

**FIG. 77 – DISTRIBUTOR VENTILATION
& Ign Noise Filter**

- 1 - Cable Assy. ORD 7348569
- 2 - Vent tube distr to crossover WO 800374 ORD 8676980 9"
- 3 - Vent tube distr to wiper "T" WO 800375 ORD 8676981 27"
- 4 - Connector 3/16" Inverted flare tube to 1/8" P Str BR WO None ORD Stk H006-0214310
ORD 137404
- 5 - Connector 3/16" Inverted flare tube to 1/8" P 90 deg BR WO 802665 WH 100-23123
ORD 7348568
- 6 - Filter, Ignition switch (Optional with 8677052) (Used on vehicles thru Serial MC20599)
WO 800239 AX 19525 ORD 7528195 FSN 2920-752-8195 G741-7528195
Filter, Ignition Switch (Optional with G741-7528195)(Used on vehicles thru serial
MC20599) WO 802383 SPR 11715 ORD 8677052

XII, par. 84). Inspect cable and replace capacitor (condenser) if cable or terminal is chafed, partially broken, or damaged.

(6) Inspect plate for stripped threads and damaged or worn lever pivot and replace plate if these conditions are found. Check primary terminal for grounds with test probes and replace plate if terminal is grounded.

(6) Inspect contacts. If they are a grayish color and are not pitted, or burned they need not be replaced. Replace contacts if rough, burned, or pitted.

(7) Install contacts on plate and turn distributor lever on pivot. It must turn easily without binding or looseness. Remove lever and inspect pivot. Replace plate if wear is evident on pivot, or if pivot is loose or not perpendicular to plate. If pivot is in good condition, install new contacts to obtain correct pivot fit.

(8) Assemble contacts, capacitor (condenser), and primary cable on plate. Distributor lever spring and connector should be installed on the inside of the terminal.

(9) Place one drop of preservative lubricating oil on distributor lever pivot. Operate lever once or twice and remove excess oil.

e. Primary Connector.

(1) Clean with cloth dampened in volatile mineral spirits or dry-cleaning solvent.

(2) Inspect connector for damaged or corroded connector pin, lead, and terminal. Check for grounds with test probes by testing between terminal pin and connector body and replace if grounded.

Note. The primary connector used on LAU-400GUT includes a 2 microfarad primary filter and will test grounded if alternating current test probes are used.

(3) Inspect primary connector gasket and gasket seats and replace if rough or damaged.

f. Cam. Clean cam in volatile mineral spirits or dry-cleaning solvent and inspect cam lobes and weight slots for wear. Replace cam if lobes are grooved or if sides of weight slots are rough.

g. Governor. Clean governor weights, governor springs, snap ring, and spacer in dry-cleaning solvent or volatile mineral spirits and dry thoroughly. Replace weights if pivot holes are worn or if they are a loose fit on pivots. Replace springs if bent or distorted.

h. Base and Shaft.

(1) *Cleaning.* Wipe shaft and inside of base as clean as possible with cloth dampened with volatile mineral spirits or dry-

cleaning solvent. Do not soak. Dry immediately with clean dry compressed air.

(2) Inspection.

(a) Inspect base for cracks or other damage. Make sure groove for cap "O" ring gasket is smooth and clean. Remove slotted plug and take out felt wick. Inspect wick for damage and soak in preservative lubricating oil. Fill wick cavity with automotive and artillery grease and insert wick. Wipe off excess grease. Coat plug with plastic type gasket cement and install.

(b) Clamp dial indicator on base with plunger resting against side of shaft. With tension gauge, apply a 5-pound pull in line with plunger (fig. 145). Install new drive shaft bearings (3 below) if side play is more than 0.005 inch. Clamp dial indicator on base with its plunger against end of shaft. Move shaft to its two extreme positions and read total end play. End play can also be measured with flat feeler gauge inserted between shaft collar and lower thrust washer (fig. 146). If end play is less than 0.003 inch (table XI, par. 83), tap lower end of shaft to loosen. If end play is more than 0.010 inch, remove collar and install additional thrust washers between base and gear.

(3) Repair (if necessary).

(a) Remove rivet and take collar off shaft. Take off lower thrust washer and remove burr from rivet hole in shaft. Pull shaft out of base and remove upper thrust washer and oil seal. Drive out old bearings with arbor or bolt that rests on bearing without gouging bearing bore.

