

**JBL**  
**POWER**<sup>™</sup>  
series



# Component Tweeter

**P-20t Owner's Manual**

**GENUINE JBL**



**Congratulations** on choosing JBL. For over 50 years, JBL has been involved in every facet of musical and film recording and reproduction. From live performances to monitoring the recordings you will soon play in your car, JBL has provided a critical link. As good as JBL products are, our high-fidelity research never stops. This continuing research results in new products of even higher performance capabilities. We are confident that the JBL products you have chosen will provide every note of musical enjoyment you expected – and that when you think about additional loudspeakers for your home and your car, you will once again choose JBL. We would like to ask you to take a moment to complete the enclosed profile card. This will enable us to keep you posted on our latest advancements, and will help us to better understand our customers and build products to meet your needs and expectations.

Thank you for selecting JBL.

## Introduction

Thank you for purchasing the JBL P-20t Power Series™ component tweeter. We've organized this manual to make your installation as simple and trouble-free as possible. We suggest you read through it completely before proceeding. If, after having read it, you decide that you would rather leave installation to a professional, consult your JBL Power Series Dealer.

## Autosound at its Best

Your JBL P-20t tweeters are built to meet the same rigorous standards of construction and performance that have long established JBL's renowned home and professional speaker systems. The P-20t incorporates advanced materials and construction especially suited to the unique acoustic environment of modern vehicles. They are engineered to provide excellent dispersion, frequency response, and power handling, along with minimum size. Angle- and flush-mounting options are included for optimizing placement within the vehicle. Your P-20t tweeter has been designed using a combination of technologies that bring high value to high performance.

The dome used in your P-20t is manufactured from a proprietary material known as Titanium Composite. This material combines the control and damping of an advanced polymer with the reinforcing stiffness of vapor-deposited titanium to prevent breakup at high levels.

The P-20t utilizes a powerful neodymium magnet structure. Neodymium not only improves the P-20t's performance, but allows that performance to be built into a small package, increasing installation possibilities.

By following the installation recommendations and suggestions included in this manual, you will be assured of many years of trouble-free enjoyment from your Power Series components.

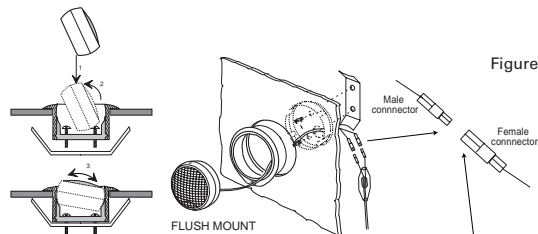


Figure 1

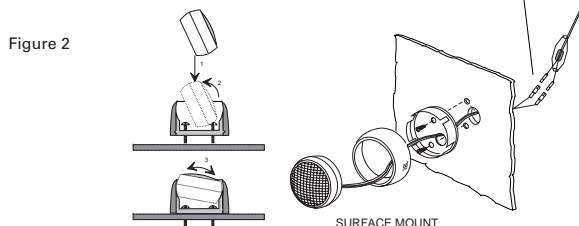


Figure 2

## Important Paperwork

Before proceeding, be sure to put the sales receipt from your JBL P-20t tweeter purchase in a safe place. It is necessary to validate your Limited Warranty. Having access to the receipt is also valuable for insurance purposes and when it comes time to resell your vehicle.

## Installation

The tweeter has been supplied with both surface- and flush-mount brackets. Figures 1 and 2 show the proper way to flush- and surface-mount the tweeter. The mounting hole diameter of the flush-mount frame is 1-7/16".

## System Design

The P-20t, with its built-in in-line crossover, is designed to provide added high-frequency performance to any mobile audio system.

The P-20t may be used as the primary tweeter in a system or as an add-on tweeter or super tweeter used to improve the high-frequency response of an existing system.

The in-line crossover acts as a high-pass filter as well as a protection device that keeps the tweeter from being overexerted by low frequencies that it was not designed to reproduce.

**Under normal circumstances this crossover should not be bypassed or removed for any reason. Bypass the installed capacitor only when using an outboard active crossover or a custom-built passive crossover set above 5kHz.**

## Component Placement

Because of the P-20t's small size and extremely versatile mounting options, there is an almost infinite number of placement options to achieve excellent sound quality in any vehicle. Please consider the following statements to help you get the most from your system.

