Contents [hide]

PATTERSON V Series HVLS Ceiling Fan

Specifications

- Product: V-SERIES Installation Manual 8′ – 16′
- Manufacturer: Patterson Fan Company
- Contact: 1-800-768-3985
- Website: www.pattersonfan.com/installation-services-and-guides

IMPORTANT SAFETY INFORMATION

READ BEFORE OPERATING THE FAN AND SAVE THESE INSTRUCTIONS

- Read and understand these instructions before installing or operating a fan unit. Installation, adjustment, repair or maintenance must be performed by qualified personnel.
- Follow all safety practices and instructions during the installation, operation and servicing of the fan. Failure to apply these safety practices could result in death or serious injury. If you do not understand the instructions, please call your Patterson Sales Rep for guidance.
- All fan controls and incoming power should be installed only by qualified technicians familiar with the requirements of the National Electrical Code and local codes.
- Failure to follow these guidelines will void the manufacturer’s warranty.
- All electrical controls are configured at the factory and are ready to use.
- No user adjustments are available. Follow the included installation instructions when

installing this device to ensure proper operation.

- Do not make any changes to any part of the fan without first consulting Patterson Fan. Installation is to be by the National Electrical Code, ANSI/NFPA and applicable local codes.
- The user is responsible for compliance with all international and National Electrical Code requirements concerning the grounding of all equipment. Many of the parts of this unit operate at line voltage.
- DO NOT TOUCH. Install all covers before applying power or starting and stopping the unit. To reduce the risk of electric shock or injury, use this unit only in the manner intended by the manufacturer. If you have questions, call your Patterson Sales Rep at 1-800-768-3985.
- Before servicing or cleaning the unit, switch the power off at the service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning sign, such as a tag, to the service panel.
- At all times, leave the power off at the service panel. To reduce the risk of electric shock or injury, use this unit only in the manner intended by the manufacturer. If you have questions, call your Patterson Sales Rep at 1-800-768-3985.

DAMAGED EQUIPMENT

- Do not operate or install any fans or fan accessories that appear to be damaged. Failure to follow this instruction can result in death, serious injury, or equipment damage. Call your Patterson Sales Rep at 1-800-768-3985 immediately for guidance.

SERVICE

- If the fan does not operate properly using the procedures in this manual, remove all power to the unit and call your Patterson Sales Rep at 1-800-768-3985.
- Keep all body parts clear of moving parts at all times. All electrical troubleshooting and repair must be done by a qualified technician and meet all applicable codes.

Product Usage Instructions

BEFORE YOU START

KEY RETENTION SYSTEM COMPONENTS

- Our fans are engineered with key features to prevent pieces of the fan from falling in the unlikely event of a catastrophic failure.
- Used together, these systems provide comprehensive protection of people, equipment and property.
- Install the safety cable on EVERY fan. The safety cable, if installed per Patterson Fan specifications, will prevent the fan from falling in the unlikely event that the mounting system should fail.
- The fan should never be run without a properly installed safety cable, which is supplied with every fan along with all required hardware. If the safety cable is not installed, the warranty will be voided.

MARK THE FLOOR TO ALERT PERSONNEL

When mounting a fan in an area where materials may be elevated into its path, we recommend alerting personnel of the overhead location of fans by marking the floor.

WEIGHT CONSIDERATIONS

- If there is any uncertainty in the strength of the building structure, a professional structural engineer should perform a thorough evaluation of the building prior to purchasing the fans. Patterson Fan provides guidelines for mounting fans; however, it is the sole responsibility of the building owner and installer to ensure the safety of the mounting system, that the building structure is sound, and that the installation complies with all federal, state, and local codes.

WARNING

If unusual oscillating movement is observed, immediately stop using the fan and contact your Patterson Sales Rep at 1-800-768-3985.

