GEDORE
KLANN EXPERIENCE

KL- 0033-10 E / -100 A

Compact Internal-Type Spring Compressor

Operating instructions EN

⚠ Read and understand before use!

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Contents

1. FOR YOUR SAFETY

Read and understand these operating instructions **before using** the internal-type spring compressor and observe all safety and warning instructions! Misuse can result in **DEATH** or **SEVERE INJURIES** ! These operating instructions are an integral part of the internal-type spring compressor. Keep them at a safe place for future reference, and always pass them on to subsequent users of the internal-type spring compressor! The internal-type spring compressor complies with the recognised rules of technology as well as the relevant safety regulations!

1.1 Target group

These operating instructions are **exclusively** intended for skilled personnel in specialised motor vehicle workshops!

The internal-type spring compressor **may only be** used by skilled personnel in specialised motor vehicle workshops who are familiar with the basic regulations on work safety and accident prevention!

- **Never** allow unauthorised, inexperienced persons, minors and children, or persons with limited physical, sensory, and mental abilities to use the internal-type spring compressor!

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1.2 Obligations of the owner

Pursuant to the German Ordinance on Industrial Safety and Health *(BetrSichV)*, employers are obliged to provide their employees with safe work equipment in accordance with the recognised rules of technology and the relevant safety regulations!

- The owner of the internal-type spring compressor **must** ensure that **only** trained personnel in specialised vehicle workshops use the internal-type spring compressor!
- The owner of the internal-type spring compressor **must** ensure that the instructions for use are available to the user and that the user has completely read and understood the instructions for use **before** using the internal-type spring compressor!
- The owner of the internal-type spring compressor **must** ensure that the user is familiar with the basic regulations on work safety and accident prevention, and that the personal protective equipment is available to him/her!

1.3 Intended use

The internal-type spring compressor ...

- **may only** be used for compressing and relieving chassis springs on wishbone and multi-link axles!
- **may only** be used for springs with an **inner Ø** of **min. 100mm** up to an **outer Ø** of **max. 130mm**!
- **may only** be used with pressure plates from **GEDORE-Automotive** which are compatible with the spring!
- **may only** be used to a **max. load of 30,000 Newton**!
- **may only** be used with a manual drive with muscle power!
- **may only** be used in the way described in these operating instructions!

⚠ Any other use can result in **DEATH** or **SEVERE INJURIES** !

1.4 Reasonably foreseeable misuse

The internal-type spring compressor ...

- **must never** be used for compressing springs other than that intended for it!
- **must never** be used for compressing springs with extremely high spring force!
- **must never** be used together with pressure plates from a different manufacturer!
- **must never be** used together with an impulse or impact screwdriver!
- **must never** be used with a machine-operated drive or a drive other than that intended for it!
- **must never** be used for batch processing with many compressing processes within a few minutes!
- **must never** be used with bridged, modified, or removed safety devices!
- **must never** be modified, converted, or used for other purposes without authorisation!

⚠ Use the internal-type spring compressor **always** as intended. Any other use can result in **DEATH** or in **SEVERE INJURIES**!

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1.5 Personal protective equipment

For your safety, **always** wear personal protective equipment when using the internal-type spring compressor! The internal-type spring compressor can bring about mechanical hazards such as crushing, cutting and shock injuries.

Always **wear EYE PROTECTION** *(for example to DIN EN 166, OSHA 29 CFR 1910.133, ANSI Z87)* when using the internal-type spring compressor to protect yourself against flying parts or particles!

- When using the internal-type spring compressor, flying parts or particles can cause **SEVERE INJURIES** to your **eyes**!

Always **wear PROTECTIVE GLOVES** *(for example to DIN EN 388, OSHA 29 CFR 1910.138, ANSI 105)* when using the internal-type spring compressor to protect yourself against sharp edges and crushing between parts!

- When working with the internal-type spring compressor, sharp edges and crushing between parts can cause **SEVERE INJURIES** to your **hands**!

Always **wear SAFETY SHOES** *(for example to DIN EN ISO 20345, OSHA 29 CFR 1910.136, ANSI Z41)* when using the internal-type spring compressor to protect yourself against dropping parts!

- When working with the internal-type spring compressor, dropping parts can cause **SEVERE INJURIES** to your **feet and toes**!

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1.6 Labelling of the warnings

Warnings warn of potential **hazards**. **Always** observe these warnings to avoid **DEATH** or **INJURIES**!

For better differentiation, warnings in these operating instructions are classified as follows:	
Warning sign	**Meaning**
⚠WARNING	**Indicates** a hazardous situation which, if not avoided, could cause **DEATH** or **SEVERE INJURIES**.
⚠CAUTION	**Indicates**a hazardous situation which, if not avoided, could cause **MODERATE** or **MINOR INJURIES**.
ATTENTION	**Indicates** a situation which, if not avoided, can cause damage to the tool or an object in its vicinity.
ⓘ	**Note** on important information and useful tips.

1.7 Basic warnings

⚠WARNING - Danger to life from MISUSE

The internal-type spring compressor can break and abruptly release itself as a result of a **MISUSE**, which can cause the internal-type spring compressor, various parts and the spring of the vehicle to be hurled about. This can cause **DEATH** or **SEVERE INJURIES**!

- Read and understand these operating instructions **before using** the internal-type spring compressor, and observe all safety and warning instructions for **safe use**!
- **Always** work with the internal-type spring compressor in accordance with the basic regulations on work safety and accident prevention!
- **Only** use the internal-type spring compressor as described in these operating instructions!
- **Always** observe the vehicle-specific application procedures in the repair guide of the vehicle manufacturer!
- **Never** use the internal-type spring compressor if it is damaged or has loose parts or unauthorised modifications!
- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!
- Use the internal-type spring compressor **only** with **GEDORE Automotive** pressure plates that are compatible with the spring!
- **Never** use the internal-type spring compressor for batch processing with many compressing processes within a few minutes!
- **Always** observe the installation position of the chassis spring specified by the vehicle manufacturer!
- **Never** hit the internal-type spring compressor with a hammer or anything similar!
- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!

⚠WARNING - Danger to life from OVERLOAD

The internal-type spring compressor can break and abruptly release itself as a result of **OVERLOAD**, which can cause the internal-type spring compressor, various parts and the spring of the vehicle to be hurled about. This can cause **DEATH** or **SEVERE INJURIES**!

- **Never** exceed the **maximum loading capacity** of the internal-type spring compressor!
- **Never** use the internal-type spring compressor to compress springs with extremely high spring force!
- **Never** use the internal-type spring compressor for batch processing with many compressing processes within a few minutes!
- **Before each use** of the internal-type spring compressor, check both screws of the anti-rotation device for tight seat!
- **Never** use the internal-type spring compressor if it is damaged or has loose parts or unauthorised modifications!
- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!
- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!

⚠WARNING - Danger of injury from DROPPING

There is a risk of the internal-type spring compressor **DROPPING** during preparation and use (overhead, for example). This can cause **DEATH** or **SEVERE INJURIES**!

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- Avoid dropping the internal-type spring compressor **at all costs**, especially when it is under load and/or compressed!
- **Always** make sure that the internal-type spring compressor is securely attached to the chassis spring!
- **Never** leave the internal-type spring compressor unattended on the chassis spring when it is compressed!
- Put down the internal-type spring compressor safely to prevent it from dropping (for example on a workbench)!
- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!

⚠CAUTION - Danger from OVERHEATING

OVERHEATING can cause the inner spring tensioner to release itself. This can cause **MODERATE** or **MINOR INJURIES** due to crushing hands or fingers.

- To lubricate the spindle, use **only MOLYKOTE® P-74 paste**!
- **Never** use the internal-type spring compressor for batch processing with many compressing processes within a few minutes!
- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!
- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!

ATTENTION - Risk of DAMAGE

There is a risk of **DAMAGING** the vehicle, the chassis spring and the internal-type spring compressor.

- **Always** observe the installation position of the chassis spring specified by the vehicle manufacturer!
- **Always** observe vehicle-specific application procedures in the repair guide of the vehicle manufacturer.
- **Prior to each use**, check the moving parts and the spindle of the internal-type spring compressor for sufficient lubrication. If necessary, lubricate them **only** with **MOLYKOTE® P-74 paste**!
- **Never** use the internal-type spring compressor for batch processing with many compressing processes within a few minutes!
- **Never** clamp the internal-type spring compressor in a vice.

1.8 Basic safety instructions

For your safety, **always** observe the following safety precautions when using the internal-type spring compressor in order to avoid injuries and material damage caused by misuse or unsafe handling.

