

**Ruwac USA Industrial Vacuums**

**NA35 Series**

**Installation, Operation, Maintenance & Service**

**Model No.**

**Serial No.**

**Filter No.**

**Start-Up Date**



# IMMERSION SEPARATION VACUUMS



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## I. --- Warranty

RUWAC warrants that new equipment which are complete units and are sold and/or manufactured by RUWAC, Inc. will be free from defects in material and workmanship for a period of 18 months from date of shipment or 12 months from date of start-up, whichever come first. RUWAC warrants that replacement parts sold hereunder will be free from defects in material or workmanship for a period of 120-days after the date of shipment. RUWAC machines that have been completely re-built at the factory will carry a 180-day warranty from date of shipment. All field repairs preformed by authorized RUWAC service personnel are covered by a 120-day parts only warranty.

RUWAC, Inc. will not assume any responsibility under the terms of this limited warranty on equipment, which has not been paid in full. This warranty does not apply to any equipment that has been disassembled, repaired, or otherwise altered by any person without the written authorization of RUWAC'S service department, nor does it apply to any product that has been subjected to failure sure to corrosive or abrasive attack, misused, damaged, or improperly installed, nor does it apply to motors, controls, and components not manufactured by RUWAC, Inc. Motors, controls, and other Sub vendor's components therefor are warranted only to the extent of the manufacture's warranty. All warranty work on such products must be authorized by RUWAC, Inc. and must be performed in an authorized shop as designated by the manufacturer. RUWAC sole liability and buyer's sole and exclusive remedy hereunder is the replacement or repair at RUWAC'S option of products not complying with this warranty. Such repair or replacement shall be F.O.B. RUWAC'S factory, and RUWAC reserves the right to invoice all expenses incurred when repairs are made in the field at the request of the customer, except as specifically set forth herein, RUWAC makes no warranty express or implied, with respect to the products and/or service supplied hereunder, this warranty is in lieu of and excludes all other warranties, including without limitation, any warranty of merchantability, fitness for a particular purpose, or conformance to purchaser's specifications.

## II. --- Safety

**CAUTION:** Standard Ruwac DS1 series motor decks are designed for continuous use provided the vacuum is not held under constant stress. If you are unsure about your application requirements consult your Ruwac representative.

**CAUTION:** Always check that the motor is rotating in the indicated direction upon start-up. Power polarity can change from power supply to power supply. Operation under a reversed polarity will damage the motor, the turbine and/or the machine.

**CAUTION:** Disconnect the machine from the power source before and during inspection and / or maintenance.

**CAUTION:** The components in this machine can be very heavy. Always follow safe lifting procedures.

**CAUTION:** Allow at least three feet of clearance space above the unit to safely remove or install components.

**CAUTION:** Make absolutely sure that there are no unsecured objects above the filter after maintenance or inspection. Catastrophic failure is likely to occur if an object passes through the turbine while running.

**CAUTION:** This separation system is designed for the separation of sensitive ultra-fine materials. It may also be used for the neutralization of hot or glowing media; however, it may not be used for both materials simultaneously.

**CAUTION:** The electrical service at the installation site must supply the voltage stamped on the machine's serial tag. Most motors have multiple voltage capabilities that may appear on the motor serial tag but do not apply to the machine. Operating at an incorrect voltage may damage the machine.

# NA35 SERIES STANDARD INSTRUCTIONS: START-UP OPERATION



Unscrew the valve marked under “WATER FILL” to fill your machine with liquid.



The liquid fill valve can easily accommodate the use of a garden hose.



Fill the water tank with liquid to the indicated level marked on the lower housing and hose.



Connect the machine to the appropriate power source as indicated on the machine’s serial tag.



Affix the retractable grounding cable (optional) to an adequately grounded structure or object.



Start the machine by turning the power switch on the control panel to the ON / (I) position.



Immediately turn the switch OFF / (O) to bump the motor. Check that the motor is moving in the correct direction based on the arrow (clockwise)



If motor is moving in the correct direction, proceed to use your NA35 vacuum

**CAUTION:** Always check that the motor is rotating in the indicated direction upon start-up. Power polarity can change from power supply to power supply. Operation under a reversed polarity will damage the motor, the turbine and / or the machine.

## NA35 SERIES STANDARD INSTRUCTIONS: FILTER BAG INSTALLATION AND BALL VALVE DISCHARGE



Before using NA35, place after filter over the opening of the ball valve.