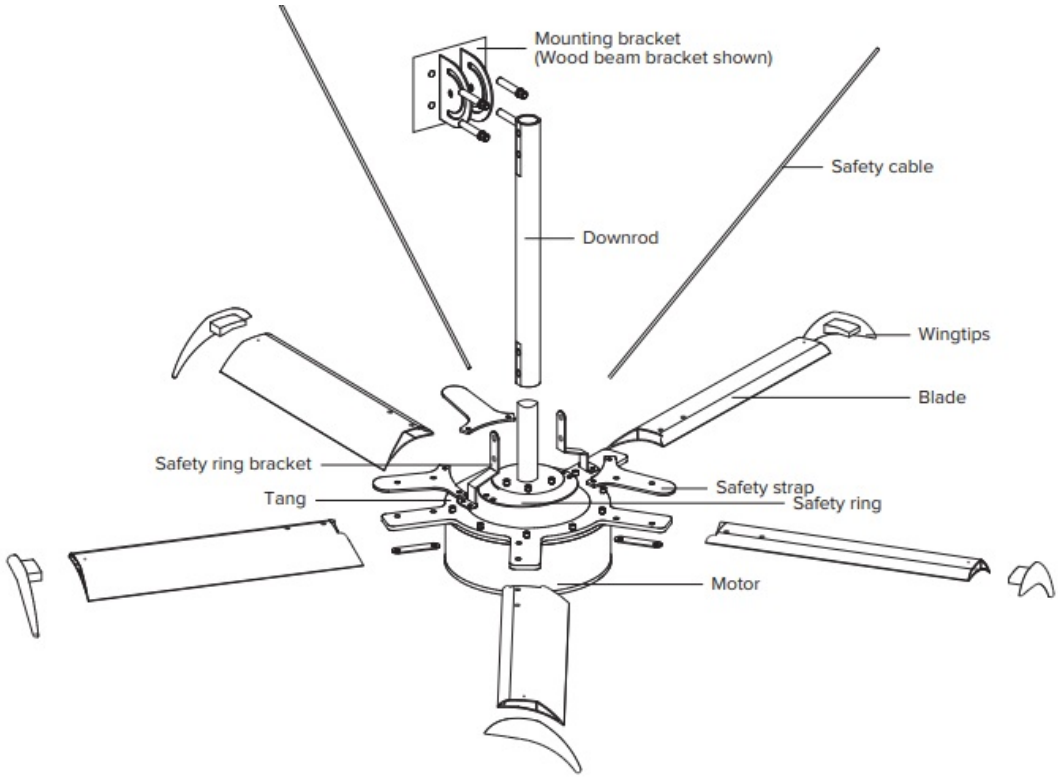
CHECK FEDERAL, STATE, AND LOCAL CODES

- Check all relevant codes to make sure that all product certifications, product listings, and building regulations are met.
- Code compliance is the responsibility of the installer.

WINDY CONDITIONS

Fans should not be operated in windy conditions or installed in locations where it is frequently windy.

ITEMS INCLUDED IN YOUR FAN KIT



1. Concrete/wood beam bracket (hardware not provided)
2. Universal/bar joist bracket & hardware
3. Hand tools
4. Downrod
5. Wingtips & hardware
6. Disconnect & electrical cable: 18 gauge – 4 conductor

