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## KL-0500-45 K

## SAC Clutch Tool Set (in plastic storage case)

(Pat.)



KL-0500-45 K



KL-0500-45 KA



Self-adjusting clutch (SAC)



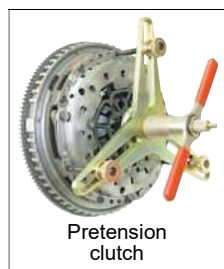
Place pressure plate plate



Clutch disc aligned



Turn back adjusting ring



Pretension clutch

**Suitable for SAC-clutches (3-hole pitch) e.g. VW Audi, BMW, Mercedes, Volvo, Opel/Vauxhall, Renault etc.**

The clutch tool set **KL-0500-45 K** enables the professional removal and replacement of SAC-Clutches (Self-Adjusting-Clutch).

Correct removal and replacement of clutches is almost impossible without this tool set due to the risk of damaging or distorting the clutch, which will result in incorrect separation or grabbing of the clutch. A clutch installed incorrectly is defective and must be replaced.

The tool set **KL-0500-45 K** prevents damage to the SAC-clutch when removing and replacing it, as well as the distortion of the adjusting ring in the pressure plate.

The newly developed clutch aligner **KL-0500-405** enables the alignment of clutch plates also on vehicles without a guide bearing in the crankshaft. The two clamping-/alignment elements ensure accurate alignment in the clutch plate on the first clamping element (Ø 15 - 28 mm), and accurate alignment in the guide bearing, respectively the crankshaft bore, on the second element (Ø 12 - 28 mm).

Even clutches on engines where the crankshaft bore-Ø is larger than the clutch disc hub-Ø can neatly and accurately be aligned with this tool.

### Operation:

**Before its removal, pre-tension the clutch pressure plate by means of the clutch pre-tensioner.**

- For this purpose unscrew the three fastening screws and screw three thread bolts in their place. Place the clutch pretensioner on the thread bolts and fix them with the knurled nuts. Screw in the pressure spindle of the clutch pretensioner until the diaphragm spring reaches the limit stop.
- Unscrew the remaining fastening screws, slacken the diaphragm spring and remove the clutch pretensioner and the clutch pressure plate.

### Centring the clutch disc:

- Insert the clutch aligner with clutch disc and the appropriate centring mandrel into the flywheel.

### Installing a clutch pressure plate:

- Position the pressure plate on the flywheel and install the clutch pretensioner following the same procedure as specified for removal.
- Stress the diaphragm spring until limit stop position and screw in the retaining screws.

### Advantages:

- Pretension of the clutch pressure plate during removal and installation (important as a means of avoiding distortion).
- Aligning the clutch disc relative to the guide bearing or pressure plate.
- Reset of the adjusting ring in conjunction with resetting tool **KL-0500-403**.

### Scope of Delivery:

#### KL-0500-45 K SAC Clutch Tool Set in plastic storage case

Part No.	Description	Qty.
KL-0500-401	Clutch pretensioner (3-hole-pitch)	1
KL-0500-403	Resetting tool	1
KL-0500-404	Clutch mandrel set (3 pcs)	1
KL-0500-405	Clutch aligner (double acting)	1
KL-0500-4590	Plastic storage case	1

## KL-0500-45 KA

## SAC Clutch Tool Set (in plastic storage case)

(Pat.)

### Scope of Delivery:

#### KL-0500-45 KA SAC Clutch Tool Set in plastic storage case

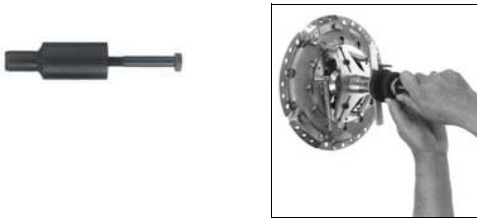
Part No.	Description	Qty.
KL-0500-45 K	SAC clutch tool set with resetting tool in a plastic storage case	1
KL-0500-4014	Upgrade Kit 4-hole pitch	1

Clutch Mandrel Ø26.5mm

KL-0500-15

Suitable for BMW and Audi.

