

Operation & Maintenance Manual

FRED SR | SR2 | SR1 C | SR2 C









READ AND SAVE THESE INSTRUCTIONS

Visit our Website for more information on this product

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SECTION 1 - SAFETY PRECAUTIONS OF FUME & DUST EXTRACTION/COLLECTION



READ BEFORE USE This manual contains specific cautionary statements related to worker safety. To protect yourself and others, read this manual thoroughly and follow as directed before use. Not all hazards of fume & dust control are listed in this manual, and no hazards related to welding, cutting, grinding, painting, deburring or other applications are listed. Consult a qualified safety professional.



DO NOT USE Do not use this equipment:

- To extract combustible dusts, liquid vapors, aggressive fumes such as acids.
- To extract smoke or fumes above 180°F / 82°C.
- If the power cord has been damaged or ground (third prong) removed.
- · Without a filter.

1.1 Symbols

This manual uses several symbols to highlight specific hazards. Be familiar with these symbols and when you see them in this manual, read adjoining warning text to avoid the hazard.



WARNING! DANGER!



ELECTRIC SHOCK



MOVING PARTS



HOT PARTS

1.2 Users Responsability

- Improper use can be hazardous.
- All users must carefully read and understand this instruction manual prior to use
- No objects, such as tools, should be placed on the machine.
- · When moving machine, care should be taken to ensure the users feet remain clear of the wheels.
- Machine weights 474 lbs without a capture arm, proper care should be taken when moving.
- Motor should not contact any objects, and all motor repairs should be performed while the power switch is off and the power source is disconnected. Operator should not touch motor during use.
- Blower assembly should not contact any objects, and all blower repairs should be performed while the power switch is off and the power source is disconnected. Operator should not touch blower during use.
- · For maintenance of any and all components, power switch must be off and the power source disconnected
- It is your responsibility to follow all applicable ANSI, OSHA, UL, CSA, National & Local Fire Codes, and other
 regulatory guidelines covering the safe use of equipment that extracts fumes, collects dusts, and exhausts
 filtered air either indoors or outdoors.
- Before use, inspect the unit for damage and verify it is working properly.
- Only qualified persons should install, operate, maintain, or repair this unit.
- Do not modify or repair the unit with parts or accessories not supplied by the manufacturer.
- Consult filter manufacturer's instructions for filter use and reuse, including instructions for cleaning.

1.3 Fume Extraction Hazards

- Breathing smoke, fumes, or dusts produced in applications such as welding, cutting, grinding, painting, deburring
 are hazardous to user's health. Proper ventilation or use of well maintained fume extraction and/or dust collection
 equipment helps the user avoid these hazards.
- Breathable contaminants may not be visible or have an odor.
- Stop operation and leave the area immediately if 1) breathing becomes difficult, 2) experience dizziness, impaired vision, 4) or eye/nose/mouth irritation.

1.4 Dust Collection Hazards

- · Dusts from many metalwork, welding, cutting, grinding, painting, or deburring applications can be combustible.
- Do not use or install equipment where any potential for combustible fumes or dusts are present, until a qualified person has indicated it is safe to do so.
- Never use or install equipment where the potential for combustible fumes or dusts are present without a fire/explosion protection system.
- If you are unsure if the product you purchased is correct for your application, call Diversitech at 1-800-361-3733.

1.5 Safety Stickers

- This machine is equipped with safety stickers to remind operators of the inherent dangers during use and maintenance.
- The stickers are only reminders, and all safety precautions contained in this manual must be well understood and adhered to by all users.
- See APPENDIX 5: Sample Safety Stickers for example of stickers applied to machine.

