WyRELESS ACCESS

## INSTALLATION INSTRUCTIONS

# MODULAR INTEGRATED READER LOCK

# (MIRL)

# STANDARD CYLINDRICAL

**(including drill jig & scar/push plate instructions)**

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# INSTALLATION INSTRUCTIONS

## Wyreless Access ™ MIRL Standard Cylindrical

NOTE: These instructions are for installing the Modular Integrated Reader Lock (MIRL) Standard Cylindrical, a component of a Wyreless Access System. After completing this installation refer to the Configuring and Operating the Wyreless Access System manual.

## Table of Contents


**1. Wyreless Access™ System Components ..... 4**
1.1 Overview ..... 4
1.2 MIRL Standard Cylindrical Components & Sales Models ..... 5
**2. Installing the MIRL Standard Cylindrical ..... 7**
2.1 Tools Required ..... 7
2.2 Optional Installation Aids ..... 7
2.3 Determining the Best WPIM and MIRL Locations ..... 8
2.4 Door Preparation ..... 8
2.5 Marking Holes for Drilling ..... 9
2.6 Drilling Holes ..... 20
2.7 Mortising for Latch ..... 20
2.8 Installing the Optional Door Position Switch ..... 21
2.9 Mounting Transceiver ..... 22
2.10 Connecting Door Position Switch Wires ..... 25
2.11 Mounting Reader ..... 26
2.12 Adjusting Lockset to Door Thickness ..... 30
2.13 Placing the Lock Chassis into the Chassis Hole and Then Engaging the Retractor in Latch ..... 32
2.14 Connecting & Dressing the Motor, Request to Exit, & Ground Wires ..... 33
2.15 Installing the Inside Rose Assembly & Cover ..... 34
2.16 Installing the Inside Lever ..... 34
2.17 Installing Strike Plate ..... 34
2.18 Installing the Optional Door Position Magnet ..... 36
2.19 Install the Battery Pack & Transceiver Cover ..... 37
**3. Troubleshooting ..... 39**
**4. Contacting Recognition Source ..... 40**
**5. FCC/UL Compliance & Warnings ..... 41**
5.1 FCC Compliance ..... 41
5.2 UL Compliance ..... 41
5.3 Warnings ..... 41
**6. Revision History ..... 42**



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# 1. Wyreless Access™ System Components

## 1.1 Overview

Every access control system that uses Wyreless Access™ contains two different types of modules (Figure 1-1):

- at least one Wyreless Panel Interface Module (WPIM), and
- at least one Wyreless Access Point Module (WAPM)

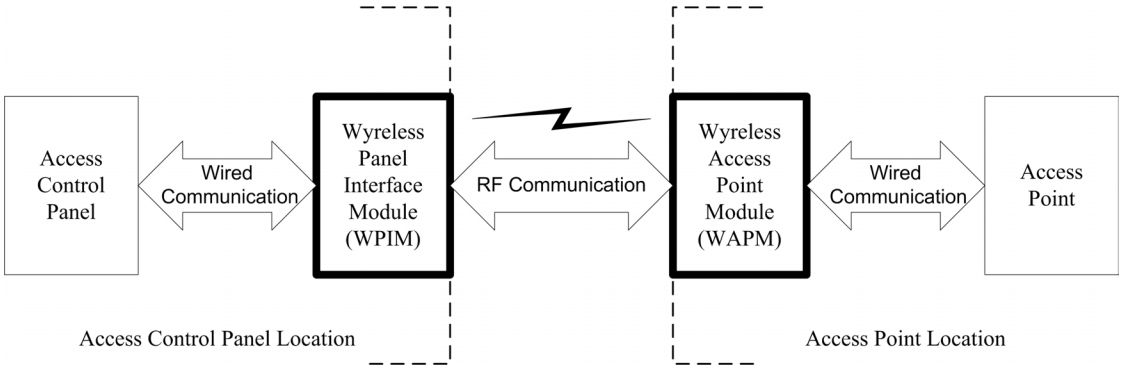


**Figure 1-1 – Wyreless Access System Block Diagram**

Recognition Source's product line contains several different expressions of each module.

The WPIM is wired to the access control panel and ideally is installed very close to the access control panel. The WPIMs installation location is determined by the location of the WAPMs with which it will communicate using RF.

The WAPM is installed at the access point where access will be controlled and/or monitored. Depending on the application and which WAPM is used, some wiring at the access control point may be required.

Regardless of which WPIM or WAPM module is used, the communication link between the WPIM and WAPM is always RF.

This manual describes the installation of a Modular Integrated Reader Lock (MIRL) Standard Cylindrical which is a WAPM.

## 1.2 MIRL Standard Cylindrical Components & Sales Models

The MIRL Standard Cylindrical includes 7 components (Figure 1-2, Figure 1-3, Figure 1-4, and Figure 1-5 ):

- electrical lock
- card reader
- power supply
- door position switch connections
- request-to-exit sensor
- RF receiver
- RF transmitter

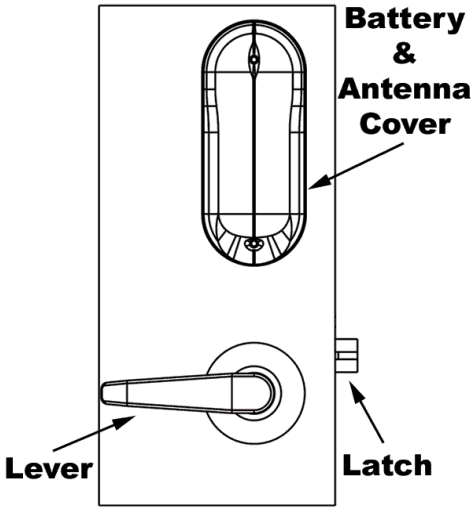


**Figure 1-2 – Unlocked Side of the MIRL (Transceiver side)**

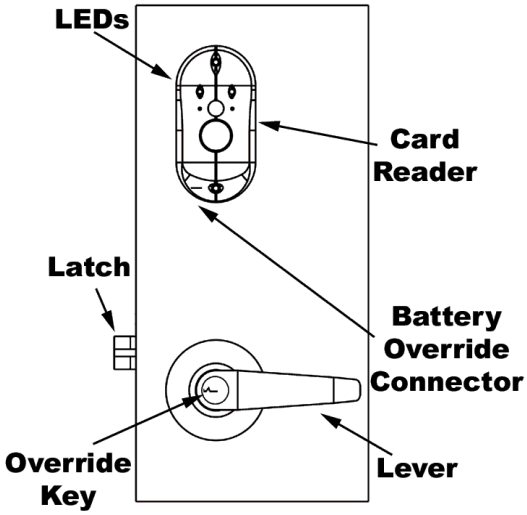


**Figure 1-3 – Locked Side of the MIRL (Reader Side)**

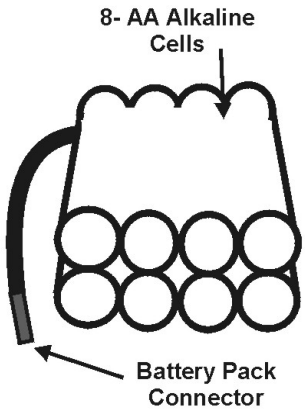


**Figure 1-4 –MIRL Battery Pack**

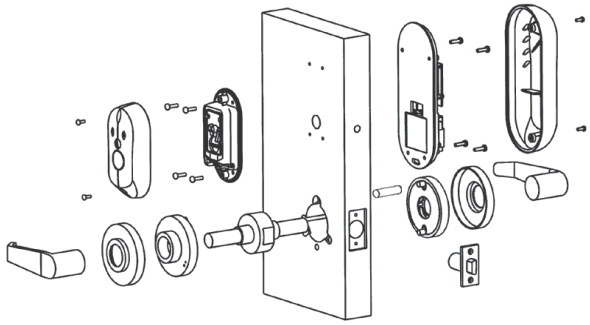

**Figure 1-5 – Exploded MIRL**

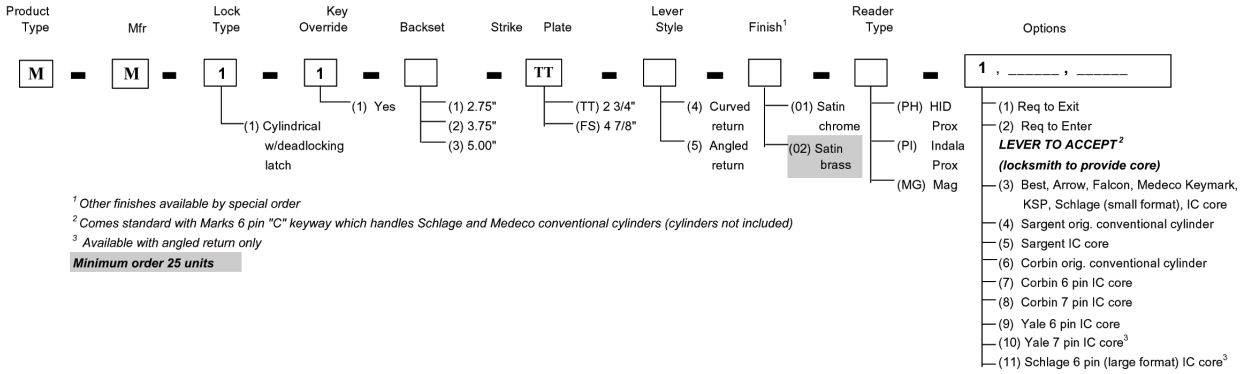


**Table 1-1- MIRL Standard Cylindrical Sales Model Table**

NOTE: Reader types are UL Recognized Components:

(PH) = Recognition Source, Model MIRL-PH-UR
(PI) = Recognition Source, Model MIRL-PI-UR
(MG) = Recognition Source, Model MIRL-MG-UR
(Refer to Installation Instructions P/N M053-028-xxx.)

When the outside portion (reader side) of the MIRL is actually outdoors, make certain that the inside portion (transceiver side) of the MIRL is in a temperature controlled environment where a minimum temperature of 32˚ F (0˚ C) is maintained with 72˚ F (22˚ C) being optimum.

# 2. Installing the MIRL Standard Cylindrical

## 2.1 Tools Required

- Templates RSTP21 (T147-008-001) provided (also available at www.recognition-source.com),
- Center punch,
- 2 1/8" Boring Bit, if needed,
- 1/8", 9/64", 5/16", 1/2", 3/4", 1" Drill Bits,
- Drill with chuck for 1" bits,
- Flat and Phillips head screwdrivers,
- T-10 & T15 TORX tamper resistant L-keys, provided,
- Chisels, if Strike has to be mortised,
- Square,
- Level,
- Pencil,
- Masking Tape.

## 2.2 Optional Installation Aids

### 2.2.1 Drill & Hole Marking Jig

An optional Drill & Hole Marking Jig is available to aid in preparing the door for a MIRL Standard Cylindrical installation (Figure 2-1).

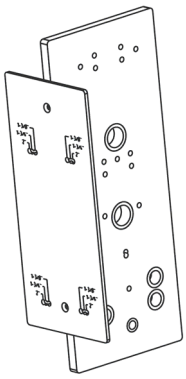

**Figure 2-1 – MIRL Standard Cylindrical Drill & Hole Marking Jig (DJMCYM)**

### 2.2.2 Scar/Push Plates

If the door where the MIRL Standard Cylindrical has holes or marks in or on the door from a previous lock installation that will not be covered up by just installing the MIRL, then optional Scar/Push Plates are available that will cover the previous holes and/or marks (Figure 2-2 & Figure 2-3).

