

# FUEL SYSTEM

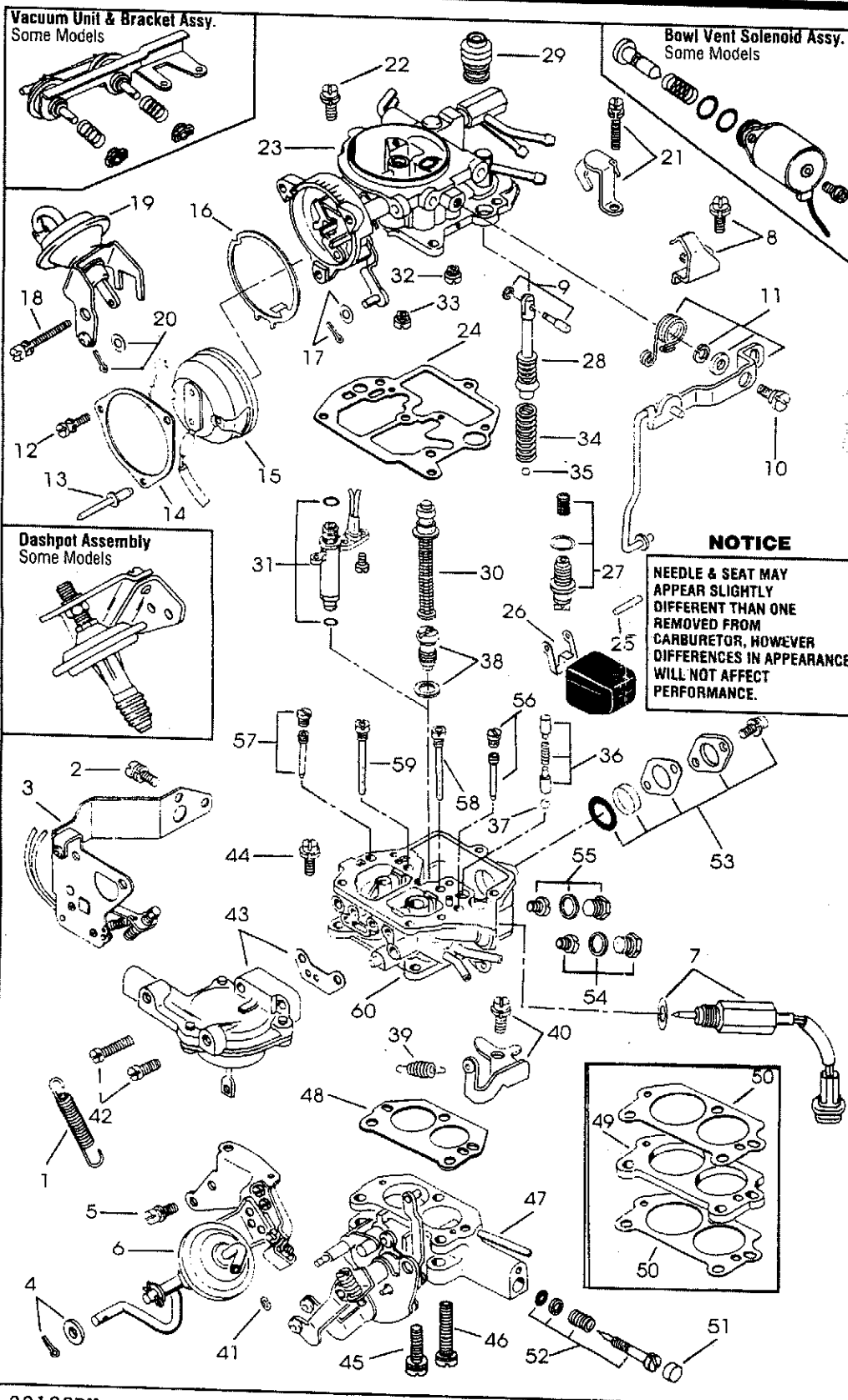
## SERVICE INSTRUCTION WORKSHEET

TO REPAIR

GF3704-18

HITACHI CARBURETOR

2 BARREL---Models DCG, DCH, DCJ, DCP, DCR  
DCS306; DCZ328; DFB306;  
DFC, DFE328; DFP306



1. Carefully read the text in the following pages to become familiar with the contents of this worksheet before performing carburetor overhaul.

