

PERFORMANCE  
ENGINE COMPONENTS 2011



SCHRICK®



# Explanation of the catalog

Tuners and engine builders will find in this catalog a selection of the camshafts and other engine performance parts that we have in stock, or can deliver on short notice.

## What is the difference between a Sport- and Standard cam-shaft?

Standard camshafts offer a good compromise between the daily requirements from an automotive engine: sustained high speed on open roads, smooth engine idle at low rpm and low exhaust emissions.

If the importance of one or more of these parameters is reduced, the camshaft can be designed to function better in the remaining parameters.

Racing camshafts offer a substantial power increase at high rpm. Engine idle at low rpm is not possible anymore.

Sport camshafts increase the valve lift, valve opening duration and the inlet/outlet valve overlap. This improves the cylinder filling at high rpm.

Engine idle at low rpm becomes erratic, due to the mixing of intake air and exhaust gasses.

## Why are SCHRICK camshafts so special ?

- They are manufactured by highly qualified specialists, who also supply the automotive industry.
- They are machined to precise tolerances, using the latest CNC machines.
- They are usually made from expensive, extremely wearresistant "chilled" cast-iron.
- **Warranty:** 1 year without kilometer limitation.

## Which camshafts are good for Street-tuning ?

If the vehicle is intended for normal street use, i.e. with a stable engine idle and the ability to pass an emissions test (idle to lower rpm range), it is important to consider a small valve lift at TDC.

The table gives a guideline for valve lift at TDC.

2 Valve engines with solid lifters	2.3 mm
4 Valve engines with solid lifters	1.5 mm
2 Valve engines with hydraulic lifters	1.9 mm
4 Valve engines with hydraulic lifters	1.1 mm

When these values are exceeded, the engine idle will become increasingly unstable and the torque delivery in the lower rpm range will be noticeably weaker.

Camshafts with larger valve durations, and a resulting higher valve lift at TDC, should only be considered for racing applications, or when each cylinder has its own butterfly valve i.e. 2 twin-choke carburetors on a 4 cylinder engine.

We have to point out that technical changes to an engine voids the vehicle's type approval.

## What precaution must be taken with valve springs ?

When we recommend the use of special valve springs, it is advisable to do so. SCHRICK camshafts usually have an increased valve lift. If the standard valve springs are used, it is important to increase the spring's installed

height, so that the increased lift will not overly compress the valve springs (possibly causing spring breakage or unacceptable cam/follower loads).

## When we do not list your required camshaft ?

We have several possibilities to help you:

1. We grind your required profile on a camshaft blank. The machine set-up cost will be added to the price of a comparable camshaft.
2. We can machine a camshaft from billet steel (single piece or small-batch production). We would be glad to help and advise you on your specific application.

## Explaining the listed technical data

Valve timing and valve opening durations are shown minus the ramps.

Valve timing is shown as IO (Inlet opens in °Crankshaft before TDC), IC (Inlet closes in °Crankshafts after BDC), EO (Exhaust opens in °Crankshafts before BDC) and EC (Exhaust closes in °Crankshafts after TDC).

Peak timing is shown as °Crankshaft and defines the angle between the gas exchange TDC and the lobe center line of the inlet- or exhaust valves.

All valve lift figures are shown without deduction of valve lash, i.e. the actual valve lift is the stated valve lift minus the valve lash.

Since engines with hydraulic lifters have no valve lash, the stated valve lift is also the actual valve lift.

Valve lift at TDC is also shown without deduction of valve lash, i.e. the actual valve lift at TDC is the stated lift minus the valve lash.

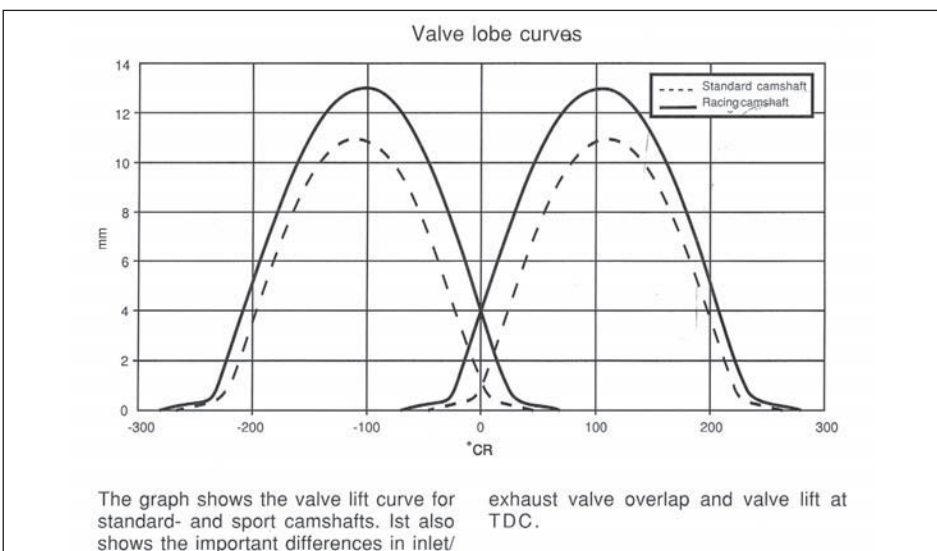
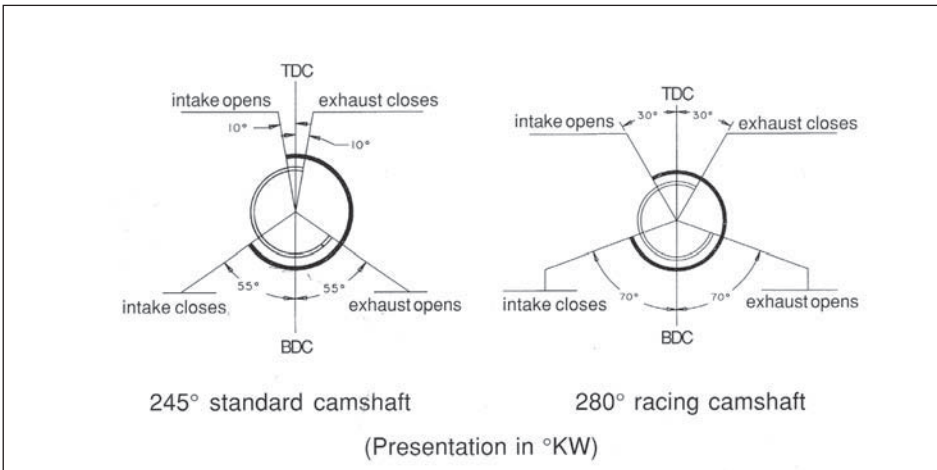
The graph shows the valve opening duration and valve lift curve for Standard- and Sport camshafts. It also shows the important differences in inlet/exhaust valve overlap and valve lift at TDC.

## General note

All products in this catalog (except advertising material) are only available through the automotors trade.

This catalog supersedes all previous catalogs. Part specifications and prices subject to change.

We may change technical specifications of our products without notice. Shipments back to us will only be accepted if we agreed before and in suitable, protective packaging. We will credit the invoiced amount -15% referring to the valid catalog price. Products which reach us will not be accepted if they were modified or have damages. This catalog is valid from 01.11.2010





# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Alfa Romeo Twin Spark 16V 4 Cyl. 4 Valve</b> (GTV, Spider, 145, 146, 155, 156..)										
0306 E1 641-V1	10,25	264/ /118-93	14-70 39-45	0,4-3,2	hydr.	0306 02 053		350,00	2	Calibration by Schrick Installation tool 0306 13 002. Valve spring installed height must be checked.
0306 A1 681-01	10,25	/268 /110	64-24	1,4	hydr.	0306 02 053 0306 02 019		350,00	2	Calibration by Schrick Installation tool 0306 13 002. Valve spring installed height must be checked.
<b>AUDI TT RS 5Cyl. 4V</b>										
0492 E1 ???-00									2	Camshafts AUDI TT RS in planning for 2011
0492 A1 ???-00									2	Camshafts AUDI TT RS in planning for 2011
<b>Audi 4 Cyl. 5 Valve 1,8L</b> (A3, A4, VW Golf 4, Passat, Skoda Octavia..)										
0301 E1 681-00	9,1	268/ /112	22-66-	1,0	hydr.			415,00	2	Please check chain tensioner for clearance to sprocket screws.
0301 A1 601-00	10,4	/260/114	-64-16	0,7	hydr.			415,00	2	Please check chain tensioner for clearance to sprocket screws.
0301 E1 521-00	8,2	252/ /110	16-56	0,8	hydr.			415,00	2	for 1.8T engines, with exhaust camshaft 301 A1 601-00
0301 E1 960-00	10,0	296/ /104	44-72	3,7	0,25	<b>0301 02 060</b>	<b>upper 0301 13 007/010</b>	415,00	2	For application of springs, retainers and keys please look in camshaft kits 301 10...
0301 A1 920-00	11,5	/292/104	70-42	3,8	0,35	<b>0014 02 054/27</b> <b>0299 02 050/31</b>	<b>upper 0301 13 008/0299 13 006</b> <b>lower 0301 13 009/0299 13 007</b>	415,00	2	For application of springs, retainers and keys please look in camshaft kits 301 10...
<b>Audi 5 Cyl. 2 Valve</b>										
0064 01 720-00	11,0	272/272/110	26-66 66-26	2,1	0,35/0,45	0013 02 062 0013 02 026	upper 0014 13 194 lower 0014 13 094 key 0894 13 8M8	250,00	2	without fuel pump - drive, without vacuum pump drive, fits pulley inner diam. 22,0mm cyl. <b>SALE, as long as stock lasts!!!</b>
0064 01 721-02	11,4	272/272/110	26-66 66-26	1,6/1,7	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 lower 0014 13 094 key 0894 13 8M8 tappet 0863 13 801	250,00	2	without fuel pump - drive, without vacuum pump drive, fits pulley inner diam. 22,0mm cyl. <b>SALE, as long as stock lasts!!!</b>
0064 01 761-00	11,5	276/276/110	28-68 68-28	2,1	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 lower 0014 13 094 key 0894 13 8M8 tappet 0863 13 801	250,00	2	without fuel pump - drive, without vacuum pump drive, fits pulley inner diam. 22,0mm cyl. <b>SALE, as long as stock lasts!!!</b>
<b>Audi V8 Cyl. 5 Valve</b> ( Audi S4 2003 - )										
0457 E1 641-L0	11,30 (13,5)	264/ /142-98	10-74 34-50	0,5-2,5	hydr.			350,00	2	
0457 E1 641-R0	11,30 (13,5)	264/ /142-98	10-74 34-50	0,5-2,5	hydr.			350,00	2	
0457 A1 721-L0	9,1 (10,8)	/272/115	71-21	0,75	hydr.			350,00	2	
0457 A1 721-R0	9,1 (10,8)	/272/ 115	71-21	0,75	hydr.			350,00	2	



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Audi 5 Cyl. 4 Valve</b>										
0246 E1 601-01	10,9	260/ /112	18-62	0,8	hydr.		tappet 0863 13 801	425,00	2	For Turbo charged and normally aspirated engines.
0246 A1 601-01	10,9	/260/112	62-18	0,9	hydr.		tappet 0863 13 801	425,00	2	For Turbo charged and normally aspirated engines.
<b>BMW M10 4 Cyl. 2 Valve</b>										
0002 01 840-01	7,2 (9,5)	284/284/110	32-72 72-32	2,0	0,20/0,20	-1985 0002 02 090 1985- 0056 02 062/022		340,00	2	clockwise distributor (-9/1980)
0002 01 840-02	7,2 (9,5)	284/284/110	32-72 72-32	2,0	0,20/0,20	-1985 0002 02 090 1985- 0056 02 062/022		340,00	2	anti-clockwise distributor (9/80 - )
0002 01 920-01	7,6 (10,0)	292/292/110	36-76 76-36	2,6	0,20/0,20	-1985 0002 02 090 1985- 0056 02 062/022		340,00	2	clockwise distributor ( - 9/80)
0002 01 920-02	7,6 (10,0)	292/292/110	36-76 76-36	2,6	0,20/0,20	-1985 0002 02 090 1985- 0056 02 062/022		340,00	2	anti-clockwise distributor (9/80 - )
0002 01 040-01	8,2 (10,7)	304/304/108	44-80 80-44	2,9	0,25/0,25	-1985 0002 02 090 1985- 0056 02 062/022		360,00	2	clockwise distributor ( - 9/80)
0002 01 040-02	8,2 (10,7)	304/304/108	44-80 80-44	2,9	0,25/0,25	-1985 0002 02 090 1985- 0056 02 062/022		360,00	2	anti-clockwise distributor (9/80 - ) A small slot must be bored in the middle bearing!
0002 01 160-03	9,1 (11,9)	316/316/100	58-78 78-58	5,6	0,25/0,25	<b>0002 02 080</b> <b>0002 02 043</b>	<b>upper 0002 13 059</b> <b>key 0894 13 8M8</b>	400,00	2	First and second bearing 2 mm larger in dia, clockwise distributor.
0002 01 160-04	9,1 (11,9)	316/316/100	58-78 78-58	5,6	0,25/0,25	<b>0002 02 080</b> <b>0002 02 043</b>	<b>upper 0002 13 059</b> <b>key 0894 13 8M8</b>	400,00	2	First and second bearing 2 mm larger in dia, anti-clockwise distributor (9/80 - ).
0002 01 280-01	9,2/8,5 (12/11,15)	328/316/100	64-84 78-58	5,5	0,25/0,25	<b>0002 02 080</b> <b>0002 02 043</b>	<b>upper 0002 13 059</b> <b>key 0894 13 8M8</b>	415,00	2	First and second bearing 2 mm larger in dia, clockwise distributor ( - 9/80 ).
0002 01 360-01	9,5/9,2 (12,4/12)	336/328/100	68-88 84-64	5,9	0,25/0,25	<b>0002 02 080</b> <b>0002 02 043</b>	<b>upper 0002 13 059</b> <b>key 0894 13 8M8</b>	415,00	2	First and second bearing 2 mm larger in dia, clockwise distributor ( - 9/80 ).
<b>BMW M20 6 Cyl. 2 Valve (2.0 - 2.5 l)</b>										
0056 01 720-00	7,0 (11,0)	272/272/111	25-67 67-25	1,6	0,25/0,25	-1985 0002 02 090 1985- 0056 02 062 & -022		365,00	2	
0056 01 840-00	7,3/7,0 (11,4/11,0)	284/272/110	32-72 66-26	2,2/1,7	0,25/0,25	-1985 0002 02 090 1985- 0056 02 062 & -022		365,00	2	
0056 01 880-00	7,3 (11,4)	288/288/110	34-74 74-34	2,8	0,25/0,25	-1985 0002 02 090 1985- 0056 02 062 & -022		365,00	2	
0056 01 040-00	7,7 (12,2)	304/304/105	47-77 77-47	4,0	0,25/0,25	0002 02 090		365,00	2	
<b>BMW M30 6 Cyl. 2 Valve (2.8 - 3.5 l)</b>										
0022 01 820-00	8,4 (10,6)	282/282/110	31-71 71-31	1,8	0,25/0,25	0002 02 090		365,00	2	Distributor drive, not for Motronic, without fuel pump drive!
0022 01 840-01	8,7/8,6 (10,9/10,8)	284/280/110	32-72 70-30	1,9/1,7	0,25/0,25	0002 02 090		365,00	2	Motronic 1 ( - 9/83), without fuel pump drive!
0022 01 840-04	8,7/8,6 (10,9/10,8)	284/280/110	32-72 70-30	1,9/1,7	0,25/0,25	-1985 0002 02 090		365,00	2	Motronic 2 (9/83 - ), without fuel pump drive!



