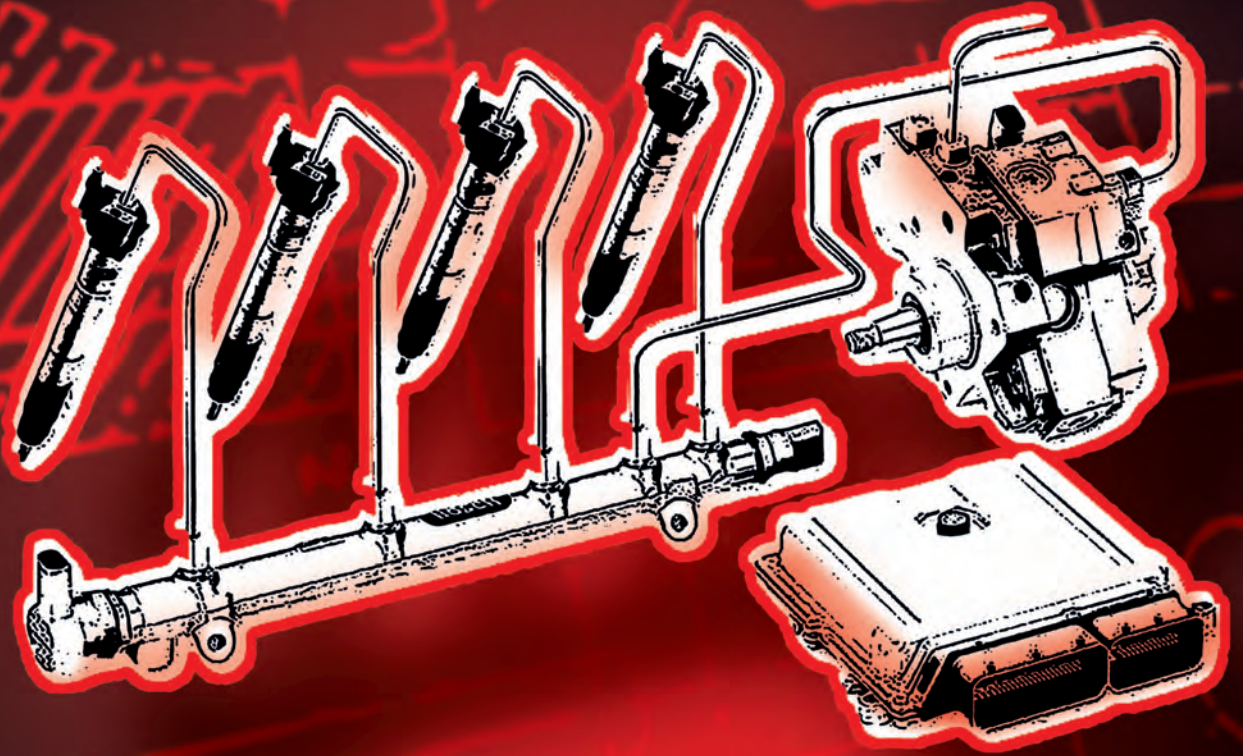


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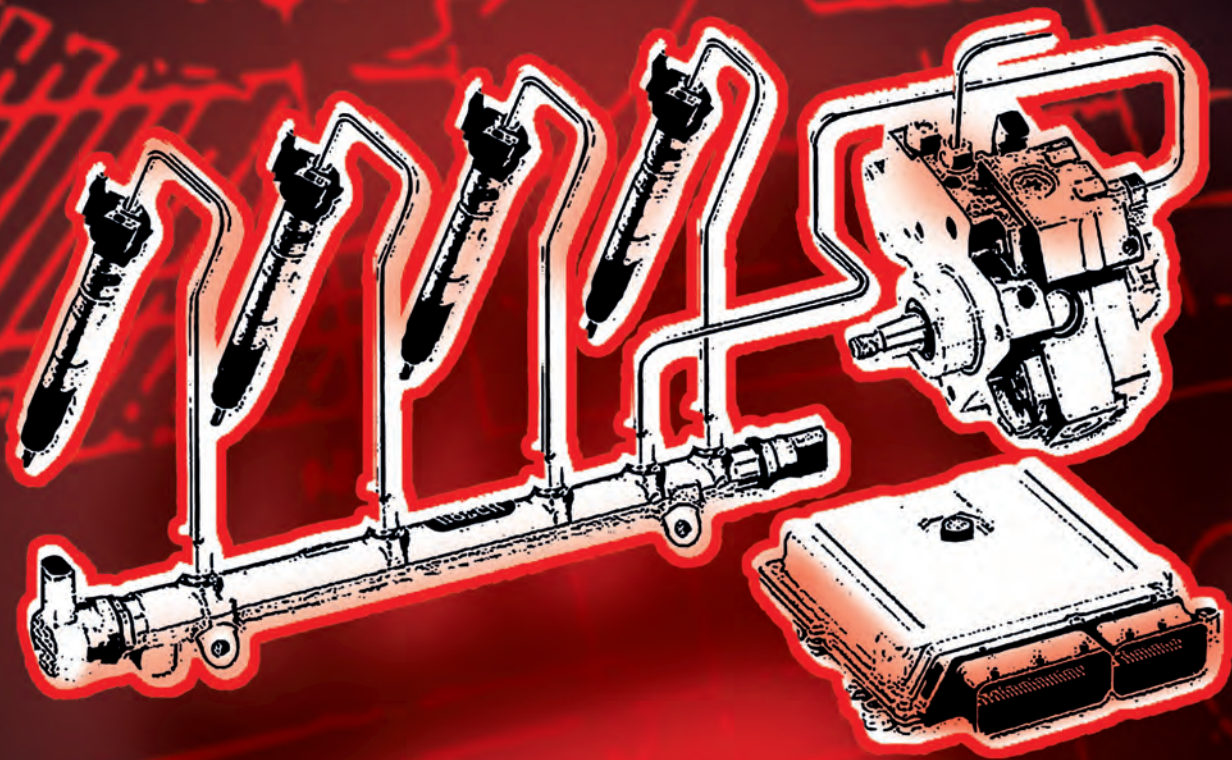


KS TOOLS





ENGINE - FUEL INJECTION SYSTEM



Innovation is
our mission!



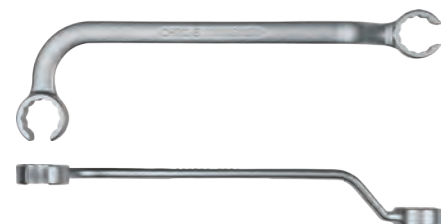
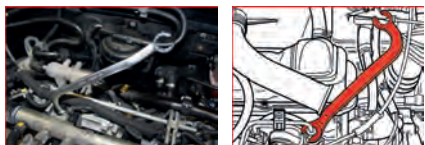
	PAGE
FUEL INJECTOR RAIL WRENCH	242 - 245
PRE-COMBUSTION CHAMBER SOCKET WRENCH	245 - 246
INSPECTION AND TEST TOOLS	246 - 247
PNEUMATIC ADAPTER FOR GLOW PLUG BORES	247
INJECTOR REMOVAL TOOLS	248 - 249
INJECTOR SEALING RING EXTRACTOR	249
INJECTOR AND INJECTOR SEAT CLEANING	250 - 251
INJECTOR SHAFT CLEANING	251 - 252
INJECTOR PUMP WRENCH	252
PUMP WHEEL EXTRACTOR	252
LOCKRING DRIVER AND ADJUSTMENT TOOLS	252 - 253
INJECTOR PUMP ADJUSTING TOOLS	253 - 254

FUEL INJECTOR RAIL WRENCH

Double open ring injection spanner

- Special length and design
- For the assembly and disassembly of hard-to-reach injection pipes
- Makes possible simple and time-saving work
- Wrench has single-sided head
- Open 12-point
- Matt finish
- Chrome vanadium

Application range: Audi, Volkswagen, Škoda, etc. e.g. for 1.6 l 4 cyl., 2.0 l 5 cyl., 2.4 l 6 cyl. diesel engines



	mm	L mm	g
517.0057	17x17	220.0	140



T-handle box wrench

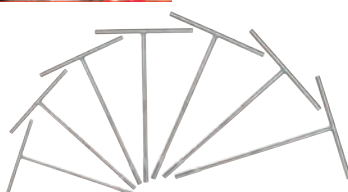
- 6 point
- T-handle
- Matt finish
- Chrome vanadium



	mm	L mm	B mm	g
517.1181	8,0	300,0	200,0	310
517.1182	9,0	300,0	200,0	300
517.1183	10,0	300,0	200,0	310
517.1184	11,0	300,0	200,0	320
517.1185	12,0	300,0	200,0	320
517.1186	13,0	300,0	200,0	330
517.1187	14,0	300,0	200,0	310

T-handle box wrench set

- 6 point
- T-handle
- Matt finish
- Chrome vanadium



		g
517.1180	7 pcs T-handle box wrench set	2.50

consists of:

		g
517.1181	T-handle box wrench, 8mm	310
517.1182	T-handle box wrench, 9mm	300
517.1183	T-handle box wrench, 10mm	310
517.1184	T-handle box wrench, 11mm	320
517.1185	T-handle box wrench, 12mm	320
517.1186	T-handle box wrench, 13mm	330
517.1187	T-handle box wrench, 14mm	310

Injector pipe wrench

- 12-point
- For screw fitting to injection pipes
- Chrome plated and mirror polished
- Chrome vanadium

Application range: Mercedes 100, 130, 314, 360, 360h, 352A, 346/355, 401, 402, 403, 407h, 615, 616, 617

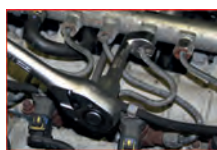


	mm	Length mm	g
152.1401	17,0	80,0	150

Open box head spanner

- 12-point
- Internal square drive to DIN 3120/ISO 1174 with ball reception
- Special length and design
- For almost all common vehicle types
- For the assembly and disassembly of hard-to-reach injection pipes
- Makes possible simple and time-saving work
- With opening
- Special steel

Application range: Audi, BMW, Chrysler, Ford Opel, Mercedes, etc.

