



**GAI-TRONICS®**  
A HUBBELL COMPANY

# Model 370-202 Interface Amplifier Assembly for Electro-Sound

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## Confidentiality Notice

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## Introduction

The Model 370-202 Interface Amplifier for Electro-Sound allows GAI-Tronics' Page/Party® systems to interface with GAI-Tronics' Electro-Sound systems. This unit interconnects two voice circuits that are dissimilar in voltage and/or impedance. The interface amplifier is not just a matching transformer; it also includes a gain adjustment that compensates for differences in signal levels or permits use with a range of signal level. It can also be used in other paging systems.

Model No.	Consisting of:	
	Amplifier	Enclosure
370-202	371-202	372A

## Installation



**Do not install the Model 370-202 equipment in hazardous areas; such installation may cause a safety hazard and consequent injury or property damage.**

### Enclosure Placement

The Model 370-202 Interface Amplifier Assembly should be located near the Model 10456-001 Electro-Sound power source and within 300 feet of the Model 305-001 Line Balance Assembly for the GAI-Tronics Page/Party® system.

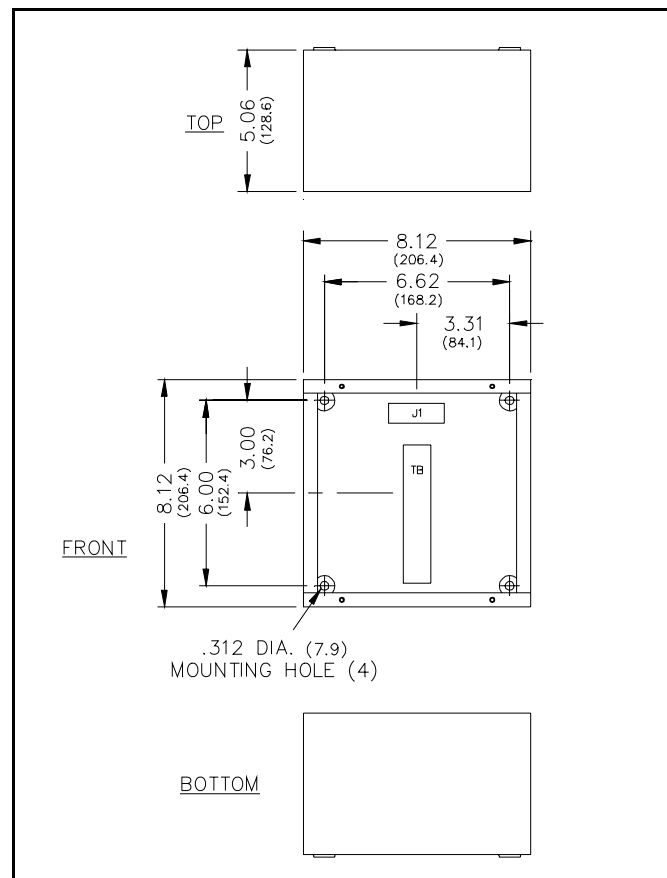


Figure 1. Model 372A Indoor Enclosure Mounting

## Mounting

The indoor enclosure is not supplied with openings for conduit or cable. Drill or punch these openings using the supplied template before mounting the enclosure. We recommend placing the conduit holes near the rear surface of the top or bottom of the enclosure. Avoid the top center, as it may interfere with the plug-in amplifier receptacle.

There are four 5/16-inch diameter mounting holes in the corners of the Model 372A Amplifier Enclosure. See Figure 1. When mounting the enclosure, use caution to avoid damaging the terminal blocks inside. The suggested mounting height for all station enclosures is 54 inches (137 cm) to the bottom of the enclosure.

Connect the conduit to the enclosure, then feed the wiring through the conduit into the enclosure. When wiring the station, follow the wire colors carefully; the colors noted in Figure 2 correspond to GAI-Tronics 60038 Series cable. The wires should be spade-lugged and connected properly to the terminal block. An improper termination may result in diminished station performance.

### Wiring a Model 370-202 Between a Page/Party® System and an Electro-Sound II System

Figure 2 shows the wiring of a three-wire Electro-Sound system interfaced to a five-party Page/Party® system. Handsets or headsets plugged into jack stations are normally tied to party line 5 but switch to the page line whenever the page switch on the handsets or headsets is pushed. The power source contains a relay that disconnects the coupling when no handset or headset is plugged in and another relay for switching between page and party lines.

The wiring shown in Figure 2 provides ac power to Model 471 Electro-Sound Power Source, Model 370-202 Interface Amplifier Assembly, and Page/Party® wall stations.

