

*Quality People. Building Solutions.*

Comfort Systems USA (Arkansas), Inc.  
P.O. Box 16620  
Little Rock, AR 72231  
Phone 501-834-3320  
Fax 501-834-5416

**Date:** 10/18/2024  
**Return Request:** 11/1/2024  
**Project:** UAMS (CAMID)  
**Supplier:** Airetech  
**Manufacturer:** Greenheck  
**Submittal:** Power Ventilators  
**Submittal Number:** 23 34 23-01  
**Drawing # and Installation:** Mechanical Drawings

**ARCHITECT**

Clark Kenersen  
2020 Baltimore Avenue, Suite 300  
Kansas City, MO 64108  
816-474-8237

**ENGINEER**

Clark Kenersen  
2020 Baltimore Avenue, Suite 300  
Kansas City, MO 64108  
816-474-8237

**GENERAL CONTRACTOR**

CDI Contractors  
3000 Cantrell Rd.  
Little Rock, AR 72202  
501-666-4300

**MECHANICAL SUBCONTRACTOR**

Comfort Systems USA (Arkansas), Inc.  
9924 Landers Rd.  
N. Little Rock, AR 72117  
501-834-3320

Notes:

**CSUSA PROJECT NO.**

**22-6069**

[sean@comfortar.com](mailto:sean@comfortar.com)

9924 Landers Rd.  
No. Little Rock, AR 72117



## SUBMITTAL DATA

EQUIPMENT: Greenheck Exhaust Fans

TAGS: EXH-4/5, EXH-6/7 & EXH-10

PROJECT: UAMS CAMID  
325 Jack Stephens Dr.  
LOCATION: Little Rock, Arkansas

ENGINEER: James R. Beecher

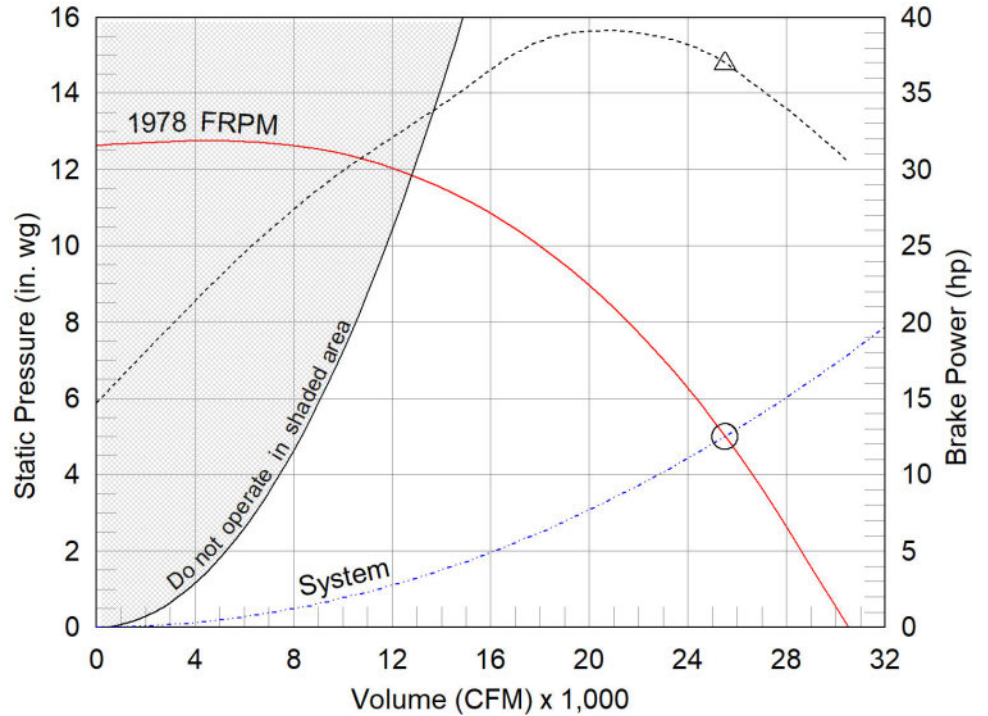
CONTRACTOR: The logo for Comfort Systems USA Arkansas features the words 'COMFORT SYSTEMS' in a bold, black, sans-serif font, followed by 'USA' in a larger, bold, black, sans-serif font with a red and blue wave-like element. Below this, the word 'ARKANSAS' is written in a smaller, black, sans-serif font.

DATE: 8/27/2024

SUBMITTED BY: Forrest Moseley  
forrest@airetechcorp.com

Performance	
Quantity	1
Volume (CFM)	25,500
Total External SP (in. wg)	5
Operating Power (hp)	36.92
Required Power (hp)	36.92
Fan RPM	1978
Max Fan RPM	2,182
Oper. Frequency (Hz)	67
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

**Model: USF-30**  
Universal Single Width Fan  
**Operating Performance**



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	30
Wheel Type	AF
Arrangement	4
Drive Type	Direct
Class	III
Rotation	CCW
Discharge Position	UB
Construction Type	Welded Scroll
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Cone Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	902
Motor/Drive (lb)	579
Accessories (lb)	151
Fan Total (lb)	1,632

Misc Fan Data	
Fan Energy Index (FEI)	1.16
Outlet Velocity (ft/min)	4,925
Static Efficiency (%)	54
Tip Speed (ft/min)	15,538
Shaft Bearing Type	N/A
Bearing Life Calculation	N/A

Motor and Drives	
Motor	Included
Size (hp)	40
RPM	1770
Enclosure	ODP
V/C/P	460/60/3
Frame Size	324T
Max Frame Size	405
Location	Centered
MCA* (Amps)	65
MOP* (Amps)	90
SCCR* (Kiloamps)	5

Nameplate Model: USF-30-5-A2-00-02-02



**Sound Power by Octave Band**

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	105	106	105	101	97	92	87	86	103	91	72
Outlet	106	104	104	101	98	93	90	90	103	92	76

\*Values are estimated and subject to change. Actual values provided on fan at time of manufacture.  
LwA - A weighted sound power level, based on ANSI S1.4  
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International  
Sones - calculated using AMCA 301 at 5 ft

## Model: USF-30

### Universal Single Width Fan

#### Standard Construction Features:

HOUSING: Class II and under feature Perma-Lock construction on sizes 4 - 49 and continuously welded on sizes 54 - 73 and all class III fans - Unit support angles with mounting holes - Adjustable motor plate - Corrosion resistant fasteners - Inlet collars - Outlet flange standard on sizes 27 - 73 and all class III fans - Untreated steel parts are processed through a multi-stage cleaning and pre-treatment and then finished with a high-performance powder coating. Sizes 24 and less are rotatable in 45 deg. increments. Sizes 27 to 40 are rotatable in 90 deg. increments. Sizes greater than 40 and all class III are not rotatable.