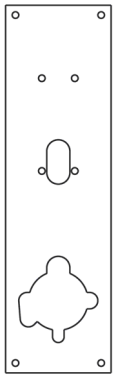

**Figure 2-2 – Reader Side (PPMCYRDxx*)**

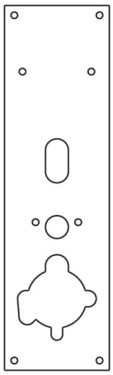

**Figure 2-3 – Transceiver Side (PPMCYTRxx*)**

**xx: 01=satin chrome finish, 02 = satin brass*

## 2.3 Determining the Best WPIM and MIRL Locations

Proper selection of the WPIM and the MIRL mounting locations insures reliable RF communications.

The mounting location of the MIRL is fixed by the location of the door. Best RF performance is achieved when the MIRL Antenna Cover (Figure 1-2) can never be within 4" of any metal object whether the door is closed or open. This does not include any metal that maybe in the door or door frame. The MIRL Antenna Cover is located just above the Cylindrical Lockset on the unlocked side of the door (Figure 1-2).

Since mounting location of the MIRL is fixed by the location of the door, only the location of the WPIM can be varied to achieve optimum RF performance.

The WPIM manual contains a section for determining the best location for the WPIM.

The maximum distance between WPIM and an MIRL is 200' horizontally when installed inside a building that uses normal building construction materials. The maximum distance is 600' for a line of sight installation.

**NOTE: When the outside portion (reader side) of the MIRL is actually outdoors, make certain that the inside portion (transceiver side) of the MIRL is in a temperature controlled environment where a minimum temperature of 32° F (0° C) is maintained with 72° F (22° C) being optimum.**

## 2.4 Door Preparation

If the door already has a lockset installed, remove it.

## 2.5 Marking Holes for Drilling

***There are eight different variations of templates for installing the MIRL Cylindrical:***

1. ***Wood door, reader side, right hand or right hand reverse***
2. ***Wood door, transceiver side, right hand or right hand reverse***
3. ***Wood door, reader side, left hand or left hand reverse***
4. ***Wood door, transceiver side, left or left hand reverse***
5. ***Metal door, reader side, right hand or right hand reverse***
6. ***Metal door, transceiver side, right hand or right hand reverse***
7. ***Metal door, reader side, left hand or left hand reverse***
8. ***Metal door, transceiver side, left or left hand reverse***

# *Make certain you are using the correct template!*

**NOTES:**

1. **As shown above, there are templates for wood doors and templates for metal doors. They are named that way since most wood doors have solid cores and most metal doors have hollow cores. The wood door templates are intended for use on any solid core door and the metal templates are intended for use on any hollow core door.**
2. **Some doors may have some holes already drilled; skip the instructions related to those holes.**
3. **The suggested height from the floor to the centerline of the Lever is 38".**

### 2.5.1 Door Side

#### 2.5.1.1 Using the Drill & Hole Marking Jig

**NOTES:**

1. **The Drill & Hole Marking Jig is a multi purpose installation aid. Only holes appropriate for the type of door and for the side of the door being drilled & marked are to be used. When drilling and marking holes double check to make certain that hole is to be drilled or marked for that type and side of the door.**
2. **The Drill & Hole Marking Jig is intended only for installations requiring a 2-3/4" set back.**
3. **There are six holes on the Jig that have drill bearings installed these holes are to be drilled when the Jig is on the door. The non-bushing holes are to be used for marking a location of a hole to be drilled later.**
4. **Holes drilled using the Jig must not be drilled all the way through the door. If the door is metal, then the holes should only be drilled through the metal skin on the Jig side of the door. If the door is wood then, then the holes should only be drilled half way though the door's thickness.**
5. **Do not use a flat spade bit when drilling the bearing holes on the Jig. Use only twist or Forstner type bits.**

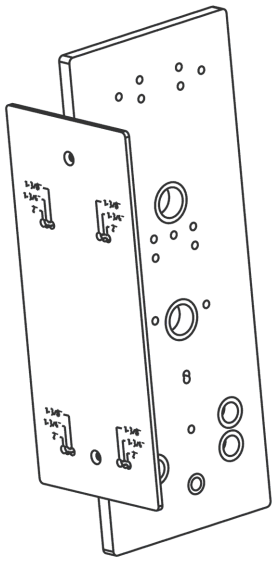

**Figure 2-4 - Perspective View of Drill & Hole Marking Jig**

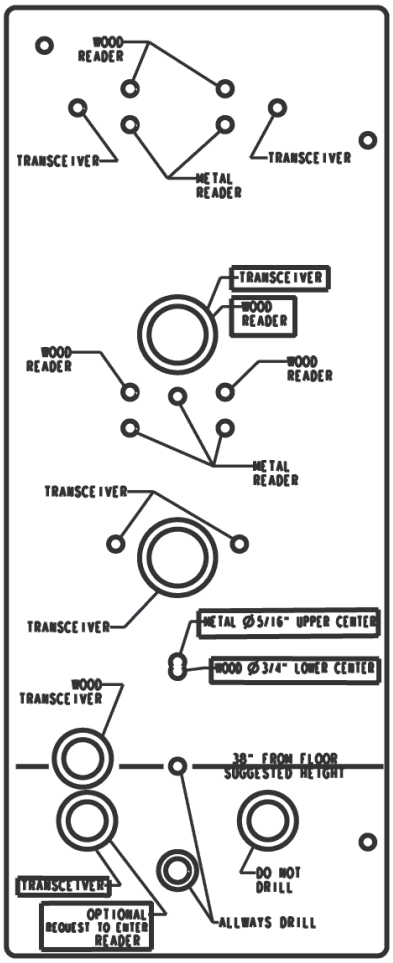


**Figure 2-5 – Left View**

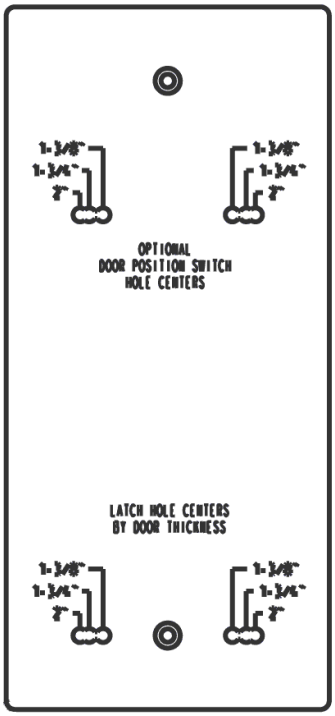


**Figure 2-6 –Door Edge View**

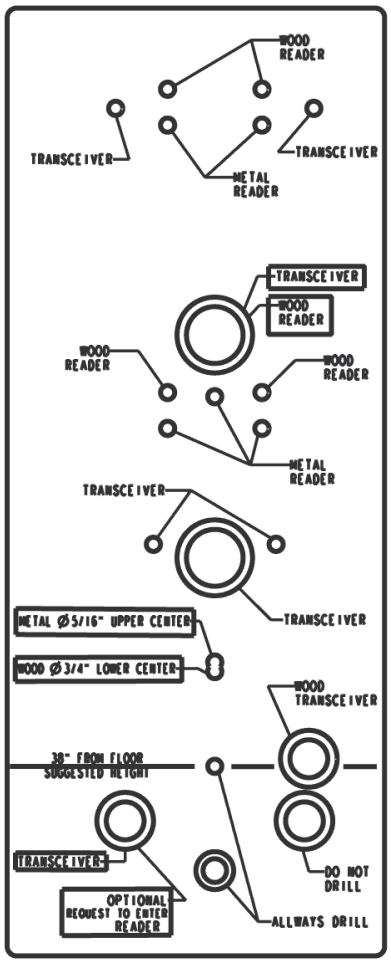


**Figure 2-7 – Right View**

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2.5.1.1.1 Mark a horizontal line 38” from the floor between 2” to 5 ½” from the edge of the door on both sides of the door. Use a level.

2.5.1.1.2 Place a ~5” piece of masking tape about 11” above the horizontal line drawn in section 2.5.1.1.1 above horizontally on each side of the door starting at the door’s edge.

2.5.1.1.3 Depending on if the door is metal or wood write the word “METAL” or “WOOD” on each piece of masking tape.

2.5.1.1.4 On the side of the door where the reader is to be installed, write the word “READER” on only that piece of masking tape (Figure 1-3).

2.5.1.1.5 On the other side of the door, write the word “TRANSCEIVER” on only that piece of masking tape (Figure 1-2).

2.5.1.1.6 Clamp the Jig to the Reader side of the door making certain that edge of the jig is tight to the door edge and that the 38” line on the Jig (Figure 2-5 or Figure 2-7) lines up with the line drawn in section 2.5.1.1.1 above.

**Note: Most doors have beveled edges so that the edge of the Jig will not lay flat against the door edge, this is normal.**

2.5.1.1.7 If the door is WOOD, drill bearing holes and mark non-bearing holes that are labeled WOOD READER, WOOD LOWER CENTER, and ALWAYS DRILL (Figure 2-5 or Figure 2-7).

2.5.1.1.8 If the door is METAL, drill bearing holes and mark non-bearing holes that are labeled METAL READER, METAL UPPER CENTER, and ALWAYS DRILL (Figure 2-5 or Figure 2-7).

2.5.1.1.9 If the MIRL has the optional Request to Enter feature in the handle, then drill the bearing hole that is labeled OPTIONAL REQUEST TO ENTER READER.

2.5.1.1.10 Remove the Jig from the reader side of the door.

2.5.1.1.11 Clamp the Jig to the Transceiver side of the door making certain that edge of the jig is tight to the door edge and that the 38” line on the Jig (Figure 2-5 or Figure 2-7) lines up with the line drawn in section 2.5.1.1.1 above.

**Note: Most doors have beveled edges so that the edge of the jig will not lay flat against the door edge, this is normal.**

2.5.1.1.12 If the door is WOOD, drill bearing holes and mark non-bearing holes that are labeled TRANSCEIVER, WOOD LOWER CENTER, WOOD TRANSCEIVER, and ALWAYS DRILL (Figure 2-5 or Figure 2-7).

2.5.1.1.13 If the door is METAL, drill bearing holes and mark non-bearing holes that are labeled TRANSCEIVER, METAL UPPER CENTER, and ALWAYS DRILL (Figure 2-5 or Figure 2-7).

2.5.1.1.14 On the door edge of the Jig, mark the non-bearing Latch Hole Center that is appropriate for the thickness of the door (Figure 2-6).

2.5.1.1.15 If a door position switch is to be installed, then on the door edge of the Jig, mark the non-bearing Door Position Switch Hole Center that is appropriate for the thickness of the door (Figure 2-6).

2.5.1.1.16 Remove the Jig from the Transceiver side of the door.

2.5.1.2 **Using the Scar/Push Plates**

**NOTE: Holes drilled using the Scar/Push Plates must not be drilled all the way through the door. If the door is metal, then the holes should only be drilled through the metal skin on the Scar/Push Plate side of the door. If the door is wood then, then the holes should only be drilled half way though the door's thickness.**

2.5.1.2.1 Mark a horizontal line 38" from the floor between 2" to 3 ½" from the edge of the door on both sides of the door. Use a level.

