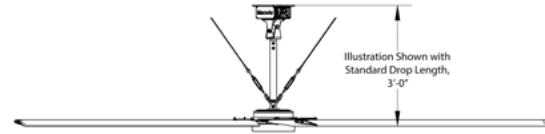


Experience the power and efficiency of MacroAir's AVD5, a cutting-edge direct-drive fan for industrial and commercial spaces. The captivating five-blade AVD5 is a perfect composition of purposeful design, superior performance, and cost efficiency. Elevate your projects with the AVD5, a commanding revelation in air movement.



STANDARD FEATURES:

- 1.0 HP (equivalent) Direct Drive motor, rated for indoor/outdoor use*
- Clearcoat anodized airfoil blades
- Industry leading onboard electronics for unmatched reliability
- Forward, reverse, variable speed
- Integrated VFD/Mount Enclosure
- Safety Components: safety cable, Universal Mount with guy wires, blade retainer links



STEP 1: POWER UNIT

Item #	Options	Qty
M500-0025-MA	8-14 ft Power Unit, 1.0 HP Equivalent	
M500-0035-MA	16-18 ft Power Unit, 1.0 HP Equivalent	
M500-0050-MA	20-24 ft Power Unit, 1.0 HP Equivalent	

STEP 2: BLADES

Item #	Diameter	Qty
60-80008-00	8 ft / 2.44 m	
60-80010-00	10 ft / 3.05 m	
60-80012-00	12 ft / 3.66 m	
60-80014-00	14 ft / 4.27 m	
60-80016-00	16 ft / 4.88 m	
60-80018-00	18 ft / 5.49 m	
60-80020-00	20 ft / 6.07 m	
60-80024-00	24 ft / 7.32 m	

STEP 3: VOLTAGE/PHASE

Item #	Options	Qty
33-22017-00	208-240V Single Phase, 50/60 Hz AVD5 DROP ENCL (for use with Universal Mount)	
33-22038-00	208-240V Three Phase, 50/60 Hz AVD5 DROP ENCL (for use with Universal Mount)	
33-42038-00	480V Three Phase, 50/60 Hz AVD5 DROP ENCL (for use with Universal Mount)	
35-22017-00	208-240V Single Phase, 50/60 Hz AVD5 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	
35-22038-00	208-240V Three Phase, 50/60 Hz AVD5 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	
35-42038-00	480V Three Phase, 50/60 Hz AVD5 SCHNEIDER CONT PNL (for use with Rapid Mount Industrial)	

STEP 4: MOUNTING

Item #	Options	Qty
60-50150-00	AVD Universal Mount with I-beam Hardware Kit	
60-40049-00	Glulam Hardware Kit	
60-50136-00	Rapid Mount Industrial with I-Beam Hardware Kit (requires drive in control panel, offboard)	

STEP 5: CONTROLS

Item #	Description	Qty
30-90308-00	Digital Remote Assembly (Standard)	
30-04006-00	Controller 4	
30-04007-00	Controller 4 + Single Temperature Sensor	
30-04030-01	Controller 30	
30-10012-00	AirLynk - BacNet	
30-10011-00	AirLynk - LonWorks	
30-04030-02	Dual Control Enabled Controller 30 (requires AirLynk-BacNet)	

*Motor unit only

STEP 6: STOCK DROP LENGTHS

Item #	Length (ft/in)*	Length (m)	Qty
51-X0200-02	2 ft**	0.61 m	
51-X0300-02	3 ft (Standard)	0.91 m	
51-X0400-02	4 ft	1.22 m	
51-X0500-02	5 ft	1.52 m	
51-X0600-02	6 ft	1.83 m	
51-X0700-02	7 ft	2.13 m	
51-X0800-02	8 ft	2.44 m	
51-X0900-02	9 ft	2.74 m	
51-X1000-02	10 ft	3.05 m	
51-Fftin-02	Customization fee		

* Lengths are +/- 1" depending on power unit selection/fan diameter.

X= substitute D for drops with UMH mount, F for drops with Rapid Mount Industrial (i.e. 51-F0500-02 describes a 5' drop for use with a Rapid Mount Industrial).

ft = length in feet (i.e. 04 for 4 feet, 10 for 10 feet)

in = length in inches (i.e. 05 for 5 inches, 10 for 10 inches)

**2 ft is the shortest allowed drop length for AVD5. Lengths shorter than the standard drop length are not recommended and will not work for some fan diameters. Consult MacroAir for more details.

DROP LENGTH is the distance from fan mounting point to the blades.

AVD5 fans can only be connected with a single-piece of custom length drop tube.

Measure the distance from the fan's mounting point down to the desired fan blade position and provide this information with the fan order to receive the correct custom drop length.

For custom drop lengths, order a length longer and MacroAir will cut it down to the requested length. Estimated lead time is 10 business days.

Do you have a custom color in mind? Custom powder coating is available for all our blades, mounts and drop lengths.

OPTIONAL: POWDER COATING

Item #	Diameter	Estimated Lead Time	Qty
60-80008-02	8 ft / 2.44 m	15 business days	
60-80010-02	10 ft / 3.05 m	15 business days	
60-80012-02	12 ft / 3.66 m	15 business days	
60-80014-02	14 ft / 4.27 m	15 business days	
60-80016-02	16 ft / 4.88 m	15 business days	
60-80018-02	18 ft / 5.49 m	15 business days	
60-80020-02	20 ft / 6.07 m	15 business days	
60-80024-02	24 ft / 7.32 m	15 business days	

For powder coating colors, please refer to Appendix A.



ADDITIONAL OPTIONS

Item #	Description	Qty
10-60200-00	AVD Fuse Disconnect*	

*IEC Compliance requires a fused disconnect switch. Fuse selection is input voltage specific, so fuses are not provided with purchase of a disconnect.

BASIC SPECIFICATIONS

AIRFOIL DIAMETER	8ft	10ft	12ft	14ft	16ft	18ft	20ft	24ft
Airfoil Style	7.375" Extruded Anodized Aluminum Airfoil							
Number of Airfoils	5							
PERFORMANCE								
Max Speed	200 RPM	190 RPM	130 RPM	99 RPM	78 RPM	73 RPM	70 RPM	50 RPM
Recommended Spacing*	57 ft [17.4 m]	62 ft [18.9 m]	67 ft [20.4 m]	77 ft [23.5 m]	82 ft [25.0 m]	87 ft [26.5 m]	97 ft [29.6 m]	105 ft [32.0 m]
Max Affected Area	4,950 ft ² [460 m ²]	6,150 ft ² [571 m ²]	8,100 ft ² [752 m ²]	10,300 ft ² [957 m ²]	11,875 ft ² [1,103 m ²]	14,200 ft ² [1,319 m ²]	18,475 ft ² [1,716 m ²]	20,350 ft ² [1,891 m ²]
Sound Level dBA at Max Speed**	61	59	60	56	53	53	57	56
Carrier/Switching Frequency**	16,000Hz							
HANGING REQUIREMENTS								
Hanging Weight	138.8 lbs [63.0 kg]	140.9 lbs [63.9 kg]	143.1 lbs [64.3 kg]	145.2 lbs [65.8 kg]	155.8 lbs [70.7 kg]	157.9 lbs [71.6 kg]	173.6 lbs [78.7 kg]	177.8 lbs [80.6 kg]
MOTOR AND DRIVE TRAIN								
Motor Type	Gearless Direct Drive							
Equivalent Horsepower Rating	1.0 HP (8ft - 24ft)							
Operating Temp Range	16°F [-10°C] - 140 F° [60°C]							
MAX AMP DRAW								
208-240V Single Phase	3.8	6.5	5.1	4.4	3.7	4.5	5.4	4.3
208-240V Three Phase	2.2	3.8	2.9	2.5	2.1	2.6	3.1	2.5
480V Three Phase	1.6	2.7	2.1	1.8	1.5	1.8	2.2	1.8
POWER AND CONTROLS								
Power Source	Single Phase or Three Phase 208-240 VAC +/-5%, 50/60 Hz, Three Phase 480 VAC +/-5%, 50/60 Hz							
Control Options	Digital Touchpad, MacroAir Controller 4, Controller 30, AirLynk - BacNet							
INSTALLATION								
Mounting Hardware	Universal Mount, Rapid Mount Industrial							
Drop Length	In addition to the standard drop length supplied, optional drop lengths are available in 1ft increments; all drop lengths require guy wires except when used with the Rapid Mount Industrial							
RATINGS AND COMPLIANCE								
Fire and Sprinkler	NFPA Compliant							
Outdoor Rating***	Rated for outdoor use							
Certifications	Pending							

*For spacing between fan units based on the dimensions of a specific space please refer to <https://macroairfans.com/airviz>.

**Sound testing taken with the sensor 5 ft above the ground and 20 ft from the center of the fan at 20 ft high. Carrier frequency will be audible to some listeners and is considered normal during operation. Supplemental information on Carrier Frequency and Decibel levels are supplied with the full product selection guide.

***Applicable to the fan unit only, does not include controller, control panel and accessories.

MacroAir Warranty

MacroAir warrants the Products listed in the table below will be free from defects in materials and workmanship under normal use and maintenance for the applicable Warranty Period. Other than the Warranty set forth in this document, no other written or oral warranties apply, and no employee, agent, dealer, or other person is authorized to give any other warranties on behalf of MacroAir.

START DATE OF WARRANTY COVERAGE

Warranty Period for all fan models begins fifteen (15) days following shipment of the Product, or on the date the Product is installed (not to exceed sixty (60) days Customer receives the Product), whichever date is later. Customer should retain necessary documentation to verify the date of receipt and installation of the Product. Customer will be required to produce this documentation in order to obtain Warranty services from MacroAir. The Warranty specified herein applies only to Products purchased on or after March 15, 2021.

PRODUCTS AND SYSTEMS COVERED BY THIS WARRANTY AND APPLICABLE WARRANTY PERIODS:

Fan Type	Mechanical: Blades, Hub & Frame	Standard Electrical ¹ : Motor, Electrical Controls, Remote	Labor
AirVolution-DX	15 Years	10 Years*	1 Year
AirVolution	15 Years	7 Years*	1 Year
AirLegacy	15 Years	5 Years*	1 Year
AirVolution-D3	10 Years	7 Years*	1 Year
AirVolution-D 370	10 Years	5 Years*	1 Year
AirLite Shop Fan	5 Years	2 Years*	N/A

WARRANTY COVERAGE:

Subject to the exclusions herein, the MacroAir Warranty covers any defects in workmanship or materials of the covered Products under normal operation and prescribed maintenance when those defects adversely affect the ability of the Product to operate properly.² The Warranty only covers Products which have been installed in compliance with MacroAir's written installation instructions by a MacroAir approved installation technician or licensed electrical contractor and operated and maintained by the Customer in conformity with MacroAir's written instructions, and when the Product is purchased directly from MacroAir or a MacroAir Authorized Dealer.

This Warranty is subject to all provisions, conditions, limitations, and exclusions explained in this Warranty document. **leader**

***EXTENDED ELECTRICAL WARRANTY COVERAGE AVAILABLE FOR PURCHASE (OR PROVIDED WITH FACTORY CERTIFIED INSTALL)**

Fan Type	Extended Electrical Warranty Price per Year	Max Years Available for Purchase	Max Electrical Warranty after Extended Warranty Purchase
AirVolution-DX	\$200	5	15 Years
AirVolution	\$200	5	12 Years
AirLegacy	\$200	5	10 Years
AirVolution-D3	\$200	5	12 Years
AirVolution-D 370	\$200	5	10 Years
AirLite Shop Fan	\$200	3	5 Years

WHO MAY USE THIS WARRANTY?

This MacroAir Warranty may be used by the original purchaser of the Product and any subsequent owners, provided the fan has not been moved from its original installation location. The MacroAir Warranty is void once the Product is removed from its original installation location. This MacroAir Warranty is valid only within the fifty states of the United States, the District of Columbia, and all ten Canadian Provinces and Territories.

MacroAir will not, under any circumstances, provide Warranty coverage for a Product purchased from any reseller or internet site not approved by MacroAir.

¹"Standard Electrical" means any common electrical component that is utilized across more than one fan line will assume the higher warranty period.

²"Operate properly" applies only to mechanical, electrical, and structural systems of the Product.

MacroAir Warranty

WHAT HAPPENS WHEN I MAKE A WARRANTY CLAIM?

During the Warranty Period, MacroAir will, at its sole discretion and cost (as limited by this Warranty):

- Repair or replace parts of the Product, as necessary, to return the Product to proper operation; or
- Repair or replace the entire Product; or
- Replace the product with similar or like product of equal or better performance; or
- Refund the price you paid for the Product upon return of the Product to MacroAir. (You must pay shipping and insurance.)

REPAIR, REPLACEMENT, OR REFUND ARE THE EXCLUSIVE REMEDIES AVAILABLE UNDER THE MACROAIR WARRANTY. MACROAIR IS NOT RESPONSIBLE FOR DAMAGES OF ANY KIND, INCLUDING INCIDENTAL AND CONSEQUENTIAL DAMAGES.

For Products that qualify for extended labor, MacroAir will pay reasonable labor³ costs incurred to repair or replace defective parts or a defective Product at the original installation location. In the alternative and in its sole discretion, MacroAir may require you to return of the Product to MacroAir for repair or replacement.

MacroAir will ship the repaired Product or replacement Product to you at no charge; however, you are responsible for all costs of removal, reinstallation, and shipping of the Product to the MacroAir service center located at 794 South Allen Street, San Bernardino, CA 92408. If local laws require a certified electrician to reinstall the Product, MacroAir will reimburse the costs incurred to ship the Product to the MacroAir service center.

OBTAINING WARRANTY SERVICE:

Discovering a defect. If the Product is malfunctioning, turn it off immediately. Do not restart it until it has been examined by a MacroAir technician.

As soon as possible, contact MacroAir' Technical Support by visiting the MacroAir website and starting a technical support case at <https://macroairfans.com/support> or by calling the Technical Support phone number: (866) 668-3247

Provide information. Once you have initiated your technical support case, MacroAir will process it under the Warranty terms. A MacroAir representative will contact you and ask you to provide: Your contact information, including the installation address of the Product; the Product's brand name, serial number, purchase price, and verification of date of Product installation or, if you are not the original owner of the Product, the date you came into possession of the installation location; and a detailed description of the Product's problem.

Response from MacroAir. If MacroAir determines you have a valid Warranty claim, MacroAir will process your claim and respond appropriately. If the response requires shipment of a replacement part, MacroAir will provide you with any shipping labels and documents needed to return the original defective part, including a Return Materials Authorization (RMA) number.

When you accept delivery of a replacement part, you are also agreeing to return the defective part to MacroAir within fifteen (15) days of the date the replacement part was delivered to you. If you fail to return the original part, MacroAir will invoice you for the retail cost of the replacement part which must be paid immediately upon receipt of the invoice. MacroAir reserves all legal and equitable rights to collect payment for the replacement part if you fail to comply with these terms.

³ "Labor" means on-site technical service of the Product provided by MacroAir during applicable Warranty coverage time. At MacroAir's sole discretion, the person(s) providing this on-site service may be employees of MacroAir or qualified technicians contracted by MacroAir. MacroAir will not reimburse Customers or independent contractors for Product service performed without prior written approval from MacroAir. GST, Taxes, Service Charges, and Troubleshooting are excluded from Labor Coverage. MacroAir will reimburse the Customer in whose building the Product is installed, with such reimbursement limited to the reasonable cost paid by the Customer to an independent contractor hired to remove, dismantle, reassemble, or reinstall any of the Products under the Warranty during the applicable coverage period. MacroAir may request proof of payment by the Customer to the independent contractor of all service charges, and will reimburse the Customer only for those charges MacroAir, in its sole discretion, determines to be reasonable and necessary under the circumstances and inclusive of the cost of any lift or other equipment needed to service the Product.

MacroAir Warranty

Site visit or Product return. Depending on the issue your Product is experiencing, it may be necessary to have a MacroAir certified technician contact you to remove, repair, or replace the Product. For Products that qualify for extended labor, MacroAir will pay reasonable labor costs incurred to repair or replace defective parts or a defect Product at the installation location. Alternatively, MacroAir may, in its sole discretion, require you to return of the entire Product to MacroAir for repair or replacement. Should MacroAir ask you to ship the entire Product back to MacroAir for repairs or replacement, MacroAir will prepay the shipping and insurance for factory-installed Products for the first 365 days after the commencement of the Warranty Period.

WARRANTY CONDITIONS

—MacroAir reserves full, sole, and complete discretion to determine, based on its own evaluation and testing of the Product and its components, whether the problem reported by the Customer is a defect covered under the Warranty. (Non-covered problems are listed in the Exclusions section below.);

—If MacroAir determines, in its full, sole, and complete discretion, that the appropriate remedy under the Warranty is a refund, the refund amount will be limited to the price paid by the Customer for the Product, and under no circumstances will it include any other costs incurred or anticipated by the Customer, including labor, shipping, packaging, and other costs.

—If MacroAir determines, in its full, sole, and complete discretion, that a part or parts within the Product must be replaced or repaired, MacroAir may choose to use refurbished replacement parts.

—MacroAir warrants any replacement parts, whether refurbished or new, will operate properly and be free from defects in materials and workmanship for a period of ninety (90) days from the date the replacement parts are shipped to you, or for the remainder of the original warranty period, whichever is longer.

—If you return a Product to MacroAir for Warranty service and it has been modified in any way or if it is missing any parts, MacroAir reserves the right, in its full, sole, and complete discretion, to require you to pay one or more of the following: a service fee, parts replacement fee, and shipping fee. The amount of the fee(s) will be based on materials and labor costs necessary to return the Product to its original factory condition.

—The MacroAir Warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

—MacroAir reserves the right to change this Warranty and its terms at any time without advance notice. You can view the most current version of this Warranty on the MacroAir website at macroairfans.com/warranty.

WHAT IS EXCLUDED FROM THIS WARRANTY?

1. Parts and Labor necessary to correct improper Product installation by someone other than MacroAir. Improper installation includes, but is not limited to:
 - Failure to follow MacroAir-supplied installation instructions and any other installation-related instructions supplied with the Product and related equipment;
 - Failure to follow all applicable codes and ordinances including, but not limited to, electric codes and local building codes;
 - Failure to follow electrical engineering industry standards for installation of electrical equipment similar to the Product and its related components, even if such standards are not expressly referenced in any MacroAir instructions or; and
 - Improper use of or failure to use installation and mounting hardware supplied or approved by MacroAir
2. Product failures arising from adverse site conditions, including, but not limited to, excessive dust, heat, and humidity; exposure to chemicals, salt water, acid rain or other corrosive elements, excessive humidity, snow, sleet, and/or wind; unstable electric service, lightning events, lack of phase protection, or any other unknown or unforeseen condition that affects the proper operation of the products).

MacroAir Warranty

3. Products purchased from someone other than MacroAir or a MacroAir Factory Authorized Dealer.
4. Products or components with missing or defaced serial numbers or part number stickers.
5. Normal operational noise or complaints or dissatisfaction with operational noise levels. The warranted Products produce some noise while operating within normal levels, which levels may vary due to the Product design and/or site conditions. A Product returned by a Customer because of noise concerns will be subject to MacroAir's Standard Return Policy.
6. Defects, malfunctions, failure or physical damage caused by unauthorized service, use of unauthorized parts, and/or improper installation.
7. Customer mishandling, modifications, or damage to the Product while in Customer possession, which includes, but is not limited to:
 - Any modification or alteration of, or adjustment to the Product;
 - Any modification or alteration of, or adjustment to the Product's control components, or mounting and installation hardware;
 - Disassembly of the Product and Product controls, including any attempt to diagnose or repair any problem, without prior written authorization from MacroAir's Technical Support Department;
 - Misuse, abuse, accidents, unreasonable use, or Acts of God;
 - Incorrect electric current, voltage, phase protection, or supply;
 - Failure to use the Product controls supplied by MacroAir unless the Customer has received pre-installation written permission from MacroAir and the controls are built, operated, and maintained according to specifications provided to and approved by MacroAir.
8. Failure to provide reasonable and necessary maintenance, which shall include, but not be limited to failure to perform periodic prescribed Product maintenance as detailed on the MacroAir website.
9. Consequential⁴ or incidental⁵ damages sustained by any person, entity, or structure and arising from any breach by Customer of any provision of this Warranty, except where such damages are not excludable by law.
10. Claims made for Products that have not been paid for in full.
11. Damage caused to the Product by structural defects, structural movement or settlement of the premises in which the Product is installed.
12. Normal changes to the Product's exterior finish caused by ordinary use.
13. Damage to any finish applied by someone other than MacroAir.
14. Damage or failure caused by use of the Product in conditions or environments outside its design limitations as specified in the Product's Owner's Manual.
15. Untimely reporting of defects. A report of a defect is untimely where Customer reports the defect to MacroAir more than ninety (90) days from when the defect was or should have been discovered.

⁴"Consequential damages" include but are not limited to the cost of repairing or replacing other property which was damaged if this product does not work properly.

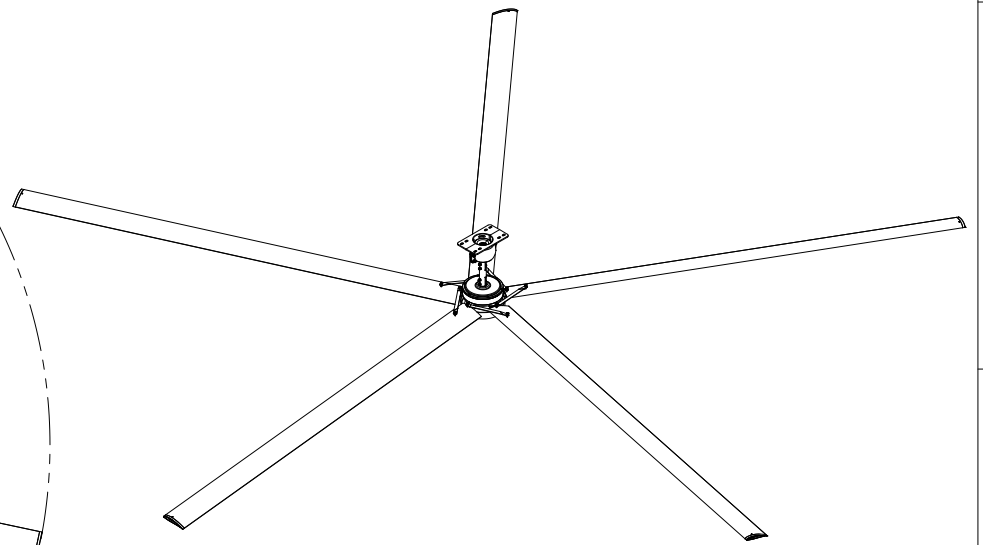
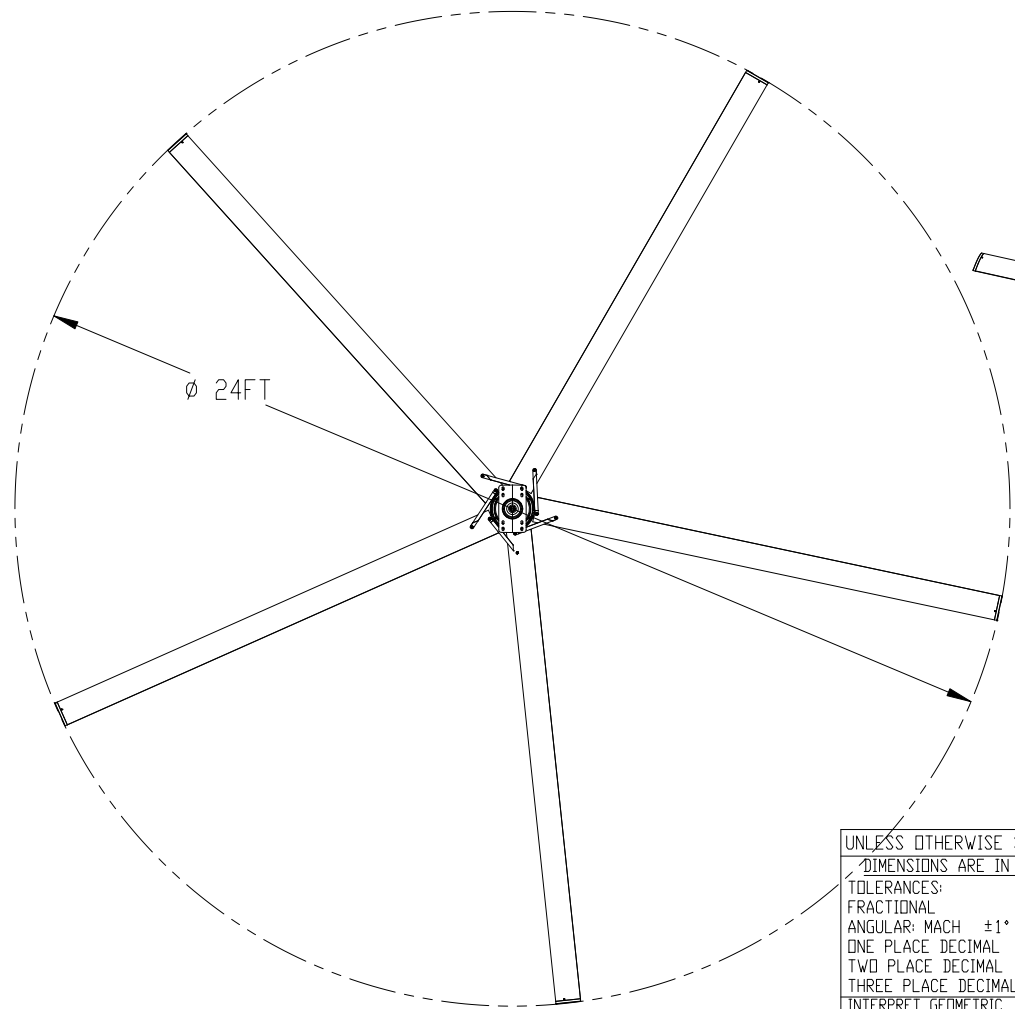
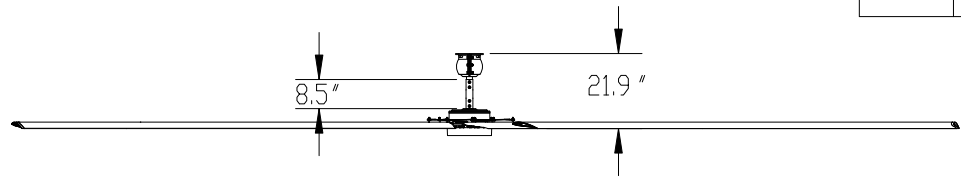
⁵Incidental damages" include but are not limited to such damages as loss of time and loss of use.

MacroAir Warranty

16. When MacroAir evaluates electrical and electronic components of a Product in response to a Warranty claim, MacroAir will rely on the original manufacturer to determine whether the failure of the component was the result of a defect. Where the manufacturer of the component determines there was no defect and refuses to cover it under its own warranty, MacroAir will not provide Warranty service, repair, or replacement of the component unless MacroAir determines the failure of the component was the result of a defect of design, workmanship, or material within some other part of the Product.
17. Additional labor or equipment costs resulting from third party installations and/or parts of the fan being inaccessible (including, but not limited to fans above pools or specialty flooring, proximity to other equipment, cabling or electronic drive equipment housed within drywall, limited hours of accessibility, or remote geographic location).
18. When MacroAir evaluates electrical and electronic components of a Product in response to a Warranty claim, MacroAir will rely on the original manufacturer to determine whether the failure of the component was the result of a defect. Where the manufacturer of the component determines there was no defect and refuses to cover it under its own warranty, MacroAir will not provide Warranty service, repair, or replacement of the component unless MacroAir determines the failure of the component was the result of a defect of design, workmanship, or material within some other part of the Product.
19. No warranty or guarantee, unless and except by separate written agreement, is made regarding the volume of air movement generated by any Product or the effectiveness, fitness, or appropriateness of any Product for its intended purpose or for the Customer's particular application.
20. MacroAir will not reimburse Labor costs related to residential installations; installations to where a Product has been relocated after its original installation; or where any of the other Warranty Exclusion applies.
21. Replacement of functioning products in the vicinity of defective product when MacroAir replaces the defective product with similar or like product of equal or better performance.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, AND OF ALL OTHER OBLIGATIONS AND LIABILITIES ON MACROAIR'S PART, AND MACROAIR NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCTS COVERED BY THIS WARRANTY. NO OTHER WARRANTY EXPRESSED OR IMPLIED, WHETHER OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY OR OF ANY OTHER KIND, WHETHER OR NOT SIMILAR IN NATURE TO ANY PREVIOUSLY SPECIFIED, SHALL EXIST WITH RESPECT TO SUCH PRODUCTS, ALL SUCH WARRANTIES BEING HEREBY EXPRESSLY DISCLAIMED BY MACROAIR AND WAIVED BY YOU, THE CUSTOMER. IN NO EVENT SHALL MACROAIR BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCTS OR FOR, WITHOUT LIMITATION, COMMERCIAL LOSS OF ANY SORT; LOSS OF USE, TIME, REPUTATION, OPPORTUNITY, GOODWILL, PROFITS OR SAVINGS; INCONVENIENCE; INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES; OR DAMAGES ARISING FROM THE USE OR INABILITY TO USE THE PRODUCTS, UNLESS SUCH DAMAGES CANNOT BE EXCLUDED BY LAW.

REVISIONS				
ECD	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES		APPROVALS	NAME	DATE	MacroAir Technologies 794 S Allen St. San Bernardino, CA 92408	
TOLERANCES:		DRAWN	RSAMFORD	06/05/24	TITLE:	
FRACTIONAL ±1/16		CHECKED			24' AVD5 FAN, RMI MT, 50mm POWER UNIT	
ANGULAR: MACH ±1° BEND ±1°		ENG APPR.			REV	
ONE PLACE DECIMAL ±.1		MFG APPR.			A M500-2450-PA-RMI P-01	
TWO PLACE DECIMAL ±.02		Q.A. APPR.			SCALE: 1:55 WEIGHT: 79.00 SHEET 1 OF 1	
THREE PLACE DECIMAL ±.005						
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5		PROPRIETARY AND CONFIDENTIAL				
MATERIAL		THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.				
SEE BOM						
FINISH						
N/A						
DO NOT SCALE DRAWING						

5

4

3

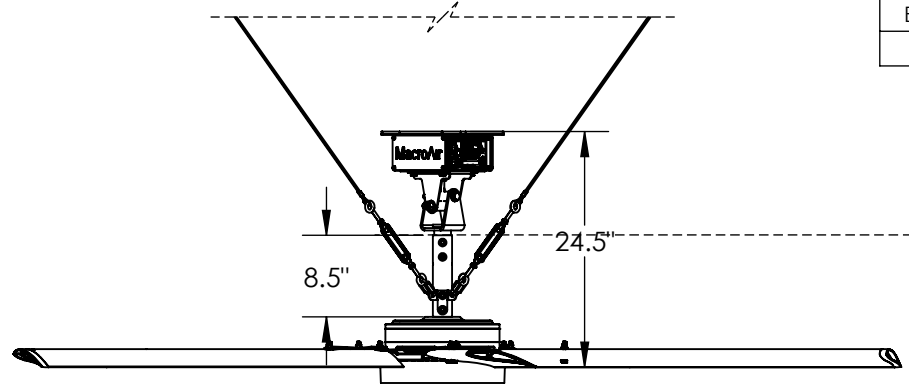
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

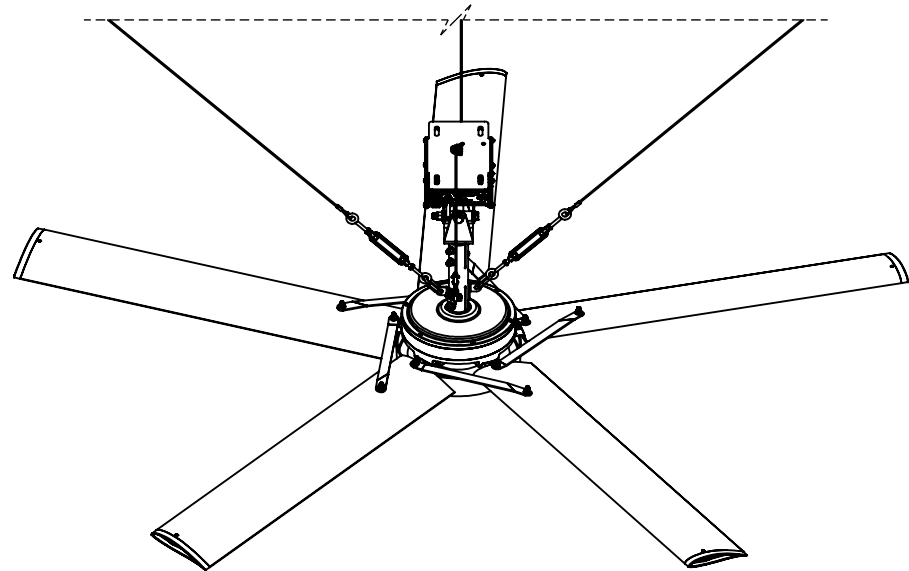
D

D



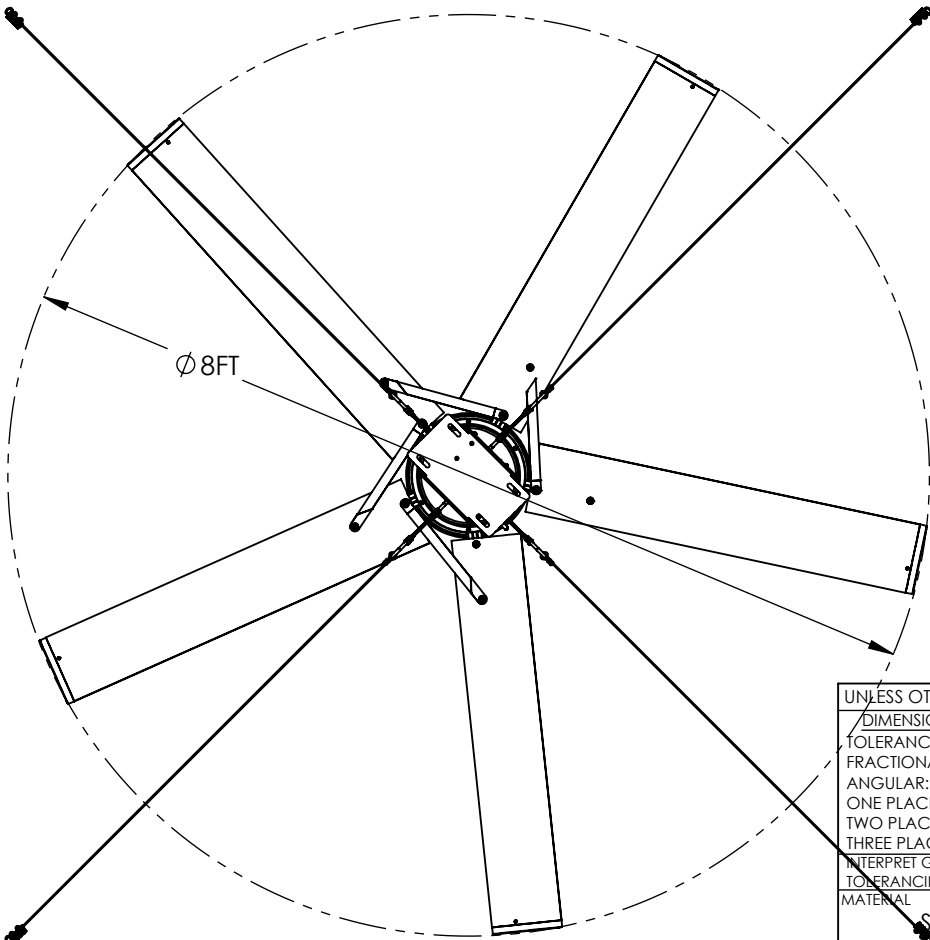
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE		
N/A	A		
DO NOT SCALE DRAWING	DWG. NO.		
	M500-0825-PA		
	REV		
	P-01		
	SCALE: 1:20	WEIGHT: 70.94	SHEET 1 OF 1

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**8' AVD5 FAN,
25mm POWER UNIT**

5

4

3

2

1

5

4

3

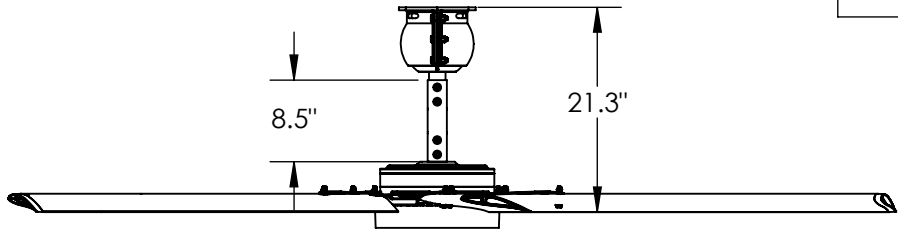
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

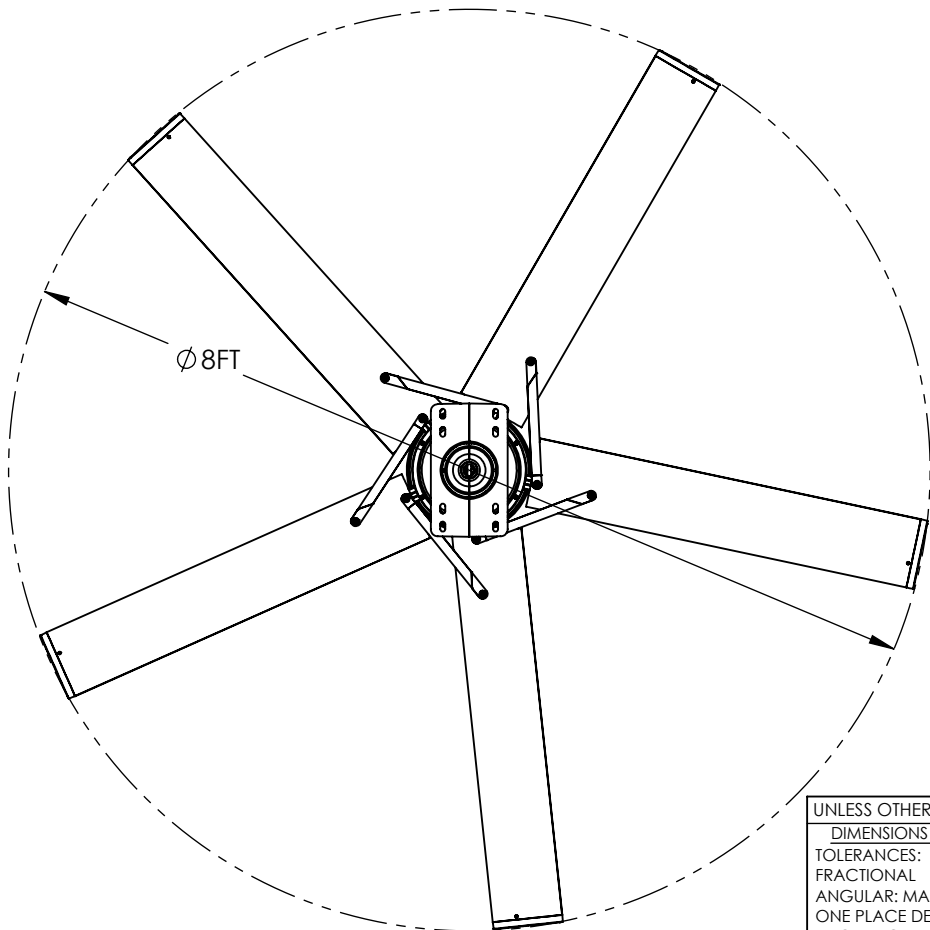
D

D



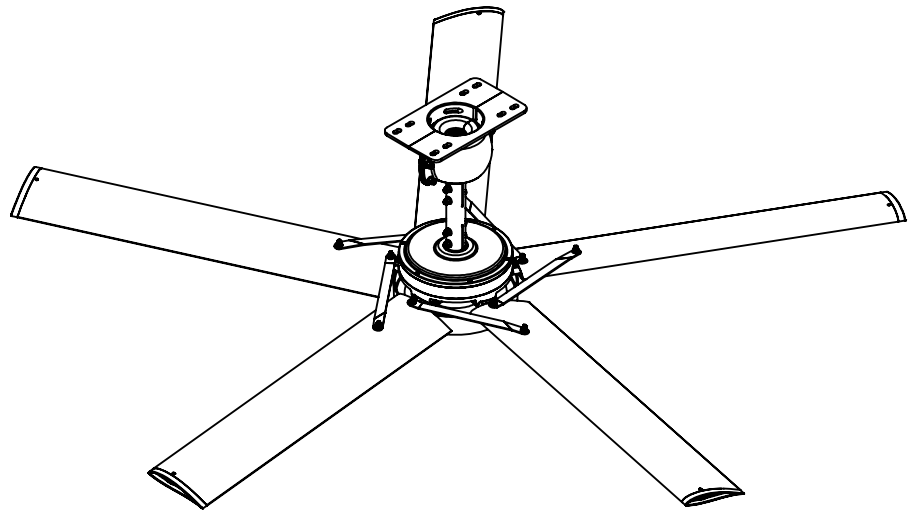
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	06/05/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-0825-PA-RMI P-01		
DO NOT SCALE DRAWING	SCALE: 1:20 WEIGHT: 70.04 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**8' AVD5 FAN, RMI MT,
25mm POWER UNIT**

5

4

3

2

1

5

4

3

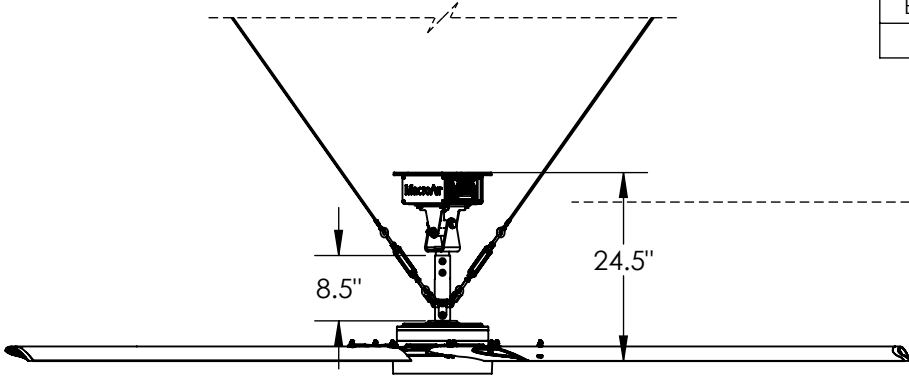
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

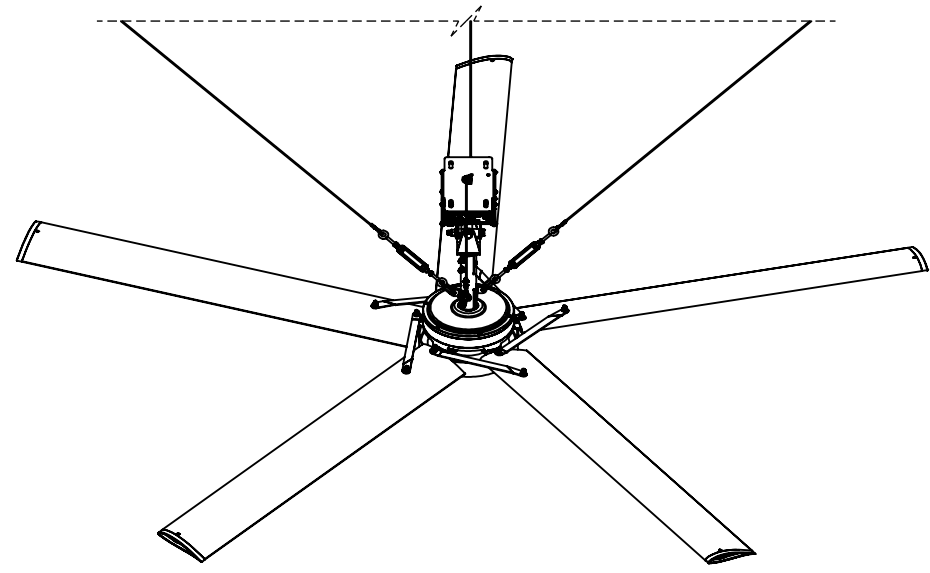
D

D



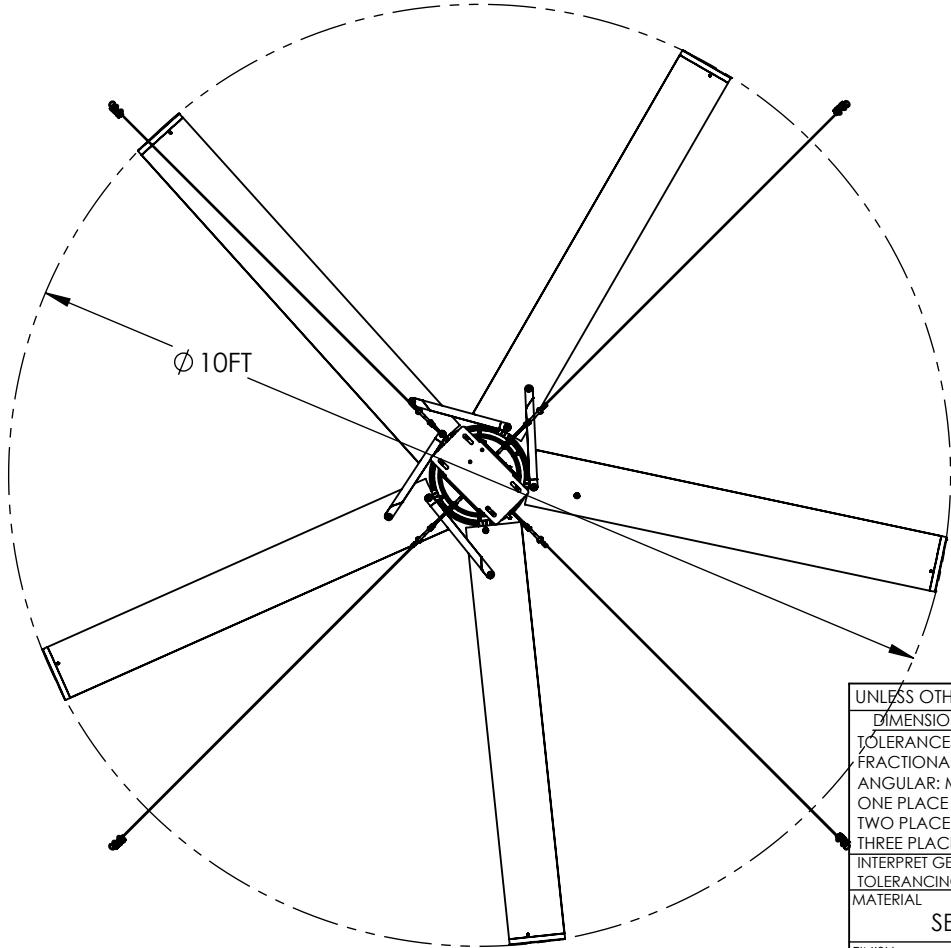
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-1025-PA P-01		
DO NOT SCALE DRAWING	SCALE: 1:25 WEIGHT: 58.37 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**10' AVD5 FAN,
25mm POWER UNIT**

5

4

3

2

1

5

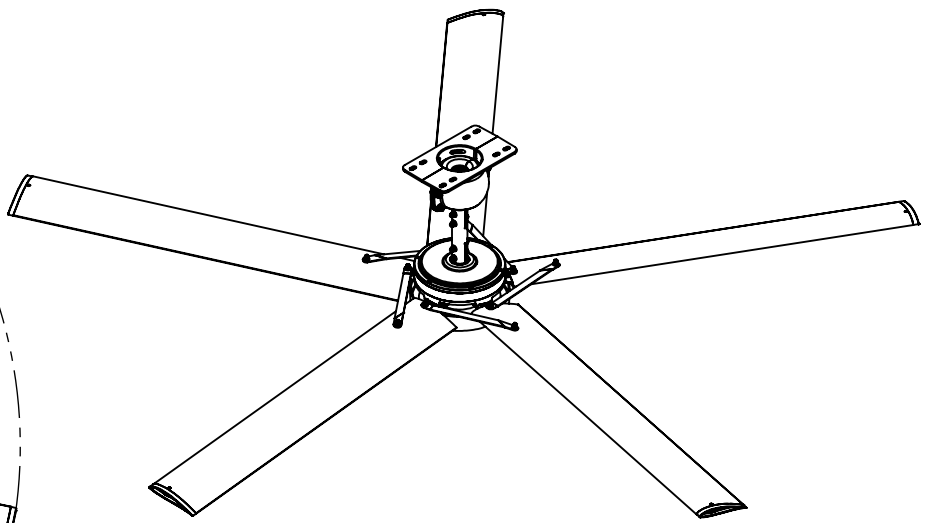
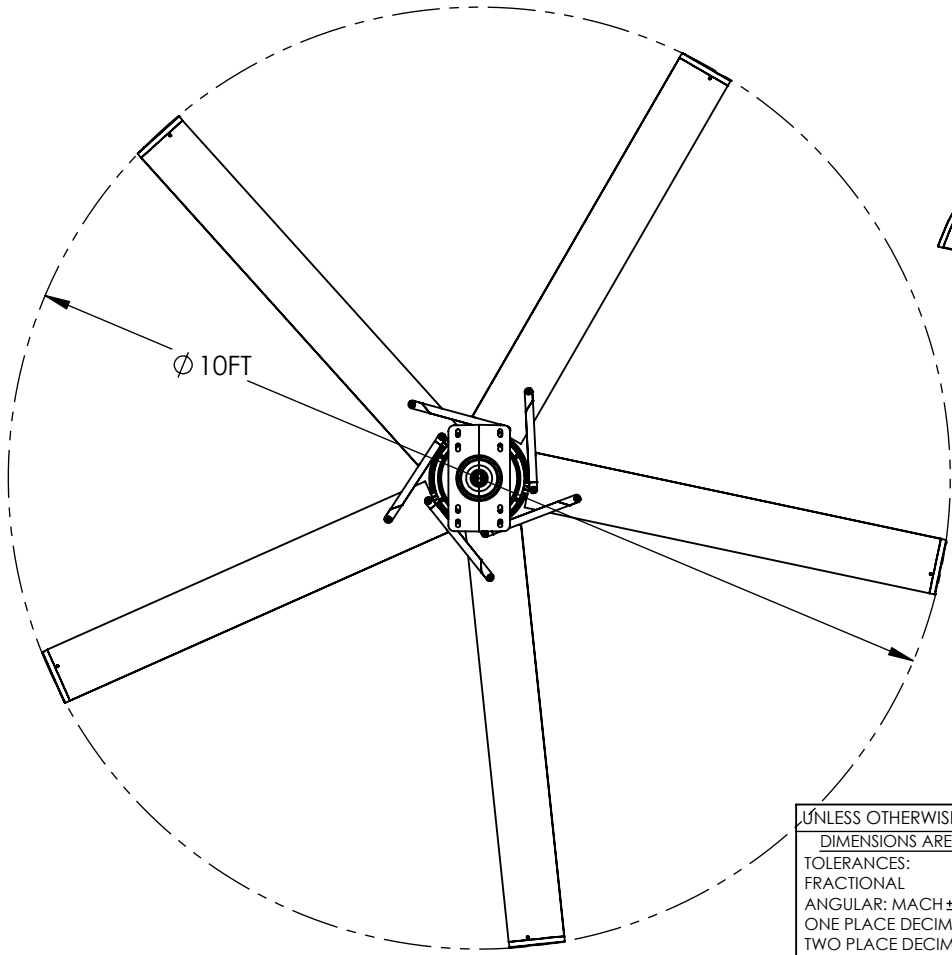
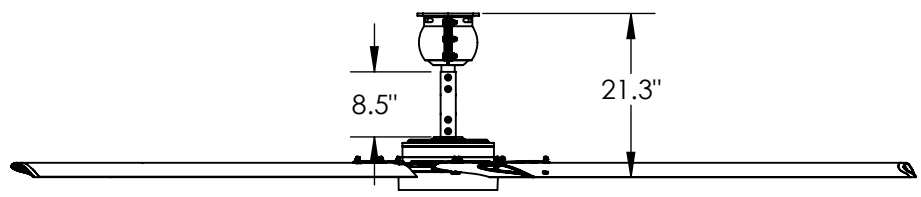
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	06/05/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE		
N/A	DWG. NO.		
DO NOT SCALE DRAWING	REV		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**10' AVD5 FAN, RMI MT,
25mm POWER UNIT**

A	M500-1025-PA-RMI	P-01
SCALE: 1:25	WEIGHT: 57.47	SHEET 1 OF 1

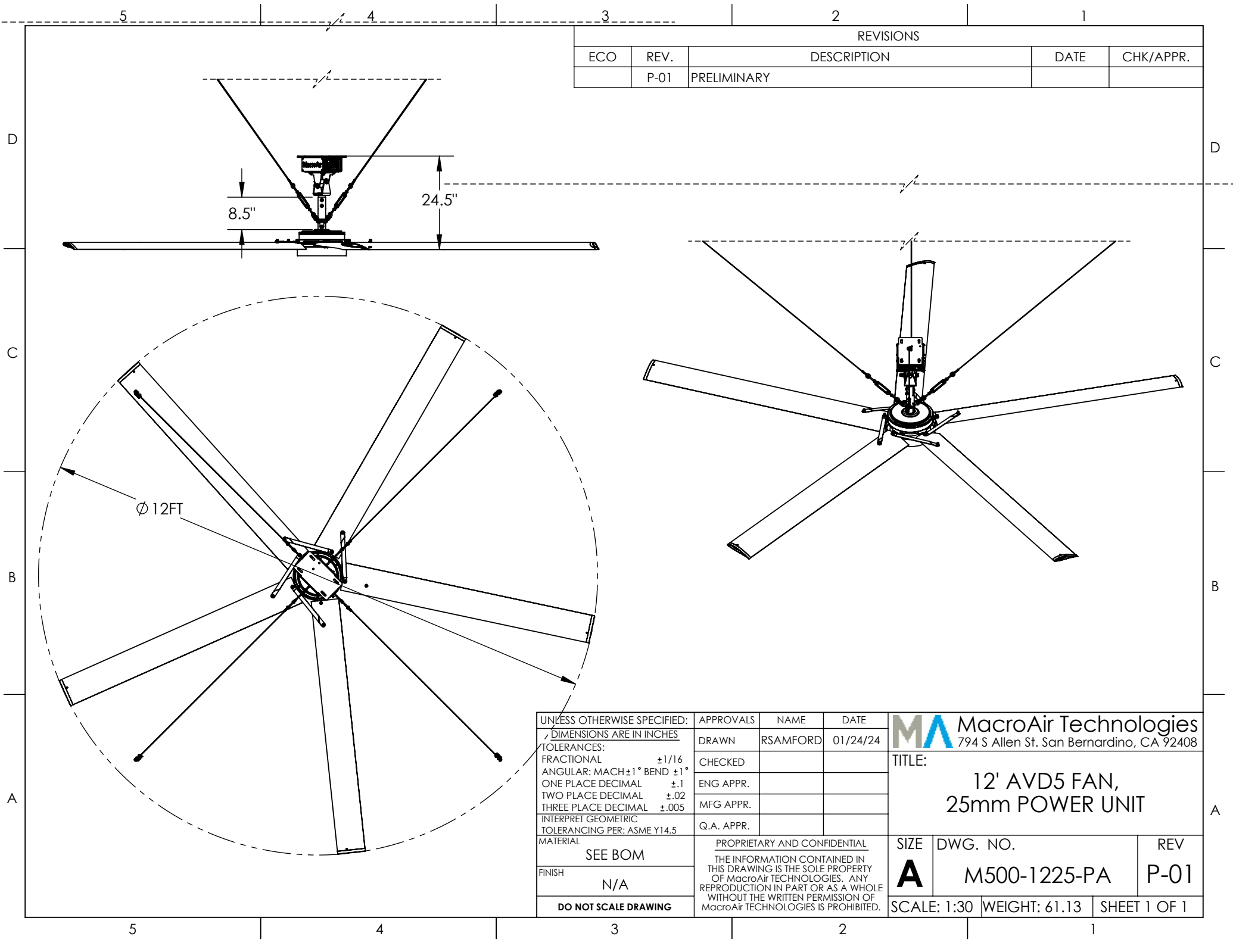
5

4

3

2

1



REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-1225-PA P-01		
DO NOT SCALE DRAWING	SCALE: 1:30 WEIGHT: 61.13 SHEET 1 OF 1		

MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
12' AVD5 FAN,
25mm POWER UNIT

5

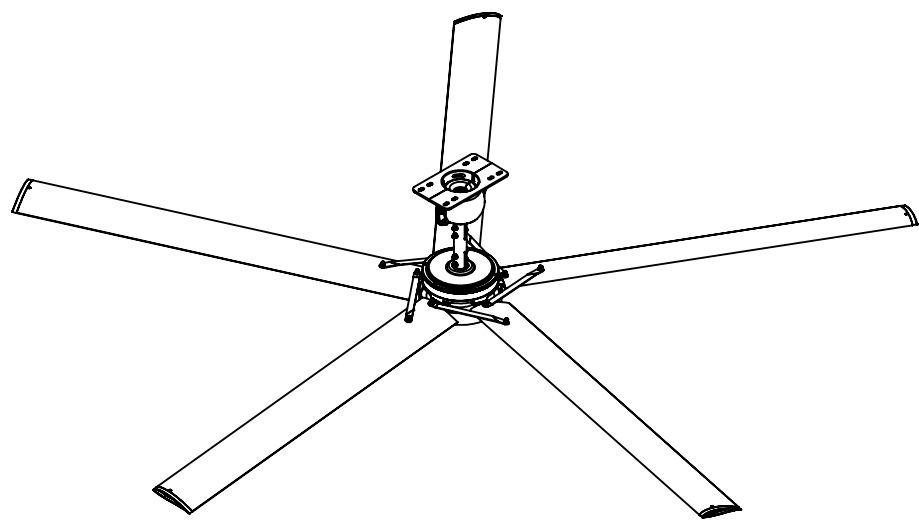
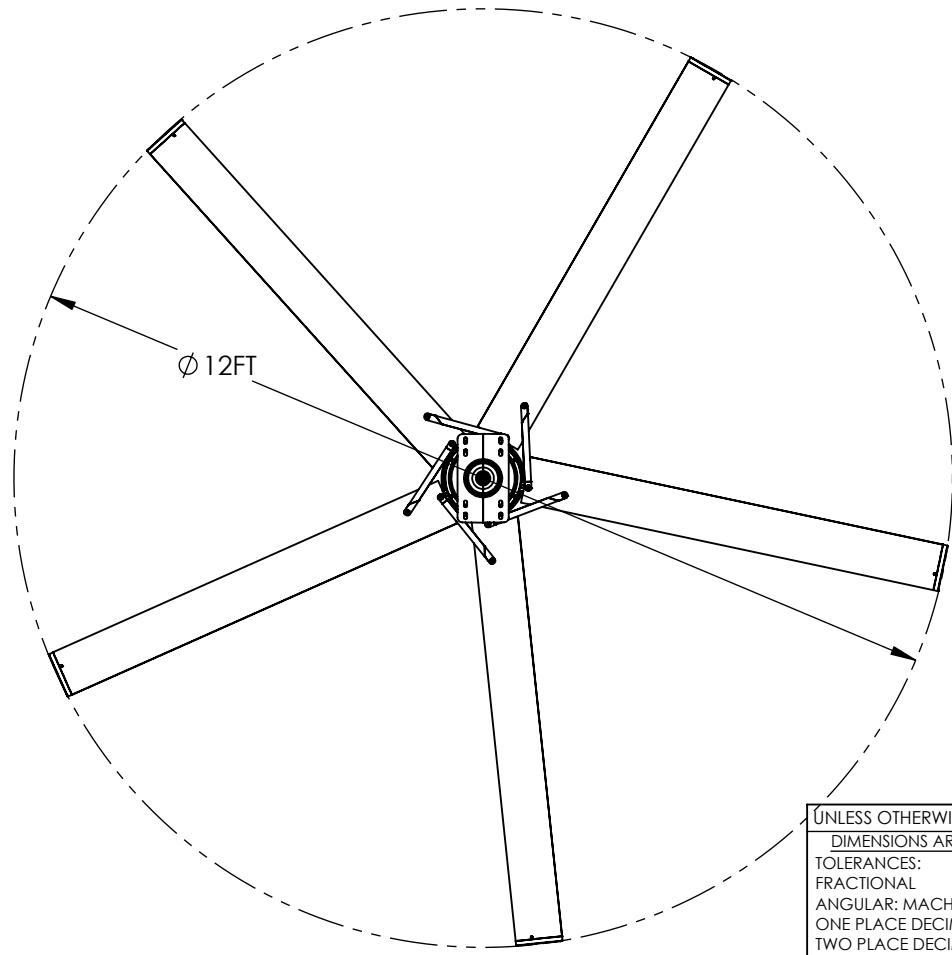
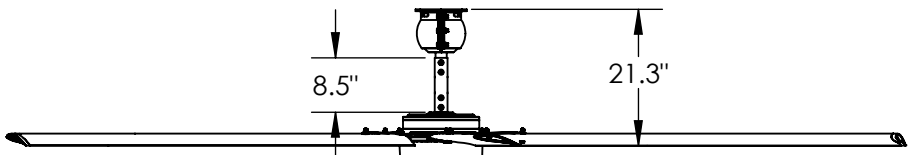
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° ONE PLACE DECIMAL ±.1 TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.005 INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5 MATERIAL SEE BOM FINISH N/A DO NOT SCALE DRAWING	APPROVALS	NAME	DATE
	DRAWN	RSAMFORD	06/05/24
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A. APPR.		