Designed to align the clutch disc before the re-installation of a pretensioned SAC clutch. Can also be used to align new and already pretensioned SAC clutches.



Clutch Centring Sleeve Ø32.5 mm

KL-0500-22

Suitable for BMW vehicles with engine N54B30 e.g. E90 / E91 / E92 / E93 (335i)

Used to centrically align the clutch disc before installing or re-installing a SAC clutch.

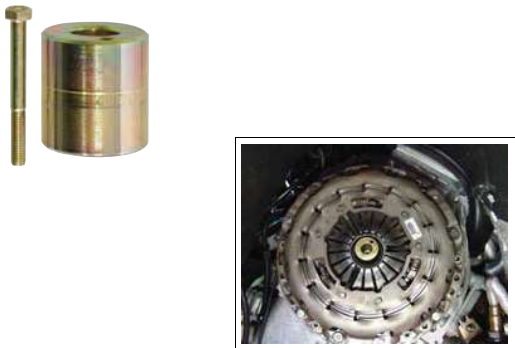
Technical Data:

Inner Ø:	15 mm
Outer Ø:	32.5 mm

Scope of Delivery:

KL-0500-22 Clutch Centring Sleeve Ø32.5 mm

Part No.	Description	Qty.
KL-0015-0010	Hex screw M5x45	1
KL-0500-2201	Centring sleeve	1



Pin-Type Face Spanner Ø14 -100, Pin Ø5 mm

KL-0149-131

Suitable for example for Audi A4, A6, A8 and VW Passat.

Designed to keep the fan-belt pulley in position when removing and installing the Visco-Fan on Audi A4, A6, A8 and VW Passat etc.

It can also be used to remove the pre-tension ring when installing a new SAC-clutch on Audi, Fiat etc.

Technical Data:

Ø:	14 -100 mm
Pin Ø:	5 mm
Pin height:	6 mm
Overall Length:	215 mm
Weight:	300 g



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Upgrade Kit (4 hole pitch) for KL-0500-40 K

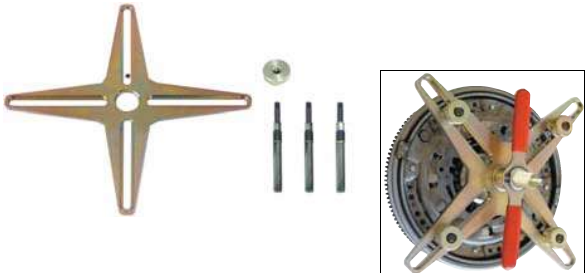
KL-0500-4014

Required for pretensioning the clutch pressure plate before removing and installing SAC-clutches with 4 hole pitch.

Scope of Delivery:

KL-0500-4014 Supplement Kit (4 hole pitch) for KL-0500-40 K

Part No.	Description	Qty.
KL-0500-4006	Knurled nut	1
KL-0500-4006 A	Knurled nut	1
KL-0500-4007	Thread bolt M6	1
KL-0500-4008	Thread bolt M7	1
KL-0500-4009	Thread bolt M8	1
KL-0500-4011	Base plate with 4-hole-pitch	1



## KL-0500-405

## Clutch Aligner

(German Utility Model)



**Suitable for SAC-Clutches.**

**Ideal required for vehicles without a guide bearing in the crankshaft.**

The newly developed clutch aligner **KL-0500-405** enables the alignment of clutch plates also on vehicles without a guide bearing in the crankshaft. The two clamping-/ alignment elements ensure accurate alignment in the clutch plate on the first clamping element (Ø 15 - 28 mm) as well as accurate alignment in the guide bearing, respectively the crankshaft bore on the second one (Ø 12 - 28 mm).

Even clutches on engines where the crankshaft bore-Ø is larger than the clutch disc hub-Ø, can neatly and accurately be aligned with this tool.

