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Congratulations and thank you....

for choosing *PrecisionPower* audio equipment. At *PrecisionPower* we proudly design, engineer and manufacture audio products at our facility in Phoenix, Arizona. Our award winning engineering team utilizes innovative technology to consistently deliver *Absolutely State of the Art™* performance, sound quality, reliability, and value. This *PrecisionPower* product reflects our commitment to offer you unparalleled versatility and quality for years of dependable service and listening enjoyment.

Service



Do not attempt to service *PrecisionPower* products yourself. Performing exploratory surgery on your audio equipment yourself will void the warranty. Many parts of your *PrecisionPower* gear are custom built to our specifications. Our factory parts are not made available to anyone else nor are they for sale. Our goal is to make sure that your *PrecisionPower* product will always sound as good as the day it was purchased. Contact your authorized *PrecisionPower* dealer about obtaining any warranty service through *PrecisionPower*. (See Warranty inside back cover)

FOR YOUR RECORDS:

M o d e l _____

Serial Number _____

Purchase Date _____

Caution!



The extended use of a high powered audio system may result in hearing loss or damage. While *PrecisionPower* systems are capable of "Concert Level" volumes with incredible accuracy, they are also designed for you to enjoy at more reasonable levels all of the sonic subtleties created by musicians. Please observe all local sound ordinances.

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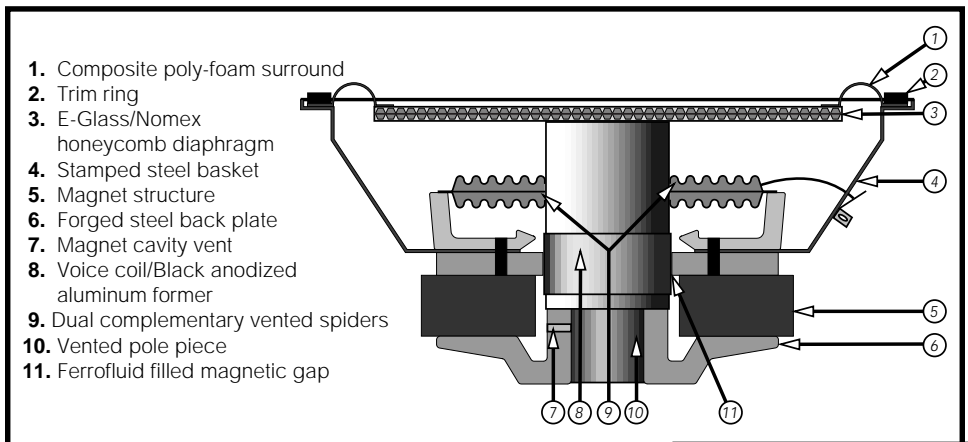
INTRODUCTION

Your new **PowerClass** Flat Piston subwoofer is part of an exciting line of loudspeakers, **PC8**, **PC10**, **PC12** and **PC15**, which represent the extraordinary design achievements of the **PrecisionPower** Engineering Team. The **PrecisionPowerClass** Flat Piston subwoofers have been engineered from the ground up and are constructed at our factory in Phoenix from the finest materials available. Like all **Precision Power** products, they reflect our commitment to “*Absolutely State of the Art*” performance and ultimate sonic quality.

The **PC8**, **PC10** and **PC12** subwoofers incorporate a 2” voice coil while the **PC15** incorporates a 3” voice coil. All have Dual Layer voice coils wound onto black anodized aluminum formers and are available in both 4Ω and 8Ω versions. The voice coils are cooled and given increased mechanical damping through the use of a ferrofluid filled magnetic gap. The cooling, and therefore power handling, is further enhanced by the extended pole piece and vented magnet cavity. The long field motor structure results in a substantial reduction of distortion over conventional loudspeaker systems. Increased linearity at large excursion is obtained by using dual matched rear suspension components together with the finest quality poly-foam surround.


The most unique feature is the use of a flat diaphragm instead of a conical structure. The diaphragm is constructed from a combination of state of the art materials which include E-Glass and Nomex honeycomb. The result is a diaphragm that is exceptionally stiff and lightweight which does not exhibit cone flex distortion or the buckling effects inherent in conventional designs. Additionally, **PrecisionPower** chose a high grade steel basket design to complement the demands of this rugged driver.

Included in this manual are a number of sample enclosure drawings. They are by no means the only enclosures to use, but rather a starting point in the right direction. To determine the correct enclosure for your needs many factors need to be addressed (amount of power, vehicle, placement, crossover, etc.) Therefore, as always, **PrecisionPower** recommends that your subwoofer be installed by an Authorized **PrecisionPower** Dealer.



