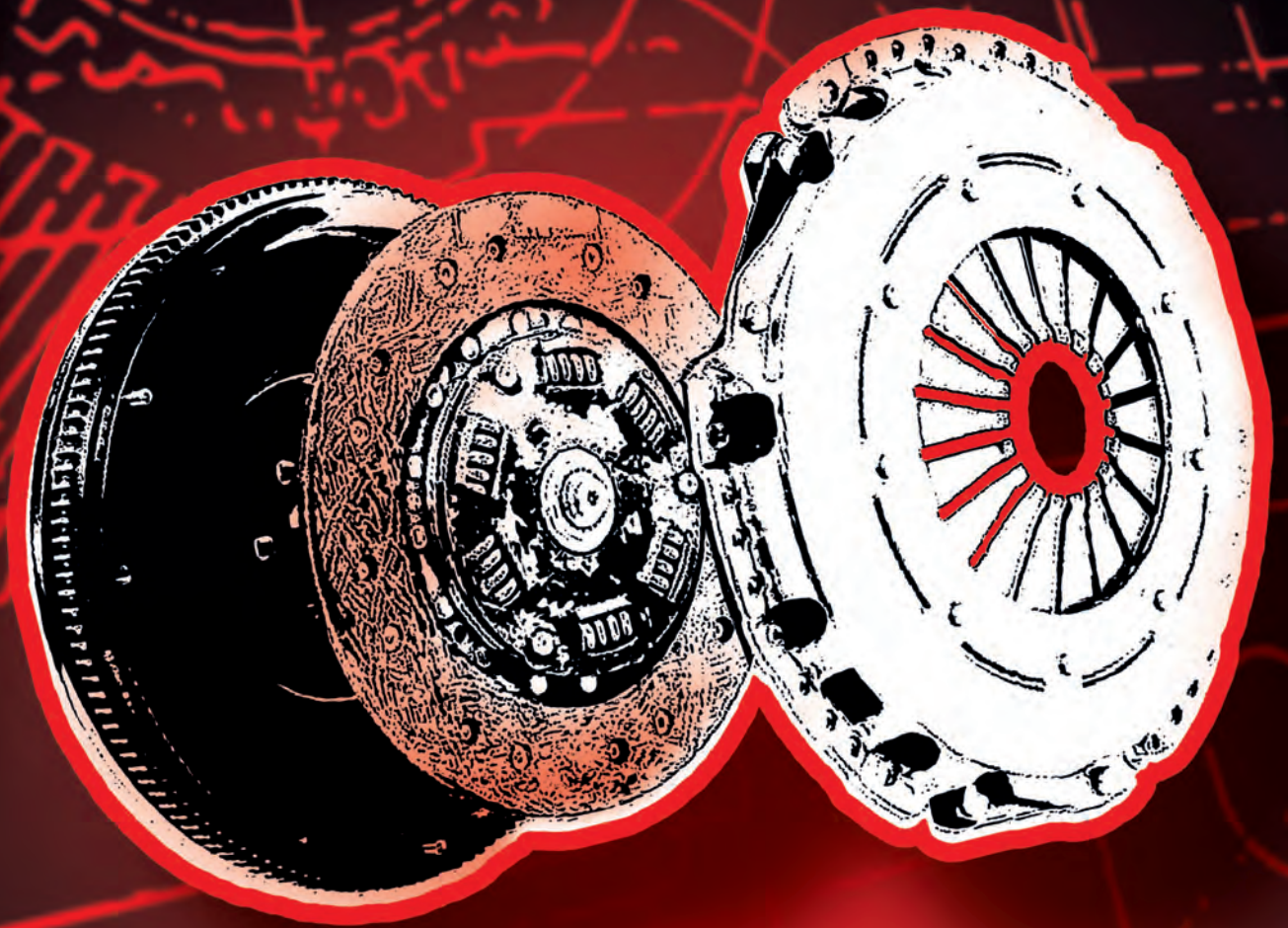
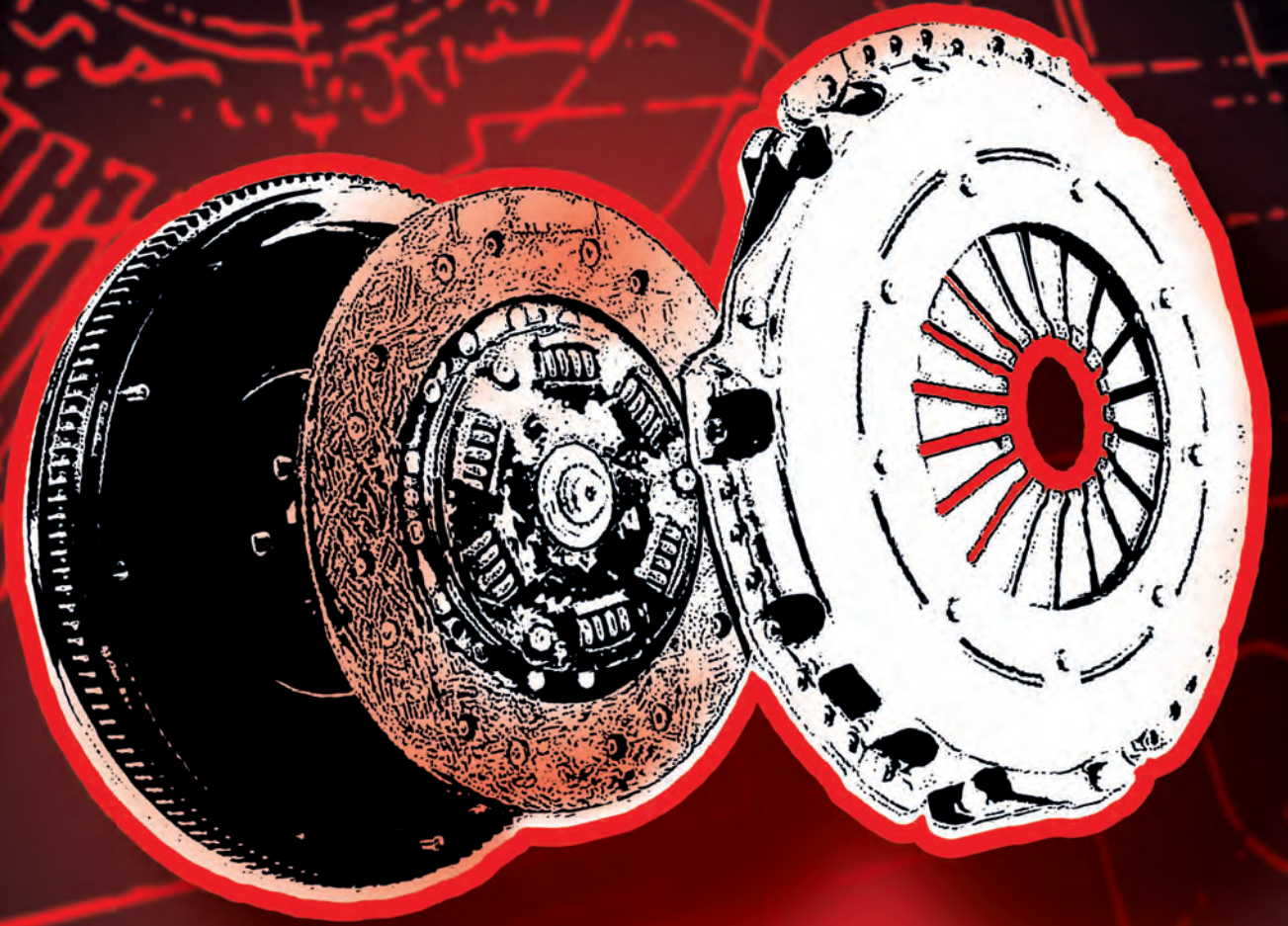


