
INSTRUCTION MANUAL



EICO

667 TUBE TESTER



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GENERAL DESCRIPTION

The EICO Model 667 Dynamic Conductance Tube & Transistor Tester is one of the first thoroughly practical service instruments able to test both tubes and transistors. Among its advantages are rapid and simple operation, close simulation of actual tube operating conditions, and unexcelled thoroughness and accuracy of test. The outstanding mechanical design and layout, coupled with components carefully selected for ruggedness, makes the Model 667 extremely well-suited for the hard usage of daily service work.

All components of the Model 667 tube tester are assembled to the heavy-gauge aluminum front panel, which is in turn top-mounted by 14 screws to flanges on all four sides of the steel case. A detachable steel cover is mounted to the back of the case with separable hinges so that the cover may easily be removed for use of the instrument as a counter-top model or replaced to convert it back to a portable instrument.

There are ten different tube sockets on the panel to accommodate modern receiving and other tube types (see Types Tested below). In addition, pilot and Christmas tree lamps can be checked rapidly using the center of the Novar socket. A special transistor socket accommodates both n-p-n and p-n-p transistors. To protect against damage due to current overload, a type 3AG 1 ampere fuse is connected in series with the primary of the power transformer.

SPECIFICATIONS

LINE VOLTAGE & FREQUENCY: 105-130V, 60 cycles. Note: Do not connect to a dc line.

POWER CONSUMPTION: 10 watts with no tube/transistor under test; 50 watts at maximum load.

TYPES TESTED: 5 & 7 pin Nuvisitors; Novars; Compactrons; 7, 9, & 10 pin miniatures; 5, 6 & 7 pin sub-miniatures (in-line base); 8-pin sub-miniatures (circular base); octal; loctal. In addition to receiving types, both domestic and foreign, many small transmitting and special-purpose tubes, voltage regulators, cold cathode rectifiers, electron-ray indicators, and ballast tubes are tested. Tests n-p-n and p-n-p transistors. Pilot lamps are tested in center of Novar socket. Accessory Model CRU adaptor for testing all color and black and white picture tubes.

TUBE TESTS: a) Direct-reading of inter-element and cathode heater leakage in ohms on a 0 to 20 megohms scale. DC test voltage always applied in correct polarity to eliminate emission effects from reading. b) Merit test, which is an emission reading for diodes and rectifiers and a dynamic conductance (combined plate conductance, mutual conductance, and emission) reading for triodes, tetrodes, and pentodes.

TRANSISTOR TESTS: N-p-n and p-n-p types.

TRANSISTOR TESTS: a) Leakage measurement of collector current with emitter grounded and no base signal. b) Direct reading of current amplification factor or Beta (change in collector current caused by change in base current).

ACCURACY OF LINE VOLTAGE INDICATION: $\pm 3\%$

SIZE: 12" x 15" x 6"

WEIGHT: 20 lbs.

FUNCTIONS OF CONTROLS

A necessary supplement to the operating instructions is the following description of control functions. Several controls, for example, have unusual secondary functions which must be understood in making settings.

FILAMENT SELECTOR — The dial of this control indicates rms a-c volts tapped from the power transformer and applied to the tube filament at each position. Do not take the setting for granted; check the roll chart and set it to the value shown for the particular tube type. The last position, marked "Z", is used when checking cold cathode tubes such as the OZ4 for which the plate voltage of the Model 667 is insufficient to initiate conduction in the tube. The 117 volts available from the FILAMENT switch is thrown in series with the plate voltage of 180 volts at the "Z" position to provide a total voltage sufficient to initiate tube conduction. A 3K resistor, placed in series with this circuit, provides current limiting to protect the tube after the start of conduction.

LINE ADJ. — This control is a continuously variable potentiometer connected across a portion of the primary winding. It permits adjustment of transformer secondary voltages to the standard test values despite line voltage and filament load variations. The small push-button serves to insert a standard resistance in the leakage test circuit which will result in exactly half-scale deflection (LINE mark) when the LINE ADJ. control has been set properly in relation to the actual line voltage and filament load. The actual line voltage may be read off the dial of the LINE ADJ. control with an accuracy of $\pm 3\%$ when line adjustment is made under no-load conditions (no tube inserted for testing).

GRID control — A continuously variable potentiometer which taps the desired grid voltage up to a maximum of 5, 15, or 45 volts, depending on the setting of the V switch. A snap switch, which takes up the first few divisions on the dial, is actuated to the most counter-clockwise position and inserts a 400 Ω current-limiting resistor in series with the plate supply (for high-current rectifiers). At settings of 7 and above, the resistor is bypassed.

PLATE control — A continuously variable rheostat in series with the plate which acts as a "fine" adjustment of meter sensitivity in conjunction with the coarse adjustment provided by the "S" lever switch.

LEVER switches 1 through 12 & C — These are single section switches which connect the similarly numbered tube socket terminals (lever C is the heater lead) to the proper voltage sources for the tube which is to be tested. At the 1 position, each switch contacts ground; at the 2 position, each switch contacts the filament voltage; at the 3 position, each switch contacts the screen voltage; at the 4 position, each switch contacts the plate voltage; at the 5 position, each switch contacts grid voltage; in the 6 position, each switch contacts the heater circuit.

LEVER V — This is a three section switch with four positions (1 through 4). The 180 volt taps on a separate secondary winding on the transformer are selected by the four switch sections as to provide selection from four combinations of plate, screen, and grid voltages. The plate and screen voltages selected are applied through the filament circuit to the corresponding position contacts on lever switches 1 through C. The grid voltage selected is applied to the GRID potentiometer so that the desired portion of the total available grid voltage can be accurately tapped off by means of the dial calibration and applied to the grid position contacts on lever switches 1 through C, also through the MERIT switch. The plate, screen, and grid voltages selected at each position of the V switch are as follows:

<u>POSITION</u>	<u>PLATE</u>	<u>SCREEN</u>	<u>GRID</u>
1	45V	15V	0-5V
2	90	45	0-15
3	180	90	0-15
4	180	90	0-45

LEVER S — This is a single section six-position switch which selects the value of shunt resistance placed across the meter and PLATE control potentiometer. As such, lever S is a "coarse" meter sensitivity control which is used in conjunction with the "fine" control provided by the PLATE potentiometer. Position 1 provides the least meter sensitivity for high current tubes and position 5 the highest sensitivity for low current tubes; intermediate positions provide a variety of sensitivities necessary for testing the many tube types encountered. At position 6 of the S switch, the grid voltage from the V switch is connected through the 24, 000 ohm current-limiting resistor in testing light-duty diodes.

PUSH-SWITCHES 1 through 12 & C — Each of these switches serves as a transfer switch for the tube element connected to the corresponding base pin number. The No. 1 switch controls all connections to the No. 1 socket terminals; the No. 2 switch controls all connections to the No. 2 socket terminals; and so forth, in order, through to the No. 12 switch for the No. 12 terminal of the COMPACTRON socket. The C switch controls the connections to the cap lead. These push switches serve the following functions:

With the MERIT and LINE switches at their normal position, depressing one of these switches transfers the corresponding tube element to one side of the ohmmeter circuit (with the remaining tube elements all grounded together with the other side of the ohmmeter circuit) as required for the intrs-element leakage tests. These push-switches are also primarily responsible for two of the outstanding features of this tube tester; one feature being that in the majority of cases all sections of multi-section tubes draw their normal current when any one section is tsstd; the second being the rapid tssting afforded multi-section tubes due to the saving in set-up time. These advantages are obtained because the push switches permit selection of the tube base pin which will be connected to the transformer power supply through the metrs circuit when the MERIT switch is pulled down, in order that the current through the corresponding tube element (normally the plate of a tube or a tube section) be measured for MERIT tssting. The remaining tube base pins (connected to the push switches which are not depressed for the particular MERIT test) are connected either directly to the transformer power supply or indirectly through a potentiometrs.

RESET push button – This button is a convenience intended to permit restoring of a depressed push-switch to the normal position.

H-K LEAKage push switch — This is a momentary switch which is used for heaters-cathode leakage testing. When the push switch for an indirectly heated cathode (underlined in the LEAK column of the roll chart) is depressed to transfer the cathode to one side of the ohmmeter circuit, the H-K LEAK button is depressed also to break the ground connection of the remaining "lumped" elements in order that cathode emission current to these elements will be excluded from the cathode heater leakage measurement.

TRANSISTOR TEST selector — This is a special five-position multi-circuit switch performing the following functions: a) At the TUBE position the transistor test socket is de-energized and the meter connected so as to render it available for line adjustment, leakage testing, and merit testing; b) At the transistor test positions, it applied a dc bias voltage between the collector and emitter socket terminals, of polarity depending on whether the n-p-n or p-n-p positions are used.

At the 1 position for either transistor type, the meter is inserted in the collector circuit in series with a 1K current-limiting resistor to measure the current (I_{CEO}) under these conditions. At either 2 position, a 200K resistor is connected between the collector side of the power supply and the base to put a small current into the base. The current gain, Beta, is then read on the meter, which remains in the collector circuit.

WARNING: Be certain as to the type of transistor (n-p-n or p-n-p) you are testing. Testing a transistor using the positions designated for the opposite type may damage the tester meter or the transistor. Note that shorted transistors may cause the meter to read past full scale at the "N-P-N 1" or "P-N-P 1". Should this occur, turn the switch back to the "TUBE" position immediately and discard the defective transistor, after you have first checked to see that the correct test position was used for the particular type.

SPECIAL SOCKET CONNECTIONS — Several socket terminal connections are not standard and should be noted. The pilot light socket in the center of the NOVAR socket is connected across the selected filament voltage (shell to ground, center post to filament switch arm). The center of the octal socket is connected to ground. The sub-miniature in-line socket has no numbers assigned to its seven terminals. In the Model 667, these terminals are connected to the push-switches as if they were numbered 1 to 7 beginning at the index dot on the panel. However, a consistent connection procedure has been established (the roll chart settings are given accordingly), which is as follows: With tube base and socket indexes matched (dot or spur on tube base to dot at right of socket on the panel), the tube leads are inserted in order so as not to skip any socket terminals starting from the extreme right.

OPERATING INSTRUCTIONS

PRELIMINARY STEPS FOR TUBE OR TRANSISTOR TESTING

1. Insert the power plug in a 105-130 volts AC, 60 cps line outlet. Do not use a DC line outlet or any AC line outlet other than specified above.
2. Turn the tester on by rotating the LINE ADJ. control clockwise from AC-OFF.
3. Set the TRANSISTOR TEST selector to TUBE, regardless of whether it is a tube or transistor that is to be tested.
4. Make a preliminary line adjust by holding down the LINE button while turning the LINE ADJ. control until the meter pointer is over the LINE ADJ. mark on the meter (center scale). Release the LINE button at the conclusion of the adjustment.

TUBE TESTING CONTINUED

5. Press the RESET button to release any button which may be down from a previous setting. Make sure the TRANSISTOR TEST selector is set at "TUBE".
6. Move all 15 lever switches down to the "1" position.
7. Rotate one or both roll chart wheels until the tube type you wish to test appears in one of the windows. Obsolete types will be found in a supplement to this manual.

8. Note the number of lines of settings devoted to the tube in the chart. Each line of settings corresponds to a section of the tube (1 line for a single diode, triode or pentode; 2 lines for a double diode, triode or pentagrid converter; 3 lines for a duodode-triode, etc.) Each section of the tube is tested by making the settings indicated on a single line of the chart and then depressing the MERIT lever. Note, however, that twin or triple section tubes having identical tube characteristics will occupy one line with two or three plate numbers in the merit column instead of the usual single number. Each of these numbers signifies an individual merit test. Using the same line of settings, perform each individual merit test.

EXAMPLE: 12AT7, twin triode

In the merit column you will find the entry 16 (one, six). Press 1 to read merit of the first triode. Press 6 to read merit of the second triode.

All interelement leakage testing must be performed before any of the Merit tests, as a safeguard to the tube tester. The push-button which must be pressed down to complete the leakage and short testing are all given in the same line or different lines for different sections of the tube. Specific instructions for making settings and performing the required tests follow.

9. The first 3 settings following the tube type are for the FIL. selector, GRID control and PLATE control, in that order. Set these controls accordingly.

10. The next 15 settings are for lever switches 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, C, V and S in that order. Set these levers accordingly.

11. Check all settings to make sure that no mistake has been made.

12. Insert the tube into the socket which matches its base. (The socket just above the TRANSISTOR TEST selector is for transistors only. All other sockets are for tubes only). If the rectangular sub-miniature socket is used, turn the tube so that its index (red dot, black dot, glass spur) matches the dot on the panel; then insert each lead into a socket terminal in order, not skipping any socket terminals starting from the right. If there is a top cap on the tube, connect it with the cap clip lead.

13. Allow sufficient warm-up time before proceeding. For battery-operated tubes and h. v. rectifiers (1B3 type) warm up is almost instantaneous; for most receiving tubes 10 to 20 seconds; for high power pentodes, triodes, and rectifiers 20-40 seconds. Note that the MERIT test (step 17) should not be performed until the stated warm-up time has elapsed.

14. Press the LINE button and note the meter reading. Depending on the filament drain of the tube under test, the meter will read more or less to the left of the LINE ADJ. mark (center scale). Holding the LINE button down turn the LINE ADJ. control until the meter pointer is again over the LINE ADJ. mark. Release the LINE button at the conclusion of this adjustment.

15. Refer to the first (or only) line of settings for the tube and note the buttons listed in the LEAK column. Press down each of the buttons listed one at a time (in order), observing the meter each time. (See next paragraph for evaluation of leakage readings.) The underlined leakage buttons are for indirectly heated cathodes; when these buttons are depressed, the resulting meter reading will be valid only when the H-K LEAK button is also depressed. Failure to do so will not normally cause damage to the tube, but will give too low a leakage resistance reading due to emission to other elements. Thus, the underlined leakage tests are of heater to cathode leakage only.

On cathode leakage test of light duty diodes in multi-section tubes, meter will not swing across the scale as for other type of tubes if tube under test is good, and there is no need to depress the H-K LEAK button. Underlining of pin No. 2 in case of 6AQ7 merely indicates cathode. The above also applies to other tubes of similar types such as 6R8, 6S8, and 6T8.

Standard for acceptance or rejection on Inter-Element Leakage (excluding cathode-heater leakage): No less than 5 megs on any test. A stricter standard for high reliability applications would be no less than 10 megs on any test.

Standard for Acceptance or Rejection on Cathode-Heater Leakage: Not less than 1 meg for non-power types; not less than 500K for power types. Half these values may be acceptable for tubes approaching end of life, with the exception of tubes used in audio preamplifiers which may not read less than 1 meg at any time.

In general, tubes failing to meet these standards should be discarded. In any case, do not perform a MERIT test on any tube having an inter-element leakage resistance less than 100K ohms, as this may damage the tube tester. Note that all required inter-element and cathode-heater leakage tests for the entire tube have been completed with the tester set up for the first (or only) MERIT test and before the first (or only) MERIT test is made. No further leakage testing is performed thereafter.

Note: Depressing the buttons listed in the MERIT column actually tests that element for leakage until the MERIT lever is depressed. A tube giving too low an ohms reading in this condition should not be tested for MERIT.
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16. Perform the first (or only) MERIT test on tubes which have been found satisfactory as to leakage and shorts by first pressing down the button listed in the MERIT column and then pulling down the MERIT lever switch. With the MERIT lever held down, read the merit (quality) indication on the DIODES GOOD scale for diodes and rectifiers, or the color scale and percent markings for all other tubes. Note that although 100% represents normal tolerance for a new tube, some tubes will read higher and some lower because of the tolerances allowed in tube manufacturing. Note also that the limits of the GOOD, ? (doubtful), and REPLACE areas are obtained by striking an average for all tube types and so should not be interpreted in an absolute manner.

17. If there is more than one line of settings for the tube, leave the tube in the socket and proceed as follows for each line: a) Reset the lever switches and GRID and PLATE controls accordingly; b) Depress the button listed in the MERIT column; c) Pull down the MERIT lever switch to read the quality on the meter of the particular tube section under test.

18. After testing the last section of a tube, remove the tube from the socket of the tube tester. Push reset button and return all lever switches to "1". Failure to do this can result in damage to the meter when you proceed to test the next tube.

19. Proceed with testing another tube by beginning with Step 5. If there are no more tubes or transistors to be tested, turn the LINE ADJ. control counter-clockwise to its AC-OFF position. A slide switch at the end of the potentiometer winding opens the primary circuit of the power transformer and turns the tester off. If there is a transistor to be tested, proceed directly to step 5 of TRANSISTOR TESTING after completing step 18 of TUBE TESTING.

