Beau Brummel Cleaners

Suffolk County

Commack, New York

SITE MANAGEMENT PLAN

NYSDEC Site Number: 152211

Prepared for Site:

Han's Cleaner of Commack, Inc. dba Beau Brummel Cleaners
2049 Jericho Turnpike, Commack, NY 11725

Prepared by:

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, Albany, NY 12233-7015
(518) 402-9620

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

August 2023

CERTIFICATION STATEMENT

I Melissa Sweet certify that I am currently a Qualified Environmental Professional as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Melissa L. Sweet QEP

July 20, 2023 DATE

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List of Acronyms

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
EWP	Excavation Work Plan
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
RSO	Remedial System Optimization
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System

SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance, and reporting activities required by this Site Management Plan:

Site Identification: Site No.152211
Beau Brummel Cleaners
2049 Jericho Turnpike, Commack, NY 11725

Institutional Controls: Environmental Easement	1. The property may be used for commercial and industrial use.	
	2. All Engineering Controls (EC) must be inspected at a frequency and in a manner defined in the Site Management Plan (SMP).	
	3. An Environmental Easement	
Engineering Controls:		Cover System Soil Vapor Extraction System
Inspections:		**Frequency:**
Cover System		Annual
Soil Vapor Extraction System		Monthly
Monitoring:		
Soil Vapor Extraction System		Quarterly air samples & Monthly System readings
Groundwater Monitoring Wells		As Needed

Site Identification: Site No.152211
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Maintenance:	
SVE system	Monthly & As Needed
Groundwater Monitoring Wells	As Needed
Reporting:	
Operation, Maintenance, & Monitoring and Inspections	Annual

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) is a required element of the remedial program for the Beau Brummel Cleaners located in Commack, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program, Site No. 152211 which is administered by New York State Department of Environmental Conservation (NYSDEC).

Mr. Sang Ok Han entered into an Order on Consent (Index #1A-0656-12-10), on March 31, 2011 with the NYSDEC to remediate the site. Figures showing the site location and boundaries of this site are provided in Figures 1 and 2. The boundaries of the site are more fully described in the metes and bounds site description that is part of the Environmental Easement provided in Appendix B.

After completion of the remedial work, some contamination was left at this site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Suffolk County Clerk, requires compliance with this SMP and all ECs and ICs placed on the site.

This SMP was prepared to manage remaining contamination at the site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6NYCRR Part 375 and the Order on Consent (Index #1A-0656-12-10; Site #152211) for the site, and thereby subject to applicable penalties.

All reports associated with the site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the site is provided in Table 1 of this SMP.

This SMP was prepared by the New York State Department of Environmental Conservation in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated June 2010 and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the site.

1.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

- 60-day advance notice of any proposed changes in site use that are required under the terms of the Order on Consent, 6NYCRR Part 375 and/or Environmental Conservation Law.
- 7-day advance notice of any field activity associated with the remedial program.
- 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan.
- Notice within 48-hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.
- Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.
- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the Order on Consent and all approved work plans and reports, including this SMP.
- Within 15 days after the transfer of all or part of the site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Table 1.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 Site Location and Description

The site is located in the town of Smithtown, Suffolk County, New York and is identified as Section 90, Block 2, Lot 24 on the Suffolk County Tax Map. Figure 1 provides a Site Location Map. The Site is a rectangular shaped lot and is developed with a 1-story commercial building that is currently occupied by an active dry cleaner that uses PCE. A parking lot is located on the south side of the lot and an asphalt driveway is located along the western and northern portion of the Site. The site is an approximately 0.24-acre area bounded by a 2-story church to the north, Jericho Turnpike to the south, a 1-story beverage store to the east, and 1-story convenience store to the west. A Site Plan is provided in Figure 2. The boundaries of the site are more fully described in Appendix B –Environmental Easement.

The owner and operator of the site parcel(s) at the time of issuance of this SMP is Mr. Sang Ok Han

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: a building, parking area, and driveway. The Site is zoned commercial and is currently utilized for commercial uses. The Site occupant is Han's Cleaner of Commack, Inc. dba Beau Brummel Cleaners .