- Read and understand these operating instructions **before using** the internal-type spring compressor, and observe all safety and warning instructions for **safe use**!
- **Always** observe the vehicle-specific application procedures in the repair guide of the vehicle manufacturer!
- **Always** work with the internal-type spring compressor in accordance with the basic regulations on work safety and accident prevention!
- **Never** use the internal-type spring compressor when you are tired or under the influence of alcohol, drugs, or medication!
- **Before each use**, check the internal-type spring compressor **carefully** for damage, loose parts, or unauthorised modifications. **Never** use it if you notice any such deficiencies!
- Use **only** genuine **GEDORE Automotive** spare parts and accessories!
- **Before using** the internal-type spring compressor, make sure that **no** unauthorised persons are in the immediate environment!
- **Before each use** of the internal-type spring compressor, check both screws of the anti-rotation device for tight seat!
- **Always** observe the **max. loading capacity** when using the internal-type spring compressor, and **never** exceed it!
- **Never** use the internal-type spring compressor with an unauthorised drive. Operate it **only** with an approved drive!

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- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!
- Interrupt your work **immediately** if you are unsure about using the internal-type spring compressor, and contact **GEDORE Automotive GmbH if necessary**!
- For safety reasons, ensure that a damaged internal-type spring compressor is no longer used! A professional inspection and repair may only be carried out by specially trained specialists at **GEDORE Automotive GmbH**!
- **Always** use the internal-type spring compressor as intended. Non-compliance will invalidate any warranty claim and may significantly reduce its durability!

1.9 Work environment

For your safety, **only** use the internal-type spring compressor in a safe working environment.

- The workplace **must** be clean and tidy.
- The workplace **must** be sufficiently large and illuminated.
- The workplace **must** be on a solid and non-skidding floor.
- The workplace **must** be safeguarded against access of unauthorised persons.
- The workplace **must** have a room temperature between -10°C and +40°C.

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1.10 Emissions

MOLYKOTE® P-74 paste can drip when using the internal-type spring compressor and thus pose a hazard to the environment.

- **Immediately** remove excess **MOLYKOTE® P-74 paste**, using a cleaning cloth, for example.
- In case of skin contact with hydraulic oil, clean the affected area **immediately** with degreasing soap and water.
- Dispose of pollutants,such as **MOLYKOTE® P-74 paste**,**in an environmentally friendly way**.
- Safety data sheets *in accordance with (EC) Ordinance No. 1907/2006*, about MOLYKOTE® P-74 paste can be found in the Internet (**W**orld **W**ide **W**eb).

1.11 Maintenance

Perform maintenance on the internal-type spring compressor **at regular intervals** and **only** when the tool is not tensioned or compressed! Poor and improper maintenance can damage the internal-type spring compressor, thus causing **DEATH** or **SEVERE INJURIES**!

Prior to each use:

- **Prior to each use**, check the internal-type spring compressor **carefully** for damage, loose parts or unauthorised modifications!
- **Prior to each use** of the internal-type spring compressor, check the two screws of the anti-rotation device for tight fit. If necessary, tighten them clockwise with **1.5Nm**!

  ⓘ Both screws of the anti-rotation device are inserted with **high-strength thread-locking compound** and prevent spring self-relaxation or the individual components of the compressor cylinder from rotating in relation to each other. If the screws of the anti-rotation device are loose, the internal-type spring compressor **must be** sent to **GEDORE Automotive GmbH for inspection and repair**!
- **Prior to each use** of the internal-type spring compressor, check the spindle for contamination and damage. If necessary, clean it and subsequently lubricate it **only** with **MOLYKOTE® P-74 paste!**

Every 6 months:

- Clean and lubricate the spindle on the internal-type spring compressor **at least every 6 months**, and **only** with **MOLYKOTE® P-74 paste!**

Recommended: Every 12 months:

- Have the internal-type spring compressor professionally checked **every 12 months** by authorised **GEDORE Automotive GmbH** specialists.

1.12 Troubleshooting

Only perform troubleshooting on the internal-type spring compressor when it is not compressed!

Problem: Stiff movement of the drive nut of the internal-type spring compressor.
Reason: The spindle is contaminated or insufficiently lubricated, or wrong lubricant was used.
Remedy: Clean the spindles, check them for damage, and lubricate them **only** with **MOLYKOTE® P-74 paste**.

Problem: The drive nut of the spindle of the internal-type spring compressor is loose, there is no more frictional connection.
Reason: The dowel pin of the drive nut is defective, e.g. due to overload.
Remedy: Relieve the compressor cylinder via the auxiliary drive and insert a new dowel pin into the drive nut (see **Chapter 5**).

2. PRODUCT DESCRIPTION

2.1 KL-0033-10 E - Compact internal-type spring compressor with size 2A, in foam insert

Universally suitable for chassis springs on wishbone and multi-link axles for VW-Audi, Seat, Porsche, Mercedes, BMW, Ford, and many more.

Fits particularly to the rear axle on Audi, for example Audi A4 B8 (8K), A5 (8T), A6 (C7 / 4G), A7 (C7 / 4G), Q5 (8R).

The internal-type spring compressor enables the quick and safe removal and installation of chassis springs on wishbone and multi-link axles directly on the vehicle.

The particularly compact design of the internal-type spring compressor allows, for example, also a simple insertion of the compressor cylinder through the wishbone of VAG vehicles with a very small through hole (approx. 34mm diameter) at the bottom of the wishbone, and thus makes loosening of various axle components as well as a resulting wheel alignment superfluous.

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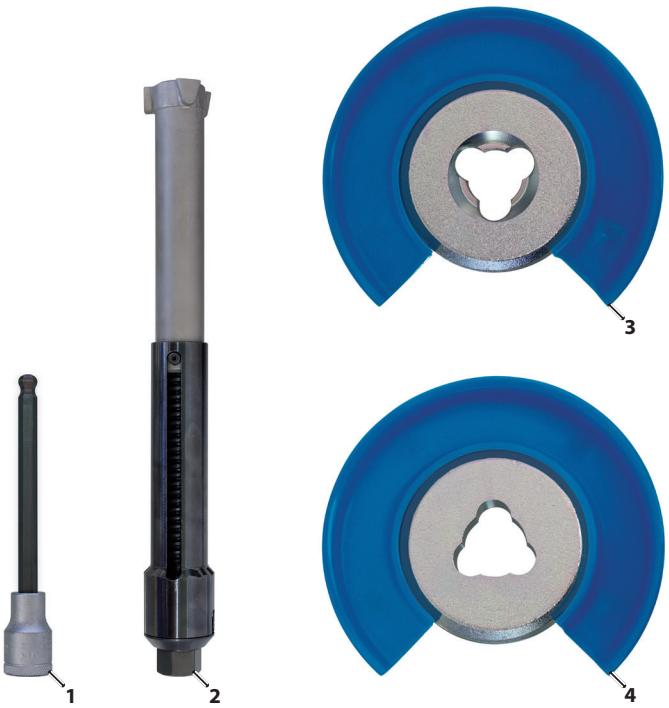
The extremely stable and robust design ensures a very high level of safety, and the unique three-point safety lock as well as the special corrugated profile prevent the pressure plates from twisting in relation to each other when the spring is compressed, thus preventing the spring from popping out. This makes the a installation of additional securing devices against falling out unnecessary!

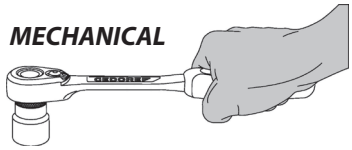
The pressure plates are also equipped with anti-slip protective inserts preventing the spring from turning out and the sensitive spring surface coating from being damaged.

Recommended accessories: KL-0033-300 E - hold-down device set with foam insert

Storage system: KL-4990-9372 - Plastic case



Required drive parts:
see Chapter 3.2



2.2 Scope of delivery

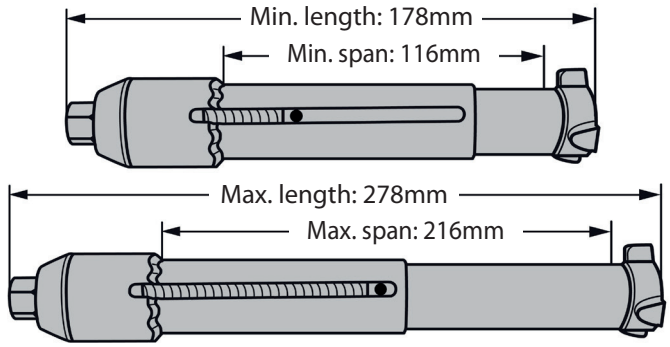
Item	Part no.	Description	Qty
1	IN19LK8-140	Screwdriver bit 8 mm	1
2	KL-0033-100 A	Compact compressor cylinder	1
3	KL-0033-1101	Pressure plate size 2A with lock	1
4	KL-0033-1102	Pressure plate size 2A with corrugated profile	1
-	KL-0033-1090-1	Foam insert *1 / *2	1
-	KL-4990-9372	Plastic case *(without insert)* *1	1

ⓘ **1 Available as an accessory. / *2 Included with KL-0033-10 E .*

ⓘ *Detailed overview of individual parts: See Chapter 9.*

2.3 Specifications

Max. load: **30 000N**
Breaking point: 120 000N
Operating stroke: 100mm
For spring Ø from: ..... 100mm (inside)
For spring Ø to: ..... 130mm (outside)
Dimensions: ...