K15



KS TOOLS





Innovation is
our mission!



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SAC clutch removal



1. Select the appropriate centring pin depending on the pilot bearing diameter and screw onto the clamping mandrel with the receiving thread M8.



2. Equip the clamping mandrel with the appropriate clamping sleeve, depending on the hub diameter of the clutch disc.



3. Insert the fully equipped clamping mandrel (relaxed clamping sleeve) into the pilot bearing.



4. Guide the new clutch disc over the centring device and insert into the flywheel receptacle.
Attention: It is important for an optimal guiding that the centring pin is close-fitting in the pilot bearing.



5. Now the clamping sleeve is braced in the hub of the clutch disc by securing the clamping mandrel with one hand and using the other hand to actuate the drive on the mandrel end so that the clamping sleeve spreads in the hub (finger tightening is sufficient).



6. Place the new clutch pressure plate on the flywheel (note centring pins). Select the matching threaded bolts and screw 3 threaded bolts into the flywheel hand-tight offset by 120°. Offset by 90° for 4-pitch! (e.g. Mercedes W169 A-class from MJ 2004).
Attention: Always screw the short thread end into the flywheel.



7. **Attention:** Pressure plate does not abut!



8. **Correct:** Pressure plate abuts!



9. Insert the cover fastening screws into the open threaded receptacles of the flywheel and tighten.



10. Guide the SAC clamping device over the threaded bolts.



11. Screw on hexagonal nuts by hand until these are flush with the threaded bolts (parallel mounting of the SAC clutch tool set).
Attention: The pressure spindle must be completely screwed back.



12. Screw the pressure spindle onto the catch until the disc spring is actuated.
Attention: Only turn until the cover of the pressure plate touches the support of the disc flywheel.



13. Tension disc springs.



14. Completely turn back the pressure spindle - disc spring will release tension.



15. Loosen hexagonal nuts - remove clamping device.



16. Remove threaded bolts.



17. Screw the missing cover fastening screws into the now free threaded receptacles on the flywheel hand-tight. At the end, tighten all fastening screws with the torque stipulated according to the manufacturer's specifications.



18. Remove the clutch centring pin.

SAC clutch installation

During the controlled removal, the work steps take place in the reverse order from the installation, whereby the use of the centring device is not required here.

CENTRING TOOLS

Clutch aligner tool set Ø 15,0 - 26,6 mm

- Universally applicable for vehicles with a hub diameter of 15.0 - 26.6 mm
- For the professional and quick assembly of single-disc dry clutches
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate
- It is not necessary to centre the clutch disc via the guide bearing
- For passenger vehicles and light commercial vehicles with guide bearing
- Variably adjustable in diameter from 15.0 - 18.0 mm or 20.0 - 26.6 mm



150.2285	2 pcs	Clutch aligner tool set Ø 15,0 - 26,6 mm	455
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consists of:

150.2286	Clutch centring pin Ø 15.0 - 18.0 mm	115
150.2287	Clutch centring pin Ø 20.0 - 26.6 mm	200

Clutch centring tool set Ø 15.0 - 28.0 mm

- Universally applicable for vehicles with a hub diameter of 15.0 - 28.0 mm
- For the professional and quick assembly of single-disc dry clutches
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate
- It is not necessary to centre the clutch disc via the guide bearing
- Also for vehicles without guide bearings
- For passenger vehicles and light commercial vehicles
- Variably adjustable in diameter from 15.0 - 21.0 mm or 21.0 - 28.0 mm
- With reinforced knurled metal clamping screw



150.2180	3 pcs	Clutch centring tool set Ø 15.0 - 28.0 mm	200
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consists of:

150.2181	Centring tool without clamping cone	182
150.2182	Clamping cone Ø 15.0 - 21.0 mm	6
150.2183	Clamping cone Ø 21.0 - 28.0 mm	9

