

Operating Instructions



BP-319 / BP-351 Beltpacks RTSTW Intercom Systems

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Bosch Security Systems, Inc.
12000 Portland Avenue South
Burnsville, MN 55337 USA
Telephone: 877-863-4169
Fax: 800-323-0498
Info@rtsintercoms.com

Technical Questions EMEA
Bosch Security Systems Technical Support
EMEA
[http://www.rtsintercoms.com/
contact_main.php](http://www.rtsintercoms.com/contact_main.php)

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Customer Service Department
Bosch Security Systems, Inc. (Lincoln, NE)
Telephone: 402-467-5321
Fax: 402-467-3279
Factory Service: 800-553-5992

Please include a note in the box which supplies the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

Shipping to the Manufacturer

All shipments of product should be made via UPS Ground, prepaid (you may request from Factory Service a different shipment method). Any shipment upgrades will be paid by the customer. The equipment should be shipped in the original packing carton. If the original carton is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the equipment should be wrapped in paper and surrounded with at least four (4) inches of excelsior or similar shock-absorbing material. All shipments must be sent to the following address and must include the Proof of Purchase for warranty repair. Upon completion of any repair the equipment will be returned via United Parcel Service or specified shipper, collect.

Factory Service Department
Bosch Security Systems, Inc.
8601 East Cornhusker Hwy.
Lincoln, NE 68507 U.S.A.
Attn: Service

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Introduction

Description

The BP-319/351 are beltpacks for use with RTS 2-wire intercom systems. The BP-319 is a microprocessor controlled one-channel intercom, where the BP-351 is a microprocessor controlled two-channel select intercom beltpack. Both have connections for headset/earset microphones (Dynamic/Electret).

Features

Features of the BP-319/351 include:

- Call function that allows the user to send or receive call signals to other devices on the intercom channel, including Audible Call Alert on the listen side.
- Microprocessor controlled Microphone Kill Detect.
- Powered externally, via the intercom system power supply on channel one.
- Headset/earset 4 or 5-pin XLR connection set for intercom operation.

Connections and Controls

BP-319/351 has the following connections and controls:

- Intercom volume control
- Headset connectors that accept XLR type 4 or 5-pin male connector.
- Line connector that accepts an XLR type 3-pin female connector for intercom line and power input.
- A loop-through connection (XLR male) connects several beltpacks in a chain. Since this is often the preferred method of connection, a line loop connector has been added to new units. See Figure 1 on page 6.

Specifications

General

Channel Supplied Power Requirements

30VDC nominal (standard RTS line), 40 to 100mA

Environmental Requirements

Storage: -20°C to 80°C; 0% to 95% humidity, non-condensing

Operating: 0°C to 50°C; 0% to 95% humidity, non-condensing

Dimensions: 5.0" (127mm) H x 3.5" (88.9mm) W x 1.8" (45.7mm) D

Weight: Approximately 13oz. (0.4kg)

Interface Requirements

Headset/Earset

50 to 200 Ω dynamic microphone

150 to 600 Ω headphones

1000 - 3000 Ω electret microphone

RTS Intercom Channel

Output Level: 775VRMS nominal

Terminating Impedance: 200 Ω $\pm$ 10%

Bridging Impedance: greater than 10,000 Ω

Call Signaling

Send: 20kHz $\pm$ 100Hz, 250mVRMS $\pm$ 10%

Receive: 20kHz $\pm$ 800Hz, 100mVRMS $\pm$ 10%

Mic-Off Frequency Detect

24kHz $\pm$ 800Hz, 100mVRMS

Noise Contribution

less than -60dB on the line

Headset Amplifier

Maximum Output

4.5 $\pm$ 10% VRMS into 150 Ω headphones

Frequency Response

200Hz to 8kHz $\pm$ 2dB

Audible Alert

1kHz, at the headset/earset

Total Harmonic Distortion

Less than 1% nominal at less than 3.5VRMS into the headset

Sidetone

17dB minimum range, adjustable

Connector Pin Configurations

TABLE 1. Intercom Channel Connector

XLR-3 M/F Loop Thru	BP-319	BP-351
Pin 1	Common	Common
Pin 2	+30V _{DC} IN/ System Chan 1	+30V _{DC} IN/ System Chan 1
Pin 3	System Chan 2	System Chan 2

NOTE: On BP-319 channel must be selected by intercom jumpers see Table 3 on page 9.

