

SECTION VI

CARBURETION

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Condensed Data

Engine Model	No. of Cyl.	Carb. Size Type and Number	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Original Jetting		Recommended Jetting/0'-5,000'		Recommended Jetting/5,000'-10,000'	
						Main	Pilot	Main	Pilot	Main	Pilot
EC17P	1	VM24SH (1)	-----	---	---	300H	40	---	35	---	---
EC25P	1	VM30SH (1)	6DH4-3	O-8	3.0	125	40	120	35	115	35
EC29P	2	VM26SH (2)	5DP7-3	O-8	3.0	107.5	40	---	35	105	35
EC29PF	2	VM26SH (2)	5DP7-3	O-8	3.0	107.5	40	---	35	105	35
EC34PS	2	VM26SS (2)	5DP7-3	O-8	3.0	125	40	120	35	105	35
EC40P	2	VM30SH (2)	5DP7-3	O-8	3.0	120	40	---	35	110	35
EC40PF	2	VM30SH (2)	5DP7-3	O-8	3.0	120	40	---	35	110	35
EC51PS	3	VM26SH (3)	5DP7-3	O-8	3.0	125	40	120	35	115	35
EC54P	2	VM32SH (2)	5DH4-3	O-8	2.0	140	40	132.5	35	125	35
EC54PF	2	VM32SH (2)	5DH4-3	O-8	2.0	140	40	132.5	35	125	35

EC17P	1	VM24SH (1)	5DP7-3	P-4	2.0	102.5	40	---	35	---	---
EC25PS	1	VM30SH (1)	5DT7-4	O-8	3.0	125	40	120	35	115	35
EC29PM	2	VM26SH (2)	5DP7-3	O-8	3.0	110	40	---	35	100	35
EC29PF	2	VM26SH (2)	5DP7-3	O-8	3.0	115	40	110	35	100	35
EC29PS	2	VM30SS (2)	5DP7-3	P-2	3.0	127.5	40	120	35	105	35
EC34PF	2	VM26SH (2)	5DP7-3	O-8	3.0	115	40	110	35	107.5	35
EC34PS	2	VM30SS (2)	5DP7-3	P-2	3.0	127.5	40	120	35	110	35
EC40PM	2	VM30SH (2)	5DP7-3	O-8	3.0	120	40	---	35	117.5	35
EC40PS	2	VM32SS (2)	5DH4-3	O-8	2.0	145	40	132.5	35	120	35
EC44PS	2	VM32SS (2)	5DH4-3	O-8	2.0	145	40	137.5	35	120	35
EC51PS	3	VM30SS (3)	5DP7-3	O-8	3.0	127.5	40	120	35	115	35
EC54PM	2	VM32SS (2)	5DH4-3	O-8	2.0	145	40	132.5	35	125	35

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Condensed Data

1974

Engine Model	No. of Cyl.	Carb. Size Type and Number	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Original Jetting		Recommended Jetting/0'-5,000'		Recommended Jetting/5,000'-10,000'	
						Main	Pilot	Main	Pilot	Main	Pilot
EC17PM	1	VM24SH (1)	5DP7-3	P-4(212)	2.0	102.5	35	—	—	—	—
EC25PS	1	VM30SH (1)	5DP7-4	O-8(171)	3.0	125	35	120	—	115	35
EC25PC	2	VM26SS (2)	5DP7-3	O-8(164)	3.0	110	35	—	—	100	35
EC25PT	2	VM30SS (2)	5DP7-3	P-2(171)	3.0	125	35	115	—	105	35
EC29PF	2	VM26SH (2)	5DP7-3	O-8	3.0	115	35	110	—	107.5	35
EC34PC	2	VM26SH (2)	5DP7-3	O-8(164)	3.0	125	35	112.5	—	110	35
EC34PQ	2	VM32SS (1)	5DP10-4	P-2(171)	2.0	125	40	120	35 ^C	107.5	35 ^C
EC34PS	2	VM30SS (2)	5DP7-3	P-2	3.0	127.5	35	120	—	110	35
EC40PM	2	VM30SH (2)	5DP7-3	O-8	3.0	120	40	—	35	115	35
EC44PQ	2	VM38SS (1)	5DP7-3	P-2(171)	3.0	135	40	—	35 ^C	117.5	35 ^C
EC44PT	2	VM38SS (2)	6DH4-4	Q-0(205)	1.5	135	35	—	— ^{C1}	115	35 ^{C1}
EC51PT	3	VM32SS (3)	6DH4-4	O-8(188)	2.5	117.5	35	—	— ^C	110	35 ^C
EC54PM	2	VM32SS (2)	5DH4-3	O-8	2.0	145	40	130	35 ^C	117.5	35 ^C

1975

EC17PM	1	VM24SH (1)	5DP7-3	P-4	2.0	102.5	35	—	—	—	—
EC25PS	1	VM30SH (1)	5DP7-4	O-8	3.0	125	35	117.5	— ^C	115	35 ^C
EC25PC	2	VM26SS (2)	5DP7-3	O-8	3.0	105	35	112.5 ²	— ^C	95	35 ^C
EC25PT	2	VM30SS (2)	5DP7-3	O-8	3.0	120	35	—	— ^C	112.5	35 ^C
EC34PC	2	VM26SS (2)	5DP7-3	O-8	3.0	112.5	35	107.5	— ^{C3}	100	35 ^{C3}
EC34PQ	2	VM30SS (2)	5DP10-4	P-2	2.0	122.5	30	117.5	— ^C	110	30 ^C
EC34PT	2	VM32SS (2)	6DH4-3	P-0	2.0	140	30	130	— ^C	115	35 ^C
EC44PQ	2	VM30SS (2)	5DP7-3	P-2	3.0	125	25	115	— ^C	110	25 ^C
EC44PT	2	VM38SS (2)	6DH4-4	Q-0	1.5	140	40	132.5	45 ^C	120	40 ^C
EC51PT	3	VM32SS (3)	6DH4-5	O-2	2.5	120	40	—	— ^C	115	40 ^C

C — With air silencer installed

1 — Reference Service Bulletin No. 93

2 — Reference Service Bulletin No. 96

3 — Reference Service Bulletin No. 101

CARBURETION

Condensed Data

Engine Model	No. of Cyl.	Carb. Size Type and Number	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Original Jetting		Recommended Jetting/0'-5,000'		Recommended Jetting/5,000'-10,000'	
						Main	Pilot	Main	Pilot	Main	Pilot
EC17PM	1	VM24SH (1)	5DP7-3	P-4(212)	2.0	102.5	35	—	—	—	—
EC25PS	1	VM30SH (1)	5DP7-4	O-8(171)	3.0	125	35	117.5	—C	115	35C
EC25PC	2	VM26SS (2)	5DP30-3 or 5DP7-5	O-8(164)	3.0	112.5	35	—	—C	95	35C
EC25PT-06	2	VM32SS (2)	6DP1-3	P-4(159)	2.0	260H	30	—	35C	190H	30C
EC25PT-05	2	VM32SS (2)	6DP1-3	P-2(159)	2.0	230H	35	—	—C	—	—C
EC34PC	2	VM26SS (2)	5DP30-3 or 5DP7-5	O-8(164)	3.0	107.5	35	—	—C	105	35C
EC34PQ	2	VM30SS (2)	5DP10-4	P-2(171)	2.0	122.5	30	117.5	—C	110	30C
EC34PT-05	2	VM32SS (2)	6DP1-3	P-4(159)	2.0	270H	30	260H ⁴	—C	230	30C
EC34PT-06	2	VM34SS (2)	6DH4-3	Q-0(159)	1.5	270H	30	—	—C	—	—C
EC44PQ	2	VM30SS (2)	5DP7-3	P-2(171)	3.0	125	25	115	—C	115	25C
EC44PT-05	2	VM34SS (2)	6DP1-3	P-6(166)	2.5	320H	35	—	—C	270	35C

EC25PS	1	VM30SH (1)	5DP7-4	O-8(171)	3.0	117.5	35	—	—C	REFER TO THE 1977 SHOP MANUAL FOR SPECIFIC ALTITUDE TEMPERATURE COMPENSATION ADJUSTMENTS
EC25PC	2	VM26SS (2)	5DP7-5 or 5DP3-3	O-8(164)	3.0	112.5	35	—	—C	
EC25PM-01	2	VM26SS (2)	5DP7-2	O-8	2.5	130H	35	—	—C	
EC25PT-07	2	VM30SS (2)	5DP7-3	P-2(171)	2.5	220H	35	—	—C	
EC34PM-03	2	VM26SS (2)	5DP7-2	O-8	2.5	150H	35	130H	—C	
EC34PQ	2	VM30SS (2)	5DP10-4	P-2(171)	2.0	122.5	30	117.5	—C	
EC34PT-05	2	VM32SS (2)	6DH7-3	P-4(159)	2.0	280H	30	270H	—C	
EC34PL-01	2	VM38SS (2)	6DH4-3	Q-2(166)	2.5	340H	45	320H ⁴	—C	
EC44PQ	2	VM30SS (2)	5DP7-3	P-2(171)	3.0	115	25	—	—C	
EC44PT-05	2	VM34SS (2)	6DP1-3	P-6(166)	2.5	320H	35	—	—C	
EC44PT-06	2	VM34SS (2)	6DP1-3	P-6(166)	2.5	320H	35	—	—C	

C — With air silencer installed

H — Hex head

4 — Lower "E" clip to No. 4 position

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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)
Colt	EC25PS	244	VM30SH (1) Flange	117.5 Round	35	1 turn
Colt	EC25PC	250	VM26SS (2) Rubber	112.5 Round	35	1 turn
S/S 340	EC34PM-03 EC34PM-04N	333	VM26SS (2) Rubber	130 Hex	35	1 turn 1/2 turn
Cobra	EC34PM-04	333	VM26SS (2) Rubber	130 Hex	35	1 turn
Cobra	EC44PM-01	432	VM34SS (2) Rubber	200 Hex	35	1 turn
TX	EC25PT-07	249	VM30SS (2) Rubber	220 Hex	35	1 turn
TX	EC34PT-05	336	VM32SS (2) Rubber	280 Hex	30	1 turn
TX	EC44PT-05	432	VM34SS (2) Rubber	370 Hex	45	1 turn
TX-L	EC34PL-02	333	VM38SS (2) Rubber	310 Hex	45	1 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Valve Seat	Fuel Mixture
EC25PS	5DP7 - 4	O-8 (171)	3.0	1.5MM	40:1
EC25PC	5DP7 - 5 or 5DP3 - 3	O-8 (164)	3.0		
EC34PM-03 EC34PM-04N	5DP7 - 2 5EP6 - 3	O-8 (259) P-2 (259)	2.5 3.0		
EC34PM-04	5DP7 - 3	P-2 (259)	3.0		
EC44PM-01	6DP1 - 3	P-6 (166)	2.5		
EC25PT-07	5DP7 - 3	P-2 (171)	2.5		
EC34PT-05	6DH7 - 3	P-4 (159)	2.0		
EC44PT-05	6DH7 - 3	P-6 (166)	2.5		
EC34PL-02	6DH4 - 3	Q-2 (247)	2.5		

REFER TO THE 1978 SHOP MANUAL FOR SPECIFIC ALTITUDE/TEMPERATURE COMPENSATION ADJUSTMENTS.