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>BMW M42 4 Cyl. 4 Valve</b> (318is)										
0256 E1 561-00	10,4	256/ /110	18-58	1,2	hydr.	0256 02 082	tappet 0863 13 801	310,00	2	made from billet steel
0256 A1 561-00	10,4	/256/110	58-18	1,2	hydr.	0256 02 082	tappet 0863 13 801	310,00	2	made from billet steel
<b>BMW M43 4 Cyl. 2 Valve Roller Cam Follower</b> (316i, 318i, Z3 1.8..)										
0353 01 561-00	6,34/6,34 (11,1/11,1)	256/108 /256/110	20-56 58-18	1,05/0,86	hydr.			370,00	2	
0353 01 641-00	6,34/6,34 (11,1/11,1)	264/110 /264/110	22-62 62-22	1,22/1,22	hydr.			370,00	2	
<b>BMW M52 6 Cyl. 4 Valve</b> (320i - 328i, 520i - 528i) single VANOS !										
0261 E1 521-V0	10,2	252/ /116-91	10-62 35-37	0,3-3,2	hydr.			450,00	2	Intake camshaft M52 single Vanos engine! Recommended exhaust camshaft 0261 A1 441-00!
0261 A1 441-00	9,5	/244/106	48-16	0,8	hydr.			425,00	2	
<b>BMW M52TU 6 Cyl. 4 Valve</b> (320i - 328i, 520i - 528i) dual VANOS !										
0261 E1 481-DV0	10,0	248/ /120-80	4-64 44-24	0,1-4,4	hydr.			450,00	2	M52TU Dual Vanos
0261 A1 481-DV0	10,0	/248/112-87	56-12 31-37	0,6-3,6	hydr.			450,00	2	M52TU Dual Vanos
<b>BMW M54 6 Cyl. 4 Valve</b> ( 330i, 530i, X5 3,0L, Z4 ) dual VANOS !										
0261 E1 641-DV0	10,5	264/ /126-86	6-78 46-38	0,15-4,05	hydr.			450,00	2	
0261 A1 481-DV0	10,0	/248/112-87	56-12 31-37	0,6-3,6	hydr.			450,00	2	
0261 E1 721-DV0	10,9	272/ /126-86	10-82 50-42	0,35-4,85	hydr.			475,00	2	Check valve spring length and valve to piston clearance!
0261 A1 561-DV0	10,4	/256/114-89	62-14 39-37	0,65-4,4	hydr.			475,00	2	Check valve spring length and valve to piston clearance!
<b>BMW M70 V 12 Cyl. 2 Valve</b>										
0239 L1 641-00	6,3 (11,0)	264/264/112	20-64 64-20	1,1	hydr.			475,00	2	Valve/piston clearance has to be checked.
0239 R1 641-00	6,3 (11,0)	264/264/112	20-64 64-20	1,1	hydr.			475,00	2	Valve/piston clearance has to be checked.
<b>BMW M88, S38 6 Cyl. 4 Valve</b> (M1, M5, 635Csi)										
0207 D1 720-00	11,0	272/272/110	26-66 66-26	2,5	0,35/0,35			660,00	2	Engine M 88 ( - 1988)
0207 D1 800-00	11,0	280/280/110	30-70 70-30	2,7	0,35/0,35			660,00	2	Engine S 38 (1989 - )
<b>BMW S62 V8 Cyl. 4 Valve</b> (M5 E39, Z8)										
0409 E1 681-L0	11,3	268/ /134-74	0-88 60-148	0,05-6,40	hydr.			490,00	2	Check clearance between cam lobes and cyl. head!
0409 E1 681-R0	11,3	268/ /134-74	0-88 60-148	0,05-6,40	hydr.			490,00	2	Check clearance between cam lobes and cyl. head!
0409 A1 681-L0	11,3	/268/136-76	86-2 58-38	0,1-6,15	hydr.			490,00	2	Check clearance between cam lobes and cyl. head!
0409 A1 681-R0	11,3	/268/136-76	86-2 58-38	0,1-6,15	hydr.			490,00	2	Check clearance between cam lobes and cyl. head!



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>BMW R 259 2 Cyl. 4 Valve Boxer</b> (R850 GS, R, R1100S, R, GS, RS R1200C..)										
0392 01 920-00	9,5 (11,3)	292/292/108	38-74 74-38	3,3	0,20/0,35		Intake 0392 13 002 Exhaust 0392 13 001	205,00	2	Please secure, that the cams are free turning.
0392 01 120-00	9,5 (11,3)	312/312/104	52-80 80-52	4,6	0,20/0,35		Intake 0392 13 002 Exhaust 0392 13 001	205,00	2	Please secure, that the cams are free turning.
<b>BMW S14 4 Cyl. 4 Valve</b> (M3 E30)										
0227 D1 760-01	11,3	276/276/106	32-64 64-32	3,2	0,35/0,40	0013 02 064 0220 02 026	upper 0227 13 051 lower 0227 13 052 key 0894 13 8M7	415,00	2	
0227 D1 840-00	11,5	284/284/106	36-68 68-36	3,5	0,25/0,30	0013 02 064 0220 02 026	upper 0227 13 051 lower 0227 13 052 key 0894 13 8M7	415,00	2	
0227 D1 920-05	12,0	292/292/102	44-68 68-44	4,55	0,25/0,30	0013 02 064 0220 02 026	upper 0227 13 051 lower 0227 13 052 key 0894 13 8M7	440,00	2	
0227 D1 080-01	12,2	308/308/102	52-76 76-52	5,5	0,20/0,25	<b>0227 02 113</b>	<b>upper 0227 13 055</b> <b>lower 0227 13 058</b> <b>key 0894 13 8L7</b> <b>tappet 0227 13 805</b> <b>int. valve 0227 13 053</b> <b>exh. valve 0227 13 054</b>	440,00	2	Tappets 0227 13 805 necessary!
0227 D1 200-02	13,0	320/320/102	58-82 82-58	6,4	0,20/0,25	<b>0227 02 113</b>	<b>upper 0227 13 055</b> <b>lower 0227 13 058</b> <b>key 0894 13 8L7</b> <b>tappet 0227 13 805</b> <b>int. valve 0227 13 053</b> <b>exh. valve 0227 13 054</b>	440,00	2	Tappets 0227 13 805 necessary!
<b>BMW S50, S52 6 Cyl. 4 Valve</b> (M3 E36)										
0284 E1 840-0V1	11,9	284/ /122-80	20-84 62-42	1,3-6,7	0,25			490,00	2	M 3 single Vanos 3,0L intake
0284 A1 840-001	11,9	/284/108	70-34	3,1	0,25			490,00	2	M 3 single Vanos 3,0L exhaust
0284 E1 960-0V1	12,4	296/ /122-80	26-90 68-48	2,15-7,5	0,25			520,00	2	M 3 single Vanos 3,0L intake
0284 A1 960-001	12,4	/296/108	40-76	4,00	0,25			520,00	2	M 3 single Vanos 3,0L exhaust
0284 E1 840-0V2	11,9	284/ /129-69	13-91 73-31	0,8-7,95	0,25			490,00	2	Vanos system for intake- and exhaust 3,2 L
0284 A1 840-0V2	11,9	/284/114-76	72-28 38-66	2,32-7,15	0,25			490,00	2	Vanos system for intake- and exhaust 3,2 L
0284 E1 960-0V2	12,4	296/ /69-129	79-37 19-97	1,35-8,86	0,25	0013 02 064 0220 02 026	upper ret. 0284 13 010 lower ret. 0284 13 011 tappet 0227 13 804	520,00	2	Vanos system for intake- and exhaust 3,2 L
0284 A1 960-0V2	12,4	/296/76-114	44-72 82-34	3,2-7,94	0,25	0013 02 064 0220 02 026	upper ret. 0284 13 010 lower ret. 0284 13 011 tappet 0227 13 804	520,00	2	Vanos system for intake- and exhaust 3,2 L
0284 E1 160-1V2	13,3	316 / / 104	54 - 82	5,5	0,25	<b>0227 02 113</b>	<b>tappet 0227 13 805</b> <b>upper ret. 0284 13 012</b> <b>lower ret. 0284 13 013</b> <b>key 0894 13 8L6</b> <b>valve 0284 13 014 intake</b>	560,00	2	Vanos system must be removed! Base circle diam. 32mm



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>BMW S50, S52 6 Cyl. 4 Valve (M3 E36)</b>										
0284 A1 080-1V2	13,0	/308/104	78-50	4,5	0,25	<b>0227 02 113</b>	<b>tappet 0227 13 805</b> <b>upper ret. 0284 13 012</b> <b>lower ret. 0284 13 013</b> <b>key 0894 13 8L6</b> <b>valve 0284 13 015 exhaust</b>	560,00	2	Vanos system must be removed! Base circle diam. 32mm
<b>BMW S54 (B32) 6 Cyl. 4 Valve</b>										
0415 E1 800-00	11,6 (12,50)	280/ /132-72	8-92 68-22	0,55-8,0	0,25		<b>rocker arm 0415 13 800</b>	640,00	2	To be used with Schrick rocker arms!
0415 A1 720-00	11,6 (12,50)	/272/128-83	53-37 8-82	0,55-6,15	0,25		<b>rocker arm 0415 13 800</b>	640,00	2	To be used with Schrick rocker arms!
0415 E1 880-00	11,6 (12,50)	288/ /132-72	12-96 76-32	0,77-8,26	0,25		<b>rocker arm 0415 13 800</b>	640,00	2	For <b>CSL</b> , to be used with Schrick rocker arms!
0415 A1 800-00	11,6 (12,50)	/280/130-85	55-45 10-90	0,62-6,25	0,25		<b>rocker arm 0415 13 800</b>	640,00	2	For <b>CSL</b> , to be used with Schrick rocker arms!
0415 E1 040-00	11,6 (12,50)	304/ /132-72	20-104 80-44	1,15-8,5	0,25		<b>rocker arm 0415 13 800</b>	690,00	2	To be used with Schrick rocker arms!
0415 A1 960-00	11,6 (12,50)	/296/130-85	63-53 18-98	1,35-6,6	0,25		<b>rocker arm 0415 13 800</b>	690,00	2	To be used with Schrick rocker arms!
0415 E1 880-01	12,9 (14,0)	288/ /132-72	12-96 72-36	0,9-8,9	0,25	<b>0415 02 095</b>	<b>rocker arm 0415 13 800</b> <b>Retainer up 0415 13 011 &amp; lo -012</b>	690,00	2	Valve springs, retainers and Schrick rocker arms must be used!
0415 A1 800-01	12,58 (14,0)	/280/130-85	55-45 10-90	0,68-6,68	0,25	<b>0415 02 095</b>	<b>rocker arm 0415 13 800</b> <b>Retainer up 0415 13 011 &amp; lo-012</b>	690,00	2	Valve springs, retainers and Schrick rocker arms must be used!
0415 E1 040-01	12,9 (14,00)	304/ /104	48-76	4,57	0,25	<b>0415 02 095</b>	<b>rocker arm 0415 13 800</b> <b>Retainer up 0415 13 011 &amp; lo -012</b>	690,00	2	Valve springs, retainers and Schrick rocker arms must be used! No Vanos to be used!
0415 A1 960-01	12,58 (14,00)	/296/104	44-72	4,1	0,25	<b>0415 02 095</b>		690,00	2	Valve springs, retainers and Schrick rocker arms must be used! No Vanos to be used!
<b>BMW S85, 10 Zyl. 4V (M5, M6)</b>										
0473 E1 921-L0	12,2	292//145-79	1-111 67-45	0,04-6,55	hydr.			475,00	2	
0473 E1 921-R0	12,2	292//145-79	1-111 67-45	0,04-6,55	hydr.			475,00	2	
0473 A1 801-L0	12,2	/280/130-93	90-10 63-47	0,2-3,8	hydr.			475,00	2	Check for clearance of cam lobes to cyl. head and between valves & pistons!
0473 A1 801-R0	12,2	/280/130-93	90-10 63-47	0,2-3,8	hydr.			475,00	2	Check for clearance of cam lobes to cyl. head & between valves & pistons!
0473 E1 961-L0	12,2	296//145-79	3-113 69-47	0,05-6,75	hydr.			475,00	2	
0473 E1 961-R0	12,2	296//145-79	3-113 69-47	0,05-6,75	hydr.			475,00	2	
0473 A1 841-L0	12,2	/284/130-93	92-12 55-49	0,25-4,05	hydr.			475,00	2	
0473 A1 841-R0	12,2	/284/130-93	92-12 55-49	0,25-4,05	hydr.			475,00	2	
<b>BMW S65 V8 4Valve M3 E92</b>										
0485 E1 841-L0	12,00	284°/ /132-74°	12-90 68-36	0,15-6,72	hydr.			495,00	2	
0485 E1 841-R0	12,00	284°/ /132-74°	12-90 68-36	0,15-6,72	hydr.			495,00	2	
0485 A1 841-L0	12,00	/284°/134-86°	96-8 48-56	0,17-5,05	hydr.			495,00	2	
0485 A1 841-R0	12,00	/284°/134-86°	96-8 48-56	0,17-5,05	hydr.			495,00	2	
0485 E1 921-L0	12,20	292°/ /132-74°	14-98 72-40	0,4-7,37	hydr.	<b>SCHRICK Valvesprings</b>	<b>Available in spring 2011</b>	525,00	2	Check clearance in head and valve to piston! Check spring clearance at max. lift = min. 1,00mm!
0485 E1 921-R0	12,20	292°/ /132-74°	14-98 72-40	0,4-7,37	hydr.	<b>SCHRICK Valvesprings</b>	<b>Available in spring 2011</b>	525,00	2	Check clearance in head and valve to piston! Check spring clearance at max. lift = min. 1,00mm!
0485 A1 921-L0	12,20	/292°/134-86°	100-12 52-60	0,35-5,75	hydr.	<b>SCHRICK Valvesprings</b>	<b>Available in spring 2011</b>	525,00	2	Check clearance in head and valve to piston! Check spring clearance at max. lift = min. 1,00mm!



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>BMW S65 V8 4Valve M3 E92</b>										
0485 A1 921-R0	12,20	/292°/134-86°	100-12 52-60	0,35-5,75	hydr.	<b>SCHRICK Valvesprings</b>	<b>Available in spring 2011</b>	525,00	2	Check clearance in head and valve to piston! Check spring clearance at max. lift = min. 1,00mm!
<b>Chrysler PT Cruiser 4 Cyl. 4 valve ( 2,0L )</b>										
0406 E1 641-00	5,15 (9,00)	264/ /111	21-63	0,86	hydr.			250,00	2	<b>Sale as long as stock lasts</b>
0406 A1 561-00	5,15 (9,00)	/256/109	57-19	0,64	hydr.			250,00	2	<b>Sale as long as stock lasts</b>
<b>Ducati V 2 Cyl. 2 Valve</b>										
0453 H1 240-00	10,70 (12,0)	324/324/ 110-106	54-94 90-58	3,0/3,5	0,2/0,25			295,00	2	
0453 V1 240-00	10,70 (12,0)	324/324/ 110-106	54-94 90-58	3,0/3,5	0,2/0,25			295,00	2	
<b>Fiat 20V 5 Cyl. 4 Valve (Bravo, Coupé)</b>										
0310 E1 601-V0	10,0	260/ /120-101	10-70 29-51	0,2-1,9	hydr.	0306 02 054 & 019		375,00	2	Calibration by Schrick installation tool 0306 13 002!
0310 A1 521-00	9,0	/252/106	52-20	0,95	hydr.	0306 02 054 & 019		375,00	2	Calibration by Schrick installation tool 0306 13 002!
<b>Ford CVH 4 Cyl. 2 Valve Aluminium Cylinder Head (Fiesta, Escort, Orion..)</b>										
0086 01 881-02	6,5 (10,6)	288/280/116/109	28-80 69-31	1,4/1,8	hydr.			245,00	2	
<b>Ford Zetec 4 Cyl. 4 Valve (1.6 - 2.0   Escort, Mondeo, Fiesta, Focus..)</b>										
0252 E1 601-00	9,9	260/ /114	16-64	0,9	hydr.			315,00	2	
0252 A1 601-00	9,9	/260/114	64-16	1,0	hydr.			315,00	2	
0252 E1 640-00	10,0	264/ /114	18-66	1,5	0,3			315,00	2	for solid tappets (MY 1998- ) Focus
0252 A1 560-00	9,7	/256/114	62-14	1,1	0,35			315,00	2	for solid tappets (MY 1998- ) Focus
<b>Ford Zetec SE 4 Cyl. 4 Valve (1.7   Puma..)</b>										
0330 E1 600-V0	9,0	260/ /126-86	4-76 44-36	0,5-4,1	0,3	<b>0002 02 043</b>	<b>upper 0330 13 003 key 0894 13 8L6 lash cap 0866 13 070</b>	350,00	2	Camshaft can not be assembled without fat printed accessories!
0330 A1 360-00	8,0	/236/106	44-12	0,9	0,35	<b>0002 02 043</b>	<b>upper 0330 13 003 key 0894 13 8L6 lash cap 0866 13 070</b>	300,00	2	Camshaft can not be assembled without fat printed accessories!
<b>Honda Civic Type R 2,0L &amp; Accord 2,4L roller follower I V-Tec 4 Cyl. 4 valve</b>										
0432 E1 960-00	7,33 (12,80)	232/296/ /78-130	2-50 54-2	0,43	0,3			415,00	2	Intake camshaft for Civic!
0432 A1 900-00	6,81 (12,00)	/236/290/112	18-98 70-46	0,95-7,4				415,00	2	Exhaust camshaft for Civic!
0432 E1 920-01	7,33 (12,80)	248/292//72-124	50-6 77-33	0,52-2,20	0,35			415,00	2	Intake camshaft for Accord!
			12-56 64-4	0,63	0,3					
			22-90 74-38	1,45-8,2						



