

January 11, 2011

TO: Members of the MAG Building Codes Committee

FROM: Steven Hether, Mesa, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday **January 19, 2011** - 2:00 pm
MAG Office, Suite 200, Cholla Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Building Codes Committee (BCC) has been scheduled for the time and place noted above. Members of the MAG Building Codes Committee may attend in person, by videoconference or by telephone conference call. Those attending by videoconference or telephone conference call must make arrangements with Steve Gross at MAG and, for videoconferencing, your site coordinator by at least the Monday prior to the meeting.

If you drive to the meeting, please park in the garage under the building and bring your ticket to the meeting; parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Heidi Bickart at the MAG office. Requests should be made as early as possible to allow time to arrange for accommodation.

Please be advised that under procedures approved by the MAG Regional Council on June 26, 1996, all MAG committees must have a quorum to conduct business. A quorum is a simple majority of the membership, or 13 people for the MAG Building Codes Committee. If you are unable to attend the meeting, please send a proxy from your jurisdiction or agency to represent you.

If you have any questions or require additional information, please contact Heidi Bickart at (602) 254-6300 or hbickart@azmag.gov.

TENTATIVE AGENDA

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| <p>1. <u>Call to Order</u></p> | |
| <p>2. <u>Introductions</u></p> | <p>2. For information.</p> |
| <p>3. <u>September 15, 2010 Meeting Minutes</u></p> | <p>3. Review and approve the minutes of the September 15, 2010 meeting.</p> |
| <p>4. <u>Call to the Audience</u></p> <p>Members of the public may request to speak on items that fall under the jurisdiction of the MAG Building Codes Committee (BCC) and are not scheduled on the agenda; or, on items on the agenda for discussion but not for action. A total of 15 minutes will be provided for the Call to the Audience, with a limit of three minutes per speaker, unless the Chair requests an exception to this limit. Those requesting to comment on action agenda items may be provided an opportunity to do so at the time the agenda item is heard.</p> | <p>4. For information and discussion.</p> |
| <p>5. <u>Comments From the Committee</u></p> <p>An opportunity will be provided for Building Codes Committee members to present a brief summary of current events. The Building Codes Committee is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed in accordance with the Arizona Open Meeting Law.</p> | <p>5. For information and discussion.</p> |
| <p>6. <u>AZBO Amendments</u></p> <p>AZBO has acted upon its recommended amendments to the 2009 ICC family of codes. The amendments will be presented to the Committee for discussion and possible recommendation to member jurisdictions to consider them if adopting the 2009 edition of the codes. Please see Attachment One.</p> | <p>6. For information, discussion and possible action.</p> |
| <p>7. <u>Electric Vehicle Project</u></p> <p>On August 5, 2009, Electric Transportation Engineering Corporation (eTec), a subsidiary of ECOtality, Inc., a leader in clean electric transportation and storage technologies, was</p> | <p>7. For information and discussion.</p> |

selected by the U.S. Department of Energy for a grant of approximately \$99.8 million to implement the largest deployment of electric vehicles and charging infrastructure in history. The eTec initiative proposes to deploy charging infrastructure in major population areas, including Phoenix/Tucson.

Ecotality would like to provide an update on their progress with signing deals, planning installs, obtaining permits and updated timetables. Please see Attachment Two.

8. Updated MAG Building Codes Committee Membership

We are requesting that Committee members review Attachment Three, Committee Roster, sent with this agenda. Please forward any changes to Heidi Bickart prior to the meeting or provide them at the meeting.

9. Update Survey of Code Adoption

Attachment Four identifies the codes that member agencies have adopted. Please review this information and provide any updates or corrections to Heidi Bickart.

10. Topics for Future Agendas

Potential topics for the next meeting will be discussed. The next meeting of the MAG Building Codes Committee is scheduled for Wednesday February 16, 2011 at 2:00 p.m. in the Cholla Room of the MAG offices.

11. Adjournment

8. For information and discussion.

9. For information and discussion.

10. For information and discussion.

MINUTES OF THE
MARICOPA ASSOCIATION OF GOVERNMENTS
BUILDING CODES COMMITTEE

September 15, 2010

Maricopa Association of Governments Office
Cholla Room
Phoenix, Arizona

COMMITTEE MEMBERS

Steven Hether, Mesa, Chair

Ken Sowers, Avondale

Phil Marcotte, Buckeye

*Mike Tibbett, Carefree

Mike Baxley, Cave Creek

Dave Nakagawara for Alex Banachowski,
Chandler

*Mary Dickson, El Mirage

*Peter Johnson, Fountain Hills

*John Smith, Gila Bend

*Jo Rene DeVeau, Gila River Indian
Community

A-Ray Patten, Gilbert

Tom Paradise, Glendale

Ed Kulik, Goodyear

*Chuck Ransom, Litchfield Park

Tom Ewers, Maricopa County

Bob Lee, Paradise Valley

Dennis Marks, Peoria

Tom Wandrie, Phoenix

A-Dean Wise, Queen Creek

Dustin Schroff for Michael Clack,
Scottsdale

A-Michael Williams, Tempe

Mario Rochin, Tolleson

*Jim Fox, Youngtown

Rick DeStefano, Wickenburg

Bridget Jones, Home Builders Association

OTHERS IN ATTENDANCE

Heidi Bickart, MAG

Steve Gross, MAG

Marc Sobelman, Ecotality

Alana Chavez, Ecotality

Denise McClafferty, MAG

Dennis Chase, Peoria

John Armstrong, Viega

Rick Burris, Viega

Ted Atkinson, Viega

*Those members neither present nor
represented by proxy.

A-Those members participating via
audioconference

V-Those members participating via
videoconference

1. Call to Order

Steve Hether, Chairman, called to order the September 15, 2010 meeting of the MAG Building Codes Committee (BCC) at 2:00 p.m.

2. Introductions

Voting members Dean Wise, Michael Williams, Ray Patten, attended via telephone conference call. All members introduced themselves.

3. August 18, 2010 Meeting Minutes

It was moved by Mario Rochin, seconded by Ken Sowers and unanimously recommended to approve the August 18, 2010 meeting minutes.

4. Call to the Audience

There were no comments from the audience.

5. Comments From the Committee

Bob Lee said Arizona Building Officials (AZBO) Board voted to adopt the AZBO amendments and he would like to have the AZBO amendments as a future MAG BCC agenda item. Bob Lee reminded that the AZBO Education Institute is October 4-8, 2010 and there are no scholarships available. He said there should be good attendance at the green building and energy classes.

6. Residential Fences

Tom Wandrie explained that a Phoenix resident needed to increase the height of their fence around their pool in order to comply with city of Phoenix pool barrier requirements. He said this fence was on the property line. The adjacent neighbor did not approve of the increase in height and the construction of the fence. Mr. Wandrie said the issue is in litigation. He asked for input from the MAG BCC.

Tom Wandrie said now there has to be some agreement from adjacent owner when a residential fence is built or changed and it is located on the property line. Tom Ewers asked if the city of Phoenix recorded the agreement. Tom Wandrie responded no, it is in the permit application which is scanned, not recorded. Bob Lee said Town of Paradise Valley borrowed a document from city of Scottsdale that says a person applying for a fence permit on the property line needs to get concurrence from the adjacent neighbor and there is a statement in the document on who maintains each side of the fence.

Bob Lee suggested that if someone wants to build on a property line then there needs to be an agreement from the neighbor. Bob Lee said Paradise Valley addresses fence building on a property line in the zoning code and the minimum requirement on the opposite side of the fence is stucco and paint. Bob Lee said the minimum fence height in Paradise Valley is 8 inches and the code has been amended to reflect that.

Tom Paradise asked when a permit is required. Tom Wandrie said at the city of Phoenix a permit is required when a fence is being built on a property line.

Dean Wise said most of the subdivision Covenants, Conditions and Restrictions (CC&Rs) also have restrictions stating that permission from a neighbor is required before changes can be made to a fence on a property line. Tom Wandrie said Phoenix does not get involved in CC&Rs.

Rick DeStefano asked if there a definition for fence in the codes. He asked for clarification on the definition for wall versus fence. Bob Lee said that he was not successful in obtaining different definitions for wall and fence. Steve Hether said if neighbor will not cooperate they build the barrier inside their property line. He said before litigation Mesa tries to use Neighborhood Services to mediate the issue. He said it seems like the member agencies are all over the board when it comes to residential fences. He suggested that it may not be feasible to give this topic to the BI/PE Forum.

Ken Sowers asked what the minimum distance is from building on your own property to the property line. Tom Wandrie said he does not have a measurement for that and said a footing can go across a property line underneath the ground and emphasized that everything is really supposed to be on your property.

Phil Marcotte said Buckeye permitted a fence where the footer was inside the property line and did not allow the builder of the fence to maintain the extra 4 inches on the other side so the weeds grew up and the judge granted him a temporary easement to maintain the property on the other side of the fence. Mr. Marcotte said it may be a good idea to hold it back some so there is some trespass. Tom Wandrie thanked Mr. Marcotte for his comment.

Tom Paradise asked if adverse possession comes into play where you could claim the additional property as being yours and increase the square footage of your own property. Steve Hether said for adverse possession the other party has to be using it open and notoriously and if the property owner said they have no right to use that area and took the appropriate action on it then it would take the adverse possession claim away.

Dean Wise asked if property owners are expected to maintain fences on property lines in a subdivision. Tom Wandrie said Phoenix considers it as separate properties as it is platted as separate property. Dean Wise said in his subdivision CC&Rs it states that common walls are owned in common for purposes of wall and maintenance. Tom Wandrie reiterated that Phoenix does not get involved in CC&Rs as it is a private agreement. Steve Hether said that in the instances where there are HOAs you could bring the issue to the HOA. Steve Hether said for old subdivisions the CC&Rs are not valid.

Mike Baxley said in Cave Creek they solved it by using a 12 feet setback for fences. For large lots this is feasible and the setback could be smaller for smaller lots.

Steve Hether asked the MAG BCC if they wanted to pass this issue to the BI/PE Forum. The committee decided not to bring the issue to them. Tom Wandrie said the issue is in litigation and will let the BCC know the outcome. He is trying to get agreement between the 2 property owners.

7. Electric Vehicle (EV) Project

Marc Sobelman provided an update on the EV Micro-Climate for Electric Vehicle Supply Equipment (EVSE) Location Planning.

Marc Sobelman said the Deployment Guidelines document was extremely helpful and thanked the MAG BCC for their assistance in moving it through the MAG committee process. He provided a presentation on the EV project. He said the Nissan Leafs will trickle into the Phoenix metro area beginning December 2010. He said he would like some of the valley mayors to be involved in the initial Nissan Leaf roll-out. He said Ecotality is currently working on the EV Micro-Climate Plan which is a 3 phase process. He presented a timeline and stated maps showing EV charging infrastructure will soon be available. He distributed a handout on the blink level 2 EVSE chargers. He said Ecotality hopes to have the EV MicroClimate Plan complete by end of this month. The plan will describe where people live, work and what routes they take. He said that people in Phoenix generally live less than 24 miles from work and people generally take 2 side trips a day. Marc Sobelman said that when the Installation Guide for Level 2 and Level 3 chargers is available, the MAG BCC will be requested to review the Guide.