2. The exploded view is typical of the model carburetor this kit will service. The view may differ slightly from the actual carburetor being overhauled.

3. Use the exploded view as a guide. The numerical sequence of the parts list may generally be followed to disassemble the carburetor far enough to permit cleaning and inspection.

4. Parts list shown DOES NOT reflect the contents of the kit.

5. Kit may contain extra parts intended for other carburetor within this group. Substitute identical replacement parts for original worn parts found in the carburetor.

### CLEANING

Cleaning must be done with carburetor disassembled. Use spray cleaner and a stiff bristle brush to remove dirt and carbon deposits. Do not use abrasives and wires to clean parts and passageways. Wash off in suitable solvent, and clear out all passageways with compressed air.

**Caution:** When cleaning with solvent do not soak or spray parts containing rubber, leather, plastic and electrical components. **Important:** Sight glass seal is not removable on some models. Do not soak main body too long in solvent.

### PARTS LIST

1. Spring, throttle return
2. Screw, bracket\* (5)
3. Throttle valve switch assembly\*
4. Cotter pin & washer, actuator link\*
5. Screw, actuator bracket\* (2)
6. Air conditioning actuator assembly\*
7. Solenoid assembly, idle shut-off
8. Bracket & screw, pump stroke
9. Pin & retainer, pump lever\*
10. Pivot screw, pump lever
11. Pump lever assembly
12. Screw, retainer
13. Pop rivet, retainer (2)
14. Retainer, cover
15. Cover & thermostatic coil assembly
16. Plate, stopper
17. Cotter pin & washer, fast idle rod
18. Screw, bracket
19. Choke pull-off assembly
20. Cotter pin & washer, pull-off stem
21. Bracket & screw, fuel fitting
22. Screw, air horn (2)
23. Air horn assembly
24. Gasket, air horn
25. Pin, float hinge
26. Float assembly
27. Needle, seat & strainer assembly
28. Fuel pump assembly
29. Boot, pump
30. Power piston assembly\*
31. Solenoid assembly, air fuel ratio\*
32. Jet, primary slow air bleed
33. Jet, secondary slow air bleed
34. Spring, pump return
35. Ball, pump intake check
36. Weights & spring, pump discharge
37. Ball, pump intake check
38. Power valve assembly
39. Spring, throttle line return
40. Bracket & screw assembly
41. Retainer, secondary diaphragm stem
42. Screw, secondary diaphragm (2)
43. Sec. throttle valve diaphragm assembly & gasket
44. Screw, throttle body
45. Screw, throttle body
46. Screw, throttle body (hollow)\*
47. Throttle body assembly
48. Gasket, throttle body
49. Spacer, throttle body\*
50. Cover gasket, throttle body\* (2)
51. Plug, idle mixture needle
52. Idle mixture needle assembly
53. Sight glass & cover assembly
54. Primary main jet assembly
55. Secondary main jet assembly
56. Jet, primary slow & plug
57. Jet, secondary slow & plug
58. Jet, primary main air bleed
59. Jet, secondary main air bleed
60. Main body assembly

**NOTICE**  
NEEDLE & SEAT MAY APPEAR SLIGHTLY DIFFERENT THAN ONE REMOVED FROM CARBURETOR, HOWEVER DIFFERENCES IN APPEARANCE WILL NOT AFFECT PERFORMANCE.

## REMOVAL & INSTALLATION NOTES (All Models)

- CAUTION:** Original screws have a sealant coating. Exercise care in removing by using a close fitting screwdriver blade. If difficulty is encountered, try carefully turning screw heads using a very small pair of curved teeth vise grip pliers (recommended only as a last resort).
- Some models have choke cover assembly (15) fastened with pop rivets (13). To remove, drill off heads & drive out rivets using a drift punch.
- For pump service on 1981 Carb. models DCP306-11 through 22, refer to Fig. 2.
- On models with leather pump cup, before installation, flex leather outwards and soak in clean oil for a few minutes.
- To remove power valve piston assembly (30) from air horn (23), use a sharp tool to remove staking. Restake upon installation.
- Mark or index parts especially where similarities exist such as jets & tubes, etc. Also note spring location points to insure correct installation.
- Retain all old gaskets for matching purposes. Reassemble with all new applicable gaskets.