CONTINUE PROCEDURE FOR TRANSISTOR TESTING (From Step 4, Page 4)

5. Locate the type number of the transistor to be tested on the transistor chart. Note whether the transistor is a n-p-n or p-n-p type and the specified allowable range of Beta. Make sure that the TRANSISTOR TEST selector is set at "TUBE".

6. Insert the emitter (E), base (B), and collector (C) lead of the transistor in the corresponding terminals of the transistor socket located immediately above the TRANSISTOR TEST selector.

7. Turn the TRANSISTOR TEST selector from "TUBE" to position 1 on the p-n-p or n-p-n side depending on the type of transistor under test. The indication on the meter will be proportional to the collector current with emitter grounded and no base signal. On this test, transistors in good condition should read in the "I_{ceo} GOOD" area (between 0 and 40 on the 0 to 140 scale). Reject transistors that read outside the "I_{ceo} GOOD" area (higher than 40 on the 0 to 140 scale), unless note has been made on the chart that a higher reading is acceptable.

8. Turn the TRANSISTOR TEST selector to position 2 and read the current amplification factor or Beta (change in collector current caused by a change in base current) on the 0 to 140 Beta Scale. A good transistor will read within the allowable range of Beta as given on the chart for the particular transistor type. Transistors which do not give a reading within the specified allowable range of Beta may still be useable; see data sheet.

9. Turn the TRANSISTOR TEST selector back to "TUBE" and then remove the transistor from the transistor socket.

10. Proceed with testing another transistor by beginning with step 5. If there are no more transistors or tubes to be tested, turn the tester off by turning the LINE ADJ. control to its AC-OFF position. If there is a tube to be tested, proceed directly to step 5 of TUBE TESTING after completing step 9 of TRANSISTOR TESTING.

NOTE: The only controls having any effect in transistor testing are the TRANSISTOR TEST selector, the LINE ADJ. control, and the LINE push-button. Provided that a tube has not been left inserted in any of the tube sockets, the settings of any other lever switches, push-buttons or potentiometers on the panel have no effect and are immaterial.

CIRCUIT DESCRIPTION

It may be of assistance in understanding the functioning of the instrument to examine the following typical partial schematics, each of which indicates the voltages applied and the placement of the meter circuit when performing the tests provided (in accordance with the detailed operating instructions) for tubes and transistors.

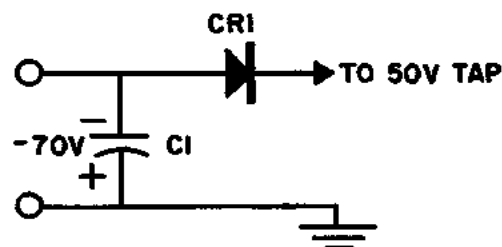
NOTE: R_s denotes the meter shunt resistance selected by S29 (Lever S). Φ 1, Φ 2, and Φ 3 denote various a-c voltages taken from taps on the high voltage secondary winding of the power transformer and selected by S28 (Lever V). An asterisk denotes the function of current-limiting.

The functioning of the Model 667 in each of the various tests furnished is as follows:

INTER-ELEMENT LEAKAGE: A filtered dc test voltage of -70 volts is obtained by rectifying and filtering (CR1 and C1) the 50 volts ac obtained from filament winding tap. This voltage is applied between the tube element isolated by its transfer switch and the remaining tube elements whose lever switches are set at the plate, screen, and grid voltage busses which are grounded through the MERIT and H-K switches at their normal positions. The current through this circuit is read in ohms on the meter. Note that the polarity of the test voltage is evidently such as to eliminate cathode emission from the reading and that resistor R8 and LEAK CAL. rheostat R7 restrict the total current to 200ua (full scale) even with a dead short. For heater-to-cathode leakage testing, the connection of the "remaining" elements to ground is broken by depressing the H-K push-switch to remove them from the circuit and leave in the test circuit the cathode and heater only. This is necessary because the cathode is placed at a negative voltage with respect to the "remaining" elements when it is selected by its transfer switch and the consequent cathode emission current would also register on the meter to give a false low reading of cathode-heater leakage resistance.

LINE ADJ: For the adjustment, resistor R19 and LINE CAL rheostat R18 (identical to R8 and R7 respectively) are inserted in the leakage test circuit by depressing the LINE push-switch to exactly double the total resistance in the circuit and reduce the meter indication to exactly half scale. The condition for full-scale and half-scale reading, set in initial calibration with the LEAK CAL. and LINE CAL. rheostat R7 and R18, is that the LINE ADJUST potentiometer be set to give 130 volts across the full transformer primary (or 105 volts across the low end of the primary and the primary tap). The LINE ADJUST potentiometer permits duplication of this condition over a $\pm 10\%$ variation of the actual line voltage from the nominal value (117 volts).

MERIT TEST: Several of the many configurations that occur in MERIT testing are shown above. In general, each test furnishes a composite indication of cathode emission capability and the ability of each grid to control the plate current in accordance with the design of the tube, plus the ability of the plate to receive the regulated current. For diodes and rectifiers, the measurement is simply an emission test. To properly test a great variety of tube types, several plate, screen and ranges of grid voltage are available from taps on the plate secondary winding of the transformer for selection by switch S28 (lever V). These voltages are applied through switch S34 (MERIT) to the plate, screen, and grid bus bars inter-connecting corresponding terminals on switches S15 through S27 (lever switches 1 through 12 & C). The grid voltage is variable by R16 (GRID potentiometer) from zero to maximum of the range selected. Note that the plate, screen, and grid voltage contacts on switches S15 through 27 are grounded at the normal position of S34 and that plate screen, and grid voltages are only applied when S34 is pulled down.



LEAKAGE TEST POWER SUPPLY — Also used for Line Adjust

TUBE	FIL.	GR.	PL.	LEVERS		V	S	LEAK	MERIT
2A4	2.5	20	78	1251111	111111	4	2	3-5	3
2A4	2.5	85	78	1251111	111111	4	2	3	3
2A5	2.5	7	44	2445111	111111	4	2	2-3-4-5	2
2A6	2.5	7	20	2466111	111115	2	5	2-3-4-5-C	2
2A6	2.5	7	20	2466111	111115	4	6	3-4	3-4
2A7	2.5	7	87	2334111	111111	4	3	2-3-5-6	2
2A7	2.5	7	0	2334111	111111	4	4	4	4
2B3	2.5	0	60	6111112	611114	2	4	C	C
2B7	2.5	78	12	2436611	111115	3	3	2-3-4-5-6-C	2
2B7	2.5	7	20	2436611	111115	4	6	4-5	4-5
2BU2	2.8	0	35	1111111	611124	2	3	C	C
Good tube reads above 40.									
2C21	2.5	23	26	1665412	111116	3	3	4-5-6	5
2C21	2.5	23	26	1146662	111115	3	3	2-3-C	3
2C50	2.5	10	80	1115412	111111	2	2	4-5-6	5
2C50	2.5	10	80	5411112	111111	2	2	1-2-3	2
2C52	2.5	7	82	1115412	111111	4	4	4-5-6	5
2C52	2.5	7	82	5411112	111111	4	4	1-2-3	2
2D21	6.3	0	58	6121343	111111	2	1	1-2-5-6	6
2DF4	2.5	30	60	3141216	511111	2	2	1-3-8	3
2DL4	2.0	55	65	5162166	461111	2	2	1-2-8	8
2DM4	12.6	0	55	6611411	211111	4	1	3-5	5
2DM5	12.6	7	94	1512634	111111	4	1	1-2-6-7	7
2D54	2.5	51	58	1415111	112111	1	3	2-4-8	2
2DW4	2.0	0	35	6662164	611111	4	1	7-9	7
2DX4	2.5	10	40	4521166	111111	1	3	1-2-5	1
2DY4	2.5	10	40	4521166	111111	1	3	1-2-5	1
2E5	2.5	7	87	2414111	111111	4	3	2-3-4-5	2
2EA5	2.5	25	50	5112436	111111	2	3	1-2-5-6	5
2EN5	2.5	0	85	1612114	111111	1	1	5-7	7
2EN5	2.5	0	85	1412116	111111	1	1	2-5	2
2ES5	2.5	20	15	6521461	666666	2	3	2-5-7	5
2EV5	2.5	7	90	5112436	111111	3	2	1-2-5-6	5
2FV6	2.5	25	25	5112431	111111	2	3	1-5-6-7	5
2GU5	2.5	68	80	5121436	111111	3	2	1-2-5-6	5
2HR8	2.5	10	90	3111241	151111	2	3	3-6	6
2T4	2.5	35	71	4521166	111111	2	2	1-2-5	1
2V3	2.5	0	93	1211111	111113	4	3	C	C
2W3	2.5	0	96	1213111	111111	4	1	4	4
3A2	2.8	0	35	6116661	621114	2	4	C	C
3A5	2.8	15	63	1456662	111111	2	3	2-3	2
3A5	2.8	15	84	1666542	111111	2	3	5-6	6
3A8	2.8	7	79	6233531	611115	4	4	3-4-5-6-8-C	3
3A8	2.8	7	67	6233531	611115	4	5	6	6
3A8	2.8	7	23	6233531	611115	4	6	8	8
3B4	2.5	80	83	3652163	111111	2	3	1-3-7	7
3B7	2.5	45	34	1456166	211111	3	3	2-3	2
3B7	2.5	45	34	1666154	211111	3	3	6-7	7
3BN4	2.8	10	75	1512466	111111	4	2	1-2-5-7	7
3BT2	3.8	0	38	1111111	611124	2	3	C	C
Good tube reads above 40.									
3BW2	3.8	0	38	1111111	611124	2	3	C	C
Good tube reads above 40.									
3BX6	2.5	7	88	1561214	311111	2	3	1-2-7-8	7
3BY6	2.8	30	95	5121431	611111	2	2	1-2-5-6-7	5
3BY7	2.8	10	90	1561214	311111	4	2	1-2-7-8	7
3C2	2.8	0	16	1216661	611114	1	4	C	C
3C6	2.8	7	90	2111531	111111	4	3	4-5	6
3C6	2.8	7	90	2125111	111111	4	3	3	3

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TUBE	FIL.	GR.	PL.	LEVERS		V	S	LEAK	MERIT
3CX3	2.8	0	70	1121111	111114	3	2	C	C
3CY3	3.8	0	90	6261611	111114	1	3	C	C
Good tube reads above 30.									
3CZ3	2.8	0	42	6261611	611114	1	4	C	C
3D6	2.8	29	5	1431156	211111	2	3	2-3-6	2
3DB3	2.8	0	90	6261611	111114	1	3	C	C
Good tube reads above 30.									
3DC3	2.8	0	70	6261611	111114	1	3	C	C
3DF3	2.8	0	80	1121111	111114	3	2	-	-
No short test.									
3DJ3	2.8	0	85	6261611	111114	2	3	C	C
3DY4	2.8	10	40	4521166	111111	1	3	1-2-5	1
3E5	2.8	7	71	1331652	111111	2	3	2-3-6	2
3E6	2.8	20	89	1331651	111111	2	3	4-6	2
3EA5	2.8	25	65	5112436	111111	2	3	1-2-5-6	5
3ES5	2.8	20	15	6521461	666666	2	3	2-5-7	5
3EV5	2.8	7	90	5112436	111111	3	2	1-2-5-6	5
3FW7	2.8	20	48	6661245	111111	3	3	6-7-8	6
3FW7	2.8	21	37	4511266	611111	3	3	1-2-3	1
3FX7	2.8	37	21	6661245	111111	3	3	6-7-8	6
3FX7	2.8	37	21	4511266	611111	3	3	1-2-3	1
3GU5	2.8	15	50	5121436	111111	3	3	1-2-5-6	5
3GW5	2.8	67	96	4512161	111111	3	2	1-2-5	1
3HS8	2.8	52	50	1361265	451111	4	3	1-2-7-8	8
3HS8	2.8	80	85	1341255	661111	2	3	1-2-3-7	3
3HT6	2.8	15	95	1561264	311111	2	2	1-2-7-8	7
3JD6	2.8	15	95	1561264	311111	2	2	1-2-7-8	7
3KE8	2.8	13	30	1341215	661111	3	4	1-2-3-7	3
3KF8	2.8	40	90	1361265	411111	3	3	1-2-7-8	8
3LF4	2.8	23	29	2431156	111111	2	3	2-3-6	2
3Z4	2.8	0	80	1453662	111111	1	4	2-3-4	2
4A6	3.8	7	77	1235531	611111	1	4	3-4-5-6	3-6
4BA6	4.2	40	90	5112431	111111	3	2	1-5-6-7	5
4BN4	4.2	10	75	1512416	611111	4	2	1-2-5	5
4BZ8	4.2	12	20	6661245	111111	3	2	6-7-8	6
4BZ8	4.2	12	20	4511266	611111	3	2	1-2-3	1
4CX7	4.2	17	20	6661245	161111	2	3	6-7-8	6
4CX7	4.2	17	20	4511266	661111	2	3	1-2-3	1
4CY5	4.2	7	80	5112436	111111	2	3	1-2-5-6	5
4DE6	4.2	15	9	5121431	111111	2	3	1-2-5-6	5
4GS7	4.2	65	80	6611243	651111	3	2	3-6-7-9	6
4GS7	4.2	20	80	5411266	661111	2	2	1-2-3	2
4GW5	4.2	67	96	4512161	111111	3	2	1-2-5	1
4HG8	4.2	30	40	1561266	431111	2	3	1-2-8-9	8
4HG8	4.2	93	90	1661254	661111	1	2	1-6-7	7
4HR8	4.2	7	75	3611246	151111	3	3	1-3-6-9	6
4JK6	4.2	70	16	5121431	111111	2	3	1-2-5-6	5
4KT6	4.2	50	70	1562114	311111	3	2	1-2-7-8	7
4MK8	4.2	70	70	1341215	661111	4	3	1-2-3-7	3
4MK8	4.2	35	70	1361265	411111	4	3	1-2-7-8	8
5A6	5.0	7	30	3111235	661111	4	2	3-7	1
5AF4	5.0	25	84	4521166	111111	1	1	1-2-5	1
5AQ4	5.0	0	65	1214111	111111	2	1	4	4
5AQ4	5.0	0	65	1211141	111111	2	1	6	6
5AT4	5.0	0	35	1114161	211111	4	1	4	4
5AT4	5.0	0	35	1116141	211111	4	1	6	6
5AX4	5.0	0	50	6164666	211111	4	1	4	4
5AX4	5.0	0	50	6164666	211111	4	1	6	6

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
5AZ3	5.0	0	40	1666646 666621	4	1	6	6
5AZ3	5.0	0	40	1666664 666621	4	1	7	7
5AZ4	5.0	0	57	6164666 211111	4	1	4	4
5AZ4	5.0	0	57	6166646 211111	4	1	6	6
5BE8	5.0	30	80	6611243 151111	2	3	6-7-8-9	6
5BE8	5.0	80	80	5411266 661111	2	2	1-2-3	2
5BK5	5.0	40	30	4151216 311111	4	2	1-3-6-9	1
5BS8	5.0	13	20	4511266 611111	2	3	6-7-8	6
5BS8	5.0	13	20	6661245 111111	2	3	1-2-3	1
5BW8	5.0	60	36	5151266 661111	1	4	1-2-3	1-3
5BW8	5.0	0	56	6661251 341111	1	3	6-7-8-9	9
5BZ7	5.0	30	20	6661245 111111	2	3	6-7-8	6
5BZ7	5.0	30	20	4511266 611111	2	3	1-2-3	1
5CG4	5.0	0	35	1114161 211111	4	1	4	4
5CG4	5.0	0	35	1116141 211111	4	1	6	6
5CM8	5.0	7	65	6511243 661111	4	3	2-3-6-7	6
5CM8	5.0	7	25	6611243 151111	4	4	3-6-7-9	6
5CR8	5.0	7	100	6511243 661111	2	3	2-3-6-7	6
5CR8	5.0	7	35	4661266 151111	2	3	1-8-9	1
5CU4	5.0	0	50	1114161 211111	4	1	1-4	4
5CU4	5.0	0	50	1116141 211111	4	1	1-6	6
5CZ5	5.0	20	30	3651261 641111	4	2	1-3-7-9	9
5EH8	5.0	7	17	1541266 661111	2	3	1-2-3	3
5EH8	5.0	7	100	6661215 341111	2	3	6-7-8-9	9
5ES8	5.0	15	75	6661245 111111	2	2	6-7-8	6
5ES8	5.0	10	75	4511266 611111	2	2	1-2-3	1
5HG8	5.0	30	40	1561266 431111	2	3	1-2-8-9	8
5HG8	5.0	93	90	1661254 661111	1	2	1-6-7	7
5MQ8	5.0	75	75	4112111 151111	2	2	1-8-9	1
5MQ8	5.0	49	13	1532141 111111	2	3	2-3-6-7	6
5T4	5.0	0	30	6164666 211111	4	1	4	4
5T4	5.0	0	30	6166646 211111	4	1	6	6
5W4	5.0	0	46	1211141 111111	4	1	4-6	6
5W4	5.0	0	46	1214111 111111	4	1	4	4
5X3	5.0	0	60	2141111 111111	4	1	2-3	3
5X3	5.0	0	60	2141111 111111	4	1	2	2
5X4	5.0	0	40	1161411 211111	4	1	5	5
5X4	5.0	0	40	1141611 211111	4	1	3	3
5Z4	5.0	0	40	1114161 211111	4	1	4	4
5Z4	5.0	0	40	1116141 211111	4	1	6	6
6A3	6.3	7	65	1432111 111111	4	2	2-3	2
6A4	6.3	7	73	2453111 111111	4	2	2-3-4	2
6A5	6.3	7	79	1231511 611111	4	1	5	3
6A6	6.3	17	94	2351531 111111	3	3	2-3-4-5-6	2-6
6A7	6.3	7	78	2334511 111111	4	3	2-3-4-5-6	2
6A7	6.3	7	98	2434511 111111	4	3	4	4
6AB5	6.3	7	87	2414111 111111	4	3	2-3-4-5	2
6AB5	6.3	7	87	2114111 111111	4	3	2	2
6AB7	6.3	40	94	6115132 411111	1	3	2-4-5-6-8	8
6AB8	6.3	7	85	4511266 661111	2	3	1-2-3	1
6AB8	6.3	7	72	6611241 351111	2	3	3-6-8-9	6
6AC5	6.3	75	20	1241511 111111	4	2	5-8	3
6AC6	6.3	7	65	1244511 111111	4	2	3-4-5-8	3
6AD4	6.3	20	70	5616126 411111	1	4	5-8	8
6AD6	6.3	0	65	6156412 111111	4	5	3-5-8	5
6AD7	6.3	7	92	5243541 111111	3	2	1-4-5-8	3
6AD7	6.3	7	40	5243541 111111	3	3	6	6
6AE5	6.3	86	39	1231511 111111	1	3	5-8	3