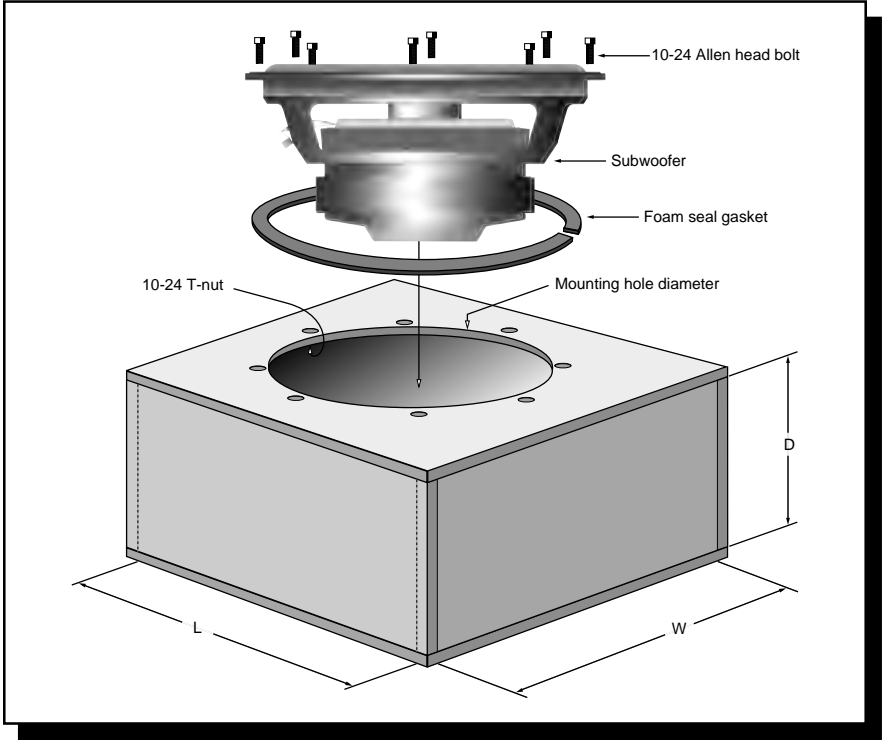
SEALED ENCLOSURE

Building A Sealed Enclosure:

- 
1. Build a sealed box with specified dimensions of L x W x D per drawing. (See chart for suggested box sizes) Use 3/4" thick material (preferably medium density fiber board or equivalent) for box construction. Be sure to use wood glue and silicone to ensure your enclosure is sealed properly, as air leaks will affect the performance of a subwoofer. (The use of an air stapler will help to achieve the nicest results for constructing the enclosure.)
 2. Locate the supplied template and with an exacto knife cut through the correct speaker outline for your woofer, following the printed lines. Then, trace the circle template and mounting hole pattern for your *PrecisionPower* subwoofer on the appropriate side of the box. (See Diagram)
 3. Cut the speaker hole from the face of the box with a router. Use a guide or template whenever possible for a clean, accurate job; use a jig saw only if a router is not available. Drill out the holes for T-nuts with a 7/32" drill bit.
 4. Place the woofer in the opening which you have cut into the box to check the fit. Make sure that the T-nut holes lineup.
 5. Install 10-24 T-nuts (not supplied) into the 7/32" holes from the backside of the face board.
 6. Run an appropriate length of wire into the box, leaving enough length to comfortably install the wires to the terminals on the woofer before placing the speaker into its mounting hole. Use a terminal cup whenever possible.
 7. Vacuum out any wood shavings and dust that could find it's way into the woofer from the inside of the speaker box. Fill the box with polyester fiberfill. Use a ratio of 1/2lb per cubic foot.
 8. Apply the foam gasket to the speaker to ensure a sealed fit. Be sure that the mounting holes line up.
 9. Connect the wires to the woofer observing the proper polarity, positive and negative terminals. Strip away the insulation of the wire about 1/4" and install the wires into the terminal posts.
 10. Install the woofer into the box using 10-24 bolts to fit the t-nuts.
 11. Once the box is completed it is time to connect the speaker wire coming from the subwoofer enclosure to your amplifier. Check that you use the proper wire for consistent polarity, positive and negative. (Refer to amplifier owner's manual.)
 12. Finally, sit back and enjoy to the incredible enhancement your new *PrecisionPower* subwoofer brings to your audio system.

SEALED ENCLOSURE


Sealed speaker diagram



Internal dimensions should be calculated to determine the correct box volume. Be sure to allow for speaker displacement and extra bracing (if used).