**Scope of Delivery:**

**KL-0500-405 Clutch Aligner**

Part No.	Description	Qty.
KL-0500-4050	Guide tube (complete)	1
KL-0500-4057-1	Centring pin Ø12 mm	1
KL-0500-4057-2	Centring pin Ø14 mm	1
KL-0500-4057-3	Centring pin Ø15 mm	1
KL-0069-0006	Clamping cone size 2, 22 mm	1
KL-0500-4055	Cone extender	1
KL-0500-4054	Clamping segment set Ø20	1
KL-0500-4056-2	Sliding cone Ø 15 mm, 40 mm long	1
KL-0500-4056-3	Sliding cone Ø 15 mm, 67 mm long	1
KL-0500-4056-4	Sliding cone Ø 15 mm, 75 mm long	1
KL-0500-4056-6	Sliding cone Ø 18 mm, 75 mm long	1
KL-0500-4056-5	Sliding cone Ø 18 mm, 67 mm long	1

## KL-0500-500 K

## Dual Mass Flywheel Wear-Testing Tool (without dial gauge, degree gauge)



KL-0500-500 K

KL-0500-50 K

**Universally suitable for vehicles with Dual Mass Flywheel (DMF).**

Indispensable tool for the quick and professional wear tests of Dual Mass Flywheels (DMF).

Tests can be performed directly on the vehicle if the clutch has been removed. The test involves checking the rock allowance (axial play) and the freeplay angle (torsion of the secondary flywheel against the primary flywheel until the tension of the spring can be felt).

**Note:**

It is generally necessary to test the Dual Mass Flywheel for wear and damage when replacing a clutch. Professional tests are essential as Dual Mass Flywheels that are deteriorated or worn can damage the new clutch as well as the gear box and drive train.

**Advantages:**

- Universal application.
- Substantial time savings.
- The tool is easy to operate.
- Professional and accurate working.

**Scope of Delivery:**

**KL-0500-500 K Dual Mass Flywheel Wear-Testing Tool (without dial gauge, degree gauge)**

Part No.	Description	Qty.
KL-0500-500	Dual Mass Flywheel Wear Testing Tool dial gauge and degree gauge	1
KL-0043-5990	Plastic storage case	1

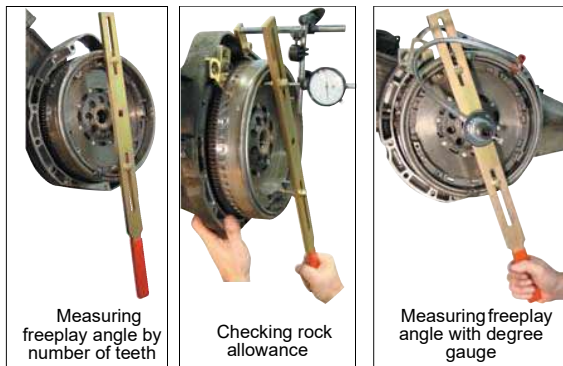
## KL-0500-50 K

## Dual Mass Flywheel -Wear Testing Tool

**Scope of Delivery:**

**KL-0500-50 K Dual Mass Flywheel Wear-Testing Tool**

Part No.	Description	Qty.
KL-0500-500 K	Dual Mass Flywheel wear-testing tool without dial gauge, degree gauge (specification see above)	1
KL-4090-302	Degree gauge	1
KL-0128-1	Dial gauge Ø 58 mm	1



Measuring freeplay angle by number of teeth

Checking rock allowance

Measuring freeplay angle with degree gauge



Dual Mass Flywheel Wear Testing Tool without case, dial gauge and degree gauge

KL-0500-500

**Universally suitable for vehicles with Dual Mass Flywheel (DMF).**  
Indispensable tool for the quick and professional wear tests of Dual Mass Flywheels (DMF).  
Tests can be performed directly on the vehicle if the clutch has been removed.  
The test involves checking the rock allowance (axial play) and the freeplay angle (torsion of the secondary flywheel against the primary flywheel until the tension of the spring can be felt).