Universal clutch aligner tool set Ø 15,0 - 26,0 mm

- Universally applicable for vehicles with a hub diameter of 15.0 - 26.0 mm
- Includes 10 centring sleeves
- Sturdy design
- For the professional and quick assembly of single and two-disc dry clutches
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate or via the guide bearing to the fly wheel
- Also for vehicles without guide bearings
- Also for front-wheel drive vehicles with a transversely mounted engine
- For passenger vehicles and light commercial vehicles



455.0170	19 pcs	Universal clutch aligner tool set Ø 15,0 - 26,0 mm	1,91
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consists of:

455.0171	Spindle M16 x 1.5 L= 55mm	55
455.0172	Spindle M16 x 1.5 L= 100mm	72
455.0173	Spindle M16 x 1.5 L= 150mm	120
455.0174	Expander for clutch disc hubs 15-19 mm	63
455.0175	Expander for clutch disc hubs 19.5-26 mm	106
455.0176	Cone IG M15 x 1.5 working range 19-30 mm	125
455.0177	Cone IG M15 x 1.5 working range 26-35 mm	170
455.0178	Biconical plate IG M15 x 1.5	380
455.0180	Pilot bearing extension, 20 mm	24
455.0181	Centring sleeve for guide bearing Ø 10.0 mm	11
455.0182	Centring sleeve for guide bearing Ø 12.0 mm	15
455.0183	Centring sleeve for guide bearing Ø 14.0 mm	21
455.0184	Centring sleeve for guide bearing Ø 15.0 mm	24
455.0185	Centring sleeve for guide bearing Ø 16.0 mm	27
455.0186	Centring sleeve for guide bearing Ø 17.0 mm	31
455.0187	Centring sleeve for guide bearing Ø 19.0 mm	38
455.0188	Centring sleeve for guide bearing Ø 25.0 mm	64
455.0189	Centring sleeve for guide bearing Ø 27.0 mm	74
455.0190	Centring sleeve for guide bearing Ø 30.0 mm	90

Clutch centring tool set Ø 15.0 - 28.0 mm with centring sleeves

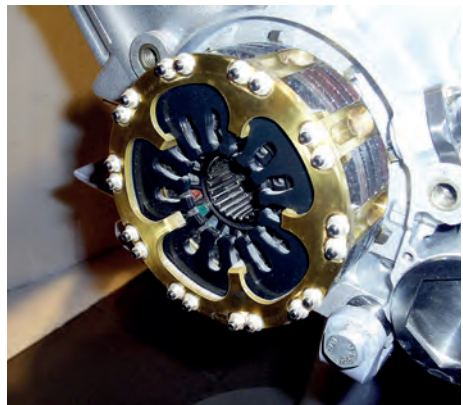
- Universally applicable for vehicles with a hub diameter of 15.0 - 28.0 mm
- Includes 8 centring sleeves
- For the professional and quick assembly of single-disc dry clutches
- Parallel clamping technology with self-centring
- Precise centring process is exactly in the axis of the clutch disc hub
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate or via the guide bearing to the fly wheel
- Also for vehicles without guide bearings
- For passenger vehicles and light commercial vehicles
- Also for front-wheel drive vehicles with a transversely mounted engine
- Variably adjustable in diameter from 15.0 - 21.0 mm or 21.0 - 28.0 mm
- With reinforced knurled metal clamping screw



150.2290	11 pcs	Clutch centring tool set Ø 15.0 - 28.0 mm with centring sleeves	820
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consists of:

150.2281	Centring tool without clamping segment set	180
150.2282	Clamping segment set Ø 19.0 mm	10
150.2283	Clamping segment set Ø 24.0 mm	20
455.2291	Centring sleeve for guide bearing Ø 10.0 mm	20
455.2292	Centring sleeve for guide bearing Ø 12.0 mm	20
455.2293	Centring sleeve for guide bearing Ø 14.0 mm	20
455.2294	Centring sleeve for guide bearing Ø 15.0 mm	30
455.2295	Centring sleeve for guide bearing Ø 16.0 mm	40
455.2296	Centring sleeve for guide bearing Ø 17.0 mm	40
455.2297	Centring sleeve for guide bearing Ø 19.0 mm	60
455.2298	Centring sleeve for guide bearing Ø 26.0 mm	80



Clutch centring tool set Ø 24.0 - 36.0 mm with centring sleeves

- Universally applicable for light commercial vehicles with a hub diameter of 24.0 - 36.0 mm
- Includes 6 centring sleeves
- Sturdy design
- For the professional and quick assembly of single and two-disc dry clutches
- For the custom-fit centring of the clutch disc via the guide bearing in the crankshaft
- For vans and small lorries
- Variably adjustable in diameter from 24.0 - 36.0 mm
- With reinforced knurled metal clamping screw



				🔑
150.2380	9 pcs	Clutch centring tool set Ø 24.0 - 36.0 mm with centring sleeves	700	

consists of:

			🔑
150.2381	Centring pin without clamping segment set	400	
150.2382	Clamping segment set Ø 24.0 mm	40	
455.2383	Threaded bolts for centring sleeve M8 x 1.25	20	
455.2384	Centring sleeve for guide bearing Ø 15.0 mm	20	
455.2385	Centring sleeve for guide bearing Ø 16.0 mm	30	
455.2386	Centring sleeve for guide bearing Ø 17.0 mm	30	
455.2387	Centring sleeve for guide bearing Ø 18.0 mm	40	
455.2388	Centring sleeve for guide bearing Ø 19.0 mm	40	
455.2389	Centring sleeve for guide bearing Ø 20.0 mm	60	