SECTION 2 - SPECIFICATIONS

2.1 Diagram & Description



FRED-SR Single Arm, Self-Cleaning, Mobile Fume Extractor



FRED-SR2 Dual Arm, Self-Cleaning, Mobile Fume Extractor





rume Extracto

2.2 Product Specifications

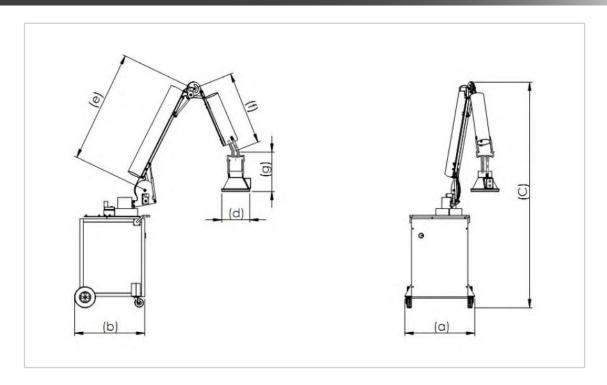
	Nominal	Motor			Power			Cord	Arm
Model	Airflow (CFM)	Allilow	Phase (Hz)	@120V (amps)	@230V (amps)	@440V (amps)	@575V (amps)	Length (ft.)	Length (ft.)
FRED SR Portable Fum	e Collector with	externally articul	ated manual	capture arm					
	1200	1.5	1P/60Hz	13.2				15	10/13
FRED-SR	1800	3.0	3P/60Hz		7.1	3.7	3.2		10/13
	2500	5.0	3P/60Hz		13.0	6.5	5.0		10/13
FRED-SR Portable Fum	ne Collector with	Fume Tracker™ l	hands-free ca	apture arm					
	1200	1.5	1P/60Hz	13.2				15	10/13
FRED-SR-T	1800	3.0	3P/60Hz		7.1	3.7	3.2		10/13
	2500	5.0	3P/60Hz		13.0	6.5	5.0		10/13
FRED-SR2 Portable Fume Collector with two externally articulated manual capture arms									
FRED-SR2	2500	5.0	3P/60Hz		13.0	6.5	5.0		10/13
FRED SR2 C Fume Coll	FRED SR2 C Fume Collector with two externally articulated manual capture arms								
FRED-SR2 C	2500	5.0	3P/60Hz		13.0	6.5	5.0		10/13

2.3 Filter Specifications

Description	Stage	Part#	Filter Area	Filter Efficiency	Reusable
Nano-Fiber Filter	Primary	S-IA-21NF	190 SQ.FT.	MERV 15	Yes
Polyester Filter	Primary	S-IA-21PT	105 SQ.FT.	MERV 11	Yes
HEPA Filter	After-Filter	S-SR-1009	24" × 36" × 5-7/8"	MERV 17	No

For information on inspecting and cleaning filter, or purchasing replacement filters, contact Diversitech at 1-800-361-3733.

2.4 Dimensions



	Arm	Arm				Footprint (in.)			
Model	Length (ft.)	Diameter (in.)	Width [a]	Height [C]	Length [b]	[d]	[e]	[f]	[9]
FRED SR Portable Fume C	Collector with ext	ernally articulate	ed manual ca	oture arm					
FRED-SR	10	6	32.5	115	33	13	60	34	18.5
FRED-OR	13	6	32.5	128	33	13	60	60	18.5
FRED-SR Portable Fume C	Collector with Fu	me Tracker™ haı	nds-free capt	ure arm					
FRED-SR-T	10	7	32.5	115	33	13	60	34	18.5
LKED-2K-I	13	7	32.5	128	33	13	75	34	18.5
FRED-SR2 Portable Fume Collector with two externally articulated manual capture arms									
FRED-SR2	10 (x2)	6 (x2)	32.5	115	33	13	60	34	18.5
	13 (x2)	6 (x2)	32.5	128	33	13	60	60	18.5

SECTION 3 - PRE-INSTALLATION

3.1 To Setup or Install Safely



- Do not place unit near flammables or combustible surface.
- Refer to SECTION 2: Specifications, to know the electrical requirements of the unit you are installing and ensure adequate input power that is properly sized, rated, and protected.
- This unit must be grounded for safe operation.

3.2 Un-Packaging

- 1. Immediately upon receiving the unit, carefully examine the carton for damage during transit.
- 2. Use lift forks or truck to move
- 3. Remove packing material.
- 4. Avoid tipping or inverting during handling.
- The item serial number, model, and electrical ratings are listed on the nameplate. Record this information in the Maintenance Record provided in APPENDIX 2: Maintenance Record, or your own preventative maintenance system.