(b) Install new bearings on arbor of correct size to give proper bearing diameter (tables III, (par. 8) and XI (par. 83)) and press bearings into place. Install lower bearing flush with bottom of base and install upper bearing flush with face of bearing bore. (Use bearing arbor No. 6 (table III) for both bearings.) Continue oil hole in base through bearing using drill of same diameter. Remove all burrs from inside of bearing, being careful not to mar bearing. Soak bearings in preservative lubricating oil and drain off excess oil. Do not get oil in upper part of base.

(d) Install oil seal in top of bearing bore.

(e) Assemble governor and install cam (par. 51a and b) (if shaft is removed).

(f) Grease upper thrust washer and install on shaft. Place shaft in bearings and install lower thrust washer and collar. Drill rivet hole in shaft to correspond to hole in

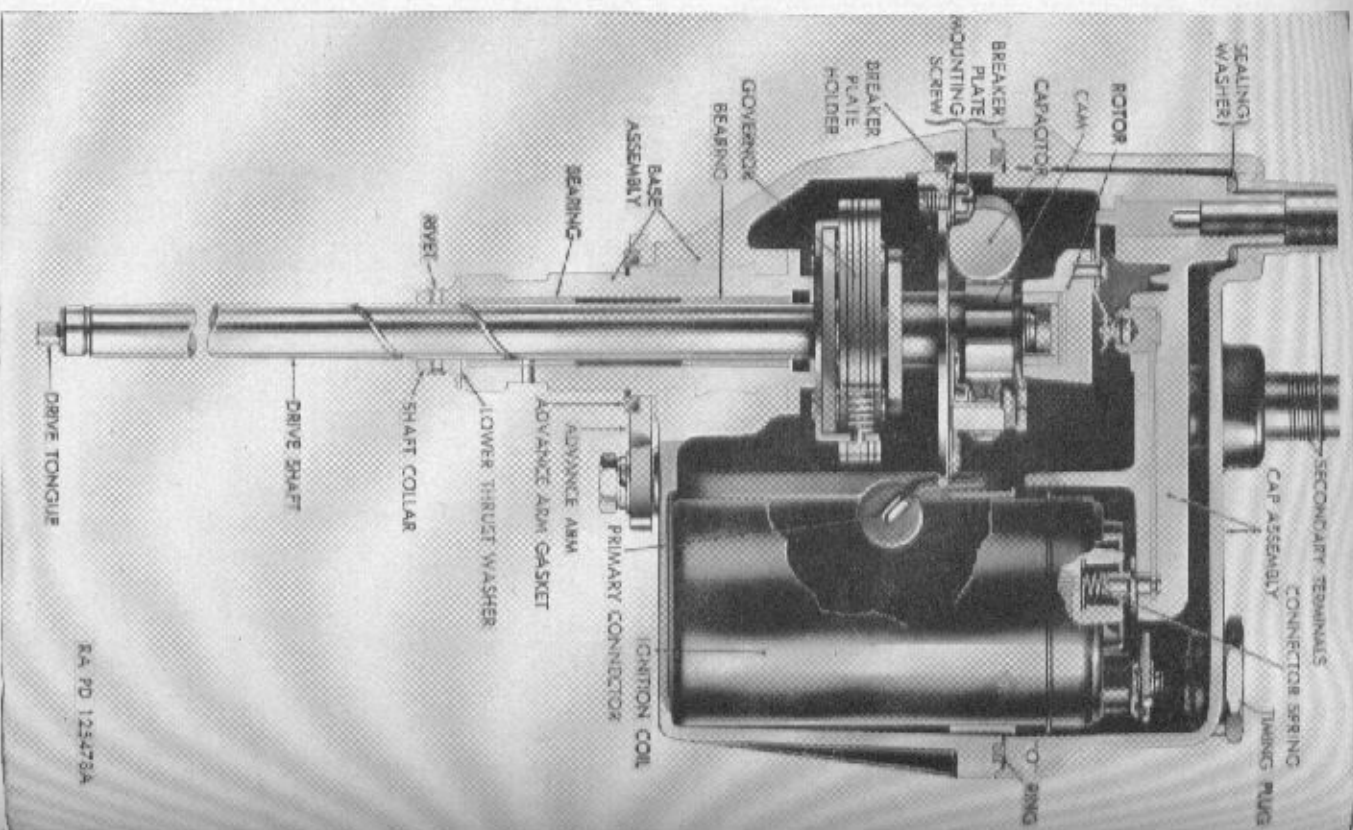


Figure 154. Sectional view of waterproof distributor.