**Note:**  
It is generally necessary to test the Dual Mass Flywheel for wear and damage when replacing a clutch. Professional tests are essential as Dual Mass Flywheels that are deteriorated or worn can damage the new clutch as well as the gear box and drive train.

- Advantages:**
- Universal application.
  - Substantial time savings.
  - The tool is easy to operate.
  - Professional and accurate working.

**Scope of Delivery:**  
**KL-0500-500 Dual Mass Flywheel Wear Testing Tool without storage case, dial gauge, degree gauge**

Part No.	Description	Qty.
KL-0500-501	Slotted bar with fixing device	1
KL-0500-502	Support stand for dial gauge	1
KL-0481-7	Flywheel locking tool	2



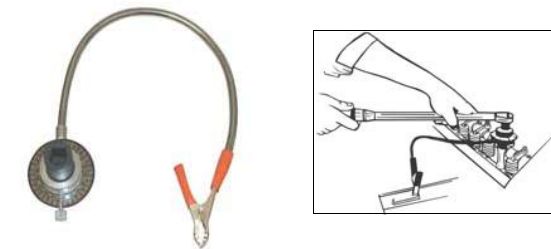
Degree Gauge

KL-4090-302

Used for screw tightening with angle degree indication.  
The degree gauge KL-4090-302 used in conjunction with a 1/2"-torque wrench enables the accurate tightening of screws and nuts according to tightening torques (Nm) and angular degrees (°).

**Technical Data:**

Drive:	1/2"
Weight:	340 g



Dial Gauge Ø 58 mm

KL-0128-1

Spindle and clamping shank made of stainless steel, design and measurement accuracy according to DIN 878-A.

**Technical Data:**

Reading:	0.01 mm
Measuring Range:	10 mm
Housing -Ø:	58 mm
1 pointer revolution:	1 mm
Clamping shank-Ø:	8 mm



KL-0069-K

## Clutch Aligner

(Universal)



**For Clutch-Hub-Ø: 15 - 28 mm.**

This tool allows the user to quickly and easily align a clutch disc towards the clutch pressure plate. This is indispensable on vehicles that do not feature a pilot / guide bearing in the crankshaft (mostly on front-wheel-driven vehicles having a transversely installed engine).

**Scope of Delivery: KL-0069-K Clutch Aligner (Universal)**

Part No.	Description	Qty.
KL-0069	Clutch Aligner	1
KL-0069-5030	Plastic Storage Case	1

**Scope of Delivery: KL-0069 Clutch Aligner**

Part No.	Description	Qty.
KL-0069-0001	Base body	1
KL-0069-5002	Fixing nut	1
KL-0069-5003	Clamping nut	1
KL-0069-5004	Clamping screw	1
KL-0069-0005	Clamping cone size 1, 15 mm	1
KL-0069-0006	Clamping cone size 2, 22 mm	1
KL-0069-0050	Conical adaptor	1

KL-0069-5

## Clutch Aligner

(Universal)



**For Clutch-Hub-Ø: 15 - 28 mm.**

As a result of the parallel expansion technique it is now possible to align the clutch disc either relative to the clutch pressure plate (on vehicles that do not feature a pilot / guide bearing in the crankshaft) or via the pilot / guide bearing relative to the flywheel.

**Advantage:** The new expanding technique with a self-centring mechanism ensures that the tool is being exactly positioned in the clutch disc hub during the entire alignment process, thus allowing for an accurate alignment.

**Scope of Delivery: KL-0069-5 Clutch Aligner**

Part No.	Description	Qty.
KL-0069-55	Clutch Aligner for passenger cars	1
KL-0069-5010	Centring sleeve set	1
KL-0069-5030	Plastic storage case (empty)	1

KL-0069-55

## Clutch Aligner for Passenger Cars

**For Clutch-Hub-Ø: 15 - 28 mm.**

As a result of the parallel expansion technique it is now possible to align the clutch disc either relative to the clutch pressure plate (on vehicles that do not feature a pilot / guide bearing in the crankshaft) or via the pilot / guide bearing relative to the flywheel.