2.5.1.2.2 Using a square (to compensate for beveled door edges), mark a point along the horizontal line 2¾" from the door edge on both sides of the door (Figure 2-8).

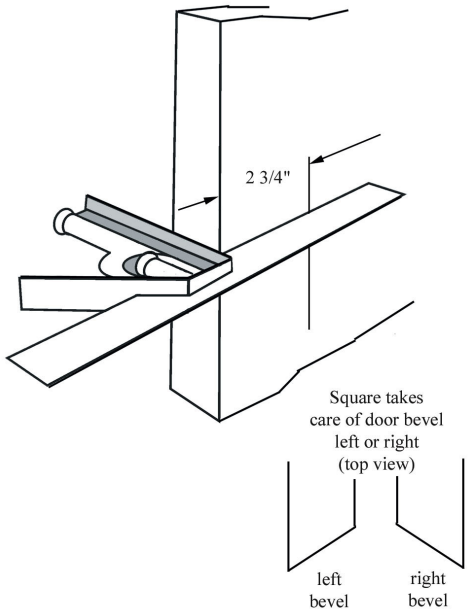


**Figure 2-8 – Marking 2 ¾" Setback with Square**

2.5.1.2.3 If the door does not have the 2 1/8" Chassis Hole already drilled, place the Reader Scar/Push Plate, so that the center of the Chassis Hole (Figure 2-9) in the Reader Scar/Push Plate is centered over the intersection of the horizontal line drawn in Section 2.5.1.2.1 and the 2 ¾" setback line drawn in Section 2.5.1.3.2.

If the 2 1/8" Chassis Hole already exists, align the Chassis Hole in the Reader Scar/Push Plate over it.

Align the edge of the Reader Scar/Push Plate to be parallel with the edge of the door.

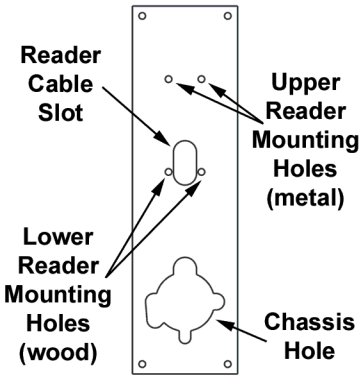


**Figure 2-9 - Reader Scar/Push Plate**

2.5.1.2.4 While holding the Reader Scar/Push Plate in position, mark the four mounting holes located in the four corners of the Plate (Figure 2-10).

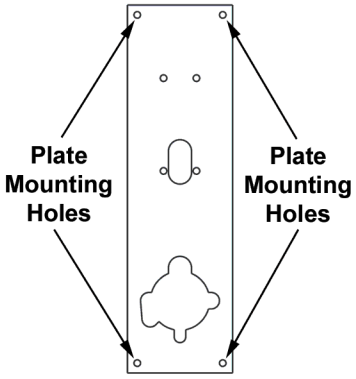


**Figure 2-10 – Reader Scar/Push Plate Mounting Holes**

2.5.1.2.5 Remove the Reader Scar/Push Plate and drill the mounting holes.

2.5.1.2.6 Install the Reader Scar/Push Plate using the 4 screws supplied.

2.5.1.2.7 Using the Reader Scar/Push Plate as a template, drill or route out the door around the 2-1/8" Chassis Hole (Figure 2-9).

2.5.1.2.8 If installed, remove the Reader Cover by removing the two secure Torx Reader Cover Mounting Cover Screws (6-23 x 3/8") (Figure 2-31).

**NOTE: Self tapping screws cannot be used to mount the Reader, therefore drill the Reader Mounting Holes as indicated below.**

2.5.1.2.9 **This next step depends on if the door is wood or metal:**

2.5.1.2.9.1 ***WOOD DOOR:*** Position the Reader Base Plate against the Reader Scar/Push Plate and so that the two **Bottom Reader Base Plate Mounting Holes** (Mounting Holes

1 & 2, Figure 2-11) line up with the two **Lower Reader Mounting Holes** in the Reader Scar/Push Plate (Figure 2-9).

Using the Reader Base Plate as a template, mark the two **Top Reader Base Plate Mounting Holes** on the Scar/Push Plate.

2.5.1.2.9.2 ***METAL DOOR:*** Position the Reader Base Plate against the Reader Scar/Push Plate so that the two **Top Reader Base Plate Mounting Holes** (Mounting Holes 3 & 4, Figure 2-11) line up with the two **Upper Reader Mounting Holes** in the Reader Scar/Push Plate (Figure 2-9).

Using the Reader Base Plate as a template, mark the two **Bottom Reader Base Plate Mounting Holes** on the Scar/Push Plate.

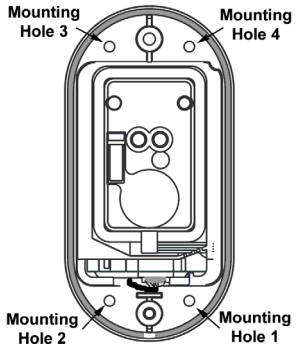


**Figure 2-11 – Reader Base Plate Mounting Holes**

2.5.1.2.10 Remove the Reader Base Plate from the door and drill 9/64" holes at these four locations.

***NOTES:***

1. ***Do not drill while the Reader Base Plate is still on the door!***
2. ***Two of the holes (top two for wood, bottom 2 for metal) will require drilling through the Scar/Push Plate.***
3. ***Do not install the Reader Base Plate at this time.***

2.5.1.2.11 **This next step depends on if the door is wood or metal:**

2.5.1.2.11.1 ***WOOD DOOR:*** Using the Reader Scar/Push Plate as a drill jig, drill a ¾" Reader Cable Hole in the door at the **top end of the Reader Cable Slot**.

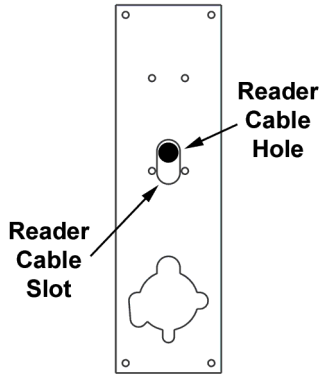


**Figure 2-12 – Reader Cable Hole on a Wood Door**

2.5.1.2.11.2 ***METAL DOOR:*** Using the Reader Scar/Push Plate as a drill jig, drill a ¾" Reader Cable Hole in the door at the **bottom end of the Reader Cable Slot**.

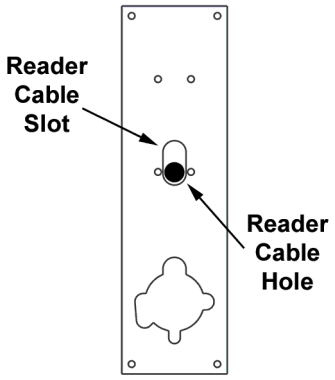


**Figure 2-13 – Reader Cable Hole on a Metal Door**

***NOTES: Do not install the Reader Base Plate at this time.***

2.5.1.2.12 If the door does not have the 2 1/8" Chassis Hole already drilled, place the Transceiver Scar/Push Plate, so that the center of the Chassis Hole (Figure 2-14) in the Transceiver Scar/Push Plate is centered over the intersection of the horizontal line drawn in Section 2.5.1.2.1 and the 2 ¾" setback line drawn in Section 2.5.1.3.2.

If the 2 1/8" Chassis Hole already exists, align the Chassis hole in the Reader Scar/Push Plate over it.

Align the edge of the Transceiver Scar/Push Plate to be parallel with the edge of the door.

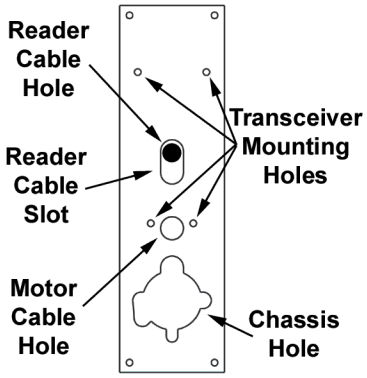


**Figure 2-14 – Transceiver Scar/Push Plate**

2.5.1.2.13 While holding the Transceiver Scar/Push Plate in position, mark the four mounting holes located in the four corners of the Plate (Figure 2-15).

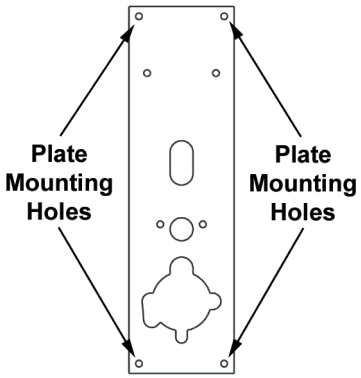


**Figure 2-15 - Transceiver Scar/Push Plate Mounting Holes**

2.5.1.2.14 Remove the Transceiver Scar/Push Plate and drill the mounting holes.

2.5.1.2.15 Install the Transceiver Scar/Push Plate using the 4 screws supplied.

2.5.1.2.16 Using the Transceiver Scar/Push Plate as a template, drill or route out the door around the 2-1/8" Chassis Hole (Figure 2-14).

2.5.1.2.17 Using the Transceiver Scar/Push Plate as a drill jig, drill four 9/64" Transceiver Mounting Holes in the door (Figure 2-14).

***NOTES:***

1. ***Self tapping screws cannot be used to mount the Transceiver, therefore drill the Transceiver Mounting Holes as indicated.***
2. ***Do not install the Transceiver Base Plate at this time.***

2.5.1.2.18 Using the Transceiver Scar/Push Plate as a drill jig, drill a ¾" Reader Cable Hole in the door at the **top end of the Reader Cable Slot** (Figure 2-14).

2.5.1.2.19 Using the Transceiver Scar/Push Plate as a drill jig, drill a ¾" hole in the door Motor Cable Hole (Figure 2-14).

2.5.1.3 **Using the Template Only**

2.5.1.3.1 Mark a horizontal line 38” from the floor between 2” to 3 ½” from the edge of the door on both sides of the door. Use a level.

2.5.1.3.2 Using a square (to compensate for beveled door edges), mark a point along the horizontal line 2¾” from the door edge on both sides of the door (Figure 2-8).

2.5.1.3.3 Start on the high bevel side of the door. If the door does not have the 2 1/8” hole already drilled, place the Template, RSTP21, so that the center of the 2 1/8” hole is centered over the intersection of the horizontal line drawn in Section 2.5.1.3.1 and the 2 ¾” setback line drawn in Section 2.5.1.3.2.

If the 2 1/8” hole already exists, align the 2 1/8” hole in the Template over it.

Align the edge of the Template to be parallel with the edge of the door (Figure 2-16). The edge of the door maybe beveled, so the edge of the template may not line up exactly with the door edge, just make certain it is parallel to it.