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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)
Gemini	EC25PS	244	VM30SH (1) Flange	117.5 Round	35	1 turn
Gemini	EC25PM-01	244	VM26SS (2) Rubber	120 Hex	35	1 turn
Apollo	EC34PM-03	333	VM26SS (2) Rubber	130 Hex	35	1 turn
Cobra	EC34PM-04	333	VM26SS (2) Rubber	130 Hex	35	1 turn
Cobra	EC44PM-01	432	VM34SS (2) Rubber	200 Hex	35	1 turn
TX	EC25PT-07	249	VM30SS (2) Rubber	220 Hex	35	1 turn
TX	EC34PT-05	336	VM32SS (2) Rubber	290 Hex	30	1 turn
TX	EC44PT-05	432	VM34SS (2) Rubber	320 Hex	30	1 turn
TX-L	EC34PL-02	333	VM38SS (2) Rubber	260 Hex	45	1 turn
Centurion	EC51PL-01	500	VM34SS (3) Rubber	220 Hex	35	1 1/2 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Valve Seat	Fuel Mixture
EC25PS	5DP7 - 4	O-8 (177)	3.0	1.5MM	40:1
EC25PM-01	5DP7 - 2	O-8	2.5		
EC34PM-03	5DP7 - 2	O-8	2.5		
EC34PM-04	5DT49 - 2*	P-2 (259)	3.0		
EC44PM-01	6DP1 - 3	P-6 (166)	2.5		
EC25PT-07	5DP7 - 3	P-2 (171)	2.5		
EC34PT-05	6DH7 - 2	P-4 (159)	2.0		
EC44PT-05	6DH7 - 2	Q-0 (166)	2.5		
EC34PL-02	6DH4 - 3	Q-2 (247)	2.5		
EC51PL-01	6DH7 - 2	Q-2 (166)	3.0		

*Reference Information Bulletin No. I-78-5

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1980

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)
Gemini	EC25PS	244	VM30SS (1) Rubber	120 Hex	60	1 turn
Gemini	EC25PM-01	244	VM26SS (2) Rubber	120 Hex	35	1 turn
Apollo	EC34PM-03	333	VM26SS (2) Rubber	130 Hex	35	1 turn
Galaxy	EC34PM-04	333	VM26SS (2) Rubber	110 Hex	35	1 turn
Galaxy	EC44PM-01/02	432	VM34SS (2) Rubber	200 Hex	35	1 turn
TX/TX-C	EC34PT-07	336	VM32SS (2) Rubber	280 Hex	30	1 turn
TX	EC44PT-05	432	VM34SS (2) Rubber	320 Hex	30	1 turn
TX-L/TX-L Indy	EC34PL-02/05	333	VM38SS (2) Rubber	260 Hex	45	1 turn
Centurion	EC51PL-02	500	VM34SS (3) Rubber	220 Hex	35	1 1/2 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Valve Seat	Fuel Mixture
EC25PS	5DT49-2	O-8 (177)	3.0	1.5MM	40:1
EC25PM-01	5DP7 - 2	O-8	2.5		
EC34PM-03	5DP7 - 2	O-8	2.5		
EC34PM-04	5DT49-2	P-2 (259)	3.0		
EC44PM-01/02	6DP1 - 3	P-6 (166)	2.5		
EC34PT-07	6DH7 - 2	P-4 (159)	2.0		
EC44PT-05	6DH7 - 2	Q-0 (166)	2.5		
EC34PL-02/05	6DH4 - 3	Q-2 (247)	2.5		
EC51PL-02	6DH7 - 2	Q-2 (166)	3.0		

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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)
Gemini	EC25PS	244	VM30SS (1) Rubber	120 Hex	60	1 turn
Galaxy	EC44PM-02	432	VM34SS (2) Rubber	200 Hex	35	1 turn
Cutlass	EC34PM-03	333	VM26SS (2) Rubber	130 Hex	30	1 turn
Cutlass SS	EC44-2PM-3100/3300	432	VM38SS (1) Rubber	290 Hex	40	1 turn
TX-C	EC44-2PM-1100	432	VM34SS (2) Rubber	270 Hex	35	1 turn
TX-L/TX-L Indy	EC34PL-05	333	VM38SS (2) Rubber	260 Hex	45	1 turn
Centurion Indy	EC51PL-02	500	VM34SS (3) Rubber	220 Hex	35	1 1/2 turn

1981

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Valve Seat	Fuel Mixture
EC25PS	5DT49-2	O-8 (177)	3.0	1.5mm	40:1
EC44PM-02	6DP1-3	P-6 (166)	2.5	1.5mm	40:1
EC34PM-03	5DP7-3	O-8 (259)	2.5	1.5mm	40:1
EC44-2PM-3100/3300	6DH7-3	Q-2 (247)	2.0	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-1100	6DH7-3	P-6 (166)	3.5	1.5mm	Variable Ratio/ Automatic Injection
EC34PL-05	6DH4-3	Q-2 (247)	2.5	1.5mm	40:1
EC51PL-02	6DH7-2	Q-2 (166)	3.0	1.5mm	40:1

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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)
Cutlass SS	EC44-2PM-3100*1	432	VM38SS(1) Rubber	290 Hex	40	1 turn
	EC44-2PM-3100*2	432	VM34SS(1) Rubber	280 Hex	40	1 turn
TX-C	EC44-2PM-1100	432	VM34SS(2) Rubber	270 Hex	35	1 turn
TX-L/TX-L Indy	EC34PL-05	333	VM38SS(2) Rubber	260 Hex	45	1 turn
Centurion Indy	EC51PL-02	500	VM34SS(3) Rubber	220 Hex	35	1 1/2 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Fuel Mixture
EC44-2PM-3100*1	6DH7-3	Q-2 (247)	2.0	7041136	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-3100*2	6DH7-3	P-6 (166)	2.5	3130289	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-1100	6DH7-3	P-6 (166)	3.5	3130026	1.5mm	Variable Ratio/ Automatic Injection
EC34PL-05	6DH4-3	Q-2 (247)	2.5	3130026	1.5mm	40:1
EC51PL-02	6DH7-2	Q-2 (166)	3.0	3130026	1.5mm	40:1

*1 — Engine serial numbers beginning with 80—

*2 — Engine serial numbers beginning with 81—

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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)
Gemini/Star	EC25PS	244	VM30SS(1) Zinc	130 Hex	60	1 1/2 turn
Sport	EC44-2PM 5100	432	VM30SS(1) Zinc	190 Hex	35	1.0 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 Cross Country	EC34PL-05	333	VM38SS(2) Alum	260 Hex	40	1.0 turn
Indy 600	EC60PL-01	597	VM38SS(3) Alum	250 Hex	40	1.0 turn
Long Track	EC44-2PM 5000	432	VM30SS(1) Zinc	190	35	1.0 turn

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Fuel Mixture
EC25PS	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	40:1
EC44-2PM-5100	5DP10-3	P-8 (171)	2.5	3130281	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-3100	6DH7-3	P-6 (166)	2.5	3130289	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-2100	6DH7-2	P-6 (166)	3.0	3130026	1.5mm	Variable Ratio/ Oil Injection
EC34PL-05	6DH4-3	Q-2 (247)	2.5	3130026	1.5mm	40:1
EC60PL-01	6DH4-3	Q-2 (247)	3.5	3130026	1.5mm	40:1
EC44-2PM 5000	5DP10-3	P-8 (171)	2.5	3130281	1.5mm	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/Star LT	EC25PS-05	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 600	EC60PL-02	597	VM38SS(3) Alum	250 Hex	40	1.0 turn
Long Track	EC44-2PM 5000	432	VM30SS(1) Zinc	200	30	1.0 turn

1
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8
4

Engine Model	Jet Needle No. "E" Clip Position	Needle Jets	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Fuel Mixture
EC25PS-05	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	40:1
EC44-2PM-3100	6DH7-3	P-6 (166)	2.5	3130289	1.5mm	Variable Ratio/ Automatic Injection
EC44-2PM-2100	6DH7-2	P-6 (166)	3.0	3130026	1.5mm	Variable Ratio/ Oil Injection
EC60PL-02	6F4-3	Q-2 (247)	3.5	3130314	1.5mm	Variable Ratio/ Oil Injection
EC44-2PM-5000	5DP10-3	P-8 (171)	2.5	3130281	1.5mm	40:1

CARBURETION

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	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 Jets	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Fuel Mixture	Idle RPM
EC25PS-06	5DT49-3	O-8 (171)	3.0	3130281	1.5mm	Variable Ratio/ Automatic Injection	2100
EC44-2PM-3100	6DH7-3	P-6 (166)	2.5	3130289	1.5mm	Variable Ratio/ Automatic Injection	2300
EC44-2PM-2100	6DH7-2	P-6 (166)	3.0	3130314	1.5mm	Variable Ratio/ Automatic Injection	2300
EC40PL-02	6DH7-2	P-8 (166)	3.0	3130314	1.5mm	Variable Ratio/ Automatic Injection	2200
EC60PL-02	6F4-3	P-8 (247)	3.0	3130334	1.5mm	Variable Ratio/ Automatic Injection	2000
EC44-2PM-5000	5DP10-3	P-8 (171)	2.5	3130281	1.5mm	40:1	2300

CARBURETION

Condensed Data

1986

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) Alum	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 Jets	Throttle Valve Cutaway	Throttle Valve Spring PN	Valve Seat	Idle RPM	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	3130281	1.5mm	2300	Variable Ratio/ Automatic Injection

CARBURETION

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, Star Trak	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) Alum	260 Hex	40	1.0 turn
Long Track (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 Jets	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	6DH7-3	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-8 (171)	2.5	3130281	1.5mm	2300	Variable Ratio/ Automatic Injection

CARBURETION

Systems

FUNCTION OF A CARBURETOR

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

FUNCTIONS AND CONSTRUCTION

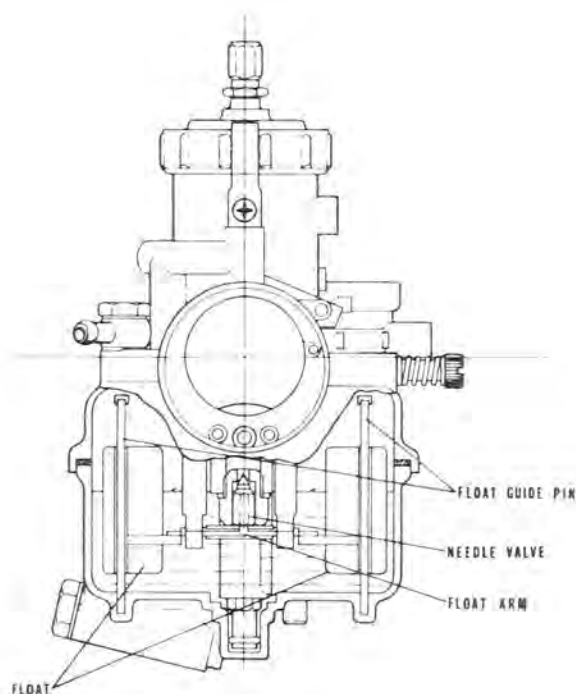
The engine of a vehicle is operated under a wide range of conditions, from idling with the throttle valve remaining almost closed to the full load (the maximum output) with the throttle valve fully opened. In order to meet the requirements for the proper mixture ratio under these varying conditions,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

The Mikuni carburetor has varying operations depending upon varying driving conditions. It is constructed with the float system, the pilot system, the main system, and the starter system (initial starting device).