3.3 Tools Required

- 1. 7/16 Socket or Wrench
- 2. 9/16 Socket or Wrench
- 3. Torque Wrench

The tools above are required for unit assembly.

3.4 Mounting Options

- If you purchased a mobile model, see APPENDIX 3: Installation of Fred SR/SR2.
- If you purchased a wall/ceiling mounted model, see APPENDIX 6: Installation of Fred SR2 C/SR1 C.

3.5 Electrical Options

- Single-Phase Unit: See APPENDIX 1A: Electrical Diagram [120 VAC] Single-Phase Power for wiring
 instructions. Have a certified electrician install unit according to local regulations.
- 3-Phase Unit: See **APPENDIX 1B: Electrical Diagram [230/460/575 VAC] 3-Phase Power** for wiring instructions. Have a certified electrician install unit according to local regulations.

SECTION 4 - OPERATION

4.1 To Operate Safely



- Read and understand SECTION 1: Safety Precautions and SECTION 4: Operation before use
- Read and understand all Material Safety Data Sheets and Manufacturer's instructions of all
 process materials, consumables, and equipment used in conjunction with this equipment.
- Keep away from all mechanical moving parts including motor, gears, and other pinch points.
- Do not use product without first confirming if a Spark Arrestor is required and installed for the type of dust, or fumes you are extracting and/or collection. If you are unsure, call a Diversitech representative at 1-800-361-3733.

4.2 Controls



The machine controls are basic, and consist solely of a power switch with ON and OFF positions.



- If the machine is equipped with a Minihelic differential pressure gauge, the Minihelic should read between .8 and 4.2 inches W.C. during normal operation.
- For a reading of more than 4 inches W.C, consult SECTION 5: Maintenance and Troubleshooting as filter servicing may be required.

4.3 Pre-Use Checklist

- Read and understand SECTION 1: Safety Precautions and ensure SECTION 3: Pre-Installation has been followed.
- Before plugging unit in to an input power source, look at the manufacturer's label located on the exterior of the unit and ensure the source is correctly sized in terms of Voltage and Amperes.
- Prior to use in your application, turn the unit ON, and perform a function test. To do so:
 - 1. LOOK: Have the front and back doors been closed properly.
 - 2. Turn switch to ON position.
 - 3. LOOK: Is the unit level, stable, and that nothing is obstructing the extraction path.
 - 4. LISTEN: Does the motor and suction sound smooth and within expected volumes.
 - 5. FEEL: Place your hand on top of the unit and sense for unexpected vibration. Place you hand in front of the intake hood/surface and sense for expected level(s) of suction.
- Inform all potential users of this equipment where they may find and review this manual.

4.4 Principles of Operation

This product is designed to capture and clean smoke and dust from medium & heavy duty welding, soldering, and grinding applications. When operating, air is drawn in to the nozzle, passes through the 7" diameter hose, then through the air cleaner's filtration system, and is exhausted through the rear discharge.

This product consists of four basic components:

- 1. Capture Arm(s)
- 2. A blower
- 3. Cartridge Filter
- 4. Motor & Electrical assemblies
- 5. ICS-360 Injection Cleaning System
- 6. Dust Drawer (Mobile) or Hopper (Ceiling Mount)
- The operator is to position the machine within operating distance, and activate the caster wheel brakes.
- The operator can then position the capture arm close enough to the worksite to capture all dust and fumes that will be produced.
- · Ensuring that all safety procedures have been followed, the operator can turn on the machine and begin working.
- When not in use, the machine should be turned off.

4.5 Failure Event

If, for some reason, during operation there is an accident, a blockage occurs, the Minihelic displays abnormal pressure differences, or the machine begins to act abnormally, the operator should immediately shut off the machine. This is considered a machine failure and the following steps should be taken:

This product consists of four basic components:

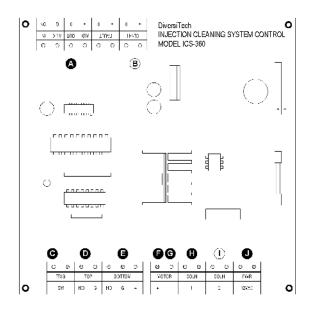
- 1. Turn the power switch to the OFF position.
- 3. Seek medical attention if an accident occurred.
- 4. Follow the guidelines in SECTION 5: Maintenance and Troubleshooting.