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Honda Civic Type R 2,0L &amp; Accord 2,4L roller follower I V-Tec 4 Cyl. 4 valve</b>										
0432 A1 900-02	6,81 (12,00)	/242/290/106	54,5-7,5 71-39	0,6	0,35			415,00	2	Exhaust camshaft for Accord!
<b>Honda CRF450 1 Cyl. 4 valve</b>										
0458 01 960-00	10,6/10,0	296/324/ 108-110	40-76 92-52	3,0/3,35	0,25			250,00	2	
<b>Honda S2000 2,0L roller follower V-Tec 4 Cyl. 4 valve</b>										
0438 E1 080-00	7,15 (12,50)	244/ /116 308/ /102	6-58 52-76	0,46/4,40	0,3			415,00	2	
0438 A1 000-00	6,93 (12,20)	/244/116 /300/102	58-6 72-48	0,5 / 3,80	0,35			415,00	2	
<b>Mazda Miata 4 Cyl. 4 valve 1,9L</b>										
0436 E1 560-00	9,5	256/ /110	18-58	1,3	0,25			300,00	2	Engine code NB 1999- mechanical lash adjustment!
0436 A1 560-00	9,5	256/ /110	18-58	1,3	0,35			300,00	2	Engine code NB 1999- mechanical lash adjustment!
0436 E1 641-00	9,5	264/ /110	22-62	0,9	hydr.			300,00	2	Engine code NA -1999 hydraulic tappets!
0436 A1 641-00	9,5	/264/110	62-22	0,9	hydr.			300,00	2	Engine code NA -1999 hydraulic tappets!
<b>Mazda Miata 4 Cyl. 4 valve 1,6L</b>										
0441 E1 601-01	8,4	260/ /110	20-60	0,8	hydr.			300,00	2	
0441 A1 601-00	9,0	/260/110	60-20	0,77	hydr.			300,00	2	
<b>Mercedes M273 V8 4Valve</b>										
0474 A1 681-L0	5,44 (10,95)	/268/			hydr.			575,00	2	Check valve to piston clearance!
0474 A1 681-R0	5,44 (10,95)	/268/			hydr.			575,00	2	Check springs for clearance at max. lift. Check valve to piston clearance!
0474 E1 681-L0	5,46 (10,95)	268/ /			hydr.			575,00	2	Check springs for clearance at max. lift. Check valve to piston clearance!
0474 E1 681-R0	5,46 (10,95)	268/ /			hydr.			575,00	2	Check springs for clearance at max. lift. Check valve to piston clearance!
<b>Mercedes M112 V 6 Cyl. 3 Valve (C, CLK, E, SLK..)</b>										
0351 01 561-L0	7,25 (10,8)	256/268/114	14-62 68-20	0,5/1,0	hydr.			690,00	2	
0351 01 561-R0	7,25 (10,8)	256/268/114	14-62 68-20	0,5/1,0	hydr.			690,00	2	
<b>Mercedes M272 V6 Cyl. 4V (SLK, E350, S350...)</b>										
0464 E1 681-L0	5,48 (11,0)	268/ /89-129	45-43 5-83	0,13-3,82	hydr.			470,00	2	
0464 E1 681-R0	5,48 (11,0)	268/ /89-129	45-43 5-83	0,13-3,82	hydr.			470,00	2	



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Mercedes M272 V6 Cyl. 4V</b> (SLK, E350, S350...)										
0464 A1 681-L0	5,47 (11,0)	/268/74-114	59-28 19-68	0,86-5,9	hydr.			470,00	2	
0464 A1 681-R0	5,47 (11,0)	/268/74-114	59-28 19-68	0,86-5,9	hydr.			470,00	2	
<b>Mercedes M113 V 8 Cyl. 3 Valve</b> (C, CLK, E, S, SL...)										
0352 01 561-L0	7,25 (10,8)	256/268/114	14-62 68-20	0,5/1,0	hydr.			795,00	2	
0352 01 561-R0	7,25 (10,8)	256/268/114	14-62 68-20	0,5/1,0	hydr.			795,00	2	
<b>Mini 4Cyl. 4V Cooper S R56 N14 11/2005-</b>										
0483 E1 481-00	5,6 (10,0)	248° /141°-		0,00-	hydr.			360,00	2	Check valve to piston clearance!
0483 A1 481-00	5,6 (10,0)	/248°/112°	56-12	0,75	hydr.			360,00	2	
0483 A1 481-01	5,96 (10,70)	/248/112,2	56-12	0,73	hydr.	upper, 0483 13 004		360,00	2	check valve to piston clearance! check spring for clearance at max. lift min. 1mm!
0483 E1 481-01	5,97 (10,70)	248/ /140,9	-17-85		hydr.	upper, 0483 13 004		360,00	2	check valve to piston clearance! check spring for clearance at max. lift min. 1mm!
<b>Mini 4 Cyl. 4 valve</b> ( also Cooper and Cooper S )										
0424 01 601-00	5,77/6,24 (9,5/9,0)	260/260/114	16-64 64-16	0,42	hydr.			385,00	2	
0424 01 641-03	5,77/6,24 (9,5/9,0)	264/272/114	18-66 70-22	0,5/0,65	hydr.	intake valve 0424 13 004 exhaust valve 0424 13 005		385,00	2	Camshaft for Cooper S!
<b>Moto Guzzi 2 Cyl. 2 Valve</b>										
0459 01 200-00	9,03 (12,0)	320/320/108	52-88 88-52	3,77	0,25	0002 02 043 0002 02 080	upper titanium 0459 13 003 lower steel 0459 13 004	195,00	2	
<b>Nissan 350Z V6 Cyl. 4 Vent.</b>										
0469 E1 520-L0	10,50	252/ /126	0-72	0,45-	0,30			395,00	2	
0469 E1 520-R0	10,50	252/ /126	0-72	0,45-	0,30			395,00	2	
0469 A1 520-L0	10,50	/252/113	59-13	1,05	0,33			395,00	2	
0469 A1 520-R0	10,50	/252/113	59-13	1,05	0,33			395,00	2	
<b>Opel OHC 4 Cyl. 2 Valve Aluminium Cyl. Head, Big Block</b> (Kadett, Ascona, Manta...)										
0092 01 761-01	7,3/7,1 (11,8/11,5)	276/272/110	28-68 66-26	1,4/1,3	hydr.			215,00	2	Please use only new Schrick rocker arms 0092 13 800
0092 01 961-00	7,3 (11,8)	296/296/105	43-73 73-43	3,6	hydr.			215,00	2	Please use only new Schrick rocker arms 0092 13 800
<b>Opel 16 V Ecotec 4 Cyl. 4 Valve</b> (1.8 - 2.2   Astra, Vectra, Sintra.. 1995 - )										
0291 D1 561-00	10,2	256/110	18-58 58-18	0,9/1,0	hydr.		tappet 0863 13 803	265,00	2	
0291 D1 641-00	10,5	264/110	22-62 62-22	1,3/1,4	hydr.		tappet 0863 13 803	265,00	2	
0291 D1 721-00	10,5	272/110	26-66 66-26	1,7/1,8	hydr.		tappet 0863 13 803	325,00	2	



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Opel 4 Cyl. 4 Valve roller cam follower</b> ( 2.2   Zafira, Speedster ... )										
0412 E1 521-01	7,03 (12,0)	252/ /116	10-62	0,25	hydr.	<b>0242 02 054</b> <b>0242 02 019</b>	<b>upper 0412 13 004</b> <b>lower 0895 00 820</b> <b>key 0894 13 8M6</b>	390,00	2	Valve spring seat must be machined to fit the springs.
0412 A1 481-01	7,03 (12,0)	/248/103	47-21	1,0	hydr.	<b>0242 02 054</b> <b>0242 02 019</b>	<b>upper 0412 13 004</b> <b>lower 0895 00 820</b> <b>key 0894 13 8M6</b>	390,00	2	Valve spring seat must be machined to fit the springs.
<b>Opel 16 V C20XE 4 Cyl. 4 Valve</b> (2.0   Kadett, Astra, Calibra, Vectra.. 1988 - 1994)										
0242 E1 681-00	10,4	268/ /110	24-64	1,5	hydr.	0242 02 065	upper 0242 13 030 key 0894 13 8M7	295,00	2	
0242 A1 681-00	10,4	/268/110	64-24	1,5	hydr.	0242 02 065	upper 0242 13 030 key 0894 13 8M7	295,00	2	
0242 E1 761-00	10,7	276/ /110	28-68	2,0	hydr.	0242 02 065	upper 0242 13 030 key 0894 13 8M7	295,00	2	
0242 A1 761-00	10,7	/276/110	68-28	2,1	hydr.	0242 02 065	upper 0242 13 030 key 0894 13 8M7	295,00	2	
0242 E1 040-00	12,0	304/ /105	47-77-	5,1	0,25/0,30	<b>242 02 054/019</b>	<b>upper 0242 13 029</b> <b>lower 0242 13 010</b> <b>key 0894 13 8M7</b> <b>tappet 0863 13 024</b>	295,00	2	
0242 A1 040-00	12,0	/304/105	77-47	5,1	0,25/0,30	<b>242 02 054/019</b>	<b>upper 0242 13 029</b> <b>lower 0242 13 010</b> <b>key 0894 13 8M7</b> <b>tappet 0863 13 024</b>	295,00	2	
<b>Opel V 6 Cyl. 4 Valve</b> (Calibra, Omega, Vectra, Sintra, Saab V6..)										
0219 D1 561-00	10,5	256/256/113/103	15-61 51-25	0,4/1,9	hydr.		tappet 0863 13 803	265,00	2	
0219 E1 761-00	10,7	276/ /116	22-74	1,1	hydr.		tappet 0863 13 803	265,00	2	For use in 3,2L engine!
0219 A1 761-00	10,7	/276/106	64-32	1,65	hydr.		tappet 0863 13 803	265,00	2	For use in 3,2L engine!
<b>Opel 16V Small Block 4 Cyl. 4 Valve</b> (1.4 - 1.6   Corsa, Tigra, Astra, Vectra..)										
0281 E1 561-00	9,5	256/ /110	18-58	0,7	hydr.	0242 02 065	upper 0299 13 004 tappet 0863 13 803	265,00	2	Please secure, that the cams are free trevelling.
0281 A1 561-00	9,5	/256/110	58-18	0,8	hydr.	0242 02 065	upper 0299 13 004 tappet 0863 13 803	265,00	2	Please secure, that the cams are free trevelling.
0281 E1 641-00	9,8	264/ /110	22-62	1,0	hydr.	0242 02 065	upper 0299 13 004 tappet 0863 13 803	265,00	2	Please secure, that the cams are free trevelling.
0281 A1 641-00	9,8	/264/110	62-22	1,2	hydr.	0242 02 065	upper 0299 13 004 tappet 0863 13 803	265,00	2	Please secure, that the cams are free trevelling.
0281 E1 800-00	10,25	280/ /110	30-70	2,5	0,25	<b>0242 02 065</b>	<b>upper 0299 13 004</b> <b>spacer 0863 14 600</b>	280,00	2	base circle radius R=17,25 (1,25mm smaller then standard)
0281 A1 800-00	10,25	/280/110	70-30	2,5	0,30	<b>0242 02 065</b>	<b>upper 0299 13 004</b> <b>spacer 0863 14 600</b>	280,00	2	base circle radius R=17,25 (1,25mm smaller then standard)
0281 D1 920-00	11,50	292/104	42-70 70-42	4,0	0,25/0,30	<b>0299 02 050</b> <b>0299 02 031</b>	<b>upper 0261 13 039</b> <b>tappet 0863 13 024</b>	280,00	2	base circle radius R=16 (2,5mm smaller then standard), camshaft for intake and exhaust



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Peugeot XU.. MI16 4 Cyl. 4 Valve</b> (1.9 - 2.0 l 309, 405, Citroen ZX..)										
0247 E1 681-02	10,4	268/ /114	20-68	1,3	hydr.			350,00	2	
0247 A1 641-02	10,2	/264/114	18-66	1,2	hydr.			350,00	2	
<b>Peugeot TU.. 4 Cyl. 2 Valve</b> (1.3 - 1.6 l 205, 106, 306, Citroen AX..) not for roller rocker arms!										
0257 01 720-00	7,0 (11,4)	272/272/112	24-68 68-24	1,6	0,20/0,35			290,00	2	Peugeot 205, Citroen AX smaller bearings no fuel pump drive
0257 01 840-01	7,0 (11,4)	284/284/108	34-70 70-34	2,5	0,20/0,35			290,00	2	Peugeot 205, Citroen AX smaller bearings no fuel pump drive
0257 01 040-00	7,4/7,2 (12,0/11,7)	304/296/105	47-77 73-43	4,1/3,6	0,20/0,35			290,00	2	Peugeot 205, Citroen AX smaller bearings no fuel pump drive
0257 01 720-01	7,0 (11,4)	272/272/110	26-66 66-26	1,8	0,20/0,35			290,00	2	Peugeot 106, 306 large bearings no fuel pump drive
0257 01 840-02	7,0 (11,4)	284/284/108	34-70 70-34	2,5	0,20/0,35			290,00	2	Peugeot 106, 306 large bearings no fuel pump drive
0257 01 040-01	7,4/7,2 (12,0/11,7)	304/296/105	47-77 73-43	4,1/3,6	0,20/0,35			290,00	2	Peugeot 106, 306 large bearings no fuel pump drive
<b>Peugeot TU5J4 4 Cyl. 4 Valve</b> (1.6 l 106, Citroen Saxo..)										
0326 E1 601-00	9,3	260/ /110	20-60	1,1	hydr.			250,00	2	
0326 A1 601-00	9,3	/260/110	60-20	1,1	hydr.			250,00	2	
<b>Peugeot XU.. 4 Cyl. 2 Valve</b> (1.9 l 205, 309, 405..)										
0234 01 680-03	12,0	268/268/112	22-66 66-22	1,7	0,20/0,35			265,00	2	Please ensure correct valve-springs installed height.
<b>Peugeot XU10J4 4 Cyl. 4 Valve</b> (2.0 l 306, Citroen Xsara..)										
0336 E1 681-00	10,5	268/ /114	20-68	1,1	hydr.			350,00	2	Please check for order the spring travel!
0336 A1 681-00	10,5	/268/114	68-20	1,2	hydr.			350,00	2	Please check for order the spring travel!
0336 E1 601-00	9,3	260/ /110	20-60	1,1	hydr.			350,00	2	Please check for order the spring travel!
0336 A1 601-00	9,3	/260/110	60-20	1,1	hydr.			350,00	2	Please check for order the spring travel!
<b>Porsche 996 GT3 CUP 6Cyl. 4Valve</b>										
0450 E1 001-L0	12,0	300/ /108	42-78	3,00	hydr.			420,00	2	For application in CUP engines! For flat tappets!
0450 E1 001-R0	12,0	300/ /108	42-78	3,00	hydr.			420,00	2	For application in CUP engines! For flat tappets!
0450 A1 921-L0	11,0	/292/110	76-36	2,2	hydr.			420,00	2	For flat tappets!
0450 A1 921-R0	11,0	/292/110	76-36	2,2	hydr.			420,00	2	For flat tappets!
0450 E1 001-LV0	12,00	300/ /122-94	28-92 56-64	1,28-4,73	hydr.			420,00	2	For 996 GT3 with flat tappets. To be used with cam advancer!
0450 E1 001-RV0	12,0	300/ /122-94	28-92 56-64	1,28-4,73	hydr.			420,00	2	For 996 GT3 with flat tappets. To be used with cam advancer!



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Porsche 911 6 Cyl. 2 Valve</b>										
0005 L1 880-02	8,8 (13,2)	288/280/114	30-78 74-26	2,1/1,7	0,20/0,20	0013 02 064 0013 02 031	0005 13 042 titanium 0005 13 035 steel	410,00	2	Internal thread, bearings 49 mm dia. (Carrera 2 and Carrera 4)
0005 R1 880-02	8,8 (13,2)	288/280/114	30-78 74-26	2,1/1,7	0,20/0,20	0013 02 064 0013 02 031	0005 13 042 titanium 0005 13 035 steel	410,00	2	Internal thread, bearings 49 mm dia. (Carrera 2 and Carrera 4)
0005 L1 921-01	8,8 (13,2)	292/284/114	32-80 76-28	1,8/1,5	hydr.	0013 02 064 0013 02 031	0005 13 041 titanium 0005 13 035 steel 0005 13 043 steel 0894 13 8M8 key	410,00	2	Internal thread, bearings 49 mm dia. (993 - Carrera 1994 - )
0005 R1 921-01	8,8 (13,2)	292/284/114	32-80 76-28	1,8/1,5	hydr.	0013 02 064 0013 02 031	0005 13 041 titanium 0005 13 035 steel 0005 13 043 steel 0894 13 8M8 key	410,00	2	Internal thread, bearings 49 mm dia. (993 - Carrera 1994 - )
0005 L1 040-00	8,8 (13,2)	304/296/112	40-84 80-36	3,35/2,85	0,20/0,20	0013 02 064 0013 02 031	0005 13 042 titanium 0005 13 035 steel	430,00	2	Internal thread, bearings 49 mm dia.
0005 R1 040-00	8,8 (13,2)	304/296/112	40-84 80-36	3,35/2,85	0,20/0,20	0013 02 064 0013 02 031	0005 13 042 titanium 0005 13 035 steel	430,00	2	Internal thread, bearings 49 mm dia.
0005 L1 200-01	8,8 (13,2)	320/308/108	52-88 82-46	5,0/4,3	0,20/0,20	0013 02 064 0013 02 031	upper 0005 13 036 lower 0005 13 035 valves 0005 13 003/004 key 0894 13 8R8	455,00	2	Internal thread, bearings 49 mm dia. Porsche racing rocker arms Nr.96210530800 required!
0005 R1 200-01	8,8 (13,2)	320/308/108	52-88 82-46	5,0/4,3	0,20/0,20	0013 02 064 0013 02 031	upper 0005 13 036 lower 0005 13 035 valves 0005 13 003/004 key 0894 13 8R8	455,00	2	Internal thread, bearings 49 mm dia. Porsche racing rocker arms Nr.96210530800 required!
<b>Porsche 996/997 3,6L 6Cyl. 4Valve</b>										
0454 E1 841-R0	12,0	284/ /125-83	17-87 59-45	0,85-5,7	hydr.			510,00	2	
0454 E1 841-L0	12,0	284/ /125-83	17-87 59-45	0,85-5,7	hydr.			510,00	2	
0454 A1 921-R0	11,5	/292/117	83-29	1,6	hydr.			370,00	2	
0454 A1 921-L0	11,5	/292/117	83-29	1,6	hydr.			370,00	2	
<b>Porsche 997 GT3 M97/76 6Cyl. 4V</b>										
0487 E1 921-L0	13,50	292/ /135	11-101	0,4-6,75	hydr.			435,00	2	Not for CUP engine!
0487 E1 921-R0	13,50	292/ /135	11-101	0,4-6,75	hydr.			435,00	2	Not for CUP engine!
0487 A1 801-R0	12,00	/280/115	75-25	1,22	hydr.			435,00	2	Not for CUP engine!
0487 A1 801-R0	12,00	/280/115	75-25	1,22	hydr.			435,00	2	Not for Cup engine!
<b>Porsche 996 TURBO</b>										
0475 E1 761-L0	11,0	276°		0,45-3,0	hydr.			510,00	2	
0475 E1 761-R0	11,0	276°		0,45-3,0	hydr.			510,00	2	
0475 A1 741-LR0	10,6	274°		0,97	hydr.			395,00	2	<b>Camshaft for cyl. 1-3 &amp; 4-6!</b>