BEARINGS, SHAFT, AND WHEEL: Air handling quality, self-aligning, ball bearing in pillow block housing - Polished, solid steel shafts with rust inhibitor - Centrifugal wheel

#### Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated without Shaft Grounding Protection

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted & Wired

Motor with Class B or Greater Insulation

Finish - Coated

Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories

Isolation Base, Factory Mounted, Isolator-Spring, Free Standing, 1 Inch, Indoor Use Only, Base

Coating - Permatecor

Housing - Welded Scroll

Arrangement - 4

Wheel - Airfoil

UL Listed for UL/cUL-705 - "Power Ventilators"

Access Door - Bolted

Drain Connection - 1 inch threaded female

Inlet Connection, Slip Fit

Outlet Flange, Punched

Motor Cover - Steel Construction

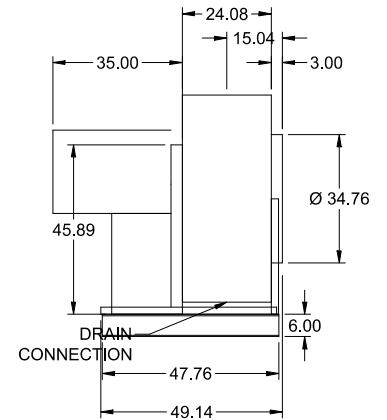
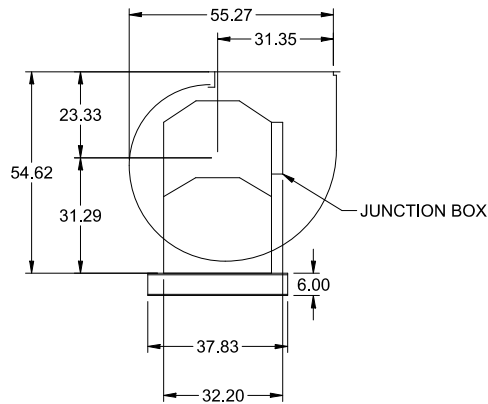
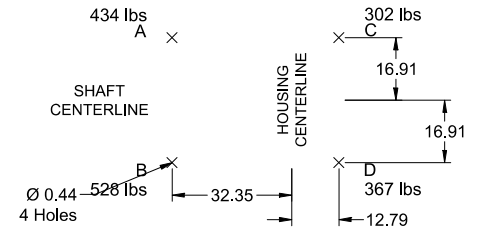
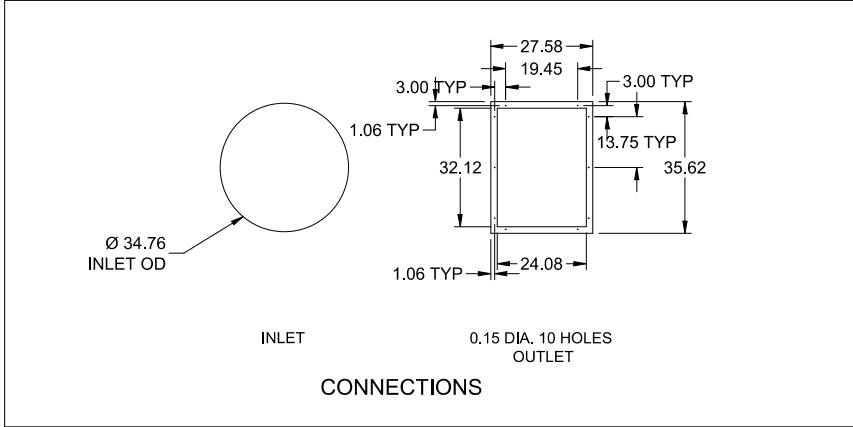
Fasteners - Stainless

Factory Vibration Test, 0.1 in/sec, Peak, Filter-in as measured at the fan RPM

Unit Warranty: 1 Yr (Standard)

Model: USF-30

Universal Single Width Fan



Notes: All dimensions shown are in units of in.

# Isolation Base

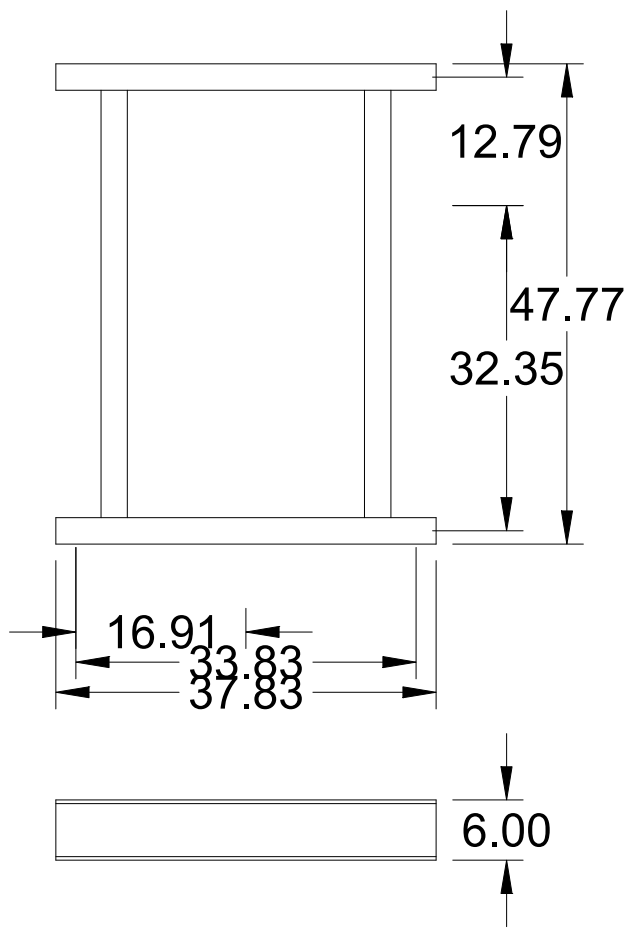
Type: Isolation Base

## Standard Construction Features:

-Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

## Fan Configuration

Model:	USF-30	Class:	III
Arrangement:	4	Motor Frame Size:	324T
Rotation:	CCW	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Motor Position:	Centered	Corner Weight A (lb):	434
Corner Weight A (lb):	434	Corner Weight B (lb):	528
Corner Weight C (lb):	302	Corner Weight D (lb):	367



Notes: All dimensions shown are in units of in.