Drive:..... 19mm external hexagon + 8mm internal hexagon
Weight: 3.5kg

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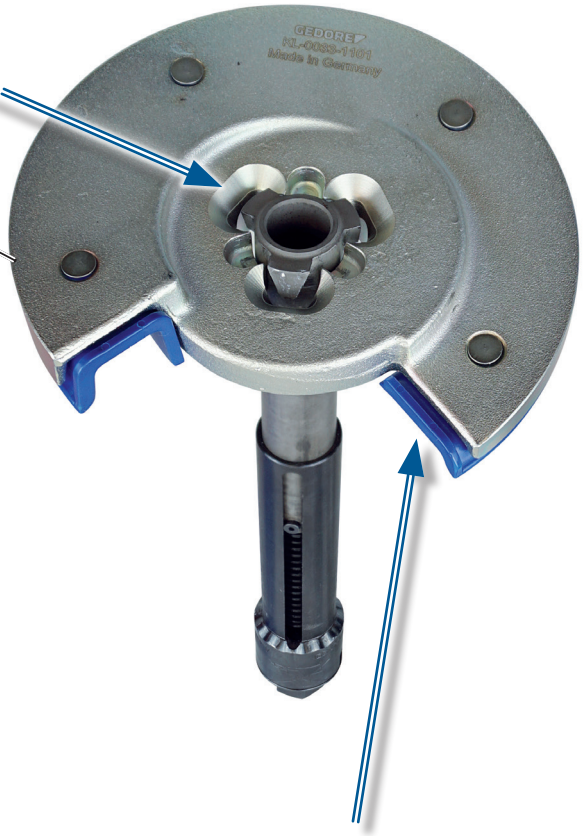
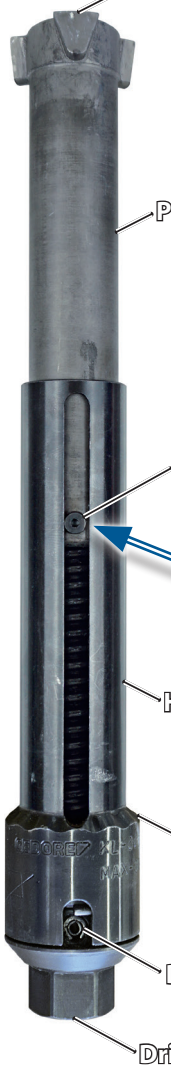
2.4 Component overview

This overview shows basic components, designations and information on the internal-type spring compressor.

The three-point safety lock allows the spring to be compressed only when the compressor cylinder has been properly locked in the upper pressure plate.

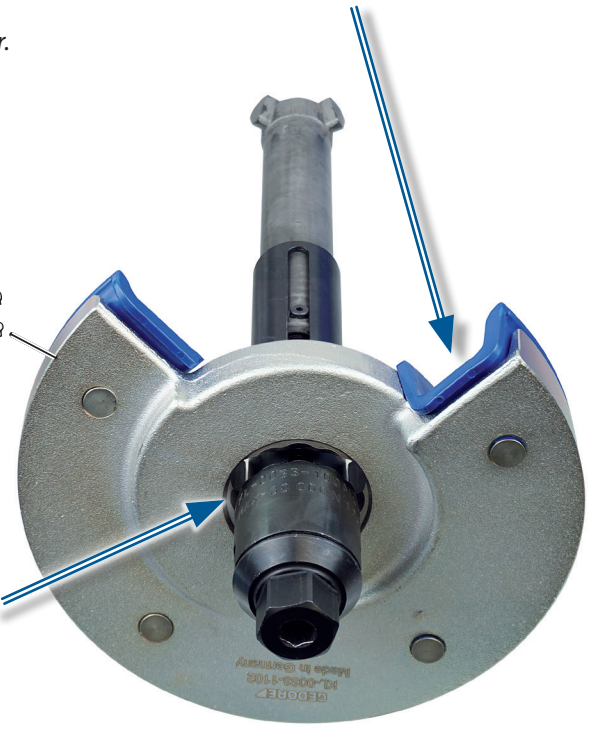


Compressor cylinder



The anti-rotation elements prevent spring self-relaxation or twisting of the individual compressor cylinder components in relation to each other.

The pressure plates are also equipped with anti-slip protective inserts preventing the spring from turning out and the sensitive spring surface coating from being damaged.



The corrugated profile locks the lower pressure plate and prevents it from rotating towards the upper pressure plate during compression. This prevents the compressed spring from being turned out of the internal-type spring compressor.

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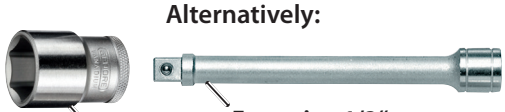
1: Required drive parts

A - Reversible ratchet 1/2“

Alternatively:



Extension 1/2“

Socket spanner insert size 19mm

Ring ratchet spanner size 19mm

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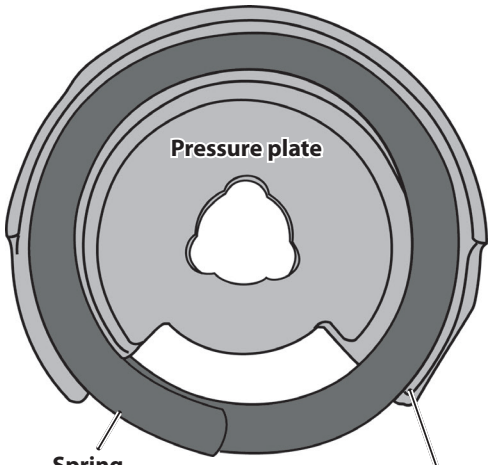
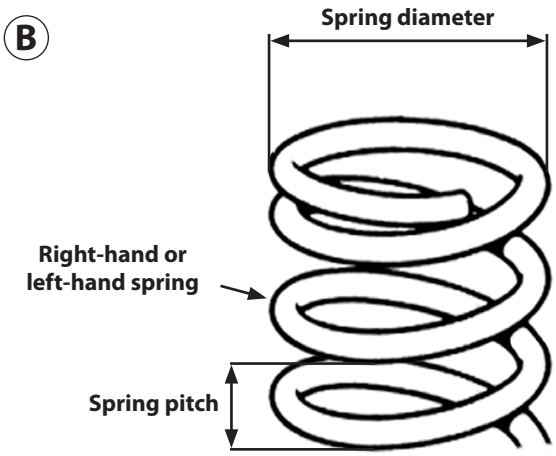
2: Determining the suitable pressure plates.

A



B



3. PREPARATION

⚠WARNING

The internal-type spring compressor can break and abruptly release itself as a result of **misuse** or **overload**, which can cause the internal-type spring compressor, various parts and the spring of the vehicle to be hurled about. This can cause **DEATH** or **SEVERE INJURIES**!

- **Prior to using** the internal-type spring compressor, read and understand **all** safety instructions and warnings listed in ***Chapter 1*** and **always observe** them **for safe use**!
- **Use the** internal-type spring compressor as intended and described in these operating instructions. **Always** observe the vehicle-specific application procedures in the repair manual of the vehicle manufacturer!
- **Before each use**, check the internal-type spring compressor **carefully** for damage, loose parts, or unauthorised modifications. **Never** use it if you notice any such deficiencies!
- **Always** wear your personal protective equipment *(safety goggles, protective gloves, safety shoes)* during work!

3.1 Checking the scope of delivery

Prior to using the internal-type spring compressor, check to ensure that all the parts included in the scope of delivery ***(see chapter 2.)*** are available, and follow the instructions below.

3.2 Assembling drive parts

⚠WARNING

Using a machine-operated drive can cause the internal-type spring compressor to slip, break and thus drop or be hurled about. This can cause **DEATH** or **SEVERE INJURIES**!

- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!

