



MonsterFans
by Schwank

MonsterFans Geared-Drive [GD] Series

Installation Manual

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Installation & components

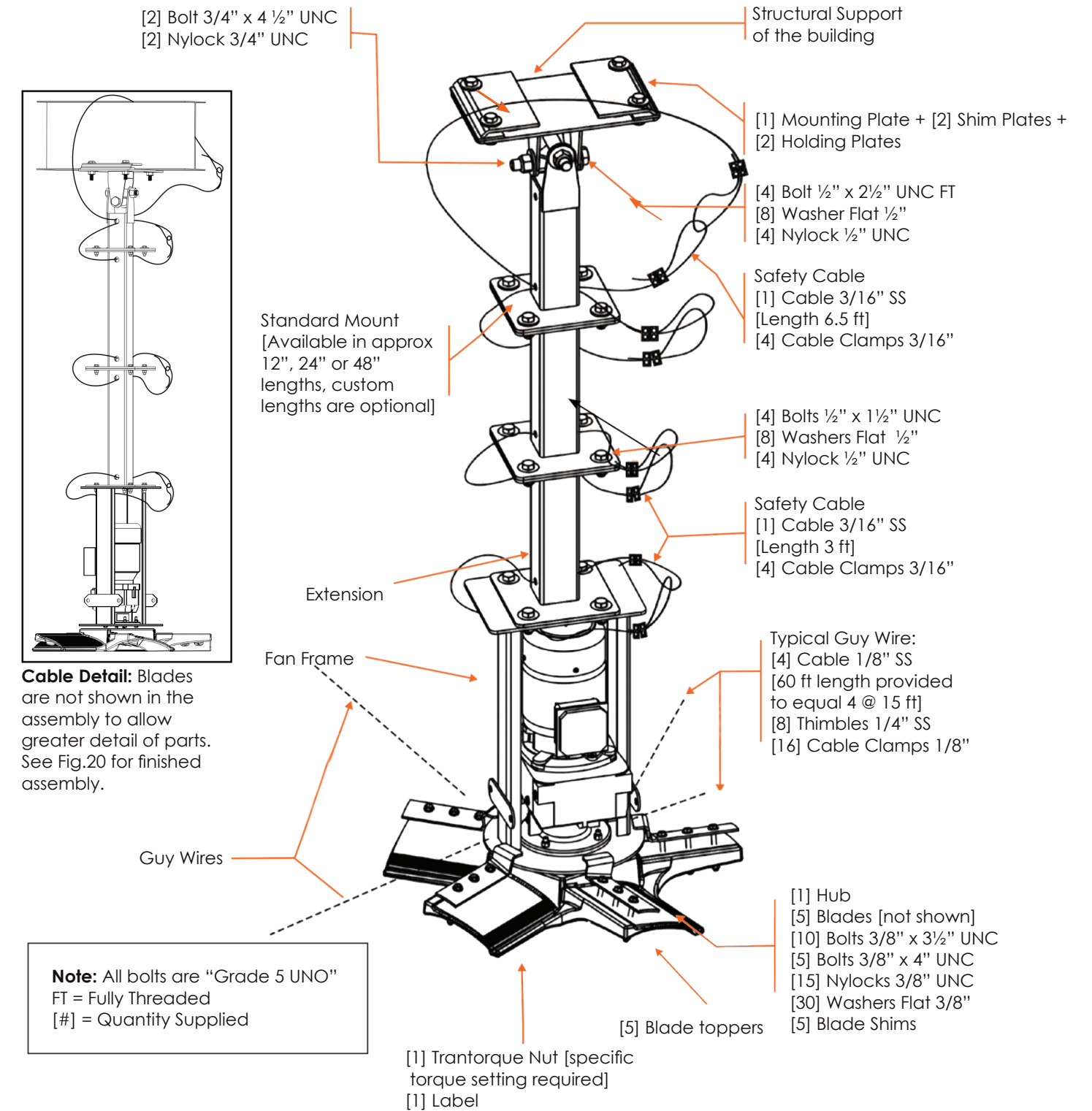
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Engineers requiring AutoCAD or SolidWorks drawings can download them by accessing www.schwankgroup.com/monsterfans.

Fan Components Diagram



Tools Required to Install Product

- Level
- Cable cutters [for stainless steel aircraft cable]
- Ratchet or impact gun
- Basic imperial socket set up to 3/4"
- Basic imperial wrench set
- Lifting devices or scaffolding

Required Steps Before Installation

- Check to see if you have all the tools required for the installation.
- Verify that all fan components were received.
- Check drawings and layouts provided to locate where the Fan is to be installed.
- Ensure work area is safe and that all security, policies and procedures for the facility are met.
- Inspect the lift device or mobile platform.
- Each person installing the Fan must use a safety harness at all times.
- Other safety requirements may be required for installation.
- All workspace safety requirements, lock out procedures and hoarding of construction zone for the assembly and installation must be met and followed.