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Porsche 996 GT3</b> (M96/79 convex tappets)										
0490 E1 961-L0	13,0	292°			hydr.			455,00	2	<b>Check valve to piston clearance!</b>
0490 E1 961-R0	13,0	292°			hydr.			455,00	2	<b>Check valve to piston clearance!</b>
0490 A1 881-LR0		288°			hydr.			435,00	2	<b>Check valve to piston clearance! Camshaft for cyl. 1-3 &amp; 4-6!</b>
<b>Porsche 996 6 Cyl. 4 Valve Water Cooling</b> (Boxster, 911 Carrera..1998 - 3,4L )										
0319 E1 641-R0	10,7	264/ /120-95	12-72 37-47	0,4-3,3	hydr.			395,00	2	2,5L engine (Boxster) with adjustable sprocket
0319 A1 641-R0	10,7	/264/108	60-24	1,7	hydr.			395,00	2	2,5L engine (Boxster)
0319 E1 641-L0	10,7	264/ /120-95	12-72 37-47	0,4-3,3	hydr.			395,00	2	2,5L engine (Boxster) with adjustable sprocket
0319 A1 641-L0	10,7	/264/108	60-24	1,7	hydr.			395,00	2	2,5L engine (Boxster)
0319 E1 801-R0	10,7	280/ /127-102	13-87 38-62	0,4-3,2	hydr.	0299 02 050 0299 02 031	upper 0261 13 028 lower 0895 00 820 (2X) key 0894 13 8M6	420,00	2	3,4L engine (911) with adjustable sprocket
0319 A1 721-R0	10,7	/272/113	69-23	1,5	hydr.	0299 02 050 0299 02 031	upper 0261 13 028 lower 0895 00 820 (2X) key 0894 13 8M6	420,00	2	3,4L engine (911)
0319 E1 801-L0	10,7	280/ /127-102	13-87 38-62	0,4-3,2	hydr.	0299 02 050 0299 02 031	upper 0261 13 028 lower 0895 00 820 (2X) key 0894 13 8M6	420,00	2	3,4L engine (911) with adjustable sprocket
0319 A1 721-L0	10,7	/272/113	69-23	1,5	hydr.	0299 02 050 0299 02 031	upper 0261 13 028 Unten 0895 00 820 (2X) key 0894 13 8M6	420,00	2	3,4L engine (911)
0319 E1 800-R0	12,2	280/ /127-102	13-87 38-62	0,95-4,0	0,30	<b>0299 02 050 0299 02 031</b>	<b>upper 0261 13 39 lower 0895 00 820 (2X) tappet 0863 13 023 key 0894 13 8M6</b>	440,00	2	3,4L engine (911) with adjustable sprocket check valve/piston clearance
0319 A1 720-R0	12,0	/272/113	-69-23	2,06	0,35	<b>0299 02 050 0299 02 031</b>	<b>upper 0261 13 039 lower 0895 00 820 (2X) tappet 0863 13 023 key 0894 13 8M6</b>	440,00	2	3,4L engine (911) check valve/piston clearance
0319 E1 800-L0	12,2	280/ /127-102	13-87 38-62	0,4-3,2	0,30	<b>0299 02 050 0299 02 031</b>	<b>upper 0261 13 039 lower 0895 00 820 (2X) tappet 0863 13 023 key 0894 13 8M6</b>	440,00	2	3,4L engine (911) with adjustable sprocket check valve/piston clearance
0319 A1 720-L0	12,0	/272/113	69-23	1,5	0,35	<b>0299 02 050 0299 02 031</b>	<b>upper 0261 13 039 lower 0895 00 820 (2X) tappet 0863 13 023 key 0894 13 8M6</b>	440,00	2	3,4L engine (911) check valve/piston clearance
<b>Porsche 997 TURBO</b>										
0489 E1 881-L0	11,0	288°		0,4-2,4	hydr.			510,00	2	
0489 E1 881-R0	11,0	288°		0,4-2,4	hydr.			510,00	2	
0489 A1 921-L0	11,0	292°/110°	76-36	3,4	hydr.			470,00	2	
0489 A1 921-R0	11,0	292°/110°	76-36	3,4	hydr.			470,00	2	



# Camshafts



Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>Renault 4Cyl. 4Valve Roller Cam Follower</b> (2,0L Clío RS)										
0381 E1 881-00	5,66 (11,42)	288/ /125	19-89	0,57	hydr.			425,00	2	
0381 A1 801-01	5,66 (11,42)	/280/110	70-30	1,40	hydr.			425,00	2	
0381 E1 881-01	6,18 (12,30)	288/ /138-98	6-102 46-62		hydr.			450,00	2	Camshafts for CLIO 3!
0381 A1 881-02	5,78 (11,65)	/288/104	68-40		hydr.			450,00	2	Camshafts for CLIO 3!
<b>Renault 16V F7P 4 Cyl. 4 Valve</b> (Clío Williams, R19, Mégane..)										
0272 E1 641-01	10,3	264/ /112	20-64	1,0	hydr.			350,00	2	
0272 A1 641-01	10,3	/264/112	64-20	1,2	hydr.			350,00	2	
<b>Renault D7F 4 Cyl. 2 Valve Roller Cam Follower</b> (1997- Twingo, Clío..)										
0332 01 520-01	5,85 (10,3)	252/252/113	13-59 59-13	0,7	0,2/0,3			350,00	2	
<b>Renault K4M 4 Cyl. 4 Valve Roller Cam Follower</b> (1999- Mégane, Laguna..)										
0374 E1 441-00	5,02 (10,0)	244/ /106	16-48	0,7	hydr.			375,00	2	
0374 A1 441-00	5,02 (10,0)	/244/106	48-16	0,7	hydr.			375,00	2	
<b>VW 16V Small Block 4 Cyl. 4 Valve Roller Cam Follower</b> (Polo, Lupo, Golf 4, Arosa, Felicia..)										
0350 E1 441-00	4,69 (9,0)	244/ /107	15-49	0,7	hydr.			290,00	2	
0350 A1 441-00	4,69 (9,0)	/244/107	49-15	0,7	hydr.			290,00	2	
0350 E1 521-00	4,69 (9,0)	252/ /110	16-56	0,75	hydr.			290,00	2	
0350 A1 521-00	4,69 (9,0)	/252/110	56-16	0,75	hydr.			290,00	2	
0350 E1 681-00	4,80 (9,15)	268/ /112	22-66	0,8	hydr.			315,00	2	
0350 A1 681-00	4,80 (9,15)	/268/112	66-22	0,8	hydr.			315,00	2	
<b>VW 16V Small Block 4 Cyl. 4 Valve Roller Cam Follower</b> (Polo, Lupo, Golf 4..) variable intake camshaft										
0350 E1 561-V0	4,80 (9,15)	256/ /125	03-73	0,1-	hydr.			315,00	2	For engines with variable intake camshaft!
0350 A1 441-00	4,69 (9,0)	/244/107	49-15	0,7	hydr.			290,00	2	
0350 A1 521-00	4,69 (9,0)	/252/ 110	56-16	0,75	hydr.			290,00	2	
<b>VW 111 4 Cyl. 2 Valve Bucket Tappets, Cross Flow Cyl. Head</b> (1.0 - 1.6   Polo, Golf, Jetta, Vento, Seat Cordoba, Ibiza, Arosa, Skoda Felicia..)										
0244 01 521-00	9,6/10,0	252/276/111	17-55 71-25	0,7/1,3	hydr.		tappet 863 13 801	280,00	2	Especially for G40!
0244 01 641-03	9,8	264/260/112	20-64 62-18	0,9	hydr.		tappet 863 13 801	280,00	2	Check valve springs, avoid coil bind!
0244 01 681-01	9,3	268/268/113	21-67 67-21	1,2	hydr.		tappet 863 13 801	280,00	2	Check valve springs, avoid coil bind!
0244 01 681-02	10/9,8	268/264/112	22-66 64-20	1,2	hydr.		tappet 863 13 801	280,00	2	Check valve springs, avoid coil bind!
<b>VW 16 V 4 Cyl. 4 Valve</b> (1.8 - 2.0   Golf, Passat, Scirocco, Corrado, Audi 80/90, Seat Toledo, Cordoba, Ibiza..)										
0220 E1 601-02	11,2	260/ /114	16-64	0,9	hydr.	0013 02 062	lower 0014 13 094	320,00	2	
						0013 02 026	tapet 0863 13 801			
0220 A1 601-02	11,2	/260/114	64-16	1,0	hydr.	0013 02 062	lower 0014 13 094	320,00	2	
						0013 02 026	tappet 0863 13 801			



# Camshafts





Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>VW 16 V 4 Cyl. 4 Valve</b> (1.8 - 2.0 l Golf, Passat, Scirocco, Corrado, Audi 80/90, Seat Toledo, Cordoba, Ibiza..)										
0220 E1 681-01	11,5	268/ /112	22-66	1,6	hydr.	0013 02 062 0013 02 026	lower0014 13 094 tappet 0863 13 801	320,00	2	
0220 A1 681-01	11,5	/268/112	66-22	1,7	hydr.	0013 02 062 0013 02 026	lower 0014 13 094 tappet 0863 13 801	320,00	2	
0220 E1 761-01	11,5	276/ /110	28-68	2,4	hydr.	0013 02 062 0013 02 026	lower 0014 13 094 tappet 0863 13 801	320,00	2	
0220 A1 761-02	11,5	/276/110	68-28	2,5	hydr.	0013 02 062 0013 02 026	lower 0014 13 094 tappet 0863 13 801	320,00	2	
0220 E1 840-03	11,6	284/ /108	34-70	3,1	0,25	0013 02 062 0013 02 026	lower 0014 13 094 <b>tappet 0863 13 028</b>	340,00	2	
0220 A1 840-03	11,6	284/ /108	70-34	3,1	0,30	0013 02 062 0013 02 026	lower 0014 13 094 <b>tappet 0863 13 028</b>	340,00	2	
0220 E1 000-03	12,0	300/ /105	45-75	4,2	0,25	<b>013 02 064/ 220 02 026</b>	<b>upper 0220 13 133 lower 0220 13 135 key 0894 13 8R7 tappet 0863 13 028</b>	340,00	2	
0220 A1 000-03	12,0	/300/105	75-45	4,2	0,30	<b>013 02 064/ 220 02 026</b>	<b>upper 0220 13 133 lower 0220 13 135 key 0894 13 8R7 tappet 0863 13 028</b>	340,00	2	
<b>VW V6 24 valve roller cam follower</b> ( Golf 4 V6 from 05/2001, R32, Phaeton, Audi TT 3,2L, A3, Touareg )										
0452 E1 641-00	5,47 (11,0)	264/ /127	5-79	0,1	hydr.			475,00	2	
0452 A1 601-00	5,47 (11,0)	/260/108	58-22	1,3	hydr.			475,00	2	
0452 E1 681-00	5,47 (11,0)	268/ /127	7-81	0,1	hydr.			475,00	2	
0452 A1 641-00	5,47 (11,0)	/264/108	60-24	1,5	hydr.			475,00	2	
<b>VW VR6 6 Cyl. 2 Valve</b> (Golf, Passat, Corrado, Vento, Sharan, Ford Galaxy, Mercedes V..)										
0268 R1 681-00	11,4	268/268/115	18-70 68-20	0,8/1,1	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
0268 L1 681-00	11,4	268/268/115	18-70 68-20	0,8/1,1	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
0268 R1 641-01	11,4/11,2	264/260/115	17-67 65-15	0,91/0,75	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
0268 L1 641-01	11,4/11,2	264/260/115	17-67 65-15	0,91/0,75	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
0268 L1 761-00	11,5	276/276/112	26-70 70-26	2,08/2,20	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
0268 R1 761-00	11,5	276/276/112	26-70 70-26	2,08/2,20	hydr.	0013 02 062 0013 02 026	lower 0895 00 811 / 814 tappet 0863 13 801	340,00	2	use <b>Schrick</b> valve springs with washer 1.0mm 0895.00.811/814
<b>VW 827 4 Cyl. 2 Valve</b> (1.5 - 2.0 l Golf, Scirocco, Jetta, Passat, Vento, Polo Classic, Audi 80/90, A4, A3, Seat Toledo, Cordoba, Ibiza, Skoda Octavia..)										
0014 01 601-01	11,0	260/260/116	14-66 66-14	0,6/0,7	hydr.	0014 02 054 0014 02 027	upper 0014 13 198 for 7mm valves key 0894 13 8M7 lower 0014 13 199	280,00	2	Recommended for model year 2000 or later!





# Camshafts



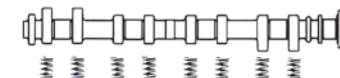
Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>VW 827 4 Cyl. 2 Valve</b> (1.5 - 2.0 l Golf, Scirocco, Jetta, Passat, Vento, Polo Classic, Audi 80/90, A4, A3, Seat Toledo, Cordoba, Ibiza, Skoda Octavia..)										
0014 01 681-01	11,2	268/268/113	21-67 67-21	1,2	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 für 8mm valves key 0894 13 8M8 lower 0014 13 094	280,00	2	Also recommended for G 60!
0014 01 681-02	11,2/11,5	268/276/112	22-66 70-26	1,3/1,8	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 für 8mm valves key 0894 13 8M8 lower 0014 13 094	280,00	2	Recommended for G 60 only!
0014 01 721-02	11,4	272/272/110	26-66 66-26	1,6/1,7	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 für 8mm valves key 0894 13 8M8 lower 0014 13 094	280,00	2	
0014 01 761-00	11,5	276/276/110	28-68 68-28	2,1	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 für 8mm valves key 0894 13 8M8 lower 0014 13 094	280,00	2	Not recommended for G60!
0014 01 881-00	11,7	288/288/110	34-74 74-34	2,9	hydr.	0013 02 062 0013 02 026	upper 0014 13 194 für 8mm valves key 0894 13 8M8 lower 0014 13 094	280,00	2	
0014 01 760-00	11,3	276/276/110	28-68 68-28	2,7	0,35/0,45	0013 02 062 0013 02 026	upper 0014 13 195 (1.6 l) key 0894 13 8R8 upper 0014 13 194 (1.8 l) key 0894 13 8M8 lower 0014 13 094 (alle)	280,00	2	Please secure, that the cams are free travelling.
0014 01 880-02	11,7	288/288/108	36-72 72-36	3,4	0,35/0,45	0013 02 062 0013 02 026	upper 0014 13 195 (1.6 l) key 0894 13 8R8 upper 0014 13 194 (1.8 l) key 0894 13 8M8 upper 0014 13 094 (alle)	335,00	2	Please secure, that the cams are free travelling.
0014 01 040-06	12,3	304/304/106	46-78 78-46	4,6	0,35/0,45	<b>0013 02 064</b> <b>0013 02 031</b>	<b>upper 0050 13 133/RK8</b> <b>0050 13 325/MK8</b> <b>lower 0050 13 126</b> <b>Key 0894 13 8R8/8M8</b> <b>tappet 086313 028</b>	335,00	2	Base circle 34 mm dia. Not for tappets with external lash adjustment plates, (cam contact surface Ø 35 required)!
0014 01 200-01	12,9	320/320/102	58-82 82-58	6,1	0,35/0,45	<b>0013 02 064</b> <b>0013 02 031</b>	<b>upper 0050 13 133/RK8</b> <b>0050 13 325/MK8</b> <b>lower 0050 13 126</b> <b>key 0894 13 8R8/8M8</b> <b>tappet 086313 028</b>	335,00	2	Base circle 34 mm dia. Not for tappets with external lash adjustment plates, (cam contact surface Ø 35 required)!
<b>VW V6 24 valve roller cam follower</b> ( Golf 4 V6 )										
0389 E1 521-00	5,47 (11,0)	252/ /122-91	4-68 34-37	0,09-2,9	hydr.			405,00	2	For engines with vario cam system, not for "hydraulic ring" system !
0389 A1 521-00	5,47 (11,0)	/252/110	58-18	0,7	hydr.			405,00	2	
<b>VW 16V Small Block 4 Cyl. 4 Valve bucket Tappets</b> (Polo )										
0299 E1 561-00	9,5	256/ /112	16-60	0,6	hydr.	242 02 065	upper 0299 13 004 lower 0299 13 005	300,00	2	
0299 A1 561-00	9,5	/256/112	60-16	0,7	hydr.	242 02 065	upper 0299 13 004 lower 0299 13 005	300,00	2	