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial and residential properties. The properties immediately south of the Site include are commercial properties; the properties immediately north of the Site include residential properties; the properties immediately east of the Site include commercial properties; and the properties to the west of the Site include commercial properties.

2.2.2 Geology & Hydrogeology

A Site Characterization Report dated December 2009 documented a general soil classification in the upper glacial aquifer as yellow-orange, medium sand with trace gravel. The depth to groundwater during the Site Characterization investigation was between 94 to 98 feet below grade. The groundwater flow direction established during the Site Characterization investigation is toward the east-northeast. A groundwater flow and contour map is provided in Figure 3. Groundwater elevation data is provided in Table 2. Groundwater monitoring well construction logs are provided in Appendix G.

2.3 Investigation and Remedial History

The site building was constructed between 1957 and 1966. The site has been occupied by a drycleaner since at least 1971. Han's Cleaner of Commack has been present at the Site since 2000. Releases to an on-site sanitary system impacted surrounding soils and groundwater.

2.3.1 Investigations

Investigations by the Suffolk County Department of Health Services were performed in 1998. SCDHS collected sludge and liquid from the on-site sanitary system and found elevated tetrachloroethylene (PCE) concentrations in both. The sanitary system was remediated to SCDHS requirements. In 2004, monitoring wells located 300 feet to the east on a gas station property were found to be impacted by PCE above standards. In 2005, a NYSDEC inspection of the dry-cleaning unit found that surface soils on-site exhibited elevated levels of PCE.

A Site Characterization Investigation (AECOM, 2009) and Remedial Investigation (Arcadis, 2016) were performed by NYSDEC to characterize the presence and the nature and extent of contamination on-site. Results indicated elevated levels of PCE in groundwater, soil, and soil vapor.

The site environmental conditions following the 2016 RI were as follows:

Soil

- No VOCs were detected in any of the soil samples analyzed at concentrations exceeding the Part 375 Unrestricted Soil Cleanup Objective (SCO).

Groundwater

- VOCs were detected in the monitoring wells at the Site and downgradient of the Site at concentrations exceeding TOGS 1.1.1 Standards. Maximum total chlorinated solvents concentrations detected beneath the Site in 2009 ranged between 43 ug/L in and 388 ug/L.
- No SVOCs or metals were detected in the groundwater samples.

Soil Vapor Intrusion

- VOCs consisting of chlorinated hydrocarbons including PCE (from 5,600 µg/m^3 to 48,000 µg/m^3), Trichloroethene (TCE) (from 210 µg/m^3 to 2,300 µg/m^3) and cis-1,2-Dichloroethene (DCE) (from 60 µg/m^3 to 1,300 µg/m^3) were detected beneath the Site and are most abundant beneath the building slab.
- Other petroleum-range vapors characterized by Xylenes, Trimethylbenzenes, and Ethylbenzene (maximum of 190 ug/m^3) and likely attributed to off-site sources are present beneath and surrounding the building at the Site.
- Chlorinated hydrocarbons including Tetrachloroethene (68 µg/m^3) and Trichloroethene (1.1 µg/m^3) were also detected at trace concentrations in the outdoor air.

An Interim Remedial Measure (IRM) Investigation (HydroTech, 2012) and Construction Completion Report (HydroTech, 2016) for the completion in 2014 of the IRM were performed on behalf of the property owner.

The Interim Remedial Measure Work Plan (HydroTech, August 2013) designed the installation of a Soil Vapor Extraction/ Sub-Slab Depressurization System (SVE/SSDS) for the remediation of the site soils and the mitigation of soil vapor and indoor air in the on-site building.

1. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation trenches for the SSD/SVE system;
2. Installation of a vapor extraction well designated PT-2 in the asphalt parking area to the southern portion of the Site and a sub-slab suction pit designated SD-1 beneath the central portion of the building;
3. Excavation of trenches for SSD and SVE piping beneath the building slab and in the vicinity of PT-1 and PT-2 utilizing mini-backhoe and a jack hammer;
4. Installation of SVE/SSD system piping aboveground and connecting it to a blower associated with a granulated activated carbon treatment tank for soil vapors situated in the rear northeastern portion of the building;
5. Screening of excavated soil/fill for indications of contamination by visual means, odor, and monitoring with a PID;
6. Monitoring of SVE/SSD system operational integrity prior to start-up;
7. Performance of Post-SVE/SSD System Start-Up outdoor air sampling.