7. Safety cable & hardware

TOOLS NEEDED

- Hand tools (provided)
- Level or plumb bob
- Torque wrench

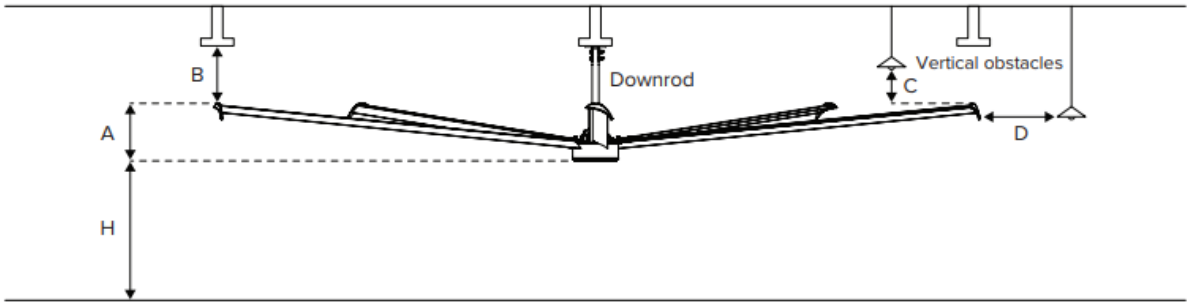
FAN SPACING, PLACEMENT, & CLEARANCE

SPRINKLER SYSTEMS AND FAN PLACEMENT

- In any installation where fire sprinklers are in place, the fan should not interfere with their correct operation. Fans should be located no less than 3 feet below a sprinkler and placed in the centre of the nearest four sprinklers. Our industrial control panel can be connected to a fire relay system, which, in an emergency, will stop fans in case of fire.
- Before installing fans, review all codes applicable to sprinkler systems and fans to ensure code compliance and refer to NFPA 13 Standard from the National Fire Protection Association. It is your sole responsibility to see that the installation is completed to code and that it is correct.

OTHER INFORMATION ON PLACEMENT AND SPACING

- If possible, avoid mounting fans directly below lights or skylights to avoid any strobe effect caused by moving airfoils. Please see the chart below for recommended minimum and maximum hanging heights.
- If the building has a mezzanine, fans should be mounted so that a person cannot reach a fan in any way from the upper level/deck. Make certain that fans are positioned so that the airfoil tips are at least 3 feet away from any area where a person may be able to extend outward to reach them.
- Fans should not be located directly beneath any air supply outlets or exhausting outlets.
- This includes air conditioning units and evaporative coolers. Such equipment can be used effectively in conjunction with HVLS fans but the discharge must be located outside of the swept area of the fan.
- Exhaust fan inlets or other return air points creating a negative pressure should not be within 1.5 times the diameter of the fan.



Size	H (min)	H (Rec max)	Assembled Height	A	B	C	D	Downrod
8′	10′	16.5′	31.5″	14″	12″	8″	8″	2′ to 5′
12′	10′	16.5′	31.5″	15″	12″	8″	8″	2′ to 5′
16′	12′	20′	31.5″	16″	12″	8″	8″	2′ to 6′
20′	14′	23′	37″	20″	12″	8″	8″	2′ to 10′
24′	14′	30′	37″	20″	12″	8″	8″	2′ to 10′

MAINTENANCE

We strongly recommend that all equipment be included in your company's preventative maintenance program. Before performing any maintenance on the fan, it MUST be disconnected from the power source using the separate lockable disconnect (provided).

AIRFOIL CLEANING

Depending on the application of the fan, there can be quite a bit of dust or other particulates that cling to the fan's airfoils. We recommend fan owners keep airfoils clean by having a maintenance person or skilled trade professional – who has experience using a lift – wipe the fan airfoils with a rag or sponge using hot water or regular cleaning solutions. Please do not use chlorine or any chemicals containing chlorine.

RETENTION SYSTEM CHECK

Each fan must be installed with a retention system. The safety cable is attached to the

motor and wraps around the building structure. The safety cable is an important part of the safety system and protects users if a catastrophic event occurs. It is critical for fan owners to ensure that it is intact and properly secured.

REPLACEMENT PARTS

Please call your Patterson Sales Rep at 1-800-768-3985 for parts.

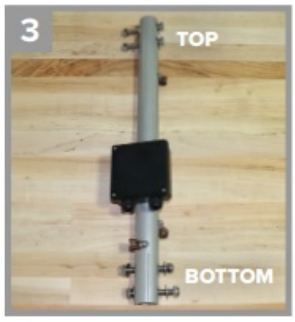
MECHANICAL INSTALLATION

BAR JOIST MOUNTING

Note

For other mounting options, please call your Patterson Rep at 1-800-768-3985.

1. Insert two bolts through one side of the bar joist mount and one beam clamp. Select the appropriate holes on the mount based on structure width; install bolts as close to bar joist as possible.
2. Place the mount around the bar joist and secure the remaining two bolts through the remaining beam clamp. Torque all four bolts to 32 ft-lbs
3. Place the two top bolts of the downrod (image 3) into the bolt opening of the mount (image 4). Do not tighten completely.