- (2) Discard cap if it is cracked, has corroded terminals, or if carbon runners have formed either on inside or outside surfaces. Inspect contacts on inside of cap (fig. 136). After normal use, these contacts become slightly burned on inside tip. If burning is excessive or uneven replace cap. If burning is found on horizontal face of contacts, it indicates rotor is too short and must be replaced. Clean contacts with carbon tetrachloride but do not file. Do not clean carbon contact with solvent. Wipe thoroughly and inspect for cracks and an oil soaked condition. Replace cap if carbon contact is not in good condition.
- (3) Replace rubber sealing washers if they are rough or do not fit properly.
- (4) Thoroughly clean cap cover in volatile mineral spirits or dry-cleaning solvent and inspect for cracks or other damage. Place cover on base and inspect to make sure it touches base on all sides. Replace cover if distorted.
- (5) Place rubber sealing washers on cap towers and install cap in cover. Install three cap attaching screws and tighten evenly.

b. Rotor. Discard rotor if it is cracked, has loose contact strip, or if burning is found on top of strip. Inspect end of contact. If burning is excessive, replace rotor. If burning is only slight, clean with carbon tetrachloride. Do not file. Inspect contact spring and replace rotor if spring does not instantly spring back when contact button is pressed against rotor.

Note. Pressure should be applied to button to avoid setting spring.

Clean button so that it will make a good contact on the carbon contact in the center of the cap.

e. Ignition Coil. Refer to paragraphs 113 through 119.

d. Breaker Plate.

- (1) Remove distributor lever spring clamp screw, washers, and clamp. Take off coil primary cable. Remove stationary contact-lock screw and lift contact from plate. Take out capacitor mounting screw and lift capacitor off.
- (2) Clean all parts with cloth dampened in volatile mineral spirits or dry-cleaning solvent.
- (3) Rub contacts with linen tape that has been dampened in carbon tetrachloride. Dry with clean tape to remove any residue.
- (4) Test capacitor (condenser) for capacity and grounds on capacitor (condenser) tester. Replace capacitor (condenser) if grounded, leaky, or if capacity is not within limits (table

collar. Install rivet and swage so both ends are riveted over and rivet spreads to fill hole.

(g) Check side and end play of shaft ((2) (b) and (c) above).

(h) Soak felt wick in preservative lubricating oil. Fill cavity with automotive and artillery grease and insert wick. Remove excess grease. Coat plug with plastic type gasket cement and install.

81. Assembly

a. Assemble Governor. Place a small amount of grease on weight pivots, weight pivot holes, cam yoke slots, and weight spring lugs and pins. Place governor weights in position and install governor springs. Make sure springs are properly seated on weight pivots and carrying plate brackets.

b. Install Cam. Apply a film of preservative lubricating oil to upper end of shaft. Place cam in position over shaft and weights. Place rotor on cam and check relation between rotor and drive tongue. If not correct, lift cam and turn 180°. Remove rotor. Install cam snap ring and felt wick. Add 5 to 10 drops preservative lubricating oil to wick.

c. Install Breaker Plate. Place plate in base and turn so locating lug fits into slot. Install plate mounting screws and holders.

d. Install Primary Connector. Place connector and gasket in position on base and inspect to make sure it fits lightly. Install attaching screws.

e. Install Ignition Coil. Place coil in position in base and arrange the cables so they will reach coil terminals without kinks and cramping. Install coil mounting screws and primary cable retaining clips, if used.

f. Connect Cables. Connect breaker plate primary cable to ignition coil terminal under the cover plug. Connect primary connector cable to second coil terminal.

82. Tests

a. Adjust Contact Gap.

- (1) Turn shaft so distributor lever rubbing block is on high point of cam.
- (2) Loosen stationary contact lock screw slightly. Adjust gap to 0.020 inch (table XI, par. 83) by turning adjusting cam (fig. 147). Use wire feeler gage or dial indicator to check contact gap as there is less chance of error than with flat gage. Tighten contact lock screw.

(3) Turn shaft until contacts close. Bend stationary contact bracket to align contacts for full face contact.

(4) Adjust contact gap as above after aligning contacts.

b. Adjust Contact Spring Tension. Hook spring scale on distributor lever at contact and pull on line with contacts (fig. 150). Take reading as contacts separate. Adjust tension to 17 to 20 ounces (table XI) by loosening distributor lever spring clamp screw and sliding spring in or out as necessary. Tighten screw and check pressure.

c. Check Cam Dwell.

