

CHAPTER 6

CARBURETION

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Whenever servicing the carburetor or fuel system, it is important to heed the following warnings.

WARNING

Gasoline is extremely flammable and explosive under certain conditions.



Always stop the engine and refuel outdoors or in a well ventilated area.



Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored or used.



Do not overfill the tank. Do not fill the tank neck.



If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.



If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.



Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star	EC25PS-06	244	VM30SS (1) Zinc	130 Hex	60	1 1/2 turn
SS	EC44-2PM-3100	432	VM34SS (1) Zinc	280 Hex	40	1.0 turn
Indy Trail	EC44-2PM-2100	432	VM34SS (2) Zinc	230 Hex	35	1.0 turn
Indy 400	EC40PL-02	398	VM34SS (2) Zinc	220 Hex	35	1.0 turn
Indy 600	EC60PL-02	597	VM38SS (3) Alum	260 Hex	35	3/4 turn
Long Track	EC44-2PM-5000	432	VM30SS (1) Zinc	200 Hex	30	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC44-2PM-3100	6DH7-3	P-6 (166)	2.5	3130289	1.5mm	2300	Variable Ratio/ Automatic Injection
EC44-2PM-2100	6DH7-3	P-6 (166)	3.0	3130314	1.5mm	2300	Variable Ratio/ Automatic Injection
EC40PL-02	6DH7-2	P-6 (166)	3.0	3130314	1.5mm	2200	Variable Ratio/ Automatic Injection
EC60PL-02	6F4-3	P-8 (247)	3.0	3130334	1.5mm	2000	Variable Ratio/ Automatic Injection
EC44-2PM-5000	5DP10-3	P-8 (171)	2.5	3130281	1.5mm	2300	40:1

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Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star	EC25PS-06	244	VM30SS (1) Zinc	130 Hex	60	1 1/2 turn
Sprint (ES)	EC34-2PM-01/02	339	VM30SS (2) Zinc	145 Hex	35	1.0 turn
SS	EC44-2PM-3100	432	VM34SS (1) Zinc	280 Hex	40	1.0 turn
Indy Trail	EC50PM-01	488	VM34SS (2) Zinc	210 Hex	30	1.0 turn
Indy 400	EC40PL-02	398	VM34SS (2) Zinc	220 Hex	30	1.0 turn
Indy 600 (LE)	EC60PL-02	597	VM38SS (3) Zinc	260 Hex	35	3/4 turn
Long Track	EC44-2PM-5100	432	VM30SS (1) Zinc	200 Hex	30	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-01/02	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC44-2PM-3100	6DH7-3	P-6 (166)	2.5	3130318	1.5mm	2300	Variable Ratio/ Automatic Injection
EC50PM-01	6DH7-2	P-8 (166)	3.0	3130318	1.5mm	2000	Variable Ratio/ Automatic Injection
EC40PL-02	6DP17-2	Q-2 (166)	2.0	3130318	1.5mm	2200	Variable Ratio/ Automatic Injection
EC60PL-02	6F9-3	P-8 (247)	3.0	3130334	1.5mm	2000	Variable Ratio/ Automatic Injection
EC44-2PM-5100	5DP10-3	P-8 (171)	2.5	3130218	1.5mm	2300	Variable Ratio/ Automatic Injection

CARBURETION 1987 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star, StarTrak	EC25PS-06	244	VM30SS (1) Zinc	130 Hex	60	1 1/2 turn
Sprint (ES)	EC34-2PM-01/02	339	VM30SS (2) Zinc	155 Hex	35	1.0 turn
Indy Sport	EC34-2PM-03	339	VM30SS (2) Zinc	180 Hex	35	1.0 turn
Indy Trail (All)	EC50PM-01/02	488	VM34SS (2) Zinc	220 Hex	30	1.0 turn
Indy 400	EC40PL-02	398	VM34SS (2) Zinc	220 Hex	30	1 1/2 turn
Indy 600	EC60PL-02	597	VM38SS (3) Zinc	260 Hex	40	1.0 turn
LongTrak (R.L.R.)	EC44-2PM-5100	432	VM30SS (1) Zinc	200 Hex	30	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-01/02	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-03	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC50PM-01	6DH7-2	P-8 (166)	3.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC40PL-02	6DP17-3	Q-2 (166)	2.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC60PL-02	6F9-3	P-8 (247)	3.0	3130334	1.5mm	1900	Variable Ratio/ Automatic Injection
EC44-2PM-5100	5DP10-3	P-6 (171)	2.5	3130218	1.5mm	2300	Variable Ratio/ Automatic Injection

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1988 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star, StarTrak	EC25PS-06	244	VM30SS (1) Zinc	130 Hex	60	1 1/2 turn
Sprint (ES)	EC34-2PM-02	339	VM30SS (2) Zinc	155 Hex	35	1.0 turn
Indy Sport	EC34-2PM-03	339	VM30SS (2) Zinc	180 Hex	35	1.0 turn
Indy Trail (All)	EC50PM-01/02	488	VM34SS (2) Zinc	220 Hex	35	1.0 turn
Indy 400	EC40PL-02/03	398	VM34SS (2) Zinc	220 Hex	30	1 1/2 turn
Indy 650 (All)	EC65PL-01	648	VM38SS (3) Zinc	260 Hex	50	1.0 turn
LongTrak (R.L.R.)	EC44-2PM-4100	432	VM34SS (1) Zinc	280 Hex	50	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-02	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-03	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC50PM-01/02	6DH7-2	P-8 (166)	3.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC40PL-02/03	6DP17-3	Q-2 (166)	2.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC65PL-01	6F9-3	P-8 (247)	3.0	3130334	1.5mm	1900	Variable Ratio/ Automatic Injection
EC44-2PM-4100	6DH7-3	P-6 (166)	2.5	3130318	1.5mm	2300	Variable Ratio/ Automatic Injection

CARBURETION 1989 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star, StarTrak	EC25PS-06	244	VM30SS (1) Zinc	130 Hex	60	1 1/2 turn
Sprint (ES)	EC34-2PM-02	339	VM30SS (2) Zinc	155 Hex	35	1.0 turn
Indy Sport/ Sport GT	EC34-2PM-03	339	VM30SS (2) Zinc	180 Hex	35	1.0 turn
Indy Trail (All)	EC50PM-01/02	488	VM34SS (2) Zinc	230 Hex	35	1.0 turn
Indy SuperTrak	EC50PM-03	488	VM34SS (2) Zinc	200 Hex	30	1.0 turn
Indy 400	EC40PL-02	398	VM34SS (2) Zinc	230 Hex	30	1 1/2 turn
Indy 500 (All)	EC50PL-01/02	488	VM38SS (2) Aluminum	280 Hex	40	1.0 turn
Indy 650 (All)	EC65PL-01	648	VM38SS (3) Zinc	260 Hex	50	1.0 turn
LongTrak (R.L.R.)	EC44-2PM-4100	432	VM34SS (1) Zinc	280 Hex	50	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-02	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-03	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC50PM-01/02	6DH7-2	P-8 (166)	3.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC50PM-03	6DH7-3	P-6 (166)	3.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC40PL-02	6DP17-3	Q-2 (166)	2.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC50PL-01/02	6F9-3	Q-0 (247)	3.0	3130334	1.5mm	1900	Variable Ratio/ Automatic Injection
EC65PL-01	6DH4-3	P-8 (247)	3.0	3130334	1.5mm	1900	Variable Ratio/ Automatic Injection
EC44-2PM-4100	6DH7-3	P-6 (166)	2.5	3130318	1.5mm	2300	Variable Ratio/ Automatic Injection

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1990 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
Star, StarTrak	EC25PS-06	244	VM30SS (1) Zinc	150 Hex	60	1.0 turn
Sprint (ES)	EC34-2PM-02	339	VM30SS (2) Zinc	155 Hex	35	1.0 turn
Indy Sport/ Sport GT	EC34-2PM-03	339	VM30SS (2) Zinc	180 Hex	35	1.0 turn
Indy Trail (All)	EC50PM-01/02	488	VM34SS (2) Zinc	230 Hex	35	1.0 turn
Indy SuperTrak	EC50PM-03	488	VM34SS (2) Zinc	200 Hex	30	1.0 turn
Indy 400	EC40PL-02	398	VM34SS (2) Zinc	230 Hex	30	1 1/2 turn
Indy 500 (All)	EC50PL-01/02	488	VM38SS (2) Aluminum	280 Hex	40	1.0 turn
Indy WideTrak	EC50PL-03	488	VM34SS (2) Zinc	190 Hex	35	1 1/4 turn
Indy 650 (All)	EC65PL-01	648	VM38SS (3) Zinc	260 Hex	45	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-02	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC34-2PM-03	5DP7-3	O-8 (171)	3.0	3130350	1.5mm	2100	Variable Ratio/ Automatic Injection
EC50PM-01/02	6DH7-2	P-8 (166)	3.0	3130318	1.5mm	1600	Variable Ratio/ Automatic Injection
EC50PM-03	6DH7-3	P-6 (166)	3.0	3130318	1.5mm	1600	Variable Ratio/ Automatic Injection
EC40PL-02	6DP17-3	Q-2 (166)	2.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC50PL-01/02	6F9-3	Q-0 (247)	3.0	3130334	1.5mm	1900	Variable Ratio/ Automatic Injection
EC50PL-03	6EJ26-3	P-6 (166)	3.0	3130318	1.5mm	1900	Variable Ratio/ Automatic Injection
EC65PL-01	6DH4-3	Q-2 (247)	3.0	3130334	1.5mm	1990	Variable Ratio/ Automatic Injection

CARBURETION 1991 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
StarLite	EC25PS-07	244	VM30SS (1) Zinc	160 Hex	60	1 1/2 turn
Indy Lite	EC34-2PM-03	339	VM30SS (2) Zinc	160 Hex	35	1.0 turn
Indy Sport/ Sport GT	EC44-3PM-01	432	VM34SS (2) Zinc	155 Hex	35	1 1/2 turn
Indy Trail (All)	EC50PM-01/02	488	VM34SS (2) Zinc	230 Hex	35	1.0 turn
Indy SuperTrak	EC50PM-03	488	VM34SS (2) Zinc	200 Hex	30	1.0 turn
Indy 400	EC40PL-02/04	398	VM34SS (2) Zinc	230 Hex	30	1 1/2 turn
Indy 500 (All)	EC50PL-01/ 02/04/05	488	VM38SS (2) Aluminum	280 Hex	40	1.0 turn
Indy WideTrak	EC50PL-06	488	VM34SS (2) Zinc	190 Hex	35	1 1/4 turn
Indy 650 (All)	EC65PL-02	648	VM38SS (3) Aluminum	260 Hex	45	1.0 turn
RXL	EC65PL-03	648	46mm TBI* (3)	N/A	N/A	N/A

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-07	5DT49-3	O-8 (171)	3.0	1.5mm	1200	Variable Ratio/ Automatic Injection
EC34-2PM-03	5DP7-3	O-8 (171)	3.0	1.5mm	2100	Variable Ratio/ Automatic Injection
EC44-3PM-01	6DP7-3	O-8 (171)	3.0	1.5mm	2100	Variable Ratio/ Automatic Injection
EC50PM-01/02	6DH7-2	P-8 (166)	3.0	1.5mm	1600	Variable Ratio/ Automatic Injection
EC50PM-03	6DH7-3	P-6 (166)	3.0	1.5mm	1600	Variable Ratio/ Automatic Injection
EC40PL-02/04	6DP17-3	Q-2 (166)	2.0	1.5mm	1900	Variable Ratio/ Automatic Injection
EC50PL-01/02/ 04/05	6F9-3 6F9-3	Q-0 (247) P-8 (247)	3.0 2.5	1.5mm 1.5mm	1900 1900	Variable Ratio/ Automatic Injection
EC50PL-06	6EJ26-3	P-6 (166)	3.0	1.5mm	1900	Variable Ratio/ Automatic Injection
EC65PL-02	6DH7-3	Q-2 (247)	2.5	1.5mm	1900	Variable Ratio/ Automatic Injection
EC65PL-03	EFI	N/A	N/A	N/A	N/A	Variable Ratio/ Automatic Injection

CARBURETION

1992 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
StarLite	EC25PS-07	244	VM30SS (1) Zinc	160 Hex	60	1.0 turn
Indy Lite/GT/Deluxe	EC34-2PM-02/03/04	339	VM30SS (2) Zinc	160 Hex	35	1.0 turn 1 1/2 turn (GT)
Indy Sport/ Sport GT	EC44-3PM-01	432	VM34SS (2) Zinc	180 Hex	35	1 1/4 turn
Indy Trail/ Trail Deluxe	EC50PM-01/02	488	VM34SS (2) Zinc	230 Hex	35	1.0 turn
Indy SuperTrak	EC50PM-03	488	VM34SS (2) Zinc	200 Hex	30	1.0 turn
Indy 440	EC45PL-02	432	VM34SS (2) Zinc	230 Hex	30	1.0 turn
440 XCR	EC45PL-01	432	VM38SS (2) Aluminum	290 Hex	40	1.0 turn
Indy 500/Classic	EC50PL-04/05	488	VM38SS (2) Aluminum	280 Hex	40	1.0 turn
Indy WideTrak	EC50PL-06	488	VM34SS (2) Zinc	190 Hex	35	3/4 turn
Indy 650	EC65PL-02	648	VM38SS (3) Aluminum	260 Hex	45	1.0 turn
Indy 500 SP/ SKS	EC50PL-07	488	46MM TBI* (2)	N/A	N/A	N/A
RXL/SKS	EC65PL-03	648	46mm TBI* (3)	N/A	N/A	N/A

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-07	5DT49-3	O-8 (171)	3.0	1.5	1200	Variable Ratio/ Automatic Injection
EC34-2PM-02/03/04	5DP7-3 5DP7-2 (GT)	O-8 (171)	3.0	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM-01	6DH7-3	P-2 (166)	3.0	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM-01/02	6DH7-2	P-8 (166)	3.0	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM-03	6DH7-3	P-6 (166)	3.0	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL-02	6DH7-2	P-4 (166)	2.5	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL-01	6F9-3	P-8 (247)	2.5	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL-04/05	6F9-3	P-8 (247)	2.5	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL-06	6EJ26-2	P-6 (166)	3.0	1.5	1600	Variable Ratio/ Automatic Injection
EC65PL-02	6DH7-3	Q-2 (247)	2.5	1.5	1500	Variable Ratio/ Automatic Injection
EC50PL-07	EFI**	N/A	N/A	N/A	N/A	Variable Ratio/ Automatic Injection
EC65PL-03	EFI**	N/A	N/A	N/A	N/A	Variable Ratio/ Automatic Injection

* T.B.I. (Throttle Body Injectors)

** E.F.I. (Electronic Fuel Injection)

CARBURETION 1993 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
StarLite/GT	EC25PS-07	244	VM30SS (1) Zinc	140 Hex	60	1.0 turn
Indy Lite/GT/Deluxe	EC34-2PM-02/04	339	VM30SS (2) Zinc	145 Hex	35	1 1/2 turn
Sport/Trail Deluxe	EC44-3PM-01	432	VM34SS (2) Zinc	180 Hex	35	1 1/4 turn
Trail	EC50PM-01	488	VM34SS (2) Zinc	230	35	1.0 turn
440 XCR	EC45PL-01	432	VM38SS (2) Aluminum	290	40	1.0 turn
Indy 440/SKS	EC45PL-02	432	VM34SS (2) Zinc	230	35	3/4 turn
Classic/Touring	EC50PL-04/05	488	VM38SS (2) Aluminum	280	40	1.0 turn
WideTrak GT	EC50PM-03	488	VM34SS (2) Zinc	200	30	1.0 turn
WideTrak	EC50PL-06	488	VM34SS (2) Zinc	190	35	3/4 turn
XLT/SP/SKS	EC58PL-01	579	VM34SS (3) Zinc	200	35	1.0 turn
Storm/SKS	EC75PL-01	744	VM38SS (3) Aluminum	390 390 410 P C M	35	1 1/2 turn
500 EFI/SKS	EC50PL-07	488	46MM TBI* (2)	N/A	N/A	N/A
RXL/SKS	EC65PL-05	648	46mm TBI* (3)	N/A	N/A	N/A

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM $\pm$ 200	Fuel/Oil Mixture
EC25PS-07	5DT2-3	O-8 (169)	3.0 AL	1.5	1200	Variable Ratio/ Automatic Injection
EC34-2PM-02/04	5DP7-2	O-6 (169)	2.5 AL	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM-01	6DH7-3	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM-01/03	6DH7-2 6DH7-3	P-8 (166) P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL-01	6DH3-3	P-8 (247)	2.0 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC45PL-02	6DH7-2	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL-04/05	6F9-3	P-8 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL-06	6EJ26-2	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC58PL-01	6DP17-3	Q-2 (166)	2.0 CH	1.5	1800	Variable Ratio/ Automatic Injection
EC75PL-01	6CEY6-3	R-0 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL-07	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection
EC65PL-05	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection

* T.B.I. (Throttle Body Injectors)

** E.F.I. (Electronic Fuel Injection)

CARBURETION

1994 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
StarLite/GT	EC25PS-07	244	VM30SS (1) Zinc	140 Hex	60	1.0 turn
Indy Lite/GT/ Deluxe	EC34-2PM-02/04	339	VM30SS (2) Zinc	145 Hex	35	1 1/2 turn
Sport/SKS Super Sport	EC44-3PM-01 01/02	432	VM34SS (2) Zinc	180 Hex	35	1 1/4 turn
Trail/Trail Deluxe	EC50PM-01	488	VM34SS (2) Zinc	230	35	1.0 turn
440 XCR	EC45PL-01	432	VM38SS (2) Aluminum	290	40	1.0 turn
440 XCR SP	EC45PL-03	432	VM38SS (2) Aluminum	330	40	1.5 turn
600 XCR	EC58PL-02	596	VM38SS (3) Aluminum	260	35	1.0 turn
Indy 440/SKS	EC45PL-02	432	VM34SS (2) Zinc	230	35	3/4 turn
Classic	EC50PL-05	488	VM38SS (2) Aluminum	300	40	1.0 turn
WideTrak GT	EC50PM-03	488	VM34SS (2) Zinc	200	30	1.0 turn
WideTrak LX	EC50PL-06	488	VM34SS (2) Zinc	190	35	3/4 turn
XLT/SP/SKS	EC58PL-01	579	VM34SS (3) Zinc	200	35	1.0 turn
XLT Special XTRA	EC58PL-03	596	VM34SS (3) Zinc	210	35	1.0 turn
Storm/SKS	EC80PL-01	794	VM38SS (3) Aluminum	380 390 410 P C M	30	1 1/2 turn
500 EFI/SKS Classic Touring	EC50PL-07 /08	488	46MM TBI* (2)	N/A	N/A	N/A
RXL/SKS	EC65PL-05	648	46mm TBI* (3)	N/A	N/A	N/A

CARBURETION 1994 Condensed Data

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM ± 200	Fuel/Oil Mixture
EC25PS-07	5DT2-3	O-8 (169)	3.0 AL	1.5	1200	Variable Ratio/ Automatic Injection
EC34-2PM-02/04	5DP7-2	O-6 (169)	2.5 AL	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM-01 01/02	6DH7-3 6DH7-2/6FJ6-3	P-4 (166) P-4/P-8 (166)	2.5 CH 2.0	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM-01 /03	6DH7-2 6DH7-3	P-8 (166) P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL-01	6DH3-3	P-8 (247)	2.0 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC45PL-02	6DH7-2	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL-03	6DH3-3	Q-2 (247)	2.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL-05	6F9-3	P-8 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL-06	6EJ26-2	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC58PL-01	6DP17-3	Q-2 (166)	2.0 CH	1.5	1800	Variable Ratio/ Automatic Injection
EC58PL-02	6DH7-3	Q-2 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC58PL-03	6DP17-3	Q-2 (166)	2.0 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC80PL-01	6CGY3-2	Q-8 (247)	2.5 CH	1.8	1900	Variable Ratio/ Automatic Injection
EC50PL-07/08	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection
EC65PL-05	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection

* T.B.I. (Throttle Body Injectors)