Clamp and lock the sanitary fitting over the after filter and ball valve to secure in place.



Upon completing use of NA35, remove after filter by reversing. To begin discharge from unit, slide the latch bracket upward to release.



Bring the lever toward you.



Once lever is facing toward you, you may push the latch bracket down to lock it into place and open the discharge valve.



To clean after filter, rinse the material down with a hose and shake any leftover sludge or residual debris out from its opening.



## NA35 SERIES STANDARD INSTRUCTIONS: CARTRIDGE FILTER & DEMISTING PAD CLEANING

1. The NA35 should be cleaned after each use to avoid off-gassing.
2. The demisting screen and the filters should be checked on a weekly basis to ensure efficiency.
3. The demisting chamber and filters should be checked for excessive sediment build-up on a regular basis.  
Empty and take apart the unit to ensure there is no build up of material above the liquid bath. Clean the unit thoroughly.
4. The sight glass window must be free from debris and offer visibility into the vacuum. Replace as required.



Turn the machine OFF / (O) and disconnect the power source.



Unclamp the two motor deck housing clamps.



Separate the motor deck assembly from the filter housing. Set the assembly down.



Remove the filter hold-down brackets using a 1/2" wrench, then pull the cartridge filters out of the filter housing.



Pull the filter up while being sure to bring up the grounding line with it.



Inspect the filters for damage and excessive material blockage. Also inspect for signs of material leakage at the gasket point. If all checks out, proceed to cleaning.

Clean the filter following the Filter Cleaning Instructions in Appendix A.



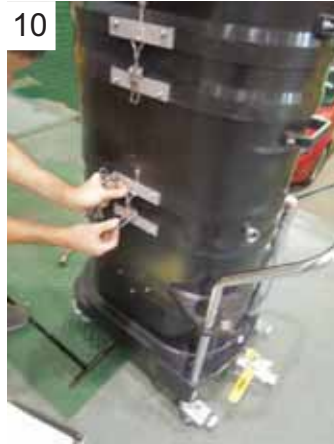
Clean the upper tier of the filter holder by rinsing the surrounding area with the hose.

**CAUTION:** Motor deck will be heavy and will require a crane to place atop work bench or table.

**NA35 SERIES STANDARD INSTRUCTIONS:  
CARTRIDGE FILTER, DEMISTING PAD & DISPERSION SCREEN CLEANING**



Backwash the demisting pads by rinsing them and the surrounding area beneath the filter holder with the hose to ensure all materials are dislodged.



Unclamp the middle housing.



Clean the dispersion screen of any sludge or residual debris by thoroughly rinsing it away with the hose.



Using a 7/16" wrench, remove the spacer and lock washers holding the dispersion screen in place.



Remove the dispersion screen.



Clean the lower vessel of the NA35 by thoroughly rinsing it away using the hose.



Remove any leftover liquid from the lower vessel by releasing the ball valve, done by bringing the lever toward you.



Reinstall the dispersion screen.

**NOTE:** Not all of the liquid water will drain out of the unit via the discharge hose. Prepare the work area accordingly.

## NA35 SERIES STANDARD INSTRUCTIONS: CARTRIDGE FILTER & DEMISTING PAD CLEANING

**CAUTION:** Motor deck will be heavy and will require a hoist or two users to place atop work bench or table.



Seat the middle housing deck back on top of the lower housing.



If installing new filter cartridges, insert them closed side first, being sure to sink the ground down into the filter holder with it.



Reinstall the filter hold-down brackets using a 1/2" wrench.



Seat the motor deck assembly on top of the middle housing deck.



Re-secure motor deck with the two motor deck clamps.



Reconnect the power source.

Allow the demisting pad to dry completely before using the machine again. Excess liquid in the demisting pad will be transported to the cartridge filters. Excess water on the cartridge filters will diminish the efficiency of the machine.



## NA35 SERIES STANDARD INSTRUCTIONS: AIR-POWERED DECK INSPECTION

**NOTE:** For NA35-100 with 70 PSI at 65 CFM, you **MUST** use a 1/2" NPT unrestricted air line.



Affix the retractable grounding cable to an adequately grounded structure or object.



Attach full port air supply connection. A 1/2" unrestricted air line is absolutely required for optimal operation.



