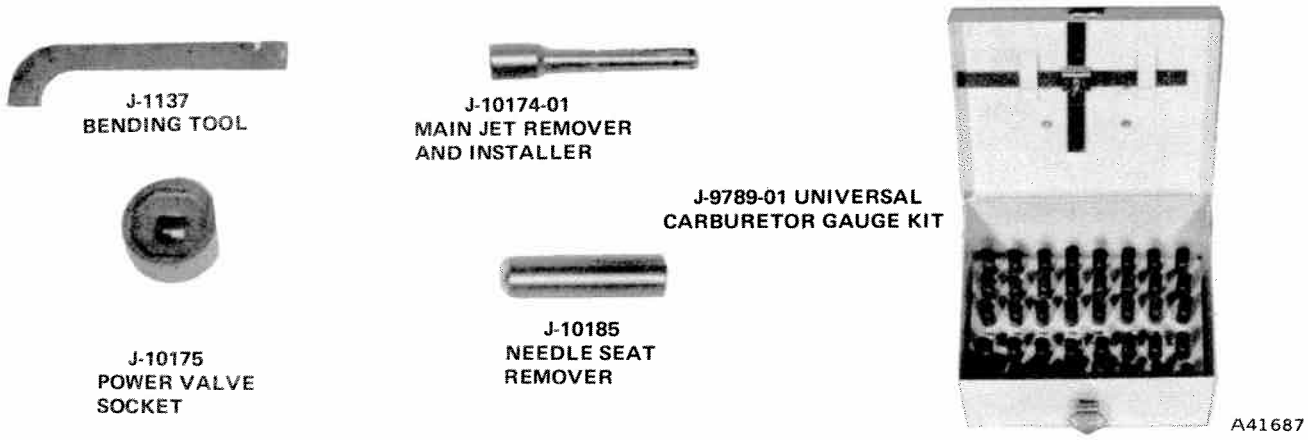

Fig. 4-77 Carburetor Tools

EXHAUST SYSTEM

GENERAL

Exhaust systems used with V-8 engines now use larger diameter exhaust and tailpipes and a new muffler to provide more efficient power with minimum noise level (fig. 4-80,-81). New exhaust pipe brackets and a new steel-reinforced manifold-to-exhaust pipe seal ("donut" gasket) added to these system do not substantially affect servicing operations.

When replacing exhaust manifold seals and gaskets on models equipped with V-8 engines, unfasten the cross-pipe at the manifolds, disconnect the exhaust pipe brackets, and move the entire exhaust system to the rear. Refer to figures 4-78, -79, -80, and -81 for exhaust system components.

If the exhaust pipe-to-manifold studs are removed with the attaching nuts, the front pipe bracket may be removed to obtain clearance for removal of the exhaust manifold gasket.