** E.F.I. (Electronic Fuel Injection)

CARBURETION
1995 Condensed Data

Machine Model	Engine Model	Cyl. Disp. CC's	Carburetor Model, Mount Type & No.	Std. Main Jet & Type	Std. Pilot Jet	Air Screw Adjust (counterclockwise from seat)
StarLite	EC25PS07	244	VM30SS (1) Zinc	140	60	1.0 turn
Indy Lite/GT/ Deluxe	EC34-2PM 02/E02	339	VM30SS (2) Zinc	145	35	1 1/2 turn
Sport/Touring Super Sport	EC44-3PM01/02	432	VM34SS (2) Zinc	180	35	1 1/4 turn
Trail/Trail Deluxe	EC50PM04/E04	488	VM34SS (2) Zinc	240	35	1.5 turn
Indy 440/SKS	EC45PL02	432	VM34SS (2) Zinc	230	35	3/4 turn
Classic/500	EC50PL04/E04	488	VM38SS (2) Aluminum	300	40	1.0 turn
WideTrak LX	EC50PL06	488	VM34SS (2) Zinc	190	35	3/4 turn
WideTrak GT	EC50PM03	488	VM34SS (2) Zinc	200	30	1.0 turn
440 XCR	EC45PL05	439	VM34SS (2) Aluminum	290	40	1.0 turn
XLT/SP/SKS	EC58PL03	596	VM34SS (3) Zinc	210	35	1.0 turn
XLT Touring	EC58PLE04	596	VM34SS (3) Zinc	240	35	1.0 turn
600 XCR	EC58PL02	596	VM38AL (3) Aluminum	260	35	1.0 turn
Storm/SKS	EC80PL02	794	VM38SS (3) Aluminum	370 380 410 P C M	45	1 1/4 turn
500 EFI/SKS	EC50PL07 /08	488	46MM TBI* (2)	N/A	N/A	N/A
RXL/Touring	EC65PL05	648	46mm TBI* (3)	N/A	N/A	N/A

CARBURETION
1995 Condensed Data

Engine Model	Jet Needle No. "E" Clip Position	Needle Jet No.	Throttle Valve Cutaway	Valve Seat	Idle RPM ± 200	Fuel/Oil Mixture
EC25PS07	5DT2-3	O-8 (169)	3.0 AL	1.5	1200	Variable Ratio/ Automatic Injection
EC34-2PM02/E02	5DP7-2	O-6 (169)	2.5 AL	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM01	6DH7-3	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC44-3PM02	6FJ6-3	P-8 (166)	2.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM04/E04	6DH7-3	P-8 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL02	6DH7-2	P-4 (166)	2.5 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL04/E04	6F9-3	P-8 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC50PL06	6EJ26-2	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PM03	6DH7-3	P-6 (166)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC45PL05	6DH7-3	P-0 (286)	2.0 CH	1.5	1500	Variable Ratio/ Automatic Injection
EC58PL02	6DH7-3	Q-2 (247)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC58PLE04	6DP17-3	Q-2 (166)	2.5 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC58PL03	6DP17-3	Q-2 (166)	2.0 CH	1.5	1900	Variable Ratio/ Automatic Injection
EC80PL02	6CGY3-3	Q-0 (247)	3.0 CH	1.5	1600	Variable Ratio/ Automatic Injection
EC50PL07/08	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection
EC65PL05	EFI**	N/A	N/A	N/A	1900	Variable Ratio/ Automatic Injection

* T.B.I. (Throttle Body Injectors)

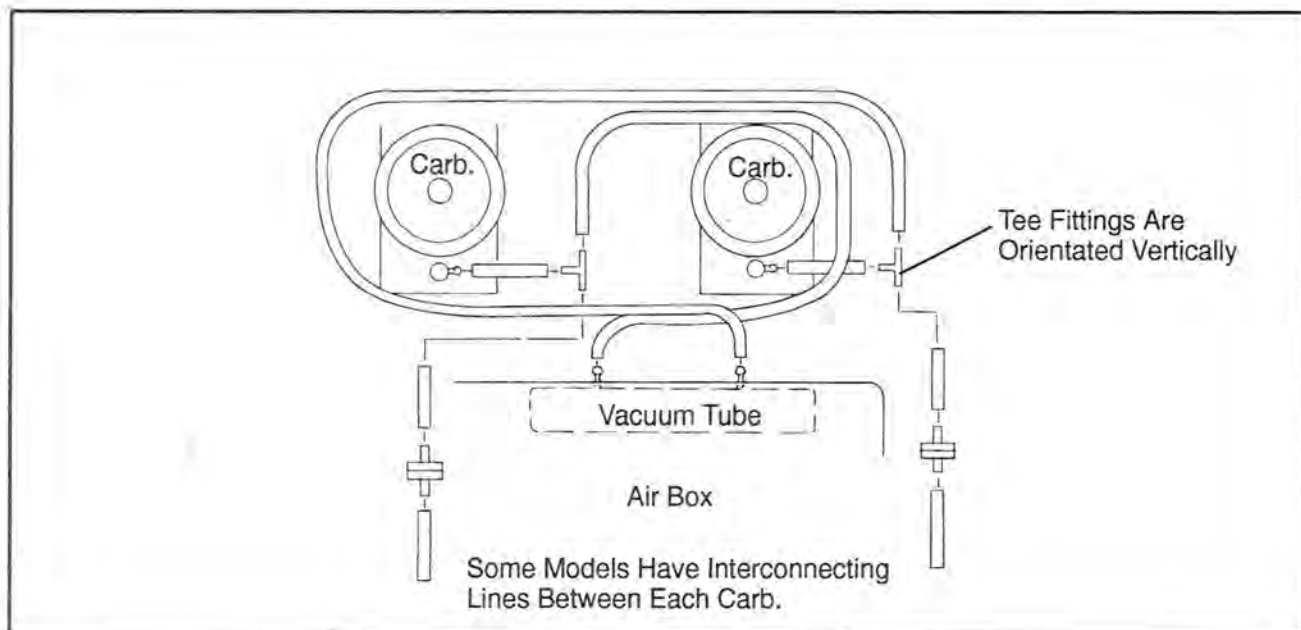
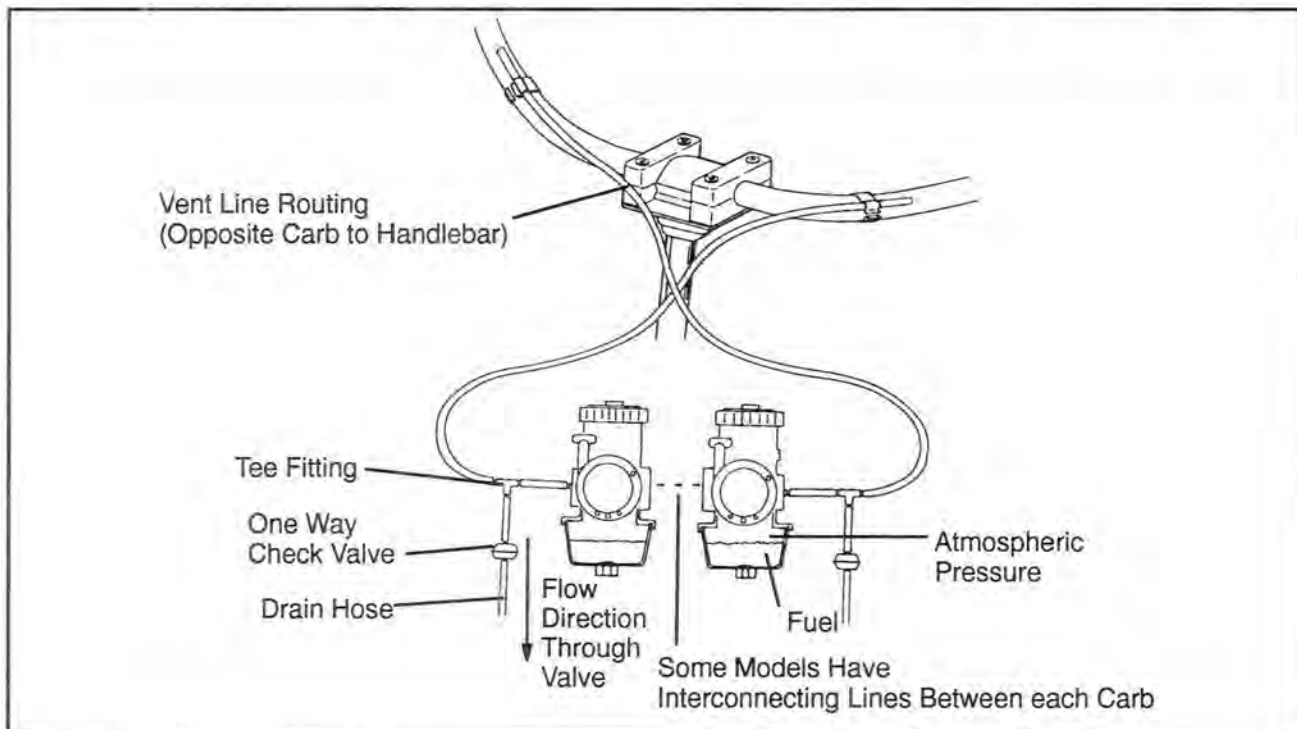
** E.F.I. (Electronic Fuel Injection)

CARBURETION Systems

Float Chamber Venting

In order to provide consistent fuel flow through the carburetor, the air pressure inside has to remain the same as the outside air pressure. For this reason, the float chamber is vented. It is very important that the vent lines are routed properly to the handlebars. Proper routing provides atmospheric pressure to the float chambers rather than high under hood pressure. If high pressure is introduced into the chamber it could push extra fuel through the jets, creating a rich running condition. In some cases high air pressure may not allow fuel to enter the float bowl, causing a lean mixture.

If the vent line is pinched or restricted, it can result in either a rich or lean condition, depending on how much fuel is present in the float bowl before the restriction begins. Generally speaking, if the fuel level is low to begin with, as fuel is trying to get in a pressure is built up inside the float chamber, not allowing fuel in. If the fuel level is high to begin with, low pressure can be created causing fuel to be siphoned in through the inlet needle and seat.



The function of a carburetor is to produce a combustible air/fuel mixture by breaking fuel into tiny particles in the form of vapor, to mix the fuel with air in a proper ratio, and to deliver the mixture to the engine. A proper ratio means an ideal air/fuel mixture which can burn without leaving an excess of fuel or air. Whether the proper mixture ratio is maintained or not is the key to efficient engine operation.

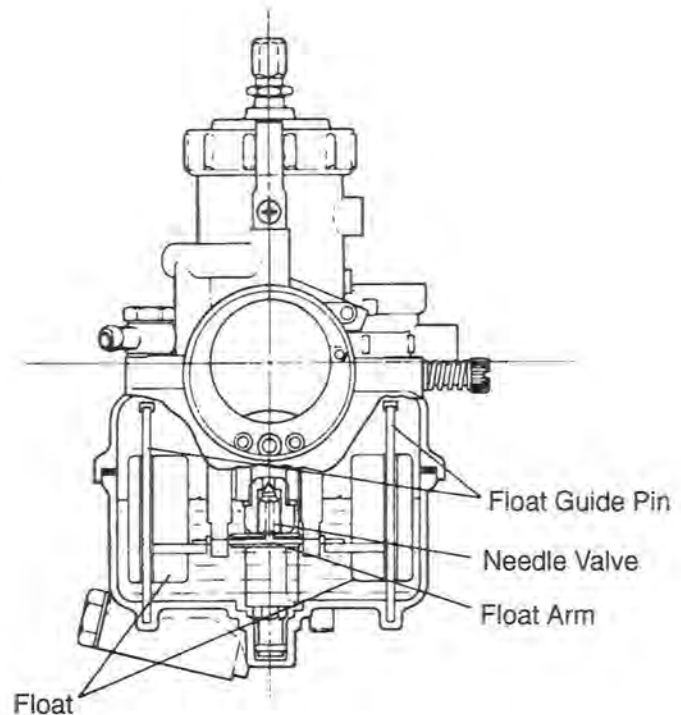
The engine of a vehicle is operated under a wide range of conditions, from idling with the throttle valve remaining almost closed, to full load or maximum output with the throttle valve fully opened. In order to meet the requirements for the proper mixture ratio under these varying conditions, a low speed fuel system, or pilot system, and a main fuel system are provided in Mikuni VM type carburetors.

The Mikuni carburetor has varying operations depending upon varying driving conditions. It is constructed of a float system, pilot system, main system, and starter system or initial starting device.

Float System

The float system is designed to maintain a constant height of gasoline during operation. When the fuel flowing from the fuel pump into the float chamber through the needle valve reaches the constant fuel level, the floats rise. When the buoyancy of the float and the fuel pressure of the fuel pump balance, the needle valve sticks fast to the needle seat, preventing further delivery of gasoline, thereby holding the standard level of gasoline.

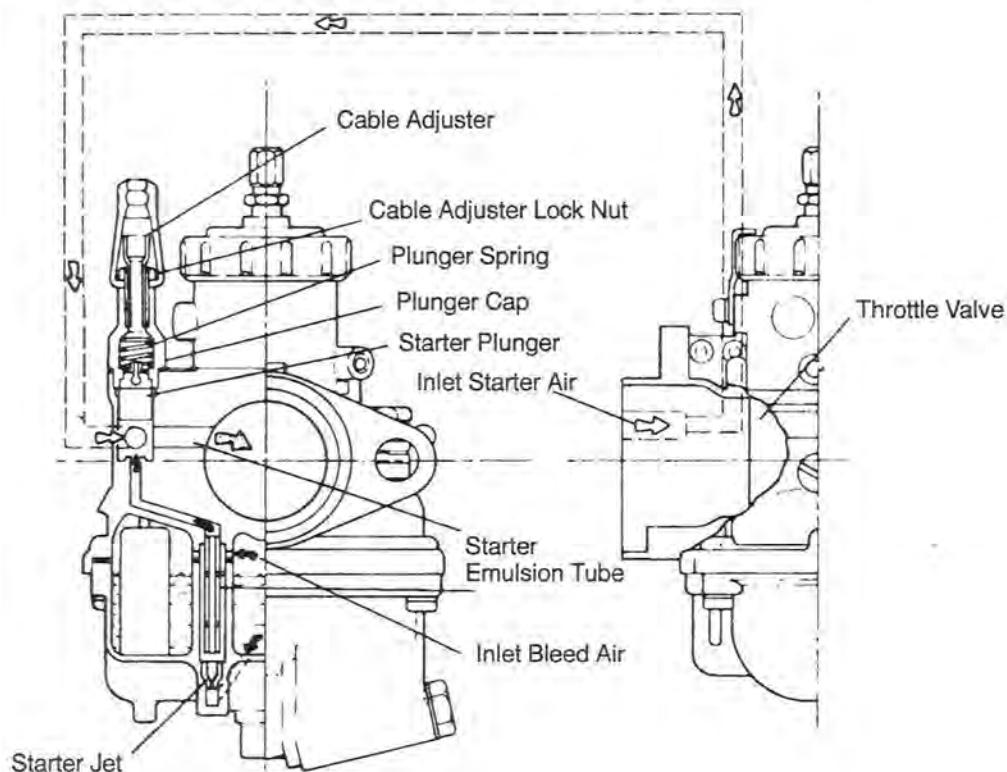
The fuel level in the bowl controls the amount of fuel in the fuel mixture. Too high a level allows more fuel than necessary to leave the nozzle, enriching the mixture. Too low a level results in a leaner mixture, since not enough fuel leaves the nozzle. Therefore, the predetermined fuel level should not be changed arbitrarily.



CARBURETION

Starter System - Closed Throttle

The starter system is employed for Mikuni carburetors in place of the choke. In this type of carburetor, fuel and air for starting the engine are metered with entirely independent jets. The fuel metered in the starter jet is mixed with air and is broken into tiny particles in the emulsion tube. The mixture then flows into the plunger area, mixes again with air coming from the air intake port for starting and is delivered to the engine in the optimum air/fuel ratio through the fuel discharge nozzle. The starter is opened and closed by means of the starter plunger. Since the starter type carburetor is constructed so as to utilize the negative pressure of the inlet pipe, it is important that the throttle valve is closed when starting the engine.



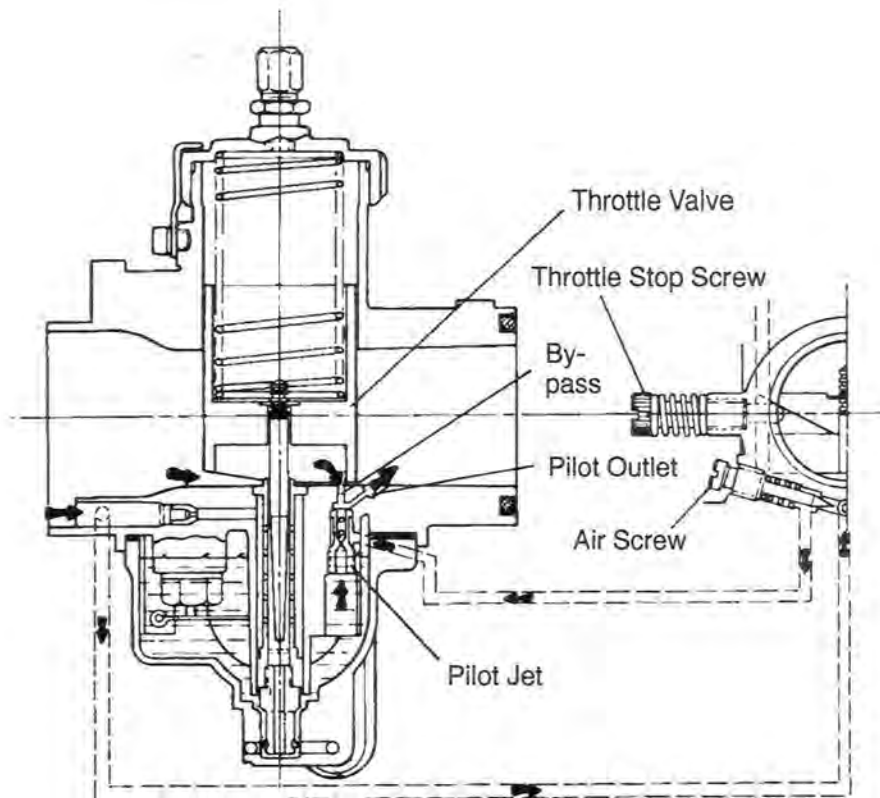
CARBURETION

Pilot System (0-3/8 Throttle)

The pilot system's main function is that of a low speed jet, to meter fuel at idle and low speed driving. Though its main function is to supply fuel at low speed, it does feed fuel continuously throughout the entire operating range.

Fuel for the pilot jet is drawn from the float bowl, mixed with air regulated by the air screw, and delivered to the engine through the pilot outlet.

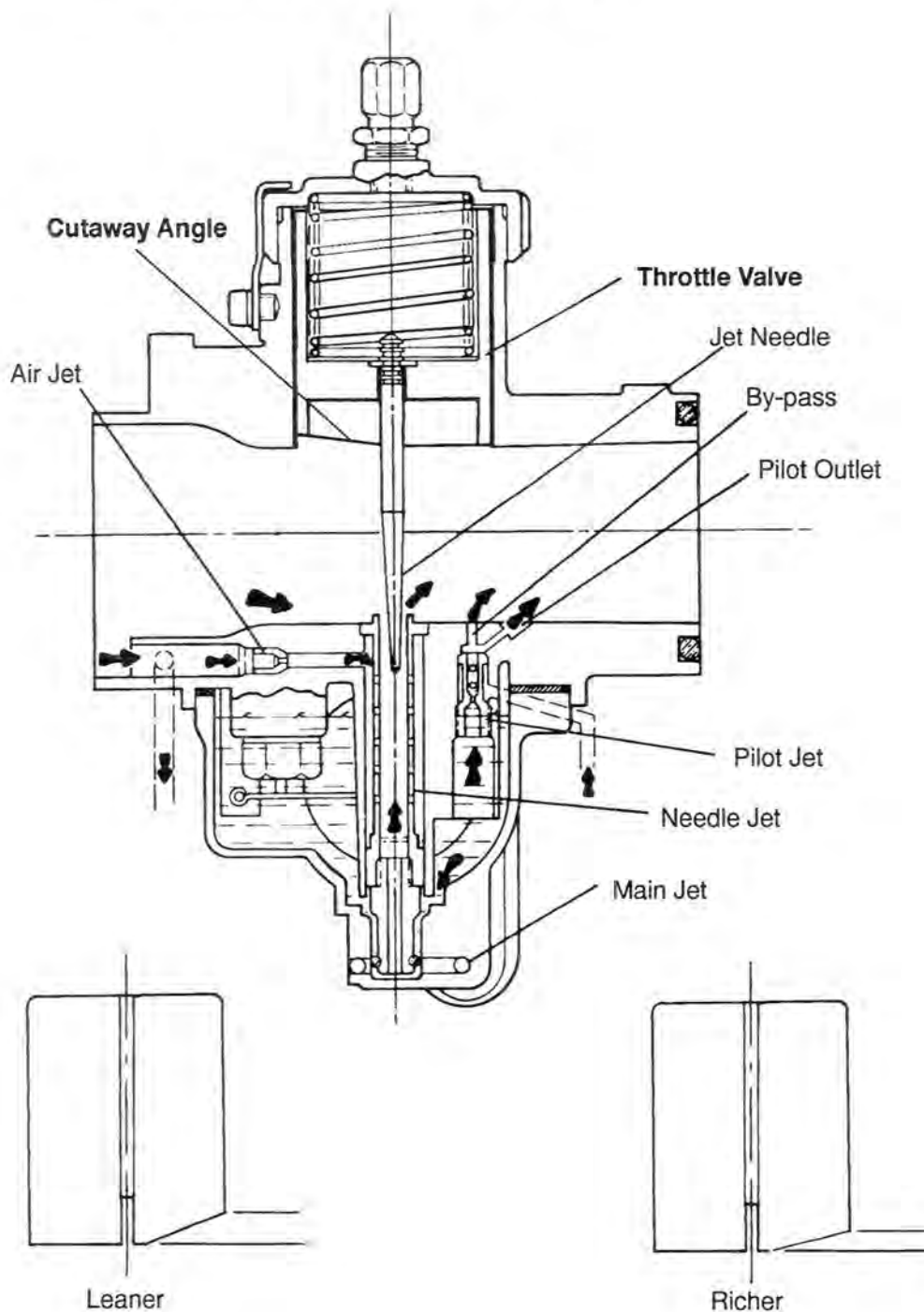
The mixture is regulated to some degree by adjusting the air screw. When the air screw is closed, the fuel mixture is made richer as the amount of air is reduced. When the air screw is opened, the mixture is made more lean as the amount of air is increased.