MA MacroAir Technologies
 794 S Allen St. San Bernardino, CA 92408

TITLE:
 12' AVD5 FAN, RMI MT,
 25mm POWER UNIT

SIZE	DWG. NO.	REV
A	M500-1225-PA-RMI	P-01
SCALE: 1:30	WEIGHT: 60.23	SHEET 1 OF 1

5

4

3

2

1

5

4

3

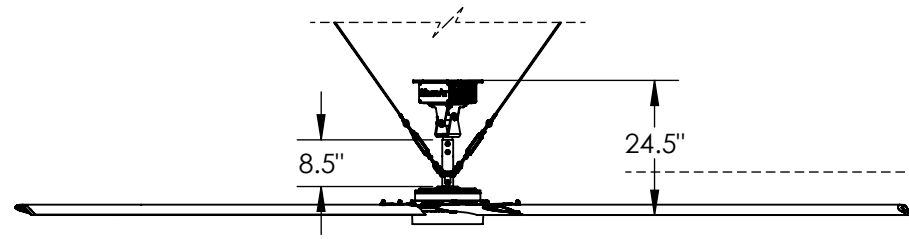
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

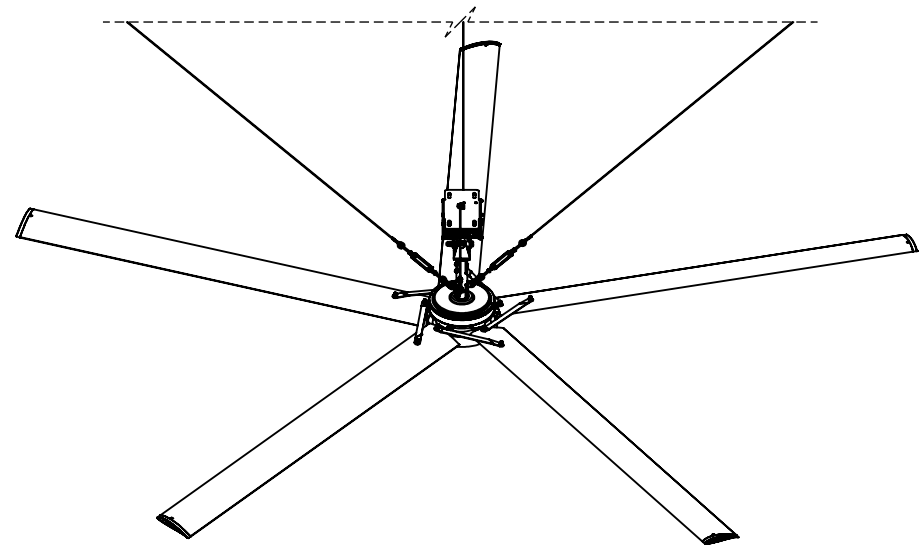
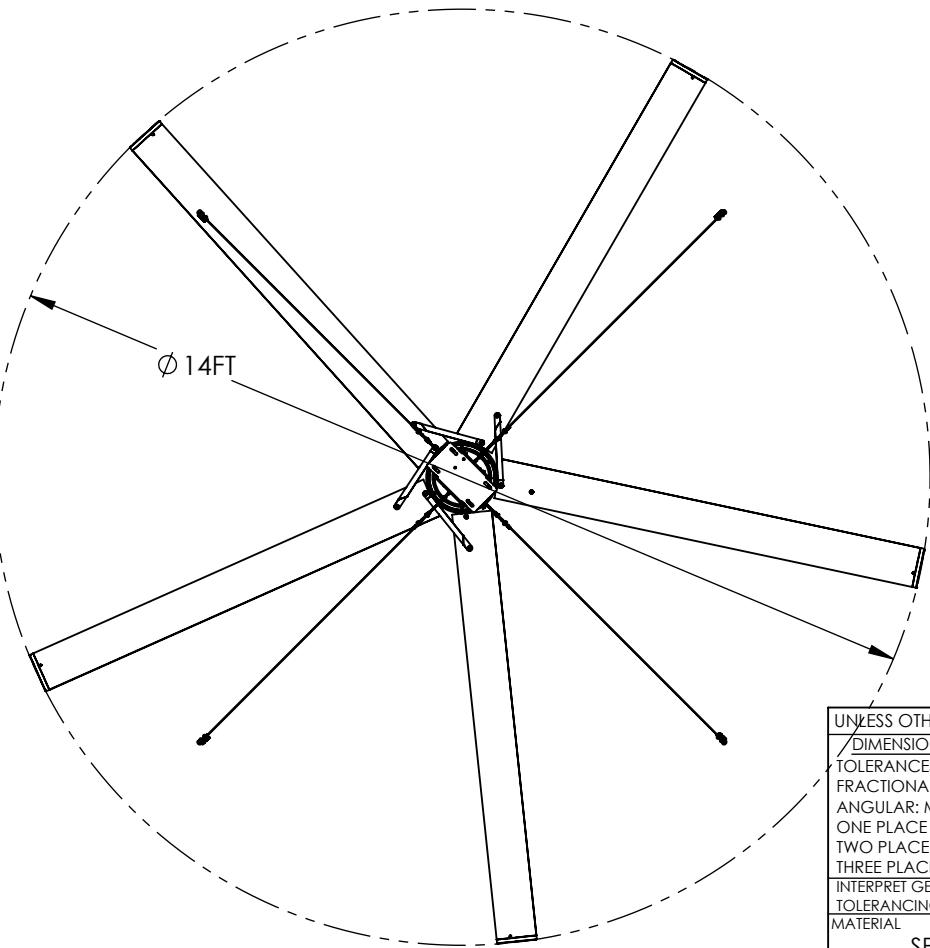
D

D



C

C



B

B

A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL SEE BOM	PROPRIETARY AND CONFIDENTIAL		
FINISH N/A	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
DO NOT SCALE DRAWING			

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**14' AVD5 FAN,
25mm POWER UNIT**

SIZE A	DWG. NO. M500-1425-PA	REV P-01
SCALE: 1:35	WEIGHT: 63.84	SHEET 1 OF 1

5

4

3

2

1

5

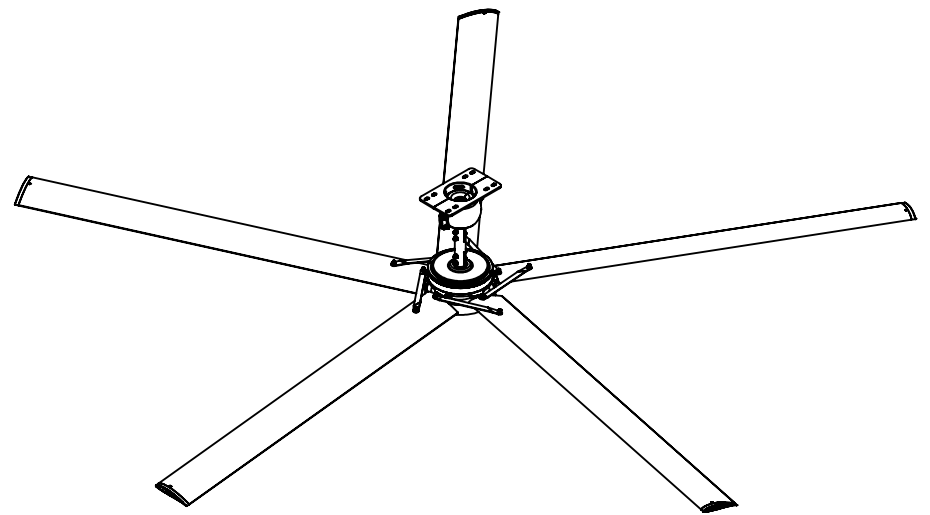
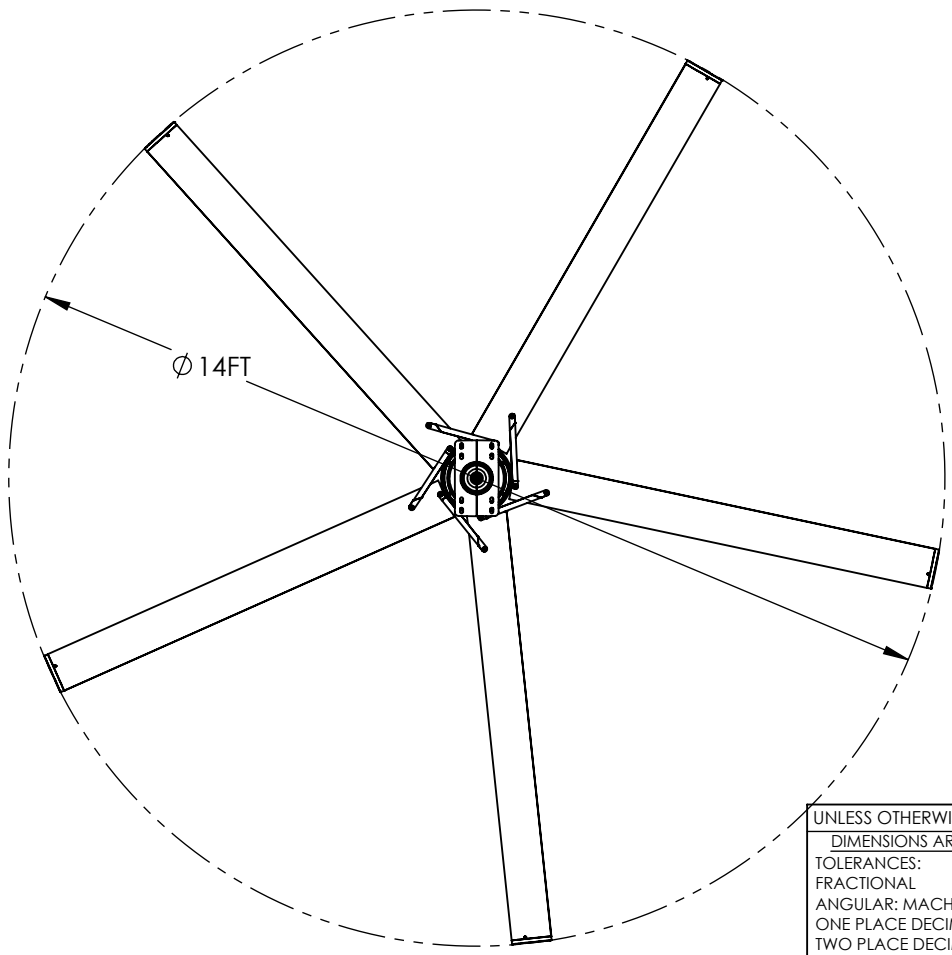
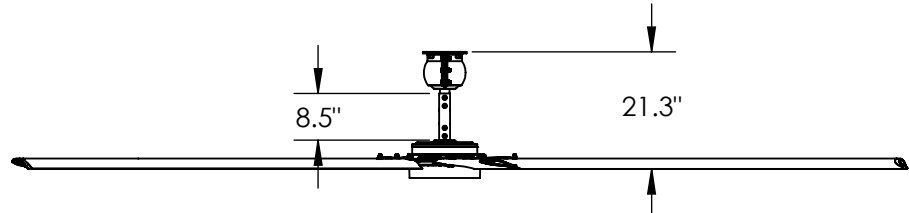
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	06/05/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-1425-PA-RMI P-01		
DO NOT SCALE DRAWING	SCALE: 1:35 WEIGHT: 62.94 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**14' AVD5 FAN, RMI MT,
35mm POWER UNIT**

D

D

C

C

B

B

A

A

5

4

3

2

1

5

4

3

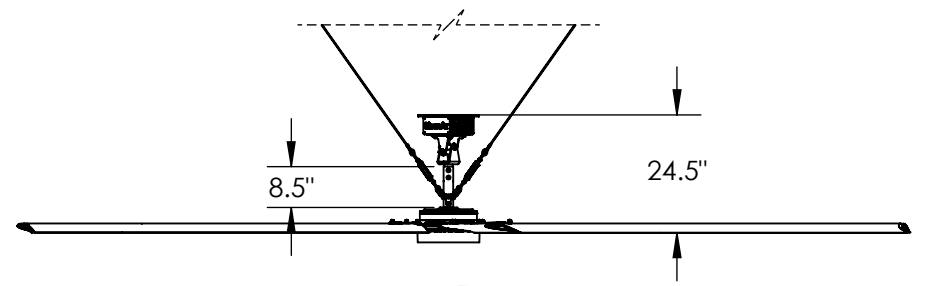
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

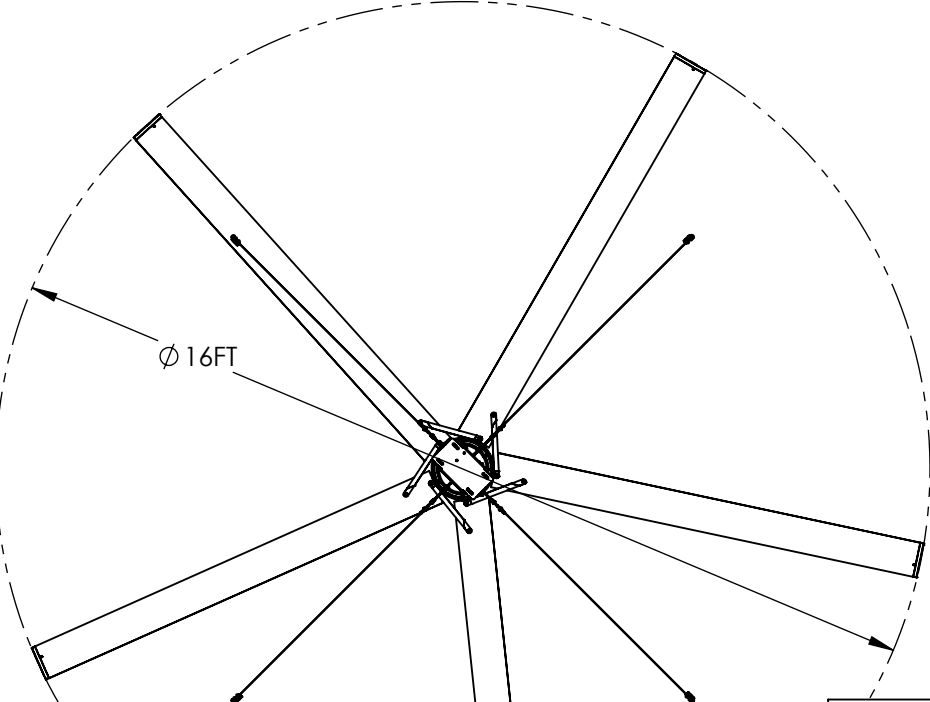
D

D



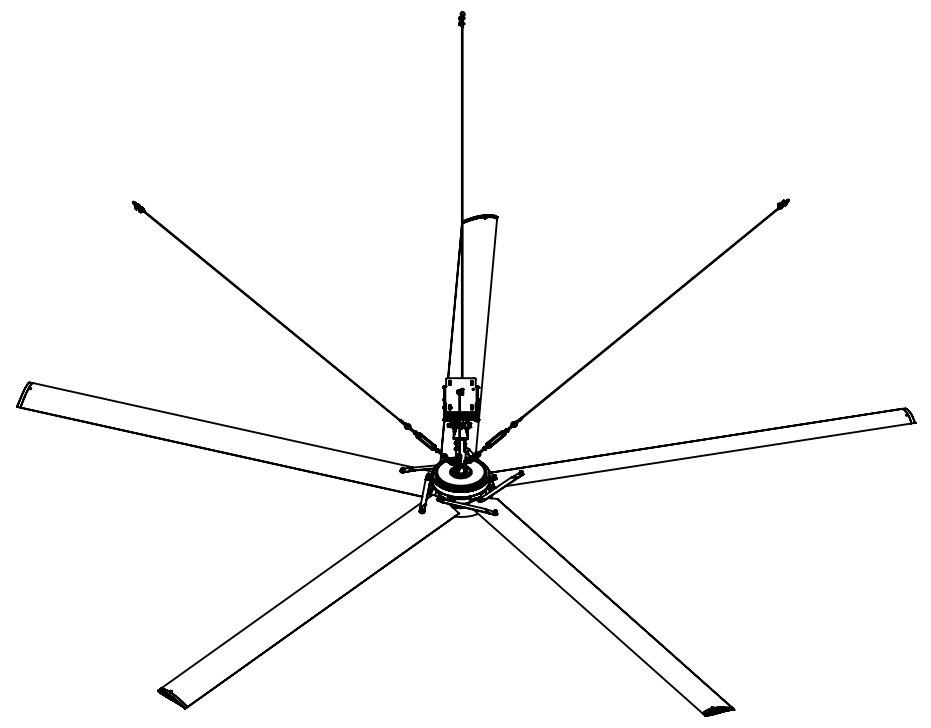
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-1635-PA P-01		
DO NOT SCALE DRAWING	SCALE: 1:40 WEIGHT: 66.67 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**16' AVD5 FAN,
35mm POWER UNIT**

5

4

3

2

1

5

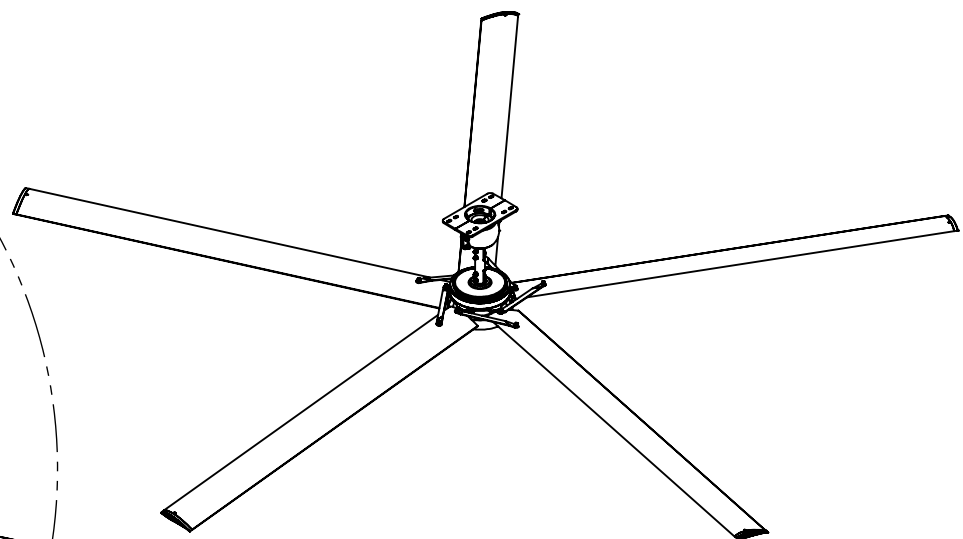
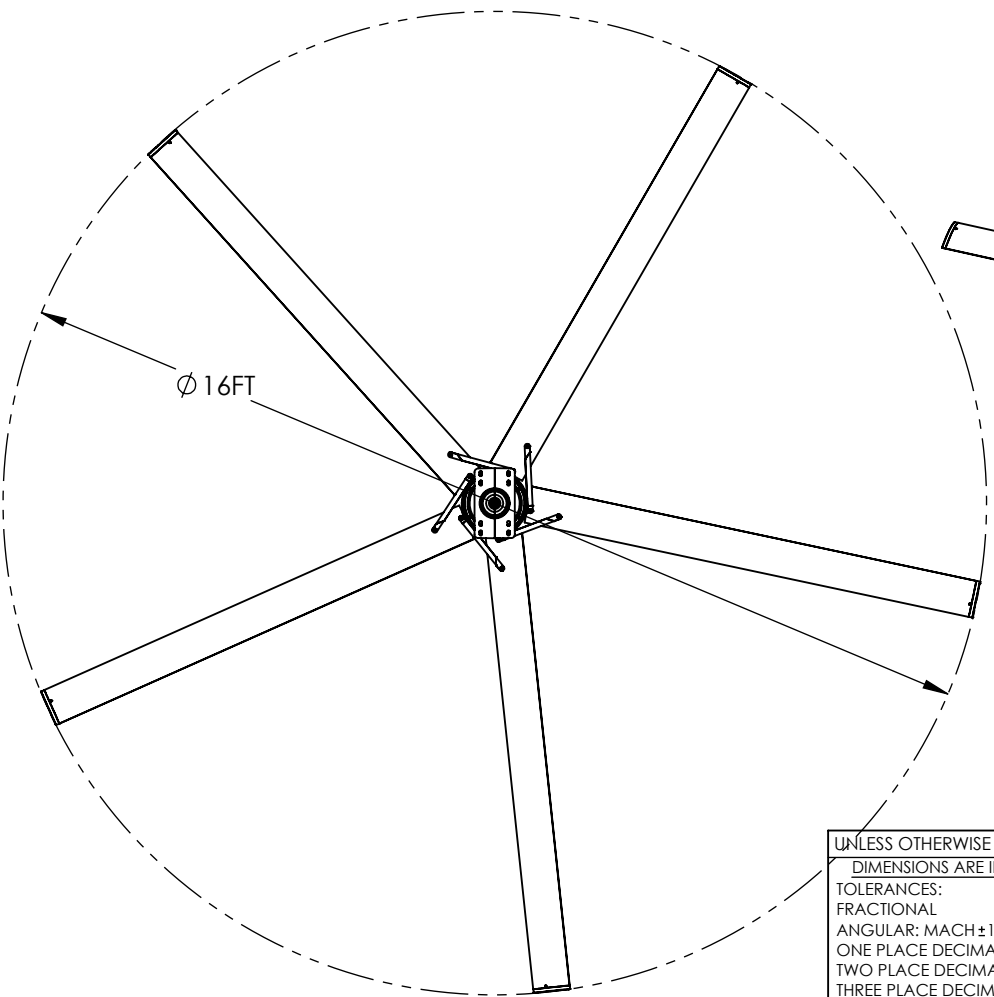
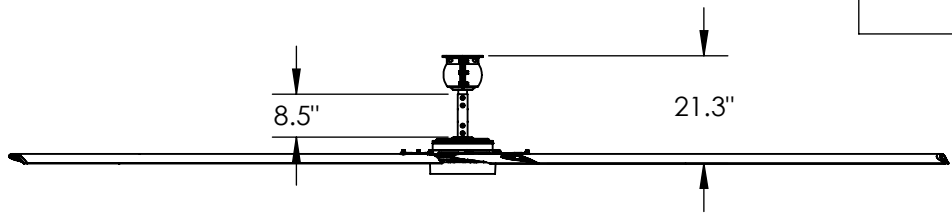
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	06/05/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE		
N/A	DWG. NO.		
DO NOT SCALE DRAWING	REV		

MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**16' AVD5 FAN, RMI MT,
35mm POWER UNIT**

A M500-1635-PA-RMI P-01

SCALE: 1:38 WEIGHT: 65.77 SHEET 1 OF 1

5

4

3

2

1

5

4

3

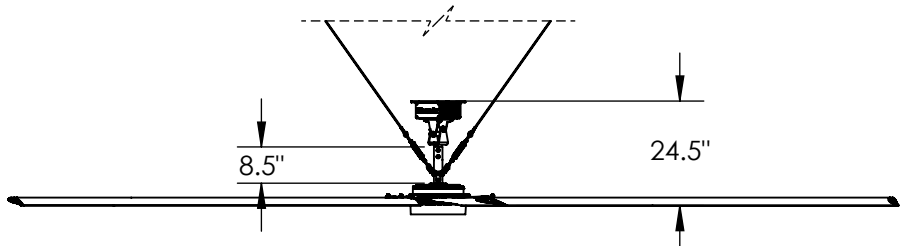
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

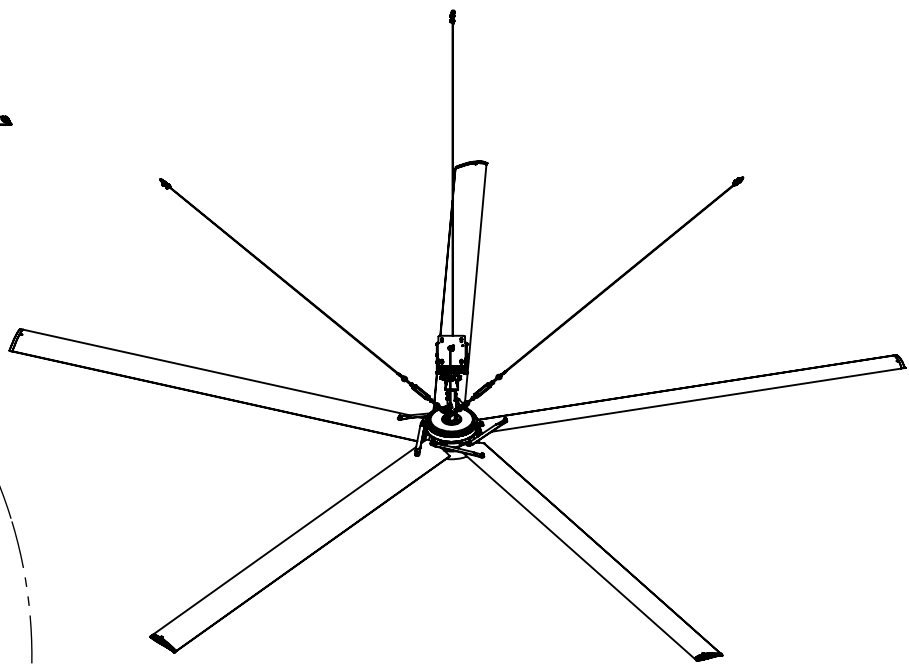
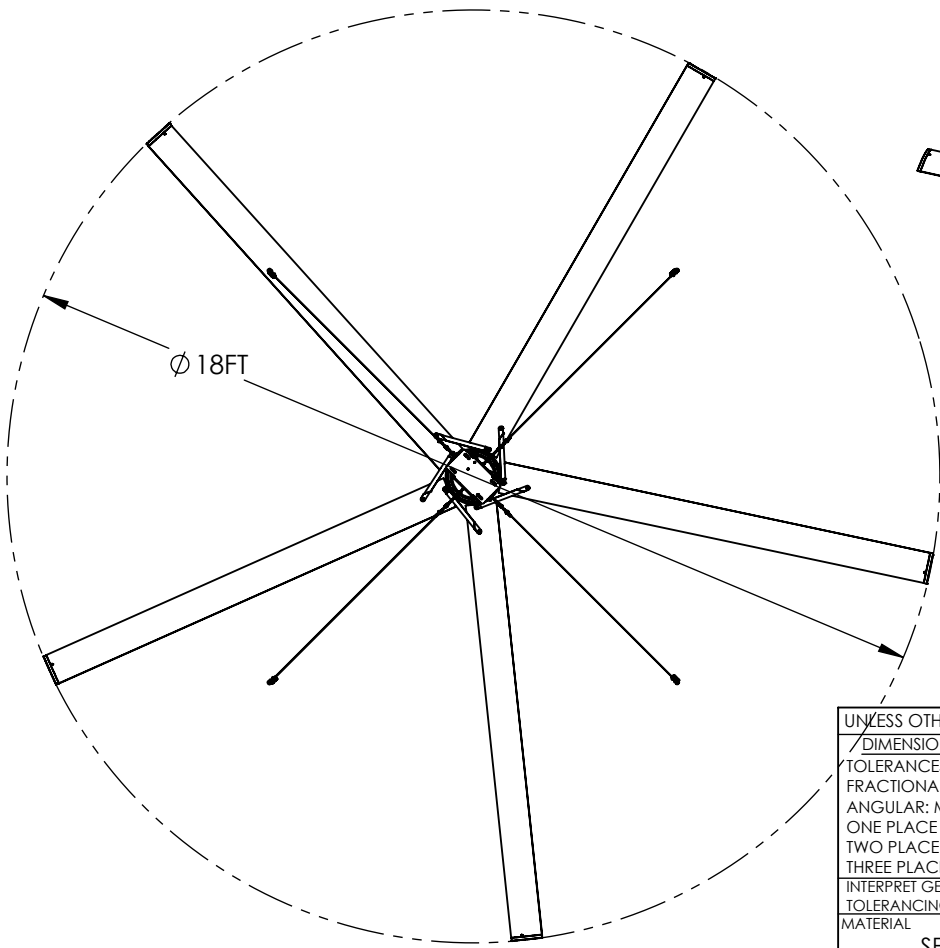
D

D



C

C



B

B

A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-1835-PA P-01		
DO NOT SCALE DRAWING	SCALE: 1:45 WEIGHT: 69.38 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**18' AVD5 FAN,
35mm POWER UNIT**

5

4

3

2

1

5

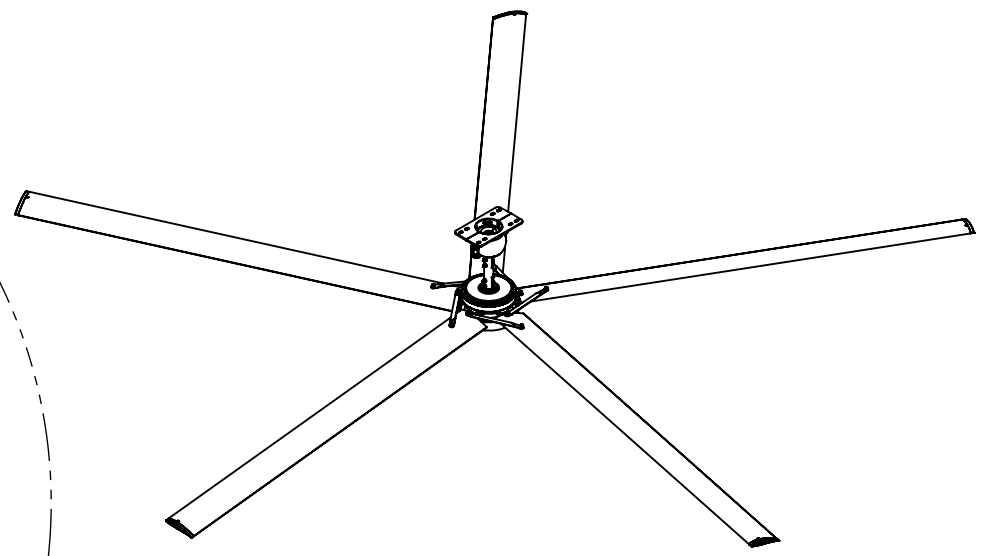
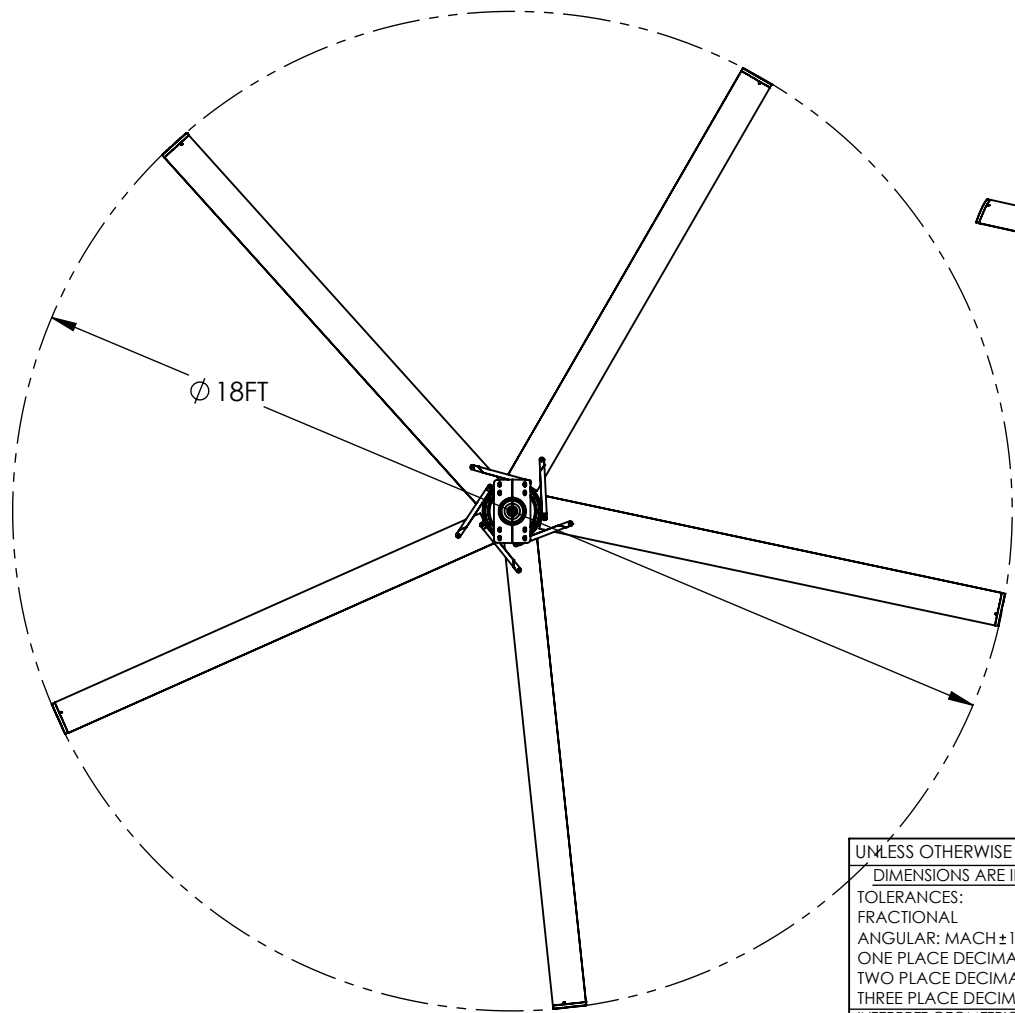
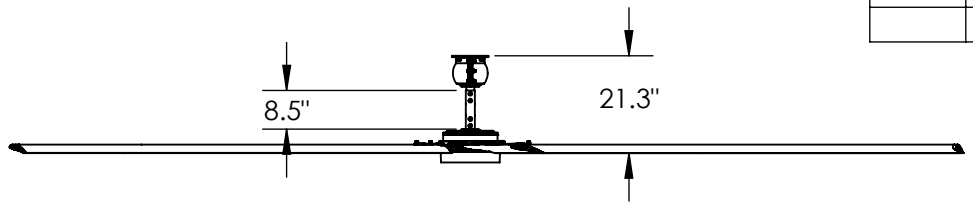
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° ONE PLACE DECIMAL ±.1 TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.005 INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5 MATERIAL SEE BOM FINISH N/A DO NOT SCALE DRAWING	APPROVALS	NAME	DATE
	DRAWN	RSAMFORD	06/05/24
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A. APPR.		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**18' AVD5 FAN, RMI MT,
35mm POWER UNIT**

SIZE A	DWG. NO. M500-1835-PA-RMI	REV P-01
SCALE: 1:42	WEIGHT: 68.48	SHEET 1 OF 1

5

4

3

2

1

5

4

3

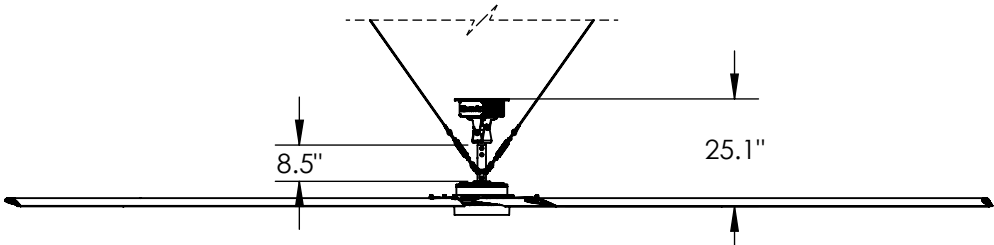
2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		

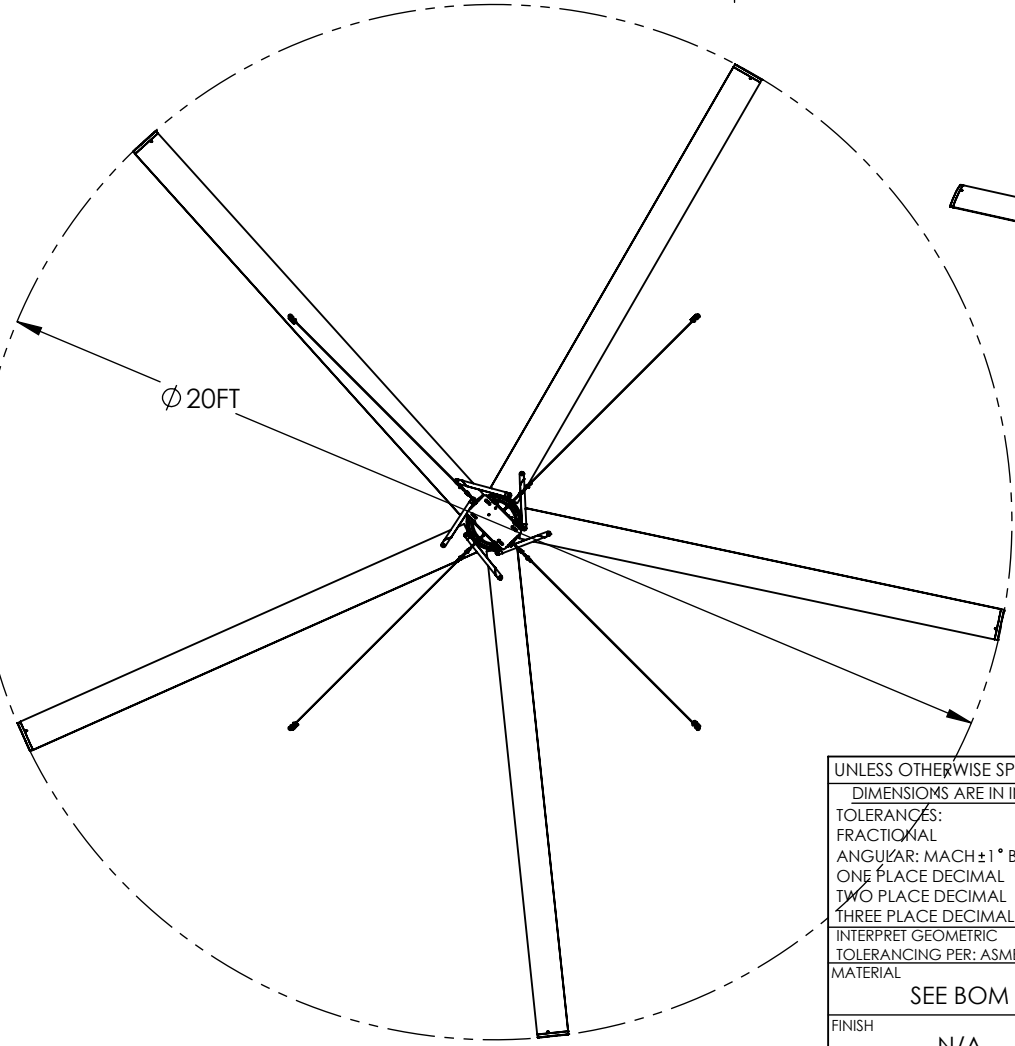
D

D



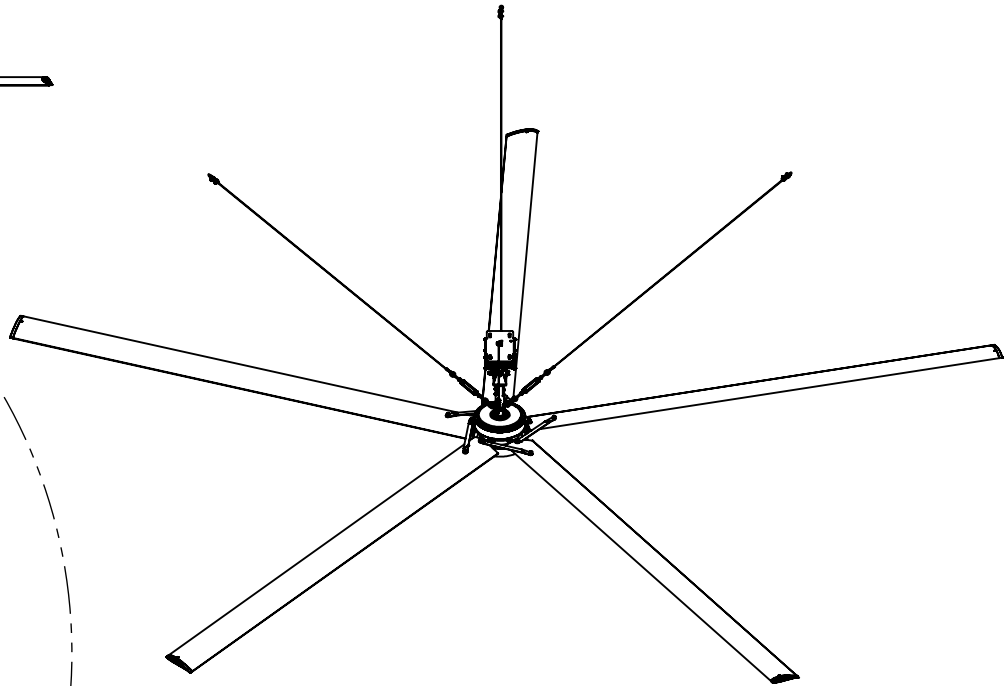
C

C



B

B



A

A

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE DWG. NO. REV		
N/A	A M500-2050-PA P-01		
DO NOT SCALE DRAWING	SCALE: 1:45 WEIGHT: 74.48 SHEET 1 OF 1		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**20' AVD5 FAN,
50mm POWER UNIT**

5

4

3

2

1

5

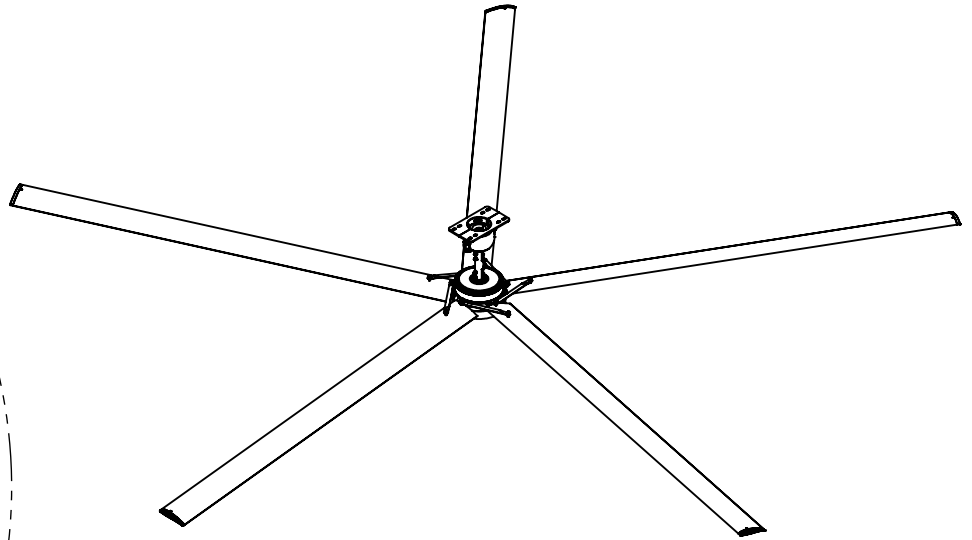
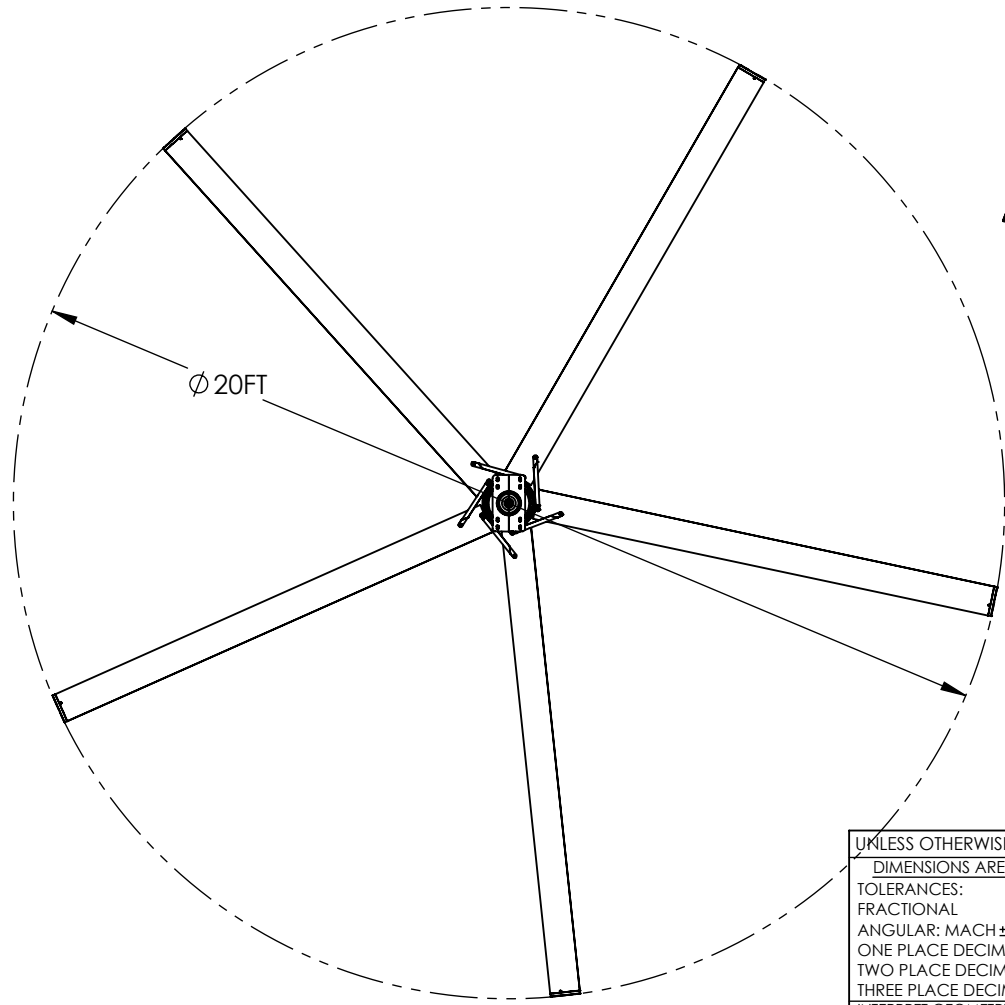
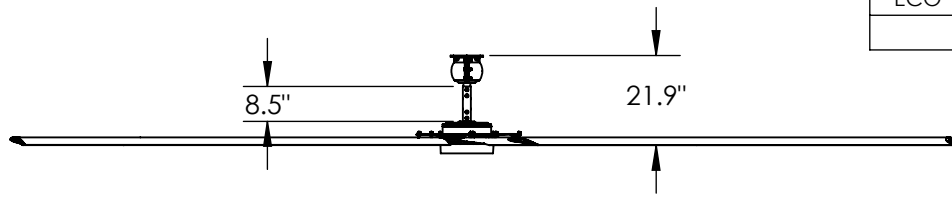
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° ONE PLACE DECIMAL ±.1 TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.005 INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5 MATERIAL SEE BOM FINISH N/A DO NOT SCALE DRAWING	APPROVALS	NAME	DATE
	DRAWN	RSAMFORD	06/05/24
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A. APPR.		

MA MacroAir Technologies
 794 S Allen St. San Bernardino, CA 92408

TITLE:
**20' AVD5 FAN, RMI MT,
 50mm POWER UNIT**

SIZE	DWG. NO.	REV
A	M500-2050-PA-RMI	P-01
SCALE: 1:47	WEIGHT: 75.92	SHEET 1 OF 1

5

4

3

2

1

5

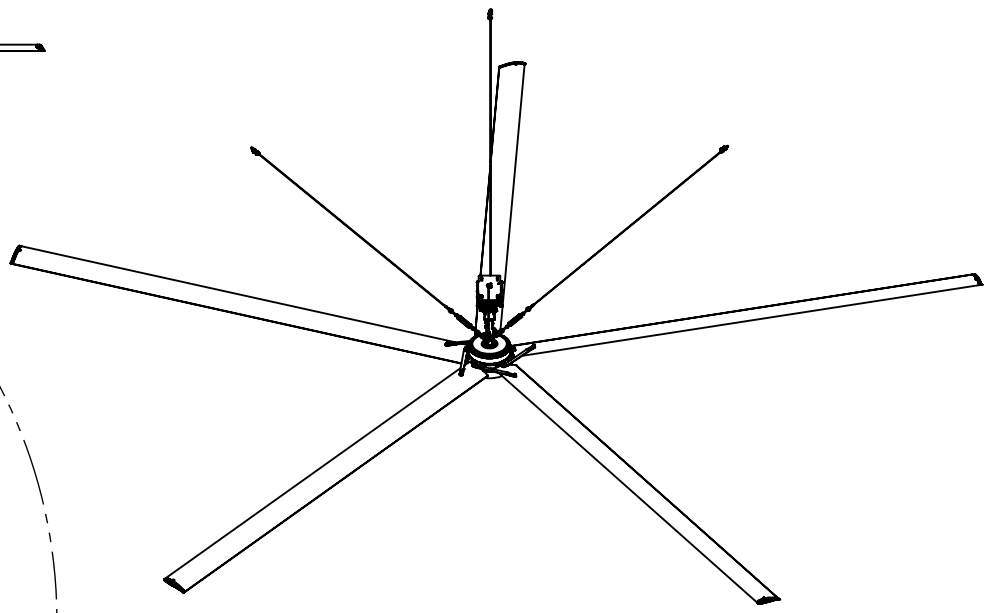
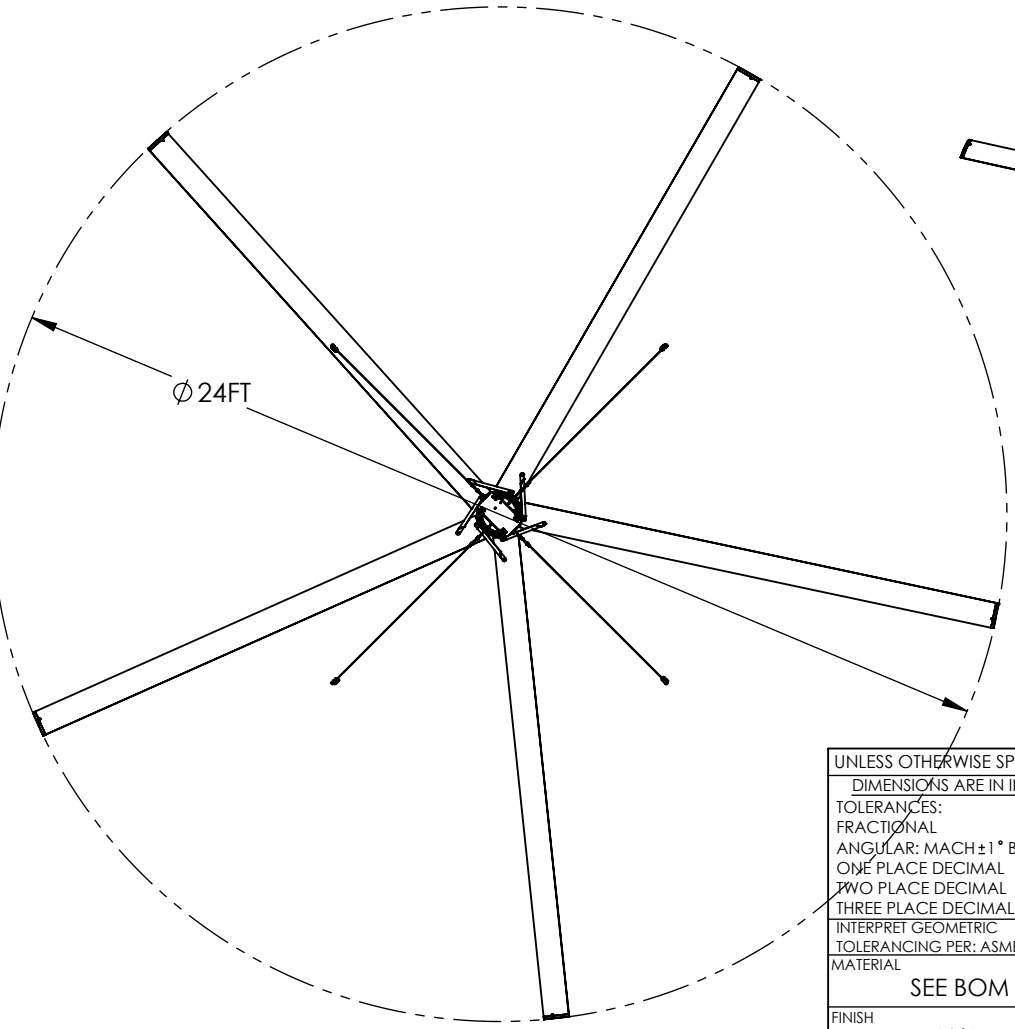
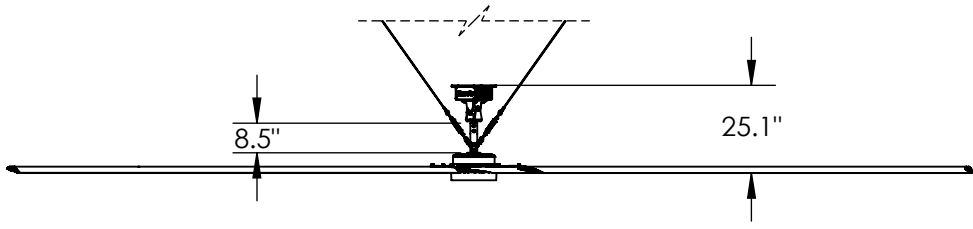
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	APPROVALS	NAME	DATE
TOLERANCES:	DRAWN	RSAMFORD	01/24/24
FRACTIONAL ±1/16	CHECKED		
ANGULAR: MACH ±1° BEND ±1°	ENG APPR.		
ONE PLACE DECIMAL ±.1	MFG APPR.		
TWO PLACE DECIMAL ±.02	Q.A. APPR.		
THREE PLACE DECIMAL ±.005			
INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5			
MATERIAL	PROPRIETARY AND CONFIDENTIAL		
SEE BOM	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MacroAir TECHNOLOGIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MacroAir TECHNOLOGIES IS PROHIBITED.		
FINISH	SIZE		
N/A	A		
DO NOT SCALE DRAWING	DWG. NO.		
	M500-2450-PA		
	REV		
	P-01		
	SCALE: 1:55	WEIGHT: 79.90	SHEET 1 OF 1

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**24' AVD5 FAN,
50mm POWER UNIT**

SIZE	DWG. NO.	REV
A	M500-2450-PA	P-01
SCALE: 1:55	WEIGHT: 79.90	SHEET 1 OF 1

5

4

3

2

1

5

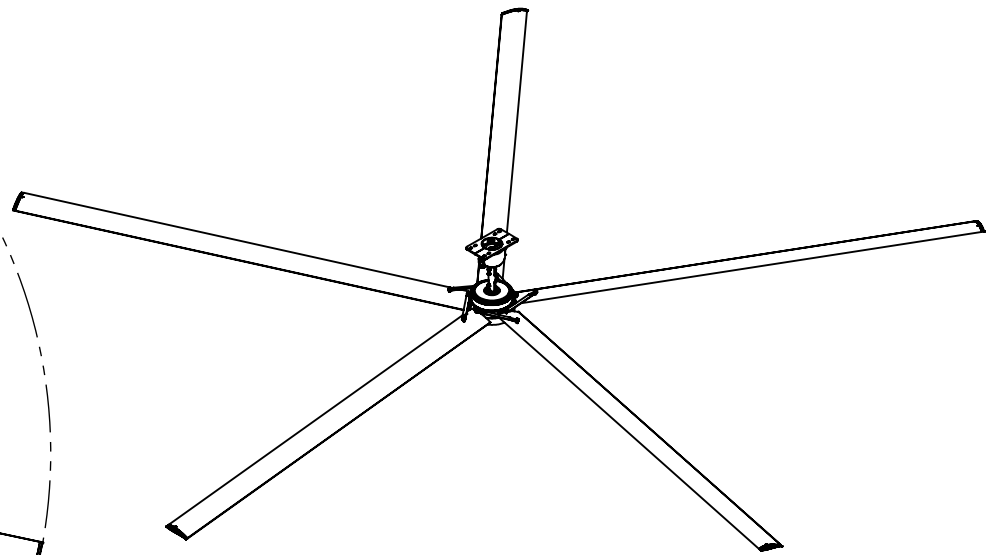
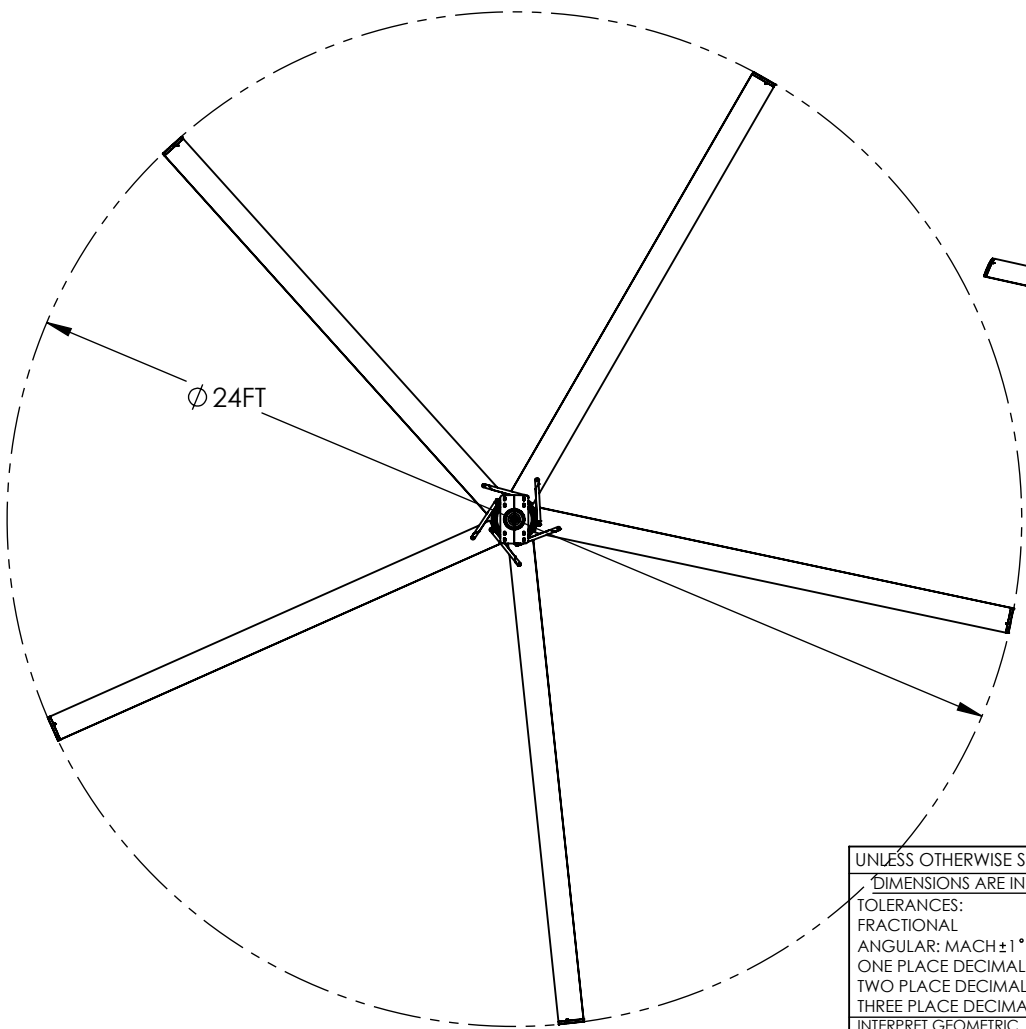
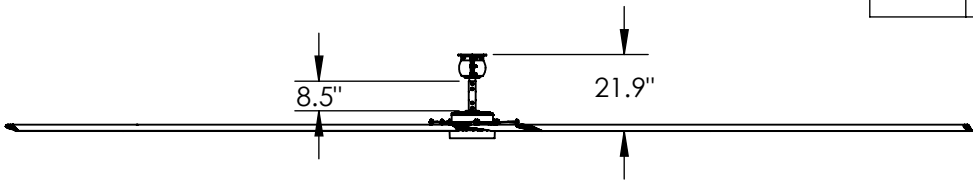
4

3

2

1

REVISIONS				
ECO	REV.	DESCRIPTION	DATE	CHK/APPR.
	P-01	PRELIMINARY		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ±1/16 ANGULAR: MACH ±1° BEND ±1° ONE PLACE DECIMAL ±.1 TWO PLACE DECIMAL ±.02 THREE PLACE DECIMAL ±.005 INTERPRET GEOMETRIC TOLERANCING PER: ASME Y14.5 MATERIAL SEE BOM FINISH N/A DO NOT SCALE DRAWING	APPROVALS	NAME	DATE
	DRAWN	RSAMFORD	06/05/24
	CHECKED		
	ENG APPR.		
	MFG APPR.		
	Q.A. APPR.		

MA MacroAir Technologies
794 S Allen St. San Bernardino, CA 92408

TITLE:
**24' AVD5 FAN, RMI MT,
50mm POWER UNIT**

SIZE	DWG. NO.	REV
A	M500-2450-PA-RMI	P-01
SCALE: 1:55	WEIGHT: 81.34	SHEET 1 OF 1

5

4

3

2

1

Installation Manual

AVD5 Series Fan (Rapid Industrial Mount)



Table of Contents

AVD5 SERIES

Pre-Installation Checklist	Pre-Installation Checklist 1
Introduction	Caution & Safety 2 Fan Clearance and Placement 5
Pre-Installation	Fan Dimensions, I-Beam/Glulam Chart 7 Max Amp, Network Wiring Instructions 8 Fan Components 9 Mounts & Components 10 Control Panel & Components 12 Tools Required 13
Installation Overview	I-Beam 14 Glulam 15
Installing the Fan	I-Beam Mounting 16 Glulam Mounting 19 Unistrut Mounting 22 Mounting the Extension 24 Motor and Safety Cable Routing 25 Mounting the Motor Unit 26 Motor Cable Connection 28 Safety Cable Installation, I-Beam/Glulam . . 29
Guy Wire Option	Guy Wire: Installation on RMI 30 Guy Wire: Tightening 31 Guy Wire: Band installation 32
Installing Fan Blades	Blade/Strut Lubrication 33 Blade Assembly 34 Assembly Conclusion 35
Wiring the Fan	Electrical & Safety Cable Installation 36 Control Panel Overview 37 Control Panel Schematics 38
Mounting the Wall Controller	Touchpad Remote User Interface 40 Touchpad Remote Installation 41 Touchpad Remote Enclosure & Display . . . 43
Fan Settings	Touchpad Remote 44 Network Controller 30 45
Information	Mounting Hole Patterns 46 Maintenance 48 Troubleshooting 49 Warranty 50

Literature (Pg. 3)

- Order Verification.** I have verified the order information. All components are accounted for.
- Read.** I have read this Installation Manual and all other instructions before installing this fan.

Power (Pg. 3-4)

- Power Requirements.** I have verified the incoming power supply is sufficient for the fan.

Safety (Pg. 4-5)

- Safety Familiarity.** I am familiar with the safety components and features of the fan. I have verified the presence of a safety cable, and guy wires (if applicable).

Airfoils (Pg. 5-7)

- Height from Floor.** I have verified the airfoils will be at least 10ft (3.05 m) above the floor.
- Application Clearance.** I have consulted the manual to determine that the airfoils will meet or exceed the clearance requirements regarding obstructions, or other fans.
- Airfoil Reach.** I have verified the airfoils will be mounted such that they are at least 3 feet away from any area where someone can extend outward and reach them.
- High Winds.** I have verified the fan will not be subjected to high winds from any outside influences, such as large garage door openings or HVAC systems.
- Diffuser Interference.** If diffusers are present, I will ensure that the fan is mounted at least 2X the diameter of the fan away from any source of airflow.
- Airfoil Compatibility.** I have verified the Airfoils and other fan components are those that shipped with the motor unit.
- Installing Multiple Fans.** I will not mix and match any hardware or blades.