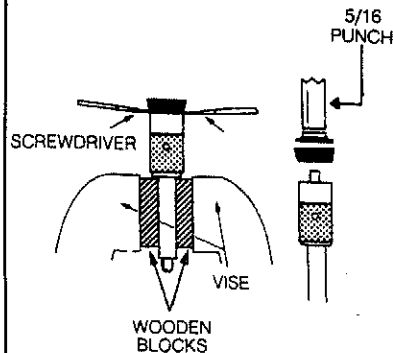
- To remove idle mixture plug (51), drill small hole to fit screw-end of small slide hammer, then pull out plug. If slide hammer is not available, drill appropriate size hole in plug then drive in tapered end of nail set (tool) & pry out plug.
- Before removing mixture needle (52), turn in until lightly seated counting number of turns. Record for proper installation.
- Install parts & components in reverse order of removal.
- To correctly place choke cover assembly (15) on choke housing, make sure hook end of spring engages lever in choke housing so as to spring-load choke valve toward closed position.
- Make sure pump return spring (34) is correctly installed with cross wire to the bottom of pump cylinder & in slot.
- Check throttle linkage for freedom of movement before and after installing carburetor on engine.
- When installing idle mixture needle (52), turn in until lightly seated, then back out number of turns recorded earlier.
- Lightly lubricate o-rings with clean oil before installation.

**FIG. 2  
PUMP CUP  
SERVICE INSTRUCTIONS**

PLACE PUMP STEM BETWEEN SOFT JAWS AND CLAMP IN VISE. INSERT TWO SMALL SCREWDRIVERS UNDER CUP AND CAREFULLY PRY UP CUP. WASHER INSERT AND SCREEN

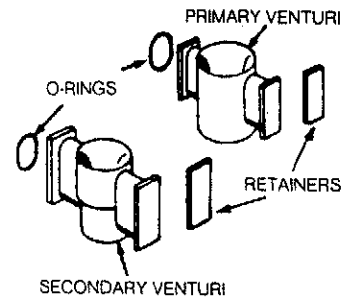
TO ASSEMBLE, PLACE NEW CUP, WASHER INSERT AND SCREEN ON STEM AND LIGHTLY TAP ASSEMBLY IN PLACE USING A 5/16" FLAT END PUNCH AND HAMMER.

**NOTE:** CUP SHOULD BE HELD FIRMLY IN PLACE. DO NOT OVERTIGHTEN.



**FIG. 3  
SPECIAL NOTE:**

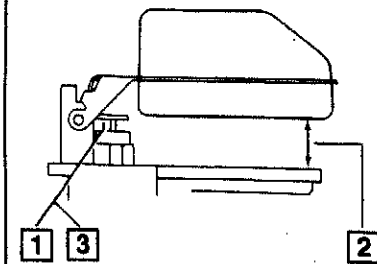
IF O-RING SEALS HAVE TO BE REPLACED, LIGHTLY TAP VENTURIES FROM BOTTOM UNTIL THEY ARE FREE. ON SOME MODELS, REMOVE VENTURIES BY LOOSENING LOCK SCREWS. (REMOVE STAKING ON LOCK SCREWS OR ON O-RING SIDE OF VENTURI IF NECESSARY.) INSTALL NEW O-RINGS AND POSITION VENTURIES FIRMLY IN PLACE, THEN TAP IN SPRING RETAINERS. MAKE SURE VENTURIES ARE FIRMLY IN PLACE, TIGHTEN SCREWS OR RESTAKE VENTURI ON O-RING SIDE.



## ADJUSTMENT DATA

**FIG. 4  
FLOAT LEVEL (DRY)  
ADJUSTMENT**

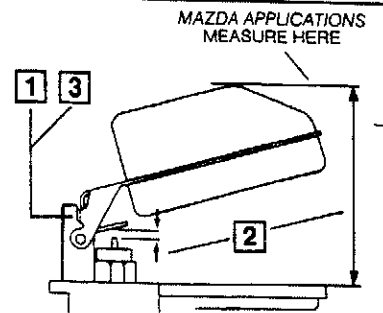
- WITH FUEL BOWL (MAIN BODY) INVERTED, ALLOW FLOAT TANG TO REST LIGHTLY ON NEEDLE. **CAUTION:** DO NOT COMPRESS SPRING LOADED NEEDLE OR FORCE RESILIENT NEEDLE INTO SEAT.
- MEASURE SPECIFIED CLEARANCE (SEE SPEC. CHART) AS SHOWN BETWEEN TOE END OF FLOAT & TOP OF FLOAT BOWL.
- IF ADJUSTMENT IS REQUIRED, BEND FLOAT TANG.



