the intelligent mechanical coding within the hydraulic actuator HA XT², too high pressure settings and thus damage of unsuitable punches can be excluded. For future applications, the new double-acting technology and the expandability of the products are very well positioned. The universal technology of the device allows the adaptation of many attachments for different applications.

SCOPE OF DELIVERY

- Pressure intensifiers PNP 90 XT²
- Hydraulic actuator HA XT²
- Duo-hose-package DN4-XT²
- Tool kit RIVKIT MB 1 „punching“
- Tool kit RIVKIT MB 2 „flow form rivets“
- Adapter kit60 kN
- Riveting clamp NB 45 incl. universal handle
- Riveting clamp NB 130
- Riveting clamp NB 240
- Blind riveting adapter BNW 25 kN incl. uni-versal adaption kit
- Tool kit [hard-to-reach]
- Front ejector
- Tool kit for blind riveting nuts
- Mounting aid for griffin cone
- Extension 160 mm
- Trolley with tray
- Cover
- Instruction manual

TECHNICAL DATA

Compressive force	10 t (100 kN)
Tension force	8 t (80 kN)
Two-circuit-hydraulik	yes
Travel	50 mm
Max. inlet pressure	6 bar
Max. work pressure	600 bar

OEM APPROVAL

- DAIMLER AG

Why PNP 90 XT²?

Because there is nothing comparable.

We upgraded one of our existing top-seller products. PNP 90 is 67% stronger than before. PNP 90 XT² reaches a compressing force of 100 kN (10 tonnes). Thus, it is also possible to precess high strength materials.. The new hydraulic actuator HA XT² is equipped with two-circuit-hydraulic. For this reason the stamping punch gets pulled out with up to 80 kN (8 tonnes).



Back & forth. Just push the button.

The new designed hydraulic actuator HA XT² is equipped with two-circuit-hydraulic. As a result, the actuator pulls out the punching-die with up to 8 tonnes (80 kN).

Captive locking pins.

Ball Lock Pins? The new locking pins are locked conical. Thus, the attached pins cannot be lost. Furthermore, this solution safes time: open lock, change the clamp, close lock, continue.





Designed to save time.

Swapping punches is quick and easy. The clear attribution through colour coding and labelling of the rivet inserts guarantees an unique use of fitting pairs of punches.



Handy and safe.

Because of such an enormous power we used a slug-collecting protection. It prevents the slug from uncontrolled shooting out by punching high-strength materials. The wipers enables effortless pulling out of the of the stamping punch from the carrier material. We are talking about eight tonnes of tension force.

Patented punch mandrel receiver.

This holder saves time and effort, when changing the punch. It was manufactured to the highest quality standard and impresses with a long life. When used properly, the precise tools can be used for over 300 die-cuts in high-strength materials.



Adjustable operating pressure.

The operating pressure of PNP 90 XT² is adjustable continuously. The setting depends on different applications and specific requirements.





PNP 90 XT² with Docking Station XT².

PNP 90 XT² – JLR Version

Strongest mobile hydraulic tool for bodywork repair.

The pneumatic, hydraulic universal stamping and riveting tool PNP 90 XT² is specifically designed for all common riveting operations of sandwich panels, thin sheet and high-strength sheet. The equipment's universal technology enables adaptation of various attachments for different applications. The hydraulic pump is a pneumatically-driven pressure intensifier with a ratio of 1:100. This means that a hydraulic secondary pressure of 600 bar is generated by a primary air pressure of 6 bar. When the equipment's preset final pressure is reached, the pump stops automatically and keeps this pressure constant. The hydraulic pump has a pneumatically controlled pressure relief valve.

The Docking Station XT² supplementary unit is an addition to TKR's PNP 90 XT² stamping and riveting tool. It ensures consistent quality for riveting processes. If the operating pressure drops below 6 bar (required minimum operation pressure), the operator will be informed via optical indicator (red LED) and the pressure accumulator will take over the pressure supply.