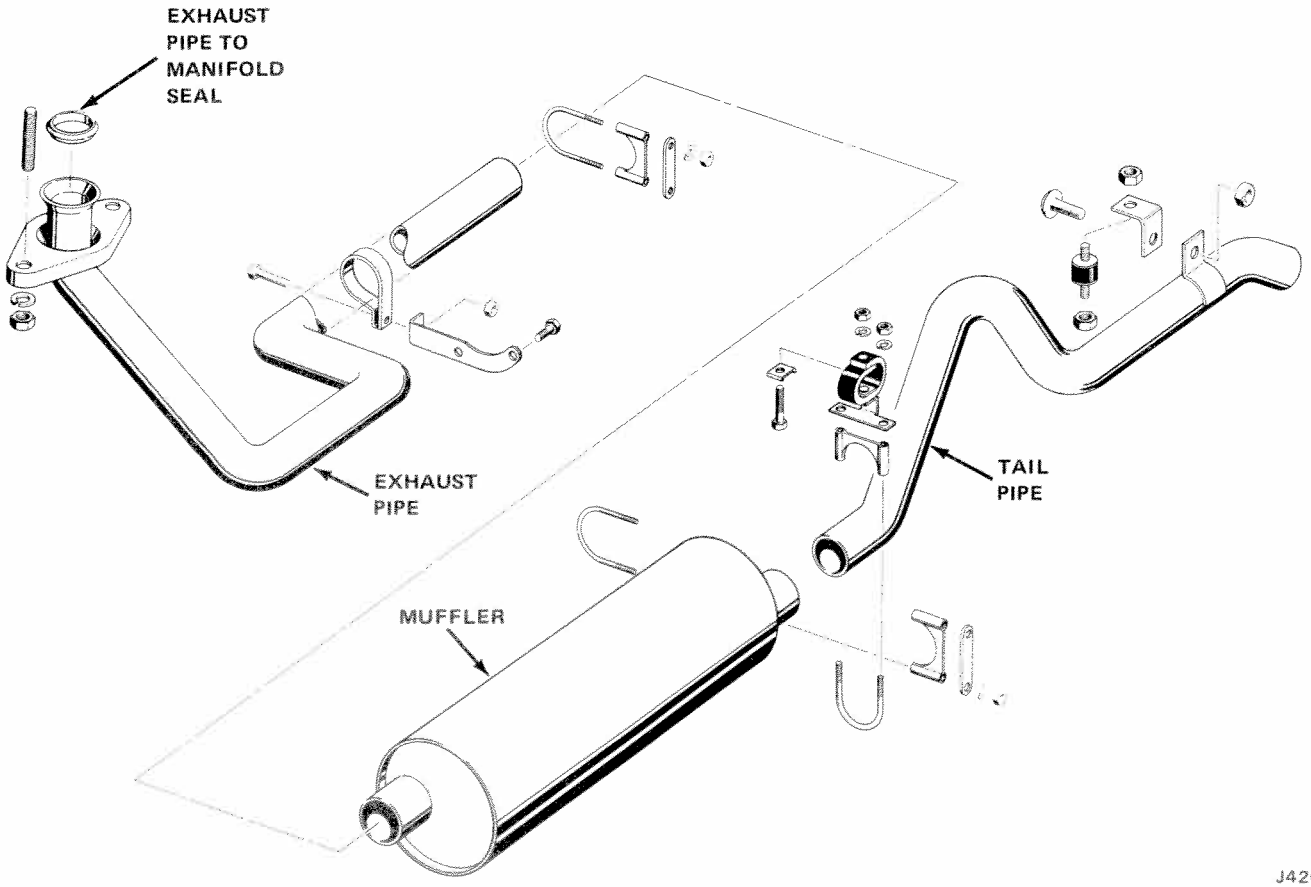

Fig. 4-78 Exhaust System - Wagoneer, Cherokee, Truck - 6 Cylinder Engine

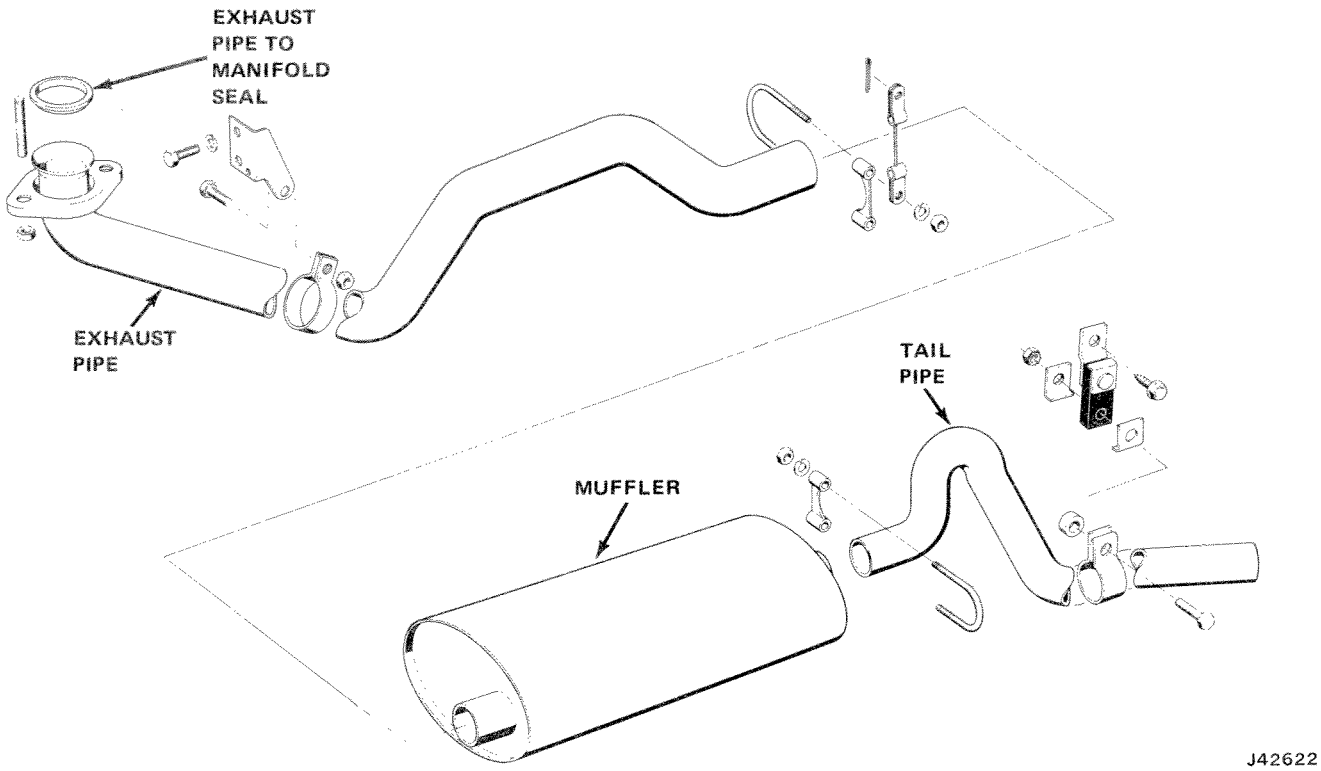

Fig. 4-79 Exhaust System -CJ-5/CJ-6 Six-Cylinder Engine

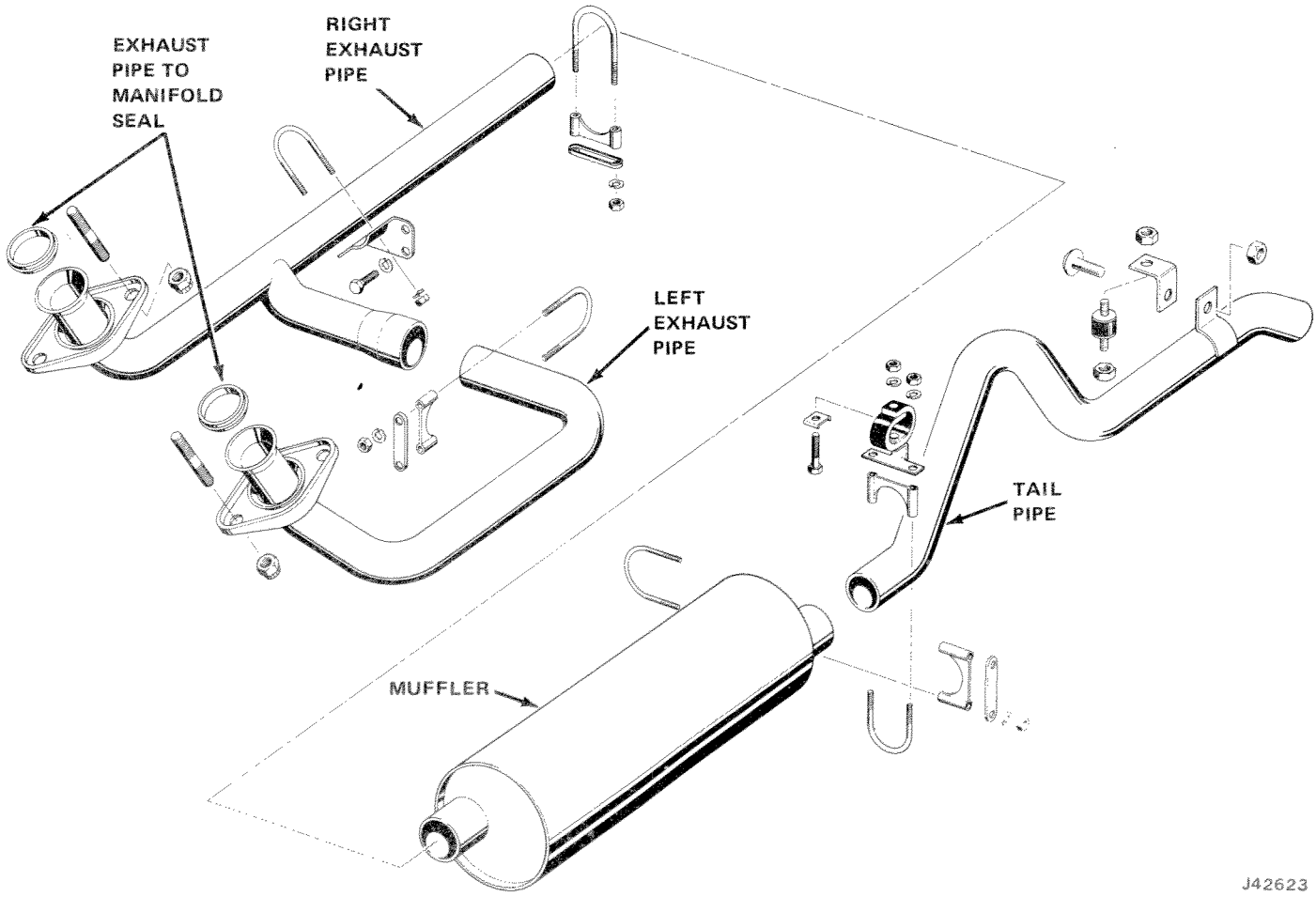

Fig. 4-80 Exhaust System—Wagoneer, Cherokee, Truck—V-8 Engine

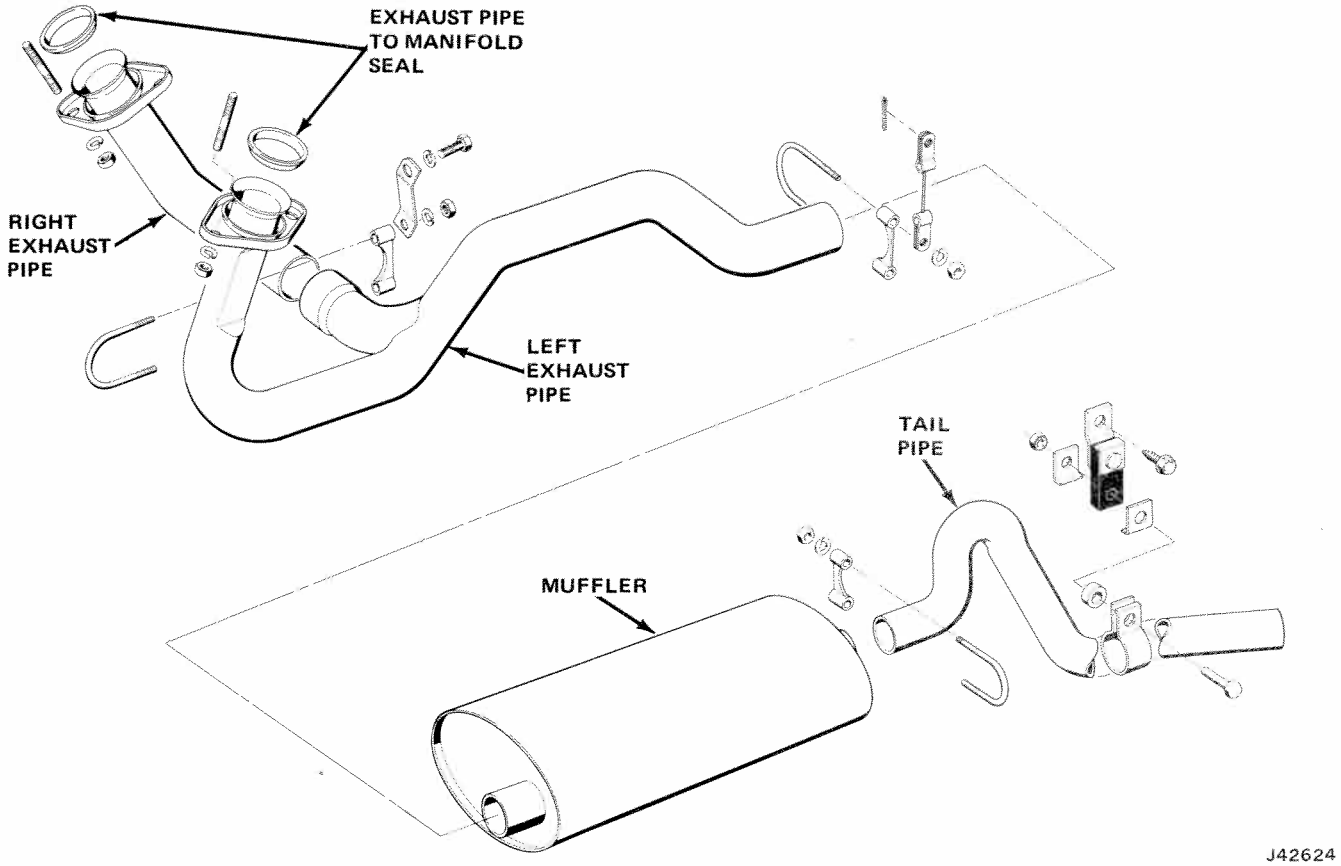

Fig. 4-81 Exhaust System — CJ-5/CJ-6—V-8 Engine

EXHAUST MANIFOLD HEAT VALVE

Six-Cylinder Engine

A thermostatically controlled heat valve in the exhaust manifold directs exhaust heat to the floor of the intake manifold for rapid fuel vaporation during engine warmup. The valve is closed, directing exhaust heat to the intake manifold, when the counterweight is in the extreme counterclockwise position when viewed from the counterweight end (fig. 4-82, -83). As the engine