In 2018, the NYSDEC began OM&M operations on the SVE/SSDS as well as continued semi-annual groundwater monitoring of the monitoring well network.

In 2021, groundwater monitoring was ceased. This was determined following several rounds of groundwater sampling of on-site and downgradient monitoring wells. These wells did not exhibit VOCs exceeding groundwater standards for several rounds preceding the cessation.

2.4 Remedial Action Objectives

The Remedial Action Objectives (RAOs) for the Site as listed in the Record of Decision dated March 2016 are as follows:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure from, contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

2.5 Remaining Contamination

During the RI, contaminants of concern (COCs) at the site were identified to be chlorinated VOCs in the groundwater and the soil vapor. COCs were not identified in soil exceeding commercial SCOs. However, residual contamination may still be present beneath the Site building and sanitary system.

As of completion of the remedial action, groundwater monitoring has been ceased due to the monitoring well groundwater results no longer exceeding standards. Table 3a and Figure 4 summarize the results of the last rounds of groundwater samples after completion of the remedial action.

Existing soil vapor exceedances are being treated by the soil vapor extraction/sub-slab depressurization system. The system runs continuously and is checked on a monthly basis to take pressure, vacuum, flow, PID, and temperature readings. Effluent samples are collected quarterly. Measurements from the SVE system are summarized in Table 3b.

3 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 General

Since remaining contamination exists at the site, Institutional Controls (ICs) and Engineering Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC.

This plan provides:

- A description of all IC/ECs on the site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix A) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the site remedy, as determined by the NYSDEC.

3.2 Institutional Controls

A series of ICs is required by the ROD to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use

and development of the site to commercial and industrial uses only. Adherence to these ICs on the site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 5. These ICs are:

- The property may be used for: commercial and industrial use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Suffolk County Department of Health Services to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 5, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the site are prohibited;
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.

3.3 Engineering Controls

3.3.1 Site Cover

Exposure to remaining contamination at the site is prevented by a cover system placed over the site. This cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. Figure 5 presents the location of the cover system. The Excavation Work Plan (EWP) provided in Appendix A outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed, and any underlying remaining contamination is disturbed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the site and provided in Appendix D. Any disturbance of the site's cover system must be overseen by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

3.3.2 Soil Vapor Extraction System/Sub-slab Depressurization system

Migration of soil vapor and remediation of soil is mitigated with the construction of a Sub-Slab Depressurization and Soil Vapor Extraction system. The SSD/SVE system is a permanent EC for the site. The SSD consists of a sub-slab suction pit designated SD-1 and installed in the central portion of the building at the Site. The SVE system consists of two soil vapor extraction wells designated PT-1 and located in the northern portion of the Site and PT-2 located in the asphalt parking area in the southern portion. SD-1 consisted of a sub-slab cavity of 2 feet by 2 feet in area by 1 foot in depth. A 4-inch diameter open-ended PVC pipe was installed in the SSD pit. PT-1 and PT-2 consisted each of 1-inch PVC screen installed to a depth of 12 feet below grade and finished at grade with a 5-inch limited access manhole cover.

The suction pit SD-1, PT-1 and PT-2 were all connected to 2-inch schedule 40 PVC piping routed underground within trenches. The underground piping for PT-1 runs horizontally within trenches excavated in the asphalt area in northern portion of the site toward the northern wall of the building. The underground piping for PT-2 runs horizontally within trenches excavated in the asphalt parking area in the southern portion toward the southeast corner of the building and then runs in trenches across the eastern portion of the Site. The underground piping for SD-1 runs horizontally within trenches excavated in the slab in the eastern portion of the building. At the exit of the building, underground piping SD-1 runs in the same trench excavated in the eastern portion of the Site. At the approach of the northeast corner of the building, all underground piping is then connected to extension pipes aboveground, which are then connected to a 4.5 HP regenerative blower, R6 Series manufactured by Gast, with a maximum flow rate of 232 CFM and a maximum vacuum rating of 60 inches of water blower system. The three pipes from PT-1, PT-2 and SD-1 converge via 2-inch diameter PVC pipes into one influent, which is connected to a moisture separator and particle filter placed prior to the blower.