SCOPE OF DELIVERY

- Pressure intensifiers PNP 90 XT²
- Docking Station XT²
- Hydraulic actuator HA XT² JLR
- Duo-hose-package DN4-XT²
- Tool kit RIVKIT JLR
- Riveting clamp NB 45
- Trolley with tray
- Instruction manual

TECHNICAL DATA

Compressive force	10 t (100 kN)
Tension force	8 t (80 kN)
Two-circuit-hydraulik	yes
Travel	50 mm
Max. inlet pressure	6 bar
Max. work pressure	600 bar

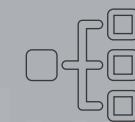
OEM APPROVAL

- Jaguar
- Land-Rover

Comparison of different versions.


No.	Art.-No.	Description	Basic Version	Standard Version	Full Version	JLR Basic
1	501102	Pressure intensifiers PNP 90 XT²	✓	✓	✓	✓
2	501101	Hydraulic actuator XT² / 100 kN	✓	✓	✓	✓
3	501105	Riveting clamp NB 45	✓	✓	✓	✓
4	501108	Duo hose package, DN4-XT²	✓	✓	✓	✓
5	501014	Tool kit RIVKIT MB 2.0 – Kit 1 „punching“	✓	✓	✓	
6	501015	Riveting tool kit Set RIVKIT MB 2.0 – Kit 2 „flow form rivets“	✓	✓	✓	
7	501021	Riveting tool kit Set RIVKIT XT² – JLR Edition				✓
8	501016	Adapter kit 60 kN	✓	✓	✓	
9	501017	Riveting tool kit Set RIVKIT UN 2.0 - „BMW-Edition“ 60 kN	✓	✓	✓	
10	501106	Riveting clamp NB 130		✓	✓	
11	501107	Riveting clamp NB 240 incl. distance bolt		✓	✓	
12	000100	Closeable trolley with tray	✓	✓	✓	
13	000101	Cover for riveting station	✓	✓	✓	
14	501103	Docking Station XT²				✓
15	505002	Blind riveting tool BNW 25 kN – Premium Edition			✓	





Universal & quick adaptability.

The PNP 90 punching and riveting tool is adapted to the specifications of most German car manufacturers. It is easy to do a quick change of different riveting tools. Even the UN 2.0 RIVKIT can be easily used with the PNP 90 XT². In case of an upgrade, you can continue to use your existing riveting dies.

							
RIVKIT UN 2.0 – Universal tool –	RIVKIT UN 2.0 – Audi Edition –	RIVKIT UN 2.0 – BMW Edition –	RIVKIT UN 2.0 – JLR Edition –	RIVKIT XT² – Kit 1 „punching“ –	RIVKIT XT² – Kit 2 „flow form rivets“ –	RIVKIT XT² – Kit 3 „punching“ –	RIVKIT XT² – JLR Edition –
Scope of delivery	Scope of delivery	Scope of delivery	Scope of delivery	Scope of delivery	Scope of delivery	Scope of delivery	Scope of delivery
<ul style="list-style-type: none">◦ Riveting bolt & die Ø 3mm◦ Riveting bolt & die Ø 5mm◦ Flow form bolt & die◦ Punching blot & die Ø6mm◦ Extraction bolt & die◦ Spacing bolt kit◦ Elastomer rings◦ Installation wrench	<ul style="list-style-type: none">◦ Wide range of riveting tools◦ Processing punch rivets◦ Processing full rivets◦ Preperation for pop / blind rivets◦ Installation wrench	<ul style="list-style-type: none">◦ Riveting bolt & die Ø 3mm◦ Riveting bolt & die Ø 5mm◦ Installation wrench◦ Elastomer rings (4 pcs.)	<ul style="list-style-type: none">◦ Extraction die Ø 5,5 mm◦ Closing head, conical◦ Riveting bolt Ø 8,8 mm◦ Closing head, flat◦ Extraction die, long Ø 8,2 mm◦ Extraction bolt Ø 4,6 mm◦ Extraction bolt Ø 5 mm◦ Extraction die Ø 8,2 mm	<ul style="list-style-type: none">◦ Punching bolt ø 6 mm◦ Punching die ø 6 mm◦ Slidebush ø 6 mm◦ Punching bolt ø 8 mm◦ Punching die ø 8 mm◦ Slidebush ø 8 mm◦ Holder◦ Installation wrench SW 16 / SW 20	<ul style="list-style-type: none">◦ Flow form bolt & die ø 6 mm◦ Flow form bolt & die ø 8 mm◦ Reshaping die◦ Installation wrench SW 16 / SW 20◦ Integrally forming die ø 6 mm◦ Integrally forming die ø 8 mm◦ Holder◦ Extraction bolt & die	<ul style="list-style-type: none">◦ Punching bolt ø 6,7 mm◦ Punching die ø 6,7 mm◦ Slidebush ø 6,7 mm◦ Punching bolt ø 10 mm◦ Punching die ø 10 mm◦ Slidebush ø 10 mm◦ Holder◦ Installation wrench SW 16 / SW 20	<ul style="list-style-type: none">◦ Extraction die Ø 5,5 mm◦ Closing head, conical◦ Riveting bolt Ø 8,8 mm◦ Closing head, flat◦ Extraction die, long Ø 8,2 mm◦ Extraction bolt Ø 4,6 mm◦ Extraction bolt Ø 5 mm◦ Extraction die Ø 8,2 mm