CARBURETION

Slide Cutaway (1/8-3/8 Throttle)

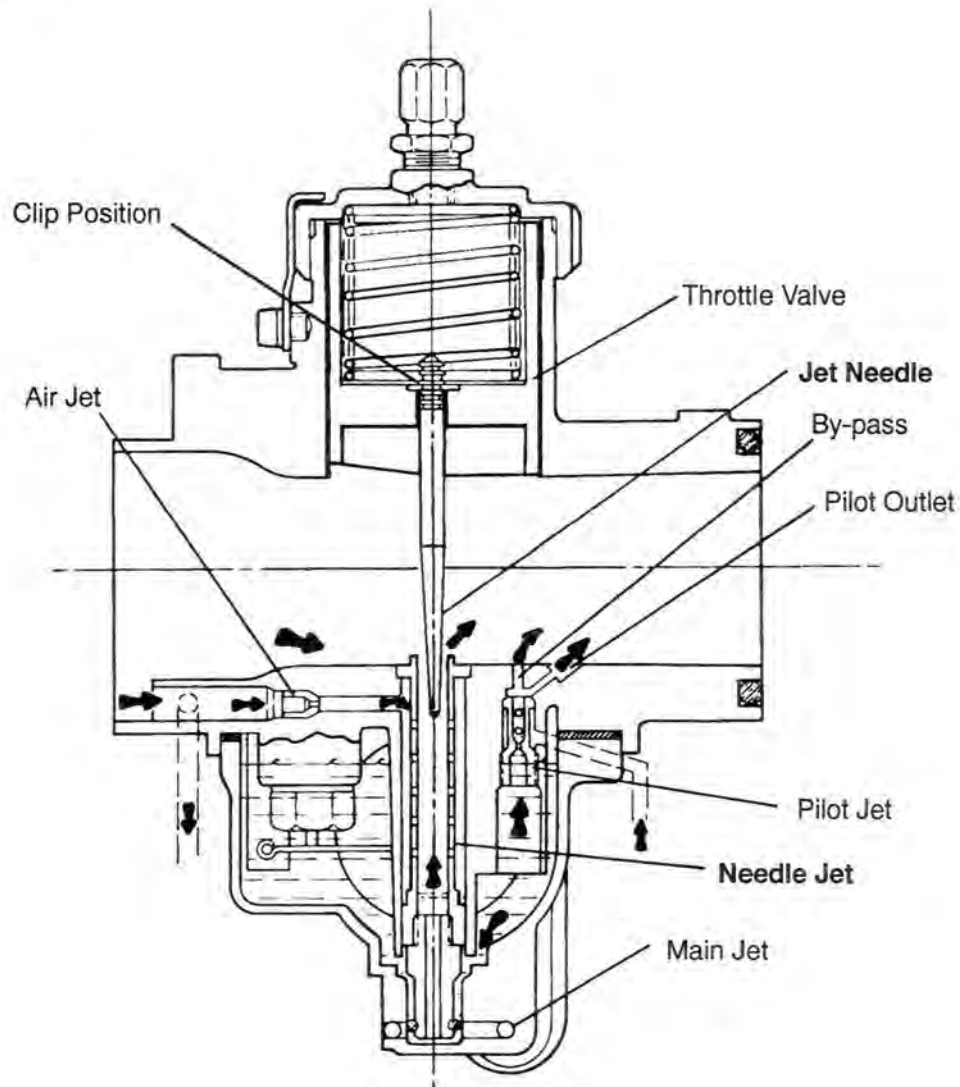
Throttle valve cutaway effect is most noticeable at 1/4 throttle opening. The amount of cutaway is pre-determined for a given engine to maintain a 14:1 air/fuel ratio at part throttle. A steep angle would indicate a fairly lean mixture because there is less resistance to air flow. A flat angle would provide a much richer mixture because there is more resistance to air flow. The venturi shape can be adjusted for each engine's breathing characteristics by using a different valve cutaway angle. A number will be stamped into the bottom of the valve (e.g. 2.5) indicating the size of the cutaway. The higher the number, the steeper the angle.



CARBURETION

Jet Needle/Needle Jet (3/8-3/4 Throttle)

The jet needle and needle jet have the most effect at approximately 3/8 to 3/4 throttle opening. Some mixture adjustment can be accomplished by changing the location of the "E" clip on the needle. Moving the clip down raises the needle in the jet passage and richens the mixture. Moving the clip up lowers the needle in the jet passage and leans the mixture. Letter and number codes are stamped into the needle and the jet indicating sizes and tapers of each.

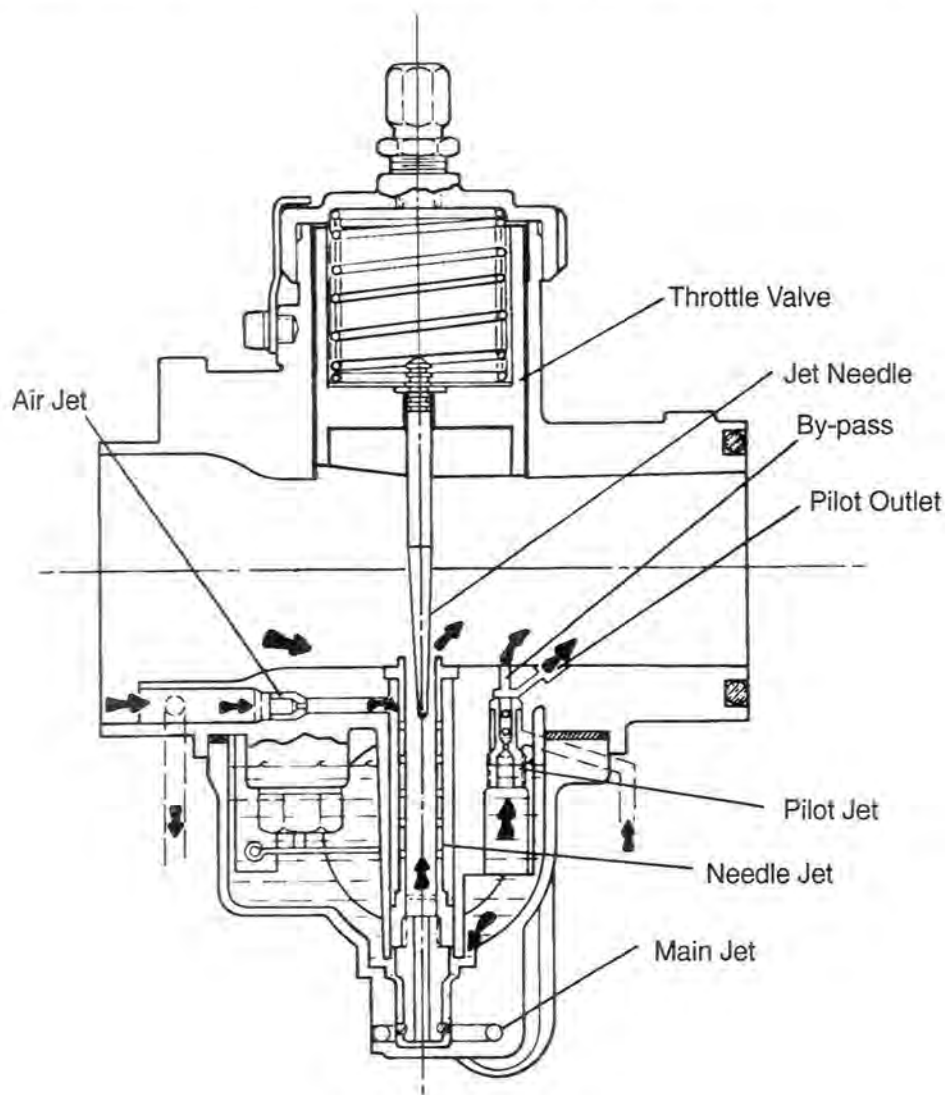


CARBURETION

Main System (3/4 to Full Throttle)

The main system is designed for delivering fuel between low speed and high speed operation. This system is made up of the jet needle, needle jet, and main jet. The main system begins to take effect as soon as there is enough air flow into the carburetor venturi to draw fuel up through the main jet and needle jet assembly. This system works in conjunction with the needle jet system.

During low speed driving, there is very little clearance between the jet needle and the needle jet; therefore, very little fuel from the main jet can pass between the jet needle and the needle jet. As the throttle valve opening is increased, the tapered jet needle is raised farther out of the needle jet, allowing greater fuel flow. Under full throttle opening, the cross sectioned area of clearance between the jet needle and the needle jet becomes greater than the cross sectioned area of the main jet. Thus the main jet is now controlling the amount of fuel flow.



CARBURETION

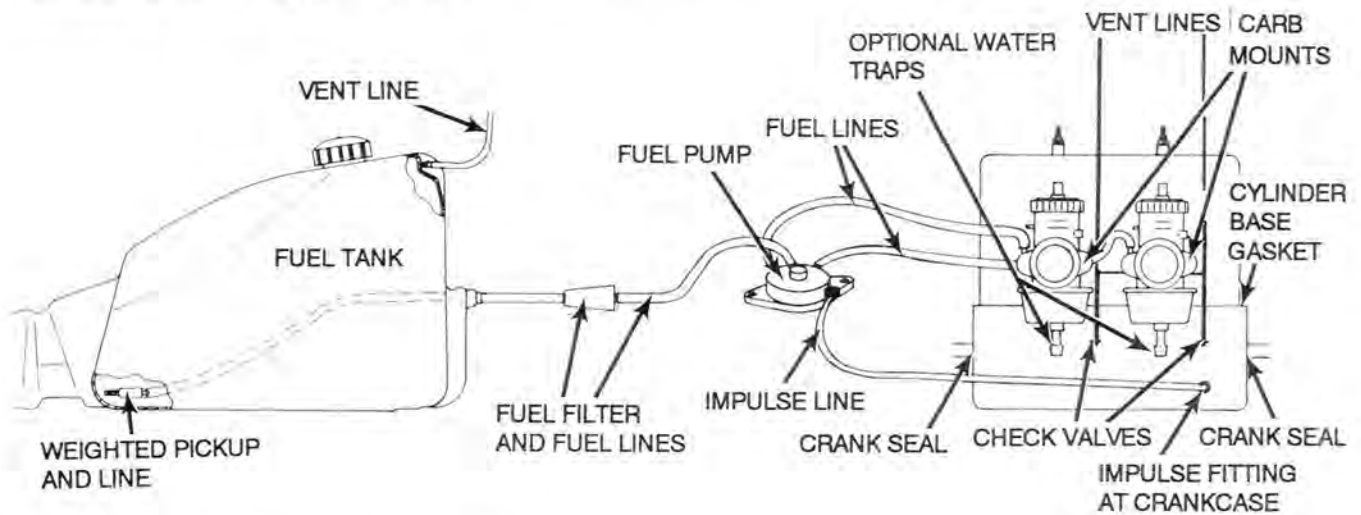
Fuel Delivery System - Typical

The fuel system contains many components which directly affect fuel mixture and driveability. When performing diagnosis or carburetor maintenance, the entire fuel delivery system should be inspected. Illustration 1 shows parts of the system requiring periodic maintenance to ensure there is no fuel or air leaks present.

Fuel filters should be replaced at least once per season or more often if any contamination is suspected.

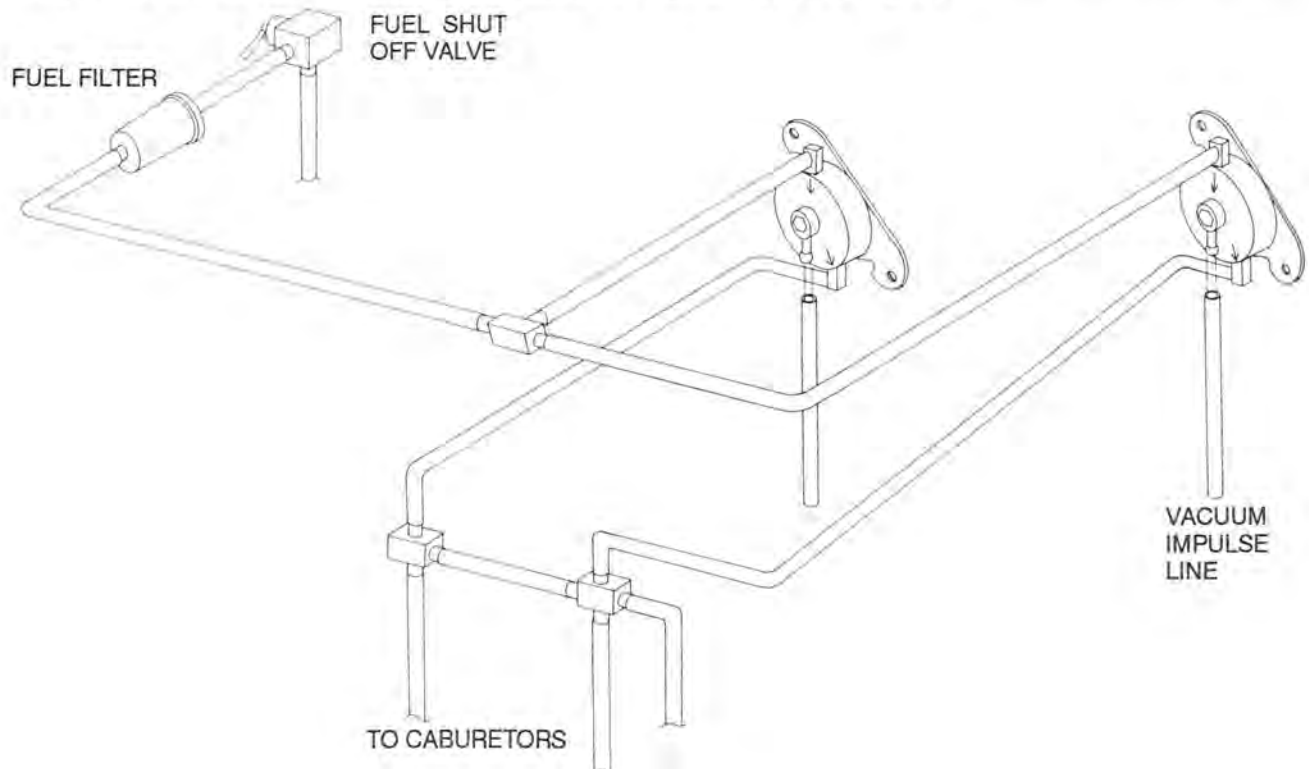
Fuel lines should be replaced every other season or more often if they become brittle or swollen. Fittings should be inspected at that time for cracks or leaks.

Test run and leak check the fuel system after any parts have been replaced and verify that all lines are routed correctly away from any moving parts.



Fuel Hose - Indy Storm/Storm SKS

The Storm model fuel system incorporates dual fuel pumps. It is important to pay particular attention to correct routing of the fuel lines in order to provide an adequate fuel supply to the engine.



CARBURETION

Component Effect vs Throttle Opening

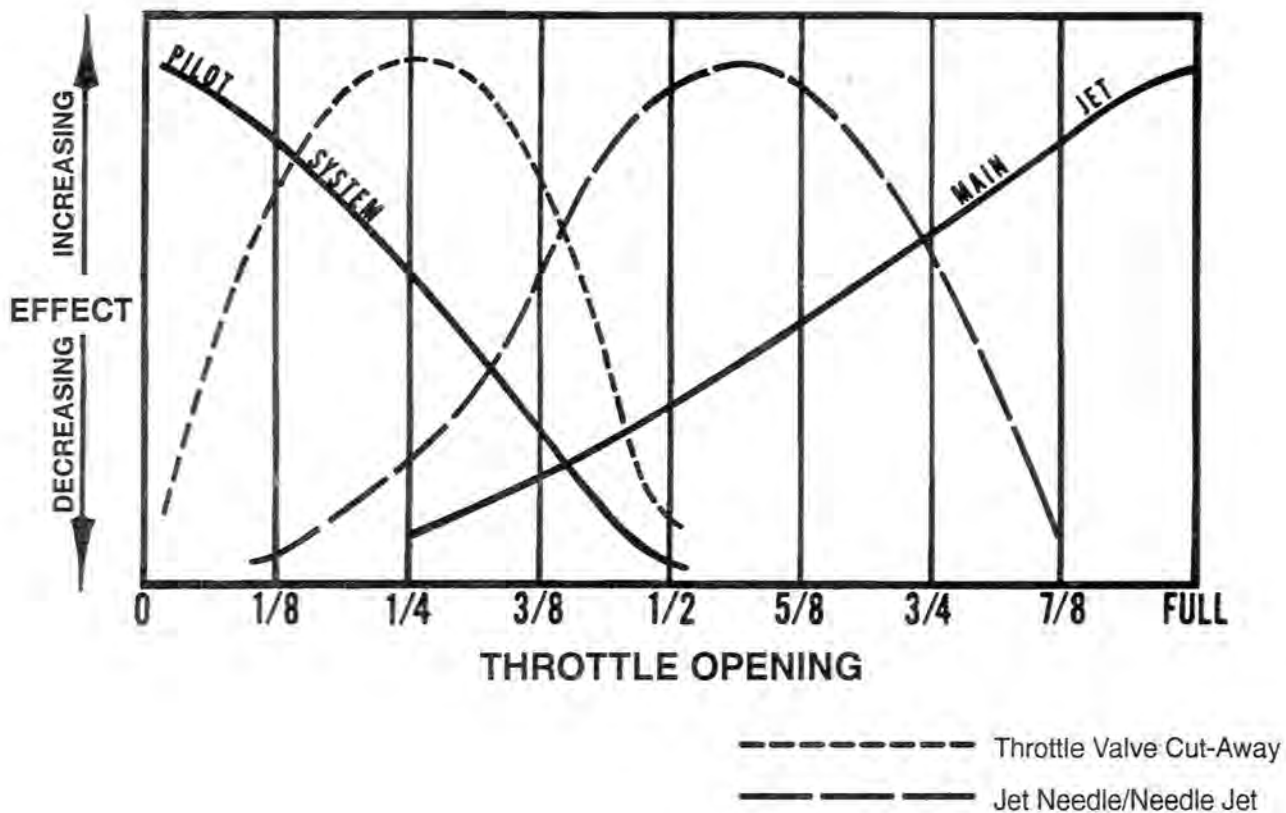
The throttle opening chart demonstrates component relationship to fuel flow versus throttle valve opening.

The pilot system's main function is that of a low speed jet. Its most effective range of fuel delivery is from idle to approximately $3/8$ throttle valve opening.

The throttle valve controls the rate of engine air by its movement up and down in the carburetor venturi. At small throttle openings the air flow is regulated chiefly by the valve cutaway as shown, with its greatest effectiveness at $1/4$ throttle opening. Throttle valves are numbered 1.0, 1.5, 2.0, etc., according to the size of the cutaway. Decreasing the cutaway number will increase the amount of fuel delivered in its effective range.

The jet needle and needle jet have an effective operating range from approximately $1/8$ to $7/8$ throttle opening. The amount of fuel delivered during this range relies upon the jet needle clip position, as well as the needle jet size and other specifications.

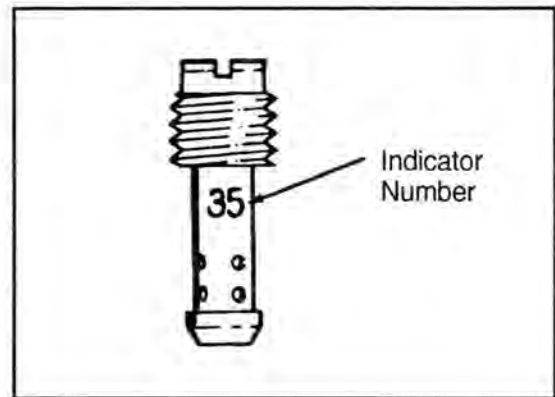
The main jet affects fuel delivery at $1/4$ throttle and consistently increases to full throttle opening.