Headset Connector

Type: XLR-4F

Pin 1	Headset microphone low
Pin 2	Headset microphone high
Pin 3	Headphone common
Pin 4	Headphone audio

Type: XLR-5F

Pin 1	Headset microphone low
Pin 2	Headset microphone high
Pin 3	Headphone low
Pin 4	Headphone high
Pin 5	No connection

NOTE: Sometimes pin 4 and 5 connect together when using a dual-sided headset.

Operation

Operation External Connections and Controls

NOTE: The numbers refer to the callouts in Figure 1.

1. **Volume Control:** Use this control to adjust the headset/earset listen level.
2. **Chan Select Button (BP-351 Only):** The Chan button allows the user to select which intercom channel is active. The yellow indicator next to 1 or 2 lights to show the active channel. Press the Chan button to change the channel selection.
3. **Call Button and Indicator:** The Call function allows the user to send or receive signals to/from other devices on the intercom channel selected. The Call button operation in two ways:
 - Call/Receive: When there is an incoming call signal, the indicator is red. (If Audible Call Alert is enabled, incoming call will cause beeps in the headset.)
 - Call Send: To send a call signal to all stations on a selected channel, press and hold the Call button until a verbal response is received. The indicator will glow red.
4. **Talk Button and Indicator:** The talk button activates the headset microphone and operates in two ways:
 - Latched Mode: Tap the button once to talk. The indicator will glow green. Tap the button again when finished with a conversation.
 - Momentary Mode: Press and hold the button to talk momentarily. Release the button when finished talking.
5. **Sidetone Control:** When using a headset, this control adjusts your own voice level heard in the earphones. To adjust the level, tap the Talk button once to turn ON the headset microphone. Then, use a small Phillips-head screwdriver to increase or decrease your voice level while talking into the microphone. (This control is accessible by removing one screw of the belt clip.)

6. Headset Connector: This connector accepts an RTS headset with a boom microphone.
7. Intercom Channel Connector: The BP-319/351 intercom channel is connected via a 3-pin female connector with a 1-pin male loop-through connector. The BP-319/351 is powered from the intercom system power supply.

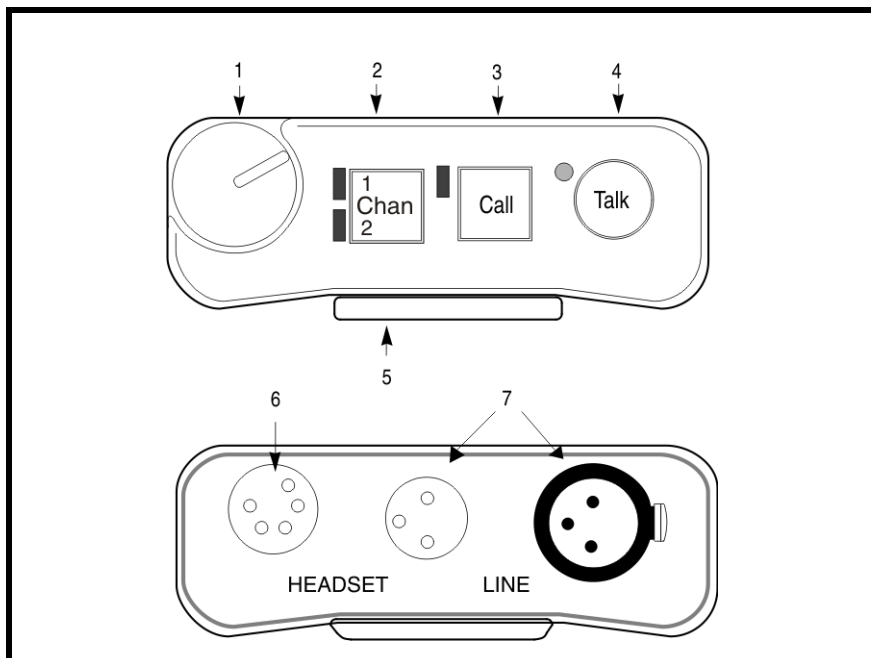


FIGURE 1. *Reference View*

Setting Modes of Operation

Perform the following steps to change the BP-319/351 mode of operation.