Open the ball valve to turn the vacuum on by pulling the lever toward you.



Close the ball valve to turn the vacuum off by pushing the lever away from you.

## NA35 SERIES STANDARD INSTRUCTIONS: ELECTRIC MOTOR DECK INSPECTION

**CAUTION:** Motor deck will be heavy and will require a hoist or two users to place atop work bench or table.



Unlatch the housing clamps on both sides of the NA35 unit.



Using either a manual lift or with two people using the handles, lift the motor deck up from the NA35 unit.



Either from the lift or by turning the motor deck over on a table, inspect the belt for cracks, wear, melt, stretch and tension (Make sure to support the motor and turbine equally).



Remove any damaged belts by walking it off.



Check for any noise by spinning belt or running the motor without the turbine connected. Replace any problematic parts if needed.

## NA35 SERIES STANDARD INSTRUCTIONS: TURBINE REPLACEMENT

**NOTE:** The turbine is not field serviceable and must be replaced as one unit if defective. Replacement of the motor belt or turbine will require the turbine seal to be replaced.



1  
Switch the vacuum off and remove the power cord from the power source.



2  
Remove the vacuum from the hazardous area to a service work area where the motor deck can be rested on a work bench or table.



3  
Remove the silencer assembly from the motor deck.



4  
Break the silicone seal surrounding turbine using a sharp edge.



5  
Carefully turn motor deck upside down onto work bench or table.



6  
Remove belt by walking it off.



7  
Loosen the three nuts securing the turbine, supporting it from underneath to ensure it doesn't drop.



8  
Using a sharp edge, remove the remaining silicone seal from the motor deck.

**CAUTION:** Motor deck will be heavy and will require a crane to place atop work bench or table.

## NA35 SERIES INSTRUCTIONS: TURBINE REPLACEMENT



Replace turbine by fastening all nuts and bolts through bottom of motor deck.



Align and install new motor belt (See pgs. 14 & 15 for instructions)



Tighten all nuts and bolts surrounding turbine to ensure they're fastened securely.



Flip fully assembled motor deck upright, resting front end on a support so as not to move underlying bushing and belt.



Reapply silicone after an 8 hour run in and belt re-inspection.

**CAUTION:** Motor deck will be heavy and will require a crane to place atop work bench or table.



## NA35 SERIES INSTRUCTIONS: PULLEY ALIGNMENT

**NOTE:** Complete the previous operations to prepare the motor deck for service of the motor, turbine or belt. Replace any defective components and secure the motor with bolts before proceeding.



Match the height of the first groove of the turbine sheave to the first groove of the motor sheave to ensure belt alignment.



The motor sheave can be adjusted by sliding the shaft bushing up or down.



Using a torque wrench, tighten the sheave bushing locking bolts to 15 foot pounds of torque.



Install the belt (See pg. 15 for Belt Tensioning Adjustment Instructions)



Tighten all nuts and bolts surrounding turbine to ensure they're fastened securely. **Do NOT overtighten.**



Hand spin the motor sheave to insure proper alignment, verify by taking a second height measurement to the first motor sheave groove.

## NA35 SERIES INSTRUCTIONS: BELT TENSIONING ADJUSTMENT

**CAUTION:** Motor deck will be heavy and will require a hoist to remove. Before any maintenance service is done, follow standard lock out and tag out procedures as well.



1 With the power off and disconnected, remove the motor deck from the top of the vacuum. Place the motor deck upside down on a clean work surface.