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TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
6AF5	6.3	7	34	1231511 111111	2	3	5-8	3
6AF6	6.3	0	65	6154412 111111	4	5	3-5-8	5
6AF6	6.3	0	65	6145412 111111	4	5	3-5-8	5
6AH5	6.3	25	76	3214151 111111	4	1	1-4-6-8	4
6AH7	6.3	40	38	5131532 111111	3	3	1-2-4-5	3-6
6AJ4	6.3	10	55	5166461 261111	4	2	1-2-5	5
6AJ5	6.3	7	78	5121436 111111	2	3	1-2-5-6	5
6AK4	6.3	70	15	5616126 411111	1	3	1-5-8	8
6AK8	6.3	10	77	6612161 531111	2	4	1-2-3-6-7-8-9	9
6AK9	6.3	66	75	2661121 665411	1	3	7-10-11	11
6AK9	6.3	66	67	2451621 666611	1	3	2-3-7	2
6AK9	6.3	90	95	2661421 536611	1	2	5-7-8-9	5
6AK10	6.3	70	70	2111415 111111	2	2	5-6-7	5
6AK10	6.3	70	70	2411111 111511	2	2	2-3-11	2
6AK10	6.3	70	70	2111111 154111	2	2	4-9-10	10
6AL7	6.3	15	90	5245551 111111	4	5	3-4-5-6-8	3
6AL9	6.3	10	55	1411161 613511	2	3	2-9-10-11	2
6AL9	6.3	82	82	2111514 661111	2	2	5-6-7	7
6AM6	6.3	18	50	5112413 111111	3	3	1-2-5-7	5
6AN4	6.3	7	93	4521166 111111	4	2	1-2-5	1
6AN6	6.3	0	66	1556612 111111	2	3	2-3-6	2-3
6AN6	6.3	0	66	1665512 111111	2	3	4-5-6	4-5
6AN7	6.3	7	93	3512163 351111	4	3	2-3-7-9	7
6AN7	6.3	7	64	3512163 351111	4	3	8	8
6AQ6	6.3	20	90	5121664 111111	3	3	1-2-7	7
6AQ6	6.3	20	90	1121551 111111	3	6	5-6	5-6
6AR6	6.3	7	73	1142425 111111	4	1	1-3-5-7	3
6AS7	6.3	7	70	1115412 111111	2	1	4-5-6	5
6AS7	6.3	7	50	5411112 111111	4	1	1-2-3	2
6AW6	6.3	19	39	5121431 111111	3	3	1-2-7	5
6AZ5	6.3	0	80	6611621 411111	2	3	2-8	8
6AZ5	6.3	0	80	4111626 611111	2	3	1-2	1
6B3	6.3	0	50	6461266 661111	4	1	2-C	2
6B6	6.3	7	41	1246611 111115	2	5	3-4-5-8-C	3
6B6	6.3	7	25	1246611 111115	4	6	4-5	4-5
6B7	6.3	78	12	2436611 111115	3	3	2-3-4-5-6-C	2
6B7	6.3	7	20	2436611 111115	4	6	4-5	4-5
6B32	6.3	90	90	1521115 111111	4	2	1-2-5-7	2-7
6B-B14*	6.3	30	50	5612136 611114	3	1	1-3-6-C	C
*Must use magnoval adapter.								
6BC4	6.3	20	87	3562116 661111	3	2	1-2-6	1
6BD4	6.3	50	55	1111512 111114	4	4	1-5-C	C
6BD5CT	6.3	7	90	5111412 311111	4	1	1-3-5-8	5
6BD6	6.3	8	34	5112431 111111	3	3	1-5-6-7	5
6BE7	6.3	65	92	3312145 631111	1	4	1-3-6	6
6BE8	6.3	80	55	6611243 151111	2	3	6-7-8-9	6
6BE8	6.3	70	83	5411266 661111	2	2	1-2-3	2
6BG7	6.3	15	30	3521115 311111	3	3	2-4-5-7	1-8
6BJ5	6.3	78	96	5112413 111111	2	3	1-2-5-7	5
6BK6	6.3	7	90	5121663 111111	4	4	1-2-5-6	7
6BK6	6.3	7	20	5121663 111111	4	6	5-6	5-6
6BL4	6.3	0	10	6616461 211111	4	1	1-5	5
6BN4	6.3	18	69	1521366 111111	4	2	1-2	5
6BN5	6.3	25	50	5611214 631111	2	3	1-3-6-7-9	7
6BR5	6.3	0	54	1162164 641111	3	3	1-7-9	7
6BR5	6.3	0	54	1162161 641111	3	3	7	7
6BR7	6.3	90	90	6661255 161111	3	3	6-7-8	6-7
6BR7	6.3	75	75	4511266 661111	3	2	1-2-3	1

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
6BT6	6.3	7	80	5121663	111111	4	4	1-2-5-6	7
6BT6	6.3	7	20	5121663	111111	4	6	5-6	5-6
6BT8	6.3	0	5	5511266	661111	4	6	1-2-3	1-2
6BT8	6.3	29	100	6661243	511111	3	2	6-7-8-9	6
6BU4	6.3	75	95	1166562	611114	4	4	1-5-C	C
6BU5	6.3	20	15	6135161	211114	3	5	3-4-5-C	C
6BU6	6.3	7	0	5121664	111111	4	3	1-2-5-6	7
6BU6	6.3	7	25	5121664	111111	4	6	5-6	5-6
6BW3	6.3	0	66	2114661	666111	2	1	4-7	4
6BX6	6.3	7	88	1561214	311111	2	3	1-2-7-8	7
6BY7	6.3	10	90	1562114	311111	4	2	1-2-6-8-9	7
6BZ3	6.3	0	65	2114661	666111	2	1	4-7	4
6C6	6.3	15	40	1431121	111115	2	4	2-3-5-C	2
6C7	6.3	20	77	2316611	111115	3	3	2-4-5-6-C	2
6C7	6.3	7	28	2316611	111115	4	6	4-5	4-5
6C8G	6.3	10	90	1166542	111116	2	3	5-6-8	6
6C8G	6.3	10	90	1141662	611115	2	3	3-4-C	3
6CA5	6.3	12	36	1512634	111111	4	2	1-2-6	7
6CA11	6.3	11	50	2114151	111111	2	3	4-5-6	4
6CA11	6.3	19	48	2451111	111111	2	3	2-3-7	2
6CA11	6.3	60	54	2111111	513411	2	2	8-9-10-11	11
6CH7	6.3	17	20	6661245	161111	2	3	6-7-8	6
6CH7	6.3	17	20	4511266	661111	2	3	1-2-3	1
6CJ5	6.3	90	84	3512166	661114	2	1	1-2-3-C	C
6CL5	6.3	95	35	3115662	611114	2	1	1-3-4-C	C
6CN6	6.3	55	70	1113512	111114	2	2	4-5-8-C	C
6CQ6	6.3	25	70	5112413	111111	3	3	1-2-5-7	5
6CR4	6.3	77	85	5166461	261111	3	2	1-2-5	5
6CR6	6.3	15	30	1612435	111111	4	3	1-5-6-7	5
6CR6	6.3	7	23	1512666	111111	4	6	1-2	2
6CR8	6.3	14	10	6511243	661111	3	3	2-3-6-7	6
6CR8	6.3	15	20	4661266	151111	2	3	1-8-9	1
6CS8	6.3	72	90	6511243	661111	3	2	2-3-6-7	6
6CS8	6.3	67	96	4661266	151111	3	2	1-8-9	1
6CT3	6.3	0	64	6462166	611111	2	1	2-9	2
6CV7	6.3	15	75	1451661	211111	4	3	3-5-6-7	2
6CV7	6.3	15	20	1451661	211111	4	6	5-6	5-6
6CX7	6.3	37	21	6661245	161111	3	3	6-7-8	6
6CX7	6.3	37	21	4511266	661111	3	3	1-2-3	1
6D6	6.3	32	21	1431121	111115	3	3	2-3-5-C	2
6D7	6.3	15	45	2431111	111115	2	4	2-3-6-C	2
6D8	6.3	7	0	1243141	111111	2	4	3-4-5-8	3
6D8	6.3	7	75	1243141	111111	2	4	6	6
6DA5	6.3	7	25	5162164	641111	4	5	1-2-7-9	9
6DA5	6.3	7	75	5162161	641111	4	5	9	9
6DA7	6.3	80	0	6661245	161111	3	2	6-7-8	6
6DA7	6.3	80	0	4661266	151111	3	3	1-3-5	1
6DC6	6.3	7	9	5121431	111111	3	3	1-2-7	5
6DG7	6.3	58	98	1511214	311111	3	2	2-3-7-8	7
6DL5	6.3	7	92	5121436	111111	3	2	1-2-6	5
6DN3	6.3	0	66	6461266	611111	2	1	2-9	2
6DN6	6.3	7	65	1211511	311114	2	1	3-5-8-C	C
6DR8	6.3	20	65	3511246	611111	2	3	1-2-3-6	6
6DR8	6.3	0	30	1111214	611111	2	3	7-8	7-8
6DS8	6.3	7	98	3512135	351111	1	4	1-2-3-6-7	6
6DS8	6.3	7	95	3512135	121111	1	4	8-9	8
6DY4	6.3	10	40	4521166	111111	1	1	1-2-5	1
6DY5	6.3	40	50	6511264	631111	2	3	2-3-7-9	7

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
6DZ7	6.3	20	90	5143662	111111	2	2	1-3-4-8	3
6DZ7	6.3	20	90	6163542	111111	2	2	4-5-6-8	6
6DZ8	6.3	7	90	6151243	661111	2	3	2-3-6-7	6
6DZ8	6.3	7	50	5661266	141111	2	2	1-8-9	9
6E6	6.3	40	80	2351531	111111	3	2	2-3-4-5-6	2-6
6E7	6.3	27	27	2431111	111115	3	3	2-3-6-C	2
6EL4	6.3	20	50	1166562	611114	4	5	1-5-C	C
6EL7	6.3	53	100	1561214	311111	3	2	1-2-7-8	7
6EN4	6.3	95	55	1266561	611114	3	4	1-5-C	C
6ET7	6.3	7	65	6661215	341111	3	2	6-7-8-9	9
6ET7	6.3	50	50	1561266	661111	1	6	1-2	2
6ET7	6.3	50	50	1651266	661111	1	6	1-3	3
6EY6	6.3	15	60	6143562	111111	4	2	3-4-5-8	3
6F7	6.3	15	50	2433511	111115	4	3	2-3-4-5-6-C	2
6F7	6.3	15	98	2433511	111115	4	3	4	4
6F8	6.3	37	30	1231531	111115	3	3	3-4-5-6-8-C	3-6
6FA7	6.3	60	84	4161215	311111	2	2	1-6-7-8	1
6FA7	6.3	60	84	6161215	341111	2	2	6-7-8-9	9
6FA7	6.3	50	50	6151216	661111	2	5	5-6	3
6FC7	6.3	77	85	6661251	641111	3	2	6-7-9	9
6FC7	6.3	77	85	1541266	661111	3	2	1-2-3	3
6FG6	6.3	7	75	5612144	641111	4	4	1-3-6-7-9	9
6FG6	6.3	7	75	5612143	641111	4	4	9	9
6FW7	6.3	20	48	6661245	111111	3	3	6-7-8	6
6FW7	6.3	21	37	4511266	611111	3	3	1-2-3	1
6FW8	6.3	77	85	6661245	111111	3	2	6-7-8	6
6FW8	6.3	77	85	4511266	611111	3	2	1-2-3	1
6FX7	6.3	37	21	6661245	111111	3	3	6-7-8	6
6FX7	6.3	37	21	4511266	611111	3	3	1-2-3	1
6G5	6.3	7	87	2454111	111111	4	3	2-5	2
6G6	6.3	59	85	1233511	111111	3	2	3-4-5-8	3
6GC6	6.3	20	70	1113512	611114	2	1	3-4-5-C	C
6GD7	6.3	77	85	5411266	661111	3	2	1-2-3	2
6GD7	6.3	0	53	6611243	151111	3	3	3-6-7-9	6
6GE8	6.3	7	80	6151246	661111	2	1	2-3-6	6
6GE8	6.3	7	85	3661261	541111	4	3	1-7-8-9	9
6GJ8	6.3	70	90	4661266	151111	3	2	1-8-9	1
6GJ8	6.3	67	96	6531241	661111	3	2	2-3-6-7	6
6GK7	6.3	20	48	1561214	311111	3	3	1-2-7-8	7
6GN6	6.3	53	100	5112436	111111	3	2	1-2-5-6	5
6GW5	6.3	67	96	4512161	111111	3	2	1-2-5	1
6H4	6.3	7	0	1216111	111111	4	6	4-8	4
6HC8	6.3	7	65	6151243	661111	4	2	2-3-6-7	6
6HC8	6.3	7	95	5661266	141111	4	3	1-8-9	9
6HJ7	6.3	24	86	1662116	451111	2	2	1-8-9	8
6HJ7	6.3	40	45	1562143	661111	2	3	1-2-6-7	6
6HJ7	6.3	77	65	5112431	111111	3	2	1-2-5-6	5
6HV5	6.3	23	75	2531664	666611	2	3	2-3-4-7	7
6J8	6.3	60	55	1243541	111111	2	4	3-4-5-6-8-C	3
6J8	6.3	60	25	1243541	111111	2	3	6	6
6JB5	6.3	40	40	2531141	166611	3	2	2-3-4-6	6
6JB8	6.3	25	60	4532141	151111	3	3	1-2-6-7-8-9	1-6
6JL8	6.3	53	0	1541266	661111	3	3	1-2-3	3
6JL8	6.3	95	40	6661215	341111	3	2	6-7-8-9	9
6JQ6	6.3	13	54	4632165	611111	2	2	1-3-7-9	1
6JU6	6.3	60	80	6512163	161114	2	1	2-3-7-C	C
6JZ6	6.3	52	79	2136511	116614	2	1	2-3-5-C	C
6K5	6.3	7	80	1231111	111115	4	4	3-8-C	3