Remember, under no circumstance should the machine be turned back on while performing maintenance.

4.6 ICS-360 Injection Cleaning System

The ICS-360 Injection Cleaning System works to blow particulate off the filter and into the dust drawer in a cycle that takes approximately 8 minutes to complete. The cycle initiates automatically each time the units turned off. If the cycle has started and the unit is turned back on, the ICS-360 will recommence cleaning from the last position the next time the unit switched off.

STATUS LIGHTS				
А	Fault Alert			
В	Solid > Cleaning Flashing > Homing			
С	Trigger			
D	Top Switch			
Е	Bottom Switch			
F	Motor Up			
G	Motor Down			
Н	Solenoid 1			
1	Solenoid 2			
J	Power 12VAC			



SECTION 5 - MAINTENANCE & TROUBLESHOOTING

5.1 To Maintain this Product Safely



- Read and understand SECTION 1: Safety Precautions and SECTION 4: Operation before maintenance.
- Do not breathe the dust collected from product while changing/cleaning filters or performing maintenance on this
 product.



• Disconnect power before performing any maintenance on unit, including filter inspection. The input power to this unit is high voltage, and touching any live electrical parts can cause fatal shocks or severe burns. Do not touch live electrical parts.



Keep away from all mechanical moving parts including motor, gears, and other pinch points while operating.



• Operating this unit causes some parts to heat to a point that will burn bare hands. Before maintenance allow parts to cool, or use proper tools and personal protection equipment during maintenance.

5.2 Tools Required



EYE PROTECTION



RESPIRATOR



GLOVES



WASTE CONTAINER

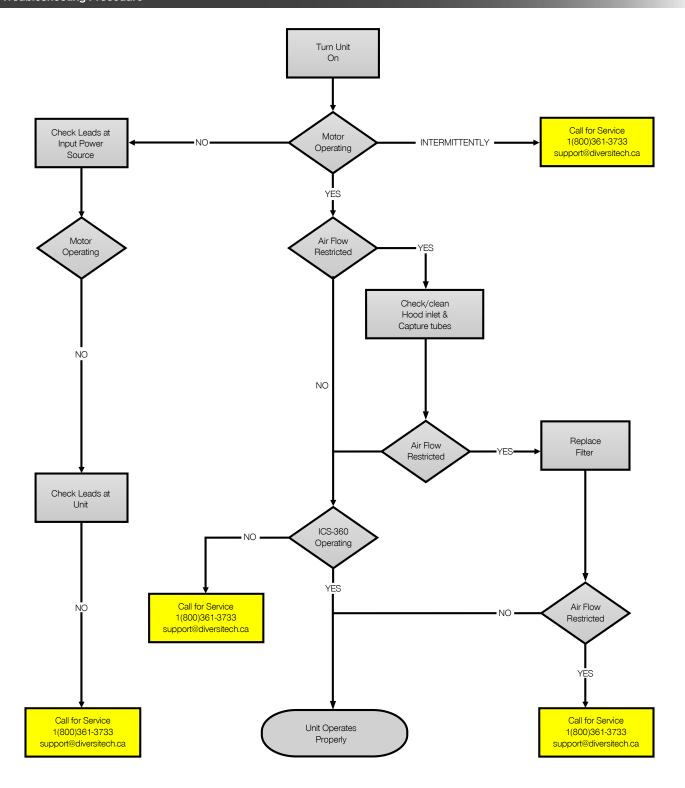


REPLACEMENT
FILTER
(if required)

5.3 Routine Maintenance Schedule

The manufacturer recommends the following routine maintenance based on light-duty use in normal operating conditions. Service more frequently if the unit is used in severe conditions.