Tom Paradise asked how many Nissan Leafs will be available in the valley. Marc Sobelman replied that 900 Nissan Leaf's will be available in the Phoenix/Tucson area as part of the EV Project. As part of this, fleets of 10 or more Nissan Leafs, will receive free chargers.

Tom Ewers asked if all EV chargers will be installed by August 2011. Marc Sobelman replied yes there will be 2100 chargers (80 percent Phoenix 20 percent Tucson) installed in residential and commercial sites by August 2011.

Marc Sobelman said the Chevy Volt will start selling in January 2011 and all the other OEMs will begin to come out with their EV and hybrid vehicles in the next couple years. Steve Hether noted that there will be EVs outside this project in the Phoenix metro market. Bob Lee asked if they are all using the same receptacle. Marc Sobelman said yes all cars will have the same inlet. He said Level 2 chargers are standardized and Level 3 will probably be standardized by end of 2011. The Nissan Leafs will all have a Level 3 charging inlet and if you are outside the EV project and buy a Nissan Leaf you will have to pay extra to get the Level 3 inlet. He said the Level 3 charger is the fast charge and these will be located along the I10 corridor from Phoenix to Tucson. Marc Sobelman thanked member agencies for their participation.

8. Flameless Pipe Joining System

John Armstrong a representative from Viega ProPress Copper & Stainless Steel Piping Systems presented information on their flameless pipe joining technology. Other manufacturers offer this technology. Mr. Armstrong said that no flame is the biggest change, and they use copper and stainless steel mainly. He said the join is very quick and very safe and can be done wet. They have all the listing and code compliance necessary. He showed the MAG BCC how the technology works.

Tom Paradise asked for clarification about testing pipe for leaks. He was concerned about the PSI limits. Dean Wise asked if this is going to be restricted to private property saying that laterals in the right of way are going to test at more than 85psi. Rick Burris said the smart connect feature works between 15-85psi and if you test it at 120psi the pipe will blow apart.

Ted Atkinson added that if system is being tested, do the initial test between 15-85psi and if the pipe has not been pressed it is guaranteed to leak and if you do a water test at 120psi the fitting will blow apart if it is not pressed. Dean Wise asked if the pipe designed for 160psi. John Armstrong replied said they don't design the pipe, it works with anybody's copper so it is good from 1-1.25 inches.

Steve Hether asked if this was being used for MedGas systems. Armstrong said no. He added that for stainless steel they have to use Viega steel. Steve Hether asked if the workers are required to be trained by Viega. John Armstrong said yes they are required to be trained.

Rick Burriss explained PEX system which is part of the 2009 ICC codes dealing with plumbing/fire sprinkler systems. He said the new codes require fire sprinklers in new residential development. Bob Lee asked for test pressure on NFPA 13d. Mr. Burriss said it depends on if there is a fire hydrant or a fire dept connection (FDC). If there is a FDC on one of their homes you cannot use PEX. He distributed a bronze fitting for viewing. He said Talking Stick project in Scottsdale is all Viega copper and stainless steel product. He described internal circulation system for high-rises. He said they are LEED Gold certified and did the Orange County chopper building.

Tom Paradise asked if Viega would come to City of Glendale to make a presentation. Rick Burriss said yes, they would be happy to visit any jurisdictions.

Rick Burriss said if you turn it more than 5 degrees then fitting should be repressed. He said you can repress the same fitting.

Ed Kulik asked how you take it apart if you needed. Rick Burriss said it is same way you take apart a sweat fitting, you cut it out. Mr. Kulik asked if it has to be calibrated. Ted Atkinson said yes it does have to be calibrated. He noted that after 30000 presses you need to recalibrate tool. He said there are 2000 warning presses after 30000 presses and then the tool will shut down.

9. Updated MAG Building Codes Committee Membership

Members were encouraged to send any changes to Heidi Bickart.

10. Update on Survey of Code Adoption Document

Steve Hether encouraged members to send Heidi Bickart changes to the table.
Tom Ewers described the Maricopa County adoption of the new codes.

11. Topics for Future Agendas

Bob Lee said Arizona Building Officials (AZBO) Board voted to adopt the AZBO amendments and he would like to have the AZBO amendments as a future MAG BCC agenda item. Bob Lee suggested green construction code as a future meeting topic.

Steve Hether suggested canceling the October meeting due to the AZBO education workshop.

12. Adjournment

Ken Sowers made motion and Mario Rochin seconded motion. The meeting adjourned at 3:00 pm.

AZBO Code Review and Development Committee

AZBO Code Review & Development Committee Amendments recommended for the 2009 ICC Codes

2009 INTERNATIONAL BUILDING CODE

Revision to: Table 1607.1

Revise as follows:

OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (lbs.)
27. Residential		
One- and two-family dwellings		
Uninhabitable attics with limited storage ^{i,j,k}	20 <u>40</u>	
Habitable attics and sleeping areas	30 <u>40</u>	
(no other changes in item 27)		

Reason: Industry standards in Arizona indicate designers based their calculations on the 40 psf for all second floor areas.

Committee Reason: Although this does exceed the minimum requirements set forth by the code, the committee members representing the building industry indicated the homebuilders and designers preferred to continue with the 40 psf in bed room areas. The increased design would lessen deflection in floor systems, provide a uniform design for headers and lessen complaints from buyers.

Revision to: Sections 308.2, 308.3, 310.1, 310.2, (new) 424, 309.2.9, 1008.1.2

Replace with new text as follows:

308.2, Group I-1. This occupancy shall include buildings, structures, or parts thereof housing more than 10 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides supervisory care services. The occupants are capable of responding to an emergency without physical assistance from staff. The group shall include, but not be limited to the following:

- Alcohol and drug abuse centers
- Assisted living centers
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Residential board and care facilities
- Social rehabilitation facilities

A facility such as the above with 10 or fewer persons shall be classified as a Group R-4 Condition 1, or shall comply with the International Residential Code in accordance with 101.2 where the building is in compliance with Section 424 of this code.

308.3, Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing, custodial, personal, or directed care on a 24-hour basis of more than 5 persons who are not capable of self-preservation by responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to the following:

- Child care facilities
- Detoxification facilities
- Hospitals
- Mental hospitals
- Nursing homes (both intermediate care and skilled nursing facilities)

This occupancy shall also include assisted living facilities providing personal or directed care on a 24-hour basis of more than 10 persons who are not capable of responding to an emergency situation without physical assistance from staff. Assisted living facilities providing personal or directed care on a 24-hour basis of 10 or fewer persons who are not capable of responding to an emergency situation without physical assistance from staff shall be classified as R-4 Condition 2.

310.1 Group R-4. Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living homes including not more than 10 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code and Section 424 or shall comply with the *International Residential Code* provided the building is protected by an *automatic sprinkler system* in accordance with Section 424.

310.1.1 Condition 1. This occupancy condition shall include facilities licensed to provide supervisory care services, in which occupants are capable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 1 facilities housing more than 10 persons shall be classified as group I-1.

310.1.2 Condition 2. This occupancy condition shall include facilities licensed to provide personal or directed care services, in which occupants are incapable of self-preservation by responding to an emergency situation without physical assistance from staff. Condition 2 facilities housing more than 10 persons shall be classified as Group 1-2.

310.2 Definitions. Delete the definition for **PERSONAL CARE SERVICE** and replace with the following: Assistance with activities of daily living that can be performed by persons without professional skills or professional training and includes the coordination or provision of intermittent nursing services and the administration of medications and treatments.

Delete the definition of **RESIDENTIAL CARE/ASSISTED LIVING FACILITY** and replace with the following: A building or part thereof housing a maximum of 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment which provides supervisory, personal, or directed care services. This classification shall include, but not be limited to, the following: residential board and care facilities, group homes, congregate care facilities, assisted living homes.

Add the following definitions:

SUPERVISORY CARE SERVICE. General supervision, including daily awareness of resident functioning and continuing needs.

DIRECTED CARE SERVICE. Care of residents, including personal care services, who are incapable of recognizing danger, summoning assistance, expressing need, or making basic care decisions.

Add a new **Section 424 ASSISTED LIVING HOMES**, as follows:

424.1 Applicability. The provisions of this section shall apply to a building or part thereof housing not more than 10 persons, excluding staff, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment, which provides licensed care services. Except as specifically required by this division, R-4 occupancies shall meet all the applicable provisions of Group R-3.

424.2 General. Building or portions of buildings classified as R-4 may be constructed of any materials allowed by this code, shall not exceed two stories in height nor be located above the second story in any building and shall not exceed two thousand square feet above the first story, except as provided in Section 506.

424.3 Special Provisions. R-4 occupancies having more than 2,000 square feet above the first story shall be of not less than one-hour fire-resistive construction throughout.

424.3.1 Mixed Uses. R-4 occupancies shall be separated from other occupancies as provided in Table 508.4.

424.4 Access and Means of Egress Facilities

424.4.1 Accessibility. R-4 occupancies shall be provided with at least one accessible route as provided in Section 1104.1.

424.4.2 Exits

424.4.2.1 Number of Exits. Every story, basement, or portion thereof shall have not less than two exits.

Exception: Basements and stories above the first floor containing no sleeping rooms used by residents may have only one means of egress as provided in Chapter 10.

424.4.2.2 Distance to Exits. The maximum travel distance shall comply with Section 1016, except that the maximum travel distance from the center point of any sleeping room to an exit shall not exceed 75 feet.

424.4.2.3 Emergency Exit Illumination. In event of a power failure, exit illumination shall be automatically provided from an emergency system powered by storage batteries or an onsite generator set installed in accordance with the International Electric Code.

424.4.2.4 Emergency Escape and Rescue. R-4 occupancies shall comply with the requirements of Section 1029, except that Exception #1 to 1029 does not apply to R-4 occupancies.

424.4.2.5 Delayed Egress Locks. In R-4 Condition 2 occupancies, delayed egress locks shall be permitted in accordance with 1008.1.4.4, Items 1, 2, 4, 5, and 6 or 1008.1.9.8.

424.5 Smoke Alarms and Sprinkler Systems.

424.5.1 Smoke Alarms. All habitable rooms and hallways in R-4 occupancies shall be provided with smoke alarms installed in accordance with Section 907.2.11.

424.5.2 Sprinkler Systems. R-4 occupancies shall be provided with a sprinkler system installed in accordance with 903.2.8. Sprinkler systems installed under this section shall be installed throughout, including attached garages, and in Condition 2 facilities, shall include concealed spaces of or containing combustible materials. Such systems may not contain unsupervised valves between the domestic water riser control valve and the sprinklers. In Condition 2 occupancies, such systems shall contain water flow switches electrically supervised by an approved supervising station, and shall sound an audible signal at a constantly attended location.

1008.1.2, Door Swing, delete the text of exception #4, and replace with the following;

4. Doors within or serving a single dwelling unit in Groups R-2 and R-3, as applicable in 101.2, and R-4.

Reason: The purpose of this amendment is to bring the provisions of the code into agreement with the licensing rules of the Arizona Department of Health Services. DHS license categories have a threshold of 10 residents to move from a residential home setting to an institutional setting. DHS rules (R9-10-701) state, "Assisted living home" or "home" means an assisted living facility that provides resident rooms to (10) or fewer residents, as distinct from an "assisted living center", which provides services to more than (10) persons. In addition, the license classifications to provide "personal care services" and "directed care services" to residents allow for residents to be bed-bound. The use of "Condition" distinctions is reflective of similar distinctions in I-occupancies.