MOTOR ASSEMBLY

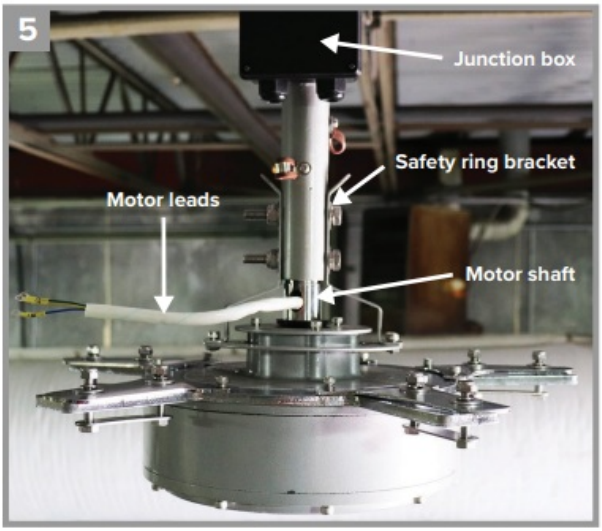
Note

To avoid damaging the motor during installation, do not remove protective plastic from the motor until it has been properly mounted.

Note

If using an extended downrod, see page 11 for the guy wire bracket installation before proceeding with the motor assembly below.

1. Remove the two bolts on the bottom of the downrod. Slide the motor shaft inside the downrod so that the motor leads are aligned with the junction box above.
2. Line up the safety ring bracket, downrod, and motor shaft bolt holes. Replace the two bolts.
3. With a level or plumb bob, make sure the downrod is completely vertical. Torque all four downrod bolts (top and bottom) to 32 ft-lbs.



SAFETY RETENTION SYSTEM

Note

This step is required. Failure to install the safety cable may void the manufacturer's warranty.

WARNING

Do not put too much tension on the safety cable. A small amount of slack is needed for the safety cable to properly function. Avoid sharp edges.

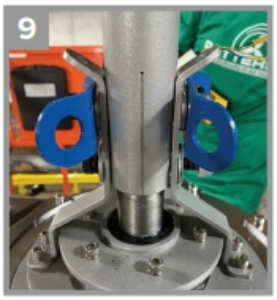
1. Wrap the safety cable around the beam or building structure.
2. Run a safety cable through the holes in the top of the safety ring bracket and around the downrod.
3. Overlap the safety cable and secure it with cable clamps.

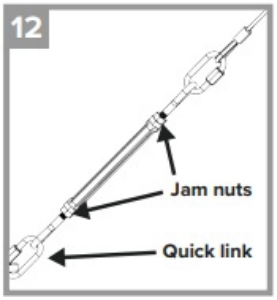
GUY WIRE ASSEMBLY

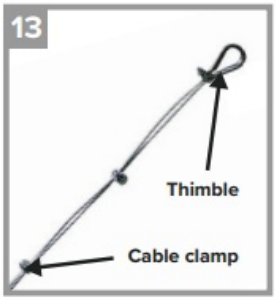
WARNING: If you order an extended downrod, a guy wire installation becomes required for safe fan operation.

1. During Step 2 of MOTOR ASSEMBLY, add guy wire brackets to the top bolt of the motor shaft. The guy wire brackets come with extra washers that should be placed between the guy wire brackets and safety ring bracket. Bolt should be torqued to 32 ft-lbs per Step 3 of MOTOR ASSEMBLY.
2. Using the quick links, connect the turnbuckles to the outer holes of the guy wire brackets.
3. Loosen jam nuts and extend the turnbuckle.
4. Run four guy wires to ceiling structure, keeping the angle less than 45° for maximum stability. Attach guy wires to ceiling structure using provided beam clamps and thimble.

5. Remove slack and secure with cable clamps.
6. Once all guy wires are in place, use turnbuckles to take out any remaining slack. Periodically check the fan assembly with a level to ensure it remains in the vertical position. Continue adjusting by means of the turnbuckles until all cables are satisfactory. Guy wires should be taut, but not over stressed. Recheck all cable clamps for tightness.
7. Tighten all jam nuts. This step is required. Failure to install the guy wires properly may void the manufacturer's warranty and become a safety hazard.