Frecuency	Manual Reference				
Pre-Use					
Perform pre-use inspection to ensure operating correctly.	4.3				
ISC-360 Self-Cleaning Cycle					
Automatically initiated each time unit is turned OFF.	4.5				
Every (1) Week - Empty Dust Drawer					
 Remove dust drawer and deposit accumulated particulate in appropriate waste container. Refer to local regulations regarding disposal procedures as some captured contaminants may be flammable, explosive, or toxic. Recommended frequency is one week, but may be less or more depending of application. 					
As Required - Replace Filter					
1. Replace Filter					
Every (12) months Inspect Basic Components					
Clean unreadable labels and exterior surfaces					
2. Capture Arm: Check for tears in flex hoses and fitting of hose clamps					
3. Cabinet: Look for loose wiring.					
4. ICS-360 Function Test:					
Open Cabinet Door (keep open)					
Remove Filter					
Turn ON unit, and then OFF					
Observe if ICS-360 cycle initiates (normal delay of 30 seconds)					
Observe if air nozzle passes the complete range (bottom-to-top) of acme shaft.					

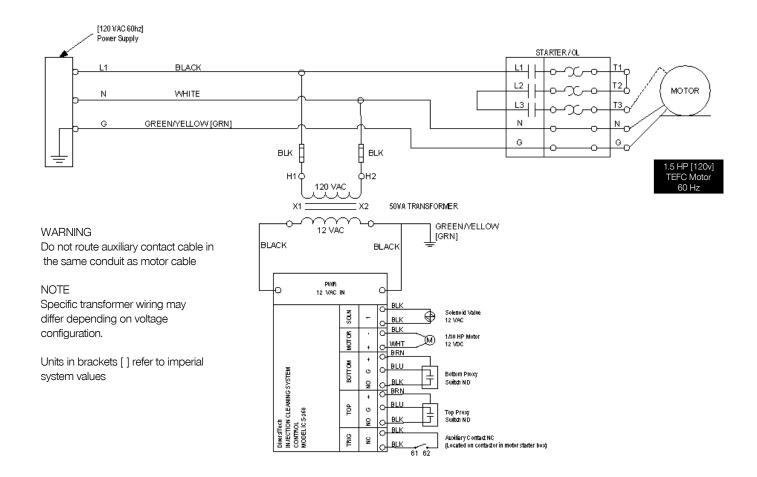


APPENDIX 1A - ELECTRICAL DIAGRAM MANUAL

[120 VAC] Single-Phase Power



ELECTRIC SHOCK HAZARD Disconnect power before performing any maintenance on unit, including filter inspection. The input power to this unit is high voltage, and touching any live electrical parts can cause fatal shocks or severe burns. Do not touch live electrical parts.

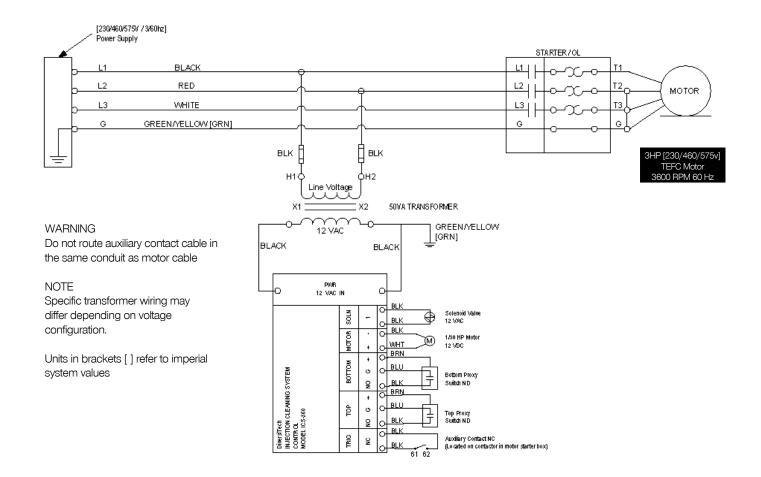


APPENDIX 1B - ELECTRICAL DIAGRAM MANUAL

[230/460/575V] 3-Phase Power



ELECTRIC SHOCK HAZARD Disconnect power before performing any maintenance on unit, including filter inspection. The input power to this unit is high voltage, and touching any live electrical parts can cause fatal shocks or severe burns. Do not touch live electrical parts.