Structure (Pg. 6-8)

- Application Suitability.** I have verified the application was approved by a structural engineer. I have checked the hanging weight and torque specs in the installation manual to ensure that the mounting structure can withstand the forces generated by the fan.
- Structural Suitability.** I have verified the building structure is suitable for this fan mounting. The fan will be mounted to an I-beam or Glulam or similar. I will not mount the fan to a single purlin, truss, or bar joist. I will consult a structural engineer for mounting not covered herein.
- Mount Suitability.** I have the appropriate mount for this application. I have verified in the installation manual that the mounting option provided is suitable for this application. I will consult a structural engineer for applications and mounting methods not covered herein.

Caution and Safety

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

⚠ ATTENTION: Safety. READ AND SAVE THE ENTIRE MANUAL BEFORE OPERATING THE FAN.

Ensure that all safety procedures and instructions are followed 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 our technical department for guidance.

⚠ CAUTION: Non-Compliance. The fan installation should follow the recommendations outlined in this manual. MacroAir is not responsible for any injury or damage to persons or property because of 'not complying' with the recommendations outlined in the manual.

Electrical Guidelines

⚠ WARNING: Electrical Damage. Improper electrical installation can cause damage to the fan and interfere with other electronic equipment. In addition to standard electrical safety considerations, please observe the following:

- **MacroAir Cables.** The wiring from the control panel to the fan **MUST** be by MacroAir supplied shielded cable.
- **Electrical Interference.** Separate incoming power and CAT5 motor control cables by a minimum of six (6) inches to avoid communication issues.
- **Individual Fan Wiring.** Run wiring for each fan separately.
- **Multiple Fans.** Do not attempt to control multiple fans from one (1) control panel.
- **ALWAYS GROUND PROPERLY.** Connect the supplied cable glands to each end of the motor cable and tighten them securely at both the fan motor and control panel ends. Connect the ground bar in the control panel to ground at the main breaker and test.
- **Read.** Please refer to the installation instructions for more information.

Electrical Guidelines cont.

⚠ ATTENTION: Qualified Technicians. All fan controls should only be installed by qualified technicians familiar with the requirements of the National Electrical Code (NEC) and local codes. Refer to appropriate portions of this manual for other important requirements. Failure to follow these guidelines will void the manufacturer's warranty.

⚠ ATTENTION: Factory Configured. All electrical controls are configured at the factory and are ready to use. No user adjustments are available. Follow the included wiring schematics and installation instructions when installing this device to ensure proper operation. Do not make any changes to any part of the motor control panel without first consulting MacroAir.

⚠ ATTENTION: Code Compliance. Installation is to be in accordance with the NEC, ANSII/NFPA 70-1999 and local codes.

Hazard of Electrical Shock, Explosion or Arc Flash:

⚠ ATTENTION: Read. Read and understand this manual before installing or operating a fan unit. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.

⚠ ATTENTION: Code Compliance. The user is responsible for compliance with all international and National Electrical Code requirements with respect to the grounding of all equipment.

⚠ WARNING: Do Not Touch. Many of the parts of this unit operate at line voltage. DO NOT TOUCH.

⚠ WARNING: Covers. Install all covers before applying power or starting and stopping the unit.

Installation and Service

⚠ WARNING: Damage. Do not operate or install any fans or fan accessories that appear to be damaged.

⚠ WARNING: Death and Injury. Failure to follow this instruction can result in death, serious injury, or equipment damage.

⚠ WARNING: Disconnect Power. If the fan does not operate properly using the procedures in this manual. BE CERTAIN TO REMOVE ALL POWER TO THE UNIT and contact our technical department for further assistance.

⚠ CAUTION: Moving Parts. Keep all body parts clear of moving parts at all times.

⚠ ATTENTION: Qualified Technicians. All electrical troubleshooting and repair must be done by a qualified technician and meet all applicable codes.

Key Safety Systems

⚠ ATTENTION: Safety. MacroAir fans are engineered with key safety features to prevent pieces of the fan from falling in the unlikely event of a catastrophic failure. Used together, these systems and devices provide comprehensive protection to people, equipment, and property.

⚠ WARNING: Safety Cable and Guy Wires. Install safety cable on EVERY fan. Install guy wires on every fan using a UMH mount, unless otherwise specified. Properly installing the guy wires will keep the fan stable in case of earthquake or in “outdoor” installations where high wind conditions may occur. The safety cable, if installed per MacroAir specifications, will prevent the fan from falling in the unlikely event that the mounting system should fail.

⚠ WARNING: Safety Cable. A MacroAir fan should never be run without a properly installed safety cable, which is supplied with every fan along with all required hardware. You must install a safety cable for the warranty to be in effect.

⚠ ATTENTION: Mark the Floor to Alert Personnel. When mounting a fan in an area where materials may be elevated into its path, MacroAir recommends marking or painting the floor with a large, cross-hatched circle to alert personnel of the overhead location of fans.

Mounting Guidelines

⚠ WARNING: Weight Considerations. We recommend that a building structure be capable of holding approximately twice the stated hanging weight of the fan. If there is some doubt of this, a professional contractor or architect should perform a thorough evaluation of the building prior to purchasing the fans. MacroAir 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: Torque. The maximum torque (twisting force) that must be handled by the mounting system, including the building structure, occurs at fan startup. For the 24-foot fan, maximum potential starting torque is 112 Ft-Lbs. When standard electrical controls are installed, the fan will never begin to approach this maximum because the standard variable-speed control system uses the soft-start fail, however, when a fan is installed as a single-speed model without the variable speed control system (rare), full torque might be applied to the mounting system, so it is important that it be adequate to withstand 112 Ft-Lbs.

⚠ ATTENTION: 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.

⚠ WARNING: Welding. DO NOT attach the fan or fan mounting components to the building structure by welding that component to the structure. DO NOT cement the fan to the structure.

Clearance Guidelines

⚠ ATTENTION: Sprinkler Systems and Fan Placement. In any installation where fire sprinklers are in place, do not interfere with their correct operation. Fans should be located no less than 3 feet below a sprinkler and placed central to each sprinkler quadrant.

⚠ ATTENTION: Sprinkler Systems and Code Compliance. Prior to installing fans, review all codes applicable to sprinkler systems and fans to ensure code compliance. Refer to the wiring diagrams packaged inside the control panel for proper installation. If further advice is needed, you may contact our support staff. However, it is your sole responsibility to see that the installation is completed to code and is correct.

General Information on Fan Placement and Spacing

⚠ ATTENTION: Strobe and Performance. If possible, avoid mounting fans directly below lights or skylights to avoid any strobe effect caused by moving blades.

⚠ WARNING: Mezzanine Placement. If the building has a mezzanine, fans should be mounted so a person cannot reach a fan in any way from the upper level/deck. Make certain that fans are positioned so that blade tips are at least 3 feet away from any area where a person may be able to extend outward to reach them.

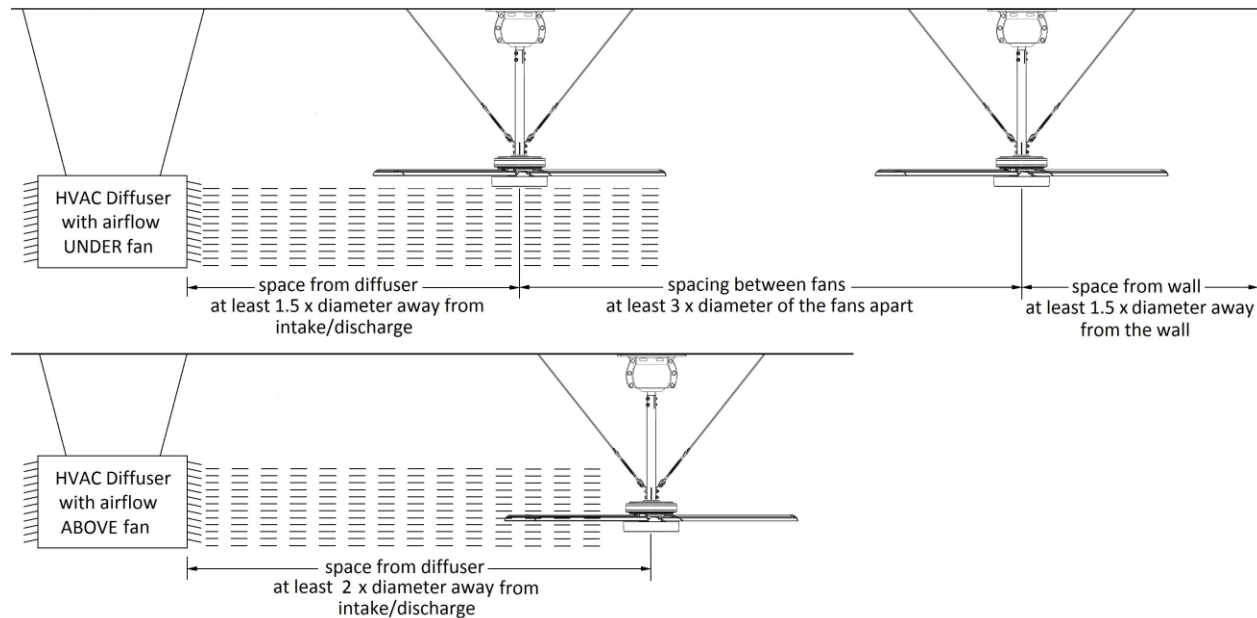


Figure 1: Fan Clearance and Placement

⚠ ATTENTION: The minimum distance of a fan to a wall or similar obstruction should be no less than 1.5 times the diameter of the fan. Reference Figure 1.

General Information on Fan Placement and Spacing, cont.

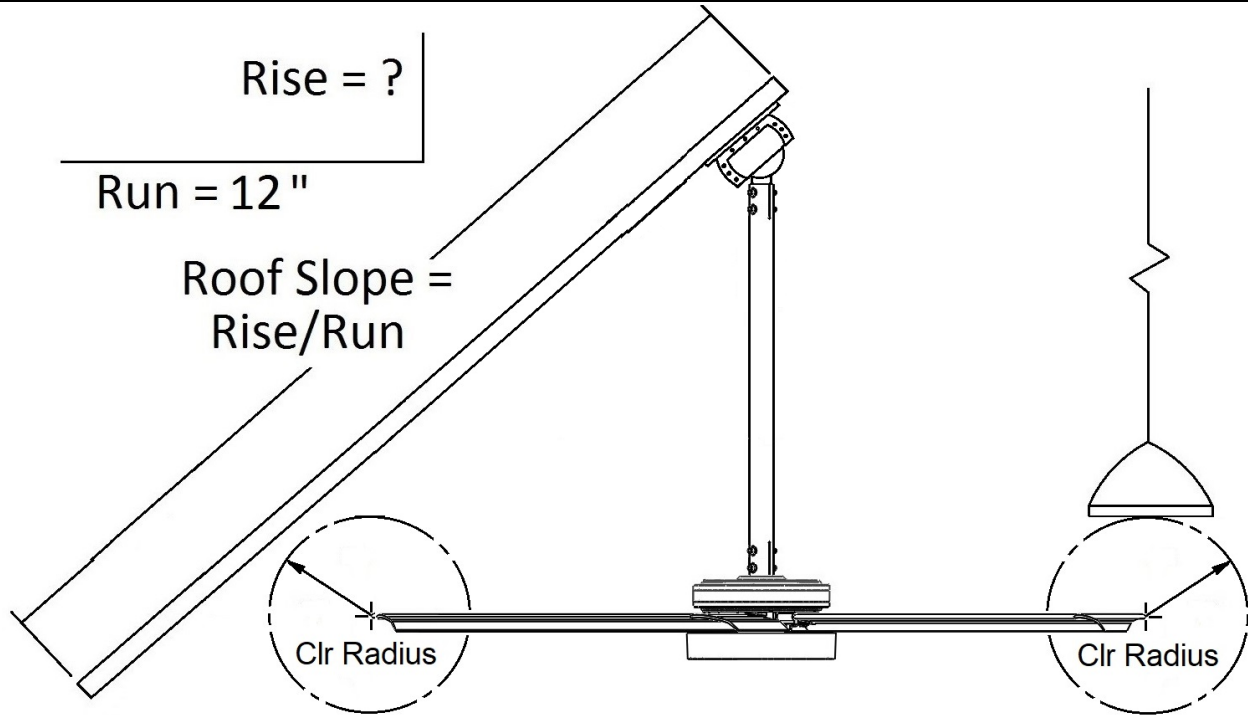


Figure 1: Fan Clearance, Rapid Mount Industrial (RMI)

Fan shown in Fig. 1 for illustration purposes only.

Slope (in)	0	2/12	4/12	6/12	8/12	10/12	
Roof Angle	0	9.5°	18.4°	26.6°	33.7°	39.8°	
Diameter	Recommended Extension Length (Ft.)						Min Clr. Radius
8 feet	2	2	3	3	4	5	7"
10 feet	2	2	3	4	5	6	9"
12 feet	2	3	4	5	6	7	11"
14 feet	2	3	4	5	6	7	13"
16 feet	2	3	4	6	7	8	14"
18 feet	2	3	5	6	8	9	16"
20 feet	2	4	5	7	8	10	18"
24 feet	2	4	6	8	10	N/A*	22"

Figure 2: Maximum Angle & Clearance Radius.

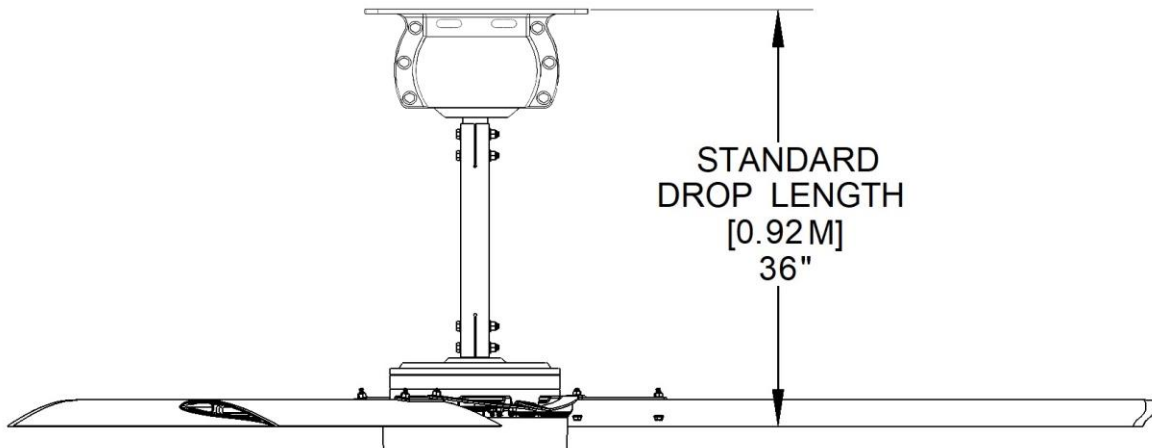
* Note: Extension longer than 10ft not recommended.

⚠ WARNING: FANS ARE NOT MEANT TO BE OPERATED IN WINDY CONDITIONS.

The goal of Figures 1 and 2 is to determine the proper extension length to maintain a minimum blade clearance of 3 feet from ceiling for optimal performance. The extension lengths above are minimum recommendations only, based solely on roof pitch and fan diameter. Other factors must be evaluated when determining extension requirements.

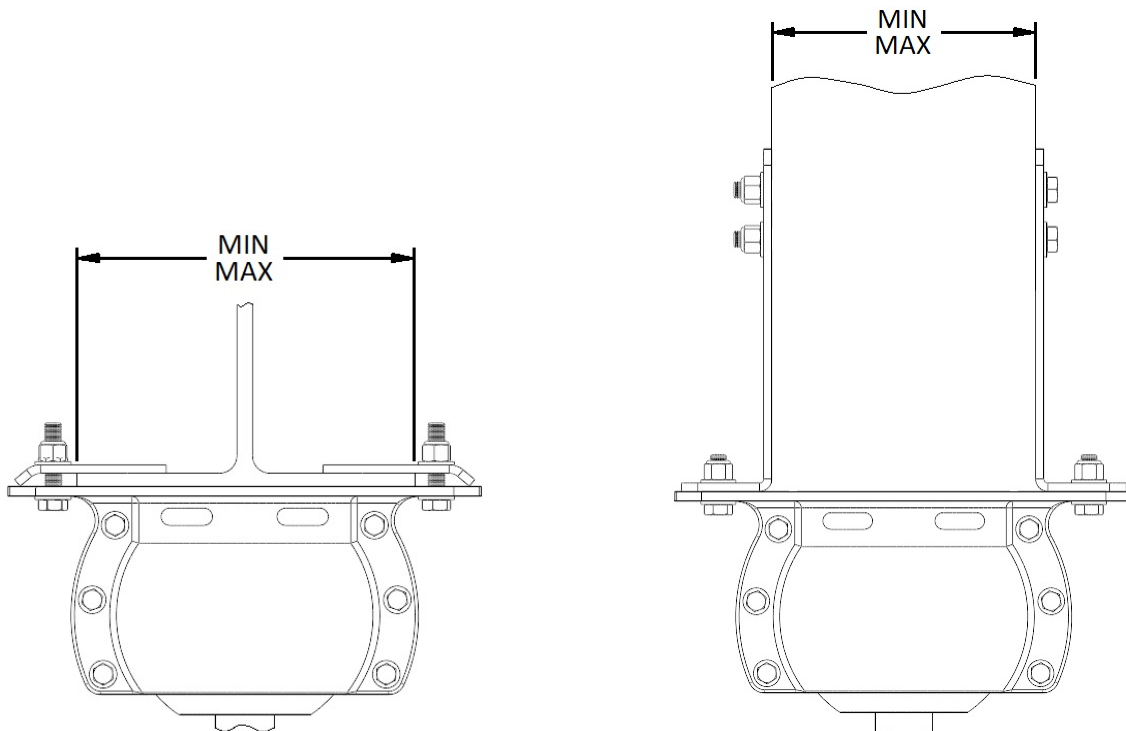
⚠ ATTENTION: Minimum Height. MacroAir requires that the fan blades must be a minimum of 10 feet (3.05 meters) above the floor. Contact MacroAir for assistance with fan placement and extension selection.

Fan Dimensions



Dimensions listed above are applicable to all MacroAir AVD5 fans.

I-Beam/Glulam Chart



I-Beam Min/Max		
Minimum		Maximum
4.50"		9.50"

Glulam Min/Max		
Minimum	Mid	Maximum
2.00"	4.63"	7.50"

The Maximum Range dimension in these tables is determined by using the outside slots of the control panel. The Minimum Range dimension is determined by using the inside slots.

The Glulam mounting method (Referenced on pages 15, 19-21) is recommended for Glulams or wood beams 5-1/8" or wider. For narrower beams, span across two or more beams using the Unistrut mounting method (Referenced on pages 22-23).

Max Amp Draw

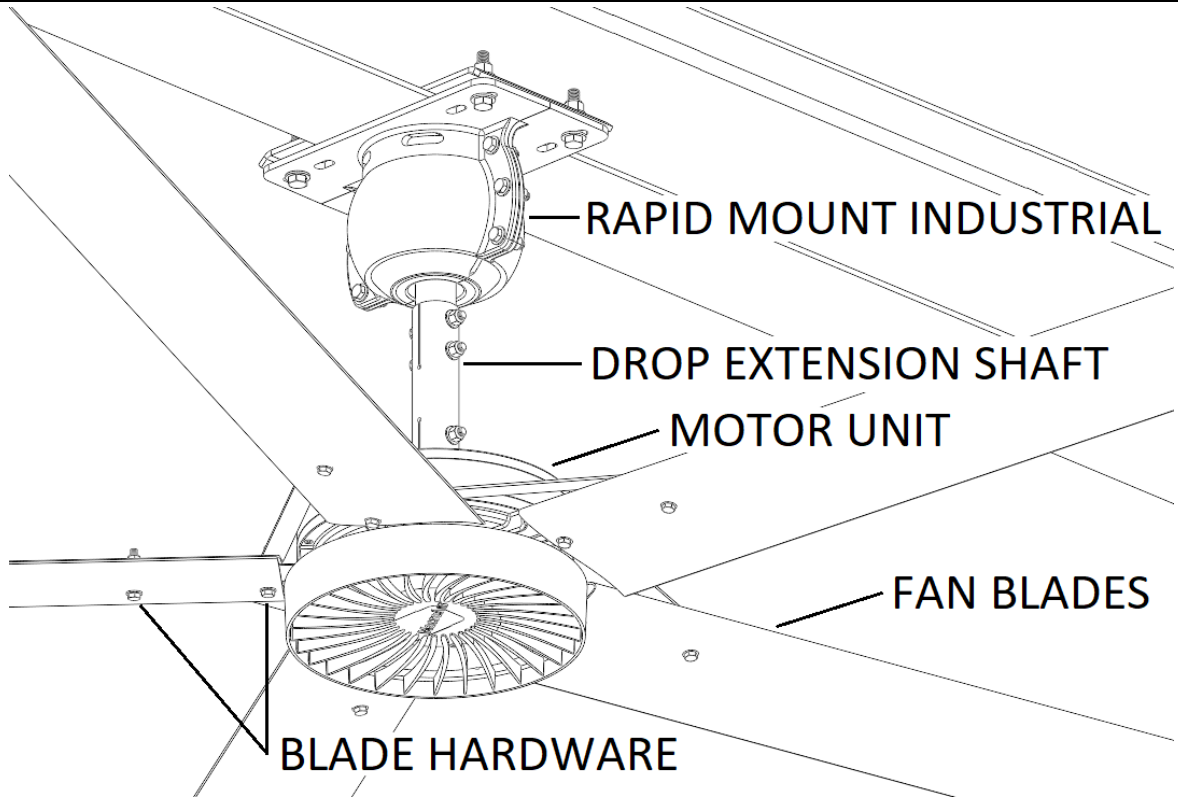
Use this chart to determine the proper fuse for your AVD5 fan installation.

VOLTAGE and PHASE	MAX AMP DRAW							
	8FT	10FT	12FT	14FT	16FT	18FT	20FT	24FT
208-240VAC / 1 PHASE	3.8A	6.5A	5.1A	4.4A	3.7A	4.5A	5.4A	4.3A
208-240VAC / 3 PHASE	2.2A	3.8A	2.9A	2.5A	2.1A	2.6A	3.1A	2.5A
480VAC / 3 PHASE	1.6A	2.7A	2.1A	1.8A	1.5A	1.8A	2.2A	1.8A

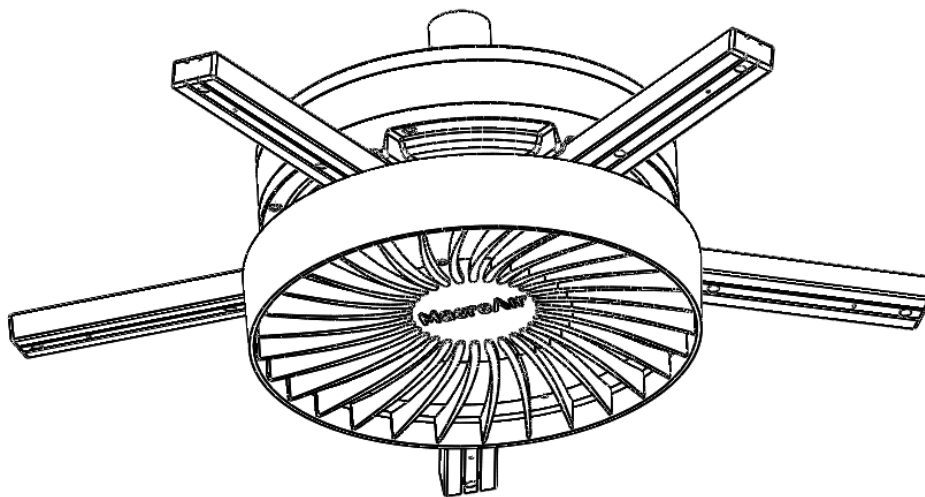
Network Wiring Instructions

For clarification of approved networking principles and methods for installing MacroAir Fans, refer to the MacroAir network instructions included with your MacroAir Controller.

Fan Components



View of Assembled Fan



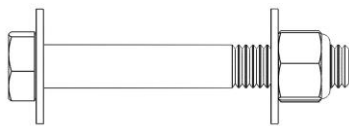
Motor Unit

Images are not to scale

Mounts & Components



Extension Tube



Extension Tube Bolt Kits

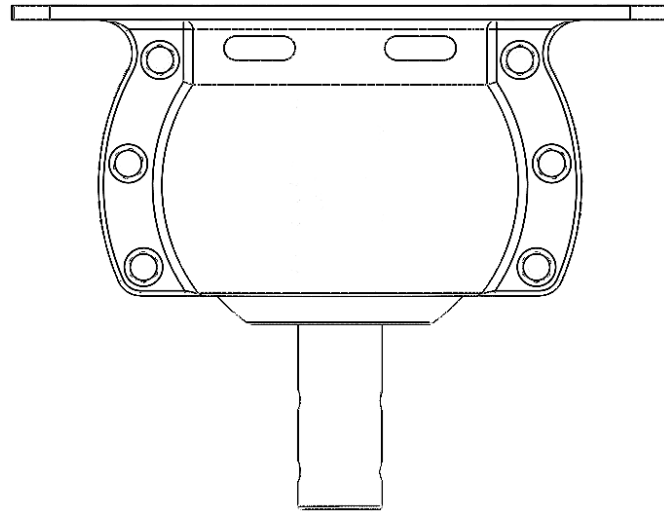
- (4) Hex Bolts 3/8"-16x2-3/4
- (8) Washers, 3/8"
- (4) Nuts, 3/8" Nylon Lock

Unistrut Mount Bolt Kit (optional)

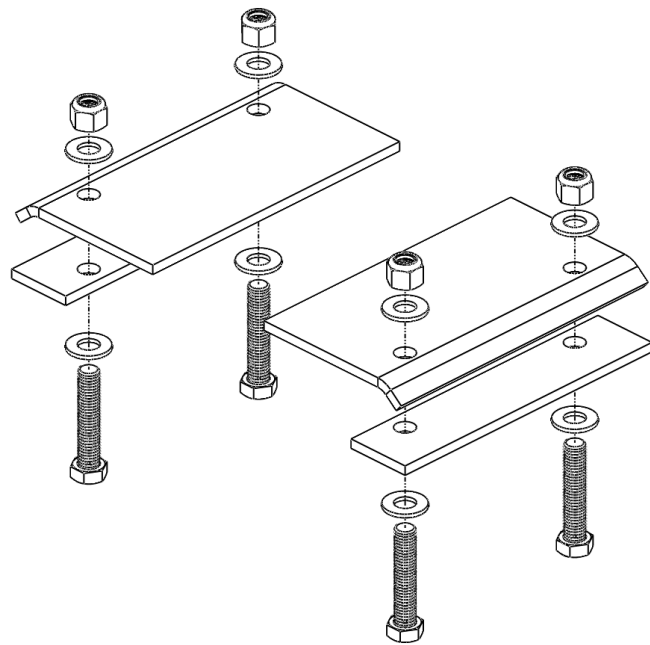
Hardware Required but Not Provided:

- (4) 3/8"-16 x 1-1/2" Hex Bolts
- (4) 3/8" Flat Washers
- (4) 3/8" Unistrut Spring Nut

Images are not to scale



Rapid Mount Industrial (RMI)



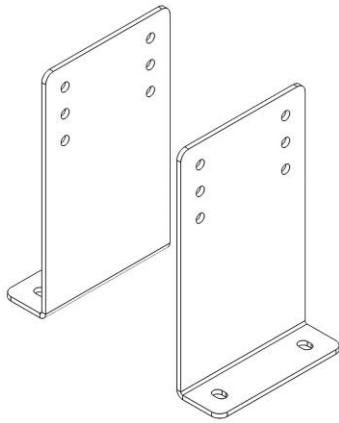
I-Beam Clamp & Bolt Kit

- (2) I-Beam Clamps
- (2) I-Beam Shims (Used when Req'd)
- (4) Hex Bolts 1/2"-13x2"
- (8) Washers, 1/2" Flat
- (4) Hex Nuts 1/2"-13, Nylon Lock

Glulam Bolt Kit:

- (4) Hex Bolts 1/2"-13x1-1/4"
- (8) Washers, 1/2" Flat
- (4) Hex Nuts 1/2"-13, Nylon Lock

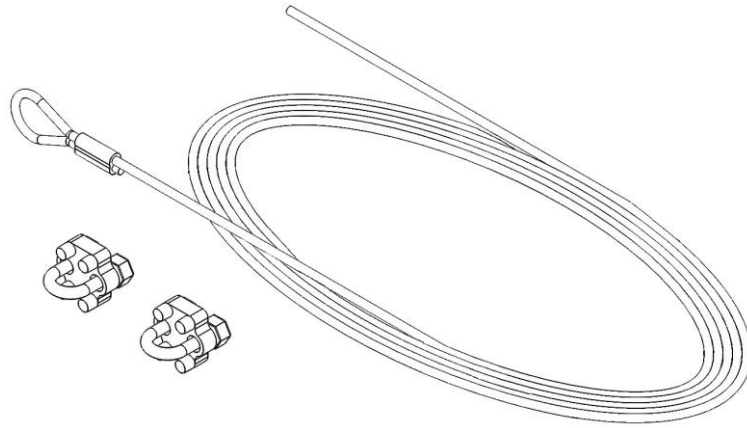
Mounts & Components (cont.)



Glulam Brackets (optional)

Hardware Required but Not Provided:

- (4) 3/8"-16 Grade 5 Hex Bolts (at least 2-1/2" longer than Glulam)
- (8) 3/8" Flat Washers
- (4) 3/8" Nylon Lock Nuts



Safety Cable Kit

- (1) Wire Rope 1/8"
- (2) Wire Rope Clamps

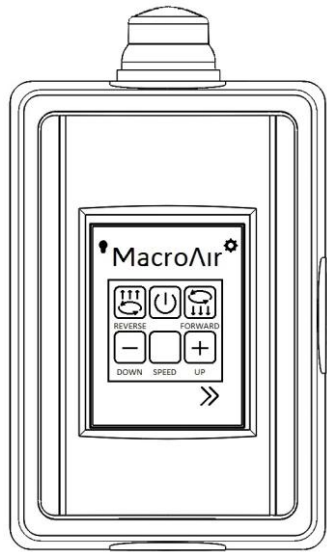
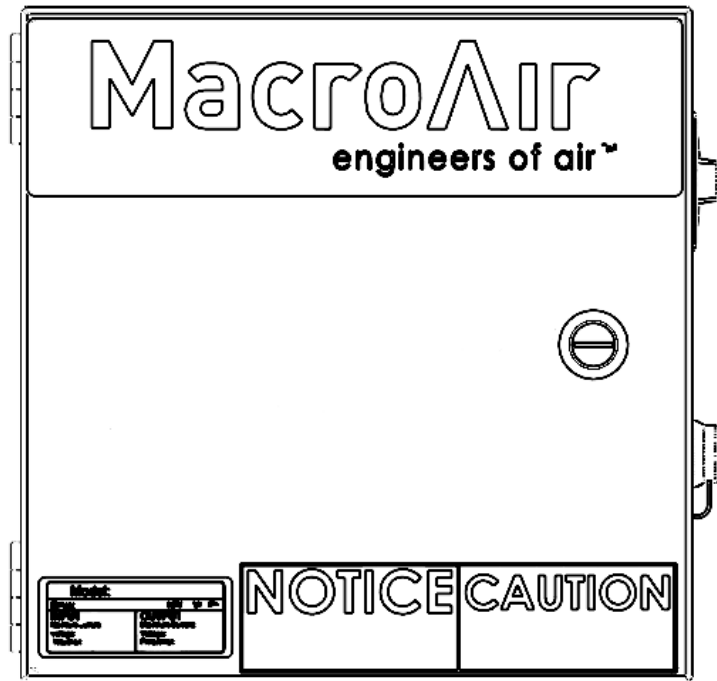


(6) Blade Safety Retainer Link

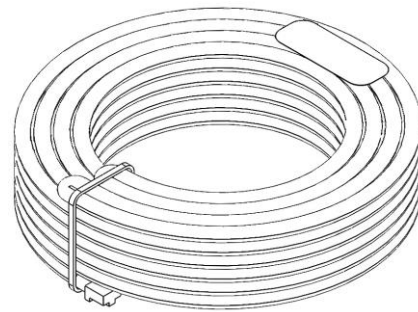
Images are not to scale

Control Panel & Components

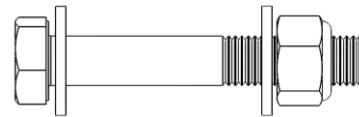
Control Panel



Digital Touchpad Remote



CAT5E Stranded Shielded Cable

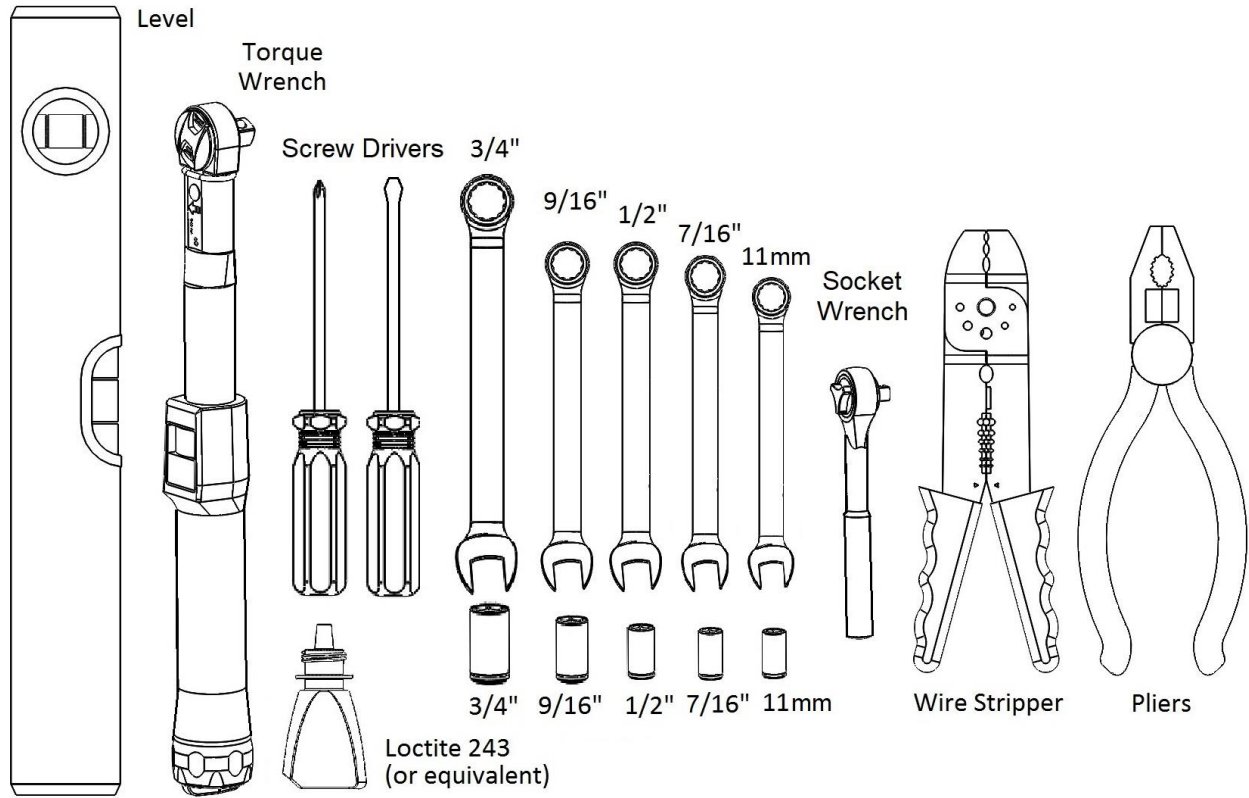


Blade Bolt Kit

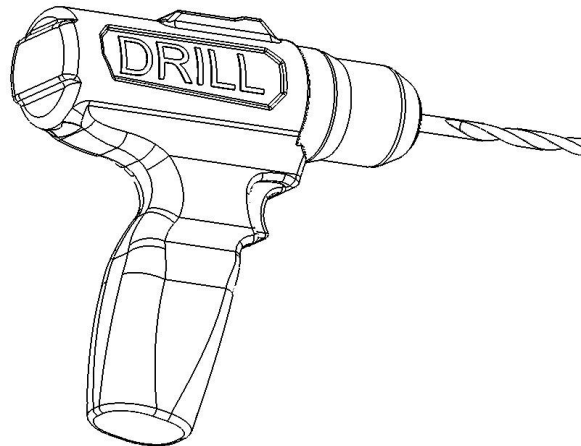
- (6) BOLT, HEX HD, 5/16"-24 X 2", GR5
- (12) WASHER, FLAT, 5/16" PREFERRED NARROW
- (6) LOCK NUT, 5/16"-24, NYLON, GR5
- (1) Loctite 243

Images are not to scale

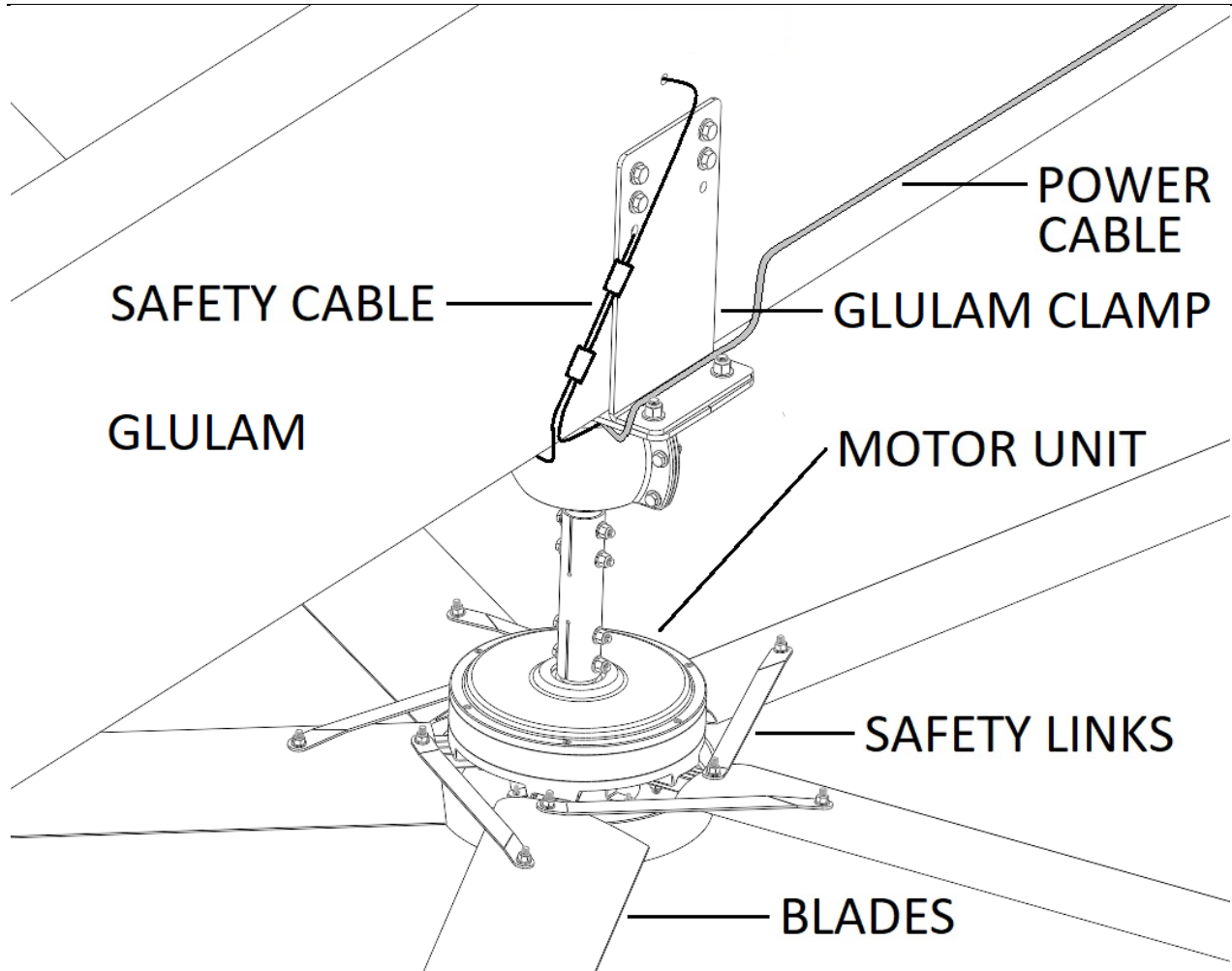
Tools Required



Note: A drill and drill bits will also be required when mounting brackets to Glulam

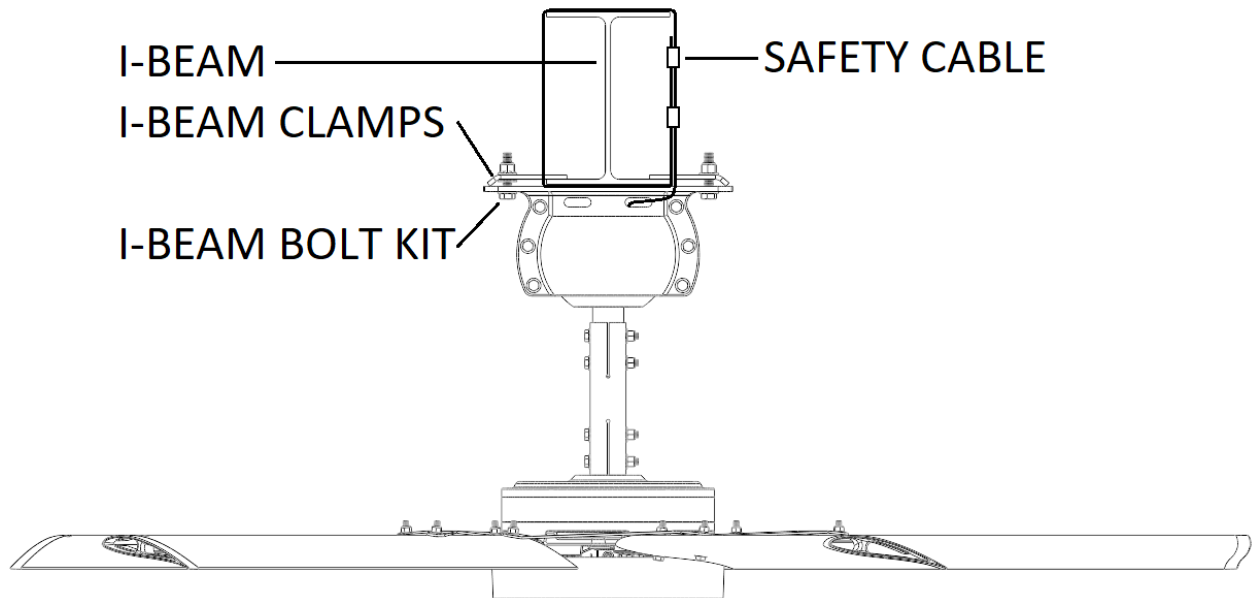


Glulam

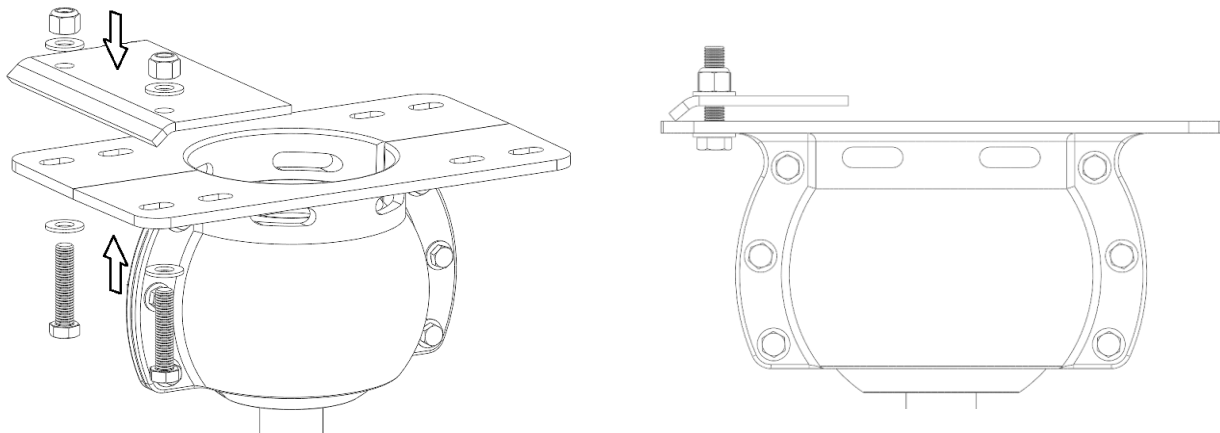


1. The Safety Cable needs to be fed through a hole in the Glulam, preferably above the center line of the Glulam.
2. The Rapid Mount Industrial (RMI) must be secured to the Glulam with Glulam brackets and hardware kit.
DO NOT discard the Glulam brackets and mount the RMI directly to the Glulam.
3. The Glulam brackets need to be through bolted to the Glulam as high as possible.
4. Mount Fan Motor Unit using Rapid Mount Industrial (RMI) and drop extension using hardware kit, combination wrench, and/or Allen wrench.

I-Beam Mounting



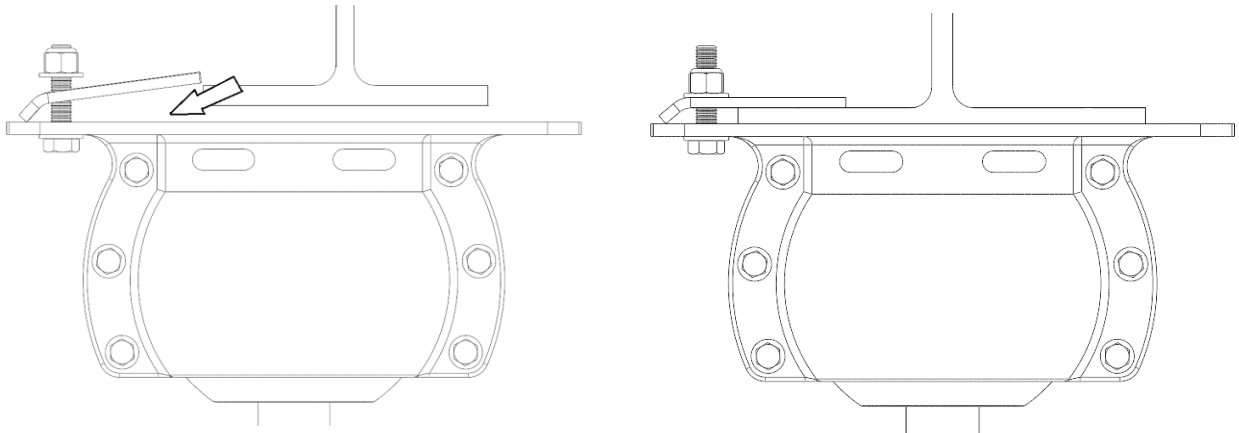
- 1.) Assemble one side of I-Beam Mount with (1) Clamp, and Hardware.



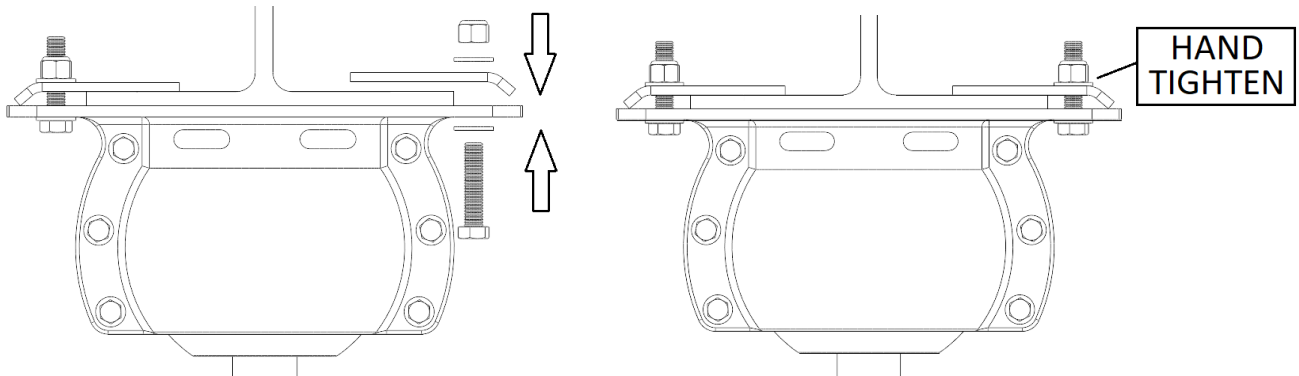
I-Beam Clamps & I-Beam Bolt Kit

- (2) I-Beam Clamps
- (2) I-Beam Shims (Use when Req'd)
- (4) Hex Bolts 1/2"-13x2"
- (8) Washers, 1/2" Flat
- (4) Hex Nuts 1/2"-13, Nylon

I-Beam Mounting (cont.)



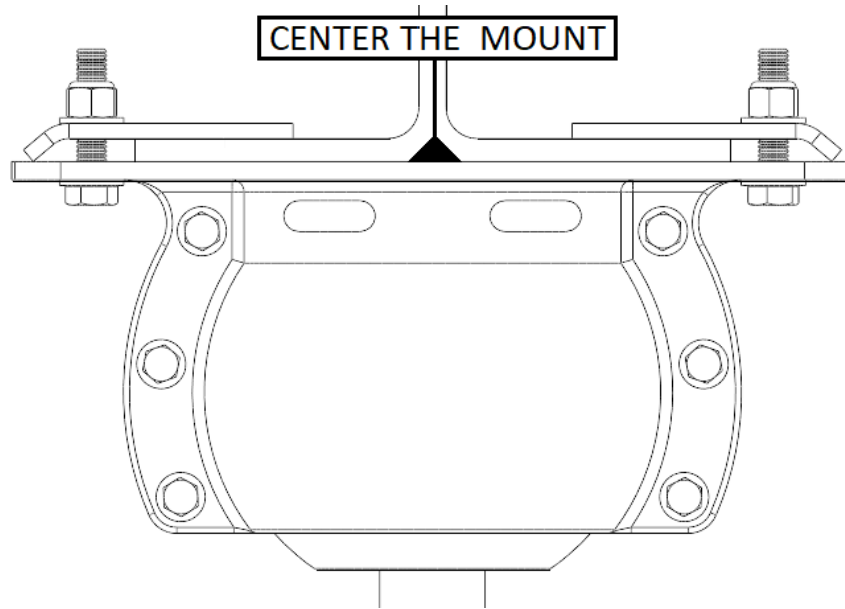
2.) Position the Control Panel under the I-Beam so that one side of the beam is between the clamp and the mount.



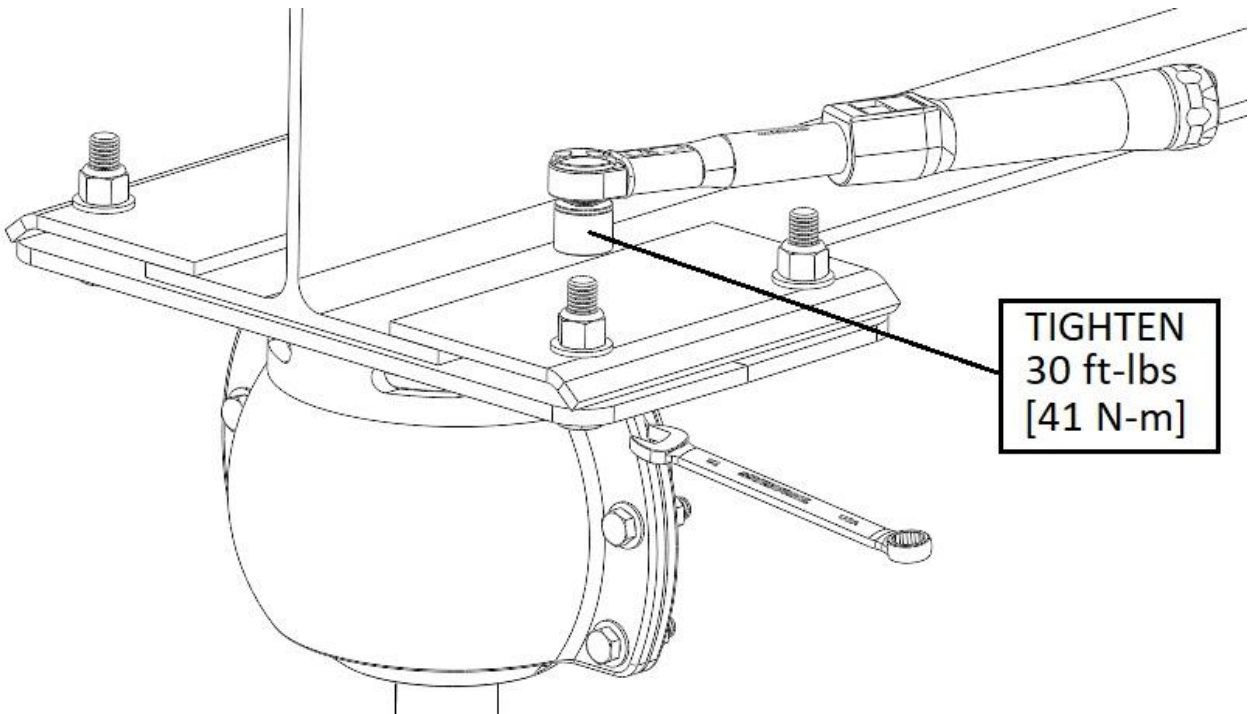
3.) Assemble other side of I-Beam Mount with (1) Clamp and Hardware.

4.) Hand tighten nuts to secure Clamp in place.

I-Beam Mounting (cont.)

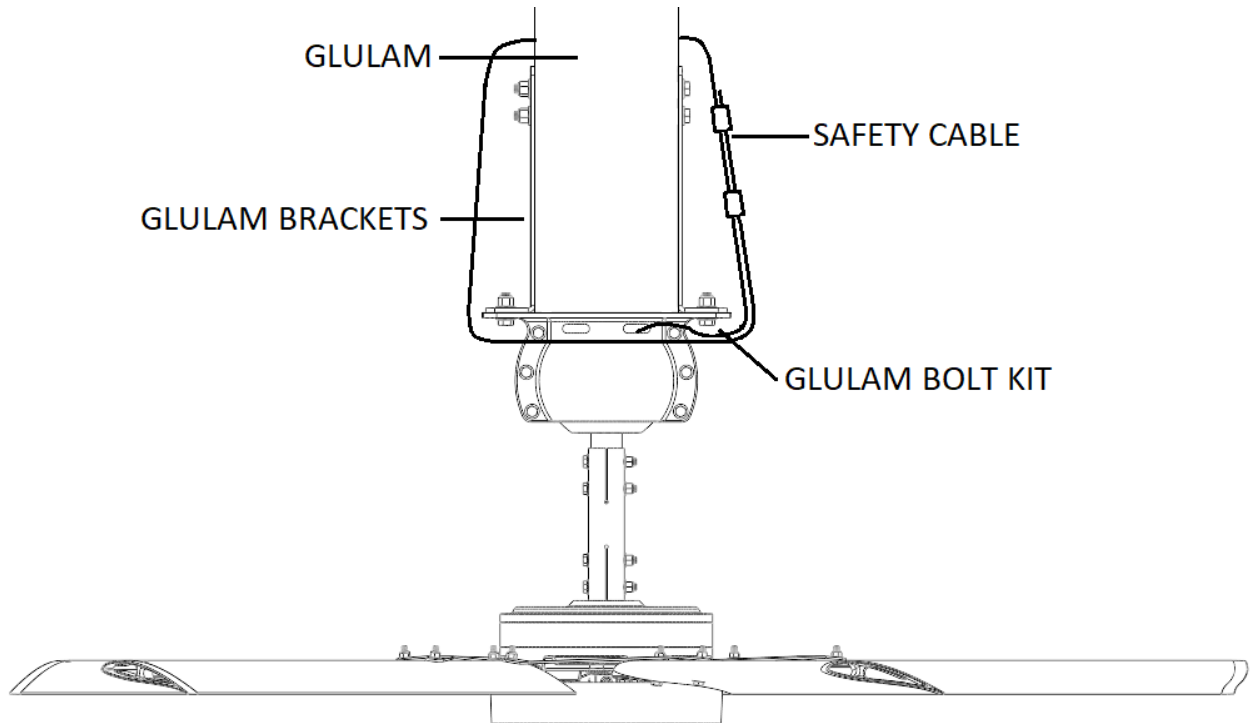


5.) Center the Control Panel on the I-Beam.

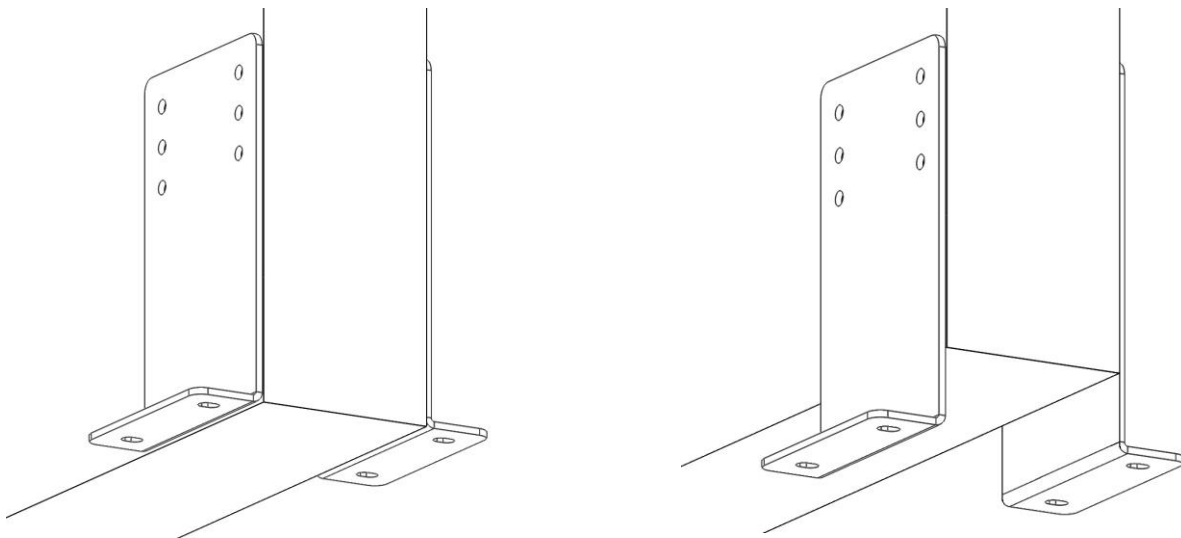


6.) Using a 3/4" combination wrench and a 3/4" socket and torque wrench tighten all hardware to 30 ft-lbs. [41 N-m]. Note: An extension may be required.

Glulam Mounting

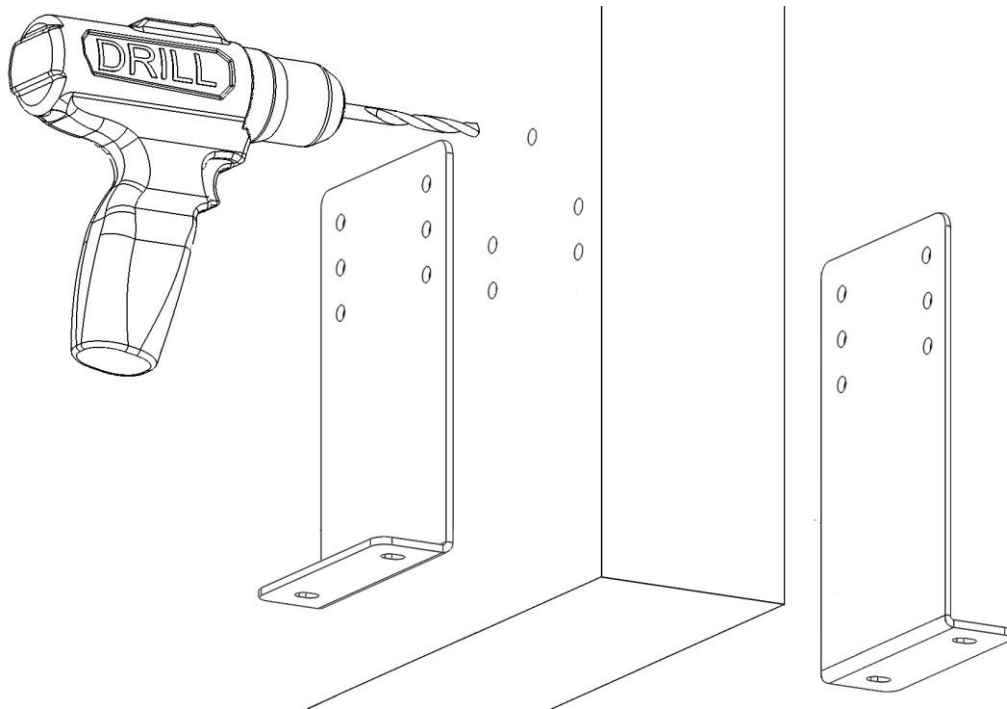


This method is recommended for Glulams or wood beams 5-1/8" or wider. For narrower beams, span across two or more beams using the Unistrut mounting method. (Refer to pages 22-23)

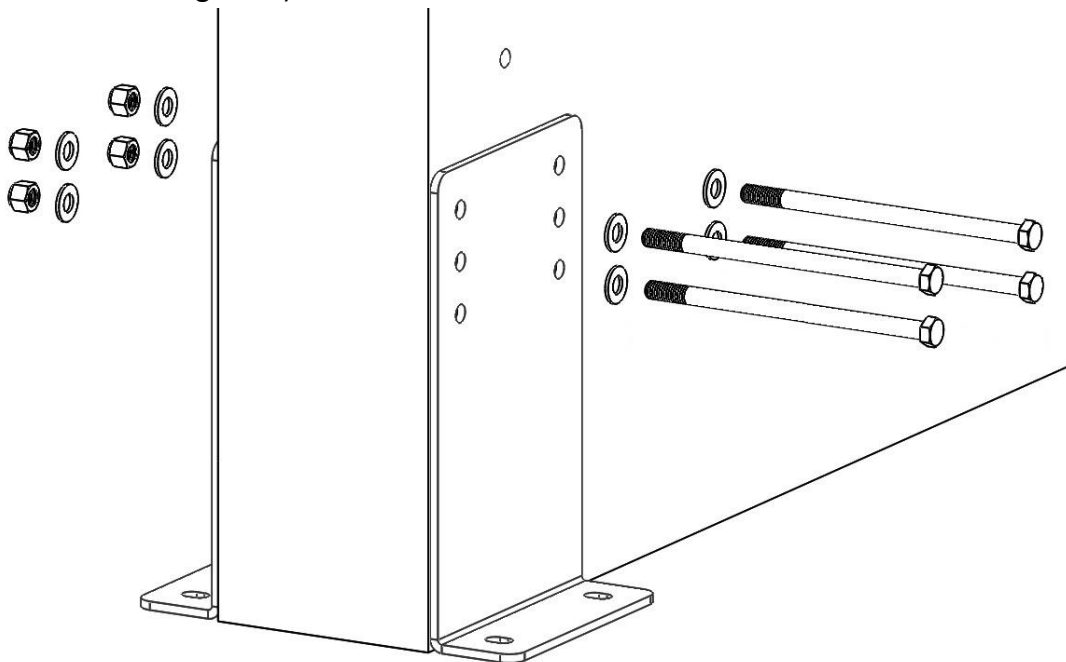


1. The Brackets can be located below the glulam if necessary but is not recommended. Locate brackets even with bottom of glulam.