2 Inspect the belt for any glazing, cracking or shredding. Any of these will require belt replacement.

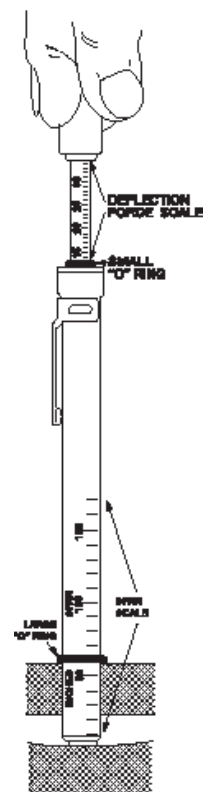
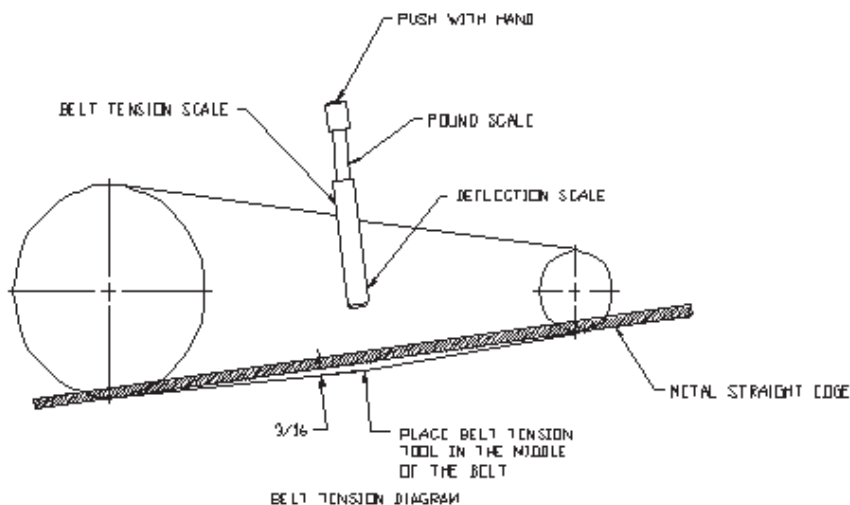


3 To check the belt's tension, place a metal straight edge at the edge of the pulleys as shown and count the ribs on the belt to get the correct force required. (See below)



4 Place the belt tension scale at the mid-point of the belt. Press slowly with your palm and read the pound scale as well as the deflection scale. Adjust belt tension as required.

Checking the belt tension requires two measurements: The belt tension in force (pounds) and the deflection in fractions of an inch. These measurements are taken at the mid-point of the belt. Ruwac uses two different width belts. 6 rib (count the high points of the belt) with 3 - 5 pounds of force and 10 ribs that requires 6 - 8 pounds of force. The deflection of the belt is calculated from the center distance of the pulleys, DS1 and DS2 series vacuum will be  $\frac{3}{16}$  on an inch.



## NA35 SERIES INSTRUCTIONS: REPLACING THE BELT

**CAUTION: Motor deck will be heavy and will require a hoist to remove.** Before any maintenance service is done, follow standard lock out and tag out procedures as well.



To replace a drive belt, cut the silicone between the motor deck and the turbine and loosen the three hex nuts.



Flipping the motor deck on its other side, slide the turbine toward the motor and remove the old belt.



Place the new belt around the pulleys.



Spread the pulleys apart and tightens the three hex nuts on the turbine.



Tension Belts (See pg.15 for Belt Tensioning Adjustment Instructions)



Reapply silicone after an 8 hour run in and belt re-inspection.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
<b>Water Leaked from Bottom Discharge</b>	- Seals leaking	- Check and replace if needed. Contact your Ruwac representative for replacement
Insufficient Vacuum	- Hose blocked	- Unplug hose.
	- Filter clogged or improperly seated	- Follow filter inspection procedure, Section V.
	- Vacuum leak	- Check that motor deck is properly seated and secured. Also, check all hoses.
<b>Air Leaks</b>	- Worn or poorly seated seals, Retainers improperly installed	- Block the inlet with a flat and rigid material to place the unit under vacuum pressure then remove retainers and turn the unit off. Inspect the seals for completeness, then reseal and secure components again under vacuum pressure.
<b>Unusual or High Pitched Noises</b>	- Motor bearings, turbine bearing	- Follow relevant motor / turbine inspection procedure, Section III. Check motor bearings for noise by hand.
	- Worn or poorly seated seals, Retainers improperly installed	- Block the inlet with a flat and rigid material to place the unit under vacuum pressure then remove retainers and turn the unit off. Inspect the seals for damage, then reseal and secure components again under vacuum pressure.
	- Belt worn, cracked, damaged,	- Follow belt / turbine / motor inspection procedure, Section III.



**ACCEPTANCE:** The terms and conditions of sale set forth herein apply to any order accepted or acknowledged by RUWAC, Inc. Buyer's acceptance of RUWAC'S proposal or delivery of all or any part of the goods covered hereunder constitutes acceptance of the terms and conditions of sale contained herein, and RUWAC hereby rejects any additions to or modification to these terms and conditions. Any representations, promises, warranties, or statements by RUWAC or its agents that differ in anyway from these terms and conditions shall be given no force or effect. No contract is final until accepted in writing by RUWAC at its corporate office in Holyoke, Massachusetts.