# Isolators

Type: Spring, Free Standing, 1 Inch

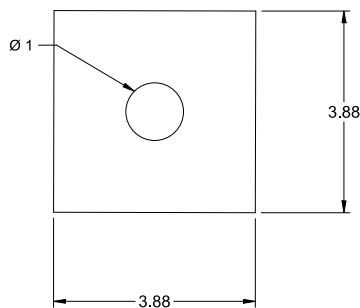
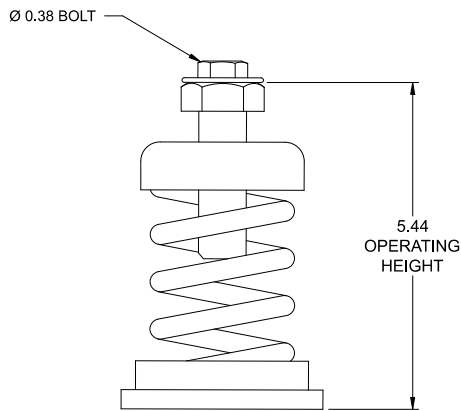
## Standard Construction Features:

Laterally stable spring mounts. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

## Fan Configuration

Model: USF-30  
Arrangement: 4  
Rotation: CCW  
Motor Position: Centered  
Isolator Color A: Black  
Isolator Color C: Green  
Isolator Description A: FDS-1-625  
Isolator Description C: FDS-1-450  
Isolator Manufacturer: Kinetics

Discharge Position: UB  
Class: III  
Motor Frame Size: 324T  
Isolator/Deflection: Spring, Free Standing, 1 Inch  
Isolator Color B: Black  
Isolator Color D: Black  
Isolator Description B: FDS-1-625  
Isolator Description D: FDS-1-625



Notes: All dimensions shown are in units of in.

Performance	
Quantity	1
Volume (CFM)	25,500
Total External SP (in. wg)	5
Operating Power (hp)	36.92
Required Power (hp)	36.92
Fan RPM	1978
Max Fan RPM	2,182
Oper. Frequency (Hz)	67
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

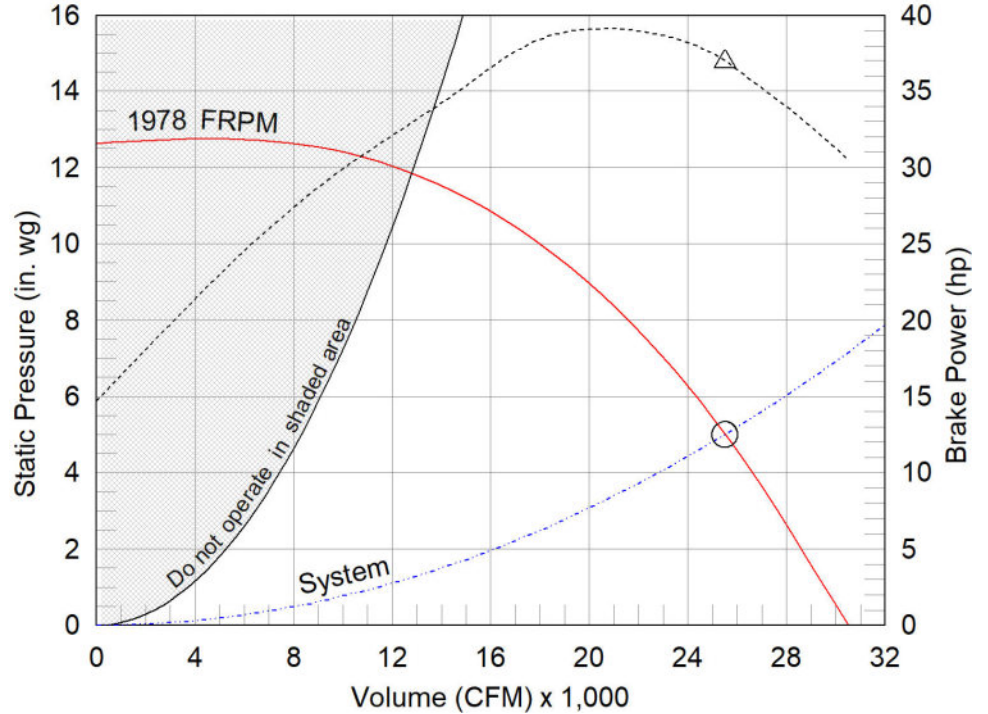
Fan Configuration	
Size	30
Wheel Type	AF
Arrangement	4
Drive Type	Direct
Class	III
Rotation	CW
Discharge Position	UB
Construction Type	Welded Scroll
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Cone Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	902
Motor/Drive (lb)	579
Accessories (lb)	151
Fan Total (lb)	1,632

Misc Fan Data	
Fan Energy Index (FEI)	1.16
Outlet Velocity (ft/min)	4,925
Static Efficiency (%)	54
Tip Speed (ft/min)	15,538
Shaft Bearing Type	N/A
Bearing Life Calculation	N/A

Motor and Drives	
Motor	Included
Size (hp)	40
RPM	1770
Enclosure	ODP
V/C/P	460/60/3
Frame Size	324T
Max Frame Size	405
Location	Centered
MCA* (Amps)	65
MOP* (Amps)	90
SCCR* (Kiloamps)	5

**Model: USF-30**  
Universal Single Width Fan  
**Operating Performance**



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Nameplate Model: USF-30-5-A2-00-02-02



**Sound Power by Octave Band**

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA	Sones
Inlet	105	106	105	101	97	92	87	86	103	91	72
Outlet	106	104	104	101	98	93	90	90	103	92	76

\*Values are estimated and subject to change. Actual values provided on fan at time of manufacture.  
LwA - A weighted sound power level, based on ANSI S1.4  
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International  
Sones - calculated using AMCA 301 at 5 ft



## Model: USF-30

### Universal Single Width Fan

#### Standard Construction Features:

HOUSING: Class II and under feature Perma-Lock construction on sizes 4 - 49 and continuously welded on sizes 54 - 73 and all class III fans - Unit support angles with mounting holes - Adjustable motor plate - Corrosion resistant fasteners - Inlet collars - Outlet flange standard on sizes 27 - 73 and all class III fans - Untreated steel parts are processed through a multi-stage cleaning and pre-treatment and then finished with a high-performance powder coating. Sizes 24 and less are rotatable in 45 deg. increments. Sizes 27 to 40 are rotatable in 90 deg. increments. Sizes greater than 40 and all class III are not rotatable.