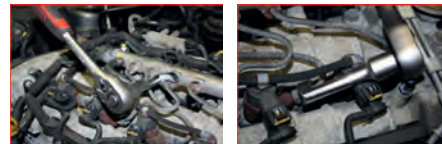


	mm	L mm	g
913.1211	12	100,0	122
913.1212	14	100,0	129
913.1213	16	100,0	146
913.1214	17	100,0	140
913.1215	18	100,0	145
913.1216	19	100,0	147

Open box head spanner set

- 12-point
- Internal square drive to DIN 3120/ISO 1174 with ball reception
- Special length and design
- For almost all common vehicle types
- For the assembly and disassembly of hard-to-reach injection pipes
- Makes possible simple and time-saving work
- With opening
- Special steel
- In durable plastic storage case

Application range: Audi, BMW, Chrysler, Ford Opel, Mercedes, etc.



		g
913.1210	6 pcs 12 - 14 - 16 - 17 - 18 - 19 mm	1.13

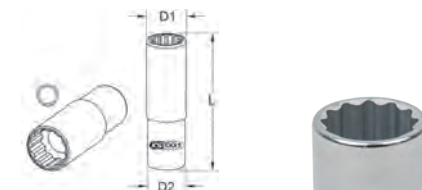
consists of:

		g
913.1211	Open box head spanner, 10mm	122
913.1212	Open box head spanner, 14mm	129
913.1213	Open box head spanner, 16mm	146
913.1214	Open box head spanner, 17mm	140
913.1215	Open box head spanner, 18mm	145
913.1216	Open box head spanner, 19mm	147

Injector-socket

- 12-point
- Ideal for assembly and disassembly of injectors
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Matt finish
- Chrome vanadium

Application range: Volkswagen Polo 1.3 l Diesel-Motor, Nissan Terrano TD 25, 27 from 1988



	mm	D1 mm	D2 mm	L mm	g
150.2311	22	31,0	25,0	85,0	170

Injector-socket

- 12-point
- Ideal for assembly and disassembly of injectors
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Matt finish
- Chrome vanadium

Application range: for diesel engines Volkswagen, Audi, Mercedes, Opel, Ford, Peugeot, Volvo, Toyota, Mazda, Nissan, Mitsubishi, Daihatsu, etc.



	mm	D1 mm	D2 mm	L mm	g
150.2312	27	37.0	30.0	85.0	260

Injector-socket

- 12-point
- Ideal for assembly and disassembly of injectors
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Matt finish
- Chrome vanadium

Application range: for diesel engines Volkswagen, Audi, Mercedes, Opel, Ford, Peugeot, Volvo, Toyota, Mazda, Nissan, Mitsubishi, Daihatsu, etc.



	mm	D1 mm	D2 mm	L mm	g
150.2314	27	35.3	36.7	110.0	260

Injector-socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Burnished
- Special steel

Application range: PSA, Ford, Toyota



	mm	Ø mm	mm	L mm	g
150.2391	25	37,0	22,0	100,0	300

Injector-socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Burnished
- Special steel

Application range: 2.0 l DW 10 HDI engines, etc.



	mm	Ø mm	mm	L mm	g
150.2307	27	38,0	22,0	100,0	280

Injector-socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Burnished
- Special steel

Application range: DCI and HDI engines, etc.



	mm	Ø mm	mm	L mm	g
150.2308	29	42,0	22,0	100,0	340

Injector-socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Burnished
- Special steel

Application range: Renault, Nissan, 1.9 l F9Q engines, etc.



	mm	Ø mm	mm	L mm	g
150.2309	30	43,0	22,0	100,0	360

Injector-socket set

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Burnished
- Special steel
- In durable plastic storage case



		g
150.2310	4 pcs Injector-socket set	1.56

consists of:

		g
150.2391	1/2" injector nozzle socket, 25.0 mm	300
150.2307	1/2" injector nozzle socket, 27.0 mm	280
150.2308	1/2" injector nozzle socket, 29.0 mm	340
150.2309	1/2" injector nozzle socket, 30.0 mm	360

Injector-socket

- 12-point
- Ideal for assembly and disassembly of injectors
- Internal square to DIN 3120/ISO 1174 with ball reception
- With a side window for guiding the cable of the motion sensor and the return pipe
- For manual operation
- (E-connection)
- Phosphate
- Chrome molybdenum

Application range: Ford Mondeo from 10/2000 - 02/2007, 2.0 DI, -TDCl, -TDDI, 2.2 TDCl; Ford Transit from 01.2000 - 05/2006, 2.0 DI, -TDCl and 2.4 DI, -TDCl



	mm	D1 mm	D2 mm	L mm	g
150.9541	21	32,0	34,0	90,0	300

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25
26

Injector-socket

- 12-point
- Ideal for assembly and disassembly of injectors
- Internal square to DIN 3120/ISO 1174 with ball reception
- With a side window for guiding the cable of the motion sensor and the return pipe
- For manual operation
- Burnished
- Special steel

Application range: Alfa Romeo, Chrysler, Rover, MAN 2.5TD



1/2"

	mm	D1 mm	D2 mm	L mm	g
150.2322	28	40.0	33.0	78.0	280

Diesel injector socket

- 6 point
- Special socket key for dismantling and assembly of injectors
- Correct easy and damage free usage
- Internal square to DIN 3120 / ISO 1174 with ball reception
- Ideally suited for commercial vehicles, light commercial, SUV, etc
- Black, tempered surface
- Special steel

Application range: Mercedes Benz, Motor 604 / 605 / 606



1/2"

	mm	L mm	g
455.0034	22	110.0	250

Diesel injector socket

- 12 point
- Special socket key for dismantling and assembly of injectors
- Correct easy and damage free usage
- Internal square to DIN 3120 / ISO 1174 with ball reception
- Ideally suited for commercial vehicles, light commercial, SUV, etc
- Black, tempered surface
- Special steel

Application range: Mercedes Benz Actros, Motor 457 / 541 / 542, Ford Maverik 2,7 TDI, Nissan Terrano TD 2,5L / 2,7L, Opel Corsa 1,5D / 1,7 TD, Isuzu



1/2"

	mm	L mm	g
455.0033	22	80.0	250

Diesel injector socket

- 12 point
- Special socket key for dismantling and assembly of injectors
- Correct easy and damage free usage
- Internal square to DIN 3120 / ISO 1174 with ball reception
- Ideally suited for commercial vehicles, light commercial, SUV, etc
- Black, tempered surface
- Special steel

Application range: Suitable for diesel engines from Fiat, Ford, Mercedes Benz and Volkswagen (vans and passenger cars), MAN 2,5 TD



1/2"

	mm	L mm	g
455.0032	27	78.0	250

Diesel injector socket

- 12 point
- Special socket key for dismantling and assembly of injectors
- Correct easy and damage free usage
- Internal square to DIN 3120 / ISO 1174 with ball reception
- Ideally suited for commercial vehicles, light commercial, SUV, etc
- Black, tempered surface
- Special steel

Application range: MAN 6 cylinder in line D 0226, Chrysler Voyager, Jeep Cherokee, Opel Frontera VM 41 B, Rover, Landrover Discovery Motor VM 2,5L TD



1/2"

	mm	L mm	g
455.0031	28	78.0	250

Diesel injector socket set

- Special socket key for dismantling and assembly of injectors
- Correct easy and damage free usage
- Internal square to DIN 3120 / ISO 1174 with ball reception
- Ideally suited for commercial vehicles, light commercial, SUV, etc
- Black, tempered surface
- Special steel
- In durable plastic storage case

Application range: MAN, Mercedes Benz Transporter and commercial vehicles, Opel, Fiat, Volkswagen, Ford, Nissan, etc.