**Advantage:** The new expanding technique with a self-centring mechanism ensures that the tool is being exactly positioned in the clutch disc hub during the entire alignment process, thus allowing for an accurate alignment.

**Scope of Delivery: KL-0069-55 Clutch Aligner for Passenger Cars**

Part No.	Description	Qty.
KL-0069-500	Clutch Aligner Base Tool	1
KL-0069-5006	Clamping segment set 19 mm	1
KL-0069-5007	Clamping segment set 24 mm	1

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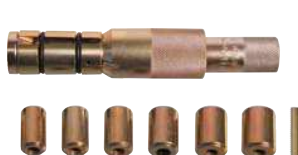


Universal



KL-0069-7

## Clutch Aligner (Vans)



**Suitable for vans and small lorries with a hub-Ø of 24 - 36 mm.**

This clutch aligner is indispensable for the quick and easy centring of a clutch disc or clutch discs.

The centring takes place via the guide bearing in the crankshaft.

**Scope of Delivery: KL-0069-7 Clutch Aligner (Vans)**

Part No.	Description	Qty.
KL-0069-700	Centring sleeve set	1
KL-0069-710	Clutch mandrel	1

Clutch Aligner Renault

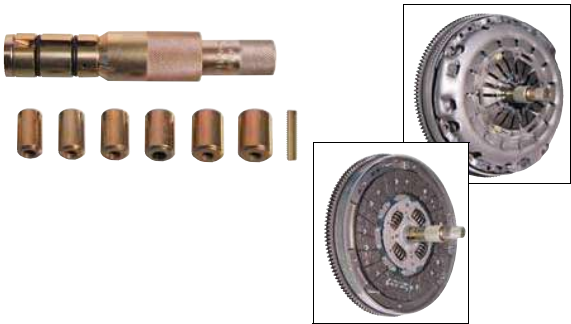
KL-0069-7 R

Intended for use on vans and small lorries with a hub-Ø of 23 35 mm, ideal for Renault.

This clutch aligner is indispensable for the quick and easy centring of a clutch disc or clutch discs.  
The centring takes place via the guide bearing in the crankshaft.

Scope of Delivery:  
KL-0069-7 R Clutch Aligner Renault

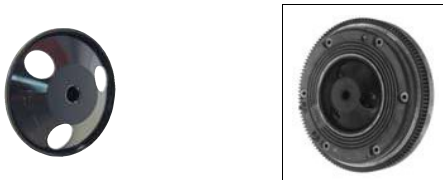
Part No.	Description	Qty.
KL-0069-700	Centring sleeve set	1
KL-0069-710 R	Clutch mandrel	1



Clutch Aligner

KL-0201

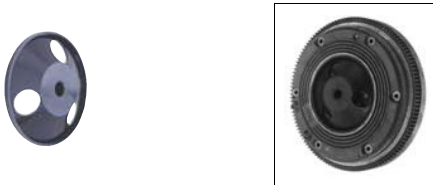
Intended for use on: VW Golf equipped with 1.5 - 1.8 litre engines.  
Allows the clutch disc to be aligned relative to the flywheel.



Clutch Aligner

KL-0202

Suitable for VW engines featuring 16 valves.  
Allows the clutch disc to be aligned relative to the flywheel.



Clutch Cable Clamp

KL-0203-1

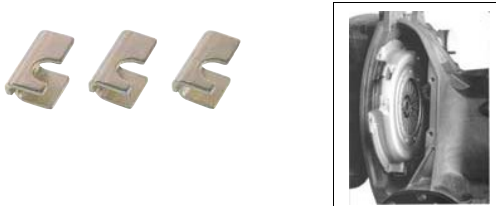
Suitable for VW Golf (II and III), etc.  
When exchanging a clutch, the self-adjusting clutch cable has to be secured by means of the clamp KL-0203-1. If this is omitted, the clutch cable has to be completely renewed.