Each state has unique agency programs for assisted living occupancies, which establish license categories based on numbers of residents and the familiar ambulatory/non-ambulatory distinction. Uniformity could be accomplished by either trusting health service agencies nationally to agree to uniform thresholds and other licensing characteristics, or by amending building codes to allow each state to adapt to that state's unique rules. If numerical thresholds are provided on a "fill in the blanks" basis, condition categories can be added or deleted, and definitions can be customized to match licensure definitions, the hazards associated with these facilities can be addressed comprehensively on a state-by-state basis.

The most hazardous scenario is a facility in an ordinary, un-rated residential structure, occupied by (10) bed-bound residents, supervised by a single caregiver. Provisions for exiting, smoke detectors, emergency illumination, sprinklers, et al, can substantially increase the chances of survival in a fire or other emergency for these residents.

Revision to: 716.5.4 2007 Supplement

Revise as follows: Add new exception:

4. Such walls are penetrated by ducted HVAC systems, have a required fire-resistance rating of 1 hour or less and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals.

Reason: Currently the code is less restrictive for penetrations of a fire barrier than a fire partition. This proposal adds an additional exception for fire partitions. This proposal duplicates provisions of Section 716.5.2 Exception 3 as an exception 4 for fire partitions. It is logical to allow the exception for a wall type where the code places lesser restrictions on its use. This exception does not limit the size of a duct penetration as Exception 3 does currently. If this exception is acceptable for fire barriers, it should be acceptable for fire partitions.

Revision to: Section 1210.2

Revise as follows:

1210.2 Walls. Walls within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of 4 feet (1219 mm) above the floor and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

Reason: The areas around service sinks are as susceptible to moisture as the urinals and water closets as splattering of water and other liquids is common place. Also, with the use of cleaning chemicals and other items that can and will be used at the service sinks makes the walls as subject to the effects experienced at the urinals and water closets.

Revision to: 3109

Revise as follows:

Section 3109 is hereby REPEALED

Reason: The requirements of this section do not comply with Arizona state law governing swimming pool enclosure requirements.

2009 INTERNATIONAL RESIDENTIAL CODE**Revision to: TABLE R 301.5**

Revise as follows:

USE	LIVE LOAD
Attics with limited storage ^{b,g}	20 <u>40</u>
Habitable attics and attics served with fixed stairs	30 <u>40</u>
Sleeping rooms	30 <u>40</u>

(No other changes to Table)

Reason: Industry standards in Arizona indicate designers based their calculations on the 40 psf for all second floor areas.

Committee Reason: Although this does exceed the minimum requirements set forth by the code, the committee members representing the building industry indicated the homebuilders and designers preferred to continue with the 40 psf in bed room areas. The increased design would lessen deflection in floor systems, provide a uniform design for headers and lessen complaints from buyers.

Revision to: Section G2415.10

Proposal: G2415.10 (404.10) Minimum burial depth. Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping.

Delete: G2415.10.1

Reason: The distinction between metal piping and plastic piping in regards to burial depth is because the plastic piping is more susceptible to damage and needs the increased depth for protection.

The elimination of the section addressing individual outside appliances is because the risks are the same whether the line serves multiple appliances or a single appliance. With similar risks, similar depths should be required.

Revision to: Section P2803.6.1

Revise as follows:

P2803.6.1 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater except where the discharge is to the outdoors, not subject to freezing and the piping terminates not less than 6 inches (152mm) and not more than 12 inches (305mm) above grade.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.
4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate more than 6 inches (152 mm) above the floor or waste receptor.
11. Not have a threaded connection at the end of such piping

12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.
14. Direct the discharge in a downward direction.

Reason: This change will allow the P & T pressure relief drain pipe to extend direct from the water heater to an exterior location where no freeze potential exists. This is consistent with the IPC Section 504.6.5 (IRC P2803.6.1.5) which allows the discharge to go directly outdoors. The 6" minimum termination height provides the required air gap. This proposed change does set a termination height limit of 12". This method of drainage and termination is very common in locations that have previously utilized the Uniform Plumbing Code for over 50 years. No data exists to suggest this method has created unsafe conditions. The Committee reason for disapproval of Item P50-07/08 clarifies that the code allows a discharge pipe to terminate over a water heater drip pan. The code currently establishes drip pan drain terminations at 6" minimum and 24" maximum termination heights in IPC Section 504.7.2. If it's safe to drain a discharge pipe to a drip pan using these heights, then it certainly would be no more harmful to use the similar heights for an outdoors termination.

This proposal improves the termination requirements.

This method is also more energy efficient by not creating a direct open pipe for air flow from and to the out doors as will occur where an indirect waste receptor is utilized in the room with the water heater.

Revision to: M1503.1

Revise as follows:

Add new text as follows:

M1503.1 General. Range hoods shall discharge to the outdoors through a single wall duct. The duct serving the hood shall have a smooth interior surface, shall be airtight, and shall be equipped with a backdraft damper. Changes in size or direction shall be accomplished with a pre-manufactured transition fitting. Ducts serving range hoods shall not terminate in an attic or crawl space or areas inside the building. (No other changes)

2009 INTERNATIONAL PLUMBING CODE

Revision to: Section 101

Add a new section 101.5 to read as follows:

101.5 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

Reason: This provision is included in all the other International codes and needs to be included in the International Plumbing Code to maintain uniformity among the codes.

Revision to: Section 504.6

Revise as follows:

504.6 Requirements for discharge piping. The discharge piping serving a pressure relief valve, temperature relief valve or combination thereof shall:

1. Not be directly connected to the drainage system.
2. Discharge through an air gap located in the same room as the water heater except where the discharge is to the outdoors, not subject to freezing and the piping terminates not less than 6 inches (152mm) and not more than 12 inches (305mm) above grade.
3. Not be smaller than the diameter of the outlet of the valve served and shall discharge full size to the air gap.

4. Serve a single relief device and shall not connect to piping serving any other relief device or equipment.
5. Discharge to the floor, to the pan serving the water heater or storage tank, to a waste receptor or to the outdoors.
6. Discharge in a manner that does not cause personal injury or structural damage.
7. Discharge to a termination point that is readily observable by the building occupants.
8. Not be trapped.
9. Be installed so as to flow by gravity.
10. Not terminate more than 6 inches (152 mm) above the floor or waste receptor.
11. Not have a threaded connection at the end of such piping
12. Not have valves or tee fittings.
13. Be constructed of those materials listed in Section 605.4 or materials tested, rated and approved for such use in accordance with ASME A112.4.1.
14. Direct the discharge in a downward direction.

Reason: This change will allow the P & T pressure relief drain pipe to extend direct from the water heater to an exterior location where no freeze potential exists. This is consistent with the IPC Section 504.6.5 (IRC P2803.6.1.5) which allows the discharge to go directly outdoors. The 6” minimum termination height provides the required air gap. This proposed change does set a termination height limit of 12”. This method of drainage and termination is very common in locations that have previously utilized the Uniform Plumbing Code for over 50 years. No data exists to suggest this method has created unsafe conditions. The Committee reason for disapproval of Item P50-07/08 clarifies that the code allows a discharge pipe to terminate over a water heater drip pan. The code currently establishes drip pan drain terminations at 6” minimum and 24” maximum termination heights in IPC Section 504.7.2. If it’s safe to drain a discharge pipe to a drip pan using these heights, then it certainly would be no more harmful to use the similar heights for an outdoors termination.

This proposal improves the termination requirements.

This method is also more energy efficient by not creating a direct open pipe for air flow from and to the out doors as will occur where an indirect waste receptor is utilized in the room with the water heater.

In many commercial tenant spaces it is common practice to locate a water heater above the lay-in ceiling in an attic or interstitial space. Many times these locations are above a restroom or storage room. IPC Section 802.3 would prohibit an indirect waste receptor in such locations. A drain pipe needs to extend beyond the room or space containing the water heater.

Also, IPC 802.3 prohibits indirect waste receptors in rest rooms and 504.6.2 requires an air gap in the same room as the water heater, thereby prohibiting water heaters in rest rooms. This change would allow a reasonable option where the need exists.

2009 INTERNATIONAL FUEL GAS CODE

Revision to: Section 404.9

404.9 Minimum burial depth. Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade for metal piping and 18 inches (457mm) for plastic piping.

Delete: Section 404.9.1

Reason: The distinction between metal piping and plastic piping in regards to burial depth is because the plastic piping is more susceptible to damage and needs the increased depth for protection.

The elimination of the section addressing individual outside appliances is because the risks are the same whether the line serves multiple appliances or a single appliance. With similar risks, similar depths should be required.

2009 INTERNATIONAL MECHANICAL CODE

No Changes

Models WE-30C/K and WE-48C/K Charger Installation Manual

Single Station, Wall Mounted



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1 Important Safety Instructions

Before using the battery charger, read all the instructions in addition to the **WARNING** and **CAUTION** markings in this document and on the charger, battery and all associated equipment.



WARNING: USED WHEN THERE IS A RISK OF SAFETY OR PERSONAL INJURY

CAUTION: USED WHEN THERE IS A RISK OF DAMAGE TO THE EQUIPMENT

Consult the following symbols and related instructions for the actions necessary to avoid hazards.



WARNING: ELECTRIC SHOCK CAN KILL.

- DO NOT TOUCH LIVE ELECTRICAL PARTS.
- PROPERLY INSTALL AND GROUND THIS EQUIPMENT ACCORDING TO ITS INSTALLATION MANUAL AND NATIONAL, STATE AND LOCAL CODES.
- INCORRECT CONNECTIONS WILL CAUSE ELECTRIC SHOCK.
- DISCONNECT INPUT POWER BEFORE INSTALLING OR SERVICING THE EQUIPMENT.



WARNING: THIS DEVICE IS INTENDED ONLY FOR CHARGING VEHICLES NOT REQUIRING VENTILATION DURING CHARGING.



WARNING: TO REDUCE THE RISK OF FIRE, FOLLOW THESE INSTALLATION GUIDELINES.

- INSTALL CHARGER ON A WALL CONSTRUCTED OF MATERIAL RESISTANT TO COMBUSTION.
- A TYPICAL EXAMPLE OF MATERIAL RESISTANT TO COMBUSTION IS PLASTERBOARD (DRYWALL) OVER WOOD FRAMING. OTHER EXAMPLES OF MATERIALS RESISTANT TO COMBUSTION INCLUDE BRICK, CONCRETE OR METAL.

CAUTION: INCORRECT CONNECTION WILL CAUSE DAMAGE TO CHARGER.

- FOR PERMANENTLY-CONNECTED INSTALLATIONS, USE WIRE SIZE AND TEMPERATURE RATING AS REQUIRED BY LOCAL CODE. GROUND CHARGER PROPERLY USING EQUIPMENT GROUND LUG. REFER TO THE LABEL IN CHARGER HOUSING IDENTIFYING SERVICE WIRING TERMINAL CONNECTIONS.
- FOR CORD-CONNECTED INSTALLATIONS, USE CORD SET SUPPLIED WITH THE UNIT ONLY. USE ONLY NEMA 6-50R RECEPTACLE FOR CORD CONNECTION.