Renault clutch centring tool set Ø 23.0 - 35.0 mm with centring sleeves

- Universally applicable for light commercial vehicles with a hub diameter of 23.0 - 35.0 mm
- Includes 6 centring sleeves
- Sturdy design
- For the professional and quick assembly of single and two-disc dry clutches
- For the custom-fit centring of the clutch disc via the guide bearing in the crankshaft
- For vans and small lorries, **especially Renault**
- Variably adjustable in diameter from 23.0 - 35.0 mm
- With reinforced knurled metal clamping screw



				🔑
150.2390	9 pcs	Renault clutch centring tool set Ø 23.0 - 35.0 mm with centring sleeves	700	

consists of:

			🔑
150.2381	Centring pin without clamping segment set	400	
150.2359	Clamping segment set Ø 23.0 mm	40	
455.2383	Threaded bolts for centring sleeve M8 x 1.25	20	
455.2384	Centring sleeve for guide bearing Ø 15.0 mm	20	
455.2385	Centring sleeve for guide bearing Ø 16.0 mm	30	
455.2386	Centring sleeve for guide bearing Ø 17.0 mm	30	
455.2387	Centring sleeve for guide bearing Ø 18.0 mm	40	
455.2388	Centring sleeve for guide bearing Ø 19.0 mm	40	
455.2389	Centring sleeve for guide bearing Ø 20.0 mm	60	

VAG clutch centring disc

- For the centring of the clutch drive plate to the disc fly wheel
- For the clutch disc mounted within the fly wheel
- Adjustment is not possible without this tool, since the outer diameter of the centring disc is decisive

Application range: Volkswagen, Audi, Seat and Škoda engines with 16 valves



	Outer Ø mm	Inner Ø mm	Rim diameter Ø mm	Height mm	🔑
150.2393	131.8	20.2	21.4	21.5	25



VAG clutch centring disc

- For the centring of the clutch drive plate to the disc fly wheel
- For the clutch disc mounted within the fly wheel
- Adjustment is not possible without this tool, since the outer diameter of the centring disc is decisive

Application range: Volkswagen, Audi, Seat and Škoda engines with 1.5 to 1.8 litres



	Outer Ø mm	Inner Ø mm	Rim diameter Ø mm	Height mm	🔑
150.2392	131.8	17.3	21.4	19.6	24

SAC CLUTCH TOOLS

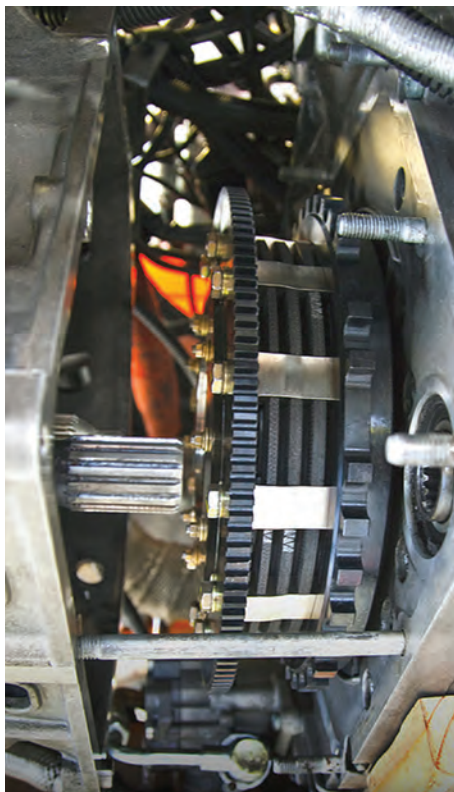
Adjustable pin wrench Ø 14 - 100 mm with 5.0 mm pin

- To remove the pretension ring when installing a SAC clutch
- Variably adjustable in diameter from 14.0 - 100.0 mm
- With firmly connected pivot Ø 5.0 mm (not interchangeable)
- Bronzed
- Special steel

Application range: Volkswagen, Audi, Seat, Škoda, Fiat, etc.



	Ø mm	Stud Ø mm	Zapfenhöhe mm	Length mm	🔑
150.2407	14-100	5.0	6.0	215.0	300



BMW + VOLVO clutch pre-tension jack for SAC clutches

- Required for the tension-free assembly and disassembly of SAC clutches
- For the quick, clean and safe removal and installation or replacement
- Avoids a distortion of the clutch housing, which can occur without this special tool
- Allows for the resetting of the adjusting ring in the zero position with the resetting device 150.2396
- Knurled spindle wheel for tensioning the gripper arms
- Ball bearing pressure piece

Application range:

BMW: E34, E36, E38, E39, E46, E52, E53, E60, E61, E81, E83, E85, E86, E87, E88, E90 and E91
 VOLVO: C70 2.4 20V Turbo, S70 2.3 Turbo, S70 2.5 20V Turbo, S70 2.5 TDI, V70 2.3 Turbo, V70 2.5 20V Turbo, V70 2.5 TDI



Suitable for		
150.2395	BMW, Volvo	1.68

BMW + VOLVO clutch resetting device for SAC clutches

- Required for the professional assembly and disassembly of SAC clutches
- For attachment to the clutch before pre-tensioning the SAC clutch
- During the pre-tensioning in connection with the pre-tension jack 150.2395, it allows for an automatic resetting of the adjusting disc located in the SAC clutch to its zero or new position
- With knurled locking screws and adjusting lever

Application range:

BMW: E34, E36, E38, E39, E46, E52, E53, E60, E61, E81, E83, E85, E86, E87, E88, E90 and E91
 VOLVO: C70 2.4 20V Turbo, S70 2.3 Turbo, S70 2.5 20V Turbo, S70 2.5 TDI, V70 2.3 Turbo, V70 2.5 20V Turbo, V70 2.5 TDI



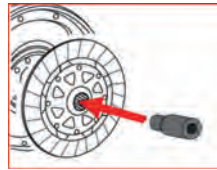
Suitable for		
150.2396	BMW, Volvo	460

BMW clutch centring pin Ø 23.0 mm for SAC clutches

- For hub diameter 23.0 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:

BMW: E36, E38, E39, E46, E87, Mini R50, Mini R53
 Gearbox: S5D 200G, S5D 250G, S5D 260Z, S5D 310Z



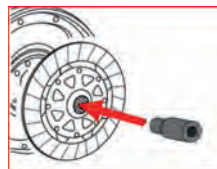
	Ø mm	L mm	
150.2401	15,0/23,0	72,0	190

BMW clutch centring pin Ø 26.5 mm for SAC clutches

- For hub diameter 26.5 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:

BMW: E36, E38, E39, E46, E87, Mini R50, Mini R53
 Gearbox: S5D 200G, S5D 250G, S5D 260Z, S5D 310Z



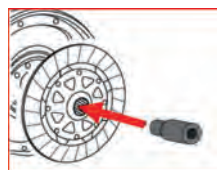
	Ø mm	L mm	
150.2402	15,0/26,5	80,0	230

BMW clutch centring pin Ø 26.5 mm for SAC clutches

- For hub diameter 26.5 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:

BMW: E36, E38, E39, E46, E87, Mini R50, Mini R53
 Gearbox: GS6-37BZ, GS6-51BZ, GS6-51DZ (H-gearbox)



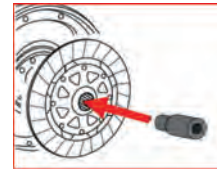
	Ø mm	L mm	
150.2403	15,0/26,5	72,0	230

BMW clutch centring pin Ø 28.0 mm for SAC clutches

- For hub diameter 28.0 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:

BMW: E36, E38, E39, E46, E87, Mini R50, Mini R53
 Gearbox: S6S 420G, S6S 560G



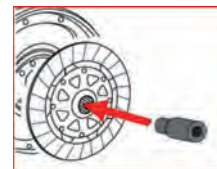
	Ø mm	L mm	
150.2404	15,0/28,0	72,0	260

BMW clutch centring pin Ø 32.5 mm for SAC clutches

- For hub diameter 32.5 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:

BMW: E92 (M3), E60 (M5), E63 (M6) with S65 (V8), S85 (V10) engines
 Gearbox: GS6-53DG



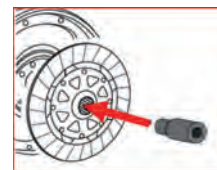
	Ø mm	L mm	
150.2405	15,0/32,5	72,0	310

BMW clutch centring pin Ø 34.0 mm for SAC clutches

- For hub diameter 34.0 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch pressure plate
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Areas of application:

BMW: E36, E38, E39, E46, E87, Mini R50, Mini R53
 Gearbox: S6S 420G, S6S 560G

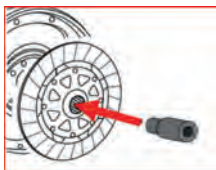


	Ø mm	L mm	
150.2408	15,0/34,0	72,0	360

BMW clutch centring sleeve Ø 32.5 mm for SAC clutches

- For hub diameter 32.5 mm
- For centring the clutch disc before the installation or reassembly of the pre-tensioned SAC clutch
- In order to centre new, already pre-tensioned SAC clutches
- After assembly, the centring pin is removed with the attached bolts

Application range:
 BMW: E90, E91, E92, E93 (335i)
 Engine: N54B30 (3.5 litre)



	Outer Ø mm	Inner Ø mm	L mm	kg
150.2406	32.5	15.0	72.0	180

SAC clutch tool set (3-hole pitch)

- For nearly all SAC (self-adjusting) clutches with 3-hole pitch
- Optionally expandable with 4-hole pressure plate set
- For the quick and professional assembly and disassembly of SAC clutches
- Accuracy of fit through high-precision CNC components
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate or via the guide bearing to the fly wheel
- Even clutches for engines with larger crankshaft bore diameters than clutch discs or clutch disc hub diameters can be centred cleanly and precisely
- Resetting the adjusting ring in conjunction with the attached resetting tool
- Avoids a distortion of the clutch housing, which can occur without this special tool
- Ideal for damage-free working on the pressure plate
- Malfunctions (poor separation, sliding or picking) are avoided
- Sturdy design
- Also for vehicles without guide bearings
- For passenger vehicles and light commercial vehicles
- Chrome-plated
- Special steel
- In durable plastic storage case

Application range: Volkswagen, Audi, BMW, Mercedes, Opel, Renault, Volvo, etc.



	kg
150.2105 32 pcs SAC clutch tool set (3-hole pitch)	6.50

consists of:

X	kg
150.2167 1 Aligning pin f.150.2160, 12mm	25
150.2166 1 Aligning pin f.150.2160, 14mm	36
150.2165 1 Aligning pin f.150.2160, 15mm	43
150.2164 1 Aligning pin f.150.2160, 16mm	50
150.2163 1 Aligning pin f.150.2160, 17mm	57
150.2162 1 Aligning pin f.150.2160, 18mm	65
150.2161 1 Aligning pin f.150.2160, 19mm	74
150.2401 1 BMW clutch centring pin Ø 23.0 mm for SAC clutches	190
150.2404 1 BMW clutch centring pin Ø 28.0 mm for SAC clutches	260
150.2408 1 BMW clutch centring pin Ø 34.0 mm for SAC clutches	360
150.2173 1 Pressure spindle	712
150.2174 1 Resetting tool	98
150.2176 1 3 Arm beam f.150.2160	1536
150.2177 1 Locking bolt f.150.2160	305
150.2178 3 Fixing bolt, M6	185
150.2179 3 Fixing bolt, M7	192
150.2188 3 Fixing bolt, M8	200
150.2169 3 Nut for fixing bolt, M8	113
150.2106 1 Centring pin receptacle	184
150.2107 1 Centring basic tool spindle with cone operation	46
150.2108 1 Centring basic tool clamping number	54
150.2109 1 Centring basic tool receptacle sleeve	83
150.2111 1 Small clamping cone	6
150.2112 1 Large clamping cone	11