1. Assemble the required drive parts for the internal-type spring compressor as shown in **2**.

ⓘ ***For other pressure plates see the GEDORE Automotive catalogue.***

3.3 Preparing the tool

1. First determine the matching pressure plates. To do this, check the pressure plates for the spring.

The spring must evenly rest on the pressure-plate locking profile **2A**. It must match with the diameter **Ø** as well as with the pitch **2B**.

ⓘ The pressure plates **[3 + 4] only** fit with right-hand springs **2B**!

ⓘ ***For other pressure plates see the GEDORE Automotive main catalogue.***

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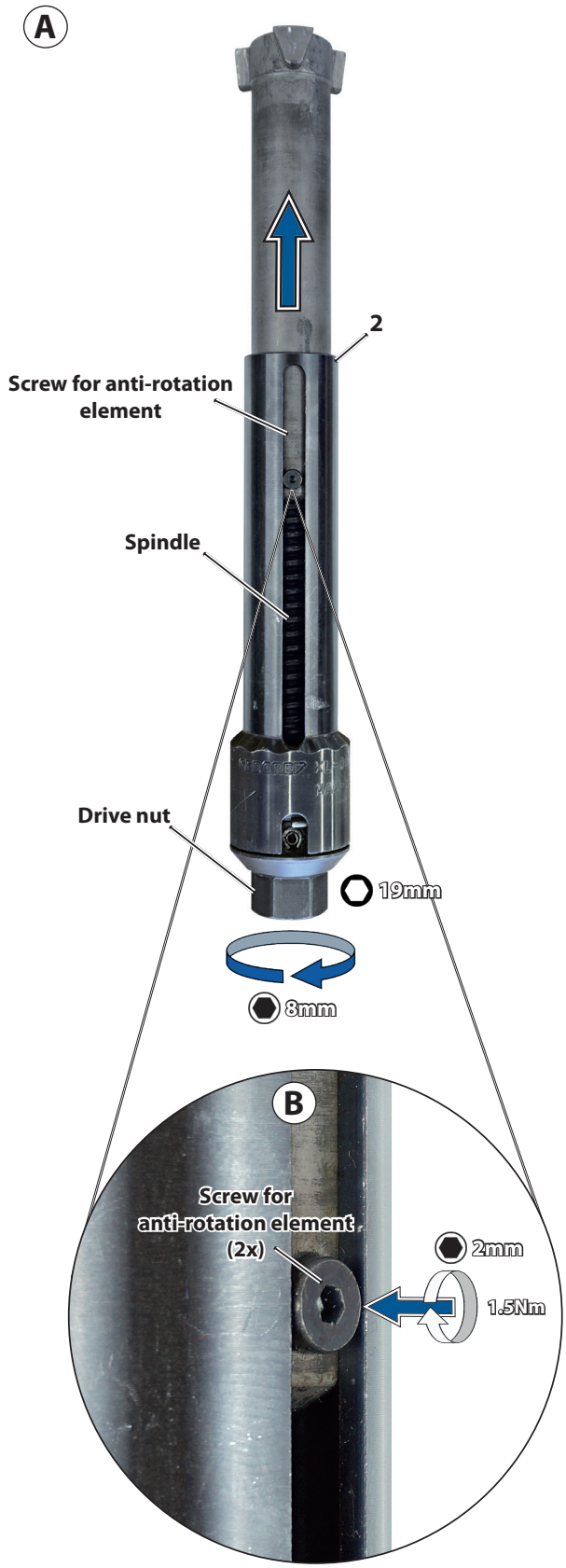
3: Check the anti-rotation elements at the compressor cylinder **"2"** for tight seat before each use.



2. Extend the compressor cylinder **[2]** completely, **shortly before the stop**.

To do this, turn the drive nut on the compressor cylinder **[2]** with the reversible ratchet **[A]** and the socket **[1]** anticlockwise. **3A**.

WARNING

The internal-type spring compressor can suddenly release itself and break if the anti-rotation element is loose or defective. As a result, parts being hurled about and the spring of the vehicle can cause **DEATH** or **SEVERE INJURIES!**

- **Before each use** of the internal-type spring compressor, check both screws of the anti-rotation element for tight seat.
- **Never** use the internal-type spring compressor when the anti-rotation elements are loose or damaged.
- If the screws of the anti-rotation element are loose, the internal-type spring compressor **must be** sent to **GEDORE Automotive GmbH** *for repair*.

3. Prior to using the internal-type spring compressor, check both screws of the anti-rotation element on the compressor cylinder **[2]** to ensure that they have a tight seat.

To do this, use a torque spanner and a **2mm** hexagon socket to tighten the screws clockwise to **1.5Nm** as shown in **3B**!

The screws of the anti-rotation element are inserted with **high-strength thread-locking compound** that prevents spring self-relaxation and/or the individual components of the compressor cylinder from rotating in relation to each other.

CAUTION

In case of springs with extremely high spring force or in case of overheating, the internal-type spring compressor can slowly release itself. This can cause **MODERATE** or **MINOR INJURIES** due to crushing hands or fingers.

- To lubricate the spindle, use **only MOLYKOTE® P-74 paste**!

ATTENTION

The spindle of the internal-type spring compressor can run dry and be damaged.

- **Always** ensure that the spindle on the internal-type spring compressor is clean. Lubricate it **only** with **MOLYKOTE® P-74 paste**!

4. Check the spindle on the inner spring tensioner for dirt and damage. Clean it if necessary and lubricate it with **MOLYKOTE® P-74 paste**!

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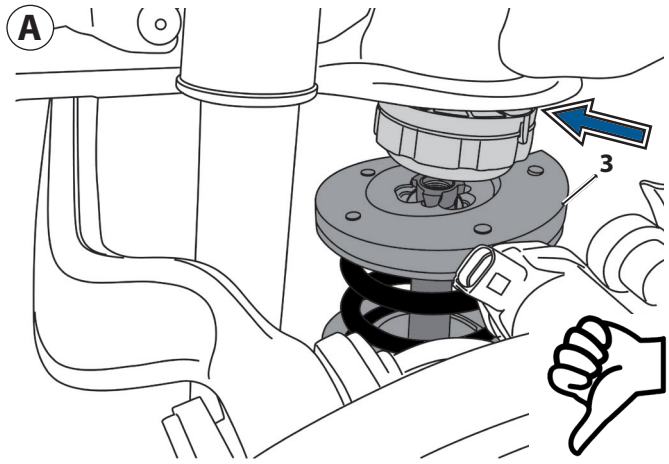
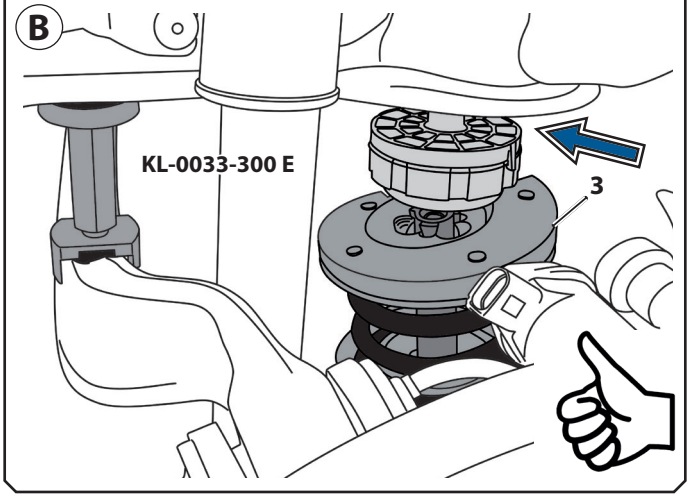
📷**4:** Loosen or remove all necessary parts as specified by the manufacturer.

📷**5:** Typical application **without** hold-down device



Typical application **with** hold-down device - **KL-0033-300 E**



3.4 Preparing the vehicle

1. Loosen and dismantle all necessary parts as specified by the manufacturer. For example, remove wheels and loosen cable plug connections 📷**4**.

ⓘ For better illustration, the splash guard on the spring was removed from this vehicle *(Audi A6)*.

Recommended accessories:

The hold-down kit - **KL-0033-300 E** which is available as an **accessory**, facilitates the removal and installation of chassis springs on wishbone and multi-link axles; it is recommended for removal and installation with the internal-type spring compressor **KL-0033-10 E**, for example.

Insert the hold-down device **KL-0033-300 E** between the upper axle guide and the vehicle body, and slightly preload it. It holds the wheel suspension in its current position while compressing the chassis spring, which reduces the required clamping path and makes the removal of the chassis spring much easier. **(See comparison: 📷 5A + 5B)**

⚠WARNING

The wheel suspension can be damaged.