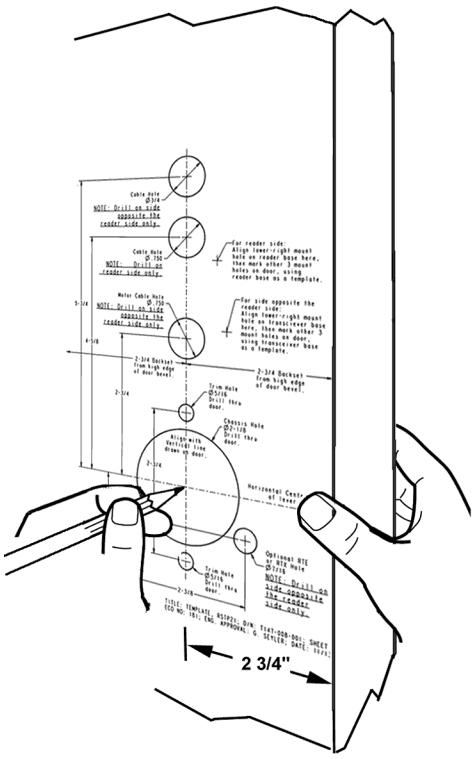


**Figure 2-16 – Template, RSTP21, on Metal Door**

2.5.1.3.4 Tape the Template onto the door.

2.5.1.3.5 Center punch the center points of the holes (Figure 2-16).

2.5.1.3.6 To locate hole center points on the opposite side of the door, following instructions 2.5.1.3.6, 2.5.1.3.4, and 2.5.1.3.5 with Template on the other side of the door.

2.5.2 **Door Edge**

**Note: Skip this section if the Drill & Hole Marking Jig was used or if the Latch Hole (Hole #1) is already drilled and the Optional Door Position Switch (Hole #2) is not being installed (Figure 2-17).**

2.5.2.1 Mark a vertical center line on the door edge 37" to 39" from floor. Mark a horizontal line on the door edge that lines up with the horizontal line drawn on the door side in Section 2.5.1.2.

2.5.2.2 Align Template, RSTP21, on the door edge so that the center of the Latch Hole is at the intersection of the vertical center line and horizontal line drawn in Section 2.5.2.1 (Figure 2-17).

2.5.2.3 Align the edge of the Template to be parallel to the edge of the door and tape in place.

2.5.2.4 If the Latch Hole (Hole #1) does not exist, center punch its center point (Figure 2-17).

2.5.2.5 If the Optional Door Position Switch (Hole #2) is to be installed, center punch the correct center point for the size magnet to be installed (Figure 2-17).

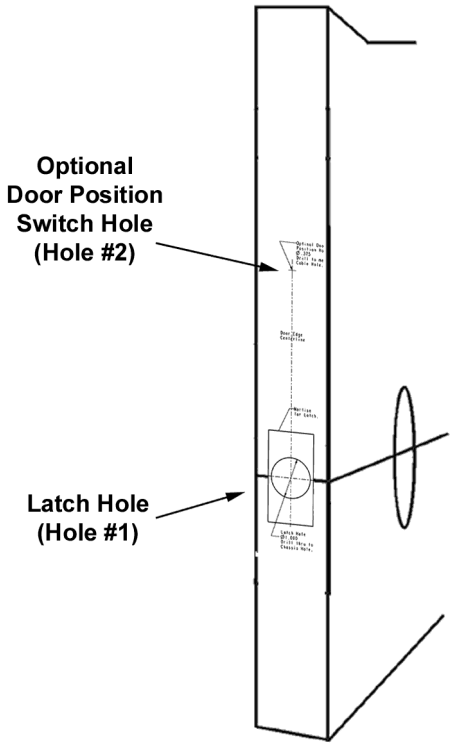


**Figure 2-17 – Template RSTP21 on Metal Door Edge**

2.5.2.6 Drill the holes as indicated on the template on the edge of the door.

2.5.3 **Doorjamb**

2.5.3.1 If the strike is not mortised or if a door position switch is being used, mark a vertical line on the strike side of the doorjamb, one half the thickness of the door plus the thickness of any bumpers on the jamb away from the door stop of the doorjamb (D = ½ door thickness + bumper thickness, Figure 2-18 & Figure 2-19). The vertical line must be in line with the Center Line of the door when the door is closed.

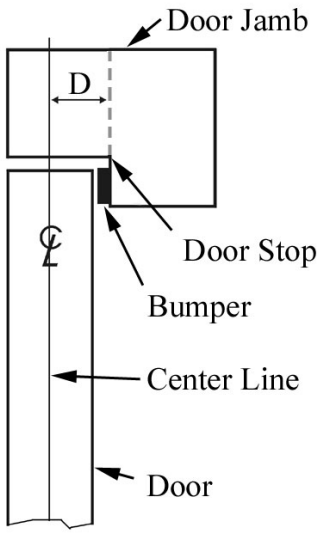


**Figure 2-18 – Locating Center Line on Doorjamb (top view)**

2.5.3.2 Mark a horizontal center line (Figure 2-19) on the door jamb that lines up with the horizontal center line on the door that intersects the center of the Chassis Hole on the door (Hole #2 in Figure 2-17).

2.5.3.3 Place Template, RSTP11, with the center of the Latch Hole over this 38" intersect. Align the center lines on the template with the center lines drawn on the doorjamb and tape it in place (Figure 2-19).

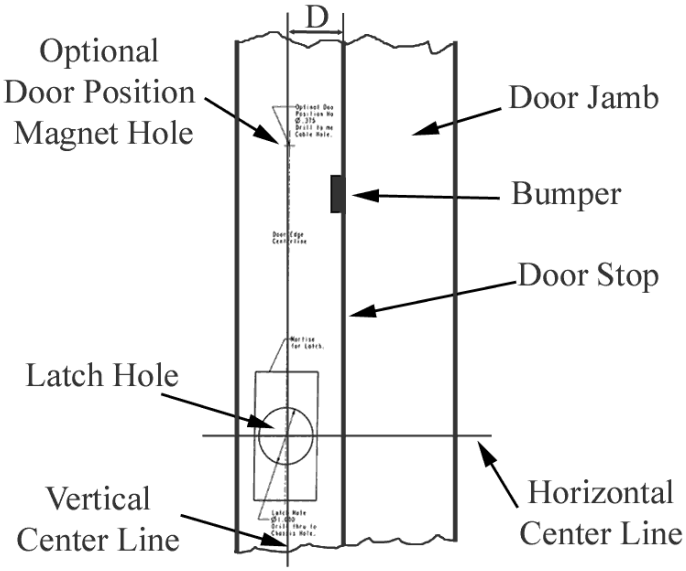


**Figure 2-19 – Template, RSTP21, on Doorjamb (side view)**

2.5.3.4 Center punch the Latch Hole drill point.

2.5.3.5 If the Optional Door Position Switch is being installed then center punch the Optional Door Position Magnet Hole (Figure 2-19).

**NOTE: It is very important that the Optional Door Position Magnet Hole on the doorjamb and the Optional Door Position Switch Hole on the door edge are center punched <u>exactly</u> opposite each other.**

**Note: For UL installations that use a Door Position Switch use a UL listed door/window contact. Door contacts for door position monitoring are not for intrusion protection.**

## 2.6 Drilling Holes

Follow the instructions printed on the templates for drilling the remaining marked holes.

**Note: Some holes are only to be drilled on the reader side and some holes are transceiver side of the door**

**Note: There is a template for a metal door (hollow core) and a different template for a wood door (solid core). Make certain you have used the correct template!**

**Note: For UL installations that use a Door Position Switch use a UL listed door/window contact. Door contacts for door position monitoring are not for intrusion protection.**

## 2.7 Mortising for Latch

2.7.1 If not already done, mortise the edge of the door to accommodate the Latch & Faceplate (Figure 2-20).

2.7.2 Making certain that the Latch is properly oriented ***(Note: The Deadlocking Plunger of the Latch must face away from the Door Stop of the Doorjamb,*** Figure 2-21***.)***, install the Latch & Faceplate with the two screws provided (Figure 2-20).

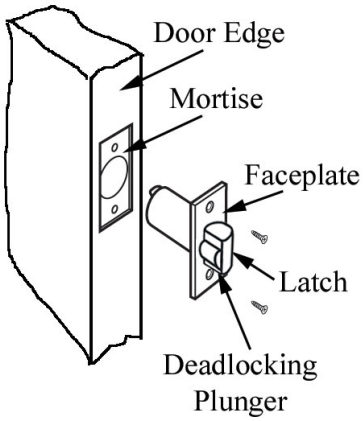


**Figure 2-20 – Mortising Latch on Door Edge**

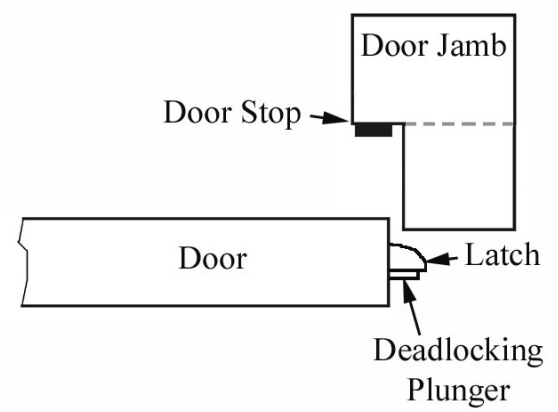


**Figure 2-21 – Latch Orientation on Door Edge**

## 2.8 Installing the Optional Door Position Switch

If the optional Door Position Switch is being used, feed the 2 wires of the supplied 3/4" diameter Door Position Switch through the Door Position Switch Hole in the edge of the door and then through the Reader Cable Hole to the inside side of the door (Figure 2-22). Press the reed switch into the hole so it is flush with the door edge. The two wires from the Door Position Switch will be connected after mounting the Transceiver, see Section 2.10, below.

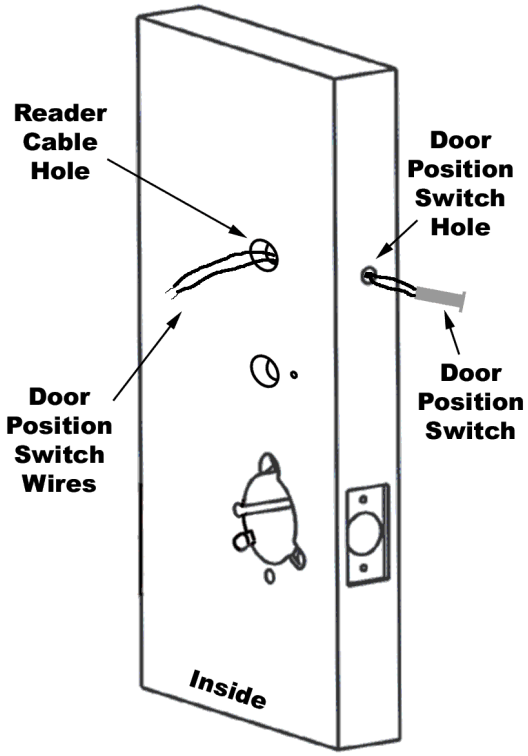


**Figure 2-22 – Installing the Door Position Switch**

## 2.9 Mounting Transceiver

The Transceiver consists of two major components: the Transceiver Cover (Figure 2-23) and the Transceiver Base Plate (Figure 2-24). The Transceiver is mounted on the inside of the door.