The SSD/SVE system assembly is equipped with a visible and audible alarm indicating loss of system vacuum or system malfunctioning due to mechanical or electrical failure. The alarm is connected to SSD pipe located inside Beau Brummel Cleaners.

Appropriate stickers indicating the content of SSD/SVE pipes, purpose of alarm, and contact numbers in case of emergency for immediate assistance were mounted on visible portions of the SSD/SVE piping network. There is also an automatic dialer alarm which alerts the NYSDEC's contractors to a loss in vacuum or electricity. The contractor is instructed to immediately contact the NYSDEC project manager should this occur.

Procedures for operating and maintaining the SSD/SVE system are documented in the Operation and Maintenance Plan (Section 5 of this SMP). Procedures for monitoring the system are included in the Monitoring Plan (Section 4 of this SMP). The Monitoring Plan also addresses severe condition inspections in the event that a severe condition, which may affect controls at the site, occurs.

3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10.

3.3.3.1 – Site Cover

The composite cover system is a permanent control. The quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

3.3.3.2 - Soil Vapor Extraction System/ Sub-Slab Depressurization (SVE/SSD) System

The SVE/SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that the SVE/SSD system may no longer be required, a proposal to discontinue the system will be evaluated. Conditions that may warrant discontinuing the SVE/SSD system include contaminant concentrations in groundwater and/or soil that: (1) reach levels that are consistently below ambient water quality standards or the site SCGs, as appropriate; (2) have become asymptotic to a low level over an extended period of time, as accepted by the NYSDEC; or (3) the NYSDEC has determined that the SVE/SSD system has reached the limit of its effectiveness. This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the site and/or an evaluation of the system performance based on the mass of contaminant that the system removes from the soil. Systems will remain in place and operational until permission to discontinue their use is granted in writing by the NYSDEC.

3.3.3.3 Groundwater Monitoring Wells

Residual groundwater concentrations have been found to be consistently below ambient water quality standards over an extended period. Groundwater sampling has been discontinued.
The monitoring wells will remain in place in order to evaluate the SVE/SSDS shutdown procedure in the future.

4 MONITORING AND SAMPLING PLAN

4.1 General

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of site management for the site are included.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 Site–Wide Inspection

Site-wide inspections will be performed at a minimum of once per year. Modification to the frequency or duration of the inspections will require approval from the NYSDEC. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or

monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix E – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General site conditions at the time of the inspection;
- The site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that site records are up to date.

Inspections of all remedial components installed at the site will be conducted. A comprehensive site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If site records are complete and up to date; and

Reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the site, verbal notice to the NYSDEC must be given by noon of the following day. In addition, an inspection of the site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the site by a qualified environmental professional, as determined by the NYSDEC. Written confirmation must be provided to the NYSDEC within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 Treatment System Monitoring and Sampling

4.3.1 Remedial System Monitoring

Monitoring of the SVE/SSD system will be performed on a routine basis, as identified in Table 4 Remedial System Monitoring Requirements and Schedule (see below). Modification to the frequency or sampling requirements will require approval from the NYSDEC. A visual inspection of the complete system will be conducted during each monitoring event. Unscheduled inspections and/or sampling may take place when a suspected failure of the soil vapor extraction system has been reported or an emergency occurs that is deemed likely to affect the operation of the system. The soil vapor extraction system components to be monitored include, but are not limited to, the components included in Table 4 below.