- Pretension the hold-down device **only** to the extent that it cannot fall out of the wheel suspension!
- Pretension the wheel suspension **never** forcibly with the hold-down device!
- After completion of the work on the vehicle it is **absolutely necessary** to remove the hold-down device from the wheel suspension!

2. Insert the hold-down device set **KL-0033-300 E**, which is available as accessories, into the wheel suspension as described in the related product information.

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📷**6:** Insert the pressure plates "**3 + 4**" into the spring.

📷**7:** Insert the compressor cylinder **"2"** and lock it.

4. TYPICAL APPLICATION

This application example describes the removal and installation of a chassis spring on a wishbone and multi-link axle on an Audi A6 (C7/4G) Quattro.

4.1 Removing the chassis spring

⚠WARNING

Very high forces are exerted when tensioning springs! Using the wrong pressure plates bears the risk of the spring jumping out of the pressure plates during the tensioning process. This can result in **DEATH** or **SEVERE INJURIES** caused by the spring or fragments of it being hurled about.

- Ensure that the spring rests **evenly** in the locking profile of the pressure plates **[3 + 4]**, both in diameter and in pitch!
- Use the pressure plates **[3 + 4] only** for right-hand springs!

⚠CAUTION

The pressure plates can drop and cause **moderate** or **minor injuries**.

- Insert the pressure plates **[3 + 4]** safely into the spring so that they cannot drop.

1. As shown in 📷**6**, insert the pressure plate **[3]** with locking in the **upper half** of the spring, and the pressure plate **[4]** with corrugated profile in the **lower half** of the spring.

⚠CAUTION

The compressor cylinder and the pressure plates can drop and cause **moderate** or **minor injuries**.

- Hold the pressure plates tight **[3 + 4]** when you insert the compressor cylinder **[2]** !
- Only release the compressor cylinder **[2]** when it sits safely in the three-point safety lock.

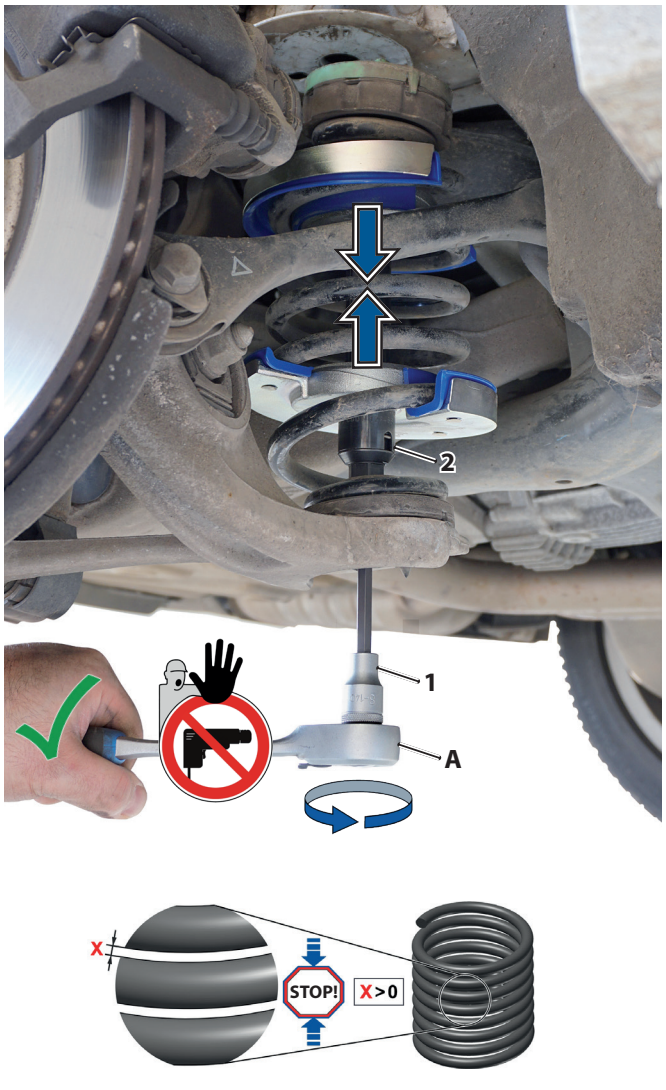
2. Insert the compressor cylinder **[2]** from below through the spring into the pressure plates **[3 + 4]** and lock it by a **60-degree-turn + lowering** into the *three-point safety lock* of the upper pressure plate **[3]** 📷**7**.

ⓘ The *three-point safety lock* allows the spring to be compressed only when the compressor cylinder **[2]** was properly locked into the pressure plate **[3].**

Expert's tip:
To facilitate the insertion of the compressor cylinder **[2]** it is helpful to lubricate the bottom hole of the wishbone with a suitable lubricant.

8: Turn the pressure plates into the max. clamping p

9: Compress the spring.



3. Take the following steps to tension as many coils of the spring as possible and thus make removal easier!

Turn the upper pressure plate **[3]** together with the locked compressor cylinder **[2]** as far as possible by hand upwards in the spring **8**.

Subsequently, turn the lower pressure plate **[4]** about the compressor cylinder **[2]** as far as possible by hand downwards in the spring **8**.

ⓘ Make sure that the pressure plates **[3 + 4]** are offset by about **180°** to each other to permit a straight compression of the spring.

⚠WARNING

Very high forces are exerted when tensioning springs! Incorrect assembly, overloading or misuse can cause the internal-type spring compressor to slip and break, causing the spring to suddenly release itself! As a result, parts being hurled about and the spring can cause **DEATH** or **SEVERE INJURIES!**

- **Before each use** of the internal-type spring compressor, check both screws of the anti-rotation element for tight seat.
- **Before each use**, check the internal-type spring compressor **carefully** for damage, loose parts, or unauthorised modifications. **Never** use it if you notice any such deficiencies!
- **Never** exceed the **maximum load** of **30 000 Newton** of the internal-type spring compressor.
- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!
- Stop compression **immediately** when the maximum span is reached or the spring coils are in contact with each other!

⚠CAUTION

In case of springs with extremely high spring force or in case of overheating, the internal-type spring compressor can slowly release itself. This can cause **MODERATE** or **MINOR INJURIES** due to crushing hands or fingers.

- Stop the tensioning process **immediately** if the internal-type spring compressor releases itself!
- **Never** use the internal-type spring compressor for batch processing with *many compressing processes within a few minutes*!

4. To compress the spring, turn the **drive nut** on the compressor cylinder **[2]** clockwise using the reversing ratchet **[A]** and the socket **[1]** until the internal-type spring compressor with spring can be removed from the axle without tension **9**.

ⓘ However, if it is impossible to compress the spring to such an extent that it can be removed without tension, interrupt compressing and repeat it at **item 3.**

If the **drive nut** at the compressor cylinder **[2]** comes loose, insert a new **dowel pin**. ***(see Chapter 5)***

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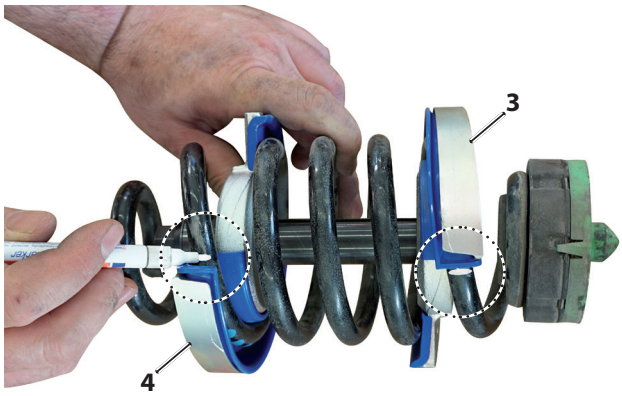
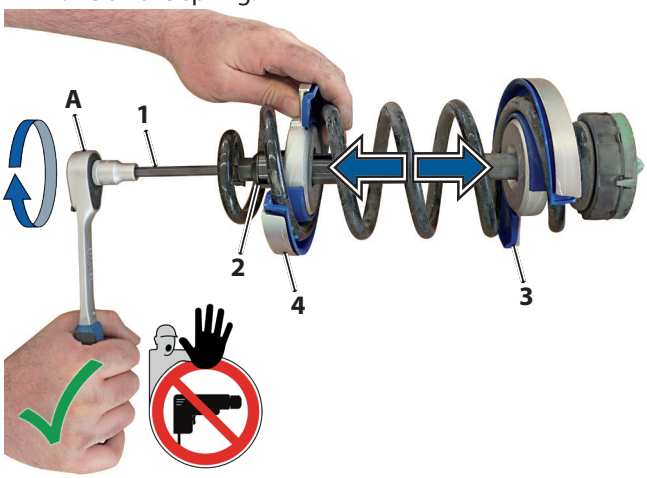
10: Remove the compressed spring from the axle.