Glulam Mounting (cont.)

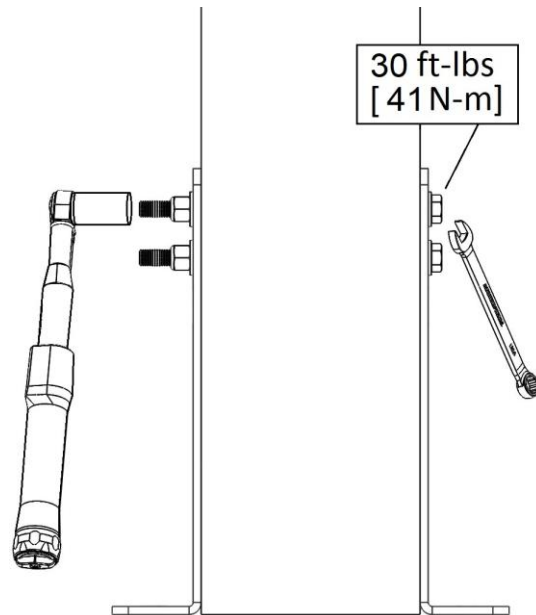


2. Drill maximum 1/2" diameter clearance holes through the glulam for (4) 3/8"-16 mounting bolts (not provided by MacroAir) and (1) hole for the 3/16" diameter safety cable. The highest bolt hole should not be below the beam's center line unless the glulam is too tall. The hole for the safety cable should be centered above the brackets (preferably above the center line of the glulam).

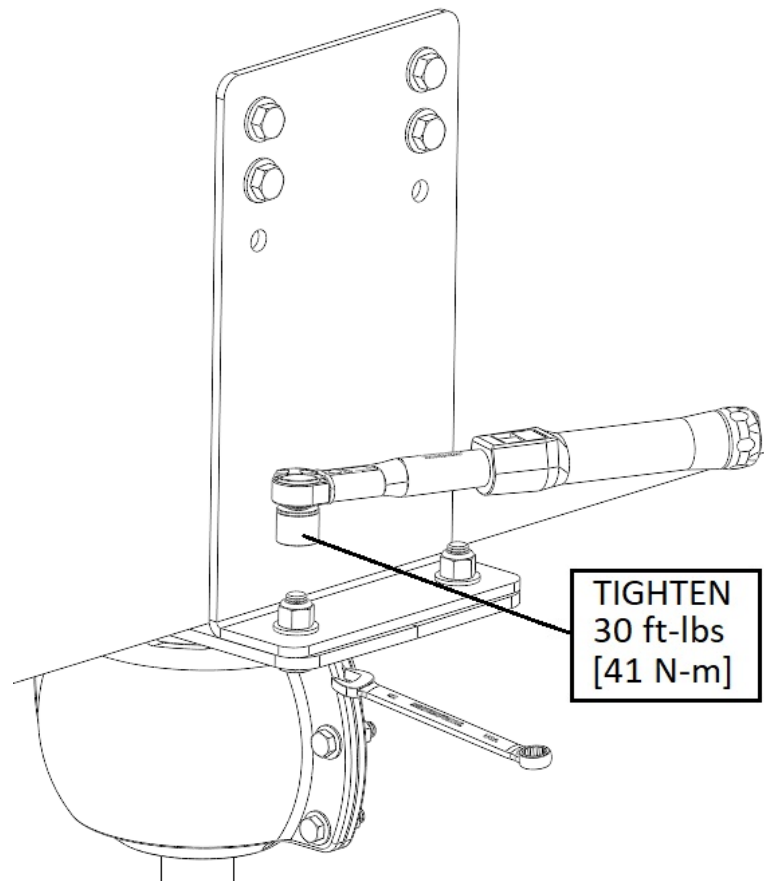


3. Secure the Glulam brackets to the Glulam via (4) 3/8"-16 grade 5 bolts (long enough to go through the entire beam with nylon lock nuts). Stack the Bolt, washer, washer, nut as shown above. Note: This hardware is not provided by MacroAir.

Glulam Mounting (cont.)



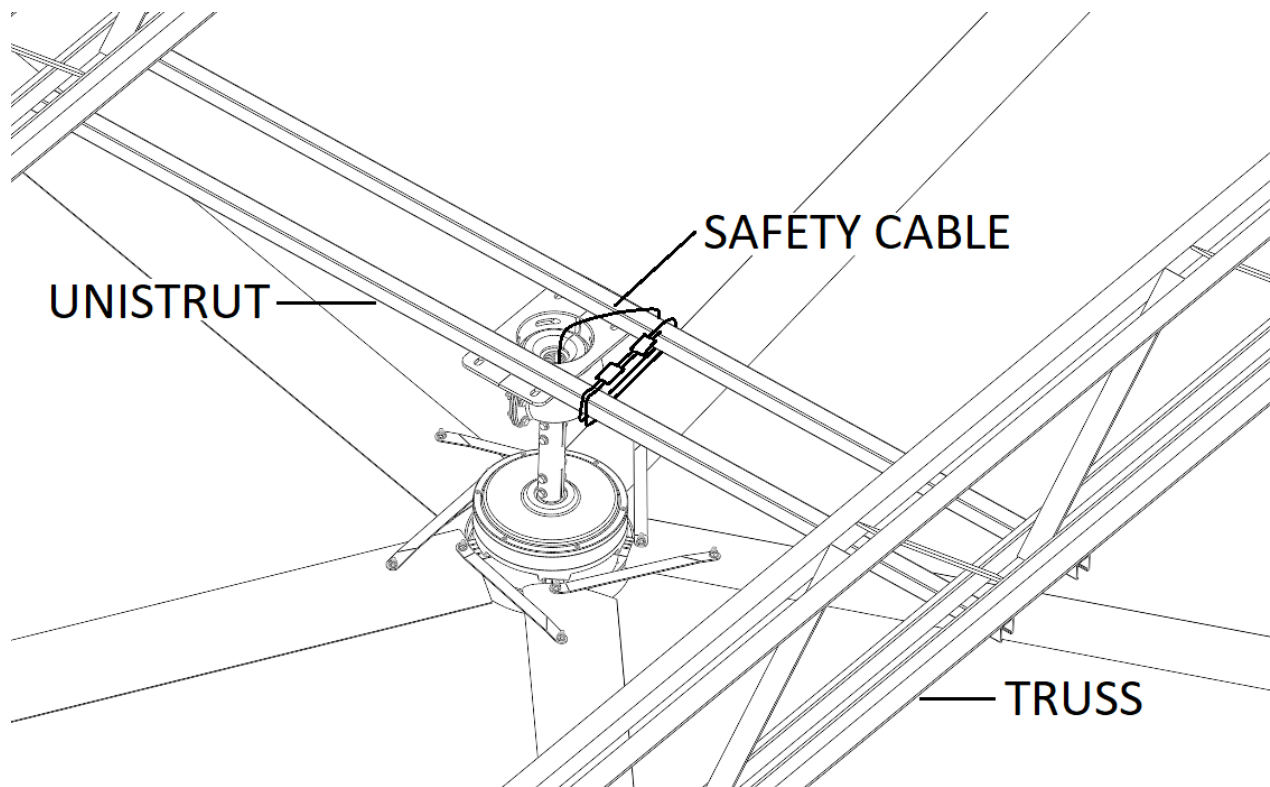
4. Using a 9/16" combination wrench and 9/16" socket and torque wrench tighten all hardware to 30 ft-lbs.[41 N-m].
5. Mount the Rapid mount Industrial (RMI) to the glulam brackets using the Mount Bolt Kit which contains: (4) 1/2"-13 x 2" Hex Bolts, (8) 1/2" Washers and (4) 1/2"-13 Nylon Lock Nuts. Using a 3/4" combination wrench and a 3/4" socket and torque wrench tighten all hardware to 30 ft-lbs. [41 N-m].



Unistrut Mounting

This method is used to span components of a building structure. Attachment points to the building structure can vary greatly, so we recommend contacting Unistrut, so they can recommend the best method for attaching the Unistrut (www.unistrut.us).

1. Two (2) pieces of 1-5/8" x 1-5/8" 12-gauge (Heavy Duty) Unistrut need to span the trusses. Distance apart to be centered over the widest hole pattern in the Rapid Mount Industrial (RMI) (see step 2). The maximum allowable distance between trusses is 8 feet. If the spanning distance is greater than 8 feet, please consult a Structural Engineer. Please refer to page 5 "Mounting Guidelines" for the maximum torque and weight guidelines.



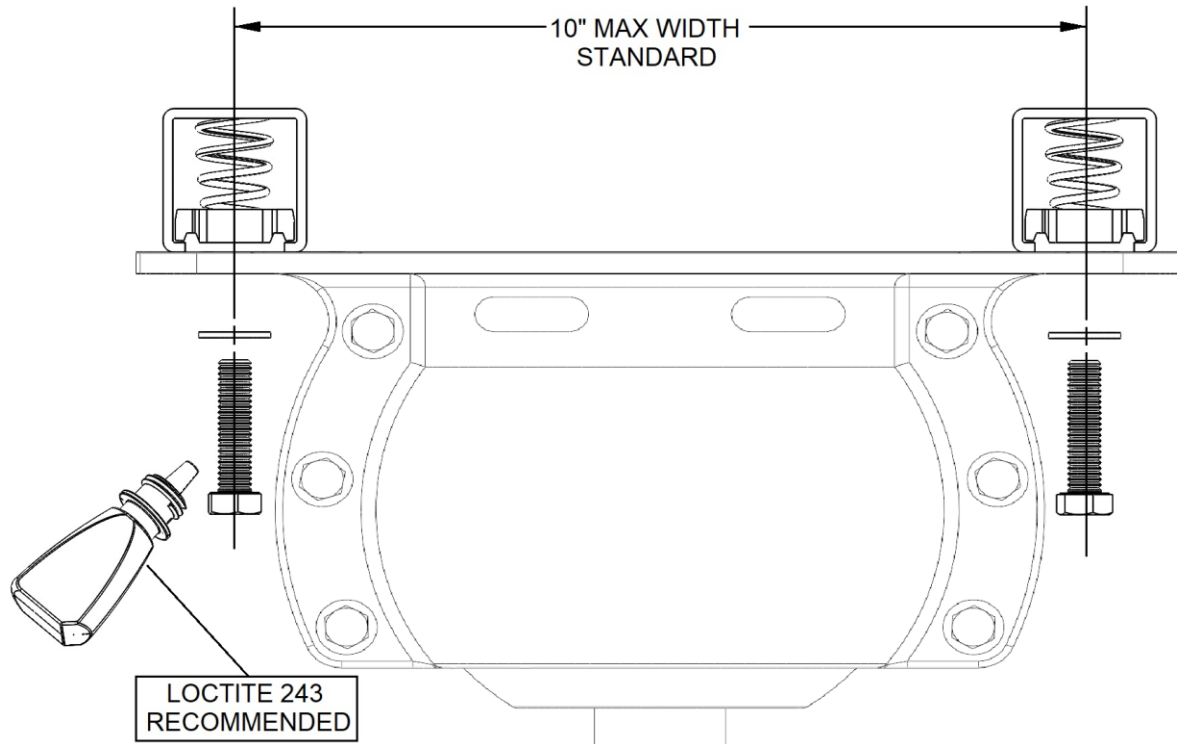
The fan shown in the above image is for illustration purposes only.

Hardware Required but Not Provided:

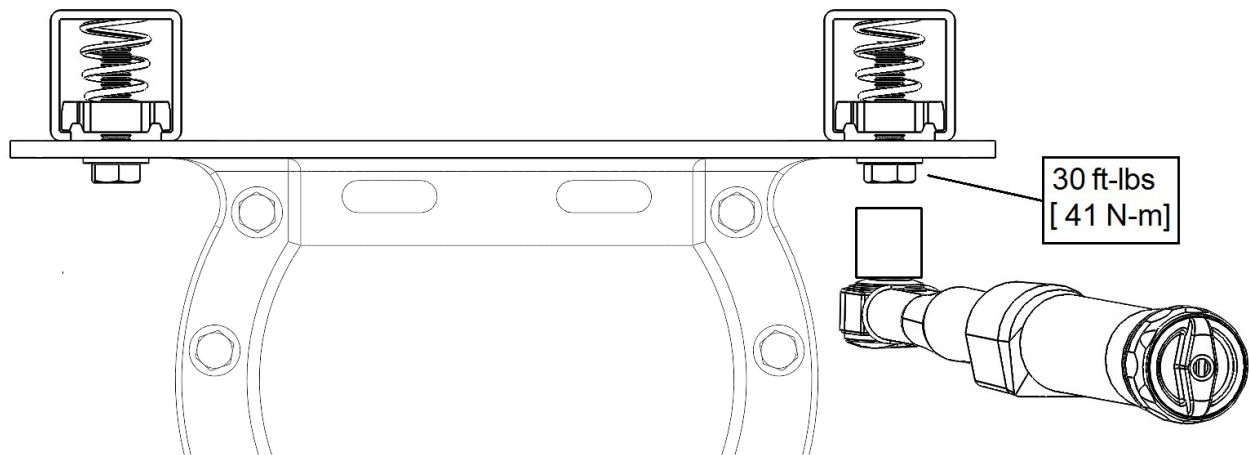
- (4) 3/8"-16 x 1-1/2" Hex Bolts
- (4) 3/8" Flat Washer
- (4) 3/8" Unistrut Spring Nut
- (1) Loctite 243

Unistrut Mounting (cont.)

- Attach the Control Panel in the most desired position between the trusses using hardware indicated (not provided). Apply Loctite 243 to the 3/8"-16 bolts prior to mounting. Unistrut clamps are not permitted in this mounting method.



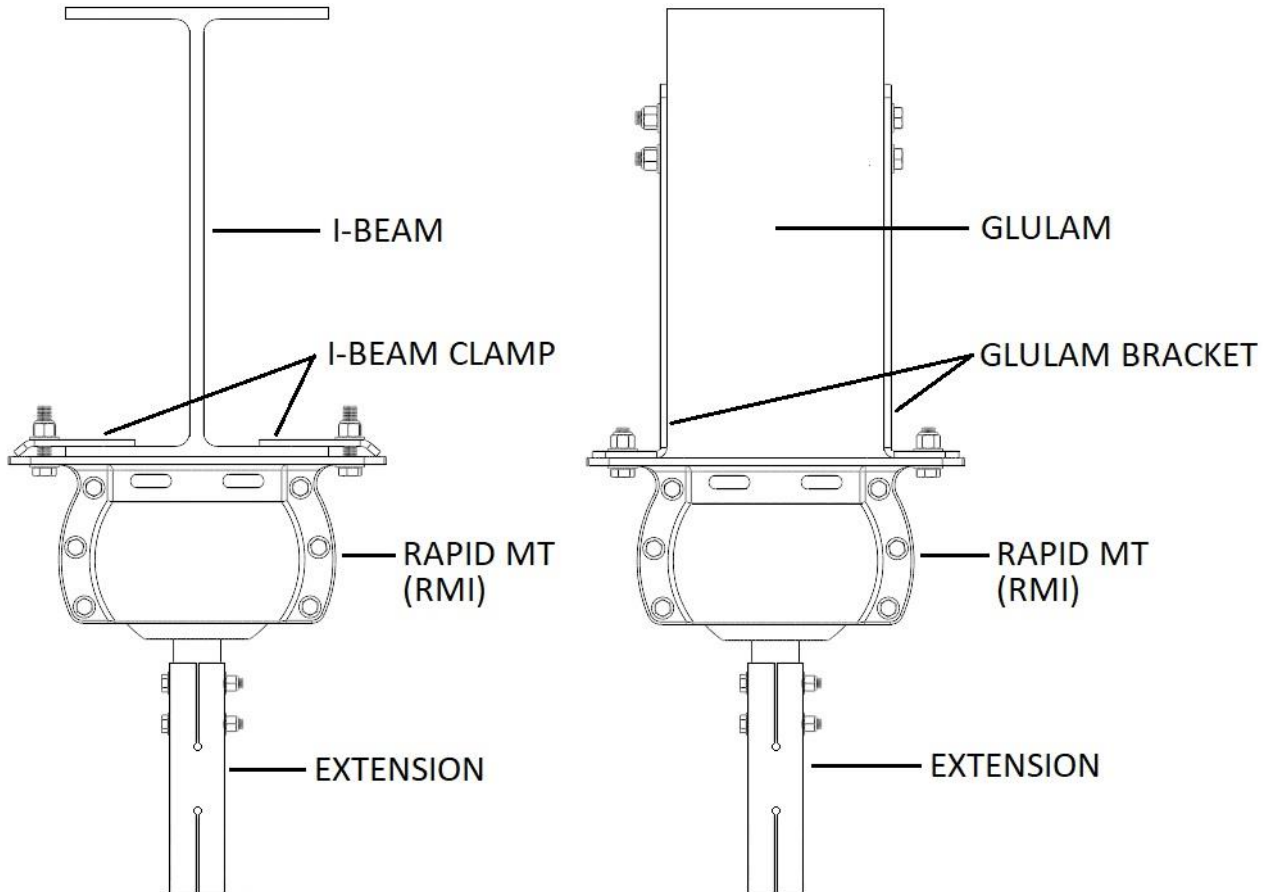
- Using a Torque wrench, tighten hardware to 30 ft-lbs (41 N-m).



NOTE: Mounting to C- and Z-purlins requires Unistrut span mounting. Mounting to trusses under three (3) inches in width requires two or more trusses to be linked with Unistrut. We recommend contacting Unistrut or a licensed structural engineer for a recommendation on the best method for attaching the Unistrut (www.unistrut.us).

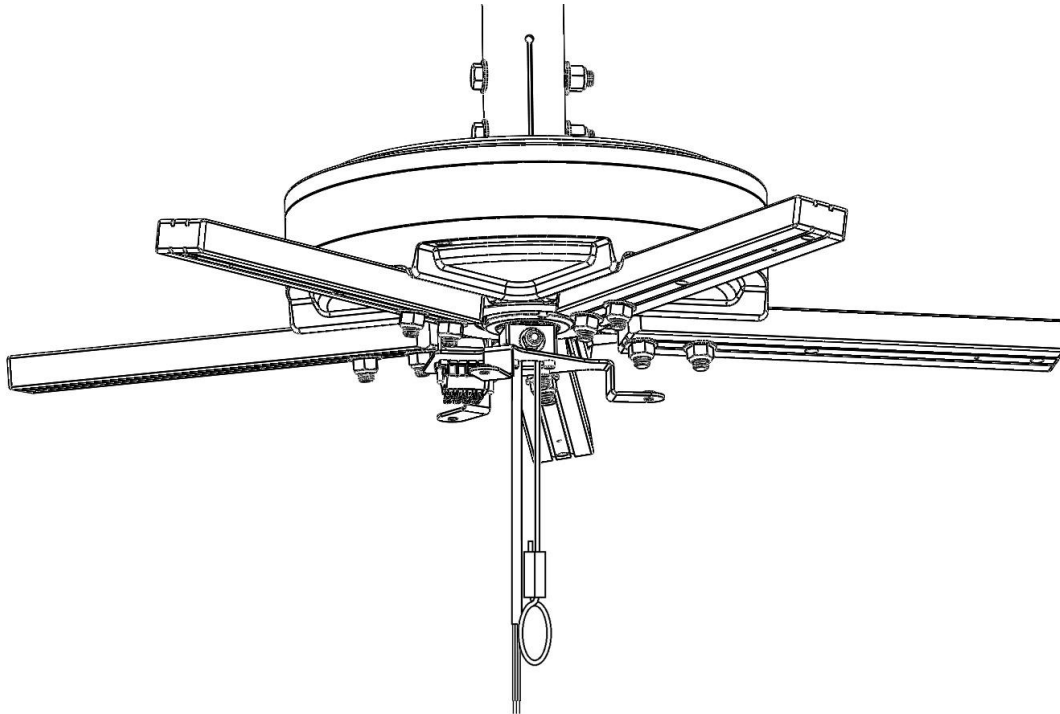
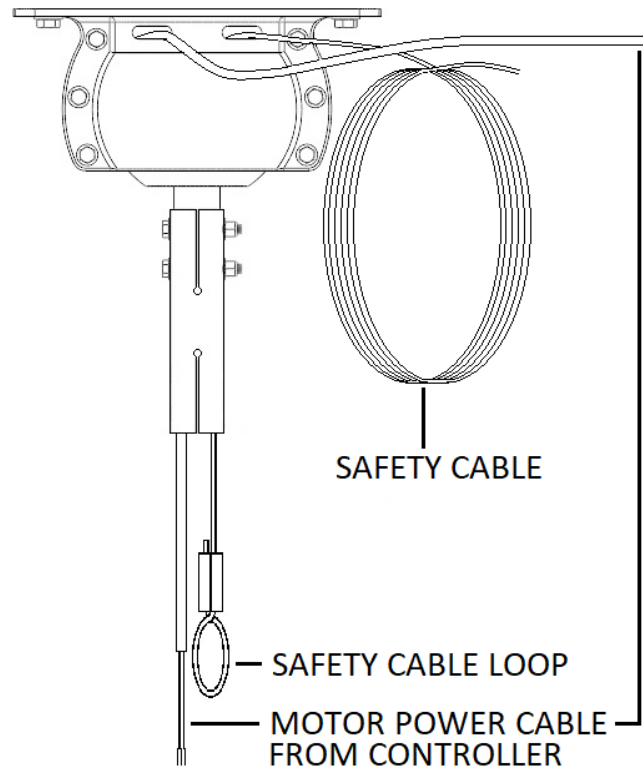
Mounting the Extension

1. Attach the extension to the bottom of the Rapid Mount Industrial "RMI" (shown below) and attach the top of the fan unit to the bottom of the extension with the provided hardware pack. Tighten hardware to 30 ft-lbs [41 N-m] using torque and combination wrenches.



Motor and Safety Cable Routing

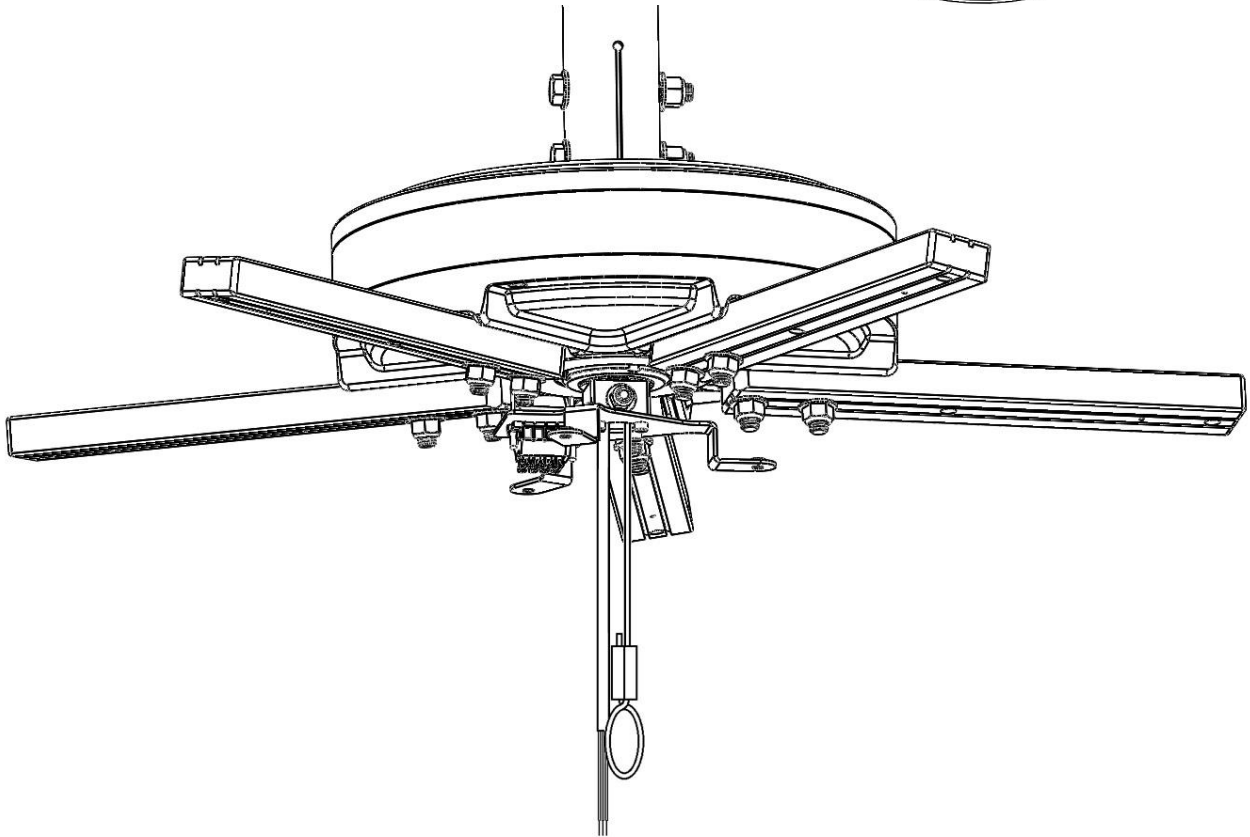
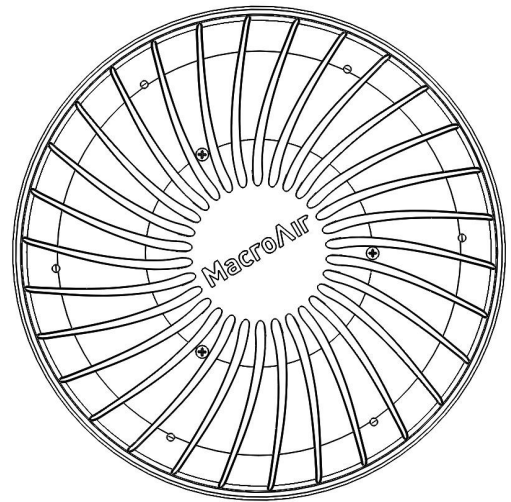
1. The Safety Cable is fed up through the Drop Extension Tube and out the open RMI mount. The motor cable and the safety cable is to be routed through the mount and extension as shown in the image to the right, after the mounts have been properly secured to the building.
2. When the motor is mounted to the bottom of the extension, the motor cable and safety cable will be passed through the fan housing for connection inside the fan unit, as shown in the image below. This procedure is discussed in the following instructions.



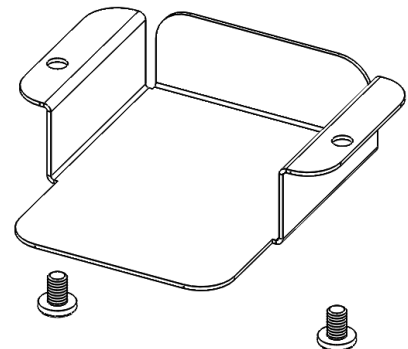
Struts and Safety Retainers: Please note that the motor assembly comes with struts and safety retainers installed. Many of the following images are shown without these components to provide clarity in the illustrated instruction. Do not remove these components to complete the following instructions.

Mounting the Motor Unit

1. Use a Phillips screwdriver to loosen the (3) #8-32 screws about the center of the cover. Do not remove the screws completely if they are captured on the cover with plastic lock washers. If washers are not present, set screws aside with cover (Do not discard).
2. Remove the bottom cover from the fan, ensure the screws are still captured on the cover with the (3) nylon washers (if washers are present). Set the bottom cover to one side.

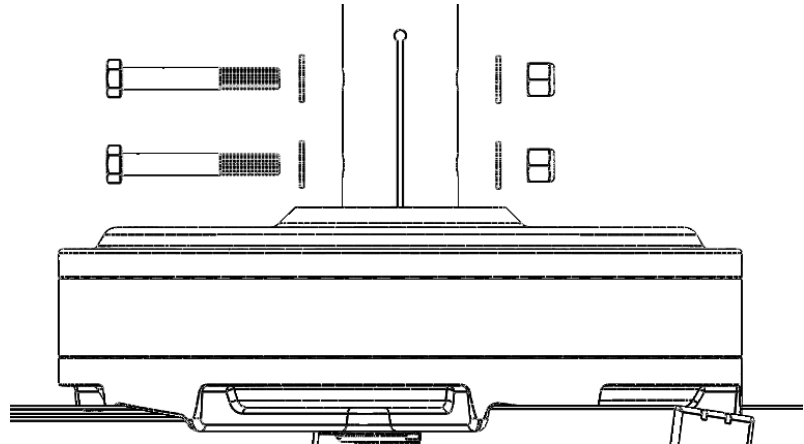


3. Remove the electrical cover. Momentarily set this hardware to one side.
4. Raise the fan and carefully guide the motor shaft into the extension tube. Feed the safety cable and motor cable through the motor.



Mounting the Motor Unit, cont.

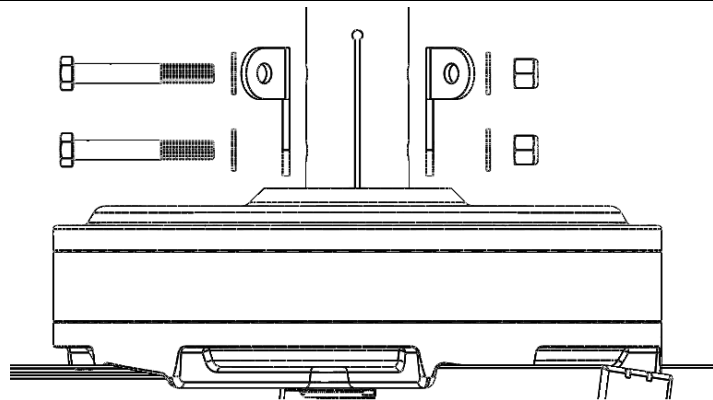
5. Bolt the fan motor shaft to the extension tube. See Guy Wire Option Note below.
6. Be careful of the wires in the motor shaft and extension tube.
7. Tighten the bolts to 30 ft-lbs [41 N-m] using torque and combination wrenches.



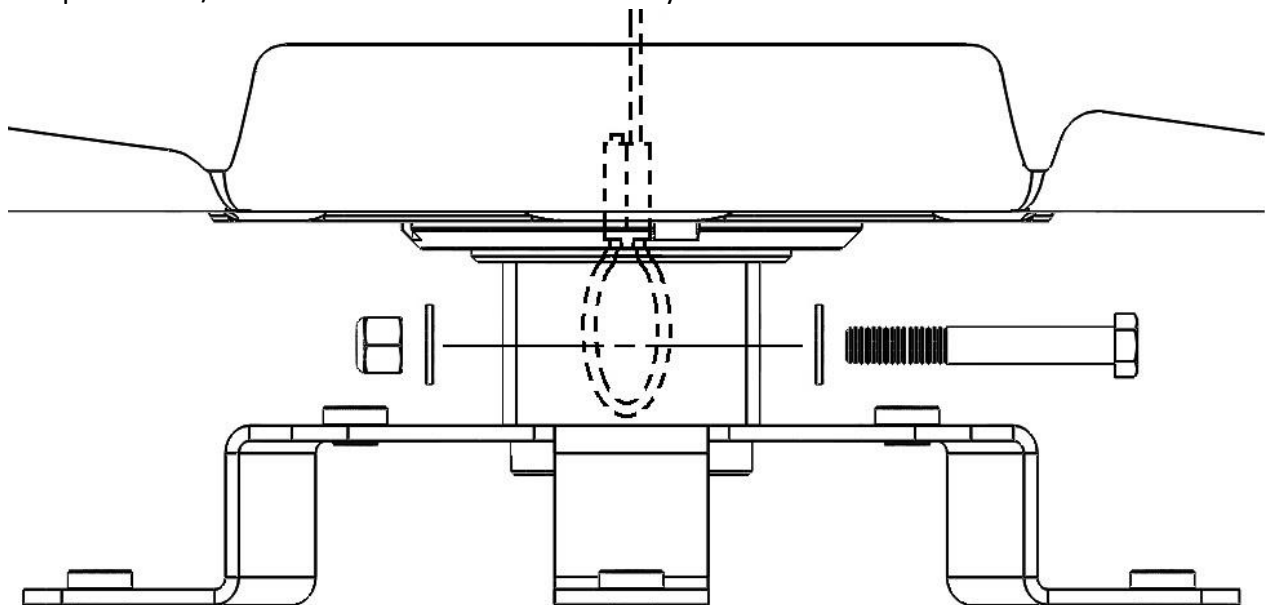
Note: GUY WIRE OPTION

If guy wires are to be used with the Rapid Mount Industrial system, then the Guy Wire Brackets are to be installed at step 5 of "Mounting the Motor Unit".

Continue with steps 6 thru 9. For more information about optional use of Guy Wire support, see pages 30 thru 32.

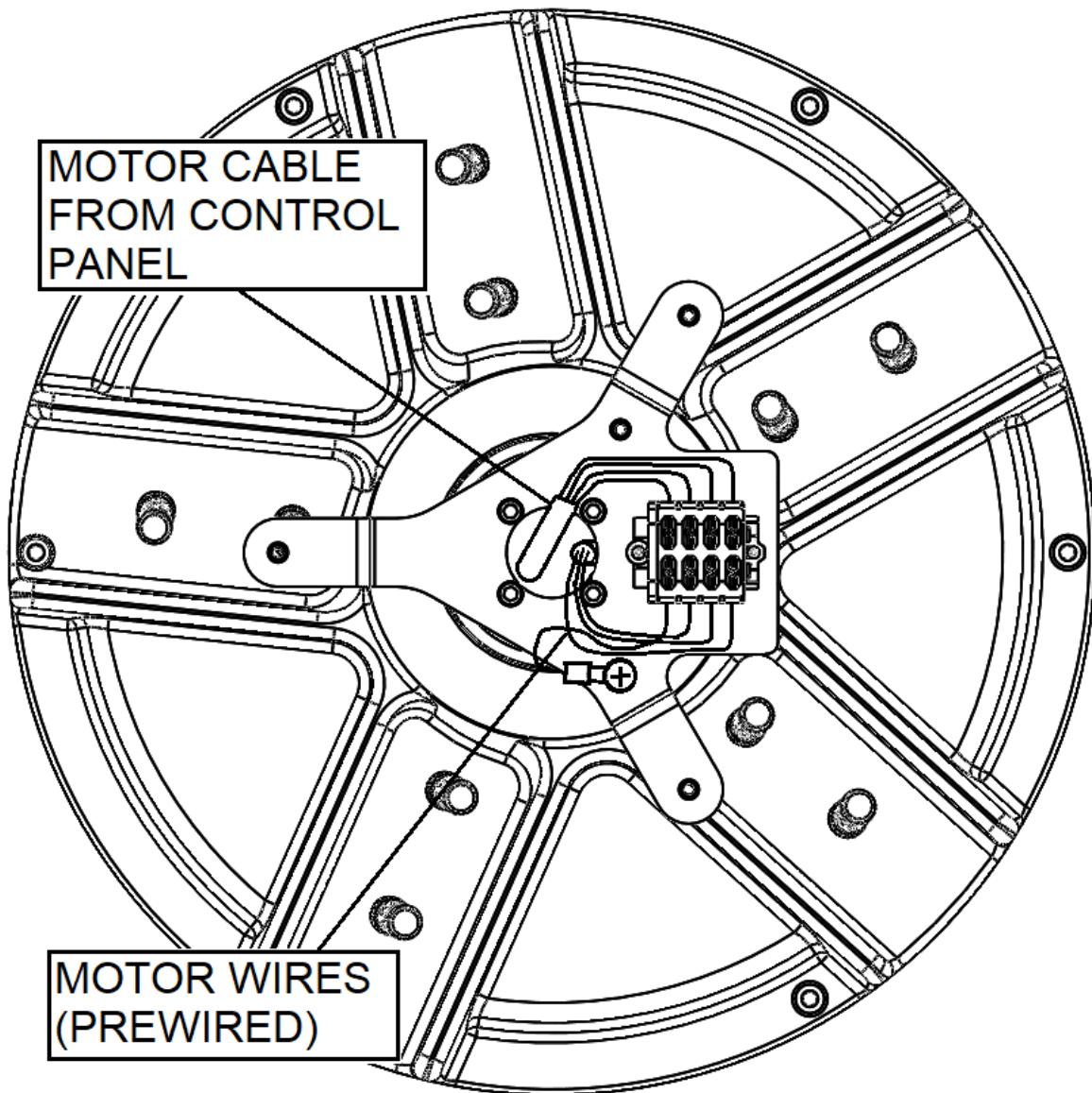


8. The Safety Cable is fed up through the Drop Extension between the mount and the Control Panel and out the open Rapid Mount Industrial (RMI). Refer to the illustration on page 29.
9. Pass the provided 1/4"-20 Safety Cable Bolt through the spacer block shown below. Pass the 1/4"-20 bolt through the loop of the safety cable, as shown. Secure the 1/4"-20 bolt with the provided 1/4"-20 nut and washers in the Safety Cable Bolt Kit.



Motor Cable Connection

1. The motor cable from the Control Panel is passed through the retaining bracket and connected to the four-position terminal block.



2. Wiring to the terminal block:

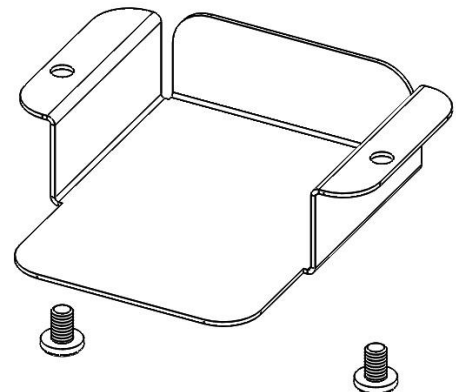
Green wire chassis GND – motor control cable bare wire

White wire – motor control cable black #1 wire

Black wire – motor control cable black #2 wire

Yellow wire – motor control cable black #3 wire

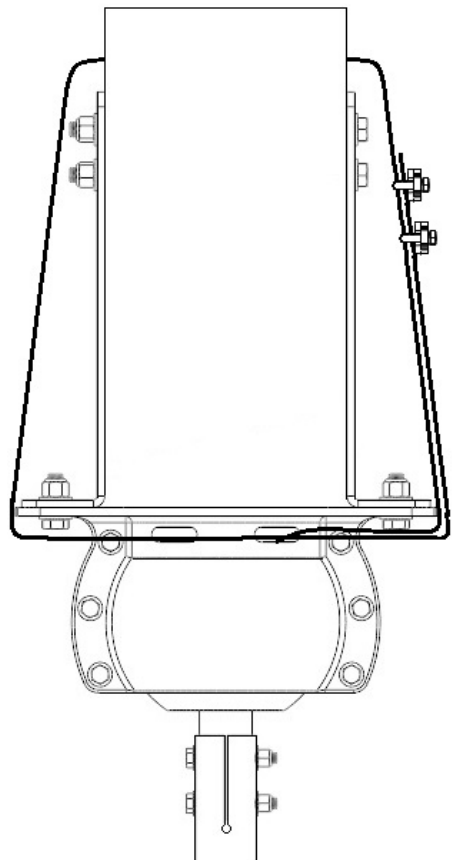
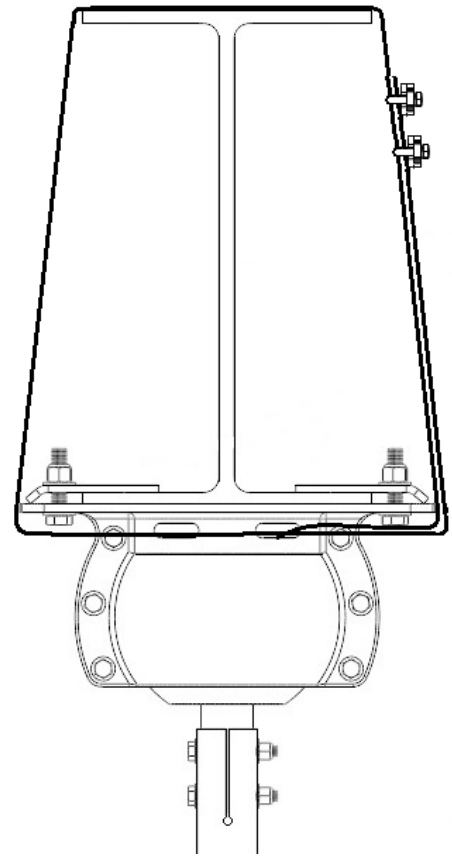
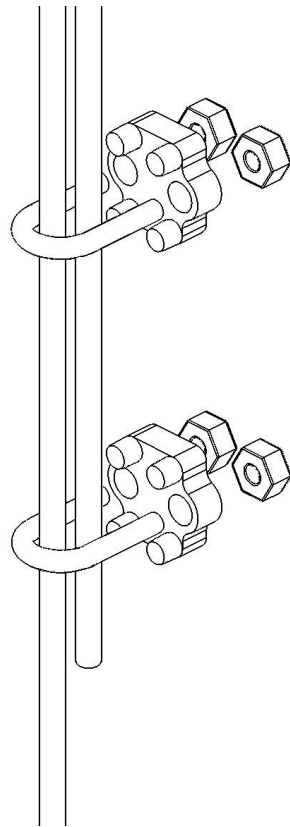
3. Replace the cover previously removed to access the terminal block. Do not yet replace the MacroAir bottom cover as you still need access to install the blades.



Safety Cable Installation

I-Beam

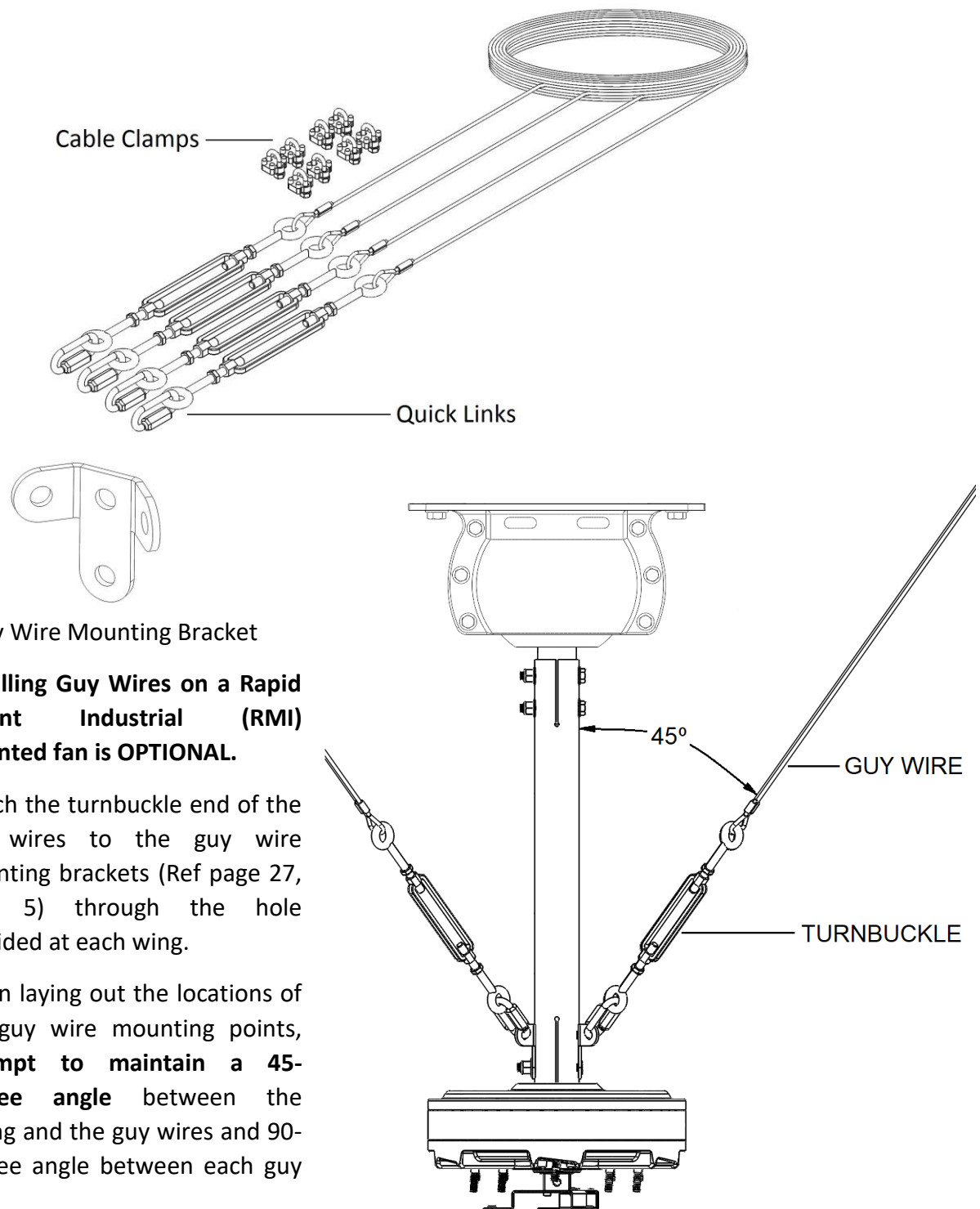
1. Wrap 1/8" diameter safety cable from the mount, around the I-beam multiple times.
2. Secure two (2) safety cable clamps around the wire. Pull the cable taut and tighten both nuts using a 3/8" combination wrench.



Glulam

1. Wrap 1/8" diameter safety cable from the mount, through the hole drilled in the Glulam above brackets.
2. Secure two (2) safety cable clamps around the wire. Pull the cable taut and tighten both nuts using a 3/8" combination wrench.

Guy Wire: Installation on RMI



Installing Guy Wires on a Rapid Mount Industrial (RMI) mounted fan is OPTIONAL.

1. Attach the turnbuckle end of the guy wires to the guy wire mounting brackets (Ref page 27, step 5) through the hole provided at each wing.
2. When laying out the locations of the guy wire mounting points, **attempt to maintain a 45-degree angle** between the ceiling and the guy wires and 90-degree angle between each guy wire.
3. Avoid any sharp edges that may contact the guy wire. Guy wires need to be attached to the building structure via 1/2" eye lags or bolts with the provided cable clamps. Eye Lags or bolts are not supplied by MacroAir.

⚠ WARNING: DO NOT wrap the guy wires around the building structure.

Guy Wire: Tightening

4. Tighten down the nuts on each cable clamp with a 11mm combination wrench (or socket).

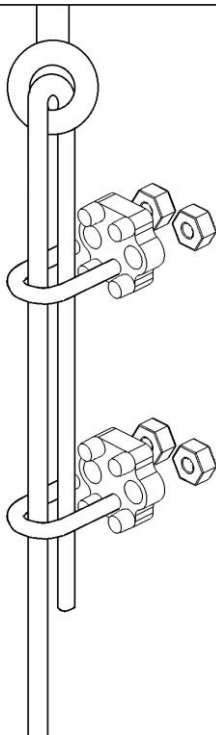


Fig. Note 4

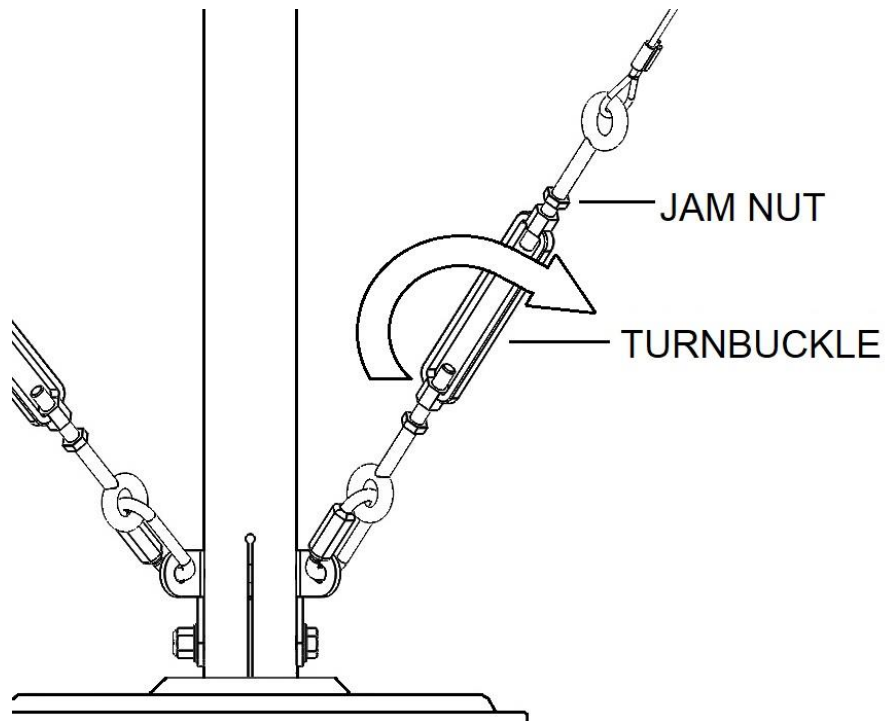


Fig. Notes 5-7

5. With the aid of a level placed against the drop extension, tighten the turnbuckles by hand in a crisscross pattern while periodically checking to ensure that the fan is level.
6. Tighten the turnbuckles until the fan unit is stable in the level position.

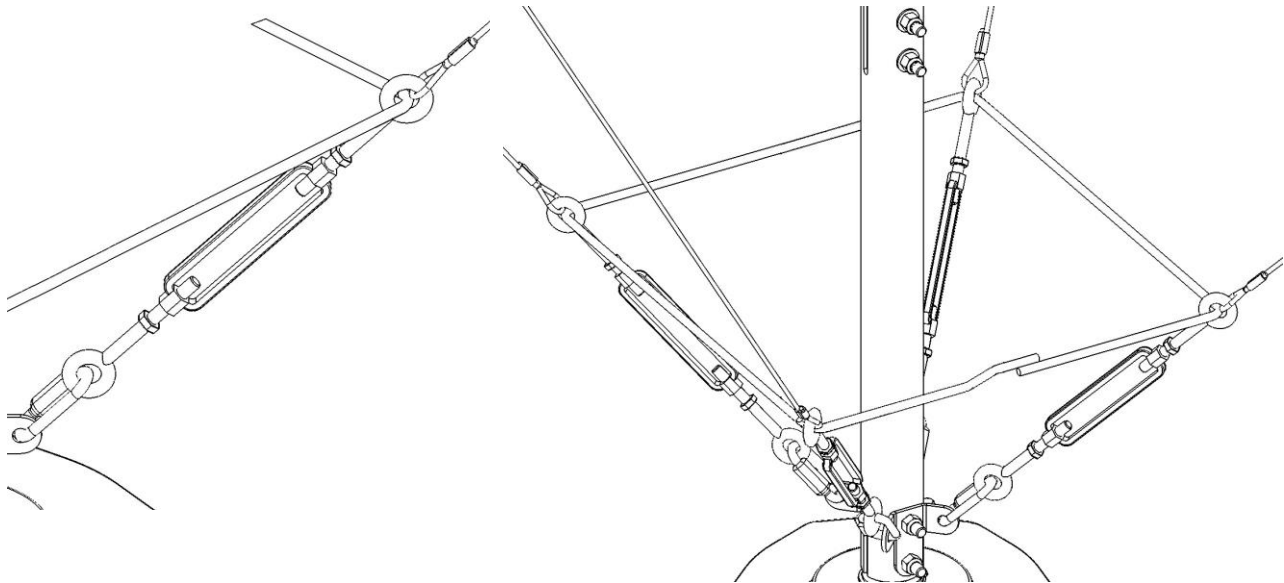
⚠ WARNING: Make sure to not overtighten the turnbuckles.

7. Once all the guy wires are taut (stretched or pulled tight with no slack) and the fan unit is stable and level, tighten the jam nuts on the turnbuckles with a 1/2" combination wrench.

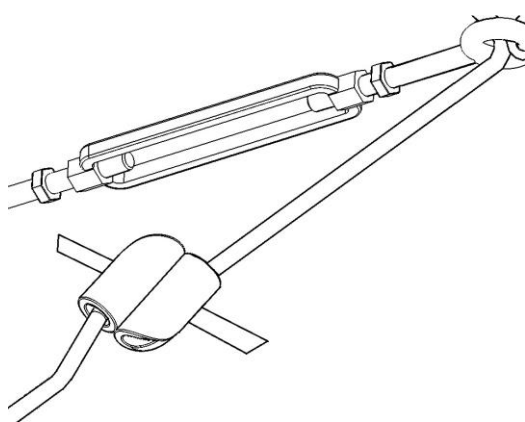
⚠ WARNING: Do not use tools to tighten the turnbuckles; only use tools to tighten the jam nuts.

Guy Wire: Band Installation

1. Insert the elastic cord through the top eyelet of each of the 4 turnbuckles.

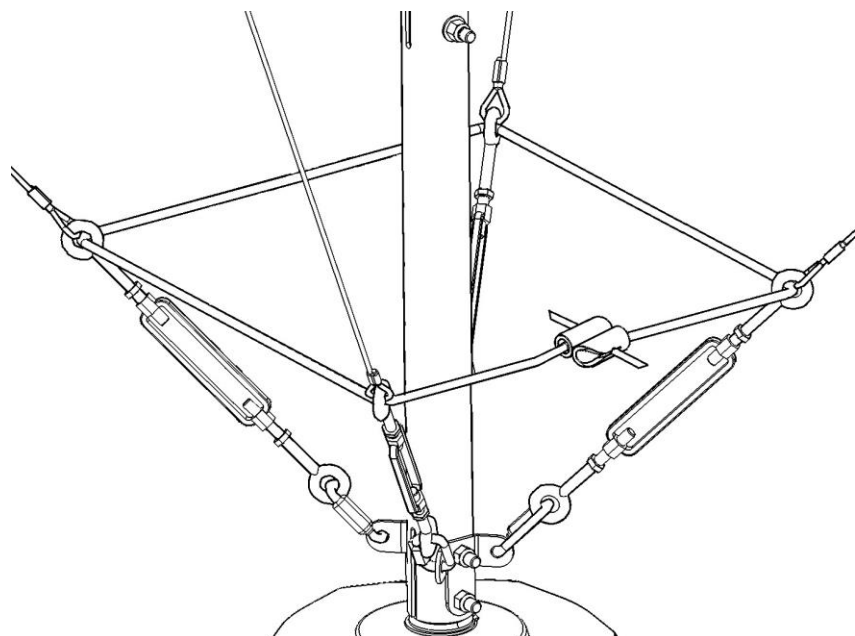


2. Pull one of the ends of the cord through one of the holes on the cable lock and then pull the end into the groove to lock it. Use pliers to properly secure the cord in the groove of the cable lock.



3. Repeat the previous instruction for the second end of the cord using the opposite hole and groove on the cable lock.

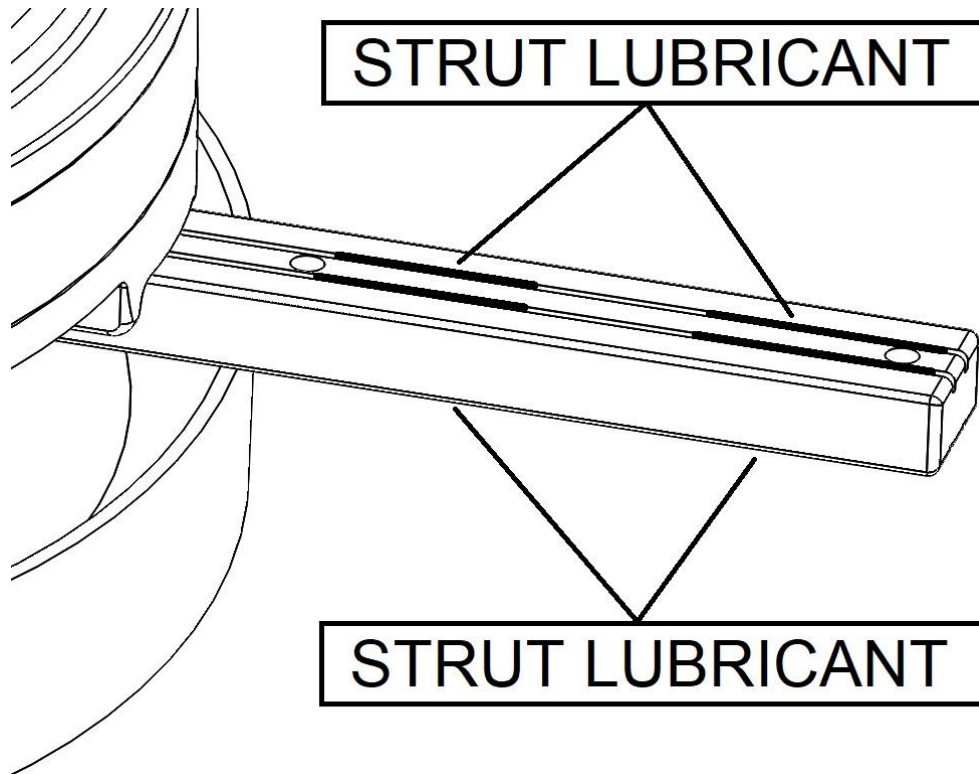
4. The safety cord should be pulled tight and fastened as shown.



**DO NOT EXCESSIVELY
STRETCH THE ELASTIC CORD.**

Blade/Strut Lubricant

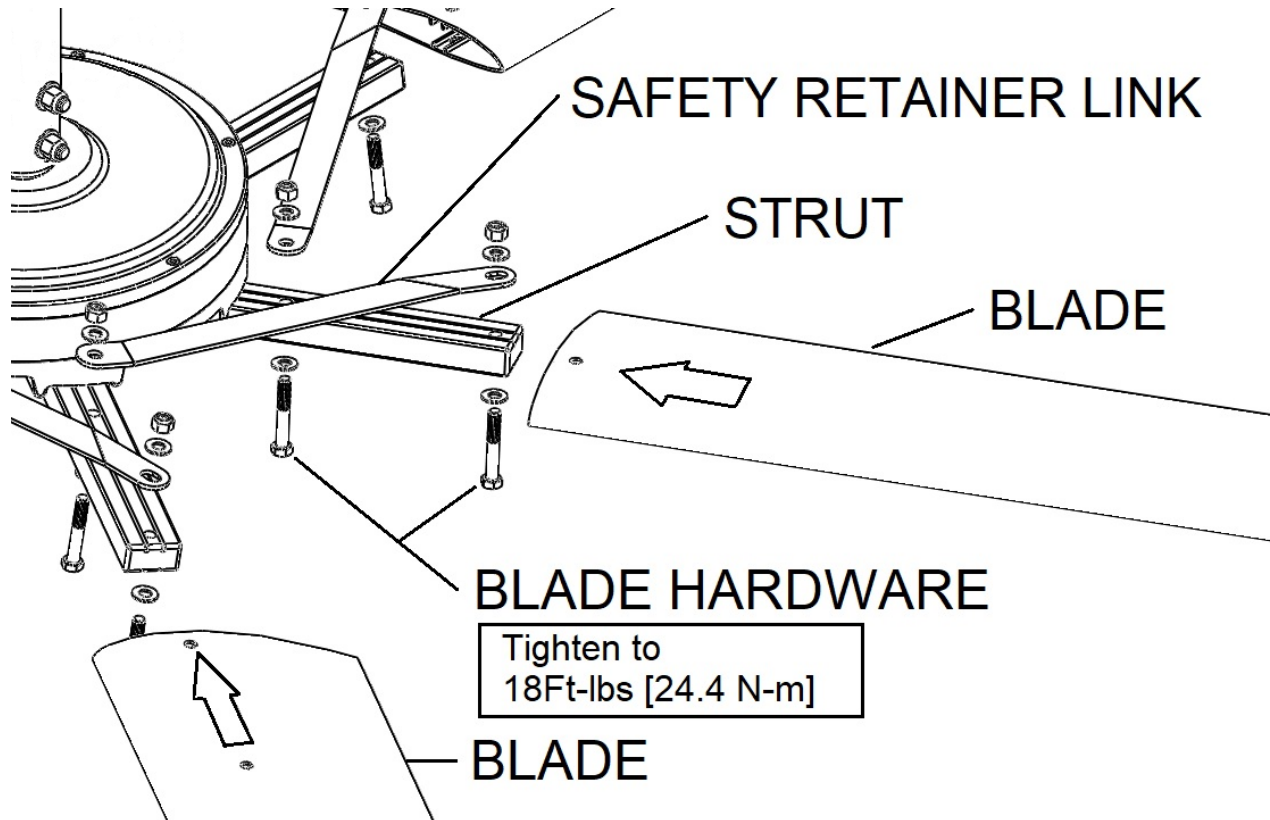
Apply the provided lubricant in 4 spots on the top and 4 spots on the bottom of each strut as indicated. Each line of lubricant should be in a groove of the strut, starting at the tip of the strut, approximately 1"-1.5" long and spaced as indicated.



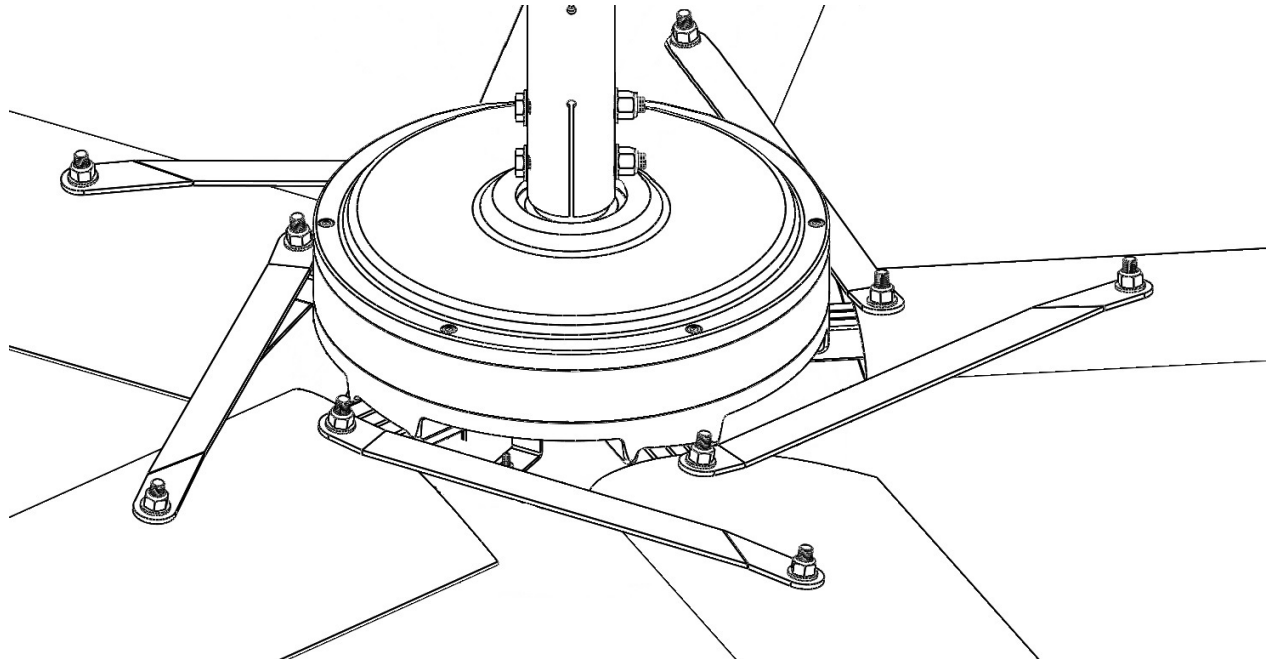
NOTE: The lubricant should reach the top of the groove.
It is not necessary to use the entire tube.