Table 4 – Remedial System Monitoring Requirements and Schedule

Remedial System Component	Monitoring Parameter	Operating Range	Monitoring Schedule
Blower	Flow Rate	30-80 cfm	Monthly
Blower	Vacuum	~20 in H_2O	Monthly
Effluent	Temperature	Not to Exceed 160°F	Monthly
Effluent	PID Reading	0-5 ppm	Monthly
Hour Meter Reading	Total system hours	N/A	Monthly
Moisture Separator	Gallon of liquid	0-55 gallons	monthly

A complete list of components to be inspected is provided in the Inspection Checklist, provided in Appendix E - Site Management Forms. If any equipment readings are not within their specified operation range, any equipment is observed to be malfunctioning or the system is not performing within specifications; maintenance and repair, as per the Operation and Maintenance Plan, is required immediately.

4.3.2 Remedial System Sampling

Samples shall be collected from the SVE/SSDS on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 5 – Remedial System Sampling Requirements and Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

Table 5 – Remedial System Sampling Requirements and Schedule

Sampling Location	**Analytical Parameters**		
	VOCs 8260	VOC (EPA Method TO-15)	**Schedule**
SVE Effluent		X	Quarterly
Monitoring Wells	X		As Needed

Detailed sample collection and analytical procedures and protocols are provided in Appendix C – QAPP.

4.4 Post-Remediation Media Monitoring and Sampling

Samples shall be collected from the SVE/SSDS on a routine basis. Sampling locations, required analytical parameters and schedule are provided in Table 5 – Remedial System Sampling Requirements and Schedule. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

4.4.1 Groundwater Sampling

Groundwater monitoring will be performed as needed to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The network of monitoring wells has been installed to monitor upgradient, on-site and downgradient groundwater conditions at the site.

Table 6 summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, three

upgradient wells, six on-site wells and six downgradient wells are sampled to evaluate the effectiveness of the remedial system.

Monitoring well construction logs are included in Appendix G of this document.

If biofouling or silt accumulation occurs in the on-site and/or off-site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.4.2 Soil Vapor Sampling

Soil vapor sampling will be performed as needed to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

The sampling frequency may only be modified with the approval of the NYSDEC. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC.

Deliverables for the soil vapor sampling program are specified in Section 7.0 – Reporting Requirements.

4.4.3 Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix E - Site Management Forms. Other observations (e.g., groundwater monitoring well

integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network.

5 OPERATION AND MAINTENANCE PLAN

5.1 General

This Operation and Maintenance Plan provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the site to operate and maintain the soil vapor extraction/ sub-slab depressurization system;
- Will be updated periodically to reflect changes in site conditions or the manner in which the soil vapor extraction/ sub-slab depressurization system is operated and maintained.

Further detail regarding the Operation and Maintenance of the SVE/SSDS is provided in Appendix F - Operation and Maintenance Manual. A copy of this Operation and Maintenance Manual, along with the complete SMP, is to be maintained at the site. This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP.

5.2 Remedial System Performance Criteria

The SVE/SSD System will be monitored at the sampling ports and key system process ports. These locations were chosen to monitor the concentrations of the COCs present in the system and to aid in the operation and maintenance of the SVE system. Monitoring will follow the details outlined in Appendix F – Operation and Maintenance Manual. Equipment used for screening analyses will include a PID and a hand-held anemometer.

5.3 Operation and Maintenance of Soil Vapor Extraction System

The following sections provide a description of the operations and maintenance of the SVE system. Cut-sheets and as-built drawings for the soil vapor extraction system are provided in Appendix F - Operations and Maintenance Manual.

5.3.1 Routine System Operation and Maintenance

The NYSDEC will conduct formal periodic inspections of conditions at the Beau Brummel Cleaners Site and will make a record of these inspections. An Operation and Maintenance

Inspection Form is provided in the O&M Manual and provides a “to-do list” of maintenance, operation, and monitoring activities, as well as creating a record that the activities were successfully completed.

All process equipment shall be maintained in accordance with manufacturer’s instructions.

A copy of an Operations and Maintenance Manual specific to the remedial system is provided in Appendix F.

5.3.2 System Monitoring Devices and Alarms

SVE/SSD system - system monitoring device and alarm notification for SVE vacuum blower failure and an alarm notification for high-high moisture separator level.