reaches operating temperature, the thermostatic spring heats up and loses tension, allowing the counterweight to open the valve.

The manifold heat valve must operate freely and should be checked and lubricated every 5,000 miles with American Motors Heat Valve Lubricant or equivalent.

Replacement

(1) Separate intake and exhaust manifold.

(2) Remove manifold heat valve assembly by cutting heat valve shaft on both sides of valve.

(3) Lift valve from manifold and drive out remaining shaft sections and bushings.

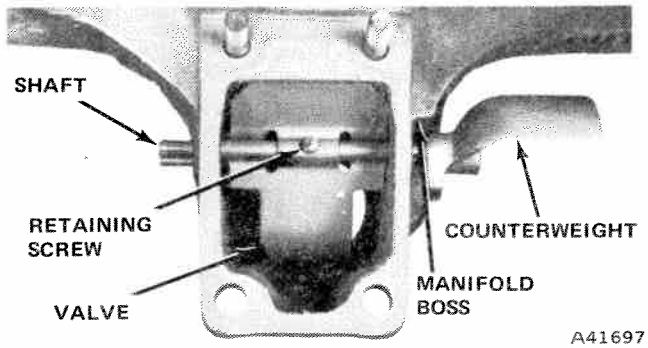

Fig. 4-82 Heat Valve in Open Position

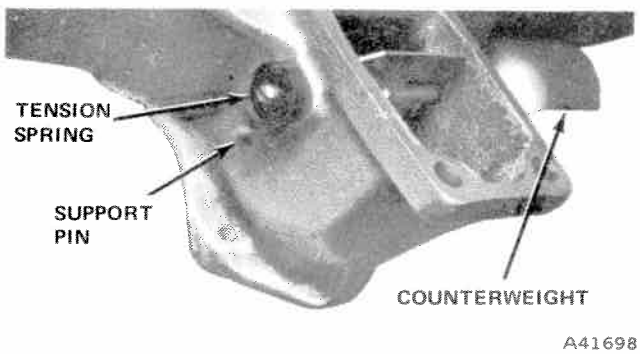

Fig. 4-83 Heat Valve in Closed Position

(4) Install new bushings using heat valve shaft as a guide pin.

(5) Ream out new bushings with a 5/16-inch drill bit to remove all burrs.