CAUTION

This unit has an unguarded impeller.

Do not use in locations readily accessible to people or animals.

To reduce the risk of injury to persons, install fan so that the blade is at least 10ft [3.05m] above the floor.



WARNING

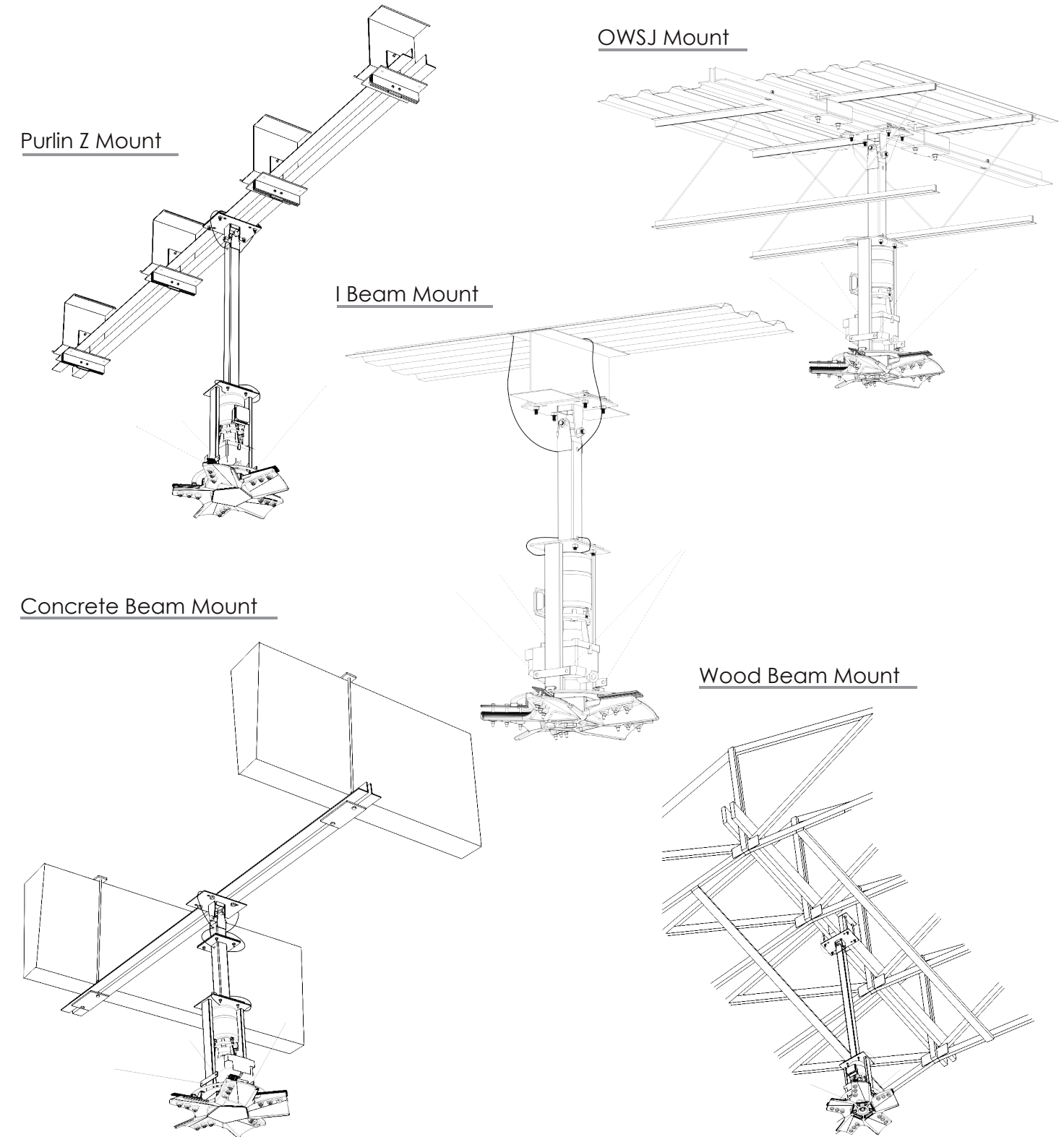
Support directly from building structure



CAUTION

Mount with the lowest moving parts at least 10ft [3.05m] above floor or grade level

3. Different Mounting Applications



Note: The following mounting applications are representations only and are subject to change without notice. Contact your sales representative for complete mounting instructions.