11: Mark the pressure plate position on the spring.



12: Relax the spring.



5. Carefully remove the internal-type spring compressor together with the spring from the axle. **10**.

6. To make it easier to reposition the internal-type spring compressor when installing the spring, you **should** mark the position of the pressure plates **[3 + 4]** on the old spring and then simply transfer them to a new spring **11**.

EN

CAUTION

The internal-type spring compressor and the spring can drop during the releasing process and cause **moderate** or **minor injuries**.

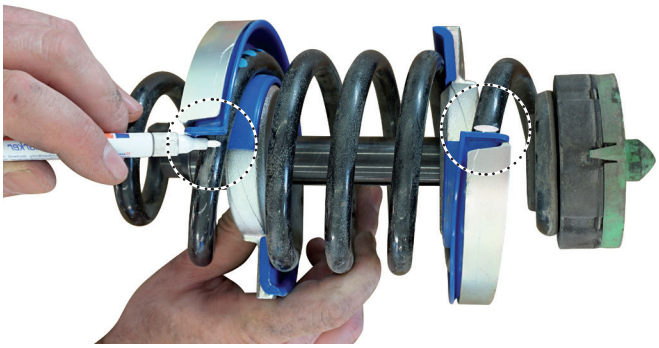
- Firmly hold on to the internal-type spring compressor with spring when releasing the tension!
- Release the spring tension on a clean and level workbench.
- **Always** wear your personal protective equipment *(safety shoes)* during work!

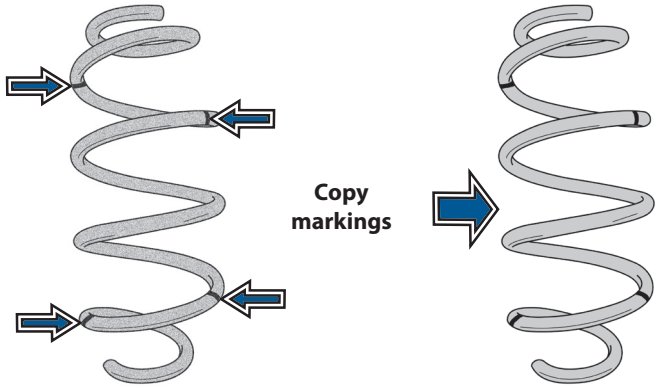
7. To release the spring tension, turn the **drive nut** on the compressor cylinder **[2]** anticlockwise using the reversing ratchet **[A]** and the socket **[1]** until the pressure plates **[3 + 4]** are free, or the maximum span of the compressor cylinder **[2]** is reached **12**.

If it is not possible to release the spring pressure to the extent that the pressure plates **[3 + 4]** are tension-free, interrupt releasing the pressure and additionally compress the spring with the aid of a suitable spring compressing device.

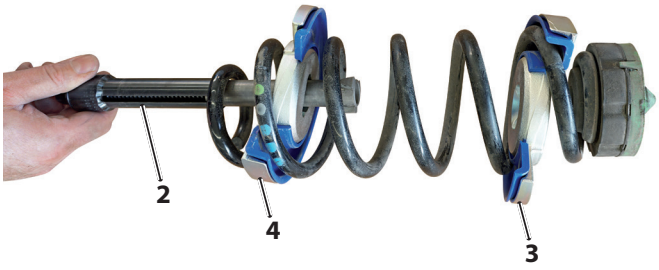
8. Release the compressor cylinder **[2]** from the *three-point safety lock* and remove it and the pressure plates **[3 + 4]** from the chassis spring **12.**

13: Copy the markings from the spring.

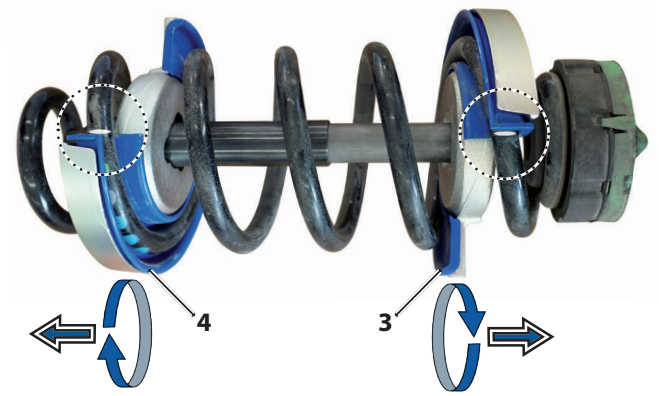




14: Insert the pressure plates and the compressor cylinder **"2"**.



15: Turn the pressure plates to the marked positions.



4.2 Installing the chassis spring

1. When using a new spring, you **must** transfer the markings set in **chapter 4.1 / step 6.** from the old spring to the new spring **13**.

2. As shown in **14**, insert the pressure plate **[3]** with locking in the **upper half** of the spring, and the pressure plate **[4]** with corrugated profile in the **lower half** of the spring.

CAUTION

The compressor cylinder and the pressure plates can drop and cause **moderate** or **minor injuries**.

- Hold the pressure plates tight **[3 + 4]** when you insert the compressor cylinder **[2]** !

3. Insert the clamping cylinder **[2]** from below through the spring into the pressure plates **[3 + 4]** and lock it by a **60° turn + lowering** into the *three-point safety lock* of the upper pressure plate **[3]** **14**.

ⓘ The *three-point safety lock* allows the spring to be compressed only when the compressor cylinder **[2]** was properly locked into the pressure plate **[3].**

4. Turn the pressure plates **[3 + 4]** to the previously set markings on the spring **15**.

ⓘ Make sure that the pressure plates **[3 + 4]** are offset by about **180°** to each other to permit a straight compression of the spring.

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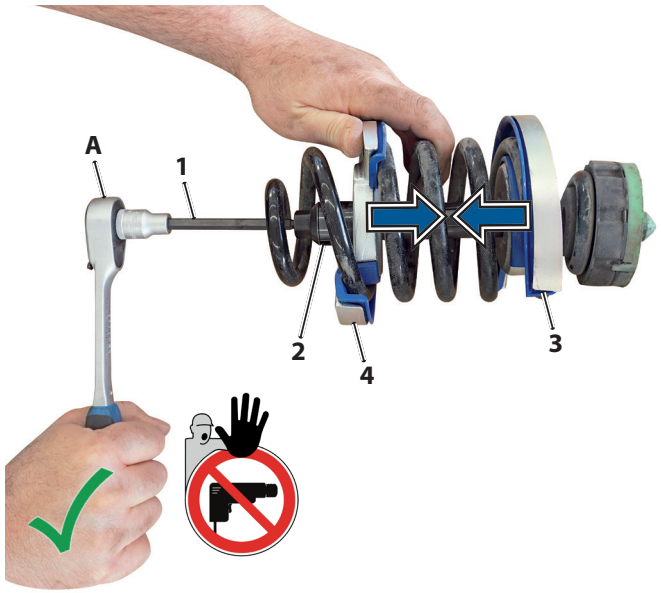
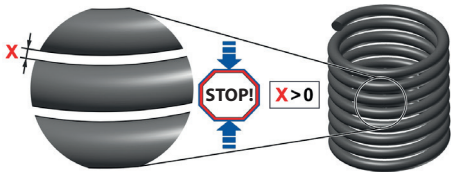
16: Compress the spring.





17: Insert the compressed spring into the axle.

⚠WARNING

Very high forces are exerted when tensioning springs! Incorrect assembly, overloading or misuse can cause the internal-type spring compressor to slip and break, causing the spring to suddenly release itself! As a result, parts being hurled about and the spring can cause **DEATH** or **SEVERE INJURIES!**

- **Before each use** of the internal-type spring compressor, check both screws of the anti-rotation element for tight seat.
- **Before each use**, check the internal-type spring compressor **carefully** for damage, loose parts, or unauthorised modifications. **Never** use it if you notice any such deficiencies!
- **Never** exceed the **maximum load** of **30 000 Newton** of the internal-type spring compressor.
- **Never** use the internal-type spring compressor with a machine-operated drive. Operate it **only** with a manual drive with muscle power!
- Stop compression **immediately** when the maximum span is reached or the spring coils are in contact with each other!

⚠CAUTION

In case of springs with extremely high spring force or in case of overheating, the internal-type spring compressor can slowly release itself. This can cause **MODERATE** or **MINOR INJURIES** due to crushing hands or fingers.