THE RIVETING CLAMPS

Enourmous forces have never been so easy to handle.

The new riveting clamps are now available with a universal handle for even better handling. Although they punch with incredible 100 kN (10 tons) in high-strength materials, while the effort is surprisingly low. The handle is fully applicable to any rivet bracket of PNP 90 XT² and remounted in seconds.

ADAPTER 60 KN

For the usage of already existing riveting tools.

By using the especially developed adapter set, it is possible to use the existing riveting tools (UN 2.0) with the PNP 90 XT². The hydraulic actuator HA XT² is automatically throttled from 100 kN (10t) to 60 kN (6t).





**THE SUITABLE BLIND
RIVETING TOOL FOR
YOUR PNP 90.**



Blind Riveting Tool BNW 25 kN

Small, modular and extremely powerful.

The pneumatic, hydraulic blind riveting tool was specially developed for all common riveting processes in the thin sheet metal field. Simple setting of blind rivets is now possible with your PNP 90. The rivet head is held by a magnet in the blind riveting tool. The optional accessories allow you to customize your set to suit your way of working and processes. The blind riveting tool may only be operated with the PNP 90 hydraulic pump.

CONTENT BASIC

- Blind Riveting Tool BNW 25 kN
incl. universal adaption
- Control unit
- Accessorie kit universal adaption
- Installation wrench
- Instruction manual

CONTENT PREMIUM

- BNW 25 kN – Basic Set
- Tool kit [hard-to-reach]
- Tool kit for blind riveting nuts
- Extension 16 mm
- Front Ejector
- Instruction manual

TECHNICAL DATA

Setting force	2,5 T (25 kN)
Travel	20 mm
Breite	43,5 mm
Weight	depending on accessory

OEM APPROVALS

- Daimler AG
- Volkswagen AG

THE accessory for the PNP 90

Universal adaption BNW 25 kN

The fast way setting blind rivets.
Without changing the griffin cones.

The new universal adaption for BNW 25 kN is more than just an adaption for setting blind rivets - it is more like a uncompriasing accessory for all blind rivets with a stub diameter from 1,8 - 4,4 mm. This is possible without modifications of the blind riveting unit.



SCOPE OF DELIVERY

- Universal adaption for BNW 25 kN
- Rivet head Ø 1,8 - 2,5 mm
- Rivet head Ø 2,6 - 3,0 mm
- Rivet head Ø 3,1 - 3,5 mm
- Rivet head Ø 3,6 - 4,4 mm
- Calibrations aid for griffin cone
- Griffin cone, universal
- Transport case with Inlay
- Assembly instruction



ADVANTAGES

- Saves time by switching the rivet head
- For all blind rivets (rivet summy Ø 1,8 - 4,4 mm)
- High standard of quality - Made in Germany
- Safely stowed in the case

TECHNICAL DATA

Length	223 mm
Width	34,5 mm
Heigh	62 mm
Weight	0,95 kg
Travel	20 mm
Setting force	2,5 t (25 kN)



Front ejector

For ejecting demolished blind rivet pins.