TUBE	FIL.	GR.	PL.	LEVERS		V	S	LEAK	MERIT
6KF8	6.3	13	98	1361265	411111	3	3	1-2-7-8	8
6KF8	6.3	26	98	1341215	661111	3	3	1-2-7-8	3
6KG6*	6.3	70	80	5632166	611114	2	1	1-3-9-C	C
*Must use magnoval adapter.									
6KS8	6.3	89	84	1541266	661111	1	3	1-2-3	3
6KS8	6.3	85	70	6661215	341111	3	2	6-7-8-9	9
6KV6	6.3	70	70	3512166	141111	2	1	1-2-3-9	9
6L5	6.3	45	25	1231511	111111	3	3	3-5-8	3
6L7	6.3	7	75	1143112	111115	4	3	3-4-8-C	3
6LF6	6.3	25	25	2131516	166614	1	2	2-3-5-C	C
6LG6	6.3	7	70	2161561	166314	2	1	4-5-11-C	C
6LV6	6.3	35	35	2131516	166614	1	2	2-3-5-C	C
6M5	6.3	25	20	3512164	611111	4	2	1-2-3-7	7
6ML4	6.3	77	77	4521166	111111	1	2	1-2-5	1
6MN8	6.3	56	57	2416161	616511	3	2	2-3-11	2
6MN8	6.3	56	57	2614161	615611	3	2	3-4-10	4
6MN8	6.3	56	57	2516141	516611	3	2	3-6-8	6
6M-P17	6.3	95	45	5121431	111111	2	2	1-2-5-6	5
6MQ8	6.3	75	75	4112111	151111	2	2	1-9-8	1
6MQ8	6.3	49	13	1532141	111111	2	3	2-3-6-7	6
6MU8	6.3	71	71	1531241	666666	2	2	2-3-6-7	6
6MU8	6.3	71	71	4111211	151111	2	2	1-8-9	1
6N3	6.3	0	27	6612166	641111	4	1	3-9	9
6N4	6.3	7	25	5121366	111111	4	3	1-2	5
6N5	6.3	7	87	2414111	111111	4	3	2-3-4-5	2
6N5	6.3	7	87	2114111	111111	4	3	2	2
6N6	6.3	65	0	1244511	111111	4	2	3-4-5-8	3
6N8	6.3	27	72	3512146	611111	2	3	1-2-3-6-7-8	6
6N8	6.3	7	25	3512146	611111	4	6	7-8	7-8
6P5	6.3	7	74	1231511	111111	3	3	3-5-8	3
6P7	6.3	35	52	1214335	111115	3	3	4-5-6-7-8-C	4
6P7	6.3	35	93	1214335	111115	3	3	6	6
6Q4	6.3	7	88	5612116	641111	4	2	1-3-9	9
6Q5	6.3	0	70	1231111	111111	3	1	3	3
6Q7	6.3	7	85	1146612	111115	2	4	3-8-C	3
6Q7	6.3	0	25	1165512	111116	1	4	4-5-8	4-5
6Q11	6.3	79	70	2111111	654111	2	2	4-9-10	10
6Q11	6.3	7	60	2111415	111111	1	5	5-6-7	5
6Q11	6.3	7	60	2411111	111511	1	5	2-3-11	2
6R3	6.3	0	6	6662166	641111	1	2	9-C	9
6R6	6.3	17	42	1231411	111115	4	3	3-4-8-C	5
6R7	6.3	7	0	1146612	111115	4	3	3-8-C	3
6R7	6.3	7	25	1165512	111116	4	6	4-5-8	4-5
6R8	6.3	55	16	6612161	531111	3	3	1-2-3-6-7-8	9
6RA6	6.3	70	70	1562166	641111	1	2	1-2-9	9
6RA9	6.3	95	70	1512116	141111	1	2	1-2-9	9
6RB11	6.3	96	100	3152161	141111	1	2	1-3-7-9	9
6S2	6.3	0	58	1216661	611114	2	3	C	C
6S7	6.3	23	25	1241311	111115	3	3	3-4-8-C	3
6S8	6.3	7	20	6166132	111115	4	5	1-2-3-4-5-C	6
6SB7	6.3	7	75	1233511	111111	4	3	1-5-6-8	3
6SB7	6.3	7	3	1233511	111111	4	3	4	4
6SB7Y	6.3	7	75	1143512	111111	4	3	3-4-5-6	3
6SD7	6.3	7	55	1215131	411111	4	3	3-4-5-6	8
6SF7	6.3	61	93	1513641	211111	3	2	2-3-6	6
6SF7	6.3	7	20	1616561	211111	4	6	3-5	5
6SR7	6.3	7	98	1516641	211111	4	2	2-3-6	6
6SR7	6.3	7	25	1615561	211111	4	6	3-4-5	4-5

TUBE	FIL	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
6SS7	6.3	25	19	6115132	411111	3	3	4-5-6-8	8
6ST7	6.3	7	0	1516642	111111	4	3	2-3-4-5	6
6ST7	6.3	7	27	1516642	111111	4	6	4-5	4-5
6SU7	6.3	7	38	5415412	111111	4	4	1-3-4-6	2-5
6SZ7	6.3	7	89	1516632	111111	4	4	2-3-4-5	6
6SZ7	6.3	7	30	1516632	111111	4	6	4-5	4-5
6T4	6.3	35	71	4521166	111111	2	2	1-2-5	1
6T7	6.3	7	85	1246611	111115	2	4	4-5-8-C	3
6T7	6.3	7	30	1246611	111115	4	6	4-5	4-5
6U4	6.3	0	71	1111312	111111	4	1	3-5	5
6U5	6.3	7	87	2454111	111111	1	4	2-3-5	2
6U6GT	6.3	7	94	6143562	111111	4	1	3-4-5-8	3
6U7	6.3	27	30	1243111	111115	3	3	5-8-C	3
6V4	6.3	0	79	5112113	111111	4	1	1-3-7	7
6V4	6.3	0	79	3112111	111111	4	1	1	1
6V5	6.3	36	90	1133512	111111	4	1	3-4-5	3
6V7	6.3	22	28	1246611	111115	2	3	3-4-5-8-C	3
6V7	6.3	7	22	1246611	111115	4	6	4-5	4-5
6V8	6.3	7	70	4611256	661111	2	4	1-3-6	1
6V8	6.3	74	0	6511266	651111	4	6	2-3-9	2-9
6V8	6.3	7	75	6661265	161111	4	6	7-8	7
6W5	6.3	0	50	1241411	111111	2	2	3-5-8	5
6W5	6.3	0	40	1241411	111111	2	2	3	3
6W7	6.3	7	50	1241311	111115	2	4	3-4-8-C	3
6Y5	6.3	0	83	2151311	111111	4	1	3-4-5	5
6Y5	6.3	0	83	2131111	111111	4	1	3	3
6Z4	6.3	0	83	1461211	111111	4	1	2-4	2
6Z4	6.3	0	83	1641211	111111	4	1	3-4	3
6Z5	12.6	0	81	6251311	111111	4	1	3-4-5	5
6Z5	12.6	0	81	6231111	111111	4	1	3	3
7A4	7.5	35	17	1411151	211111	2	3	2-6-7	2
7A5	7.5	66	93	1436651	211111	3	1	2-3-6-7	2
7A7	7.5	25	15	1431151	211111	2	4	2-3-6-7	2
7AB7	6.3	14	84	3241561	611111	3	3	1-3-4-5-8	3
7AD7	6.3	20	50	2411351	111111	4	2	2-3-6-7	2
7AF7	7.5	34	14	1666541	211111	3	3	5-6-7	6
7AF7	7.5	34	14	1145666	211111	3	3	2-3-4	3
7AH7	6.3	7	54	2441651	111111	4	3	2-3-6-7	2
7AJ7	6.3	14	18	2431651	111111	2	4	2-3-6-7	2
7AK7	7.5	7	65	1431151	211111	4	2	2-3-6-7	2
7AN7	6.3	7	22	1542151	641111	2	3	1-2-3-6-7	3-9
7B4	7.5	7	90	1411151	211111	2	4	2-6-7	2
7B5	7.5	7	54	1431151	211111	4	2	2-3-6-7	2
7B6	7.5	7	22	1456661	211111	2	5	2-3-7	2
7B6	7.5	7	25	1666551	211111	2	6	5-6-7	5-6
7B8	7.5	48	9	1435111	211111	2	4	2-3-4-7	2
7C4	6.3	0	75	2113111	111111	1	3	4-7	4
7DJ8	7.5	50	50	6661245	111111	2	2	6-7-8	6
7DJ8	7.5	50	50	4511266	611111	2	2	1-2-3	1
7E5	6.3	16	60	5241666	111111	2	3	1-3-4	3
7E6	6.3	7	25	2456661	111111	4	6	2-3-4-6-7	5-6
7E6	6.3	7	0	2456661	111111	4	3	2	2
7E7	6.3	37	40	2466351	111111	3	3	2-3-4-5-6-7	2-1
7E7	6.3	7	30	2466351	111111	4	6	3-4	3-4
7ES8	7.5	7	60	6661245	111111	2	2	6-7-8	6
7ES8	7.5	7	60	4511266	611111	2	2	1-2-3	1
7EY6	7.5	15	60	6143562	111111	4	2	3-4-5-8	3

TUBE	FIL.	GR.	PL.	LEVERS		V	S	LEAK	MERIT
7F8	7.5	7	50	6166142	511111	4	3	5-6-8	6
7F8	7.5	7	50	5141662	611111	4	3	1-3-4	3
7FC7	7.5	77	85	6661251	641111	3	2	6-7-9	9
7FC7	7.5	77	85	1541266	661111	3	2	1-2-3	3
7G7	6.3	7	45	2431651	111111	4	3	2-3-6-7	2
7G8	6.3	7	75	2435514	111111	4	3	2-3-4-5-6-7	2-7
7H7	7.5	30	14	1431151	211111	3	3	2-3-6-7	2
7J7	7.5	30	0	1145111	211111	2	4	3-4-7	3
7J7	7.5	30	0	2435351	111111	2	4	2-5-6-7	2
7L7	7.5	7	82	2431651	111111	4	3	2-3-6-7	2
7Q7	7.5	7	80	1435111	211111	4	3	2-3-4-7	2
7R7	7.5	17	62	1466351	211111	3	3	2-5-6-7	2
7R7	7.5	7	25	1655661	211111	4	6	3-4-7	3-4
7S7	7.5	60	30	1145111	211111	2	4	3-4-7	3
7S7	7.5	60	70	1411351	211111	2	3	2-5-6-7	2
7T7	6.3	50	0	2431651	111111	3	3	2-3-6-7	2
7V7	7.5	30	10	1431151	211111	3	3	2-3-6-7	2
7W7	7.5	14	4	1431156	211111	3	3	2-3-4-6	2
7X6	6.3	0	74	2351631	111111	4	1	2-3-6-7	6
7X6	6.3	0	74	2121611	111111	4	1	3	3
7X7	7.5	7	50	1451666	211111	4	4	2-3-4	2
7X7	7.5	7	0	1661566	211111	4	6	4-5	5
7X7	7.5	7	0	1666651	211111	4	6	6-7	6
7Z4	7.5	0	94	1141161	211111	4	1	3-7	3
7Z4	7.5	0	94	1161141	211111	4	1	6-7	6
8A8	7.5	7	95	4112111	151111	2	2	1-8-9	1
8A8	7.5	67	25	1532141	111111	2	3	2-3-6-7	6
8AC10	7.5	70	75	2411111	111511	3	2	2-3-11	2
8AC10	7.5	70	75	2111415	111111	3	2	5-6-7	5
8AC10	7.5	70	75	2111111	154111	3	2	4-9-10	10
8AL9	7.5	9	75	2111514	166611	2	3	5-6-7	7
8AL9	7.5	72	40	2411666	113511	2	2	2-9-10-11	2
8BN11	7.5	80	85	2153411	111111	3	2	2-3-4-5	5
8BN11	7.5	80	85	2111115	131411	3	2	7-8-9-11	11
8BQ7	9.0	7	43	3512135	111111	4	3	2-3-7-8	1-6
8CB11	9.0	70	85	2436511	111111	3	2	2-3-6	2
8CB11	9.0	70	85	2111116	435111	3	2	8-9-10-11	8
8DX8	7.5	30	55	5412111	111111	2	3	1-2-3	2
8DX8	7.5	30	20	1112141	531111	2	3	6-7-8-9	6
8GV8	7.5	15	80	4511266	661111	4	2	1-2-3	1
8GV8	7.5	15	60	6661243	151111	1	3	6-7-8-9	6
8HG8	7.5	30	40	1561266	431111	2	3	1-2-8-9	8
8HG8	7.5	93	90	1661254	661111	1	2	1-6-7	7
8JK8	7.5	95	70	6661245	111111	1	3	6-7-8	6
8JK8	7.5	53	100	4511266	611111	3	2	1-2-3	1
8JL8	7.5	53	100	1541266	661111	3	2	1-2-3	3
8JL8	7.5	95	40	6661215	341111	3	2	6-7-8-9	9
8JT8	7.5	42	61	1541266	661111	2	4	1-2-3	3
8JT8	7.5	77	85	6661215	341111	3	2	6-7-8-9	9
8K11	7.5	25	25	2111111	154111	2	3	4-9-10	10
8K11	7.5	25	25	2111415	111111	2	4	5-6-7	5
8K11	7.5	22	22	2411111	111511	2	4	2-3-11	2
8KR8	7.5	70	75	1542166	661111	2	2	1-2-3	3
8KR8	7.5	25	40	6662115	341111	3	2	6-7-8-9	9
8KS8	7.5	89	84	1541266	661111	1	3	1-2-3	3
8KS8	7.5	85	70	6661215	341111	3	2	6-7-8-9	9
8LE8	7.5	75	40	4612166	351111	2	3	1-3-8-9	1
8LE8	7.5	80	40	6612146	351111	2	3	3-6-8-9	6

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
8LS6	7.5	73	79	1512114	361111	2	2	1-2-3-7-8	7
8LT8	7.5	70	75	1342111	151111	3	2	1-2-3-9	3
8LT8	7.5	70	97	6342161	651111	2	6	6-7-8	6-8
8LX8	7.5	79	75	1532141	111111	3	2	2-3-6-7	6
8LX8	7.5	74	75	4112111	151111	3	2	1-8-9	1
8MD8	7.5	40	40	4662161	651111	3	2	1-7-9	1
8MD8	7.5	40	40	6462161	561111	3	2	2-7-8	2
8MD8	7.5	40	40	6642151	661111	3	2	3-6-7	3
8MU8	9.0	71	71	1531241	661111	2	2	2-3-6-7	6
8MU8	9.0	71	71	4111211	151111	2	2	1-8-9	1
8SN7	7.5	7	6	5415412	111111	3	3	1-3-4-6	2-5
9AH9	9.0	40	50	2541111	111111	3	2	2-3-4	3
9AH9	9.0	40	50	2111561	361411	2	2	5-7-8-11	11
9AK8	9.0	17	82	6612161	541111	2	3	1-2-3-7-8	9
9AK8	9.0	0	98	4612161	541111	1	1	1-2	1-2
9AK10	9.0	70	70	2111415	111111	2	2	5-6-7	5
9AK10	9.0	70	70	2411111	111511	2	2	2-3-11	2
9AK10	9.0	70	70	2111111	154111	2	2	4-9-10	10
9BJ11	9.0	54	25	2431146	666611	2	3	2-3-5	2
9BJ11	9.0	30	88	2666664	131511	2	3	7-9-10	7
9BR8	9.0	22	70	5411266	661111	4	2	1-2-3	2
9BR8	9.0	25	98	6661243	151111	4	2	6-7-8-9	6
9CG8A	9.0	10	30	5411266	661111	2	3	1-2-3	2
9CG8A	9.0	60	5	6611243	151111	3	3	3-6-7-9	6
9DZ8	9.0	7	60	6151243	661111	2	2	2-3-6-7	6
9DZ8	9.0	12	70	5661266	141111	2	4	1-8-9	9
9GH8	9.0	42	40	6531241	661111	2	3	2-3-6-7	6
9GH8	9.0	17	17	4661266	151111	2	3	1-8-9	1
9KG6*	9.0	50	50	5632166	611114	2	1	1-3-9-C	C
*Must use magnoval adapter.									
9MN8	9.0	56	57	2416161	616511	3	2	2-3-11	2
9MN8	9.0	56	57	2614161	615611	3	2	3-4-10	4
9MN8	9.0	56	57	2516141	516611	3	2	3-6-8	6
9RA6	9.0	70	70	1562166	641111	1	2	1-2-9	9
10	7.5	7	5	2351111	111111	4	3	2-3	2
10AF11	9.0	40	50	1411111	113521	3	2	2-9-10-11	2
10AF11	9.0	65	65	1111151	411121	3	2	5-6-8	8
10AF11	9.0	80	90	1154111	111121	2	2	3-4-7	4
10DA7	9.0	100	25	6661245	161111	3	2	6-7-8	6
10DA7	9.0	37	21	4651266	611111	3	3	1-3-9	1
10FD7	9.0	60	65	1112145	111111	2	3	6-7-8	6
10FD7	9.0	10	40	4562111	111111	1	2	1-2-9	1
10FR7	9.0	100	90	1112145	111111	3	1	6-7-8	6
10FR7	9.0	42	61	4562111	111111	1	4	1-2-9	1
10LM8	9.0	72	72	6531241	661111	3	2	2-3-6-7	6
10LM8	9.0	40	50	4661266	151111	3	2	1-8-9	1
10LY8	9.0	40	49	6661215	341111	2	2	6-7-8-9	9
10LY8	9.0	67	20	1541266	661111	3	3	1-2-3	3
10T10	9.0	35	70	2111111	513411	3	2	8-9-10-11	11
10T10	9.0	35	70	2151134	111111	3	3	2-3-6-7	7
10Z10	9.0	50	85	2114135	111111	2	4	4-6-7-8	4
10Z10	9.0	55	55	2311111	141511	3	2	2-3-9-11	9
11AF9●	9.0	20	45	5134211	111111	1	4	1-2-3-4	4
11AF9	9.0	60	60	1111211	531114	1	3	7-8-9-C	C
●Must use Decal Adapter.									
11BM8	9.0	70	85	5662166	141111	3	2	1-8-9	9
11BM8	9.0	30	55	6152143	661111	2	2	2-3-6-7	6