**PRICES:** Prices quoted orally expire the same day they are made unless accepted in writing on that day or confirmed by written communication by RUWAC. Written price quotations are guaranteed for thirty (30) days after the date issued, but may be terminated by written notice within that period. After thirty (30) days, any written price quotations are subject to adjustment to reflect prices in effect at the time of shipment, including any changes in packing, storage, or shipping charges. This order or proposal includes only the equipment specified herein, and does not include freight or installation of RUWAC equipment. All prices are F.O.B. RUWAC'S plant in Holyoke, Massachusetts and are exclusive of all taxes, levies, and duties that may be assessed in connection with the sale or delivery of goods, and Buyer shall be responsible for all such taxes, levies, and duties. In the event RUWAC pays any such tax, levy, or duty, Buyer shall promptly reimburse RUWAC therefor. Any packaging requirements other than RUWAC'S standard packaging and commercial container will be invoiced as an extra charge.

**PAYMENT:** Payment is due in full thirty (30) days after the date of invoice. All invoices paid after the due date will be assessed a late payment charge of one and half percent (1.5%) per month or any portion thereof, or the maximum amount allowed by applicable law, whichever is less. Buyer shall be responsible for all costs of collection, including reasonable legal fees. Sales on the foregoing terms are subject to the approval of RUWAC'S credit department and may be changed at any time at RUWAC'S sole discretion. If RUWAC has reasonable grounds with respect to Buyer's ability or willingness to make timely payments for the goods. RUWAC may at any time suspend performance, decline to ship, or require advance payment in cash or other adequate assurance satisfactory to RUWAC.

**SHIPMENTS AND DELIVERY.** RUWAC shall use its reasonable efforts to meet all shipment or delivery dates recited in RUWAC'S proposal or in Buyer's order but any such dates are estimated only and are not guaranteed. RUWAC shall have no liability to Buyer for damages or penalties, direct or indirect, for any delay in shipment or delivery, whether such delay is minor or substantial, nor shall Buyer have the right to declare a breach of contract because of any such delay. In any event, delivery schedules are based upon the effective date of the order and are subject to prompt receipt by RUWAC of all necessary down payments, information and instructions from Buyer, including any required approval of drawings. RUWAC shall have the right to make partial shipments, and invoiced covering the same shall be payment terms hereof. RUWAC will attempt to ship in accordance with Buyer's instructions, but RUWAC will make the final selection of a method of shipment and a carrier unless Buyer clearly and conspicuously specifies that shipment must be by a particular method of carrier. RUWAC is not responsible for damage or loss in transit, and all such claims must be by Buyer directly against the carrier.

**CHANGE ORDERS:** RUWAC shall not be obligated to make any changes in or additions to the scope of the work which are initiated by Buyer or result from circumstances beyond RUWAC'S control unless there is an equitable adjustment in price and or delivery.

**CANCELLATION, SUSPENSION OR DELAY:** In the event Buyer requests or causes a cancellation, suspension or delay in any RUWAC'S work under this proposal or order based thereon, Buyer shall indemnify and pay to RUWAC all appropriate charges, including but not limited to any costs, expenses, and commitments incurred by RUWAC up to the date of receipt of notice of such cancellation, suspension or delay, plus RUWAC'S overhead and reasonable profit. If shipment is delayed on account of Buyer, the purchase price shall be due and payable as if delivery had been made. Additionally, all charges related to storage, disposition and/or resumption of work, at RUWAC'S plant or elsewhere, shall be for Buyer's sole account and Buyer thereto shall assume all risks incidental.

**CLAIMS: NOTICE OF DEFECTS:** Buyer shall give written notice of rejection of any shipment or portion thereof within thirty (30) days after the date of shipment specifying the reasons therefor. Failure to give such notice shall be deemed a waiver of any right of rejection and any claim with respect thereto (except as to claims under the warranty) and shall be deemed an acceptance of such shipment. Buyer shall set aside and hold rejected goods without further processing until RUWAC has an opportunity to inspect and advise of the disposition, if any, to be made of such goods. In no event shall any rejected goods be returned reworked, or scrapped by Buyer without the express written authorization of RUWAC.