CARBURETION Component Functions

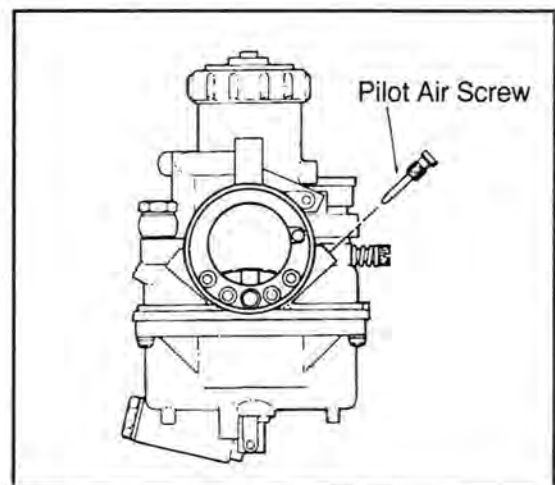
Pilot Jet

From idling to low speeds, the fuel supply is measured chiefly by the pilot jet. In the sides of the pilot jet, there are several air bleed openings which serve the same purpose as the air bleed in the needle jet, which is to reduce the fuel to mist. The number stamped on the jet is an indication of the amount of fuel in cc's which passes through the jet during a one minute interval under a given set of conditions.



Pilot Air Screw

This air screw controls the mixture from idling to low speeds. The tapered tip of the air screw projects into the air passage leading to the pilot jet air bleeds, and by turning the screw in or out, the cross sectional area of the air passage is varied, in turn varying the pilot jet air supply and changing the mixture ratio.

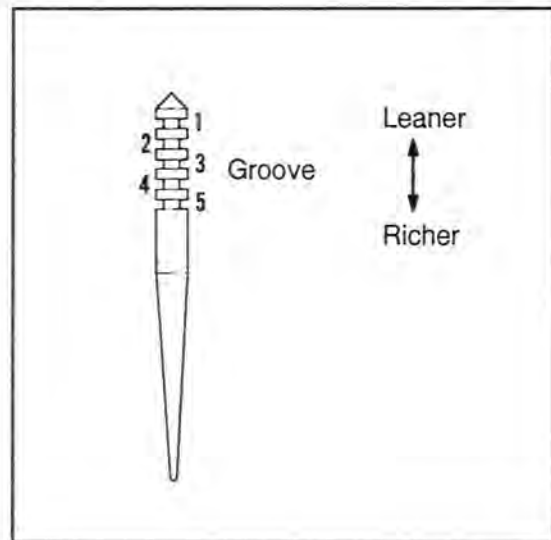


CARBURETION

Component Functions

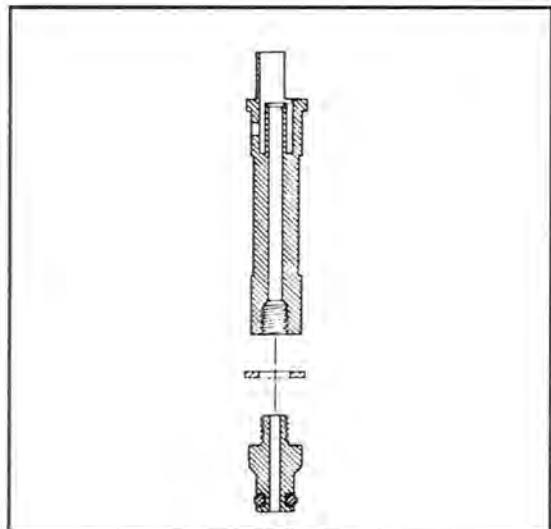
Jet Needle

The jet needle has five grooves for adjustment cut into the upper portion, and is tapered from approximately the middle of the needle to the lower end. The top is fixed to the center of the throttle valve by the needle clip, and the tapered end extends into the needle jet. Fuel flows through the space between the needle jet and jet needle. This space does not vary until the throttle reaches the 1/4 open point. At that time the tapered portion of the needle begins to move out of the jet and affect fuel flow as the opening enlarges. It follows that taper wear and the position of the needle clip in the grooves also affect the fuel flow rate. If the needle clip is changed from the standard position to a lower groove, the needle taper starts coming out of the jet sooner, resulting in a richer mixture. Moving the clip higher produces a leaner mixture.



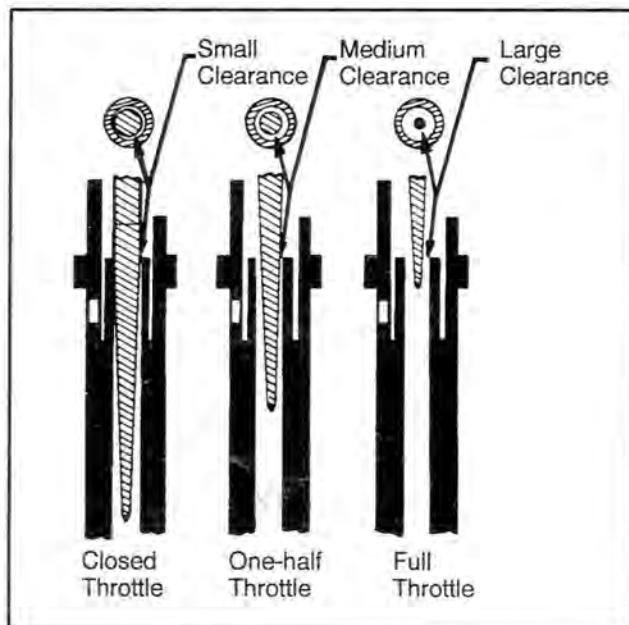
Needle Jet

The needle jet works in conjunction with the jet needle to regulate fuel flow rate. There is an air bleed opening in the side of the needle jet which brings in air measured by the air jet. This air initiates the mixing and atomizing process inside the needle jet. Mixing is augmented by a projection at the needle jet outlet, called the primary choke. The letter number code stamped on the jet indicates jet inside diameter.



Throttle Opening vs Fuel Flow

In the full throttle condition, the cross sectioned area between the jet needle and the needle jet is larger than the cross sectioned area of the main jet. The main jet therefore has greater control over fuel flow.

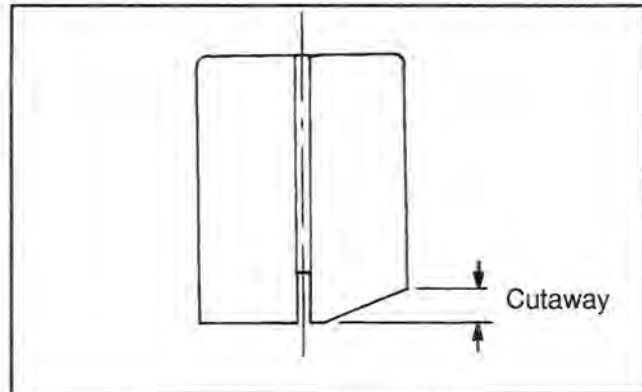


CARBURETION Component Functions

THROTTLE VALVE

The throttle valve controls the rate of engine air intake by moving up and down inside the main bore. At small throttle openings, air flow control is performed chiefly by the cutaway in the valve. By controlling air flow the negative pressure over the needle valve is regulated, in turn governing fuel intake.

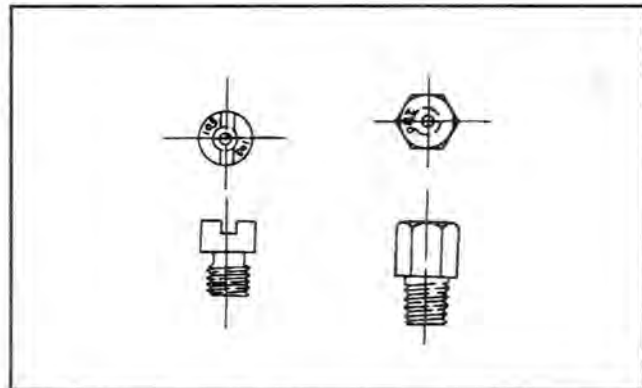
The throttle valves are numbered 1.0, 1.5, 2.0, etc., according to the size of the cutaway. The higher the number, the leaner the gasoline/air mixture.



MAIN JET

When the area between the needle jet and jet needle increases, as the throttle opening becomes greater, fuel flow is metered chiefly by the main jet. The number on the jet indicates the approximate amount of fuel cc's which will pass through it in one minute. The larger numbers give a greater flow, resulting in a richer mixture.

Main jets are located either in their banjo bolt holders in the carburetor bowl, or are screwed directly into the needle jet base.



The following chart lists all main and pilot jets and the part number of each that are presently available.

<u>PILOT JET NO.</u>		<u>ROUND HEAD</u>		<u>HEX HEAD</u>	
		<u>MAIN JET NO.</u>	<u>PART NO.</u>	<u>MAIN JET NO.</u>	<u>PART NO.</u>
25	3130064	160	3130094	210	3130124
30	3130065	165	3130095	220	3130125
35	3130066	170	3130096	230	3130126
40	3130067	175	3130097	240	3130127
45	3130068	180	3130098	250	3130128
50	3130069	<u>HEX HEAD</u>		260	3130129
55	3130070	<u>MAIN JET NO.</u>	<u>PART NO.</u>	270	3130130
60	3130071	80	3130099	280	3130131
65	3130072	85	3130100	290	3130132
<u>ROUND HEAD</u>		90	3130101	300	3130133
<u>MAIN JET NO.</u>	<u>PART NO.</u>	95	3130102	310	3130134
90	3130073	100	3130103	320	3130135
95	3130074	105	3130104	330	3130136
100	3130075	110	3130105	340	3130137
102.5	3130076	115	3130106	350	3130138
105	3130077	120	3130107	360	3130139
107.5	3130078	125	3130108	380	3130140
110	3130079	130	3130109	400	3130141
112.5	3130080	135	3130110	420	3130142
115	3130081	140	3130111	430	3130143
117.5	3130082	145	3130112	440	3130144
120	3130083	150	3130113	450	3130145
122.5	3130084	155	3130114	460	3130146
125	3130085	160	3130115	470	3130147
127.5	3130086	165	3130116	490	3130148
130	3130087	170	3130117	500	3130149
132.5	3130088	175	3130118	530	3130150
135	3130089	180	3130119	560	3130151
137.5	3130090	185	3130120	590	3130152
140	3130091	190	3130121	620	3130153
145	3130092	195	3130122		
150	3130093	200	3130123		

CARBURETION

Jetting Guidelines and Part Numbers

The number of the main jet is stamped on each jet. Although the jet size is also stamped on the banjo bolt, **never** assume that it is correct. Always remove the banjo bolt and check the main jet itself.

The original main jet is not necessarily the correct main jet for that particular engine or altitude.

NOTE: Each engine has slightly different characteristics. Therefore, two engines of one particular cc may not necessarily be jetted exactly the same.

Pilot jets are instrumental in low RPM performance. If the fuel flow is too great at low RPM, the excess fuel will build up in the crankcase, and only with increased RPM will the fuel be transferred to the combustion chamber.

CAUTION: Too small a main jet and too small a pilot jet can cause serious engine damage. Jet the carburetors carefully.

It is the dealer's responsibility to insure that the correct jets are installed in the machine. Be very careful when jetting down in warm weather. As the weather turns colder it will be necessary to re-jet upward to prevent engine damage.

ETHANOL AND MTBE (Methyl Tertiary Butyl Ether) "OXYGENATED" GASOLINE USE IN YOUR POLARIS SNOWMOBILE

When using fuels containing ethanol of up to 10% in Polaris engines, they will run leaner than non-alcohol blended fuels. These fuels contain oxygen and in turn the air/fuel mixture ratio changes. Oxygenated fuels cause an engine to experience a leaner burning condition. This leaner mixture can cause engine damage if adjustments are not made. Usually one jet size over the Altitude/Temperature chart is acceptable.

All engines react the same with these fuels. However, Polaris EFI models have little or no margin to allow for this leaner condition. Polaris has also found that oxygenated fuels using the MTBE additive versus ethanol are acceptable and can be used without adjustments.

Many areas within the U.S. are required to use oxygenated (ethanol) fuels. Polaris customers may not have a choice in operating their machines using this fuel. These areas are called non-attainment areas.

To reduce the possibility of alcohol-related engine problems, avoid the use of ethanol if possible. Although we feel this is a good fuel which has many benefits, Polaris engines have not been adjusted or calibrated to run properly using this fuel. If you must use ethanol blended fuels, we recommend that you use only 90 pump octane, (R+M)/2, or higher.

Whenever servicing the carburetor or fuel system, it is important to heed the following warnings.

WARNING

Gasoline is extremely flammable and explosive under certain conditions.

-  Always stop the engine and refuel outdoors or in a well ventilated area.
-  Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored or used.
-  Do not overfill the tank. Do not fill the tank neck.
-  If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.
-  If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
-  Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

CARBURETION 1985

EC44-2PM-2100

Main Jet - 230

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 6DH7 - 2

Cut Away - 3.0

Altitude - Feet	-40	-20	0	+20	+40	+60
1000	240	230	230	220	210	200
3000	230	220	220	210	200	190
5000	220	210	210	200	190	180
7000	210	200	200	190	180	170
9000	200	190	190	180	170	170

EC44-2PM-3100

Main Jet - 280

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6DH7 - 3

Cut Away - 2.5

Altitude - Feet	-40	-20	0	+20	+40	+60
1000	290	280	270	260	250	240
3000	280	270	250	240	230	220
5000	260	250	240	230	220	210
7000	250	240	230	220	210	200
9000	230	220	210	200	190	180

EC25PS-06

Main Jet - 130

Pilot Jet - 60

Air Screw - 1.5 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40	-20	0	+20	+40	+60
1000	130	130	120	120	110	110
3000	130	120	120	110	100	100
5000	120	110	110	100	100	90
7000	110	110	100	100	90	90
9000	110	100	100	90	90	90

EC44-2PM-5000

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 5DP10-3

Cut Away - 2.5

Altitude - Feet	-40	-20	0	+20	+40	+60
1000	200	190	190	180	170	170
3000	190	180	180	180	170	160
5000	180	170	170	160	160	150
7000	170	160	160	150	150	140
9000	160	150	150	140	140	130

EC60PL-02

Main Jet - 260

Pilot Jet - 35

Air Screw - 3/4 turn

Needle Jet - P8-247

Jet Needle - 6F4-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	270	260	250	240	230
3000-5000	260	250	240	230	220
5000-7000	250	240	230	220	210
7000-9000	230	220	210	200	190
9000-11000	220	210	200	190	180

EC40PL-02

Main Jet - 220

Pilot Jet - 35

Air Screw - 1.0 turn

Needle Jet - P8-166

Jet Needle - 6DH7-2

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	230	220	220	210	200
3000-5000	220	210	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	180	170	170

CARBURETION 1986

Star

EC25PS-06

Main Jet - 130

Pilot Jet - 60

Air Screw - 1.5 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	130	130	120	120	110
3000-5000	130	120	120	110	100
5000-7000	120	110	110	100	100
7000-9000	110	110	100	100	90
9000-11000	110	100	100	90	90

Sprint (ES)

EC34-2PM-01/02

Main Jet - 145

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	150	145	140	135	130
3000-5000	145	140	135	130	125
5000-7000	140	135	130	125	120
7000-9000	135	130	125	120	115
9000-11000	130	125	120	115	110

SS

EC44-2PM-3100

Main Jet - 280

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 2.5

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	260	250
3000-5000	280	270	250	240	230
5000-7000	260	250	240	230	220
7000-9000	250	240	230	220	210
9000-11000	230	220	210	200	190

Indy Trail

EC50PM-01

Main Jet - 220

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	220	210	200	190	180
7000-9000	210	200	190	180	170
9000-11000	200	190	180	170	170

Indy 400

EC40PL-02

Main Jet - 220

Pilot Jet - 30

Air Screw - 1.5 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	230	220	220	210	200
3000-5000	220	210	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	180	170	170

Indy 600

EC60PL-02

Main Jet - 260

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	260	250	240	230	220
7000-9000	240	230	220	210	200
9000-11000	230	220	210	200	190

Long Track

EC44-2PM-5100

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 5DP10-3

Cut Away - 2.5

Needle Jet - P8-171

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	210	200	190	180	170
3000-5000	200	190	180	170	160
5000-7000	190	180	170	160	150
7000-9000	180	170	160	150	140
9000-11000	170	160	150	140	130

CARBURETION 1987

Star Trak, Star

EC25PS-06

Main Jet - 130

Pilot Jet - 60

Air Screw - 1.5 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	130	130	120	120	110
3000-5000	130	120	120	110	100
5000-7000	120	110	110	100	100
7000-9000	110	110	100	100	90
9000-11000	110	100	100	90	90

Sprint (ES)

EC34-2PM-01/02

Main Jet - 155

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	160	155	150	145	140
3000-5000	155	150	145	135	130
5000-7000	145	14	135	130	125
7000-9000	135	130	125	120	115
9000-11000	130	120	115	110	105

Long Track (R.L.R.)

EC44-2PM-5100

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 5DP10-3

Cut Away - 2.5

Needle Jet - P8-171

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	210	200	190	180	170
3000-5000	200	190	180	170	160
5000-7000	190	180	170	160	150
7000-9000	180	170	160	150	140
9000-11000	170	160	150	140	130

Indy Sport

EC34-2PM-03

Main Jet - 180

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	190	180	170	160	160
3000-5000	180	170	160	160	150
5000-7000	170	160	150	150	140
7000-9000	160	150	140	140	130
9000-11000	150	140	130	130	125

Indy Trail (All)

EC50PM-01/02

Main Jet - 220

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	210	200	190	180
7000-9000	200	190	180	180	170
9000-11000	190	180	170	170	160

Indy 400

EC40PL-02

Main Jet - 220

Pilot Jet - 30

Air Screw - 1.5 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	170	160	160

Indy 600

EC60PL-02

Main Jet - 260

Pilot Jet - 40

Air Screw - 3/4 turn

Jet Needle - 6F9-3

Cut Away - 3.0

NOTE: Main jet size on Indy 600 is listed for PTO side (drive clutch side) carburetor. Magneto side and center can be adjusted one size leaner.

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	250	240	230	220	210
7000-9000	240	230	220	210	200
9000-11000	220	210	200	200	190

CARBURETION 1988

Star, StarTrak

EC25PS-06

Main Jet - 130

Pilot Jet - 60

Air Screw - 1.5 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	130	130	120	120	110
3000-5000	130	120	120	110	100
5000-7000	120	110	110	100	100
7000-9000	110	110	100	100	90
9000-11000	110	100	100	90	90

Sprint (ES)

EC34-2PM-02

Main Jet - 155

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	160	155	150	145	140
3000-5000	155	150	145	135	130
5000-7000	145	140	135	130	125
7000-9000	135	130	125	120	115
9000-11000	130	120	115	110	105

LongTrak (R.L.R.)

EC44-2PM-4100

Main Jet - 280

Pilot Jet - 50

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 2.5

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	260	250
3000-5000	280	270	250	240	230
5000-7000	260	250	240	230	220
7000-9000	250	240	230	220	210
9000-11000	230	220	210	200	190

Indy Sport

EC34-2PM-03

Main Jet - 180

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	190	180	170	160	160
3000-5000	180	170	160	160	150
5000-7000	170	160	150	150	140
7000-9000	160	150	140	140	130
9000-11000	150	140	130	130	125

Indy Trail (All)

EC50PM-01/02

Main Jet - 220

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	210	200	190	180
7000-9000	200	190	180	180	170
9000-11000	190	180	170	170	160

Indy 400

EC40PL-02/03

Main Jet - 220

Pilot Jet - 30

Air Screw - 1 1/2 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	170	160	160

Indy 650

EC65PL-01

Main Jet - 260

Pilot Jet - 50

Air Screw - 3/4 turn

Jet Needle - 6F9-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	250	240	230	220	210
7000-9000	240	230	220	210	200
9000-11000	220	210	200	200	190

Star, StarTrak

EC25PS-06

Main Jet - 130

Pilot Jet - 60

Air Screw - 1.5 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Sprint (ES)

EC34-2PM-02

Main Jet - 155

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

LongTrak (R.L.R.)