1. The most spacious stereo image is achieved when the P-20ts are placed as far apart as possible.
2. The best center image will be achieved when the distances from the left speaker and the right speaker are as equal as possible from your listening position. This is most easily achieved by placing the P-20ts as far forward as possible.
3. Treble is directional in nature. This means that high frequencies are reduced as you move off the tweeter's axis. The angle mounts will allow the P-20ts to be pointed across the car to the listener on the opposite side (as shown in Fig. 3). This will make each listener slightly off-axis to the tweeter that is closer to that listener, which helps to compensate for the fact that the listener is always closer to one tweeter than to the other.
4. The best system integration is achieved when the tweeter is mounted close to the midrange speaker. This helps smooth the transition from the midrange and tweeter crossover point.

Choosing mounting locations that satisfy all the above criteria will provide the most satisfying performance.

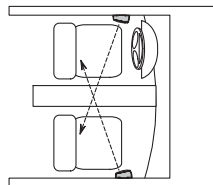


Figure 3

## Tweeter Output Level

The P-20t is a very efficient tweeter. If there is a need to lower the tweeter output, a 4-ohm / 5-watt resistor can be connected in series (before capacitor) with the P-20t, as shown in Fig. 4.

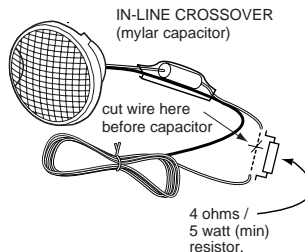


Figure 4

To avoid short circuits, make sure that heat-shrink tubing or electrical tape is used to cover all exposed wiring.

## Installation Warnings and Tips

Be careful not to cut or drill into fuel tanks, fuel lines, brake or hydraulic lines, vacuum lines or electrical wiring when working on your vehicle. Inspect behind panels before you cut or drill. Do not use the P-20ts unmounted. Failure to secure this product could result in damage or injury, particularly in the event of an accident.

Always disconnect the ground wire from the battery before doing any work on the vehicle.

## A Note on Power Handling

As a result of their high efficiency, all JBL loudspeakers will produce reasonable volume levels in the automotive environment using very little amplifier power. However, the use of a small amplifier to attain very high volume levels could lead to overdriving the amplifier. This will generate high distortion levels that can easily damage loudspeakers, even if the rated power of the amplifier is below the rated maximum power handling of the loudspeaker!

As a general rule, do not turn up the volume control past the point where you hear distortion in the form of either signal distortion from an overdriven amplifier or mechanical noise from an overstressed speaker.

For the best performance and system reliability, you should select an amplifier with an output rating greater than the maximum power likely to be used to generate the desired volume levels. If you want your system "Loud + Clear," we suggest that you step up to a JBL power amplifier which has an RMS power rating equal to, but not exceeding, the Maximum Recommended Amplifier Power listed in the specifications of your specific JBL speaker. This margin of reserve power will ensure that the amplifier will not attempt to deliver more power than its design allows. Your dealer will be happy to point out which high-power JBL amplifiers are optimal for your application and listening habits.

Following these guidelines will provide virtually distortion-free sound reproduction and long loudspeaker life.

**WARNING:** Playing loud music over 120dB can permanently damage your hearing. The maximum volume levels achievable with JBL components and high-power amplification may exceed safe levels for extended listening. When listening at high volume levels, always use hearing protection or turn the volume down!

## Specifications

	1/2" Titanium-composite neodymium magnet tweeter. Surface- and flush-mount brackets supplied.
Crossover:	7kHz effective crossover frequency. 6dB/oct crossover built-in. High-accuracy, low-loss, mylar capacitor.
Recommended Amplifier Power Range: (see this page)	5 Watts RMS min. 120 Watts RMS max. (with crossover when used in a system with midwoofers)
Nominal Impedance:	8 Ohms
Sensitivity:	90dB
Frequency Response:	5kHz – 22kHz ± 3dB
Mounting Depth:	3/4" for flush mount.

### Declaration of Conformity



We, JBL Europe A/S  
Kongevejen 194B  
DK-3460 Birkerød  
DENMARK

declare in own responsibility, that the product described in this owner's manual is in compliance with technical standards:

EN 50 081-1/1992  
EN 50 082-1/3.1995

Steen Michaelsen  
JBL Europe A/S  
Birkerød, DENMARK. 1/98



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