4. Standard Mount

A Standard Mount package is used with all MonsterFans GD Series Assemblies [except "Wood" Beam Mounting]. Standard drop mounts of 12", 24" and 48" are available.

The package includes:

- [2] mfg "I" Beam clamps
- [2] mfg "I" Beam spacers [may or may not be required for assembly]
- [1] Upper Pivot Plate
- [1] Upper Pivot [pre-assembled]
- [1] Stem for 12", 24" & 48" packages
- [4] Bolts, Nuts & Washers
- [1] Cable 3/16" SS [Length 6.5 ft]
- [4] Cable Clamps 3/16" [not shown]

Note: Spacer may or may not be required. This is dependent upon the thickness of the support structure.

Installing the mount

1. Sandwich the "I" Beam or OWSJ Beam between the mfg "I" Beam clamps and the upper pivot plate. Insert the mfg "I" Beam spacers if required.
2. Insert the bolts, washers and tighten the nylocks. [Fig.8]
3. Position the safety cable as per Fig.8, loop at both ends.
4. Fasten cable clamps as typical cable clamp installation [Fig.9] Cable should be relatively snug.

Typical cable clamp installation

When placing cable clamps on the wire, it is imperative that the U-bolt side of the clip is placed on the short turn back side and the saddle goes on the long side [the "live" end].

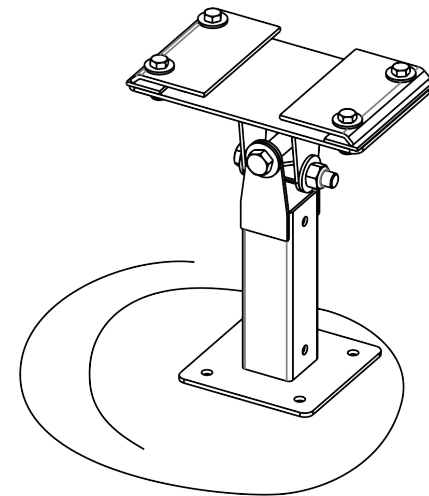


Fig.7

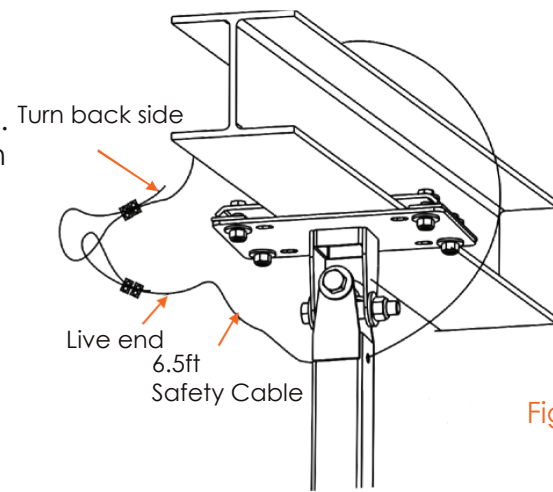


Fig.8

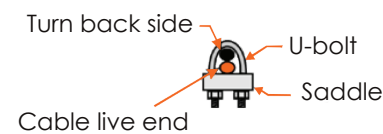


Fig.9

5. Extensions

The package includes:

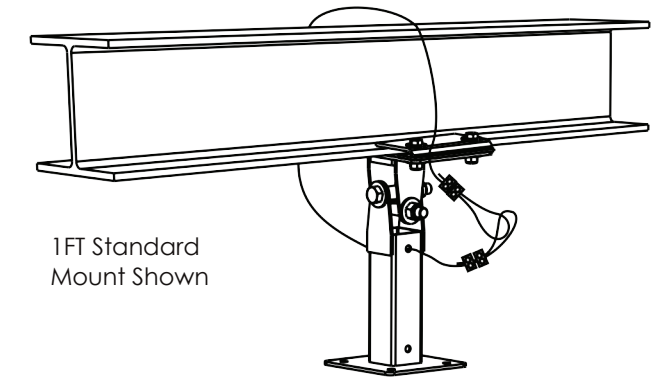
- [1] Extension [standard 2 ft or 4 ft]
- [4] Bolts 1/2" x 1 1/2" UNC
- [8] Washers Flat 1/2"
- [4] Nylocks 1/2" UNC
- [1] Cable 3/16" SS [Length 3 ft]
- [4] Cable Clamps 3/16"

Depending on your assembly, your package may include an extension. The extension with the standard mount will make up the overall drop length. If a specific drop distance is required, a custom extension may be an option and can be ordered.