Blade Assembly

1. Prior to blade installation, see strut lubricant instructions on page 33. With Struts lubricated, slide fan blade onto a blade strut (with the safety retainer links) until mounting holes line up. Insert two 5/16" -24 Hex Head Bolts, Washers and Nylon Locknuts provided in Blade Bolt Kit.

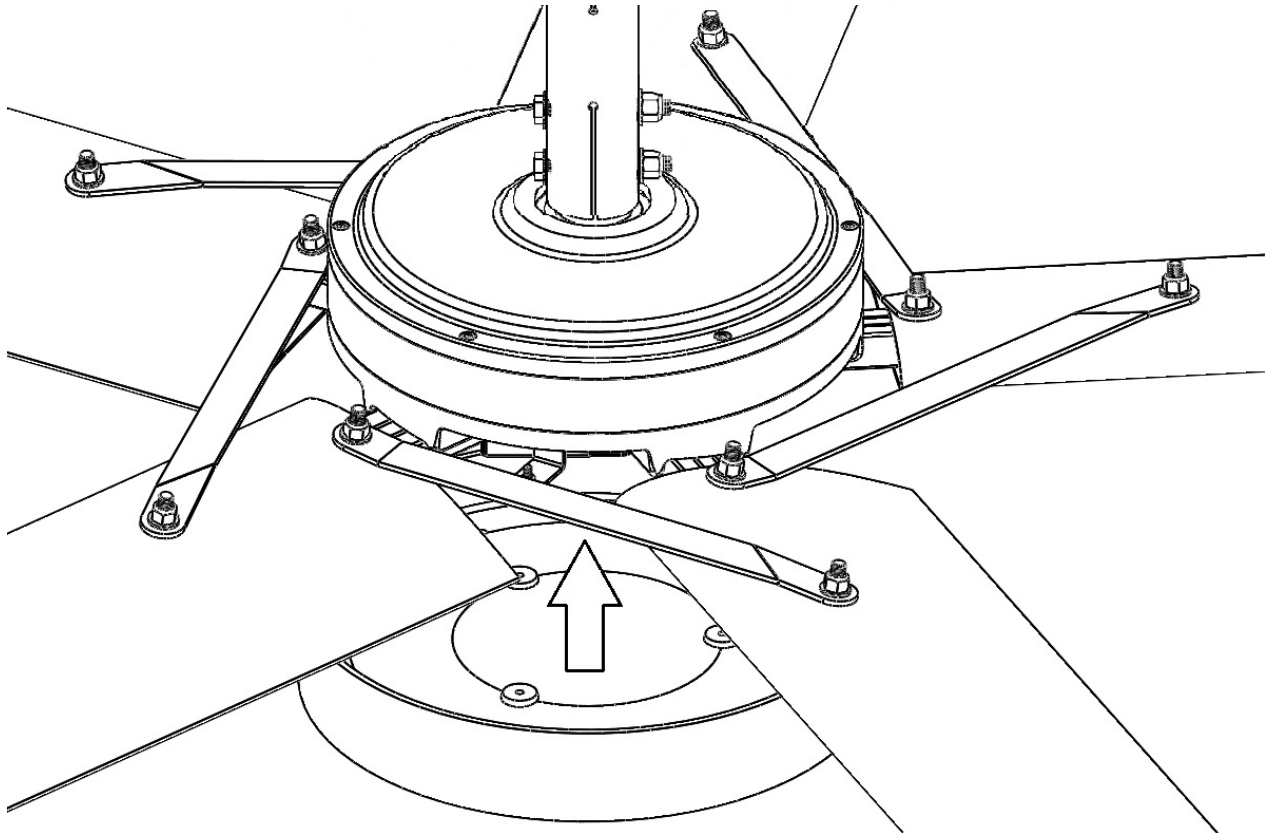


2. Install each Blade and Safety Retainer Link in the same manner.

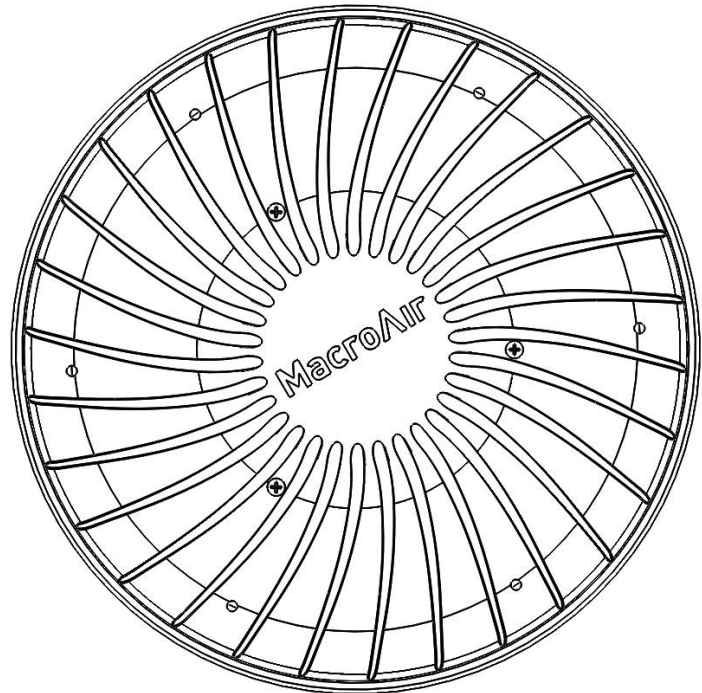


Assembly Conclusion

3. Once all the blades are in place, reinstall the MacroAir cover. See note 4 for torque requirements.



4. The three Screws to mount the cover may still be attached to the cover with plastic lock washers, if not, recover the three screws set aside with the cover at the time of disassembly (ref page 26, notes 1 & 2). Tighten the three screws to 5 in-lbs [.56 N-m] to secure cover in place.



Electrical & Safety Cable Installation

⚠ WARNING: MOTOR CABLES AND INCOMING POWER MUST NEVER BE RUN IN THE SAME CONDUIT. FAILURE TO INSTALL PER MACROAIR INSTRUCTIONS, INCLUDING WIRING, MAY BE HAZARDOUS, CAUSE PREMATURE FAILURE, AND VOID THE MANUFACTURE'S WARRANTY.

⚠ ATTENTION: Regulatory Notice, EMI (Electromagnetic Interference)

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety services or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pagers, and personal communications services (PCS). These licensed services, along with unintentional radiators such as digital devices, variable frequency drives (VFDs), and other equipment such as fans with VFDs, contribute to the electromagnetic environment.

Electromagnetic compatibility is the ability of items of electronic equipment to function properly together in the electronic environment. MacroAir Fans variable frequency drives, VFDs, are designed to be in compliance with regulatory agency limits for EMI. However, there is no guarantee that interference will not occur in a particular installation. If MacroAir's products (fans) do cause interference with radio communications services, which can be determined by turning the fans off and on, please notify MacroAir technical support.

MacroAir Technologies' products are designed, tested, and classified for their intended electromagnetic environment. These electromagnetic environment classifications generally refer to the following harmonized definitions:

Class A is typically for business or industrial environments.

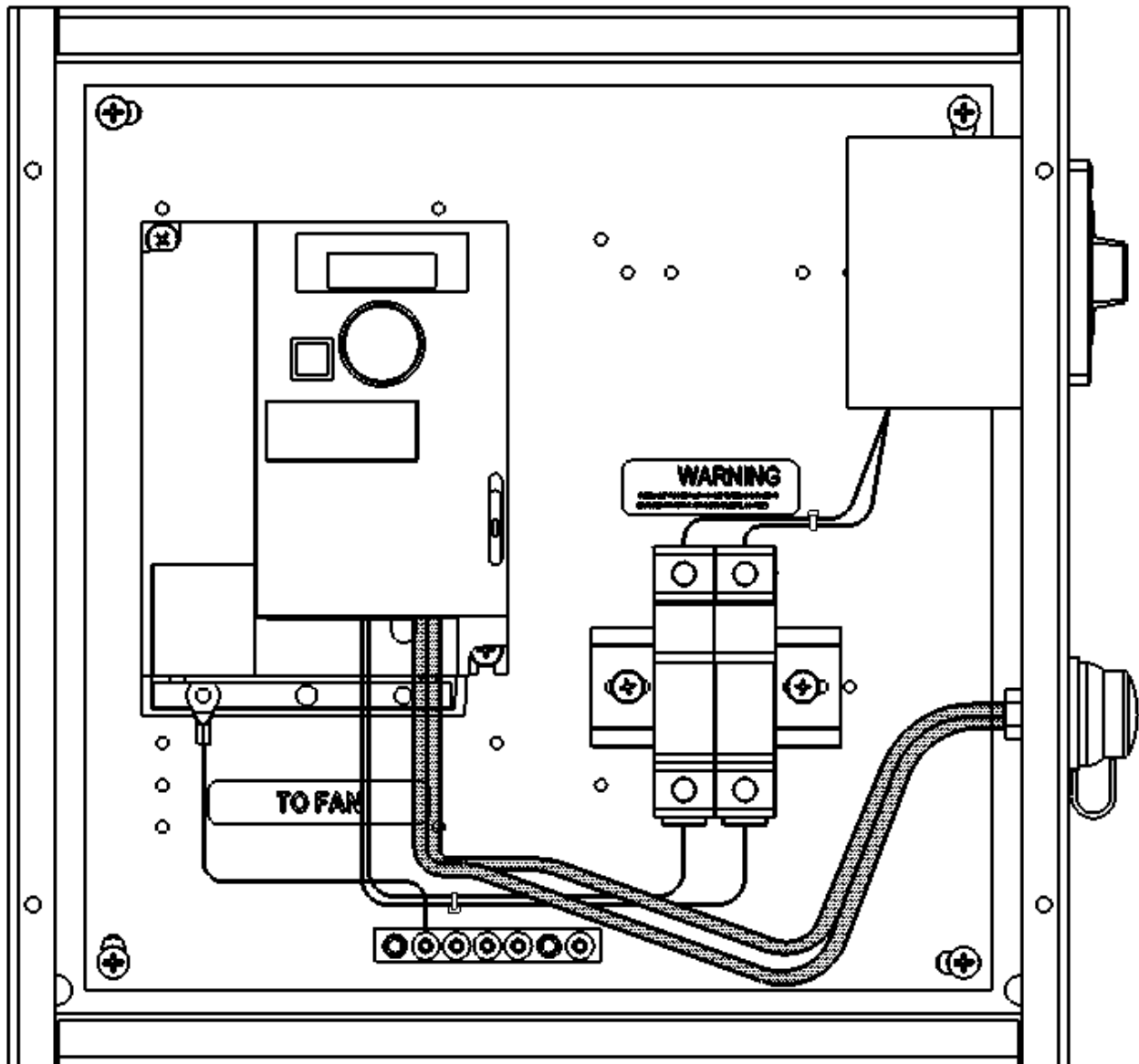
Class B (MacroAir products are **NOT** designed for typical residential environments covered under this classification).

CODE COMPLIANCE IS THE RESPONSIBILITY OF THE INSTALLER, AND ULTIMATELY, THE END USER. All wiring should conform to the National Electric Code (NEC) 2005, ANSI/NFPA 70-1999, and all local codes. This fan control should only be installed by qualified technicians familiar with the requirements of the NEC and local codes.

Note: MacroAir Technologies has a policy of continuous product improvement and reserves the right to change design and specifications without notice.

If you have any questions, please contact MacroAir technical support.

Control Panel Overview

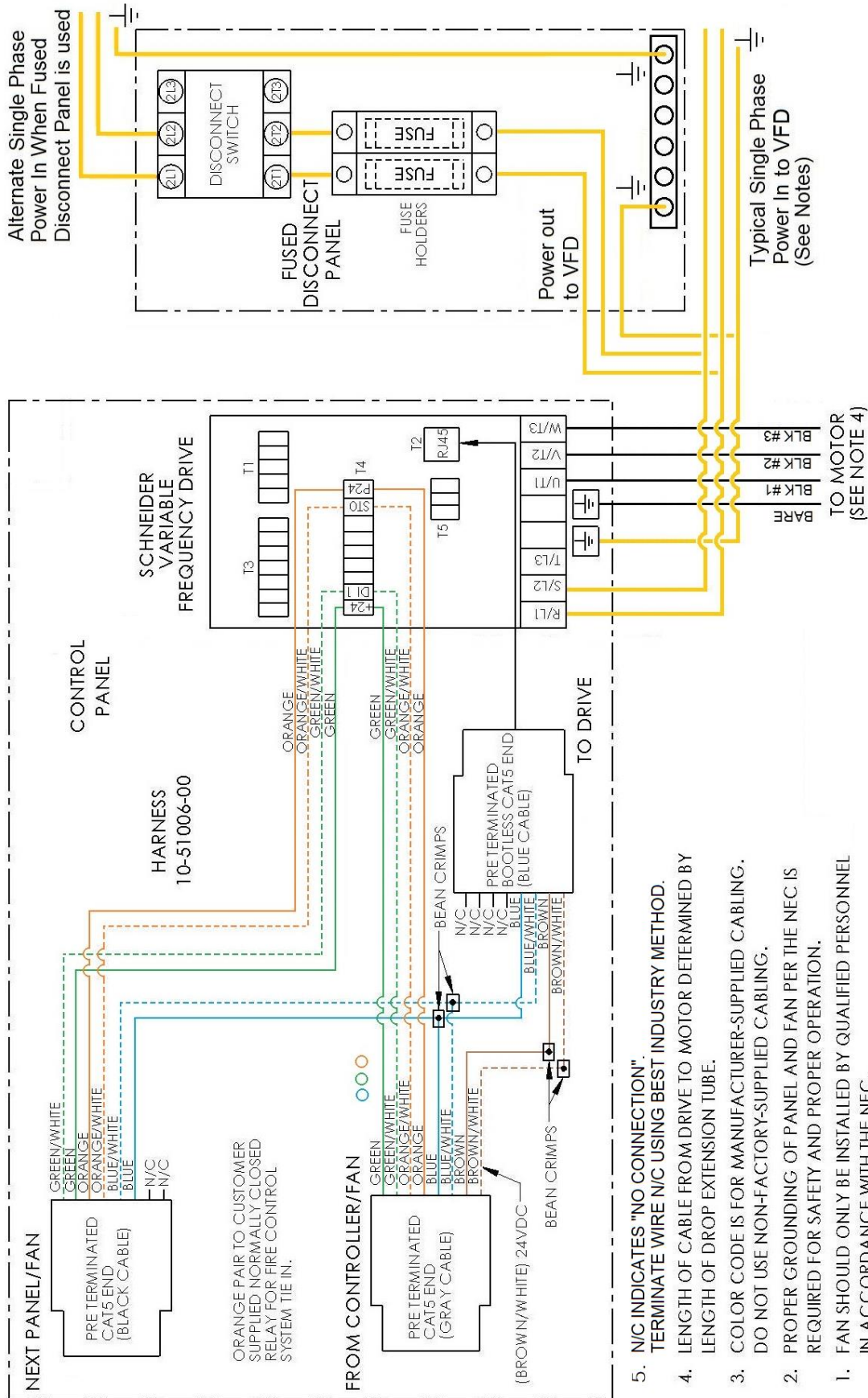


Control Panels come pre-wired, as illustrated above.

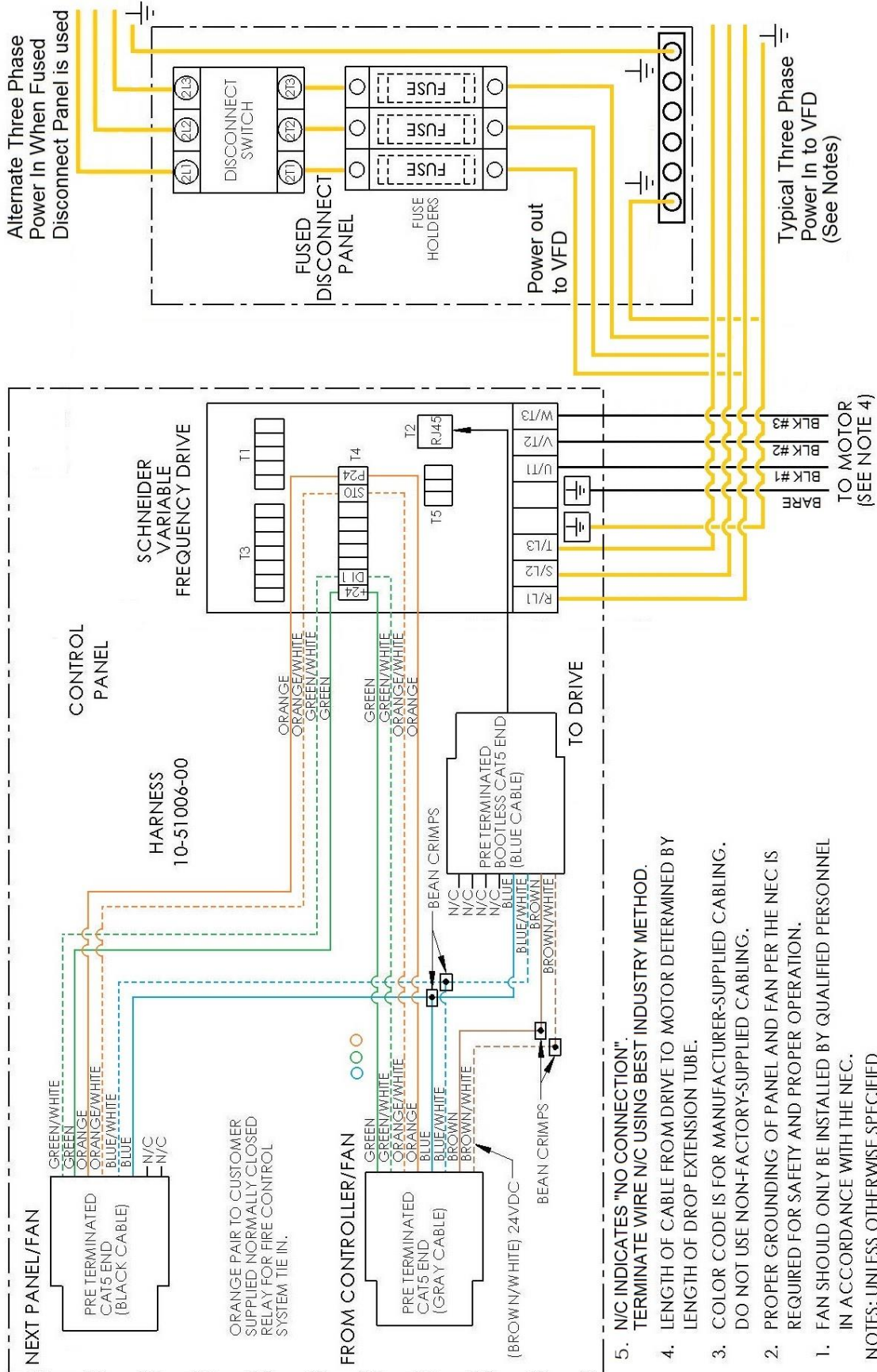
1. Make sure the control wiring is CAT5e shielded, stranded or greater.
2. The Motor Cable and Cable Gland does come pre-installed.
3. Connect Stranded, Shielded CAT5e to RJ45 labeled "in" or "controller" for single touchpad controller.
4. 25 feet of shielded power cable is provided exiting the control panel to be used to connect to power source.
5. This Control panel is to be mounted outside the fan blade sweep. Mounting hardware is not provided my MacroAir.

Images are not to scale

Digital Control Panel Schematic (SINGLE PHASE)



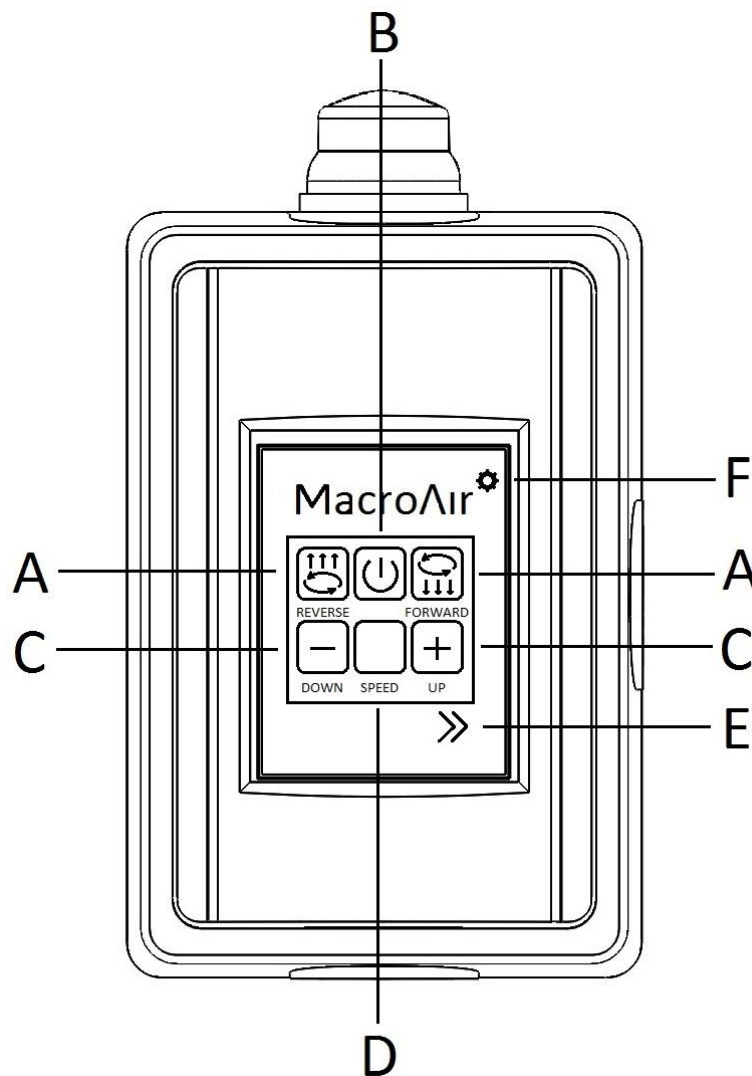
Digital Control Panel Schematic (THREE PHASE LINE IN)



Touchpad Remote User Interface

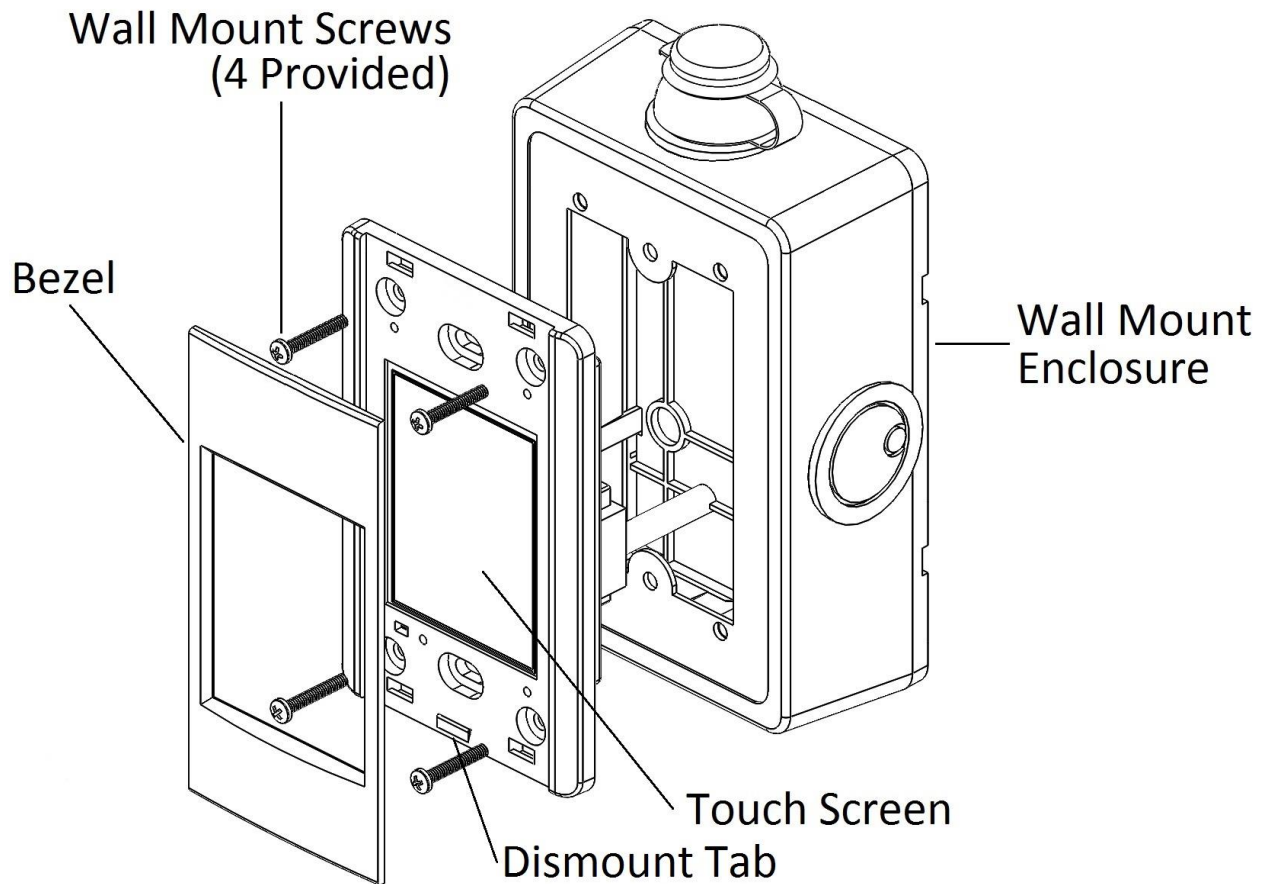
Buttons:

- A – Forward / Reverse: Select fan rotational direction.
- B – Power Button: Turn the fan on or off (forward or reverse must be chosen to start the fan).
- C – Speed Up / Speed Down: Increase or decrease the speed of the fan.
- D – Speed Box: Real-time indication of fan speed.
- E – Navigation: Navigate to the next screen.
- F – Settings: Displays settings and information about the fan.



Images are not to scale

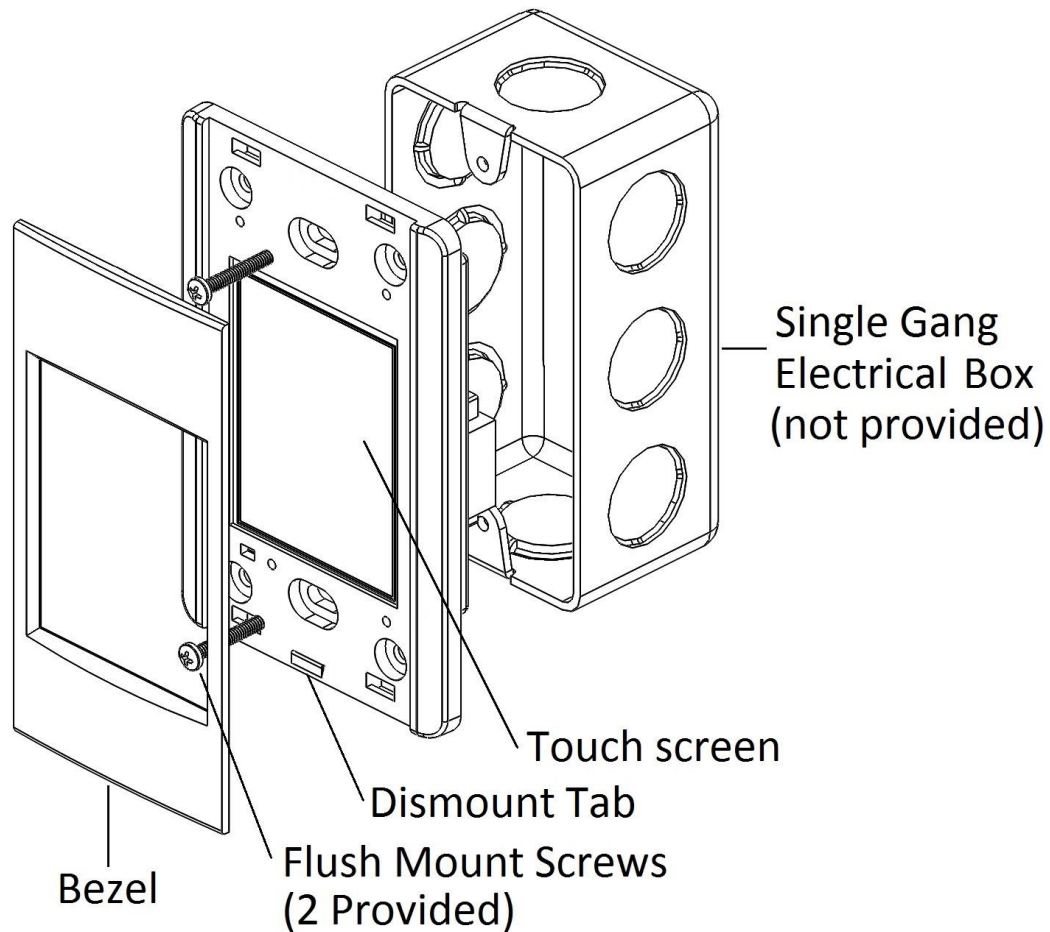
Touchpad Remote Installation



Wall Mounting (Provided)

1. Gently remove the front bezel from the touch screen using a small flat tipped screwdriver where the bezel notch meets the dismount tab located at the bottom of the touch screen.
2. Mount the base plate of the enclosure to the wall using the 4 provided wall anchors and screws.
3. Snap the front of the enclosure to the base plate.
4. Plug in the pre-wired Stranded, Shielded CAT5e cable from the screen into the RJ45 coupler inside the enclosure.
5. Secure the touch screen to the enclosure using the 4 provided screws.
6. Lock the provided bezel into place via the plastic tabs.
7. Plug the provided Stranded, Shielded CAT5e cable from the fan into the RJ45 on the outside of the enclosure.

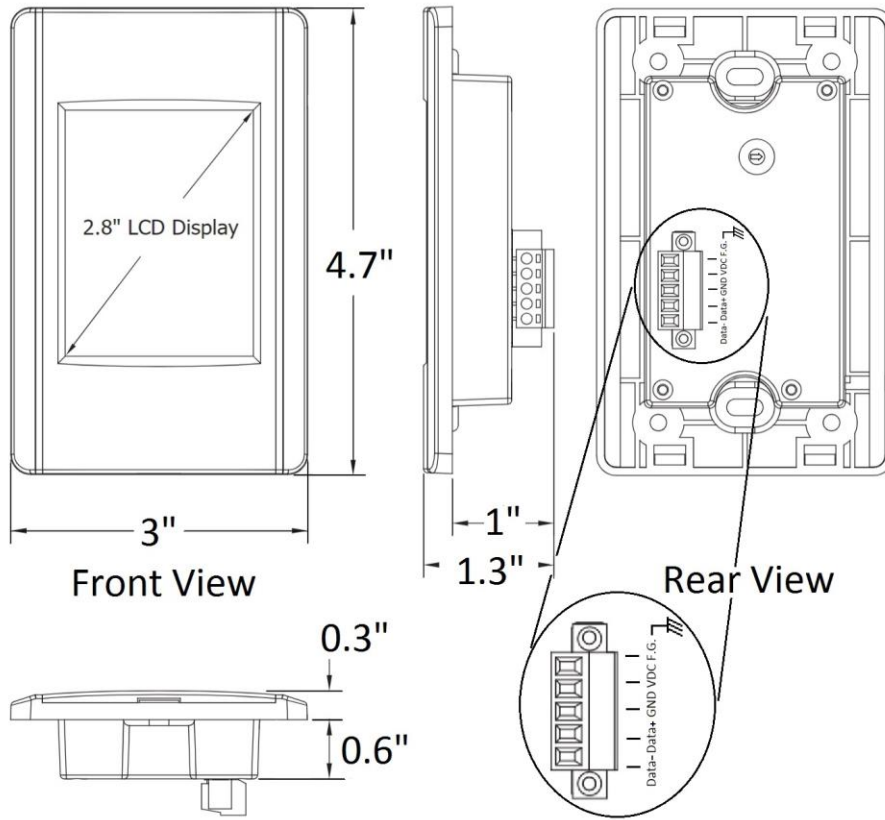
Touchpad Remote Installation (cont.)



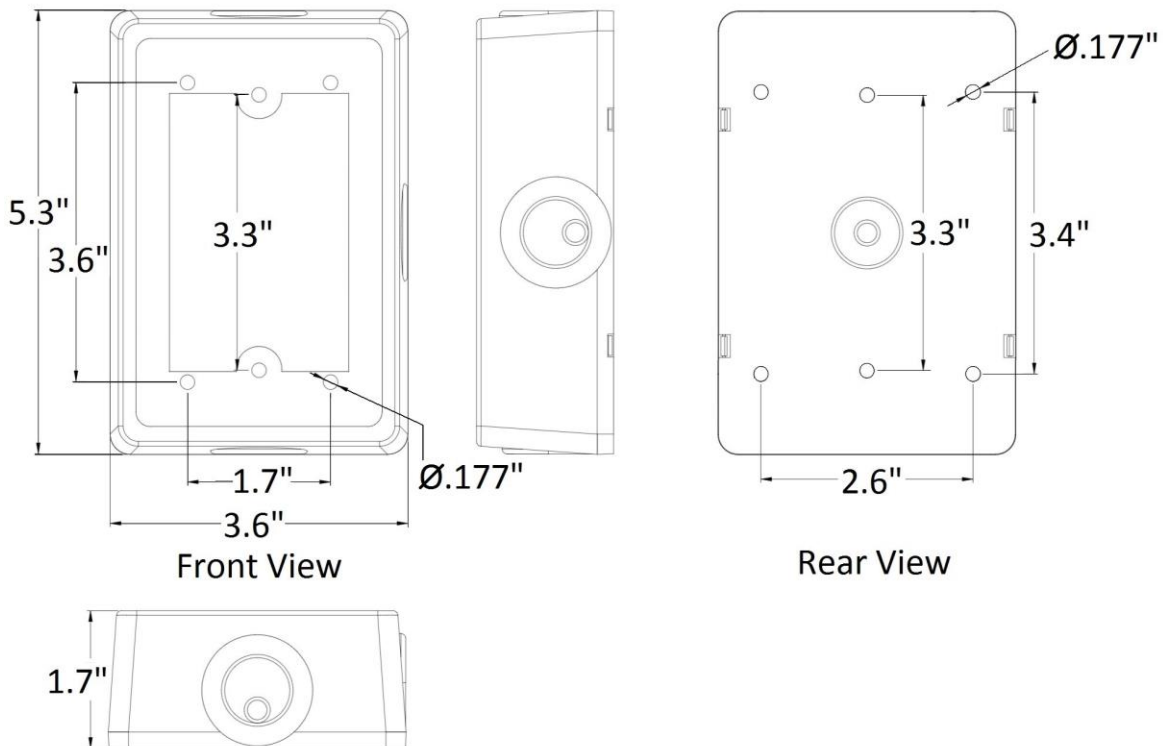
Flush Mounting (Not Provided)

1. Gently remove the front bezel from the touch screen using a small flat tipped screwdriver where the bezel notch meets the dismount tab located at the bottom of the touch screen.
2. Install the single gang electrical box (not provided).
3. Run the provided Stranded, Shielded CAT5e cable from the fan into the single gang electrical box.
4. Plug the remote cable into the pre-wired Stranded, Shielded CAT5e cable from the screen using the provided RJ45 coupler.
5. Secure the touch screen to the enclosure using the 2 provided screws.
6. Lock the provided bezel into place via the plastic tabs.

Touchpad Remote LCD Display

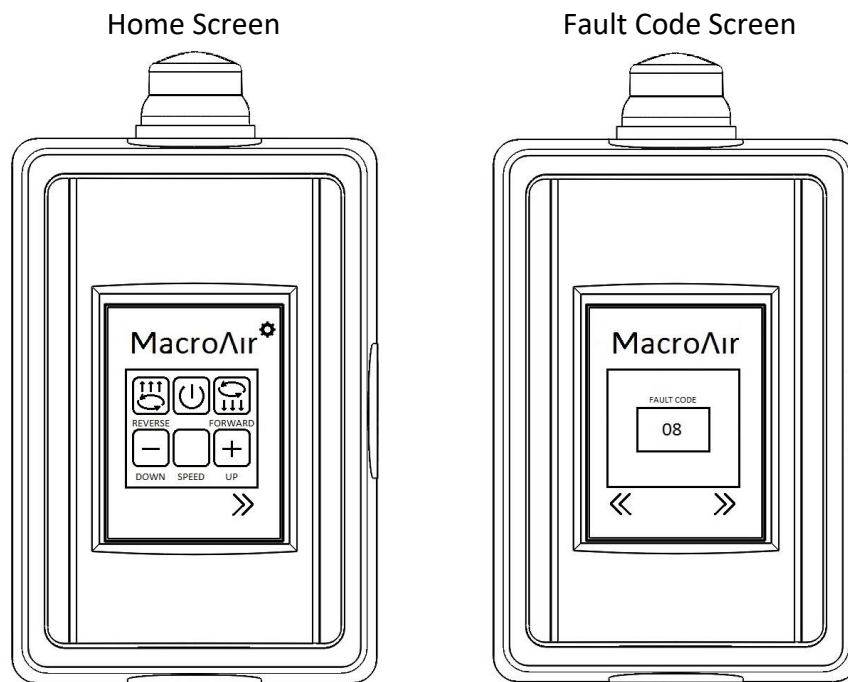


Touchpad Remote Enclosure



Touchpad Remote

1. Upon first power-up of the touchpad, the correct Fan Diameter will need to be selected.
2. After the Fan Diameter is selected, navigate to the next page using the arrow in the lower left to reach the “Setting Fan Diameter” page.
3. Once Setting Fan Diameter is done, press the lower left arrow to get to the Motor Type Screen. Then the lower left arrow again to get to the address screen. Change to the desired address and press the Reset button. If you do not need to change the address, press the arrow in the lower left until you are at the fan control screen.
4. If the fan stops operating unexpectedly, navigate to the fault code screen using the bottom right arrow and record any fault codes (if present). Click the reset button until the display reads ‘0’ or none. Then, attempt to run the fan again. If the fan is still not operating, navigate to the fault code screen via the navigation arrows at the bottom of the screen and document the code(s) displayed and call technical support at 866-668-3247. NOTE: Some faults can only be read from the VFD.

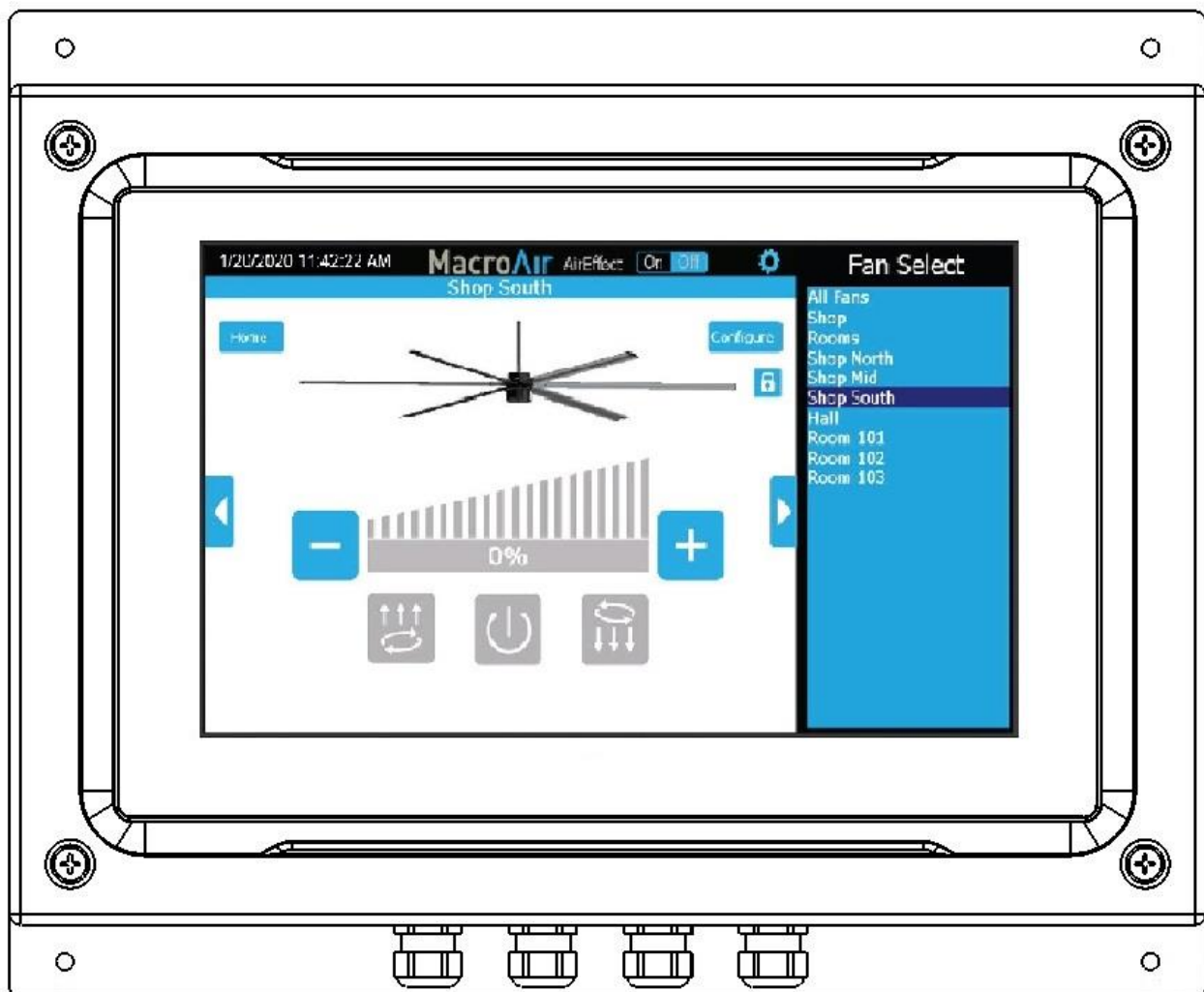


Images are not to scale

Network Controller 30

1. Press the Settings button in the upper right corner.
2. Once on the Settings page, Press the Admin Login button and enter your credentials. The default Username and password are both "admin".
3. Once you are successfully logged in under Admin, go back to the fan control screen.
4. Once on the Fan screen, press the Configure button.
5. Once on the Configure screen, input the correct fan diameter and number of blades.
6. Press "Done" to return to the Fan Control Screen.

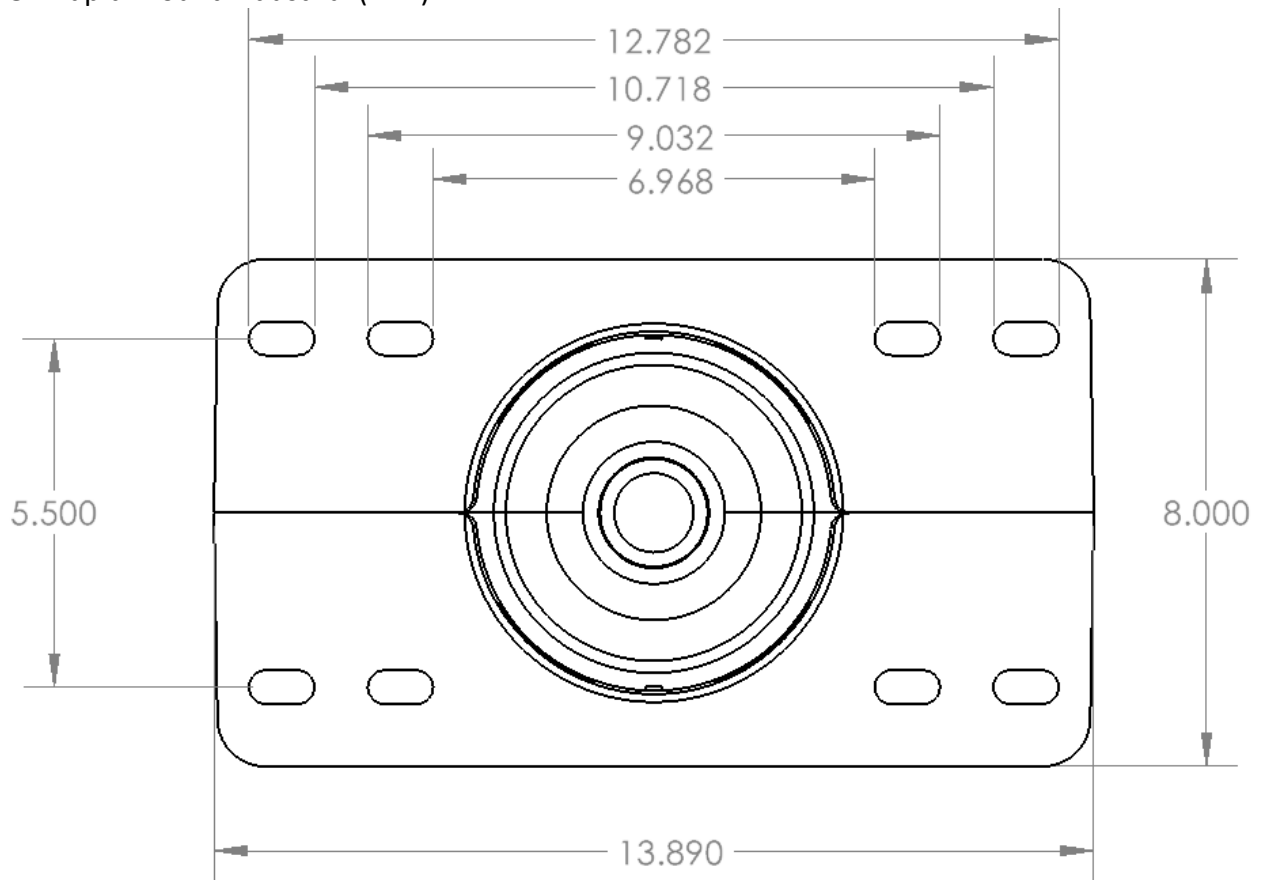
Note: For clarification of these and other procedures refer to the Manual included with your MacroAir Controller 30.



Images are not to scale

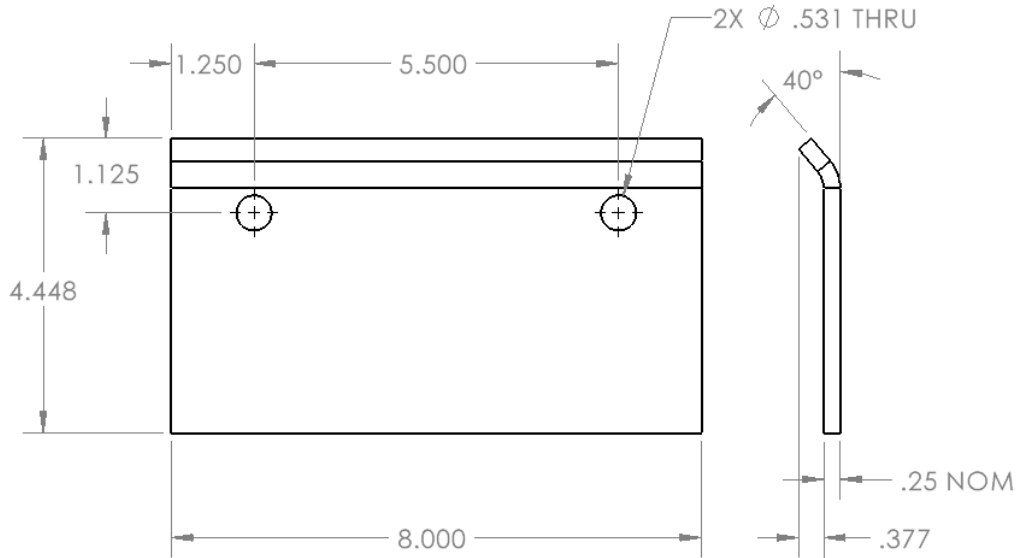
Mounting Bracket Hole Patterns

Standard Mounting Pattern
On Rapid Mount Industrial (RMI)

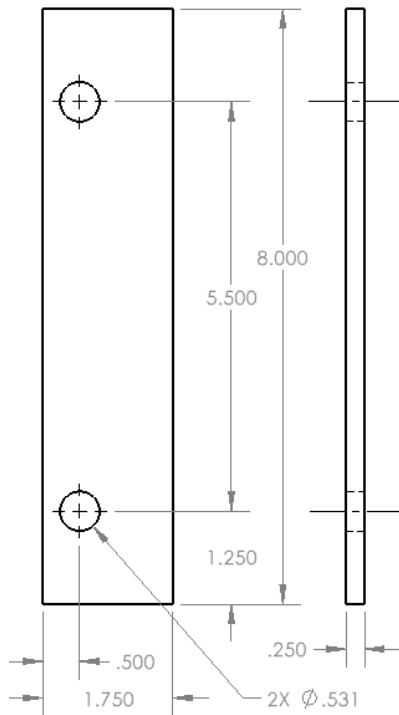


Mounting Bracket Hole Patterns, cont.

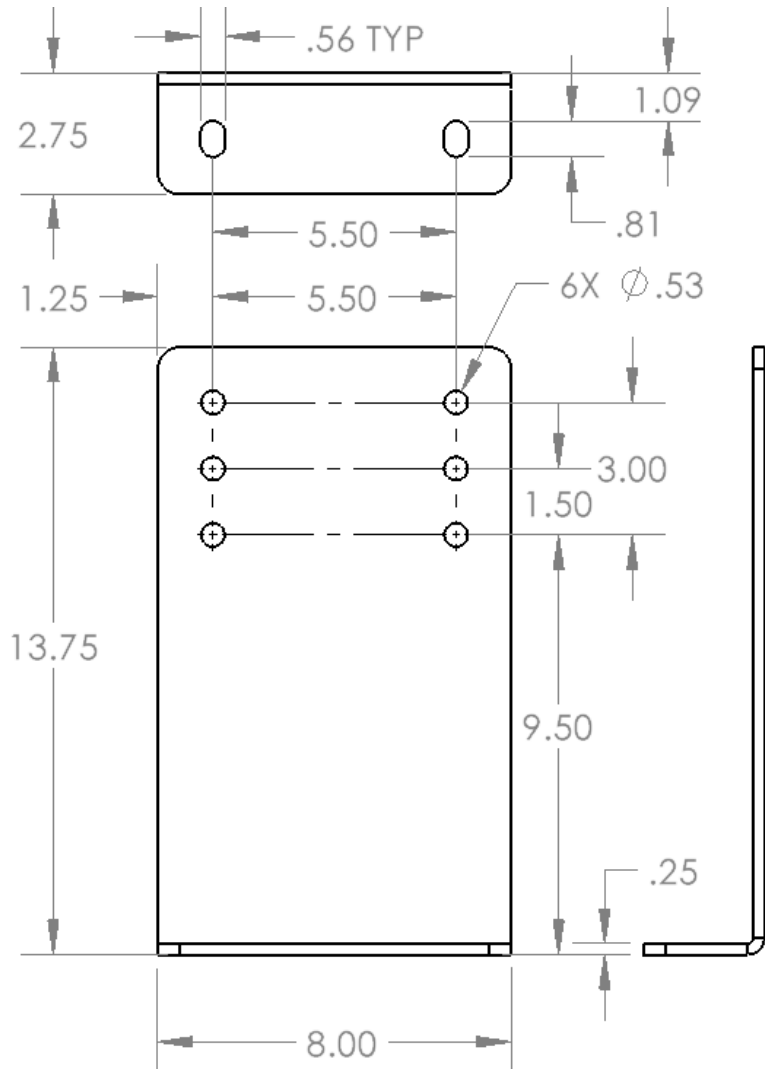
I-Beam Bracket



I-Beam Shim



Glulam Bracket



Maintenance

Guy Wire Check (if applicable): Checking a MacroAir fan's guy wires for tension and inspecting for frayed sections could mitigate a problem before it occurs. The guy wires should be under enough tension to prevent any movement in the motor unit or the extension tube. If the motor unit can be moved by pushing on it, the guy wires need to be tightened. Fan owners should confirm that the guy wires are not wrapped around any sharp edges. MacroAir recommends attaching guy wires to the building with eyebolts or eye lags. If they are not already installed with eye bolts or lags, we urge fan owners to install these to help keep the guy wires from fraying. If guy wires are installed with turnbuckles, jam nuts should periodically be checked to ensure tightness. If they are loose, the guy wire cables may need to be re-tensioned.

Blade Cleaning: Depending on the type of commercial application the MacroAir fan is in, there can be quite a bit of dust or other particulates that cling to the fan's blades. While this may not affect fan performance, we recommend fan owners keep blades clean by having a maintenance person or skilled trade professional – who has experience using a lift – wipe the fan blades with a rag or sponge using hot water or mild cleaning solutions. Please do not use chlorine or any chemicals containing chlorine.

Safety Cable Check: Each MacroAir fan comes with a safety cable. Depending on the fan model, the safety cable either wraps around the building structure and the fan frame or comes out of the top of the fan and wraps around the building structure. The safety cable is an important part of the safety system and acts as a last resort should an earthquake, collision, or similar catastrophic event occur. As such, it is vital for fan owners to ensure that the safety cable is intact and properly secured.

Reverse Operation: The beauty of MacroAir HVLS fans is that they are built to run in forward and reverse mode. However, changing the direction of your fan can put initial stress on the fan if it has not been properly checked. It is a good idea to make sure guy wires, safety cables and all bolts and nuts are tight. Cleaning the fan before switching directions will prevent dust and other particles from falling off the fan airfoils when turning in the opposite direction.

Maintenance Plan: Things to look for include properly torqued fasteners, rust, cracked welds, unusual noise, hub migration/movement, guy wire (if present) loosening or movement.

Years 1-10: One inspection on lift per year.

Year 11 and beyond: Annual inspections from a lift and seasonal inspections both before and after the busy season from the ground.

NOTE: If there are issues or concerns discovered during an inspection, please contact the service and technical support department at MacroAir for help.

CONTACT US: For installation assistance, application questions, technical sales support & any other inquiries, please contact us at **(866) 668-3247**.

Troubleshooting

Please refer to the table below if you experience issues with the fan operation.

Symptoms	Possible Solution
The fan is not turning and the lights on the VFD are lit.	Flip the disconnect switch to "OFF" for 30 seconds and then flip switch to "ON". Ensure that the VFD is properly connected to the motor.
The fan is not turning and the lights on the VFD are NOT lit.	Confirm that there is power coming from the building.
The fan is spinning in reverse when forward is selected.	Confirm the motor is wired in the correct order per page #28.
The fan will rock and will not start.	Confirm that the correct fan diameter is set on the controller.
The fan is spinning too slow/fast.	
The fan is shutting off at high speed.	
The fan is operating noisily.	Confirm that there is nothing interfering with any moving parts. Confirm that the correct fan diameter is set on the controller.
The fan is making a "clicking" sound.	Confirm that the strut lubricant was properly applied per page #33.
The fan is wobbling.	Confirm that the fan is level, and the guy wires (if present) are properly installed and tightened. If the fan is installed on Unistrut, confirm with a structural engineer that the mounting is adequate for the fan weight and torque.

If your issue cannot be resolved using the table above, please contact MacroAir technical support at **(866) 668-3247**.

Warranty

MacroAir warrants the Products listed in the table below will be free from defects in materials and workmanship under normal use and maintenance for the applicable Warranty Period. Other than the Warranty set forth in this document, no other written or oral warranties apply, and no employee, agent, dealer, or other person is authorized to give any other warranties on behalf of MacroAir.

START DATE OF WARRANTY COVERAGE

Warranty Period begins fifteen (15) days following shipment of the Product, or on the date the Product is installed (not to exceed sixty (60) days Customer receives the Product), whichever date is later. Customer should retain necessary documentation to verify the date of receipt and installation of the Product. Customers will be required to produce this documentation in order to obtain Warranty services from MacroAir. The Warranty specified herein applies only to Products purchased on or after April 15, 2021.

PRODUCTS AND SYSTEMS COVERED BY THIS WARRANTY AND APPLICABLE WARRANTY PERIODS:

Fan Type	Mechanical: Blades, Hub & Frame	Standard Electrical ¹ : Motor, Electrical Controls, Remote	Labor
AVD5	15 Years	10 Years	1 Year

WARRANTY COVERAGE:

Subject to the exclusions herein, the MacroAir Warranty covers any defects in workmanship or materials of the covered Products under normal operation and prescribed maintenance when those defects adversely affect the ability of the Product to operate properly.² The Warranty only covers Products which have been installed in compliance with MacroAir's written installation instructions by a state-qualified or licensed electrical contractor and operated and maintained by the Customer in conformity with MacroAir's written instructions, and when the Product is purchased directly from MacroAir or a MacroAir Authorized Dealer.

This Warranty is subject to all provisions, conditions, limitations, and exclusions explained in this Warranty document.

*Scan QR code or visit macroairfans.com/warranty for full warranty information.



¹ "Standard Electrical" means any common electrical component that is utilized across more than one fan line will assume the higher warranty period.

² "Operate properly" applies only to mechanical, electrical, and structural systems of the Product.

MA

Let's Stay Connected!



Social



Website

www.macroairfans.com

MacroAir
engineers of air™

794 South Allen Street
San Bernardino, CA 92408
(866) 668-3247
Macroairfans.com



Intertek

Conforms to UL Std 507
Certified to CSA Std C22.2 No. 113



Installation Manual

AVD5 Series Fan



Table of Contents

AVD5 SERIES

Pre-Installation Checklist

Pre-Installation Checklist 1

Introduction

Caution & Safety 2

Fan Clearance and Placement 5

Pre-Installation

Fan Dimensions, I-Beam/Glulam Chart 7

Max Amp, Network Wiring Instructions 8

Fan Components 9

Mounts & Components 10

Control Panel & Components 12

Tools Required 13

Installation Overview

I-Beam 14

Glulam 15

Installing the Fan

I-Beam Mounting 16

Glulam Mounting. 19

Unistrut Mounting 22

Mounting the Mount 24

Mounting the Extension 25

Motor and Safety Cable Routing 26

Mounting the Motor Unit 27

Motor Cable Connection 29

Safety Cable Installation, I-Beam/Glulam . . 30

Installing Guy Wires

Guy Wire Installation on UMH. 31

Guy Wire Tightening. 32

Guy Wire Band Installation 33

Installing Fan Blades

Blade/Strut Lubrication 34

Blade Assembly. 35

Assembly Conclusion 36

Wiring the Fan

Electrical & Safety Cable Installation 37

Control Panel Overview 38

Control Panel Schematics 39

Mounting the Wall Controller

Touchpad Remote User Interface 41

Touchpad Remote Installation 42

Touchpad Remote Enclosure & Display . . . 44

Fan Settings

Touchpad Remote 45

“Hot” State Instructions. 46

Network Controller 30 47

Information

Mounting Bracket Hole Patterns 48

Maintenance 50

Troubleshooting 51

Warranty 52

Literature (Pg. 3)

- Order Verification.** I have verified the order information. All components are accounted for.
- Read.** I have read this Installation Manual and all other instructions before installing this fan.

Power (Pg. 3-4)

- Power Requirements.** I have verified the incoming power supply is sufficient for the fan.

Safety (Pg. 4-5)

- Safety Familiarity.** I am familiar with the safety components and features of the fan. I have verified the presence of a safety cable, and guy wires (if applicable).

Airfoils (Pg. 5-7)

- Height from Floor.** I have verified the airfoils will be at least 10ft (3.05 m) above the floor.
- Application Clearance.** I have consulted the manual to determine that the airfoils will meet or exceed the clearance requirements regarding obstructions, or other fans.
- Airfoil Reach.** I have verified the airfoils will be mounted such that they are at least 3 feet away from any area where someone can extend outward and reach them.
- High Winds.** I have verified the fan will not be subjected to high winds from any outside influences, such as large garage door openings or HVAC systems.
- Diffuser Interference.** If diffusers are present, I will ensure that the fan is mounted at least 2X the diameter of the fan away from any source of airflow.
- Airfoil Compatibility.** I have verified the Airfoils and other fan components are those that shipped with the motor unit.
- Installing Multiple Fans.** I will not mix and match any hardware or blades.

Structure (Pg. 6-8)

- Application Suitability.** I have verified the application was approved by a structural engineer. I have checked the hanging weight and torque specs in the installation manual to ensure that the mounting structure can withstand the forces generated by the fan.
- Structural Suitability.** I have verified the building structure is suitable for this fan mounting. The fan will be mounted to an I-beam or Glulam or similar. I will not mount the fan to a single purlin, truss, or bar joist. I will consult a structural engineer for mounting not covered herein.
- Mount Suitability.** I have the appropriate mount for this application. I have verified in the installation manual that the mounting option provided is suitable for this application. I will consult a structural engineer for applications and mounting methods not covered herein.

Caution and Safety

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory, or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

⚠ ATTENTION: Safety. READ AND SAVE THE ENTIRE MANUAL BEFORE OPERATING THE FAN.

Ensure that all safety procedures and instructions are followed 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 our technical department for guidance.

⚠ CAUTION: Non-Compliance. The fan installation should follow the recommendations outlined in this manual. MacroAir is not responsible for any injury or damage to persons or property because of 'not complying' with the recommendations outlined in the manual.

Electrical Guidelines

⚠ WARNING: Electrical Damage. Improper electrical installation can cause damage to the fan and interfere with other electronic equipment. In addition to standard electrical safety considerations, please observe the following:

- **MacroAir Cables.** The wiring from the control panel to the fan **MUST** be by MacroAir supplied shielded cable.
- **Electrical Interference.** Separate incoming power and CAT5 motor control cables by a minimum of six (6) inches to avoid communication issues.
- **Individual Fan Wiring.** Run wiring for each fan separately.
- **Multiple Fans.** Do not attempt to control multiple fans from one (1) control panel.
- **ALWAYS GROUND PROPERLY.** Connect the supplied cable glands to each end of the motor cable and tighten them securely at both the fan motor and control panel ends. Connect the ground bar in the control panel to ground at the main breaker and test.
- **Read.** Please refer to the installation instructions for more information.