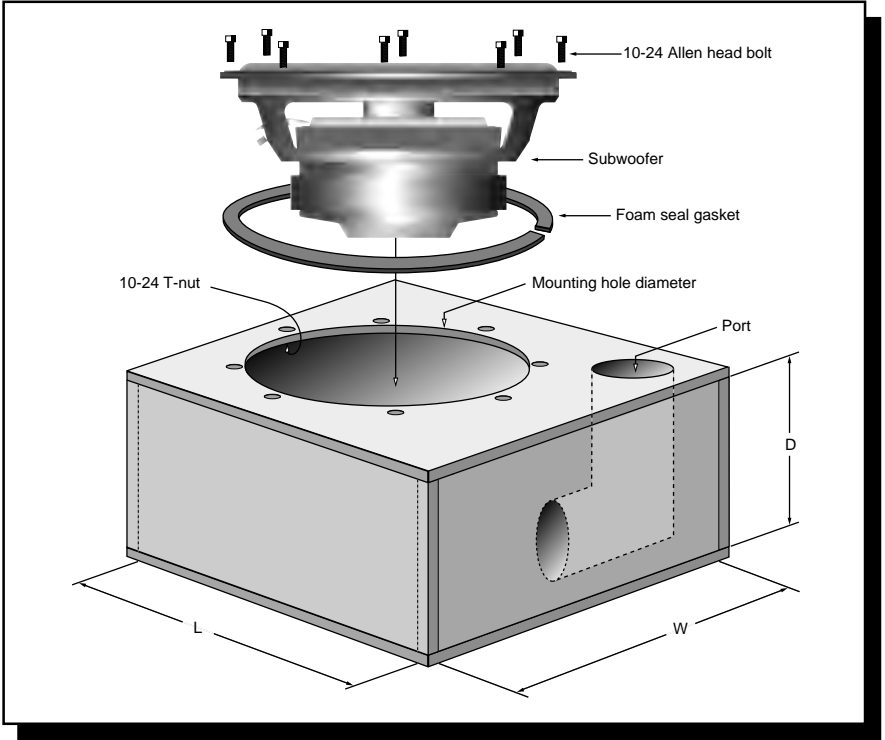
PORTED ENCLOSURE

Building A PPI Ported Enclosure:

- 
1. Build a sealed box with internal dimensions of LxWxD as specified for your woofer. Use 3/4" thick material (preferably medium density fiber board or equivalent) for box construction. Be sure to use wood glue and silicone to ensure your enclosure is sealed properly, as air leaks will affect the performance of a subwoofer. (The use of an air stapler will help to achieve the nicest results for constructing the enclosure.)
 2. Locate the supplied template and with an exacto knife cut through the correct speaker outline for your woofer, following the printed lines. Then, trace the appropriate circle and mounting hole pattern for your **PrecisionPower** subwoofer on the proper side for mounting the woofer. Be sure to offset the woofer to one side to allow for the port to fit comfortably. (See diagram)
 3. Cut the speaker hole out of the box with a router. Use a guide or template whenever possible for a clean, accurate job; use a jig saw only if a router is not available. Drill out the mounting holes with a 7/32" drill bit.
 4. Locate the port material which you are going to use. Trace the pattern of the appropriate hole needed for the port, then cut the hole out. When installing the port, make sure you have a distance of at least the diameter of the port from the end of the port to the wall inside the box. To best seal off any air leaks use silicone around the inside edge. Also, bevel the inside edge of both ends of the port to cut down on port noise.
 5. Place the woofer into the hole which you have cut into the box to check the fit. Make sure that the T-nut holes line up.
 6. Install 10-24 T-nuts (not supplied) into the 7/32" holes from the backside of the mounting board.
 7. Run an appropriate length of wire into the box, leaving enough length to comfortably install the wires to the terminals on the woofer before placing the speaker into its mounting hole. Use a terminal cup whenever possible.
 8. Vacuum out any wood shavings and dust that could find it's way into the speaker from the inside of the speaker box. Line the box with a polyester fiberfill blanket or fiberglass insulation about 1" thick.
 9. Apply the foam gasket to the speaker to ensure a sealed fit. Be sure that the mounting holes line up.
 10. Connect the wires to the woofer observing the proper polarity, positive and negative terminals. Strip away the insulation of the wire about 1/4" and install the wires into the terminal posts.
 11. Install the woofer into the box using the provided 10-24 bolts.
 12. Once the box is completed it is time to connect the speaker wire coming from the subwoofer enclosure to your amplifier. Check that you use the proper wire for consistent polarity, positive and negative. (Refer to amplifier owner's manual.)
 13. Finally, sit back and enjoy to the incredible enhancement your new **PrecisionPower** subwoofer brings to your audio system.

PORTED ENCLOSURE

Ported speaker diagram



Internal dimensions should be calculated to determine the correct box volume. Be sure to allow for speaker displacement, extra bracing (if used), and port displacement. It may be necessary to angle the port to fit your design. To calculate volume of the port: $\text{Radius}^2 \times 3.14 \times \text{length of port}$.

POWERCLASS PC8 Subwoofer

PC8 Specifications

Normal Power Handling	200W rms
Voice Coil Diameter	2"
Voice Coil Type/Form	Two Layer/Anodized Aluminum
Resonant Frequency	35Hz
Qts-Total Damping	.25
Qms- Mechanical Damping	1.28
Qes- Electromagnetic Damping	.32
Vas- Equivalent Compliance Volume	17.91 Liter
DC Resistance of V.C.	3.4Ω / 6.8Ω
Sensitivity (SPL at 1W)	85.65 dB
Linear Excursion	±7.98mm
Peak to Peak Excursion	±17.5mm
Mms- Total Mass	59.98 grams
Sd- Piston Area	0.0191 sqM
Bl- Magnet Product	11.83 TM
Diaphragm Material	E-Glass/Nomex honeycomb
Basket Material	Steel
Net Weight	11.06lb
Dimensions	8.235" dia. X 4.386" H
Mounting Diameter	7.125" dia.