**FIG. 5  
FLOAT DROP  
ADJUSTMENT**

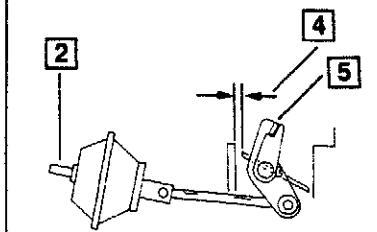
**NOTE:** FOR THIS ADJUSTMENT, REMOVE NEEDLE PULL CLIP IF APPLICABLE.

- WITH FUEL BOWL (MAIN BODY) INVERTED, RAISE FLOAT UNTIL FLOAT STOPPER TOUCHES CARBURETOR BODY.
- MEASURE SPECIFIED CLEARANCE (SEE SPEC. CHART) AS SHOWN USING A DRILL OR FEELER GAUGE BETWEEN FLOAT TANG AND TOP OF NEEDLE, EXCEPT MAZDA APPLICATIONS.
- IF ADJUSTMENT IS REQUIRED, BEND FLOAT STOPPER.



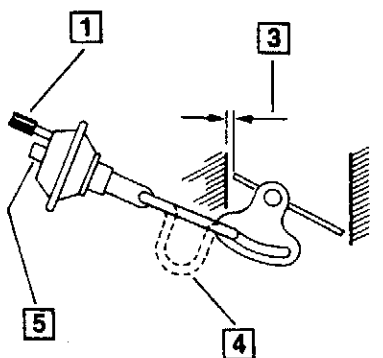
**FIG. 6  
VACUUM BREAK  
ADJUSTMENT**

- PLACE FAST IDLE ARM ON 2ND STEP OF FAST IDLE CAM. MAZDA APPLICATIONS, PLACE ARM ON 1ST (HIGH) STEP. SUBARU APPLICATIONS, REMOVE THERMOSTAT COVER AND OPEN THROTTLE TO RELEASE FAST IDLE CAM.
- APPLY OUTSIDE VACUUM SOURCE TO FULLY SEAT DIAPHRAGM.
- PUSH CHOKE VALVE TOWARDS CLOSED POSITION. MAKE SURE NOT TO PULL DIAPHRAGM FROM ITS POSITION.
- MEASURE DISTANCE BETWEEN UPPER EDGE OF CHOKE VALVE AND AIR HORN WALL USING A GAUGE OR DRILL BIT.
- TO ADJUST, BEND TAB ON CHOKE LEVER.



**FIG. 7  
VACUUM BREAK  
ADJUSTMENT**

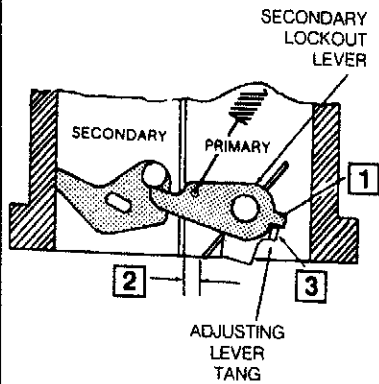
- APPLY OUTSIDE VACUUM SOURCE TO FULLY SEAT DIAPHRAGM.
- OPEN THROTTLE VALVE TO RELEASE FAST IDLE CAM, THEN PUSH CHOKE VALVE TOWARDS CLOSED POSITION. MAKE SURE NOT TO PULL DIAPHRAGM FROM ITS POSITION.
- MEASURE DISTANCE BETWEEN UPPER EDGE OF CHOKE VALVE AND AIR HORN WALL USING A GAUGE OR DRILL BIT.
- TO ADJUST, BEND LINK AT LOOP.
- SOME U.S. MODELS— REMOVE PLASTIC MATERIAL FROM ADJUSTING SCREW HOLE AND TURN ADJUSTING SCREW AS NECESSARY. RESEAL HOLE WHEN DONE.