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
11CA11	9.0	11	50	2114151 111111	2	3	4-5-6	4
11CA11	9.0	19	48	2451111 111111	2	3	2-3-7	2
11CA11	9.0	60	54	2111111 513411	2	2	8-9-10-11	11
11CK5	12.6	7	98	1512634 111111	4	1	1-2-6-7	7
11DS5	9.0	50	75	5121436 111111	1	3	1-2-5-6	5
11FY7	9.0	95	95	2151411 611111	1	1	3-5-7	5
11FY7	9.0	45	59	2111111 615411	1	4	9-10-11	11
11LT8	9.0	70	75	1342111 151111	3	2	1-2-3-9	3
11LT8	9.0	70	97	6342161 651111	2	6	6-7-8	6-8
11MS8	9.0	86	56	4512111 111111	1	3	1-2-3	1
11MS8	9.0	33	34	1112143 151111	2	2	6-7-8-9	6
12A	5.0	17	30	2351111 111111	2	3	2-3	2
12A4	12.6	7	65	1562116 131111	4	2	1-2	9
12A5	12.6	90	56	2435161 111111	2	2	2-3-4-5	3
12A6	12.6	7	54	6143562 111111	4	2	3-4-5-8	3
12A7	12.6	7	30	2331511 111115	3	3	2-3-4-5-6-C	2
12A7	12.6	0	30	2111311 111111	2	2	5	5
12A8GT	12.6	60	85	6141632 111115	2	3	3-6-8-C	C
12A8GT	12.6	60	0	6141532 111116	2	4	3-5-6-8	3
12AD5	12.6	15	50	3511246 611111	2	3	1-2-3-6	6
12AD7	12.6	7	95	6661245 161111	2	4	6-7-8	6
12AD7	12.6	7	95	4511266 661111	2	4	1-2-3	1
12AE7	12.6	10	75	6661245 161111	1	2	6-7-8	6
12AE7	12.6	7	40	4511266 661111	1	2	1-2-3	1
12AF11	12.6	40	50	1411111 113521	3	2	2-9-10-11	2
12AF11	12.6	65	65	1111151 411121	3	2	5-6-8	8
12AF11	12.6	80	90	1154111 111121	2	2	3-4-7	4
12AG6	12.6	7	73	5121431 111111	2	4	1-2-5-6-7	5
12AR11	12.6	15	1	1431511 111121	3	3	2-3-4-5-6	2
12AR11	12.6	15	1	1111111 435121	3	3	7-8-9-10-11	8
12AS5	12.6	7	25	1512634 111111	3	3	1-2-6-7	7
12B3	12.6	0	50	6461266 661111	4	1	2-C	2
12B7	12.6	25	15	2431651 111111	3	3	2-3-6-7	2
12BD6	12.6	8	34	5112431 111111	3	3	1-5-6-7	5
12BJ3	12.6	0	69	2114661 666111	2	1	4-7	4
12BK5	12.6	44	30	4151216 311111	4	2	1-3-6-9	1
12BK6	12.6	7	90	5121663 111111	4	4	1-2-5-6	7
12BK6	12.6	7	20	5121663 111111	4	6	5-6	5-6
12BN6	12.6	7	50	1512466 111111	4	4	1-2-5	5
12BT6	12.6	7	80	5121663 111111	4	4	1-2-5-6	7
12BT6	12.6	7	20	5121663 111111	4	6	5-6	5-6
12BU6	12.6	7	0	5121664 111111	4	3	1-2-5-6	7
12BU6	12.6	7	25	5121664 111111	4	6	5-6	5-6
12BX6	12.6	7	88	1561214 311111	2	3	1-2-7-8	7
12C8	12.6	26	22	1141632 111115	4	3	3-6-8-C	3
12C8	12.6	7	25	1165562 111116	4	6	4-5-8	4-5
12CJ5	12.6	90	84	3512166 661114	2	1	1-2-3	C
12CM6	12.6	25	52	3651261 641111	4	2	1-3-7-9	9
12CN5	12.6	7	75	1512634 111111	1	3	1-2-6-7	7
12CS6	12.6	11	79	5121431 111111	2	4	1-2-5-6-7	5
12CT3	12.6	0	93	6462166 611111	1	1	2-9	2
12CX6	12.6	7	84	5112431 111111	1	3	1-5-6-7	5
12DF7	12.6	7	60	6661245 161111	1	5	6-7-8	6
12DF7	12.6	13	75	4511266 661111	2	4	1-2-3	1
12DJ8	12.6	65	65	6661245 111111	2	2	6-7-8	6
12DJ8	12.6	52	52	4511266 611111	2	2	1-2-3	1
12DK5	12.6	60	30	1511264 361111	1	3	1-2-7-8	7
12DM5	12.6	7	94	1512634 111111	4	1	1-2-6-7	7

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TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
12DQ4	12.6	0	35	6611411 211111	4	1	3-5	5
12DU7	12.6	80	93	1131236 661111	2	2	1-2-3-6	6
12DU7	12.6	50	50	6161265 651111	2	5	2-7-9	7-9
12DW5	12.6	7	50	3651261 641111	2	2	1-3-7-9	9
12DW8	12.6	7	20	4511266 661111	1	4	1-2-3	1
12DW8	12.6	7	38	6661245 161111	1	5	6-7-8	6
12DW8	12.6	7	38	6661266 151111	1	5	8-9	9
12DY8	12.6	7	72	5132141 451111	1	2	1-2-3-6-7-8	6
12DY8	12.6	7	95	5132141 451111	1	3	8	8
12DZ7	12.6	20	90	5143662 111111	2	2	1-3-4-8	3
12DZ7	12.6	20	90	6163542 111111	2	2	4-5-6-8	6
12DZ8	12.6	7	30	6151243 661111	2	4	2-3-6-7	6
12DZ8	12.6	7	50	5661266 141111	2	2	1-8-9	9
12E5	12.6	7	73	1231511 111111	4	3	5-8	3
12EC8	12.6	7	70	5411266 661111	1	3	1-2-3	2
12EC8	12.6	7	90	6661243 151111	1	4	6-7-8-9	6
12EG6	12.6	7	7	5121431 111111	1	5	1-2-5-6-7	5
12EL6	12.6	7	25	5412661 111111	3	4	1-2-7	2
12EL6	12.6	7	35	5312661 111111	4	6	5-6-7	5-6
12EM6	12.6	7	40	5131246 661111	1	3	1-2-3-6	6
12EM6	12.6	7	60	5132131 161111	4	6	2-9	9
12EW6	12.6	7	94	1243511 111111	4	1	3-4-5-8	3
12EZ6	12.6	7	100	5112431 111111	1	3	1-5-6-7	5
12F5	12.6	7	94	1213111 111115	4	4	8-C	4
12F5GT	12.6	7	94	1114112 111115	4	4	4-8-C	4
12FA6	12.6	0	65	5121431 111111	4	5	1-2-5-6-7	5
12FB5	12.6	7	30	6511264 631111	2	2	2-3-7-9	7
12FQ7	12.6	31	31	4512111 111111	2	3	1-2-3	1
12FQ7	12.6	31	31	1112145 111111	2	3	6-7-8	6
12FT6	12.6	40	50	5121664 111111	2	5	1-2-7	7
12FT6	12.6	40	50	1121561 111111	4	5	2-5	5
12FT6	12.6	40	50	1121651 111111	4	5	2-6	6
12G4	12.6	30	20	3121651 111111	3	3	6-7	1
12G8	12.6	7	25	4151266 661111	1	4	1-2-3	1
12G8	12.6	7	25	6661241 561111	1	2	6-7-8	6
12G11	12.6	20	46	1151143 111121	2	4	2-3-4-6-7	6
12G11	12.6	20	46	1111111 513421	2	2	8-9-10-11	11
12GA6	12.6	7	85	5121431 111111	1	4	1-2-5-6-7	5
12GE5	12.6	15	25	2351664 666611	2	2	2-3-4-7	7
12GK17	12.6	0	73	6611412 111111	2	1	3-5	5
12GN6	12.6	53	100	5112436 111111	3	2	1-2-5-6	5
12GV5	12.6	85	90	2131516 166614	2	1	3-4-5-C	C
12H4	12.6	52	16	3612651 111111	3	3	6-7	1
12H6	12.6	65	0	6141612 611111	2	5	3-4	3
12H6	12.6	0	77	6166412 111111	1	3	5-8	5
12HB25*	12.6	65	78	5612136 111114	2	1	1-6-9-C	C
*Must use magnoval adapter.								
12HU8	12.6	55	55	3542161 661111	3	2	1-2-3-6-7	3
12HU8	12.6	55	55	6662151 431111	3	2	6-7-8-9	8
12J5	12.6	49	30	6146562 111111	2	3	3-5-8	3
12J7	12.6	45	30	6143112 111115	2	3	3-4-8-C	3
12J8	12.6	15	95	5131246 661111	1	2	1-2-3-6	6
12J8	12.6	0	70	6661261 551111	1	3	7-8-9	8-9
12JM6	12.6	85	90	2131566 666614	2	1	2-3-5-C	C
12JQ6	12.6	19	42	4632166 511111	2	2	3-8-9	1
12JQ6	12.6	19	18	4632166 511111	4	6	3-8-9	6
12JS6	12.6	65	65	2131516 166614	2	1	2-3-5-C	C

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
12JT6	12.6	70	70	5312116 641111	2	2	2-3-9	9
12JZ8	12.6	40	95	2411111 115111	1	3	2-10-11	2
12JZ8	12.6	88	99	2114156 311111	2	1	4-6-8-9	4
12K8	12.6	7	81	1143562 111111	4	3	3-4-5-8	3
12K8	12.6	7	64	1166542 111116	4	3	5-6-8	6
12L8	12.6	7	39	5154321 411111	4	3	1-2-3-4-5-8	4-8
12Q7	12.6	7	25	1165612 111111	4	6	4-8	4
12Q7	12.6	7	25	1166512 111111	4	6	5-8	5
12Q7	12.6	7	85	1146612 111115	2	4	3-8-C	3
12S8	12.6	7	20	6166132 111115	4	5	*	6
* = 1-2-3-4-5-6								
12SF5	12.6	7	75	6151411 211111	4	4	2-3-5	5
12SF7	12.6	61	93	1513641 211111	3	2	2-3-6	6
12SF7	12.6	7	20	1616561 211111	4	6	3-5	5
12SG7	12.6	31	7	1115632 411111	3	3	3-4-6-8	8
12SH7	12.6	50	97	1115632 411111	3	2	3-4-6-8	8
12SR7	12.6	7	98	1516641 211111	4	2	2-3-6	6
12SR7	12.6	7	25	1615561 211111	4	6	3-4-5	4-5
12SV6	12.6	21	98	1244511 111111	4	1	3-4-5-8	3
12SV7	12.6	21	98	1244511 111111	4	1	3-4-5-8	3
12SW7	12.6	7	0	6516642 111111	4	3	2-3-4-5	6
12SW7	12.6	7	30	6516642 111111	4	6	4-5	4-5
12SX7	12.6	52	20	5315312 111111	3	3	1-3-4-6	2-5
12SY7	12.6	7	72	1243111 111111	4	3	1-5-6-8	3
12SY7	12.6	7	35	1243111 111111	4	3	4	4
12U7	12.6	14	100	6661245 161111	1	6	6-7-8	6
12U7	12.6	14	100	4511266 661111	1	6	1-2-3	1
12Z3	12.6	0	15	2311111 111111	2	2	2-3	2
13DE7	12.6	75	75	1112451 111111	3	2	6-7-8	6
13DE7	12.6	40	40	4562111 111111	3	1	1-2-9	1
13FR7	12.6	100	90	1112145 111111	2	3	6-7-8	6
13FR7	12.6	42	61	4562111 111111	1	2	1-2-9	1
13JZ8	12.6	91	95	2114165 311111	2	1	4-7-8-9	4
13JZ8	12.6	66	68	2411111 115111	1	3	2-10-11	2
14A4	12.6	35	17	2411651 111111	2	3	2-6-7	2
14A5	12.6	27	38	2441151 111111	3	2	2-3-6-7	2
14A7	12.6	25	15	1431151 211111	3	3	2-3-6-7	2
14AF7	12.6	35	14	1666541 211111	3	3	6-7-8	7
14AF7	12.6	35	14	1145666 211111	3	3	2-3-4	3
14B6	12.6	7	22	1456661 211111	2	5	2-3-7	2
14B6	12.6	7	25	1666551 211111	4	6	5-6-7	5-6
14B8	12.6	15	30	2445311 111111	3	3	2-4-5-7	2
14B8	12.6	10	85	2445311 111111	3	3	3	3
14C5	12.6	30	92	1436651 211111	4	1	2-3-6-7	2
14C7	12.6	13	25	1431151 211111	2	4	2-3-6-7	2
14E6	12.6	7	0	2456661 111111	4	3	2-3-5-6-7	2
14E6	12.6	7	25	2456661 111111	4	6	5-6	5-6
14E7	12.6	37	40	2466351 111111	3	3	2-3-4-5-6-7	2
14E7	12.6	7	30	2466351 111111	4	6	3-4	3-4
14F8	12.6	7	50	6166142 511111	4	3	5-6-8	6
14F8	12.6	7	50	5141662 611111	4	3	1-3-4	3
14H7	12.6	30	14	2431651 111111	3	3	2-3-6-7	2
14J7	12.6	49	100	2435351 111111	4	2	4-6-1	2
14J7	12.6	40	100	2435351 111111	2	3	3	3
14Q7	12.6	7	80	1435111 211111	4	3	2-3-4-7	2
14R7	12.6	17	62	1466351 211111	4	3	2-5-6-7	2
14R7	12.6	7	25	1655661 211111	4	6	3-4-7	2-3