PC8 Sealed Enclosure

Basic working dimensions for the **PC8**

Outer Diameter	8 1/4"
Mounting Hole Diameter	7 1/8"
Mounting Depth (from bottom of top ring)	4"
Speaker Displacement	.026 cubic foot

Net Internal Volume / Internal Box Dimensions

.50 cubic foot	LxWxD 14" x 10" x 6 1/2"
.75 cubic foot	LxWxD 14" x 12" x 8"
1.0 cubic foot	LxWxD 15" x 12" x 9 7/8"

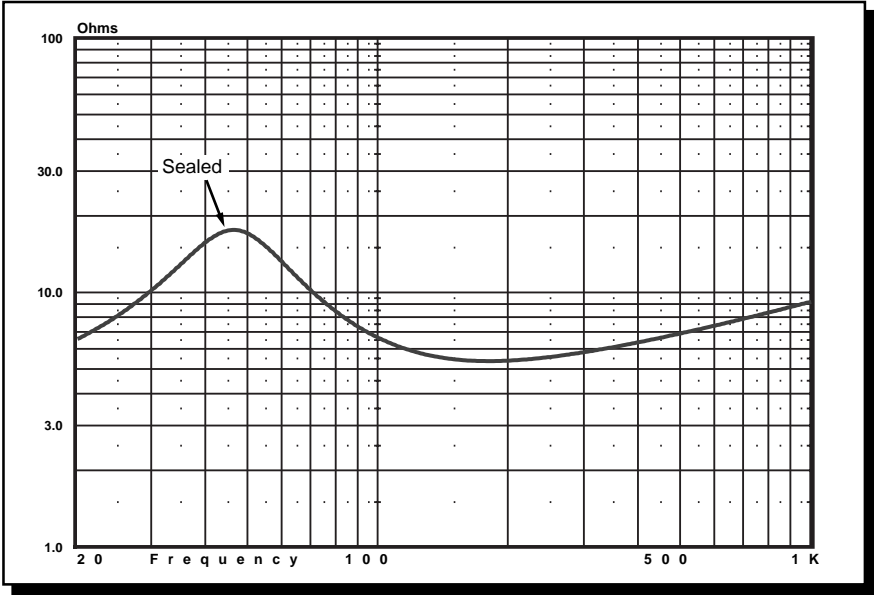
PC8 Ported Enclosure

Due to the very small box size and the very large port necessary to appropriately tune the enclosure, we do not recommend a ported enclosure for the **PC8**

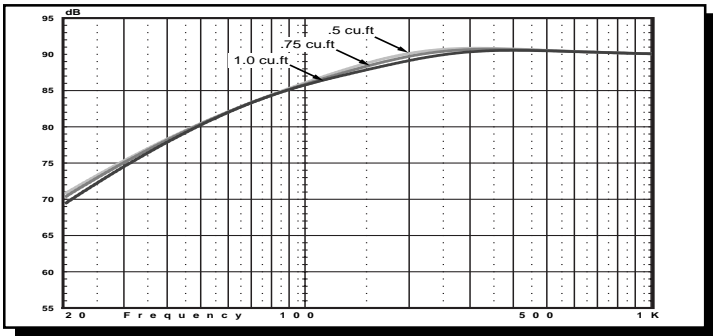


POWERCLASS PC8 Subwoofer

PC8 IMPEDANCE CURVE*



PC8 Sealed RESPONSE CURVE*



PC8 Ported RESPONSE CURVE*

Due to the very small box size and the very large port necessary to appropriately tune the enclosure, we do not recommend a ported enclosure for the **PC8**



*ACTUAL IN-CAR RESPONSE CURVE WILL VARY BASED ON CAR TYPE, WOOFER LOADING, AND ENCLOSURE DESIGN.

POWERCLASS PC10 Subwoofer

PC10 Specifications

Normal Power Handling	200W rms
Voice Coil Diameter	2"
Voice Coil Type / Former	Two Layer/Anodized Aluminum
Resonant Frequency	33 Hz
Qts-Total Damping	0.33
Qms- Mechanical Damping	1.71
Qes- Electromagnetic Damping	0.39
Vas- Equivalent Compliance Volume	43.30 Liter
DC Resistance of V.C.	3.4Ω / 6.8Ω
Sensitivity (SPL at 1W)	88.16 dB
Linear Excursion	±7.98mm
Peak to Peak Excursion	±17.5mm
Mms- Total Mass	72.27 grams
Sd- Piston Area	0.0315 sqM
Bl- Magnet Product	11.57 TM
Diaphragm Material	E-Glass/Nomex honeycomb
Basket Material	Steel
Net Weight	12.02lb
Dimensions	10.1" dia. X 4.956" H
Mounting Diameter	9.125" dia.

PC10 Sealed Enclosure

Basic working dimensions for the **PC10**

Outer Diameter	10 1/8"
Mounting Hole Diameter	9 1/8"
Mounting Depth (from bottom of top ring)	4 9/16"
Speaker Displacement	.032 cubic foot

Net Internal Volume / Internal Box Dimensions

.75 cubic foot	LxWxD 18 5/16" x 12" x 6 1/8"
1.0 cubic foot	LxWxD 20" x 12 3/8" x 7 1/4"
1.25 cubic feet	LxWxD 22" x 14 1/8" x 7 1/8"

PC10 Ported Enclosure

Basic working dimensions for the **PC10**

Outer Diameter	10 1/8"
Mounting Hole Diameter	9 1/8"
Mounting Depth (from bottom of top ring)	4 9/16"
Speaker Displacement	.032 cubic foot