The wiring to the interface shown in Figure 2 can be modified for two-wire Electro-Sound systems. See the Electro-Sound installation manual, 42004-072. It is absolutely necessary to place a 33-ohm load between points four and five or between points six and seven on the power source enclosure terminal blocks if these points are not connected to a page or party system. The two-way amplifier in the Model 370-202 may oscillate if these resistors or the Page/Party® Line Balance Assembly is not connected to the Model 370-202 Interface.

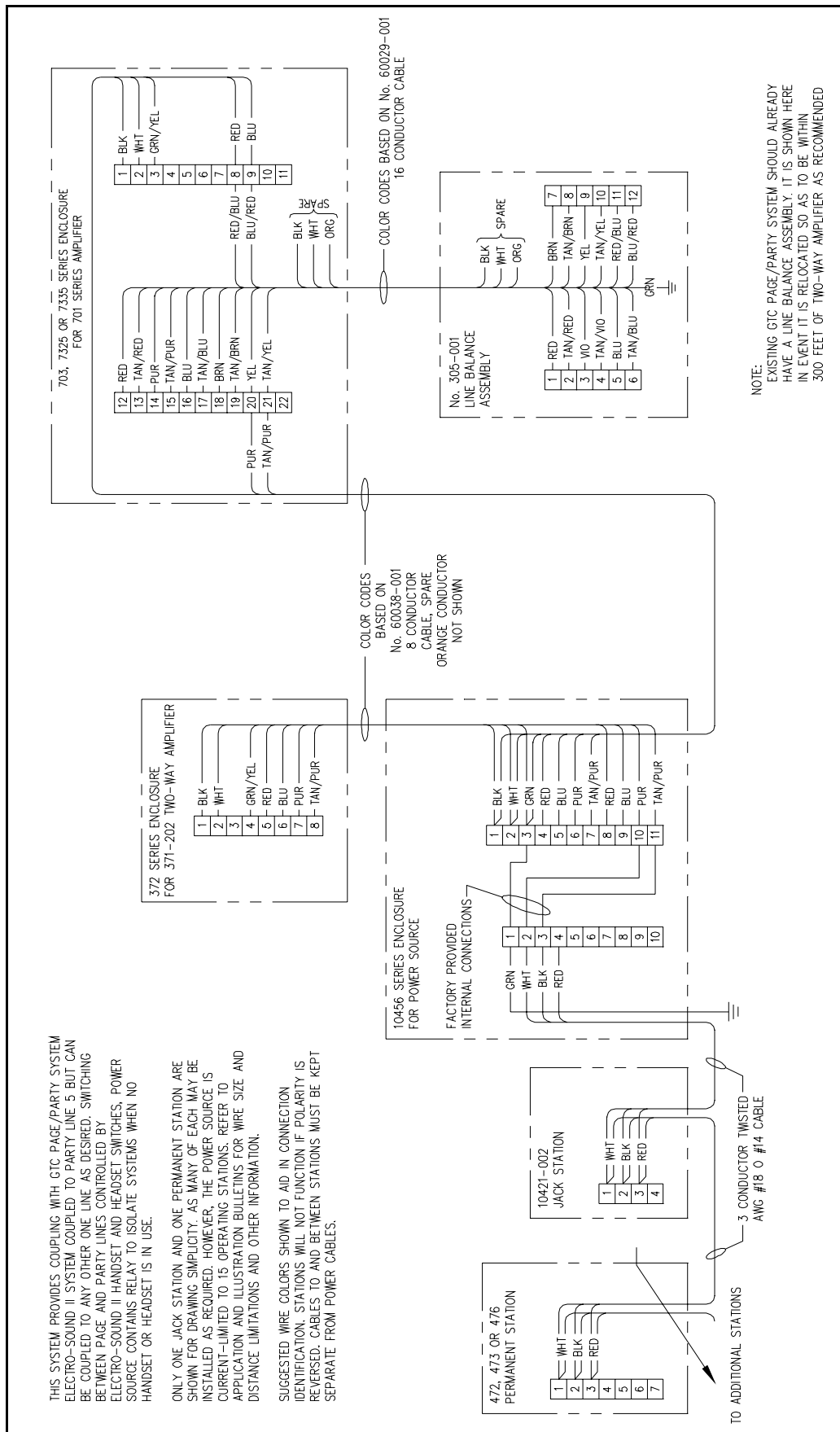


Figure 2. Page/Party® to Electro-Sound

## Checkout and Adjustment

1. After the Model 370-202 is installed and connected to the power, verify that normal use of the Page/Party<sup>®</sup> system has not been affected by the addition of the Model 370-202 Interface Amplifier Assembly. Make sure that the GAI-Tronics sidetone level (the amount of transmitted signal from the microphone that is heard in the receiver) is not substantially affected when the interface is connected to the system.