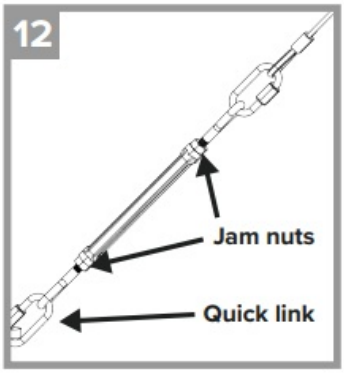




BLADE ASSEMBLY

1. Insert wingtips into the end of the blades and lock into place with screw.
2. Remove blade bolts from tang. Loosen safety strap bolts and insert blade onto tang. Install the two blade bolts and double washer from below as shown Image 17. Torque to 16 ft-lbs.
3. Install the washer and nut on top of the blade bolt. Torque to 16 ft-lbs.
4. Do not torque blade bolts and nuts at the same time.
5. Torque safety strap bolts to 16 ft-lbs.

12



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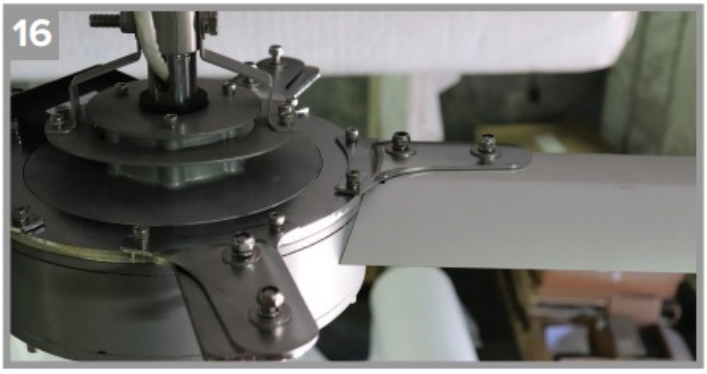
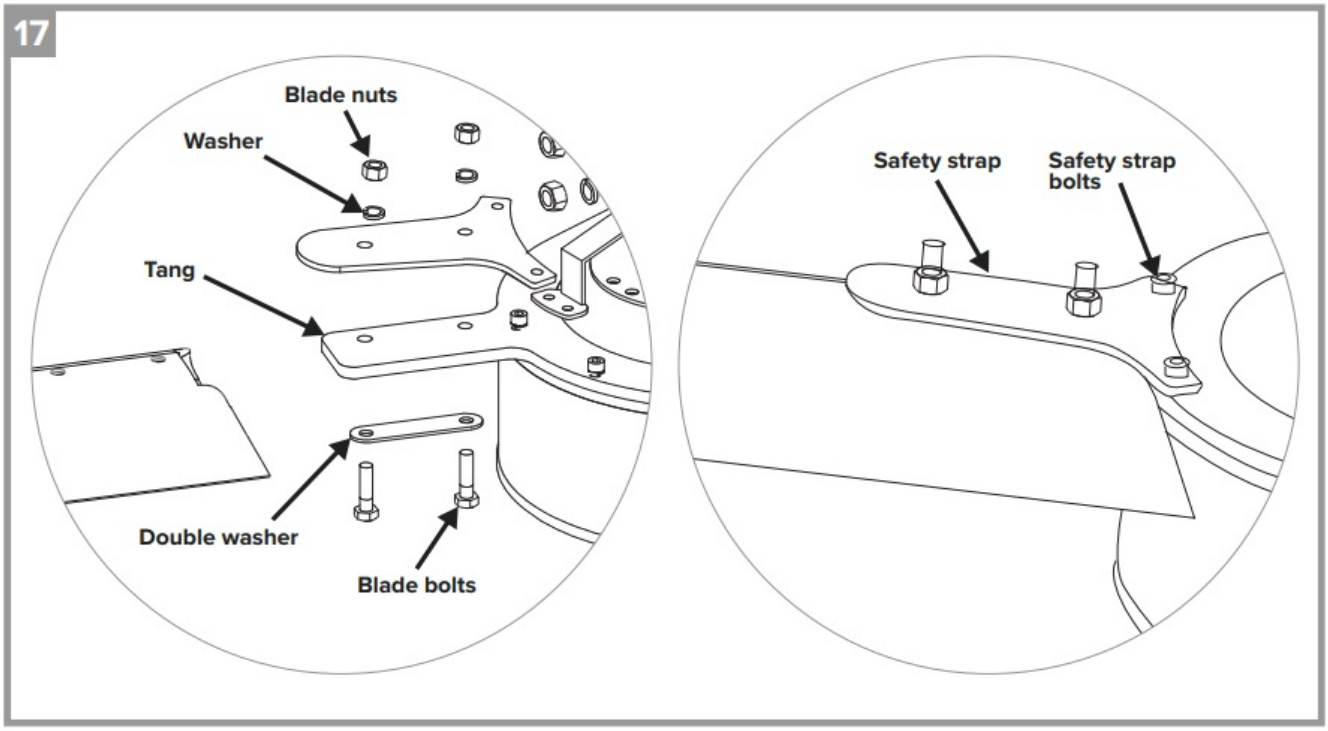