FLOAT SYSTEM — No. 1

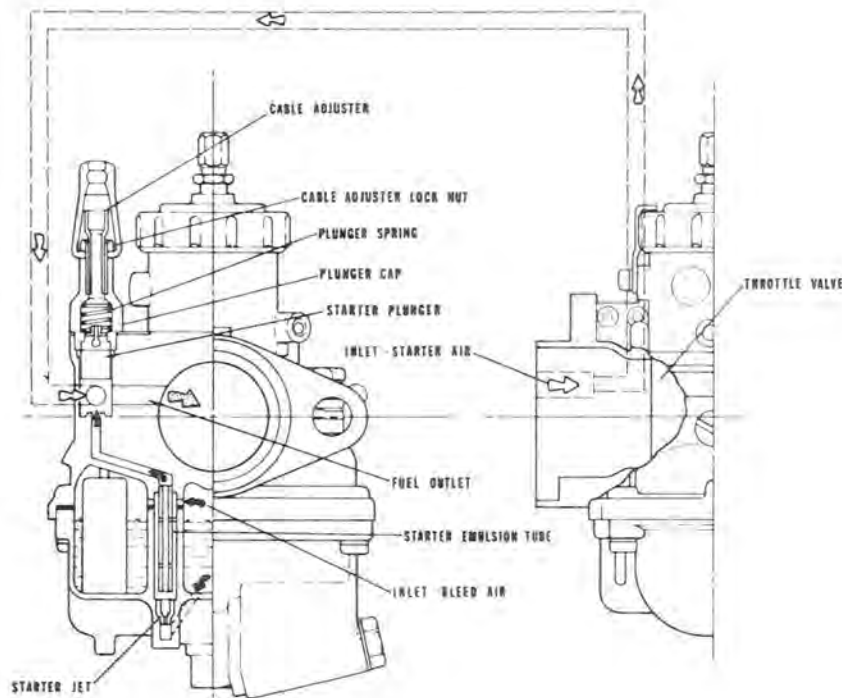
The float system is designed to maintain a constant height of gasoline during operation. When the fuel flowing from the fuel pump into the float chamber through the needle valve reaches the constant fuel level, the floats rise. When the buoyancy of the float and the fuel pressure of the fuel pump balance, 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, as not enough fuel leaves the nozzle. Therefore, the predetermined fuel level should not be changed arbitrarily.



STARTER SYSTEM — No. 2

Starting device (starter system) — In the place of the choke, the starter system is employed for Mikuni carburetors. In the starter type, 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 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

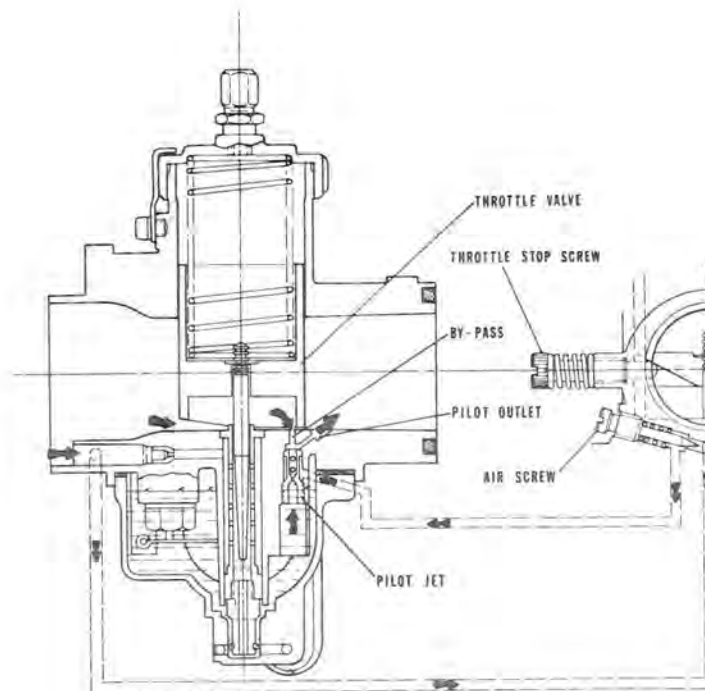
Systems

PILOT SYSTEM – No. 3

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 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.

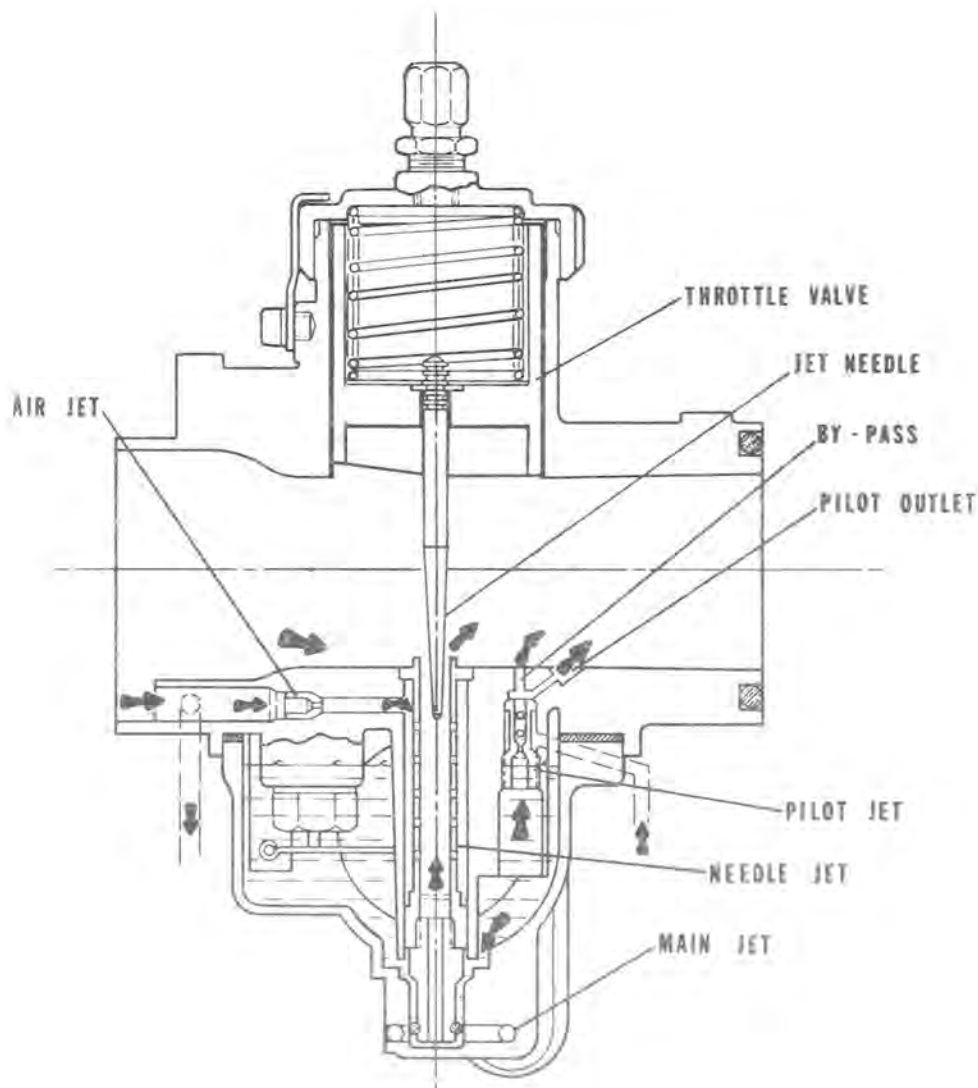
The mixture is regulated to some degree by adjusting the air screw. When the air screw is closed, the fuel mixture is made richer as the amount of air is reduced. When the air screw is opened, the mixture is leaned as the amount of air is increased.



MAIN SYSTEM — No. 4

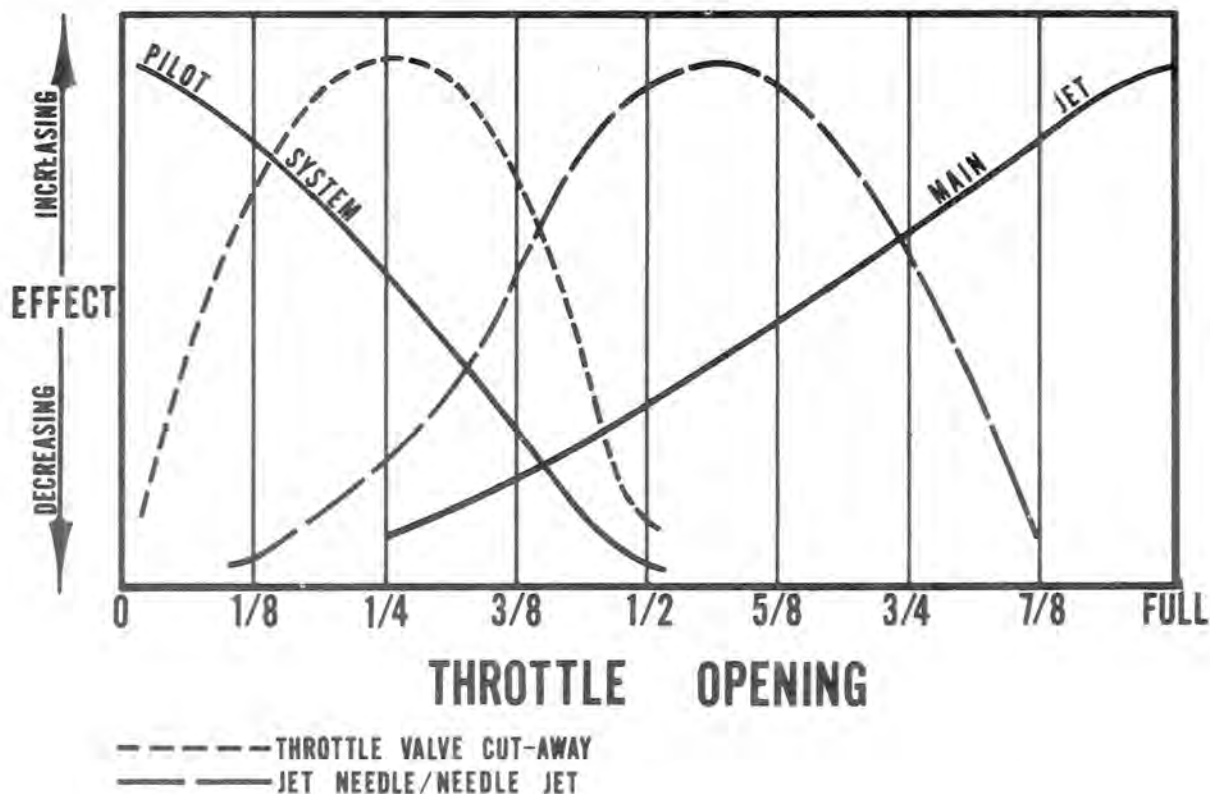
The main system is designed for delivering fuel between low speed and high speed operation. This system is made up of the jet needle, needle jet, and main jet. The main system begins to take effect as soon as there is enough air flow into the carburetor venturi to draw fuel up through the main jet and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

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

Component Effect VS Throttle Opening



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

———— Pilot System

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.

----- Throttle Valve Cutaway

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 number 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.

———— Jet Needle/Needle Jet

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.

———— Main Jet

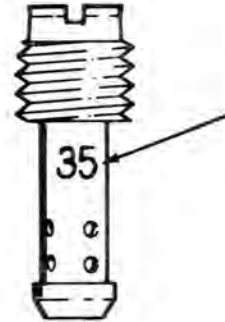
The main jet affects fuel delivery at 1/4 throttle and consistently increases to full throttle opening.

CARBURETION

Component Functions

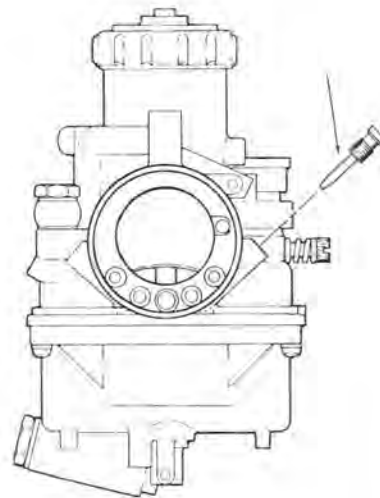
PILOT JET

From idling to low speeds, the fuel supply is measured out 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, that 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.