If oscillation, distortion, or excessive sidetone occurs, check the Model 370-202 installation wiring and ensure that the Model 305-001 Line Balance Assembly is properly installed and connected. See 42004-139, the GAI-Tronics 700 Series Page/Party<sup>®</sup> Systems installation manual. If normal operation is not restored, proceed to Step 3.

2. After the Model 370-202 Interface has been installed and connected to the Electro-Sound system and the GAI-Tronics Page/Party<sup>®</sup> system, verify that a page initiated from the Electro-Sound system can be heard over the page speakers on the Page/Party<sup>®</sup> system.
3. After system basic operation has been verified, adjust the Model 370-202 Interface if necessary. First, establish communications between the Electro-Sound system and the Page/Party<sup>®</sup> handset station nearest the interface. Follow Sub-steps A through C to complete the Model 370-202 adjustment. Adjustments are made through the plugged access holes on the front cover.
  - A. The *Balance Control* is adjusted for minimum sidetone at the GAI-Tronics station. To perform this adjustment, blow into the microphone of the GAI-Tronics handset and adjust the balance potentiometer on the Model 370-202 Interface to “null out” the microphone signal from the receiver.
  - B. Adjust the *Line to GAI-Tronics* potentiometer until the volume of the voice of the caller on the Electro-Sound system is comparable to normal voice levels on the GAI-Tronics system. (See note below).
  - C. Adjust the *GAI-Tronics to Line* potentiometer until the volume of the signal from the GAI-Tronics system to Electro-Sound system is comparable to normal system voice levels. (See note below).

**NOTE:** If the **LINE TO GTC** and/or the **GTC TO LINE** controls are set too high, oscillation and distortion may result. In this event, decrease these control settings, readjust the **BALANCE** control as necessary, and reset the **LINE TO GTC** and/or the **GTC TO LINE** controls for optimum levels below the point at which oscillation occurs.

### One-Way Operation

If the Model 370-202 Interface is **only** used for one-way communication, jumper wires located on the Model 370-202 two-way amplifier printed circuit card (69056-002) can be removed to improve amplifier stability and performance.

If the Model 370-202 is used for **one-way communications ONLY**, complete the following adjustments:

1. For Electro-Sound system to the GTC system, cut Jumper W-4.
2. For the GTC system page line to Electro-Sound system or central amplifier, cut Jumper W-3.

When the Model 370-202 is operated in a one-way mode, the **BALANCE** control will have no effect on operation. When W-4 is cut, only the **LINE TO GTC** control will be functional. The **GTC TO LINE** potentiometer will be active if W-3 is cut.

### Model 370-202 Applications

In Figure 3, a Model 370-202 Interface allows the following options:

- paging to be initiated by either a Page/Party<sup>®</sup> station or a three-wire Electro-Sound system
- two-way party line communication to occur at a prearranged time

Further, where a three-wire Electro-Sound system (Electro-Sound with paging) is installed and more than ten Page/Party<sup>®</sup> speaker amplifiers, (650 Series), are used to power the speakers, a Model 370-202 Interface is required. See 42004-072, the Electro-Sound Communications System installation manual, for more information.