Installing the extension

1. Fasten top plate of extension to the bottom plate of the standard mount using 1/2" bolts, nuts and washers.
2. Position the safety cable as per Fig.11, loop at both ends.
3. Fasten cable clamps 2 per end and as per typical cable clamp installation [Fig.9]. Cable should be relatively snug.

Every connection between components [mounts, extensions and fan frame] must include a safety cable as shown throughout this manual.



1FT Standard Mount Shown

24" or 48" Standard Extensions are Available

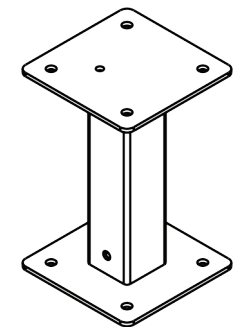


Fig.10

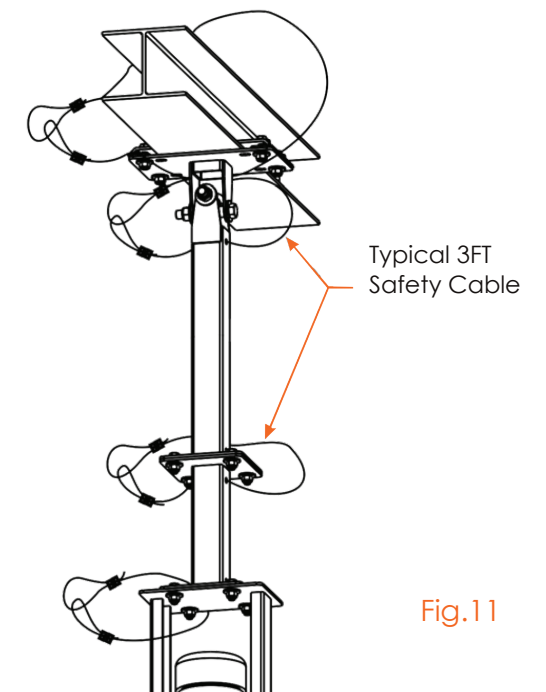


Fig.11

6. Main Hub & Drive Assembly

The package includes:

- [1] Hub
- [1] Fan frame
- [1] Trantorque nut
- [1] Motor
- [1] Gear Reducer
- [1] MonsterFans sign
- [4] Bolts 1/2" x 1 1/2" UNC
- [8] Washers Flat 1/2"
- [4] Nylock 1/2" UNC
- [1] Cable 3/16" SS [4 ft]
- [4] Cable clamp 3/16"

All these items are pre-assembled.

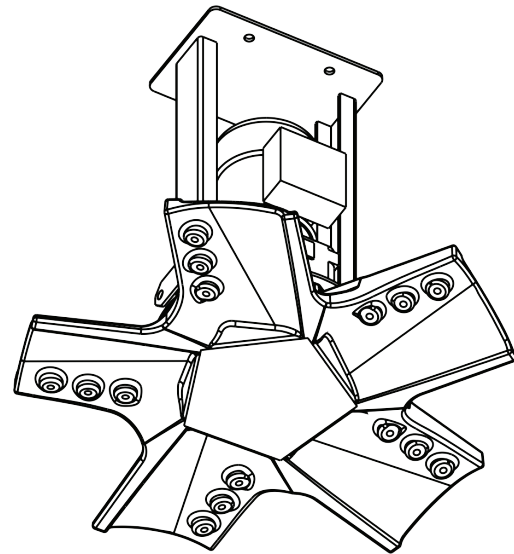


Fig.12

Installing the Main Hub & Drive Assembly

1. Fasten top plate of fan frame to the bottom plate of the standard mount using 1/2" bolts, nuts and washers.
2. Position the safety cable as per Fig.13, loop at both ends.
3. Install and fasten cable clamps 2 per end as per Fig.9. Cable should be relatively snug.