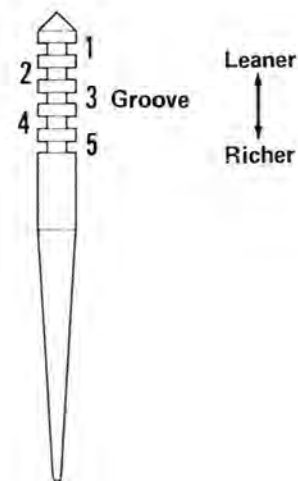


CARBURETION

Component Functions

JET NEEDLE

The jet needle has 5 grooves for adjustment cut in 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, which space is unvarying until the throttle reaches the 1/4 open point. At this 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 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.

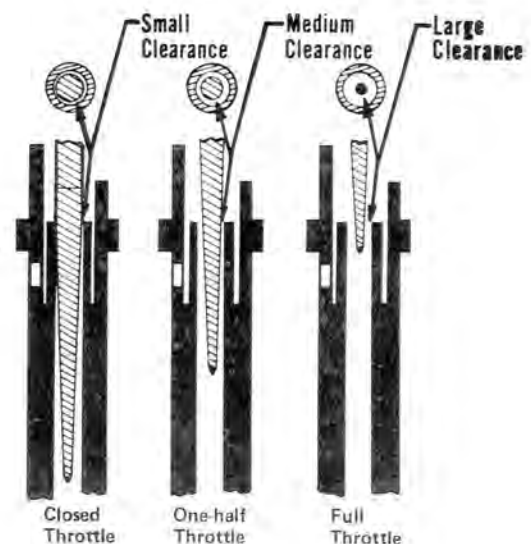
In the side of the needle jet, there is an air bleed opening which brings in air measured by the air jet. This air initiates the mixing and atomizing process inside the needle jet, and mixing is augmented by a projection at the needle jet outlet, called the primary choke.

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; therefore, the main jet has greater control over fuel flow.



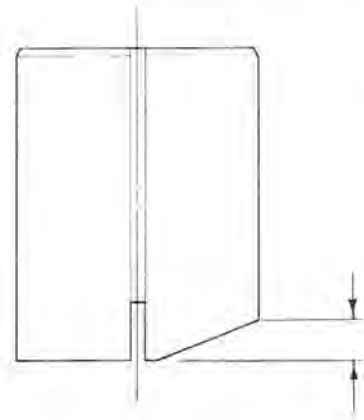
CARBURETION

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, and by controlling air flow, the negative pressure over the needle valve is regulated, in turn governing fuel intake.

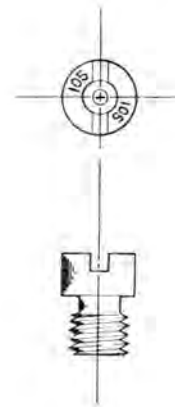
The throttle valves are numbered 1.0, 1.5, 2.0, etc., according to the size of the cutaway; the higher the number, the leaner the gasoline/air mixture.



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 in cc's which will pass through it in one minute, with the larger numbers consequently giving 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.



CARBURETION

Jetting Guidelines and Part Numbers

The number of the main jet is stamped on each jet. The jet size is also stamped on the banjo bolt, but NEVER assume that this 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 A MACHINE. BE VERY CAREFUL WHEN JETTING DOWN IN WARM WEATHER; AS THE WEATHER TURNS COLDER IT WILL BE NECESSARY TO REJET UPWARD TO PREVENT ENGINE DAMAGE.

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

PILOT JET NO.		ROUND HEAD MAIN JET NO.		HEX HEAD MAIN JET NO.	
PART NO.		PART NO.		PART NO.	
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	HEX HEAD		260	3130129
55	3130070	MAIN JET NO.		PART NO.	
60	3130071	80	3130099	270	3130130
65	3130072	85	3130000	280	3130131
ROUND HEAD		90	3130101	290	3130132
MAIN JET NO.	PART NO.	95	3130102	300	3130133
90	3130073	100	3130103	310	3130134
95	3130074	105	3130104	320	3130135
100	3130075	110	3130105	330	3130136
102.5	3130076	115	3130106	340	3130137
105	3130077	120	3130107	350	3130138
107.5	3130078	125	3130108	360	3130139
110	3130079	130	3130109	380	3130140
112.5	3130080	135	3130110	400	3130141
115	3130081	140	3130111	420	3130142
117.5	3130082	145	3130112	430	3130143
120	3130083	150	3130113	440	3130144
122.5	3130084	155	3130114	450	3130145
125	3130085	160	3130115	460	3130146
127.5	3130086	165	3130116	470	3130147
130	3130087	170	3130117	490	3130148
132.5	3130088	175	3130118	500	3130149
135	3130089	180	3130119	530	3130150
137.5	3130090	185	3130120	560	3130151
140	3130091	190	3130121	590	3130152
145	3130092	195	3130122	620	3130153
150	3130093	200	3130123		

CARBURETION

1979 Jetting Compensation for Altitude/Temperature

EC25PS

Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
1000	122.5	120	117.5	115	112.5	110
3000	120	117.5	115	112.5	110	107.5
5000	115	115	112.5	110	107.5	105
7000	112.5	110	110	107.5	105	102.5
9000	110	107.5	107.5	105	102.5	100

Main Jet Number

Production Setting

Main Jet — 117.5

Cut Away — 3.0

Jet Needle — 5DP7-4

Pilot Jet — 35

Air Screw — 1.0 turn

Maximum engine efficiency and horsepower are directly related to proper carburetion settings. The following charts are established as a guideline for selecting optimum jetting at varying temperature and altitude conditions for the 1979 Polaris.

IMPORTANT: The following guidelines must be followed when establishing a main jet setting:

1. Select the lowest anticipated temperature at which the machine will be operated.
2. Determine the lowest approximate altitude at which the machine will be operated.
3. Tracing down and across on the chart, use the intersecting main jet recommendation.

Altitude — Feet
1000
3000
5000
7000
9000

1
9
7
9

EC25PM-01

Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
1000	130	120	120	120	110	110
3000	120	120	110	110	110	100
5000	120	110	110	100	100	90
7000	110	100	100	100	90	90
9000	100	100	90	90	90	80

Main Jet Number

Production Setting

Main Jet — 120

Cut Away — 2.5

Jet Needle — 5DP7-2

Pilot Jet — 35

Air Screw — 1.0 turn

EC34PM-03

Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 130

Cut Away — 2.5

Jet Needle — 5DP7-2

Pilot Jet — 35

Air Screw — 1.0 turn

CARBURETION

1979 Jetting Compensation for Altitude/Temperature

EC34PM-04
Outside Air Temperature ° F

Altitude - Feet	-40	-20	0	+20	+40	+60
	140	130	120	120	110	110
	130	120	120	110	110	100
	120	110	110	110	100	100
	110	110	100	100	100	90
	110	100	100	90	90	90

Main Jet Number

EC44PM-01
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
210	200	190	180	180	170
200	190	180	170	170	160
190	180	170	160	160	150
170	170	160	150	150	140
160	160	150	140	140	130

Main Jet Number

Production Setting

Main Jet - 130

Pilot Jet - 35

Cut Away - 3.0

Air Screw - 1.0 turn

Jet Needle - 5DT49-2*

*Reference Information Bulletin No. I-78-5

Production Setting

Main Jet - 200

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 6DP1-3

EC25PT-07
Outside Air Temperature ° F

Altitude - Feet	-40	-20	0	+20	+40	+60
	230	220	210	200	190	180
	220	210	200	190	180	170
	200	200	190	180	170	160
	190	180	180	170	160	150
	180	170	170	160	150	140

Main Jet Number

EC34PT-05
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
310	300	290	280	270	260
300	290	280	270	260	240
280	270	260	250	240	230
260	250	240	240	230	220
250	240	230	220	210	200

Main Jet Number

Production Setting

Main Jet - 220

Pilot Jet - 35

Cut Away - 2.5

Air Screw - 1.0 turn

Jet Needle - 5DP7-3

Production Setting

Main Jet - 290

Pilot Jet - 30

Cut Away - 2.0

Air Screw - 1.0 turn

Jet Needle - 6DH7-2

CARBURETION

1979 Jetting Compensation for Altitude/Temperature

		EC44PT-05					
		Outside Air Temperature ° F					
		-40	-20	0	+20	+40	+60
Altitude — Feet	1000	340	330	320	310	300	280
	3000	330	310	300	290	280	270
	5000	310	300	290	280	260	250
	7000	290	280	270	260	250	240
	9000	270	260	250	240	230	220
		Main Jet Number					

		EC34PL-02					
		Outside Air Temperature ° F					
		-40	-20	0	+20	+40	+60
Altitude — Feet	1000	280	270	260	250	240	230
	3000	270	260	250	240	230	220
	5000	250	240	230	220	220	200
	7000	240	230	220	210	200	190
	9000	220	210	200	200	190	180
		Main Jet Number					

1
9
7
9

Production Setting
Main Jet — 320
Cut Away — 2.5
Jet Needle — 6DH7-2

Pilot Jet — 30
Air Screw — 1.0 turn

Production Setting
Main Jet — 260
Cut Away — 2.5
Jet Needle — 6DH4-3

Pilot Jet — 45
Air Screw — 1.0 turn

		EC51PL-01					
		Outside Air Temperature ° F					
		-40	-20	0	+20	+40	+60
Altitude — Feet	1000	240	230	220	210	210	200
	3000	220	220	210	200	200	190
	5000	210	200	200	190	190	180
	7000	200	190	180	180	180	170
	9000	190	180	170	170	170	160
		Main Jet Number					

Production Setting
Main Jet — 220
Cut Away — 3.0
Jet Needle — 6DH7-2

Pilot Jet — 35
Air Screw — 1.5 turn

CARBURETION

1980 Jetting Compensation for Altitude/Temperature

Maximum engine efficiency and horsepower are directly related to proper carburetion settings. The following charts are established as a guideline for selecting optimum jetting at varying temperature and altitude conditions for the 1980 Polaris.

IMPORTANT: The following guidelines must be followed when establishing a main jet setting:

1. Select the lowest anticipated temperature at which the machine will be operated.
2. Determine the lowest approximate altitude at which the machine will be operated.
3. Tracing down and across on the chart, use the intersecting main jet recommendation.