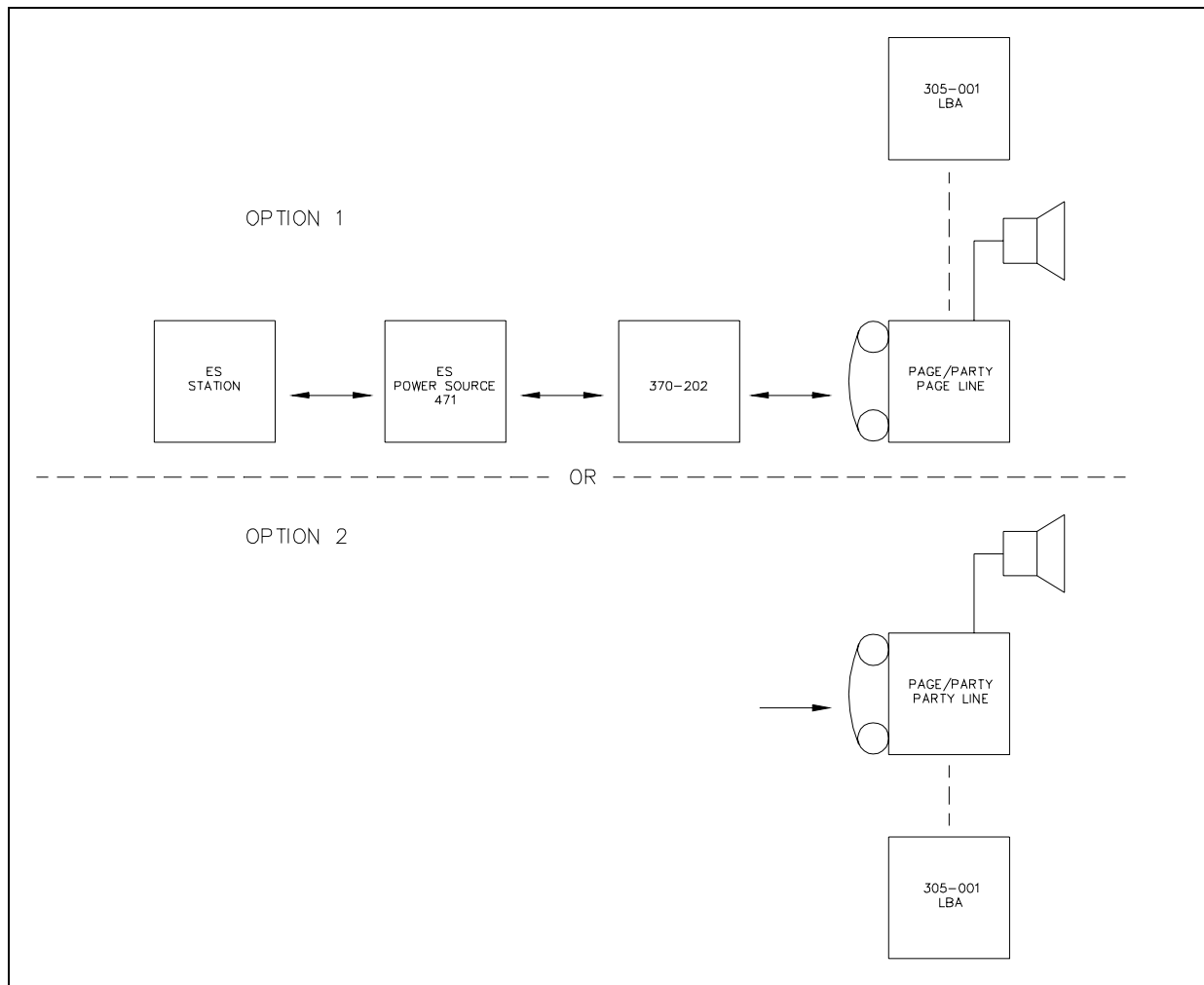


Figure 3.

## Special Applications

Please contact your GAI-Tronics' Representative for more detailed information on the capabilities and special applications of the 370 Series. The 370 Series can also be used with the following:

- Mine Page Telephones
- Two 370-202 Interface Amplifier Assemblies can be used to connect two Page/Party<sup>®</sup> systems together through a telephone line or a simple twisted pair of wires.
- An interface to a central amplifier

## Maintenance

The construction of the 371 Series Plug-in Two-way Amplifier allows replacement of either the printed circuit board assembly (PCBA) or two fuses without the need for soldering. The Model 371-202 is used to interface Page/Party<sup>®</sup> systems to Electro-Sound systems.

### Replacement Parts

Part No.	Description	371-202	372A
61508-010	Harness Assembly		■
12535-001	Enclosure Hardware Kit (5 sets)		■
12508-002	Captive Screw Kit	■	■
69056-002	PCBA, Two-way Amp (GTC-Electro-Sound Line)	■	
25210-005	Gasket	■	
12601-001	PCBA Standoffs (10 pack)	■	
12604-002	Fuse, Slow-Blow 1/16A (0.25 × 1.25, 250 V) (10 pack)	■	
12604-005	Fuse, Slow-Blow 0.3A (0.25 × 1.25, 250 V) (10 pack)	■	
10440-001	Maintenance Cable	■	■



# Specifications

## Audio Characteristics

Line Terminals Output: GAI-Tronics Terminals Input; 1000 Hz

Load impedance.....	600-1000 ohms
Output source impedance.....	600 ohms, nominal
Output level.....	0.78 V <sub>RMS</sub> , nom. (with nom. input)
Maximum output .....	2.0 V <sub>RMS</sub> (with nom. input)
Input level.....	1.5 V <sub>RMS</sub> , nom.; 0.39 V <sub>RMS</sub> minimum
Frequency response.....	250-4000 Hz (0, -0.5 dB)
Harmonic distortion .....	0.6% maximum