**INSPECTION OF EQUIPMENT:** RUWAC shall have the right to inspect, after prior notices, the equipment supplied by it when in operation. If Buyer requires, RUWAC shall execute an appropriate secrecy agreement.

**CONFIDENTIALITY:** All proposals, drawings, diagrams, specification, pricing, and other materials relating to the goods included are the property and confidential information of RUWAC. Buyer shall not disclose such material or information without the written approval of RUWAC.

**BACK CHARGE:** RUWAC will pay claims for expenses of Buyer relating to labor and/or material supplied by Buyer only if (a) RUWAC is advise in writing before such expenses are incurred (2) RUWAC gives Buyer its prior written consent to the supply of such labor and/or material by buyer.

**LIMITED WARRANTY:** RUWAC warrants that new equipment which are complete units and are sold and/or manufactured by RUWAC, Inc. will be free from defects in material and workmanship for a period of 18 months from date of shipment or 12 months from date of start-up, whichever comes first. RUWAC warrants that replacement parts sold hereunder will be free from defects in material and workmanship for a period of 120-days after the date of shipment. RUWAC machines that have been completely re-built at the factory will carry a 180-day warranty from date of shipment. All field repairs by authorized RUWAC service personnel are covered by a 120-day parts only warranty. RUWAC, Inc. will not assume any responsibility under the terms of this limited warranty on equipment, which have not been paid for in full. This warranty does not apply to any equipment that has been disassembled, repaired, or otherwise altered by any person without the written authorization of RUWAC'S service department, nor does it apply to any product that has been subject to failure due to corrosive or abrasive attack, misused, damaged, or improperly installed, nor does it apply to motors, controls, and components not manufactured by RUWAC, Inc. Motors, controls, and other Sub vendor's components therefor are warranted only to the extent of the manufacturer's warranty. All warranty work on such products must be authorized by RUWAC, Inc. and must be performed in an authorized shop as designated by the manufacturer. RUWAC sole liability and buyer's sole and exclusive remedy hereunder is the replacement or repair at RUWAC'S option of products not complying with this warranty. Such repair or replacement shall be F.O.B. RUWAC'S factory, and RUWAC reserves the right to invoice all expenses incurred when repairs are made in the field at the request of the customer, except as specifically set forth herein, RUWAC makes no warranty express or implied, with respect to the products and/or service supplied hereunder, this warranty is in lieu of and excludes all other warranties, including without limitation, any warranty of merchantability, fitness for a particular purpose, or conformance to purchaser's specifications.

**LIMITATION OF LIABILITY:** RUWAC'S responsibility with respect to the goods and RUWAC'S obligations related thereto should in no event exceed the purchase price of the goods. RUWAC shall not be liable to Buyer for any special incidental, indirect, or punitive damages for any reason whatsoever, including, but without limitation damages in the form of (a) loss of profits, revenues, or anticipated savings resulting from the failure of the equipment to meet specifications or warranties (b) damages suffered by Buyer as a result of loss of production facilities or equipment (c) cost of replacement equipment (d) damages suffered by customers of the Buyer (e) any fines or penalties assessed for failure to comply with any law or government regulations.

**REPAIR OF GOODS EXPOSED TO HAZARDOUS, TOXIC, OR INFECTIOUS MATERIAL:** Buyer shall ensure that any goods submitted by Buyer or any of its customers to RUWAC for repairs or other service have been decontaminated and cleaned (including sterilization, if appropriate) of any hazardous, toxic or infectious materials, including without limitation any materials listed by the Environmental Protection Agency, OSHA, or any applicable state law as deserving or requiring special treatment. Upon RUWAC'S request, Buyer or its customer shall certify in writing that such goods contain no such hazardous, toxic, or infectious materials, and that such decontamination has taken place in accordance with accepted parties and in accordance with all applicable laws and regulations. If special safety equipment is required to protect RUWAC'S service personnel from any such hazardous, toxic, or infectious materials during field service work or otherwise. Buyer shall ensure that such safety equipment is provided and that the personnel are properly instructed. The provision of this paragraph shall apply to all work to be performed by RUWAC'S service personnel at any time, whether or not covered by warranty. Buyer shall defend and indemnify RUWAC for any and all losses, liabilities, expenses, and damages (including attorneys' fees) arising out of any failure of buyer or its customer to comply fully with the terms of this paragraph.