BEARINGS, SHAFT, AND WHEEL: Air handling quality, self-aligning, ball bearing in pillow block housing - Polished, solid steel shafts with rust inhibitor - Centrifugal wheel

#### Selected Options & Accessories:

NEMA Premium Efficient Motor - meets NEMA Table 12-12

Motor VFD Rated without Shaft Grounding Protection

Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Mounted & Wired

Motor with Class B or Greater Insulation

Finish - Coated

Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories

Isolation Base, Factory Mounted, Isolator-Spring, Free Standing, 1 Inch, Indoor Use Only, Base

Coating - Permatecor

Housing - Welded Scroll

Arrangement - 4

Wheel - Airfoil

UL Listed for UL/cUL-705 - "Power Ventilators"

Access Door - Bolted

Drain Connection - 1 inch threaded female

Inlet Connection, Slip Fit

Outlet Flange, Punched

Motor Cover - Steel Construction

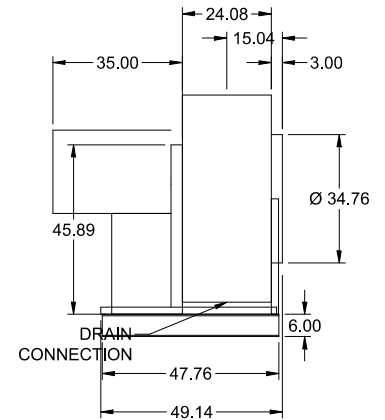
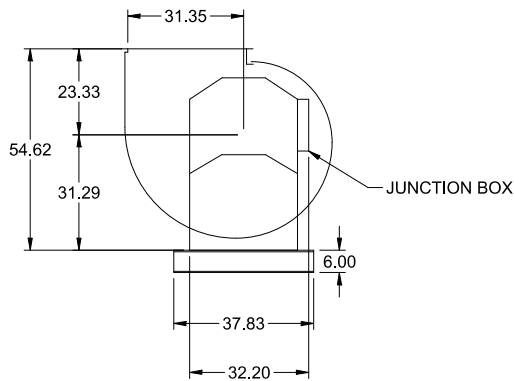
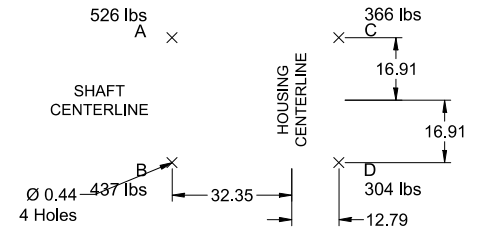
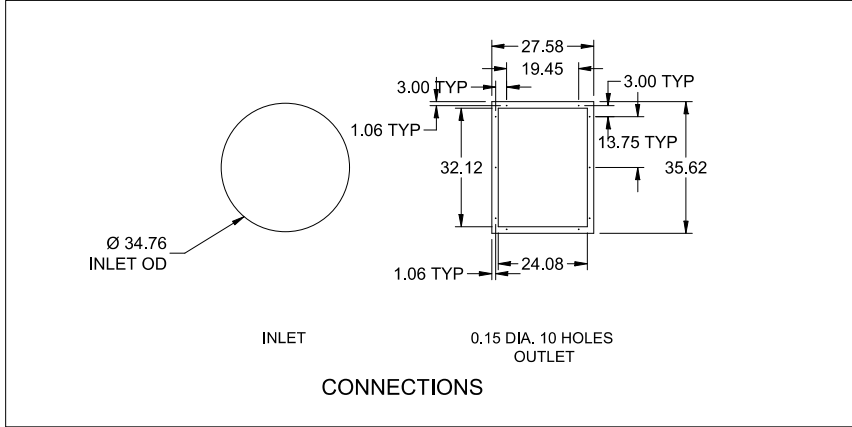
Fasteners - Stainless

Factory Vibration Test, 0.1 in/sec, Peak, Filter-in as measured at the fan RPM

Unit Warranty: 1 Yr (Standard)

Model: USF-30

Universal Single Width Fan



Notes: All dimensions shown are in units of in.

# Isolation Base

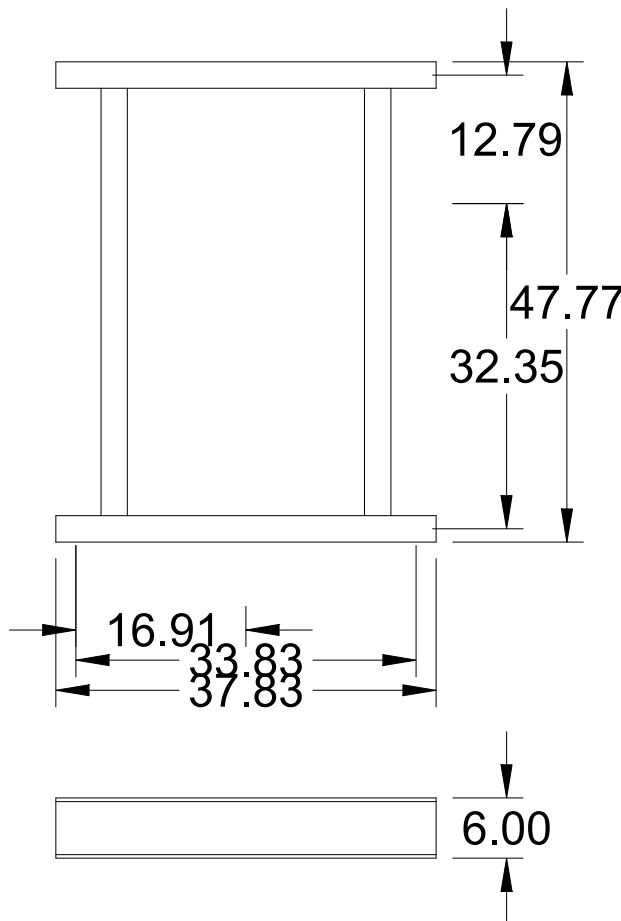
Type: Isolation Base

## Standard Construction Features:

-Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Welded lifting lugs - Motor slide base (Arr 1 and Arr 3 only)

## Fan Configuration

Model:	USF-30	Class:	III
Arrangement:	4	Motor Frame Size:	324T
Rotation:	CW	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Motor Position:	Centered	Corner Weight A (lb):	526
Corner Weight A (lb):	526	Corner Weight B (lb):	437
Corner Weight C (lb):	366	Corner Weight D (lb):	304



Notes: All dimensions shown are in units of in.