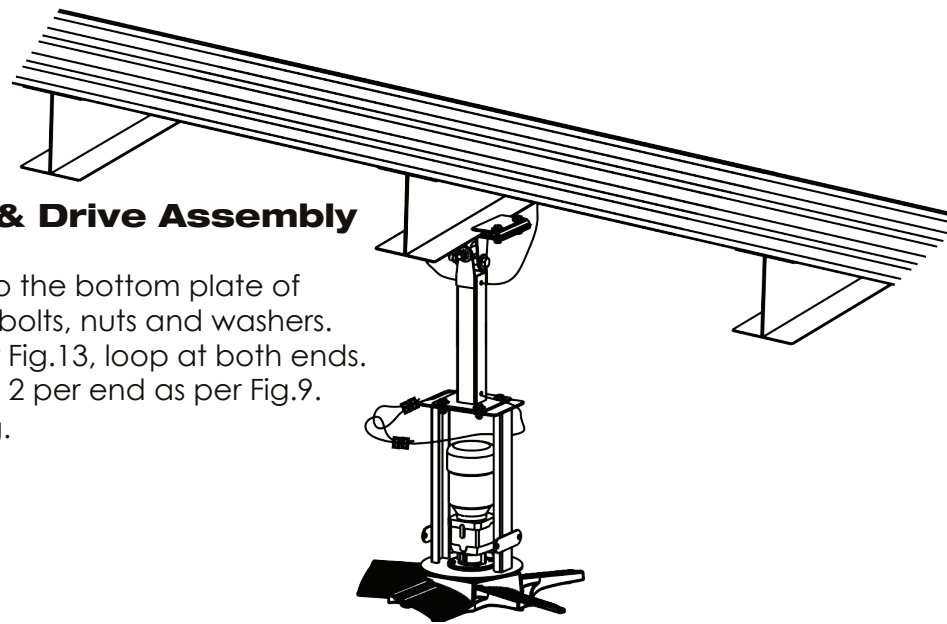


Fig.13

7. Guy Wires

The package includes:

- [4] Cable 1/8" SS [60 ft]
- [8] Thimbles 1/4" SS
- [16] Cable Clamps 1/8"

Extra hardware required:

- [4] Forged Eye Bolts 1/4"
- [4] Nuts 1/4"
- [4] Nylocks 1/4"
- [8] Washers Flat 1/4"