The soil vapor extraction system has a warning device to indicate that the system is not operating properly. In the event that the warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the soil vapor extraction system will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

6.0 PERIODIC ASSESSMENTS/ EVALUATIONS

6.1 Climate Change Vulnerability Assessment

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given site and associated remedial systems. Vulnerability assessments provide information so that the site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

A summary of vulnerability assessments will be conducted for the site during periodic assessments, and shall briefly summarize the vulnerability of the site and/or engineering controls to severe storms/weather events and associated flooding.

6.2 Green Remediation Evaluation

NYSDEC’s DER-31 Green Remediation requires that green remediation concepts and techniques be considered during all stages of the remedial program including site management, with the goal of improving the sustainability of the cleanup and summarizing the net environmental benefit of any implemented green technology. This section of the SMP provides a summary of any green remediation evaluations to be completed for the site during site management, and as reported in the Periodic Review Report (PRR).

6.2.1 Timing of Green Remediation Evaluations

For major remedial system components, green remediation evaluations and corresponding modifications will be undertaken as part of a formal Remedial System Optimization (RSO), or at any time that the Project Manager feels appropriate, e.g. during significant maintenance events or in conjunction with storm recovery activities.

Modifications resulting from green remediation evaluations will be routinely implemented and scheduled to occur during planned/routine operation and maintenance activities. Reporting of these modifications will be presented in the PRR.

6.2.2. Remedial Systems

Remedial systems will be operated properly considering the current site conditions to conserve materials and resources to the greatest extent possible. Consideration will be given to operating rates and use of consumables. Spent materials will be sent for recycling, as appropriate.

6.2.3 Frequency of System Checks, Sampling and Other Periodic Activities

Transportation to and from the Site and use of consumables in relation to visiting the Site in order to conduct system checks and or collect samples and shipping samples to a laboratory for analyses have direct and/or inherent energy costs. The schedule and/or means of these periodic activities have been prepared so that these tasks can be accomplished in a manner that does not impact remedy protectiveness but reduces expenditure of energy or resources.

Consideration shall be given to:

- Reduced sampling frequencies;
- Reduced site visits and system checks;
- Installation of remote sensing/operations and telemetry;
- Coordination/consolidation of activities to maximize foreman/labor time; and
- Use of mass transit for site visits, where available.

6.2.4 Metrics and Reporting

Metrics reporting for green remediation is required for state-funded projects however it is strongly recommended for all other sites.

As discussed in Section 7.0 and as shown in Appendix E – Site Management Forms, information on energy usage, solid waste generation, transportation and shipping, water usage and land use and ecosystems will be recorded to facilitate and document consistent implementation of green remediation during site management and to identify corresponding benefits; a set of metrics has been developed.

6.3 Remedial System Optimization

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available.

An RSO will provide a critique of a site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy.

7.0. REPORTING REQUIREMENTS

7.1 Site Management Reports

All site management inspection, maintenance and monitoring events will be recorded on the appropriate site management forms provided in Appendix E. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 7 and summarized in the Periodic Review Report.

Table 7: Reporting Summary/Schedule

Task/Report	Reporting Frequency*
Inspection Report	Monthly
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);
- Type of samples collected (e.g., sub-slab vapor, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;

- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 Periodic Review Report

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after No Further Action Letter is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the Department or at another frequency as may be required by the Department. In the event that the site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the site described in Appendix B -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the site.
- Results of the required annual site inspections and severe condition inspections, if applicable.
- All applicable site management forms and other records generated for the site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.
- A site evaluation, which includes the following:
  - The compliance of the remedy with the requirements of the site-specific RAWP, ROD or Decision Document;
  - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;

- Any new conclusions or observations regarding site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;

- Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and

- Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.

- The overall performance and effectiveness of the remedy.

If applicable:

- A performance summary for all treatment systems at the site during the calendar year, including information such as:

  - The number of days the system operated for the reporting period;

  - The average, high, and low flows;

  - The contaminant mass removed;

  - A description of breakdowns and/or repairs along with an explanation for any significant downtime;

  - A description of the resolution of performance problems;

  - Alarm conditions;

  - Trends in equipment failure;

  - A summary of the performance, effluent and/or effectiveness monitoring; and

  - Comments, conclusions, and recommendations based on data evaluation.