Electrical Guidelines cont.

⚠ ATTENTION: Qualified Technicians. All fan controls should only be installed by qualified technicians familiar with the requirements of the National Electrical Code (NEC) and local codes. Refer to appropriate portions of this manual for other important requirements. Failure to follow these guidelines will void the manufacturer's warranty.

⚠ ATTENTION: Factory Configured. All electrical controls are configured at the factory and are ready to use. No user adjustments are available. Follow the included wiring schematics and installation instructions when installing this device to ensure proper operation. Do not make any changes to any part of the motor control panel without first consulting MacroAir.

⚠ ATTENTION: Code Compliance. Installation is to be in accordance with the NEC, ANSII/NFPA 70-1999 and local codes.

Hazard of Electrical Shock, Explosion or Arc Flash:

⚠ ATTENTION: Read. Read and understand this manual before installing or operating a fan unit. Installation, adjustment, repair, and maintenance must be performed by qualified personnel.

⚠ ATTENTION: Code Compliance. The user is responsible for compliance with all international and National Electrical Code requirements with respect to grounding of all equipment.

⚠ WARNING: Do Not Touch. Many of the parts of this unit operate at line voltage. DO NOT TOUCH.

⚠ WARNING: Covers. Install all covers before applying power or starting and stopping the unit.

Installation and Service

⚠ WARNING: Damage. Do not operate or install any fans or fan accessories that appear to be damaged.

⚠ WARNING: Death and Injury. Failure to follow this instruction can result in death, serious injury, or equipment damage.

⚠ WARNING: Disconnect Power. If the fan does not operate properly using the procedures in this manual. BE CERTAIN TO REMOVE ALL POWER TO THE UNIT and contact our technical department for further assistance.

⚠ CAUTION: Moving Parts. Keep all body parts clear of moving parts at all times.

⚠ ATTENTION: Qualified Technicians. All electrical troubleshooting and repair must be done by a qualified technician and meet all applicable codes.

Key Safety Systems

⚠ ATTENTION: Safety. MacroAir fans are engineered with key safety features to prevent pieces of the fan from falling in the unlikely event of a catastrophic failure. Used together, these systems and devices provide comprehensive protection to people, equipment, and property.

⚠ WARNING: Safety Cable and Guy Wires. Install safety cable on EVERY fan. Install guy wires on every fan using a UMH mount, unless otherwise specified. Properly installing the guy wires will keep the fan stable in case of earthquake or in “outdoor” installations where high wind conditions may occur. The safety cable, if installed per MacroAir specifications, will prevent the fan from falling in the unlikely event that the mounting system should fail.

⚠ WARNING: Safety Cable. A MacroAir fan should never be run without a properly installed safety cable, which is supplied with every fan along with all required hardware. You must install a safety cable for the warranty to be in effect.

⚠ ATTENTION: Mark the Floor to Alert Personnel. When mounting a fan in an area where materials may be elevated into its path, MacroAir recommends marking or painting the floor with a large, crosshatched circle to alert personnel of the overhead location of fans.

Mounting Guidelines

⚠ WARNING: Weight Considerations. We recommend that a building structure be capable of holding approximately twice the stated hanging weight of the fan. If there is some doubt of this, a professional contractor or architect should perform a thorough evaluation of the building prior to purchasing the fans. MacroAir 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: Torque. The maximum torque (twisting force) that must be handled by the mounting system, including the building structure, occurs at fan startup. For the 24-foot fan, maximum potential starting torque is 112 Ft-Lbs. When standard electrical controls are installed, the fan will never begin to approach this maximum because the standard variable-speed control system uses the soft-start fail, however, when a fan is installed as a single-speed model without the variable speed control system (rare), full torque might be applied to the mounting system, so it is important that it be adequate to withstand 112 Ft-Lbs.

⚠ ATTENTION: 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.

⚠ WARNING: Welding. DO NOT attach the fan or fan mounting components to the building structure by welding that component to the structure. DO NOT cement the fan to the structure.

Clearance Guidelines

⚠ ATTENTION: Sprinkler Systems and Fan Placement. In any installation where fire sprinklers are in place, do not interfere with their correct operation. Fans should be located no less than 3 feet below a sprinkler and placed central to each sprinkler quadrant.

⚠ ATTENTION: Sprinkler Systems and Code Compliance. Prior to installing fans, review all codes applicable to sprinkler systems and fans to ensure code compliance. Refer to the wiring diagrams packaged inside the control panel for proper installation. If further advice is needed, you may contact our support staff. However, it is your sole responsibility to see that the installation is completed to code and is correct.

General Information on Fan Placement and Spacing

⚠ ATTENTION: Strobe and Performance. If possible, avoid mounting fans directly below lights or skylights to avoid any strobe effect caused by moving blades.

⚠ WARNING: Mezzanine Placement. If the building has a mezzanine, fans should be mounted so a person cannot reach a fan in any way from the upper level/deck. Make certain that fans are positioned so that blade tips are at least 3 feet away from any area where a person may be able to extend outward to reach them.

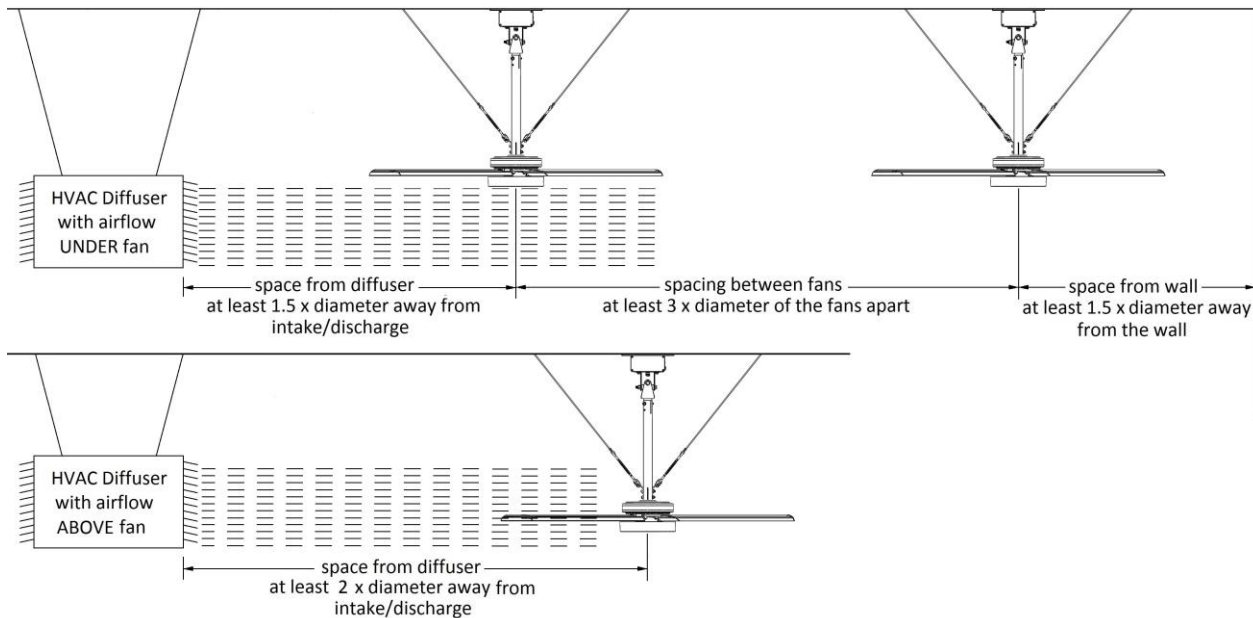
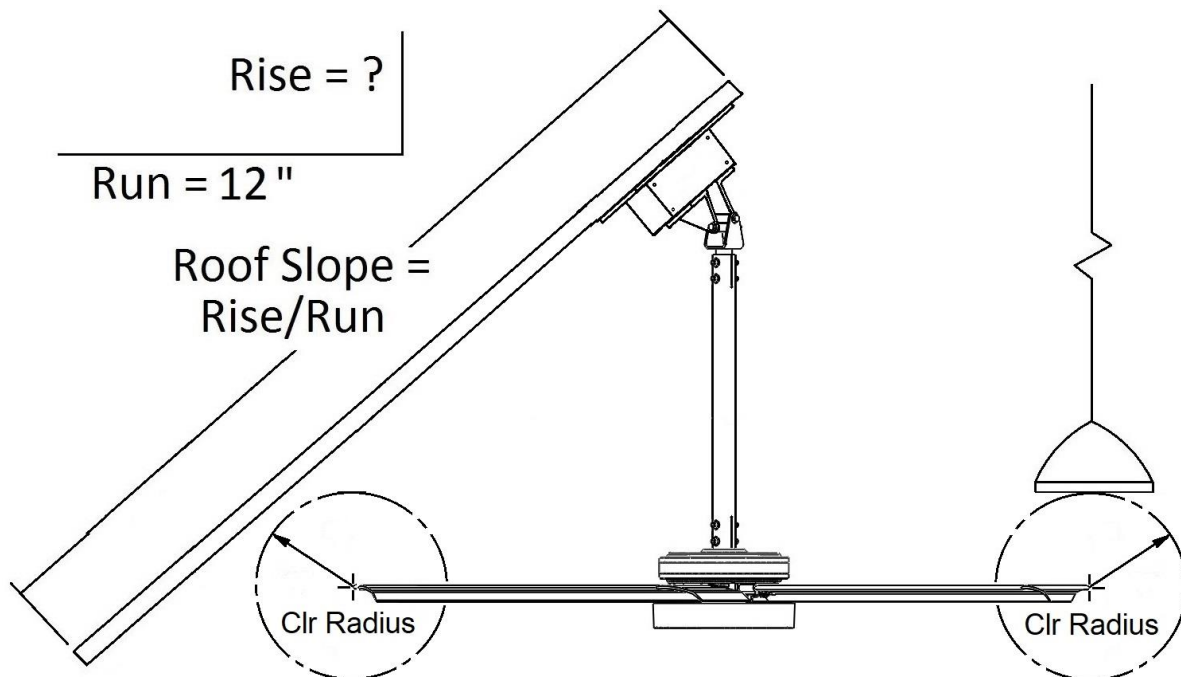


Figure 1: Fan Clearance and Placement

⚠ ATTENTION: The minimum distance of a fan to a wall or similar obstruction should be no less than 1.5 times the diameter of the fan. Reference Figure 1.

General Information on Fan Placement and Spacing, cont.

Figure 1: Fan Clearance, Universal Mount (UMH)



Fan shown in Fig. 1 for illustration purposes only.

Slope (in)	0	2/12	4/12	6/12	8/12	10/12	
Roof Angle	0	9.5°	18.4°	26.6°	33.7°	39.8°	
Diameter	Recommended Extension Length (Ft.)						Min Clr. Radius
8 feet	2	2	3	3	4	5	7"
10 feet	2	2	3	4	5	6	9"
12 feet	2	3	4	5	6	7	11"
14 feet	2	3	4	5	6	7	13"
16 feet	2	3	4	6	7	8	14"
18 feet	2	3	5	6	8	9	16"
20 feet	2	4	5	7	8	10	18"
24 feet	2	4	6	8	10	N/A*	22"

Figure 2: Maximum Angle & Clearance Radius.

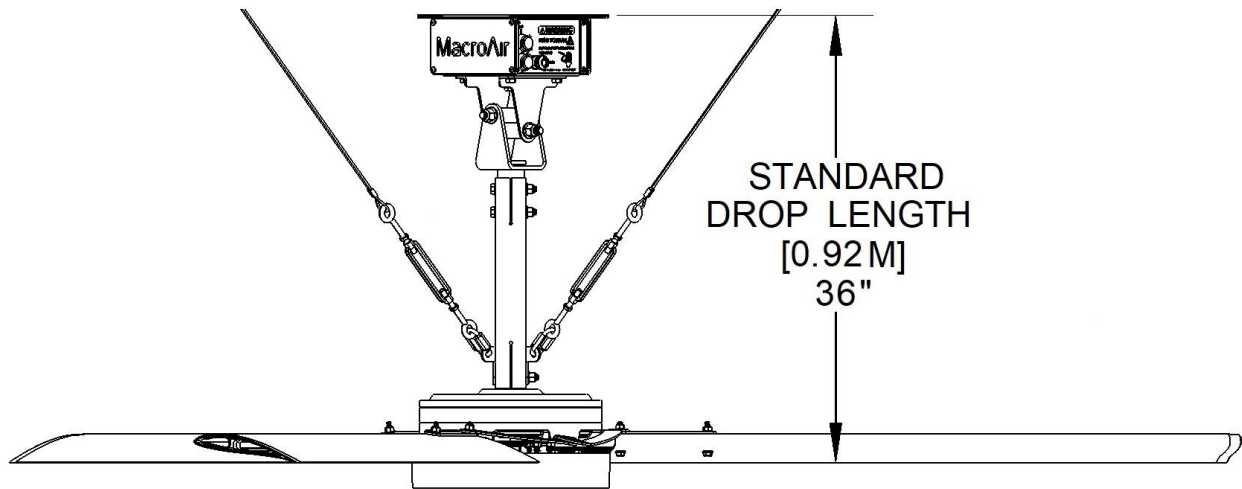
* Note: Extension longer than 10ft not recommended.

⚠ WARNING: FANS ARE NOT MEANT TO BE OPERATED IN WINDY CONDITIONS.

The goal of Figures 1 and 2 are to determine the proper extension length to maintain a minimum blade clearance of 3 feet from ceiling for optimal performance. The extension lengths above are minimum recommendations only, based solely on roof pitch and fan diameter. Other factors must be evaluated when determining extension requirements.

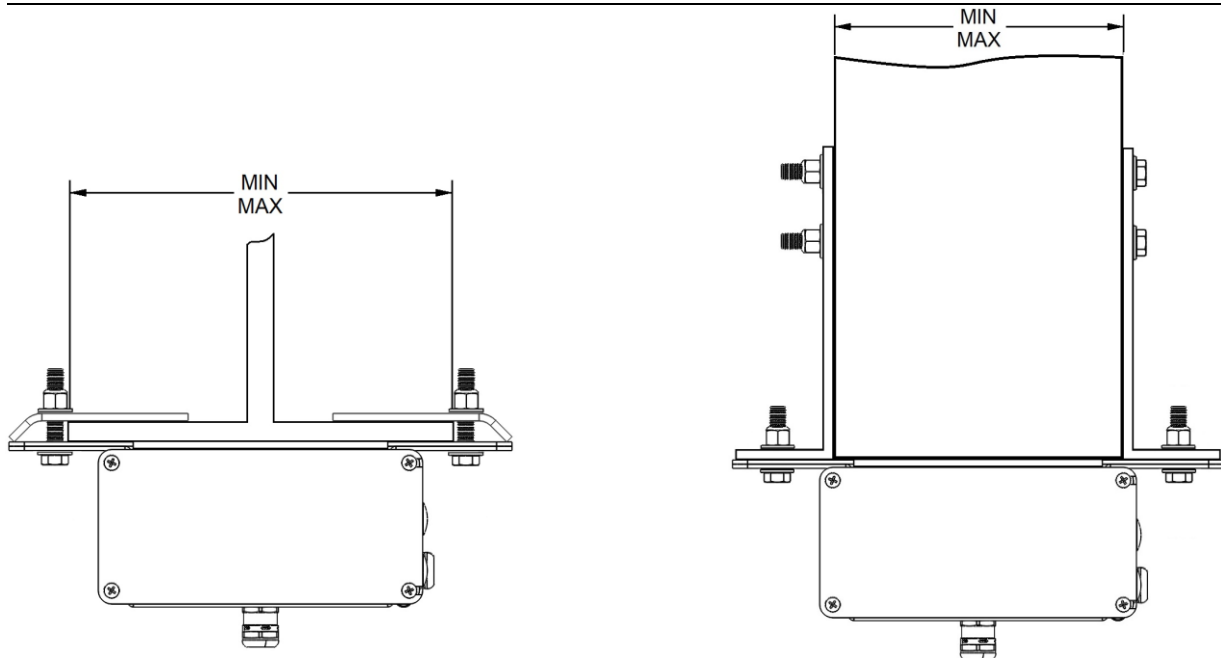
⚠ ATTENTION: Minimum Height. MacroAir requires that the fan blades must be a minimum of 10 feet (3.05 meters) above the floor. Contact MacroAir for assistance with fan placement and extension selection.

Fan Dimensions



Dimensions listed above are applicable to all MacroAir AVD5 fans.

I-Beam/Glulam Chart



I-Beam Min/Max		
Minimum		Maximum
4.50"		9.50"

Glulam Min/Max		
Minimum	Mid	Maximum
2.00"	4.63"	7.50"

The Maximum Range dimension in these tables is determined by using the outside slots of the control panel. The Minimum Range dimension is determined by using the inside slots.

The Glulam mounting method (Referenced on pages 16, 20-22) is recommended for Glulams or wood beams 5-1/8" or wider. For narrower beams, span across two or more beams using the Unistrut mounting method (Referenced on pages 23-24).

Max Amp Draw

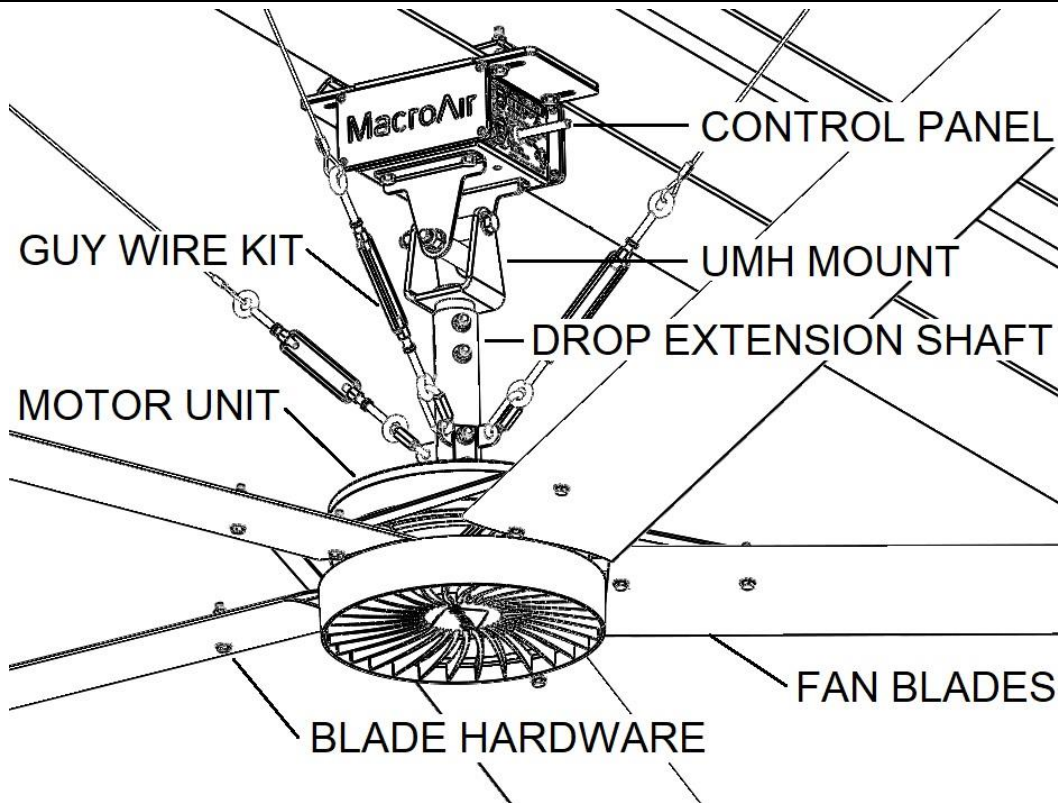
Use this chart to determine the proper fuse for your AVD5 fan installation.

VOLTAGE and PHASE	MAX AMP DRAW							
	8FT	10FT	12FT	14FT	16FT	18FT	20FT	24FT
208-240VAC / 1 PHASE	3.8A	6.5A	5.1A	4.4A	3.7A	4.5A	5.4A	4.3A
208-240VAC / 3 PHASE	2.2A	3.8A	2.9A	2.5A	2.1A	2.6A	3.1A	2.5A
480VAC / 3 PHASE	1.6A	2.7A	2.1A	1.8A	1.5A	1.8A	2.2A	1.8A

Network Wiring Instructions

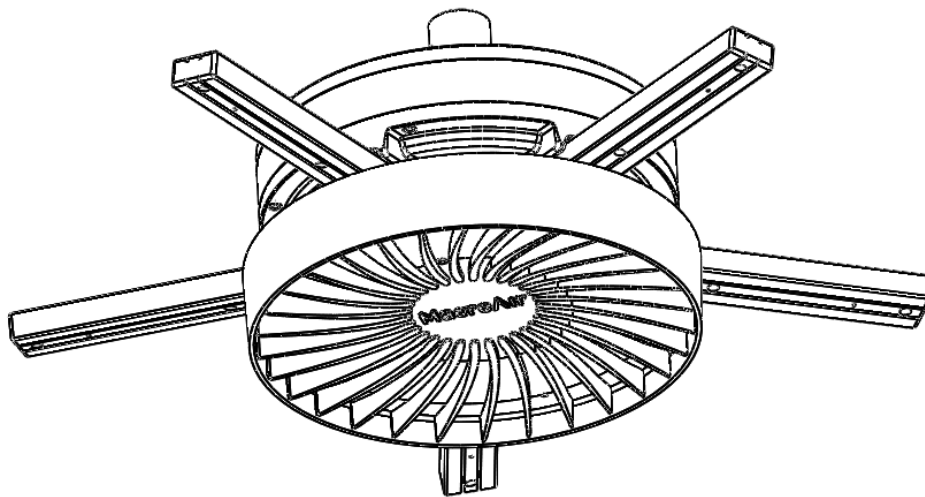
For clarification of approved networking principles and methods for installing MacroAir Fans, refer to the MacroAir network instructions included with your MacroAir Controller.

Fan Components



View of Assembled Fan

⚠ ATTENTION: Guy Wires are required when a Universal Mount is used to mount the fan.



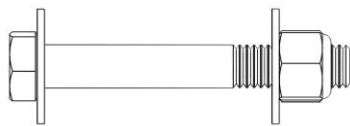
Motor Unit

Images are not to scale

Mounts & Components



Extension Tube



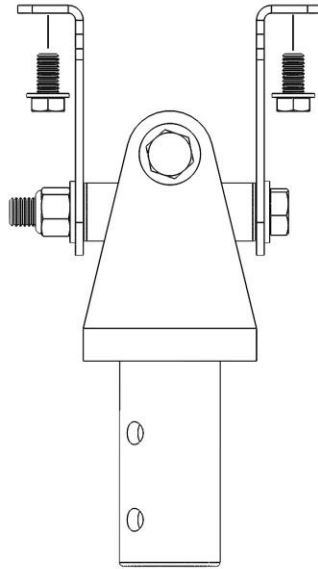
Extension Tube Bolt Kits

- (4) Hex Bolts 3/8" -16x2-3/4
- (8) Washers, 3/8"
- (4) Nuts, 3/8" Nylon Lock

Unistrut Mount Bolt Kit (optional)

Hardware Required but Not Provided:

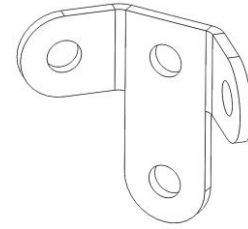
- (4) 3/8"-16 x 1-1/2" Hex Bolts
- (4) 3/8" Flat Washers
- (4) 3/8" Unistrut Spring Nut



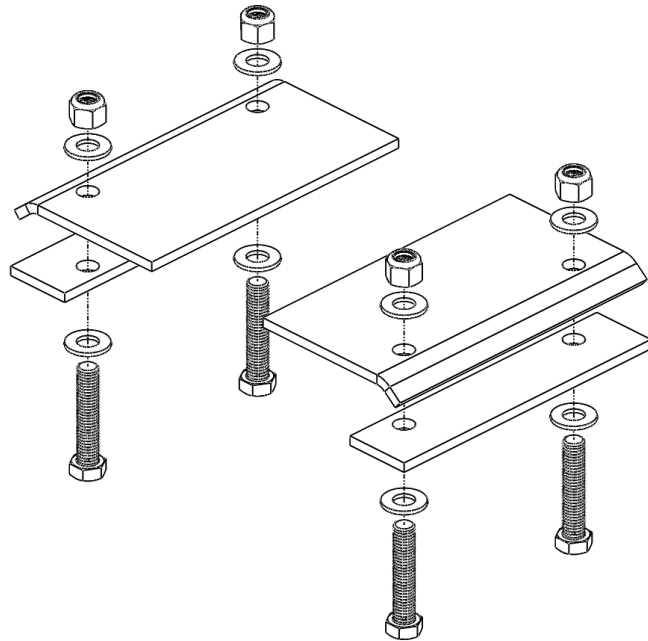
UMH Mount

(shown w/mounting Bolt Kit)

- (4) Hex Bolts 3/8" -16x3/4 "
- (4) Washers, 3/8" Flat



(2) Guy Wire Bracket



I-Beam Clamp & Bolt Kit

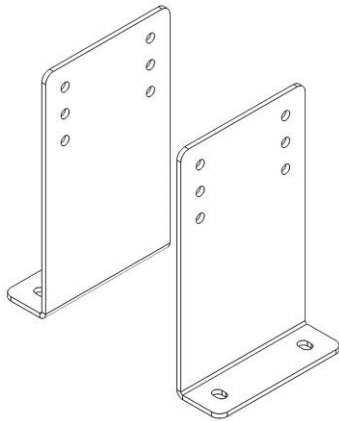
- (2) I-Beam Clamps
- (2) I-Beam Shims (Used when Req'd)
- (4) Hex Bolts 3/8" -16x2"
- (8) Washers, 3/8" Flat
- (4) Hex Nuts 3/8" -16, Nylon Lock

Glulam Bolt Kit:

- (4) Hex Bolts 3/8" -16x1-1/4"
- (8) Washers, 3/8" Flat
- (4) Hex Nuts 3/8" -16, Nylon Lock

Images are not to scale

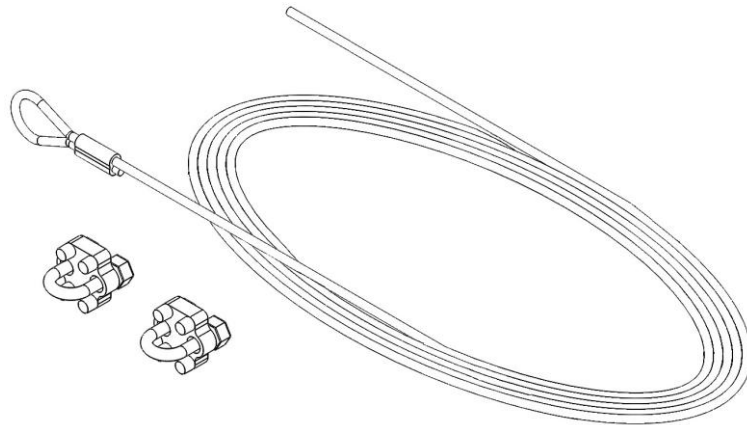
Mounts & Components (cont.)



Glulam Brackets (optional)

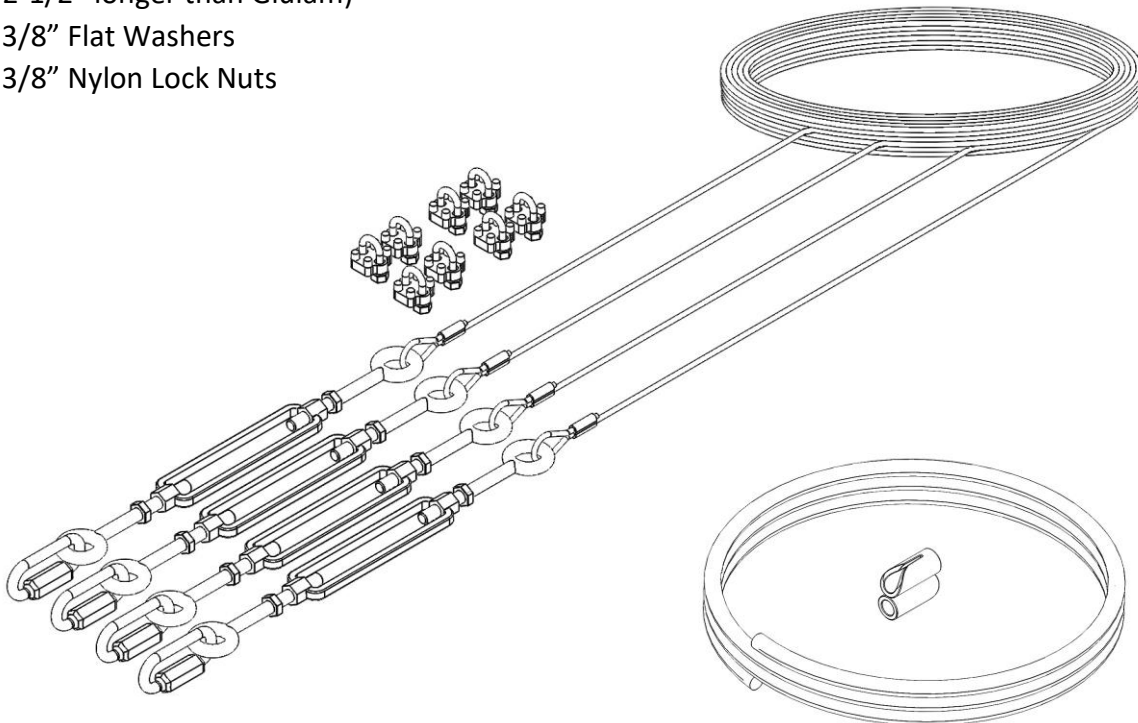
Hardware Required but Not Provided:

- (4) 3/8"-16 Grade 5 Hex Bolts (at least 2-1/2" longer than Glulam)
- (8) 3/8" Flat Washers
- (4) 3/8" Nylon Lock Nuts



Safety Cable Kit

- (1) Wire Rope 1/8"
- (2) Wire Rope Clamps



Guy Wire Assembly

- (4) Wire Rope, 19ft (A), 23ft (B*), 33ft (C*)
- (4) Turn Buckles
- (4) 1/4" Quick Links
- (8) Wire Rope Clamps

* Kits B and C provided with longer drop lengths

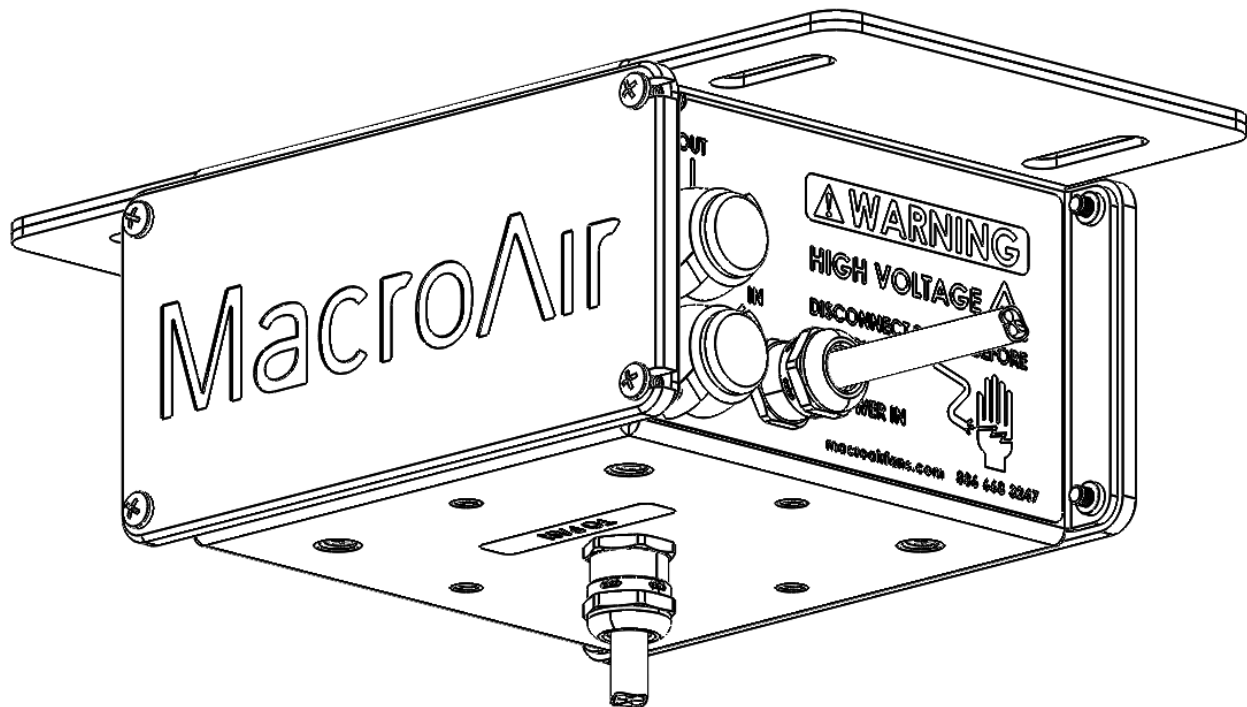
Guy Wire Band Kit

- (1) Elastic Cord
- (1) Cord Clip

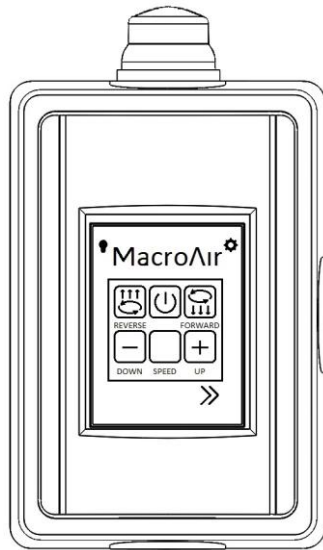
Images are not to scale

⚠ ATTENTION: Guy Wires are required when a UMH Mount is used to mount the fan.

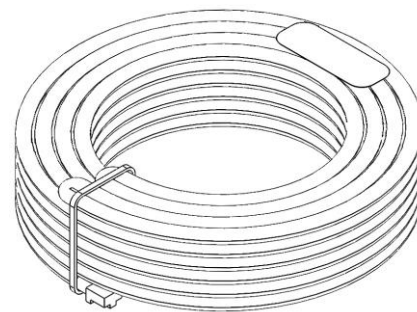
Control Panel & Components



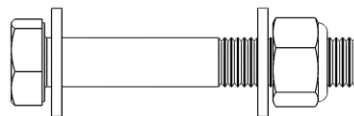
Control Panel
(Mount using I-Beam Clamp or Glulam Brackets)



Digital Touchpad Remote



CAT5E Stranded Shielded Cable



Blade Bolt Kit

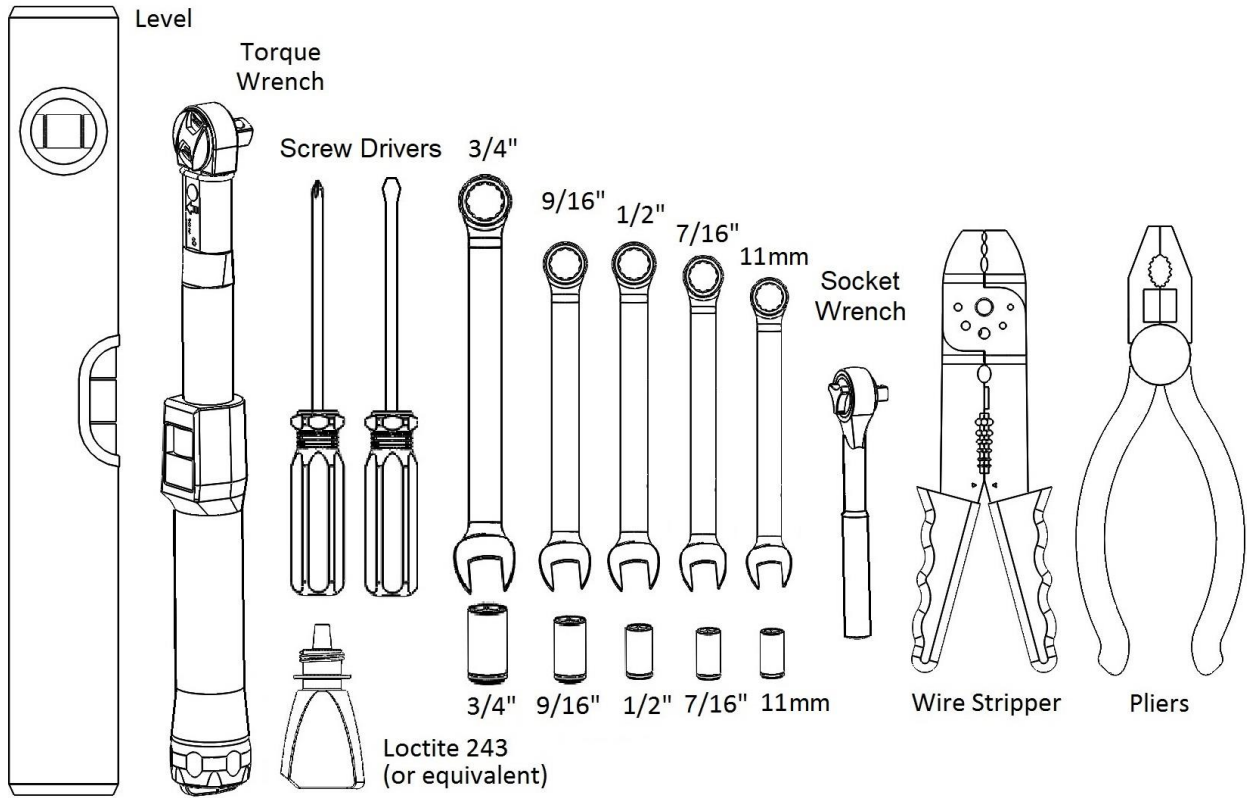
- (6) BOLT, HEX HD, 5/16"-24 X 2", GR5
- (12) WASHER, FLAT, 5/16" PREFERRED NARROW
- (6) LOCK NUT, 5/16"-24, NYLON, GR5
- (1) Loctite 243



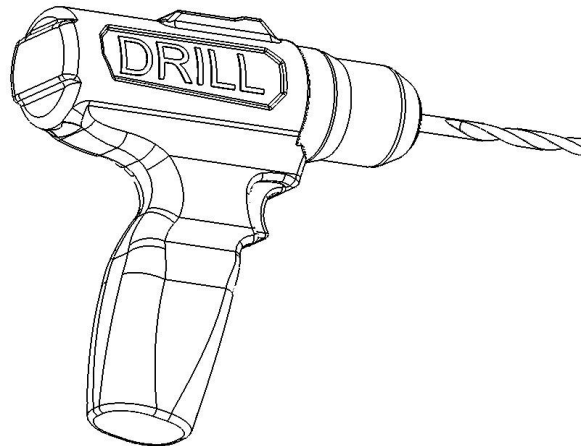
(6) Blade Safety Retainer Link

Images are not to scale

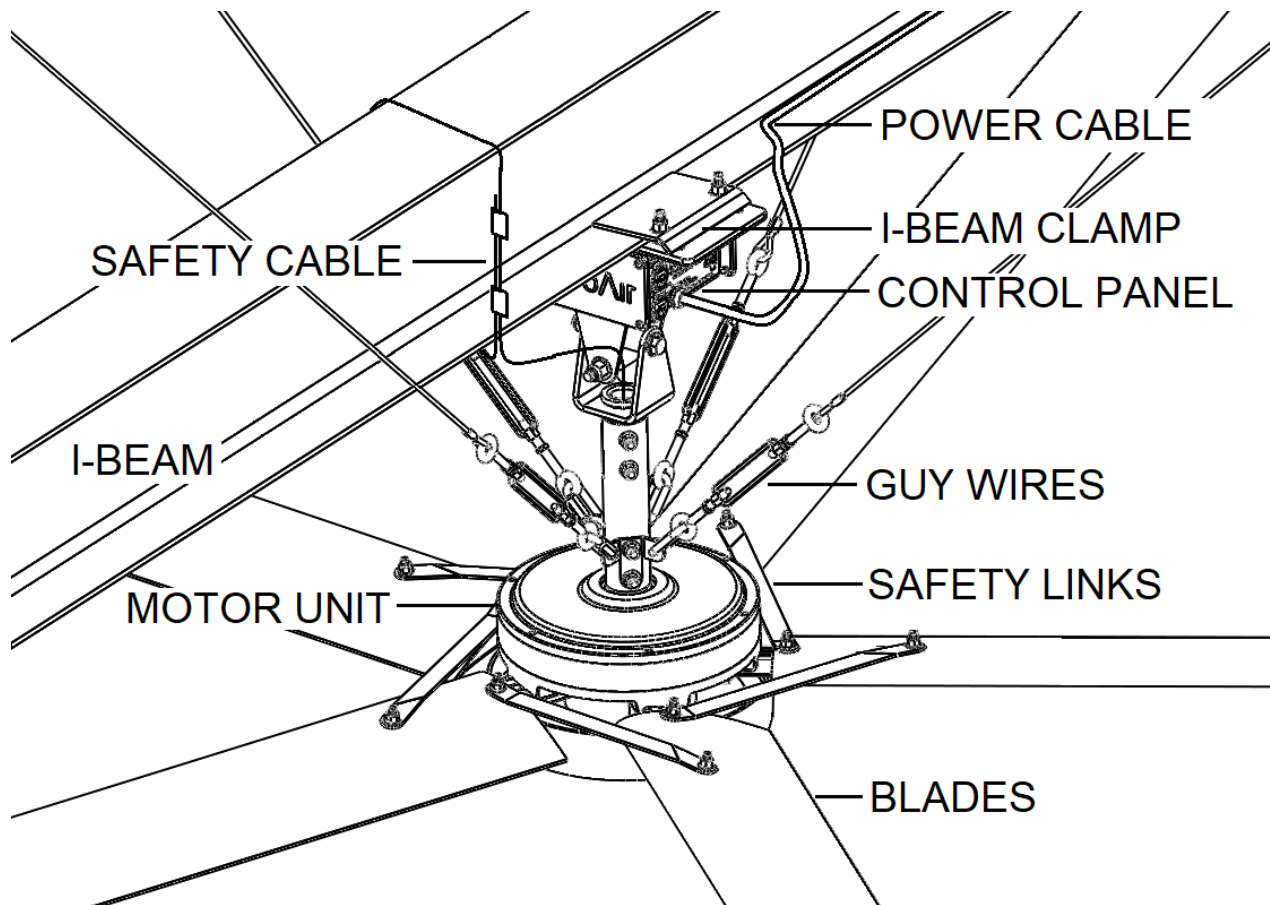
Tools Required



Note: A drill and drill bits will also be required when mounting brackets to Glulam

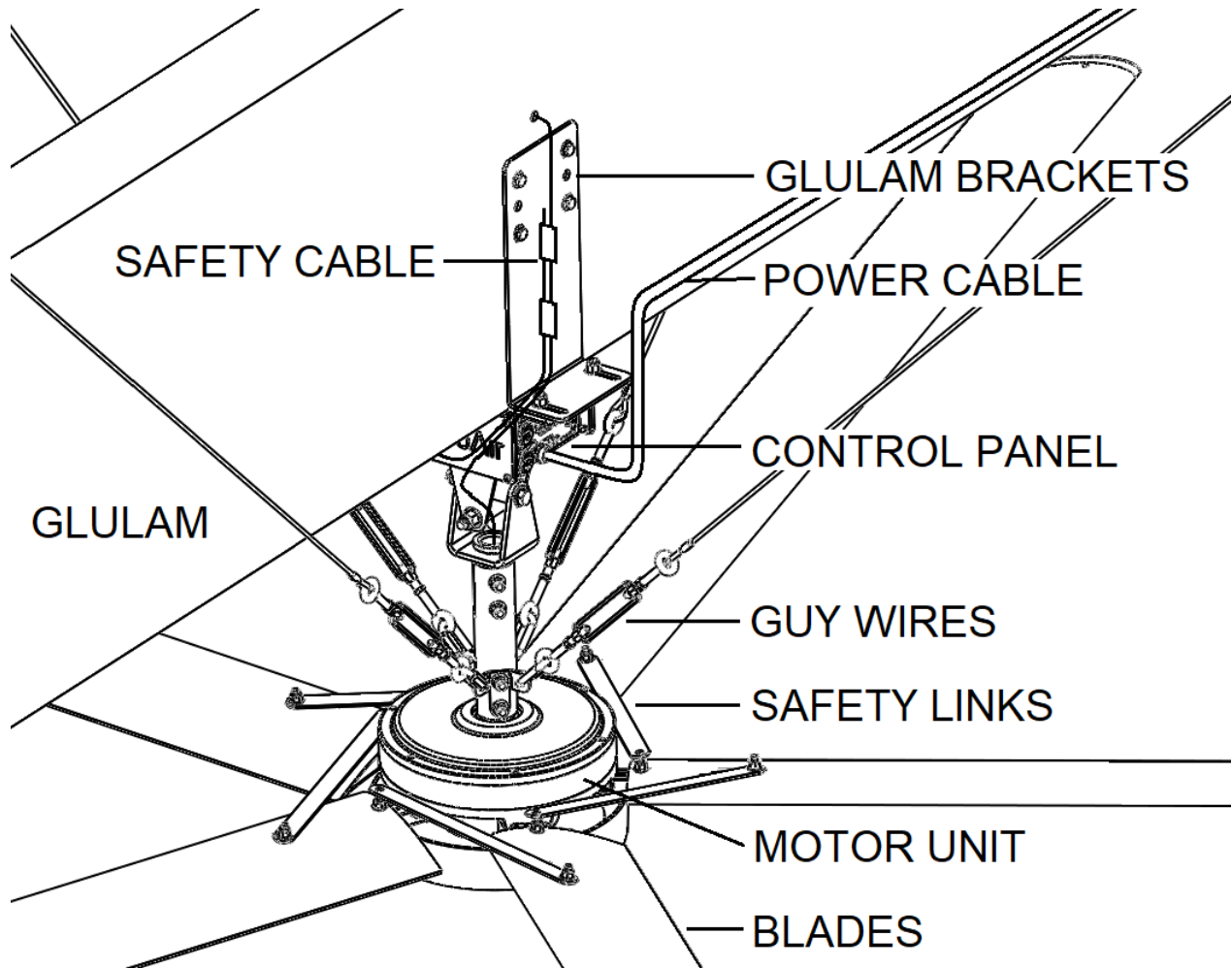


I-Beam



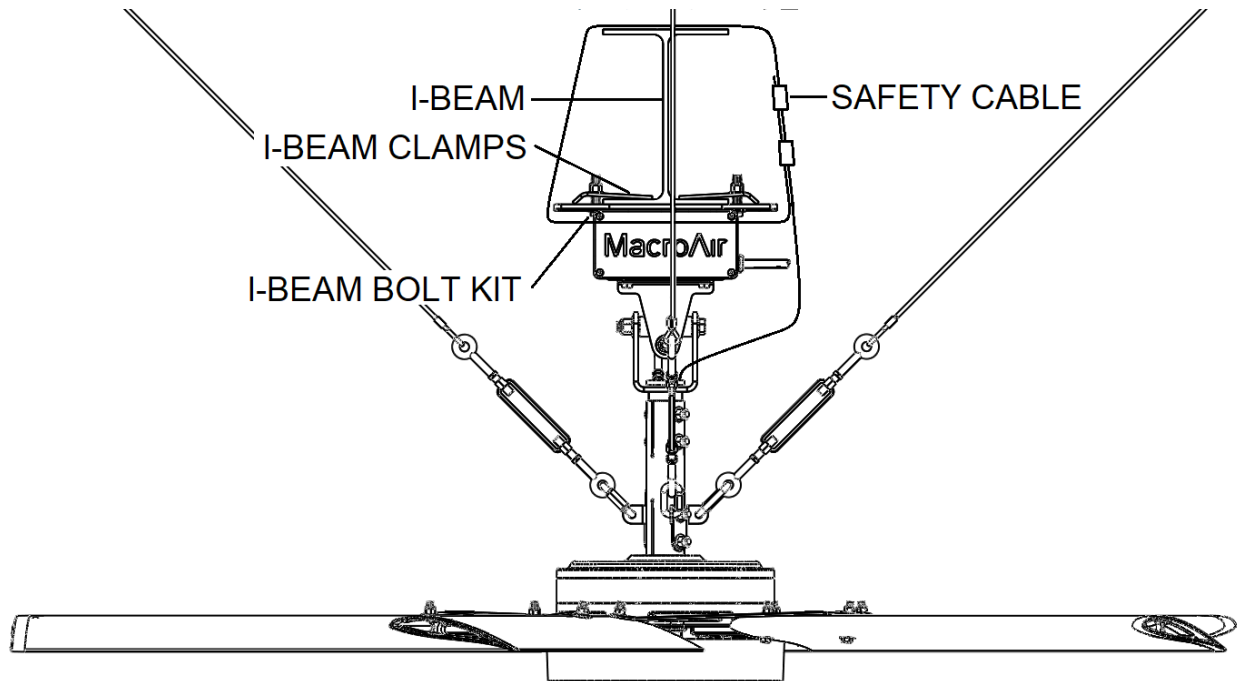
1. Mount Fan Motor Unit using Universal Mount (UMH) and drop extension onto the base of the control panel using hardware kit, combination wrench, and hex wrench.
2. The Control Panel must be secured to the I-Beam with I-Beam Clamps and hardware kit.
3. The Safety Cable exits top of UMH and needs to be fed around I-Beam and secured with provided cable clamps.

Glulam

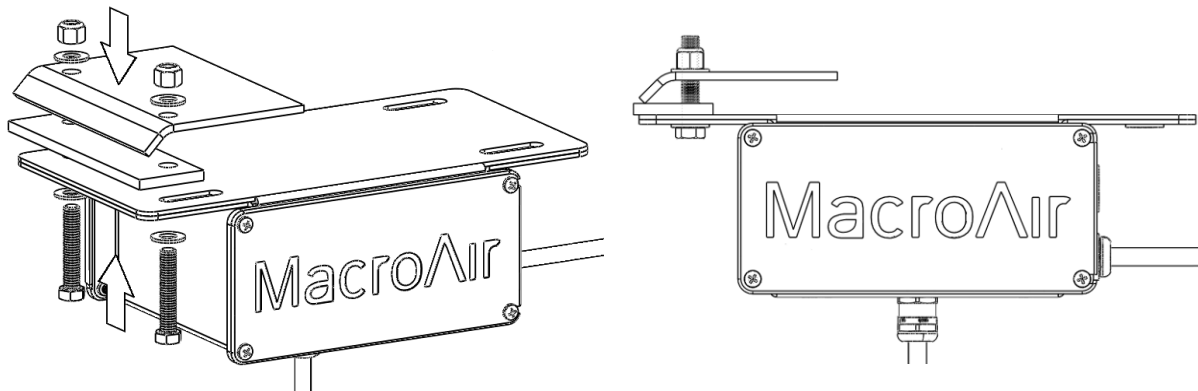


1. The Safety Cable needs to be fed through a hole in the Glulam, preferably above the center line of the Glulam.
2. The Control Panel must be secured to the Glulam with Glulam brackets and hardware kit. DO NOT discard the Glulam brackets and mount the control panel directly to the Glulam.
3. The Glulam brackets need to be through bolted to the Glulam as high as possible.
4. Mount Fan Motor Unit using Universal Mount (UMH) and drop extension onto the base of the control panel using hardware kit, combination wrench, and/or Allen wrench.

I-Beam Mounting



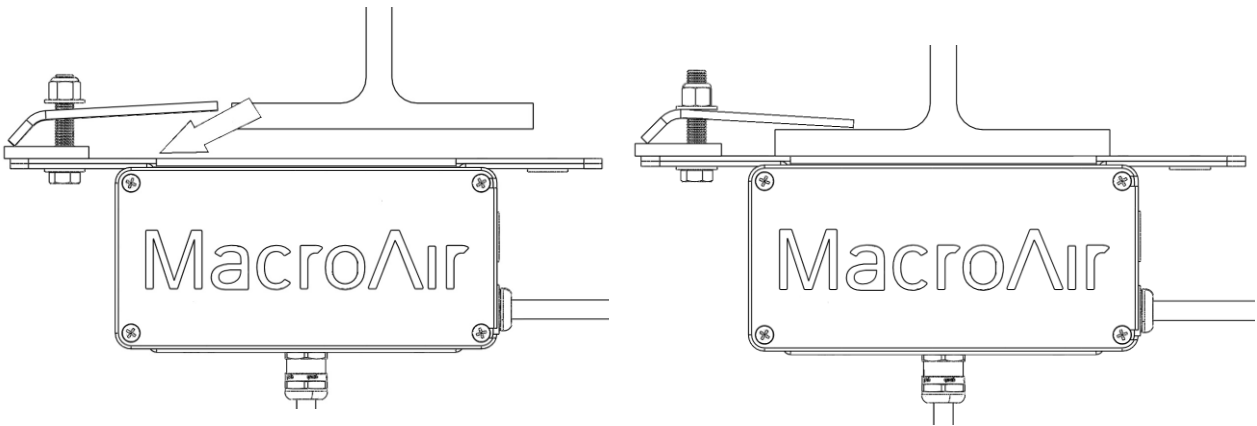
1.) Assemble one side of I-Beam Mount with (1) Clamp, and Hardware.



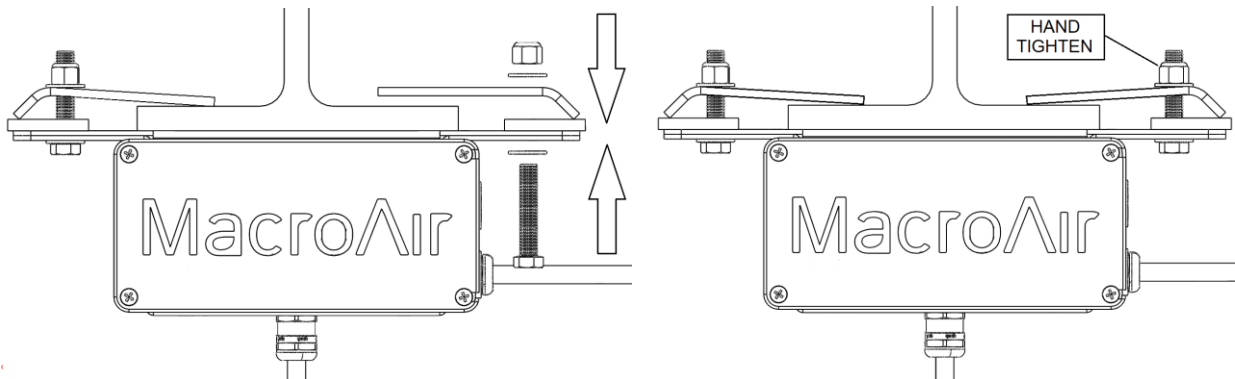
I-Beam Clamps & I-Beam Bolt Kit

- (2) I-Beam Clamps
- (2) I-Beam Shims (Use when Req'd)
- (4) Hex Bolts 3/8"-16x2"
- (8) Washers, 3/8" Flat
- (4) Hex Nuts 3/8"-16, Nylon

I-Beam Mounting (cont.)



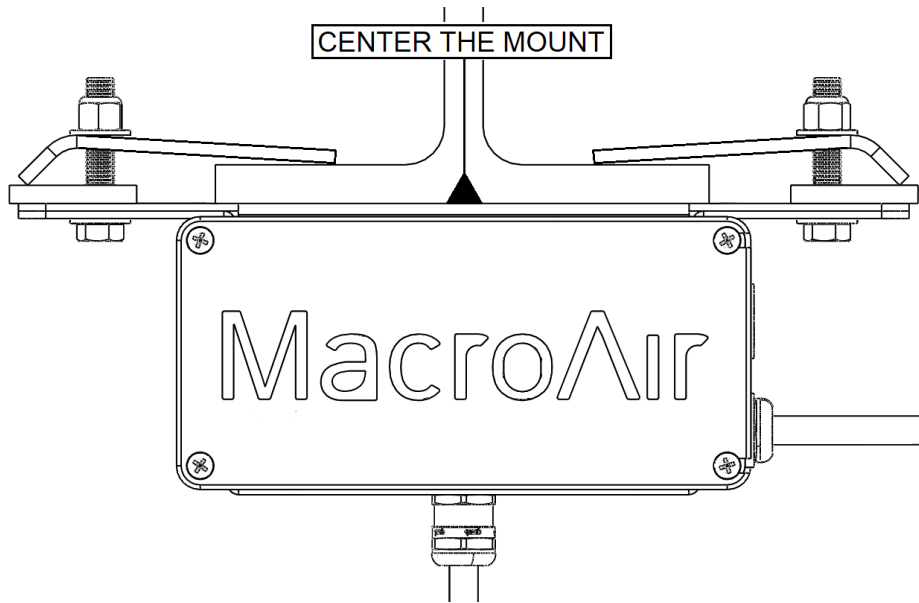
2.) Position the Control Panel under the I-Beam so that one side of the beam is between the clamp and the mount.



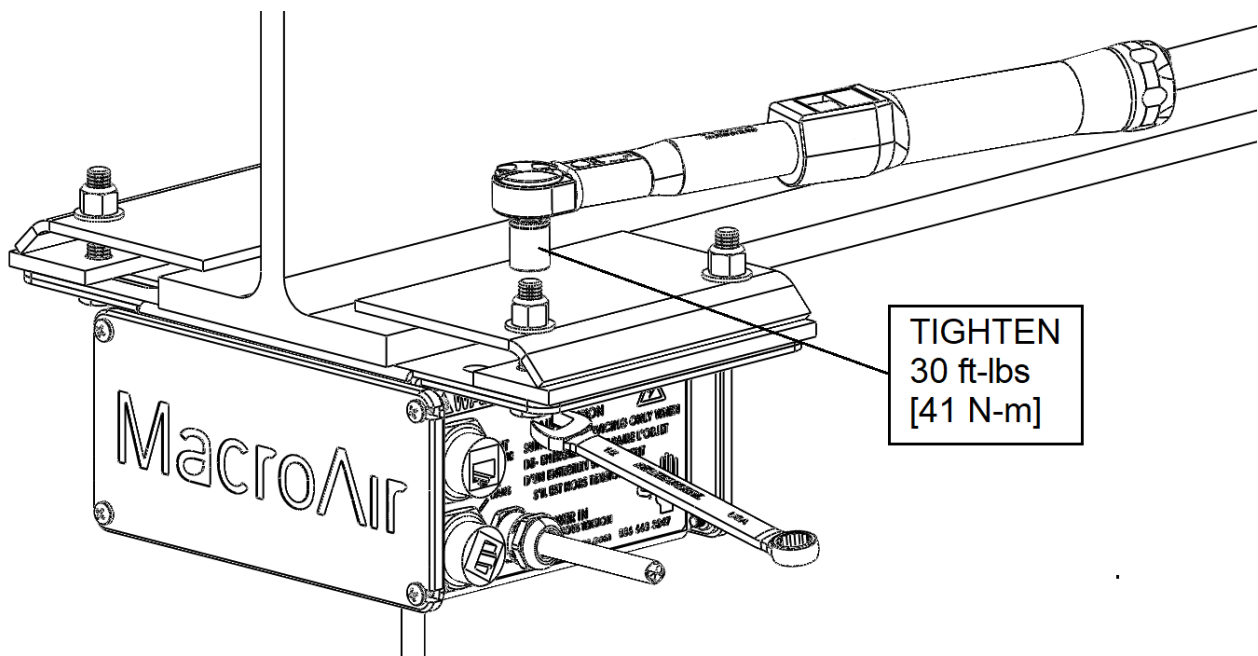
3.) Assemble other side of I-Beam Mount with (1) Clamp and Hardware.

4.) Hand tighten nuts to secure Clamp in place.

I-Beam Mounting (cont.)

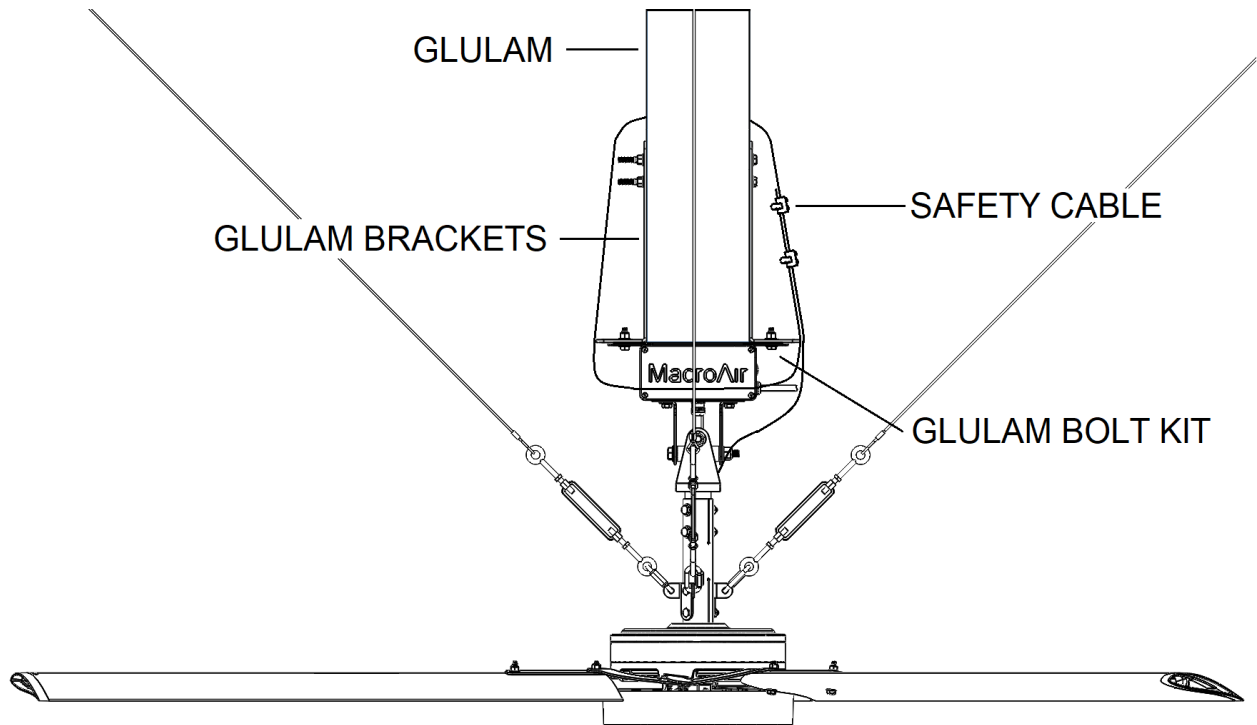


5.) Center the Control Panel on the I-Beam.