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2 Guidelines and Specifications

2.1 Applicable Codes and Standards

The installer or contractor is responsible for obtaining and becoming familiar with the following publications. Installer or contractor work and materials shall comply with the local municipality's currently adopted versions of:

- National Electric Code
- Municipal, county and state building codes and standards
- Occupational Safety and Health Administration (OSHA)
- Uniform Building Code
- Other relevant codes and standards that apply to the installation of structural components and electrical equipment

2.2 Disclaimer of Consequential Damages

ECotality North America (NA)TM is not responsible for the use or application by any person of the materials in this manual. ECotality NA is not responsible for damages, either direct or consequential, arising out of or relating to the use or application of these materials.

2.3 Installer or Contractor Notes

The installer or contractor selected to install the ECotality NA model WE-30C/K and WE-48C/K chargers, including electrical connections, shall conform to the following general notes:

- Installation shall be performed as described in the electrical plans and approved drawings.
- All work shall comply with the latest adopted edition of the National Electric Code and Building Code.
- Labor and materials not specifically described, which are incidental to installations and without which a satisfactory job cannot reasonably be completed, are a part of this installation work.
- All materials used in the installation shall be new and UL listed and labeled where required.
- The installation of AC power circuits and circuit disconnects are not included in this work. Such work must be performed by a certified electrical contractor.
- It shall be the installer's or contractor's responsibility to carefully read this entire guide and associated drawings and sketches to determine his/her responsibilities. Failure to do so shall not release the installer or contractor from doing the work in complete accordance with this document.
- During performance of the work and after all requirements of this installation standard and associated details are fully completed, ECotality NA and/or the customer shall have the option to inspect the work.
- The installer or contractor shall not modify or otherwise alter charging equipment other than specifically authorized by these installation instructions. Unauthorized modification to the charging equipment will void the manufacturer's warranty.

2.4 Customer Responsibility

The customer is responsible for contracting with a certified electrical contractor to perform all electrical work, including connections at the charger, supply circuit and main service panel.

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2.5 Tools Required for Installation

2.5.1 Meters

- Current Clamp Meter (with 600 A MAX AC/DC) (Recommend: FLUKE 336)
- Digital Multimeter (1000V MAX DC/AC) (Recommend: FLUKE 87V)

2.5.2 Hand Tools

- Drill bit, 3/16 inch
- Hammer
- Pencil/marker
- Slotted and Torx-head screwdrivers
- Wrench, 10 mm
- Torque wrench (reference)

2.6 Installer Supplied Items

- Service wiring to charger
- Conduit and fittings (1-inch trade size), except for cord-connected units

2.7 Charger Features and Specifications

2.7.1 Features

- Charge circuit interruption device (CCID) with automatic test
- Ground monitoring circuit
- Nuisance-tripping avoidance and auto re-closure
- Cold load pickup (randomized auto-restart following power outage)
- Certified energy and demand metering
- Wireless IEEE 802.11g
- LAN capable
- ZigBee SEP 1.0 capable
- AMI interface capable
- Web-based bi-directional data flow
- Cord management system
- Power cord for connection to NEMA 6-50R receptacle (WE-30K and WE-48K only)

2.7.2 Specifications

Model	WE-30C/K	WE-48C/K
Input Voltage	208-240 VAC +/-10% (120 VAC to GND)	
Input Phase	Single	
Frequency	60 Hz	
Input Current	30 Amps (maximum); 12A, 16A and 24A available	48 Amps (maximum); 12A, 16A, 24A and 30A available
Breaker Size	40 Amps; Available settings: 15A, 20A and 30A	48 Amps; Available settings: 15A, 20A, 30A and 60A
Output Voltage	208-240 VAC +/-10%	
Output Phase	Single	
Pilot	SAE J1772 compliant	
Connector/Cable	SAE J1772 compliant; UL-rated at 30A maximum	
Cord Length (output)	18 feet (approximate)	
Cord Length (input)	1 foot (WE-30K and WE-48K only)	
Exterior Dimensions	Charger assembly: 18" wide x 22" high x 5-9/16" deep Cord reel: 18" diameter	
Temperature Rating	-22 °F (-30 °C) to +122 °F (+50 °C)	
Enclosure	NEMA type 3R sun and heat resistant	
Mounting	Wall mount	

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3 Charger Layout

The charger assembly should be mounted on the wall in close proximity to the vehicle stall and at a location where the 18-foot charger cord can be easily connected to the vehicle charging port without the cord stretching taut or presenting a trip hazard.

The charger assembly must be mounted at a height (minimum 18 inches [460 mm] above floor) where the panel display can be easily seen and monitored by the operator. A height of 60 inches (152 cm) to the center of the display is suggested. The cord reel can be mounted below or in another location near the charger assembly that best accommodates the user's preferences and comfort. The charger assembly and cord reel may be installed on adjacent walls (corner mounted). For cord-connected chargers (models WE-30K and WE-48K), there must be sufficient space allowed between the charger assembly and mounting of the cord reel for installation of the 6-50R receptacle.



WARNING: THIS EQUIPMENT HAS ARCING OR SPARKING PARTS THAT MUST NOT BE EXPOSED TO FLAMMABLE VAPORS. THIS EQUIPMENT MUST BE LOCATED AT LEAST 18 INCHES (460 MM) ABOVE THE FLOOR.

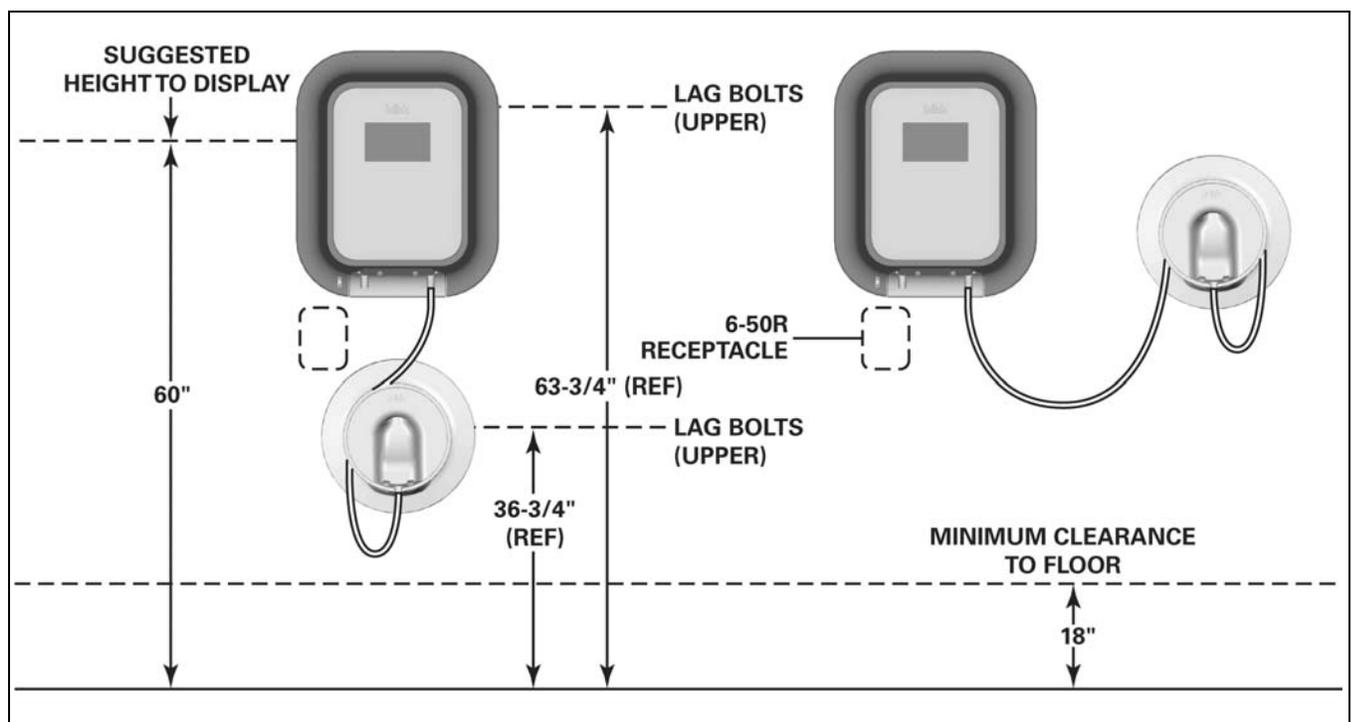


Figure 1 — Charger Installations, Typical

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4 Installation



WARNING: TO REDUCE THE RISK OF FIRE, INSTALL CHARGER ON A WALL CONSTRUCTED OF A MATERIAL RESISTANT TO COMBUSTION SUCH AS PLASTERBOARD (DRYWALL) OVER STUDS, 16 INCHES ON CENTER.

The charger kit supports installation of the charger assembly over a wood-framed wall (studs on 16-inch centers) with or without plasterboard (drywall) covering. If the assembly is to be installed on a brick or concrete wall, anchors (not supplied) of an appropriate size suitable for the 1/4-inch lag bolts and wall material must be used.



WARNING: SUITABLE WALL ANCHORS (NOT SUPPLIED) FOR BRICK OR CONCRETE WALLS MUST WITHSTAND A PULL-OUT FORCE OF 80 LB (36 kg) PER ANCHOR, WITHOUT DAMAGING THE WALL MOUNTING.

4.1 Shipping Box Contents

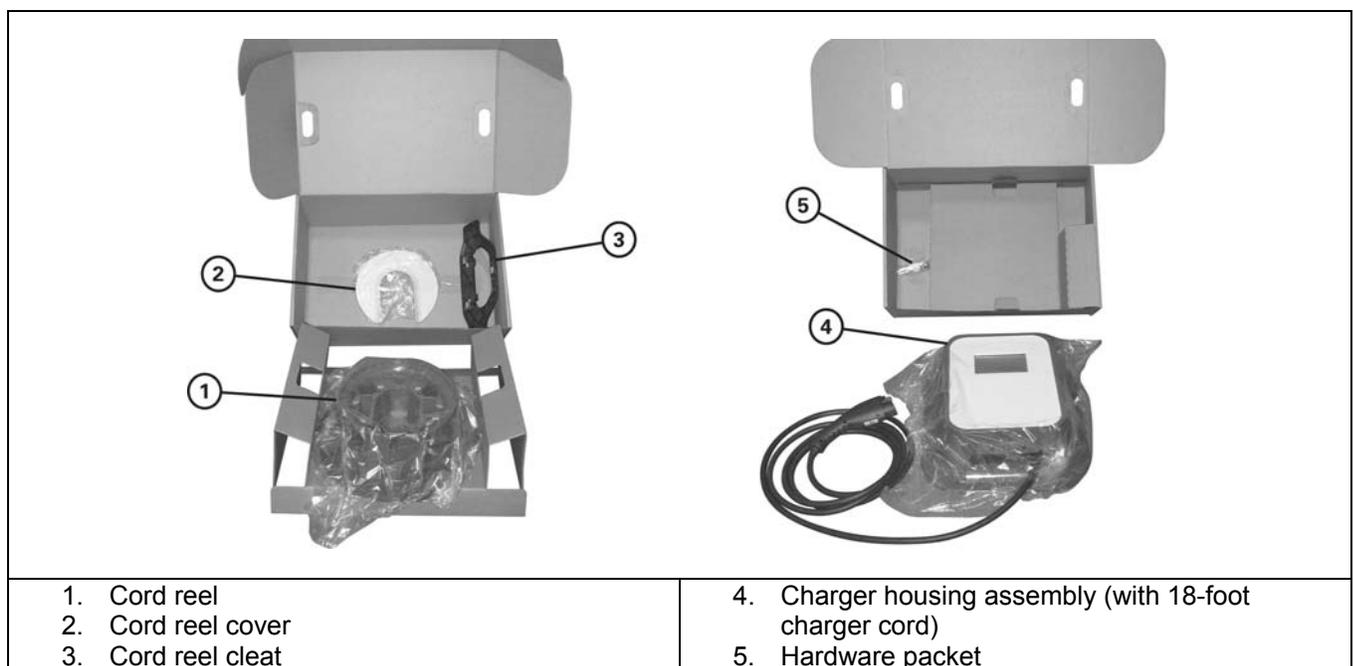


Figure 2 — Shipping Box Contents

- The charger is shipped in an over-pack box containing two cartons, one with the charger housing assembly and the second with the cord reel.
- The top carton in the over-pack box contains the cord reel mounting cleat, the cord reel and cord reel cover.
- The bottom carton contains the charger housing assembly (with 18-foot charger cord) and hardware packet. The 18-foot charger cord is attached at the bottom right of the charger housing assembly. In addition, the cord-connected (models WE-30K and WE-48K) will also have a 1-foot power cord attached at the bottom left of the assembly (not shown).

