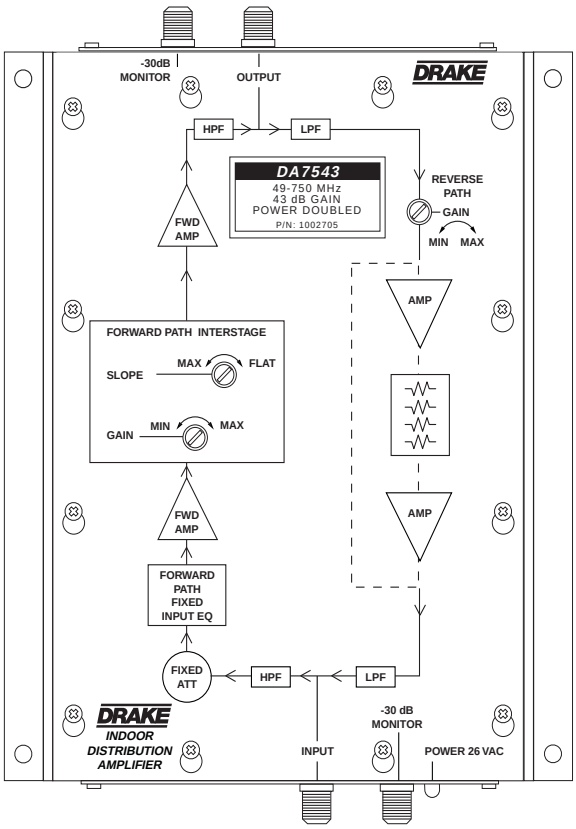


Input equalizer and fixed attenuator options are available.

**DESCRIPTION**

The R.L. DRAKE models DA8642, DA8632, DA7543, and DA7533, are broadband distribution amplifiers designed for indoor use in both residential and commercial buildings where RF signal distribution in the frequency range of 49 to 860 MHz is required. Each model provides a very low distortion signal for a cable TV "drop", the output of an SMATV headend, or a small CATV headend. The Gain and Slope controls both have a range of 10 dB minimum and operate between the preamp hybrid and the output hybrid to maintain a low noise figure over a wide range of gain and slope settings. Double-sided, plated through hole, glass epoxy, printed circuit boards, and SMT are used for low losses and maximum reliability.

All models include a 20 dB gain integrated active return path amplifier, and can provide a nominal unity gain passive return or no return path by selection with internal jumpers.

Input and output test connectors are provided for convenient monitoring of the signal path. The amplifier circuitry is designed for maximum stability, low distortion, low noise figure, and is protected in a rugged aluminum housing.

The unit operates from a nominal 26 VAC provided by the supplied 120 VAC, 60 Hz input AC Adapter.

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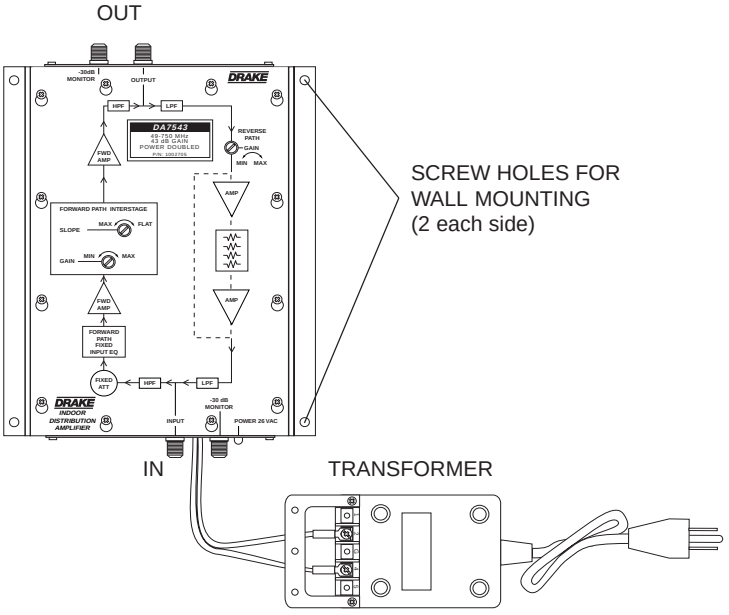
**INSTALLATION**