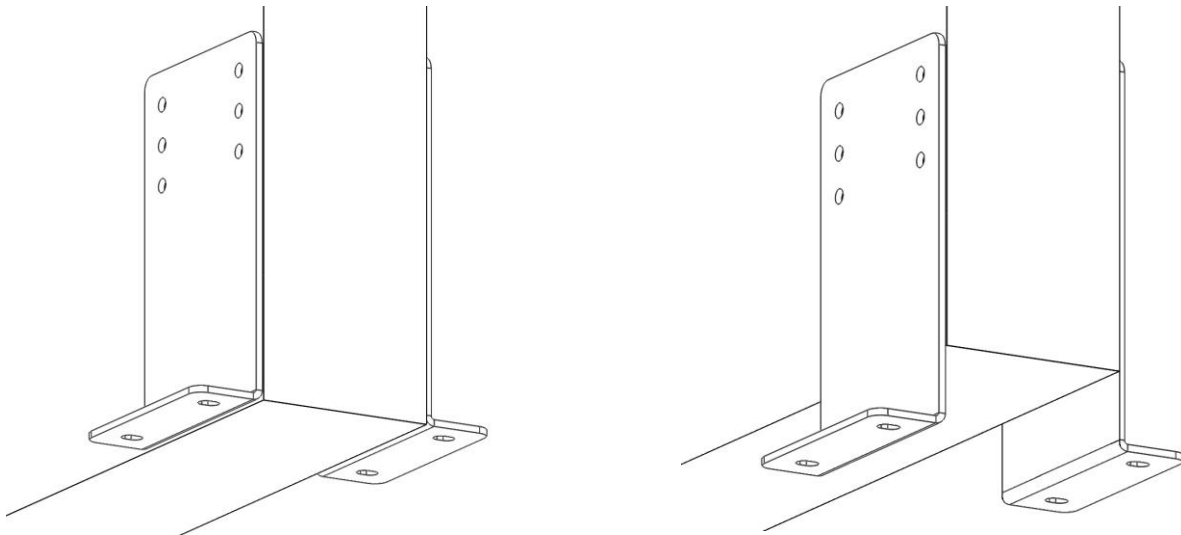


6.) Using a 9/16" combination wrench and a 9/16" socket and torque wrench tighten all hardware to 30 ft-lbs. [41 N-m]. Note: An extension may be required.

Glulam Mounting

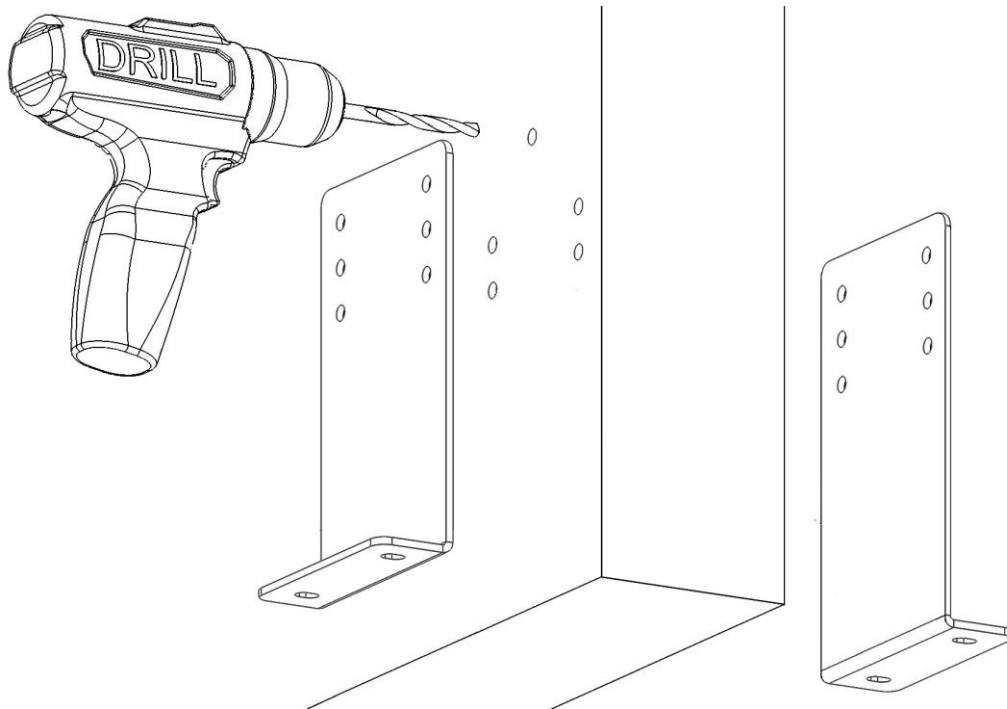


This method is recommended for Glulams or wood beams 5-1/8" or wider. For narrower beams, span across two or more beams using the Unistrut mounting method. (Refer to pages 23-24)

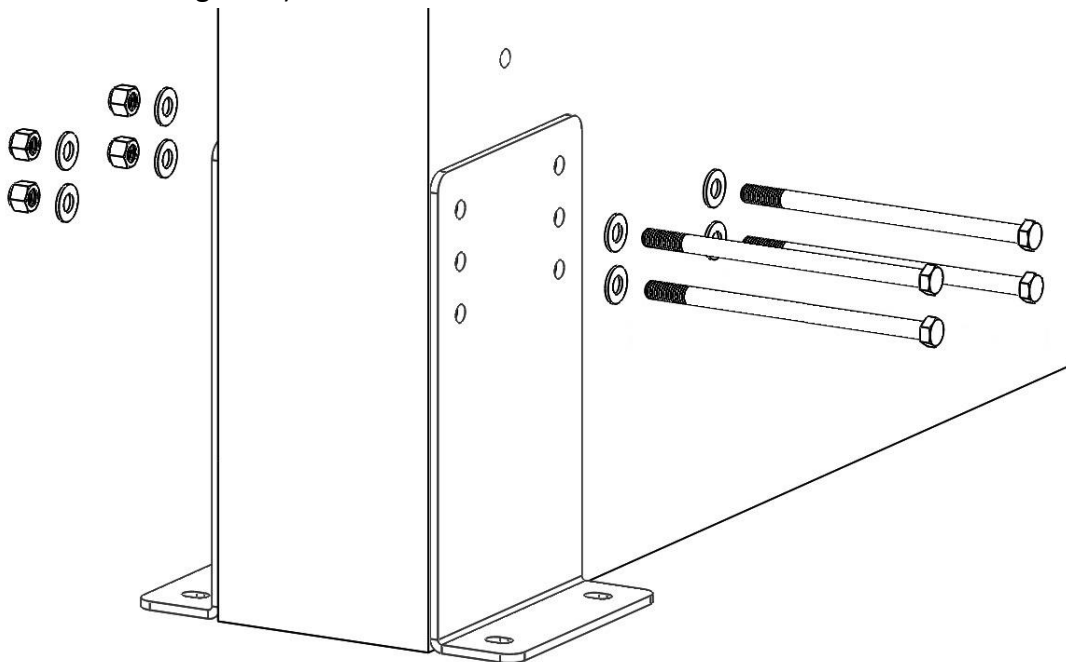


1. The Brackets can be located below the glulam if necessary but is not recommended. Locate brackets even with bottom of glulam.

Glulam Mounting (cont.)

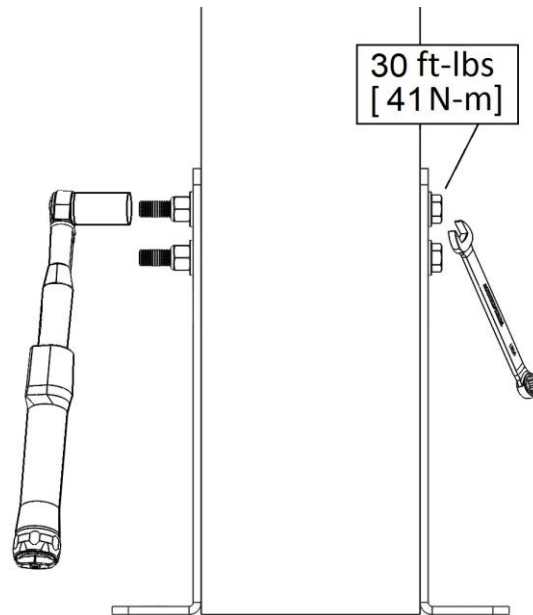


2. Drill maximum 1/2" diameter clearance holes through the glulam for (4) 3/8"-16 mounting bolts (not provided by MacroAir) and (1) hole for the 3/16" diameter safety cable. The highest bolt hole should not be below the beam's center line unless the glulam is too tall. The hole for the safety cable should be centered above the brackets (preferably above the center line of the glulam).

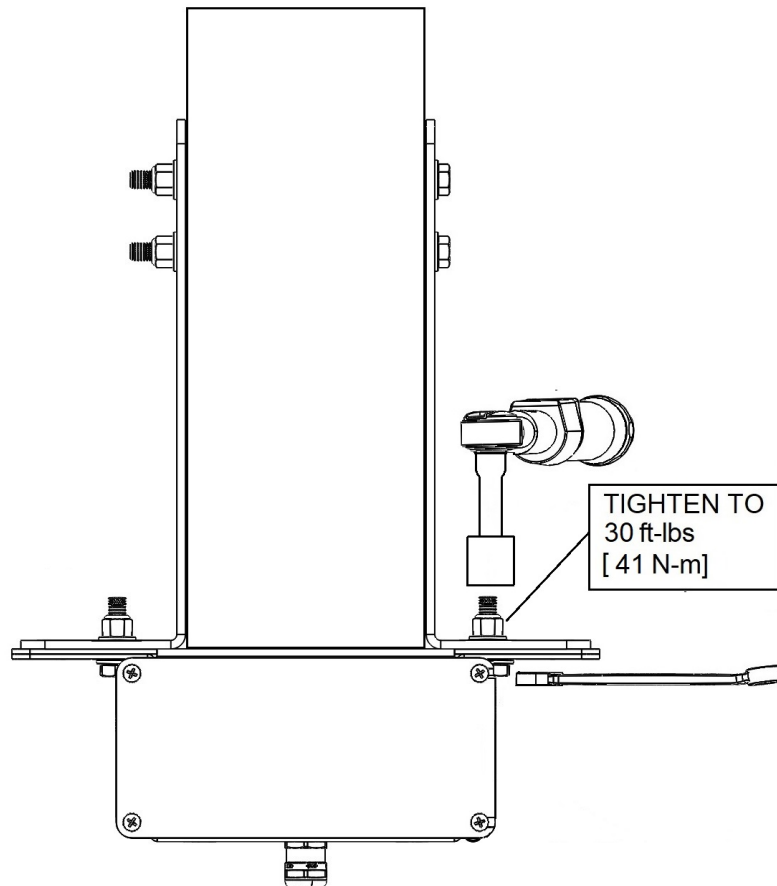


3. Secure the Glulam brackets to the Glulam via (4) 3/8"-16 grade 5 bolts (long enough to go through the entire beam with nylon lock nuts). Stack the Bolt, washer, washer, nut as shown above. Note: This hardware is not provided by MacroAir.

Glulam Mounting (cont.)



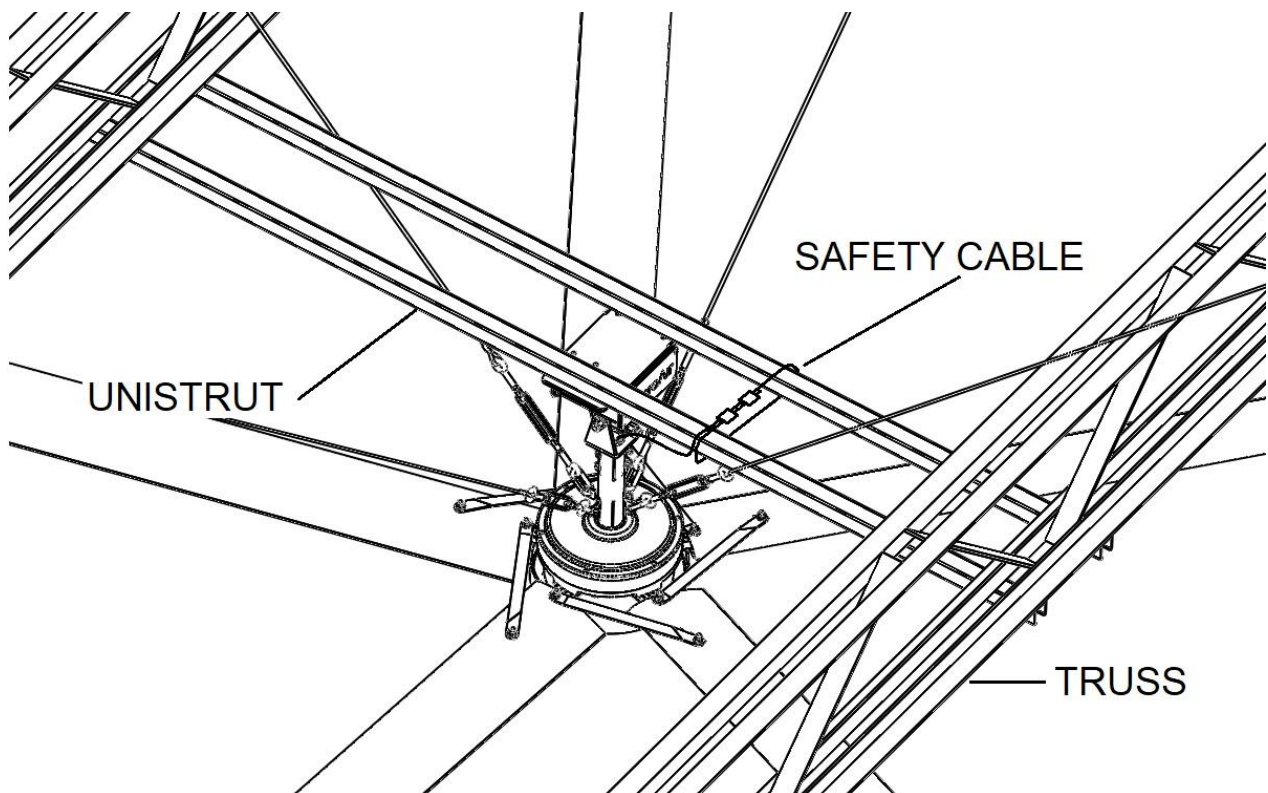
4. Using a 9/16" combination wrench and 9/16" socket and torque wrench tighten all hardware to 30 ft-lbs.[41 N-m].
5. Mount the Control Panel to the glulam brackets using the Mount Bolt Kit which contains: (4) 3/8"-16 x 2" Hex Bolts, (8) 3/8" Washers and (4) 3/8"-16 Nylon Lock Nuts. Using a 9/16" combination wrench and a 9/16" socket and torque wrench tighten all hardware to 30 ft-lbs. [41 N-m].



Unistrut Mounting

This method is used to span components of a building structure. Attachment points to the building structure can vary greatly, so we recommend contacting Unistrut, so they can recommend the best method for attaching the Unistrut (www.unistrut.us).

1. Two (2) pieces of 1-5/8" x 1-5/8" 12-gauge (Heavy Duty) Unistrut need to span the trusses. Distance apart to be centered over the widest hole pattern in the Control Panel (see step 2). Maximum allowable distance between trusses is 8 feet. If the spanning distance is greater than 8 feet, please consult a Structural Engineer. Please refer to page 5 "Mounting Guidelines" for the maximum torque and weight guidelines.



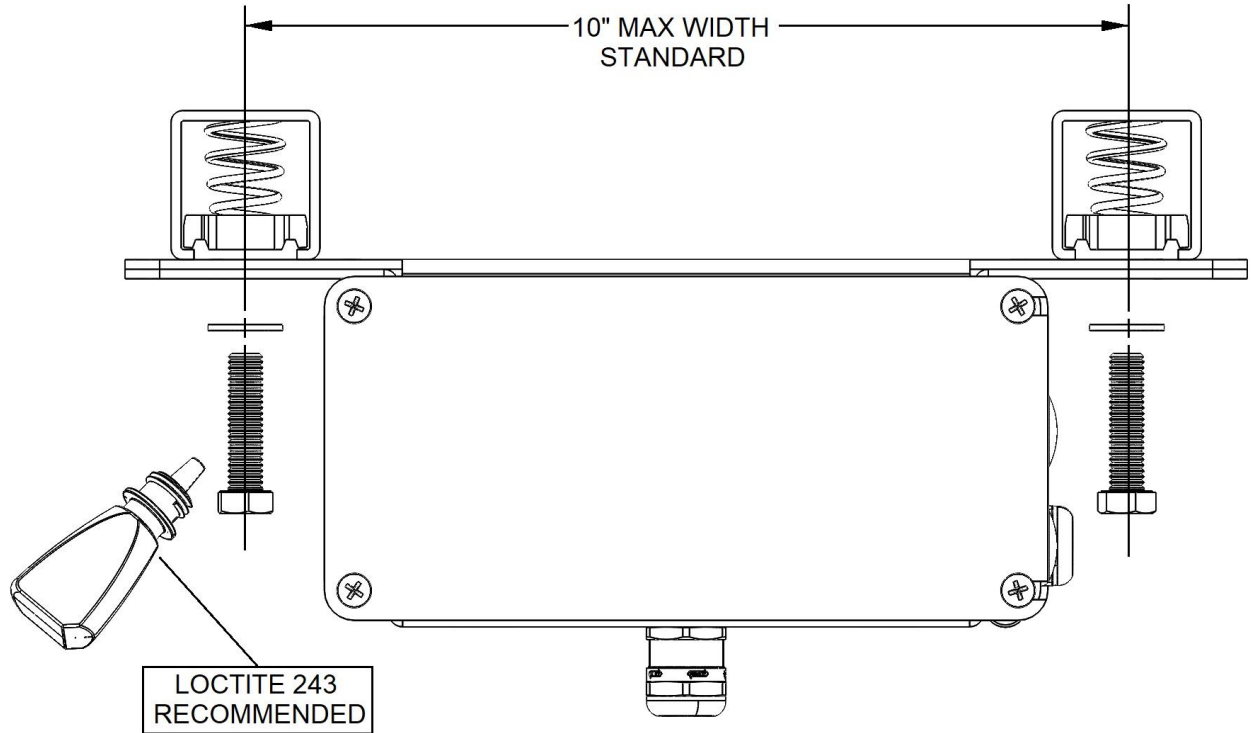
Fan shown in the above image is for illustration purposes only.

Hardware Required but Not Provided:

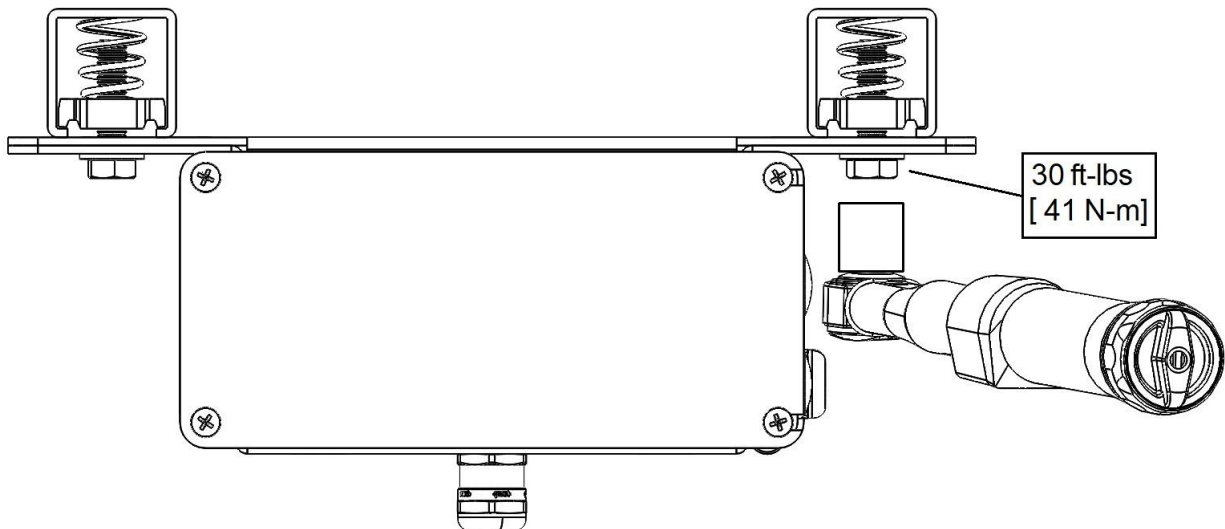
- (4) 3/8"-16 x 1-1/2" Hex Bolts
- (4) 3/8" Flat Washer
- (4) 3/8" Unistrut Spring Nut
- (1) Loctite 243

Unistrut Mounting (cont.)

- Attach the Control Panel in the most desired position between the trusses using hardware indicated (not provided). Apply Loctite 243 to the 3/8"-16 bolts prior to mounting. Unistrut clamps are not permitted in this mounting method.



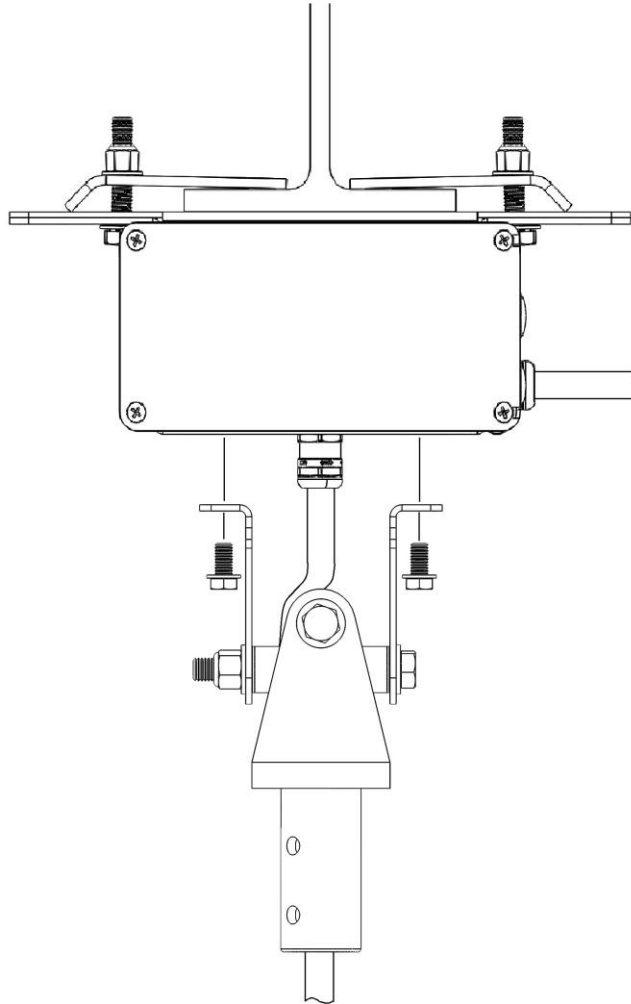
- Using a Torque wrench, tighten hardware to 30 ft-lbs (41 N-m).



NOTE: Mounting to C- and Z-purlins requires Unistrut span mounting. Mounting to trusses under three (3) inches in width requires two or more trusses to be linked with Unistrut. We recommend contacting Unistrut or a licensed structural engineer for a recommendation on the best method for attaching the Unistrut (www.unistrut.us).

Mounting the Mount

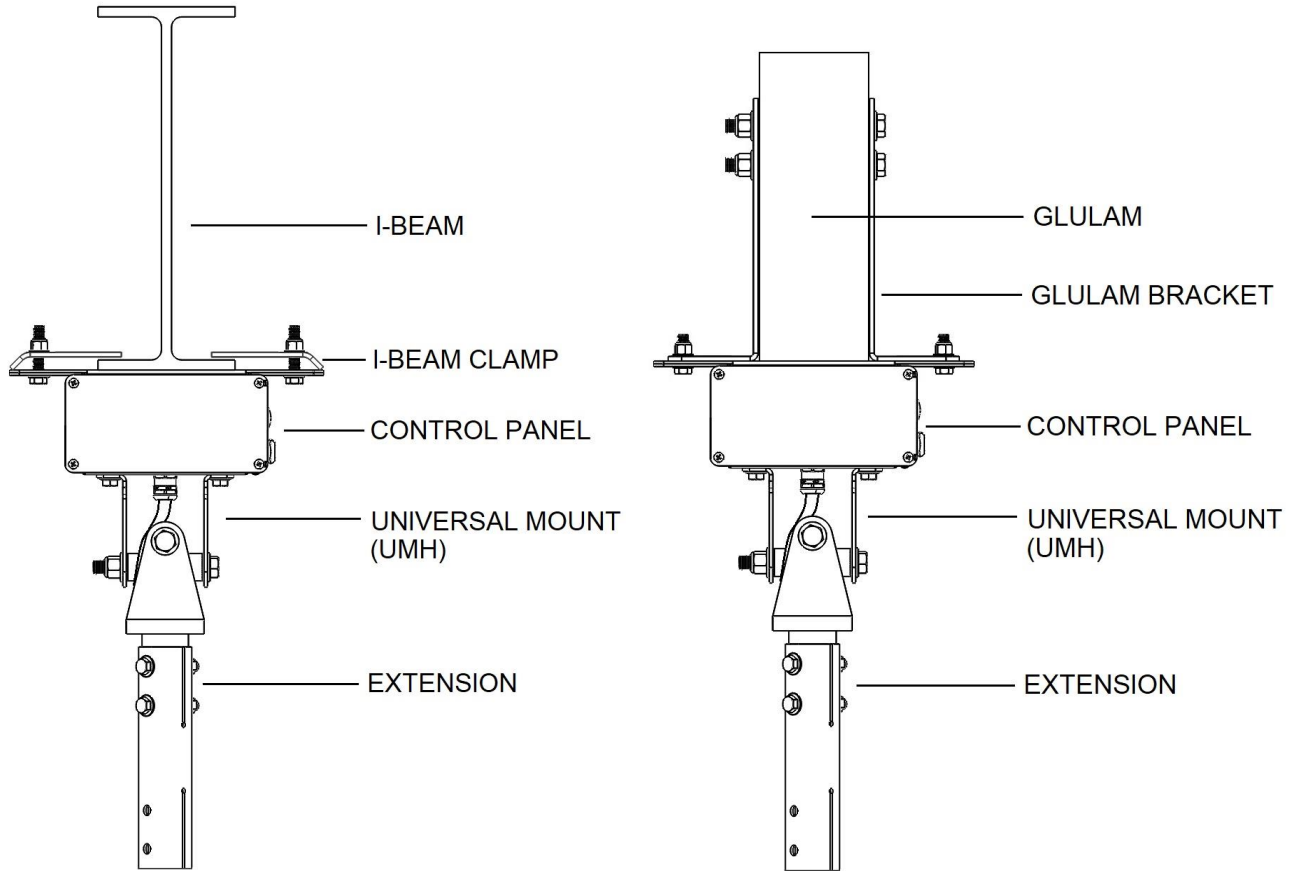
Universal (UMH) Mount



1. The UMH Mount is affixed to the bottom of the mounted Control Panel using the provided Bolt Kit consisting of:
 - (4) Hex Bolts 3/8"-16x3/4"L
 - (4) Washers, 3/8" Flat
2. Pass the motor power cable through the mount as the mount is installed. Continue the cable through the extension when installed (page 26) and through the motor when installed (page 27-30).

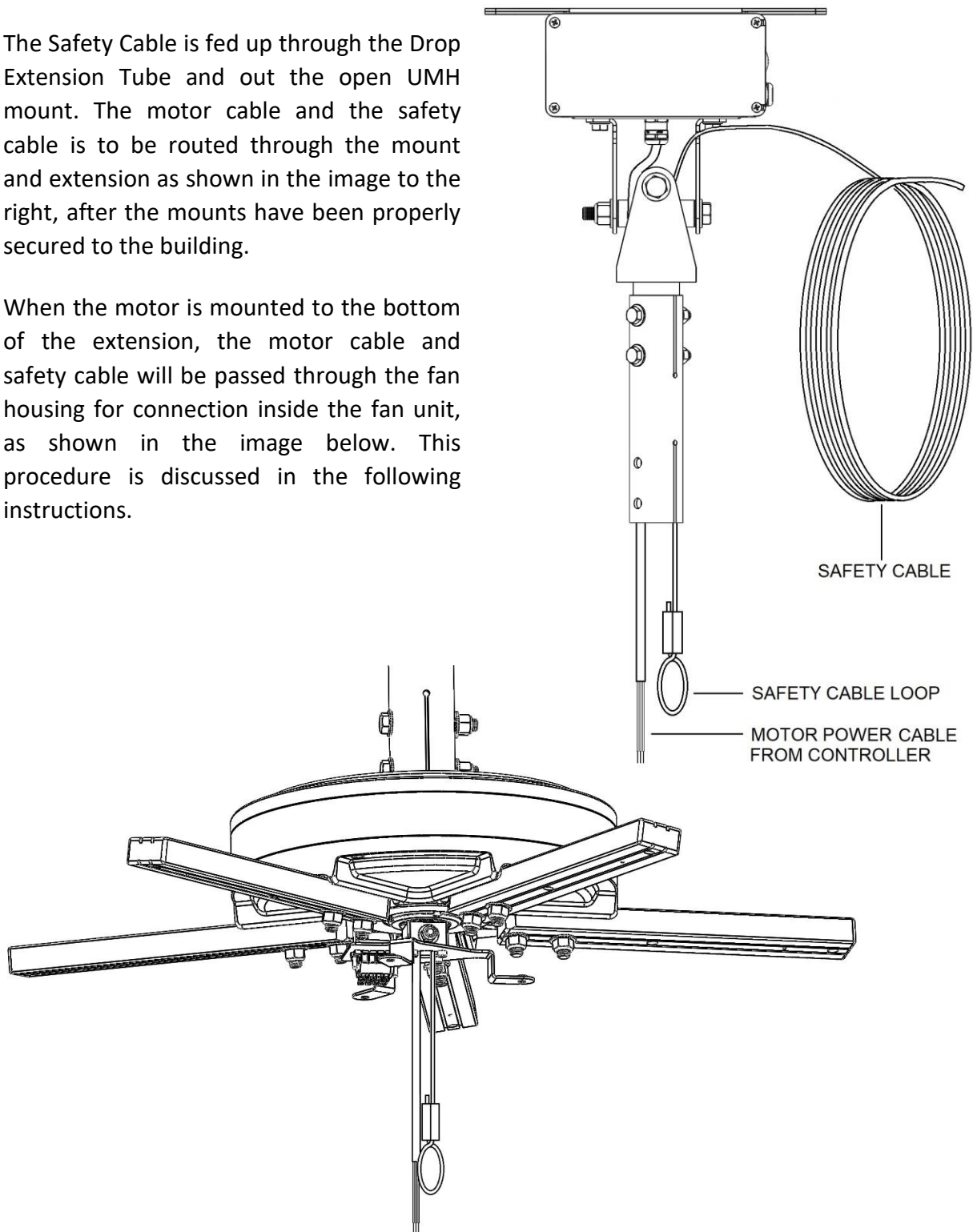
Mounting the Extension

1. Attach the extension to the bottom of the Universal Mount "UMH" (shown below) and attach the top of the fan unit to the bottom of the extension with the provided hardware pack. Tighten hardware to 30 ft-lbs [41 N-m] using torque and combination wrenches.



Motor and Safety Cable Routing

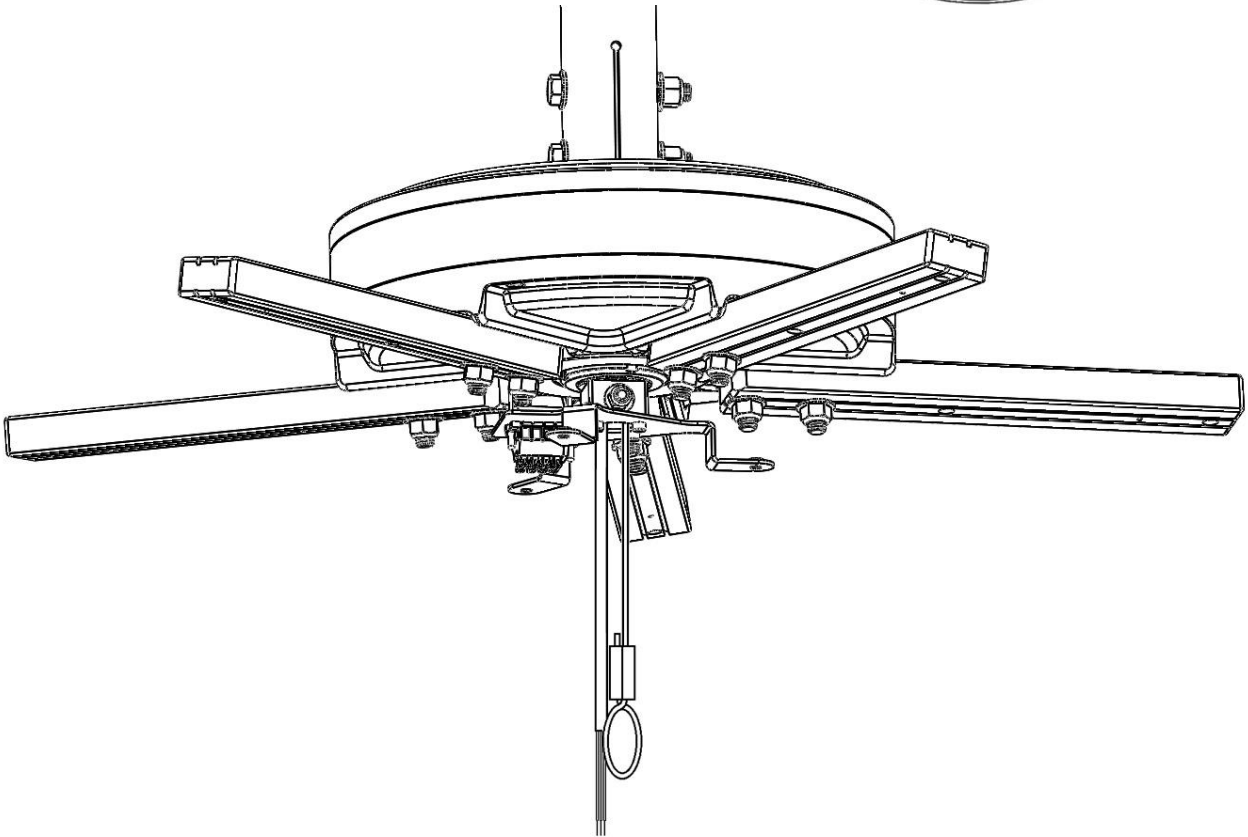
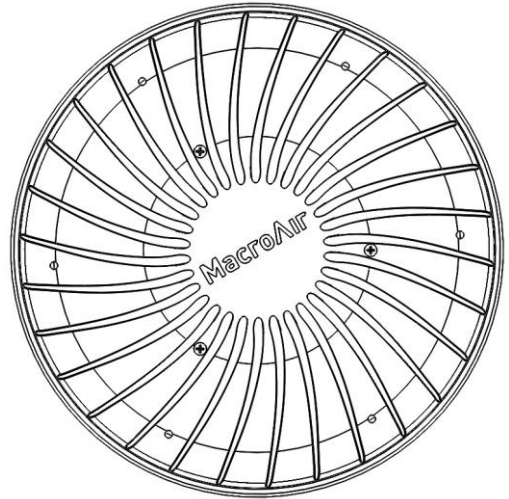
1. The Safety Cable is fed up through the Drop Extension Tube and out the open UMH mount. The motor cable and the safety cable is to be routed through the mount and extension as shown in the image to the right, after the mounts have been properly secured to the building.
2. When the motor is mounted to the bottom of the extension, the motor cable and safety cable will be passed through the fan housing for connection inside the fan unit, as shown in the image below. This procedure is discussed in the following instructions.



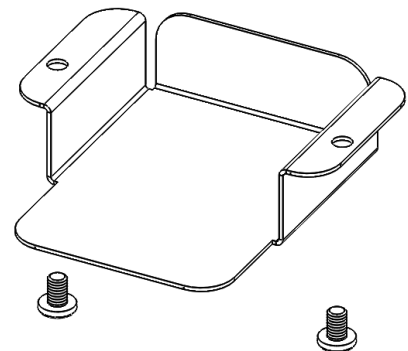
Struts and Safety Retainers: Please note that the motor assembly comes with struts and safety retainers installed. Many of the following images are shown without these components to provide clarity in the illustrated instruction. Do not remove these components to complete the following instructions.

Mounting the Motor Unit

1. Use a Phillips screwdriver to loosen the (3) #8-32 screws about the center of the cover. Do not remove the screws completely if they are captured on the cover with plastic lock washers. If washers are not present, set screws aside with cover (Do not discard).
2. Remove the bottom cover from the fan, ensure the screws are still captured on the cover with the (3) nylon washers (if washers are present). Set the bottom cover to one side.

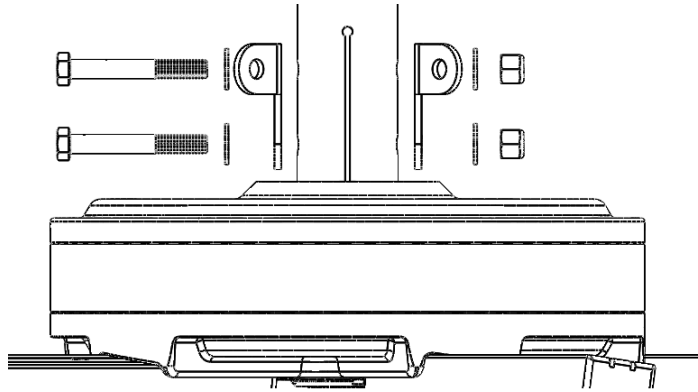


3. Remove the electrical cover. Momentarily set this hardware to one side.
4. Raise the fan and carefully guide the motor shaft into the extension tube. Feed the safety cable and motor cable through the motor.

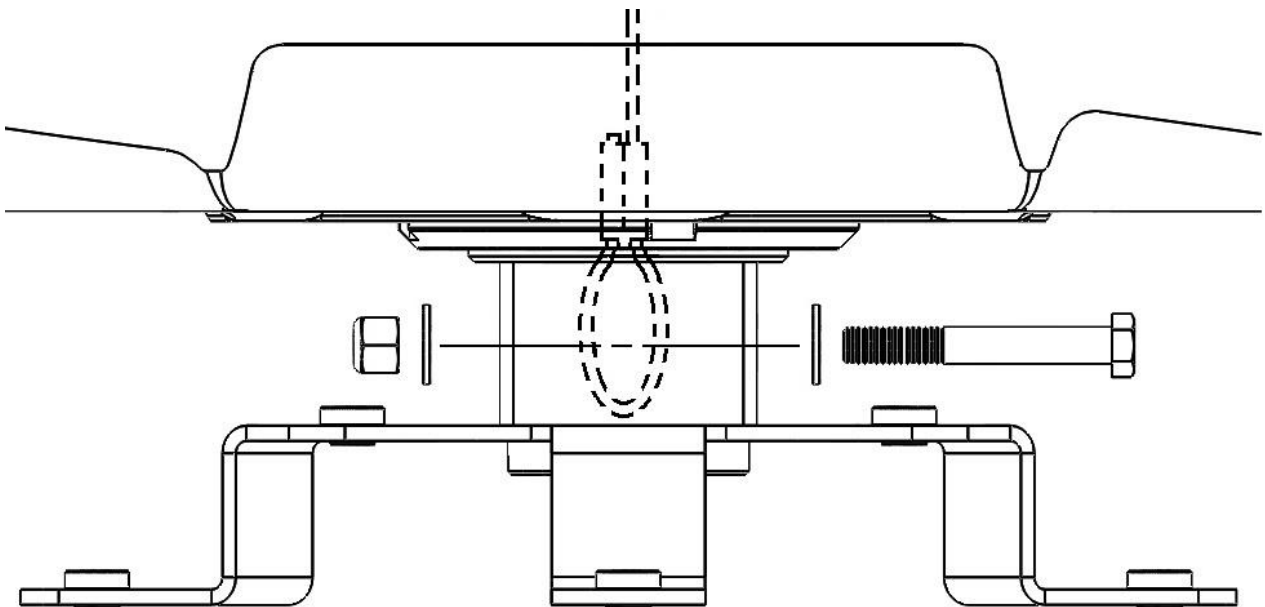


Mounting the Motor Unit, cont.

5. Bolt the fan motor shaft to the extension tube. If guy wires are to be used, then fasten the Guy Wire mounting brackets at this location.
6. Be careful of the wires in the motor shaft and extension tube.
7. Tighten the bolts to 30 ft-lbs [41 N-m] using torque and combination wrenches.

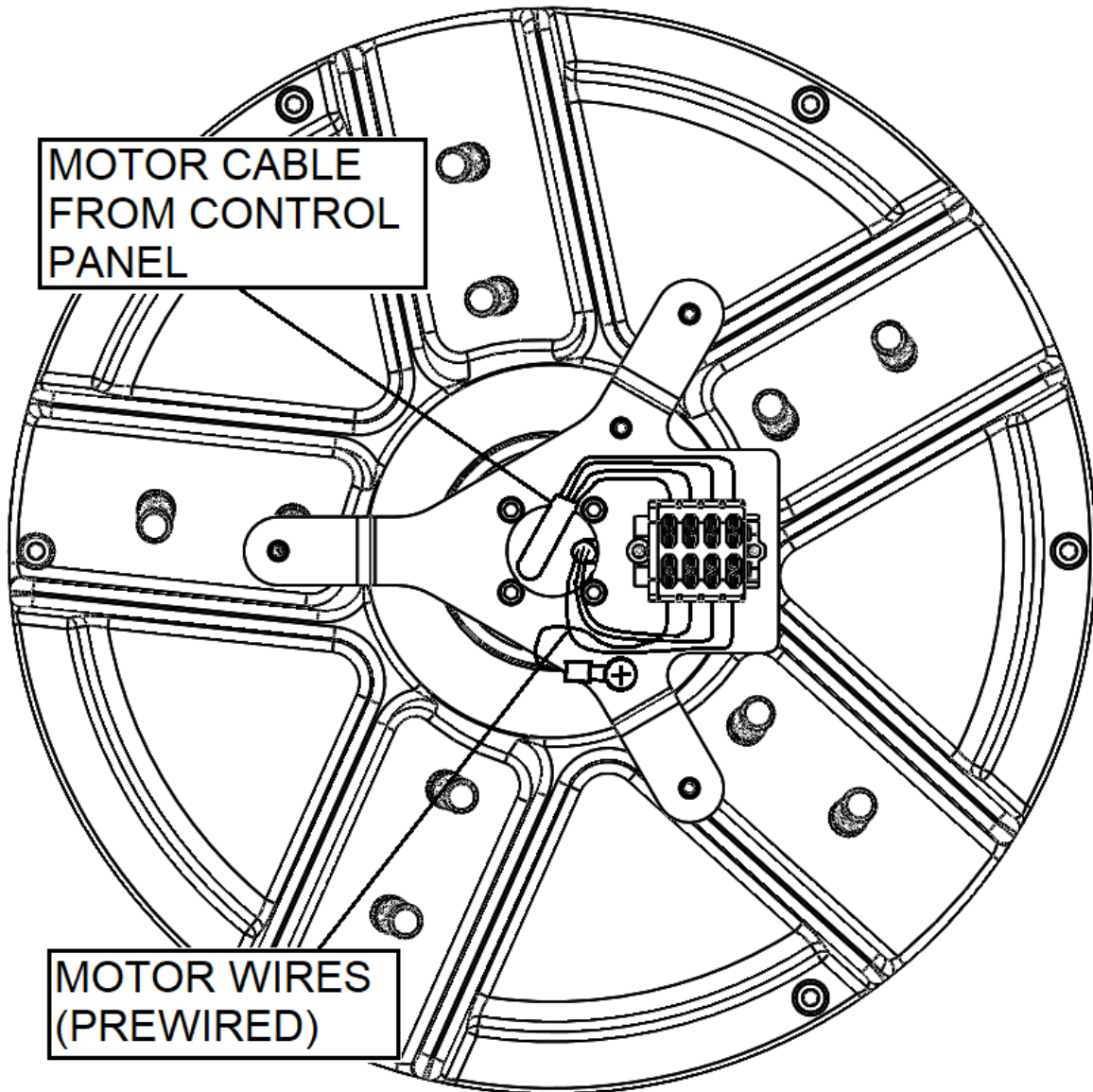


8. The Safety Cable is fed up through the Drop Extension between the mount and the Control Panel and out the open Rapid Industrial or UMH mount. Refer to the illustration on page 30.
9. Pass the provided 1/4"-20 Safety Cable Bolt through the spacer block shown below. Pass the 1/4"-20 Bolt through the loop of the safety cable, as shown. Secure the 1/4"-20 Bolt with the provided 1/4"-20 nut and washers in the Safety Cable Bolt Kit.



Motor Cable Connection

1. The motor cable from the Control Panel is passed through the retaining bracket and connected to the four-position terminal block.



2. Wiring to the terminal block:

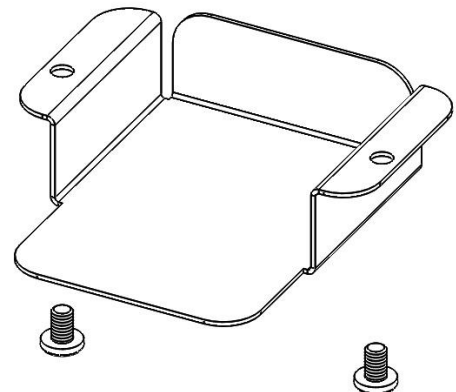
Green wire chassis GND – motor control cable bare wire

White wire – motor control cable black #1 wire

Black wire – motor control cable black #2 wire

Yellow wire – motor control cable black #3 wire

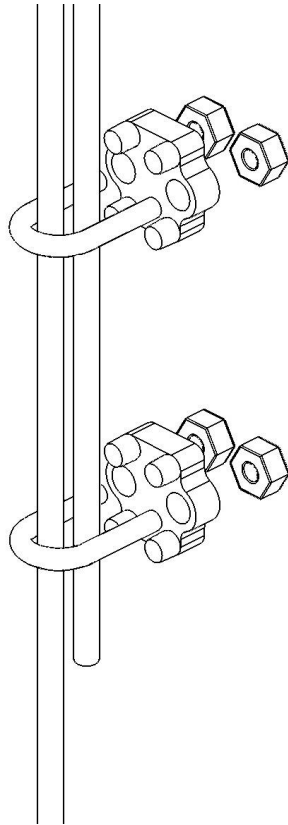
3. Replace the cover previously removed to access the terminal block. Do not yet replace the MacroAir bottom cover as you still need access to install the blades.



Safety Cable Installation

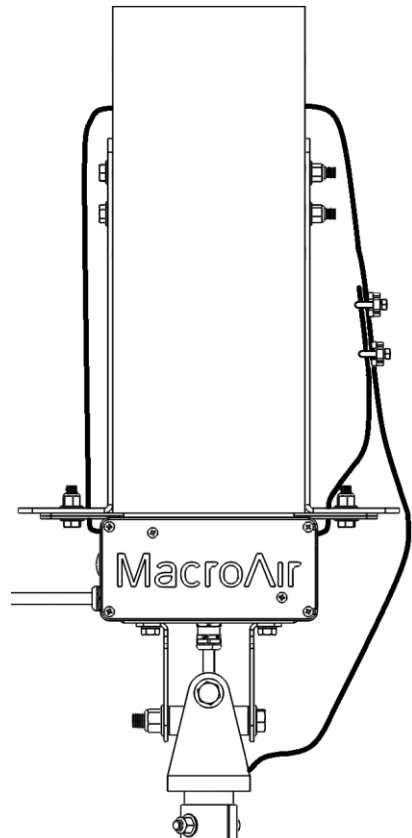
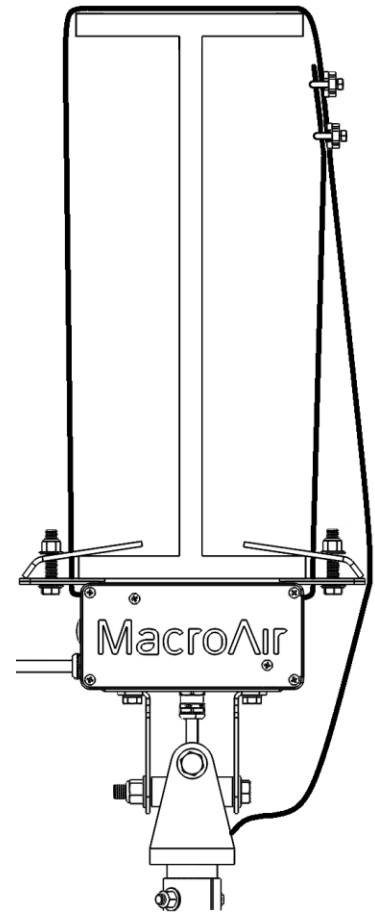
I-Beam

1. Wrap 1/8" diameter safety cable from the mount, around the I-beam multiple times.
2. Secure two (2) safety cable clamps around the wire. Pull the cable taut and tighten both nuts using 3/8" combination wrench.

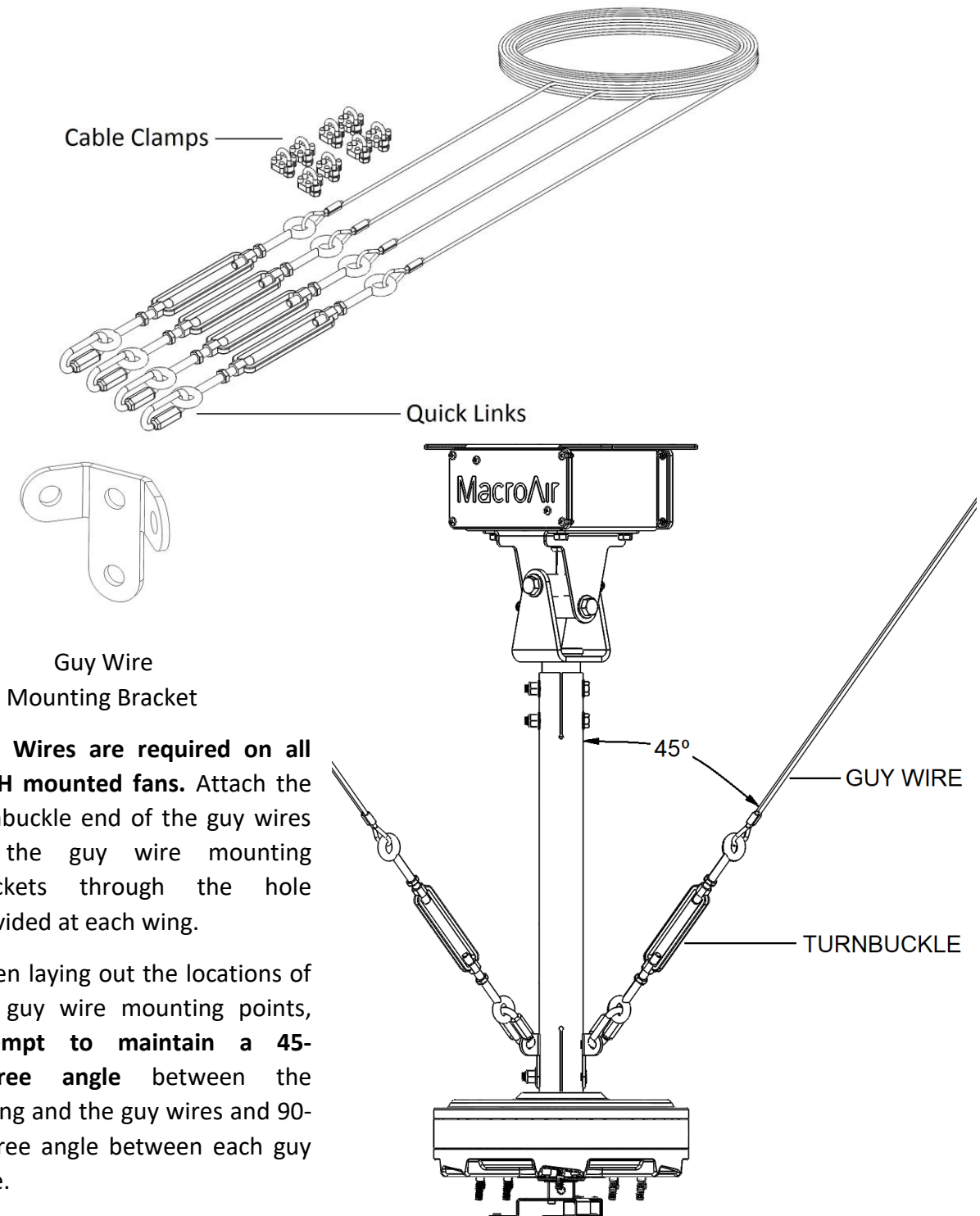


Glulam

1. Wrap 1/8" diameter safety cable from the mount, through the hole drilled in the Glulam above brackets.
2. Secure two (2) safety cable clamps around the wire. Pull the cable taut and tighten both nuts using 3/8" combination wrench.



Guy Wire Installation on UMH



1. **Guy Wires are required on all UMH mounted fans.** Attach the turnbuckle end of the guy wires to the guy wire mounting brackets through the hole provided at each wing.

2. When laying out the locations of the guy wire mounting points, **attempt to maintain a 45-degree angle** between the ceiling and the guy wires and 90-degree angle between each guy wire.

3. Avoid any sharp edges that may contact the guy wire. Guy wires need to be attached to the building structure via 1/2" eye lags or bolts with the provided cable clamps. Eye Lags or bolts are not supplied by MacroAir.

⚠ WARNING: DO NOT wrap the guy wires around the building structure.

Note: Guy Wires may also be used when fan is mounted with a Rapid Industrial Mount.

Guy Wire Tightening

4. Tighten down the nuts on each cable clamp with a 11mm combination wrench (or socket).

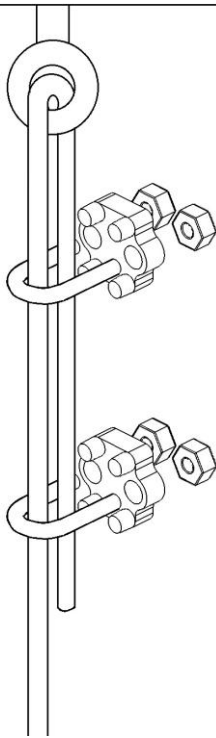


Fig. Note 4

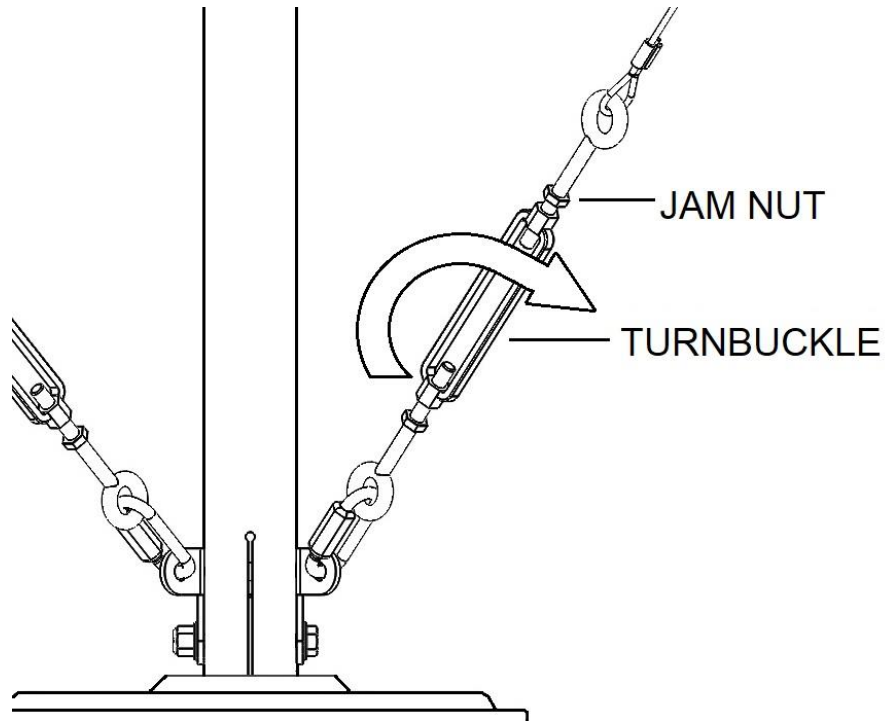


Fig. Notes 5-7

5. With the aid of a level placed against the drop extension, tighten the turnbuckles by hand in a crisscross pattern while periodically checking to ensure that the fan is level.
6. Tighten the turnbuckles until the fan unit is stable in the level position.

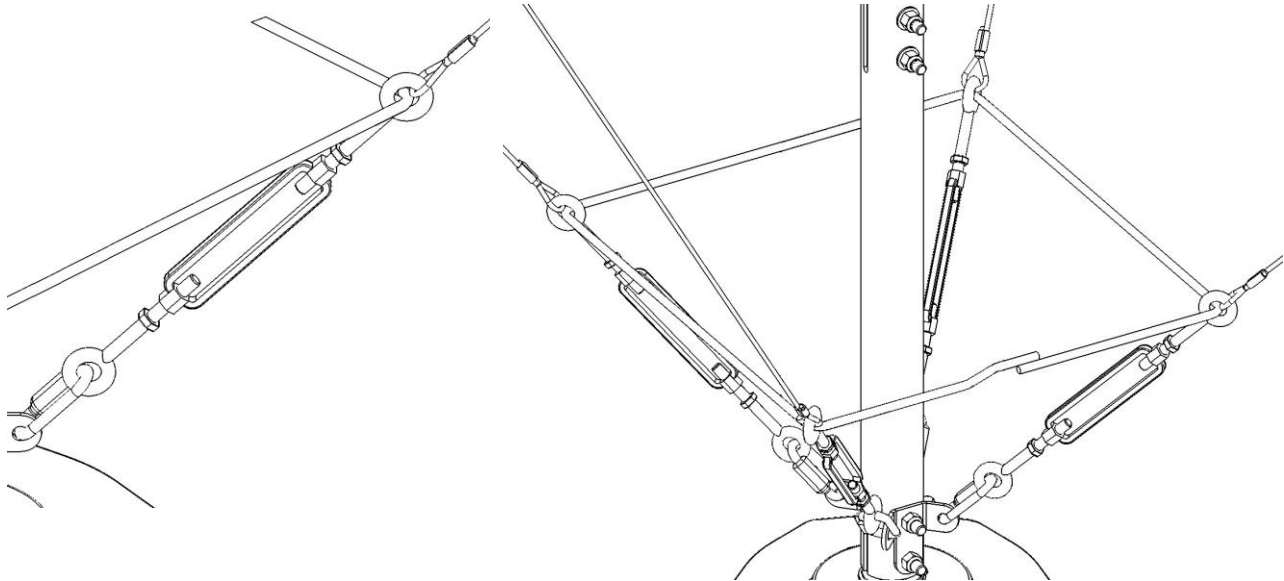
⚠ WARNING: Make sure to not overtighten the turnbuckles.

7. Once all the guy wires are taut (stretched or pulled tight with no slack) and the fan unit is stable and level, tighten the jam nuts on the turnbuckles with a 1/2" combination wrench.

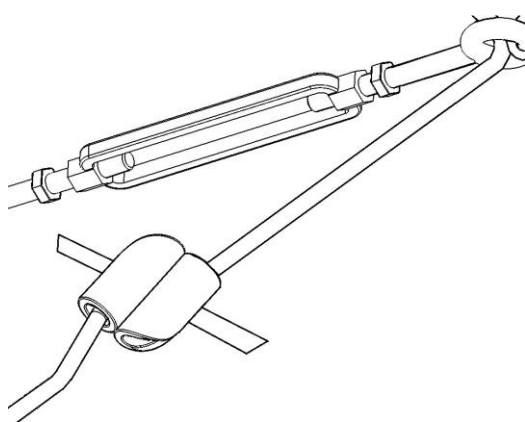
⚠ WARNING: Do not use tools to tighten the turnbuckles; only use tools to tighten the jam nuts.

Guy Wire Band Installation

1. Insert the elastic cord through the top eyelet of each of the 4 turnbuckles.

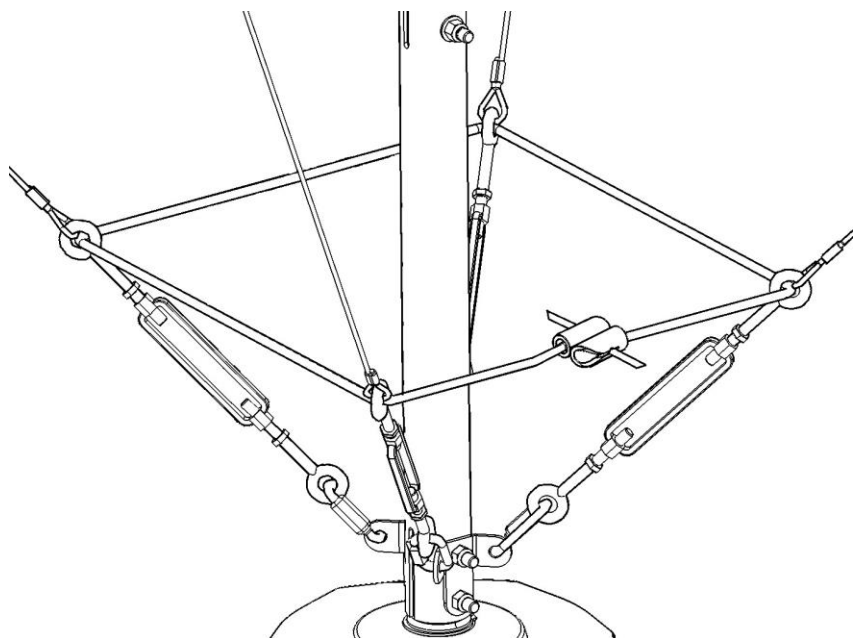


2. Pull one of the ends of the cord through one of the holes on the cable lock and then pull the end into the groove to lock it. Use pliers to properly secure the cord in the groove of the cable lock.