# Isolators

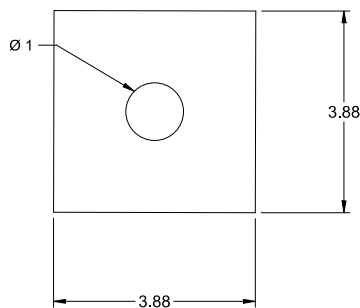
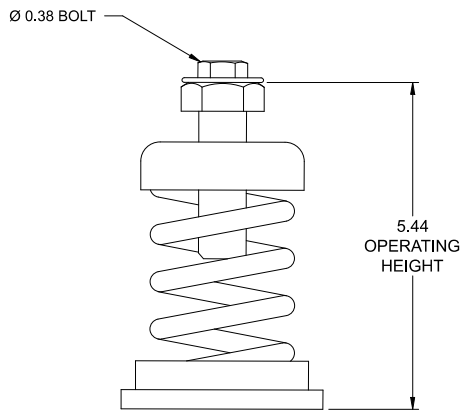
Type: Spring, Free Standing, 1 Inch

## Standard Construction Features:

Laterally stable spring mounts. Springs are color coded or identified to indicate load capacity. Neoprene pad for noise reduction.

## Fan Configuration

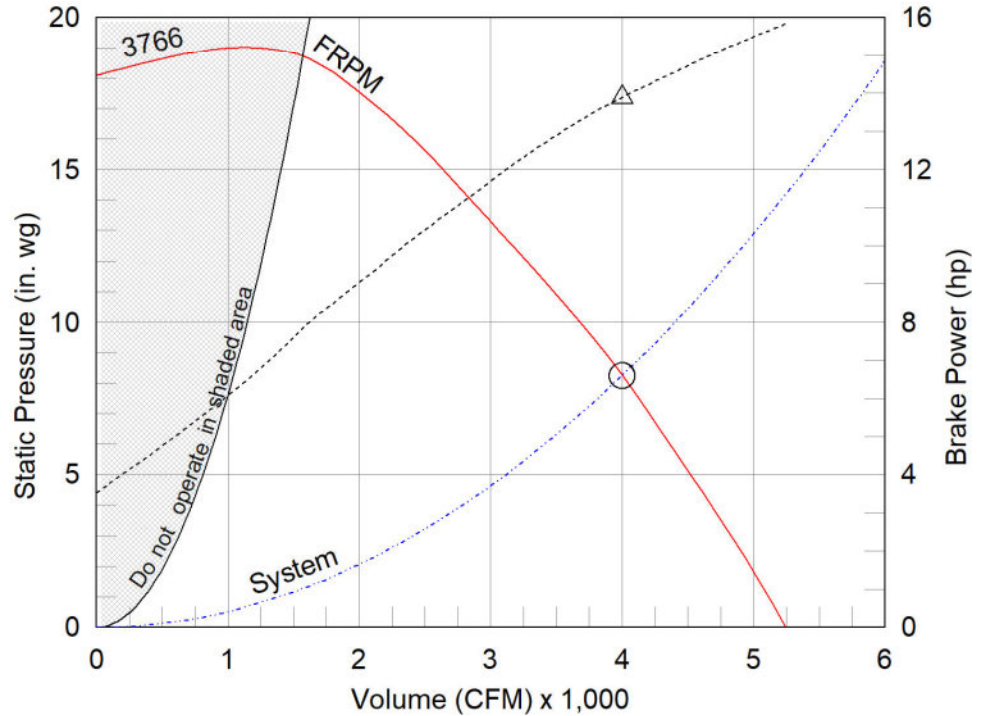
Model:	USF-30	Discharge Position:	UB
Arrangement:	4	Class:	III
Rotation:	CW	Motor Frame Size:	324T
Motor Position:	Centered	Isolator/Deflection:	Spring, Free Standing, 1 Inch
Isolator Color A:	Black	Isolator Color B:	Black
Isolator Color C:	Black	Isolator Color D:	Green
Isolator Description A:	FDS-1-625	Isolator Description B:	FDS-1-625
Isolator Description C:	FDS-1-625	Isolator Description D:	FDS-1-450
Isolator Manufacturer:	Kinetics		



Notes: All dimensions shown are in units of in.

Performance	
Quantity	2
Volume (CFM)	4,000
Total External SP (in. wg)	8.25
Operating Power (hp)	13.89
Required Power (hp)	13.89
Fan RPM	3766
Max Fan RPM	4,156
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

**Model: IP-9**  
**Air Handling Wheel**  
**Operating Performance**



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Fan Configuration	
Size	9
Wheel Type	A
Arrangement	8
Drive Type	Direct
Rotation	CW
Discharge Position	UB
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Plate Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	254
Motor/Drive (lb)	253
Accessories (lb)	79

Misc Fan Data	
Fan Energy Index (FEI)	0.99
Outlet Velocity (ft/min)	9,029
Static Efficiency (%)	37
Tip Speed (ft/min)	15,404

Motor and Drives	
Motor	Included
Size (hp)	15
RPM	3500
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	254T
Max Frame Size	256
Location	Centered

Nameplate Model: IP-9-3-A1-00-01-01



**Sound Power by Octave Band**

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA
Inlet	113	111	105	104	95	91	88	84	104	93
Outlet	115	116	114	112	103	98	91	86	112	101

LwA - A weighted sound power level, based on ANSI S1.4  
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

## Model: IP-9

### Air Handling Wheel

#### Standard Construction Features:

HOUSING: Heavy gauge, continuously welded steel housing - Constructed of welded formed steel parts to be rigid and prevent vibration - Steel components are cleaned and coated with Permatecor - Corrosion resistant fasteners.