1/2"

	mm	L mm	g
455.0030	4 pcs	Diesel injector socket set	1.10

consists of:

		g
455.0031	1/2" Diesel injector socket 12 point, 28mm	250
455.0032	1/2" Diesel injector socket 12 point, 27mm	250
455.0033	1/2" Diesel injector socket 12 point, 22mm	250
455.0034	1/2" Diesel injector socket 6 point, 22mm	250

Injector-socket with bore hole

- Hexagon socket with bore hole
- Ideal for assembly and disassembly of Common Rail couplings
- Internal square to DIN 3120/ISO 1174 with ball reception
- For manual operation
- Chrome plated and mirror polished
- Chrome vanadium

Application range: Bosch injectors in DCI and HDI engines, etc.



1/2"

	mm	D mm	L mm	T mm	g
152.1057	10	22.0	75.0	35.0	100

Injector socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- External drive hexagonal socket 22.0 mm
- For manual operation
- Burnished
- Special steel

Application range: PSA, Ford, Toyota



1/2"

	mm	Ø mm	Total length mm	g
152.1195	25.0	37.0	100.0	270

Injector socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- External drive hexagonal socket 22.0 mm
- For manual operation
- Burnished
- Special steel

Application range: 2.0 l DW 10 HDI engines, etc.



1/2"

	mm	Ø mm	Total length mm	g
152.1196	27,0	38,0	100,0	270

Injector socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- External drive hexagonal socket 22.0 mm
- For manual operation
- Burnished
- Special steel

Application range: Renault, Nissan, 1.9 l F9Q engines, etc.



1/2"

	mm	Ø mm	Total length mm	g
152.1198	30,0	43,0	100,0	358

Crows foot spanner

- With internal square drive
- For tightening and loosening pipe connections
- For manual operation
- Slim design
- For hard-to-access areas
- Burnished
- Special steel



1/2"

	mm	g
913.1329	36	275
913.1330	41	392
913.1331	46	390

Injector socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- Opened design
- For damage-free assembly and disassembly
- Tempered surface
- Special steel

Application range: Mercedes A- and B-Class, Fiat 1.3MJ



1/2"

	mm	Ø mm	Total length mm	g
152.1058	29,0	42,0	78,0	274

Crows foot spanner

- 6-point
- With internal square drive
- For tightening and loosening pipe connections
- For manual operation
- Slim design
- For hard-to-access areas
- Burnished
- Special steel



3/8"

	mm	g
913.1321	17	72
913.1322	18	74
913.1323	19	75

PRE-COMBUSTION CHAMBER SOCKET WRENCH

Special tooth socket for pre chamber

- Ideal for removing the diesel pre-combustion chamber sealing ring nuts
- Internal square to DIN 3120/ISO 1174 with ball reception
- With 58 notched teeth
- Phosphate
- Special steel

Application range: Mercedes engines OM 601, OM602, OM603, OM604, OM605 and OM606



1/2"

	No. teeth	L mm	g
455.0005	58	60,0	215

Injector socket

- 6-point
- Ideal for assembly and disassembly of injectors
- With side window and opening for connection to nozzle head (E-connection)
- Internal square to DIN 3120/ISO 1174 with ball reception
- External drive hexagonal socket 22.0 mm
- For manual operation
- Burnished
- Special steel

Application range: Mercedes A- and B-Class, Fiat 1.3MJ



1/2"

	mm	Ø mm	Total length mm	g
152.1197	29,0	42,0	100,0	342

Crows foot spanner

- 6-point
- With internal square drive
- For tightening and loosening pipe connections
- For manual operation
- Slim design
- For hard-to-access areas
- Burnished
- Special steel



1/2"

	mm	g
913.1324	22	109
913.1325	24	127
913.1326	27	135
913.1327	30	163
913.1328	32	181

Pin wrench for pre-chamber

- Ideal for removing the diesel pre-combustion chamber sealing ring nuts
- Internal square to DIN 3120/ISO 1174 with ball reception
- Includes screw
- Phosphate
- Special steel

Application range: Mercedes engines OM 615, OM616 and OM617



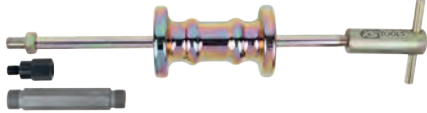
1/2"

	Length mm	g
455.0006	65,0	280

Impact extractor for pre-chamber

- Ideal for removing trapped diesel pre-combustion chambers
- Robust design
- Enables short and intensive impact through impact weight
- Includes impact weight, adapter and tension bolts
- Special steel

Application range: Mercedes engines OM615, OM616, OM617, OM601, OM602, OM603, OM604, OM605 and OM606



			kg
150.2510	6 pcs	Impact extractor for pre-chamber	3.76

consists of:

			kg
150.2511	Connecting rod	460	
150.2512	Impact weight of 2.4 kg	2400	
150.2513	Nut M14	20	
150.2514	T-handle	400	
150.2515	M14 to M12 adapter	100	
150.2516	Tension bolts for Mercedes pre-chamber	360	

INSPECTION AND TEST TOOLS

Common rail injector test assortment with 8 measurement pipes

- Professional test assortment to the misdiagnosis through measurement of the return stroke quantities of high pressure injectors
- Measurement of up to 8 high pressures Injectors simultaneously possible
- Ideal supplement to the engine diagnosis device
- Diesel suitable silicone tubes
- Tube end with coupling and original adapter for safe connection
- Double sealed brass connections in the test tube
- Stable acrylic test block with filling line scale
- Precise measurement result through 25 ml volumetric capacity in the test tube
- In durable plastic storage case

Application range: Mercedes, BMW, Ford, Renault, Opel, Vauxhall, Toyota, Nissan, Citroen, Volvo, Peugeot etc.



			kg
150.1580	65 pcs	Common rail injector test assortment with 8 measurement pipes	3.16

consists of:

			kg
X			
150.1581	1	Acrylic-Block	800
150.1582	8	Silicone tube 5,2 x 8,8 x 600 mm	40
150.1583	8	O-Ring 16 x 1,3 mm	1
150.1584	8	Adapter to acrylic block with O ring	24
150.1594	8	Adaptor for Bosch	10
150.1595	8	Adaptor for-Siemens	10
150.1596	8	Adaptor for Denso	10
150.1597	8	Adaptor for Delphi	10
150.1598	8	Double nipple Adaptor for Bosch	30
150.1599	8	Fast fastener coupling	30

Plastic pipe with adapter

- Fitted directly on the injector
- Perfect supplement to set 150.1580



			kg
Length mm			
150.1571	165.0	18	

Cylinder leak detector tester set

- For diagnosis of compression pressure loss
- Suitable for analysing inlet and outlet valves, piston rings or cylinder liner, cylinder head or head seal
- Better alternative for compression measurement
- Universal usage
- Integrated pressure reducer
- Necessary working pressure: 1.0 bar
- For use on engines at operating temperature
- In durable plastic storage case

Test results:

Outlet valves not tight:

Air noises in exhaust, manifold and cylinder head on the outlet side

Inlet valves not tight:

Air noises in intake, on cylinder head on the inlet side

Piston rings, pistons, cylinder bore damaged:

Air noises on the crankcase breather or on the dipstick

Cylinder head seal defective:

Air noises in the adjacent cylinder, spark plug bore

Cylinder head seal defective or tear in cylinder head

Air noises or bubble formation in the cooling system or reservoir



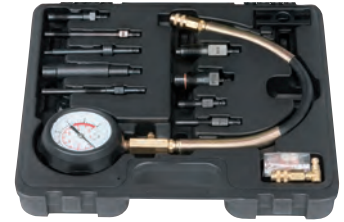
			kg
150.1780	9 pcs	Cylinder leak detector tester set	2.30

consists of:

			kg
150.1781	Test device with dual display: Input pressure 0-7 bar + pressure loss display 0-100%	570	
150.1782	Hose 14/18 mm	132	
150.1783	House with adaptor	108	
150.1784	Adaptor M10 x 1.0 mm	280	
150.1785	Adaptor M12 x 1.25 mm	310	
150.1786	Adaptor M14 x 1.25 mm	330	
150.1787	Adaptor M14 x 1.25 mm, long design	550	
150.1788	Spark plug adaptor M12 x 1.25 mm	251	
150.1789	Spark plug adaptor M14 x 1.25 mm	255	

Compression pressure test instrument for diesel engines

- Complete test tool set with or without direct injection
- Compact adaptor pieces with quick couplings
- Includes extensive adaptor assortment
- Very flexible tube for hard to access places
- In durable plastic storage case



Technical data:

Manometer: 0,0-70,0 bar
 Tube length: 355.0 mm
 Manometer gauge: bar, psi or KPA

			kg
150.1680	13 pcs	Compression pressure test instrument for diesel engines	2.56

consists of:

			kg
150.1680-1	Manometer with tube	640	
150.1680-2	Glow plug adaptor, M10x1,25	40	
150.1680-3	Glow plug adaptor, M12x1,25	40	
150.1680-4	Glow plug adaptor, M14x1,25	70	
150.1680-5	Compression pressure test adaptor, 114mm	220	
150.1680-6	Compression pressure test adaptor, M24x2	160	
150.1680-7	Compression pressure test adaptor	60	
150.1680-8	Glow Plug Adaptor M 10 x 1,25	60	
150.1680-9	Glow plug adaptor, M10x1	45	
150.1680-10	Compression pressure test adaptor	145	
150.1680-11	Replacement sealings and washers	15	
150.1680-12	Angle connecting piece	50	
150.1680-13	Clamp arch	70	

Digital compression pressure test set for petrol engines

- For dry and wet compression tests
- Compact adaptor pieces with quick couplings
- Includes extensive adaptor assortment and analogue manometer (psi)
- Digital manometer with reading storage up to 12 cylinders
- By means of brass coupling the repair is possible on valve seals without dismantling of the cylinder head
- Very flexible tube for hard to access places
- In durable plastic storage case



			kg
150.1650	10 pcs	Digital compression pressure test set for petrol engines	2.20

consists of:

			kg
150.1650-1	Manometer digital	420	
150.1650-10	Replacement seals and valve assortment	5	
150.1650-2	Manometer analogue	120	
150.1650-3	Adaptor tube M18 x 1,5	100	
150.1650-4	Adaptor tube M14 x 1,25 long	90	
150.1650-5	Adaptor tube M14 x 1,25 short	110	
150.1650-6	Adaptor bush L=64 mm, M18 x 1.5	105	
150.1650-7	Adaptor bush L=42 mm, M12 x 1.25	40	
150.1650-8	Adaptor bush L=42 mm, M10 x 1,0	40	
150.1650-9	Coupling 1/4" IG	80	

Diesel injector test device set 0-600 bar

- Table device for the testing of diesel injectors for opening pressure, density and jet shape
- During testing the fluid is injected back in to the storage tank with spray guard
- Pump lever (400 mm) can be moved for easier pumping
- Drag indicator stays still for injection pressure, therefore it is not required, to monitor the nozzle jet and the manometer at the same time
- Fluid container volume 330 cm³
- Piston displacement 35 cm³
- Bolted precision manometer Ø 100.0 mm with protective rubber parts 0-600 bar
- Includes two high pressure pipe adapters
- Device body made from sturdy metal cast
- Test container from shock-proof and diesel resistant plastic with fine filter
- Feet (118 mm x 97 mm) with four bore holes for sturdy mounting onto work bench

For testing the following methods:

- Jet free or blocked
- Opening pressure
- Jet nozzle pattern/nebulisation
- Clasp drip behaviour
- Acoustic inspection (chattering)
- Density of the pressure tube between injection pump and nozzle

Application range:

- M14 x 1.5 universal
- M12 x 1.25 VAG TDI engines



	H mm	Weight
455.0120	345.0	2.90

consists of:

		Weight
455.0121	Connection pipe M14 x M14, 210 mm	80
455.0122	Connection pipe M14 x M12, 210 mm	72
455.0123	Diesel injector test device 0-600 bar	2700

Low fuel pressure diagnosis set

- Ideal for the quick and easy testing of low pressure circuit (fuel pressure and return pressure measurement)
- Quick to find leaks
- Fits all common vehicles
- The pressure loss inspection is carried out via the manometer
- Quick and efficient use
- For the diagnosis of the following basic tests: the supply of fuel from the tank, air bubbles in the fuel system, impurities in the fuel
- In durable plastic storage case

Application range: Commercial vehicles, transporters and MPVs



		Weight
150.1845	15 pcs Low fuel pressure diagnosis set	4.00

consists of:

	X		Weight
150.1846	2	Adapter hose Ø 6.0 mm, 2 m long	320
150.1847	1	Manometer 1.0 - 5.0 bar incl. connection nipple and safety cover	140
150.1848	1	Manometer 1.0 - 15.0 bar incl. connection nipple and safety cover	140
150.1849	1	T-piece SAE 8 x 20 mm (red)	100
150.1851	1	T-piece SAE 9.5 x 20 mm (grey)	100
150.1852	1	T-piece SAE 10 x 20 mm (green)	120
150.1853	1	T-piece SAE 10 x 30 mm (blue)	120
150.1854	1	T-piece NG8 Type 246 (white)	100
150.1855	1	T-piece Ø 6.0 mm (brown)	60
150.1856	1	T-piece Ø 8.0 mm (orange)	60
150.1857	1	T-piece Ø 10.0 mm (purple)	60
150.1858	1	T-piece 11.8 x 25 mm (light blue)	140
150.1859	2	T-piece SAE 8 x 30 mm (yellow)	100

Fuel system testing and cleaning set

- Makes possible quick, simple and correct operation of the engine, without using the tank fitted to the vehicle
- Suitable for diagnosing faults between the tank and high-pressure tank, fuel filter, etc.
- Ideal for fuel systems to release soiling and gunk in the injection system with an exact mix of fuel/cleaning agent
- In durable plastic storage case

Application range: Universally suitable for all vehicles with a naturally aspirated engine



		Weight
150.1860	43 pcs Fuel system testing and cleaning set	8.00

consists of:

	X		Weight
150.1861	1	10 litre container	1000
150.1661	1	Hand pump with male coupling	280
150.1862	2	Adapter hose Ø 8.0 mm, 4 m long	650
150.1864	1	Adapter set 3 part SAE 8 x 20 mm (red)	120
150.1865	1	Adapter set 3 part SAE 8 x 30 mm (yellow)	120
150.1866	1	Adapter set 3 part SAE 9.5 x 20 mm (grey)	120
150.1867	1	Adapter set 3 part SAE 10 x 20 mm (green)	120
150.1868	1	Adapter set 3 part SAE 10 x 30 mm (blue)	160
150.1869	1	Adapter set 3 part NG8 Type 246 (white)	120
150.1870	1	Adapter set 3 part Ø 6.0 mm (light blue)	200
150.1871	1	Adapter set 3 part Ø 8.0 mm (pink)	180
150.1872	1	Adapter set 3 part Ø 10.0 mm (purple)	100
150.1873	1	Adapter set 3 part 11.8 x 25 mm (brown)	80
150.1874	1	Adapter set 3 part NG12 Type 246 (orange)	100
150.1875	1	Adapter set 3 part Ø 12.0 mm (black)	140
150.2324	2	Double-sided adapter 3/8", short	36
150.2323	1	Double-sided quick coupling 3/8"	74

PNEUMATIC ADAPTER FOR GLOW PLUG BORES

Pneumatic adapter for M8 x 1.0 glow plug holes

- Ideal for boring in the glow plug bores
- The injection of air prevents contaminants building up in the combustion chamber
- Enables simple and professional work
- Air supply can be set with lever
- Robust design
- Special steel

Application range: Citroën, Fiat, Ford, Lancia, Opel, Mercedes, Suzuki, Volvo, etc. with M8 x 1.0 glow plug thread



	Connection thread mm	Length mm	D mm	Weight
152.1511	M8 x 1,0	178.0	12 x 80	180

Pneumatic adapter for M10 x 1.0 glow plug holes

- Ideal for boring in the glow plug bores
- The injection of air prevents contaminants building up in the combustion chamber
- Enables simple and professional work
- Air supply can be set with lever
- Robust design
- Special steel

Application range: BMW, Chrysler, Opel, Mercedes, Nissan, Renault, etc. with glow plug thread M10 x 1.0



	Connection thread mm	Length mm	D mm	Weight
152.1512	M10 x 1,0	178.0	15 x 100	180

Pneumatic adapter for M10 x 1.25 glow plug holes

- Ideal for boring in the glow plug bores
- The injection of air prevents contaminants building up in the combustion chamber
- Enables simple and professional work
- Air supply can be set with lever
- Robust design
- Special steel

Application range: Toyota, Lexus, etc. with glow plug thread M10 x 1.25



	Connection thread mm	Length mm	D mm	Weight
152.1513	M10 x 1,25	207.0	15	190



INJECTOR REMOVAL TOOLS

Injector grab hook extractor with 1.25 kg impact weight

- For Mercedes CDI Bosch common rail injectors
- For the extraction of the firmly burned injectors in the cylinder head
- Arched lever area on the handle hook for exact extraction
- Tilting and jamming of the injector is avoided
- Claw and impact weight can be used separately
- Includes impact weight
- Special steel



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1050	1.25	M10 x 1,5	410.0	152.1045 152.1040	1.45

Injector extractor with 6 + 3 kg impact weight

- Ideal for Bosch injectors with M17 x 1.0 internal thread
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Includes impact weight
- Special steel

Application range: Bosch injectors with M17 x 1.0 internal thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1055	3 pcs	Injector extractor with 6 + 3 kg impact weight			12.50