**BUYER SUPPLIED DATA:** Buyer acknowledges that RUWAC has relied upon all specifications and other data supplied by Buyer to RUWAC in the selection and design of the equipment and the preparation of this proposal. In the event the site operating conditions differ from those represented by Buyer and relied upon by RUWAC, any warranties or performance guarantees contained herein affected by such conditions shall be null and void, unless otherwise mutually agreed upon in writing.

## VI. \_\_\_\_\_ Terms & Conditions

**REMEDIES OF SELLER:** In addition to any other remedies of RUWAC provided hereby or by law, in the event Buyer becomes bankrupt, insolvent, assigns assets for the benefit of creditors or its financial condition has substantially deteriorated, RUWAC may, at its sole option, declare a breach of contract, stop all work hereunder or demand payments in advance as security for its performance hereunder.

**FACTIONS: GOVERNING LAW:** Any dispute, controversy, or claim against RUWAC with respect to the goods or any of RUWAC'S obligations related thereto must be commenced within one year from the date of shipment. All contract between Buyer and RUWAC shall be governed by and construed in accordance with the laws of the state of Massachusetts except that body of laws controlling conflict of laws.

**BONDS:** In addition to the price specified herein, Buyer shall pay the cost of any bonds, which Buyer requires RUWAC to obtain.

**ENTIRE AGREEMENT:** These terms and conditions, together with the provisions of the proposal constitute the entire agreement between the parties pertaining to the goods, and they supersede any prior or contemporaneous agreements, representations, or understandings between the parties. No waiver or modification of these terms and conditions is binding unless such waiver or modification is set out in writing signed by an authorized manager or officer of RUWAC. RUWAC'S failure to strictly enforce any right on one occasion does not constitute a waiver of that or any on any other occasion.

# HYDRO & OLIPHOBIC MEDIA FILTER CLEANING

**CAUTION:** YOU MAY CLEAN THE FILTER. HOWEVER, USE EXTREME CAUTION!

- Any abrasion to the surface will adversely affect filter's performance
- Do not use high-pressure water
- Do not use harsh brushes or similar devices
- Do not use oils, solvents or harsh detergents
- Do not use direct pressure on the dust side of the filter
- Wear appropriate clothing
- Properly contain and discard any residue generated while cleaning

## DRY METHOD CLEANING

- Pulse clean the cartridge off line (fan off), for 60 minutes with pulse frequency at 15-second intervals at 60 PSI or as close as you can come to those levels, given your equipment design. Pulse duration at 100 milliseconds.
- Remove the element from the unit and clean with a compressed air wand at 60 PSI. The size of the wand orifice needs to be 3/8" or larger to protect the filter.
- Move the wand up and down, covering the entire area of the filter element. If any contaminate is still visible on the outside (dust side) of the element, clean the outside with the air wand, moving parallel with the pleat at a 45 degree angle to the pleat surface at a sufficient distance away to avoid damage to the media. Try to remove the contaminant from the surface without forcing it into the pores of the filter. When finished, move the wand back to the interior and go over the interior one more time to remove any particulates that may have been forced into the pores from the dust side of cleaning.
- Inspect the clean air side of the collector for any dust buildup or damage and wear to the pulse system components. Clean or repair as necessary.
- Reinstall the units and note the pressure drop. If cleaning makes a significant reduction in the pressure drop and you have to perform manual cleaning frequency, please review your specific operating conditions with Ruwac.

## WET METHOD CLEANING

- Remove all excess dust as outlined above.
- Place the filters in a 2 - 3% solution (about 4 oz. per gallon) of mild dish washing soap and let the cartridge soak for 10 minutes.
- Remove the element and rinse the inside of the element with a garden hose, not to exceed 50 PSI. Thoroughly rinse all traces of detergent from both sides of the media.
- Rinsing outside needs to be done with a water stream at a 45 degree angle and parallel to the pleats.
- Let the element dry completely, normally 24 - 48 hours at 70 degrees F or higher. Do not dry in the collector with the fan. Filters must be completely dry before reuse.
- Reinstall the units and note the pressure drop. If cleaning makes a significant reduction in the pressure drop and you have to perform manual cleaning frequency, please review your specific operating conditions with Ruwac.
- NOTE: Hydro and oliophobic units are DESIGNED TO REPEL WATER AND OIL. Generally, water will not freely penetrate the media finish. This is normal and it means that the finish is working.