## ADJUSTMENT DATA (Cont'd)

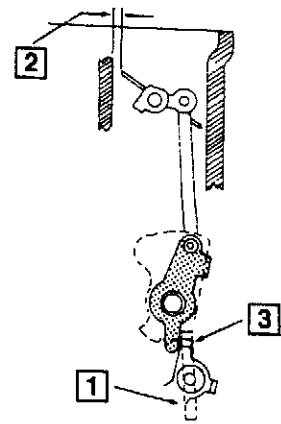
**FIG. 8  
SECONDARY THROTTLE  
ADJUSTMENT**

1. MOVE PRIMARY THROTTLE VALVE OPEN UNTIL ADJUSTING LEVER TANG JUST TOUCHES SECONDARY LOCKOUT LEVER. AT THIS POINT SECONDARY VALVE WILL START TO OPEN.
2. MAINTAIN THROTTLE VALVE IN THIS POSITION & MEASURE CLEARANCE AS SPECIFIED (SEE SPEC. CHART) BETWEEN THROTTLE BORE & PRIMARY THROTTLE VALVE.
3. TO ADJUST, BEND ADJUSTING LEVER TANG.



**FIG. 9  
UNLOADER  
ADJUSTMENT**

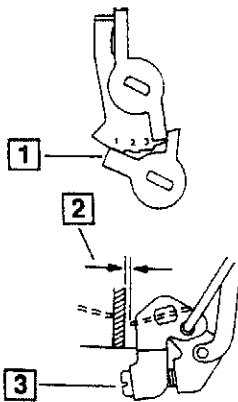
1. MAINTAIN THROTTLE VALVE IN A WIDE OPEN POSITION.
2. MEASURE CLEARANCE AS SPECIFIED (SEE SPEC. CHART) BETWEEN WALL OF AIR HORN & UPPER EDGE OF CHOKE VALVE.
3. IF ADJUSTMENT IS REQUIRED, BEND UNLOADER TANG.



**FIG. 10  
FAST IDLE CAM  
ADJUSTMENT**

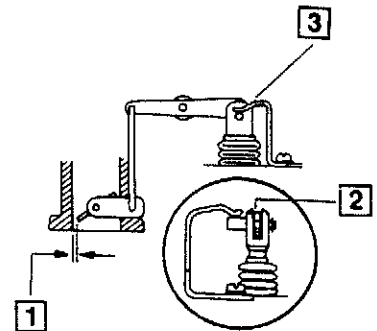
**NOTE: SUBARU APPLICATIONS,  
REMOVE THERMOSTAT COVER.**

1. CLOSE CHOKE VALVE AND POSITION FAST IDLE LEVER ON PROPER STEP OF FAST IDLE CAM AS INDICATED IN SPEC. CHART.
2. MEASURE DISTANCE BETWEEN THROTTLE VALVE AND BORE OF CARBURETOR USING A GAUGE OR DRILL BIT OF SPECIFIED SIZE.
3. TO ADJUST, TURN FAST IDLE SCREW AS NECESSARY.



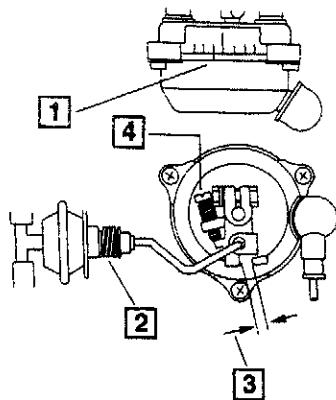
**FIG. 11  
PUMP STROKE LIMITER  
ADJUSTMENT  
(Where Applicable)**

1. INSERT A GAUGE OR DRILL BIT OF SPECIFIED SIZE BETWEEN PRIMARY THROTTLE AND BORE OF CARBURETOR AND HOLD THROUGHOUT THIS ADJUSTMENT.
2. WITH STEP 1 CORRECT, TOP OF PUMP LEVER SLOT SHOULD JUST TOUCH PIN.
3. TO ADJUST, BEND LIMITER STOP AS NECESSARY.