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
700.1415		Universal slide hammer 6 + 3 kg, 850mm			12.00
152.1056		Single screw adaptor AG M17 x 1			0.24
152.1057		Hexagon socket, tamperproof 10 mm			0.10

Injector-extractor for 1.5 kg impact weight

- Ideal for Siemens injectors with M 25 x 1.0 internal thread
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: Siemens injectors with M25 x 1.0 internal thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1200	2 pcs	Injector-extractor for 1.5 kg impact weight			2.52

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1455		Screw-in adapter for Siemens, M25 x 1			180

Injector-extractor for 1.5 kg impact weight

- Ideal for Denso injectors M20 x 1.0
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: Denso injectors with M20 x 1.0 internal thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1265	2 pcs	Injector-extractor for 1.5 kg impact weight			2.52

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1456		Screw-in adapter for Denso, M20 x 1			180

Injector-extractor for 1.5 kg impact weight

- Ideal for Siemens injectors M27 x 1.0
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: Siemens injectors with M27 x 1.0 internal thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1270	2 pcs	Injector-extractor for 1.5 kg impact weight			2.58

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1457		Screw-in adapter for Siemens, M27 x 1			240

Injector-extractor for 1.5 kg impact weight

- Ideally suited Bosch injectors M27/M17 and 10 mm
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: Fiat, BMW, Mercedes, Renault engines with Bosch injectors with M27/M17 and 10 mm internal thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1275	4 pcs	Injector-extractor for 1.5 kg impact weight			2.64

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1458		Screw-in adapter set for Bosch M27/M17 and 10 mm, 3 pitch			300

Injector-extractor for 1.5 kg impact weight

- Ideal for older high pressure injectors with M12 thread
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: for older high pressure injectors with M12 thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1280	2 pcs	Injector-extractor for 1.5 kg impact weight			2.48

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1459		Screw-in adapter for M12			140

Injector-extractor for 1.5 kg impact weight

- Ideal for Bosch and Delphi injectors M14
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Short design for hard-to-reach areas
- Includes impact weight
- Thread on impact extractor 5/16" x 16 mm
- Special steel

Application range: Bosch and Delphi injectors with M14 thread



Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1285	2 pcs	Injector-extractor for 1.5 kg impact weight			2.54

consists of:

Impact weight kg	Thread impact weight	L mm	Replacement claw	Replacement impact weight	kg
152.1255		Slide hammer 1.5 kg, thread 5/8" x 18 mm			2340
152.1461		Screw-in adapter for Bosch and Delphi, M14			200

Universal injector-extractor

- For the extraction of the firmly burned injectors in the cylinder head
- With arched contact surface on the handle hook for exact positioning
- Avoids tilting of the injectors
- Claw and impact weight can be used separately
- Includes impact weight
- Special steel

Application range: Common Rail engines with Denso, Bosch, Siemens, Delphi injectors



	Impact weight kg	Length mm	
152.2070	1.55	395.0	3.22

Air chisel injector pump puller set with adaptors

- Suited to the dismantling of injectors
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Enables short and intensive impacts by supporting a pneumatic power chisel with 10 mm adapter
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Includes extensive range of adaptors
- Thread on injector extractor 5/16" x 16 mm
- Special steel



152.1450 10 pcs Air chisel injector pump puller set with adaptors	3.54

consists of:

152.1455 Screw-in adapter for Siemens, M25 x 1	180
152.1456 Screw-in adapter for Denso, M20 x 1	180
152.1457 Screw-in adapter for Siemens, M27 x 1	240
152.1458 Screw-in adapter set for Bosch M27/M17 and 10 mm, 3 pitch	300
152.1459 Screw-in adapter for M12	140
152.1461 Screw-in adapter for Bosch and Delphi, M14	200
152.1462 Universal adapter	150
152.1463 Pneumatic power chisel extractor	1400

Universal injector removal kit

- Suited to the dismantling of injectors
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- enables short and intensive impact through impact weight
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- including extensive range of adaptors
- Includes impact weight
- Receiving thread on injector extractor M18 x 1.5 mm
- Special steel
- In durable plastic case



152.1085 14 pcs Universal injector removal kit	13.00

consists of:

152.1086 Injector nozzles hexagon socket with borehole 10 mm, Ø 6 mm	78
152.1087 Injector nozzles hexagon socket with borehole 10 mm, Ø 7 mm	80
152.1088 M14 x 1.5 mm adapter, BMW M47, MB W21 tcdi	68
152.1089 M16 x 1.0 mm adapter, Toyota 2.2	110
152.1190 M17 x 1.0 mm adapter, MB Bosch	114
152.1191 M20 x 1.0 mm adapter, Denso	110
152.1192 M25 x 1.0 mm adapter, Siemens	126
152.1193 M27 x 1.0 mm adapter, Siemens	136
152.1194 Slide hammer 3 + 5 kg	7840
152.1195 1/2" injector socket, 25.0 mm, l = 100 mm	270
152.1196 1/2" injector socket, 27.0 mm, l = 100 mm	270
152.1197 1/2" injector socket, 29.0 mm, l = 100 mm	342
152.1198 1/2" injector socket, 30.0 mm, l = 100 mm	358
152.1199 M18 x 1.5 mm universal joint	474

Pump/nozzle and TDI injector extractor set

- Ideal for disassembly of pumps/nozzle units
- Robust design
- For the removal of the firmly burned pump/nozzle unit from the cylinder head
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- Special steel

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



152.1405 6 pcs Pump/nozzle and TDI injector extractor set	1.16

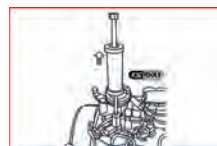
consists of:

152.1352 Impact weight for 152.1350	809
152.1354 Guide rod with nut for 152.1350	110
152.1359 T-type extractor for 152.1350	49
152.1360 T-type extractor for 152.1360	62
152.1363 Hex bolts for 152.1350	102
152.1364 Hex bolts for 152.1350	38

Injector nozzle extractor set for VAG

- Suited to the dismantling of injectors
- suitable for FSI, SDI, TDI, Common Rail and pump injector engines
- Robust design
- For the extraction of the firmly burned injectors in the cylinder head
- Cylinder head does not work against the thrust bearing
- Avoids tilting of the injectors
- including extensive range of adaptors
- Special steel

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



152.1350 24 pcs Injector nozzle extractor set for VAG	3.00

consists of:

152.1351 Handle for 152.1350	379
152.1352 Impact weight for 152.1350	809
152.1353 Guide rod for 152.1350	51

consists of:

152.1354 Guide rod with nut for 152.1350	110
152.1355 Injector pump extractor for 152.1350	258
152.1356 Brass casing no 1 for 152.1350	73
152.1357 Brass casing no 2 for 152.1350	74
152.1358 Brass casing no 3 for 152.1350	74
152.1359 T-type extractor for 152.1350	49
152.1360 T-type extractor for 152.1360	62
152.1361 Adjustable extracting tool for 152.1350	100
152.1362 Socket extracting tool for 152.1350	90
152.1363 Hex bolts for 152.1350	102
152.1364 Hex bolts for 152.1350	38
152.1365 Brass cone for 152.1350	7
152.1366 Brass casing 14 x 40 mm	46
152.1367 Brass casing 12.5 x 40 mm	49
152.1368 Brass casing 12.5 x 20 mm	19
152.1369 Connector extraction tool type I	52
152.1379 Injector extraction sleeve	173
152.1451 Connector extraction tool type U	47
152.1452 Brass cone 10 x 7 x 35 mm	15
152.1453 Stainless steel wrench for 152.1350	6
152.1454 Bracket injector extracting tool for 152.1350	173

INJECTOR SEALING RING EXTRACTOR

Injector sealing ring extractor

- Ideal for removing firmly burned injector copper sealing rings from the injector shaft
- No damage to the cylinder head
- Universal usage
- Precision pressing on the sealing ring
- Simple handling and guiding
- Special steel

Application range: BMW, Mercedes, Opel, Renault, Nissan, etc.



	L mm	
152.1173	260	425

Injector sealing ring extractor with impact weight

- Ideal for removing firmly burned injector copper sealing rings from the injector shaft
- No damage to the cylinder head
- Universal usage
- precision pressing on the sealing ring due to cone-shaped gear tooth system
- Simple handling and guiding
- Special steel

Application range: BMW, Mercedes, Honda, Peugeot, Opel, Renault, Nissan, etc.



