AGAP Camshafts for the engine family Volvo B23/B230

There are three different series of valve lift profiles for this engine.

1: Street series
For standard bucket cam followers with diameter 33 mm shim. Similar aggressiveness as for Volvo original camshafts.

2: Race series for 33 mm standard bucket cam follower
These are more aggressive and have different ramp design than the street series.

3: Race series for 37 mm bucket cam follower
Need to be used together with a bucket cam follower of minimum diameter 37 mm.

The camshafts are made to order and the valve lift profiles can be combined as the customer wish.

We can assist and recommend a camshaft to your engine combination, if you supply us with data on your engine.

Parameters

Total duration	Number of crank angle degrees the valve is are open at 0 valve lash
Rated Duration	Number of crank angle degrees the valve is open from the point where the ramps end, which is at about 0.5 mm valvelift
Duration 1.0 mm	Number of crank angle degrees the valve is open at 1.0 mm lift
Duration 0.05"	Number of crank angle degrees the valve is open at 0.05 inch, (1.27mm) lift
Lift	Maximum lift in mm at 0 valve lash,
Max engine speed	Max engine speed if used together with standard spring, valve etc.
Base circle	Volvo original is 36 mm, with a smaller base circle lash caps will be needed to achieve correct valve lash. These figures shall be considered as rough

Street series

The least aggressive profiles, designed similar to Volvo original camshafts.

To be used with original bucket cam follower, with diameter 33 mm shims. All profiles have 36 mm base circle.

Street	Total duration	Rated Duration	Duration 1.0 mm	Duration 0.05”	Lift (mm)	Max engine speed (rpm)
AGAP G-225-11.0	360	260	233	225	11.0	6500
AGAP G-234-11.5	368	268	242	234	11.5	6700
AGAP G-242-12.0	376	276	250	242	12.0	6800
AGAP G-253-12.5	388	288	261	253	12.5	7000
AGAP G-265-13.0	400	300	273	265	13.0	7300

For all the above valve lift profiles, recommended valve lash is 0.3-0.4 mm on warm engine.

Race series

These lift profiles are more aggressive, which opens the valve faster for maximum power. The stresses in the valvetrain will be higher which will slightly limit the expected life time, they are also more sensitive to valve lash adjustment. Therefore they are most suited for rally and racing engines.

There are one series for 33 mm bucket cam follower, and one that needs an bucket cam follower with minimum diameter of 37 mm.

Race Series 33mm	Total duration	Rated Duration	Duration 1.0 mm	Duration 0.05”	Lift (mm)	Base circle (mm)
AGAP R33-238-12.0	328	263	244	238	12.0	36
AGAP R33-243-12.4	332	267	249	243	12.4	36
AGAP R33-254-13.0	344	279	260	254	13.0	36
AGAP R33-262-13.4	352	287	268	262	13.4	35
AGAP R33-264-14.0	352	289	270	264	14.0	34
AGAP R33-273-14.0	364	299	279	273	14.0	34
AGAP R33-274-14.5	364	300	280	274	14.5	33
NEW AGAP R33-280-15.0	368	305	286	280	15.0	32
NEW AGAP R33-287-15.5	376	313	294	287	15.5	31
NEW AGAP R33.295-16.0	384	321	302	295	16.0	30

Race Series 37mm	Total duration	Rated Duration	Duration 1.0 mm	Duration 0.05”	Lift (mm)	Base circle (mm)
AGAP R37-251-14.0	340	276	257	251	14.0	34
AGAP R37-258-14.6	348	283	265	258	14.6	32
AGAP R37-267-15.3	356	292	273	267	15.3	31
AGAP R37-275-16.0	364	299	281	275	16.0	30
AGAP R37-279-16.0	368	303	285	279	16.0	30
AGAP R37-283-16.0	372	307	289	283	16.0	30
AGAP R37-287-16.0	376	311	293	287	16.0	30
AGAP R37-291-16.0	380	315	297	291	16.0	30

For all Race Series valve lift profiles, recommended valve lash is 0.3-0.35 mm on warm engine.

For the higher lift profiles some grinding in the cylinder head might be needed to gain clearance.

Always control that there are sufficient clearance between the valves and piston before starting the engine.

Price, camshaft with any of the lift profiles **3120 Skr +VAT = 3900 Skr**

Different lift profile on exhaust/intake, add **400 Skr + VAT = 500 Skr**

Camshaft Examples

R33-262-13.4, Lobe separation angle 109 degrees
Suitable camshaft for 2300cc turbo engine with 33 mm bucket cam followers, use 44/35 mm valves or bigger, expected maximum power engine speed 6000 rpm.

R33-264-14.0, lobe separation angle 104 degrees
Suitable camshaft for 2300cc NA engine with 33 mm bucket cam followers, use 46/38 mm valves, expected maximum power engine speed 6000 rpm.

R37-279-16.0, lobe separation angle 105 degrees
Suitable camshaft for race engine with 37 mm bucket cam followers, use 46/38 mm valves or bigger, expected maximum power engine speed 6000 rpm. Cylinder volume 2300-2500 cc

		Suitable engine			
Valve lift profile	Lobe Sep. Angle	Valve size (mm) Intake/Exhaust	Max power engine speed	NA/Turbo	Cylinder volume
AGAP R33-262-13.4	109	44/35	6000	Turbo	2300
AGAP R33-264-14.0	104	46/38	6000	NA	2300
AGAP R37-279-16.0	105	46/38, 48/40	7000	NA	2300-2500