- Stop the tensioning process **immediately** if the internal-type spring compressor releases itself!
- **Never** use the internal-type spring compressor for batch processing with *many compressing processes within a few minutes*!

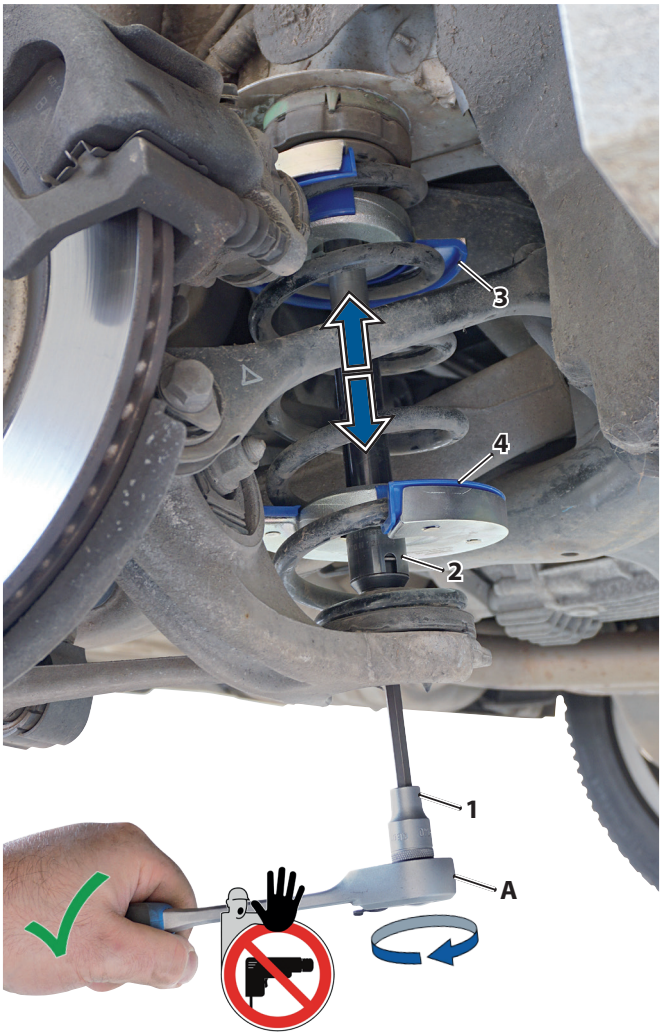
5. To compress the spring, turn the **drive nut** on the compressor cylinder **[2]** clockwise using the reversing ratchet **[A]** and the socket **[1]** until the internal-type spring compressor with spring can be removed from the axle without tension **16**.

ⓘ If the **drive nut** at the compressor cylinder **[2]** comes loose, insert a new **dowel pin**. ***(see Chapter 5)***

6. Insert the internal-type spring compressor together with the tensioned spring into the axle in the correct position as specified by the manufacturer **17**.

EN

18: Release the internal-type spring compressor.



19: Complete the vehicle as specified by the manufacturer.

CAUTION

The internal-type spring compressor and the spring can drop after the releasing process and cause **moderate** or **minor injuries**.

- Hold tight the internal-type spring compressor when releasing pressure!
- **Always** wear your personal protective equipment *(safety shoes)* during work!

7. To release the spring tension, turn the **drive nut** on the compressor cylinder **[2]** anticlockwise using the reversing ratchet **[A]** and the socket **[1]** until the pressure plates **[3 + 4]** are free, or the maximum span of the compressor cylinder **[2]** is reached **18**.

8. Release the compressor cylinder **[2]** from the *three-point safety lock* and remove it and the pressure plates **[3 + 4]** from the chassis spring.

9. Perform the further work on the vehicle as specified by the manufacturer **19**.

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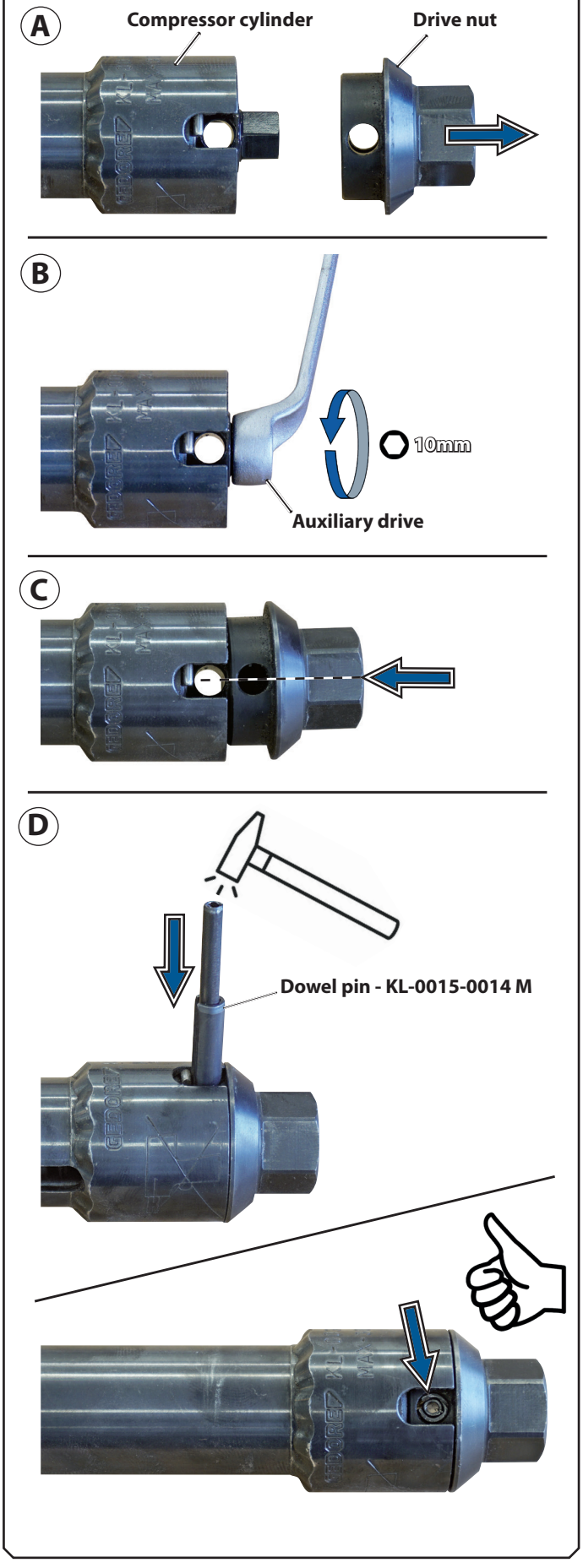
20: Replace the dowel pin on the compressor cylinder **[2]**.



5. Replacing the dowel pin on the compressor cylinder

A new dowel pin must be inserted if the drive nut on the clamping cylinder **[2]** spins without contact, e.g. **due to an overload**. These maintenance instructions describe the installation of a new dowel pin in the drive nut.

1. First remove the drive nut from the compressor cylinder **[2]** and remove the remains of the defective dowel pin **20A**.

ATTENTION

When the spring is compressed via the auxiliary drive, there is a risk that the spindle on the compressor cylinder **[2]** will be damaged.

- Use the auxiliary drive **only** to relieve the compressor cylinder **[2]**!
- **Never** use the auxiliary drive to compress the spring!

2. If there is a tensioned spring in the internal-type spring compressor, you **must** first release the tension of the compressor cylinder **[2]** via the auxiliary drive **[10mm]**, by rotating it anticlockwise **20B**.

3. Place the drive nut on the compressor cylinder **[2]** such that the holes in the drive nut and spindle are exactly aligned with each other **20C**.

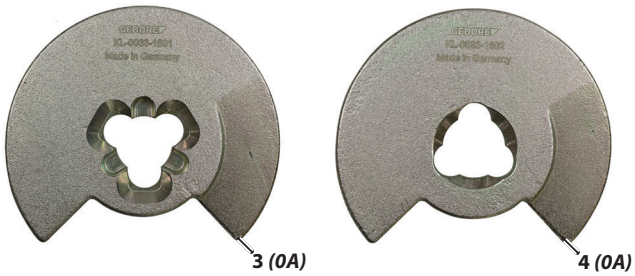
4. Drive the new dowel pin - **KL-0015-0014 M** into the hole of the drive nut such that it is flush on both sides with the drive nut **20D**.