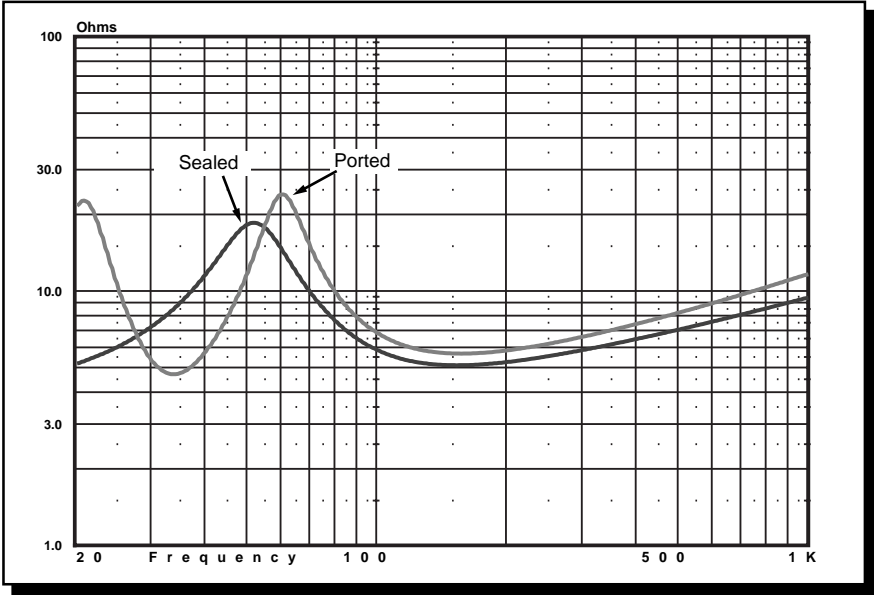
Net Internal Volume / Internal Box Dimensions

1.25 cubic feet	LxWxD 22" x 14" x 7 3/8"
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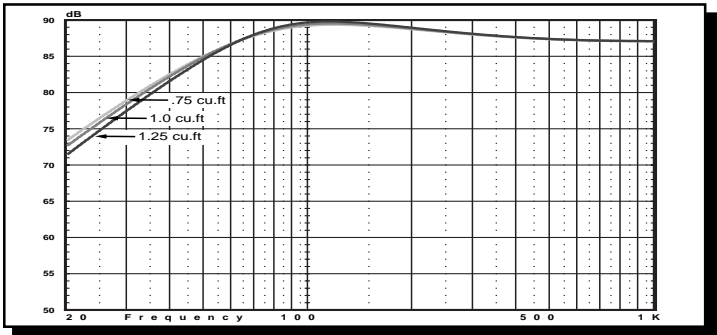
Port Length	6 7/8"
Port Diameter	3" ID
Port Displacement	.039 cubic foot

POWERCLASS PC10 Subwoofer

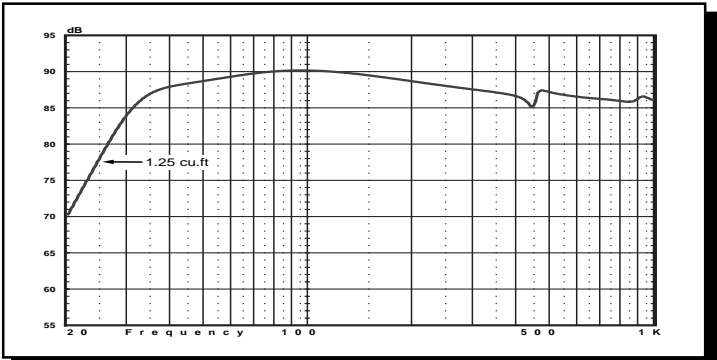
PC10 IMPEDANCE CURVE*



PC10 Sealed RESPONSE CURVE*



PC10 Ported RESPONSE CURVE*



*ACTUAL IN-CAR RESPONSE CURVE WILL VARY BASED ON CAR TYPE, WOOFER LOADING, AND ENCLOSURE DESIGN.

POWERCLASS PC12 Subwoofer

PC12 Specifications

Normal Power Handling	200W rms
Voice Coil Diameter	2"
Voice Coil Type / Former	Two Layer/Anodized Aluminum
Resonant Frequency	36.3Hz
Qts-Total Damping	0.43
Qms- Mechanical Damping	1.64
Qes- Electromagnetic Damping	0.59
Vas- Equivalent Compliance Volume	56.65 Liter
DC Resistance of V.C.	3.4Ω / 6.8Ω
Sensitivity (SPL at 1W)	88.69 dB
Linear Excursion	±7.98mm
Peak to Peak Excursion	±17.5mm
Mms- Total Mass	120.22 grams
Sd- Piston Area	0.0512 sqM
Bl- Magnet Product	12.73 TM
Diaphragm Material	E-Glass/Nomex honeycomb
Basket Material	Steel
Net Weight	12.64lb
Dimensions	12.00" dia. X 5.69" H
Mounting Diameter	11.00" dia.