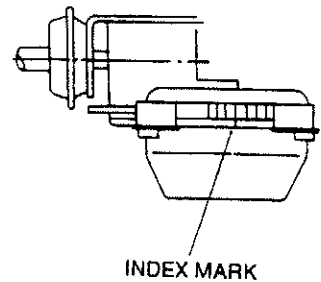
**FIG. 12  
AUTOMATIC CHOKE  
ADJUSTMENT  
(Subaru Applications)**

1. ROTATE THERMOSTATIC COVER SO INDEX MARK IS ALIGNED ONE NOTCH TO LEFT OF CENTER OF CHOKE HOUSING.
2. PUSH DIAPHRAGM PLUNGER IN UNTIL DIAPHRAGM IS FULLY SEATED. HOLD PLUNGER IN THIS POSITION.
3. MEASURE DISTANCE BETWEEN STOP AND BIMETAL LEVER.
4. TO ADJUST, TURN ADJUSTING SCREW AS NECESSARY.



**FIG. 13  
AUTOMATIC CHOKE  
ADJUSTMENT**

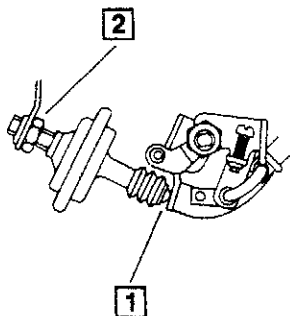
- ROTATE THERMOSTATIC COVER TO ALIGN INDEX MARK WITH CENTER INDEX MARK ON CHOKE HOUSING UNLESS OTHERWISE INDICATED.



**FIG. 14  
DASHPOT ADJUSTMENT**

**NOTE: PERFORM THIS ADJUSTMENT AFTER CURB IDLE WAS ADJUSTED.**

1. OPEN THROTTLE VALVE BY HAND AND SLOWLY RELEASE UNTIL THROTTLE LEVER JUST TOUCHES DASHPOT PLUNGER. CHECK R.P.M. AT THIS STAGE. IT SHOULD BE AS SPECIFIED ON ENGINE DECAL OR SERVICE MANUAL.
2. TO ADJUST, LOOSEN LOCKNUT AND TURN DASHPOT ASSEMBLY AS NECESSARY. RETIGHTEN LOCKNUT.



### INCH DECIMALS TO METRIC TO FRACTIONS

In.	mm	Fraction	In.	mm	Fraction	In.	mm	Fraction
.0156	0.40	1/64	.3750	9.53	3/8	.7344	18.65	47/64
.0312	0.79	1/32	.3906	9.92	25/64	.7656	19.45	49/64
.0469	1.19	3/64	.4062	10.32	13/32	.7812	19.84	25/32
.0625	1.59	1/16	.4219	10.72	27/64	.7969	20.24	51/64
.0781	1.98	5/64	.4375	11.11	7/16	.8125	20.64	13/16
.0937	2.38	3/32	.4531	11.51	29/64	.8281	21.03	53/64
.1094	2.78	7/64	.4687	11.91	15/32	.8437	21.43	27/32
.1250	3.18	1/8	.4844	12.30	31/64	.8594	21.83	55/64
.1406	3.57	9/64	.5156	13.10	33/64	.8750	22.22	7/8
.1562	3.97	5/32	.5312	13.49	17/32	.8906	22.62	57/64
.1719	4.37	11/64	.5469	13.89	35/64	.9062	23.02	29/32
.1875	4.76	3/16	.5625	14.29	9/16	.9219	23.42	59/64
.2031	5.16	13/64	.5781	14.68	37/64	.9375	23.81	15/16
.2187	5.56	7/32	.5937	15.08	19/32	.9531	24.21	61/64
.2344	5.95	15/64	.6094	15.48	39/64	.9687	24.60	31/32
.2500	6.35	1/4	.6250	15.87	5/8	.9844	25.00	63/64
.2656	6.75	17/64	.6406	16.27	41/64			
.2812	7.14	9/32	.6562	16.67	21/32			
.2969	7.54	19/64	.6719	17.07	43/64			
.3125	7.94	5/16	.6875	17.46	11/16			
.3281	8.33	21/64	.7031	17.86	45/64			
.3437	8.73	11/32	.7187	18.25	23/32			
.3594	9.13	23/64						