Supplement set for SAC clutch tool set (4-hole pitch)

- Accuracy of fit through high-precision CNC components
- Required for pre-tensioning the pressure plate before removing and installing SAC clutches with 4-hole pitch
- Sturdy design
- Chrome-plated
- Special steel

Application range: 4-hole pressure plate necessary for e.g. Mercedes (169) from the year of manufacture 2004 (A-class), Opel Insignia, etc.



	kg
150.2115 5 pcs Supplement set for SAC clutch tool set (4-hole pitch)	2.08

consists of:

X	kg
150.2175 1 4 Arm beam	1920
150.2178 1 Fixing bolt, M6	185
150.2179 1 Fixing bolt, M7	192
150.2188 1 Fixing bolt, M8	200
150.2169 1 Nut for fixing bolt, M8	113

SAC clutch tool set (3-hole and 4-hole pitch)

- For nearly all SAC (self-adjusting) clutches with 3-hole and 4-hole pitch
- For the quick and professional assembly and disassembly of SAC clutches
- Accuracy of fit through high-precision CNC components
- For the custom-fit centring and affixing of the clutch disc to the clutch pressure plate or via the guide bearing to the fly wheel
- Even clutches for engines with larger crankshaft bore diameters than clutch discs or clutch disc hub diameters can be centred cleanly and precisely
- Resetting the adjusting ring in conjunction with the attached resetting tool
- Avoids a distortion of the clutch housing, which can occur without this special tool
- Ideal for damage-free working on the pressure plate
- Malfunctions (poor separation, sliding or picking) are avoided
- Sturdy design
- Also for vehicles without guide bearings
- For passenger vehicles and light commercial vehicles
- Chrome-plated
- Special steel
- In durable plastic storage case

Application areas:
 Volkswagen, Audi, BMW, Mercedes, Opel, Renault, Volvo, etc.
 4-hole pressure plate necessary for e.g. Mercedes (169) from the year of manufacture 2004 (A-class), Opel Insignia, etc.



	kg
150.2160 37 pcs SAC clutch tool set (3-hole and 4-hole pitch)	8.50

consists of:

X	kg
150.2167 1 Aligning pin f.150.2160, 12mm	25
150.2166 1 Aligning pin f.150.2160, 14mm	36
150.2165 1 Aligning pin f.150.2160, 15mm	43
150.2164 1 Aligning pin f.150.2160, 16mm	50
150.2163 1 Aligning pin f.150.2160, 17mm	57
150.2162 1 Aligning pin f.150.2160, 18mm	65
150.2161 1 Aligning pin f.150.2160, 19mm	74
150.2173 1 Pressure spindle	712
150.2174 1 Resetting tool	98
150.2175 1 4 Arm beam	1920
150.2176 1 3 Arm beam f.150.2160	1536
150.2177 1 Locking bolt f.150.2160	305
150.2178 4 Fixing bolt, M6	185
150.2179 4 Fixing bolt, M7	192
150.2188 4 Fixing bolt, M8	200
150.2169 4 Nut for fixing bolt, M8	113
150.2106 1 Centring pin receptacle	184
150.2107 1 Centring basic tool spindle with cone operation	46
150.2108 1 Centring basic tool clamping number	54
150.2109 1 Centring basic tool receptacle sleeve	83
150.2111 1 Small clamping cone	6
150.2112 1 Large clamping cone	11
150.2401 1 BMW clutch centring pin Ø 23.0 mm for SAC clutches	190
150.2404 1 BMW clutch centring pin Ø 28.0 mm for SAC clutches	260
150.2408 1 BMW clutch centring pin Ø 34.0 mm for SAC clutches	360



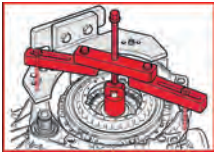
DSG CLUTCH TOOLS

DSG clutch tool set

- Required for the assembly and disassembly of DSG clutches (double clutch gearbox)
- Required for repair of the clutch assembly
- For the quick, clean and safe removal and installation or replacement
- Avoids a distortion of the clutch housing, which can occur without this special tool
- Sturdy design
- In durable plastic storage case

Application range:

7-speed gearbox in Audi, Seat, Škoda and Volkswagen
Gearbox: 0AM and 08D



			kg
150.2420	4 pcs	DSG clutch tool set	5.90

consists of:

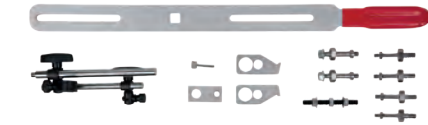
			kg
150.2421	Support bridge	2000	
150.2422	Pullers	2100	
150.2423	Gauge block	860	
150.2424	Pressure piece	280	

DUAL MASS FLYWHEEL DEGREE TEST TOOLS

Dual mass flywheel inspection tool without angular degree disc and dial gauge

- Required for the proper and quick wear test of the dual mass flywheel degree (ZMS)
- The test may be performed on the vehicle when the clutch is removed
- The clearance angle is tested via the number of teeth
- The dual mass flywheel must be checked with every clutch replacement
- Without verification, there is the risk of damaging the new clutch assembly, gearbox or the drive train
- A great deal of saved time
- For quick, precise and professional work
- Sturdy design
- In durable plastic storage case

Application range: Volkswagen, Audi, Seat, Škoda, Mercedes, etc.