(1) Mount distributor on test fixture and connect test leads. Set fixture for correct rotation (table XII, par. 84).

(2) Start test fixture and operate at about 1000 rpm. Read cam dwell which should be within limits tabulated (table XIII). If it is not, check contact gap ((a) above). Do not adjust contact gap outside the correct limits to obtain specified cam dwell. Distributors will operate satisfactorily if dwell is slightly outside specified value but will have short contact life if the contact gap is incorrect.

(3) If cam dwell is not within limits, it may indicate that the cam, cam sleeve, shaft, or distributor lever is worn or that the shaft is bent.

d. Adjust Governor. Refer to paragraph 67c(2).

e. Complete the Assembly.

(1) Install rotor. Place rotor on cam and press down firmly. Turn shaft and arrange cables so as not to interfere with rotor.

(2) Install cap. Install "O" ring in groove in base. Install coil secondary terminal connector spring on cap connector pin. Place cap on distributor taking care spring enters coil high tension terminal and that "O" ring gasket is in its proper place. Make sure cables are not close to secondary terminal or do not extend beyond coil so that leads are pinched between cover and base. Install cover attaching screws and tighten evenly and thoroughly.

(3) Install plugs. All base plugs and pipe connectors should be coated with plastic type gasket cement at assembly to make leak proof.

f. Check for Leaks. Connect an air hose to one of the ventilating holes in the distributor base and install plugs in other holes. Apply 6-pounds air pressure and submerge unit. If bubbles occur at any point except around the drive shaft, the leak must be eliminated.

g. Timing. The distributor primary terminal is accessible for connecting the timing light by removing the timing plug over the coil primary terminal. The test lead can be connected to this coil ter-

84. Performance Data

Table XII contains performance data on all distributors covered by this manual and should be used for checking and adjusting the performance. Table XIII includes governor advance data and table XIV includes the vacuum advance data referred to in table XII.

Figure 155. Distributor repair and rebuild standards.