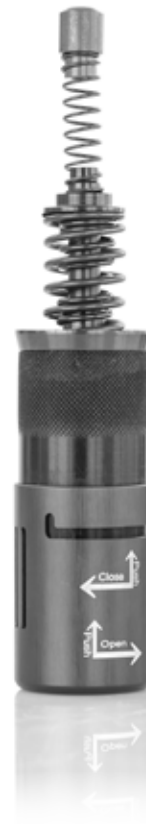
The front ejector for the BNW 25 kN blind riveting tool is designed to release the pins of the blind rivets from the required opening. Thus, the blind riveting adapter is smaller, even more manageable and can therefore be used in hard to reach places.



Collecting vessel

To collect the demolished sticks of blind rivets.

This container for the blind riveting tool BNW 25 kN intercepts broken blind rivet pins (blind rivet pins). Through a mechanism, the container can be easily opened to remove the rivet pins. This accessory is ideal for setting blind rivets faster without removing each pin individually.



Tool kit BNW 25 kN [hard-to-reach]

The easy way, to process hard-to-reach areas.

This kit, in combination with the front ejector, is the key to size the tool to a minimum. Interact with places you would never reach. Various tool attachments are included in the set:
1.8 - 2.3 mm; 2.3 - 3.0 mm; 3.6 - 4.4 mm; 4,0 - 4,2 mm.



SCOPE OF DELIVERY

- Tip with locking system
- Rivet Holder ø 3,6 - 4,4 mm stub
- Griffin cone ø 3,6 - 4,4 mm stub
- Rivet head ø 1,8 - 2,3 mm stub
- Rivet holder ø 2,3 - 3,0 mm stub
- Griffin cone ø 1,8 - 2,3 mm stub
- Rivet head ø 4,0 - 4,2 mm stub
- Griffin cone ø 2,3 - 3,0 mm stub
- Transport case with Inlay
- Assembly instruction

ADVANTAGES

- Quick operation
- Different stub-sizes
- Processing hard-to-reach areas easily

TECHNICAL DATA

Length	127 mm
Width	34,5 mm
Heigh	62 mm
Weight	0,8 kg
Travel	20 mm
Setting force	2,5 t (25 kN)



Extension for Blind Riveting Tool BNW 25 kN

Ideal for hard-to-reach areas.

Our extension for your blind riveting tool BNW 25 kN. Setting blind rivets to hard to reach areas has never been easier. For using this this practical accessory you just need the accessorie kit BNW 25 kN [hard-to-reach]. This is a big benefit because the tips are changeable.

ADVANTAGES

- Quick & easy installation
- Processing hard-to-reach areas easily
- Different stub-sizes (see [hard-to-reach]*)

*Adaptionen out of „Tool Kit [hard-to-reach]“

The same demolition diameter can be edited, since the mouthpieces are changeable.



recommended accessory:
front ejector

Tool Kit „Blind Riveting Nuts“ 25 kN, stroke controlled

Take back the control over the blind riveting nuts closing bulk.

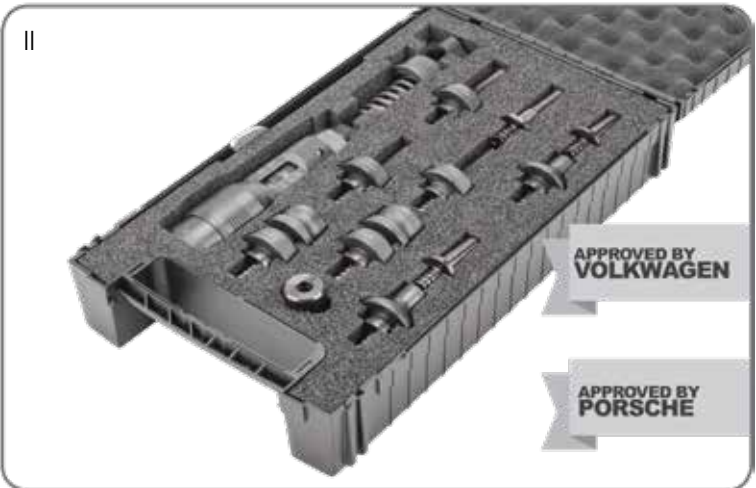
This accessory for your blind riveting adapter is designed for setting blind riveting nuts. This tool will give you control over the closing bulk of the blind riveting nut.