6. CARE AND STORAGE

ATTENTION

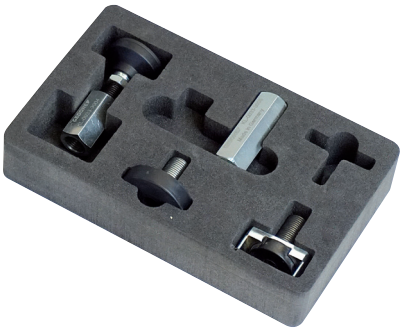
Improper care and storage can damage the internal-type spring compressor. **Never** immerse the internal-type spring compressor in water, solvents, or other cleaning liquids. After use, clean all parts **only** with a dry and clean cleaning cloth. To protect against corrosion, rub all metal parts with a tool care oil or wax. Store the internal-type spring compressor and the operating instructions at a dry and clean place.

Accessories: KL-0033-16

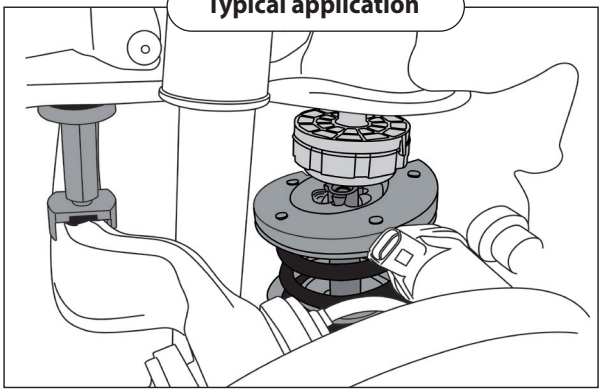


Typical application

Accessories: KL-0033-300 E



Typical application



7. ACCESSORIES

KL-0033-16 - Pair of pressure plates size 0A

Universal fit.

Fits particularly Mercedes-Benz E class (W211, W212), C class (W204*), GLA (X156), GLK (X204); Ford Focus II (MK2); BMW series 1 (E81); VW Passat (B8/3G).

*(*only rear axle / *only front axle)*

Scope of delivery:

Item	Part no.	Description	Qty
3 *(0A)*	KL-0033-1601	Pressure plate size 0A with lock	1
4 *(0A)*	KL-0033-1602	Pressure plate size 0A with corrugated profile	1

Specifications:

For spring Ø from: ..... 80mm *(inside)*

For spring Ø to: .....100mm *(outside)*

Pressure plate pitch to 240 degrees: 6mm

KL-0033-300 E - Hold-down device set with foam insert

Universally suitable for wishbone and multi-link axles for VW-Audi, Seat, Porsche, Mercedes, BMW, Ford, and many more.

Fits particularly for rear axles for VW-Audi, Porsche and Mercedes-Benz. Installed, for example, in Audi A4 (8K), A5 (8T), A6 (C6), Q5 (8R), Q7 (4M); VW Touareg, Passat (B8/3G); Porsche Cayenne (PO536), Macan; Mercedes-Benz E class (W211, W212), C class (W204), GLA (X156), GLK (X204); etc.

The hold-down device kit facilitates the removal and installation of chassis springs on wishbone and multi-link axles; it is recommended for removal and installation with the internal-type spring compressor **KL-0033-10 E**, for example.

For this, the hold-down device is inserted between the upper axle link and the vehicle body and preloaded slightly. It holds the wheel suspension in its current position while compressing the chassis spring, which reduces the required clamping path and makes the removal of the suspension spring much easier.

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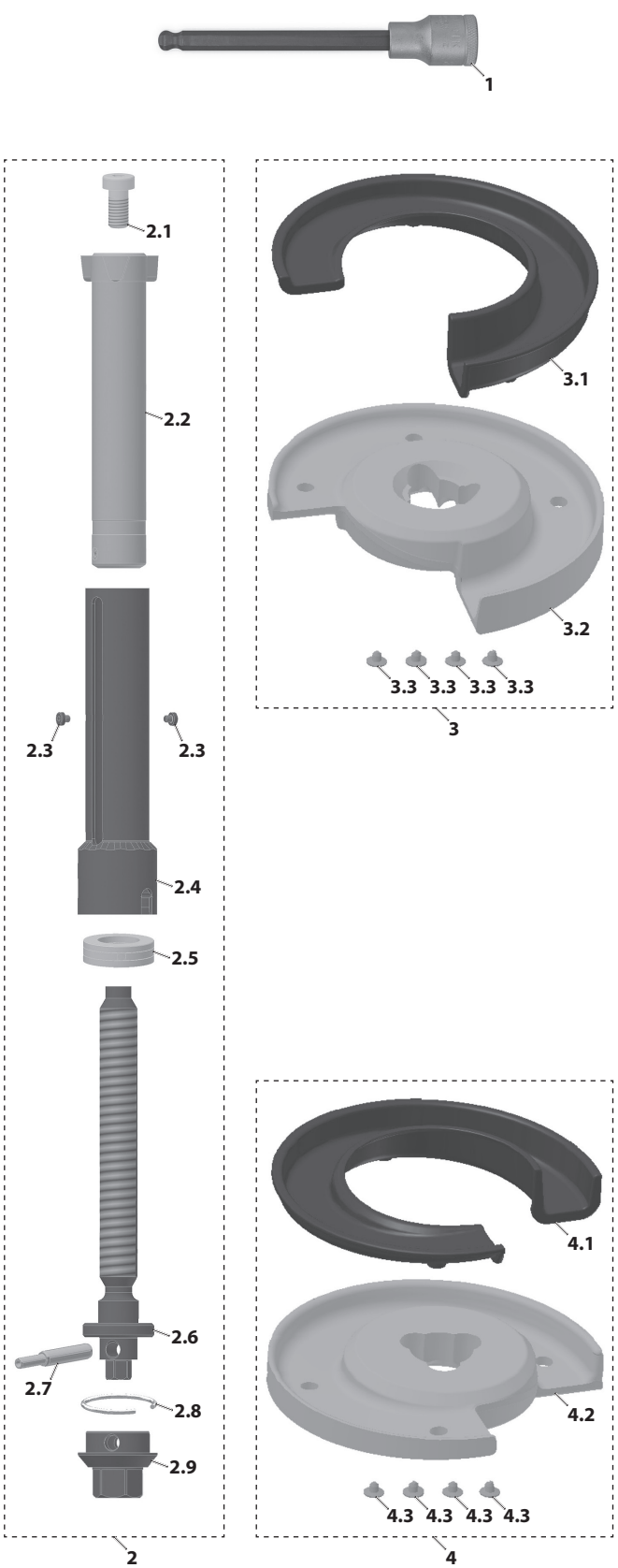
Overview of the single parts: KL-0033-10 E



8. REPAIR

⚠WARNING

For safety reasons, ensure that a damaged internal-type spring compressor is no longer used! Professional inspection and repair may only be carried out by specially trained specialist personnel at **GEDORE Automotive GmbH**. Improper repair can result in **DEATH** or **SEVERE INJURIES**.

9. COMPONENT OVERVIEW

KL-0033-10 E - Compact internal-type spring compressor with size 2A, in foam insert

Item	Part no.	Description	Qty.
1	IN19LK8-140	Screwdriver bit 8mm	1
2	KL-0033-100 A	Compact compressor cylinder	1
2.1	KL-0500-8222	Cheese-head screw	1
2.2	KL-0033-1002 A	Piston	1
2.3	KL-0033-1007 A	Encapsulated screw *(anti-rotation element)*	2
2.4	KL-0033-1001 A	Housing	1
2.5	KL-0033-1005	Axial cylindrical roller bearing	1
2.6	KL-0033-1003 A	Spindle	1
2.7	KL-0015-0014 M	Dowel pin	1
2.8	KL-0033-1006	Snap ring	1
2.9	KL-0033-1004 A	Drive nut	1
3	KL-0033-1101	Pressure plate size 2A with lock and protective insert	1
3.1	KL-0033-1101-2	Protective insert, blue	1
3.2	KL-0033-1101-1	Pressure plate size 2A with lock	1
3.3	KL-9001-2002	Corrugated nail	4
4	KL-0033-1102	Pressure plate size 2A with corrugated profile and protective insert	1
4.1	KL-0033-1101-2	Protective insert, blue	1
4.2	KL-0033-1102-1	Pressure plate size 2A with corrugated profile	1
4.3	KL-9001-2002	Corrugated nail	4
-	KL-0033-1090-1	Foam insert (w/o figure)	1

10. ENVIRONMENTALLY COMPLIANT DISPOSAL

Dispose of the internal-type spring compressor and the packaging material in an environmentally compatible way in accordance with the legal requirements. If necessary, ask your local authorities about environmentally friendly disposal options.

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