	Ø mm	Length mm	Impact weight kg	
152.1183	4 - 16	370.0	850.00	1.36

Injector test equipment

- For the diagnosis of fuel pipes and faults in electronic injectors
- Pulse generator may be used with fuel manometer



150.9010 Injector test equipment	200

INJECTOR AND INJECTOR SEAT CLEANING

Injector sealing surface cleaner

- Ideal for cleaning the injector head
- Clean, professional and fast work
- Simple handling
- Special steel



	D mm	L mm	
152.1179	20.0	49.0	97

Injector seal seat cutter Ø 15/19 mm

- Ideally suited to cleaning the injector seat
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: various manufacturers



152.1465	Injector seal seat cutter Ø 15/19 mm	481

consists of:

152.1171	3/8" Milling head pilot, 19.0 mm, 175 mm	185
152.1172	1/2" T-handle key for milling machine, 150mm	240
152.1175	Injector gasket milling seat head Ø 15/19mm, 38mm	550

Injector seal seat cutter Ø 17/17 mm

- Ideally suited to cleaning the injector seat
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: BMW, PSA, Renault



152.1466	Injector seal seat cutter Ø 17/17 mm	471

consists of:

152.1171	3/8" Milling head pilot, 19.0 mm, 175 mm	185
152.1172	1/2" T-handle key for milling machine, 150mm	240
152.1176	Injector gasket milling seat head Ø 17/17mm, 38mm	47

Injector seal seat cutter Ø 17/19 mm

- Ideally suited to cleaning the injector seat
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Mercedes



152.1467	Injector seal seat cutter Ø 17/19 mm	460

152.1171	3/8" Milling head pilot, 19.0 mm, 175 mm	185
152.1172	1/2" T-handle key for milling machine, 150mm	240
152.1177	Injector gasket milling seat head Ø 17/19mm, 38mm	58

Injector seal seat cutter Ø 19/21 mm

- Ideally suited to cleaning the injector seat
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Fiat, Iveco



152.1464	Injector seal seat cutter Ø 19/21 mm	490

consists of:

152.1171	3/8" Milling head pilot, 19.0 mm, 175 mm	185
152.1172	1/2" T-handle key for milling machine, 150mm	240
152.1178	Injector gasket milling seat head Ø 19/21mm, 38mm	68

Injector density seat cleaning set

- Assortment to the cleaning of the density seat of the diesel injector
- Simple handling
- For a correct and damage free use
- In durable plastic storage case

Application range: Mercedes Benz CDI Engine, Bosch/Delphi Injectors, (BMW, Renault, Ford, Fiat, Iveco)



152.1170	13 pcs Injector density seat cleaning set	2.38

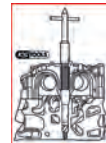
consists of:

152.1171	3/8" Milling head pilot, 19.0 mm, 175 mm	185
152.1172	1/2" T-handle key for milling machine, 150mm	240
152.1173	Injector sealing ring, 260mm	425
152.1174	Injector milling re-seating tool, 225mm	370
152.1175	Injector gasket milling seat head Ø 15/19mm, 38mm	550
152.1176	Injector gasket milling seat head Ø 17/17mm, 38mm	47
152.1177	Injector gasket milling seat head Ø 17/19mm, 38mm	58
152.1178	Injector gasket milling seat head Ø 19/21mm, 38mm	68
152.1180	Cleaning brush	45
152.1181	Milling head cleaning brush, nylon	13

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: BMW Common Rail diesel engines M47TU, M57 and M57TU



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	
152.1386	7.5	17.0	23.7	296.0	370

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: BMW Common Rail M47 diesel engines



	Ø1 mm	Ø2 mm	Length mm	
152.1387	7.5	17.0	290.0	370

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Mercedes Common Rail diesel engines OM611, OM612, OM 613, OM639, OM640, OM642, OM646, OM647, OM648, OM651, OM668, Smart R660; PSA 2.7 HDI, Motor DT17 and 3.0 HDI, DT20 engine; Chrysler 2.5 crd, engine OM664; Toyota 3.0 D-4D, engine 1 KD-FTV and 2.2 D-4D, engine 2 AD-FHV and 2 AD-FTV; Lexus 2.2 diesel, engine 2 AD-FHV



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	
152.1388	7.5	17.0	19.1	261.0	360

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Opel, Fiat, Lancia, Suzuki 1.3 JTD, 1.3 CDTi, 1.3 JTD, 1.3 DDIs Common-Rail diesel engines Z13DT, 188A9.000.



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	g
152.1389	7.5	17.0	17.6	261.0	360

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Renault, Nissan, Opel, Suzuki, Mitsubishi, 1.9 dTi, 1.9 dCi, 1.9 CDTi, 1.9 Di, 1.9 DDIs, 1.9Di-D Common Rail diesel engines



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	g
152.1391	7.5	17.4	19.0	245.0	350

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Renault, Suzuki, Nissan, Dacia, 1.5 dCi, 1.5 DDIs Common Rail diesel engines K9K



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	g
152.1392	7.5	17.0	20.1	265.0	360

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Peugeot, Citroën, Fiat, Lancia, Suzuki, 2.0 HDI, 2.0 JTD, engine code DW10 Common Rail diesel engines, Mercedes, OM646 EVO, Renault, Nissan, Opel, 2.2 DTI, CDTi, CDI, engine code G9T and 2.5 DTI, CDTi, CDI, engine code G9U



	Ø1 mm	Ø2 mm	Length mm	g
152.1393	7.5	17.0	261.0	360

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: Peugeot, Citroën, Fiat, Lancia, 2.2 HDI, 2.2 JTD, Common-Rail diesel engines



	Ø1 mm	Ø2 mm	Ø3 mm	Length mm	g
152.1394	7.5	17.0	19.6	275.0	360

Injector seat cleaning tool

- Ideally suited to cleaning the injector seat
- The special design enables cleaning of the nozzle seat, the mounting hole of the injection nozzles and the small openings to the combustion chamber in one single process
- Clean, professional and fast work
- Simple handling
- With T-handle
- Special steel

Application range: 1.6 l PSA Common Rail diesel engines, Fiat 1.6 l HDI, engine code DV6, 9HX, 9HY, 9HZ; Ford 1.6 l TDCi, engine code G8DA, G8DB, HHDA, HHJA, HHJB; Volvo 1.6 l D, engine code D4164T; Mazda 1.6 l D, engine code Y6



	Ø1 mm	Ø2 mm	Ø3 mm	Ø4 mm	Length mm	g
152.1395	7.5	17.0	17.6	18.7	195.0	330

INJECTOR SHAFT CLEANING

Injector pump cleaning set

- Range for cleaning the injector shaft
- Also suitable for various other applications
- Cleaning brushes with various diameters
- Simple handling
- For correct and damage-free use
- In durable plastic storage case



	g
152.1370	1.80

consists of:

	X	g
152.1173	1 Injector sealing ring extractor	425
152.1372	1 Sealing plugs assembly rod	30
152.1373	6 Sealing plugs for M5 internal thread	4
152.1374	1 Bit receptacle with flexible shaft	80
152.1375	2 Brush for nozzle channel Ø 7.24 mm	16
152.1376	2 Brush for injector shaft Ø 18 mm	10
152.1381	2 Brush for injector shaft Ø 19 mm	10
152.1382	2 Brush for injector shaft Ø 21 mm	10
152.1383	2 Brush for injector shaft Ø 24 mm	10
152.1377	1 Special holder for injector shaft brushes	71
152.1384	2 End brush with corrugated brass wire	32
152.1385	1 Plastic sleeve for end brush	22

MASTER cleaning brush set

- For cleaning and deburring threads, cylinders, connectors, pipes and other components with nylon, brass and steel edging
- With external hexagon drive to DIN 3126/ISO 1173 - C 6.3
- With locking and quick-change mechanism on the handle grip and extension
- Can be used by hand or with an electric screwdriver
- Can be used with an electric screwdriver in a clockwise direction
- Nickel plated
- In durable plastic storage case

Application range: For cleaning all types of thread, spreader bar seals on injection lines of cylinder heads, brake calliper sliding sleeves, O-ring entries, injector seal seats, valves of exhaust gas recirculation systems, inlet and outlet openings, etc.



	g
340.0010	1.43

consists of:

	g
340.0061	71
340.0062	51
340.0063	15
340.0064	15
340.0065	15
340.0066	16
340.0067	16
340.0068	16
340.0069	17
340.0070	17
340.0071	17
340.0072	18
340.0073	18
340.0074	18
340.0075	15
340.0076	15
340.0077	15
340.0078	15
340.0079	16
340.0080	16
340.0081	17
340.0082	17
340.0083	17
340.0084	17
340.0085	18
340.0086	18
340.0087	15
340.0088	15
340.0089	15
340.0090	15

consists of:

340.0091	1/4" nylon brush Ø 12 mm	15
340.0092	1/4" nylon brush Ø 13 mm	15
340.0093	1/4" nylon brush Ø 14 mm	15
340.0094	1/4" nylon brush Ø 15 mm	15
340.0095	1/4" nylon brush Ø 16 mm	15
340.0096	1/4" nylon brush Ø 17 mm	15
340.0097	1/4" nylon brush Ø 18 mm	15
340.0098	1/4" nylon brush Ø 19 mm	15

INJECTOR PUMP WRENCH

Injector pump wrench

- Ideal for assembly and disassembly of securing screws on the injection pump
- Also required when changing the tooth belt or to adjust the beginning of the injection process
- 90° angled
- Matt finish
- Chrome vanadium

Application range: Audi 1.6 l diesel, Citroën, Volkswagen Golf, Jetta, Caddy, Passat, etc.