PC12 Sealed Enclosure

Basic working dimensions for the **PC12**

Outer Diameter	12"
Mounting Hole Diameter	11"
Mounting Depth (from bottom of top ring)	5 1/4"
Speaker Displacement	.044 cubic feet

Net Internal Volume / Internal Box Dimensions

1.25 cubic feet	LxWxD 21 7/16" x 13 1/4" x 7 7/8"
1.50 cubic feet	LxWxD 22 1/5" x 14" x 8 1/2"
1.75 cubic feet	LxWxD 20" x 12" x 13"

PC12 Ported Enclosure

Basic working dimensions for the **PC12**

Outer Diameter	12"
Mounting Hole Diameter	11"
Mounting Depth (from bottom of top ring)	5 1/4"
Speaker Displacement	.044 cubic feet

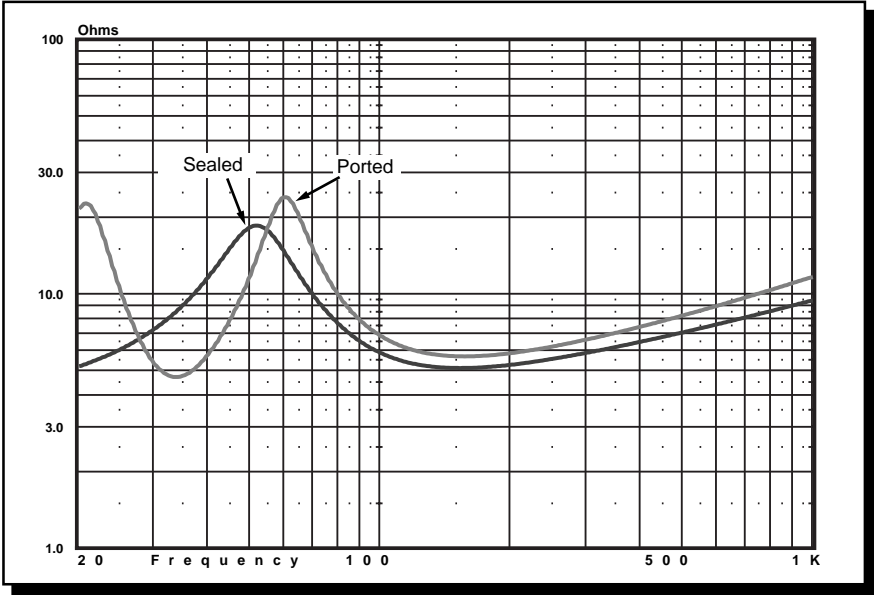
Net Internal Volume / Internal Box Dimensions

1.75 cubic feet	LxWxD 24" x 15" x 9"
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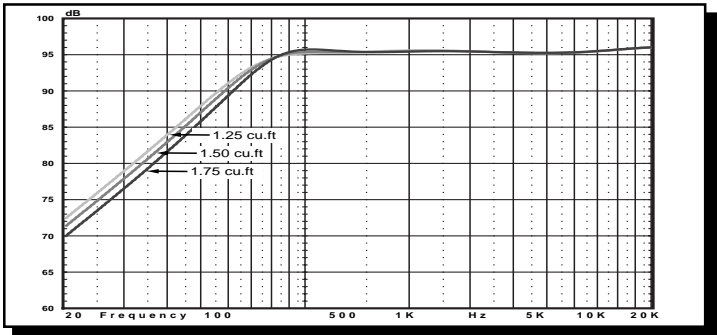
Port Length	12 3/8"
Port Diameter	4" ID
Port Displacement	.108 cubic foot

POWERCLASS PC12 Subwoofer

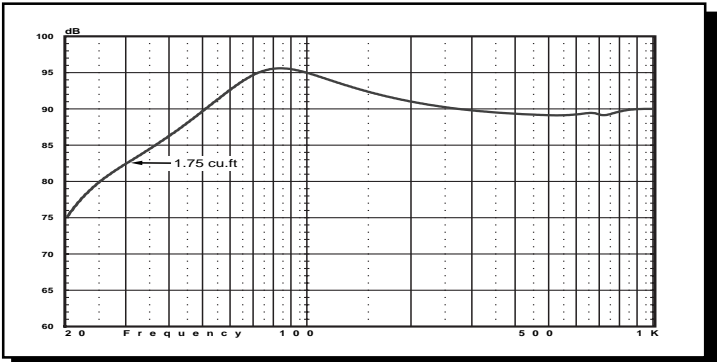
PC12 IMPEDANCE CURVE*



PC12 Sealed RESPONSE CURVE*



PC12 Ported RESPONSE CURVE*



*ACTUAL IN-CAR RESPONSE CURVE WILL VARY BASED ON CAR TYPE, WOOFER LOADING, AND ENCLOSURE DESIGN.

POWERCLASS PC15 Subwoofer

PC15 Specifications

Normal Power Handling	300W rms
Voice Coil Diameter	3"
Voice Coil Type / Former	Two Layer/Anodized Aluminum
Resonant Frequency	26.54Hz
Qts-Total Damping	0.26
Qms- Mechanical Damping	1.53
Qes- Electromagnetic Damping	0.32
Vas- Equivalent Compliance Volume	153.93 Liter
DC Resistance of V.C.	3.4Ω / 6.8Ω
Sensitivity (SPL at 1W)	91.47 dB
Linear Excursion	±6.25mm
Peak to Peak Excursion	±23.75mm
Mms- Total Mass	207.04 grams
Sd- Piston Area	0.079 sqM
Bl- Magnet Product	18.02 TM
Diaphragm Material	E-Glass/Nomex honeycomb
Basket Material	Steel
Net Weight	23.92lb
Dimensions	15.03" dia. X 6.79" h
Mounting Diameter	13.75" dia.