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- Contents of the hardware packet include:
 - P/N 11-031-0564 — 1/4-inch hex-head lag screws (Qty. 8)
 - P/N 11-452-0163 — 1/4-inch washers (Qty. 8)
 - P/N 11-356-0273 — M6.1 x 20 hex-head bolts (Qty. 3)

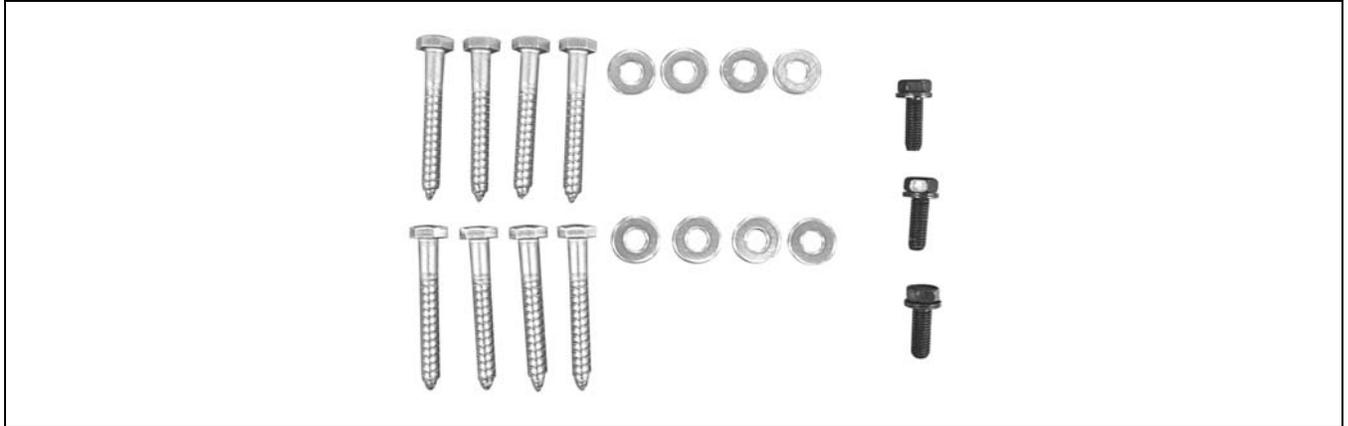


Figure 3 — Hardware Packet Contents

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4.2 Charger Housing Assembly and Cord Reel

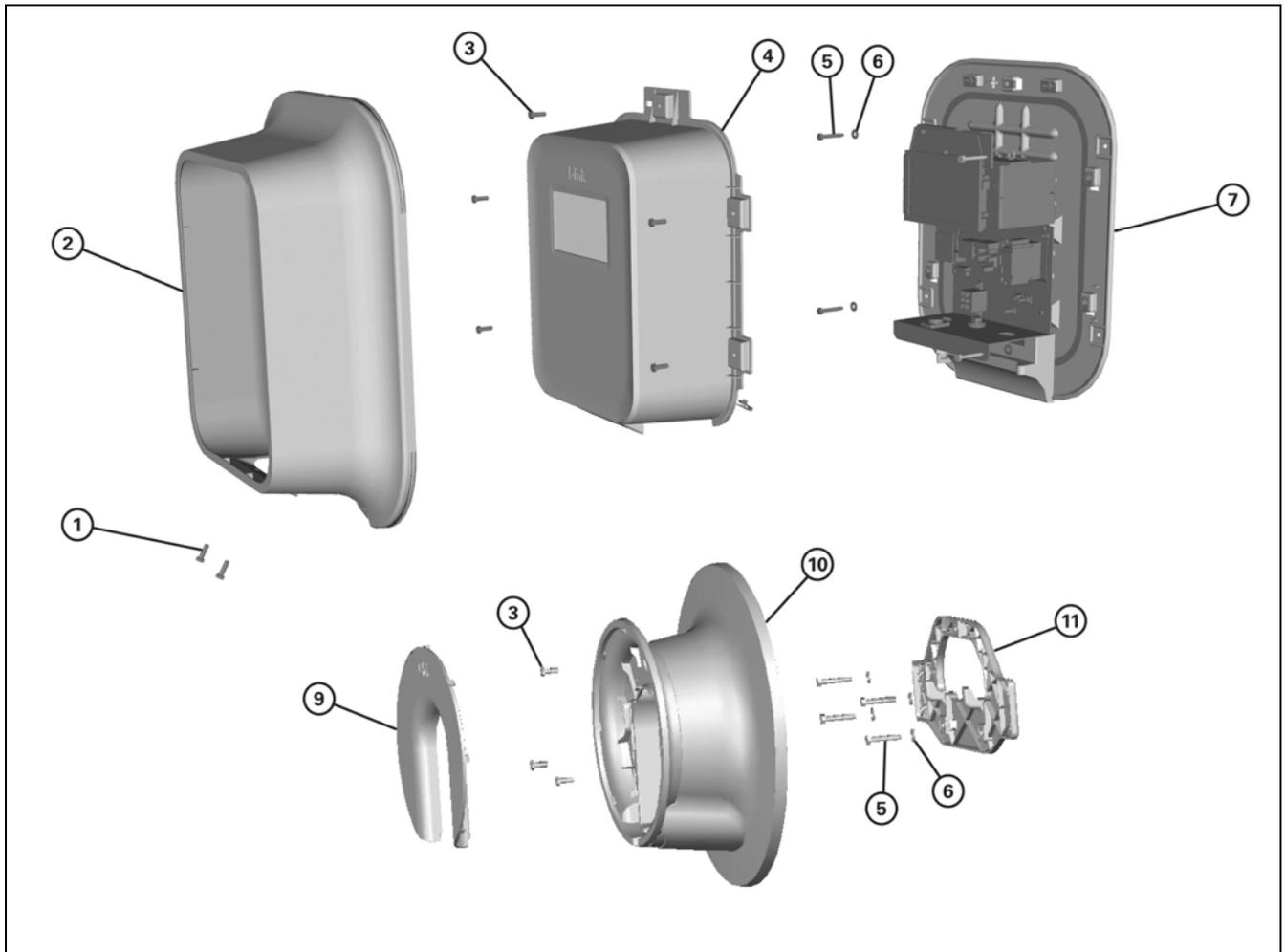


Figure 4 — Charger Housing Assembly and Cord Reel

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	11-357-0277	Torx-head screw (T30)	2
2	20-030-0001	Bezel	1
3	11-356-0273	M6 x 20 hex-head bolt	8
4	20-180-0001	Charger housing cover	1
5	11-031-0564	1/4-inch lag screw	8
6	11-452-0163	1/4-inch washer	8
7	20-180-0001	Charger unit and base	1
8	09-068-0001	Output cord (part of charger unit) (not shown)	1
9	20-071-0001	Cord reel cover	1
10	20-043-0001	Cord reel	1
11	20-349-0001	Cord reel cleat	1
12	—	Power cord (part of WE-30K and WE-48K charger units ONLY) (not shown)	1

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4.3 Charger Housing Installation

1. Open the charger shipping box and remove the two cartons containing the cord reel and the charger assembly. Unpack the cartons and lay out the contents (the two cartons are attached by the charging cord; DO NOT allow excess strain on the cord). Check for all contents as listed in Section 4.1, *Shipping Box Contents*.
2. With the charger assembly set flat on a work table, remove the two Torx-head screws at the bottom of the charger assembly. Carefully pull up on the bezel to remove the bezel from the housing cover. Pull at the top of the bezel to disengage the two pins from the grommets in the base plate.
3. Choose an appropriate place on a wall for mounting the charger housing assembly. Refer to Section 3, *Charger Layout*, for guidelines in locating the charger assembly and cord reel.
4. Locate and mark the centers of two studs in the mounting area if the assembly is being mounted on a typical wood-framed wall. (Omit this step if the charger assembly is being mounted on a brick or concrete wall and wall anchors are being used.)
5. Place the charger housing assembly in the desired location on the wall with the mounting holes in the base over the marked studs, if applicable. Make sure the charger housing assembly is positioned level and plumb.

NOTE: For cord-connected chargers (models WE-30K and WE-48K), space must be allowed for installation of a receptacle below the charger assembly when mounting the assembly and the cord reel (refer to Figure 5 for recommended mounting dimensions). A corded unit requires a NEMA 6-50R receptacle mounted in a metal 5S deep box.