BREAKER SIZING

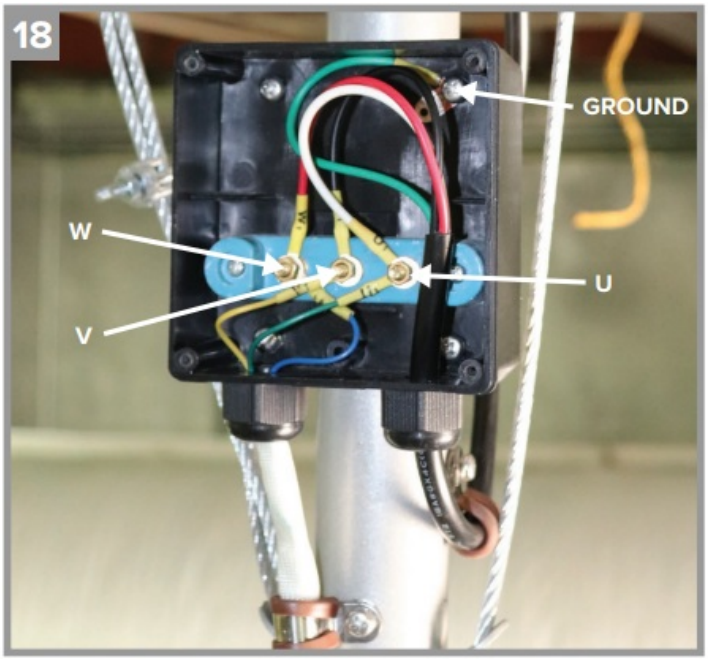
Refer to the table below for recommended circuit breaker sizing based on input voltage and fan motor horsepower.

VFD Model	Input V	Input Max Amp/ Recommended Fuse	Output V	Max Output A
EM30 Series	220V, 1Ø, .5 HP	10/15	0-Input, 3Ø	4.5
EM30 Series	208-230V, 3Ø, .5 HP	5/10	0-Input, 3Ø	4.5
EM30 Series	460V, 3Ø, .5 HP	3/10	0-Input, 3Ø	2
EM30 Series	220V, 1Ø, 1HP	14/20	0-Input, 3Ø	7
EM30 Series	208-230V, 3Ø, 1 HP	7.8/15	0-Input, 3Ø	7