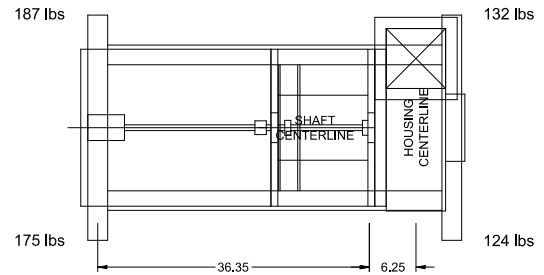
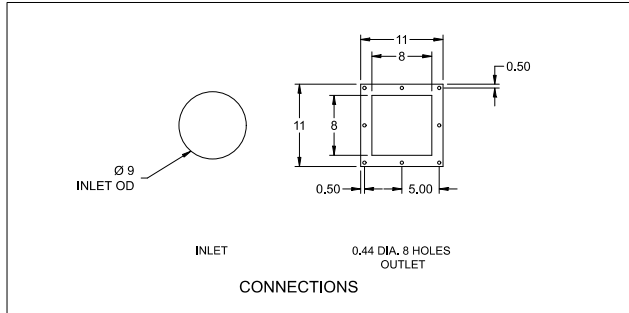
BEARINGS, SHAFT, AND WHEEL: Heavy duty, self-aligning ball or roller pillow block bearings - Polished, solid steel shafts - Welded, heavy gauge dynamically balanced wheel.

#### Selected Options & Accessories:

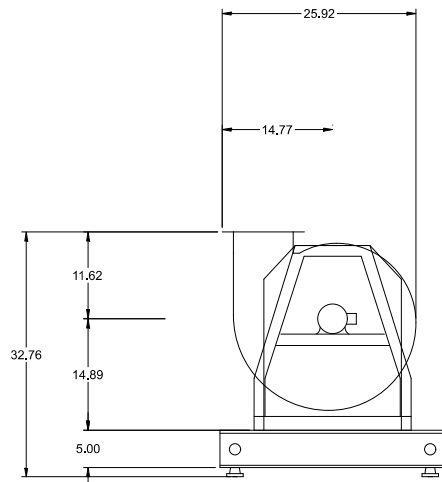
NEMA Premium Efficient Motor - meets NEMA Table 12-12  
Motor VFD Rated without Shaft Grounding Protection  
Motor with Class B or Greater Insulation  
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate  
Coating - Permatecor, Concrete Gray-RAL 7023, Fan and Attached Accessories  
Isolation Base, Factory Mounted, Isolator-Rubber Mount, 0.25 Inch  
Arrangement - 8  
Discharge Position - UB  
Access Door - Bolted  
Drain Connection - Without Plug  
Inlet Connection - Slip Fit  
Outlet Connection - Punched  
Motor Cover - Steel  
ShaftGuard - TE, Steel  
Fasteners - Stainless  
Unit Warranty: 1 Yr (Standard)  
Not available to ship to California

Model: IP-9

Air Handling Wheel

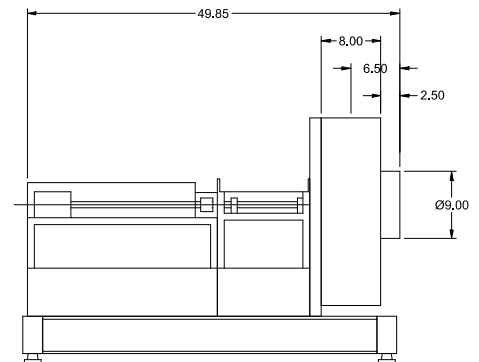


FAN FOOTPRINT



SIDE VIEW

\*SIDE VIEW IS VIEWED FROM DRIVE SIDE



END VIEW

Notes: All dimensions shown are in units of in.

# Isolation Base

Type: Isolation Base

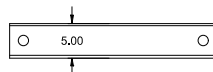
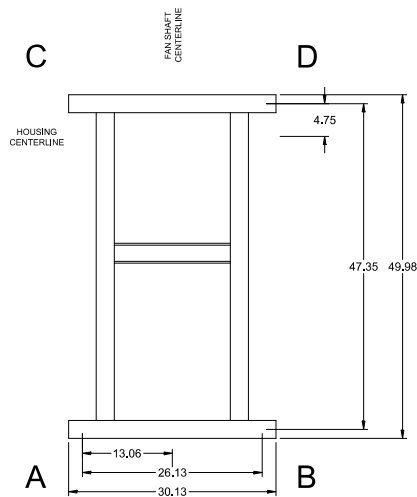
## Standard Construction Features:

- Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Integral lifting points - Motor slide base (Arr 1 and Arr 3 only)

## Fan Configuration

Model: IP-9  
 Arrangement: 8  
 Rotation: CW  
 Motor Position: Centered

Discharge Position: UB  
 Motor Frame Size: 254T  
 Isolator/Deflection: Rubber Mount, 0.25 Inch



Notes: All dimensions shown are in units of in.



# Isolators

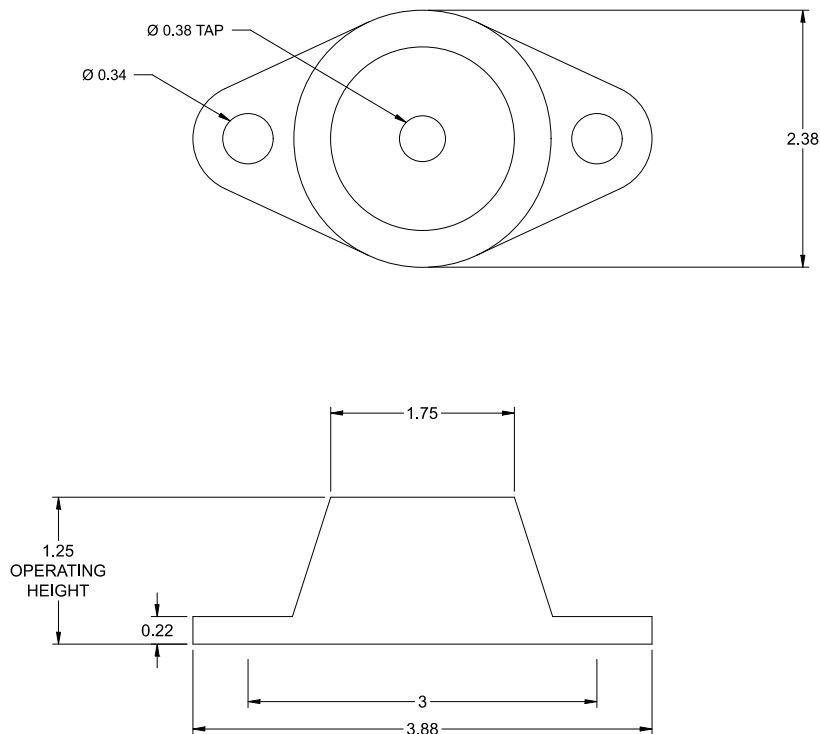
Type: Rubber Mount, 0.25 Inch

## Standard Construction Features:

Oil resistant neoprene. Color coded or identified to indicate load capacity. Tapped center hole to secure isolator to base. Flanged with through holes for attachment to supporting structure.