Clamps (3 pcs.)

KL-0401-2010

Suitable for Opel/Vauxhall.  
Used to fix the pretensioned clutch pressure plate.



Clutch Assembly Ring (Plastic)

KL-0416-4

Suitable for Opel/Vauxhall and Saab passenger cars.  
For Ø 110 - 140 mm  
Assembly aid to secure and keep the pretensioned diaphragm spring on the clutch pressure plate.



## KL-0043-31 Inner Bearing Extractor Set



**Universally suitable for passenger cars.**

Includes collet chucks with Ø 10 - 20 mm.

This set allows the quick and professional replacement of pilot-/guide bearings, alternator bearings, etc.

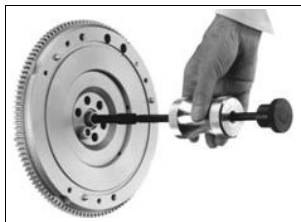
The collets are manufactured from a high-grade special steel to ensure proper functioning of the tool.

**Scope of Delivery:**

**KL-0043-31 Bearing Extractor Set**

Part No.	Description	Qty.
KL-0043-3101	Spreader 5 mm	1
KL-0043-3102	Spreader 6 mm	1
KL-0049-1013	Slide Weight	1
KL-0043-3107	Collet chuck 10 mm	1
KL-0043-3108	Collet chuck 12 mm	1
KL-0043-3109	Collet chuck 15 mm	1
KL-0043-3110	Collet chuck 17 mm	1
KL-0043-3111	Collet chuck 20 mm	1
KL-0043-3115	Plastic storage case	1

## KL-0043-32 Inner Bearing Extractor Set



**Suitable for passenger cars and lorries.**

Includes collet chucks with Ø 10 - 30 mm.

This set allows the quick and professional replacement of pilot-/guide bearings, alternator bearings, etc.

The collets are manufactured from a high-grade special steel to ensure proper functioning of the tool.

**Scope of Delivery:**

**KL-0043-32 Inner Bearing Extractor Set**

Part No.	Description	Qty.
KL-0043-31	Bearing Extractor Set	1
KL-0043-3112	Collet chuck 25 mm	1
KL-0043-3113	Collet chuck 27 mm	1
KL-0043-3114	Collet chuck 30 mm	1

## KL-0175-70 Pilot Bearing Extractor Set with Slide Hammer (0.8 kg)



**Universally suitable, for example, for clutch pilot bearings.**

This tool set allows removal of bearings, bearing shells and sleeves, for example, from blind boreholes.

**Scope of Delivery:**

**KL-0175-70 Pilot Bearing Extractor Set with Slide Hammer (0.8 kg)**

Part No.	Description	Qty.
KL-0175-602	Collet chuck 12-15 mm	1
KL-0175-603	Collet chuck 15-19 mm	1
KL-0175-604	Collet chuck 19-25 mm	1
KL-0283-6013	Adaptor for injector nozzle puller M10	1
KL-0049-100	Slide hammer base tool	1

## KL-0110 A Holding Wrench

**(Universal)**



**Universal application.**

For locking the flywheel.

**Technical Data:**

Length:	250 mm
Weight:	0.5 kg



## Flywheel Locking Tool (adjustable)

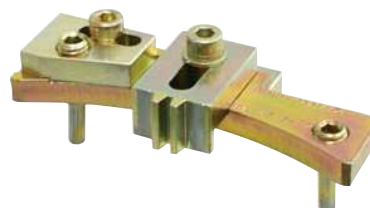
(German Utility Model)

KL-0182-10 A

This tool is required for locking the flywheel when the gearbox has been removed. Universal application. The tool can be adjusted axially and radially and can, therefore, be used almost universally by screwing in different stud bolts.