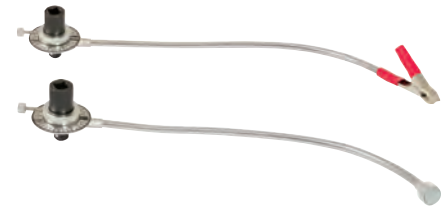
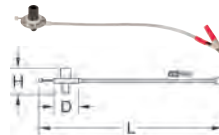
			kg
150.2435	15 pcs	Dual mass flywheel inspection tool without angular degree disc and dial gauge	3.30

consists of:

			kg
150.2426	Lever with protective handle	1100	
150.2427	Spacer screw M6 (2 pieces)	60	
150.2428	Spacer screw M7 (2 pieces)	60	
150.2429	Spacer screw M8 (2 pieces)	80	
150.2430	Union nut M8 (4 pieces)	40	
150.2431	Threaded pin M8 x 80 (pointer)	60	
150.2432	Measurement stand	414	
150.2433	Flywheel locking tool (2 pieces)	160	

Rotary angle disc

- For fastening screws at an angle
- Device for angle regulated fastening with a torque wrench
- Flexible arm
- Range 0° - 360°
- Square drive adaptor to DIN 3120 - ISO 1174 with ball lock
- Optionally with a magnetic arm or claw arm



	□	■	Arm	Pitch	D mm	H mm	L mm	kg
516.1195	1/2"	1/2"	magnet	2°	67.0	63.0	480.0	170
516.1196	1/2"	1/2"	claw	2°	67.0	63.0	538.0	60
516.1197	3/4"	3/4"	magnet	2°	87.0	87.0	624.0	170
516.1198	3/4"	3/4"	claw	2°	87.0	87.0	698.0	60

Precision dial indicator gauge 0 - 10 mm

- In accordance with DIN 878
- With fixed adjusting screw and revolving scale reading
- Shockproof
- Splash proofed
- Measuring tip protected against contamination by a bellowed sleeve
- Clamping shaft Ø 8 mm H6
- With 2 measuring scales
- Spindle and clamping shaft made from stainless steel
- In durable plastic case



	Measuring range mm	D mm	Display accuracy mm	Pointer revolution mm	kg
300.0560	0 - 10	60.0	+/- 0.01	1.0	260



Digital precision dial indicator gauge 0 - 10 mm

- mm/imperial switching
- Reset (to zero) in every position
- Large LCD display figure height 6,0 mm
- Clamping shaft Ø 8 mm H6
- Automatic switching off
- Spindle and clamping shaft made from stainless steel
- In durable wooden case



	Measuring range mm	D mm	Display accuracy mm	kg
300.0565	0 - 10	60.0	+/- 0.02	280

Dual mass flywheel inspection tool with angular degree disc and dial gauge

- Required for the proper and quick wear test of the dual mass flywheel degree (ZMS)
- The test may be performed on the vehicle when the clutch is removed
- The clearance angle is checked via the number of teeth or degree wheel (rotation of the secondary disc to the primary disc until the onset of the spring pressure) and the tilting tolerance via the dial gauge (axial bearing clearance)
- The dual mass flywheel must be checked with every clutch replacement
- Without verification, there is the risk of damaging the new clutch assembly, gearbox or the drive train
- A great deal of saved time
- For quick, precise and professional work
- Sturdy design
- In durable plastic storage case

Application range: Volkswagen, Audi, Seat, Škoda, Mercedes, etc.



150.2425	17 pcs	Dual mass flywheel inspection tool with angular degree disc and dial gauge	3.90
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consists of:

150.2426	Lever with protective handle	1100
150.2427	Spacer screw M6 (2 pieces)	60
150.2428	Spacer screw M7 (2 pieces)	60
150.2429	Spacer screw M8 (2 pieces)	80
150.2430	Union nut M8 (4 pieces)	40
150.2431	Threaded pin M8 x 80 (pointer)	60
150.2432	Measurement stand	414
150.2433	Flywheel locking tool (2 pieces)	160
515.1196	Angular degree disc	400
300.0560	Dial test indicator, 0-10mm	260

GENERAL CLUTCH TOOLS

Clutch cable bracket

- Before removing the clutch, the self-adjusting clutch cable is to be secured with the bracket
- Allows the use of the old clutch cable
- Without the use of this bracket, the clutch cable can no longer be used following disassembly
- Sturdy design

Application range: Volkswagen Golf starting in the 1989 year of manufacture



150.2436	L mm	76
	73,0	

Retaining bracket set

- For holding the pre-tensioned clutch pressure plate during assembly and disassembly of the clutch
- Sturdy design

Application range: Opel with front-wheel drive



150.2437	3 pcs	Retaining bracket set	83
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Pre-tension jack

- For clutch pressure plates
- No distortion of the clutch pressure plates
- Special steel

Application range: Opel/Saab



150.2399	Ø mm	2.86
	160,0	

Auxiliary assembly ring

- In order to secure the pre-tensioned diaphragm spring to the clutch pressure plate
- for Ø 110-140 mm
- Plastic

Application range: Opel and Saab



150.2434	Ø mm	Total depth mm	100
	110-140	10.0	

Precision inner bearing extraction set Ø 10 - 30 mm

- Includes 8 collets Ø 10 - 30 mm
- Slotted shaft
- For the quick and clean replacement of close fitting pilot/guide bearings
- Universally applicable
- Extremely robust spindle with inductively hardened thread
- Special steel



660.0009	11 pcs	Precision inner bearing extraction set Ø 10 - 30 mm	1.92
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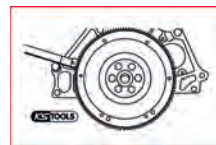
consists of:

660.0129	Expanding mandrel 5 mm	315
660.0131	Expanding mandrel 6 mm	360
660.0132	Striking weight	850
660.0133	Precision internal extractor collet Ø 10 mm	44
660.0134	Precision internal extractor collet Ø 12 mm	52
660.0135	Precision internal extractor collet Ø 15 mm	65
660.0136	Precision internal extractor collet Ø 17 mm	84
660.0137	Precision internal extractor collet Ø 20 mm	92
660.0138	Precision internal extractor collet Ø 25 mm	137
660.0139	Precision internal extractor collet Ø 27 mm	159
660.0141	Precision internal extractor collet Ø 30 mm	180