3. Repeat the previous instruction for the second end of the cord using the opposite hole and groove on the cable lock.

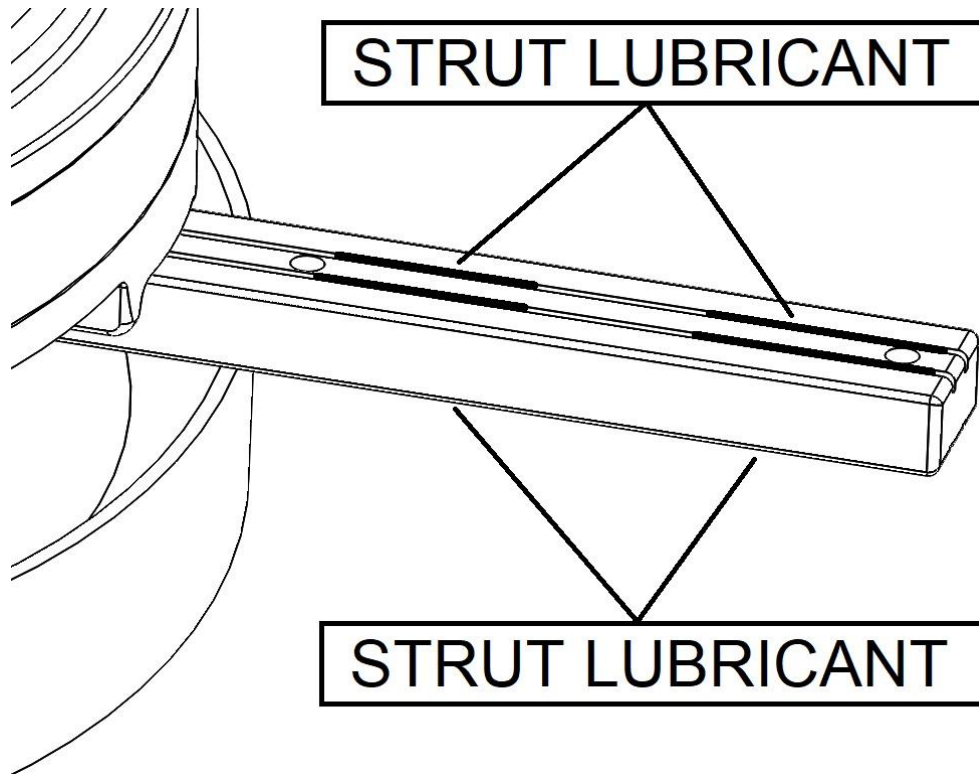
4. The safety cord should be pulled tight and fastened as shown.



**DO NOT EXCESSIVELY
STRETCH THE ELASTIC CORD.**

Blade/Strut Lubricant

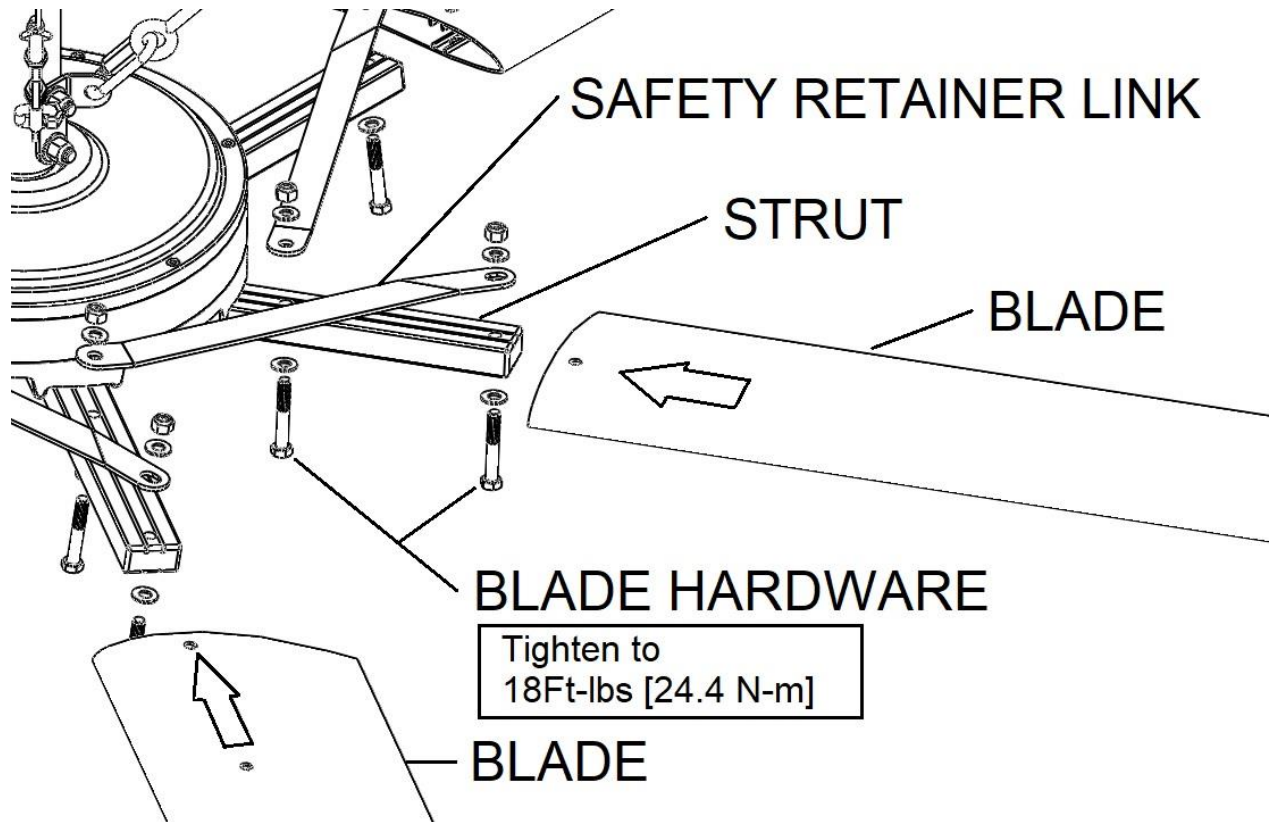
Apply the provided lubricant in 4 spots on the top and 4 spots on the bottom of each strut as indicated. Each line of lubricant should be in a groove of the strut, starting at the tip of the strut, approximately 1"-1.5" long and spaced as indicated.



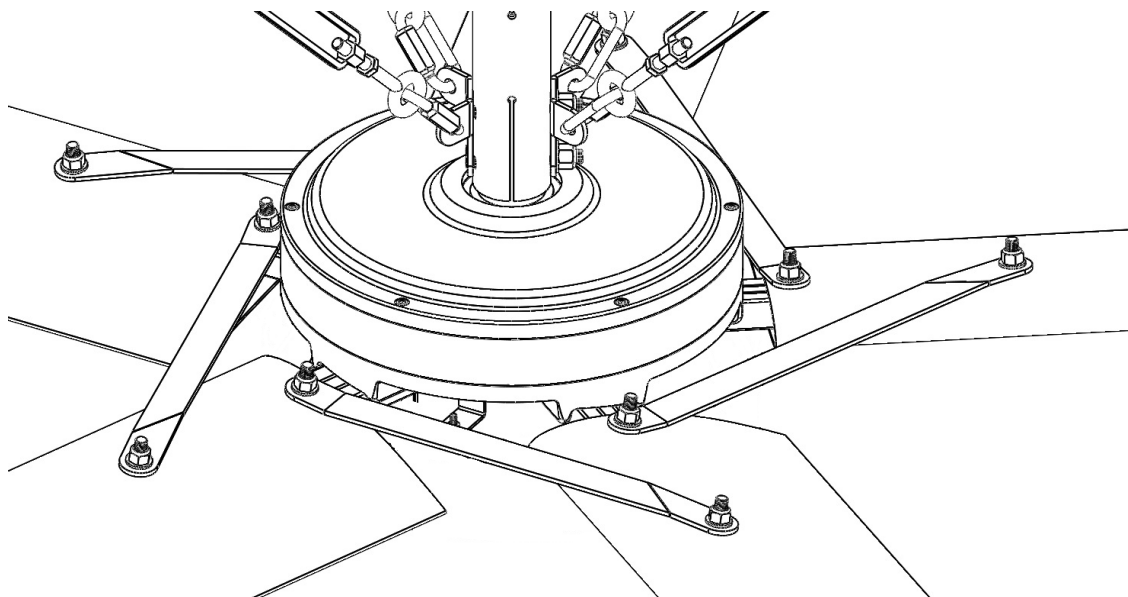
NOTE: The lubricant should reach the top of the groove.
It is not necessary to use the entire tube.

Blade Assembly

1. Prior to blade installation, see strut lubricant instructions on page 34. With Struts lubricated, slide fan blade into a blade strut (with the safety retainer links) until mounting holes line up. Insert two 5/16" -24 Hex Hd Bolts, Washers and Nylon Locknuts provided in Blade Bolt Kit.

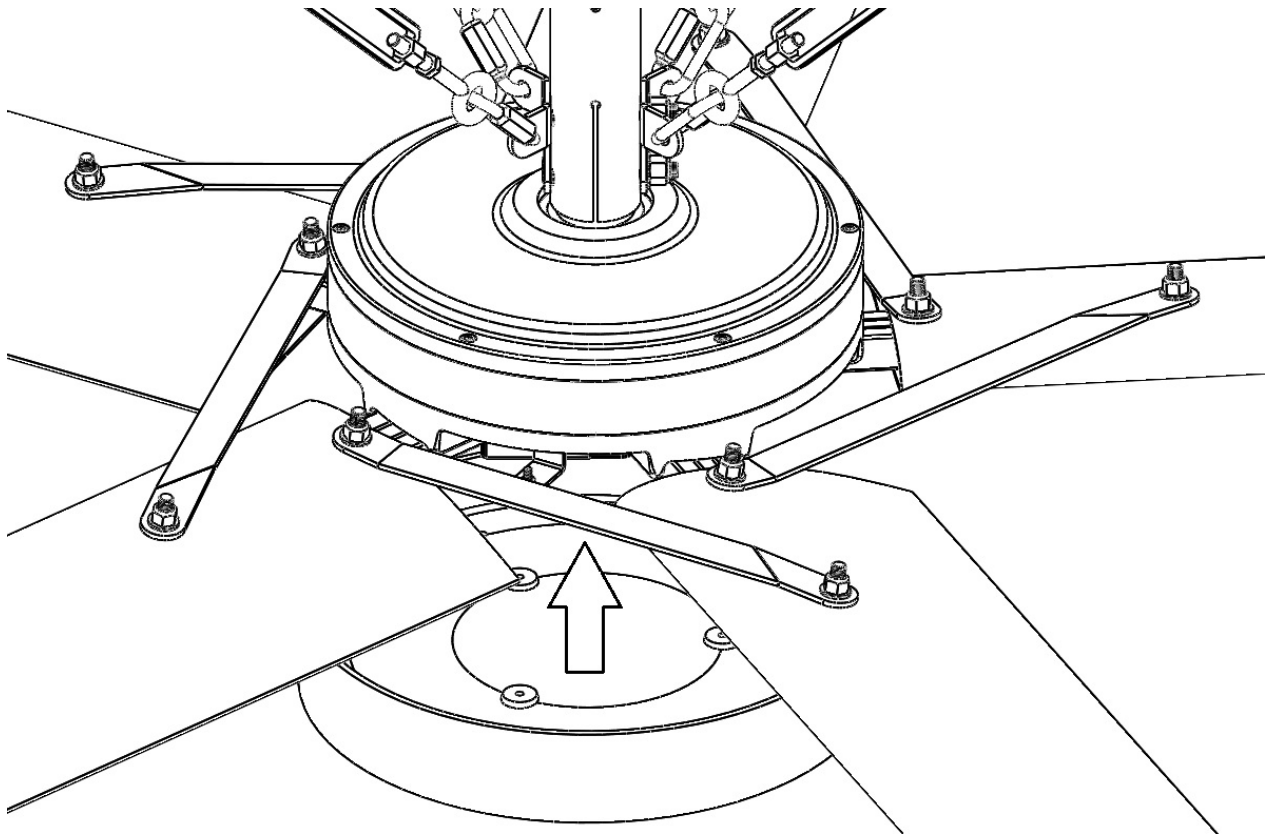


2. Install each Blade and Safety Retainer Link in same manner.

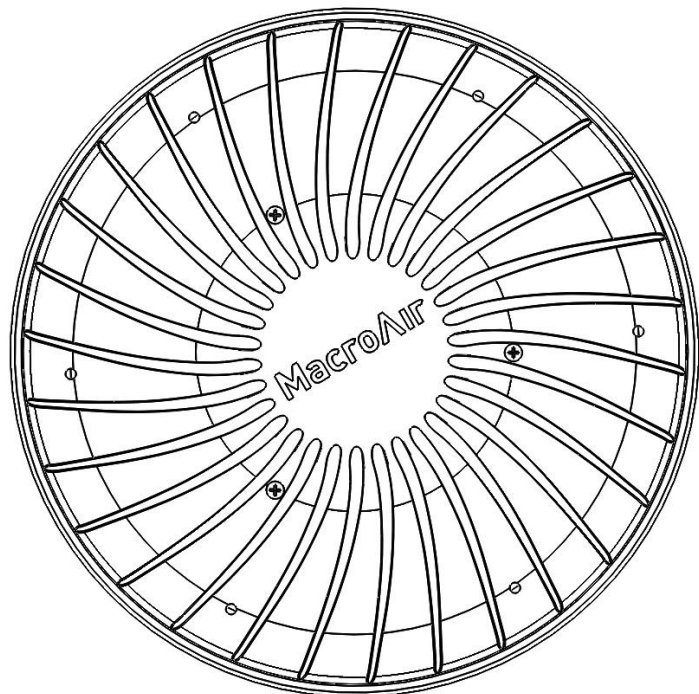


Assembly Conclusion

3. Once all the blades are in place, reinstall the MacroAir cover. See note 4 for torque requirements.



4. The three Screws to mount the cover may still be attached to the cover with plastic lock washers, if not, recover the three screws set aside with the cover at the time of disassembly (ref page 28, notes 1 & 2). Tighten the three screws to 5 in-lbs [.56 N-m] to secure cover in place.



Electrical & Safety Cable Installation

⚠ WARNING: MOTOR CABLES AND INCOMING POWER MUST NEVER BE RUN IN THE SAME CONDUIT. FAILURE TO INSTALL PER MACROAIR INSTRUCTIONS, INCLUDING WIRING, MAY BE HAZARDOUS, CAUSE PREMATURE FAILURE, AND VOID THE MANUFACTURE'S WARRANTY.

⚠ ATTENTION: Regulatory Notice, EMI (Electromagnetic Interference)

Electromagnetic Interference (EMI) is any signal or emission, radiated in free space or conducted along power or signal leads, that endangers the functioning of radio navigation or other safety services or seriously degrades, obstructs, or repeatedly interrupts a licensed radio communications service. Radio communications services include but are limited to AM/FM commercial broadcast, television, cellular services, radar, air-traffic control, pagers, and personal communications services (PCS). These licensed services, along with unintentional radiators such as digital devices, variable frequency drives (VFDs), and other equipment such as fans with VFDs, contribute to the electromagnetic environment.

Electromagnetic compatibility is the ability of items of electronic equipment to function properly together in the electronic environment. MacroAir Fans variable frequency drives, VFDs, are designed to be in compliance with regulatory agency limits for EMI. However, there is no guarantee that interference will not occur in a particular installation. If MacroAir's products (fans) do cause interference with radio communications services, which can be determined by turning the fans off and on, please notify MacroAir technical support.

MacroAir Technologies' products are designed, tested, and classified for their intended electromagnetic environment. These electromagnetic environment classifications generally refer to the following harmonized definitions:

Class A is typically for business or industrial environment.

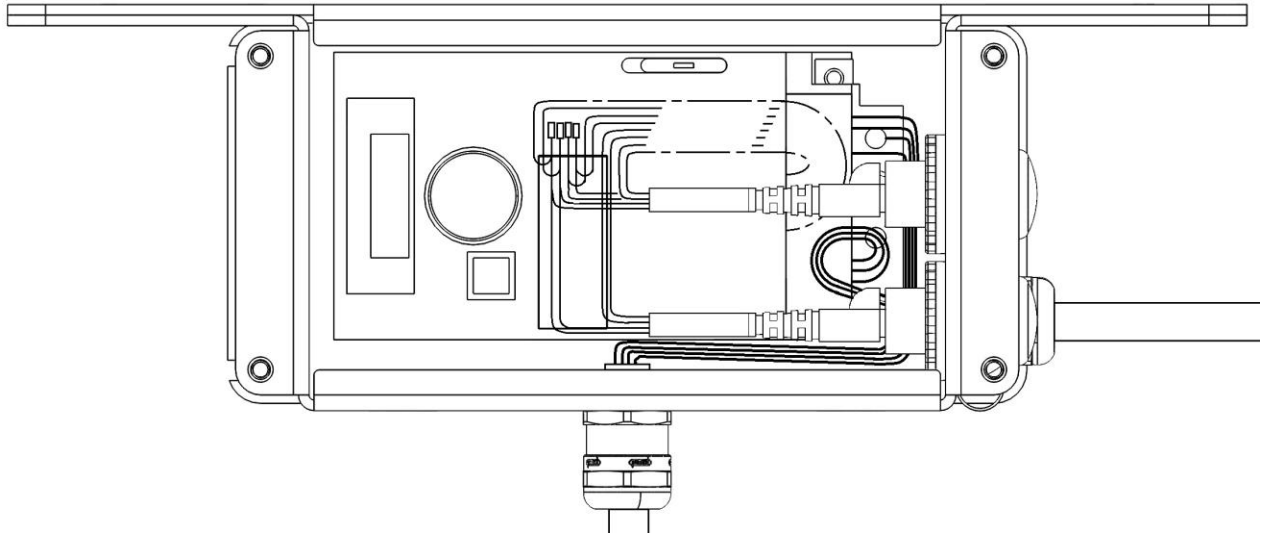
Class B (MacroAir products are **NOT** designed for typical residential environments covered under this classification).

CODE COMPLIANCE IS THE RESPONSIBILITY OF THE INSTALLER, AND ULTIMATELY, THE END USER. All wiring should conform to the National Electric Code (NEC) 2005, ANSI/NFPA 70-1999, and all local codes. This fan control should only be installed by qualified technicians familiar with the requirements of the NEC and local codes.

Note: MacroAir Technologies has a policy of continuous product improvement and reserves the right to change design and specifications without notice.

If you have any questions, please contact MacroAir technical support.

Control Panel Overview

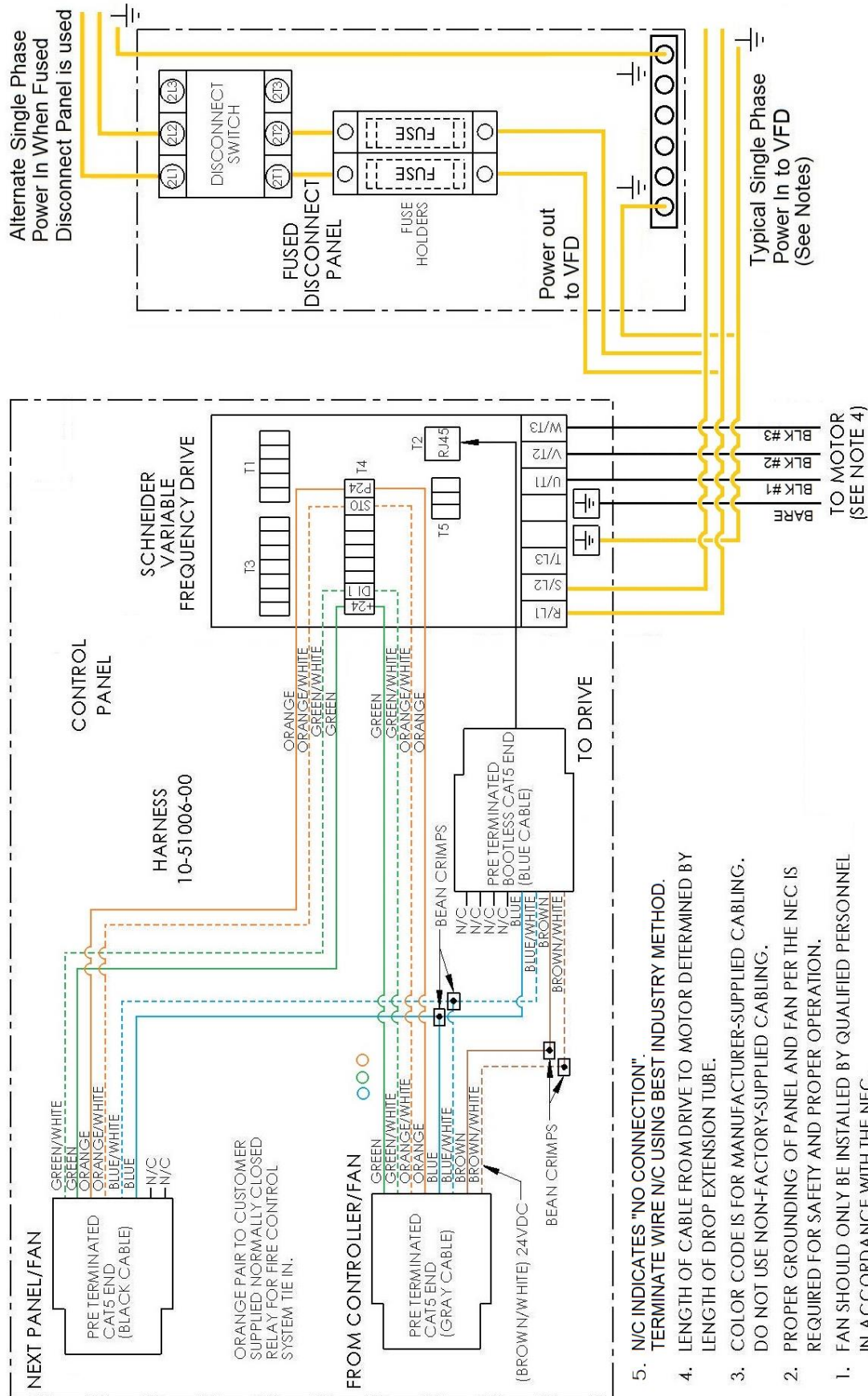


Control Panels come pre-wired, as illustrated above.

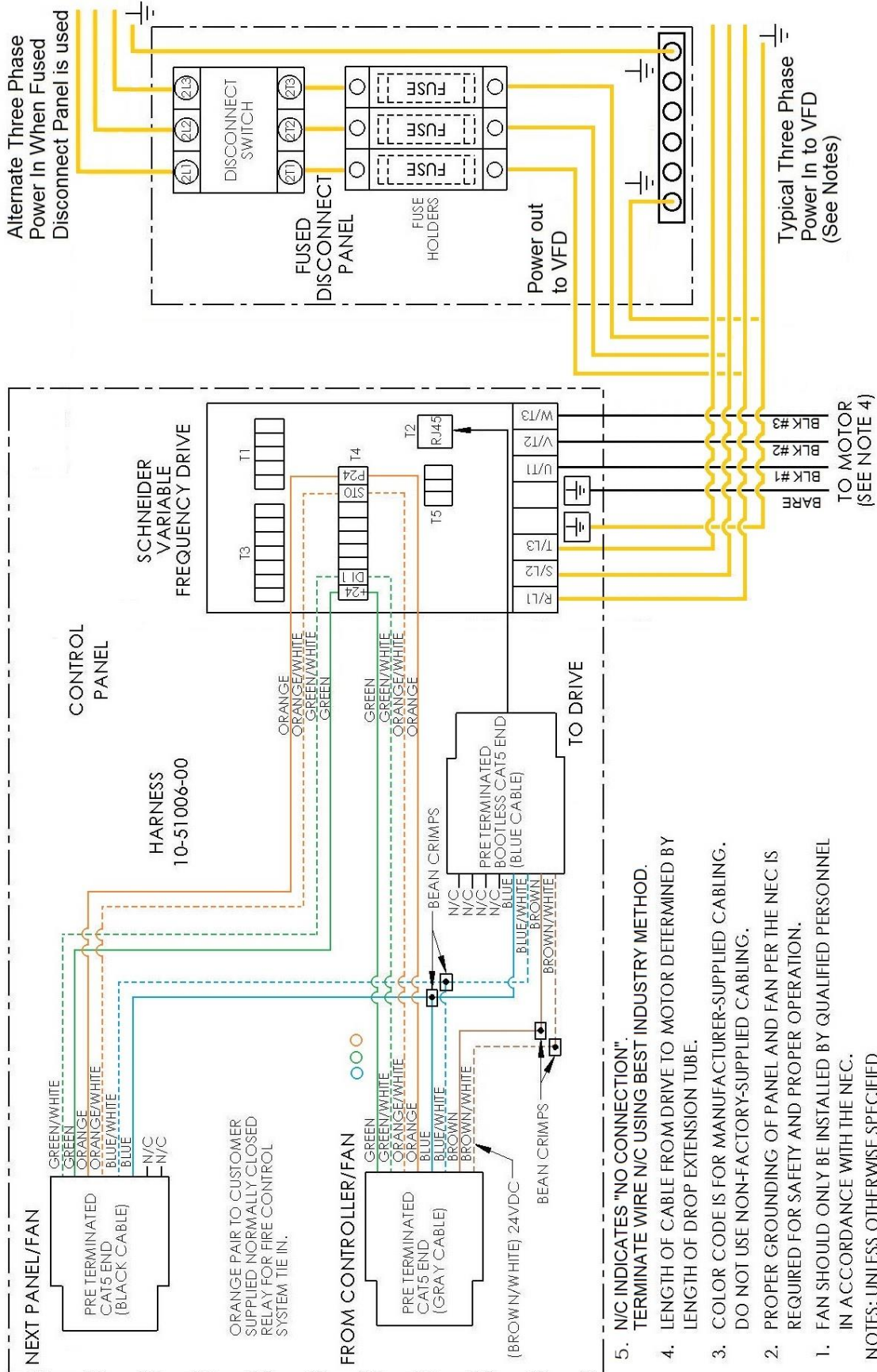
1. Make sure the control wiring is CAT5e shielded, stranded or greater.
2. The Motor Cable and Cable Gland does come pre-installed.
3. Connect Stranded, Shielded CAT5e to RJ45 labeled "in" or "controller" for single touchpad controller.
4. 25 feet of shielded power cable is provided exiting the control panel to be used to connect to power source.

Images are not to scale

Digital Control Panel Schematic (SINGLE PHASE)



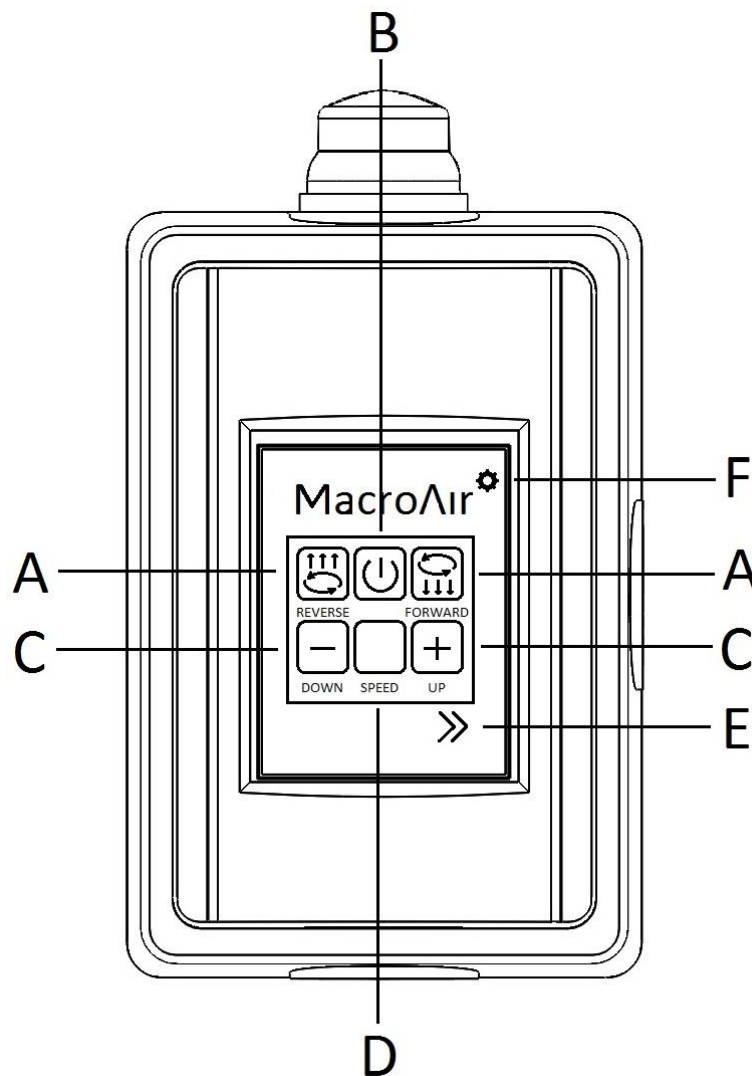
Digital Control Panel Schematic (THREE PHASE LINE IN)



Touchpad Remote User Interface

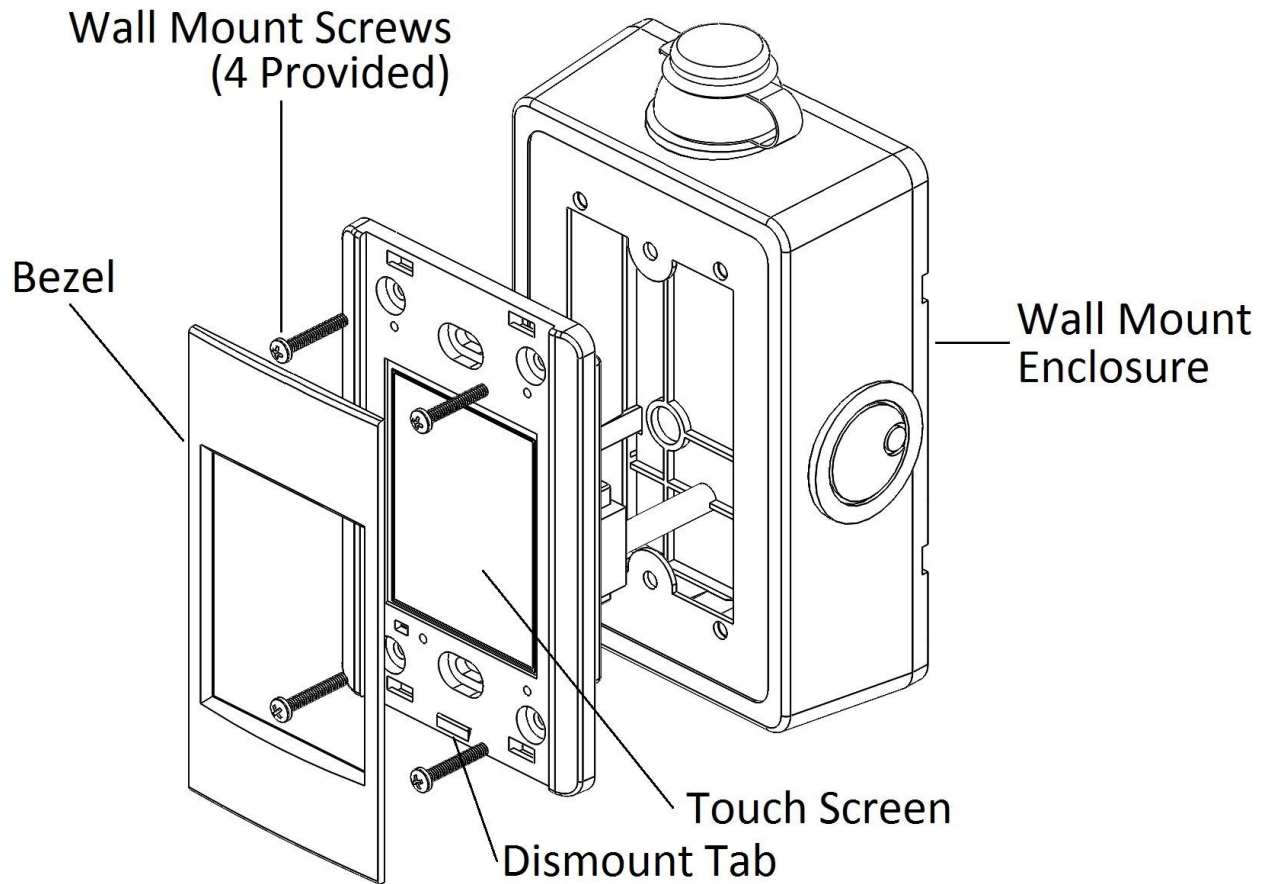
Buttons:

- A** – Forward / Reverse: Select fan rotational direction.
- B** – Power Button: Turn the fan on or off (forward or reverse must be chosen to start the fan).
- C** – Speed Up / Speed Down: Increase or decrease the speed of the fan.
- D** – Speed Box: Real-time indication of fan speed.
- E** – Navigation: Navigate to the next screen.
- F** – Settings: Displays settings and information about the fan.



Images are not to scale

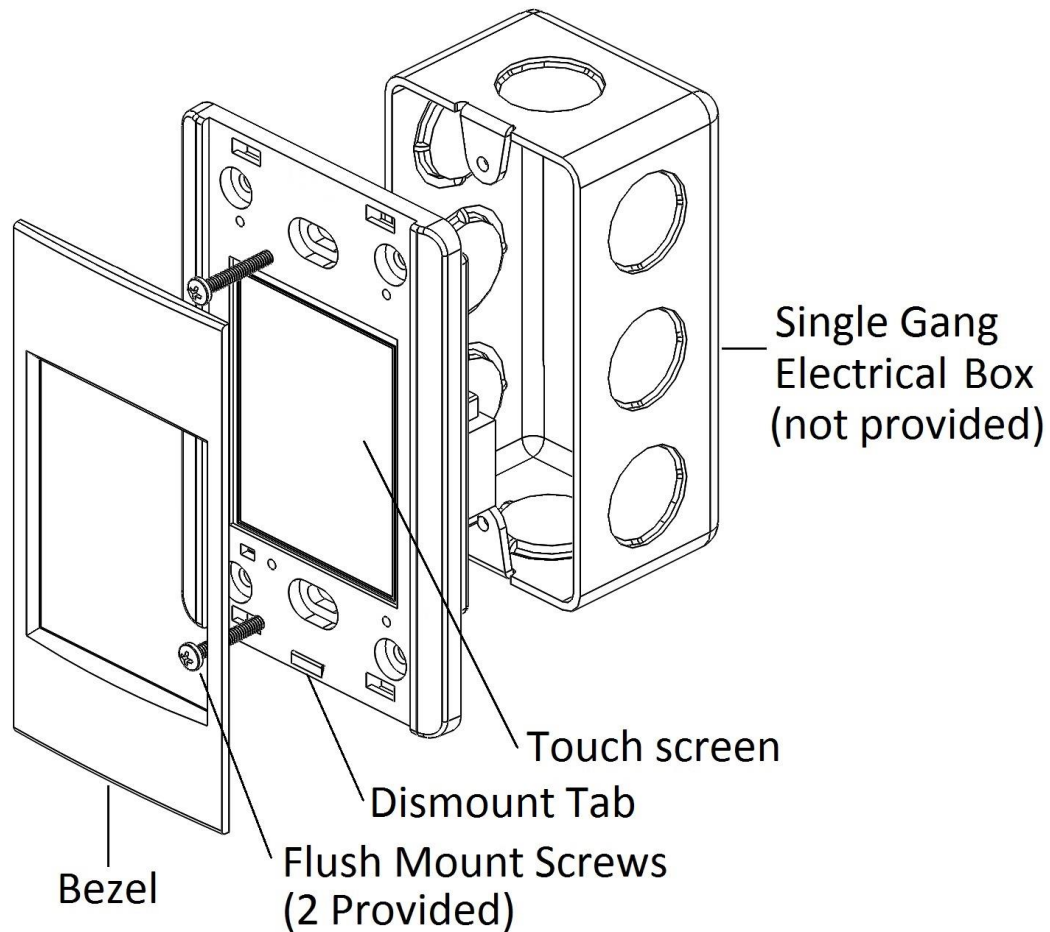
Touchpad Remote Installation



Wall Mounting (Provided)

1. Gently remove the front bezel from the touch screen using a small flat tipped screwdriver where the bezel notch meets the dismount tab located at the bottom of the touch screen.
2. Mount the base plate of the enclosure to the wall using the 4 provided wall anchors and screws.
3. Snap the front of the enclosure to the base plate.
4. Plug in the pre-wired Stranded, Shielded CAT5e cable from the screen into the RJ45 coupler inside the enclosure.
5. Secure the touch screen to the enclosure using the 4 provided screws.
6. Lock the provided bezel into place via the plastic tabs.
7. Plug the provided Stranded, Shielded CAT5e cable from the fan into the RJ45 on the outside of the enclosure.

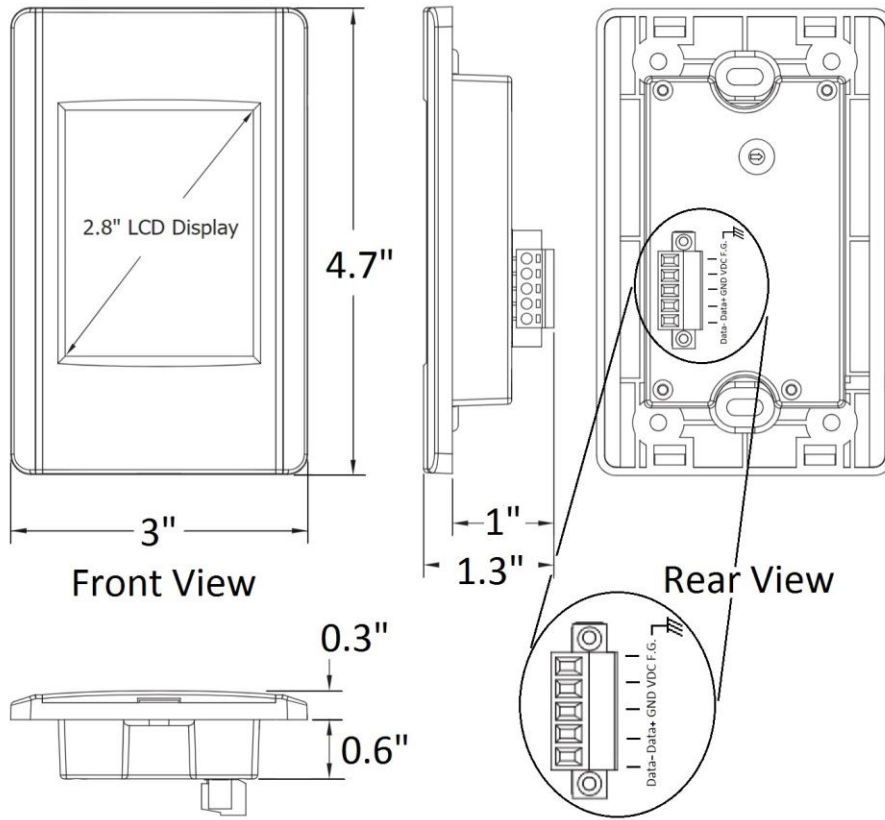
Touchpad Remote Installation (cont.)



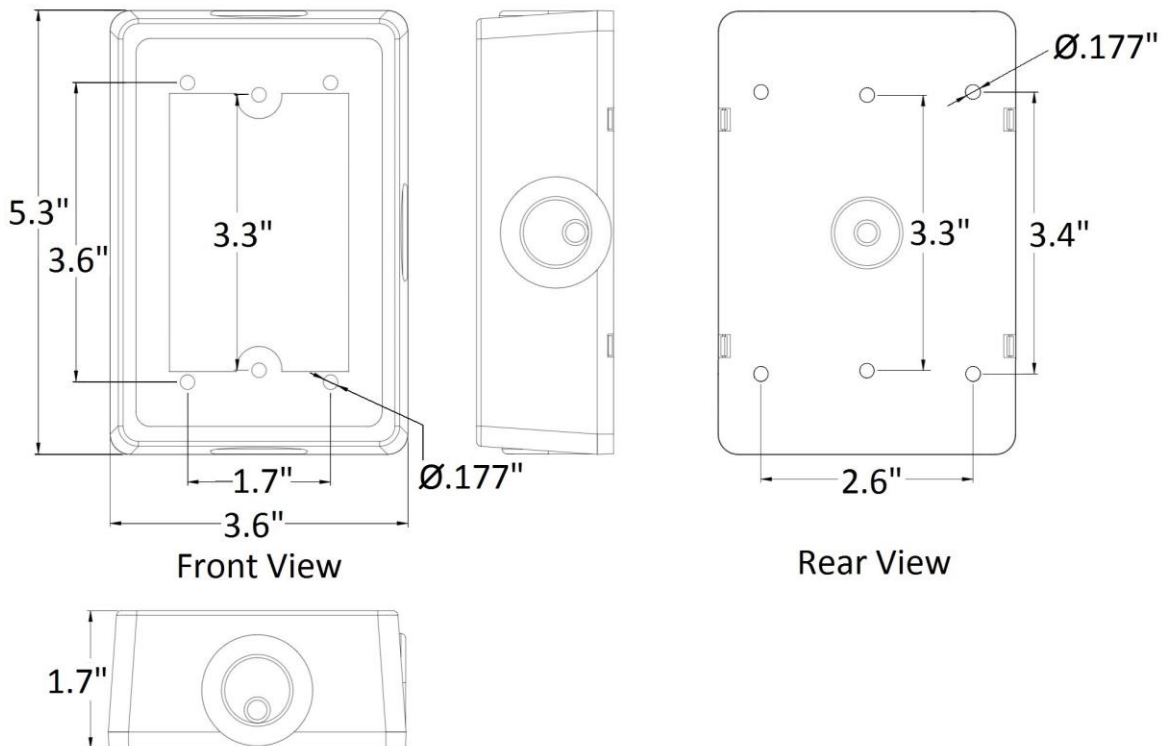
Flush Mounting (Not Provided)

1. Gently remove the front bezel from the touch screen using a small flat tipped screwdriver where the bezel notch meets the dismount tab located at the bottom of the touch screen.
2. Install the single gang electrical box (not provided).
3. Run the provided Stranded, Shielded CAT5e cable from the fan into the single gang electrical box.
4. Plug the remote cable into the pre-wired Stranded, Shielded CAT5e cable from the screen using the provided RJ45 coupler.
5. Secure the touch screen to the enclosure using the 2 provided screws.
6. Lock the provided bezel into place via the plastic tabs.

Touchpad Remote LCD Display

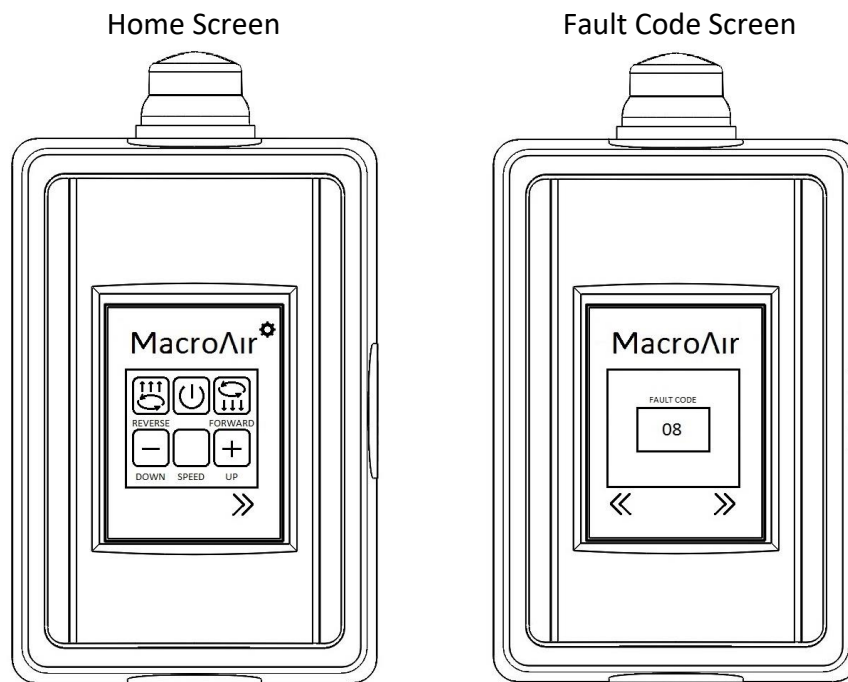


Touchpad Remote Enclosure



Touchpad Remote

1. Upon first power-up of the touchpad, the correct Fan Diameter will need to be selected.
2. After the Fan Diameter is selected, navigate to the next page using the arrow in the lower left to reach the “Setting Fan Diameter” page.
3. Once Setting Fan Diameter is done, press the lower left arrow to get to the Motor Type Screen. Then the lower left arrow again to get to the address screen. Change to the desired address and press the Reset button. If you do not need to change the address, press the arrow in the lower left until you are at the fan control screen.
4. If the fan stops operating unexpectedly, navigate to the fault code screen using the bottom right arrow and record any fault codes (if present). Click the reset button until the display reads ‘0’ or none. Then, attempt to run the fan again. If the fan is still not operating, navigate to the fault code screen via the navigation arrows at the bottom of the screen and document the code(s) displayed and call technical support at 866-668-3247. NOTE: Some faults can only be read from the VFD.



Images are not to scale

Instructions for a Fan Running In a “Hot” State

Instructions for the Touchpad Display running software version 7.03 (or later) to control MacroAir AVD5 fans running in a “hot” state.

EXPLANATION:

Software version 7.03: If the AVD5 fan has run above 85% in the “forward” direction for more than 10 min, the fan will enter a “hot” state. There will be no display screen indicating the fan is in a “hot” state.

Note: No action is required while in the “hot” state, and no damage is occurring to the fan.

Operating the fan while in a “hot” state. While in the “hot” state, if you stop or change the direction of the fan, it will cause a “cooldown” period of 2min 15sec. During this “cooldown” period, a rotating fan symbol will display in the top left corner of the screen and a progress bar will fill at the bottom of the screen (see Figure 1). At the conclusion of the “cooldown” period, the fan will start the last direction command given.

Alternate “cooldown” for a fan in a “hot” state. Change the speed of the fan below 85% in the forward direction. After 10 min, the “hot” state will go away, and the fan may be operated normally from the touchpad. The direction, stop function and start function can be used on the touchpad normally.

Note: When the touchpad is NOT in a “hot” state, entering a command to change direction will cause the fan to stop for up to 20 seconds before changing directions.

Below is an example of the “cooldown” wait period screen for software 7.03.

Rotating Fan Symbol -----



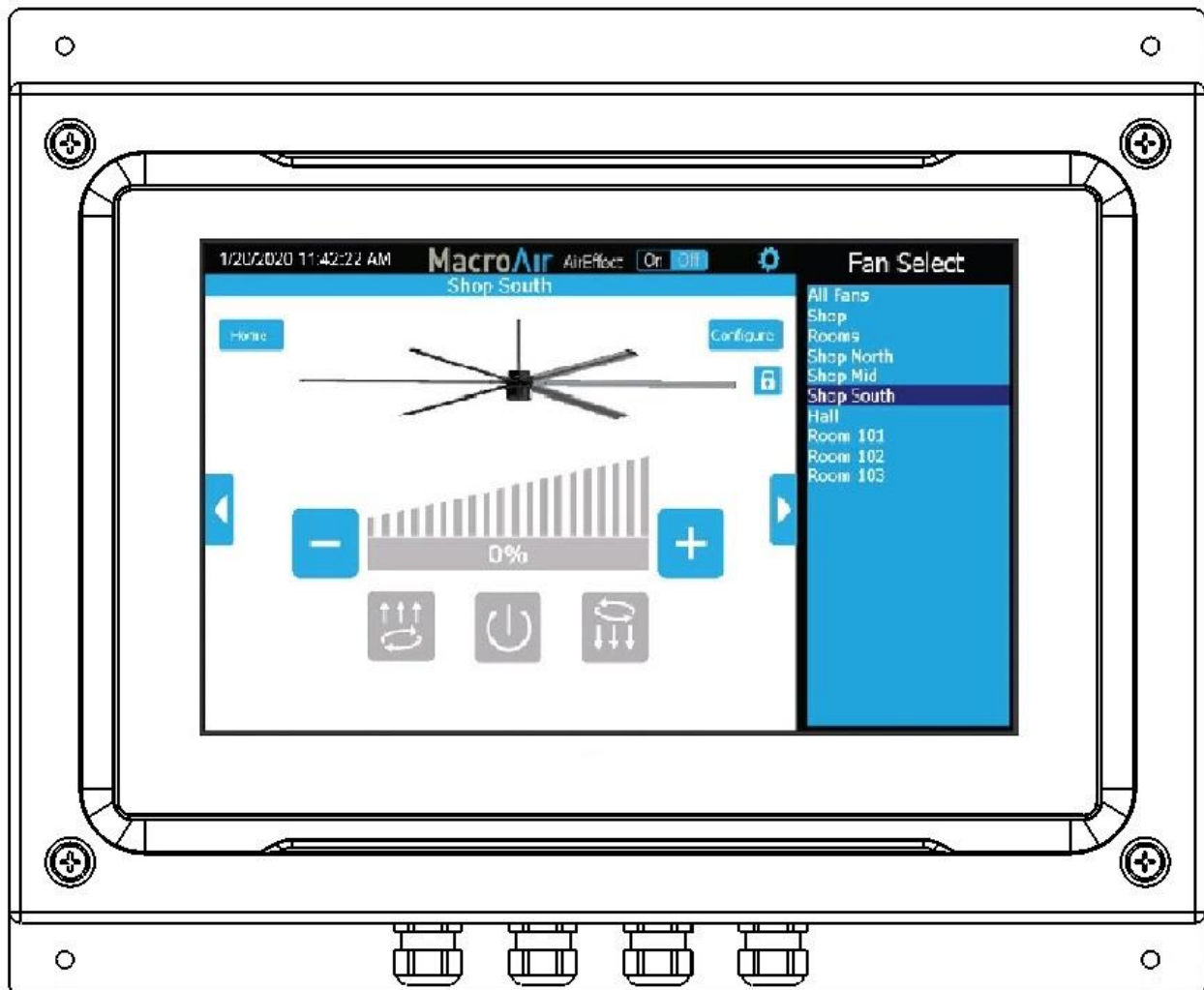
Cooldown progress bar -----

Figure 1. Cooldown screen

Network Controller 30

1. Press the Settings button in the upper right corner.
2. Once on the Settings page, Press the Admin Login button and enter your credentials. The default Username and password are both "admin".
3. Once you are successfully logged in under Admin, go back to the fan control screen.
4. Once on the Fan screen, press the Configure button.
5. Once on the Configure screen, input the correct fan diameter and number of blades.
6. Press "Done" to return to the Fan Control Screen.

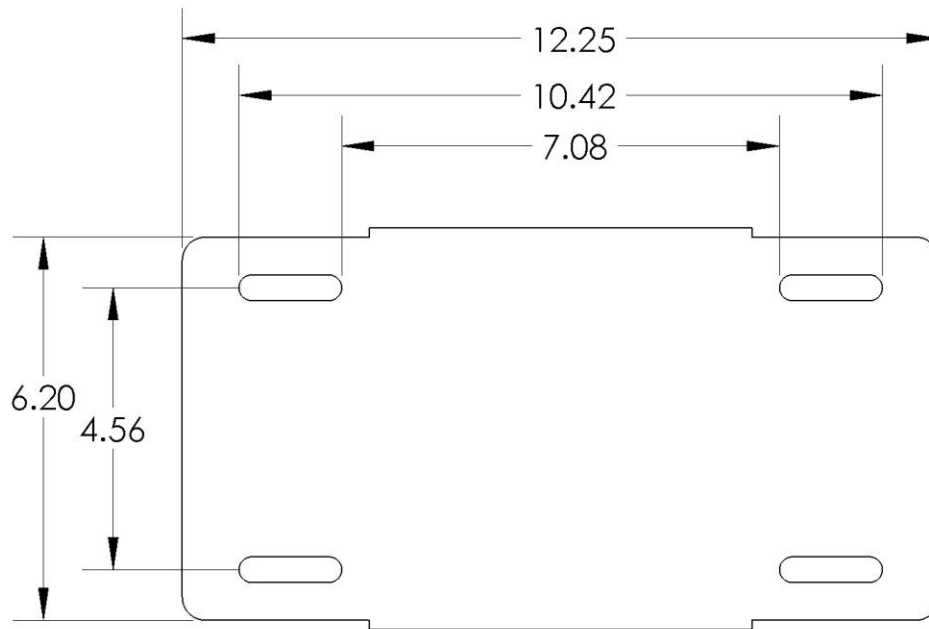
Note: For clarification of these and other procedures refer to the Manual included with your MacroAir Controller 30.



Images are not to scale

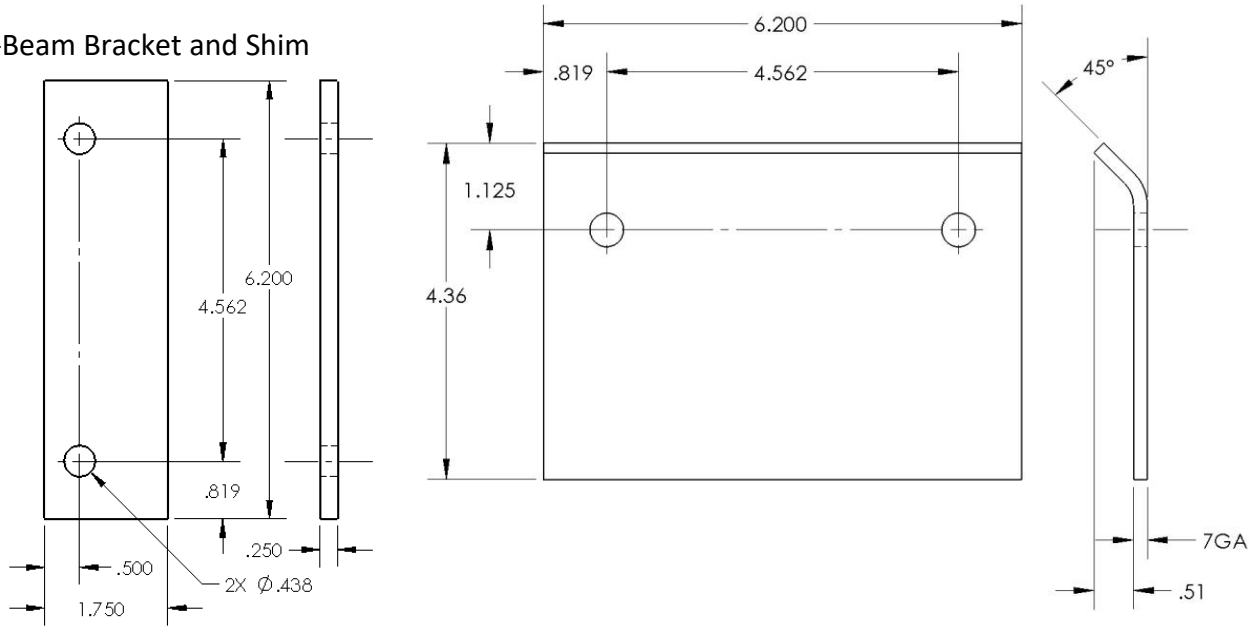
Mounting Bracket Hole Patterns

Standard Mounting Pattern
On Control Panel

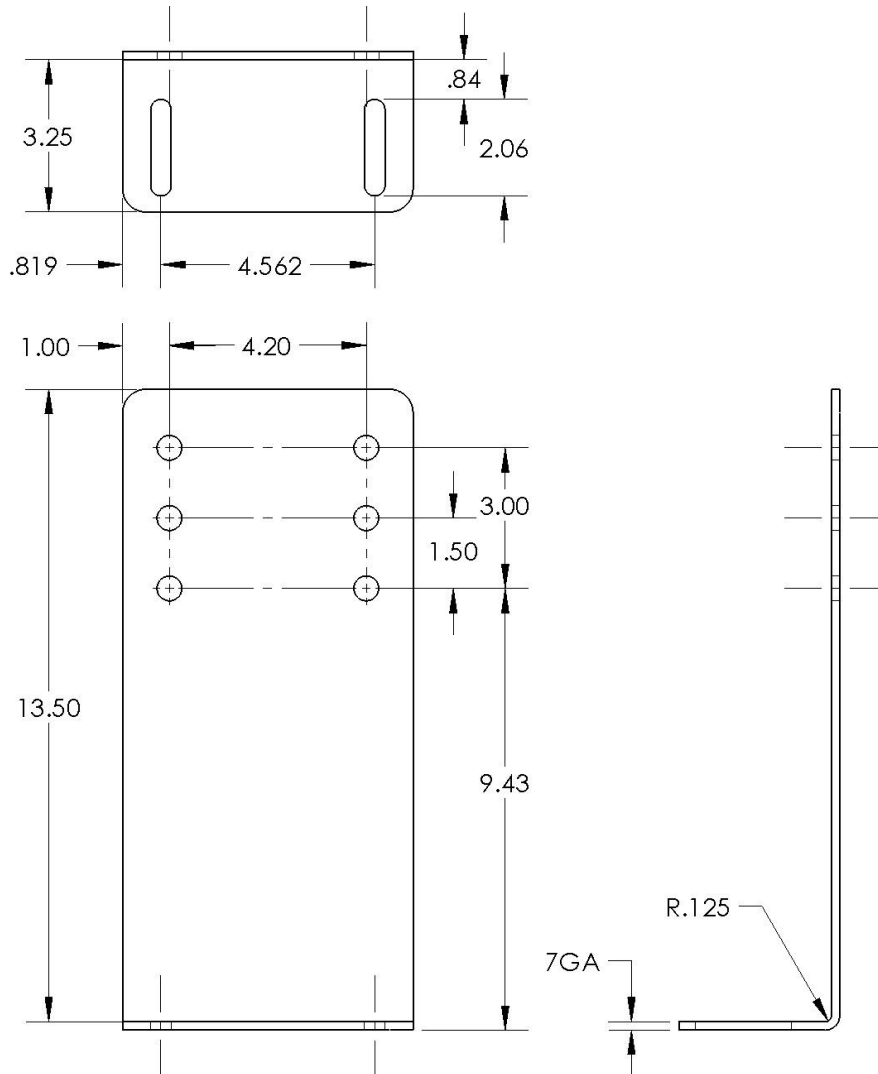


Mounting Bracket Hole Patterns, cont.

I-Beam Bracket and Shim



Glulam Bracket



Maintenance

Guy Wire Check (if applicable): Checking a MacroAir fan's guy wires for tension and inspecting for frayed sections could mitigate a problem before it occurs. The guy wires should be under enough tension to prevent any movement in the motor unit or the extension tube. If the motor unit can be moved by pushing on it, the guy wires need to be tightened. Fan owners should confirm that the guy wires are not wrapped around any sharp edges. MacroAir recommends attaching guy wires to the building with eyebolts or eye lags. If they are not already installed with eye bolts or lags, we urge fan owners to install these to help keep the guy wires from fraying. If guy wires are installed with turnbuckles, jam nuts should periodically be checked to ensure tightness. If they are loose, the guy wire cables may need to be re-tensioned.

Blade Cleaning: Depending on the type of commercial application the MacroAir fan is in, there can be quite a bit of dust or other particulates that cling to the fan's blades. While this may not affect fan performance, we recommend fan owners keep blades clean by having a maintenance person or skilled trade professional – who has experience using a lift – wipe the fan blades with a rag or sponge using hot water or mild cleaning solutions. Please do not use chlorine or any chemicals containing chlorine.

Safety Cable Check: Each MacroAir fan comes with a safety cable. Depending on the fan model, the safety cable either wraps around the building structure and the fan frame or comes out of the top of the fan and wraps around the building structure. The safety cable is an important part of the safety system and acts as a last resort should an earthquake, collision, or similar catastrophic event occur. As such, it is vital for fan owners to ensure that the safety cable is intact and properly secured.

Reverse Operation: The beauty of MacroAir HVLS fans is that they are built to run in forward and reverse mode. However, changing the direction of your fan can put initial stress on the fan if it has not been properly checked. It is a good idea to make sure guy wires, safety cables and all bolts and nuts are tight. Cleaning the fan before switching directions will prevent dust and other particles from falling off the fan airfoils when turning in the opposite direction.

Maintenance Plan: Things to look for include properly torqued fasteners, rust, cracked welds, unusual noise, hub migration/movement, guy wire loosening or movement.

Years 1-10: One inspection on lift per year.

Year 11 and beyond: Annual inspections from a lift and seasonal inspections both before and after the busy season from the ground.

NOTE: If there are issues or concern discovered during an inspection, please contact the service and technical support department at MacroAir for help.

CONTACT US: For installation assistance, application questions, technical sales support & any other inquiries, please contact us at **(866) 668-3247**.

Troubleshooting

Please refer to the table below if you experience issues with the fan operation.

Symptoms	Possible Solution
The fan is not turning and the lights on the VFD are lit.	Flip disconnect switch to "OFF" for 30 seconds and then flip switch to "ON". Ensure that the VFD is properly connected to the motor.
The fan is not turning and the lights on the VFD are NOT lit.	Confirm that there is power coming from the building.
The fan is spinning in reverse when forward is selected.	Confirm the motor is wired in the correct order per page #29.
The fan will rock and will not start.	Confirm that the correct fan diameter is set on the controller.
The fan is spinning too slow/fast.	
The fan is shutting off at high speed.	
The fan is operating noisily.	Confirm that there is nothing interfering with any moving parts. Confirm that the correct fan diameter is set on the controller.
The fan is making a "clicking" sound.	Confirm that the strut lubricant was properly applied per page #34.
The fan is wobbling.	Confirm that the fan is level, and the guy wires (if present) are properly installed and tightened. If the fan is installed on Unistrut, confirm with a structural engineer that the mounting is adequate for the fan weight and torque.

If your issue cannot be resolved using the table above, please contact MacroAir technical support at **(866) 668-3247**.

Warranty

MacroAir warrants the Products listed in the table below will be free from defects in materials and workmanship under normal use and maintenance for the applicable Warranty Period. Other than the Warranty set forth in this document, no other written or oral warranties apply, and no employee, agent, dealer, or other person is authorized to give any other warranties on behalf of MacroAir.

START DATE OF WARRANTY COVERAGE

Warranty Period begins fifteen (15) days following shipment of the Product, or on the date the Product is installed (not to exceed sixty (60) days Customer receives the Product), whichever date is later. Customer should retain necessary documentation to verify the date of receipt and installation of the Product. Customer will be required to produce this documentation in order to obtain Warranty services from MacroAir. The Warranty specified herein applies only to Products purchased on or after April 15, 2021.

PRODUCTS AND SYSTEMS COVERED BY THIS WARRANTY AND APPLICABLE WARRANTY PERIODS:

Fan Type	Mechanical: Blades, Hub & Frame	Standard Electrical ¹ : Motor, Electrical Controls, Remote	Labor
AVD5	15 Years	10 Years	1 Year

WARRANTY COVERAGE:

Subject to the exclusions herein, the MacroAir Warranty covers any defects in workmanship or materials of the covered Products under normal operation and prescribed maintenance when those defects adversely affect the ability of the Product to operate properly.² The Warranty only covers Products which have been installed in compliance with MacroAir's written installation instructions by a state-qualified or licensed electrical contractor and operated and maintained by the Customer in conformity with MacroAir's written instructions, and when the Product is purchased directly from MacroAir or a MacroAir Authorized Dealer.

This Warranty is subject to all provisions, conditions, limitations, and exclusions explained in this Warranty document.

*Scan QR code or visit macroairfans.com/warranty for full warranty information.



¹ "Standard Electrical" means any common electrical component that is utilized across more than one fan line will assume the higher warranty period.

² "Operate properly" applies only to mechanical, electrical, and structural systems of the Product.

MA

Let's Stay Connected!



Social



Website

www.macroairfans.com

MacroAir
engineers of air™

794 South Allen Street
San Bernardino, CA 92408
(866) 668-3247
Macroairfans.com



Intertek

Conforms to UL Std 507
Certified to CSA Std C22.2 No. 113