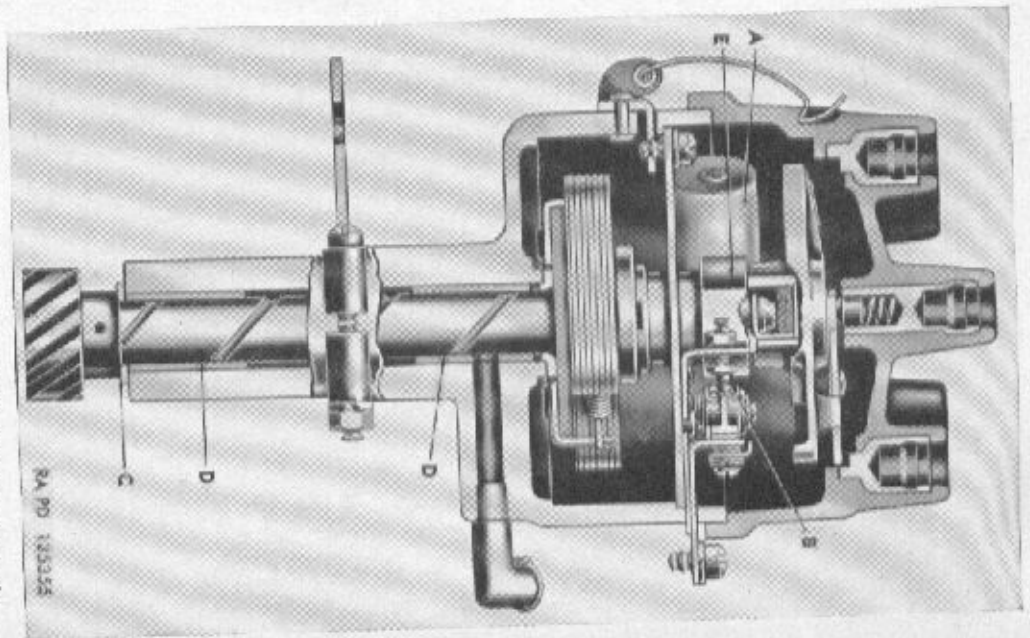


Table XII. Distributor Performance Data

Distributor	Cyl	Rot	Cam dwell (deg.) ^a	Control	Manual advance (deg.)	Max governor advance (deg.)	Governor advance curve	Max vacuum advance (deg.)	Vacuum advance curve
IAC-4003	6	RH	38	automatic		10	CU-191		
IAD-4003	6	LH	39	semiautomatic	10	12	CU-730		
IAD-4005A	6	RH	39	automatic		9	CU-756		
IAD-4006	6	RH	39	do		6	CU-368		
IAD-4007	6	RH	39	do		6	CU-368		
IAD-4008	4	LH	42	do		11	CU-789		
IAD-4201-1	6	RH	39	do		10	CU-770		
IAD-4202A	6	RH	39	do		11	CU-803		
IAD-8001-1C	6	RH	39	do		6	C2-012		
IAD-8009-2A	6	RH	39	do		15	C18-A30		
IAC-4001-1	6	RH	39	do		11	CU-774		
IAC-4101-1	6	RH	39	do		11	CU-774		
IAP-4001-1	6	RH	39	do		9	CU-769	10	CU-456
IAP-4101-1	6	RH	39	do		9	CU-769	10	CU-456
IAP-4163A-1	6	RH	39	do		10	CU-991	8	CU-685
IAU-4004UT	4	LH		do		11	C2-P22		
IAU-4005UT	6	RH		do		10	CU-770		
IAU-4006UT	4	LH		do		11	C2-P22		
IGC-405-D	6	LH	39	semiautomatic	10	12	CU-730		
IGC-4281	6	RH	39	automatic		6	CU-605		
IGC-4286	6	RH	39	semiautomatic	6	6	CU-368		
IGC-4701	6	RH	39	do	6	6	CU-368		
IGC-4701-1	6	RH	39	automatic		6	CU-368		
IGC-4701-2	6	RH	39	do		6	CU-368		

See notes at end of table.

Table XII. Distributor Performance Data—Continued

Distributor	Cyl.	Rot.	Cam dwell (deg.) ^a	Control	Manual advance (deg.)	Max gov-ernor advance (deg.)	Governor ad- vance curve	Max vac-uum advance (deg.)	Vacuum advance curve
IGC-4702A	6	RH	39	automatic		9	CU-756		
IGC-4703, -1	6	RH	39	do		10	CU-770		
IGC-4703A-1	6	RH	39	do		12	CU-475		
IGC-4704, -1	6	RH	39	do		10	CU-770		
IGC-4705	4	LH		do		11	CU-789		
IGC-4706A	6	RH	39	do		11	CU-803		
IGC-4707, -1	6	RH	39	do		10	CU-770		
IGC-4708	6	RH	39	semiautomatic	6	10	C2-P20		
IGC-4709A	6	RH	39	automatic		9	CU-756		
IGC-4710-2	6	LH	39	do		16	CU-414		
IGC-4716	6	LH	39	semiautomatic	10	12	CU-730		
IGC-4717-1	6	RH	39	automatic		11	CU-774		
IGC-4902A	6	RH	39	do		7	CU-378		
IGE-4063H, -1	6	LH	35	semiautomatic	10	12 $\frac{1}{2}$	CU-678		
IGE-4029	6	RH	35	automatic		9	CU-829		
IGS-4111, -1	6	RH	39	do		11	CU-480	10	CU-620
IGS-4112, -1	6	RH	39	do		12	CU-478	8	CU-584
IGS-4114, -1	6	RH	39	do		12	CU-478	8	CU-584
IGS-4202A, -1	6	RH	39	do		11	CU-774	6	CU-527
IGS-4202C-1	6	RH	39	do		11	CU-774	9	CU-786
IGS-4203A-1	6	RH	39	do		9	CU-769	9	CU-768
IGS-4203B, -1	6	RH	39	do		10	CU-770	9	CU-737
IGS-4204, -1	6	RH	39	do		11	CU-480	10	CU-620
IGS-4207-1	6	RH	39	do		9	CU-769	10	CU-458
IGS-4209-1	6	RH	39	do		11	CU-774	6	CU-527

IGS-4208A-1	6	RH	39	automatic		12	CU-419	9	CU-775
IGT-4102	8	LH	39	do		12	CU-654	5.5	CU-560
IGT-4203	8	LH	39	do		12	CU-654	5.5	CU-550
IGW-4049	2	RH	39	manual	18				
IGW-4053	2	RH	39	do	18				
IGW-4147	6	RH	39	semiautomatic	6	10	CU-191		
IGW-4154	6	LH	39	automatic		7	CU-378	6 9	CU-633
IGW-4156A	4	LH	39	do		6	CU-256		
IGW-4165A	2	RH	39	do		15	CU-782		
IGW-4165B	2	RH	39	do		15	CU-802		
IGW-4189	4	LH	39	do		11	CU-935	6 10	CU-467
IGW-4189A	4	LH	39	do		11	CU-1003	4 5	CU-1004

LH—Left hand rotation when viewed from top.