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TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
14S7	12.6	60	30	2435351 111111	2	4	2-3-4-6-7	2
14S7	12.6	60	76	2435351 111111	2	3	3	3
14W7	12.6	30	10	2431156 111111	3	3	2-3-4-6	2
14X7	12.6	20	60	2451661 111111	4	3	2-3-4-5-6	2
14X7	12.6	0	0	2451661 111111	4	6	5-6	5-6
14Y4	12.6	0	84	2151131 111111	4	1	3-6-7	6
14Y4	12.6	35	84	2151111 111111	4	3	3	3
15	2.0	25	55	2431111 111115	2	4	2-3-4-C	2
15A8	12.6	7	80	1255311 311113	2	4	1-3-4-5-6	C
15A8	12.6	7	40	1255311 311113	2	4	8	8
15EW7	12.6	70	70	1112145 111111	1	3	6-7-8	6
15EW7	12.6	60	60	4562111 111111	2	1	1-2-9	1
15LE8	12.6	75	40	4612166 351111	2	3	1-3-8-9	1
15LE8	12.6	80	40	6612146 351111	2	3	3-6-8-9	6
15MF8	12.6	26	87	6661261 541111	1	4	7-8-9	9
15MF8	12.6	0	100	1661246 661111	1	1	1-6	6
15MF8	12.6	0	100	6411266 661111	1	1	2-3	2
16A8	12.6	7	65	5662166 141111	2	4	1-8-9	9
16A8	12.6	7	90	6152143 661111	2	2	2-3-6-7	6
16AK9	7.5	66	75	1661621 665411	1	3	7-10-11	11
16AK9	7.5	66	67	1451621 666611	1	3	2-3-7	2
16AK9	7.3	90	95	1661421 536611	1	2	5-7-8-9	5
16BQ11	12.6	50	40	2431511 111111	2	3	2-3-5-6	2
16BQ11	12.6	50	40	2111111 435111	2	3	8-9-10-11	8
16BX11	12.6	70	90	2531111 111411	3	2	2-3-10-11	11
16BX11	12.6	70	50	2111541 111111	3	2	4-5-6	6
16BX11	12.6	70	50	2111114 511111	3	2	7-8-9	7
16C-B28	12.6	75	75	1131511 161624	1	2	2-3-5-C	C
16HB5	12.6	75	85	2351664 666611	2	1	2-3-4-7	7
16LU8	12.6	73	73	2411111 115111	2	2	2-10-11	2
16LU8	12.6	90	90	2114156 311111	2	1	4-6-8-9	4
16MY8	12.6	73	73	2411111 115111	2	2	2-10-11	2
16MY8	12.6	90	90	2114156 311111	2	1	4-6-8-9	4
17AV5	19	10	80	5111412 311111	4	1	1-3-5-8	5
17BR6	19	0	50	6661266 641111	4	1	9-C	9
17BW3	12.6	0	66	2114661 666111	2	1	4-7	4
17C8	19	20	65	3511246 611111	2	3	1-2-3-6	6
17C8	19	0	30	6611265 561111	2	3	3-7	7
17C8	19	0	30	6611266 511111	2	3	3-8	8
17C9A	19	36	15	5342111 111111	2	3	1-2-3-10	3
17C9A	19	36	15	1112115 341111	2	3	6-7-8-9	9
17CA5	19	12	36	1512534 111111	4	2	1-2-6-7	7
17CJ5	19	90	84	3512166 661114	2	1	1-2-3-C	C
17CT3	12.6	0	64	6462166 611111	2	1	2-9	2
17DQ4	19	0	35	6611411 211111	4	1	3-5	5
17EW8	12	7	20	4512145 111111	3	3	2-3-7-8	1-6
17GE5	19	15	25	2351664 666611	2	2	2-3-4-7	7
17GU5	19	55	25	5112431 111111	2	3	1-5-6-7	5
17H3	19	0	75	1141211 611111	2	1	1-3	3
17HC8	19	7	50	6151243 661111	4	2	2-3-6-7	6
17HC8	19	7	90	5661266 141111	4	3	1-8-9	9
17JF6	12.6	70	80	3512166 661114	2	1	1-2-3-C	C
17JQ6	12.6	13	54	4632165 611111	2	2	1-3-7-9	1
17L6GT	19	35	82	6143562 111111	4	1	3-4-5-8	3
17LD8	19	78	96	1511243 111111	2	3	2-3-6-7	6
17LD8	19	78	96	1111211 451111	2	3	1-8-9	8
17R5	19	7	70	1512634 111111	2	2	1-2-6-7	7
17W6GT	19	15	90	6143562 111111	4	1	3-4-5-8	3

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
17Y9●	12.6	72	72	1111211	531114	1	3	7-8-9-C	C
17Y9	12.6	85	70	5134211	111111	1	3	1-2-3-4	4
●Must use decal adapter.									
17Z3	19	0	20	6661266	641111	1	2	9-C	9
18	12.6	7	5	2442111	111111	4	3	2-3-4-5	2
18A5	19	7	65	5111412	311111	2	2	1-3-5-8	5
18AJ10	19	57	57	2151134	111111	1	4	2-3-6-7	7
18AJ10	19	92	30	2111111	813411	2	2	8-9-10-11	11
18DZ8	19	7	70	6151243	661111	2	2	2-3-6-7	6
18DZ8	19	10	90	5661266	141111	2	4	1-8-9	9
18GE6	19	7	95	5121664	111111	1	4	1-2-7	7
18GE6	19	50	50	1121561	111111	4	5	5	5
18GE6	19	50	50	1121651	111111	4	5	6	6
18HB8	19	45	50	5141266	661111	1	4	1-2-3	3
18HB8	19	45	50	6661234	151111	1	4	6-7-8-9	7
19	2.0	50	71	2355311	111111	3	3	2-3-4-5	2-5
19AQ5	19	67	97	5112436	111111	4	1	1-2-5-6	5
19BG5	19	85	90	1211511	311114	4	1	3-5-8-C	C
19C8	19	7	40	6612161	531111	2	5	1-2-3-6-7-8	9
19C8	19	7	0	6612161	531111	4	6	6-7-8-9	1-2-6
19CG3	19	0	60	2114661	666111	2	1	4-7	4
19D8	19	12	40	3511243	451111	3	3	1-2-3-6-8-9	6
19D8	19	10	30	3511243	451111	2	3	8	8
19DE7	19	11	70	1112145	111111	2	3	6-7-8	6
19DE7	19	70	33	4562111	111111	1	2	1-2-9	1
19EW7	19	70	70	1112145	111111	1	3	6-7-8	6
19EW7	19	60	60	4562111	111111	2	1	1-2-9	1
19FL8	19	85	92	3512146	611111	2	2	1-2-3-6	6
19FL8	19	0	93	6612164	661111	1	2	3-7	7
19FL8	19	0	100	6612166	461111	1	2	3-8	8
19FX5	19	55	60	1512634	111111	2	2	1-2-6-7	7
19V8	19	7	70	4611256	661111	2	4	1-3-6	1
19V8	19	14	0	6511266	651111	4	6	2-3-9	2-9
19V8	19	7	75	6661265	161111	4	6	7-8	7
20	3.8	46	56	2351111	111111	2	3	2-3	2
20EQ7	19	61	22	1511234	661111	2	3	2-3-6-7	7
20EQ7	19	65	50	6611266	511111	3	5	3-8	8
20EW7	19	70	70	1112145	111111	1	3	6-7-8	6
20EW7	19	60	60	4562111	111111	2	1	1-2-9	1
20LF6	19	25	25	2131516	166614	1	2	2-3-5-C	C
21A6	19	61	93	6512166	311114	2	1	2-3-9	C
21HB5	19	59	97	1351164	666611	2	1	2-3-4-7	7
21HD5	19	85	86	1151364	666621	3	1	3-4-7	7
21JS6	19	65	65	2131516	166614	2	1	2-3-5-C	C
21LG6	19	7	70	2161561	166314	2	1	4-5-11-C	C
21MY8	19	73	73	2411111	115111	2	2	2-10-11	2
21MY8	19	90	90	2114156	311111	2	1	4-6-8-9	4
22BH9	19	0	40	1611214	111111	4	1	7-9	7
22KV6	19	70	70	3512166	141111	2	1	1-2-3-9	9
23JS6	19	65	65	2131516	166614	2	1	2-3-5-C	C
24A	2.5	7	85	2431111	111115	4	3	2-3-4-C	2
24 BF11	25	52	70	2151134	111111	3	3	2-3-6-7	7
24 BF11	25	42	42	2111111	513411	2	2	8-9-10-11	11
24GA7	25	70	60	2365164	166111	3	1	2-4-5-7	7
24GA7	25	0	75	2111161	166411	2	1	8-11	11
24JE6	25	90	50	6512163	161114	2	1	2-3-7-C	C
24JZ8	25	40	35	2114156	311111	2	2	4-6-8-9	4
24JZ8	25	70	70	2411111	115111	3	2	2-10-11	2

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TUBE	FIL.	GR.	PL.	LEVERS		V	S	LEAK	MERIT
24IQ6	25	90	50	3512166	661111	4	2	1-2- <u>3</u> -C	C
25A6	25	7	32	1233511	111111	4	2	3-4- <u>5</u> -8	3
25A7	25	55	73	1233551	111111	2	2	<u>1</u> -3-4- <u>5</u> -6- <u>8</u>	3
25A7	25	0	75	1211131	111111	4	1	<u>6</u>	6
25AC5	25	84	0	1231511	111111	4	2	3-5-8	3-10
25B5	25	7	65	5112426	111111	2	2	1-2- <u>5</u> -6	5
25B6	25	7	46	1233511	111111	2	2	3-4- <u>5</u> - <u>8</u>	3
25B8	25	7	5	1233511	511115	4	3	*	3
*= <u>1</u> -3-4-5-6-8									
25B8	25	7	10	1233511	511115	2	5	<u>5</u>	C
25BK5	25	44	30	4151216	311111	4	2	1-3- <u>6</u> -9	1
25BR3	25	0	50	6661266	641111	4	1	9-C	9
25C6	25	7	90	1233511	111111	4	1	3-4- <u>5</u> -8	3
25CG3	25	0	65	2114661	666111	2	1	<u>4</u> -7	4
25CK3	25	0	60	1462166	611111	2	1	<u>7</u> -9	2
25CM3	25	0	91	6462166	611111	1	1	2- <u>9</u>	2
25CT3	25	0	64	6462166	611111	2	1	<u>2</u> -9	2
25CU6	25	90	90	1163562	111114	1	2	4- <u>5</u> - <u>8</u> -C	C
25DQ6	25	75	95	1163562	111114	2	1	4-5-8-C	C
25DT5	25	7	25	3651261	641111	2	2	1-3- <u>7</u> -9	9
25E5	25	7	15	6263511	111114	2	2	4-5-8	C
25HX5*	25	75	75	5162136	641111	1	2	1- <u>2</u> -6-9	9
*Must use magnoval adapter.									
25JQ6	25	13	54	4632165	611111	2	2	1-3-7-9	1
25JZ8	25	40	35	2114156	311111	2	2	4-6-8- <u>9</u>	4
25JZ8	25	70	70	2411111	115111	3	2	2-10- <u>11</u>	2
25N6	25	7	5	1244511	111111	4	2	3-4- <u>5</u> -8	3-4
25S	2.0	7	10	2366511	111111	2	5	2-3-4	2
25S	2.0	7	10	2366511	111111	4	6	3-4	3-4
25X6	25	0	75	1251311	111111	4	1	3-4- <u>5</u> -8	5
25X6	25	0	75	1231111	111111	4	1	3	3
25Y5	25	0	85	2511311	111111	4	1	2- <u>3</u> -4-5	5
25Y5	25	0	85	2311111	111111	4	1	2	2
25Z5	25	0	71	1416621	111111	4	1	2-3	2
25Z5	25	0	71	1661421	111111	4	1	4-5	5
25Z6	25	0	45	6141612	611111	4	1	<u>3</u> -4	3
25Z6	25	0	45	6166412	111111	4	1	5-8	5
26	1.4	7	50	2351111	111111	4	3	2- <u>3</u>	2
26A6	25	7	28	5121431	111111	3	3	1-2- <u>7</u>	5
26A7	25	7	78	5154321	411111	1	2	1-2-3-4-5-8	4-8
26AQ8	25	80	80	6662145	111111	2	2	6-7-8	6
26AQ8	25	80	80	4512166	611111	2	2	1-2- <u>3</u>	1
26BK6	25	7	90	5121663	111111	4	4	1-2- <u>5</u> -6	7
26BK6	25	7	20	5121663	111111	4	6	5- <u>6</u>	5-6
26C6	25	7	96	5121664	111111	4	2	1-2-5-6-7	7
26C6	25	7	25	5121664	111111	4	6	5- <u>6</u>	5-6
26D6	25	7	84	1121431	111111	4	3	<u>2</u> -5-6	7
26D6	25	7	44	1121431	111111	4	3	<u>6</u>	6
26E6	25	25	76	1243511	111111	4	1	3-4-5-8	3
26HU5	25	41	72	5131662	111114	2	1	2-6-C	C
26HV5	25	65	75	2531664	666611	3	2	2-3-4-7	7
26Z5	25	0	25	1112131	161111	2	2	1-6	6
26Z5	25	0	25	3112111	161111	2	2	1	1
27	2.5	7	66	2351111	111111	4	3	2- <u>3</u> -4	2
27LF6	25	25	25	2131516	166614	1	2	<u>2</u> -3- <u>5</u> -C	C
28D7	25	90	10	1666415	211111	1	3	5-6-7	5
28D7	25	90	10	1534616	211111	1	3	2- <u>3</u> -4-6	4
28G85	25	7	65	3651261	641111	3	1	1-3-7-9	9

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
28HD5	25	60	30	1151364	666621	2	2	3-4-7	7
29KQ6*	25	30	75	5632166	611114	2	1	1-3-9-C	C
	*Must use magnoval adapter.								
29LE6*	25	60	60	5632166	611114	1	2	1-3-9-C	C
	*Must use magnoval adapter.								
30	2.0	7	77	2351111	111111	4	3	2-3	2
30A5	25	7	54	1521634	111111	2	2	1-2-6-7	7
30CW5	25	7	50	6511264	631111	2	2	2-3-7-9	7
30HD5	25	40	80	1151364	666621	1	2	3-4-7	7
30HJ5	25	70	70	2156364	166611	2	1	2-3-5-7	7
30JZ6	25	52	79	2136511	116614	2	1	2-3-5-C	C
30KG6*	25	50	50	5632166	611114	2	1	1-3-9-C	C
	*Must use magnoval adapter.								
30M-P23	25	88	94	1521634	111111	2	1	1-2-6-7	7
30M-P27	25	86	94	1521634	111111	2	1	1-2-6-7	7
31	2.0	7	92	2351111	111111	4	2	2-3	2
31AL10	19	90	94	1664321	511111	1	2	4-5-7-8	4
31AL10	19	43	75	1451621	611111	1	3	2-3-7	2
31AL10	19	50	84	1111121	141511	1	3	9-10-11	9
31JS6	25	65	65	2131516	166614	2	1	2-3-5-C	C
31LQ6	25	60	70	3512166	661114	1	2	1-2-3-C	C
31LR8	25	70	73	1112111	451111	3	2	1-8-9	8
31LR8	25	25	25	6512143	111111	2	2	2-3-6-7	6
32	2.0	7	58	2431111	111115	2	4	2-3-C	2
32A8	25	70	85	5662166	141111	3	2	1-8-9	9
32A8	25	30	55	6152143	661111	2	2	2-3-6-7	6
32GA7	35	0	75	2111161	166411	2	1	8-11	11
32GA7	35	70	60	2365164	166111	3	1	2-4-5-7	7
32HQ7	35	0	70	2411166	116111	2	1	2-4	2
32HQ7	35	75	75	2111466	156311	2	1	5-8-9-11	5
33	2.0	73	65	2453111	111111	3	2	2-3-4	2
33HE7	25	0	98	2461166	116111	1	1	2-4	2
33HE7	25	20	82	2161466	156311	2	1	5-8-9-11	5
33JR6	25	50	52	3512166	641111	3	1	1-2-3-9	9
34	2.0	24	0	2431111	111115	2	4	2-3-C	2
34CD3	35	0	55	2664661	666611	2	1	4-7	4
34CM3	35	0	91	6462166	611111	1	1	2-9	2
35	2.0	28	51	2431111	111115	3	3	2-3-4-C	2
35A5	35	7	80	1436651	211111	2	2	2-3-6-7	2
35B5	35	90	38	5121336	111111	2	2	1-2-5-6	5
35CD6	35	85	76	1211511	311114	2	1	3-5-8-C	C
35HB8	35	75	30	5141266	661111	3	2	1-2-3	3
35HB8	35	30	75	6661234	151111	2	3	6-7-8-9	7
35Z3	35	0	40	1411111	211111	4	1	2-7	2
35Z6	35	0	72	1251311	111111	4	1	3-4-5-8	5
35Z6	35	0	72	1231111	111111	4	1	3	3
36	6.3	7	91	2431111	111115	4	3	2-3-4-C	2
36KD6	35	45	40	2131516	166614	2	1	2-3-5-C	C
37	6.3	26	39	2351111	111111	3	3	2-3-4	2
38	6.3	7	67	2441111	111115	4	2	2-3-4-C	2
39	6.3	21	64	2431111	111115	3	3	2-3-4-C	2
40KG6*	35	50	50	5632166	611114	2	1	1-3-9-C	C
	*Must use magnoval adapter.								
41	6.3	80	65	2435111	111111	3	2	2-3-4-5	2
42	6.3	30	65	2435111	111111	4	2	2-3-4-5	2
42EC4*	35	0	65	6412166	661111	2	1	2-C	2
	*Must use magnoval adapter.								
43	25	20	30	2335111	111111	3	2	2-3-4-5	2