EC44-2PM-4100

Main Jet - 280

Pilot Jet - 50

Air Screw - 1.0 turn

Needle Jet - P6-166

Jet Needle - 6DH7-3

Cut Away - 2.5

Indy Sport

EC34-2PM-03

Main Jet - 180

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Indy Trail

EC50PM-01/02

Main Jet - 230

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Cut Away - 3.0

Indy Trail SuperTrak

EC50PM-03

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 3.0

Indy 400 (All)

EC40PL-02

Main Jet - 230

Pilot Jet - 30

Air Screw - 1 1/2 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	130	130	120	120	110
3000-5000	130	120	120	110	100
5000-7000	120	110	110	100	100
7000-9000	110	110	100	100	90
9000-11000	110	100	100	90	90

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	160	155	150	145	140
3000-5000	155	150	145	135	130
5000-7000	145	140	135	130	125
7000-9000	135	130	125	120	115
9000-11000	130	120	115	110	105

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	260	250
3000-5000	280	270	250	240	230
5000-7000	260	250	240	230	220
7000-9000	250	240	230	220	210
9000-11000	230	220	210	200	190

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	190	180	170	160	160
3000-5000	180	170	160	160	150
5000-7000	170	160	150	150	140
7000-9000	160	150	140	140	130
9000-11000	150	140	130	130	125

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	210	200	190	180
7000-9000	200	190	180	180	170
9000-11000	190	180	170	170	160

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	210	200	190	180	170
3000-5000	200	190	180	170	160
5000-7000	190	180	170	160	150
7000-9000	180	170	160	150	140
9000-11000	170	160	150	140	140

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	170	160	160

CARBURETION 1989

Indy 500 (All)

EC50PL-01/02

Main Jet - 280

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	260	250
3000-5000	280	270	250	240	230
5000-7000	260	250	240	230	220
7000-9000	240	240	230	220	210
9000-11000	230	220	210	200	190

Indy 650

EC65PI-01

Main Jet - 260

Pilot Jet - 50

Air Screw - 1.0 turn

Jet Needle - 6DH4-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	250	240	230	220	210
7000-9000	240	230	220	210	200
9000-11000	220	210	200	200	190

Star, StarTrak

EC25PS-06

Main Jet - 150

Pilot Jet - 60

Air Screw - 1.0 turn

Needle Jet - O-8

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	150	150	140	140	130
3000-5000	150	140	140	130	120
5000-7000	130	130	120	120	110
7000-9000	120	120	110	110	100
9000-11000	120	110	100	90	90

Sprint (ES)

EC34-2PM-02

Main Jet - 155

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	160	155	150	145	140
3000-5000	155	150	145	135	130
5000-7000	145	140	135	130	125
7000-9000	135	130	125	120	115
9000-11000	130	120	115	110	105

Indy Sport

EC34-2PM-03

Main Jet - 180

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	190	180	170	160	160
3000-5000	180	170	160	160	160
5000-7000	170	160	150	150	140
7000-9000	160	150	140	140	130
9000-11000	150	140	130	130	125

Indy 400

EC40PL-02

Main Jet - 230

Pilot Jet - 30

Air Screw - 1 1/2 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	170	160	160

Indy Trail

EC50PM-01/02

Main Jet - 230

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	210	200	190	180
7000-9000	200	190	180	180	170
9000-11000	190	180	170	170	160

Indy Trail SuperTrak

EC50PM-03

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	210	200	190	180	170
3000-5000	200	190	180	170	160
5000-7000	190	180	170	160	150
7000-9000	180	170	160	150	140
9000-11000	170	160	150	140	140

Indy 500

EC50PL-01/02

Main Jet - 280

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	270	260
3000-5000	280	270	260	250	240
5000-7000	270	260	250	240	230
7000-9000	250	250	240	230	220
9000-11000	240	230	220	210	200

CARBURETION 1990

Indy WideTrak

EC50PL-03

Main Jet - 190

Pilot Jet - 35

Air Screw - 1 1/4 turn

Jet Needle - 6EJ26-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	200	190	180	170	170
3000-5000	190	180	170	170	160
5000-7000	180	170	160	160	150
7000-9000	170	160	150	150	140
9000-11000	160	150	140	140	130

Indy 650

Ec65PL-01

Main Jet - 260

Pilot Jet - 45

Air Screw - 1.0 turn

Jet Needle - 6DH4-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	250	240	230	220	210
7000-9000	240	230	220	210	200
9000-11000	220	210	200	200	190

StarLite

EC25PS-07

Main Jet - 160

Pilot Jet - 60

Air Screw - 1.0 turn

Jet Needle - 5DT49-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	180	170	160	155	150
3000-5000	170	160	150	150	140
5000-7000	160	150	140	140	130
7000-9000	150	140	135	130	120
9000-11000	140	130	125	120	110

Indy Lite

EC34-2PM-03

Main Jet - 160

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	170	160	155	145	140
3000-5000	155	150	145	140	135
5000-7000	150	145	140	135	130
7000-9000	140	135	135	125	120
9000-11000	130	125	125	115	110

Indy Trail

EC50PM-01/02

Main Jet - 230

Pilot Jet - 35

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	210	200	190	180
7000-9000	200	190	180	180	170
9000-11000	190	180	170	170	160

Indy Trail SuperTrak

EC50PM-03

Main Jet - 200

Pilot Jet - 30

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	210	200	190	180	170
3000-5000	200	190	180	170	160
5000-7000	190	180	170	160	150
7000-9000	180	170	160	150	140
9000-11000	170	160	150	140	140

Indy 500

EC50PL-01/02/03/04/05

Main Jet - 280

Pilot Jet - 40

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	290	280	270	270	260
3000-5000	280	270	260	250	240
5000-7000	270	260	250	240	230
7000-9000	250	250	240	230	220
9000-11000	240	230	220	210	200

Indy WideTrak

EC50PL-06

Main Jet -190

Pilot Jet - 35

Air Screw - 1 1/4 turn

Jet Needle - 6EJ26-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	200	190	180	170	170
3000-5000	190	180	170	170	160
5000-7000	180	170	160	160	150
7000-9000	170	160	150	150	140
9000-11000	160	150	140	140	130

Indy 400

EC40PL-02/04

Main Jet - 230

Pilot Jet - 30

Air Screw - 1 1/2 turn

Jet Needle - 6DP17-3

Cut Away - 2.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	240	230	220	210	200
3000-5000	230	220	210	200	190
5000-7000	210	200	200	190	180
7000-9000	200	190	190	180	170
9000-11000	190	180	170	160	160

CARBURETION 1991

Indy 650

EC65PL-02

Main Jet - 260

Pilot Jet - 45

Air Screw - 1.0 turn

Jet Needle - 6DH4-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	280	270	260	250	240
3000-5000	270	260	250	240	230
5000-7000	250	240	230	220	210
7000-9000	240	230	220	210	200
9000-11000	220	210	200	200	190

Indy Sport/GT

EC44-3PM-01

Main Jet - 155

Pilot Jet - 35

Air Screw - 1 1/2 turn

Jet Needle - 5DP7-3

Cut Away - 3.0

Altitude - Feet	-40- -20	-20- 0	0- +20	+20- +40	+40- +60
1000-3000	160	155	150	140	135
3000-5000	155	150	145	140	130
5000-7000	145	140	135	130	125
7000-9000	135	130	125	120	115
9000-11000	130	125	120	115	110

StarLite

EC25PS-07

Carburetor Type - VM30SS

Main Jet - 160

Pilot Jet - 60

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 5DT49-3

Needle Jet - O-8(171)

Indy Lite, Lite GT & Lite Deluxe

EC34-2PM-02/03/04

Carburetor Type - VM30SS

Main Jet - 160

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.0/1.5 (GT) turn

Jet Needle - 5DP7-3

Needle Jet - O-8(171)

5DP7-2 (GT)

Sport 440/440 GT

EC44-3PM-01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1 1/4 turn

Jet Needle - 6DH7-3

Needle Jet - P-2 (166)

Trail/Trail Deluxe

EC50PM-01/02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Needle Jet - P-8 (166)

SuperTrak

EC50PM-03

Carburetor Type - VM34SS

Main Jet - 200

Pilot Jet - 30

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Needle Jet - P-6(166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	170	160	150	140
	900-1800 (3000-6000)	160	150	150	130
	1800-2700 (6000-9000)	145	135	125	120
	2700-3700 (9000-12000)	130	120	115	110

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	170	160	150	140
	900-1800 (3000-6000)	160	150	140	130
	1800-2700 (6000-9000)	145	135	125	120
	2700-3700 (9000-12000)	130	120	115	110

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	240	230	220	200
	900-1800 (3000-6000)	220	210	200	190
	1800-2700 (6000-9000)	200	195	180	170
	2700-3700 (9000-12000)	185	175	165	155

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -35°C	-20° to +10°F -35° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	210	200	190	175
	900-1800 (3000-6000)	195	185	170	160
	1800-2700 (6000-9000)	180	170	160	150
	2700-3700 (9000-12000)	160	150	140	135

- Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1992

Indy 440

EC45PL-02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 30

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (144)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	240	230	220	200
	900-1800 (3000-6000)	220	210	200	190
	1800-2700 (6000-9000)	200	195	180	170
	2700-3700 (9000-12000)	185	175	165	155

 - Shaded zone should drop Jet Needle one position (raise E-clip)

440 XCR

EC45PL-01

Carburetor Type - VM38SS

Main Jet - 290

Pilot Jet - 40

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Needle Jet - P-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	310	290	270	260
	900-1800 (3000-6000)	280	270	250	240
	1800-2700 (6000-9000)	260	240	230	210
	2700-3700 (9000-12000)	230	220	210	195

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Classic/Indy 500

EC50PL-04/05

Carburetor Type - VM38SS

Main Jet - 280

Pilot Jet - 40

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Needle Jet - P-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	300	280	270	250
	900-1800 (3000-6000)	280	260	240	230
	1800-2700 (6000-9000)	250	240	220	210
	2700-3700 (9000-12000)	220	210	200	185

 - Shaded zone should drop Jet Needle one position (raise E-clip)

WideTrak

EC50PL-06

Carburetor Type - VM34SS

Main Jet - 190

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 3/4 turn

Jet Needle - 6EJ26-2

Needle Jet - P-6 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	200	190	180	170
	900-1800 (3000-6000)	185	175	165	155
	1800-2700 (6000-9000)	170	160	150	140
	2700-3700 (9000-12000)	150	145	135	130

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy 650

EC65PL-02

Carburetor Type - VM38SS

Main Jet - 260

Pilot Jet - 45

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6DH7-3

Needle Jet - Q-2 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	280	260	250	230
	900-1800 (3000-6000)	250	240	230	210
	1800-2700 (6000-9000)	230	220	210	190
	2700-3700 (9000-12000)	210	200	190	175

 - Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1993

StarLite/GT

EC25PS-07

Carburetor Type - VM30SS

Main Jet -140

Pilot Jet - 60

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 5DT2-3

Needle Jet - 0-8 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	150 (155 GT)	140	135	130
	900-1800 (3000-6000)	140 (145 GT)	130 (135 GT)	125	120
	1800-2700 (6000-9000)	130	120	115	110
	2700-3700 (9000-12000)	115	110	105	100

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Lite/Lite GT & Lite Deluxe

EC34-2PM-02/04

Carburetor Type - VM30SS

Main Jet - 145

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1 1/2 turn

Jet Needle - 5DP7-2

Needle Jet - 0-6 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	155	145	135	130
	900-1800 (3000-6000)	145	135	125	120
	1800-2700 (6000-9000)	135	125	120	110
	2700-3700 (9000-12000)	120	115	110	100

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Sport 440/Trail Deluxe

EC44-3PM-01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1 1/4 turn

Jet Needle - 6DH7-3

Needle Jet - P-4 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Trail

EC50PM-01

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Needle Jet - p-8 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	240	230	220	200
	900-1800 (3000-6000)	220	210	200	190
	1800-2700 (6000-9000)	200	195	180	170
	2700-3700 (9000-12000)	185	175	165	155

 - Shaded zone should drop Jet Needle one position (raise E-clip)

440 XCR

EC45PL-01

Carburetor Type - VM38SS

Main Jet -290

Pilot Jet - 40

Cut Away - 2.0

Air Screw - 1.0 turn

Jet Needle - 6DH3-3

Needle Jet - P-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	310	290	270	260
	900-1800 (3000-6000)	280	270	250	240
	1800-2700 (6000-9000)	260	240	230	210
	2700-3700 (9000-12000)	230	220	210	195

 - Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1993

Indy 440/SKS

EC45PL-02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 3/4 turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	240	230	220	200
	900-1800 (3000-6000)	220	210	200	190
	1800-2700 (6000-9000)	200	195	180	170
	2700-3700 (9000-12000)	185	175	165	155

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Classic/Touring

EC50PL-04/05

Carburetor Type - VM38SS

Main Jet - 280

Pilot Jet - 40

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Needle Jet - P-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	300	280	270	250
	900-1800 (3000-6000)	280	260	240	230
	1800-2700 (6000-9000)	250	240	220	210
	2700-3700 (9000-12000)	220	210	200	185

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Widetrak

EC50PL-06

Carburetor Type - VM34SS

Main Jet - 190

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 3/4 turn

Jet Needle - 6EJ26-2

Needle Jet - P-6 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	200	190	180	170
	900-1800 (3000-6000)	185	175	165	155
	1800-2700 (6000-9000)	170	160	150	140
	2700-3700 (9000-12000)	150	145	135	130

 - Shaded zone should drop Jet Needle one position (raise E-clip)

XLT/SP/SKS

EC58PL-01

Carburetor Type - VM34SS

Main Jet - 200

Pilot Jet - 35

Cut Away - 2.0

Air Screw - 1.0 turn

Jet Needle - 6DP17-3

Needle Jet - Q-2 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	210	200	190	175
	900-1800 (3000-6000)	195	185	175	165
	1800-2700 (6000-9000)	180	170	160	150
	2700-3700 (9000-12000)	160	155	145	135

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Storm/SKS

EC75PL-01

Carburetor Type - VM38

Main Jet - 320-320-340

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.5 turn

Jet Needle - 6CEY6-3

Needle Jet - R-0247

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	(02) 360*	(02) 340*	(02) 330*	(02) 310*
	900-1800 (3000-6000)	(02) 330*	(02) 310*	(02) 300*	(02) 280*
	1800-2700 (6000-9000)	(02) 310*	(02) 290*	(02) 280	(02) 270*
	2700-3700 (9000-12000)	(02) 280*	(02) 260*	(02) 250*	(02) 240*

 - Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1994

StarLite/GT

EC25PS-07

Carburetor Type - VM30SS

Main Jet - 140

Pilot Jet - 60

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 5DT2-3

Needle Jet - 0-8 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	(01) 150	140	135	130
	900-1800 (3000-6000)	(01) 140	(01) 130	125	120
	1800-2700 (6000-9000)	130	120	115	110
	2700-3700 (9000-12000)	115	110	105	100

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Lite/GT/Lite Deluxe

EC34-2PM-04,02

Carburetor Type - VM30SS

Main Jet - 145

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.5 turn

Jet Needle - 5DP7-2

Needle Jet - 0-6 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	155	145	135	130
	900-1800 (3000-6000)	145	135	125	120
	1800-2700 (6000-9000)	135	125	120	110
	2700-3700 (9000-12000)	120	115	110	100

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Sport/SKS

EC44-3PM-01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.25 turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (144)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Super Sport

*EC44-3PM-01,02

Engine EC44-3PM-01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.25 turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (144)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Engine EC44-3PM-02

Carburetor Type - VM34SS

Main Jet -180

Pilot Jet - 35

Cut Away - 2.0

Air Screw - 1.25 turn

Jet Needle - 6FJ6-3

Needle Jet - P-8 (166)

*Check engine model number on
specification decal located under hood.

CARBURETION 1994

Trail/Deluxe

EC50PM-01/02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

Needle Jet - P-8 (166)

Indy 440/SKS

EC45PL-02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 3/4 turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (166)

Classic

EC50PL-05

Carburetor Type - VM38SS

Main Jet - 300

Pilot Jet - 40

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6F9-3

Needle Jet - P-8 (247)

WideTrak LX

EC50PL-06

Carburetor Type - VM34SS

Main Jet - 190

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 3/4 turn

Jet Needle - 6EJ26-2

Needle Jet - P-6 (166)

WideTrak GT

EC50PM-03

Carburetor Type - VM34SS

Main Jet - 200

Pilot Jet - 30

Cut Away - 3.0

Air Screw - 1 turn

Jet Needle - 6DH7-3

Needle Jet - P-6 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	240	230	220	200
	900-1800 (3000-6000)	220	210	200	190
	1800-2700 (6000-9000)	200	195	180	170
	2700-3700 (9000-12000)	185	175	165	155

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	250	230	210	200
	900-1800 (3000-6000)	220	210	195	185
	1800-2700 (6000-9000)	200	185	170	160
	2700-3700 (9000-12000)	175	165	150	145

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	320	300	280	260
	900-1800 (3000-6000)	300	280	260	250
	1800-2700 (6000-9000)	270	250	240	230
	2700-3700 (9000-12000)	240	230	210	210

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	200	190	180	170
	900-1800 (3000-6000)	185	175	165	155
	1800-2700 (6000-9000)	170	160	150	140
	2700-3700 (9000-12000)	150	145	135	130

- Shaded zone should drop Jet Needle one position (raise E-clip)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	210	200	190	175
	900-1800 (3000-6000)	195	185	175	165
	1800-2700 (6000-9000)	180	170	160	150
	2700-3700 (9000-12000)	160	155	145	135

- Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1994

440 XCR

EC45PL-01

Carburetor Type - VM38SS

Main Jet - 290

Pilot Jet - 40

Cut Away - 2.0

Air Screw - 1 turn

Jet Needle - 6DH3-3

Needle Jet - P-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	310	290	270	260
	900-1800 (3000-6000)	280	270	250	240
	1800-2700 (6000-9000)	260	240	230	210
	2700-3700 (9000-12000)	230	220	210	195

 - Shaded zone should drop Jet Needle one position (raise E-clip)

XLT/SP/SKS

EC58PL-01

Carburetor Type - VM34SS

Main Jet - 200

Pilot Jet - 35

Cut Away - 2.0

Air Screw - 1 turn

Jet Needle - 6DP17-3

Needle Jet - Q-2 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	210	200	190	175
	900-1800 (3000-6000)	195	185	175	165
	1800-2700 (6000-9000)	180	170	160	150
	2700-3700 (9000-12000)	160	155	145	135

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Storm/SKS

EC80PL-01

Carburetor Type - VM38

Main Jet - 380-390-410

Pilot Jet - 30

Cut Away - 2.5

Air Screw - 1.5 turn

Jet Needle - 6CGY3-2

Needle Jet - Q-8 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	400 410 430	380 390 410	360 370 390	340 350 370
	900-1800 (3000-6000)	370 380 400	350 360 380	330 340 360	310 320 340
	1800-2700 (6000-9000)	330 340 360	310 320 340	290 300 320	270 280 300
	2700-3700 (9000-12000)	300 310 330	280 290 310	260 270 290	240 250 270

 - Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1995

StarLite

EC25PS07

Carburetor Type - VM30SS

Main Jet - 140

Pilot Jet - 60

Cut Away - 3.0

Air Screw - 1.0 Turn

Jet Needle - 5DT2-3

Needle Jet - O-8 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	150	140	135	130
	900-1800 (3000-6000)	140	130	125	120
	1800-2700 (6000-9000)	130	120	115	110
	2700-3700 (9000-12000)	115	110	105	110

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Indy Lite

EC34-2PM02

Carburetor Type - VM30SS

Main Jet - 145

Pilot Jet - 35

Cut Away - 2.5 AL

Air Screw - 1.5 Turn

Jet Needle - 5DP7-2

Needle Jet - O-6 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	155	145	135	130
	900-1800 (3000-6000)	140	130	120	115
	1800-2700 (6000-9000)	125	115	110	100
	2700-3700 (9000-12000)	110	100	95	85

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Lite GT

EC34-2PM02

Carburetor Type - VM30SS

Main Jet - 145

Pilot Jet - 35

Cut Away - 2.5 AL

Air Screw - 1.5 Turn

Jet Needle - 5DP7-2

Needle Jet - O-6 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	155	145	135	130
	900-1800 (3000-6000)	140	130	120	115
	1800-2700 (6000-9000)	125	115	110	100
	2700-3700 (9000-12000)	110	100	95	85

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Lite Deluxe

EC34-2PME02

Carburetor Type - VM30SS

Main Jet - 145

Pilot Jet - 35

Cut Away - 2.5 AL

Air Screw - 1.5 Turn

Jet Needle - 5DP7-2

Needle Jet - O-6 (169)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	155	145	135	130
	900-1800 (3000-6000)	140	130	120	115
	1800-2700 (6000-9000)	125	115	110	100
	2700-3700 (9000-12000)	110	100	95	85

 - Shaded zone should drop Jet Needle one position (raise E-clip)

Sport

EC44-3PM01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.5 CH

Air Screw - 1.25 Turn

Jet Needle - 6DH7-3

Needle Jet - P-4 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

 - Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1995

Sport Touring

EC44-3PM01

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.25 Turn

Jet Needle - 6DH7-3

Needle Jet - P-4 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

- Shaded zone should drop Jet Needle one position (raise E-clip)

Super Sport

EC44-3PM02

Carburetor Type - VM34SS

Main Jet - 180

Pilot Jet - 35

Cut Away - 2.0

Air Screw - 1.25 Turn

Jet Needle - 6FJ6-3

Needle Jet - P-8 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	190	180	170	160
	900-1800 (3000-6000)	180	165	155	145
	1800-2700 (6000-9000)	160	150	140	130
	2700-3700 (9000-12000)	145	140	130	120

- Shaded zone should drop Jet Needle one position (raise E-clip)

Trail

EC50PM04

Carburetor Type - VM34SS

Main Jet - 240

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.5 Turn

Jet Needle - 6DH7-3

Needle Jet - P-8 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	260	240	220	210
	900-1800 (3000-6000)	230	220	200	195
	1800-2700 (6000-9000)	200	190	180	170
	2700-3700 (9000-12000)	180	170	160	155

- Shaded zone should drop Jet Needle one position (raise E-clip)

Trail Deluxe

EC50PME04

Carburetor Type - VM34SS

Main Jet - 240

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.5 Turn

Jet Needle - 6DH7-3

Needle Jet - P-8 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	260	240	220	210
	900-1800 (3000-6000)	230	220	200	195
	1800-2700 (6000-9000)	200	190	180	170
	2700-3700 (9000-12000)	180	170	160	155

- Shaded zone should drop Jet Needle one position (raise E-clip)

440 L/C

EC45PL02

Carburetor Type - VM34SS

Main Jet - 230

Pilot Jet - 35

Cut Away - 2.5 CH

Air Screw - 3/4 Turn

Jet Needle - 6DH7-2

Needle Jet - P-4 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	250	230	210	200
	900-1800 (3000-6000)	220	210	195	185
	1800-2700 (6000-9000)	200	185	170	160
	2700-3700 (9000-12000)	175	165	150	145

- Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION 1995

XLT Touring

EC58PLE04

Carburetor Type - VM34SS

Main Jet - 240 Pilot Jet - 35
Cut Away - 2.5 Air Screw - 1.0 Turn
Jet Needle - 6DP17-3 Needle Jet - Q-2 (166)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	250	240	230	220
	900-1800 (3000-6000)	230	220	210	200
	1800-2700 (6000-9000)	210	200	190	180
	2700-3700 (9000-12000)	190	190	180	170

- Shaded zone should drop Jet Needle one position (raise E-clip)

Storm/SKS/PT

EC80PL02

Carburetor Type - VM38

Main Jet - 370-380-410 Pilot Jet - 45
Cut Away - 3.0 CH Air Screw - 1.25 Turn
Jet Needle - 6CGY3-3 Needle Jet - Q-0 (247)

		AMBIENT TEMPERATURE			
		Below -20°F Below -29°C	-20° to +10°F -29° to -12°C	+10° to +40°F -12° to +5°C	Above +40°F Above 5°C
Alt. Met. (Ft)	0-900 (0-3000)	400 410 430	380 390 410	360 370 390	340 350 370
	900-1800 (3000-6000)	370 380 400	350 360 380	330 340 360	310 320 340
	1800-2700 (6000-9000)	330 340 360	310 320 340	290 300 320	270 280 300
	2700-3700 (9000-12000)	300 310 330	280 290 310	260 270 290	240 250 270

- Shaded zone should drop Jet Needle one position (raise E-clip)

CARBURETION Adjustments

The amount of air drawn into the cylinders is influenced by such factors as altitude, temperature, humidity, etc. Suppose the amount of air drawn into the cylinders at an elevation of zero is taken as 100 (the temperature and humidity in this case are considered constant). The amount of air in question decreases in proportion to a rise in elevation as shown in Chart A. Reduction in the amount of air drawn into the cylinders changes the air/fuel mixture ratio, resulting in a marked drop in power output.