SCHRICK® 		Camshafts								
Part no.	Cam lift (Valve lift) I / E [mm]	Duration °CRA Intake/Exhaust Peak Timing	Valve Timing °CRA IO-IC-EO-EC	Valve lift at TDC I / E [mm]	Valve clearance I / E [mm]	fat printed accessories are necessary, other ones are recommended		Price EUR / ea. excl. VAT	Discount group	Remarks
						Valve springs	Valve spring retainer, accessories			
<b>VW 16V Small Block 4 Cyl. 4 Valve bucket Tappets (Polo )</b>										
0299 E1 641-00	10,0	264/ /110	22-62	1,1	hydr.	242 02 065	upper 0299 13 004 lower 0299 13 005	300,00	2	
0299 A1 641-00	10,0	/264/110	62-22	1,2	hydr.	242 02 065	upper 0299 13 004 lower 0299 13 005	300,00	2	
0299 E1 800-00	10,4	280/ /110	33-67	3,0	0,25	<b>242 02 065</b>	<b>upper/lower 0299 13 004/5 spacer 0863 11 600</b>	300,00	2	base circle radius R=16,5 (0,5mm smaller then standard)
0299 A1 800-00	10,4	/280/110	67-33	3,0	0,30	<b>242 02 065</b>	<b>upper/lower 0299 13 004/5 spacer 0863 11 600</b>	300,00	2	base circle radius R=16,5 (0,5mm smaller then standard)
0299 E1 920-01	11,6	292/ /104	42-70	4,2	0,25	<b>299 02 050</b>	<b>upper/lower 0299 13 004/5 spacer 0863 11 600</b>	300,00	2	base circle radius R=15,5 (1,5mm smaller then standard)
0299 A1 920-01	11,6	/292/104	70-42	4,2	0,30	<b>299 02 050</b> <b>299 02 031</b>	<b>upper/lower 0299 13 004/5 spacer 0863 11 600</b>	300,00	2	base circle radius R=15,5 (1,5mm smaller then standard)
<b>VW 4 Cyl. 4V 2,0L FSI &amp; TFSI (Golf V GTI, A3, Passat, A4, Jetta)</b>										
0467 A1 521-00	6,56 (11,0)	/252/107	53-19	0,62	hydr.			475,00	2	For FSI only!
0467 E1 461-00	6,57 (11,0)	246/ /124-82	1-67 41-25	0,0-2,8	hydr.			475,00	2	TFSI intake camshaft, to be used with 0467 A1 521-01
0467 E1 561-00	7,09 (12,0)	256/ /129-87	1-77 41-35	0,0-2,9	hydr.			475,00	2	FSI intake non Turbo, to be used with 0467 A1 521-00
0467 A1 521-01	6,56 (11,0)	/252/111	57-15	0,41	hydr.			475,00	2	For TFSI only!
<b>Suzuki 4Cyl. 4V 1,4-1,8L SWIFT, IGNIS</b>										
0484 E1 480-00	9,0	248°/ /117°-57°	7-61 67-1	0,4-6,2	0,20			395,00	2	
0484 A1 400-00	8,5	/240°/101°	41-19	1,15	0,35			395,00	2	
0484 E1 520-00	9,00	252/ /125-65	1-71 61-11	0,3-5,55	0,20			395,00	2	1,6 Sport M16A Swift III
0484 A1 460-00	9,00	/246/107	50-16	0,90	0,35			395,00	2	1,6 Sport M16A Swift III

SCHRICK® 		Camshaft Kits						
Part no.	Camshaft	include:			EUR per kit excl. VAT	Discount group	Remarks	
		Valve Springs	Valve Spring Retainers	Cam Followers, accessoires				
<b>Audi 5 Cyl. 2 Valve</b>								
0064 10 721-02	1 x 0064 01 721-02	10 x 0013 02 062 10 x 0013 02 026	10 x 0014 13 194 titanium 10 x 0014 13 094 steel 20 x 0894 13 8M8 key	10 x 0863 13 801 hydr. tappet	779,00	1	without fuel pump - drive, without vacuum pump drive, fits pulley inner diam. 22,0mm cyl.	
0064 10 761-00	1 x 0064 01 761-00	10 x 0013 02 062 10 x 0013 02 026	10 x 0014 13 194 titanium 10 x 0014 13 094 steel 20 x 0894 13 8M8 key	10 x 0863 13 801 hydr. tappet	779,00	1	without fuel pump - drive, without vacuum pump drive, fits pulley inner diam. 22,0mm cyl.	



# Camshaft Kits

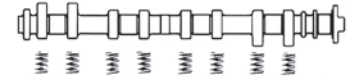


include:

Part no.	Camshaft	Valve Springs	Valve Spring Retainers	Cam Followers, accessoires	EUR per kit excl. VAT	Discount group	Remarks
<b>Audi 4 Cyl. 5 Valve</b> (A3, A4, VW Golf 4, Passat, Skoda Octavia..)							
0301 10 960-00	1 x 0301 E1 960-00 1 x 0301 A1 920-00	12 x 0301 02 060 8 x 0014 02 054 8 x 0014 02 027	12 x 0301 13 007 titanium 8 x 0301 13 008 titanium 8 x 0301 13 009 steel 40 x 0894 13 8M6 key	20 x 0863 14 500 mech. spacer	1644,00	1	group A, using standard valves
0301 10 960-10	1 x 0301 E1 960-00 1 x 0301 A1 920-00	12 x 0301 02 060 8 x 0299 02 050 8 x 0299 02 031	12 x 0301 13 010 titanium 8 x 0299 13 006 titanium 8 x 0299 13 007 steel 40 x 0894 13 8S6 key 12 x 0301 13 011 int. valve 8 x 0301 13 012 exh. valve	20 x 0863 14 500 mech. spacer	2362,00	1	group H, with Schrick valves
<b>BMW M20 6 Cyl. 2 Valve</b> (2.0 - 2.5 l)							
0056 10 720-20 0056 10 720-10	1 x 0056 01 720-00 1 x 0056 01 720-00	12 x 0002 02 090 12 x 0056 02 062 12 x 0056 02 022			425,00 521,00	1 1	single valve springs (- 1985) double valve springs (1985 -)
<b>BMW S14 4 Cyl. 4 Valve</b> (M3 E30)							
0227 10 840-00	1 x 0227 D1 840-00 1 x 0227 D1 760-01	16 x 0013 02 064 16 x 0220 02 026	16 x 0227 13 051 titanium 16 x 0227 13 052 steel 32 x 0894 13 8M7 key 8 x 0227 13 016 int. valve 8 x 0227 13 017 exh. valve		2150,00	1	Valve length designed for use with recommended Schrick racing tappets 022713804!
0227 10 920-05	1 x 0227 D1 920-05 1 x 0227 D1 840-00	16 x 0013 02 064 16 x 0220 02 026	16 x 0227 13 051 titanium 16 x 0227 13 052 steel 32 x 0894 13 8M7 key 8 x 0227 13 016 int. valve 8 x 0227 13 017 exh. valve		2175,00	1	Valve length designed for use with recommended Schrick racing tappets 022713804!
0227 10 200-00	1 x 0227 D1 200-02 1 x 0227 D1 080-01	16 x 0227 02 113	16 x 0227 13 055 titanium 16 x 0227 13 058 steel 32 x 0894 13 8L7 key 8 x 0227 13 053 int. valve 8 x 0227 13 054 exh. valve	16 x 0227 13 805 tappet	3635,00	2	
<b>BMW S50, S52 6 Cyl. 4 Valve</b> (M3 E36)							
0284 10 960-0V2	1 x 0284 E1 960-0V2 1 x 0284 A1 960-0V2	24 x 0013 02 064 24 x 0220 02 026	24 x 0284 13 010 titanium 24 x 0284 13 011 steel 48 x 0894 13 8M6 key		2100,00	1	group A, Using standard valves tappet 227 13 805 recommended!



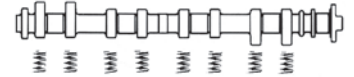
## Camshaft Kits



Part no.	include:				EUR per kit excl. VAT	Discount group	Remarks
	Camshaft	Valve Springs	Valve Spring Retainers	Cam Followers, accessoires			
<b>BMW S50, S52 6 Cyl. 4 Valve</b> (M3 E36)							
0284 10 160-1V2	1 x 0284 E1 160-1V2 1 x 0284 A1 080-1V2	24 x 0227 02 113	24 x 0284 13 012 titanium 24 x 0284 13 013 steel 48 x 0894 13 8L6 key 12 x 0284 13 014 int. Valve 12 x 0284 13 015 exh. Valve	24 x 0227 13 805 tappet	5250,00	2	group H, with Schrick valves
<b>BMW S54</b> (B32) 6 Cyl. 4 Valve							
0415 10 880-01	1 X 0415 E1 880-01 1 X 0415 A1 800-01	24 X 0415 02 095	upper, Titanium 24 X 0415 13 011 lower, Steel 24 X 0415 13 012 keys 48 X 0894 13 8M6	24 X 0415 13 800	3950,00	2	
0415 10 880-00	1 X 0415 E1 880-00 1 X 0415 A1 800-00			24 X 0415 13 800	1925,00	2	
<b>Ford Zetec SE 4 Cyl. 4 Valve</b> (1.7 l Puma..)							
0330 10 600-V0	1 x 0330 E1 600-V0 1 x 0330 A1 360-00	16 x 0002 02 043	16 x 0330 13 003 titanium 32 x 0894 13 8L6 key	16 x 086613 070 lash cap	1138,00	1	
<b>Opel 16 V C20XE 4 Cyl. 4 Valve</b> (2.0 l Kadett, Astra, Calibra, Vectra.. 1988 - 1994)							
0242 10 681-00	1 x 0242 E1 681-00 1 x 0242 A1 681-00	16 x 0242 02 065	16 x 0242 13 030 titanium 32 x 0894 13 8M7 key	16 x 0863 13 803 hydr. tappet	1215,00	1	
0242 10 040-00	1 x 242 E1 040-00 1 x 242 A1 040-00	16 x 0242 02 054 16 x 0242 02 019	16 x 0242 13 029 titanium 16 x 0242 13 010 steel 32 x 0894 13 8M7 key	16 x 0863 14 600 mech. spacer	1315,00	1	group A racing
<b>Opel 16V Small Block 4 Cyl. 4 Valve</b> (1.4 - 1.6 l Corsa, Tigra, Astra, Vectra..)							
0281 10 800-00	1 x 0281 E1 800-00 1 x 0281 A1 800-00	16 x 0242 02 065	16 x 0299 13 004 titanium 32 x 0894 13 8M6 key	16 x 0863 14 600 mech. spacer	1050,00	1	group A rallye
<b>Opel 4 Cyl. 4 Valve roller cam follower</b> ( 2.2 l Zafira, Speedster ... )							
0412 10 521-01	1 x 0412 E1 521-01 1 x 0412 A1 481-01	16 x 0242 02 054 16 x 0242 02 019	16 x 0412 13 004 titanium 16 x 0895 00 820 steel 32 x 0894 13 8M6 key		1300,00	1	Cylinderhead must be machined below springs.
<b>Porsche 911 6 Cyl. 2 Valve</b>							
0005 10 200-01	1 x 0005 L1 200-01 1 x 0005 R1 200-01	12 x 0013 02 064 12 x 0013 02 031	12 x 0005 13 036 titanium 12 x 0005 13 035 steel 24 x 0894 13 8R8 key	6 x 0005 13 003 int. valve 6 x 0005 13 004 exh. valve	1890,00	1	Internal thread, bearings 49 mm dia. Porsche racing rocker arms Nr.96210530800 required!
0005 10 880-02	1 x 0005 L1 880-02 1 x 0005 R1 880-02	12 x 0013 02 064 12 x 0013 02 031	12 x 0005 13 042 titanium 12 x 0005 13 035 steel		1315,00	1	Internal thread, bearings 49 mm dia. (Carrera 2 and Carrera 4)



# Camshaft Kits

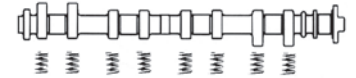


include:

Part no.	Camshaft	Valve Springs	Valve Spring Retainers	Cam Followers, accessoires	EUR per kit excl. VAT	Discount group	Remarks
<b>Porsche 911 6 Cyl. 2 Valve</b>							
0005 10 921-01	1 x 0005 L1 921-01 1 x 0005 R1 921-01	12 x 0013 02 064 12 x 0013 02 031	12 x 0005 13 041 titanium 12 x 0005 13 035 steel 12 x 0005 13 043 Steel 24 x 0894 13 8M8 Key	6 x 0005 13 001 int. valve 6 x 0005 13 002 exh. valve	1885,00	1	Internal thread, bearings 49 mm dia. (993 - Carrera 1994 - ).
<b>Porsche 996 6 Cyl. 4 Valve Water Cooling</b> (Boxster, 911 Carrera..1998 - 3,4L )							
0319 10 800-00	1 X 0319 E1 800-R0 1 X 0319 E1 800-L0 1 X 0319 A1 720-R0 1 X 0319 A1 720-L0	24 X 0299 02 050 24 X 0299 02 031	24 X 0261 13 039 titanium 48 X 0894 13 8M6 key 48 X 0895 00 820 washer	24 X 0863 13 023 tappet	3835,00	1	Order lash caps additional in needed thickness!
<b>VW 827 4 Cyl. 2 Valve</b> (1.5 - 2.0   Golf, Scirocco, Jetta, Passat, Vento, Polo Classic, Audi 80/90, A4, A3, Seat Toledo, Cordoba, Ibiza, Skoda Octavia..)							
0014 10 681-01	1 x 0014 01 681-01	8 x 0013 02 062 8 x 0013 02 026	8 x 0014 13 194 titanium 8 x 0014 13 094 steel 16 x 0894 13 8M8 key	8 x 0863 13 801 hydr. tappet	665,00	1	Also recommended for G 60!
0014 10 681-02	1 x 0014 01 681-02	8 x 0013 02 062 8 x 0013 02 026	8 x 0014 13 194 titanium 8 x 0014 13 094 steel 16 x 0894 13 8M8 key	8 x 0863 13 801 hydr. tappet	665,00	1	Recommended for G 60 only!
0014 10 681-11	1 x 0014 01 681-01	8 x 0014 02 054 8 x 0014 02 027	8 x 0014 13 198 titanium 8 x 0014 13 199 steel 16 x 0894 13 8M7 key	8 x 0863 13 801 hydr. tappet	680,00	1	valve stem 7mm (MY 1995- and New Beetle)
0014 10 721-02	1 x 0014 01 721-02	8 x 0013 02 062 8 x 0013 02 026	8 x 0014 13 194 titanium 8 x 0014 13 094 steel 16 x 0894 13 8M8 key	8 x 0863 13 801 hydr. tappet	665,00	1	Please secure, that the cams are free travelling.
0014 10 760-00	1 x 0014 01 760-00	8 x 0013 02 062 8 x 0013 02 026	8 x 0014 13 194 titanium 8 x 0014 13 094 steel 16 x 0894 13 8M8 key		540,00	1	Please secure, that the cams are free travelling. For Golf I GTI 1.8L!
0014 10 760-10	1 x 0014 01 760-00	8 x 0013 02 062 8 x 0013 02 026	8 x 0014 13 195 titanium 8 x 0014 13 094 steel 16 x 0894 13 8R8 key		540,00	1	Please secure, that the cams are free travelling. For Golf I GTI 1.6L!
<b>VW 16 V 4 Cyl. 4 Valve</b> (1.8 - 2.0   Golf, Passat, Scirocco, Corrado, Audi 80/90, Seat Toledo, Cordoba, Ibiza..)							
0220 10 601-00	1 x 0220 E1 601-02 1 x 0220 A1 601-02	16 x 0013 02 062 16 x 0013 02 026	16 x 0014 13 094	8 x 0863 13 801 hydr. Tappet	1135,00	1	
0220 10 681-00	1 x 0220 E1 681-01 1 x 0220 A1 681-01	16 x 0013 02 062 16 x 0013 02 026	16 x 0014 13 094	8 x 0863 13 801 hydr. tappet	1135,00	1	
0220 10 840-03	1 x 0220 E1 840-03V 1 x 0220 A1 840-03	16 x 0013 02 062 16 x 0013 02 026	16 x 0014 13 094	16 x 0863 13 028 tappet 1 x 0220 13 045 adj. timing gear 1 x 0220 13 015 adj. sprocket on int. cam	1960,00	1	group A rallye


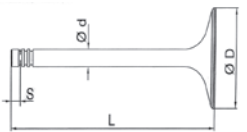



## Camshaft Kits



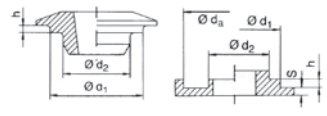
include:

Part no.	Camshaft	Valve Springs	Valve Spring Retainers	Cam Followers, accessoires	EUR per kit excl. VAT	Discount group	Remarks
<b>VW 16 V 4 Cyl. 4 Valve</b> (1.8 - 2.0   Golf, Passat, Scirocco, Corrado, Audi 80/90, Seat Toledo, Cordoba, Ibiza..)							
0220 10 000-03	1 x 0220 E1 000-03V 1 x 0220 A1 000-03	16 x 0013 02 064 16 x 0220 02 026	16 x 0220 13 133 titanium 16 x 0220 13 135 steel 32 x 0894 13 8R7 key 8 x 0220 13 020 int. valve 8 x 0220 13 021 exh. valve	16 x 0863 13 028 tappet 1 x 0220 13 045 adjust. timing gear 1 x 0220 13 015 adj. sprocket on int. camshaft.	2820,00	1	group A racing
<b>VW VR6 6 Cyl. 2 Valve</b> (Golf, Passat, Corrado, Vento, Sharan, Ford Galaxy, Mercedes V..)							
0268 10 681-00	1 x 0268 L1 681-00 1 x 0268 R1 681-00	12 x 0013 02 062 12 x 0013 02 026	12 x 0895 00 811 12 x 0895 00 814	12 x 0863 13 801 hydr. tappet	1025,00	1	use Schrick valve springs with washer 1.0mm 0895.00.811/814
0268 10 761-00	1 x 0268 L1 761-00 1 x 0268 R1 761-00	12 x 0013 02 062 12 x 0013 02 026	12 x 0895 00 811 12 x 0895 00 814	12 x 0863 13 801 hydr. tappet	1025,00	1	use Schrick valve springs with washer 1.0mm 0895.00.811/814
<b>VW 16V Small Block 4 Cyl. 4 Valve bucket Tappets</b> (Polo )							
0299 10 561-00	1 x 0299 E1 561-00 1 x 0299 A1 561-00	16 x 0242 02 065	16 x 0299 13 004 titanium 16 x 0299 13 005 steel 32 x 0894 13 8M6 key		1075,00	1	
<b>VW 16V Small Block 4 Cyl. 4 Valve bucket Tappets</b> (Polo )							
0299 10 800-00	1 x 0299 E1 800-00 1 x 0299 A1 800-00	16 x 0242 02 065	16 x 0299 13 004 titanium 16 x 0299 13 005 steel 32 x 0894 13 8M6 key	16 x 0863 11 600 mech. spacer	1190,00	1	group A rallye
0299 10 920-01	1 x 0299 E1 920-01 1 x 0299 A1 920-01	16 x 0299 02 050 16 x 0299 02 031	16 x 0299 13 006 titanium 16 x 0299 13 007 steel 32 x 0894 13 8S6 key 8 x 0299 13 010 int. valve 8 x 0299 13 011 exh. valve	16 x 0863 11 700 mech. spacer	1800,00	1	group A racing
0299 10 920-11	1 x 0299 E1 920-01 1 x 0299 A1 920-01	16 x 0299 02 050 16 x 0299 02 031	16 x 0299 13 006 titanium 16 x 0299 13 007 steel 32 x 0894 13 8S6 key 8 x 0299 13 008 int. valve 8 x 0299 13 009 exh. valve		1690,00	1	group H racing

		<h1 style="text-align: center;">Valves</h1>									
Part No.	D [mm] Head dia.	L [mm] Length	d [mm] Stem dia.	s [mm] Groove position	Number of grooves	Keys	Type	Price EUR / ea. excl. VAT	Discount group	Remarks	
0301 13 011	27,5	105,2	6	3,8	1	SK6	intake	27,50	2 - 12		
0301 13 012	30	104	6	3,8	1	SK6	exhaust	45,00	2 - 8	Nimonic / Inconel	
0002 13 005	39	103,5	8	3,8	3	MK8	exhaust	27,50	2 - 4		
0002 13 022	48	103,5	8	3,8	3	MK8	intake	27,50	2 - 4		
0056 13 001	42	103	7	4,6	3	MK7	intake	27,50	2 - 6		
0056 13 002	36	103	7	4,6	3	MK7	exhaust	27,50	2 - 6		
0227 13 016	38	123	7	12,2	3	MK7	intake	34,00	2 - 8		
0227 13 017	32	125	7	13,2	3	MK7	exhaust	47,50	2 - 8	Nimonic / Inconel	
0227 13 053	39	123	7	12,7	1	LK7	intake	34,00	2 - 8		
0227 13 054	32,5	125	7	13,7	1	LK7	exhaust	47,50	2 - 8	Nimonic / Inconel	
0284 13 014	35,8	122,35	6	13,7	1	LK6	intake	34,00	2 - 12		
0284 13 015	31,5	123,85	6	13,7	1	LK6	exhaust	47,50	2 - 12	Nimonic / Inconel	
0392 13 002	37	115,9	5	4	1	SK5	intake	34,00	2 - 4		
0392 13 001	33	117,5	5	5,5	1	SK5	exhaust	34,00	2 - 4		
0424 13 004	31,3	109,5	6		3	MK6	intake	34,00	2 - 8		
0424 13 005	26	118,3	6		3	MK6	exhaust	47,50	2 - 8	Nimonic / Inconel	
0005 13 001	50	111	8	4	3	MK8	intake	34,00	2 - 6		
0005 13 002	43	110	8	4	3	MK8	exhaust	47,50	2 - 6	Nimonic / Inconel	
0005 13 003	52	109	8	6	1	RK8	intake	34,00	2 - 6	retainer reference 005 13 036	
0005 13 004	44	108	8	6	1	RK8	exhaust	47,50	2 - 6	Nimonic / Inconel, retainer reference 0005 13 036	
0014 13 018	35	106,5	8	3,5	1	RK8	exhaust	27,50	2 - 4	Heron-combustion chamber	
0014 13 017	40	106,5	8	3,5	1	RK8	intake	27,50	2 - 4	Heron-combustion chamber	
0014 13 174	33,1	90,8	8	2,8	3	MK8	exhaust	27,50	2 - 4		
0014 13 173	40	90,8	8	3	3	MK8	intake	27,50	2 - 4		
0220 13 020	32	95,4	7	4,5	1	RK7	intake	27,50	2 - 8		
0220 13 021	28	98,2	7	4,5	1	RK7	exhaust	27,50	2 - 8		
0220 13 022	27	98,2	7	4,5	1	RK7	exhaust	27,50	2 - 8		
0268 13 001	41	106	7	3	3	MK7	intake	27,50	2 - 6		
0268 13 002	36,2	106,4	7	3	3	MK7	exhaust	27,50	2 - 6		
0299 13 008	32	111,1	6	17,7	1	SK6	intake	27,50	2 - 8		
0299 13 009	28	110,4	6	17,7	1	SK6	exhaust	27,50	2 - 8		
0299 13 010	29,5	97,9	6	4,5	1	SK6	intake	27,50	2 - 8		
0299 13 011	26	97,2	6	4,5	1	SK6	exhaust	27,50	2 - 8		

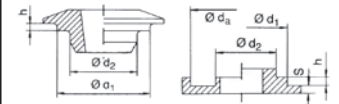
		<h1 style="text-align: center;">Valve keys</h1>					
Discount group		2-16		Discount group		2-16	
Part No.	Specification	groove/s	Price EUR / ea. excl. VAT	Part No.	Specification	groove/s	Price EUR / ea. excl. VAT
0894 13 8K6	clamping, 14,25°, KK6, hardened	1	1,10	0894 13 8S5	clamping, 10°, SK5, hardened	1	1,10
0894 13 8K7	clamping, 14,25°, KK7, hardened	1	1,10	0894 13 8S55	clamping, 10°, SK5,5 , hardened	1	1,10
0894 13 8K8	clamping, 14,25°, KK8, hardened	1	1,10	0894 13 8S6	clamping, 10°, SK6, hardened	1	1,10
0894 13 8L6	clamping, 14,25°, LK6, hardened	1	1,10	0894 13 8M5	non-clamping, 14,25°, MK5, hardened	3	1,10
0894 13 8L7	clamping, 14,25°, LK7, hardened	1	1,10	0894 13 8M6	non-clamping, 14,25°, MK6, hardened	3	1,10
0894 13 8R6	clamping, 10°, RK6, hardened	1	1,10	0894 13 8M7	non-clamping, 14,25°, MK7, hardened	3	1,10
0894 13 8R7	clamping, 10°, RK7, hardened	1	1,10	0894 13 8M8	non-clamping, 14,25°, MK8, hardened	3	1,10
0894 13 8R8	clamping, 10°, RK8, hardened	1	1,10	0894 13 8X4	clamping, 15°, 4mm	1	1,50

SCHRICK®			Valve blanks								
Stem ground, Head premachined, without key groves											
Part No.	d [mm] Stem dia.	D [mm] Head dia.	L [mm] Length	Price EUR / ea. excl. VAT	Discount group	Part No.	d [mm] Stem dia.	D [mm] Head dia.	L [mm] Length	Price EUR / ea. excl. VAT	Discount group
Bimetal - <b>Steel</b> , for intake and exhaust up to appr. 70 KW / l						Bimetal - <b>Nimonic</b> , for exhaust, when more then appr. 70 KW / l					
0894 50 30S	4,98	30	124	16,00	3	0894 50 30N	4,98	30	124	25,00	3
0894 55 30S	5,48	30	124	16,00	3	0894 55 30N	5,48	30	124	25,00	3
0894 60 30S	5,98	30	139	16,00	3	0894 60 30N	5,98	30	139	25,00	3
0894 70 30S	6,98	30	139	16,00	3	0894 70 30N	6,98	30	139	25,00	3
0894 80 30S	7,98	30	139	16,00	3	0894 13 09S	7,98	30	139	25,00	3
0894 50 34S	4,98	34	124	17,50	3	0894 50 34N	4,98	34	124	30,00	3
0894 55 34S	5,48	34	124	17,50	3	0894 55 34N	5,48	34	124	30,00	3
0894 60 34S	5,98	34	139	17,50	3	0894 60 34N	5,98	34	139	30,00	3
0894 70 34S	6,98	34	139	17,50	3	0894 70 34N	6,98	34	139	30,00	3
0894 80 34S	7,98	34	139	17,50	3	0894 80 34N	7,98	34	139	30,00	3
0894 50 38S	4,98	38	124	19,10	3	0894 55 38N	5,48	38	124	33,50	3
0894 55 38S	5,48	38	124	19,10	3	0894 60 38N	5,98	38	139	33,50	3
0894 60 38S	5,98	38	139	19,10	3	0894 70 38N	6,98	38	139	33,50	3
0894 70 38S	6,98	38	139	19,10	3	0894 80 38N	7,98	38	139	33,50	3
0894 80 38S	7,98	38	139	19,10	3	0894 70 41N	6,98	41	139	38,20	3
0894 55 41S	5,48	41	124	20,00	3	0894 80 41N	7,98	41	139	38,20	3
0894 60 41S	5,98	41	139	20,00	3	0894 70 45N	6,98	45	139	41,20	3
0894 70 41S	6,98	41	139	20,00	3	0894 80 45N	7,98	45	139	41,20	3
0894 80 41S	7,98	41	139	20,00	3	0894 13 101	6,98	50	139	41,20	3
0894 60 45S	5,98	45	139	21,50	3	0894 80 50N	7,98	50	139	41,20	3
0894 70 45S	6,98	45	139	21,50	3						
0894 80 45S	7,98	45	139	21,50	3						
0894 70 50S	6,98	50	139	23,00	3						
0894 80 50S	7,98	50	139	23,00	3						
0894 80 53S	7,98	53	139	23,00	3						

SCHRICK®			Valve Spring Retainers								
Part No.	d1 [mm]	d2 [mm]	h [mm]	s [mm]	keys	Type, material	spring reference	Price EUR / ea. excl. VAT	Discount group	Remarks	
0005 13 035	31,4	22,6	-1,0	3,9		lower, steel	0013 02 064 & 031	7,00	2 - 12		
0005 13 036	23,6	17,0	3,0		10° RK8	upper, titanium	0013 02 064 & 031	18,00	2 - 12		
0005 13 041	23,61	17,0	3,0		0894 13 8R8 14,25° MK8	upper, titanium	0013 02 064 & 031	18,00	2 - 12	Porsche Carrera (993) 0005 13 001/002 valves 0005 13 035 043 lower retainer	
0005 13 042	23,6	17,0	3,0		14,25° MK9	upper, titanium	0013 02 064 & 031	18,00	2 - 12	Porsche Carrera 2 4 0005 13 035 lower retainer	
0005 13 043				3,3		lower, steel		7,00	2 - 12	Porsche Carrera (993) centering spacer for 0005 13 035 lower retainer	
0014 13 094	22,5	16,0	2,0	1,0		lower, steel	0013 02 062 & 026	4,50	2 - 8		
0014 13 194	23,0	16,3	2,0		14,25° MK8	upper, titanium	0013 02 062 & 026	15,50	2 - 8		
0014 13 195	23,0	16,3	2,0		0894 13 8M8 10° RK8	upper, titanium	0013 02 062 & 026	15,50	2 - 8		
0014 13 198	22,4	16,6	2,2		0894 13 8R8 14,25° MK7	upper, titanium	0014 02 054 & 027	15,50	2 - 8		
0014 13 199	22,4	16,6	2,2	1,5		lower, steel	0014 02 054 & 027	6,50	2 - 8		
0050 13 126	23,3	16,6	1,0	1,0		lower, steel	0013 02 064 & 031	6,50	2 - 8		
0050 13 133	23,3	16,7	1,0		10° RK8	upper, steel	0013 02 064 & 031	9,20	2 - 8		
0050 13 325	23,6	17,0	1,0		0894 13 8R8 14,25° MK8	upper, steel	0013 02 064 & 031	9,20	2 - 8		
0220 13 133	23,6	17,4	2,0		0894 13 8M8 10° RK7	upper, titanium	0013 02 064 0220 02 026 0220 02 103	15,50	2 - 16		
0220 13 134	23,6	17,4	2,0		14,25° MK7 0894 13 8M7	upper, titanium	0013 02 064 0220 02 026	15,50	2 - 16		
0220 13 135	23,6	17,4	2,0	1,5		lower, steel	0013 02 064 0220 02 026	6,50	2 - 16		
0220 13 144	23,6	17,4	2,0			lower, steel	0220 02 103	6,50	2 - 16	with upper retainer 0220 13 133	
0227 13 051	23,6	17,4	2,0		14,25° MK7 0894 13 8M7	upper, titanium	0013 02 064 0220 02 026	18,00	2 - 16		
0227 13 052	23,6	17,4	2,0	2,0		lower, steel	0013 02 064 0220 02 026	7,00	2 - 16		
0227 13 055	22,8	16,6	2,0		14,25° LK7 0894 13 8L7	upper, titanium	0227 02 113	18,00	2 - 16		
0227 13 058		16,6		1,0		lower, steel	0227 02 113	7,00	2 - 16		
0227 13 057	23,6	17,4	2,0		14,25° LK6 0894 13 8L6	upper, titanium	0013 02 064 0220 02 026	18,00	2 - 16		



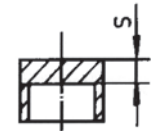
# Valve Spring Retainers




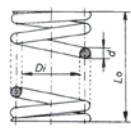
Part No.	d1 [mm]	d2 [mm]	h [mm]	s [mm]	keys	Type, material	Spring reference	Price EUR / ea. excl. VAT	Discount group	Remarks
0227 13 064	23,6	18,0	2,0		14,25° LK7 0894 13 8L7	upper, Titanium	0220 02 103	18,00	2 - 16	
0227 13 065		18,0		2,7		lower, steel	0220 02 103	7,00	2 - 16	
0242 13 010	21,4	16,3	2,0	1,8		lower, steel	0242 02 054 & 019	6,50	2 - 16	
0242 13 029	21,0	15,9	2,1		14,25° MK7 0894 13 8M7	upper, titanium	0242 02 054 & 019	15,50	2 - 16	
0242 13 030	20,4				14,25° MK7 0894 13 8M7	upper, titanium	0242 02 065	15,50	2 - 16	
0261 13 039	21,5	16,0	2,1		14,25° MK6 0894 13 8M6	upper, titanium	0299 02 050 & 031	18,00	2 - 24	
0284 13 010	23,6	16,8	2,0		14,25° MK6 0894 13 8M6	upper, titanium	0013 02 064 0220 02 026	18,00	2 - 24	
0284 13 011	23,6	16,8	2,0	4,0		lower, steel	0013 02 064 0220 02 026	7,00	2 - 24	
0284 13 012	22,8	16,6	2,2		14,25° LK6 0894 13 8L6	upper, titanium	0227 02 113	18,00	2 - 24	
0284 13 013		16,6		3,0		lower, steel	0227 02 113	7,00	2 - 24	
0299 13 004	20,4				14,25° MK6 0894 13 8M6	upper, titanium	0242 02 065	15,50	2 - 16	
0299 13 005	20,4			1,5		lower, steel	0242 02 065	6,50	2 - 16	
0299 13 006	21,5	16,0	2,1		10° SK6 0894 13 8S6	upper, titanium	0299 02 050 & 031	15,50	2 - 8	
0299 13 007	28,3		0	1,5		lower, steel	0299 02 050 & 031	6,50	2 - 8	
0299 13 012	21,5	16,0	2,1		10° SK5 0894 13 8S5	upper, titanium	0299 02 050 & 031	15,50	2 - 16	
0301 13 007	14,2				14,25° MK6 0894 13 8M6	upper, titanium	0301 02 060	15,50	2 - 12	
0301 13 008	22,4	16,6	2,7		14,25° MK6 0894 13 8M6	upper, titanium	0014 02 054 & 027	15,50	2 - 8	exhaust
0301 13 009	22,2	16,6	2,0			lower, steel	0014 02 054 & 027	6,50	2 - 8	exhaust
0301 13 010	14,2				10° SK6 0894 13 8S6	upper, titanium	0301 02 060	15,50	2 - 12	intake
0330 13 003	17,0				14,25° LK6 0894 13 8L6	upper, titanium	0002 02 043	15,50	2 - 16	
0412 13 004	21,0	15,9	2,0		14,25° MK6 0894 13 8M6	upper, titanium	0242 02 054 & 019	15,50	2 - 16	
0415 13 012	15,45		3,5			lower Steel	0415 02 095	9,00	2-24	
0415 13 011	21,0	15,0	2,0		14,25° MK6	upper Titanium	0415 02 095	18,00	2-24	
0002 13 059	23,5	17,0	2,0		14,25° MK8 0894 13 8M8	upper, titanium	0002 02 080 & 043	15,50	2-8	
0483 13 004	12,1				14,25° MK5	upper, titanium		15,50	2-16	For original valve spring!