### SPECIFICATION CHART<sup>1</sup>

Year	Application	Float Level (Dry) Fig. 4	Float Drop Fig. 5	Vacuum Break (Choke Pull-Off)		Sec. Throttle Opening Fig. 8	Unloader Fig. 9	Fast Idle Cam Fig. 10	Cam Step	Pump Stroke Limiter Fig. 11	Auto Choke	
				Fig. 6	Fig. 7						Fig. 12	Fig. 13
<b>NISSAN (DATSUN) — SPECIFICATION I.D. A</b>												
1982	A12 Eng. 210 -Can.	12.0	1.5	—	1.3	5.3 - 6.3	2.2	.72	2nd	1.1 - 1.5	—	Index
1981	A12 Eng. 210 -Can.	15.0	1.5	—	1.3	5.3 - 6.3	2.2	.72	2nd	1.1 - 1.5	—	Index
1980	A12 Eng. -Calif., Can.	15.0	1.5	—	1.8 - 2.0	5.3 - 6.3	2.4	.72	2nd	1.1 - 1.5	—	Index
1979	A14, A15 Eng. 210 -KFU 310 -Cal.	15.0 15.0	1.5 1.5	— —	2.0 - 2.2 1.8 - 2.0	5.3 - 6.3 5.3 - 6.3	2.4 2.4	.73 - .87 .73 - .87 <sup>2</sup>	2nd 2nd	— 1.1 - 1.5	— —	Index Index
1978	A14 Eng.	15.0	1.5	—	2.0 - 2.2	5.3 - 6.3	2.2	.73 - .84	2nd	—	—	Index
1977-75	A14 Eng. -A/T -M/T	15.0 15.0	1.5 1.5	— —	1.4 - 1.6 1.3 - 1.5	5.3 - 6.3 5.3 - 6.3	2.2 2.2	1.1 - 1.2 .80 - .88	2nd 2nd	— —	— —	Index Index
1974-72	A12, A13 Eng. -A/T -M/T	10.5 10.5	1.5 1.5	— —	1.2 - 1.3 1.1 - 1.3	5.3 - 6.3 5.3 - 6.3	2.2 2.2	1.1 - 1.2 .80 - .88	2nd 2nd	— —	— —	Index Index
1971-70	A12 Eng.	10.5	1.5	—	—	—	—	—	—	—	—	Index
<b>HONDA —</b>												
1976-73	1200, 1300cc -Civic	11.1	1.5	—	1.4 - 1.6	5.3 - 6.3	2.0	.80	2nd	—	—	Index
<b>MAZDA —</b>												
1979	1300cc Eng.	11.1	1.5 <sup>14</sup>	—	1.3	5.3 - 6.3	2.3	1.4	2nd	—	—	Index
1978-76	1300cc Eng. -Fed. -Cal.	11.1 11.1	1.5 <sup>14</sup> 1.5 <sup>14</sup>	— —	1.2 - 1.5 1.6 - 2.0	5.3 - 6.3 5.3 - 6.3	— —	1.3 1.3	2nd 2nd	— —	— —	Index Index
<b>SUBARU — SPECIFICATION I.D. B</b>												
1980	1600, 1800cc Eng.	10.5	1.5	1.7	—	5.3 - 6.3	1.1	1.3	1st	—	12.3	—
<b>NISSAN (DATSUN) — SPECIFICATION I.D. C</b>												
1986-83	E16 Eng. -Fed. -Cal. -Can.	12.0 12.0 12.0	1.5 1.5 1.5	1.9 1.5 1.4	— — —	6.3 6.3 6.3	3.0 3.0 3.0	.86 <sup>3</sup> .86 <sup>3</sup> .72 <sup>4</sup>	2nd 2nd 2nd	1.3 1.3 1.3	— — —	— — —
<b>SUBARU — SPECIFICATION I.D. D</b>												
1981	1600, 1800cc Eng. -Carb. No. DCP306-11 DCP306-12, 13	10.5 10.5	1.5 1.5	— —	— —	6.0 6.0	2.3 2.3	1.2 1.4	1st 1st	— —	— —	— —
<b>CHEVROLET, PONTIAC — SPECIFICATION I.D. E</b>												
1986-85	1.0L Eng. -U.S. -M/T	6.0	—	2.4 <sup>5</sup>	—	—	3.0	—	—	4.4	—	—
<b>MAZDA — SPECIFICATION I.D. F</b>												
1986-83 1981	1500cc Eng. -GLC	9.2 <sup>7</sup> 11	45 <sup>8</sup> 1.5 <sup>14</sup>	2.3 <sup>9</sup> 1.8	— —	6.0 6.0	2.2 2.1	.72 <sup>8</sup> .85	3rd 1st	— —	— —	— —
<b>NISSAN (DATSUN) — SPECIFICATION I.D. G</b>												
1986	E16 Eng. -Fed.	17	45 <sup>10</sup>	2.6 <sup>9</sup>	—	7.2	3.0	.68 <sup>11</sup>	2nd	—	—	—
1985	E16 Eng. -Fed.	12	1.5	2.6 <sup>9</sup>	—	7.2	3.0	.86 <sup>9</sup>	2nd	—	—	—
1984	E16 Eng. -Fed.	12	1.5	1.7	—	7.2	3.0	.86 <sup>9</sup>	2nd	.51	—	—
<b>MAZDA — SPECIFICATION I.D. H</b>												
1982	1500cc Eng. -GLC	11	45	2.5	—	7.9	2.4	.60	3rd	—	—	—
<b>MAZDA — SPECIFICATION I.D. I</b>												
1981-80	1.4L Eng. -GLC Wagon	11	1.5 <sup>14</sup>	—	1.3	6.1	2.3	1.4	1st	—	—	—
<b>NISSAN (DATSUN) — SPECIFICATION I.D. J</b>												
1984-83 1982	E15 Eng. A12 Eng. 210 -U.S. A14, A15 Eng. 210 -U.S. <sup>12</sup> E15 Eng. 310 -U.S. -M/T -Can.	12 12 12 12 12	1.5 1.5 1.5 1.5 1.5	1.7 1.7 1.7 1.7 1.5	— — — — —	6.3 5.8 5.8 5.8 5.8	2.4 2.4 2.4 2.4 2.4	.80 .72 .80 <sup>4</sup> .80 .80 <sup>4</sup>	2nd 2nd 2nd 2nd 2nd	1.3 1.3 1.3 1.3 1.3	— — — — —	— — — — Index
1981	A12 Eng. 210 -U.S. A14, A15 Eng. 210, 310	15 15	1.5 1.5	— —	1.7 1.7 <sup>13</sup>	5.8 5.8	2.4 2.4	.72 .80 <sup>4</sup>	2nd 2nd	1.3 1.3	— —	Index Index
1980	A12 Eng. -Fed.	15	1.5	—	1.9	5.8	2.4	.72	2nd	1.3	—	Index
1980-76	A14, A15 Eng. -210, 310, F10 -Exc. Carb. No. DCH306-16A	15 15	1.5 1.5	— —	1.9 1.5	5.8 5.8	2.4 2.0	.80 <sup>4</sup> .80 <sup>2</sup>	2nd 2nd	1.3 —	— —	Index Index
<b>CHEVROLET, PONTIAC — SPECIFICATION I.D. K</b>												
1986-85	1.0L Eng. -U.S. -A/T	6.0	—	2.4 <sup>5</sup>	—	—	3.0	—	—	4.4	—	—

