

HOW & WHY OF TUNING BING CARBURETORS

TECHNICAL INFORMATION FOR BING CARBURETOR

Adjusting the Bing Carburetor - The Bing Carburetor has a three stage system: Idle, Midrange and Top End.

Idler Jets - From the moment the engine is started to approximately 1/4 throttle, the carburetor is running according to how the idle system is set up. As the idler jet number decreases, the mixture gets leaner as the number increases, the mixture gets richer. For instance, Idler Jet #45 has a leaner mixture than Idler Jet #50

The Air Regulating Screw must be set as stated in the Bing Jet Chart in order to insure smooth operation of the Idler Jet. This screw adjusts the air/fuel mixture at idle speeds and for smooth acceleration. Turning the screw in a clockwise direction creates a richer mixture while turning it counterclockwise creates a leaner mixture. To adjust this screw, gently turn in a clockwise direction until the screw bottoms out, then loosen the screw (in a counterclockwise direction) the number of turns as recommended in the Bing Jet Chart. (effective range 1/2 to 2-1/2 turns out).

Use the carburetor piston Adjusting Screw to adjust the idle RPM. Turn this screw in a counterclockwise direction until the Carburetor Piston is in the lowest position. Then carefully turn the screw clockwise until it just engages the piston and then continue to turn it clockwise for 2 to 2-1/2 turns. This determines the idle RPM. of the engine and should be set at 2,000 RPM min.

Needle Jets/Jet Needles - The Jet Needle has three or four grooves which the clip can be snapped onto. The grooves are 1, 2, 3, 4 with number 1 at the top position. When the clip is snapped onto the top position #1 of the needle, a leaner mixture is created than if it was mounted on the #2 groove. NOT: Jet Needle clip must always be under plastic spring cup.

The Midrange System affects the carburetor for approximately 1/4 to 3/4 throttle. Once again, the lower the needle number of the Needle Jet, the leaner the mixture.

Main Jet Conversion Chart - These recommendations are a result of continued research and testing which allow the Rotax® engine to perform more efficiently and reliably throughout its power band. The Jet chart shows each engine and the stock carburetor setting at sea level. If you live other than at sea level or in a hotter climate, then you must refer to the Main Jet Conversion Chart to calibrate for altitude and temperature.

Air density decreases with decreasing pressure and increasing temperature. If an engine is operated at higher elevation, the weight of the aspirated air decreases, where as the aspirated fuel quantity remains practically the same. This results in richer fuel/air mixture than the lower sea level.

If the engine is operated in high altitude for a longer period, it is necessary to adjust the carburetor calibration to re-establish the original composition of the fuel/air mixture. With increasing altitude (lower air pressure), the oxygen quantity injected by the engine decreases. The consequent loss in performance cannot be compensated for by different carburetor settings.

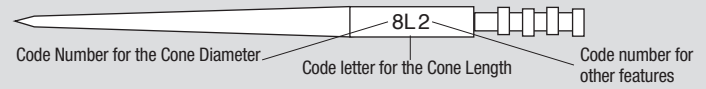
To adjust the carburetor, in general, a different main jet size is sufficient. Only in very particular cases does a different needle jet and/or different idle jet have to be installed. Example: If a Rotax® 503 single carb engine set up for sea level is shipped to Colorado Springs, Colorado, (approximate elevation 6,500 feet), the main jet would have to be changed. The carburetor would have a main jet of 180 at sea level. By using the conversion chart, going to the approximate altitude of 6,500 feet and using the temperature of 32 degrees, you can see we have a multiplier of .95 and come up with a recommended jet of 171. This main jet will produce the same composition of air/fuel mixture that the 180 main jet would at sea level.

TUNING BING CARBURETORS

Recommended Jetting for Rotax® Engines

This jetting chart is for sea level setting. If you are located 1000' or above sea level - refer to the Main Jet Conversion Chart. Jetting is selected for the engine to provide an overlap in jetting giving you smoother acceleration. If jetting is leaned out through the ranges it will cause poor acceleration, high EGT's, and stumbling of throttle response.