APPENDIX 2 - MAINTENANCE RECORD

Diversitech Inc. authorizes this page to be photocopied or otherwise reproduced as needed for management of maintenance records.

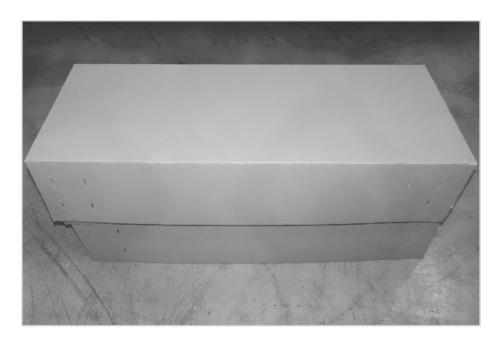
MANUFACTURER:	DIVERSITECH INC.	MODEL N°	FRED-SR	SERIAL N°	
SERVICE LOCATION:				CONTROL N°	

Date	Description of Service	Serviced By	Location	Comments

Only use manufacturer approved replacement parts on this unit.

APPENDIX 3 - ARM-TO-BLOWER DIRECT INSTALLATION

3.1 Unpack capture arm, hood, and base



STEP 1. Unpack capture arm, hood, and base.



Capture Arm

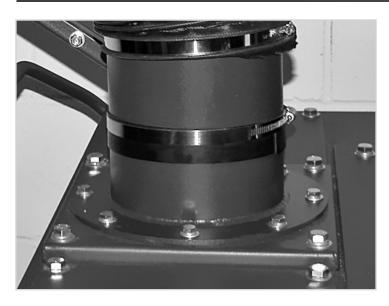


Swivel Base



Vent Hood

3.2 Attach swivel base to mounting plate

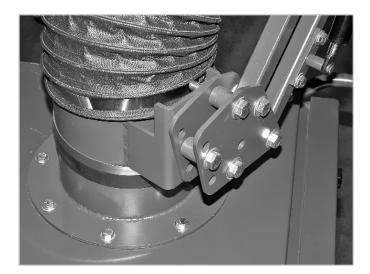


STEP 2. Attach swivel base to mounting plate.

- Mount Swivel Base to Mount Plate.
- Tighten all Bolts (8) with Washers (8)
- Toque each bolt to 23 N m

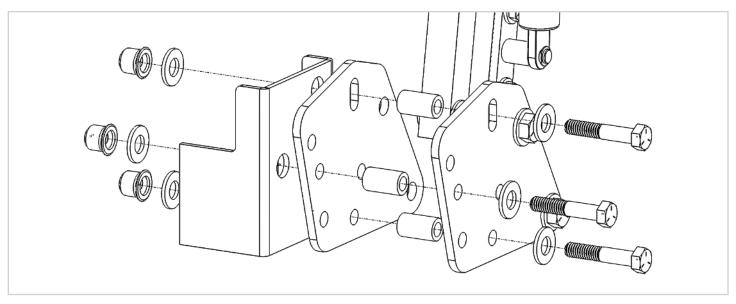
Quantity	Hardware
1	Mounting Plate
1	Swivel Base
8	1/4" Bolt, Socket Cap
8	1/4" Washer

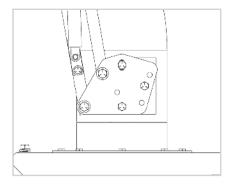
3.3 Attach capture arm to swivel base



STEP 3. Attach capture arm to swivel base.

Quantity	Hardware
1	Swivel Base
1	Capture Arm Assembly
3	1/4" Bolt, Socket Cap
6	1/4" Washer
3	1/4" Locking Nut
3	1/4" Spacer





- Insert Spacers (3) between Capture Arm Mounting Bracket.
- Thread Bolts (3) with Washers (3) through Mounting Bracket and Spacers.
- Mount Capture Arm Assembly to Swivel Base.
- Thread Washers (3) and Locking Nuts (3) to Bolts (3)
- Tighten all Bolts (3) to Locking Nuts (3)
- Toque each bolt to 40 N m

3.4 Install flex hose



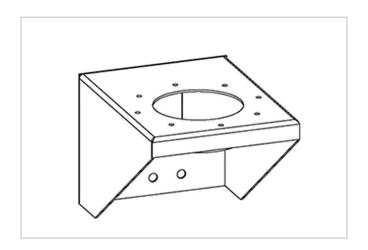
STEP 4. Install flex hose.