(6) Position heat valve as shown in figure 4-82 and install shaft and counterweight assembly. Rotate counterweight until spring stop contacts bottom of manifold boss.

(7) Align hole in valve with screw threads in shaft and install but do not tighten retaining screw.

(8) Close heat valve and install tension spring with hook end up and pointing away from manifold. Hook spring under support pin as shown in figure 4-83.

(9) Operate heat valve several times to allow shaft to center. Hold shaft and move valve as far as possible from counterweight. Tighten retaining screw.

(10) Check operation of valve.

(11) Install intake and exhaust manifolds.

Eight-Cylinder Engine

A thermostatically controlled heat valve mounted between the right exhaust manifold and exhaust pipe directs exhaust heat to the intake manifold for rapid fuel vaporation during engine warmup. The valve is closed, directing exhaust heat through the intake manifold crossover passage when the counterweight is in the extreme downward position (fig. 4-84). The exhaust heat crosses through the intake manifold and discharges into the left exhaust manifold until the engine reaches operating temperature. At this time the thermostatic spring loses its tension, opens the valve, and allows exhaust heat to discharge through the right exhaust pipe.

The manifold heat valve must operate freely and should be checked and lubricated every 5,000 miles with American Motors Heat Valve Lubricant or equivalent.

Replacement

(1) Disconnect and lower exhaust pipe(s).

(2) Replace the manifold heat valve and gaskets.

(3) Replace exhaust pipe gaskets.

(4) Position exhaust pipe(s) and connect to exhaust manifold.