## Fan Configuration

Model:	IP-9	Discharge Position:	UB
Arrangement:	8	Motor Frame Size:	254T
Rotation:	CW	Isolator/Deflection:	Rubber Mount, 0.25 Inch
Motor Position:	Centered		
Isolator Color A:	Red	Isolator Color B:	Red
Isolator Color C:	Black	Isolator Color D:	Black
Isolator Description:	R-2	Isolator Manufacturer:	VMC



Notes: All dimensions shown are in units of in.

\*\*Isolator dimensions may vary with all aluminum, aluminum airstream, or Spark A construction, external inlet vane damper or with an outlet damper accessory. Consult factory for details.

Performance	
Quantity	1
Volume (CFM)	1,800
Total External SP (in. wg)	1
Operating Power (hp)	1.01
Required Power (hp)	1.01
Fan RPM	1549
Max Fan RPM	2,425
Elevation (ft)	256
Start-up Temp.(F)	70
Operating Temp.(F)	70

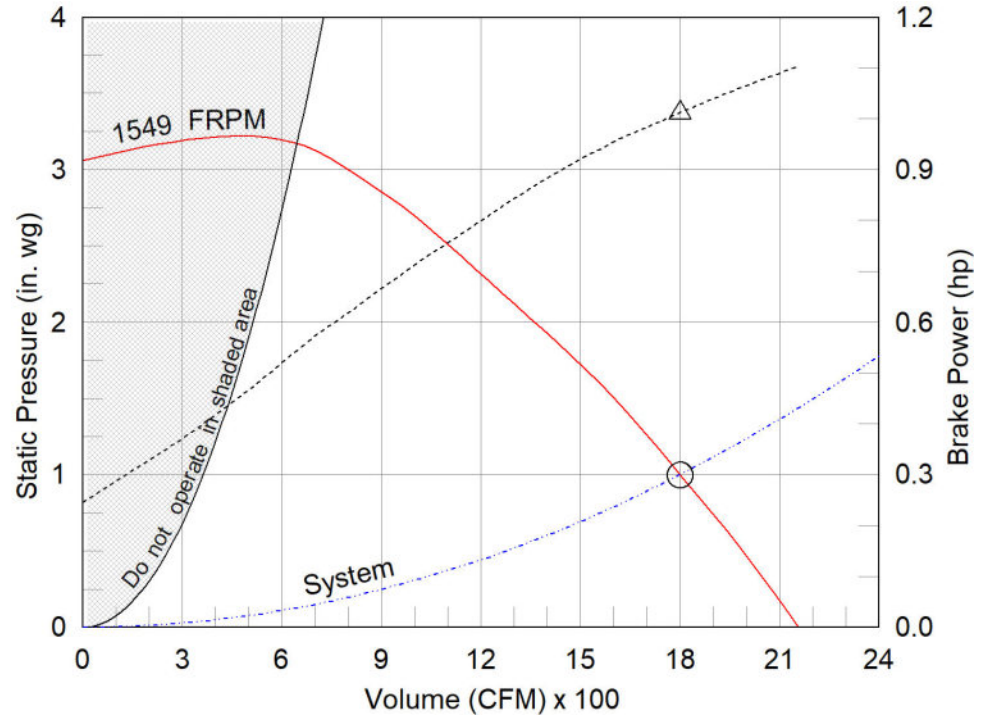
Fan Configuration	
Size	9
Wheel Type	A
Arrangement	4
Drive Type	Direct
Rotation	CW
Discharge Position	UB
Spark Resistance	None
Scroll Material	Steel
Wheel Material	Steel
Inlet Plate Material	Steel
Pedestal Material	Steel

Equipment Weights	
Fan (LMD)(lb)	131
Motor/Drive (lb)	93
Accessories (lb)	30

Misc Fan Data	
Fan Energy Index (FEI)	1.19
Outlet Velocity (ft/min)	4,063
Static Efficiency (%)	28
Tip Speed (ft/min)	6,338

Motor and Drives	
Motor	Included
Size (hp)	1 1/2
RPM	1170
Enclosure	TEFC
V/C/P	460/60/3
Frame Size	182T
Max Frame Size	256
Location	Centered

**Model: IP-9**  
**Air Handling Wheel**  
**Operating Performance**



- △ Operating Bhp point
- Operating point at Total External SP
- Fan curve
- - - System curve
- - - Brake horsepower curve

Nameplate Model: IP-9-1-A1-00-01-01



**Sound Power by Octave Band**

Sound Data	62.5	125	250	500	1000	2000	4000	8000	LwA	dBA
Inlet	99	94	88	81	73	70	65	60	84	73
Outlet	97	98	94	84	77	71	65	60	89	77

LwA - A weighted sound power level, based on ANSI S1.4  
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5 ft- dBA levels are not licensed by AMCA International

## Model: IP-9

### Air Handling Wheel

#### Standard Construction Features:

HOUSING: Heavy gauge, continuously welded steel housing - Constructed of welded formed steel parts to be rigid and prevent vibration - Steel components are cleaned and coated with Permatecor - Corrosion resistant fasteners.

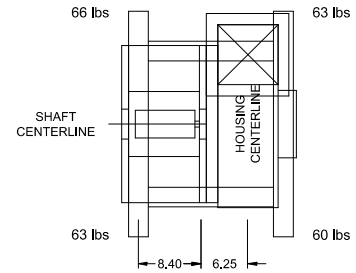
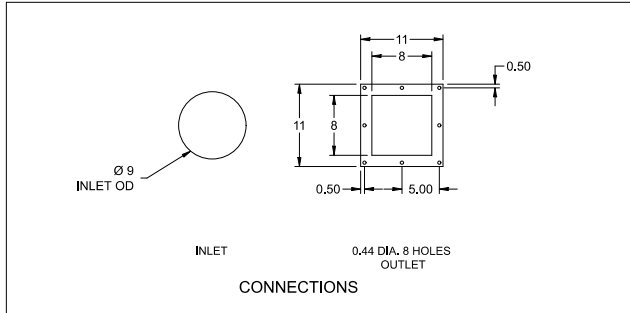
BEARINGS, SHAFT, AND WHEEL: Heavy duty, self-aligning ball or roller pillow block bearings - Polished, solid steel shafts - Welded, heavy gauge dynamically balanced wheel.