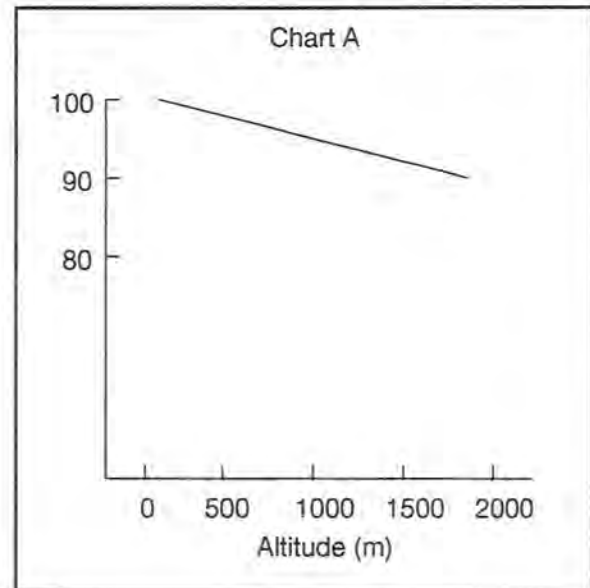
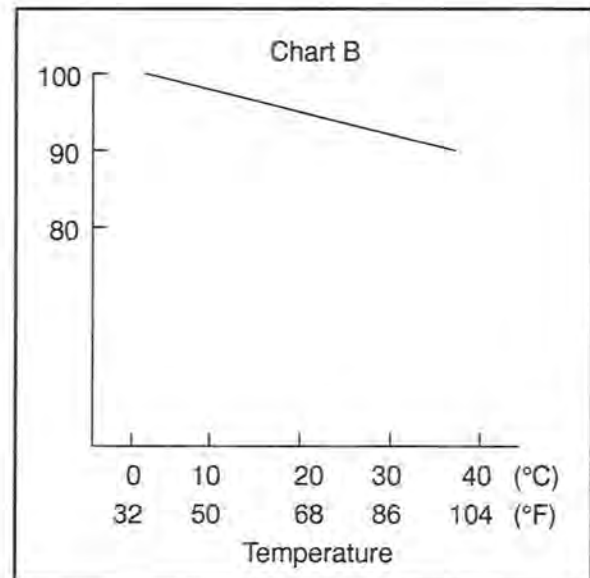
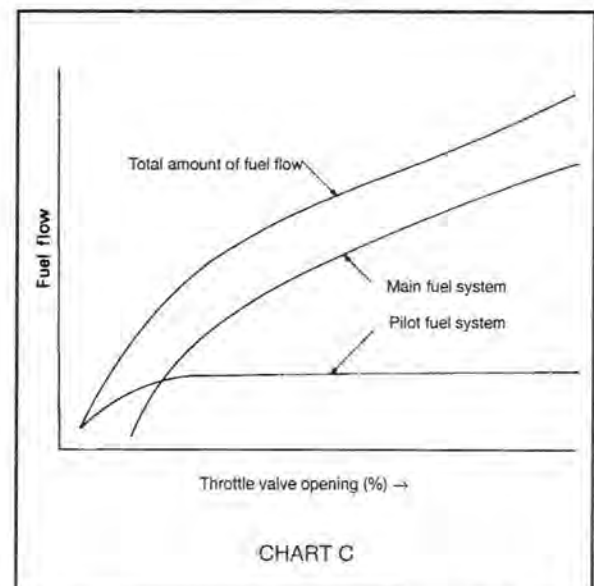


Chart B shows the relationship between a rise in temperature and the amount of air drawn into the cylinders. In this case, the atmospheric pressure (elevation) and the humidity are considered unchanged and the amount of air going into the cylinders at 32° F (0° C) is taken as 100.



On Mikuni VM carburetors the pilot system and the main system are of independent construction. The fuel flow in these two systems is shown on Chart C.



CARBURETION

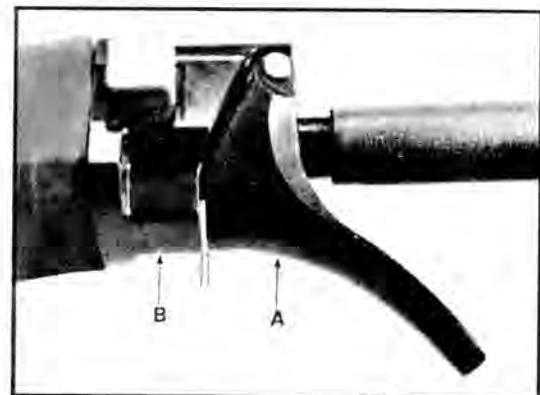
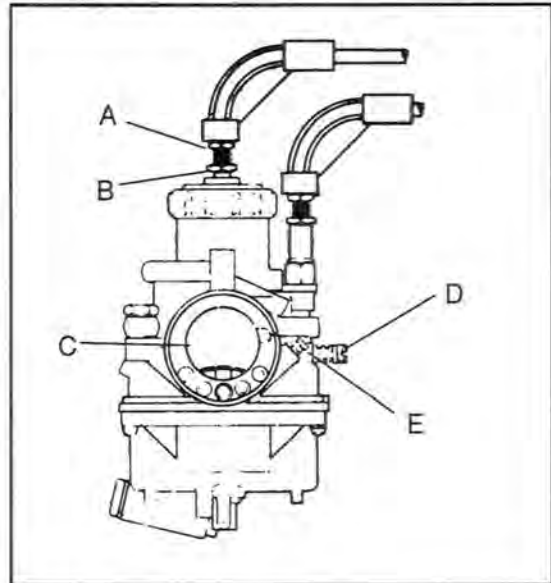
Adjustments

On engines which have more than one carburetor, it is of vital importance that carburetor systems be synchronized. The steps listed below should be followed in sequence for best engine performance and throttle response.

1. Support rear of machine off floor.
2. Check drive belt condition and tension. These have an effect on engine idle RPM.
3. Remove air silencer and back out idle screws until slide valves (C) are seated in carburetor bore.
4. Loosen cable sleeve jam nuts (B) and adjust cable sleeves (A) until slide valves rise equally or at the same time the throttle control flipper is actuated.
5. Turn idle screws (D) in until they contact the slide valves. Then turn in an additional two turns.
6. Adjust pilot air screws (E) to recommended settings. Refer to carburetion data at the beginning of this section.
7. Start engine and allow it to reach operating temperature.
8. Using a tachometer, turn idle screws in until desired engine idle RPM is reached. **NOTE:** 38mm carburetors have a vacuum fitting provided for mercury stick or multiple vacuum gauge usage. See page 6.51.
9. With Uni-Syn gauge, move from carb to carb and adjust idle screws until the float rises and equal amount at each carburetor.

Tips:

- The Uni-Syn gauge must be centered on carburetor air horn as shown.
 - The gauge sight tube should always be held vertically.
 - The gauge must be held on each carburetor for *short, equal periods of time*.
 - Initial Uni-Syn float adjustment is controlled by turning the air flow valve in or out (A). Before adjusting carburetors, Uni-Syn float should be centered in the sight tube.
10. Adjust throttle lever free play. Throttle lever (A) to throttle block (B) clearance should be between .010"-.030" (.25-.76 mm). This is most critical on machines equipped with a throttle safety switch.
 11. Equalize air flow or vacuum at off idle throttle position.
 12. Start engine and block throttle to approximately 1000 RPM above idle RPM.
 13. Install and adjust Uni-Syn gauge air flow control valve. Synchronize carburetor slide valves by adjusting cable sleeves. The float should rise an equal amount on all carburetors. Release blocked throttle and shut off engine.
 14. Re-check throttle lever free play. If adjustment is required, the cable sleeves must be turned equally to maintain off idle synchronization. Hold cable sleeves and lock jam nuts. Install air silencer.
 15. On models with oil injection, pump lever cable adjustments should also be checked and adjusted at this time. Refer to Chapter 5 for specific oil pump settings.

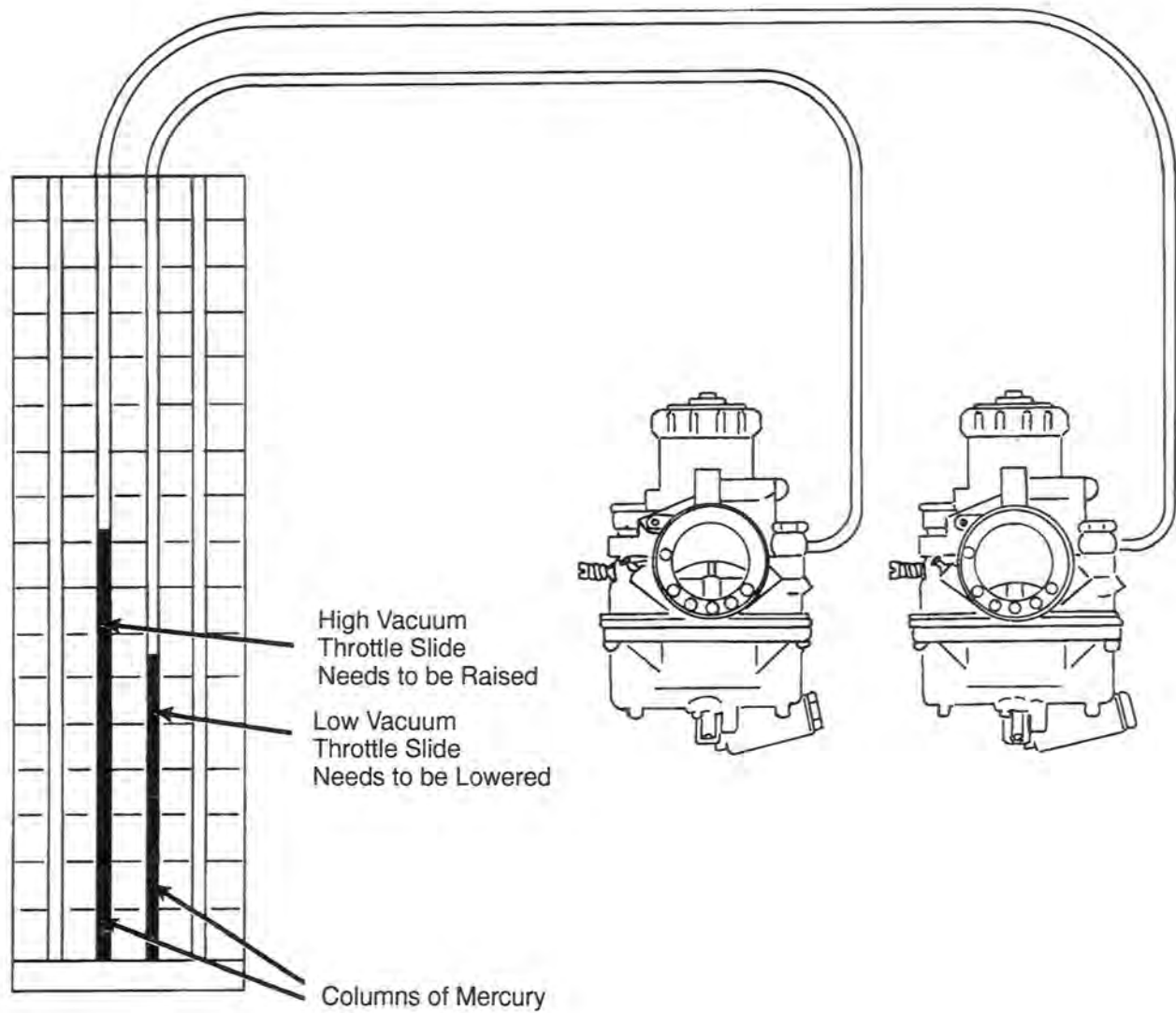


Synchronizing Throttles - 38 mm Carbs

Follow the steps listed on page 6.50 for carburetor synchronization procedures.

Tips on mercury stick usage:

- Synchronize the carbs by adjusting each throttle stop screw until the columns of mercury are equal in height.
- With pressure applied to the throttle lever (fast idle), adjust each cable adjuster until the columns of mercury are equal in height.

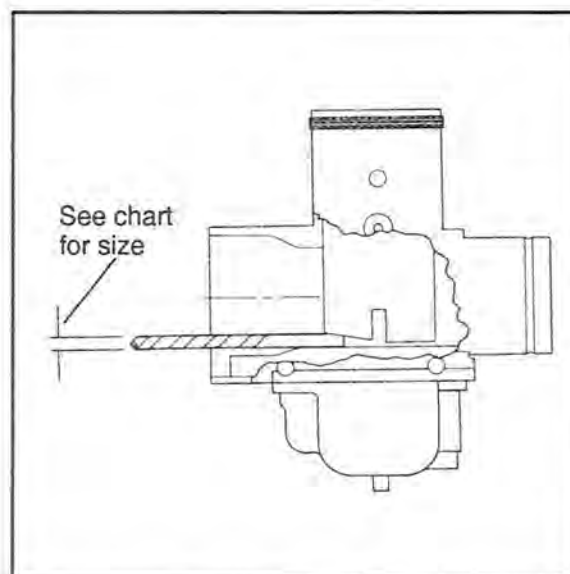


CARBURETION Adjustments

Throttle Synchronization Procedure

1. Remove air box, noting the position of the throttle cable junction block. Reposition throttle cable and junction block in this same position when air box is reinstalled.
2. Rotate the slide valve adjustment screws out (counterclockwise) approximately two turns. Then loosen the throttle cable adjuster sleeve jam nuts and turn the adjuster down (clockwise) two turns.

Engine Model	Throttle Gap Under Cutaway	Air Screw CCW From Seat	Idle RPM
EC80PL-01	.218"/5.5mm	1.0	1900
EC58PL-02	.210"/5.3mm	1.0	1900
EC58PL-01	.185"/4.7mm	1.0	1800
EC50PL-06	.240"/6.1mm	.75	1600
EC50PL-05	.210"/5.3mm	1.0	1900
EC45PL-03	.210"/5.3mm	1.5	1900
EC45PL-02	.210"/5.3mm	.75	1600
EC45PL-01	.210"/5.3mm	1.0	1900
EC50PM-03	.240"/6.1mm	1.0	1600
EC50PM-01/02	.240"/6.1mm	1.0	1600
EC44-3PM01	.236"/6.0mm	1.25	1600
EC44-3PM02	.200"/5.1mm	1.25	1600
EC34-2PM-02/04	.236"/6.0mm	1.5	1600
EC25PS07	.295"/7.5mm	1.0	1200



3. Referring to the above chart, select the correct diameter throttle gap drill gauge for your engine.
4. Place the drill gauge beneath the slide valve cutaway as shown in the illustration above.
5. Turn the idle screw out until there is a slight drag on the gauge. **NOTE:** The drill gauge must be in the center of the carb bore. This indicates proper throttle gap. Repeat this procedure on all cylinders.
6. Hold the throttle cable junction block in the same location as noted in step #1. **NOTE:** This is very important, as the synchronization changes if the throttle cable or junction block are improperly positioned.
7. With drill gauge installed under throttle slide as shown, turn cable adjuster out (up) until the gauge starts to move. **NOTE:** The drill gauge must be centered in the carb bore.
8. Turn the cable adjuster clockwise (down) 1.3 turn. Repeat for all cylinders.
9. The throttle slides must raise from the idle position in unison. Check by visually observing the drill gauge, noting and comparing while lightly depressing the throttle.

NOTE: Check throttle lever freeplay. Throttle lever to throttle block clearance should be between 0.010" and 0.030". If adjustment is required, the throttle cable adjusters must be turned equally to maintain synchronization. Tighten jam nut while holding cable adjusters.

10. Check oil pump adjustment.
11. Reinstall air box and correctly position throttle cable and junction block. Start engine and adjust idle stop screws evenly until proper idle RPM is achieved. (See chart above.) Re-check throttle lever freeplay and reset by turning cable adjusters evenly. Re-tighten cable adjuster jam nuts.

Snowmobile Master Repair Manual

Throttle Synchronization Specifications

Engine Model	Throttle Gap Under Cutaway	Air Screw CCW From Seat	Idle RPM
EC80PL-01/02	.218"/5.5mm	1.0	1900
EC58PL-02	.221"/5.6mm	1.0	1900
EC58PL-01	.185"/4.7mm	1.0	1800
EC58PL-03	.193"/4.9mm	1.0	1900
EC58PL-E04	.230"/5.8mm	1.0	1900
EC50PL-06	.240"/6.1mm	.75	1600
EC50PL-05/(E)04	.210"/5.3mm	1.0	1900
EC45PL-03/05	.210"/5.3mm	1.5 1.0 (05)	1900 1500 (05)
EC45PL-02	.210"/5.3mm	.75	1600
EC45PL-01	.210"/5.3mm	1.0	1900
EC50PM-03	.240"/6.1mm	1.0	1600
EC50PM-01/02/03 /(E)04	.240"/6.1mm	1.0 1.5 (E)04	1600
EC44-3PM01	.236"/6.0mm	1.25	1600
EC44-3PM02	.200"/5.1mm	1.25	1600
EC34-2PM-(E)02/04	.236"/6.0mm	1.5	1600
EC25PS07	.295"/7.5mm	1.0	1200

Please attach this updated chart to page 6.52 of the Snowmobile Master Repair Manual. ♦

CARBURETION Adjustments - Choke

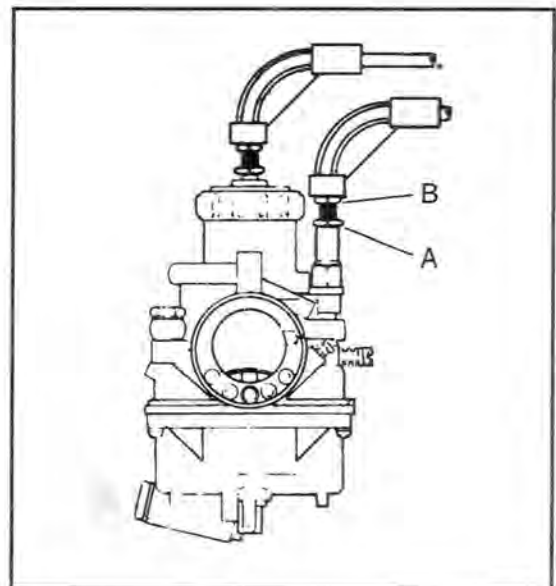
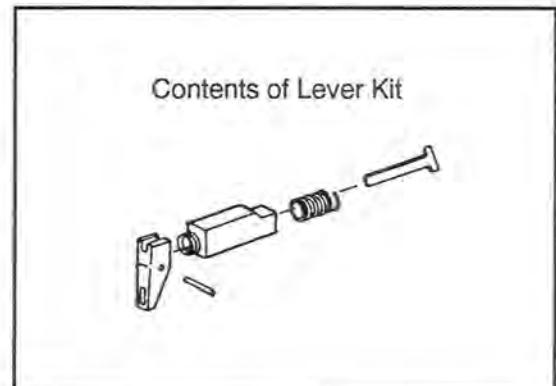
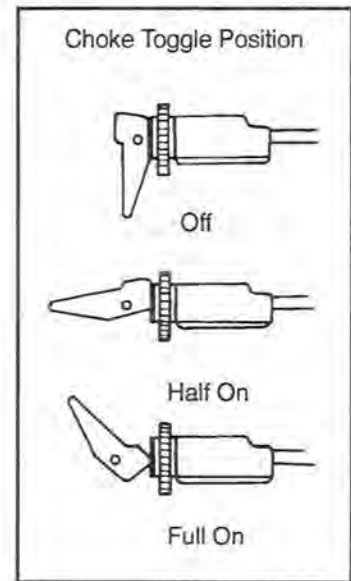
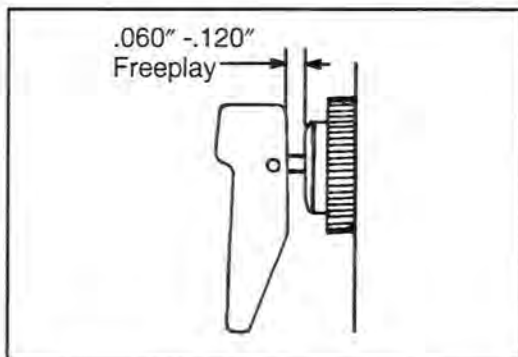
With the dash mounted choke control toggle flipped to the full off position, the choke plunger must be seated on the fuel passage way in the carburetor. If the plunger is not seated on the passage way, the engine will flood or run too rich, causing plug fouling and very poor engine performance.