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44	6.3	21	64	2431111	111115	3	3	2-3-4-C	2
45	2.5	7	44	2351111	111111	4	2	2-3	2
45Z3	50	0	78	2311161	111111	4	1	2-4	2
45Z5	50	0	70	1261311	111111	4	1	5-8	5
46	2.5	7	60	2353111	111111	4	2	2-3-4	2
47	2.5	7	54	2354111	111111	4	2	2-3 4	2
48	25	80	15	2355111	111111	4	2	2-3-4-5	2
49	2.0	7	66	2353111	111111	2	3	2-3-4	2
50	7.5	25	20	2351111	111111	4	2	2-3	2
50A5	50	7	66	1436651	211111	2	2	2-3-6-7	2
50AX6	50	0	70	6141612	611111	4	1	3-4	3
50AX6	50	0	70	6166412	111111	4	1	5-8	5
50BK5	50	44	30	4151216	311111	4	2	1-3-6-9	1
50C6	50	7	90	1233511	111111	4	1	3-4-5-8	3
50CA5	50	19	5	1512634	111111	4	2	1-2-6-7	7
50FA5	50	60	30	1512634	111111	2	3	1-2-6-7	7
50GY7	50	56	80	2111416	156311	2	1	5-8-9-11	5
50GY7	50	0	70	2411116	111111	2	1	2-4	2
50X6	50	0	45	1141166	211111	4	1	2-3	3
50X6	50	0	45	1661141	211111	4	1	6-7	6
50Y6	50	0	45	6141612	611111	4	1	3-4	3
50Y6	50	0	45	6166412	111111	4	1	5-8	5
50Z7	50	0	75	1251361	111111	4	1	3-4-5-8	5
50Z7	50	0	75	1231161	111111	4	1	3	3
51	2.0	28	51	2431111	111115	3	3	2-3-4-C	2
52	6.3	7	51	2453111	111111	4	2	2-3-4	2
53	2.5	16	10	2451541	111111	2	4	2-3-4-5-6	2-6
53HK7	50	0	56	2411166	116111	2	1	2-4	2
53HK7	50	62	62	2111466	156311	2	1	5-8-9-11	5
55	2.5	25	30	2366111	111115	3	3	2-3-4-5-6	2
55	2.5	7	25	2366111	111115	4	6	3-4	3-4
56	2.5	7	74	2351111	111111	4	3	2-3-4	2
57	25	15	45	2431111	111115	2	4	2-3-5-C	2
58	2.5	34	25	2431111	111115	3	3	2-3-5-C	2
58HE7	50	0	95	2461166	116111	1	1	2-4	2
58HE7	50	17	80	2161466	156311	2	1	5-8-9-11	5
59	2.5	50	35	2435111	111111	4	2	2-3-4-6	2
70L7	70	7	97	1233511	511111	4	1	1-3-4-6-8	3
70L7	70	0	70	1213561	311111	4	1	8	8
71A	5.0	7	38	2351111	111111	4	2	2-3	2
76	6.3	7	77	2351111	111111	4	3	2-3-4	2
77	6.3	7	98	2431111	111115	4	3	2-3-5-C	2
79	6.3	46	66	2451411	111115	3	3	2-3-4-5-C	5
79	6.3	46	66	2451111	111115	3	3	2	2
81	7.5	0	72	2411111	111111	4	1	2	2
82	2.5	0	76	2131111	111111	4	1	2-3	3
82	2.5	0	76	2311111	111111	4	1	2	2
83V	5.0	0	80	2131111	111111	4	1	2-3-4	3
83V	5.0	0	80	2311111	111111	4	1	2	2
84	6.3	0	83	1461211	111111	4	1	2-4	2
84	6.3	0	83	1641211	111111	4	1	3-4	3
85	6.3	35	34	2366111	111115	3	3	2-3-4-5-C	2
85	6.3	7	25	2366111	111115	4	6	3-4	3-4
85A2	25	0	50	4266666	111111	1	3	1-3	1
89	6.3	7	85	2431111	111115	4	2	2-3-5-C	2
108C1	0	0	67	4166666	111111	2	3	1	1
117P7	117	50	98	1235311	111111	3	1	4-5-6	3
117Z3	117	0	74	6121311	111111	4	1	5-6	5

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
117Z4	117	0	75	1211311 111111	4	1	5-8	5
150C2	117	0	10	2161666 111111	1	3	1	1
150C3	70	0	73	1211311 111111	4	2	5	5
VR150	70	0	73	1211311 111111	4	2	5	5
182B	5.0	7	55	2351111 111111	4	2	2-3	2
183B	5.0	7	23	2351111 111111	4	2	2-3	2
482B	5.0	7	55	2351111 111111	4	2	2-3	2
483	5.0	7	23	2351111 111111	4	2	2-3	2
484	2.8	17	61	2451111 111111	2	3	3-4	2
485	2.8	17	61	2451111 111111	2	3	3-4	2
502X	6.3	0	70	1231211 111111	4	1	3-5-8	3
502X	6.3	0	70	1231111 111111	4	1	3	3
CK512AX	.625	7	100	3325111 111111	2	5	1-2	1
CK526AX	1.25	40	90	4325111 111111	2	3	1-2-4	1
CK533AX	1.25	7	70	3325111 111111	1	5	1-2-4	1
802	6.3	25	41	2645111 111114	3	2	4-5-6	C
816	25	0	66	2111111 111113	4	1	C	C
864	1.25	7	90	2351111 111111	4	3	3	2
866	2.5	0	70	2111111 111113	4	1	C	C
879	2.5	0	60	2111111 111113	4	3	C	C
950	2.0	50	42	2453111 111111	2	3	2-3	2
955	6.3	21	54	2135111 111111	3	3	3-5	2
957	1.25	7	34	2131111 511111	4	4	3	2
958	1.25	7	5	2135116 111112	4	3	2	2
1201	6.3	16	60	5241666 111111	2	3	1-3-4	3
1203A	6.3	0	75	2113111 111111	1	3	4-7	4
1232	6.3	7	45	2431651 111111	4	3	2-3-6-7	2
1267	0	0	50	1311413 111111	4	2	7	5
1267	0	0	50	1211413 111111	4	2	5	5
1275	5.0	0	35	1462111 111111	4	1	2	2
1275	5.0	0	35	1642111 111111	4	1	3	3
1276	4.2	7	65	1432111 111111	4	2	2-3	2
1284	12.6	7	65	1431151 211111	4	2	2-3-6-7	2
1291	2.8	45	34	2356153 111111	3	3	2-3-6	7
1293	1.4	20	61	1411651 211111	2	3	2-6	2
1294	1.4	7	17	1114111 211111	4	6	4-7	4
1299	1.4	29	5	1434156 211111	2	3	2-3-6	2
1602	1.5	7	0	2351111 111111	4	3	3	2
1603	6.3	16	41	2431111 111115	2	4	4-5-6	2
1609	1.25	7	59	2453111 111111	2	4	2-3	2
1619	2.5	25	15	1244511 111111	4	2	5-8	3
1621	6.3	25	27	1244511 111111	4	2	1-3-5-8	3
1625	12.6	15	91	1135112 111114	4	1	3-4-6-C	C
1626	12.6	20	70	1141512 111111	2	2	3-5-8	3
1635	6.3	20	50	1145542 111111	3	4	3-4-5-6-8	3-6
1642	6.3	23	26	2135311 111115	3	3	2-3-5-6	5
1642	6.3	23	26	2135311 111115	3	3	3	3
1852	6.3	13	87	1215131 411111	4	2	3-4-5	8
1853	6.3	40	94	1215131 411111	3	2	3-4-5	8
5625	2.5	16	25	1431252 111111	2	3	2-3-4-6	2
5642	1.25	0	100	1111111 211114	1	3	C	C
5678	1.25	23	40	4315211 111111	1	5	1-2-4	1
5691	6.3	20	80	1115412 111111	3	3	4-5-6	5
5691	6.3	20	80	5411112 111111	3	3	1-2-3	2
5727	6.3	0	58	6121343 111111	2	1	1-2-5-6	6
5749	6.3	75	75	5121431 111111	3	2	1-5-6-7	5
CK5755	12.6	83	40	4152166 661111	1	4	1-2-3	1
CK5755	12.6	83	40	1112151 461111	1	4	6-7-8	8

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
5763	6.3	70	92	4112131 561111	4	1	3-7-8	1
5871	6.3	21	98	6143562 111111	4	1	3-4-5-8	3
5881	6.3	35	82	6143562 111111	4	1	3-4-5-8	3
5896	6.3	0	75	6611421 111111	2	2	5-7	5
5896	6.3	0	75	4111626 111111	2	2	1-2	1
5902	6.3	7	80	5116423 611111	2	2	1-2-5-7	5
5903	25	0	95	6611421 111111	2	3	5-7	5
5903	25	0	95	4111626 111111	2	3	1-2	1
5904	25	10	95	5616126 411111	1	3	1-5-8	8
5905	25	15	95	5116423 611111	1	3	1-2-5-7	5
5906	25	7	70	5116423 611111	2	3	1-2-5-7	5
5907	25	7	95	5116423 611111	1	3	1-2-5-7	5
5908	25	7	80	5111423 611111	1	4	1-2-5-7	5
5910	1.4	7	95	1431652 111111	1	3	2-3-6	2
5916	25	15	60	5111423 611111	2	3	1-2-5-7	5
5930	2.5	17	82	2351111 111111	4	1	2-3	2
5932	6.3	35	82	6143562 111111	4	1	3-4-5-8	3
5933	6.3	15	91	1351211 111114	4	1	2-3-4-C	C
5965	12.6	20	80	6661245 161111	4	2	6-7-8	6
5965	12.6	20	80	4511266 661111	4	2	1-2-3	1
5968	1.4	10	90	4152666 611111	1	5	1-3	1
5968	1.4	10	90	6162656 411111	1	5	6-8	8
5969	1.4	7	50	1534466 211111	2	3	2-3-4-5	4-5
5970	1.4	10	90	1534466 211111	1	4	2-3-4-5	4-5
5977	6.3	10	95	5616126 411111	2	2	1-5-8	8
5987	6.3	80	10	5416121 611111	2	3	1-2-5	2
5998	6.3	7	45	1115412 111111	1	1	4-5-6	5
5998	6.3	7	45	5411112 111111	1	1	1-2-3	2
6000	25	7	0	5111412 311111	2	1	1-3-5-8	5
6021	6.3	7	60	6616125 411111	2	3	5-7-8	8
6021	6.3	7	70	4511626 611111	2	3	1-2-4	1
6028	19	7	95	5121436 111111	2	3	1-2-5-6	5
6072	12.6	16	98	3512135 161111	3	3	2-3-7-8	1-6
6073	117	0	10	2161666 111111	1	3	1	1
6074	0	0	67	4166666 111111	2	3	1	1
6082	25	7	50	1115412 111111	4	1	4-5-6	5
6082	25	7	50	5411112 111111	2	1	1-2-3	2
6085	12.6	46	27	4512111 161111	2	3	1-2-3	1
6085	12.6	46	27	1112145 161111	2	3	6-7-8	6
6087	5.0	0	55	1214111 111111	4	1	4	4
6087	5.0	0	55	1211141 111111	4	1	4-6	6
6095	6.3	67	20	5112436 111111	2	3	1-2-5-6	5
6096	6.3	67	20	5112436 111111	2	3	1-2-5-6	5
6097	6.3	88	68	1521111 111111	1	6	1-2-5-7	2
6097	6.3	88	68	6621115 111111	1	6	5-7	7
6098	6.3	7	73	1141315 211111	1	1	1-3-5-7	3
6099	6.3	23	35	6412561 111111	2	3	2-5-7	2
6099	6.3	23	35	4612651 111111	2	3	1-6-7	1
6101	6.3	23	35	6412561 111111	2	3	2-5-7	2
6101	6.3	23	35	4612651 111111	2	3	1-6-7	1
6106	5.0	0	55	1211141 111111	4	1	4-6	6
6106	5.0	0	55	1214111 111111	4	1	4	4
6110	6.3	40	50	6611421 111111	2	2	5-7	5
6110	6.3	40	50	4111626 111111	2	2	1-2	1
6111	6.3	85	60	6616125 411111	2	2	5-7-8	8
6111	6.3	85	60	4511626 611111	2	2	1-2-4	1
6112	6.3	7	53	6616125 411111	2	4	5-7-8	8
6112	6.3	7	45	4511626 611111	2	4	1-2-4	1

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
6118	6.3	85	60	1146612 111115	2	2	3-8-C	3
6118	6.3	85	60	1165512 111116	2	2	4-5-8	4-5
6134	6.3	13	87	1215131 411111	4	2	3-4-5	8
6135	6.3	40	95	4612651 111111	3	2	1-6-7	1
6136	6.3	60	5	5112331 111111	3	3	1-6-7	1
6137	6.3	25	13	1215131 411111	3	3	3-4-5-6	8
6145	6.3	7	45	1431151 211111	2	2	2-3-6-7	2
6147	1.25	50	75	1141632 511111	2	3	3-6-8	3
6186	6.3	16	81	5121436 111111	2	3	1-2-5-6	5
6188	6.3	7	88	5112431 111111	4	4	1-2-5-6	5
6188	6.3	7	88	1115412 111111	2	3	4-5-6	5
6188	6.3	7	88	5411112 111111	2	3	1-2-3	2
6202	6.3	0	86	5121131 111111	4	1	1-6-7	6
6202	6.3	0	86	3121111 111111	4	1	1	1
6205	6.3	25	50	5111423 611111	2	3	1-2-5-7	5
6206	6.3	50	50	5111423 611111	3	3	1-2-5-7	5
6216	6.3	20	50	4511263 611111	2	2	1-2-3-7	1
6265	6.3	45	42	5121431 111111	3	3	1-2-5-6-7	5
6336	6.3	7	45	1115412 111111	1	1	4-5-6	5
6336	6.3	7	45	5411112 111111	1	1	1-2-3	2
6350	6.3	7	92	4151166 621111	2	2	1-2-3	1
6350	6.3	7	90	6661141 521111	2	2	6-7-8	6
6352	2.8	15	90	1666424 611111	1	4	5-7	5-7
6354	0	20	70	4166666 111111	4	4	1	1
6360	12.6	7	67	5152143 461111	3	2	1-2-3-7	6-8
6386	6.3	7	90	2153135 111111	2	3	2-3-7-8	4-6
6394	25	7	45	1115412 111111	1	1	4-5-6	5
6394	25	7	45	5411112 111111	1	1	1-2-3	2
6463	12.6	7	90	4151266 661111	2	4	1-2-3	1
6463	12.6	7	90	6661241 561111	2	4	6-7-8	6
6485	6.3	14	50	5112431 111111	2	3	1-2-5-6-7	5
6486	6.3	35	90	5111423 611111	2	3	1-2-5-7	5
6516	6.3	65	90	5112413 111111	1	2	1-2-5-7	5
6520	6.3	7	70	1115412 111111	2	1	4-5-6	5
6520	6.3	7	70	5411112 111111	2	1	1-2-3	2
6528	6.3	7	45	1115412 111111	1	1	4-5-6	5
6528	6.3	7	45	5411112 111111	1	1	1-2-3	2
6528A	6.3	7	83	5111423 661111	2	3	1-2-5-7	5
6626	0	0	10	4166666 111111	3	2	1	1
6627	0	0	67	4166666 111111	3	2	1	1
6660	6.3	40	90	5112431 111111	3	2	1-5-6-7	5
6663	6.3	88	58	1521116 111111	1	6	1-2	2
6663	6.3	88	58	1621115 111111	1	6	5-7	7
6669	6.3	67	97	5112436 111111	2	3	1-2-5-6	5
6676	6.3	40	50	5121431 111111	2	3	1-2-5-6	5
6677	6.3	70	40	1532141 661111	3	2	1-2-7-8	7
6678	6.3	40	88	4661266 151111	3	2	1-8-9	1
6678	6.3	71	5	6531241 661111	3	3	2-3-6-7	6
6679	6.3	20	60	6661245 161111	2	3	6-7-8	6
6679	6.3	20	55	4511266 661111	2	3	1-2-3	1
6680	6.3	40	18	6661245 161111	2	3	6-7-8	6
6680	6.3	40	18	4511266 661111	2	3	1-2-3	1
6681	6.3	15	80	6661245 161111	2	4	6-7-8	6
6681	6.3	15	80	4511266 661111	2	4	1-2-3	1
6686	6.3	85	70	6512164 311111	2	2	2-3-7-8-9	7
6689	6.3	7	65	3512146 611111	2	3	1-2-3-6	6
6690	6.3	7	80	4511626 611111	2	3	1-2-4	1
6690	6.3	7	80	6616425 111111	2	3	5-7-8	5