**FOOTNOTES:**

- <sup>1</sup> Dimensions are given in millimeters.
- <sup>2</sup> A/T set 1.0-1.14mm.
- <sup>3</sup> A/T set 1.15±.07mm.
- <sup>4</sup> A/T set 1.0±.07mm.
- <sup>5</sup> Primary vacuum break clearance. To obtain secondary vacuum clearance (4.4 mm), follow steps 1, 2, 3 Fig. 6, then press rod into piston and measure as in step 4, Fig. 6.
- <sup>6</sup> At 40° C (104° F).
- <sup>7</sup> 1984 set 12mm; 1983 set 11mm.
- <sup>8</sup> 1983 set .87mm.
- <sup>9</sup> At 30° (86° F). Below 10° C (50° F) set 1.53mm.
- <sup>10</sup> See Mazda detail, Fig. 5.
- <sup>11</sup> A/T set .96±.10mm.
- <sup>12</sup> Except California models with A14 engine.
- <sup>13</sup> Carb. No. DCR306-121, 122 set 1.5mm.
- <sup>14</sup> Measure between float tang and top of needle.

**ABBREVIATIONS:**

- A/T - Automatic Transmission
- Cal. - California
- Can. - Canada
- Exc. - Except
- Fed. - Federal (49 States)
- KFU - Federal Coupe 5 Spd. (fuel economy car)
- M/T - Manual Transmission