



MODEL RD-2 RESIDENTIAL DUMBWAITER INSTALLATION

A. **REVIEW COMPONENTS.** *Refer to illustration A.* Throughout these instructions, we refer to component parts by the names shown on illustration A. It will be helpful to become familiar with them. Check the parts you received against the bill of materials list. Notify us of any discrepancies.

1. CHECK HOISTWAY. *Refer to illustration #1.*

- Check hoistway for conformity with shop drawings, especially:
 - Floor to floor distance
 - Number of stops
 - Overhead distance
 - Door opening dimensions and doorlock roller pocket cutouts
- Make sure there is proper blocking for attaching the rail brackets.
- Make sure the hoistway is plumb and square.
- Make sure you have an rough opening wide enough to get the frame and cab into the hoistway - it is usually best to leave a wall out at the bottom landing.

2. INSTALL RAILS. *Refer to illustration #2A, 2B, 2C.*

- Drop a plumb line from the top of the hoistway down the center of the rail attachment wall.
- Scribe a line down the center.
- Mount the bottom rail bracket to the wall at the bottom of the hoistway with **5/16" x 2" lagg bolts and flat washers**, with the center of the bracket on the scribed center line.
- Attach the first two rails to the outside of the bracket, using the bottom holes, with **5/16" x 3/4" hex bolts and nuts**.
- If the machine is basement mounted, also attach motor base/deflector beam angles to the inside of the rail bracket.
- Attach another rail bracket to the top of the first rail sections with **5/16" x 3/4" hex bolts and nuts**, then attach the bracket to the wall with **5/16" x 2" lagg bolts and flat washers**. Center the bracket on the scribed center line.
- Use a 4' level to make sure the rails are plumb in both directions. You may have to add shims between the wall and rail bracket to compensate for an uneven wall.
- At this point, if the front of the hoistway is open, it is best to assemble the sling outside of the hoistway, lift it over the first section of rails, and slide it down to rest on the floor. See step 5 for sling assembly.
- Repeat for each section of rail. The top of the rails must extend a minimum of 3' above the top stop, or 6' above the top floor assuming the top stop is 36" above the floor. Depending on the amount of overhead you have available, you may have to cut the top rails. If necessary, cut the rails so you have at least the minimum required as described above, but leave a minimum of 6" between the top of the rail and the ceiling to allow room for the overhead sheave assembly. Cut both rails to the same length with a hacksaw. Drill 5/16" holes in the rail flanges - use the end you cut off as a guide.
- Attach the top rail bracket to the top rails, using the bottom set of holes in the rail bracket. Attach adapter angles to the inside of the top rail bracket, using the top set of holes in the rail bracket. Recheck rails with 4' level.

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3. **INSTALL MACHINE.** *Refer to illustration #3.*

- The machine base can be installed at the top or bottom of the rail system. The drive machine will already be attached to the machine base.
- For a bottom mounted machine: If the sling is installed, you will need to raise it and tie it off to a rail.
- Attach the machine base to the adapter angles at either the bottom or top of the hoistway as appropriate with **5/16" x 3/4" hex bolts and nuts.**

4. **INSTALL OVERHEAD FRAME.** *Refer to illustration #4.*

- Bottom mount machines require an overhead deflector sheave.
- Attach the overhead sheave angles to the adapter angles at the top of the hoistway with **5/16" x 3/4" hex bolts and nuts.**
- Attach the overhead sheave to the angles with a **3/8" x 1-1/2 hex bolt and ESNA nut.**

5. **INSTALL SLING.** *Refer to illustration #5.*

- Assemble the roller guides
- Attach the side beams and bottom roller guide assemblies to the side stiles
- If you have to assemble the sling inside the hoistway after the rails are up, at this point it may be helpful to put a clamp on each rail about 3 to 4 feet from the floor to rest the sidestiles on to facilitate assembly, and then temporarily tie the sidestiles to the rails with some wire or rope.
- Attach the bottom beam to the sidestiles. The flange with the larger holes should be down.
- Attach the top beam, top beam stabilizer, top roller guide assemblies and door lock cam channel adapter (s) to the sidestiles. The top beam flange with the larger holes should be up.
- Attach the stringer beam to the side beams.
- Attach the pickup beam to the bottom beam and the stringer beam.
- Check the sling for squareness, and firmly tighten all bolts.

6. **INSTALL HOISTING CABLE.** *Refer to illustration #6.*

- Block up the sling about 6" below the bottom stop.
- Install the eyebolt to the lifting beam using double nuts and double washers.
- Leaving 2 wraps of cable on the drum, run the cable up to the overhead sheave, and down to the eyebolt.
- Install the cable to the eyebolt with a thimble and two wire rope clips.
- Do not cut off the excess cable until you run the car the entire travel distance.
- Make sure all cable fastenings are secure, and that cable is not crossed on the drum.