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6788	6.3	7	70	5116423 611111	2	4	1-2-5-7	5
6792	6.3	4	95	1236531 311114	4	4	1-3-6-8	C
6814	6.3	30	75	5616126 411111	2	2	1-5-8	8
6829	12.6	20	80	3512135 161111	4	2	2-3-7-8	1-6
6832	6.3	7	95	6616125 411111	1	4	5-7-8	8
6832	6.3	7	95	4511626 611111	1	4	1-2-4	1
6840	12.6	60	90	4151266 661111	1	2	1-2-3	1
6840	12.6	60	90	6661241 561111	1	2	6-7-8	6
6851	6.3	7	95	6661245 161111	1	4	6-7-8	6
6851	6.3	7	95	4511266 661111	1	4	1-2-3	1
6853	5.0	0	40	1214141 111111	4	1	4-6-8	4-6
6854	6.3	7	72	1154611 121111	2	2	2-3-4	4
6854	6.3	7	72	1111645 121111	2	2	6-7-8	6
6870	12.6	7	40	1511214 311111	1	3	1-2-7-8	7
6877	6.3	7	40	5114261 161111	1	3	1-4-8	4
6887	6.3	0	60	1421114 111111	1	2	1-6-5-7	2-7
6893	12.6	15	80	1136562 111114	4	1	1-3-5-C	C
6900	6.3	40	30	6661215 641111	2	2	6-7-9	9
6900	6.3	40	30	4511266 661111	2	2	1-2-3	1
6922	6.3	13	60	6661245 111111	2	2	6-7-8	6
6922	6.3	13	60	4511266 611111	2	2	1-2-3	1
6943	6.3	7	20	5111423 611111	2	2	1-2-5-7	5
6944	6.3	7	25	5111423 611111	2	2	1-2-5-7	5
6945	6.3	15	60	5116423 611111	2	2	1-2-5-7	5
6946	6.3	7	40	5616126 111111	1	3	1-5-8	8
6947	6.3	7	40	6616125 411111	1	3	5-7-8	8
6947	6.3	10	37	4511626 611111	1	3	1-2-4	1
6948	6.3	15	10	6616125 411111	1	5	5-7-8	8
6948	6.3	15	10	4511626 611111	1	5	1-2-4	1
6954	6.3	94	75	5121431 111111	1	3	1-2-5-6	5
6955	6.3	85	10	6661245 161111	2	3	6-7-8	6
6955	6.3	85	10	4511266 661111	2	3	1-2-3	1
6968	6.3	0	60	5121436 111111	2	3	1-2-5-6	5
7001	6.3	20	50	5111423 661111	2	2	1-2-5-7	5
7032	6.3	25	0	5121431 111111	2	4	1-2-5-6-7	5
7036	6.3	50	60	5121431 111111	2	4	1-2-5-6-7	5
7055	12.6	0	48	1321113 111111	1	3	1-2-5-7	2-7
7057	12.6	18	36	6661245 111111	2	3	6-7-8	6
7057	12.6	15	34	4511266 611111	2	3	1-2-3	1
7105	12.6	7	0	1115412 111111	2	1	4-5-6	5
7105	12.6	7	0	5411112 111111	2	1	1-2-3	2
7137	6.3	70	88	6112654 111111	1	2	2-6-7	7
7150	6.3	32	40	4115266 131111	2	2	1-3-4-9	1
7212	6.3	30	50	1136562 611114	2	2	1-3-5-C	C
7227	25	50	95	1511214 311111	1	2	2-3-7-8	7
7233	6.3	7	90	6561246 161111	1	1	2-6-8	6
7236	6.3	70	36	1115412 111111	4	1	4-5-6	5
7236	6.3	70	36	5411112 111111	2	1	1-2-3	2
7239	6.3	10	80	5161236 611114	2	3	1-6-9-C	C
7241	6.3	7	0	1111542 111111	1	1	5-6	6
7242	6.3	7	0	1111542 111111	1	1	5-6	6
7244	6.3	87	10	6412561 111111	2	3	2-5-7	2
7244	6.3	87	10	4612651 111111	2	3	1-6-7	1
7245	6.3	85	20	6112654 111111	2	3	2-6-7	7
7258	12.6	10	80	4511266 661111	2	2	1-2-3	1
7258	12.6	10	80	6661243 511111	2	2	6-7-8-9	6
7308	6.3	80	84	4512111 111111	1	2	1-2-3	1
7308	6.3	84	84	1112145 111111	1	2	6-7-8	6

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
7316	6.3	80	10	6661245 161111	2	3	6-7-8	6
7316	6.3	80	10	4511266 661111	2	3	1-2-3	1
7318	6.3	83	10	6661245 161111	2	3	6-7-8	6
7318	6.3	83	10	4511266 661111	2	3	1-2-3	1
7320	6.3	45	85	6511264 631111	4	1	2-3-7-9	7
7358	6.3	7	50	1136562 611114	1	1	1-3-5-C	C
7370	35	7	75	6661215 641111	2	2	6-7-9	9
7370	35	7	75	4511266 661111	2	2	1-2-3	1
7489	6.3	80	10	6661245 161111	2	3	6-7-8	6
7489	6.3	80	10	4511266 661111	2	3	1-2-3	1
7490	6.3	40	50	6661245 161111	2	3	6-7-8	6
7490	6.3	40	50	4511266 661111	2	3	1-2-3	1
7492	6.3	80	10	6661245 161111	2	3	6-7-8	6
7492	6.3	80	10	4511266 661111	2	3	1-2-3	1
7494	12.6	15	75	6661245 161111	2	4	6-7-8	6
7494	12.6	15	75	4511266 661111	2	4	1-2-3	1
7495	6.3	7	95	4611231 561111	2	1	1-6-7-8	1
7496	6.3	80	10	5112431 111111	2	3	1-5-6-7	5
7498	6.3	83	10	5112413 111111	2	3	1-2-5-7	5
7499	6.3	80	10	1511214 311111	3	1	2-3-7-8	7
7502	6.3	10	95	5121431 111111	2	4	1-2-5-6-7	5
7550	6.3	0	65	6616125 411111	4	1	5-7-8	8
7550	6.3	0	65	4511626 611111	4	1	1-2-4	1
7551	12.6	7	50	1532141 661111	4	2	1-2-3-7	6
7558	6.3	7	50	1532141 661111	4	2	1-2-3-7	6
7561	2.5	7	45	1143512 111111	2	1	3-4-5-8	3
7576	6.3	10	80	1546616 211111	2	2	2-3-6	3
7587	6.3	90	15	1315111 112114	1	3	2-4-8-C	C
7631	6.3	50	50	1521115 111111	1	6	1-2-5-7	2-7
7693	6.3	60	30	5112431 111111	2	3	1-2-5-6	5
7694	6.3	80	10	5112431 111111	2	3	1-2-5-6	5
7699	12.6	20	67	5152143 461111	3	2	1-2-3-7	6-8
7701	12.6	20	88	1562143 661111	3	2	1-2-6-7	6
7716	12.6	7	80	1541266 661111	3	2	1-2-3	3
7716	12.6	7	50	6661215 341111	2	4	6-7-8-9	9
7717	6.3	15	0	5112436 111111	3	3	1-2-5-6	5
7719	12.6	15	100	4511266 661111	3	2	1-2-3	1
7721	6.3	15	60	1561264 131111	3	2	1-2-7-9	7
7722	6.3	15	60	1561264 131111	3	2	1-2-7-9	7
7728	6.3	20	60	6661245 161111	2	3	6-7-8	6
7728	6.3	20	65	4511266 661111	2	3	1-2-3	1
7729	6.3	15	80	6661245 161111	2	4	6-7-8	6
7729	6.3	15	80	4511266 661111	2	4	1-2-3	1
7730	6.3	20	80	6661245 161111	4	2	6-7-8	6
7730	6.3	20	80	4511266 661111	4	2	1-2-3	1
7731	6.3	40	88	4661266 151111	3	2	1-8-9	1
7731	6.3	7	5	6531241 661111	3	3	2-3-6-7	6
7732	6.3	40	90	5121431 111111	2	3	1-2-5-6	5
7733	12.6	15	55	1511214 311111	4	2	1-2-7-8	7
7737	6.3	15	95	3661261 541111	3	2	1-7-8-9	9
7738	6.3	60	100	4521166 111111	2	2	1-2-5	1
7751	6.3	82	82	6243511 111111	1	2	3-4-5-8	3
7754	6.3	7	50	3161251 641111	2	1	1-6-7-9	9
7759	25	40	50	6616125 411111	2	3	5-7-8	8
7759	25	40	50	4511626 611111	2	3	1-2-4	1
7760	25	10	85	6616125 411111	1	4	5-7-8	8
7760	25	10	85	4511626 611111	1	4	1-2-4	1
7761	25	30	60	5116423 611111	2	2	1-2-5-7	5

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TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT
7762	25	60	30	5116423 611111	2	2	1-2-5-7	5
7788	6.3	52	35	1562134 161111	2	2	1-2-6-7	7
7861	12.6	80	20	1666145 121111	2	3	6-7-8	6
7861	12.6	80	20	1154166 621111	2	3	2-3-4	4
7867	6.3	7	65	1211511 311114	2	1	3-5-8-C	C
7887	25	15	20	6616125 411111	3	3	5-7-8	8
7887	25	15	20	4511626 611111	3	3	1-2-4	1
7888	25	13	20	5616126 411111	3	3	1-5-8	8
7889	25	13	30	6616125 411111	1	4	5-7-8	8
7889	25	13	30	4511626 611111	1	4	1-2-4	1
7895	6.3	45	40	1415111 112111	1	3	2-4-8	2
7898	12.6	25	50	4511211 161111	2	3	1-2-3	1
7898	12.6	25	50	1111245 161111	2	3	6-7-8	6
7905	6.3	55	30	1536641 621111	2	2	2-3-6	6
7994	6.3	7	90	1546616 211111	2	2	2-3-6	3
7995	6.3	82	20	1152614 311111	2	3	2-3-7-8	7
8016	1.25	0	85	6261611 613111	2	4	C	C
8032	12.6	96	89	1236511 611114	2	1	1-2-6-7	C
8393	12.6	20	10	1415111 111111	1	3	2-4-8	2
FOREIGN								
DC90	1.4	37	97	1461562 111111	1	3	5	2
DF62	1.25	7	5	3315211 111111	2	4	2-4	7
DF96	1.4	50	95	1436652 111111	1	4	3-6	2
DH63	6.3	7	85	1246611 111115	2	4	4-5-8-C	3
DK96	1.4	40	20	1435352 111111	1	5	2-3-4-5-6	2
DL35	1.4	29	41	1233511 111111	2	3	3-5	3
DM70	1.4	100	70	5611211 411111	2	5	1	8
DY86	1.4	0	31	1261616 611113	2	4	C	C
DY87	1.4	0	31	1261616 611113	2	4	C	C
E80CC	12.6	46	27	4512111 161111	2	3	1-2-3	1
E80CC	12.6	46	27	1112145 161111	2	3	6-7-8	6
E80L	6.3	55	55	1512114 311111	3	2	2-3-7-8	7
E81L	6.3	85	70	6512164 311111	2	2	2-3-7-8-9	7
E83F	6.3	70	90	3512141 111111	2	2	1-2-3-6	6
E180F	6.3	50	85	1562164 631111	2	2	1-2-7-9	7
E188CC	6.3	80	84	4512111 111111	1	2	1-2-3	1
E188CC	6.3	80	84	1112145 111111	1	2	6-7-8	6
E235L	6.3	82	82	6243511 111111	1	2	3-4-5-8	3
E810F	6.3	52	35	1562134 161111	2	2	1-2-6-7	7
EBC41	6.3	15	75	1451661 211111	4	3	3-5-6-7	2
EBC41	6.3	15	20	1451661 211111	4	6	5-6	5-6
EBF80	6.3	27	72	3512146 611111	2	3	1-2-3-6-7-8	6
EBF80	6.3	7	25	3512146 611111	4	6	7-8	7-8
EBF83	6.3	20	65	3511246 611111	2	3	1-2-3-6	6
EBF83	6.3	0	30	1111214 611111	2	3	7-8	7-8
EC80	6.3	7	88	5612116 641111	4	2	1-3-9	9
ECC88	6.3	55	65	5162166 461111	2	2	1-2-8	8
ECH83	6.3	7	98	3512135 351111	1	4	1-2-3-6-7	6
ECH83	6.3	7	95	3512135 121111	1	4	8-9	8
EF85	6.3	10	90	1562114 311111	4	2	1-2-6-8-9	7
EF91	6.3	18	50	5112413 111111	3	3	1-2-5-7	5
EF92	6.3	25	70	5112413 111111	3	3	1-2-5-7	5
EF93	6.3	75	75	5121431 111111	3	2	1-5-6-7	5

TUBE	FIL.	GR.	PL.	LEVERS	V	S	LEAK	MERIT	
EL37	6.3	35	82	6143562	111111	4	1	3-4-5-8	3
EL38	6.3	55	70	1113512	111114	2	2	4-5-8-C	C
EL85	6.3	25	50	5611214	631111	2	3	1-3-6-7-9	7
EL95	6.3	7	92	5121436	111111	3	2	1-2-6	5
EL504*	6.3	80	75	6512136	661114	2	1	2-3-6-C	C
*Must use magnoval adapter.									
EM80	6.3	0	54	1162164	641111	3	3	1-7-9	7
EM80	6.3	0	54	1162161	641111	3	3	7	7
EM81	6.3	7	25	5162164	641111	4	5	1-2-7-9	9
EM81	6.3	7	75	5162161	641111	4	5	9	9
EM84	6.3	7	75	5612144	641111	4	4	1-3-6-7-9	9
EM84	6.3	7	75	5612143	641111	4	4	9	9
EN91	6.3	0	58	6121343	111111	2	1	1-2-5-6	6
EQ80	6.3	65	92	3312145	631111	1	4	1-3-6	6
EY81	6.3	0	6	6662166	641111	1	2	9-C	9
EY82	6.3	0	27	6612166	641111	4	1	3-9	9
EY86	6.3	0	58	1216661	611114	2	3	C	C
EZ80	6.3	0	79	5112113	111111	4	1	1-3-7	7
EZ80	6.3	0	79	3112111	111111	4	1	1	1
GZ32	5.0	0	65	1214111	111111	2	1	4	4
GZ32	5.0	0	65	1211141	111111	2	1	6	6
GZ34	35	0	41	1114161	211111	4	1	4	4
GZ34	35	0	41	1116141	211111	4	1	6	6
HCC85	12	7	20	4512145	111111	3	3	2-3-7-8	1-6
HL94	25	7	54	1521634	111111	2	2	1-2-6-7	7
N14	1.4	29	41	1233511	111111	2	3	3-5	3
PABC80	9.0	17	82	6612161	541111	2	3	1-2-3-7-8	9
PABC80	9.0	0	98	4612161	541111	1	1	1-2	1-2
PCC84	6.3	7	22	1542151	641111	2	3	1-2-3-6-7	3-9
PCC85	9.0	80	80	6662145	111111	2	2	6-7-8	6
PCC85	9.0	80	80	4512166	611111	2	2	1-2-3	1
PCL82	12.6	7	65	5662166	141111	2	4	1-8-9	9
PCL82	12.6	7	90	6152143	661111	2	2	2-3-6-7	6
PCL85	19	35	45	1112143	151111	2	2	6-7-8-9	6
PCL85	19	60	75	4512111	111111	3	2	1-2-3	1
PL36	25	7	15	6263511	111114	2	2	4-5-8	C
PL81	19	61	93	6512166	311114	2	1	2-3-9	C
PL505*	35	50	50	5632166	611114	2	1	1-3-9-C	C
*Must use magnoval adapter.									
PL521*	25	30	75	5632166	611114	2	1	1-3-9-C	C
*Must use magnoval adapter.									
PL1267	0	0	50	1311413	111111	4	2	7	5
PL1267	0	0	50	1211413	111111	4	2	5	5
PM04	6.3	40	90	5121431	111111	3	2	1-5-6-7	5
PY81	19	0	20	6661266	641111	1	2	9-C	9
PY500*	35	0	65	6412166	661111	2	1	2-C	C
*Must use magnoval adapter.									
UCH81	19	12	40	3511243	451111	3	3	1-2-3-6-8-9	6
UCH81	19	10	30	3511243	451111	2	3	8	8
U78	6.3	0	86	5121131	111111	4	1	1-6-7	6
U78	6.3	0	86	3121111	111111	4	1	1	1
UBF89	19	85	92	3512146	611111	2	2	1-2-3-6	6
UBF89	19	0	93	6612164	661111	1	2	3-7	7
UBF89	19	0	100	6612166	461111	1	2	3-8	8
UCC85	25	80	80	6662145	111111	2	2	6-7-8	6
UCC85	25	80	80	4512166	611111	2	2	1-2-3	1

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<u>TUBE</u>	<u>FIL.</u>	<u>GR.</u>	<u>PL.</u>	<u>LEVERS</u>	<u>V</u>	<u>S</u>	<u>LEAK</u>	<u>MERIT</u>	
V2M70	6.3	0	86	5121131	111111	4	1	1-6-7	6
V2M70	6.3	0	86	3121111	111111	4	1	1	1
XL500*	12.6	80	75	6512136	661114	2	1	2-3-6-C	C
*Must use magnoval adapter.									
XXD	12.6	35	14	1666541	211111	3	3	6-7-8	7
XXD	12.6	35	14	1145666	211111	3	3	2-3-4	3
XXL	7.5	35	17	1411151	211111	2	3	2-6-7	2