1. Both the Talk and Call indicators should be OFF.
2. Press and hold both the Talk and Call keys, then release both keys. The Call indicator should now glow red. (The number of beeps heard in the headset indicates the current mode of operation.)
3. Press the Call key to change to the next mode of operation. Each press of the Call key causes the BP-319/351 to change to the next mode of operation.

-
4. When the desired mode is reached, press the Talk key to select the mode and exit.

NOTE: Each time the intercom system power is turned ON, the BP-319-/351 will reset to the default mode of operation (Mode 2, see Table 2).

TABLE 2. Operating Modes

Mode (beeps)	Mic Kill	Audible Call Alert
1	Disabled	Disabled
2 (default)	Enabled	Disabled
3	Disabled	Enabled
4	Enabled	Enabled

BP-319/351 Operation Programming

The BP-319/351 uses four modes of operation to control the Mic Kill and Audible Call Alert features (see Table 2).

Mic Kill

When this feature is enabled and Mic Kill signal is received from the intercom channel, the BP-319/351 microphone will be turned OFF>

Audible Call Alert

When this feature is enabled, an audible beep is heard in the headset whenever there is an incoming call from the same intercom channel.

When this feature is disabled, no audible beep is heard for incoming calls.

Internal Switches, Jumpers, and Adjustments

There are several internal switches, jumpers, and adjustments that affect operation. These are described below. To gain access to the switches, jumpers, and adjustments, disconnect all power and line connections. Remove two screws from the top of each side of the case and two screws from the bottom of each side of the case. The jumper and switch locations are shown in Figure 2.

Sidetone Adjustment

The **Sidetone Adjustment** is accessible either internally (see Figure 2) or by removing the belt clip mounting screw (#5) shown in Figure 1.

To adjust the level of your own voice heard in the earphones, tap the Talk button once to turn ON the headset microphone. Then, use a small Phillips-head screwdriver to increase or decrease your voice level while talking into the microphone.

Mic Gain Adjustment

The **Mic Gain Adjustment** is accessible internally on the board (R156)y (see Figure 2) or by removing the belt clip mounting screw (#5) shown in Figure 1.

To **adjust the mic gain**, do the following:

- > Using a small Phillips-head screwdriver, turn the **Mic Gain pot** clockwise to increase the gain (or counterclockwise to decrease the gain).