PC15 Sealed Enclosure

Basic working dimensions for the **PC15**

Outer Diameter	15 1/16"
Mounting Hole Diameter	13 3/4"
Mounting Depth (from bottom of top ring)	6 3/8"
Speaker Displacement	.059 cubic feet

Net Internal Volume / Internal Box Dimensions

1.75 cubic foot	LxWxD 20" x 12" x 13"
2.00 cubic foot	LxWxD 24" x 15" x 9 7/8"
2.50 cubic foot	LxWxD 26 1/2" x 16 1/4" x 10 1/4"

PC15 Ported Enclosure

Basic working dimensions for the **PC15**

Outer Diameter	15 1/16"
Mounting Hole Diameter	13 3/4"
Mounting Depth (from bottom of top ring)	6 3/8"
Speaker Displacement	.059 cubic feet

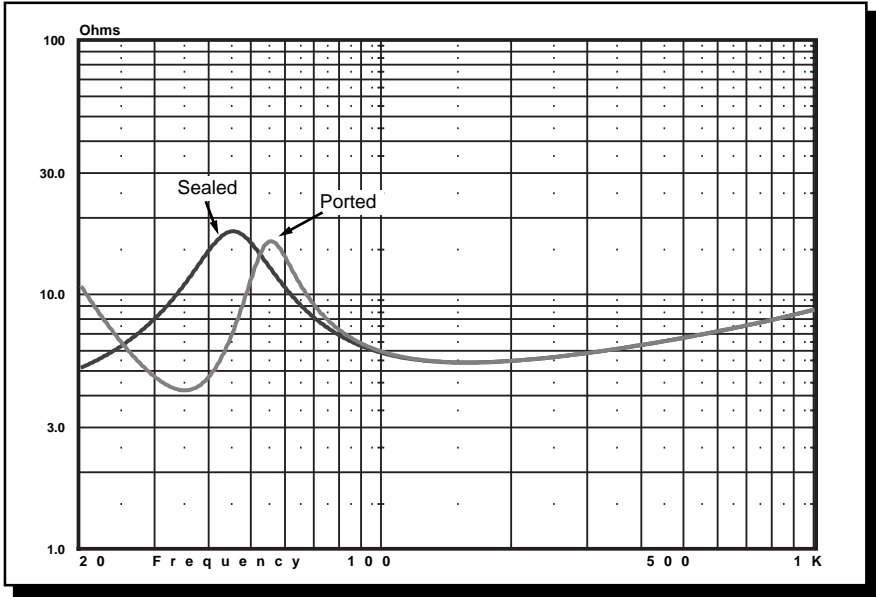
Net Internal Volume / Internal Box Dimensions

2.50 cubic foot	LxWxD 25" x 15" x 12"
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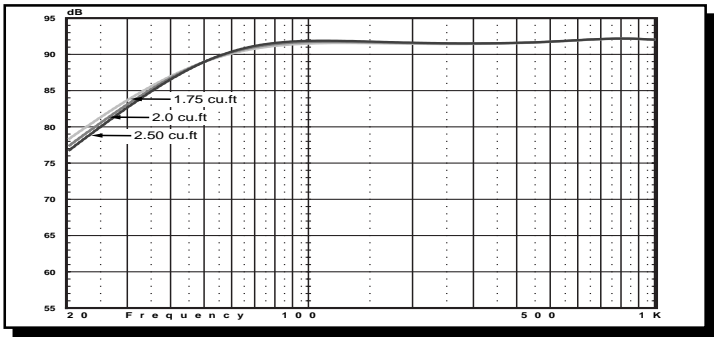
Port Length	7 5/8"
Port Diameter	4" ID
Port Displacement	.06 cubic foot

POWERCLASS PC15 Subwoofer

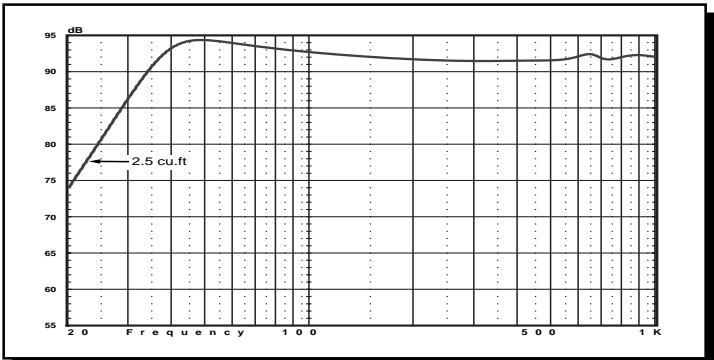
PC15 IMPEDANCE CURVE*



PC15 Sealed RESPONSE CURVE*



PC15 Ported RESPONSE CURVE*



*ACTUAL IN-CAR RESPONSE CURVE WILL VARY BASED ON CAR TYPE, WOOFER LOADING, AND ENCLOSURE DESIGN.

Additional information

The **PowerClass PC8** subwoofer will give you excellent results in sealed enclosures from .5 cubic foot to over 1.0 cubic foot.

The **PowerClass PC10** subwoofer will give you excellent results in enclosures from .75 cubic foot to over 1.25 cubic feet, ported or sealed.