# Valve lash caps



Price EUR / ea. excl. VAT			Discount group			Price EUR / ea. excl. VAT			Discount group		
4,25	2-8		4,25	2-8		4,25	2-8		4,25	2-8	
inner dia. 5 mm Part No.	inner dia. 5,5 mm Part No.	inner dia. 6 mm Part No.	inner dia. 7 mm Part No.	inner dia. 8 mm Part No.	S thickness [mm]	inner dia. 5 mm Part No.	inner dia. 5,5 mm Part No.	inner dia. 6 mm Part No.	inner dia. 7 mm Part No.	inner dia. 8 mm Part No.	S thickness [mm]
		0866 13 100	0867 13 100		1,00	0865 13 280	0855 13 280	0866 13 280	0867 13 280	0868 13 280	2,80
0865 13 200	0855 13 200	0866 13 200	0867 13 200	0868 13 200	2,00	0865 13 285	0855 13 285	0866 13 285	0867 13 285	0868 13 285	2,85
0865 13 205	0855 13 205	0866 13 205	0867 13 205	0868 13 205	2,05	0865 13 290	0855 13 290	0866 13 290	0867 13 290	0868 13 290	2,90
0865 13 210	0855 13 210	0866 13 210	0867 13 210	0868 13 210	2,10	0865 13 295	0855 13 295	0866 13 295	0867 13 295	0868 13 295	2,95
0865 13 215	0855 13 215	0866 13 215	0867 13 215	0868 13 215	2,15	0865 13 300	0855 13 300	0866 13 300	0867 13 300	0868 13 300	3,00
0865 13 220	0855 13 220	0866 13 220	0867 13 220	0868 13 220	2,20	0865 13 305	0855 13 305	0866 13 305	0867 13 305	0868 13 305	3,05
0865 13 225	0855 13 225	0866 13 225	0867 13 225	0868 13 225	2,25	0865 13 310	0855 13 310	0866 13 310	0867 13 310	0868 13 310	3,10
0865 13 230	0855 13 230	0866 13 230	0867 13 230	0868 13 230	2,30	0865 13 315	0855 13 315	0866 13 315	0867 13 315	0868 13 315	3,15
0865 13 235	0855 13 235	0866 13 235	0867 13 235	0868 13 235	2,35	0865 13 320	0855 13 320	0866 13 320	0867 13 320	0868 13 320	3,20
0865 13 240	0855 13 240	0866 13 240	0867 13 240	0868 13 240	2,40	0865 13 325	0855 13 325	0866 13 325	0867 13 325	0868 13 325	3,25
0865 13 245	0855 13 245	0866 13 245	0867 13 245	0868 13 245	2,45	0865 13 330	0855 13 330	0866 13 330	0867 13 330	0868 13 330	3,30
0865 13 250	0855 13 250	0866 13 250	0867 13 250	0868 13 250	2,50	0865 13 335	0855 13 335	0866 13 335	0867 13 335	0868 13 335	3,35
0865 13 255	0855 13 255	0866 13 255	0867 13 255	0868 13 255	2,55	0865 13 340	0855 13 340	0866 13 340	0867 13 340	0868 13 340	3,40
0865 13 260	0855 13 260	0866 13 260	0867 13 260	0868 13 260	2,60	0865 13 345	0855 13 345	0866 13 345	0867 13 345	0868 13 345	3,45
0865 13 265	0855 13 265	0866 13 265	0867 13 265	0868 13 265	2,65	0865 13 350	0855 13 350	0866 13 350	0867 13 350	0868 13 350	3,5
0865 13 270	0855 13 270	0866 13 270	0867 13 270	0868 13 270	2,70	0865 13 400	0855 13 400	0866 13 400	0867 13 400	0868 13 400	4
0865 13 275	0855 13 275	0866 13 275	0867 13 275	0868 13 275	2,75	0865 13 450	0855 13 450	0866 13 450	0867 13 450	0868 13 450	4,5

			<h2 style="text-align: center;">Valve Springs</h2>									
Part No.	Da [mm] Outer diameter	Di [mm] Inner diameter	d [mm] wire diameter	L1 [mm] max. installed height	L2 [mm] min operating height	S [mm] max valve lift	F1 [mm] force at L1	F2 [mm] force at L2	Price EUR / ea. excl. VAT	Discount group	Remarks	
0002 02 090	32,3	23,3	4,5	38,5	26,5	12,0	270	880	6,90	1-8	single spring	
0002 02 080	31,9	23,5	4,2	37,0	24,0	13,0	280	780	11,80	2-8	outer spring to 0002 02 043	
0002 02 043	23	17,0	3,0	35,0	22,0	13,0	140	410	11,80	2-8	inner spring to 0002 02 80	
0013 02 062	30,7	23,0	3,85	31,5	20,0	11,5	208	610	6,90	1-8	outer spring to 0013 02 026	
0013 02 026	21,3	16,3	2,5	27,5	16,0	11,5	82	250	6,90	1-8	inner spring to 0013 02 062	
0013 02 064	31,3	23,6	3,85	34,0	21,0	13,0	202	630	11,00	1-8	outer spring to 0013 02 031 and to 0220 02 026	
0013 02 031	22,8	17,2	2,8	31,8	18,8	13,0	97	325	11,00	1-8	inner spring to 0013 02 064	
0014 02 054	29,6	22,4	3,6	33,8	22,3	11,5	220	533	6,90	1-8	outer spring to 0014 02 027	
0014 02 027	21,8	16,6	2,6	29,3	17,8	11,5	94	268	6,90	1-8	inner spring to 0014 02 054	
0056 02 062	29,8	22,2	3,8	37,4	25,9	11,5	240	610	7,65	1-12	outer spring to 0056 02 022	
0056 02 022	20,4	15,6	2,4	35,4	23,9	11,5	90	220	7,65	1-12	inner spring to 0056 02 022	
0220 02 026	22,6	17,4	2,6	30,0	17,0	13,0	80	255	11,00	1-8	inner spring to 0013 02 064	
0220 02 103	31,3	18,0	3,85/2,8	35,0	20	14,5	330	1035	61,00	2-8	double spring max. 50 hours lifetime!!!	
0227 02 113	30,7	16,6	3,9/3,1	36,0	23,0	13,0	309	1130	41,00	2-16	contact spring set	
0242 02 065	27,8	20,4	3,7	32,7	22,3	10,4	290	640	9,00	1-16	single spring	
0242 02 019	20,2	15,9	2,15	28,7	16,3	12,4	90	190	9,00	1-16	inner spring to 0242 02 054	
0242 02 054	28	21,0	3,5	32,7	20,3	12,4	200	530	9,00	1-16	outer spring to 0242 02 019	
0256 02 082	30,6	22,2	4,2	37,0	25,1	11,9	300	835	11,50	2-16	single spring	
0261 02 075	24,2 30,2	16/22	4,1	37,0	27,8	9,2	300	750	13,20	2-24	conical spring BMW M52 group N	
0299 02 050	28,3	21,5	3,4	31,6	19,6	12,0	156	496	11,00	1-8	outer spring to 0299 02 031	
0299 02 031	21,3	16,0	2,65	29,5	17,5	12,0	99	313	11,00	1-8	inner spring to 0299 02 050	
0301 02 060	20,8	14,2	3,3	36,5	26,5	10,0	209	602	19,50	1-12	single spring	
0306 02 053	29,3	22,1	3,6	32,2	21,7	10,5	252	545	8,45	1-16	outer spring to 0306 02 019	
0306 02 019	20,7	16,2	2,25	27,5	17,0	10,5	91	200	8,45	1-16	inner spring to 0306 02 053	
0415 02 095	28,4	15,45	3,7	38	24	14	330	953	51,00	2-24	Double spring, contact spring!	

			<h2 style="text-align: center;">Washers for valve springs</h2>							
Part No.	s [mm] thickness	d x D [mm]	Price EUR / ea. excl. VAT	Discount group	Part No.	s [mm] thickness	d x D [mm]	Price EUR / ea. excl. VAT	Discount group	
0234 13 004	2,00	24 x 34	1,30	2 - 8	0895 00 812	0,25	23 x 30	1,30	2 - 8	
0234 13 005	0,30	24 x 34	1,30	2 - 8	0895 00 814	1,00	23 x 30	1,30	2 - 8	
0895 00 801	0,25	16,5 x 32	1,30	2 - 8	0895 00 815	0,25	14 x 26	1,30	2 - 8	
0895 00 802	0,50	16,5 x 32	1,30	2 - 8	0895 00 816	0,50	14 x 26	1,30	2 - 8	
0895 00 803	0,75	16,5 x 32	1,30	2 - 8	0895 00 817	1,00	14 x 26	1,30	2 - 8	
0895 00 804	1,00	16,5 x 32	1,30	2 - 8	0895 00 818	0,25	16 x 28	1,30	2 - 8	
0895 00 805	0,25	14,5 x 30	1,30	2 - 8	0895 00 819	0,50	16 x 28	1,30	2 - 8	
0895 00 806	0,50	14,5 x 30	1,30	2 - 8	0895 00 820	1,00	16 x 28	1,30	2 - 8	
0895 00 807	0,75	14,5 x 30	1,30	2 - 8	0895 00 821	0,25	12 x 20	1,30	2 - 8	
0895 00 808	1,00	14,5 x 30	1,30	2 - 8	0895 00 822	0,50	12 x 20	1,30	2 - 8	
0895 00 809	0,25	16 x 22	1,30	2 - 8	0895 00 823	1,00	12 x 20	1,30	2 - 8	
0895 00 811	1,00	16 x 22	1,30	2 - 8	0234 13 002	2,30	24 x 34	1,30	2 - 8	

			<h2 style="text-align: center;">Timing gears and accessories</h2>							
Part No.	Specification	Price EUR /ea. excl. VAT	Discount group	Part No.	Specification	Price EUR /ea. excl. VAT	Discount group			
0050 13 206	Adjustable timing gear for: VW Golf (0014..) and Polo(0013..)!	120,00	3	0220 13 807	Standard sprocket for VW Golf 16 valve (0220...)	30,00	3			
0220 13 045	Adjustable timing gear for: VW Golf 16 valve (0220...)	130,00	3	0899 00 001	Degree wheel, Aluminium for precise cam adjustment. (with printed instructions)	10,20	2			
0220 13 015	Adjustable sprocket for VW Golf 16 valve ( 0220...)	135,00	3	0899 00 002	Locking bolt for precise determination of TDC!	7,80	2			







# GENERAL TERMS AND CONDITIONS AVL SCHRICK GMBH

## Clause 1: Validity

1. Our terms and conditions only apply to companies within the terms of section 310 of the German Civil Code (BGB).
2. The conditions of sale and delivery set out below apply to all orders, deliveries and other services supplied by us, unless otherwise agreed to or excluded with our express written consent. They also apply in particular when we unreservedly supply goods or services, even if we are aware, when doing so, of contrary or different conditions on the part of the customer. The general terms and conditions of the other contracting party only apply if confirmed in writing by us.
3. Our conditions also apply to all future orders, deliveries and services, even if the corresponding text is not supplied with each quotation or order confirmation sent to the other contracting party.

## Clause 2: Quotations and confirmation

1. Our quotations are non-binding. Orders and other agreements become binding only after we have issued the corresponding written confirmation, or by delivery of the item or service concerned.
2. All agreements made between us and our customer are to be confirmed in writing at the moment of entering into such an agreement.

Accords reached between our employees or representatives and our customer at the moment of entering into an agreement or afterwards must be confirmed in writing before they can become effective, with the representation rights of our employees and agents subject to this limitation.

## Clause 3: Prices, price increases and payment

1. Our quoted prices apply to delivery ex-works, subject to additions for packing, shipping, customs duty, export tax, insurance, other charges and fees, and value added tax (VAT) at the current rate, which we will in any case calculate at the rates applying on the date of delivery of the goods or service concerned, even if the quotation and/or order confirmation contains no specific reference to the effect.
2. This condition applies to orders where there is an agreed delay of more than four months between conclusion of the agreement and completion of the order, or if such a delay is attributable to our suppliers. If our purchase costs increase during this period, or if a valid wage agreement leads to increased salary costs, we shall be entitled to increase the agreed purchase price in proportion to the corresponding increase in our own purchase prices and/or wage costs. Where business is based on rolling credit, we shall be entitled to exercise this right even if the period between conclusion of the agreement and fulfilment of the order is less than four months.
3. Our invoices are to be settled strictly net and without discount within ten days of receipt of the goods or services concerned.
4. We can only accept drafts and cheques by prior arrangement, and in any case only in lieu of formal payment and on condition of their being bankable. The costs of clearing are to be borne by our customer and settled immediately.
5. Once the payment deadline has passed, we shall be entitled, without having to issue any further reminder, to interest on overdue accounts of 8% above the current base rate. This does not affect our right to further claims, particularly in the event of delay by the other party to the agreement.
6. Settlement with counter-claims that are disputed by us and not legally established is not permitted. The right of retention on the grounds of claims other than those arising from the same contractual relationship is excluded if such claims are not recognised by us and not legally established.
7. In the event of claims for defects, our customer may only withhold payment if the defect claim is totally clear and free of doubt, and only then to the extent to which such withheld payment is in reasonable proportion to the claims arising.

## Clause 4: Deterioration of the contracting party's financial status

1. In the event of one of the situations listed below arising, or if it subsequently comes to our knowledge that such a situation already existed when the agreement was entered into, we may ask our customer to pay the agreed price in advance. This applies to the following situations:  
If legal or out-of-court insolvency or conciliation proceedings are taken against the assets of the other party to our

agreement, or if such proceedings have been abandoned on account of there being too few assets to recover, or if there is a written statement from a bank or credit reference agency that places in doubt the creditworthiness of our contracting party, or if a cheque or draft received by us from our contracting party is not cleared and/or is protested.

2. If, after being granted reasonable extra time by us to do so, our contracting party fails to make the advance payment to which we are entitled, despite after being reminded that we will refuse to supply further services once the period has expired, we shall be entitled to withdraw from the agreement or demand compensation for loss and damage, with respect exclusively to the part of the agreement not yet fulfilled by us.

## Clause 5: Shipping and transfer of risk, insurance

1. Risk shall be transferred to our contracting party, in all cases and regardless of the place of despatch, with handover to the shipper engaged to deliver the item concerned. This also applies in those exceptional circumstances where it is agreed that goods be supplied carriage paid.

This does not apply in cases where shipping is carried out by our own employees, or where loss of or damage to goods is attributable to our employees.

2. Shipments are to be delivered, at our discretion, by rail, post, carrier or own truck, in suitable packaging materials of our choice.

We can, exclusively at the request of our contracting partner and at the latter's expense, insure the shipment against any insurable risk that the contracting partner may specify, with particular reference to theft and damage in transit.

We must be notified immediately of any transport damage, and the addressee must also ensure, at the moment of delivery, that the carrier is notified accordingly and the corresponding claims submitted.

3. If shipment is delayed at the request of our contracting party, or by action attributable to it, risk shall be transferred at the moment in which we notify our contracting party that the consignment is ready for shipment. Goods shall be stored in these cases at our contracting partner's cost and risk.

4. In cases where we are obliged to accept the return of packaging materials, our contracting party is to meet the cost of shipping such materials back to us.

## Clause 6: Delivery times, purchase on demand

1. Delivery times and deadlines are only binding if confirmed in writing by us.

2. The deadline period is counted from the end of the day on which agreement is reached on all details of the contents of the agreement, no earlier than the date on which the order is accepted by us, but not before the ordering party has obtained all the required documentation, approvals, and permits, and not before the ordering party has settled any outstanding payment.

3. A delivery date or deadline applies, if the goods are subject to notification of readiness to ship on our part, or in cases where the goods cannot be despatched, up to the expiry of the said deadline.

4. Delivery dates may be extended – even if already subject to delay – by a reasonable amount in the event of force majeure and/or unforeseen circumstances arising after conclusion of the agreement, which are not attributable to action on our part, insofar as such incidents have demonstrably serious consequences for the delivery of the items sold.

Strikes and lockouts shall be regarded as circumstances beyond our control under the terms of this clause. The above conditions shall also apply if the circumstances that give rise to delay are attributable to our suppliers or their subcontractors.