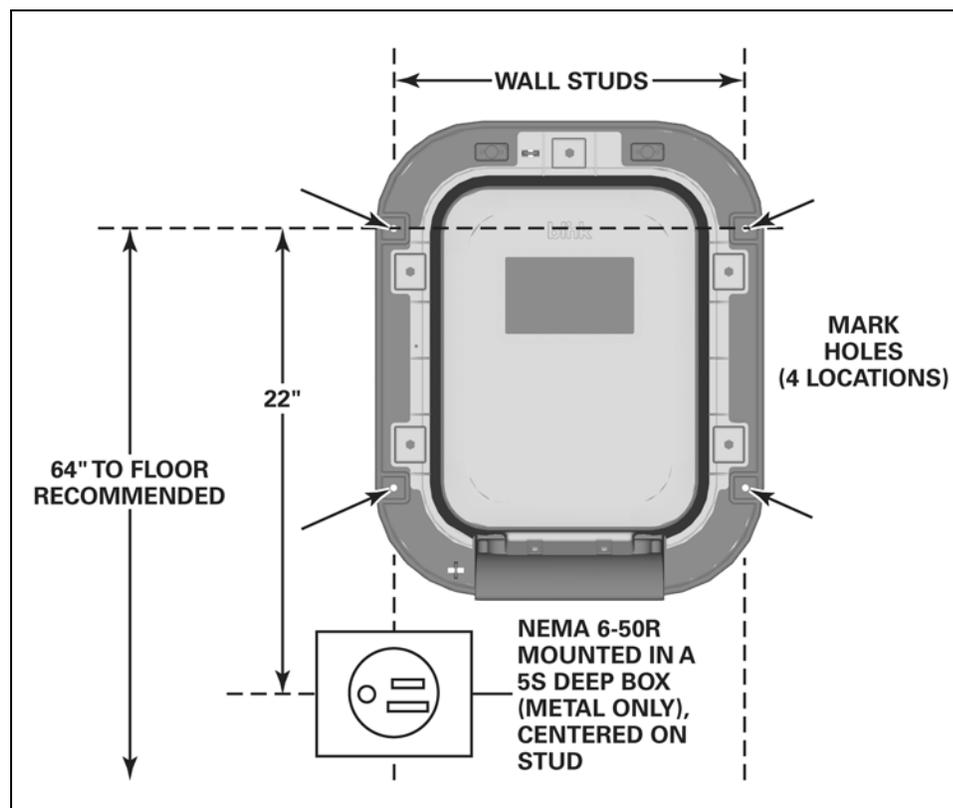


Figure 5 — Charger Assembly Installation

6. Using the housing assembly as a template, mark the centers of the four mounting holes and remove the housing assembly from the wall.

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- Using a 3/16-inch drill bit, drill a pilot hole for each of the mounting holes (wood-framed wall). For brick or concrete walls, metal anchors must be placed in the wall. Follow the manufacturer's installation instructions for wall anchors that provide a minimum pull-out force of 80 lbs (36 kg) per anchor; install four anchors.
- Place the charger housing assembly back in position on the wall and install four 1/4-inch lag screws with washers (Items 5 and 6, Figure 4) to secure the housing assembly in place. Tighten the screws enough to remove any gaps between the wall, housing base plate, washer and screw head.

NOTE: If there are irregularities in the wall surface, it may be necessary to place a shim behind one or more of the mounting holes to avoid distorting the charger housing base plate.



WARNING: ALL FOUR LAG BOLTS (AND ANCHORS, IF APPLICABLE) MUST BE INSTALLED TO PREVENT THE CHARGER ASSEMBLY FROM PULLING OUT OF THE WALL.

CAUTION: DO NOT OVER-TIGHTEN THE LAG BOLTS WHEN MOUNTING THE CHARGER HOUSING ASSEMBLY ON THE WALL. OVER-TIGHTENING CAN DEFORM AND DAMAGE THE HOUSING BASE PLATE.

4.4 Cord Reel Installation

- Choose an appropriate place on the wall for mounting the cord reel assembly. This can be below or to either side of the charger assembly.
- Locate and mark the centers of two studs in the mounting area, if applicable. (Omit this step if the charger assembly is being mounted on a brick or concrete wall and wall anchors are being used.)
- Place the cord reel cleat (Item 11, Figure 4) in the desired location on the wall with the mounting holes in the cleat over the marked studs, if applicable.
- Using the cleat as a template, mark the centers of the four mounting holes and remove the cleat from the wall.
- Using a 3/16-inch drill bit, drill a pilot hole for each of the mounting holes (wood-framed wall). For brick or concrete walls, metal anchors must be placed in the wall. Follow the manufacturer's installation instructions for wall anchors that provide a minimum pull-out force of 80 lbs (36 kg); install four anchors.
- Place the cleat back in position on the wall and install four 1/4-inch lag screws with washers (Items 5 and 6, Figure 4) to secure the cleat in place. Tighten the screws enough to remove any gaps between the wall, cleat, washer and screw head.

CAUTION: DO NOT OVER-TIGHTEN LAG SCREWS WHEN MOUNTING CORD REEL CLEAT ON WALL. OVER-TIGHTENING CAN DEFORM AND DAMAGE THE CLEAT.

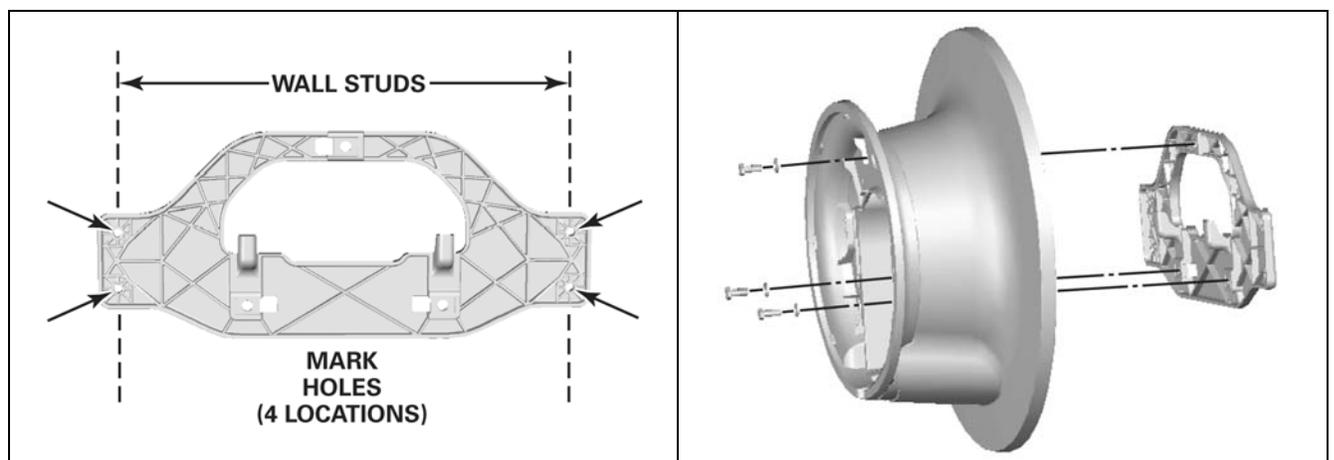


Figure 6 — Cord Reel Installation

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NOTE: If there are irregularities in the wall surface, it may be necessary to place a shim behind one or more of the mounting holes to avoid distorting the cleat.

7. Place the cord reel in position on the cleat. Using a socket wrench with extension, install three M6 hex-head bolts (Item 3, Figure 4) to attach the reel to the cleat. Tighten the bolts to 35-38 in-lb (4.0-4.3 Nm).
8. Align tabs on the cover with the seven slots in the cord reel and firmly push in on the cover to attach it to the cord reel. The tabs will snap into place to secure the cover.

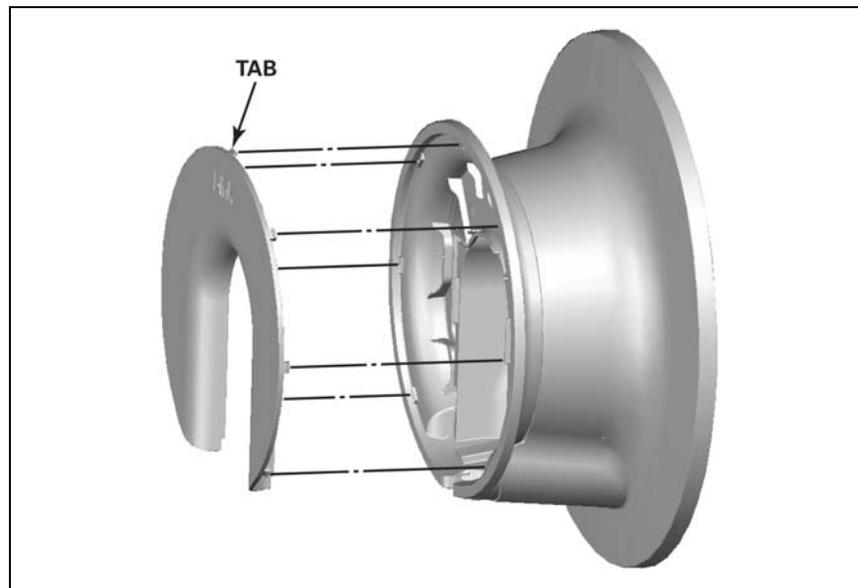


Figure 7 — Cord Reel Cover Installation

NOTE: The cover may be removed by inserting a small screwdriver blade into the slot from the inner side of the reel rim to release each tab.

9. Wrap the charging cord around the cord reel and place the vehicle connector end in the holder at the center of the reel. **DO NOT** force the connector strain relief past the cord retention fingers on the reel. Lift the connector up and into the reel so that only the cord passes between the retention fingers.

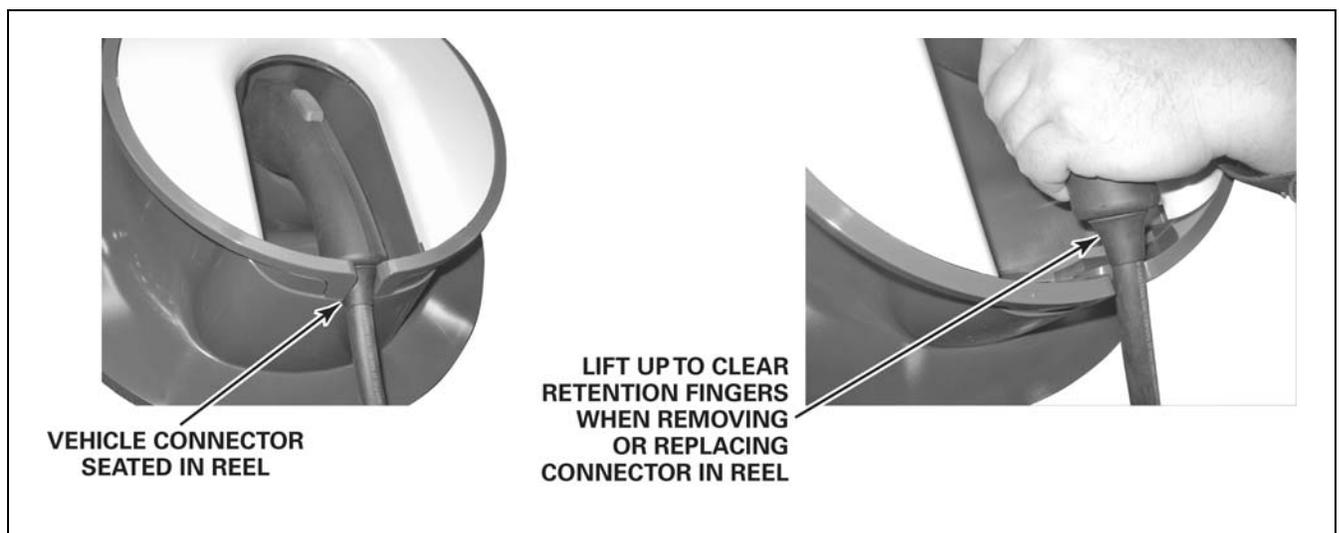


Figure 8 — Cord Reel Vehicle Connector

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5 Connecting Power to the Charger

5.1 Input Power

IMPORTANT: Electrical power to the charger must be installed by a certified electrical contractor who is familiar with local codes and standards that apply to the installation of structural components and electrical equipment. Minimum size and color-coding requirements must be in accordance with any applicable state or local code, and the National Electrical Code.