***NOTE: For maximum weather resistance, make certain that there is a foam gasket attached to the back side of the Transceiver Base Plate. Contact Recognition Source if the foam gasket is missing.***

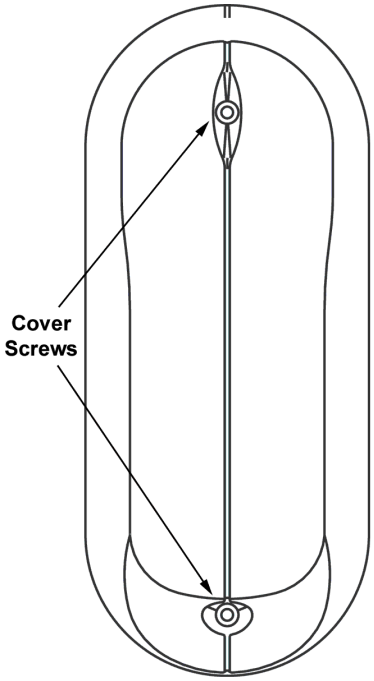


**Figure 2-23 – Transceiver Cover**

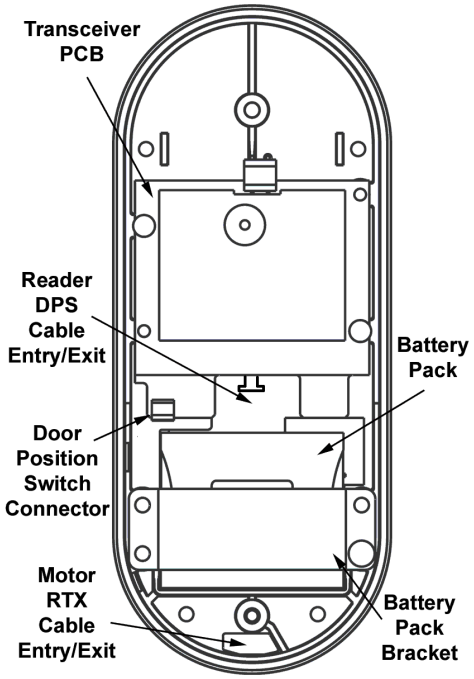


**Figure 2-24 –Transceiver Base Plate Components**

2.9.1 Before mounting the Transceiver, the Reader Cable, Motor & Request to Exit Cable, the optional Door Position Switch Wires, and Gray Ground Wire (ring terminal toward the Transceiver) must be routed into their appropriate locations (Figure 2-25).

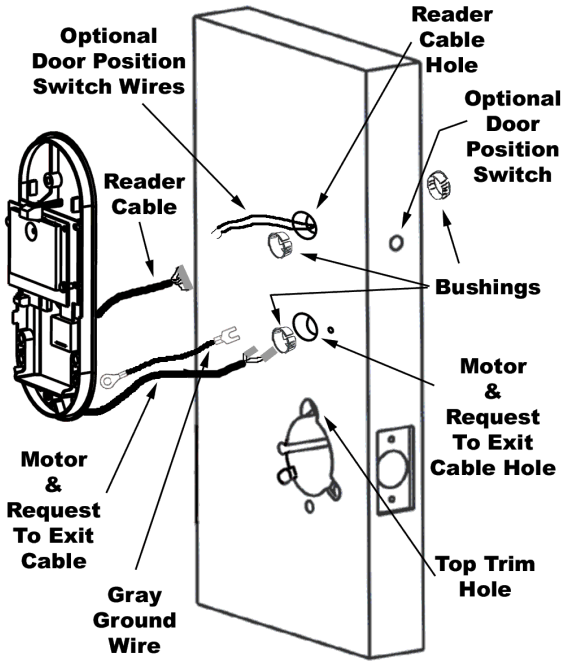


**Figure 2-25 – Routing Transceiver Wires and Cables**

2.9.1.1 Make certain that the Reader Cable is routed out the back of the Transceiver Base Plate in the opening just above the Battery Pack location (Reader/DPS Cable Entry/Exit, Figure 2-24).

2.9.1.2 Make certain that the Motor & Request to Exit Cable and Gray Ground Wire (ring terminal toward the Transceiver) are routed out the back of the Transceiver Base Plate in the opening at the bottom of the Transceiver Base Plate (Motor/RTX Cable Entry/Exit, Figure 2-24).

2.9.1.3 If installing on a metal door, install plastic Bushings in the Motor Cable hole and on Reader Cable Hole both the Transceiver and Reader Side, three bushings total (Figure 2-25).

2.9.1.4 The Reader Cable must be routed through the Reader Cable Hole from the inside of the door so that the Reader Cable extends to the outside of the door. It will be connected to the Reader in section 2.11, below.

2.9.1.5 The Motor & Request to Exit Cable and Gray Ground Wire (ring terminal toward the Transceiver) must be routed through the Motor & Request to Exit Cable Hole and down to the Lock Housing Hole. The route that this cable takes will depend on the type of door. If the door is solid core (i.e. wood), then there is a Diagonal Motor Cable Hole that is used. If the door is hollow core (i.e. metal), then the hollow core is used. See page three of template T147-008-001.

2.9.1.6 If the optional Door Position Switch is being installed, the wires coming from this switch should already be coming out the Reader Cable Hole and need to be routed through the Transceiver Base Plate in the opening just above the Battery Pack (Reader/DPS Cable Entry/Exit, Figure 2-24).

2.9.2 Being careful not to pinch any of the wires, position the Transceiver Base Plate so that it is flush against the inside of the door.

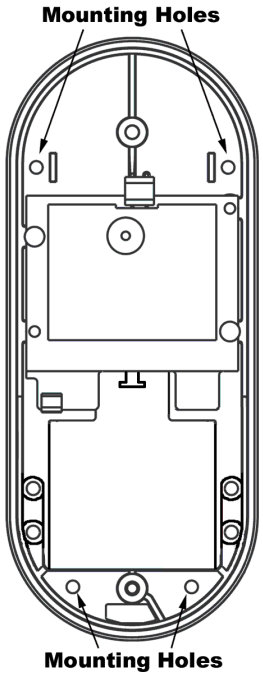


**Figure 2-26 – Mounting Transceiver Base Plate**

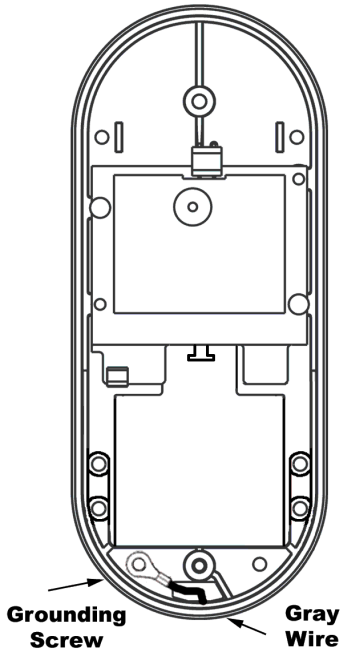


**Figure 2-27 – Transceiver Grounding Screw**

Secure the Transceiver Base Plate to the door using the supplied wood/sheet metal screws (Figure 2-26), making certain that the Gray Ground Wire (ring terminal end) coming Lock Housing is securely fastened under Grounding Screw at the lower left (Figure 2-27).

***NOTE: Do not install the Battery Pack or Transceiver Cover at this time!***

## 2.10 Connecting Door Position Switch Wires

2.10.1 Cut and strip the Door Position Switch wires so that they can be neatly dressed and connected to the Door Position Connector on the Transceiver PCB (Figure 2-28).

2.10.2 Connect the two Door Position Switch wires to the Door Position Connector on the Transceiver PCB (Figure 2-28). This connection is not polarized so either wire can go to either terminal.

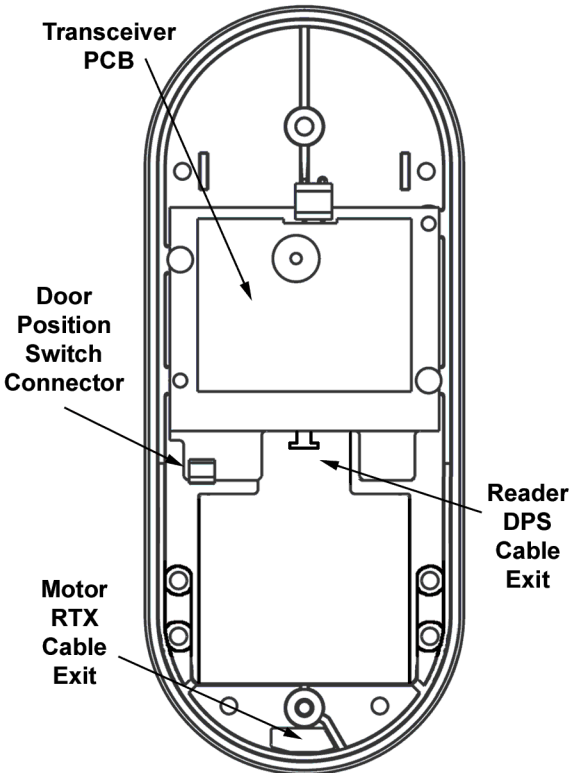


**Figure 2-28 – Connecting the Door Position Switch Wires**

## 2.11 Mounting Reader

The Reader consists of two major components: the Reader Cover (Figure 2-29) and the Reader Base Plate (Figure 2-30). The Reader is mounted on the outside of the door.

***NOTE: For maximum weather resistance, make certain that there is a foam gasket attached to the back side of the Reader Base Plate. Contact Recognition Source if the foam gasket is missing.***

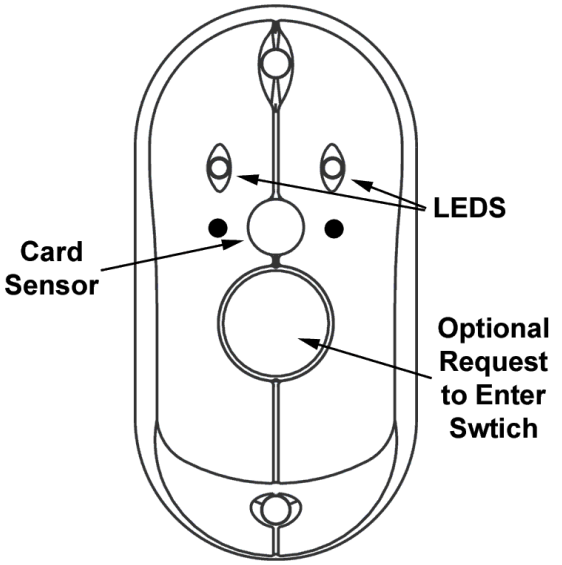


**Figure 2-29 – Reader Cover Components**

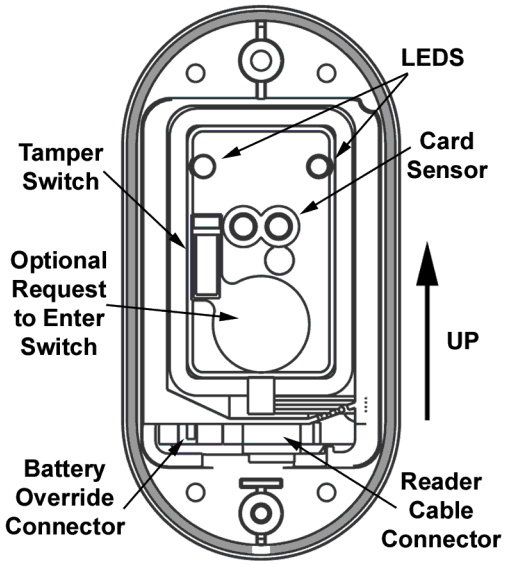


**Figure 2-30 – Reader Base Plate Components**

2.11.1 If not already done, remove the Reader Cover by removing the two secure Torx Reader Cover Mounting Cover Screws (6-23 x 3/8") (Figure 2-31).