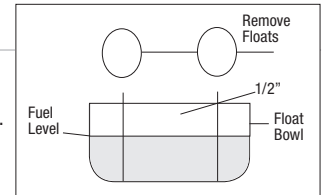
Model	Carburetor	Intake Silencer Kit	Main Jet	Idler Jet	Needle Jet	Jet Needle	Position	Air Screw Turns Out
277	Single Carb	No	148	45	2.72	8L2	2	1
277	Single Carb	Yes	140	45	2.72	8L2	2	1
377	Single Carb	No	165	45	2.70	802	2	.5
377	Single Carb	Yes	155	45	2.70	802	2	.5
447	Single Carb	No	165	45	2.70	15K2	2	.5
447	Single Carb	Yes	155	45	2.70	15K2	2	.5
503	Single Carb	No	185	45	2.72	15K2	3	.5
503	Single Carb	Yes	165	45	2.70	15K2	3	.5
503	Dual Carb	No	158	45	2.70	11K2	2	.5
503	Dual Carb	Yes	148	45	2.68	11K2	2	1
532	Single Carb	No	195	55	2.74	15K2	3	1
532	Single Carb	Yes	170	55	2.74	15K2	3	1
532/582	Dual Carb	No	165	55	2.72	11G2	3	1
532/582	Dual Carb	Yes	145	55	2.68	15K2	3	1



1. Needles with a "High Number Code" produce RICHER mixtures above half -throttle. Ex: 8L2 instead of 6L2
2. Needles with a "High Letter Code" produce RICHER mixtures below HALF-THROTTLE. Ex: 6P2 instead of 6D2
3. The adjacent regions are also affected to a lesser extent.

HOW TO CHECK THE FLOAT LEVEL

1. Start and warm up engine.
2. Run the engine at 3/4 power for two minutes.
3. Let engine idle back and cool down for one minute.
4. Shut off engine and fuel system.
5. Remove float bowl.
6. Remove the floats from the float bowl.
7. The fuel level should measure approximately 1/2" from the top edge of the float bowl.



NOTE: Fuel level below 1/2" will cause a lean mixture. Fuel level above 1/2" will cause a rich mixture.

Temp °F	Temp °C	Height (ft)=0	1,640	3,281	4,921	6,562	8,202	9,842	11,483	13,123
-22	-30	1.04	1.03	1.01	1.00	0.98	0.97	0.95	0.94	0.93
-4	-20	1.03	1.02	1.00	0.99	0.97	0.96	0.95	0.93	0.92
14	-10	1.02	1.01	0.99	0.98	0.96	0.95	0.94	0.92	0.91
32	0	1.01	1.00	0.98	0.97	0.95	0.94	0.93	0.91	0.90
50	10	1.00	0.99	0.97	0.96	0.95	0.93	0.92	0.91	0.89
59	15	1.00	0.99	0.97	0.96	0.94	0.93	0.92	0.90	0.89
68	20	1.00	0.98	0.97	0.95	0.94	0.93	0.91	0.90	0.88
86	30	0.99	0.97	0.96	0.94	0.93	0.92	0.90	0.89	0.88
104	40	0.98	0.96	0.95	0.94	0.92	0.91	0.90	0.88	0.87
122	50	0.97	0.95	0.94	0.93	0.92	0.90	0.89	0.88	0.86

BING CARBS FOR ROTAX® 2-STROKE ENGINES

These carbs do not come with jets. Jets to be purchased separate from chart below. Bing 36 mm Carburetor. With Manual Lever Choke Part # Carb-MC, With Remote Cable Choke Part # Carb-RC

MOST FREQUENT JET CALIBRATION

Main Jets	Part No.	Main Jets	Part No.	Jet Needles 36 mm.	Part No.
120	268 977	190	261 084	11K2	961 044
125	268 978	195	268 992	15E5U	961 046
28	261 085	200	261 082	15K2	963 718
130	268 979	205	261 087	8H1	261 643
135	268 980	210	261 083	802	963 711
138	268 998	220	261 081	8G2	963 712
140	268 981	Idler Jets Part No.		4E2	963 716
142	268 994	30	963 141	2H2	963 717
145	268 982	35	963 143	6H2	963 719
148	268 995	40	963 142	6P2	999 965
150	268 983	45	963 144	2.68	963 691
155	268 984	50	963 140	2.70	963 698
158	268 996	55	963 147	2.72	963 697
160	268 985	60	963 145	2.74	963 699
162	268 990	65	963 146	2.76	963 693
165	268 986	Jet Needles 36 mm Part No.		2.78	963 696
170	268 987	8L2	963 714	2.80	963 695
175	268 988	6G1	261 642	2.82	963 694
180	268 989	9 M10J	961 047	2.94	961 022
185	261 080	11G2	961 043		