GAI-Tronics Line Terminals Output: Line Terminals Input; 1000 Hz

Load impedance.....	33 ohms, nominal
Output source impedance.....	1000 ohms, minimum
Output level.....	1.5 V <sub>RMS</sub> , nom. (with nom. input)
Maximum output .....	1.9 V <sub>RMS</sub> (with nom. input)
Input level.....	0.78 V <sub>RMS</sub> , nom.; 0.21 V <sub>RMS</sub> , minimum
Frequency response.....	250-4000 Hz (0, -4dB)
Harmonic distortion .....	0.6% maximum

## Power Requirements

120 V ac.....	105-130 V ac, 50-60 Hz, 10 W
24 V dc.....	21-28 V dc, .1 amp max.

## Physical Characteristics

Controls.....	Gain control GTC TO LINE Gain control LINE TO GTC BALANCE Control (to compensate line capacitance)
Temperature range.....	-22° F to +158° F (-30° C to +70° C)
Construction/finish.....	16-gauge cold-rolled steel/gray polyurethane enamel
Mounting.....	Wall or column, four 5/16-inch mounting holds
Connections .....	Internal screw-type barrier terminal blocks
Dimensions.....	8.1 H × 8.1 W × 5.1 D inches; (206 × 206 × 129 mm)
Shipping weight .....	11 lbs (4.8 kg)

# Warranty

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Equipment. GAI-Tronics warrants for a period of one (1) year from the date of shipment, that any GAI-Tronics equipment supplied hereunder shall be free of defects in material and workmanship, shall comply with the then-current product specifications and product literature, and if applicable, shall be fit for the purpose specified in the agreed-upon quotation or proposal document. If (a) Seller's goods prove to be defective in workmanship and/or material under normal and proper usage, or unfit for the purpose specified and agreed upon, and (b) Buyer's claim is made within the warranty period set forth above, Buyer may return such goods to GAI-Tronics' nearest depot repair facility, freight prepaid, at which time they will be repaired or replaced, at Seller's option, without charge to Buyer. Repair or replacement shall be Buyer's sole and exclusive remedy. The warranty period on any repaired or replacement equipment shall be the greater of the ninety (90) day repair warranty or one (1) year from the date the original equipment was shipped. In no event shall GAI-Tronics warranty obligations with respect to equipment exceed 100% of the total cost of the equipment supplied hereunder. Buyer may also be entitled to the manufacturer's warranty on any third-party goods supplied by GAI-Tronics hereunder. The applicability of any such third-party warranty will be determined by GAI-Tronics.

Services. Any services GAI-Tronics provides hereunder, whether directly or through subcontractors, shall be performed in accordance with the standard of care with which such services are normally provided in the industry. If the services fail to meet the applicable industry standard, GAI-Tronics will re-perform such services at no cost to buyer to correct said deficiency to Company's satisfaction provided any and all issues are identified prior to the demobilization of the Contractor's personnel from the work site. Re-performance of services shall be Buyer's sole and exclusive remedy, and in no event shall GAI-Tronics warranty obligations with respect to services exceed 100% of the total cost of the services provided hereunder.

Warranty Periods. Every claim by Buyer alleging a defect in the goods and/or services provided hereunder shall be deemed waived unless such claim is made in writing within the applicable warranty periods as set forth above. Provided, however, that if the defect complained of is latent and not discoverable within the above warranty periods, every claim arising on account of such latent defect shall be deemed waived unless it is made in writing within a reasonable time after such latent defect is or should have been discovered by Buyer.

Limitations / Exclusions. The warranties herein shall not apply to, and GAI-Tronics shall not be responsible for, any damage to the goods or failure of the services supplied hereunder, to the extent caused by Buyer's neglect, failure to follow operational and maintenance procedures provided with the equipment, or the use of technicians not specifically authorized by GAI-Tronics to maintain or service the equipment. THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES AND REMEDIES, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## Return Policy

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If the equipment requires service, contact your Regional Service Center for a return authorization number (RA#). Equipment should be shipped prepaid to GAI-Tronics with a return authorization number and a purchase order number. If the equipment is under warranty, repairs or a replacement will be made in accordance with the warranty policy set forth above. Please include a written explanation of all defects to assist our technicians in their troubleshooting efforts.

Call 800-492-1212 (inside the USA) or 610-777-1374 (outside the USA) for help identifying the Regional Service Center closest to you.