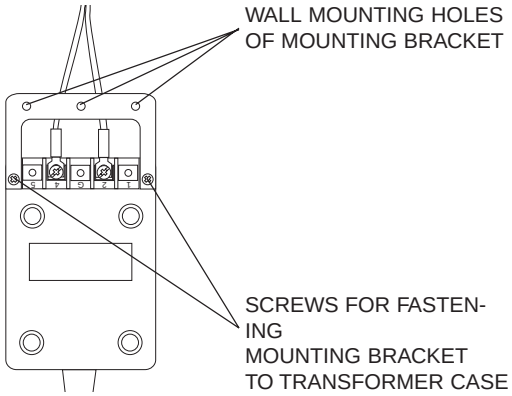
**1)** Unpack the distribution amplifier and AC adapter.

**2)** Mount the amplifier in the desired location, using the four mounting screw holes on the sides of the amplifier. Vertical mounting on a wall with the output end up is recommended for best ventilation and the coolest operation.




**3)** Route the power cable as needed to the power transformer. The cable can be pushed between fins of the heat sink on the bottom of the amplifier. Connect the power cable to the screw terminals on the power transformer.

4) If the power transformer is to be wall mounted, install the included bracket as shown. Then mount transformer to the wall.




**5)** Connect input and output cables to the amplifier.
**6)** Plug the power transformer line cord into a 120 VAC/60 Hz power source.
**7)** Preset slope control fully clockwise.
**8)** While monitoring the output levels at the Output -30 dB test port, adjust the Gain control for desired output at the high end of the band. Then monitor the lowest channel and adjust slope control to equalize this channel to the desired level (usually equal to but not higher than the high end of the band). Since there can be a slight interaction between the gain settings, it is advised to repeat this step a few times to ensure the desired levels are attained.

**NOTE:** The -30 dB input and output test ports can be used to monitor input and output levels. These are only accurate when the load is connected to the amplifier output and power is on.

**RETURN PATH PROGRAMMING**

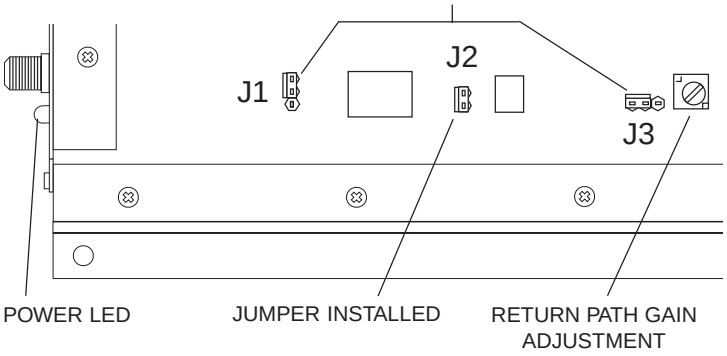
There are three jumpers to be set. J1, J2, and J3. J1 and J3 program the signal path for the return path. If the return amplifier is desired (20 dB gain), select the active return setting. This is the factory default. If a unity gain return path is desired, select the passive return settings. If no return path is desired, remove both J1 and J3. Jumper J2 is used to enable DC power to the return amplifier. When selecting the active return, Jumper J2 must be installed. If using the passive return or no return, remove Jumper J2.