1980

Altitude - Feet

Altitude - Feet
1000
3000
5000
7000
9000

EC25PS
Outside Air Temperature ° F

	-30	-10	+10	+30	+50
1000	125	120	115	110	105
3000	120	115	110	105	100
5000	110	105	100	100	95
7000	105	100	95	95	90
9000	100	95	90	85	85

Main Jet Number

Production Setting

Main Jet - 120

Cut Away - 3.0

Jet Needle - 5DT49-2

Pilot Jet - 60

Air Screw - 1.0 turn

EC25PM-01
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
1000	130	120	120	120	110	110
3000	120	120	110	110	110	100
5000	120	110	110	100	100	90
7000	110	100	100	100	90	90
9000	100	100	90	90	90	80

Main Jet Number

Production Setting

Main Jet - 120

Cut Away - 2.5

Jet Needle - 5DP7-2

Pilot Jet - 35

Air Screw - 1.0 turn

EC34PM-03
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet - 130

Cut Away - 2.5

Jet Needle - 5DP7-2

Pilot Jet - 35

Air Screw - 1.0 turn

CARBURETION

1980 Jetting Compensation for Altitude/Temperature

EC34PM-04
Outside Air Temperature ° F

Altitude - Feet		-30	-10	+10	+30	+50
	1000	115	110	105	100	95
	3000	110	105	100	95	90
	5000	105	100	95	90	85
	7000	95	95	90	85	80
	9000	90	85	85	80	80

Main Jet Number

EC44PM-01/02
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
210	200	190	180	180	170	
200	190	180	170	170	160	
190	180	170	160	160	150	
170	170	160	150	150	140	
160	160	150	140	140	130	

Main Jet Number

Production Setting

Main Jet - 110

Cut Away - 3.0

Jet Needle - 5DT49-3

Pilot Jet - 35

Air Screw - 1.0 turn

Production Setting

Main Jet - 200

Cut Away - 2.5

Jet Needle - 6DP1-3

Pilot Jet - 35

Air Screw - 1.0 turn

EC34PT-07
Outside Air Temperature ° F

Altitude - Feet		-30	-10	+10	+30	+50
	1000	290	280	270	260	250
	3000	280	270	260	250	230
	5000	260	250	240	230	220
	7000	250	240	230	220	210
	9000	230	220	210	200	195

Main Jet Number

EC44PT-05
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
340	330	320	310	300	280	
330	310	300	290	280	270	
310	300	290	280	260	250	
290	280	270	260	250	240	
270	260	250	240	230	220	

Main Jet Number

Production Setting

Main Jet - 280

Cut Away - 2.0

Jet Needle - 6DH7-2

Pilot Jet - 30

Air Screw - 1.0 turn

Production Setting

Main Jet - 320

Cut Away - 2.5

Jet Needle - 6DH7-2

Pilot Jet - 30

Air Screw - 1.0 turn

CARBURETION

1980 Jetting Compensation for Altitude/Temperature

EC34PL-02/05
Outside Air Temperature ° F

Altitude - Feet	-40	-20	0	+20	+40	+60
	280	270	260	250	240	230
	270	260	250	240	230	220
	250	240	230	220	220	200
	240	230	220	210	200	190
	220	210	200	200	190	180

Main Jet Number

Production Setting

Main Jet - 260

Cut Away - 2.5

Jet Needle - 6DH4-3

Pilot Jet - 45

Air Screw - 1.0 turn

EC51PL-02
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
240	230	220	210	210	200
220	220	210	200	200	190
210	200	200	190	190	180
200	190	180	180	180	170
190	180	170	170	170	160

Main Jet Number

Production Setting

Main Jet - 220

Cut Away - 3.0

Jet Needle - 6DH7-2

Pilot Jet - 35

Air Screw - 1.5 turn

1980

CARBURETION

1981 Jetting Compensation for Altitude/Temperature

Maximum engine efficiency and horsepower are directly related to proper carburetion settings. The following charts are established as a guideline for selecting optimum jetting at varying temperature and altitude conditions for the 1981 Polaris.

IMPORTANT: The following guidelines must be followed when establishing a main jet setting:

1. Select the lowest anticipated temperature at which the machine will be operated.
2. Determine the lowest approximate altitude at which the machine will be operated.
3. Tracing down and across on the chart, use the intersecting main jet recommendation.

Altitude — Feet
1000
3000
5000
7000
9000

EC25PS
Outside Air Temperature ° F

	-30	-10	+10	+30	+50
1000	125	120	115	110	105
3000	120	115	110	105	100
5000	110	105	100	100	95
7000	105	100	95	95	90
9000	100	95	90	85	85

Main Jet Number

Production Setting

Main Jet — 120

Cut Away — 3.0

Jet Needle — 5DT49-2

Pilot Jet — 60

Air Screw — 1.0 turn

1
9
8
1

Altitude — Feet
1000
3000
5000
7000
9000

EC44PM-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 200

Cut Away — 2.5

Jet Needle — 6DP1-3

Pilot Jet — 35

Air Screw — 1.0 turn

EC34PM-03
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
1000	135	130	125	120	115	110
3000	130	125	120	115	110	105
5000	120	115	110	105	105	100
7000	115	110	105	100	95	90
9000	105	105	100	95	90	85

Main Jet Number

Production Setting

Main Jet — 130

Cut Away — 2.5

Jet Needle — 5DP7-3

Pilot Jet — 30

Air Screw — 1.0 turn

CARBURETION

1981 Jetting Compensation for Altitude/Temperature

EC44-2PM-3100/3300
Outside Air Temperature ° F

Altitude — Feet		-40	-20	0	+20	+40	+60
	1000	310	300	290	280	270	260
	3000	300	290	280	270	260	240
	5000	280	270	260	250	240	230
	7000	260	250	240	240	230	220
	9000	250	240	230	220	210	200

Main Jet Number

EC44-2PM-1100
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 290

Cut Away — 2.0

Jet Needle — 6DH7-3

Pilot Jet — 40

Air Screw — 1.0 turn

Production Setting

Main Jet — 270

Cut Away — 3.5

Jet Needle — 6DH7-3

Pilot Jet — 35

Air Screw — 1.0 turn

EC34PL-05
Outside Air Temperature ° F

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

Main Jet Number

EC51PL-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 260

Cut Away — 2.5

Jet Needle — 6DH4-3

Pilot Jet — 45

Air Screw — 1.0 turn

Production Setting

Main Jet — 220

Cut Away — 3.0

Jet Needle — 6DH7-2

Pilot Jet — 35

Air Screw — 1.5 turn

CARBURETION

1982 Jetting Compensation for Altitude/Temperature

EC44-2PM-3100
(With Engine Serial Numbers Beginning 80-)
Outside Air Temperature ° F

Altitude - Feet		-40	-20	0	+20	+40	+60
	1000	310	300	290	280	270	260
	3000	300	290	280	270	260	240
	5000	280	270	260	250	240	230
	7000	260	250	240	240	230	220
	9000	250	240	230	220	210	200
		Main Jet Number					

EC44-2PM-3100
(With Engine Serial Numbers Beginning 81-)
Outside Air Temperature ° F

−40	−20	0	+20	+40	+60
290	280	270	260	250	240
280	270	250	240	230	220
260	250	240	230	220	210
250	240	230	220	210	200
230	220	210	200	190	180
Main Jet Number					

1
9
8
2

Production Setting
Main Jet - 290
Cut Away - 2.0
Jet Needle - 6DH7-3

Pilot Jet - 40
Air Screw - 1.0 turn

Production Setting
Main Jet - 280
Cut Away - 2.5
Jet Needle - 6DH7-3

Pilot Jet - 40
Air Screw - 1.0 turn

EC44-2PM-1100
Outside Air Temperature ° F

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

EC34PL-05
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
280	270	260	250	240	230
270	260	250	240	230	220
250	240	230	220	220	200
240	230	220	210	200	190
220	210	200	200	190	180
Main Jet Number					

Production Setting
Main Jet - 270
Cut Away - 3.5
Jet Needle - 6DH7-3

Pilot Jet - 35
Air Screw - 1.0 turn

Production Setting
Main Jet - 260
Cut Away - 2.5
Jet Needle - 6DH4-3

Pilot Jet - 45
Air Screw - 1.0 turn

CARBURETION

1982 Jetting Compensation for Altitude/Temperature

EC51PL-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 220

Cut Away — 3.0

Jet Needle — 6DH7-2

Pilot Jet — 35

Air Screw — 1.5 turn

1
9
8
2

CARBURETION

1983 Jetting Compensation for Altitude/Temperature

EC44-2PM-2100
Outside Air Temperature ° F

	-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

Main Jet Number

EC44-2PM-3100
Outside Air Temperature ° F

	-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

Main Jet Number

Production Setting

Main Jet - 230

Cut Away - 3.0

Jet Needle - 6DH7-2

Pilot Jet - 35

Air Screw - 1.0 turn

Production Setting

Main Jet - 280

Cut Away - 2.5

Jet Needle - 6DH7-3

Pilot Jet - 40

Air Screw - 1.0 turn

EC25PS
Outside Air Temperature ° F

	-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	80

Main Jet Number

EC44-2PM-5000/5100
Outside Air Temperature ° F

	-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

Main Jet Number

Production Setting

Main Jet - 130

Cut Away - 3.0

Jet Needle - 5DT49-3

Pilot Jet - 60

Air Screw - 1.5 turn

Production Setting

Main Jet - 190

Cut Away - 2.5

Jet Needle - 5DP10-3

Pilot Jet - 35

Air Screw - 1.0 turn

CARBURETION

1983 Jetting Compensation for Altitude/Temperature

EC34PL-05
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
280	270	260	250	240	230
270	260	250	240	230	220
250	240	230	220	220	200
240	230	220	210	200	190
220	210	200	200	190	180

Main Jet Number

Production Setting

Main Jet - 260

Cut Away - 2.5

Jet Needle - 6DH4-3

Pilot Jet - 40

Air Screw - 1.0 turn

EC60PL-01
Outside Air Temperature ° F

-40	-20	0	+20	+40	+60
260	250	240	240	230	220
250	240	230	230	220	210
240	230	220	220	210	200
220	210	200	200	190	190
210	200	190	190	180	180

Main Jet Number

Production Setting

Main Jet - 250

Cut Away - 3.5

Jet Needle - 6DH4-3

Pilot Jet - 40

Air Screw - 1.0 turn

NOTES

1983

CARBURETION

1984 Jetting Compensation for Altitude/Temperature

EC44-2PM-2100
Outside Air Temperature ° F

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

Main Jet Number

EC44-2PM-3100
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
290	280	270	260	250	240	
280	270	250	240	230	220	
260	250	240	230	220	210	
250	240	230	220	210	200	
230	220	210	200	190	180	

Main Jet Number

Production Setting
Main Jet — 230
Cut Away — 3.0
Jet Needle — 6DH7-2

Pilot Jet — 35
Air Screw — 1.0 turn

Production Setting
Main Jet — 280
Cut Away — 2.5
Jet Needle — 6DH7-3

Pilot Jet — 40
Air Screw — 1.0 turn

EC25PS-05
Outside Air Temperature ° F

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	80

Main Jet Number

EC44-2PM-5000
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
200	190	190	180	170	170	
190	180	180	180	170	160	
180	170	170	160	160	150	
170	160	160	150	150	140	
160	150	150	140	140	130	

Main Jet Number

Production Setting
Main Jet — 130
Cut Away — 3.0
Jet Needle — 5DT49-3

Pilot Jet — 60
Air Screw — 1.5 turn

Production Setting
Main Jet — 200
Cut Away — 2.5
Jet Needle — 5DP10-3

Pilot Jet — 30
Air Screw — 1.0 turn

CARBURETION

1984 Jetting Compensation for Altitude/Temperature

EC60PL-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet — 250

Cut Away — 3.5

Jet Needle — 6F4-3

Pilot Jet — 40

Air Screw — 1.0 turn

1
9
8
4

NOTES

CARBURETION

1985 Jetting Compensation for Altitude/Temperature

EC44-2PM-2100
Outside Air Temperature ° F

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
		Main Jet Number					

EC44-2PM-3100
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
290	280	270	260	250	240	
280	270	250	240	230	220	
260	250	240	230	220	210	
250	240	230	220	210	200	
230	220	210	200	190	180	
Main Jet Number						

Production Setting

Main Jet - 230

Cut Away - 3.0

Jet Needle - 6DH7-2

Pilot Jet - 35

Air Screw - 1.0 turn

Production Setting

Main Jet - 280

Cut Away - 2.5

Jet Needle - 6DH7-3

Pilot Jet - 40

Air Screw - 1.0 turn

1
8
9
5

EC25PS-06
Outside Air Temperature ° F

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	80
		Main Jet Number					

EC44-2PM-5000
Outside Air Temperature ° F

	-40	-20	0	+20	+40	+60
200	190	190	180	170	170	
190	180	180	180	170	160	
180	170	170	160	160	150	
170	160	160	150	150	140	
160	150	150	140	140	130	
Main Jet Number						