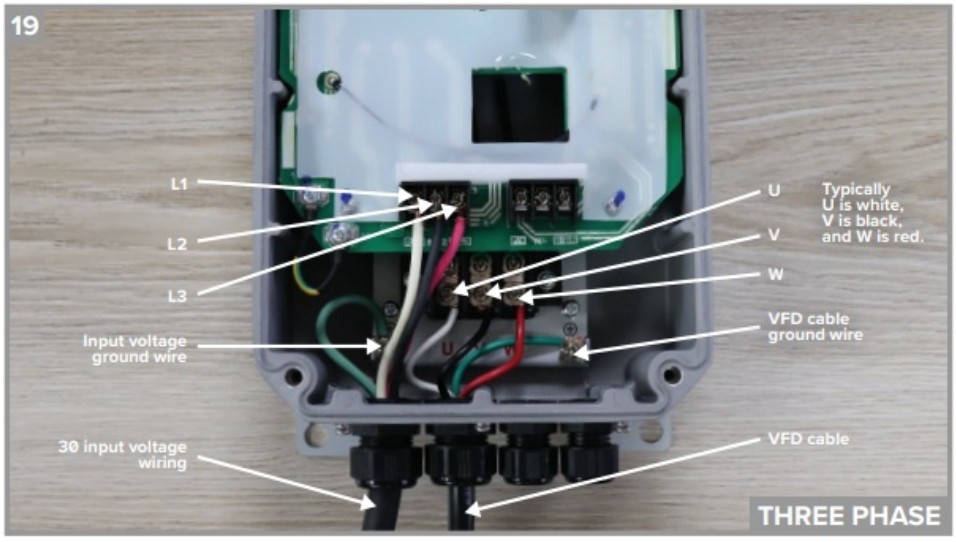
EM30 Series	460V, 3Ø, 1 H P	5/10	0-Input, 3Ø	4

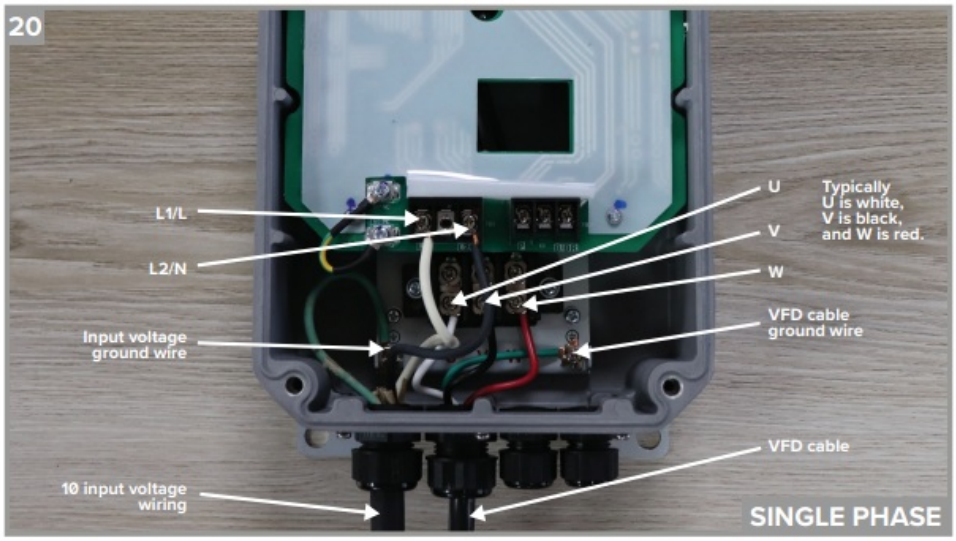
CONNECT CONTROL CABLE TO FAN MOTOR

1. Remove the cover of the motor junction box on the downrod.
2. Feed motor leads through strain relief into the junction box.
3. Pass the end of the VFD cable with ring terminals through the strain relief into the junction box.
4. Attach ring terminals from motor leads and VFD cable to terminals in junction box. Ensure letters match. See Image 18.
5. Route VFD cable to a suitable VFD location (50’ of cable has been provided). Conduit is recommended.
6. Mount VFD to the wall using of attached mounting tabs (hardware not included).
7. Run VFD cable through sthe train relief furthest to the right. Connect the cable to terminal blocks U, V, and W. See Images 19 and 20.



ELECTRICAL INSTALLATION





RUN INPUT POWER CABLE & INSTALL LOCKABLE DISCONNECT

WARNING

The Lockable Disconnect must be installed per local electrical codes. AT MINIMUM it must be installed outside the diameter of the fan blades.

1. Be sure to size the input power cable properly for the application. Most installations will require 12-gauge wire. However, longer runs of power cable may require 10-gauge or higher.
2. Run input power into the top of the Lockable Disconnect, using the appropriately sized knockout.