**INTERNAL JUMPER SETTINGS -**

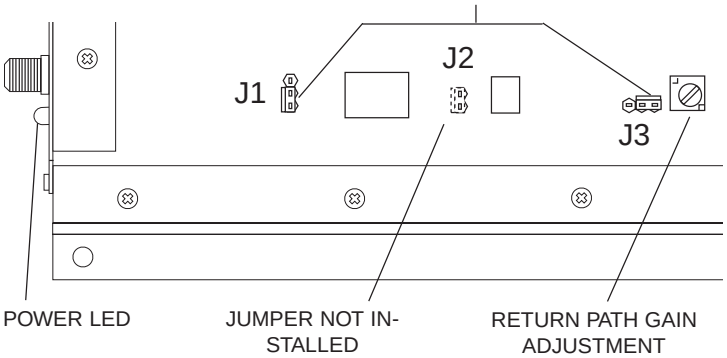
1) **Unplug amp from the AC power source.**

2) Remove top cover by loosening (but not removing) the 12 top cover screws. Slide the top cover so the screws will slip through the larger screw hole openings, then remove top cover.

A) JUMPER SETTINGS FOR ACTIVE RETURN PATH (Factory Setting)




B) JUMPER SETTINGS FOR PASSIVE RETURN PATH




C) REMOVE ALL THREE JUMPERS FOR NO RETURN

**A WORD CONCERNING INPUT LEVELS**

It is important to keep the input level to the amplifier within an optimum range. If the level is too high, higher nonlinear distortion will result and if the level becomes too low, C/N might be less than desired. As a general rule, stay within the guidelines below. This chart assumes a fully loaded channel complement. Higher levels may be used if the channel loading is less.

In general, install a fixed input attenuator if required to set the highest frequency channels in the input to within the optimum range. Then set the amplifier gain to achieve the desired output level, not to exceed the maximum output level listed in the chart below. Then, if the low frequency channels are above the optimum input level range, a fixed input equalizer can be installed to drop the low frequency channels to within this range. Use the slope control to make fine adjustments.

| MODEL | OPTIMUM INPUT LEVEL FOR LOWEST DISTORTION | MAX INPUT WITHOUT INPUT ATTENUATOR | MAX OUTPUT ADJUST GAIN CONTROL TO MAINTAIN | CHANNEL LOADING |
|---|---|---|---|---|
| DA7533 | +10 to +15 dBmV | +20 dBmV | +44 dBmV | 110 CH |
| DA7543 | +0 to +5 dBmV | +10 dBmV | +44 dBmV | 110 CH |
| DA8632 | +7 to +12 dBmV | +18 dBmV | +40 dBmV | 129 CH |
| DA8642 | -3 to +2 dBmV | +7 dBmV | +40 dBmV | 129 CH |

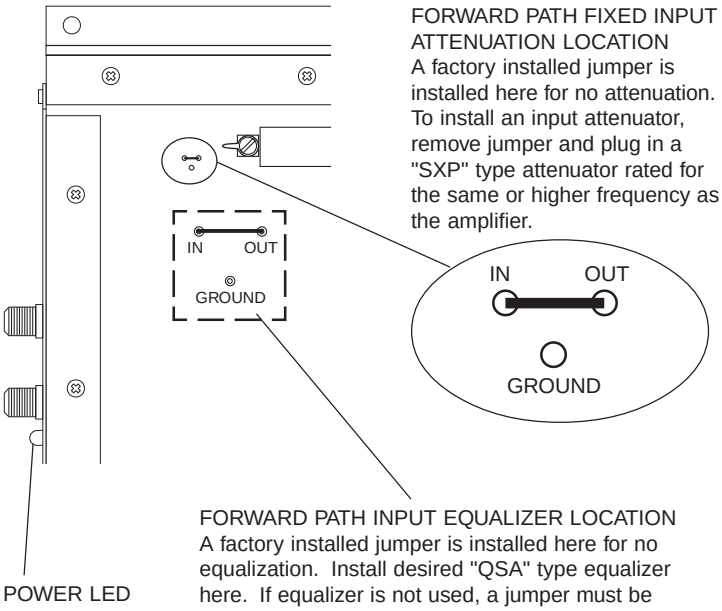
If the input level is within the optimum input level window, distortion will be at or below that which is specified. If a higher input level is supplied, add a fixed input attenuator equal to the number of dB needed to reduce the level to be within the optimum input range.