If cable slack is too great there will be excessive toggle free play resulting in hard cold starting. Also, the half on position used for intermittent applications will not function.

If the choke lever assembly becomes damaged, a lever kit is available. This allows replacement of the lever assembly rather than the entire cable assembly. Installation instructions are included with the kit.

Adjustment Procedure

1. Flip choke toggle to full off position.
2. Loosen adjustment locknut (A) on carburetor(s).
3. Turn cable sleeve adjusting nut (B) clockwise on carburetor(s) until 1/4" (.6 cm) or more choke toggle free play is evident.
4. Turn cable sleeve adjusting nut counterclockwise on one carburetor until toggle has zero free play, then rotate it clockwise until 1/8"-1/4" (.3-.6 cm) toggle free play is evident.
5. Tighten adjustment locknut (A).
6. Repeat steps 4 and 5 for remaining carburetor(s).



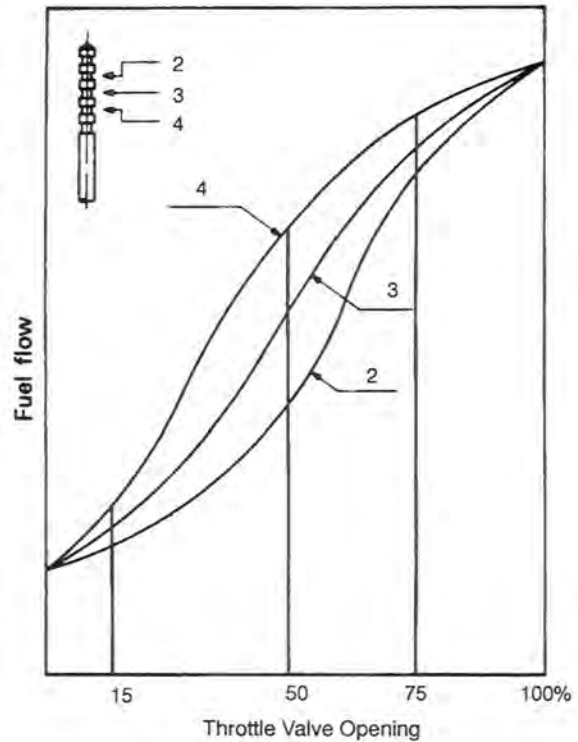
CARBURETION

Adjustments - Jet Needle and Float Level

Fine Tuning the Mikuni Carburetor

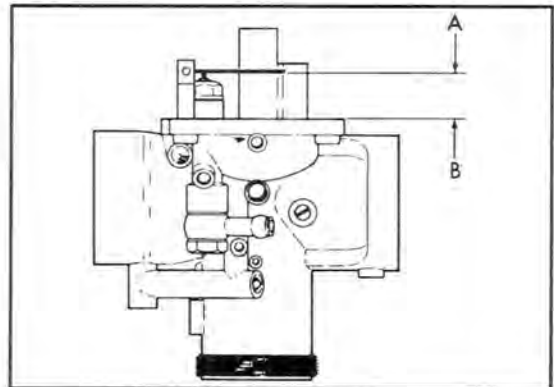
A carburetor with a piston type throttle valve is also called a variable venturi type carburetor. In this type of carburetor, the needle jet and jet needle serve to control a proper air/fuel mixture ratio at the medium throttle valve opening (between 1/4 and 3/4 opening). Having the proper needle jet and jet needle has a major impact on engine performance at partial load.

The jet needle tapers off at one end and the clearance between the jet needle and the needle jet increases as the throttle valve opening gets wider. The air/fuel mixture ratio is controlled by the height of the "E" ring inserted into one of the five slots provided in the head of the jet needle. The chart at right shows the variation of fuel flow based on the height of the "E" ring.



Float Level Adjustment

1. Remove float bowl.
2. With carburetor in an inverted position, float arm (A) should be parallel with body (B). See illustration at right.
3. To adjust float arm, bend tang contacting inlet needle.
CAUTION: Never bend the float arm itself.



Leak Testing Needle and Seat

1. After adjustment of float level, with carburetor still in an inverted position, install float chamber and connect pressure tester PN 2870975 to fuel inlet fitting.
2. Apply approximately 5 lbs. pressure and wait for one minute. Pressure should drop very slowly if at all. If the pressure drops rapidly the needle, seat, and/or gasket need replacement.



⚠ WARNING

Gasoline is extremely flammable and explosive under certain conditions.

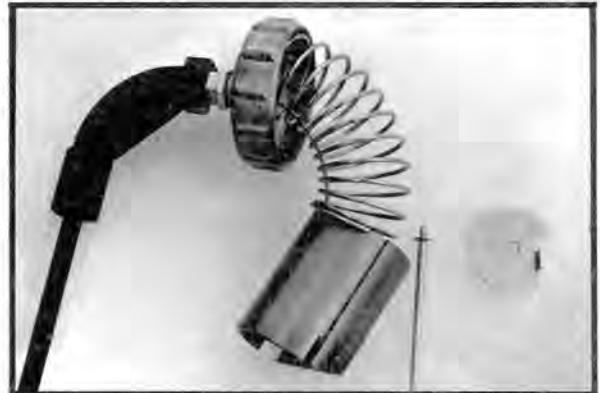
- ⚠** Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- ⚠** Do not weld or operate a torch near the fuel system. Remove fuel tank before any chassis welding is performed.
- ⚠** If you should get gasoline in your eyes or if you should swallow gasoline, see your doctor immediately.
- ⚠** If you should spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
- ⚠** Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

The Mikuni carburetor consists of various precision machined parts. Care should be exercised when removing jets or disassembling the carburetor for cleaning. This type of carburetor has few mechanical functions, so problems are mostly due to wear or obstructions. When servicing this carburetor, use a solvent or carburetor cleaner to wash all parts. Blow dry using compressed air.

1. Remove carburetor from engine. Before disassembling, clean outside of carburetor thoroughly with solvent. **CAUTION:** Do not use compressed air to dry at this time. The float chamber could become pressurized resulting in damage to the floats.



2. Remove slide valve. Inspect for nicks or burrs which may cause sticking.
3. Remove jet needle by compressing return spring toward top cap and removing throttle plate which rests on top of needle "E" clip. Note the "E" clip position and inspect needle taper for wear. An indication of wear would be an hourglass shape somewhere along the taper.



4. Remove choke plunger. Check condition of neoprene seal at the tip of the plunger. Any nicks or cuts will cause leakage and over fueling of the engine, especially at idle.
5. Check choke cable movement. Plungers and springs should move back and forth freely.



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Carburetor Service

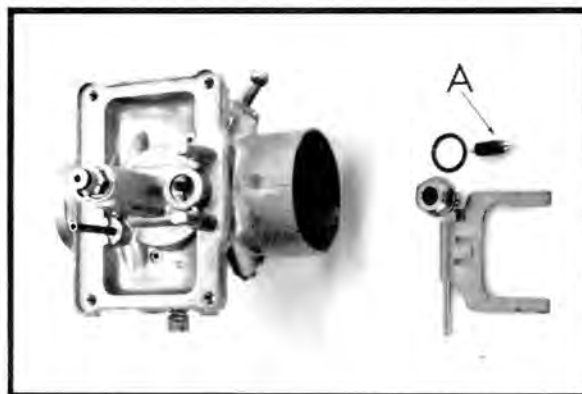
6. Remove float bowl and main jet banjo bolt (A). **NOTE:** Banjo bolts are used only on VM30 carburetors. Refer to exploded view corresponding with carburetor being serviced.



7. Remove inlet needle and seat assembly. Inspect needle (A) for any wear at its tip.

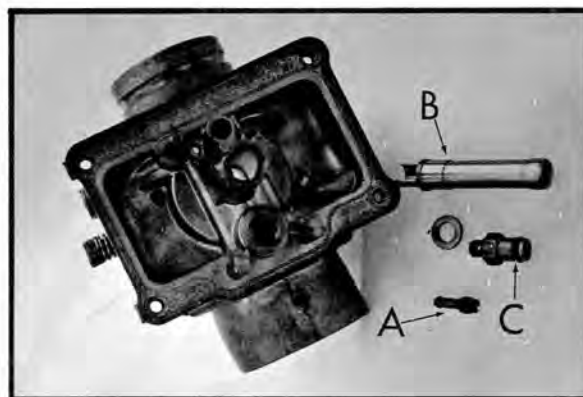
CAUTION: Do not bend float arm during disassembly. Do not use excessive force to remove float arm pin. The float pin tower castings are very easily damaged and are not repairable.

8. Remove jet setter and push needle jet into the slide valve chamber.

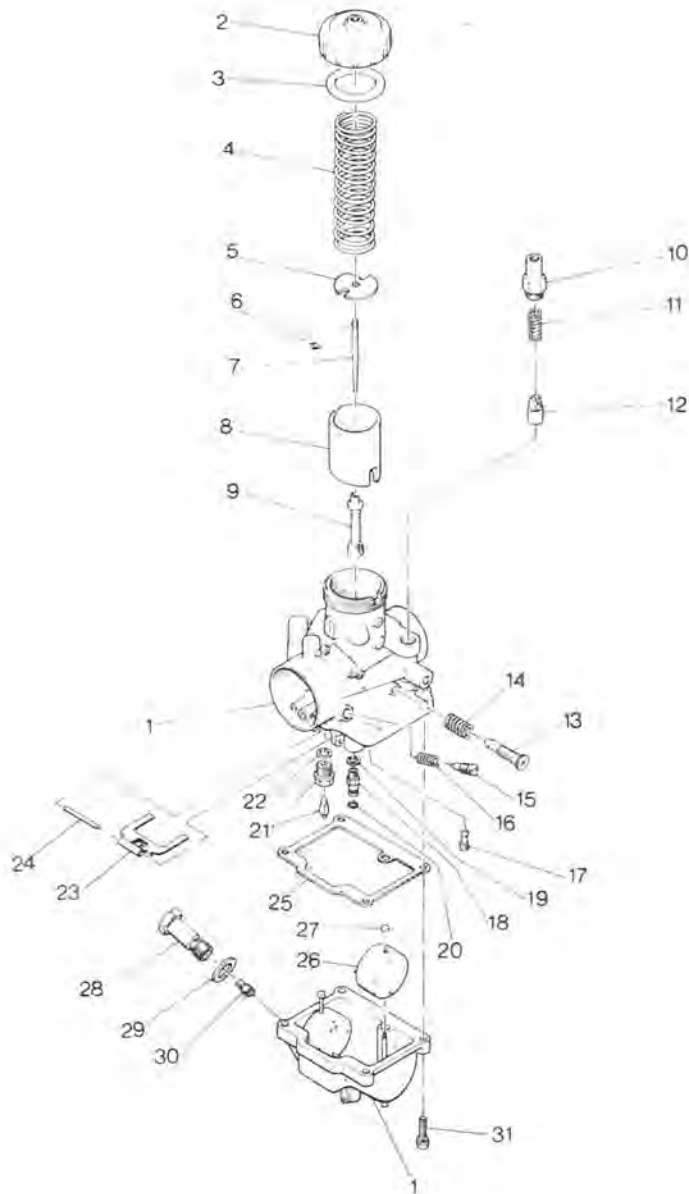


9. Remove pilot jet (A) and needle jet (B).
10. (VM30SS Only) Inspect neoprene O-Ring (C) located on needle jet setter for nicks or cuts.
11. Wash all parts in solvent and blow all passages and jets with compressed air. Replace gaskets and any parts which show wear or damage.
12. Reassemble carburetor, adjusting float level before installing float bowl.

Refer to page 6.54 for float level and leak testing procedures.



CARBURETION Exploded View - VM30SS

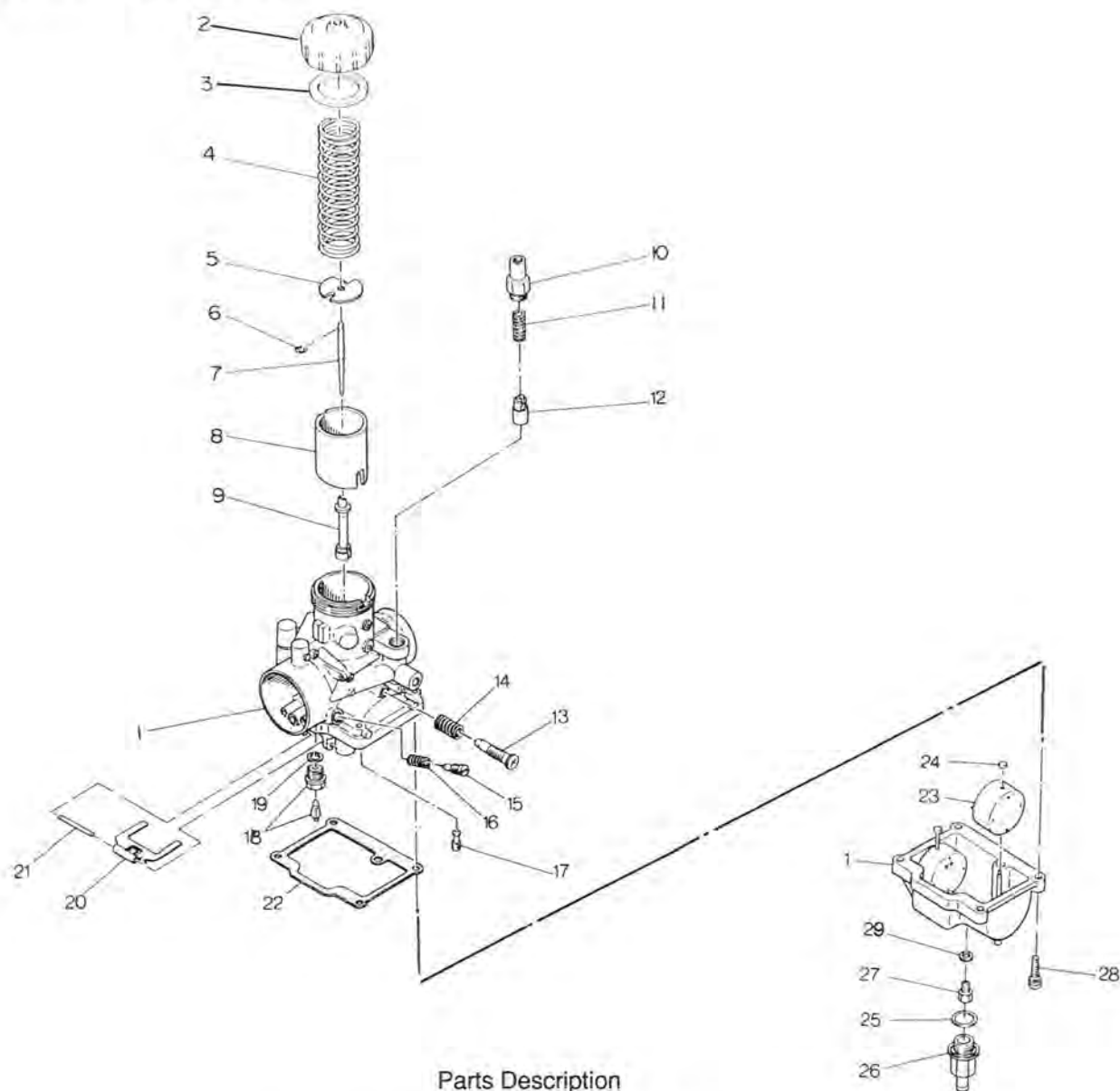


Description of Parts

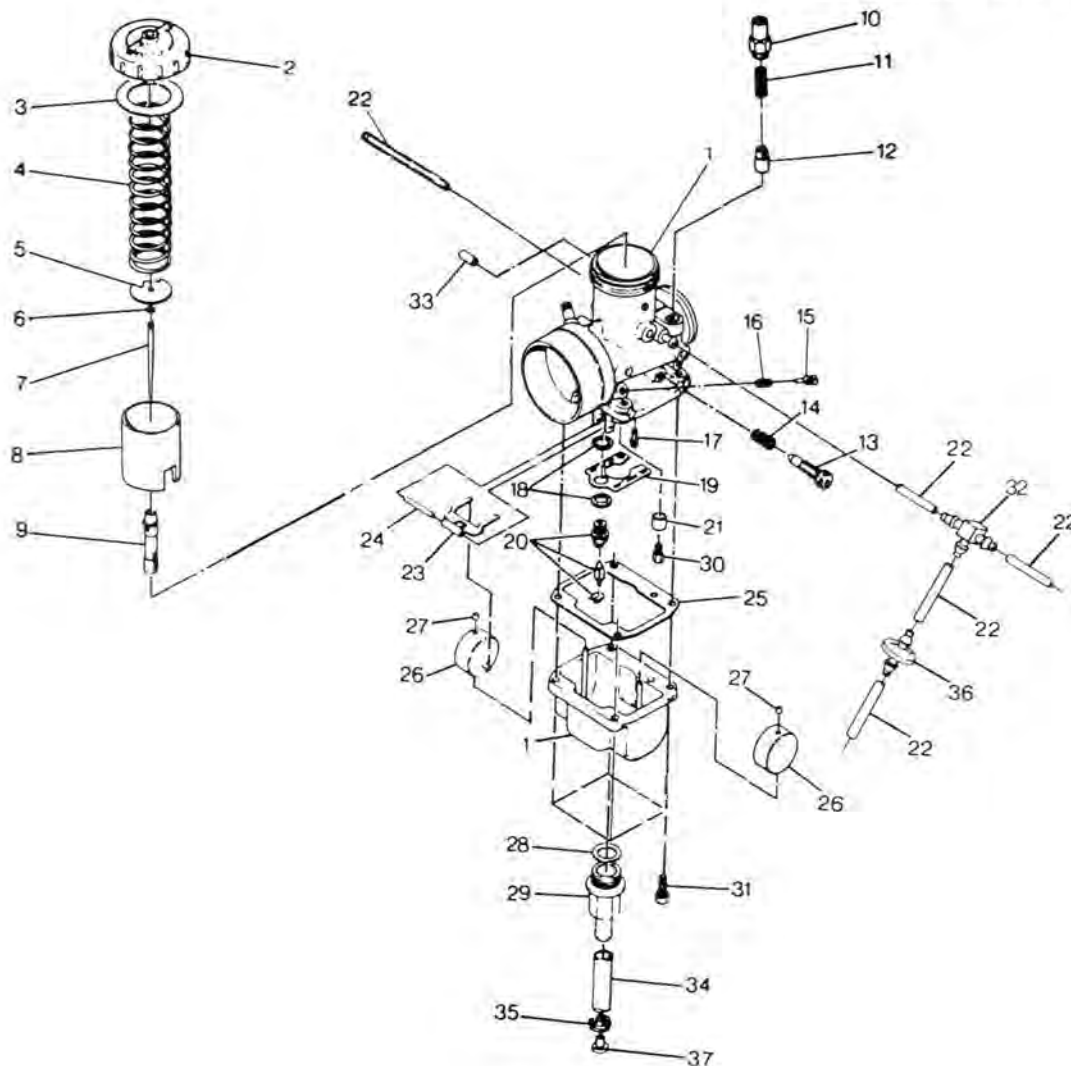
- | | |
|------------------------------|------------------------------|
| 1. Float Chamber and Body | 17. Pilot Jet |
| 2. Top Cap | 18. Needle Jet Setter |
| 3. Rubber Gasket | 19. Washer |
| 4. Return Spring, Throttle | 20. O-Ring |
| 5. Throttle Plate | 21. Needle and Seat Assembly |
| 6. E Clip | 22. Seat Gasket |
| 7. Jet Needle | 23. Float Arm |
| 8. Throttle Slide Valve | 24. Float Pin |
| 9. Needle Jet | 25. Float Chamber Gasket |
| 10. Choke Plunger Cap | 26. Float |
| 11. Plunger Return Spring | 27. Float Retainer Cap |
| 12. Choke Plunger (enricher) | 28. Banjo Bolt, Main Jet |
| 13. Throttle Stop Screw | 29. Gasket |
| 14. Spring | 30. Main Jet |
| 15. Air Screw | 31. Screw |
| 16. Spring, Air Screw | |