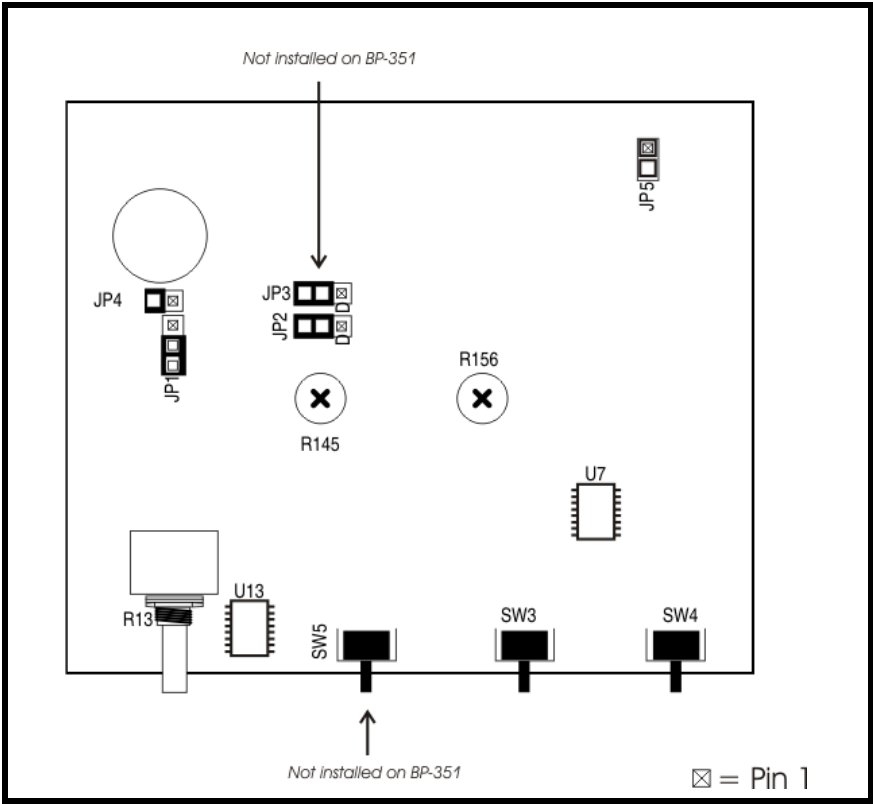


FIGURE 2. Internal Jumpers and Switches

TABLE 3. Internal Jumpers

Jumper Switch Number	Jumper or Switch Function	Default Setting
JP1 (BP-319)	Open	Open
JP2 (BP-319)	Pins 2 & 3	Pins 2 & 3 are shorted
JP3 (BP-319)	Pins 1 & 2 shorted for CH 1 audio	Pins 2 & 3 are shorted
	Pins 2 & 3 shorted for CH 2 audio	
JP3 (BP-351)	Not stuffed	Not stuffed
JP4	Open	Open
JP5	Pins 1 & 2 are shorted	Pins 1 & 2 are shorted

Replacement Parts

Where to Obtain Replacement Parts

Parts may be obtained directly from Telex at:

Telex Communications, Inc. (Lincoln, NE)
Telephone: 402-467-5321
Fax: 402-467-3279
Factory Service: 800-553-5992