If a delivery delay of this type lasts for longer than six weeks, our contracting party shall be entitled, to the exclusion of all further claims in this respect, to withdraw from the agreement.

5. Delivery times shall be increased to the extent to which the buyer delays fulfilling any of its obligations acquired as part of an ongoing business relationship or from other contractual agreements, or if it fails to fulfil any of the requirements stipulated at the beginning or fails to carry out work specified in this respect. This includes, but is not limited to, the provision of required documents, plans or similar items. Our contracting party is responsible for verifying that all requirements are met and specified documents, plans or permits have been made available.

6. If an order supplied on demand is not accepted within the agreed period, we shall be entitled to deliver finished items without further notification, or store them at the buyer's expense. We shall also be entitled to give our customer additional time to complete acceptance, on condition that we may refuse acceptance of the goods in the event of a further period elapsing without further result. If the additional period expires without result, we shall be entitled, subject to the specified notice period, to withdraw from the agreement and claim for loss and damage, with exclusive regard to the part of the agreement not yet fulfilled by us.

7. If the buyer fails to accept a part delivery assigned to it within one month of expiry of the agreed part-delivery deadline, and unless there is agreement to the contrary, we may divide and deliver the consignment at our discretion.

We shall also be entitled to give our customer additional time to complete acceptance of the part delivery, on condition that we may refuse acceptance of the goods in the event of a further period elapsing without further result. If the additional period expires without result, we shall be entitled, subject to the specified notice period, to withdraw from the agreement and claim for loss and damage limited to the part of the agreement not yet fulfilled by us.

8. We shall be entitled to carry out part deliveries and bill them separately.

**Clause 7: Explanation of exercising of rights after establishing of completion deadline**

In all cases where our customer extends a deadline in the event of non-completion or incorrect completion of an order, and where this deadline has expired without result, we shall be entitled to ask the customer to declare within a reasonable time whether it intends, despite the deadline expiring, to continue to exercise its claims regarding completion/delayed completion, or whether it intends to exercise other rights available at its discretion. If our customer fails to make such a declaration within the reasonable time provided, all claims for completion/delayed completion shall be excluded. If our customer declares, within the reasonable period established, that it continues to demand completion/delayed completion, this does not affect its entitlement to set a new deadline or, in the event of expiry without result, to exercise any alternative rights in this respect.

**Clause 8: Delay, exclusion of obligation to fulfil the terms of this agreement**

If we are in arrears with delivery, or if our obligation to fulfil the terms of this agreement is excluded under the terms of article 275 of the German Civil Code (BGB), we shall be liable for loss and damage only to the extent envisaged by article 12, section 3, subject to the following extra conditions:

1. If we are in arrears regarding delivery, claims for loss and damage on the part of our customer shall be limited to a flat-rate scale of compensation for delay, amounting to 0.5% of the value of the items to be supplied, for each complete week of delay, but not exceeding a maximum of 5% of the value of the items to be supplied. We shall be entitled to provide proof that the delay has resulted in no, or no serious, loss or damage. This limitation on liability does not apply in the event of wilful or gross negligence.

2. In the event of delay on our part, the customer shall only be entitled to claim for loss or damage if it has first granted us a reasonable (four-week minimum) deadline extension, with an entitlement to set a reasonable deadline extension of fewer than four weeks if, in an individual case, a minimum deadline extension of four weeks cannot meet its requirements.

3. The customer's entitlement to withdraw from the agreement and claim for loss and damage is normally limited to that part of the agreement that has not yet been fulfilled, unless the customer can reasonably demonstrate that it has no further interest in the completed part of the agreement.

4. Claims against us for loss and damage on grounds of delay or failure to fulfil the terms of the agreement under the terms of article 275 of the German Civil Code (BGB) shall expire once a year has elapsed under the terms of this law.

5. The above stipulations do not apply to loss or damage resulting in death, personal injury or damage to health on the part of our contracting partner, or if such loss or damage is attributable to wilful or gross negligence on our part, or that one of our legal agents or representatives, and likewise not, in the event of delay, if delivery by a fixed date has been agreed.

**Clause 9: Delay in acceptance by our contracting partner**

1. If our contracting party delays, either in part or in whole, in the acceptance of our goods or services, we shall be entitled,

after a reasonable additional period established by us has expired without result, and on condition that we may refuse acceptance of the goods in the event of a further period elapsing, to withdraw from the agreement and claim compensation for loss and damage, subject to such claims being limited to the part of the agreement not yet fulfilled by us. We shall not be entitled to claim for loss or damage if the delay is attributable to circumstances that are beyond the control of our contracting partner. This does not affect our legal right to claim in the event of delay in acceptance on the part of our customer.

2. The customer is to meet our storage, storage-space rental and insurance costs for items that are due for acceptance but which have not been accepted. We are however not obliged to insure items so stored.

3. If delivery of the item is delayed at the request of the ordering party, or if acceptance is delayed, we may, after one month has expired since issue of notification of our readiness to deliver, impose charges for storage amounting to the normal cost of keeping such items in a local service provider's storage facilities, while reserving the right to seek further sums for loss and damage.

**Clause 10: Cancellation of orders, return of goods, claims for failure to fulfil the agreement**

If we agree to the cancellation of a confirmed order at the request of our customer, or if goods supplied by us are returned by the ordering party for reasons not attributable to us and with the customer released from its obligations to accept the delivery and make payment, or if there is an outstanding claim for loss or damage on our part, we shall be entitled to demand a compensation payment amounting to 15% of the value of the contract with respect to the part affected, without having to provide further proof, with the right reserved on the part of our customer to prove that no, or only limited, loss or damage has been incurred. This does not affect our right to claim further compensation for loss and damage.

**Clause 11: Goods description, items in excess of or not fulfilling requirements**

1. Illustrations, dimensions, weights, indications of surface characteristics and other content of catalogues, brochures, price lists, descriptions, drawings or other documents are merely indicative of items typically supplied in the sector. Our samples and prototypes are only to be regarded as indicative display items with respect to quality, dimensions and other characteristics. Our indications of the dimensions, characteristics and intended purpose of our products are intended only to provide an approximate description, and do not constitute a guarantee of particular specifications.

2. In the event of technical need, we reserve the right to vary the finish, dimensions and other characteristics of the items supplied. We will notify our customer of such changes. The customer shall to this extent have no further right to claim for loss or damage, provided such modifications have no considerable bearing on the usability of the products concerned.

**Clause 12: Liability for defects and compensation for loss and damage**

1. Claims on the part of our customer for defects in the items supplied are dependent on the customer having fulfilled its obligations under article 377 of the German Commercial Code (HGB) to examine the item thoroughly and submit claims via the right channels, in correct written form.

If our customer fails to claim as specified or within the time established, the claim regarding the situation reported can no longer be made effective, unless it is attributable to deliberate concealment on our part.

2. The rights of our customer with regard to defects are governed by the corresponding legislation, with the condition that customer is to grant us a reasonable period of at least four weeks in which to correct defects, during which we can, at our discretion, repair the defect or supply a fault-free replacement item. Our contracting partner may, in an individual case, grant us a minimum deadline extension of fewer than four weeks, if its requirements cannot otherwise be met.

This additional completion period shall in any case not begin until the customer has returned, at our expense, the defective item to us. If only a part of the item supplied by us is defective, the right of our contracting partner to withdraw from the agreement or to seek compensation for loss or damage shall be limited to the defective part of the shipment, unless such a limitation is impossible or unviable for our contracting party.

The rights of our contracting party to claim for loss or

damage arising from defects in the goods or services supplied are limited under the terms described in section 3 (below).

3. Our liability for loss or damage arising from death, personal injury, damage to health or loss of freedom on the part of our contracting party is, if attributable to culpable infringement of obligations, neither excluded nor limited.

In all other cases of loss and damage on the part of our contracting partner, we shall only be liable in the event of wilful or gross negligence on our part, or that of our legal agents or representatives.

If the loss or damage is due only to minor negligence on our part, we shall only be liable to the extent that there is major infringement of contractual obligations, limited furthermore to the loss or damage reasonably considered typical for an agreement of this type.

In all other respects, claims for loss or damage on the part of our contracting party arising from failure to meet obligations, unauthorised action or other legal grounds are excluded.

The above limitations on liability do not apply to failure to provide assured characteristics, if and insofar as such a guarantee was designed to protect the partner from loss or damage other than that arising from the supplied product itself.

Insofar as our liability is excluded or limited, this also applies to personal liability on the part of our staff, employees, collaborators, agents and representatives.

The above exclusions of liability also apply in the event of subsequent loss or damage.

The above exclusions of liability do not however apply to claims based on product-liability legislation.

#### **Clause 13: Producer liability**

Our contracting partner is to absolve us of all liability for third-party claims for loss or damage arising from legislation on unlawful actions, product liability or other regulations concerning faults or defects in items manufactured or supplied by us and/or our contracting partner, insofar as such claims are also made against our contracting partner, or are no longer applicable due to the statute of limitations. Under these conditions, our contracting party is also to free us from all costs arising from legal action brought against us as a result of such claims.

Insofar as claims made against us are substantiated, or are not substantiated due only to the statute of limitations meanwhile coming into force, there is a proportional right to be freed from liability by our contracting party, the extent of which is governed by article 254 of the German Civil Code (BGB).

This does not affect our right to be freed of liability and claims for loss or damage in accordance with articles 437, 440 and of the 478 German Civil Code (BGB), or on any other legal grounds.

#### **Clause 14: Reservation of title**

1. We shall retain present or future title to all items supplied subject to reservation until the buyer has settled all outstanding accounts with the following guarantees, which we may release on request and at our discretion, provided their nominal value does not regularly exceed our outstanding accounts by more than 20%:

We retain title to items delivered.

Processing or transformation is carried out by us as manufacturer, but without this supposing any obligation on our part. If items that are not our property are used in the processing of items subject to retention of title, we then acquire part-ownership of the resulting end-product, in proportion to the value of our item relative to the finished article at the moment of processing.

If our goods are combined or mixed with other moveable items to form a unified whole and if the other object is to be considered as the main item, our contracting partner shall be obliged to transfer to us proportionate joint ownership, provided that the main item belongs to it.

Any transfer carried out by us which is required for the acquisition of ownership or joint ownership is to be replaced by the agreement so reached, by which our contracting partner is to hold the item as a borrower on our behalf or, insofar as it does not own the item itself, with the transfer to us immediately replacing enforcement of the claim against the owner for the return of the goods.

Items to which we hold title or joint title under the above terms are to be regarded as items subject to retention of title, as follows.

2. The contracting partner is entitled to sell, in the normal course of business, items that are subject to retention of title, and also to combine them with other items. Claims arising from the sale, combination or any other legally permitted

disposal of the items subject to retention of title are transferred by the contracting partner to us, at the moment in which such items are sold or otherwise processed, in proportion to our sole or joint ownership rights to such items. If settlement is made on an instalment basis, this transfer also includes also all outstanding account claims. This transfer takes precedence over all others. We authorise the contracting partner, subject to revocation, to collect payment as a result of this cession of claims. Amounts so obtained by the contracting partner are to be transferred to us immediately, insofar as and as soon as our claims are due. If no claims are due on our part, the contracting partner is to hold these sums in a special account.

This does not affect our right to bring claims on our own behalf. We do however undertake not to bring any claim for as long as our contracting partner remains up to date with its agreed payment commitments, does not fall into arrears with payments and does not, in particular, become the subject of insolvency or bankruptcy proceedings or suspension of payments.

Our contracting partner undertakes, at our request, to make known to us the details of ceded claims and the corresponding debtors, to supply us with the corresponding documents and keep us informed accordingly of all collection-related issues. If we are entitled to collect on claims, our contracting partner undertakes to make available to us all the information required for collection and to notify the third-party debtors accordingly. We shall also be entitled to notify debtors on our own behalf.

In the event of suspension of payments, an application for or actual opening of insolvency proceedings, or legal or out-of-court bankruptcy proceedings, our contracting partner loses its rights, unless otherwise stipulated by us, to resell, process combine or install items that are subject to retention of title, along with its entitlement to collect on ceded claims.

3. Our contracting partner is to give us immediate access to the third party holding items that are subject to retention of title, and also to such ceded claims. Our contracting partner is to bear all and any costs of resulting interventions and/or their legal defence.

4. The contracting partner undertakes to treat with due care the items subject to reservation of title, and to insure them adequately and at its own expense to cover fire, water and theft damage for their new replacement value.

5. In the event of contractual infringement on the part of the contracting partner – with particular reference but not limited to payment arrears – we shall be entitled to repossess, at the contracting partner's expense and without first or subsequently having to declare our intention to withdraw from the agreement, the items that are subject to retention of title, or to demand transfer of the contracting partner's claims for restitution against third parties. Our repossession or distraint of items subject to retention of title does not in itself suppose or imply our withdrawal from the agreement, unless otherwise expressly confirmed by us in writing.

6. In the event of payment arrears or infringement by our contracting partner of its contractual obligation to safeguard and insure the items subject to retention of title, we shall be entitled to withdraw from the agreement, demand that our contracting partner return to us the goods concerned and, subject to written notice of at least four weeks, to dispose of or sell the items on the most favourable terms available. An independent valuer may be called in, at our contracting partner's request and expense, to determine the value of such repossessed items. The costs of repossession and disposal of goods are to be borne by our contracting partner, with the cost of disposal defined as 10% of the resale value, unless or insofar as our contracting partner or we can demonstrate lower or higher costs of disposal.

We shall be entitled to claim against our contracting partner for payment of the agreed price of the repossessed goods, adjusted to take into account the resale value after deduction of the costs of disposal. If an independent valuer is called in, this claim shall amount to at least the sum determined by the valuer (adjusted to take into account the costs of disposal).

7. If our right to retention of title should be extinguished by export of the goods or on other legal grounds, or if we lose our right to retention of title for any other reason, our contracting partner undertakes immediately to provide us with alternative guarantees to the items subject to retention of title or otherwise to assure our claims, in accordance with the laws applying at the ordering partner's place of business and conforming as closely as possible to retention of title as defined under German law.

#### **Clause 15: Special production items and tooling costs**

1. In the case of orders for special production items, all indications regarding configuration, dimensions, etc. require,

without exception, written confirmation on our part.

2. Sums paid by the customer to cover tooling costs do not entitle the customer to any claim on such tools, which furthermore continue to be our property and remain in our possession. We undertake to safeguard such tools, on the customer's behalf, for one year from the date of the last delivery made. If the customer indicates within this period its intention to make further orders in the following year, the retention period will be extended to cover this additional year. Once this period has expired, and in the event of no further orders being received, we shall be free to dispose of the tools at our discretion.

3. If orders for which tools have been made fail to materialise, the following conditions shall apply:

We reserve the right to bill for the full costs incurred if series-production orders are not fulfilled or if such orders are cancelled in the initial phase, to include the costs of initial tooling prior to approval of prototypes and, in the event of cancellation after prototype approval, costs based on the overall monthly expenditure for series-production tools, special line equipment and training. Tools made and billed in this way will remain available for inspection for a period of four weeks, after which they will be scrapped. Finished phase plans and construction drawings of tools are subject to intellectual-property protection, and there is no obligation to make them available for inspection.

**Clause 16: Ownership of documents, confidentiality**

1. Illustrations, drawings, calculations, samples and models remain our property. Our customer undertakes not to make such items available in any way or form to any third party or parties without our express written permission to the effect. In the event of infringement of this condition, the customer undertakes to pay us a penalty of €60,000 for each such case of infringement. This does not affect our right to seek further compensation for loss and damage in this respect.

2. The contracting parties mutually undertake to treat as if it were their own industrial secrets all commercial and technical information that comes into their possession during the course of their cooperation, and not to make such information available in any way or form to any third party or parties. In the event of infringement of this condition, the infringing party undertakes to pay the other party a penalty of €60,000 for each such case of infringement. This does not affect the right of the aggrieved party to seek further compensation for loss and damage in this respect.

**Clause 17: Commercial rights**

1. If the item is to be manufactured according to drawings or other specifications provided by the contracting partner, the contracting partner is to ensure that no third-party rights, with particular reference to but not limited to patents, brand rights and/or other intellectual-property rights, are not hereby infringed. The ordering party absolves us of all third-party claims that may result from any infringement of such rights. Our contracting partner furthermore undertakes to meet all costs incurred by us as a result of such third-party claims for infringement, and to defend our interests accordingly.

The same applies to the use of all samples, drafts, printed material, etc. produced by us or supplied by our customer.

2. If our development work should result in solutions or techniques that may in any way be subject to intellectual-property protection, we are to be the sole holders of all resulting copyright and/or ownership and usage rights, and we reserve the right to register such intellectual-property rights on our own behalf and in our own name.

**Clause 18: Place of performance, legal jurisdiction and applicable law**

1. Exclusive legal jurisdiction and the place of performance for deliveries, provision of services and payments, including claims relating to cheque and draft payments and all disputes that might arise between the parties, correspond to Remscheid (Germany), although we reserve the right to proceed against our customer in an alternative jurisdiction under the terms of article 12 ff. of the German code of civil procedure (ZPO).

2. The relationship between the contracting parties is subject exclusively to the laws of the Federal Republic of Germany, to the exclusion of international commercial law with particular reference to the United Nations agreement on international contracts to purchase. ■