RH—Right hand rotation when viewed from top.

Contact gap for all distributors listed except IGT-4102 and IGT-4203 is 0.020 inches (± 0.002 in.); for distributors IGT-4102 and IGT-4203 contact gap is 0.017 inches (± 0.002 in.).

^aTolerance $\pm 3^\circ$.^bApplies to VC-4011 vacuum advance assembly used with this distributor.^cApplies to VC-4019 and VC-4018 vacuum advance assemblies used with this distributor.^dApplies to VC-4010A and VC-4018A vacuum advance assemblies used with this distributor.

Note. See table X (par. 62) for group numbers of distributor listed.

Table XIII. Distributor Governor Advance Curves

Advance curve	0 degree advance rpm.	1 degree advance rpm.	Intermediate advance		Maximum less 1 deg.		Maximum	
			Advance (deg.)	rpm.	Advance (deg.)	rpm.	Advance (deg.)	rpm.
CU-191.....	300	410	5	850	9	1,290	10	1,400
CU-256.....	300	410	3	650	5	890	6	1,000
CU-368.....	275	380	3	580	5	500	6	900
CU-378.....	400	540	3	830	6	1,260	7	1,400
CU-114.....	250	275	7	450	15	1,340	16	1,450
CU-119.....	350	370	8	400	11	1,400	12	1,525
CU-478.....	350	370	3	400	11	1,600	12	1,750
CU-480.....	350	370	3	400	10	1,680	11	1,850
CU-605.....	300	440	3	725	5	1,010	6	1,150
CU-654.....	250	325	6	700	11	1,700	12	1,900
CU-676.....	250	290	6	490	11.5	700	12.5	750
CU-730.....	250	280	9	500	11	975	12	1,200
CU-756.....	275	370	5	780	8	1,100	9	1,200
CU-769.....	350	370	3	400	8	1,150	9	1,300
CU-770.....	350	370	3	400	9	1,050	10	1,160
CU-774.....	350	370	3	400	10	1,275	11	1,400
CU-752.....	300	330	7	510	14	720	15	760
CU-759.....	250	360	5	810	10	1,380	11	1,500
CU-802.....	300	340	7	600	14	880	15	925
CU-803.....	300	370	5	650	10	1,770	11	2,000
CU-829.....	300	340	5	525	8	650	9	700
CU-835.....	350	450	5	875	10	1,400	11	1,500
CU-991.....	350	440	5	800	9	1,300	10	1,425
CU-1003.....	300	380	4	650	10	1,800	11	2,000

C2-012.....	275	375	3	575	5	775	6	875
C2-P20.....	275	380	5	825	9	1,250	10	1,350
C2-P22.....	275	380	5	825	10	1,350	11	1,475
C15-A30.....	250	280	6	425	14	1,300	15	1,400
Tolerance.....	±50	±50	±1	-----	±1	-----	±1	-----

Note. All figures are in distributor degrees and distributor revolutions per minute.

Table XIV. Distributor Vacuum Advance Curves

Advance curve	0 degree advance inches (Hg)	1 degree advance inches (Hg)	Intermediate		Maximum less 1 degree		Maximum	
			Advance (deg.)	Inches (Hg)	Advance (deg.)	Inches (Hg)	Advance (deg.)	Inches (Hg)
CU-456.....	5	6	5	9½	9	13½	10	14
CU-467.....	3½	4½	5	9½	9	13½	10	15
CU-527.....	5½	6½	3	9½	5	12½	6	14
CU-550.....	7	8½	3	11½	4½	14½	5½	16
CU-584.....	5	6½	4	10½	7	14½	8	18
CU-620.....	5	6½	5	11	9	15½	10	17
CU-633.....	4	4½	5½	8	8	13	9	14½
CU-767.....	5	6½	4	10½	7½	14½	8½	16
CU-758.....	5	6	4	9	8	13	9	14
CU-775.....	5	6	4	9½	8	14	9	15
CU-756.....	5	6½	4	10	8	15	9	16
CU-985.....	4½	5½	4	9½	7	12½	8	14
CU-1004.....	4½	5½	2	6	4	7½	5	6
Tolerance.....	±1	±1	-----	±1	±1	-----	±1	-----

Note. All figures are in distributor degrees and inches mercury (Hg).