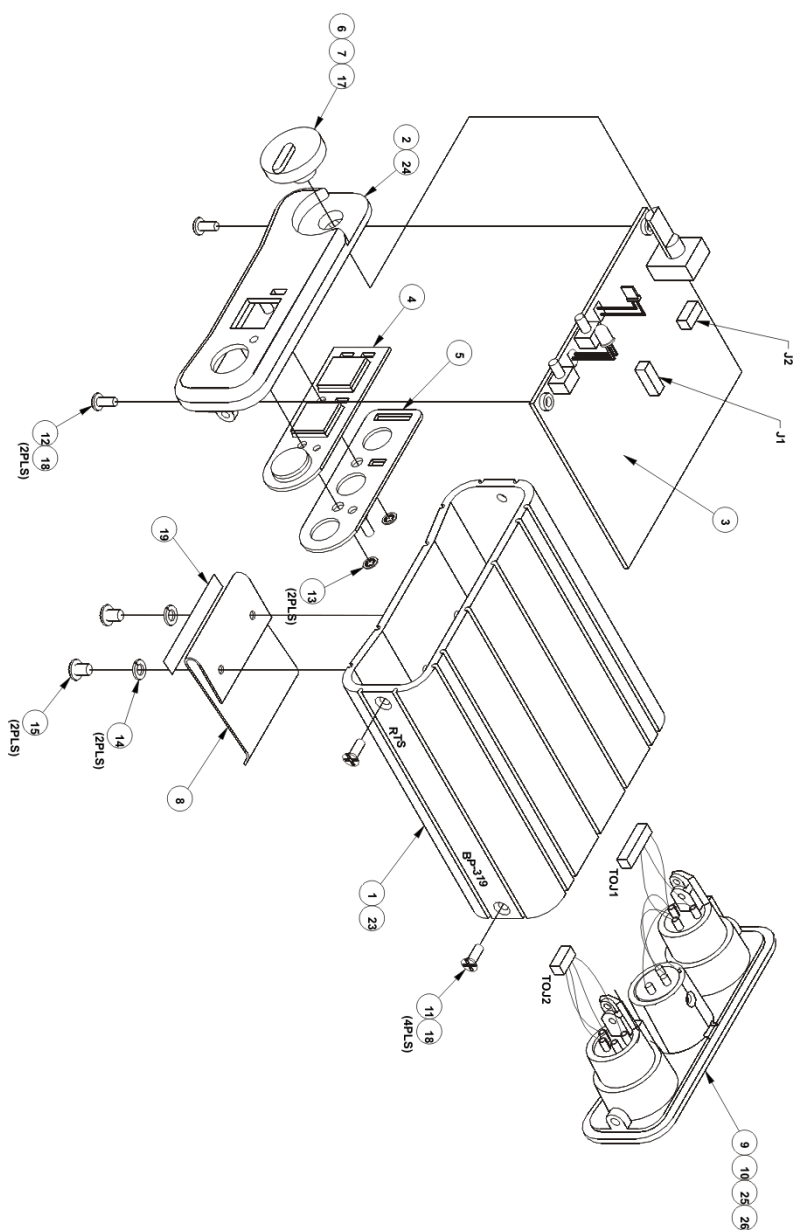


FIGURE 3. BP-319 Final Assembly, 90107753000

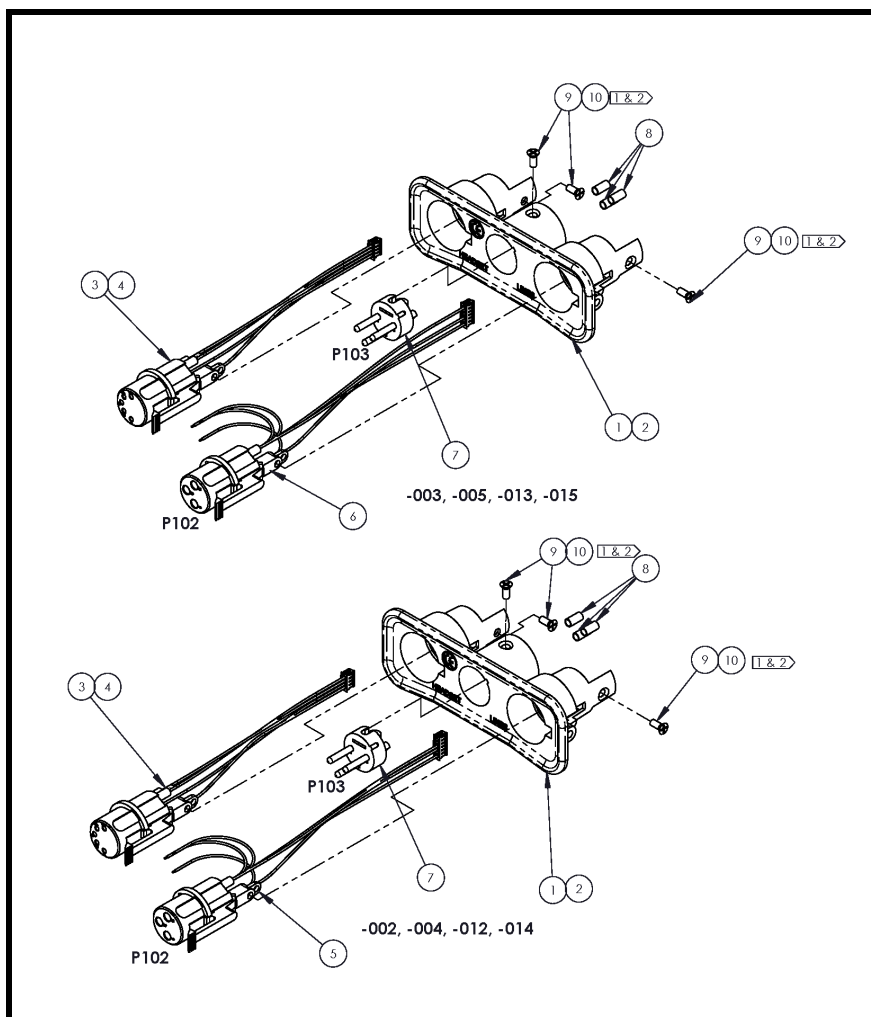