Production Setting

Main Jet - 130

Cut Away - 3.0

Jet Needle - 5DT49-3

Pilot Jet - 60

Air Screw - 1.5 turn

Production Setting

Main Jet - 200

Cut Away - 2.5

Jet Needle - 5DP10-3

Pilot Jet - 30

Air Screw - 1.0 turn

CARBURETION

1985 Jetting Compensation for Altitude/Temperature

EC60PL-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet - 260

Cut Away - 3.0

Jet Needle - 6F4-3

Pilot Jet - 35

Air Screw - 3/4

Needle Jet - P8-247

EC40PL-02
Outside Air Temperature ° F

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

Main Jet Number

Production Setting

Main Jet - 220

Cut Away - 3.0

Jet Needle - 6DH7-2

Pilot Jet - 35

Air Screw - 1.0

Needle Jet - P8-166

1986 Jetting Compensation for Altitude/Temperature

Star — EC25PS—06
Outside Air Temperature ° F

	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
		Main Jet Number				

Production Setting

Main Jet — 130

Cut Away — 3.0

Jet Needle — 5DT49—3

Pilot Jet — 60

Air Screw — 1.5 turn

Sprint (ES) — EC34—2PM—01/02
Outside Air Temperature ° F

	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
		Main Jet Number				

Production Setting

Main Jet — 145

Cut Away — 3.0

Jet Needle — 5DP7-3

Pilot Jet — 35

Air Screw — 1.0 turn

SS — EC44—2PM—3100
Outside Air Temperature ° F

	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
		Main Jet Number				

Production Setting

Main Jet — 280

Cut Away — 2.5

Jet Needle — 6DH7-3

Pilot Jet — 40

Air Screw — 1.0 turn

Indy Trail — EC50PM—01
Outside Air Temperature ° F

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

Production Setting

Main Jet — 210

Cut Away — 3.0

Jet Needle — 6DH7-2

Pilot Jet — 30

Air Screw — 1.0 turn

CARBURETION

1986 Jetting Compensation for Altitude/Temperature

Indy 400 — EC40PL-02
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

Indy 600 — EC60PL-02
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

1986

Production Setting
Main Jet — 220
Cut Away — 2.0
Jet Needle — 6DP17-2

Pilot Jet — 30
Air Screw — 1.0 turn

Production Setting
Main Jet — 260
Cut Away — 3.0
Jet Needle — 6F9-3

Pilot Jet — 35
Air Screw — 3/4 turn

Long Track — EC44-2PM-5100
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

Production Setting
Main Jet — 200
Cut Away — 2.5
Jet Needle — 5DP10-3

Pilot Jet — 30
Air Screw — 1.0 turn
Needle Jet — P8-171

1987 Jetting Compensation for Altitude/Temperature

Star Trak, Star — EC25PS-06
Outside Air Temperature ° F

	-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet					
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
	Main Jet Number				

Production Setting

Main Jet — 130

Cut Away — 3.0

Jet Needle — 5DT49-3

Pilot Jet — 60

Air Screw — 1.5 turn

Sprint (ES) — EC34-2PM-01/02
Outside Air Temperature ° F

	-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet					
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
	Main Jet Number				

Production Setting

Main Jet — 155

Cut Away — 3.0

Jet Needle — 5DP7-3

Pilot Jet — 35

Air Screw — 1.0 turn

Long Track (R.L.R.) — EC44-2PM-5100
Outside Air Temperature ° F

	-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet					
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
	Main Jet Number				

Production Setting

Main Jet — 200

Cut Away — 2.5

Jet Needle — 5DP10-3

Pilot Jet — 30

Air Screw — 1.0 turn

Needle Jet — P8-171

Indy Sport — EC34-2PM-03
Outside Air Temperature ° F

	-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet					
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
	Main Jet Number				

Production Setting

Main Jet — 180

Cut Away — 3.0

Jet Needle — 5DP7-3

Pilot Jet — 35

Air Screw — 1.0 turn

CARBURETION

1987 Jetting Compensation for Altitude/Temperature

Indy Trail (All) — EC50PM—01/02
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

Indy 400 — EC40PL—02
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

Production Setting

Main Jet — 220

Cut Away — 3.0

Jet Needle — 6DH7-3

Pilot Jet — 30

Air Screw — 1.0 turn

Production Setting

Main Jet — 220

Cut Away — 2.0

Jet Needle — 6DP17-3

Pilot Jet — 30

Air Screw — 1 1/2 turn

Indy 600 — EC60PL—02
Outside Air Temperature ° F

		-40— -20	-20— 0	0— +20	+20— +40	+40— +60
Altitude — Feet	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
		Main Jet Number				

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

Production Setting

Main Jet — 260

Cut Away — 3.0

Jet Needle — 6F9-3

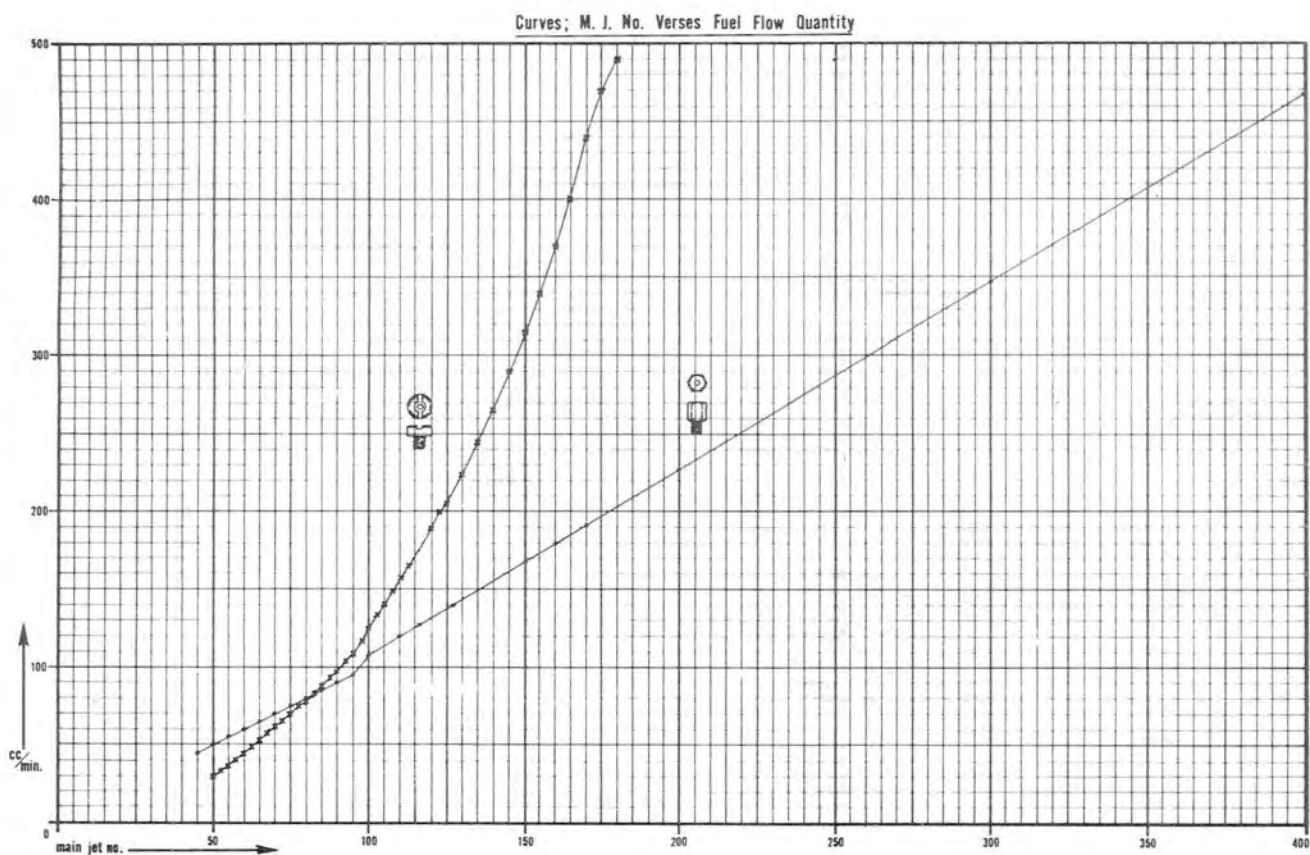
Pilot Jet — 40

Air Screw — 3/4 turn

CARBURETION

Main Jet Number VS Fuel Flow and Carburetor Identification

Main Jet Number VS Fuel Flow

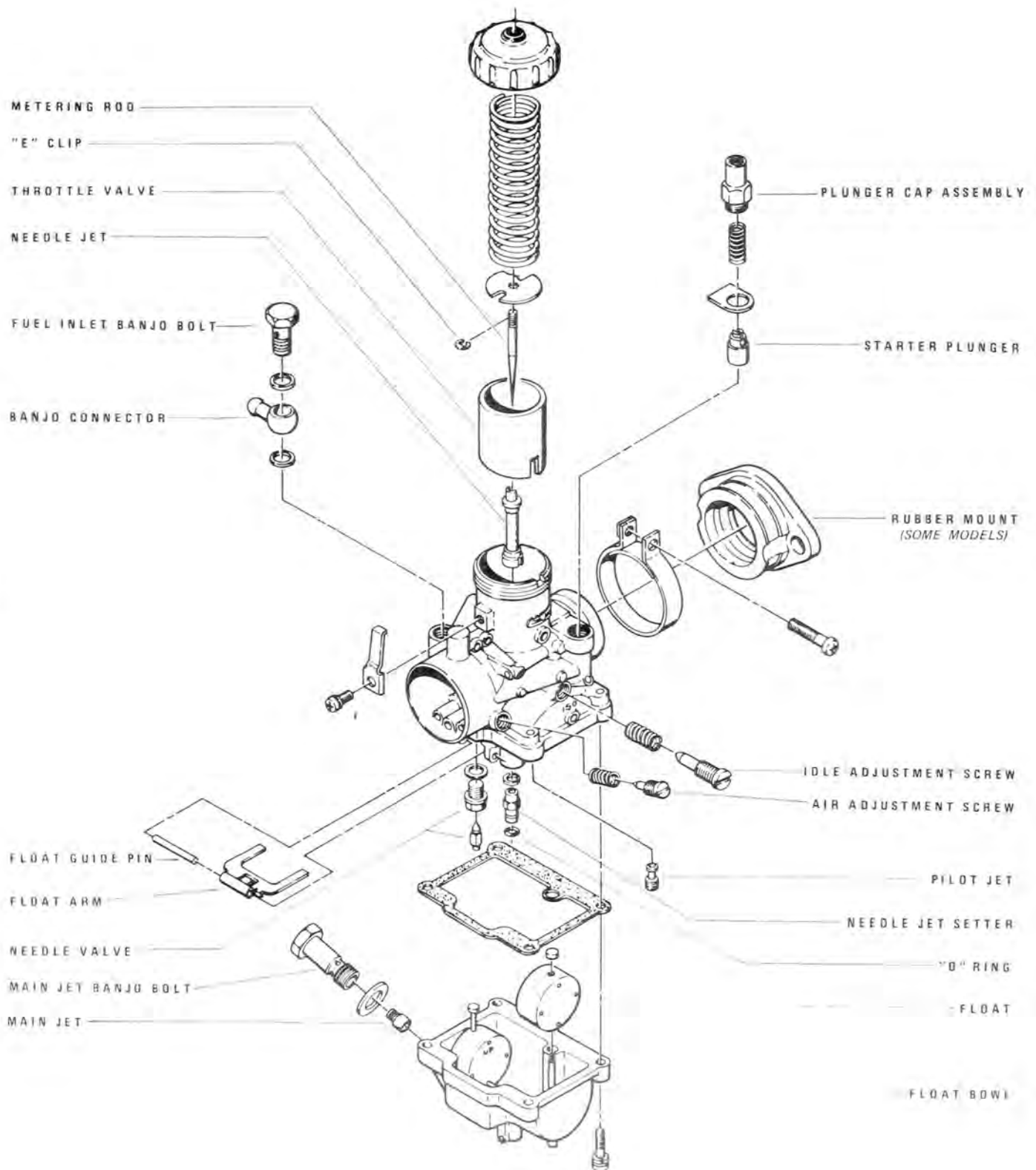


Each Polaris engine has a carburetor that has been calibrated for certain characteristics and model design. The carburetor is stamped with the engine model designation on the carburetor body. Example: EC34PL-02 TX-L engine would have the designation 34L-02. The designation is usually stamped on the front side of the choke housing chamber.