CARBURETION

Exploded View - VM34SS



CARBURETION Exploded View - VM38SS



Parts Description

- | | |
|------------------------------|------------------------------|
| 1. Float Chamber and Body | 20. Needle and Seat Assembly |
| 2. Top Cap | 21. Spacer Ring |
| 3. Rubber Gasket | 22. Bowl Vent Hose |
| 4. Return Spring | 23. Float Arm |
| 5. Throttle Plate | 24. Float Pin |
| 6. E Clip | 25. Float Chamber Gasket |
| 7. Jet Needle | 26. Float |
| 8. Throttle Slide Valve | 27. Float Retainer Cap |
| 9. Needle Jet | 28. O-Ring |
| 10. Choke Plunger Cap | 29. Drain Bolt w/fitting |
| 11. Plunger Return Spring | 30. Main Jet |
| 12. Choke Plunger (enricher) | 31. Screw |
| 13. Throttle Stop Screw | 32. Hose Retainer Plate |
| 14. Spring | 33. Vacuum Fitting Cap |
| 15. Air Screw | 34. Sediment Tube |
| 16. Spring | 35. Clamp |
| 17. Pilot Jet | 36. Check Valve |
| 18. Seat Gasket | 37. Plug |
| 19. Plate | 38. Tee Fitting |

CARBURETION

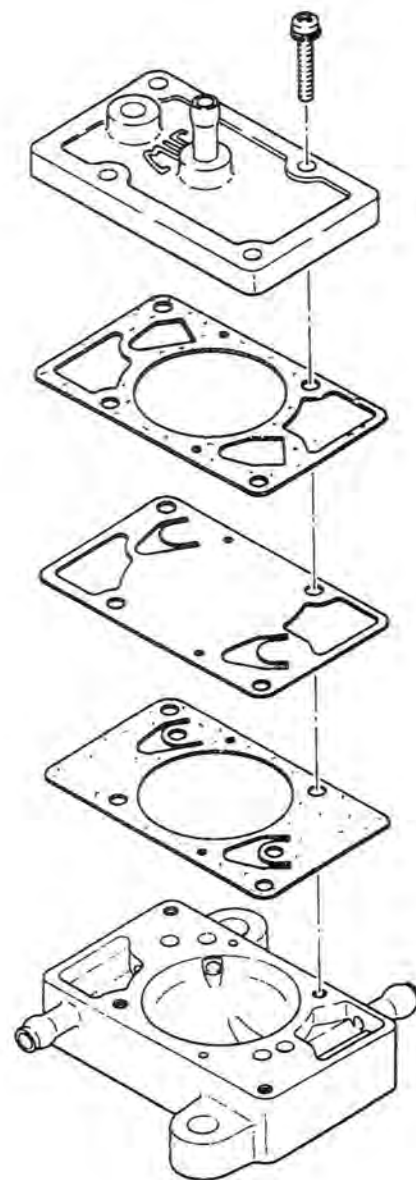
Fuel Pump - Operation

The fuel pumps on all Polaris engines are basically the same. The differences are in the size and location of the pumps. Pumps may be mounted on the crankcase or on the machine by using an impulse hose.

In the two cycle engine, the pressure in the crankcase changes with the up and down stroke of the piston. The amplitudes of pressure vary according to the RPM and degree of throttle opening. Whether idling or at full throttle, the pressure built up in the crankcase has enough amplitude to operate the pump.

When the piston is on the upstroke, crankcase pressure in that cylinder becomes less positive. The diaphragm in the fuel pump moves toward the engine, causing a negative pressure or suction in the pump chamber. This causes the inlet valve from the fuel supply to open and permits fuel to enter the chamber. This same suction causes the outlet valve (to the carburetor) to close so that fuel cannot return from the carburetor.

When the piston begins its downward stroke, the pressure from the crankcase becomes positive, causing the fuel pump diaphragm to move in the opposite direction and reversing the pressure in the fuel pump chamber. This causes the inlet valve in the pump to close and the outlet valve to open, filling the float bowl in the carburetor. When the float level in the carburetor reaches its standard level, the needle valve will close, preventing more fuel from entering the carburetor, even though the fuel pump continues to try to provide the carburetor with fuel.



Maintenance

The impulse operated diaphragm fuel pump does not require any specific scheduled maintenance. However, the following procedures should be observed.

Operation:

- The pump may be checked for operation by removing the fuel supply line from the carburetor and placing it into a container. With the engine idling at approximately 2000 RPM, a steady flow of fuel should be visible.

Cleaning:

- The pump and impulse line must be disassembled and cleaned of foreign material in the event of piston or other internal engine part failures which produce fragments.

Inspection:

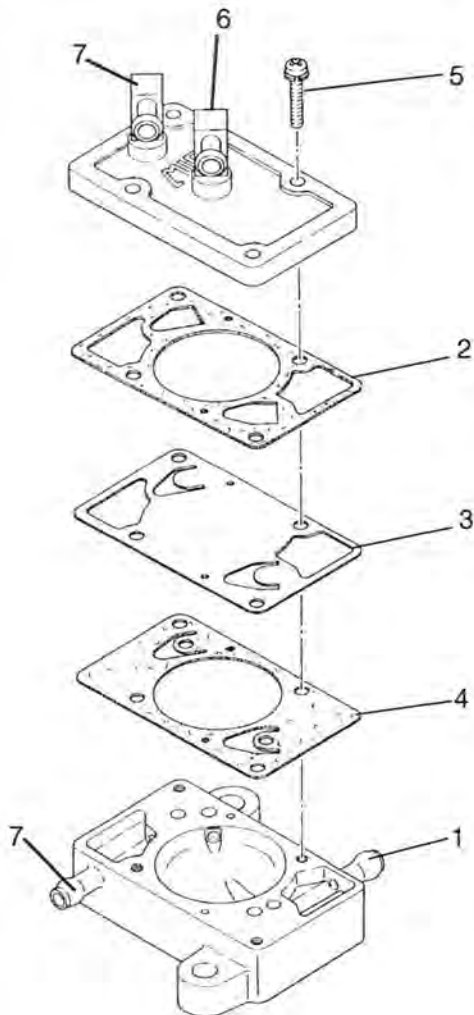
- The diaphragms and check valves must be carefully examined for cracks, tears, holes, or other damage. If in doubt as to the condition of any internal parts, replace all diaphragms, check valves, and gaskets.

CARBURETION Exploded View Fuel Pump

LITE AND SPORT PRIOR TO 1994

Description of Parts

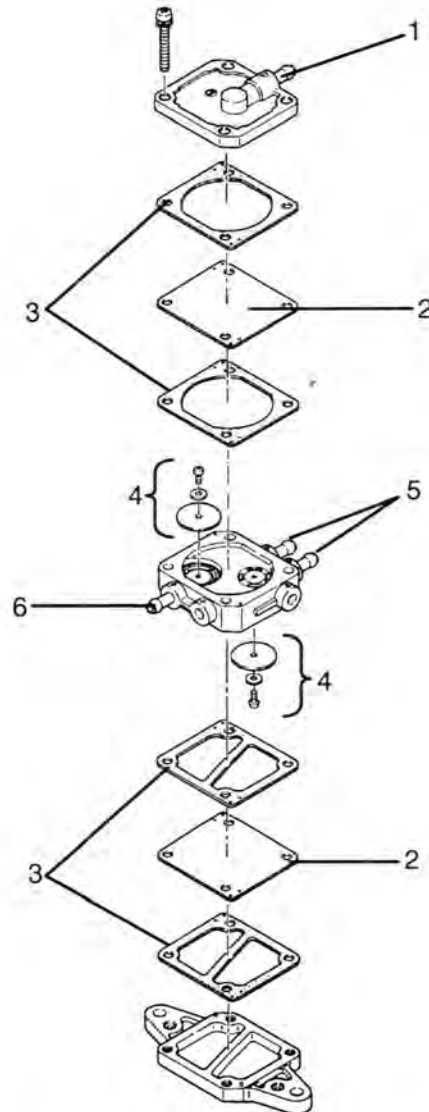
1. Fuel Inlet (from tank)
2. Gasket
3. Diaphragm (transparent)
4. Membrane
5. Screw (4 used)
6. Vacuum (from crankcase)
7. Fuel Outlet (to carbs - NOTE: one only on StarLite fuel pump)



Taiyo Giken

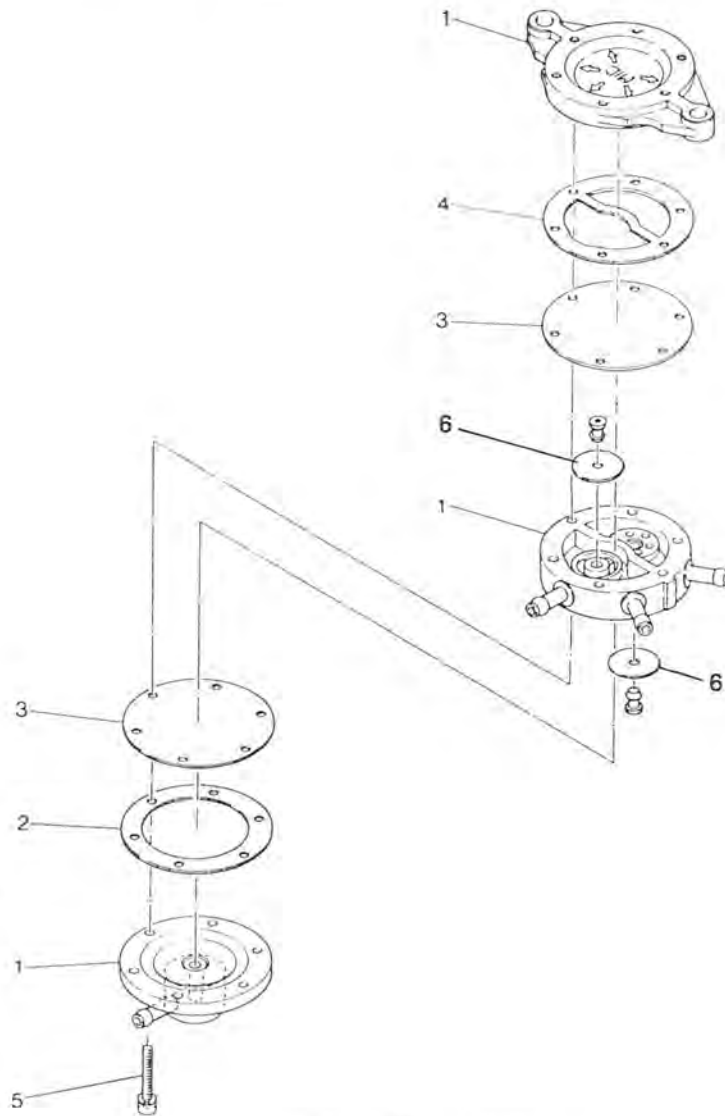
Description of Parts

1. Vacuum (from crankcase)
2. Diaphragm
3. Gaskets
4. Check Valves
5. Fuel Outlets (to carbs)
6. Fuel Inlet (from tank)



CARBURETION

Exploded View - Twin Cylinder (Typical) Fuel Pump

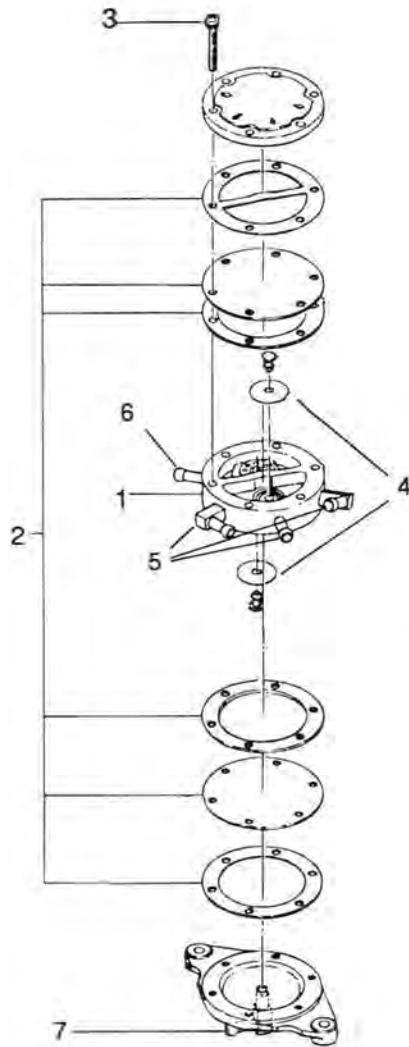


Parts Description

- 1. Pump Body Assembly
- 2. Lower Gasket
- 3. Diaphragm
- 4. Upper Gasket
- 5. Screw (6 used)
- 6. Check Valve

CARBURETION

Exploded View - 650 3 Cylinder Fuel Pump



Parts Description

1. Pump Valve Body
 2. Diaphragms and Gaskets
 3. Screw (6 used)
 4. Check Valves
- NOTE: Be sure of proper order and position of gaskets and diaphragms upon reassembly.
5. Fuel Outlet (3 to carbs)
 6. Fuel Inlet (from tank)
 7. Vacuum/Pressure (from crank-case)

CARBURETION

Problem Diagnosis

Fuel system diagnosis should follow a specific path, first examining the fuel tank, then the filters, fuel lines, vent lines, fuel pump, impulse hose, air box, exhaust system and finally the carburetors.

The following troubleshooting information assumes that the general mechanical condition of the engine (pistons, rings, bearings, etc.) is good.

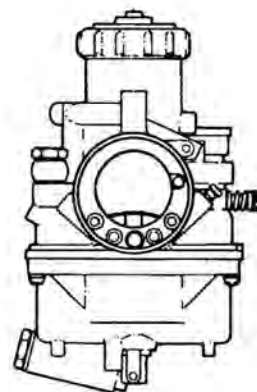
When the fuel/air mixture is diagnosed as improper due to spark plug readings, clean the carburetor and blow its passages clear with compressed air. Use the spark plug firing end condition as a guide for further determination of whether the mixture is too rich or too lean.

Next, use the throttle lever to determine at what degree of throttle valve opening the problem exists.

CONDITION	SYMPTOMS
Mixture Too Rich	-Black spark plug tip -Heavy exhaust smoke -Engine runs worse after warm up -Runs better without air silencer -Combustion chamber has heavy deposits of carbon
Mixture Too Lean	-Spark plug electrodes white -Fluctuation in engine speed -Power loss -Engine overheats -Cylinder scoring -Backfiring - detonation -Throttle diagnostic opening check points
Poor Fuel Mileage	-Incorrect ignition timing -Improper track tension (too tight) -Incorrect carburetor jetting -Fuel leaks (lines, fittings, fuel pump) -Needle and seat leaks -Plugged exhaust -Carburetor vent line problems -Clutching incorrect for conditions

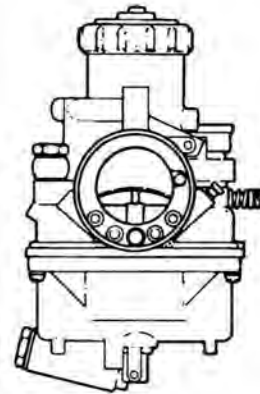
Troubleshooting Tips, 0-1/4 Throttle:

- Pilot air screw misadjusted
- Pilot jet of wrong size
- Obstruction of pilot jet
- Pilot jet loose
- Choke plunger not seating (rich)
- Carburetor mounting air leak (lean)
- Crankshaft seal air leak (lean)
- Fuel pump diaphragm damaged (rich)
- Float level incorrect



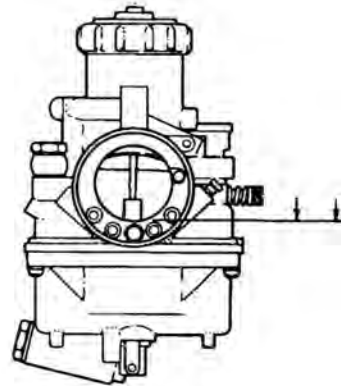
Troubleshooting Tips, 1/4-3/8 Throttle:

- Obstruction in main jet or needle jet
- Jet needle worn or out of adjustment
- Pilot system malfunction
- Incorrect throttle valve cutaway



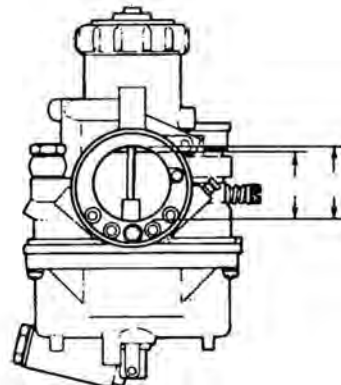
Troubleshooting Tips, 3/8-3/4 Throttle:

- Main jet incorrect size or clogged (lean)
- Needle jet setter O-Ring damaged or loose
- Needle jet/jet needle worn (rich)



Troubleshooting Tips, Full Throttle:

- Main jet size (rich or lean)
- Fuel filter blocked (lean)
- Fuel vent lines or check valves plugged
- Exhaust system plugged
- Air box restricted
- Fuel pump weak
- Exhaust leaking into engine compartment (rich)
- Water in float bowl (lean)



CARBURETION

Problem Diagnosis

Explanation of Gasoline Volatility

In order for an engine to start easily and run properly, gasoline must be able to burn without causing detonation, vapor lock, flooding, or icing of fuel lines, fuel pumps, or carburetors. One of the sometimes misunderstood properties of gasoline is its volatility, or ability to atomize at different ambient temperatures and altitudes during the year.

When gasoline is blended, it is given a Reid Vapor Pressure number which reflects its ability to vaporize or mix with air at a given temperature range. Gasoline vapor pressure is measured by putting a sample of fuel inside a closed container and applying a specified amount of heat to the container for a certain amount of time. This pressure will vary from about 9.0 PSI during the summer to approximately 15.0 PSI during the coldest months. Service stations selling a large volume of fuel will normally have the correct blend to work well at all times throughout the year.

When the weather is very cold, gasoline must be able to atomize very quickly in order for an engine to start and warm up properly. If summer blend fuel, which has a low Reid Vapor number, is being used, little or no vaporization will occur. Droplets will form causing flooding and very hard starting.

During the summer months, if winter blend fuel is being used it may cause vapor lock (boiling fuel) inside the fuel lines, pump, or carburetor. This will cause warm engine driveability problems and hard starting when warm. Some states are limiting the Reid Vapor number to 9.0 PSI year around to help meet evaporative emissions standards.

Warm Weather



Cold Weather

Maximum Reid Vapor		Ambient Air Temp. Range	
Class	Pressure	Low	High
A	9.0 PSI	60° F	110° F +
B	10.0 PSI	50° F	110° F
C	11.5 PSI	40° F	97° F
D	13.5 PSI	30° F	85° F
E	15.0 PSI	20° F	69° F

Add 2.4° F for each 1000 feet above seal level.

Low Vaporization Rate



High Vaporization Rate

CARBURETION

Optional Water Trap Installation

⚠ WARNING

Fuel spillage will occur during this installation. *Gasoline is extremely flammable and explosive under certain conditions.*

- ⚠** Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- ⚠** Do not weld or operate a torch near the fuel system. Remove fuel tank before any chassis welding is performed.
- ⚠** If you get gasoline in your eyes or if you swallow gasoline, see your doctor immediately.
- ⚠** If you spill gasoline on your skin or clothing, immediately wash it off with soap and water and change clothing.
- ⚠** Never start the engine or let it run in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death in a short time.

Following are instructions for optional water trap installation for 34 and 38mm carbs (Kit PN 2870688). **NOTE:** Not available on side jet type carburetors.

1. Turn fuel valve off.
2. Remove air silencer. (600 only)
3. Position a shop cloth or container below drain plug and loosen drain plug.
4. Remove drain plug and sealing O-Ring.
5. Install removed O-Ring onto drain plug and water trap assembly.
6. Install water trap assembly into bottom of float bowl and tighten.
7. Turn fuel on, start engine and check for possible fuel leaks.
8. Reinstall air box.

The water traps should be periodically inspected and drained. Draining frequency will depend upon fuels purchased and riding conditions. Once a week is a fairly good rule of thumb.