FIGURE 4. Connector Plate Assembly, BP-319 and BP-351 - 90207486000

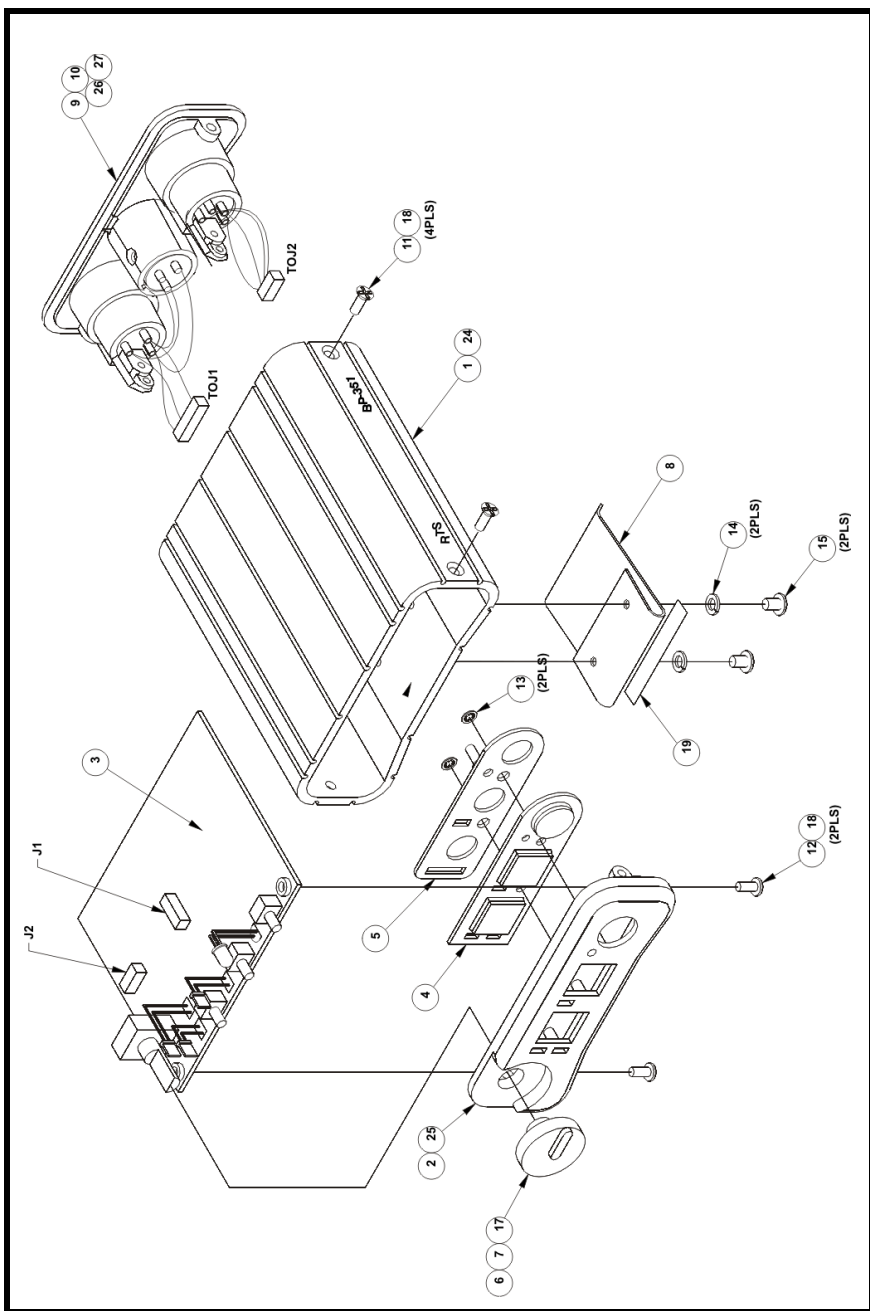


FIGURE 6. BP-351 Final Assembly 9010-7754-000