Thread, metric: M5, M6, M8, M10, M10LH, M12

ADVANTAGES

- Quick & easy processing of blind rivet nuts
- Complete control over the the closing bulk of the blind riveting nut
- Adjustable travel
- Extensive scope of delivery for different sizes



Thread, metric: M5, M6, M8, M10
Blind rivet nut M10LH, M12

Thread, metric: M5, M6
Blind rivet screw

Thread, metric: T5, T6
Coarse thread

Welding Stud Extension M6

The quick & easy way to pull rivets.

With this extension, welded M6 tension bolts can be pulled out. This is a faster way to remove punch rivets from multiple sheet metal connections. Thanks to the method, there is less contamination than with conventional drilling out of the punch rivets.



ADVANTAGES

- Time savings when changing the rivet heads
- High standard of quality – Made in Germany
- Safely stowed in the case
- Good result (clean hole)



SCOPE OF DELIVERY

- Welding stud extension
- Rivet head Ø M6
- Transport case with inlay
- Assembly instruction

TECHNICAL DATA

Length	190 mm
Width	34,5 mm
Heigh	62 mm
Weight	0,95 kg
Travel	20 mm
Setting force	2,5 t (25 kN)

OEM APPROVALS	Daimler AG	Volkswagen	Audi	Porsche	BMW	Jaguar	Land Rover	Tesla	Ford
PNP 90 SNW-RIV					X				
PNP 90 UN 2.0	X							X	
PNP 90 XT²	X							X	X
PNP 90 XT² – JLR Edition						X	X		
RIV KIT UN 2.0 – Uni					X				
RIV KIT UN 2.0 – Audi Edition			X						
RIV KIT UN 2.0 – BMW Edition					X				
RIV KIT UN 2.0 – JLR Edition						X	X		
RIV KIT XT² – Kit 1 "punching"	X								
RIV KIT XT² – Kit 2 "flow form rivets"	X								X
RIV KIT XT² – Kit 3 "punching"									
RIV KIT XT² – JLR Version						X	X		
Blind Riveting Tool BNW 25 kN	X		X	X				X	
BNW Tool Kit „universal adaption“	X			X					
BNW Tool Kit [hard-to-reach]	X			X					
BNW Tool Kit Blind Riveting Nuts I	X								
BNW Tool Kit Blind Riveting Nuts II		X		X					
BNW Extension 16 mm									
BNW Welding Stud Extension		X		X					



MAINTENANCE

You may run an inspection*
for your PNP 90 UN 2.0?

PNP 90 UN 2.0 stands for reliability, excellent repair results and a long service life. But even high quality tools become ware after some years. The compressive force of 60 kN (6 tonnes) is not achieved. This leads to more difficult working conditions. We still ensure optimal working conditions with your PNP 90 UN 2.0 - for a fair price. The inspection of the PNP 90 is due every two years, even if the machine has been used rarely or not at all. The minimum pressure must not be fallen below, since the rivets are otherwise not set properly. ATTENTION: In case of consequential damage, the operation is liable.



The inspection of the PNP 90 is due every two years, even if the machine has been used rarely or not at all. The minimum pressure must not be fallen below, since the rivets are otherwise not set properly. ATTENTION: In case of consequential damage, the operation is liable.



KAMATEC GmbH
Im Oberen Tal 31
D-74858 Aglasterhausen

Tel.: +49 (0) 6262 / 92 605-0
Fax: +49 (0) 6262 / 92 605-29
Mail: info@kamatec.com

WWW.KAMATEC.COM