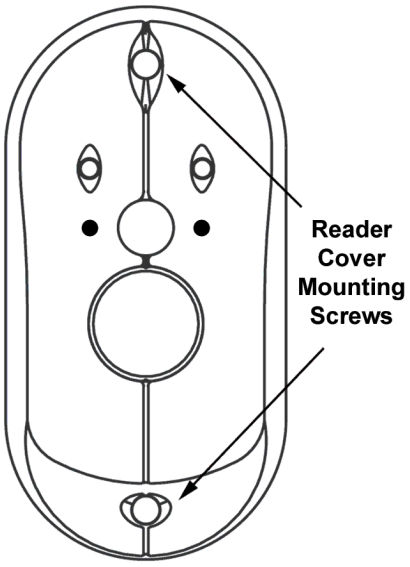


**Figure 2-31 – Reader Cover Screws**

2.11.2 Before mounting the Reader, the Reader Cable must be routed through Reader Cable Routing Hole on the Reader Base plate (Figure 2-32).

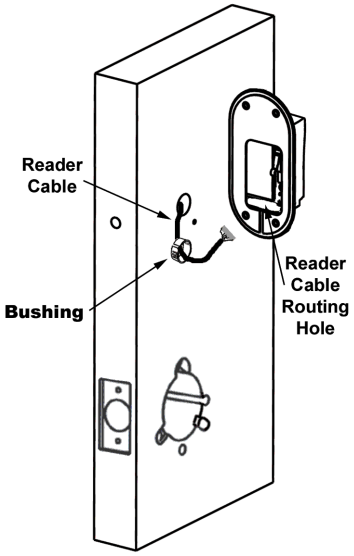


**Figure 2-32 – Reader Cable Routing**

2.11.2.1 If installing on a metal door, make certain that the plastic Bushing is installed in the Reader Hole on the Reader side of the door (Figure 2-32).

2.11.2.2 Route the Reader Cable from the Reader Hole in the door through the back of the reader into Reader Cable Routing Hole near the bottom of the Reader (Figure 2-32 & Figure 2-33).

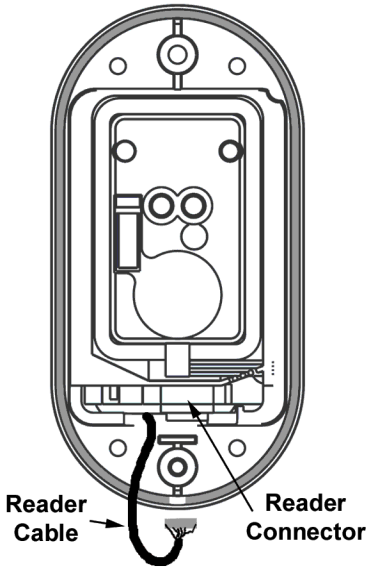


**Figure 2-33 – Reader Cable Connection**

2.11.2.3 Connect the Reader Cable to the Reader Connector from the front side of the reader (Figure 2-33).

2.11.2.4 Dress the Reader Cable so that a minimum of cable is left on the front side of the reader and that all of the Reader Cable is above the Plastic Wall (Figure 2-34). This insures that the Reader Cable will not interfere when mounting the Reader Cover.

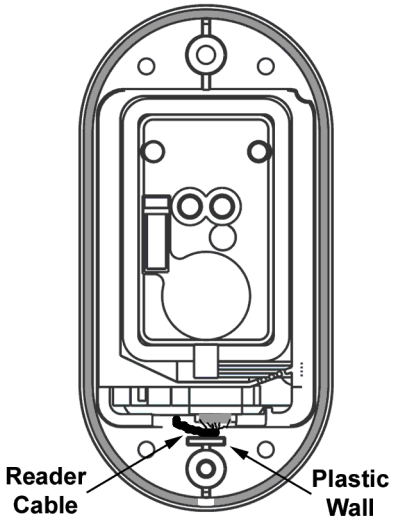


**Figure 2-34 – Reader Cable Dressing**

2.11.3 ***IMPORTANT STEP:*** If the MIRL is being installed on a wooden door where the UL 10C fire rating must be maintained, the Reader Cable Hole must be filled with a fire rated putty before attaching the Reader Base Plate to the door. Recognition Source recommends using Metacaulk Putty from RectorSeal Corporation. From the Reader side of the door, pack the Metacaulk putty into the Reader Cable Hole and around the Reader Cable, making certain that the putty does not extend beyond the door's surface.

Metacaulk Putty is available from RectorSeal representatives or distributors. Contact RectorSeal to find a representative or distributor in your area:

RectorSeal
2601 Sperwick Drive
Houston, TX 77055
voice: 800-231-3345
fax: 800-441-0051
www.rectorseal.com

2.11.4 Being careful not to pinch any of the wires, position the Reader Base Plate so that it is flush against the outside of the door and secure the Reader Base Plate to the door using the supplied wood/sheet metal screws (Figure 2-11, page 14 above).

2.11.5 If the Reader Gasket (Figure 2-35) is not already mounted on the Reader Base Plate, position the Reader Gasket in the outer groove of the Reader Base Plate making certain that the ends of the Reader Gasket are at the bottom of the base plate and that there is a Weep Gap.

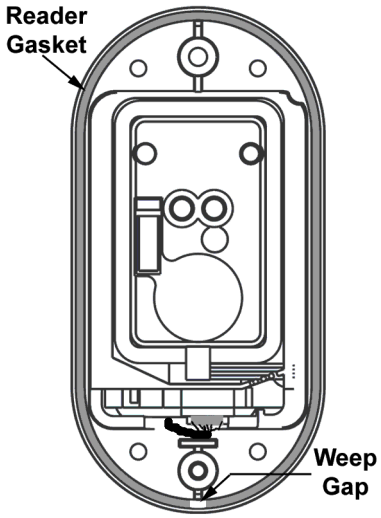


**Figure 2-35 – Reader Gasket**

2.11.6 If the Reader is equipped with an optional Request to Enter Switch (Figure 2-29), before installing the Reader Cover, route the Request to Enter switch wires through the Reader Cable Hole from the Reader side to the Transceiver side of the door. On the Transceiver side, connect the Request to Enter wires to the mating connector.

Pull the excess Request to Enter wires toward the Transceiver side and from the Transceiver side dress any excess wires into the Reader Hole.

2.11.7 Install the Reader Cover and fasten with two secure T-10 Torx Reader Cover Mounting Screws (6-32 x 3/8") using the T-10 TORX L-key that is provided (Figure 2-31).

## 2.12 Adjusting Lockset to Door Thickness

2.12.1 Remove the Inside Lever by depressing the Lever Catch with the Wire Pin through the small hole in the Inside Rose and/or Inside Lever and pull Inside Lever off the Inside Lock Tube (Figure 2-38). Depress the Lever Catch again and remove the Inside Rose assembly (Figure 2-36).

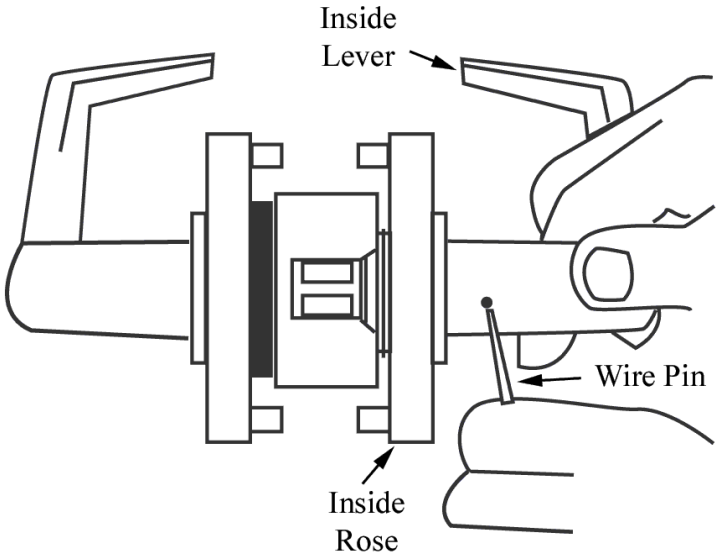


**Figure 2-36 – Removing Inside Lever & Inside Rose Assembly**

2.12.2 Determine the door's thickness. Locksets will fit doors 1-5/8" to 1-7/8" thick. Locksets are factory assembled for 1-3/4" doors.

2.12.3 To adjust, remove the outside lever (Figure 2-38). Screw the outside rose to the desired position. Use the DOOR THICKNESS GAUGE (provided with lockset) to confirm correct position for the desired door thickness. The mark on the gauge should line up with the center of the Retractor in the Housing (Figure 2-37).