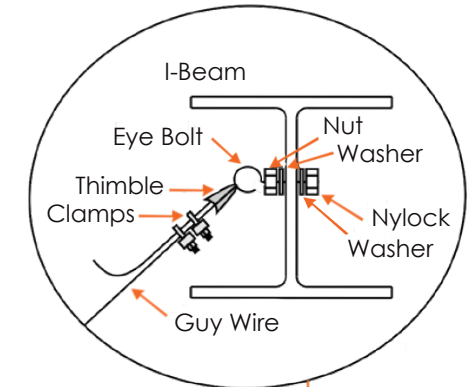


Fig.14

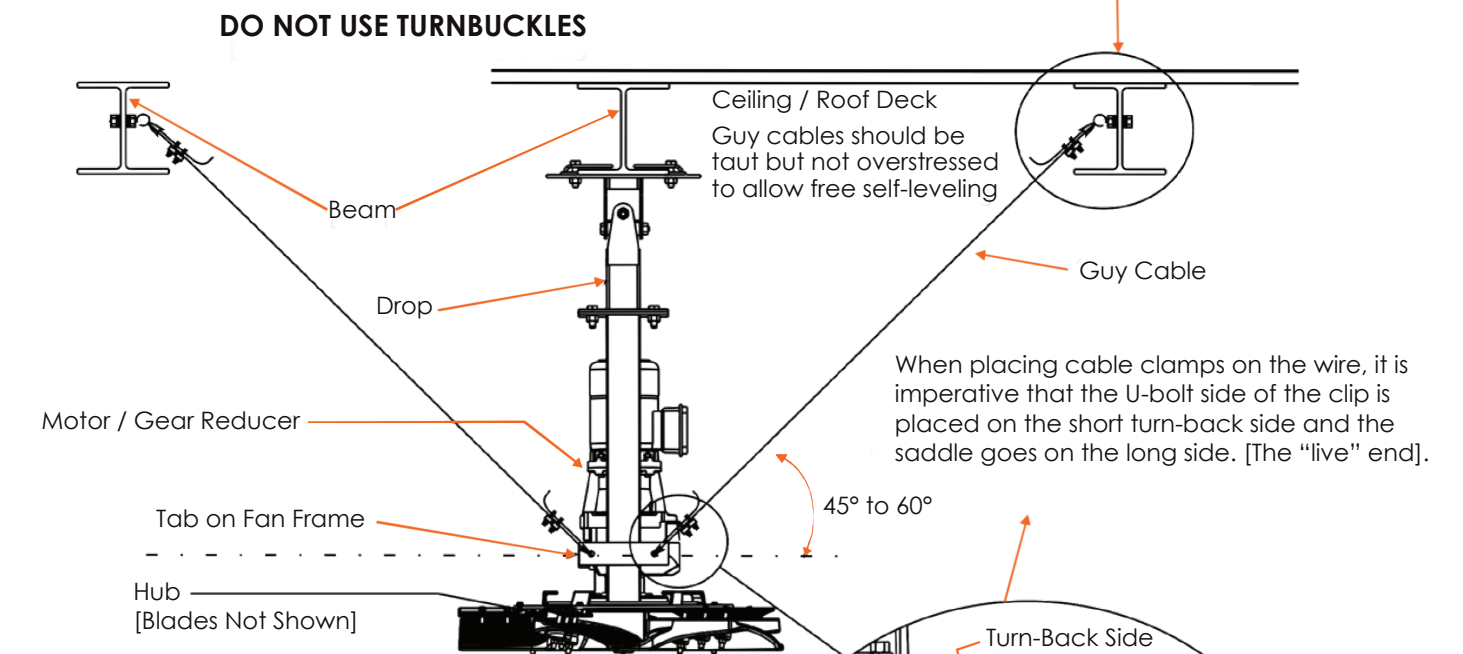


Fig.15

Structural Note: Guy cables must be installed or fastened to a structural component of the building at the angle shown in Fig.15 and Fig.17.

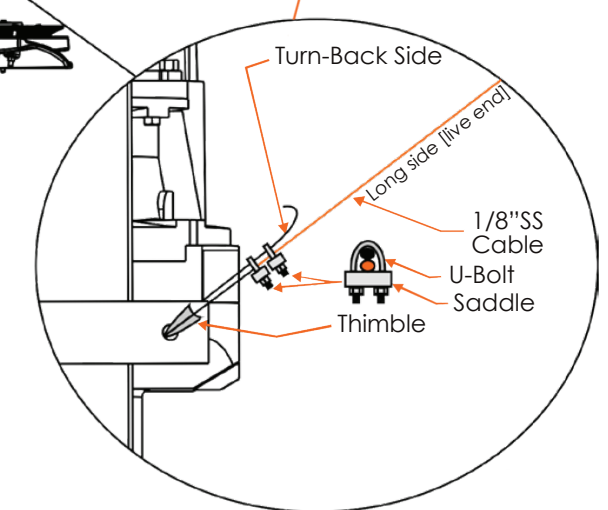


Fig.16

Installing the Main Hub & Drive Assembly

1. Determine mounting position on ceiling and establish the angle between 45°- 60° for the cable. Determine correct location on the I-Beam to drill 5/16" diameter hole for the eye bolt. For example, if fan is 4 ft down from ceiling, cables should be mounted approximately 4 ft away from fan.
2. Install eye bolt with nuts and washers in I-Beam as per Fig.15.
3. Measure the run of cable required and cut cable approximately 2 ft longer. Note: longer runs than 15 ft will require additional hardware.
4. Secure it with 1 thimble and 2 cable clamps [Fig.16]. Repeat using the other 3 pieces of guy wire cables, thimbles and cable clamps [Fig.16].
5. Guy wires should be taut but not over-stressed to allow free self-levelling. They should also be approx. 90° apart [Fig.17].
6. Check to see if the fan is level by placing your level vertically on the side of the fan frame. If adjustment is needed, slightly tighten the guy wires on proper side.

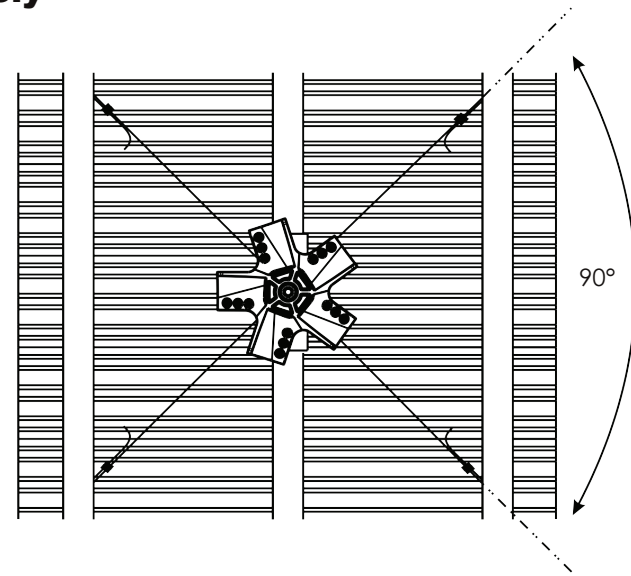


Fig.17

Note: Fans hanging lower than 10 ft from where the guy wires will mount will require additional cable.

8. Blade Assembly

The package includes:

- [5] Blades
- [5] Blade Shims
- [5] Blade toppers
- [15] Bolts 3/8" x 3 3/4" UNC
- [15] Nylocks 3/8" UNC
- [30] Washers Flat 3/8"

Installing the blade Assembly

1. Clamp a blade between blade topper and blade shim on each spoke of hub using 3/8" bolts, washers and nylocks [Fig.18].
2. Continue until all 5 blades have been fastened and tighten down.
3. Turn the fan by hand to ensure that there are no obstructions with the blades.