		L mm	
152.1396	13	165.0	140

Injector pump multi-tooth socket

- Ideal for assembly and disassembly of the pressure Valve holder on the in-line injection pump
- Also required for start of fuel delivery inspection
- Internal square drive to DIN 3120/ISO 1174 with ball reception
- Matt finish
- Chrome vanadium

Application range: Mercedes diesel engines 601, 602, 603, 605, 606, 615, 616, 617



	Tooth	L mm	D mm	
152.1397	33	40.0	27.0	104



Bosch injector pump socket set

- Ideal for Bosch high pressure pumps (VP37) and distributor injection pumps
- For loosening the cover screws
- Required for disassembling and tightening the pump
- Special steel

Application range: Bosch VP37, Bosch VE pumps



152.1380	2 pcs	Bosch injector pump socket set	114

consists of:

152.1347	Bosch injector pump socket, Ø 18 mm, l = 36 mm	44	
152.1348	Bosch injector pump socket, Ø 19.7 mm, l = 45 mm	70	

PUMP WHEEL EXTRACTOR

Injector pump sprocket removal tool for BMW

- Ideal for loosening the injection pump sprocket from the shaft when disassembling the injection pump
- Robust design
- Special steel

Application range: BMW engine 4 cylinder M41 and 6 cylinder M51, Opel Omega B 2.5 TD



	Ø mm	Length mm	
150.1506	32,5	79,0	220

Injector pump sprocket removal tool for BMW

- Ideal for securing the injection pump sprocket and for pushing out the injection shaft
- Necessary for disassembling the injection pump
- With extractor sleeve and hexagon adapter
- Robust design
- Special steel

Application range: BMW 116d, 118d, 120d, 123d (E81, E82, E87, E88, F20)/316d, 318d, 320d, 325d, 330d (E90, E91, E92, E93, F30)/520d, 525d, 530d, 530d GT, 535d, 535d GT, M550d (E60, E61, F07, F10, F11)/640d (F12)/730d, 740d, 750d (F01)/X1 1.8d, 2.0d, 2.3d (E84)/X3 1.8d, 2.0d, 3.0d, 3.5d (E83, F25)/X5 3.0d, 4.0d, M5.0d (E70)/X6 3.0d, 4.0d, M5.0d (E71)



	Ø mm	Length mm	
150.1507	32,0	33,0	80

Injection pump sprocket removal tool set for BMW

- Ideal for securing the injection pump sprocket and for pushing out the injection shaft
- Necessary for disassembling the injection pump
- Robust design
- Special steel

Application range: BMW engines M47, M47T2, M47TU, M57, M57TU (E38, E39, E60, E61, E46, E53)



150.1575	4 pcs	Injection pump sprocket removal tool set for BMW	520

consists of:

150.1576	Casing	160	
150.1577	Spindle M18 x 1.5 mm	60	
150.1578	Threaded sleeve, M40 x 1.5 mm	120	
150.1579	Threaded sleeve, M42 x 1.5 mm	180	

LOCKRING DRIVER AND ADJUSTMENT TOOLS

Injector pump locking pin

- Ideal for securing the injection pump for adjustment work on engines
- Simple handling
- Special steel

Application range: Ford

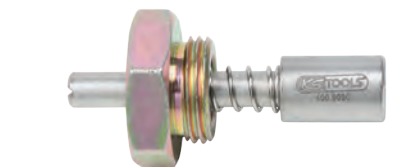


	Ø mm	L1 mm	L2 mm	
400.0251	6,0	78,0	49,0	30

In-line injector pump adjusting screw

- Ideal for setting the start of fuel delivery of the in-line injector pump
- Simple handling
- Special steel

Application range: Mercedes diesel engines 601, 602, 603, 605, 606 and 617



	Ø mm	Length mm	
400.9050	6,0	52,0	60

Valve injection pump block screw

- Ideal for locking the distributor injection pump when starting to deliver fuel when assembling and disassembling
- Simple handling
- Special steel

Application range: Mercedes diesel engine 604 with Lucas distributor injection pump, Renault with Delphi distributor injection pump

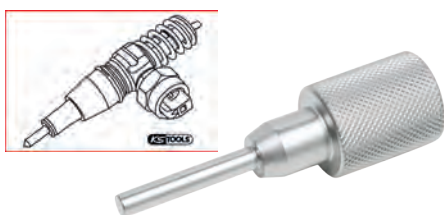


	Ø mm	Length mm	
400.9055	6,5	62,0	20

Valve injector pump alignment pin

- Ideal for locking distributor injection pump e.g. when changing tooth belt
- Simple handling
- Special steel

Application range: Fiat Ducato 2.5, 2.8D, 2.8TD, Cromia TD; Peugeot; Opel Movano 2.5D; Citroën



	Ø mm	Length mm	
400.9060	5,0	70,0	80

Injection pump locking pin

- Ideal for securing the injection pump for adjustment work on engines
- Simple handling
- Special steel

Application range: Opel, Isuzu, Vauxhall, General Motors



	Ø mm	L mm	
400.0678	6,0	110,0	41

Injection pump wheel fixing tool

- Ideal for locking the sprocket wheel of the injection pump
- Simple handling
- Special steel

Application range: Renault Clio, Megane, Laguna, Kangoo 1.9 DTi, MC: F9Q



400.9016	Injection pump wheel fixing tool	166

Injection pump locking pin

- Ideal for securing the injection pump
- Simple handling
- Special steel

Application range: Audi, Volkswagen



	Ø mm	Length mm	
400.9015	15,4	67,0	126

VAG Injection pump locking pin

- For the professional engine repair
- Ideally suited to securing the injection pump
- With air inlet
- Simple handling
- Special steel
- Very high degree of accuracy

Application range: Volkswagen Lupo 3L, 1.2/1.4 TDi, Polo 1.4 TDi, Golf / Bora 1.9 SDi / TDi, Passat 1.9 TD (1994-1996), Beetle 1.9 TDi (>1999) and Transporter 1.9TD



	Ø mm	L mm	
400.9018	6,0	80,0	20

Injection pump locking pin

- Ideal for setting up the injection pump
- Simple handling
- Special steel

Application range: Renault



	Ø mm	L mm	
400.1805	5,0	75,0	20

Pump cover locking tool

- Ideal for locking the injection pump when carrying out adjustment work on the engine
- Simple handling
- Special steel

Application range: Ford



	Ø mm	
400.0807	104,0	2

Injector pump locking pin set

- Ideal for securing the injection pump for adjustment work on engines
- Simple handling
- Special steel

Application range: Austin Maestro, Maestro Van, Montego



	Ø mm	L mm	
400.0289	6,0	70,0	14

Camshaft locking pin

- Ideal for securing the injection pump for adjustment work on engines
- Simple handling
- Special steel

Application range: Citroën AX, Jumper, Jumper II, Saxo, XM, Xsara, Ducato
MC: 8140.43, 8140.43S, 8140.63, F1AE0481C, F1AE0481D, F1AE0481N, THY (DK5ATE/L), THY (DK5ATED), VJX (TUD5B/L4), VJY (TUD5/Y), VJY (TUD5/Y/L3), VJZ (TUD5/L/L3), VJZ (TUD5/L/Y/L3), VJZ (TUD5/L3)



	Ø mm	Length mm	
400.0165	5,0	70,0	19

INJECTOR PUMP ADJUSTING TOOLS

Pump injector setting gauge, 3 cylinders

- Simple adjustment of the pump injector unit during assembly
- Adjustment unit for old and new magnetic valve bolts
- Precision positioning through slotted holes on the cylinder head
- Professional inspection of the assembly position
- Can be used in variety of situations

Application range: Audi, Volkswagen, Seat, Škoda, Ford, with 3 cylinder pump nozzle engines



	Length mm	
400.9097	305	Pump injector setting gauge, 3 cylinders 520

Pump injector setting gauge, 4 cylinders

- Simple adjustment of the pump injector unit during assembly
- Adjustment unit for old and new magnetic valve bolts
- Precision positioning through slotted holes on the cylinder head
- Professional inspection of the assembly position
- Can be used in variety of situations

Application range: Audi, Volkswagen, Seat, Škoda, Ford, with 4 cylinder pump nozzle engines



	Length mm	
400.9089	410	Pump injector setting gauge, 4 cylinders 660

Diesel pump adjustment tool

- Secure stand for the pump wheel when assembling and disassembling the high pressure pump
- exact positioning of the pump wheel
- no need to disassemble the tooth belt
- saves work of making further adjustments to the pump
- Saves a lot of time
- Special steel

Application range: Diesel engines F9Q for Opel, Renault, and Nissan vehicles



400.9051	Diesel pump adjustment tool	420

Injector pump adjusting tool set

- For adjusting the start of fuel delivery
- For diesel engines with adjustable pump wheel
- For Bosch and CAV pumps

Application range: 1.9 I diesel direct-injector F8Q and F9Q Renault Clio, Laguna, Megane, Scenic, Mitsubishi, Carisma, Opel, Volvo S40, V40, etc.