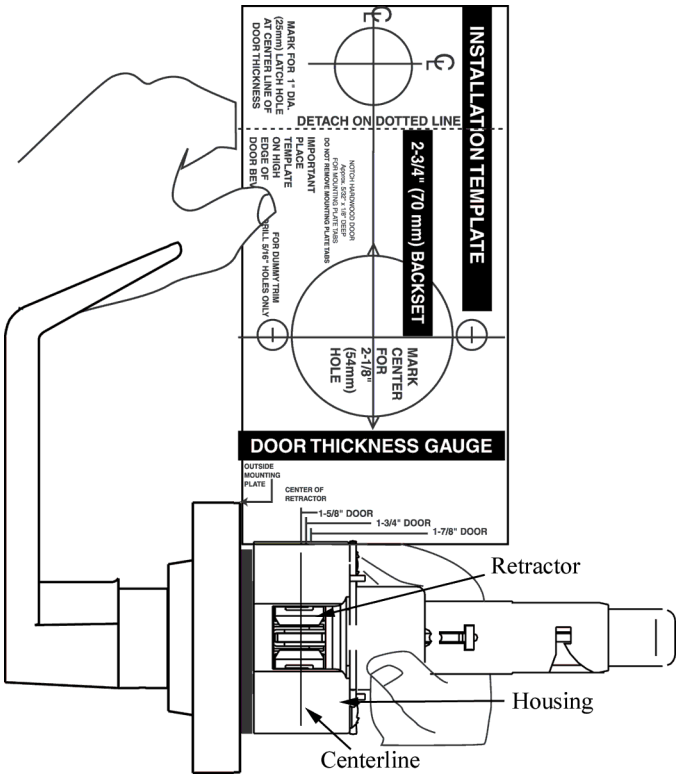


**Figure 2-37 – Door Thickness Adjustment**

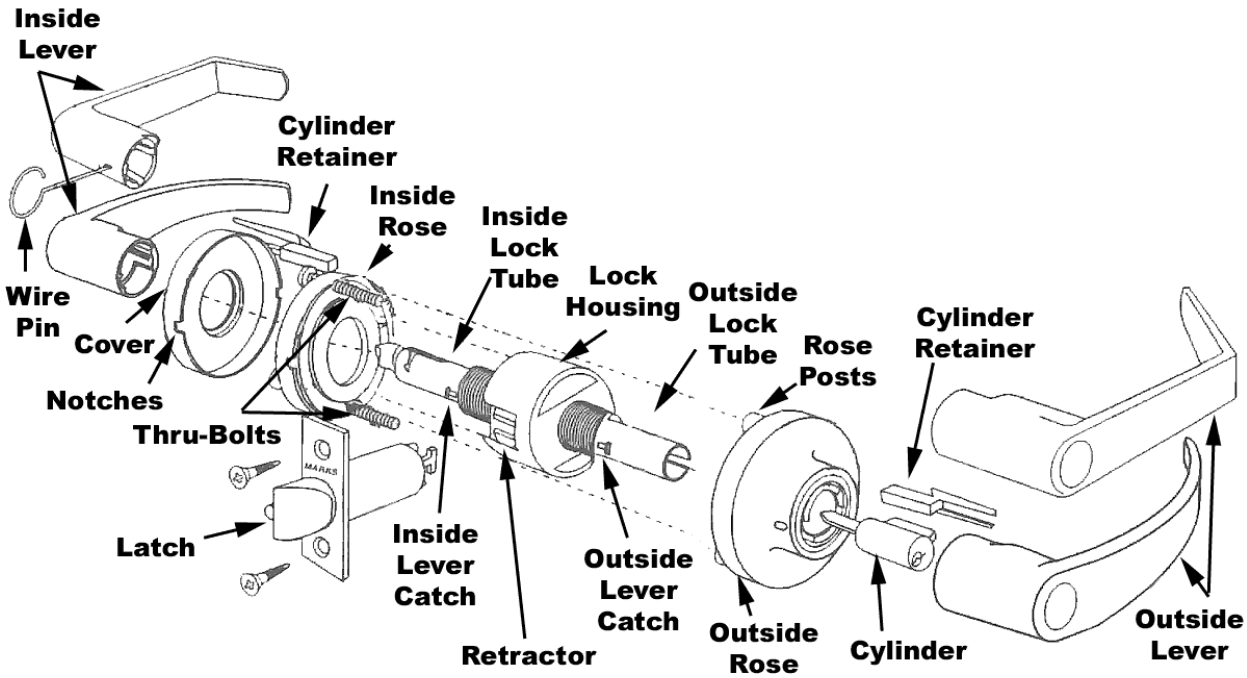


**Figure 2-38 – Exploded Lock Hardware**

## 2.13 Placing the Lock Chassis into the Chassis Hole and Then Engaging the Retractor in Latch

2.13.1 Push the Lock Housing through the 2-1/8" Hole from the outside of the door, so that the Retractor in the Lock Housing engages the Latch Tail (Figure 2-39 & Figure 2-40). Make certain the Motor Wire Harness from the Motor and the Motor & Request to Exit Cable from the Transceiver are not pinched and are properly routed to the inside of the door for connection later.

**Note: Prongs must engage inside the Lock Housing.**

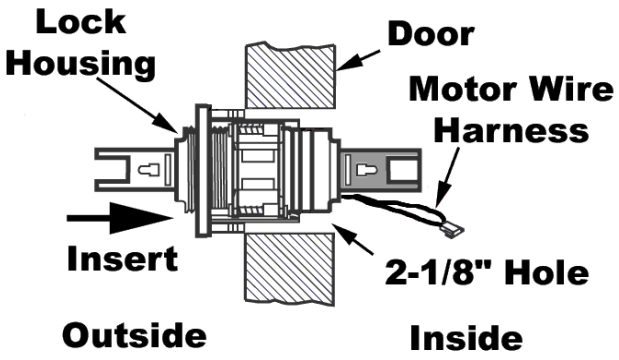


**Figure 2-39 – Inserting Lock Housing into the 2-1/8" Hole**

2.13.2 Align the Outside Mounting Plate and Outside Rose so that the Rose Posts enter the Thru-Bolt holes in the door (Figure 2-38).

2.13.3 Check from the inside of the door to see if the Latch is properly engaged with the Latch Tail in the Retractor and the Prongs in the Lock Housing. Make certain that the Latch Tube Prongs engage Chassis Frame and Latch Tailpiece engages Retractor (Figure 2-40).

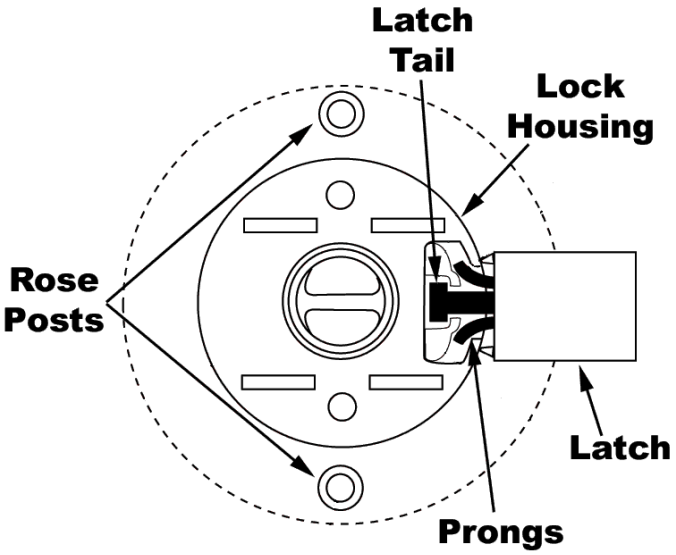


**Figure 2-40 – Engaging Retractor & Latch**

## 2.14 Connecting & Dressing the Motor, Request to Exit, & Ground Wires

2.14.1 Connect the Gray Wire (spade lug end) from the Transceiver Base to the Grounding Screw on the Lock Housing (Figure 2-41 or Figure 2-42).

**NOTE: Only the top screw on the Lock Housing can be used as a Grounding Screw.**

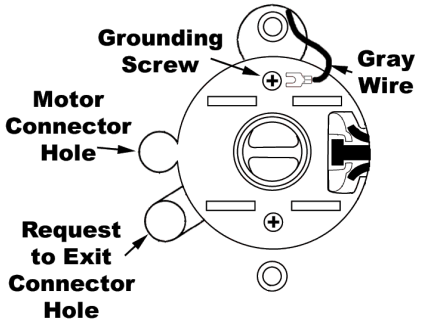


**Figure 2-41 - Ground Wire Connection & Wire/Connector Holes**
**(right hand & right hand reverse installations)**

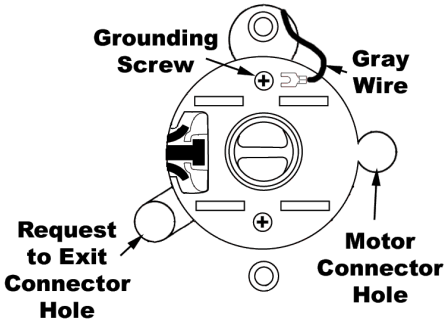


**Figure 2-42 - Ground Wire Connection & Wire/Connector Holes**
**(left hand & left hand reverse installations)**

2.14.2 Connect the Motor Wires from the motor to the Motor Connector on the cable routed through the Upper Trim Hole coming from the Transceiver. The Motor Connector is unique and will only mate with the correct connector.

2.14.3 Connect the Request to Exit Wires from the Request to Exit Switch on the Inside Rose to the Request to Exit Connector on the cable routed through the Upper Motor Cable Hole coming from the Transceiver. The Request to Exit Connector is unique and will only mate with the correct connector.

2.14.4 Insert the mated Motor Connector into the Motor Connector Hole (Figure 2-41 or Figure 2-42). **Pack and dress the Motor Cable so that the Inside Rose will not pinch it.**

2.14.5 Insert the mated Request to Exit Connector into the Request to Exit Connector Hole (Figure 2-41 or Figure 2-42). **Pack and dress the Request to Exit Cable so that the Inside Rose will not pinch it.**

2.14.6 Make certain that the cable is properly routed and dressed so that it will not be pinched when a Thu-Bolt is installed in the Upper Trim Hole.

## 2.15 Installing the Inside Rose Assembly & Cover

2.15.1 **Insert the Plastic Bushing (Figure 2-43) from the inside of the door into the Upper Trim Hole so that the Plastic Bushing slides over the top Outside Rose Post (Figure 2-38 & Figure 2-40). Make certain that the Plastic Bushing does not pinch any wires. The Plastic Bushing will protect the wires from being pinched when the Upper Thu-Bolt is installed in the following step.**

2.15.2 Insert the Upper Thu-Bolt through the top hole of the Inside Rose and install the Inside Rose Assembly making certain that the Upper Thu-Bolt goes inside the Plastic Bushing (Figure 2-43). The Inside Rose may have to be wiggled to get the Plastic Bushing over the Inside Rose Post. Make certain all connectors and wires are properly routed and dressed so that no pinching occurs then fasten it to the Outside Rose with the two long Thru-Bolts (Figure 2-43).

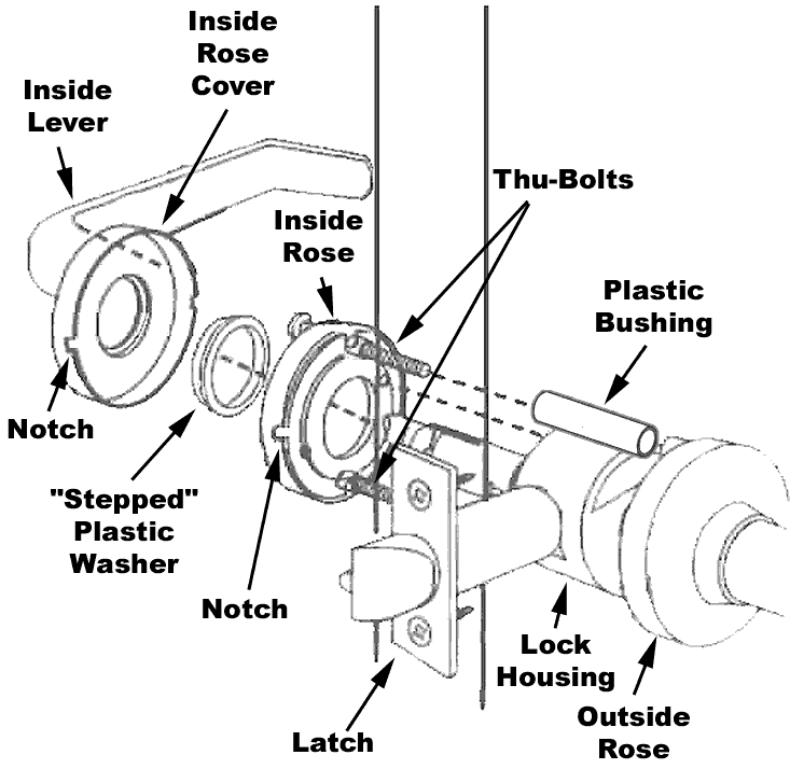


**Figure 2-43 – Installing Inside Rose, Thru-Bolts and Cover**

2.15.3 **This step is easy to forget:** ***Place the Stepped Plastic Washer (Figure 2-43), larger diameter first towards the door) over the Inside Lock Tube and into the Inside Rose (it snaps in).***

2.15.4 Press the Inside Cover over the Inside Rose making certain that the Notch in the Inside Cover aligns with either Notch on the inside Rose.