Voltage/Phase	208-240 VAC/1 phase (120 VAC to GND)
Rated Current	30 Amps (maximum); 12A, 16A and 24A available (WE-30C/K) 48 Amps (maximum); 12A, 16A, 24A and 30A available (WE-48C/K)
Circuit Rating	40 Amps; settings at 15A, 20A and 30A available

5.2 Connecting Charger



WARNING: VERIFY THAT ELECTRICAL POWER TO THE CHARGER INPUT POWER WIRING IS DISCONNECTED. ELECTRIC SHOCK CAN KILL.

NOTE: The following procedure covers the installation of a charger that is being hard-wired to the main service panel. This procedure does not apply to the optional cord-connected wall-mount chargers. The cord-connected chargers require the installation of a NEMA 6-50R receptacle in close proximity to the charger housing assembly. For these installations, insert the power cord into the 6-50R receptacle and perform the “Charger Start-Up Test” following the procedure in the 45-293-0001 manual.

1. Remove five M6 hex-head bolts (Item 3, Figure 4); then, remove the charger housing cover from the charger assembly. DO NOT remove the four lag bolts securing the charger base to the wall.

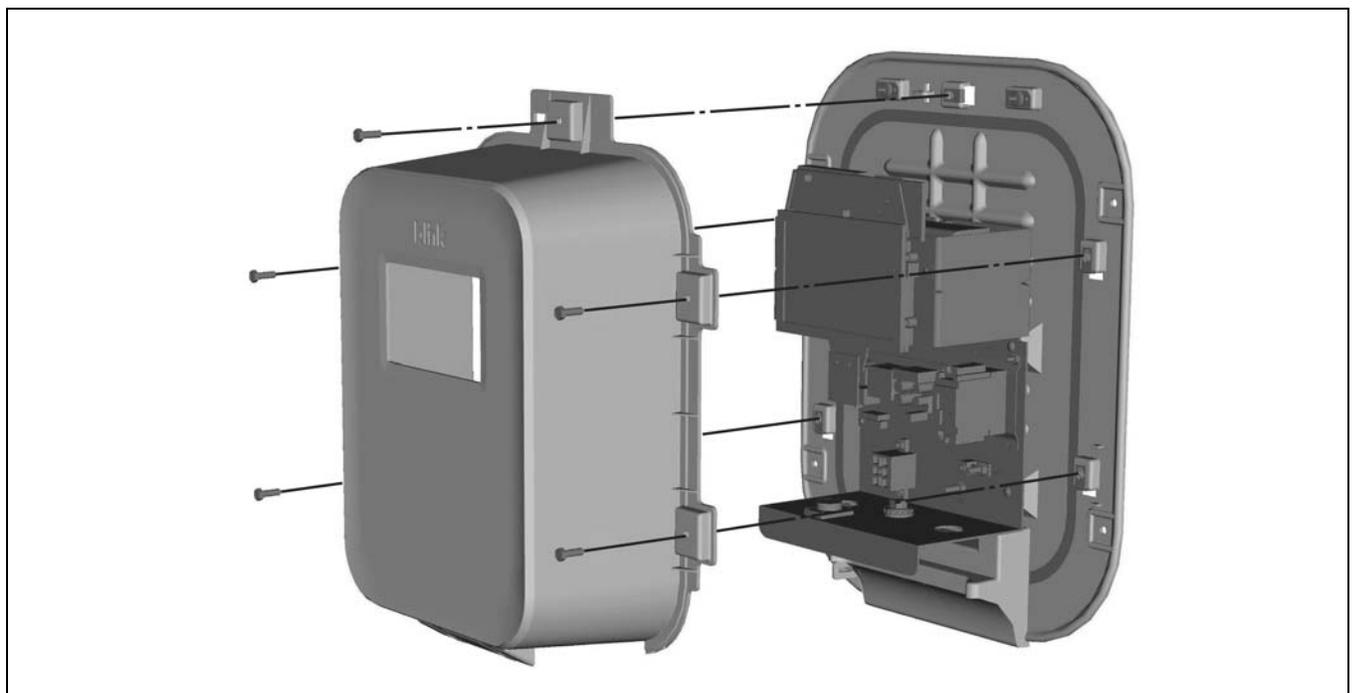


Figure 9 — Housing Cover Removal

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- Slide a 1-inch trade-size fitting (not provided), appropriate to the conduit type used, over the end of the service wiring.

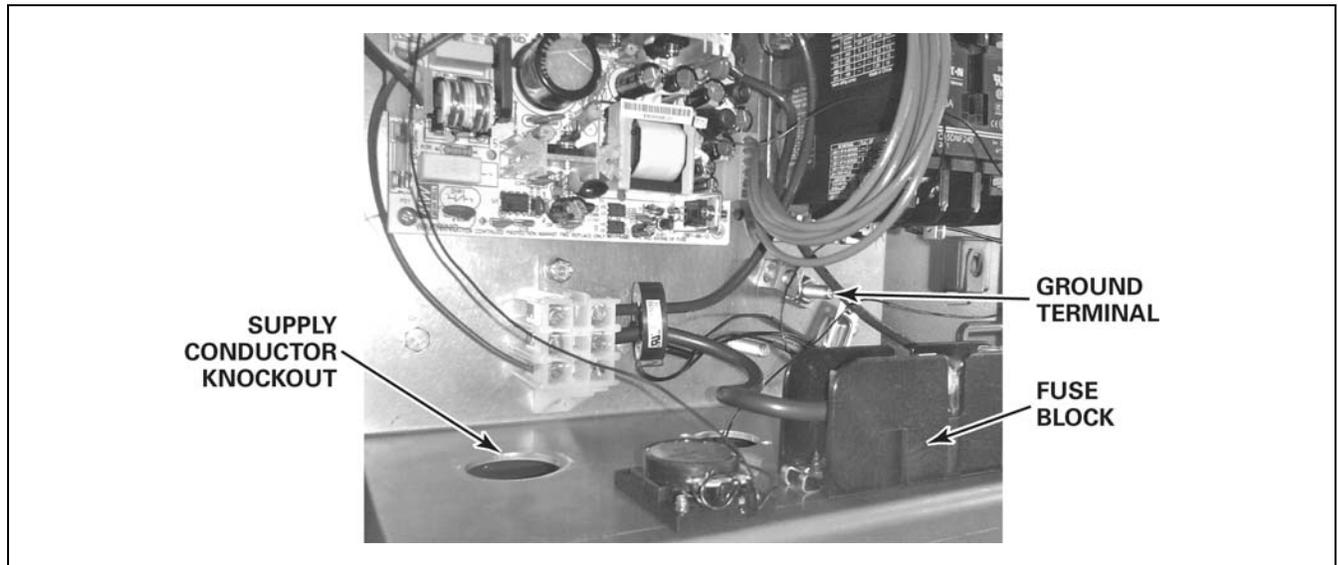


Figure 10 — Supply Circuit Port

- Insert the supply circuit conductors through the knockout in the metal housing bracket. Pull enough wiring through to allow for connection to the knockout and ground terminals.
- Position the 1-inch fitting in the knockout and secure in place using a metal lock ring.

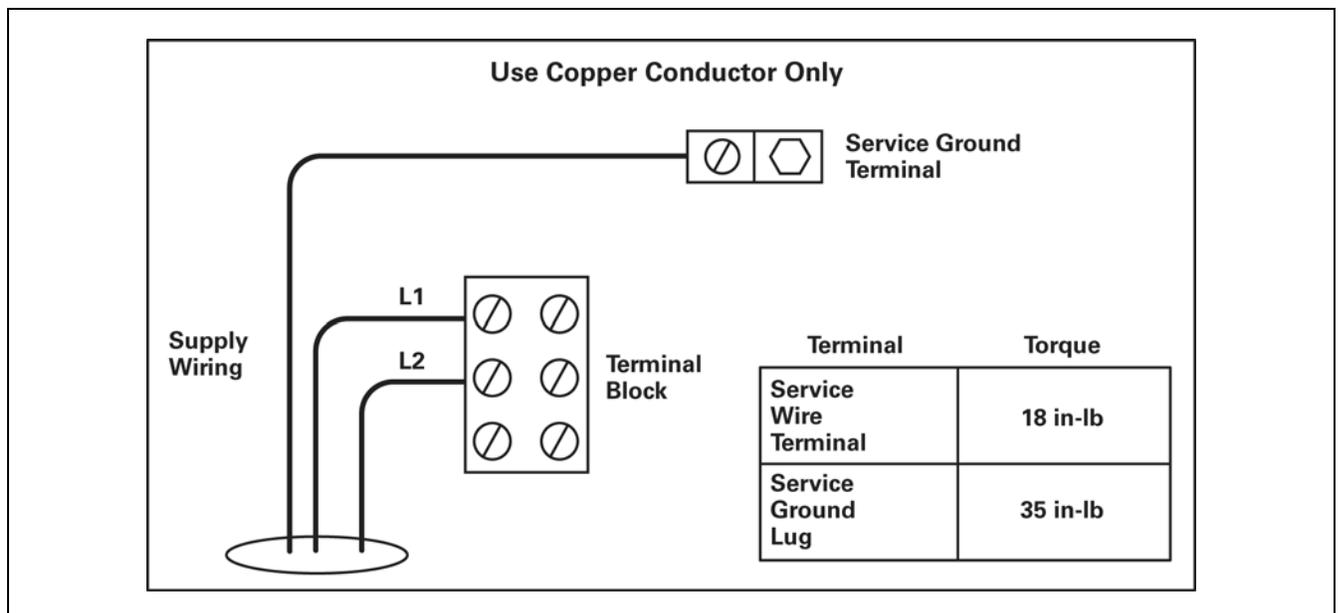


Figure 11 — Service Wiring Terminals

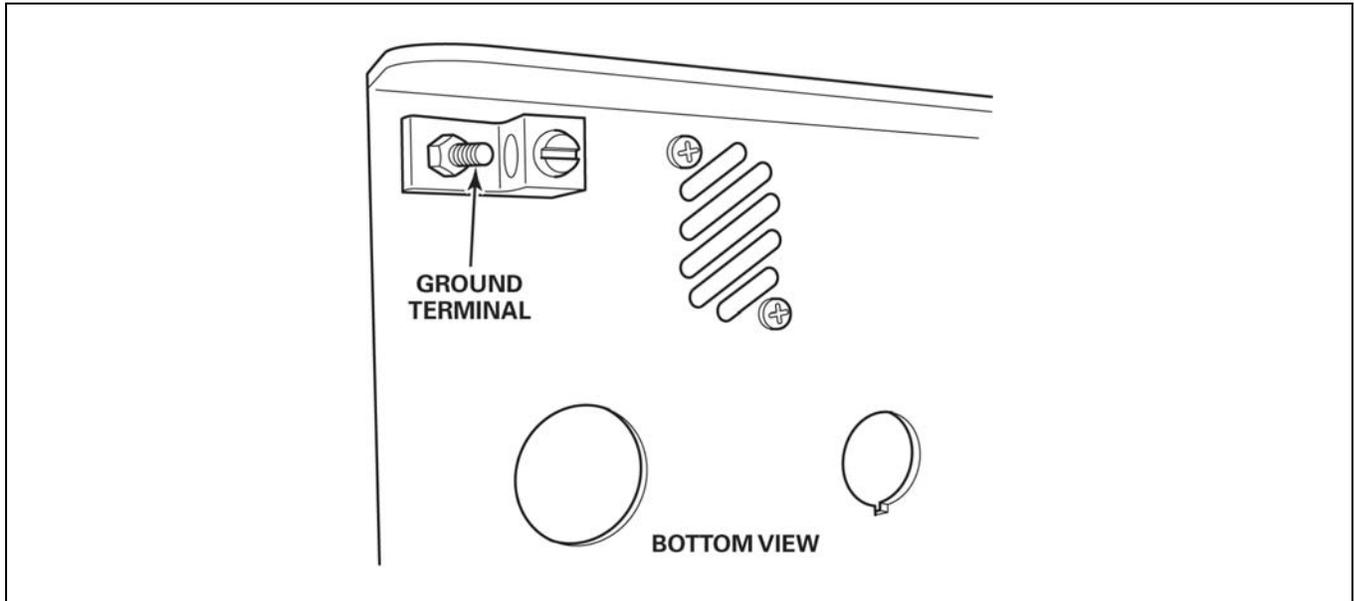
CAUTION: USE CARE TO NOT DISTURB FACTORY WIRING WHEN MAKING SUPPLY CIRCUIT WIRING CONNECTIONS WITHIN THE CHARGER HOUSING.