# GROUNDING INSTRUCTIONS

## ABOUT RUWAC'S NA35 UNITS AND GROUND:

- ALL NA35 UNITS ARE CONSTRUCTED OF COMPRESSION CAST COMPOSITE HOUSING TO ENSURE THEY ARE FULLY GROUNDED AND STATIC DISSIPATING DURING OPERATION
- PERIODIC TESTING MUST BE PERFORMED TO ENSURE CONTINUITY IN GROUND TO AVOID STATIC BUILD UP AND EXPLOSION PREVENTION
- A STANDARD OHM READER WON'T BE ABLE TO DETECT ACCURATE GROUNDING, THEREFORE A MEGOHMMETER MUST BE USED INSTEAD

## ELECTRIC MODELS

The following is a list of parts that should periodically be checked for continuity. Please note that while all clamps are grounded, they should still be tested in relation to each other and other parts.

- Inlet to line ground should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Vacuum hose end to end should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to clamp should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to inlet should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to line ground should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )

## AIR-POWERED MODELS

All air-powered models do not have any moving parts, therefore they are intrinsically safe upon originally assembly.

- Inlet to retractable grounding reel should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to clamp should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to inlet should measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )
- Clamp to retractable grounding reel measure in at less than 1 megohm ( $<1\text{ M}\Omega$ )

**Only Ruwac explosion proof accessories should be used alongside your NA35 unit. Using any other accessories will compromise the grounding of your machine, potentially rendering it defenseless against safe collecting combustible dust and creating a dangerous environment.**



## SERVICE ADVISORY:

# IS YOUR NA35 BEING PROPERLY MAINTAINED?



Ruwac's NA Series immersion separation vacuum systems are the most powerful and safest way to collect conductive metals, explosive and impact sensitive materials or glowing media. With 100% of the intake air being completely submerged in liquids, the chance of an outside ignition source entering the vacuum is safely ruled out. However, in order to ensure an efficient operation, users must do their part in properly maintaining and cleaning their machine of materials. Failure to do so can cause materials to build in the liquid tank over time. If that occurs, this renders your NA35 defenseless against combustible dust saturation, potentially setting the stages for an explosion resulting in serious injury or even death.

## WHAT CAN YOU DO?

### 1. Proper Set-Up

- Ensure vacuum is properly grounded before and during each use.
- Use only Ruwac hoses and accessories.
- Determine which liquid should be used for your material based on the application. Fill the unit to the fill level on the sight glass before each use with the proper neutralizing liquid. Review the filling capacity regularly.
- Use only for the application the vacuum was purchased for according to the application worksheet that was sent when the vacuum was received.

### 2. Empty, clean and inspect your NA35 unit

- Empty your NA35 unit. It should be cleaned after each use to avoid material build-up and potential off-gassing.
- The demisting chamber and filters should be checked for excessive sediment build-up on a regular basis. Empty and take apart the unit to ensure there is no build up of material above the liquid bath. Clean the unit thoroughly.
- The demisting screen and the filters should be checked on a weekly basis to ensure efficiency.
- The sight glass window must be free from debris and offer visibility into the vacuum. Replace as required.

### 3. Monitor material intake

- How long it takes for your NA35 unit to fill with material depends upon the application and the amount of dust you are attempting to remove. Pay attention to time and quantity so that you can prevent picking up more material than your NA35 can handle.

### 4. Monitor evaporation

- If your application is determined to use water as a neutralizer, it will evaporate during the usage of the unit. Check levels regularly and record the evaporation rate. Always maintain a proper liquid level. Special high and low water sensors and alarms are available as custom solutions. Contact Ruwac for details.

### 5. Set up a routine maintenance plan for your unit

- Once you have cleaned and inspected your NA35 as well as monitored intake, set up a routine maintenance plan which all users shall abide by when operating the unit. This plan should make everyone aware of the NA35's limits in order to safely keep them and your facility free of any potential accidents if proper maintenance is practiced.



## OTHER RECOMMENDATIONS

- Do not alter or repair vacuum without the written approval of Ruwac.
- Only authorized trained personnel should use the NA35 unit. Use only as directed by Ruwac. Use only for the application the vacuum was purchased for as per the application worksheet that was sent with vacuum when vacuum was received.