## 2.16 Installing the Inside Lever

2.16.1 Insert Cylinder Retainer into the Inside Lever (Figure 2-38).

2.16.2 With the level end towards the hinges, push the Inside Lever onto the Inside Lock Tube, slightly wiggle and push until the Inside Lever engages the Lever Catch on the Inside Rose (Figure 2-38).

2.16.3 Test the Inside Lever to insure that it is on securely.

## 2.17 Installing Strike Plate

2.17.1 Calculating the location of the Strike Plate Center Line will vary from door to door. It is basically ½ of the door thickness from whatever stops the door when it is closed. Sometimes this is the door

frame (jam) itself, sometimes it is a rubber bumper, and sometimes it is weather stripping. Determine what stops your door when it is closed and measure ½ the door's thickness from that point and that is the Strike Plate Center Line location (Figure 2-44).

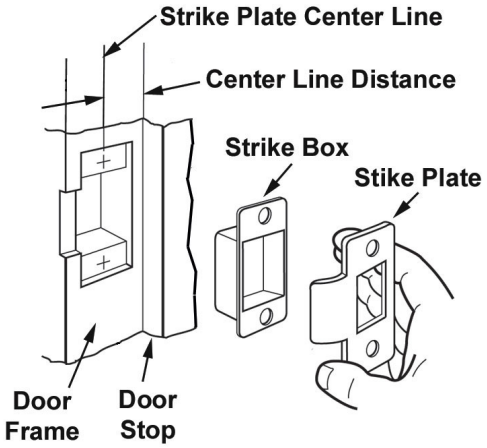


**Figure 2-44 – Installing Strike Plate**

2.17.2 Mortise the doorjamb to accommodate the Strike Box and Plate in alignment with the Strike Plate Center Line (Figure 2-44). The mortise must be deep enough so that the installed Strike Plate is flush with the Door Frame.

2.17.3 Insert the Strike Box and Plate and secure both with two screws provided.

**Note: Make certain that the Strike Plate is positioned so that the door will latch easily.**

## 2.18 Installing the Optional Door Position Magnet

**Note: The magnet that works with the Door Position Switch must get mounted exactly across from the Door Position Switch.**

**Note: For UL installations that use a Door Position Switch use a UL listed door/window contact. Door contacts for door position monitoring are not for intrusion protection.**

2.18.1 Insert the magnet into the hole drilled in section 2.6.

## 2.19 Install the Battery Pack & Transceiver Cover

2.19.1 Install the new Battery Pack (Figure 2-45), install the Battery Bracket, and connect the Battery Pack (Figure 2-46).

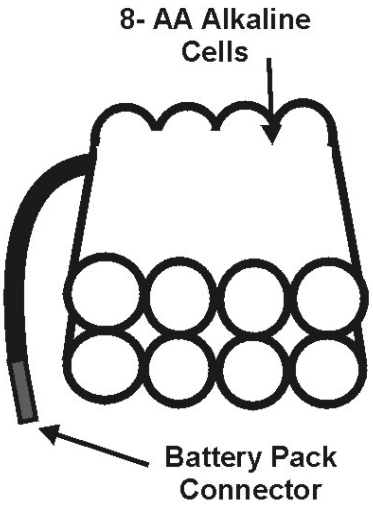


**Figure 2-45 – MIRL Battery Pack**

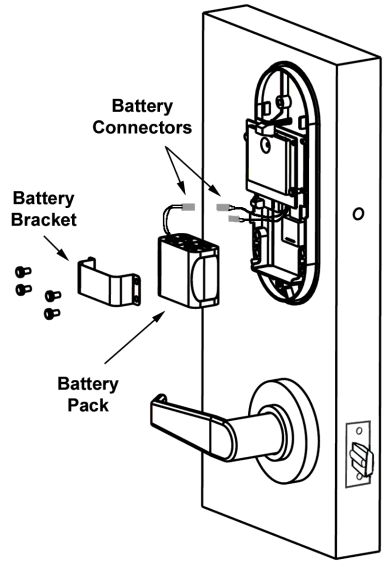


**Figure 2-46 – MIRL Battery Pack Installation**

2.19.2 If the Transceiver Gasket (Figure 2-47) is not already mounted on the Transceiver Base Plate, position the Transceiver Gasket in the outer groove of the Transceiver Base Plate making certain that the ends of the Reader Gasket are at the bottom of the base plate and that there is a Weep Gap.

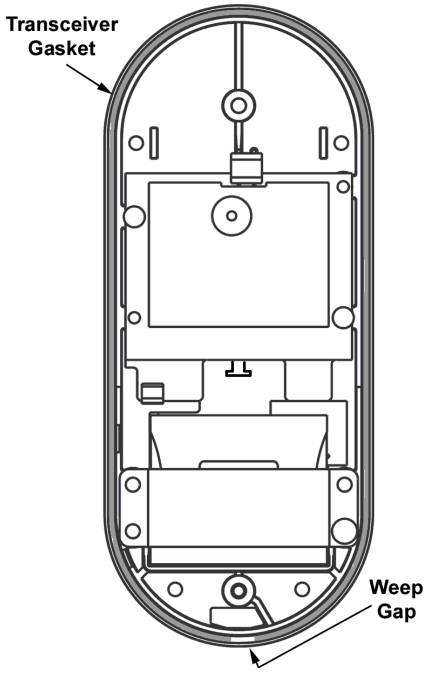


**Figure 2-47 – MIRL Transceiver Gasket**

2.19.3 Install the MIRL Transceiver Cover and fasten with two secure T-10 TORX Transceiver Cover Mounting Screws (6-32 x 3/8") using the T-10 TORX L-key that is provided (Figure 2-48).

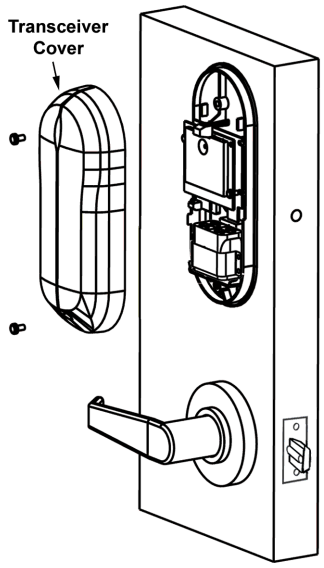


**Figure 2-48 – MIRL Transceiver Cover**

**This completes the installation of the MIRL Standard Cylindrical.**

**If the Panel Interface Module (PIM) is not installed, now is the time to install it, please refer to the PIM Installation Manual.**

**If the Panel Interface Module (PIM) is installed, then you are ready to configure your Wyreless Access System, please refer to the "Configuring & Operating a Wyreless Access System" manual.**

# 3. Troubleshooting

| Problem | Solution |
|---|---|
| **Levers pull off.** | 1. Lever catch not engaging. Lock may not be centered or door too thick.<br>2. Cylinder retainer not flush.<br>3. Non-standard sized cylinder |
| **Unable to install outside lever.** | Key orientation incorrect |
| **Outside lever removable without using key.** | 1. Tailpiece installed in wrong orientation.<br>2. Wrong tailpiece. |
| **Latch won't retract.** | 1. Incorrect retractor/latch engagement<br>2. Poor door preparation or mis-aligned Thu-Bolts. |
| **Key binds in lock.** | 1. Lever catch not fully engaged.<br>2. Be sure outside rose is not adjusted too far outward.<br>3. Wrong tailpiece. |
| **Key cannot be removed from cylinder.** | Incorrect tailpiece alignment. |

# 4. Contacting Recognition Source

For questions regarding Wyreless Access ™:

customerservice@recognition-source.com
sales@recognition-source.com
techsupport@recognition-source.com
www.recognition-source.com
(630) 762-4450
(630) 762-4444 fax

# 5. FCC/UL Compliance & Warnings

## 5.1 FCC Compliance

- This device has been authorized by the FCC Rules and Industry Canada.
- This device complies with the limits for a Class B digital device and a Class B intentional radiator, pursuant to Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions: (1) This device may cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- The Wyreless Access System Component must be installed by qualified professionals or contractors in accordance with FCC part 15.203, Antenna Requirements.
- Do not use any antenna other than the one provided with the unit.

## 5.2 UL Compliance

- The Modular Integrated Reader Lock (MIRL) Standard Cylindrical is listed under UL294 as an access control system accessory.
- Access equipment manufactured and/or sold by Recognition Source, LLC, is not rated for, or intended for use in place of life safety devices. For example, do not use a MIRL where a crash bar is required.
- When using the proximity version of the Modular Integrated Reader Lock, for UL installations, the lock has not been investigated for burglary protection.
- For UL installations that use a Door Position Switch use a UL listed door/window contact. Door contacts for door position monitoring are not for intrusion protection.
- No standby power provided.

## 5.3 Warnings

- RF Exposure - To comply with FCC RF exposure requirements for mobile transmitting devices this transmitter should only be used or installed at locations where there is normally at least a 20 cm separation between the antenna and all persons.
- Do not co-locate and operate in conjunction with any other antenna or transmitter.
- Use only the Battery Pack specified in this instruction manual.
- Do not subject Battery Pack to fire or high temperatures.
- Do not attempt to recharge, short out or disassemble Battery Pack.
- Follow local regulations for alkaline battery disposal.
- Immediately remove the batteries and discontinue use if:
    - the product is impacted after which the interior is exposed, or
    - the product emits a strange smell, heat, or smoke.
- Changes or modifications not expressly approved by Recognition Source could void the user's authority to operate the equipment.

# 6. Revision History

| Version | Date | Changes |
|---|---|---|
| x001 | 01/03/03 | preliminary in house release for comments |
| x001.1 | 01/03/03 | added verbiage to mounting transceiver & reader sections, deleted making connections section |
| x001.2 | 01/03/03 | added torx screw references for reader and transceiver covers |
| x001.3 | 01/06/03 | added exploded view of lock hardware, updated inside rose install figure, updated reader cable routing figure |
| x001.4 | 01/15/03 | reformatted transceiver & reader sections, added reader hole drilling section, added dps connection figure, moved removing inside lever section, added insert cylinder retainer section |
| 001 | 01/16/03 | added transceiver hole drilling section, added battery pack install and transceiver cover install section, released for publication |
| 002 | 02/28/03 | added torx screw/wrench info for reader & transceiver covers, added plastic wire protector bushing, added plastic bushings for metal doors, added "no self tapping screws" note, added Transceiver Base to Lock Housing grounding wire, added UL required verbiage, added Troubleshooting section |
| 003 | 03/10/03 | changed transceiver end of grounding wire to a ring terminal |
| 004 | 05/08/03 | changed verbiage concerning reader gasket, added transceiver gasket section, added transceiver & reader base plate foam gasket notes, added motor & request to exit connector hole annotation, updated sales model table (v7) |
| 005 | 08/18/03 | added Request to Enter installation procedure |
| 006 | 02/25/04 | added fire stop procedure for reader hole in a wooden door, updated marking & drills holes section for using new template (rev d), fixed typos, updated figures for plastic modifications, added Drill Jig instructions, added Scar/Push Plate instructions |