### Technical Data:

Bolt-Ø:	8.5 mm
Bolt distance:	92 - 107 mm



## Special Socket XZN M8, 800 mm

KL-0232-1

Suitable for VW-Audi, etc.

This special socket enables the drive shaft fixing screws to be loosened from the differential flange quickly and easily from the outside. Not intended for use on impact wrenches.

### Advantages

- Substantial time savings.

### Technical Data:

Size (width across flats):	XZN M8
Drive:	1/2"
Length:	800 mm



## Special Socket XZN M10, 800 mm

KL-0232-2

Suitable for VW Golf IV etc.

## Special Socket XZN M12, 800 mm

KL-0232-3

Suitable for VW T4, Touareg etc.

## Special Socket XZN M14, 800 mm

KL-0232-4

Suitable for VW T4, Touareg etc.

## Puller for Release Shaft Fiat Ducato

KL-1600-10

Suitable for Fiat Ducato (94 onwards) with pull-action clutch.

Intended for the removal of the clutch release shaft.

This tool is needed when removing the gearbox, for example when replacing clutches or for gearbox repairs.



## Releaser Bearing Removal Mandrel

KL-1600-11

For use on Fiat Ducato 1994 onwards with pull-action clutch.

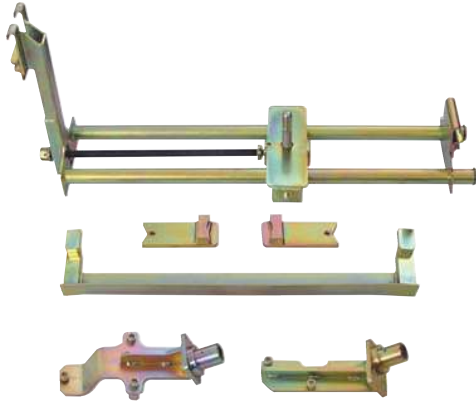
To remove the releaser bearing from the pressure plate, the circlip must be pretensioned with removal mandrel KL-1600-11.



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## KL-0206-1

## Engine Lifter VW T4



### Suitable for VW T4 Vans (short bodywork)

#### Designed to lift and pull forward the engine/gearbox assembly.

For the removal and installation of clutch and gearbox on VW T4 it is essential to support the engine with engine lifter **KL-0206-1**. After undoing all mounting bolts, loosening the exhaust flange and removal of all connections, the engine must be lifted and pulled or pushed to the right front side until the pulley of the crankshaft gets almost in contact with the frame.

Only then will it be possible to remove the gearbox and change the clutch.

#### Advantages:

- Easy installation of the engine lifter on the vehicle.
- Support of upper wishbones by retaining wedges for removal of the drive shaft.
- Support and correct positioning of the engine in every wanted position.
- Easy removal and installation of gearbox and clutch.
- Applicable for 4 and 5 cylinder engines.
- Safety fixture avoids caught in fingers in the tool's support.

#### Technical Data:

Length:	870 mm
Height:	365 mm
Width:	230 mm
Weight:	21.2 kg



#### Note:

- Removal and installation of gearbox and clutch without engine lifter **KL-0206-1** is a dangerous procedure.
- The clutch centre-plate can be aligned to the pilot bearing or against the pressure-plate with the Tool **KL-0069-5**.

#### Scope of Delivery:

#### KL-0206-1 Engine Lifter VW T4

Part No.	Description	Qty.
KL-0206-100	Lifting frame	1
KL-0206-101	Support	1
KL-0206-102	Retainer for 4-cylinder engines	1
KL-0206-103	Retainer for 5-cylinder engines	1
KL-0206-104	Set of supporting Wedges (2 pieces)	1

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## KL-0206-105

## Support VW T4



### Suitable for: VW T4 model 1995 onwards (extended bodywork)

Designed to lift and pull forward the engine/gearbox assembly in conjunction with the engine lifter **KL-0206-1**.