CARBURETION

Exploded View — VM26SS



CARBURETION

Adjustments — Jetting

JETTING IN ACCORDANCE WITH ALTITUDE

The amount of the incoming air in relation to meteorological conditions. The amount of air drawn into the cylinders is influenced by such factors as the altitude, temperature, humidity, etc. Suppose that 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, with the result that the power output drops markedly. Chart B shows the relations 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 degrees F (0 degrees C) is taken as 100.

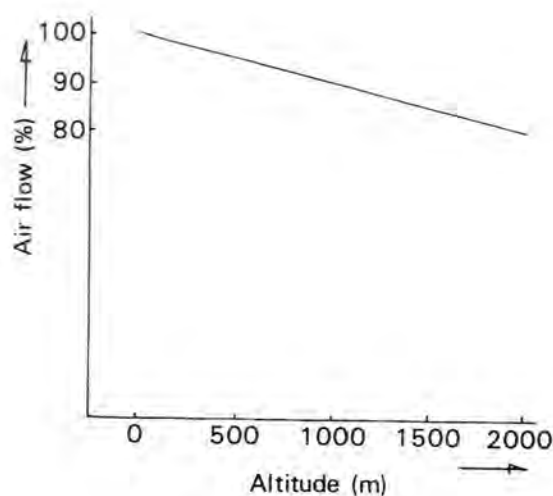


Chart A

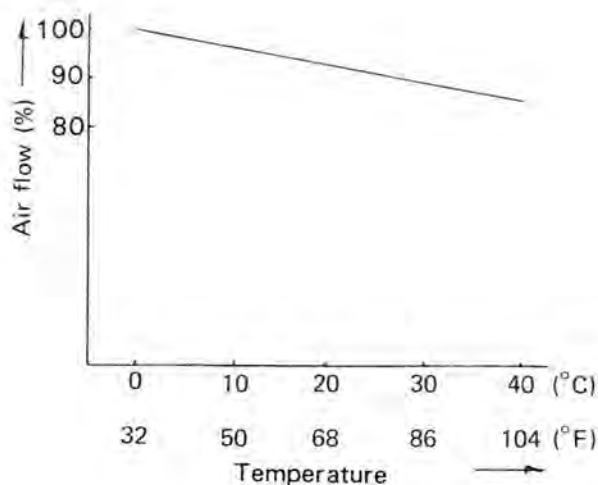


Chart B

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

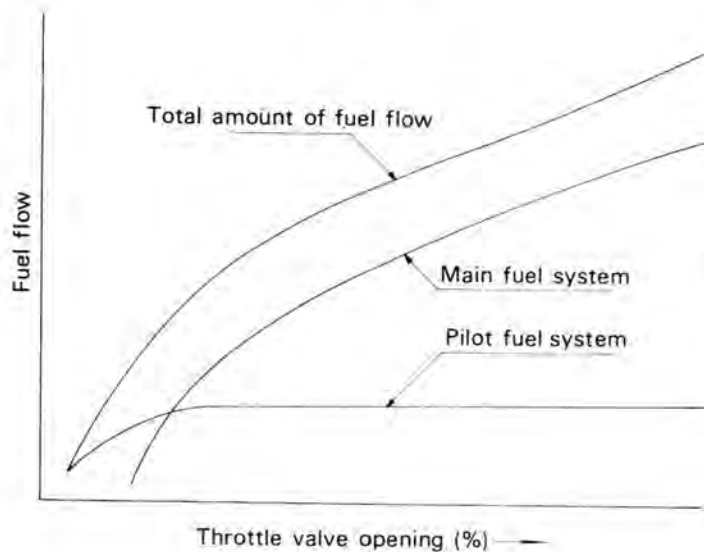


Chart C

CARBURETION

Problem Diagnosis

When the fuel-air mixture is diagnosed as improper due to spark plug readings, possible correction may result if the carburetor is cleaned and its passages blown clear with compressed air.

When the problem exists, further determine whether the mixture is too rich or too lean, again using the spark plug firing end condition as a guide.

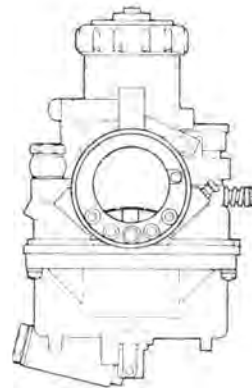
Next use the throttle lever to determine at what degree of throttle valve opening the problem exists.

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 Back firing — detonation Throttle diagnostic opening check points

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)

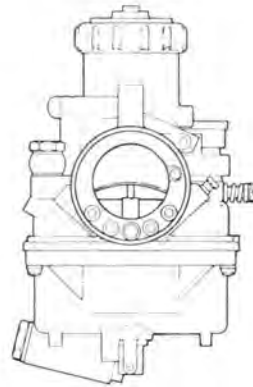


CARBURETION

Problem Diagnosis

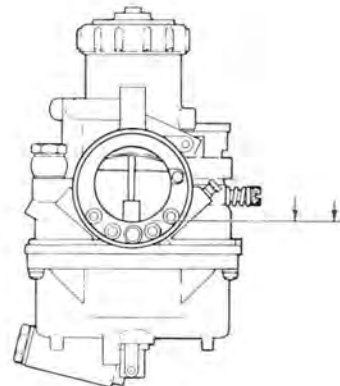
1/4 – 3/8 THROTTLE

Obstruction in main jet or needle jet
Jet needle worn or out of adjustment
Pilot system malfunction



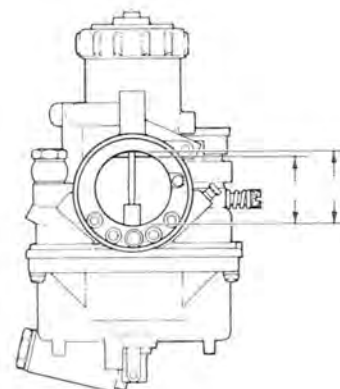
3/8 – 3/4 THROTTLE

Main jet incorrect size – clogged
Needle jet setter O-ring damaged or loose



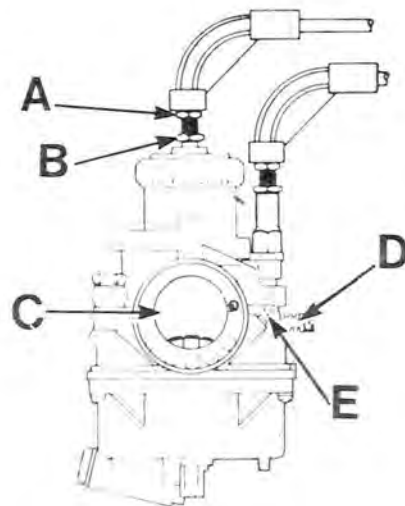
3/4 – FULL THROTTLE

Main jet size – rich or lean
Fuel filter blocked – lean



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

1. Machine preparation: Support the rear of the machine off floor. Check drive belt condition and tension — these will have an affect on engine idle RPM.
2. Remove air silencer and back out idle screws until the slide valves (C) are seated in carburetor bore.
3. Loosen cable sleeve jam nuts (B) and adjust cable sleeves (A) until slide valves rise equally or at the same time as throttle control flipper is actuated.
4. Adjust idle screws (D) in until they contact the slide valves and turn in an additional two turns.
5. Adjust pilot air screws (E) to the recommended settings. (Refer to carburetion data.)
6. Start engine and allow it to reach operating temperature.
7. Using a tachometer, adjust idle screws in equal amounts until a desired engine idle RPM is reached.



8. With Uni-Syn gauge, move from carb to carb and adjust idle screws until the float rises an equal amount at each carburetor.

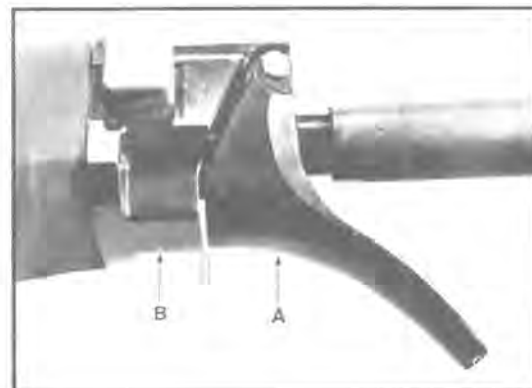
Tips on Uni-Syn operations:

- a. The Uni-Syn gauge as shown must be centered on carburetor air horn.
- b. The gauge sight tube should always be held vertical.
- c. The gauge must be held on each carburetor for short equal periods of time.
- d. 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.



9. Adjust throttle lever free play. Throttle lever (A) to throttle block (B) clearance should be between .010"–.030". This is most critical on machines equipped with throttle safety switch.

10. Equalize air flow or vacuum at off idle throttle position. Start engine and block throttle to approximately 1,000 RPM above idle RPM. 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.



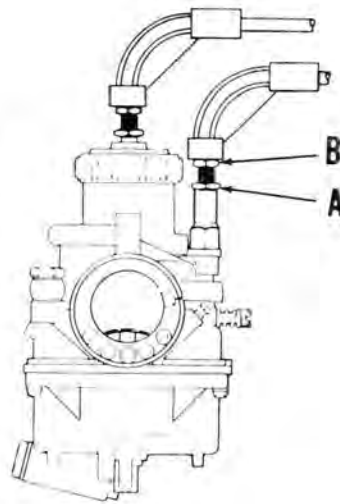
11. Re-check throttle lever free play. If adjustment is required, the cable sleeves must be turned equally to maintain off idle synchronization. Hold cable sleeves and lock jam nuts. Install air silencer.
12. On models with oil-injection, the adjustments on pump lever cable should also be checked and adjusted at this time. Refer to Section V for specific oil pump settings.

CARBURETION

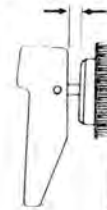
Adjustments – Choke

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

Likewise, if cable slack is too great resulting in excessive toggle free play, the engine will be hard starting when cold and the half on position used for intermittent applications will not function.



1/8" – 1/4" Freeplay



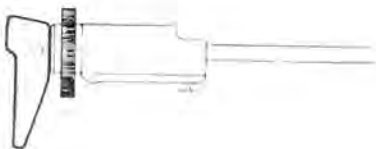
Choke Adjustment

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

Off

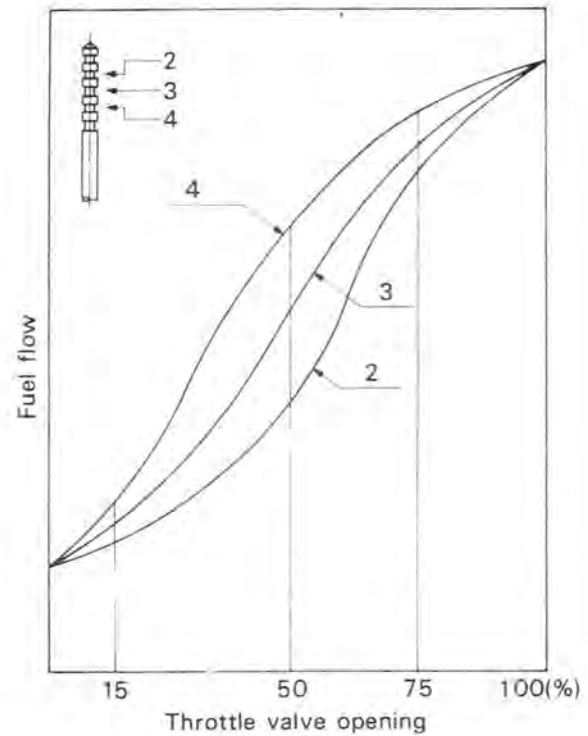
Half-On

Full-On



FINE TUNING THE MIKUNI CARBURETOR

Selection of the Needle Jet and the Jet Needle -
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 the jet needle serve to control a proper air-fuel mixture ratio during the so-called medium throttle valve opening (between 1/4 and 3/4 opening). Whether or not the right size of these parts is used gives a big bearing on the 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 "E" ring that is inserted into one of the five slots provided in the head of the jet needle. The variation of fuel flow based on the height of "E" ring is shown on chart to the right.