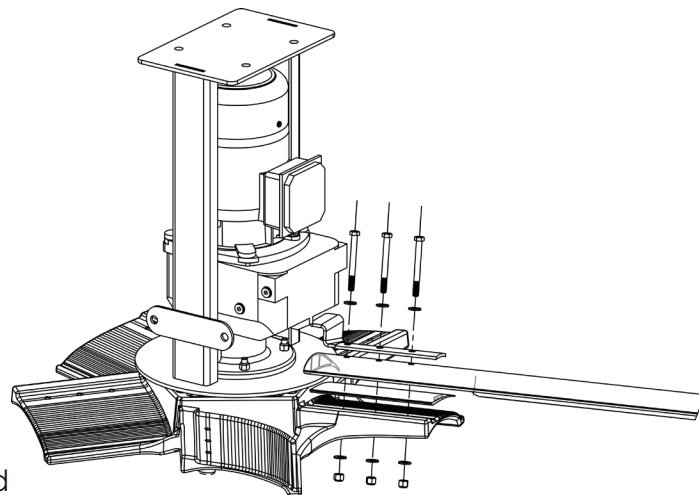


Fig.18

9. Leveling Fans

1. After your fan is installed, check the level again by placing your level vertically on the side of the fan frame. If adjustment is needed slightly tighten the guy wire on the appropriate side.
2. Once levelled your fan is installed and ready for electrical installation / connection.

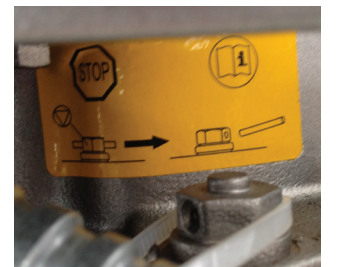


Fig.19

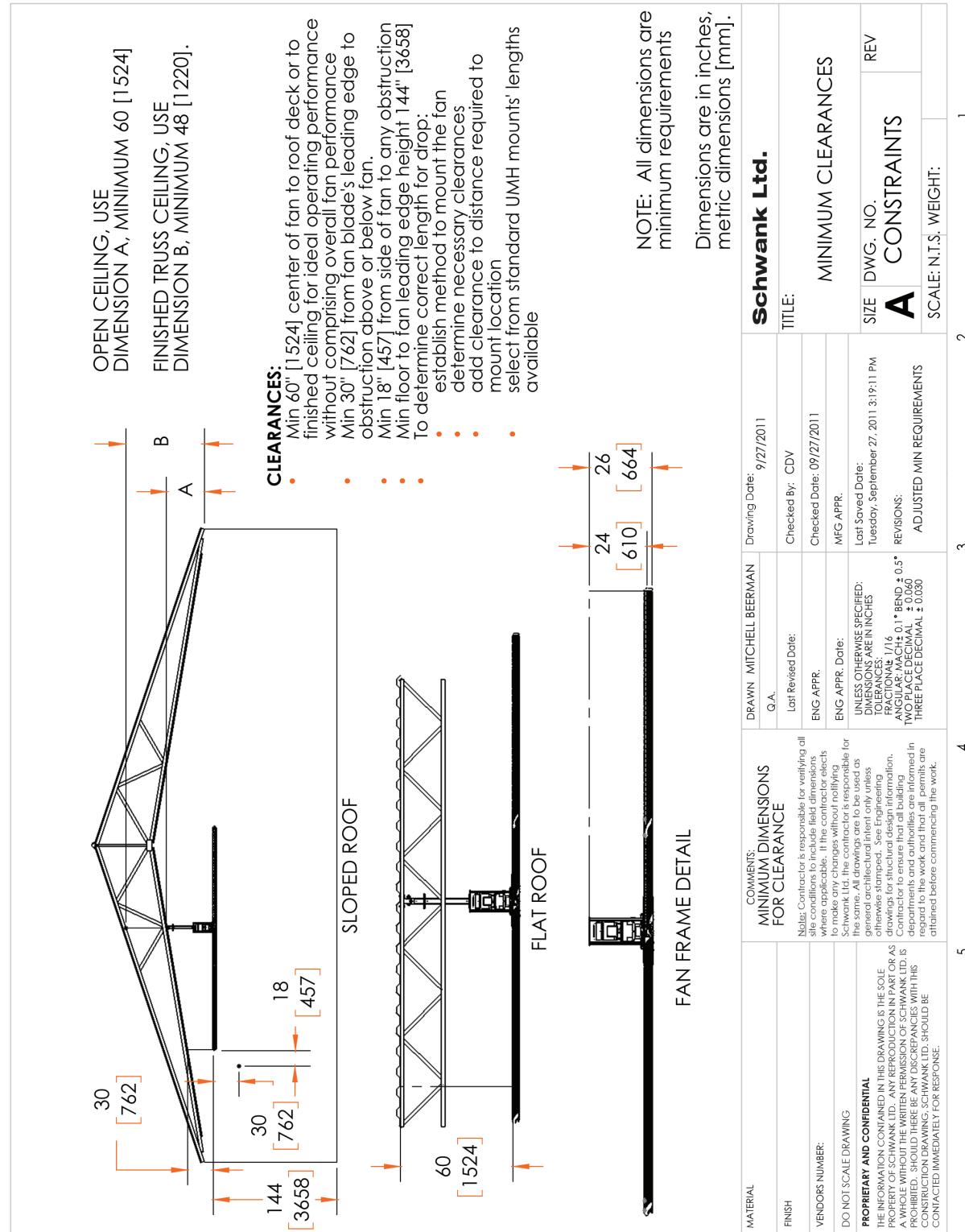
For proper electrical connection please consult the MonsterFans GD Series Electrical Installation Manual.