   3A (THREE PHASE)
3. Connect conductors to terminals L1, L2, and L3, respectively. The ground wire should be fastened to one of the ground terminals. Continue running input power to the drive by connecting three conductors to terminals T1, T2, and T3, respectively. A ground

wire should be fastened to the ground terminal.

3B (SINGLE PHASE)

Connect conductors to terminals L1 and L2, respectively. The ground wire should be fastened to one of the ground terminals. On the output side, T2 should be looped back to input L3. Continue running input power to the drive by connecting two (2) conductors to terminals T1 and T3, respectively. A ground wire should be fastened to the ground terminal.

4. Run the rest of the input cable near the wall mounted VFD. Using conduit for this run is recommended.
5. **5A (THREE PHASE)**

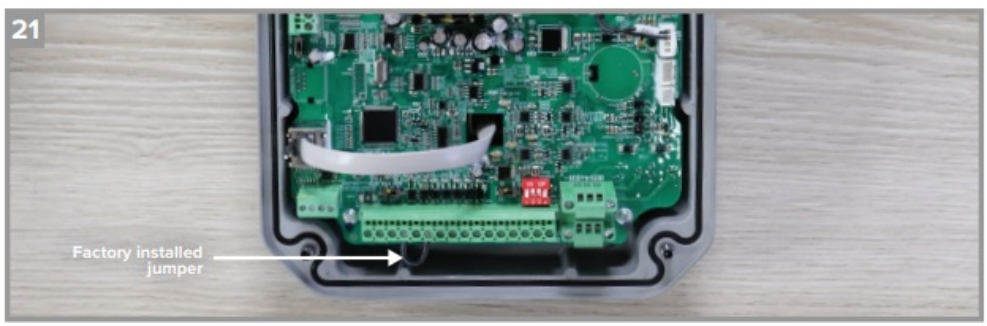
   Connect the opposite end of the input power cable to the VFD. The three conductors should be connected to L1, L2, and L3, respectively. The ground wire should be connected in the manner shown in Image 19.

   5B (SINGLE PHASE)

   Connect the opposite end of the input power cable to the VFD. The two conductors should be connected to L1/L and L2/N, respectively. The ground wire should be connected in the manner shown in Image 20.
6. Reconnect the Cat5 keypad cable to the VFD and reattach the cover.

CONNECT VFD TO A FIRE SUPPRESSION SYSTEM (If required)

- **WARNING:** DO NOT connect external voltage to the fire suppression terminals. Fire suppression terminals should be connected to a relay via contacts. Placing voltage on the VFD terminal block will destroy the unit and void all manufacturers' warranties.
- **CAUTION:** DO NOT connect Patterson V-Series fans to the fans of another company for purposes of fire suppression. A separate line must be run for Patterson fans ONLY.
- **CAUTION:** If the drive will not be connected to any fire suppression system, the factory-installed jumper across COM and DI2 MUST remain in place.



1. Remove the factory-installed jumper between terminals COM and DI2 on the terminal block behind the cover of the VFD. Refer to Image 21. Connect the fire suppression system wires from the dry contacts on the relay tothe terminals
2. COM and DI2. Route the fire system cable out via the provided strain relief.
3. Drive is now wired to shut down upon activation of any fire suppression signal. VFD expects a close contact to run.

CONTACT INFORMATION

- pattersonfan.com
- 800.768.3985

FAQS

What should I do if my fan appears to be damaged?

If your fan or any accessories appear to be damaged, do not operate them. Contact your Patterson Sales Rep immediately for guidance.

What should I do if my fan does not operate properly?

If your fan is not functioning correctly, disconnect all power to the unit and contact your Patterson Sales Rep for assistance.

Why is it important to install the safety cable?

The safety cable is essential as it prevents the fan from falling in case of a mounting system failure. It is supplied with every fan kit and must be installed to ensure safety and warranty compliance.

Documents / Resources

	PATTERSON V Series HVLS Ceiling Fan [pdf] Instruction Manual V Series HVLS Ceiling Fan, V Series, HVLS Ceiling Fan, Ceiling Fan, Fan

References

- User Manual

PATTERSON

Ceiling Fan, fan, Hvls Ceiling Fan, PATTERSON, V Series HVLS Ceiling Fan, V-Series

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