7. INSTALL CONTROLLER.

- Install controller in a convenient location, preferably near the motor.
- When the controller is mounted at the bottom of the hoistway, some installers prefer to leave it on the floor. If you can leave some slack in the wiring, you can pull the controller out of the hoistway to work on it.
- Following the wiring diagram supplied, wire the electrical service to the controller, and wire the motor to the controller.
- Run the motor by manually operating the contactors. Push the contactor quickly and firmly to prevent contact and/or motor damage.
- **Check that the brake releases when the motor is running, and sets when the motor stops.** If the motor doesn't start, the brake may not be releasing. If the car coasts when the motor stops, the brake may not be setting properly. See the brake unit instructions for adjustment procedures.
- Run the unit all the way up the hoistway - be careful not to go out of the rails at the top. Make sure there are no binds, obstructions, or any unusual noises. Make sure the cable is winding properly on the drum. If so, you can trim the excess cable at this time.

8. INSTALL LIMITS & CAM. Refer to illustration #8 & 8a.

- Install the limit cam to the top beam. There are two holes in the web toward the left side of the beam for cam mounting. Use a nut on each side of the web.
- Set up the roller arm - see the "Initial limit setup" detail on illustration #8 for roller arm measurements
- It is usually easier to wire up the limit before you install it in the hoistway. You may run the wire directly back to the controller, using the inside of the rail as a wiring duct. Be sure to allow a bit of slack in the wire so you can adjust the limit if necessary. Refer to the electrical diagram for connection details. Check proper electrical make and break with a meter.
- Scribe a line on the rail approximately 26" up from each landing, which represents the center of the cam at floor level.
- Loosely attach the limit switch to the limit bracket, which is in two pieces, with **#8-32 x 1-3/4 tapping screws**.
- Spread the 2 pieces of the bracket out, put it over the rail flange, then slide it together tight to the rail.
- Place the switch in its initial position. In most instances you will use the typical arrangement - the pivot of the upper switch will be 1/4" above the center of the cam, and the lower switch will be 5-1/4" below. If a rail bracket interferes, use one of the alternate arrangements.
- Tighten the limit switch screws, then tighten the bracket clamp screw.
- The uppermost limit is called the UP FINAL; the limit directly beneath it is the UP NORMAL, or sometimes called UP TERMINAL. The lowermost limit is called the DOWN FINAL; the limit directly above it is the DOWN NORMAL, or DOWN TERMINAL. Final limits prevent motion in either direction by cutting off the main power supply. Normal limits prevent car motion in one direction only, and affect on the control circuits.
- Intermediate floor stopping can be accomplished with one limit, but greater stopping accuracy in either direction can be achieved using two limits in parallel.
- Inch the car toward the limits. Observe from under the car with a flashlight to make sure things line up properly. It is very important that the cam contacts the roller properly, especially when the roller arm is at an angle opposite that of the lead ramp on the cam. The cam should move the roller toward the center of the rail. If it moves away from the center, either move the limit switch towards the center of the rail, or the limit cam away from the center of the rail.

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9. **INSTALL CAB.** *Refer to illustration #9.*

- At this point, if you do not have open walls to work through, you may want to install the doorlocks - see step 13.
- Assemble the cab with the special screws provided.
- Install cab to sling. Cab should be tight against the sidestiles.
- Secure the cab to the sling with **#10 x 5/8" screws**. There are holes provided in the flanges of the top & bottom beams.

10. **INSTALL PUSHBUTTONS.**

- Install pushbuttons in a convenient location next to door openings. Refer to shop drawing.

11. **WIRE CONTROLLER.**

- Wire limit switches and pushbuttons to controller
- Run wire for doorlocks.

12. **INSTALL DOORS.**

- Install doors. We suggest a magnetic latch on every door.

13. **INSTALL DOORLOCKS.** *Refer to illustration #10.*

- Install doorlocks to door frame. Electric interlocks are supplied with a template.
- Mount doorlock keeper on door to suit doorlock.
- Install cam channel on the adapter bracket, and the doorlock cam on the cam channel with **¼-20 spintite bolts**.
- Adjust doorlock cam so doors are unlocked at stopping points.
- Drill hole in door for emergency release key.
- Wire door locks into controller.

18. **CHECK ALL ADJUSTMENTS.**

- Run dumbwaiter several trips.
- Remove any temporary jumpers.
- Check limits and door locks for proper operation.
- Adjust top and bottom floor stop switches so the car stops level.
- Adjust final limits to open approximately 2" beyond the floor stop.
- To adjust intermediate floor stops, adjust lower switch for down direction, and upper switch for up direction.
- Check cable for proper winding on drum and check cable fittings for tightness.
- Check all bolts for tightness.
- Check all electrical connections.
- Place in operation.