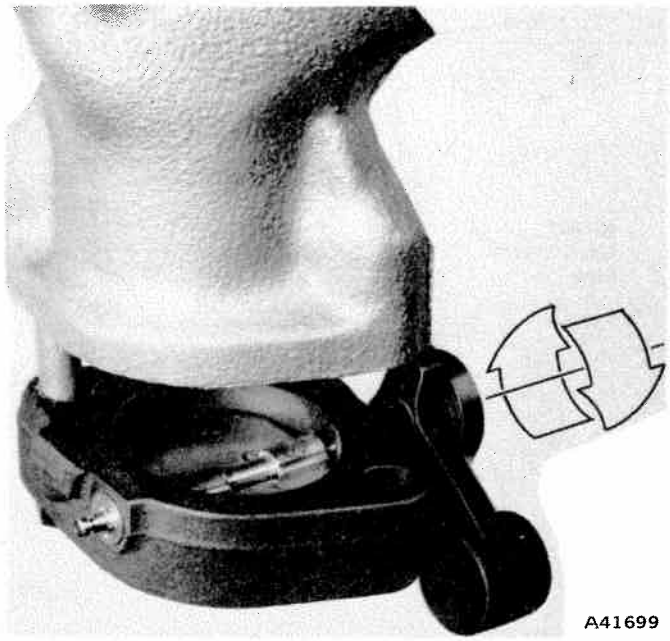

Fig. 4-84 Exhaust Manifold Heat Valve — V-8

TORQUE SPECIFICATIONS

Service Set-To torques should be used when assembling components. Service In-Use recheck torques should be used for checking a pretorqued item.

	Service Set-To Torque	Service In-Use Recheck Torque
Carburetor Holddown Nuts	14	12-15
Exhaust Manifold Bolts — V-8	25	20-30
Exhaust-Pipe-to-Manifold Nuts	23	18-28
Intake and Exhaust Manifold Bolts and Nuts—6 Cyl	23	18-28
Intake Manifold Bolts—V-8	43	37-47
Fuel Pump Screw	16	13-19
Air Cleaner Stud (2100 Carb.)	10	7-12
Air Pump Mounting Bolts	20	15-22
Air Injection Tubes — V-8	38	30-45
6 Cyl.	15	10-18

All torque values given in Foot-Pounds with dry fits unless otherwise specified.

DRILL SIZES

Letter Sizes	Drill Diam. Inches	Wire Gage Sizes	Drill Diam. Inches	Wire Gage Sizes	Drill Diam. Inches	Wire Gage Sizes	Drill Diam. Inches
Z	0.413	1	0.2280	28	0.1405	55	0.0520
Y	0.404	2	0.2210	29	0.1360	56	0.0465
X	0.397	3	0.2130	30	0.1285	57	0.0430
W	0.386	4	0.2090	31	0.1200	58	0.0420
V	0.377	5	0.2055	32	0.1160	59	0.0410
U	0.368	6	0.2040	33	0.1130	60	0.0400
T	0.358	7	0.2010	34	0.1110	61	0.0390
S	0.348	8	0.1990	35	0.1100	62	0.0380
R	0.339	9	0.1960	36	0.1065	63	0.0370
Q	0.332	10	0.1935	37	0.1040	64	0.0360
P	0.323	11	0.1910	38	0.1015	65	0.0350
O	0.316	12	0.1890	39	0.0995	66	0.0330
N	0.302	13	0.1850	40	0.0980	67	0.0320
M	0.295	14	0.1820	41	0.0960	68	0.0310
L	0.290	15	0.1800	42	0.0935	69	0.0292
K	0.281	16	0.1770	43	0.0890	70	0.0280
J	0.277	17	0.1730	44	0.0860	71	0.0260
I	0.272	18	0.1695	45	0.0820	72	0.0250
H	0.266	19	0.1660	46	0.0810	73	0.0240
G	0.261	20	0.1610	47	0.0785	74	0.0225
F	0.257	21	0.1590	48	0.0760	75	0.0210
E	0.250	22	0.1570	49	0.0730	76	0.0200
D	0.246	23	0.1540	50	0.0700	77	0.0180
C	0.242	24	0.1520	51	0.0670	78	0.0160
B	0.238	25	0.1495	52	0.0635	79	0.0145
A	0.234	26	0.1470	53	0.0595	80	0.0135
		27	0.1440	54	0.0550		

TECHNICAL SERVICE LETTER REFERENCE

Date	Letter No.	Subject	Changes Information on Page No.