400.9065	3 pcs Injector pump adjusting tool set	365

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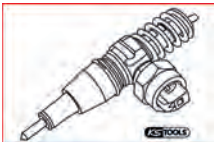
consists of:

400.9066	Bosch pump adapter, M10 to M8	6
400.9067	Adjustment tool with 3 x 4 mm pins	300
400.9068	Special applications, 27 mm hexagon socket, 1/2" drive	59

Mounting sleeve set for pump injectors

- For changing the O-rings of the pump injection unit without causing any damage
- Precision positioning of the fuel injection unit
- In durable plastic storage case

Application range: Volkswagen Phaeton and Touareg > 2003, T5 > 2004 (5 + 10 cylinder diesel engines), Touran > 2004, Audi A3 > 2004 (4 cylinder, 4 valve diesel engines), Seat, Skoda, etc.



400.9080	6 pcs Mounting sleeve set for pump injectors	580

consists of:

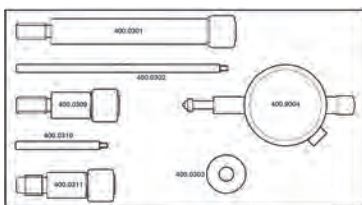
400.9083	Adjustment gauge, length 165.00 mm	60
400.9084	Assembly sleeve Ø 17.5 mm, length 28.9 mm	40
400.9085	Assembly sleeve Ø 21.6 mm, length 47.0 mm	60
400.9086	Assembly sleeve Ø 23.3 mm, length 67.2 mm	80
400.9087	Assembly sleeve Ø 31.0 mm, length 28.0 mm	60
400.9088	Assembly sleeve Ø 32.4 mm, length 40.3 mm	60

Diesel fuel pump timing set

- For the professional engine repair
- Precise measuring device
- Very high degree of accuracy
- In durable steel storage case

Application range: Alfa Romeo, Audi, BMW, Daihatsu, Fiat, Ford, Isuzu, Iveco, Lancia, Land Rover, Mazda, Mitsubishi, Nissan, Renault, Rover and Volkswagen vehicles with Bosch, Kikki, Nippon Denso injection pumps with threads of M8, M10 and M12, with new M10 Adapter in particular for Ford Transit

Please carry out an up-to-date cross reference test for the specific vehicle on www.timingtools.de



400.0325	7 pcs universal	301

consists of:

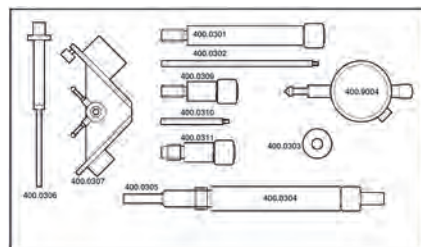
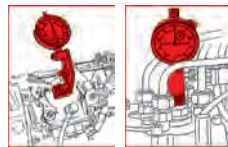
400.0301	Dial gauge adapter M8 (Bosch), long	71
400.0302	Dial gauge extension, long 99 mm	9
400.0303	Converter M8 x M12	12
400.9004	Precision-dial indicator gauge 0 - 10 mm	78
400.0309	Dial gauge adapter M8 (Bosch) short, silver	37
400.0310	Dial gauge extension short	4
400.0311	Dial gauge adapter M10 (Bosch) short, black	40

Diesel fuel pump timing set

- For the professional engine repair
- Precise measuring device for the upper entry hole
- For resetting the injection time on diesel engines
- Very high degree of accuracy
- In durable steel storage case

Application range: Alfa Romeo, Audi, BMW, Daihatsu, Fiat, Ford, Isuzu, Iveco, Lancia, Land Rover, Mazda, Mitsubishi, Nissan, PSA (XUD), Renault, Rover, Volkswagen vehicles with Bosch, EP/VE Rotary, Niki, Nippon Denso, CAV Roto-Diesel, Top injection fuel pumps

Please carry out an up-to-date cross reference test for the specific vehicle on www.timingtools.de



400.0300	11 pcs universal	710

consists of:

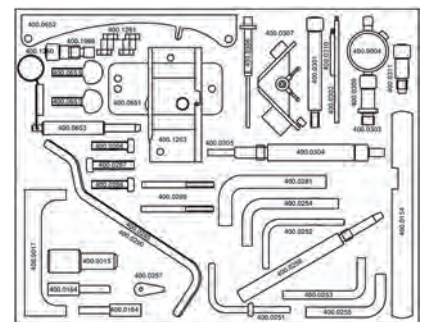
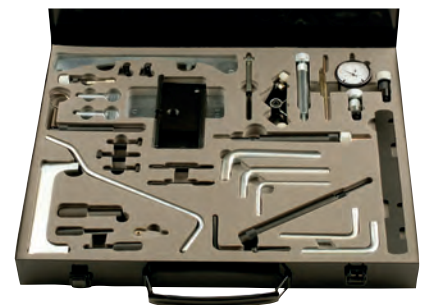
400.0301	Dial gauge adapter M8 (Bosch), long	71
400.0302	Dial gauge extension, long 99 mm	9
400.0303	Converter M8 x M12	12
400.0304	TDC determining pin / dial indicator bracket M14 x 2.0 mm	135
400.0305	Extension	460
400.0306	Dial gauge probe for Lukas-CAV-Roto	17
400.0307	Dial gauge assy for Lukas-CAV-Roto	125
400.0309	Dial gauge adapter M8 (Bosch) short, silver	37
400.0310	Dial gauge extension short	4
400.0311	Dial gauge adapter M10 (Bosch) short, black	40
400.9004	Precision-dial indicator gauge 0 - 10 mm	78

Universal - Engine Timing Tool Set for diesel engines

- For the professional engine repair
- Special set for adjusting and locking diesel engines
- Very high degree of accuracy
- In durable steel storage case

Application range: Audi, Citroën, Ford, Opel, Peugeot, Renault, Rover, Volvo, Volkswagen vehicles with diesel engines

Please carry out an up-to-date cross reference test for the specific vehicle on www.timingtools.de



400.1950	40 pcs universal	4.74

consists of:

400.0154	Camshaft setting strap	150
400.0164	Timing pin Ø 6,6 mm (2)	74
400.0251	Injection pump locking pin Ø 6.0 mm	30
400.0252	Camshaft locking pin 6.0 mm	26
400.0253	Locking pin Ø 8.0 mm	41
400.0254	Locking pin Ø 9.5 mm	60
400.0255	Locking pin Ø 10.0 mm	60
400.0257	Crankshaft TDC locking pin	124
400.0258	Shim tool (2)	3
400.0281	Timing pin Ø 12,7 mm	569
400.0285	Crankshaft locking pin Ø 8,0 mm	97
400.0286	Screw M8 x 35 mm (2)	16
400.0287	Screw M8 x 40,0 mm	18
400.0289	Injector pump locking pin (2)	14
400.0290	Crankshaft setting pin Ø 6,0 mm	55
400.0301	Dial gauge adapter M8 (Bosch), long	71
400.0302	Dial gauge extension, long 99 mm	9
400.0303	Converter M8 x M12	12
400.0304	TDC determining pin / dial indicator bracket M14 x 2.0 mm	135
400.0305	Extension	460
400.0306	Dial gauge probe for Lukas-CAV-Roto	17
400.0307	Dial gauge assy for Lukas-CAV-Roto	125
400.0309	Dial gauge adapter M8 (Bosch) short, silver	37
400.0310	Dial gauge extension short	4
400.0311	Dial gauge adapter M10 (Bosch) short, black	40
400.0651	Camshaft locking tool (3)	169
400.0652	Flywheel TDC indicator	80
400.0653	Flywheel locking pin	79
400.1260	Camshaft locking tool (5)	9
400.1261	Locking screw M6 x 10.0 mm	4
400.1263	Mounting bracket assy	330
400.1968	Special tip	16
400.9004	Precision-dial indicator gauge 0 - 10 mm	78
400.9015	Injection pump locking pin Ø 15.4 mm	126
400.9017	Camshaft setting strap	120

TRULY THE HIGHEST PERFORMING 1/2" PNEUMATIC IMPACT WRENCH!

1690
N·m



1690
N·m

MONSTER

931
N·m

931
N·m



max. 1.690 Nm	max. 510 Nm	max. 680 Nm	max. 931 Nm
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515.1210 MONSTER
High-performance pneumatic impact wrench

1/4" PT	7.930 rpm	178 L/min	6,3 bar	1,2" - 32,0 mm	1,99 kg	<2,69 m/s ²	104 dbA	88 dbA	max. M 16
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