- Mount Flex Hose to Swivel Base and Capture Arm.
- Tighten Both Hose Clamps.

Quantity	Hardware
1	Fred-SR Assembly
2	Hose Clamps
1	Flex Hose

APPENDIX 4 - ARM TO REMOTE MOUNT BRACKET INSTALLATION

4.1 Wall mount bracket standard assembly

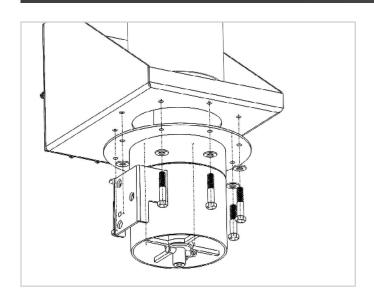


STEP 2. Description of the bracket assembly.

- Mount Swivel Base to Remote Mount Bracket.
- Tighten all Bolts (8) with Washers (8)
- Toque each bolt to 23 N m

Quantity	Hardware
1	Bracket
8	Press-in Nut for Sheet Metal, 1/4"-20 Thread Size

4.2 Attach swivel base to remote mount bracket

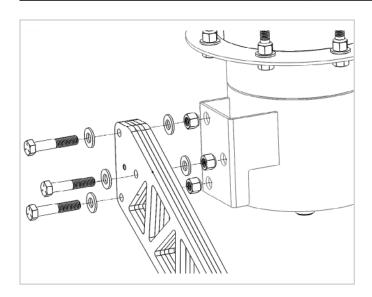


STEP 3. Attach capture arm to swivel base.

- Mount Swivel Base to Remote Mount Bracket.
- Tighten all Bolts (8) with Washers (8)
- Toque each bolt to 23 N m

Quantity	Hardware
1	Motor Blower Assembly
1	Swivel Base
8	1/4" Bolt, Socket Cap
8	1/4" Washer

4.3 Attach J-Bracket to Arm Swivel

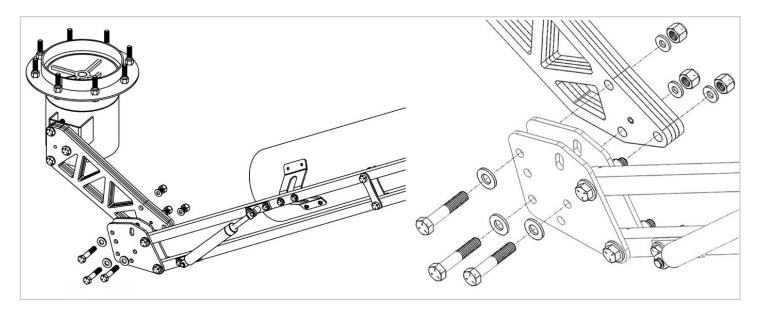


STEP 3. Attach J-Bracket to Arm Swivel.

- Mount J-Bracket to Swivel Base
- Tighten all Bolts (8) with Washers (8) and Nuts (3)
- Toque each bolt to 34 N m

Quantity	Hardware
1	Swivel Base
1	J-Bracket
3	1/4" Bolt, Socket Cap
6	1/4" Washer
3	1/4" Lock Nut. Socket Cap

4.4 Attach Capture Arm to Swivel Base (J-Bracket)

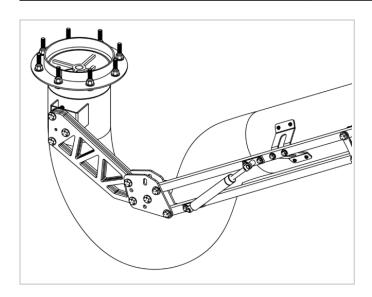


STEP 4. Attach Capture Arm to Swivel Base. (J-Bracket)