#### Selected Options & Accessories:

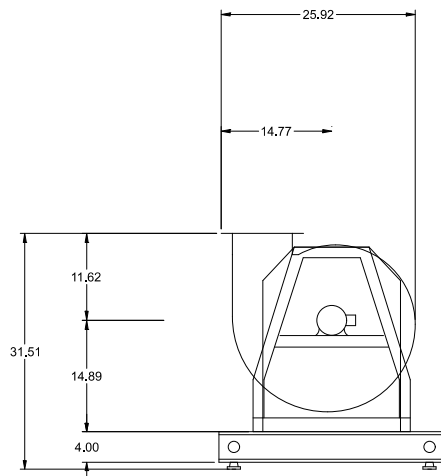
Motor VFD Rated without Shaft Grounding Protection  
Motor with Class B or Greater Insulation  
Switch - NEMA-3R, Toggle, For Indoor or Outdoor Use, Ship Separate  
Coating - Industrial Epoxy, Light Gray, Fan and Attached Accessories  
Isolation Base, Factory Mounted, Isolator-Rubber Mount, 0.25 Inch  
Arrangement - 4  
Discharge Position - UB  
Access Door - Bolted  
Drain Connection - Without Plug  
Inlet Connection - Slip Fit  
Outlet Connection - Punched  
Fasteners - Stainless  
Unit Warranty: 1 Yr (Standard)  
Not available to ship to California

Model: IP-9

Air Handling Wheel

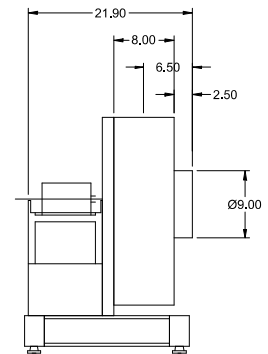


FAN FOOTPRINT



SIDE VIEW

\*SIDE VIEW IS VIEWED FROM DRIVE SIDE



END VIEW

Notes: All dimensions shown are in units of in.

# Isolation Base

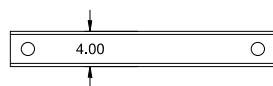
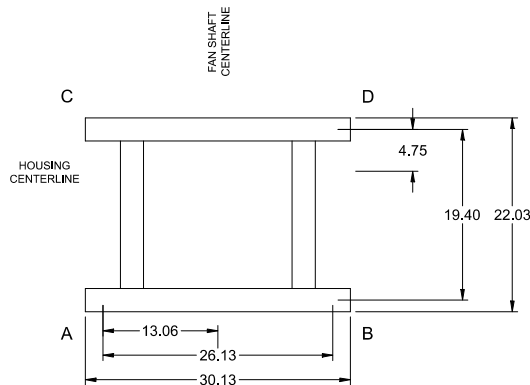
Type: Isolation Base

## Standard Construction Features:

- Steel Channel - Welded construction - Pre-punched mounting holes for fan and isolator mounting - Integral lifting points - Motor slide base (Arr 1 and Arr 3 only)

## Fan Configuration

Model:	IP-9	Discharge Position:	UB
Arrangement:	4	Motor Frame Size:	182T
Rotation:	CW	Isolator/Deflection:	Rubber Mount, 0.25 Inch
Motor Position:	Centered		



Notes: All dimensions shown are in units of in.

# Isolators

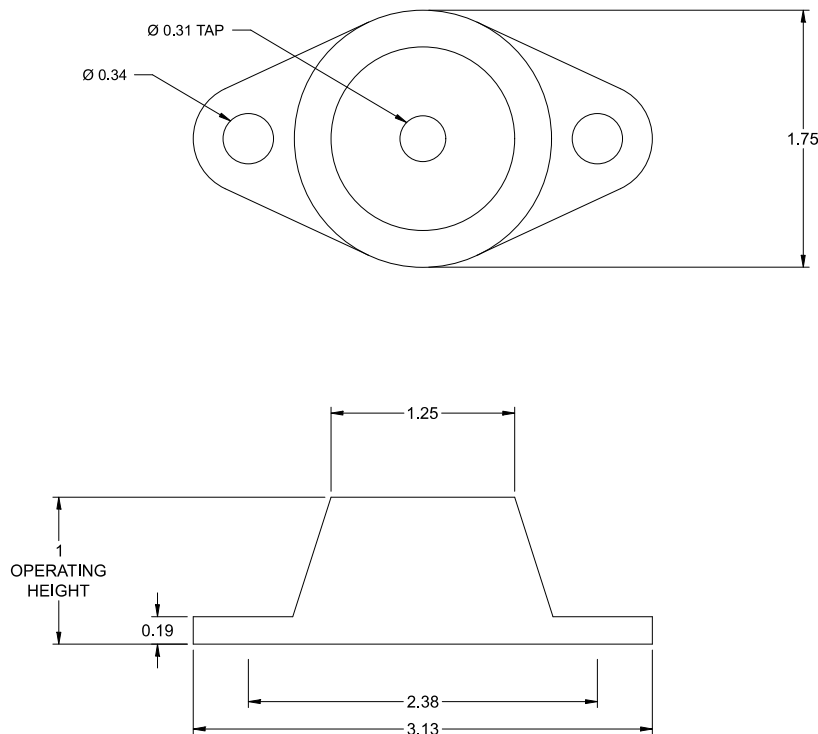
Type: Rubber Mount, 0.25 Inch

## Standard Construction Features:

Oil resistant neoprene. Color coded or identified to indicate load capacity. Tapped center hole to secure isolator to base. Flanged with through holes for attachment to supporting structure.

## Fan Configuration

Model:	IP-9	Discharge Position:	UB
Arrangement:	4	Motor Frame Size:	182T
Rotation:	CW	Isolator/Deflection:	Rubber Mount, 0.25 Inch
Motor Position:	Centered		
Isolator Color A:	Green	Isolator Color B:	Green
Isolator Color C:	Green	Isolator Color D:	Green
Isolator Description:	R-1	Isolator Manufacturer:	VMC



Notes: All dimensions shown are in units of in.

\*\*Isolator dimensions may vary with all aluminum, aluminum airstream, or Spark A construction, external inlet vane damper or with an outlet damper accessory. Consult factory for details.