Attention!

1. Remove rubber plug prior to start up.
2. Discard rubber plug after removal.
3. Discard pink tag if attached to unit.
4. If yellow sticker is attached to unit, it can remain in place.



Fan Blade Clearance



Recommended Maintenance Schedule

- No maintenance shall be done on the fan, mount or guy wires while it is in operation or powered.
- No maintenance shall be done on the fan controller while powered unless the task involves reprogramming or troubleshooting the electrical system.
- No maintenance shall be done within a 6m horizontal radius of the fan and 4 ft below and none above the blade level while it is in operation.
- While doing maintenance on the fan, mount, or guy wires, a safety barrier shall be erected at a radius of 6m of the center of the fan.
- The fan controller shall be locked out while maintenance is ongoing on the fan, mount, or guy wires.
- All personnel working on the fan, mount, or guy wires, shall wear the appropriate personal safety equipment as mandated by local, provincial, and national regulations.
- A risk assessment shall be performed before any maintenance is done on the fan, mount, guy wires and fan controller.
- A tailboard meeting shall be performed before any work is done. A checklist shall be completed and shall include any emergency contacts for the area.

Power Unit

Motor

Our motor or gearmotor manufacturers supply Schwank Ltd. with motors/gearmotors built for our application. Designed for use with variable frequency drives; they are wound with 200°C moisture resistant Inverter Spike Resistant [ISR] magnetic wire which dramatically extends the life of the motor compared to motors with non-ISR wire.

Maintenance Schedule

Initial Six Months

- Check for hot spots
 - Re-tighten all loose electrical connections
- Repeat Every Eighteen Months Thereafter

Gear Reducer / Motor

MonsterFans GD Series Fans are driven through Nord Helical Gear Reducers/Gearmotors. Nord is the best gear reducer for our particular application in terms of precision, durability, efficiency, reliability and quiet operation.

Maintenance Schedule

Initial Eighteen Months

- Check oil level
- Change Oil Every 20,000 Hours of Normal Use

Blades

The airfoil blades are designed for maximum efficiency and quietness with a minimum air disruption directly below the fan. All our blade shapes are extruded from 6063-aluminum alloy and heat-treated to T-5 condition. They are anodized to .0004 10 Microns clear for corrosion resistance and ease of cleaning. The blades have a lifetime warranty.

Maintenance Schedule

Initial Six Months

- Ensure blades are intact, level and clean as required
- Every Eighteen to Thirty-Six Months Thereafter

Drop / Mounting

The drop and mounting system is designed to prevent vibration or horizontal movement from being transferred back into the building structure. The system is easily installed in almost any building and allows fans to hang level from beams.

Maintenance Schedule

Initial Six Months

- Physical check of fan guy wires, re-tightening of clamps if required
- Check all nuts/bolts/clamps [missing/loose/damaged]
- Physical check of safety cable, re-tightening of clamps if required

After Eighteen Months Thereafter

Control Panel

Controls are variable frequency drives which provide soft start/stop, variable speed control and overload protection for the motors. The VFD also allows fan control to be automated and/or integrated with other systems.

Maintenance Schedule

Initial Twelve Months

- Check for loose/discolored wires
- Check for hot spots
- Re-tighten all loose electrical connections

Every Eighteen Months Thereafter

Note: Maintenance schedule is based on running 5,000 hrs / year and is a guide line to ensure safe and continuous operation of the fan[s]. In case of extreme operating [e.g. high humidity, aggressive environment or large temperature variations], shorter intervals between service is recommended.



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