- Connect the AC supply conductors (L1 and L2) to the upper two terminals in the terminal block (Figure 11) at the lower left of the charger.

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6. Connect the ground wire to the service ground terminal (Figure 11) at the lower right of the charger.
7. An external bond must be provided to the unit. Connect a minimum 10AWG conductor to the external ground terminal (Figure 12), found on the bottom face of the aluminum panel, just in front of the 1-inch input circuit knockout. Route this wire to a metal box or conduit that is grounded to the service panel earth ground. Use a grounding screw or clamp to affix this bonding wire to the grounded metal component.

**Figure 12 — External Ground**

8. Remove and discard the protective film on the display.
9. With the service wiring complete, place the housing cover in position on the charger assembly and install five M6 hex-head bolts (Item 3, Figure 4) to secure the cover in place. Tighten the bolts to 35-38 in-lb (4.0-4.3 Nm).

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- Align the pins at the top of the bezel with the two grommets in the charger base plate and seat the bezel over the housing cover.

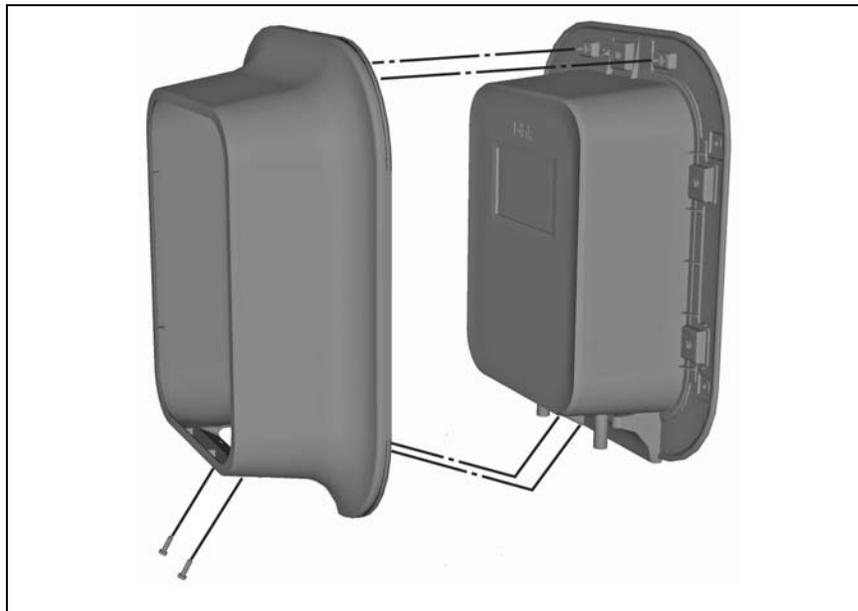


Figure 12 — Bezel Installation

- Install two Torx-head screws (Item 1, Figure 4) at bottom to secure the bezel to the charger housing.
- Perform a “Charger Start-Up Test” following the procedure in the 45-293-0001 manual.

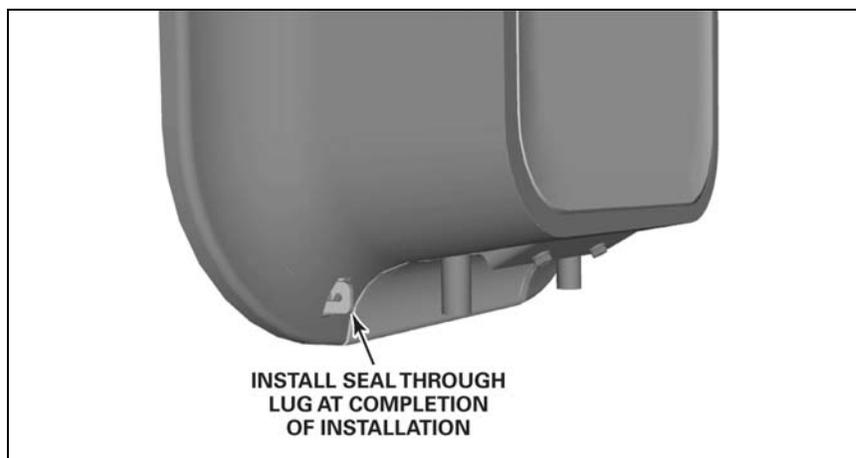


Figure 13 — Security Seal

- When the test is successfully completed and if required, install a security seal (not provided) at the bottom of the housing cover.

Models WE-30C/K and WE-48C/K Charger Installation Manual

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6 Federal Communications Commission (FCC) Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Models WE-30C/K and WE-48C/K Charger Installation Manual

Single Station, Wall Mounted

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(T) Temporary

(P) Proxy

Survey of Code Adoption

Jurisdiction	Building	Mechanical	Plumbing	Electric	Residential	Fire	Energy	Existing Building Code	Fuel	Performance	Notes	URL	Anticipated Adopted Date by Council	Anticipated Effective Date for 2009 ICC Codes (Month and Year)
Avondale	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	2006 IECC		2006 IFGC		2006 Fuel Gas Code. Codes adopted 2/20/07, effective 7/1/07	Avondale	January/February 2010	July 2010
Buckeye	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC				2006 Fuel Gas Code. Codes adopted 2/20/07, effective 7/1/07	Buckeye		No plans to adopt 2009 codes.
Carefree	2003 IBC	2003 IMC	1994 UPC	2002 NEC	2003 IRC	2003 IFC					Codes became effective July 1, 2006	Carefree		Not going to adopt, staying with 2003.
Cave Creek	2003 IBC	2003 IMC	1994 UPC	2002 NEC	2003 IRC	2003 IFC	2003 IECC					Cave Creek	January/February 2010	July 2010
Chandler	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC		2006 IFGC		Effective September 28, 2008	Chandler	January/February 2011	Early 2011
El Mirage	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC	2006 IFGC		1997 ICC/ANSI Accessibility Code with Arizonans with Disabilities Act. New codes will go into effect Jan. 1, 2008 with city amendments.	El Mirage	January/February 2010	July 2010
Fountain Hills	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC				Codes adopted April 17, 2008 with town amendments available on Web site.	Fountain Hills		No plans to adopt 2009 codes.
Gila Bend	1997 UBC	1997 UMC	1997 UPC	1999 NEC	1997 UBC	1997 UFC								Just adopted 2006 IBC.
Gila River	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	None							
Gilbert	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC		2006 IFGC		ADAAG per state requirements	Gilbert	January/February 2011	July 2011
Glendale	2006 IBC	2006 IMC	2006 UPC	2005 NEC	2006 IRC	2003 IFC		2006 IEBC			With city amendments. Effective Sept. 1, 2007	Glendale	No date	No date
Goodyear	2006 IBC	2006 IMC	1994 UPC	2005 NEC	2006 IRC	2006 IFC	2006 Residential				Adopted 5-14-2007.	Goodyear		
Guadalupe	1997 UBC	1997 UMC	1994 UPC	1999 NEC	1997 UBC	1997 UFC								Need phone #
Litchfield Park	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC (waiting on Avondale)	2006 IECC		2006 IFGC		Codes effective July 1, 2008	Litchfield Park		
Maricopa County	2009 IBC	2009 IMC	2009 IPC	2008 NEC	2009 IRC				2009 IFGC		WITH MAG/AZBO AMENDMENTS	Maricopa County	Adopted August 18, 2010	Effective date of 10-1-10, but with a grace period to 1-1-11.
Mesa	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC		2006 IEBC	2006 IFGC		2006 IBC, IMC, IPC, IRC and 2005 NEC will be effective 2/4/07. Did not adopt the energy code.	Mesa		Considering adopting the 2009 IECC.
Paradise Valley	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC		2006 IFGC		Effective July 1, 2007	Paradise Valley	January/February 2011	July 2011. Considering adopting the 2009 IECC.
Peoria	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC			2006 IFGC			Peoria	January/February 2010	July 2010
Phoenix	2006 IBC	2006 IMC	2006 UPC	2008 NEC	2006 IRC	2006 IFC w/ Amendments	2006 IECC	2006 IEBC	2006 IFGC	2006 ICCP for Buildings and Facilities	Effective July 2, 2008	Phoenix	No date	No date
Queen Creek	2006 IBC	2006 IMC	2006 UPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC			Effective Aug. 7, 2008	Queen Creek		No plans to adopt 2009 codes.
Salt River	2003 IBC	2003 IMC	2003 UPC	2002 NEC	2003 IRC	2003 IFC	None							Need phone #
Scottsdale	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC	2006 IECC				Effective Sep. 1, 2007, except IPC June 30, 2008	Scottsdale	January/February 2010	July 2010
Surprise	2006 IBC	2006 IMC	2006 IPC	2006 IEC w/ 2005 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC	2006 IFGC		Adopted June 28, 2007	Surprise	January 2010	July 2010
Tempe	2006 IBC	2006 IMC	2006 IPC	2008 NEC	2006 IRC	2006 IFC	2006 IECC	2006 IEBC	2006 IFGC		Effective 1/12/2009	Tempe		

Survey of Code Adoption

Jurisdiction	Building	Mechanical	Plumbing	Electric	Residential	Fire	Energy	Existing Building Code	Fuel	Performance	Notes	URL	Anticipated Adopted Date by Council	Anticipated Effective Date for 2009 ICC Codes (Month and Year)
Tolleson	2006 IBC	2006 IMC	2006 IPC	2005 NEC w/ 2006 IEC	2006 IRC	2006 IFC	2006 IECC				2006 Fuel Gas Code, 2006 IPMC, 2006 NEAC. Codes adopted 2/20/07, effective 7/1/07.	Tolleson 2006 IFC Amend.	January/February 2010	July 2010
Wickenburg	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2003 IFC	2006 IECC	2006 IEBC	2006 IFGC			Wickenburg		No plans to adopt 2009 codes.
Youngtown	2006 IBC	2006 IMC	2006 IPC	2005 NEC	2006 IRC	2006 IFC			2006 IFGC			Youngtown	November 2010	January 2011