- Insert J-Bracket between Capture Arm Mounting Bracket.
- Thread Bolts (3) with Washers (3) through Mounting Bracket and J-Bracket.
- Thread Washers (3) and Locking Nuts (3) to Bolts (3)
- Tighten all Bolts (3) to Locking Nuts (3)

Quantity	Hardware
1	Swivel Base with J-Bracket
1	Capture Arm Assembly
3	3/8" Bolt, Socket Cap
6	3/8" Washer
3	3/8" Lock Nut. Socket Cap

4.5 Install Flex Hose



STEP 5. Install Flex Hose.

- Mount Flex Hose to Swivel Base and capture Arm.
- Tighten Both Hose Clamps.

Quantity	Hardware
1	Extractor Arm Assembly
2	Hose Clamps
1	Flex Hose

APPENDIX 5 - SAMPLE SAFETY STICKERS

The machine is marked with a wet filtration safety sticker to remind the operator of safe working practices:

WARNING	AVERTISSEMENT	ADVERTENCIA	
DO NOT USE this equipment:	NE PAS UTILISER cet équipement :	NO USAR este equipo:	
To collect smoke, fumes, liquid vapors, or aggressive fumes such as acids	Pour l'extraction de fumées ou d'émanations de plus de 82 °C / 180 °F.	Para extraer humo o gases superiores a 180°F / 82°C.	
If the power cord has been damaged or ground (third prong) removed.	Si le cordon d'alimentation est endom- magé ou si la mise à la terre (troisième broche) a été retirée.	Si el cable está dañado o se le ha quitado el tierra (tercera punta).	
Without the proper water level in basin	Si le niveau d'eau dans le bassin n'est pas adéquat.	Sin el nivel de agua adecuado en el depósito.	

The machine is marked with safety stickers in appropriate places to remind the operator of safe working practices.

STICKERS APPLIED TO MACHINE				
Figure 1	Figure 2	Figure 3	Figure 4	Figure 5
Foot Trap Hazard	Falling Objects Hazard	Moving Parts Hazard	Electric Shock Hazard	Loud Noise Hazard
FOOT TRAP HAZARD PROPER FOOTWEAR REQUIRED	FALLING OBJECTS HAZARD DO NOT PLACE OBJECTS ON MACHINE	CAUTION MOVING PARTS HAZARD DO NOT FOURT BEFORE OPENING	ELECTRIC SHOCK HAZARD SERVICE BY TRAINED PERSONNEL ONLY	LOUD NOISE HAZARD WEAR EAR PROTECTION DURING OPERATION

NOTES

NOTES		

LIMITED EQUIPMENT WARRANTY

For a period of 2 years from the date of purchase, all Diversitech products are warranted to be free from defects in material, workmanship, and construction, when used in accordance with installation, maintenance instructions, and expressly stated proper use application(s). Diversitech Inc. will repair or replace, at our option, any defective parts which fail during the warranty period. This warranty is limited to replacement parts ONLY, and does not cover personal liability, property loss, normal wear; and does not cover losses resulting from (or due to) improper installation, inadaqueate maintenance, misapplication, misuse, or use above rated capacities.

FREIGHT CLAIMS

Shipments must be inspected upon arrival. All Diversitech units are sold ex-plant. Therefore, it is the receiver's responsibility to file any freight claims with the carrier for obvious or concealed damages. Damaged shipments must be refused at time of receipt, by consignee.

RETURN MATERIAL POLICY

Prior to the return of material, for whatever reason, a return manufacturing authorization number (RMA#) is required from the Diversitech customer service department. This procedure is necessary for proper control and handling of returned materials. Call 1-800-361-3733 or email support@diversitech.ca to obtain an RMA.

All material must be returned prepaid. Credit will be given for returns for warranty repair or replacement. Freight collect shipments, or freight without an RMA, will not be accepted. It is the shipper's responsibility to ensure that material being returned to Diversitech is adequately packaged for shipment to preclude damages.



Visit our Website for more information on this product www.diversitech.ca

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