Flywheel holding key

- To lock the flywheel
- Required for the removal and installation of disc flywheels, clutch pressure plates and belt pulleys
- Sturdy design

Application range: Opel with front-wheel drive

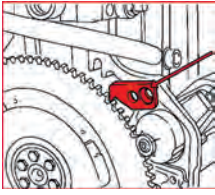


150.2438	Length mm	Width mm	Total depth mm	500
	255.0	26.0	26.0	

GM / Opel Fly wheel locking tool

- For locking the fly wheels
- For easily attaching to one of the small fixing pins next to the fly wheel
- Special steel

Application range: for all Opel and GM 4 and 6 cylinder CIH, 24V and OHC engines



Suitable for			
400.9045	GM, Opel	80	

Variable flywheel locking tool set

- For locking the flywheel when the gearbox is removed
- Required for the removal and installation of disc flywheels, clutch pressure plates and belt pulleys
- Axially and radially adjustable
- For use with the gearbox screw and the attached spacers
- The number of spacers can be extended to any amount for the required distance with the washers
- Universally applicable
- Sturdy design



150.2439	6 pcs	Variable flywheel locking tool set	

consists of:

150.2433	Flywheel locking tool (2 pieces)	160
150.2441	Spacer sleeve Ø 28.0 mm x 3.0 mm tall	12
150.2442	Spacer sleeve Ø 28.0 mm x 6.0 mm tall	22
150.2443	Spacer sleeve Ø 28.0 mm x 9.0 mm tall	34
150.2444	Spacer sleeve Ø 26.0 mm x 15.0 mm tall	20

Clutch pressure plate bit socket for multi-teeth (XZN®) screws

- For the quick and professional assembly and disassembly of the clutch pressure plate
- Multi-teeth (XZN®)
- Square drive as per DIN 3120/ISO 1174 with backstop groove
- With pressed-in nickel-plated bit holder
- For manual operation
- Matt finish
- Chrome vanadium

Application range: Volkswagen, Audi, Seat and Škoda



	D mm	L mm	T mm		
911.1347	M7	22.0	55.0	17.0	85

Clutch pressure plates 12 point force socket

- For the quick and professional assembly and disassembly of the clutch pressure plate and the flywheel
- 12-point
- Internal square in accordance with DIN 3121/ISO 1174
- Short design
- For machine operation
- Phosphate
- Chrome molybdenum

Application range: Volkswagen, Audi, Seat and Škoda



		L mm	D1 mm	D2 mm	T mm	
515.0988	9.0	78.0	15.8	25.0	12.0	160

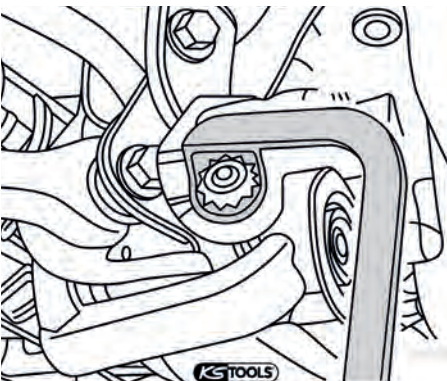
Oil filter wrench for Haldex transmission

- Special length and design
- For the assembly and disassembly of the difficult to reach oil filter of the Haldex transmission
- Allows for simple and time-saving oil filter change
- 12-point
- Matt finish
- Chrome vanadium

Application range: Volkswagen 5 and 6-speed manual gearbox, all-wheel



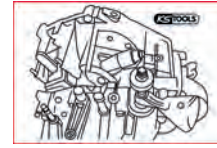
		L mm	
150.2098	46.0	390.0	770



Fiat Ducato extractor for release shaft

- For the quick and professional extraction of the clutch release shaft
- Required for clutch replacement and gearbox repair
- Sturdy design

Application range: Fiat Ducato, Citroen Jumper, Peugeot Boxer from the year of manufacture 1994 with pull-type clutch.

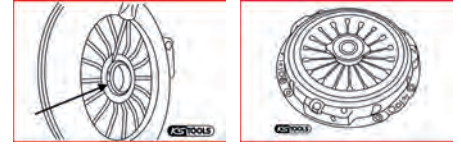


	Length mm	Width mm	Total depth mm	
911.2440	240.0	110.0	50.0	950

Dismantling mandrel for release bearing

- Required to pre-tension the circlip
- For the quick and professional removal of the release bearing from the pressure plate

Application range: Fiat Ducato, Peugeot Boxer, Citroen Jumper, Peugeot 406 with pull-type clutch



	Length mm	Width mm	Total depth mm	
911.2445	240.0	110.0	50.0	530

Clutch master cylinder collet

- Suitable for the installation and removal of the pedal bearing block
- Required for releasing the clutch master piston rod from the clutch pedal
- Quick and easy application
- Special steel

Application range: Opel Astra J, Signum C, Vectra C; Audi A1 (8X), A3 (8P), A4 (B7), A6 (C6); Volkswagen Golf (1K1), Passat (3B6), Eos (1F), etc.

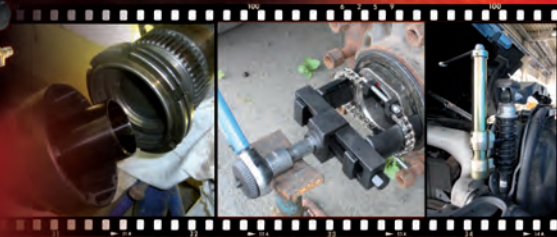


	A mm	C mm	L mm	
150.1309	85.0	95.0	295.0	265

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