ADJUSTMENT OF FLOAT LEVEL

To adjust the float level on a Mikuni carburetor, it is necessary to remove the float bowl. With the carburetor in an inverted position the float arm (A) should be parallel with the body (B) on the carburetor as indicated in Figure 1.

NOTE: To adjust the float arm never bend the arm itself, always bend the tang which contacts the inlet needle.

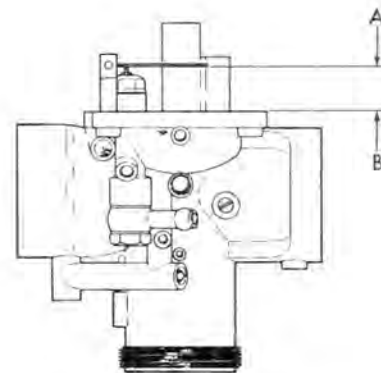


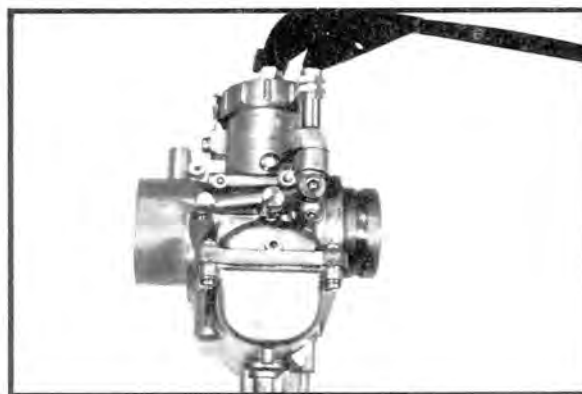
Fig. 1

CARBURETION

Overhaul Service

The Mikuni carburetor consists of various precision-machined parts. Therefore, care should be exercised when removing jets or disassembling the carburetor for cleaning. With few mechanical functions in this type carburetor, troubles are mostly due to wear of parts and clogging by dirt. In overhauling the carburetor, use a solvent or gasoline to wash all parts and blow dry using compressed air. Observe the following instructions:

1. Remove the carburetor from the engine. Before disassembling, clean the outside of the carburetor thoroughly with solvent.



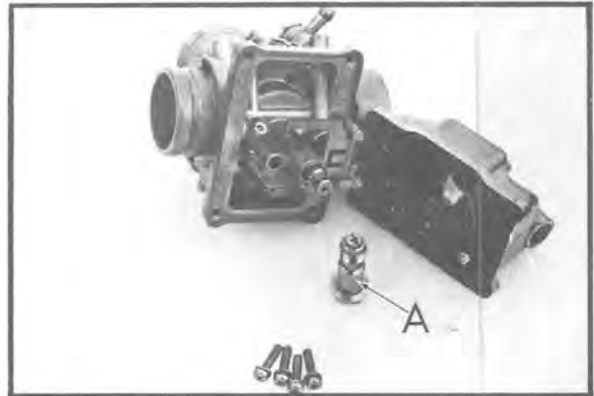
2. Remove the slide valve, inspecting it for nicks or burrs which may cause sticking. Remove the jet needle noting the "E" clip location.



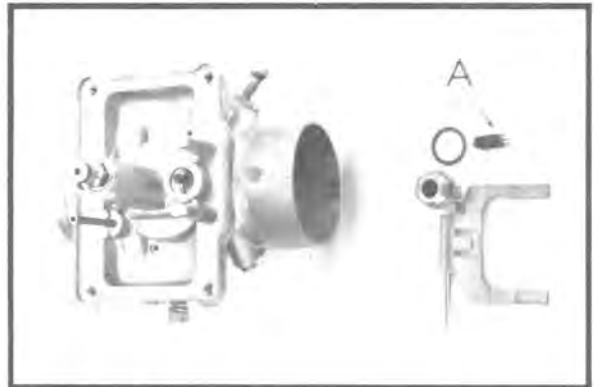
3. Remove the choke plunger, checking the condition of the neoprene seal at its tip. Any nicks or cuts will cause leakage and overfueling of the engine.



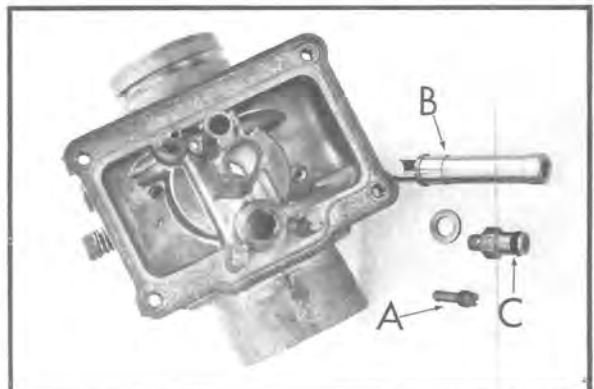
4. Remove the float bowl and main jet banjo bolt (A).



5. Remove the inlet needle and seat assembly inspecting the needle (A) for any wear at its tip.
NOTE: Do not bend the float arm during disassembly.



6. Remove the pilot jet (A) and needle jet (B) by removing the jet setter and pushing the needle jet into the slide valve chamber. Inspect the neoprene "O" ring (C) located on the needle jet setter for nicks or cuts. Wash all parts in solvent and blow all passages and jets with compressed air. Replace gaskets and parts which show wear or damage. Reassemble the carburetor, adjusting the float level before installing the float bowl.
NOTE: Refer to page in this section for correct float level adjustment procedures.



CARBURETION

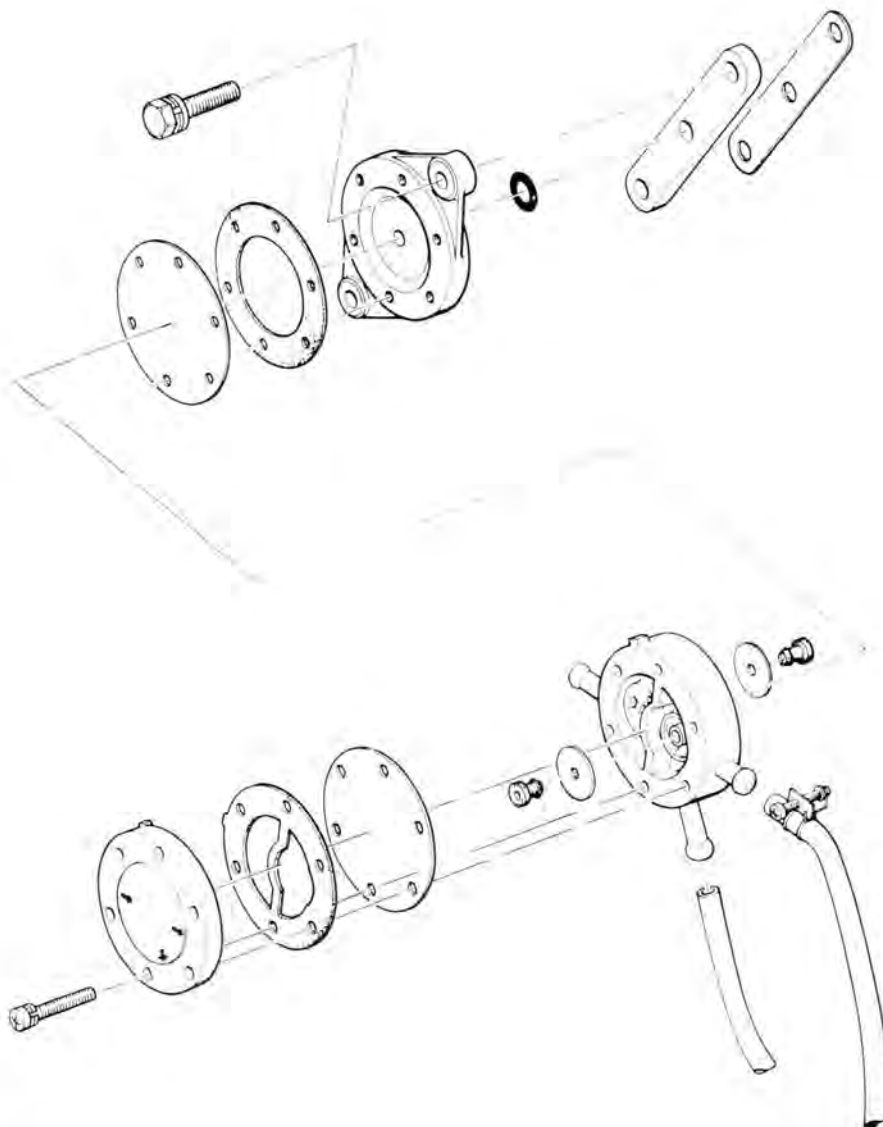
Fuel Pump

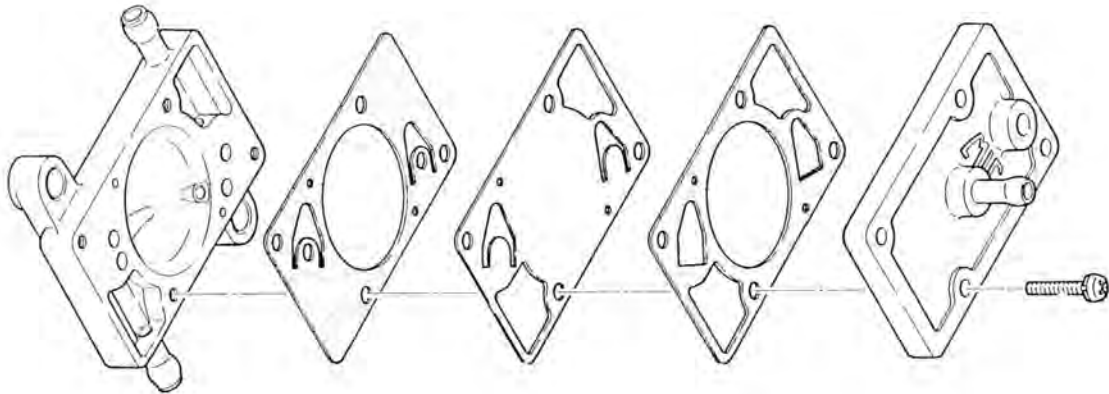
The fuel pumps for all Polaris engines are basically the same. The differences are in the size and location of the pumps. Pumps may be mounted on the crankcase or on the machine using an impulse hose.

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 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 which 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 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, reversing the pressure in the fuel pump chamber. This causes the inlet valve in the pump to close and the outlet valve (to the carburetor) 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 should be observed:

1. **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 2,000 RPM, a steady flow of fuel should be visible.
2. **CLEANING:** The pump and impulse line must be disassembled and cleaned of foreign material in the event of piston or other internal engine parts failures which produce fragments.