**INSTALLING FORWARD PATH INPUT ATTENUATOR**

Remove top cover as described below. If input levels are enough to cause a high distortion level in the input amplifier, a fixed input attenuator may be added. Choose an SXP type attenuator of the value required, and install at the location indicated below. Remove the 0 dB wire jumper to allow insertion of the attenuator. Install the standoff to the top cover using the parts supplied to prevent the attenuator from being jarred loose.

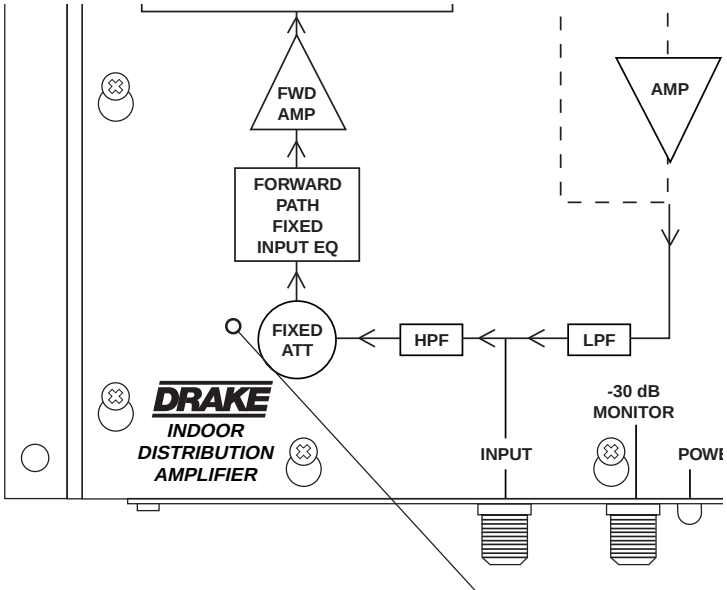
**INSTALLING AN INPUT EQUALIZER**

Follow the same basic procedure as described above for the input attenuator except that the equalizer is installed at the equalizer location shown below:




FORWARD PATH FIXED INPUT ATTENUATION LOCATION
A factory installed jumper is installed here for no attenuation. To install an input attenuator, remove jumper and plug in a "SXP" type attenuator rated for the same or higher frequency as the amplifier.

FORWARD PATH INPUT EQUALIZER LOCATION
A factory installed jumper is installed here for no equalization. Install desired "QSA" type equalizer here. If equalizer is not used, a jumper must be connected between the IN and OUT connections.




Install standoff spacer on the inside of the top cover hole (as shown) with the supplied 4-40 screw.

**SPECIFICATIONS COMMON TO ALL MODELS**

| | |
|---|---|
| Forward Gain Adjustment Range: | 10 dB minimum. |
| Slope Control Adjustment (54 MHz): | 10 dB minimum. |
| Input/Output Impedances: | 75 Ohms. |
| Input and Output Monitor Ports: | - 30 dB. |
| Fixed Input Attenuator: | Plug-in (SXP type) available. |
| Fixed Input Equalizer: | Plug-in (QSA type) available. |
| Hum Modulation: | - 70 dB. |
| Frequency Coverage (return path): | 5 to 36 MHz. |
| Active Return Path Gain: | 20 dB minimum. |
| Return Path Input Attenuator: | 0 to 10 dB adjustable. |
| RF Shielding: | Leakage complies with FCC Part 76. |
| Power Requirement: | 26 VAC from supplied transformer with six foot amp-to-transformer cable. |
| Operating Temperature Range: | - 20 deg. to + 60 deg. C. |
| Power Transformer: | Supplied transformer has 120 VAC/ 60 Hz ±10% input requirement at 35 W. Output is 26.3 VAC with screw terminals for attaching power cable from amplifier. Supplied 120 VAC 3-wire line cord is six feet long. |
| Size: | 10.25" (26 cm) L x 7.25" (18.4 cm) W x 2.75" (7 cm) D. |
| Weight: | 6 lbs. 12 oz. (3.1 Kg), including AC adapter. |

