



## Power Fishing Systems

**Program:** Electrician Technician

**Course:** EL160 - Low Voltage Application

**Objectives:** Under the supervision of your instructor, you should be able to do the following:

- Prepare multiple conductors for pulling in a raceway system.
- Pull multiple conductors in a raceway system.

**Lab Equipment:**

- 1 – conduit run

**Required Tools:**

- 1 – Pair of strippers
- 1 – Pair of linesmen pliers
- 1 – fish tape with leader
- 1 – Shop vacuum
- 1 – Foam piston (Mouse)
- 1 – spool of twine

**Materials:**

- 50'- Cat 5e
- 1 – Roll of black electrical tape
- 1 – Wire rack
- 1 – Pre-set up raceway system or have students build
- 1 – Container of wire lubricant

**Safety:**

- Safety glasses

**Resources:** N/A

**Required Time:** 180 minutes

**Shop Maintenance:**

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility



**Procedures:** *(Eye protection must always be worn)*

1. Have students identify the conduit to be used by counting how many bending degrees are involved, type of boxes, conduit and fitting used for the pull.
2. Have students identify any possible problems with raceway or upcoming pull.

**Pulling the conductors through the raceway (two people needed)**

1. Tie a foam piston (mouse), on to the end of a pull string.
2. Using a shop blower/vacuum, install a pull string through the conduit.
3. Tie the Cat 5 wire to the pull string, wrapping black tape around the connection and then pull the wire through the raceway until you have at least a foot past the end of the box
4. Pull about 8 - 10 feet of wire off each spool, if more than one low voltage wire is run, so the conductors are not pulled directly off the spools during the pull
5. Add some lubricant, if needed, to both the conductor's connection and the end of the raceway where the conductors will enter.
6. With one person on one end of the raceway with the fish tape, and the second person at the end with the conductors, you can start to slowly pull until the coupling is in the conduit.
7. The team must work together. While one team member starts to pull, the other team member must both feed and pull the slack on the wires simultaneously. Both team members must work together and find a rhythm, or the conductor pull becomes much more difficult.
8. Continue pulling until about 12 to 18 inches of wire has exited the raceway system.
9. Clean any excess lubricant from the box and wires. Lubricant is conductive when wet (read container)