The **PowerClass PC12** subwoofer will give you excellent results in enclosures from 1.25 cubic foot to over 1.75 cubic feet, ported or sealed.

The **PowerClass PC15** subwoofer will give you excellent results in enclosures from 1.75 cubic feet to over 2.50 cubic feet, ported or sealed.

If a ported enclosure is utilized, the port should be tuned from 32-40 Hz. Use as large a port diameter as possible to eliminate port "whistle". Be sure to refer to diagrams and charts for specifications for your new subwoofer.

Our dealers are trained to achieve the highest level of performance from our products. If you are installing your new subwoofers on your own and need assistance, please call your local **PrecisionPower** dealer or **PrecisionPower** Technical Service Department at

1-800-62-POWER.

Thanks again for choosing **PrecisionPower**



FerroSound The Solution Is Loud And Clear™

Ferrosound means more stable sound quality and performance, smoother frequency response, reduced distortion, increased power handling, greater efficiency and voice coil centering.

NOTE: Abuse and/or Installation Error: **PrecisionPower** defines abuse as, but not limited to, burnt voice coils (blackened, no continuity, melted adhesives, coil separated from the former, etc.), punctured or damaged surrounds, broken speaker terminals, non-**PrecisionPower** modifications, bent, chipped, or broken frames, ripped spiders, or damaged back plates. Speakers submitted with any of the above will be considered out of warranty.

Enclosure Calculations

You can use this page and the next to figure out box dimensions.
 $H \times W \times D \text{ (inches)} \div 1728 = \text{CU.FT}$



Enclosure Calculations

We suggest that you store information here about your enclosure for future use when upgrading your car audio system.



WARRANTY

Three-Year Limited U.S.A. Warranty

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. **PrecisionPower** warrants its products to be free from defects in materials and workmanship under normal use and service for a period of three (3) years from the date of original purchase when the unit is installed by an Authorized Dealer. Non-Authorized Dealer installed products carry a one (1) year parts and ninety (90) days labor limited warranty. The extent and conditions of Limited Warranty are as follows:

1. Authorized Dealer Installed Products: **PrecisionPower** will either repair or replace at no charge, to the original purchaser, any unit which **PrecisionPower's** examination discloses to be defective and under warranty, provided the defect occurs within three (3) years from the date of original purchase when the unit is installed by an Authorized Dealer and the product is returned immediately to **PrecisionPower**. This warranty is not transferable.

2. Non-Authorized Dealer Installed Products: **PrecisionPower** will either repair or replace at no charge, to the original purchaser, any unit which **PrecisionPower's** examination discloses to be defective and under warranty, provided the defect occurs within ninety (90) days from the date of purchase and the product is returned immediately to **PrecisionPower**. Warranty claims beyond ninety (90) days for Non-Authorized Dealer Installed Products will be for parts only and will extend for one (1) year from the date of purchase. This warranty is not transferable.

3. The date of purchase and proof of Authorized Dealer Installation of a PrecisionPower product must be established by an original sales receipt which must accompany the article being returned for warranty work.

4. This warranty shall NOT apply to any **PrecisionPower** product found to have the original factory serial number removed or defaced. All products received (by **PrecisionPower**) for in-warranty or out of warranty repair, with their original serial numbers removed or defaced, will NOT be repaired and will be returned to sender, freight collect. Refer to original packaging for the serial number of your component speakers.

5. The provisions of this warranty shall not apply to any **PrecisionPower** product used for a purpose for which it is not designed, which has been repaired or altered in any way, or which has been connected, installed, or adjusted other than in accordance with the instructions furnished in **PrecisionPower's** owner's manual. Nor shall this warranty apply to any part which has been subject to misuse, neglect, or accident.

6. PrecisionPower does not authorize any other persons to assume any other liability in connection with its products. THIS WARRANTY IS THE ONLY EXPRESS WARRANTY MADE BY PRECISIONPOWER APPLICABLE TO ITS PRODUCTS. ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO PRECISIONPOWER PRODUCTS IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY. PRECISIONPOWER SHALL NOT BE LIABLE FOR THE INCIDENTAL, CONSEQUENTIAL, OR COMMERCIAL DAMAGES RESULTING FROM THE BREACH OF THIS WRITTEN WARRANTY. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts; so the above limitations or exclusions may not apply to you.

7. Your product will be serviced on an in-warranty basis within the warranty period for the correction of warranted defects. If improper operation of your **PrecisionPower** product should occur, contact your Authorized Dealer for assistance with the return and factory repair of your **PrecisionPower** product. If an Authorized Dealer is not available, return the unit including your name, telephone number, return address, a copy of your sales receipt, and a description of the problem to:

PrecisionPower, Inc.
Service Department
4829 S. 38th Street
Phoenix, AZ 85040-2964

TO RETURN PRECISIONPOWER PRODUCTS OUT OF WARRANTY: Return the unit, postage prepaid, in the original protective carton. Please include a description of the problem and, if desired, a request for an estimate of repair costs. Unless a request for an estimate is included, the unit will be repaired as necessary. Please contact **PrecisionPower** Customer Service at 1-800-62-POWER for questions concerning out of warranty repair charges. Repaired unit will be returned with an itemized statement, C.O.D.

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