**ADDITIONAL SPECIFICATIONS FOR SPECIFIC MODELS**

| | **DA7533** | **DA7543** | **DA8632** | **DA8642** |
|---|---|---|---|---|
| Frequency Coverage (forward path): | 49 to 750 MHz. | 49 to 750 MHz. | 49 to 860 MHz. | 49 to 860 MHz. |
| Forward Gain: | 33 dB. | 43 dB. | 32 dB. | 42 dB. |
| Noise Figure: | 7 dB maximum. | 6.5 dB maximum. | 7.5 dB maximum. | 7 dB maximum. |
| Return Loss, Input & Output: | 14 dB. | 14 dB. | 12 dB. | 12 dB. |
| Channel Loading: | 110 CH. | 110 CH. | 129 CH. | 129 CH. |
| Output Level (maximum per channel for distortions listed below): | +44 dBmV. | +44 dBmV. | +40 dBmV. | +40 dBmV. |
| Input Level (maximum without using fixed input attenuator): | +20 dBmV. | +10 dBmV. | +18 dBmV. | +7 dBmV. |
| Optimum Input Level Range: | +10 dBmV to +15 dBmV. | +0 dBmV to +5 dBmV. | +7 dBmV to +12 dBmV. | -3 dBmV to +2 dBmV. |
| *Nonlinear Distortions-* | | | | |
| Composite Triple Beat: | - 58 dB. | - 58 dB. | - 60 dB. | - 60 dB. |
| Composite Second Order: | - 58 dB. | - 58 dB. | - 58 dB. | - 58 dB. |
| Cross-modulation: | - 62 dB. | - 62 dB. | - 64 dB. | - 64 dB. |

## THREE YEAR LIMITED WARRANTY

R.L. DRAKE COMPANY warrants to the original purchaser this product shall be free from defects in material or workmanship for three (3) years from the date of original purchase. During the warranty period the R.L. DRAKE COMPANY or an authorized Drake service facility will provide, free of charge, both parts and labor necessary to correct defects in material and workmanship. At its option, R.L. DRAKE COMPANY may replace a defective unit.

- To obtain such warranty service, the original purchaser must:

**(1)** Retain invoice or original proof of purchase to establish the start of the warranty period.

**(2)** Notify the R.L. DRAKE COMPANY or the nearest authorized service facility, as soon as possible after discovery of a possible defect, of:

(a) the model and serial number,

(b) the identity of the seller and the approximate date of purchase; and

(c) A detailed description of the problem, including details on the electrical connection to associated equipment and the list of such equipment.

**(3)** Deliver the product to the R.L. DRAKE COMPANY or the nearest authorized service facility, or ship the same in its original container or equivalent, fully insured and shipping charges prepaid.

- Correct maintenance, repair, and use are necessary to obtain proper performance from this product. Therefore carefully read the Instruction Manual. This warranty does not apply to any defect that R.L. DRAKE COMPANY determines is due to:

**(1)** Improper maintenance or repair, including the installation of parts or accessories that do not conform to the quality and specifications of the original parts.

**(2)** Misuse, abuse, neglect or improper installation.

**(3)** Accidental or intentional damage.

- All implied warranties, if any, including warranties of merchantability and fitness for a particular purpose, terminate three (3) years from the date of the original purchase.

- The foregoing constitutes R.L. DRAKE COMPANY'S entire obligation with respect to this product, and the original purchaser shall have no other remedy and no claim for incidental or consequential damages, losses or expenses. Some states do not allow limitations on how long an implied warranty lasts or do not allow the exclusions or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you.

- This warranty gives you specific legal rights and you may also have other rights which vary from state to state. This warranty shall be construed under the laws of Ohio.

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