7.2.1 Certification of Institutional and Engineering Controls

Certification of Institutional and Engineering Controls will be included in the Periodic Review Report. If the remedy includes any engineering controls, include the following:

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"*For each institutional or engineering control identified for the site, I certify that all of the following statements are true:*

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control;*
- *Access to the site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative] ."

The signed certification will be included in the Periodic Review Report.

The Periodic Review Report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located and the NYSDOH Bureau of Environmental Exposure

Investigation. The Periodic Review Report may need to be submitted in hard-copy format, as requested by the NYSDEC project manager.

7.3 Corrective Measures Work Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a Corrective Measures Work Plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC.

7.4 Remedial Site Optimization Report

In the event that an RSO is to be performed (see Section 6.3, upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is provided in Appendix H. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – “Technical Guidance for Site Investigation and Remediation”.

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

AECOM, 2009. Final Site Characterization Report for Beau Brummel Cleaners. December 2009.

Hydro Tech Environmental, Corp., 2011. Records Search Report for Beau Brummel Cleaners, July 11, 2011.

Hydro Tech Environmental, Corp., 2012. Interim Remedial Measure Report for Beau Brummel Cleaners, September 2012.

AECOM, 2016. Final Remedial Investigation Report for Beau Brummel Cleaners, February 2016.

AECOM, 2016. Final Feasibility Study for Beau Brummel Cleaners, February 2016.

NYSDEC, 2016. Record of Decisions, Beau Brummel Cleaners, March 2016.

Hydro Tech Environmental, Corp., IRM Construction Completion Report, Beau Brummel Cleaners, April 2016.

EAR, 2022. Annual Report of Site Activities for 2021, Beau Brummel Cleaners, January 2021.

Tables

Table 1. Notifications
Beau Brummel Cleaners
Site 152211

Name	Contact Information
Melissa Sweet ,NYSDEC Project Manager	(518) 402-9614 melissa.sweet@dec.ny.gov
Girish Desai, NYSDEC Regional Hazardous Waste Remediation Engineer	(631) 444-0243 girish.desai@dec.ny.gov
Kelly Lewandowski, NYSDEC Site Control	(518) 402-9569 kelly.lewandowski@dec.ny.gov

*Notifications are subject to change and will be updated as necessary

Table 2. Groundwater Elevation Measurements
Beau Brummel Cleaners
Site 152211
2020, 2019, 2018

Well ID	Date Collected	Casing Elevation (ft)	Depth to Water (ft)	Total Well Depth (ft)	Calculate GWEL (ft)
MW-2D	11/2/2020	150.66	101.18	128.8	49.48
MW-2I	11/2/2020	150.56	101.38	114.32	49.18
MW-3D	11/2/2020	148.48	99.35	128.9	49.13
MW-3I	11/2/2020	148.8	99.05	113.56	49.75
MW-5S	11/2/2020	147.56	97.98	100.65	49.58
MW-6D	11/2/2020	146.39	97.05	123.85	49.34
MW-8D	11/2/2020	148.28	97.92	132.5	50.36
MW-8S	11/2/2020	148.47	98.11	107.9	50.36
MW-2S	5/13/2019	150.46	97.42	102.32	53.04
MW-3S	5/13/2019	148.96	95.95	101.05	53.01
MW-5D	5/13/2019	147.56	94.87	128.17	52.69
MW-5I	5/13/2019	147.2	94.82	111.82	52.38
MW-6S	5/13/2019	146.32	93.6	99.11	52.72
MW-6I	5/13/2019	146.23	102.61	109.18	43.62
MW-1D	1/15/2018	150.14	103.81	129.6	46.33
MW-1I	1/15/2018	149.66	103.63	114.48	46.03
MW-1S	1/15/2018	150.22	Dry	103.8	-
MW-4D	1/16/2018	148.53	102.01	127.4	46.52
MW-4I	1/16/2018	148.67	102.14	113.23	46.53
MW-4S	1/16/2018	148.61	Dry	100.71	-
MW-7D	1/15/2018	146.9	101.44	122.9	45.46
MW-7I	1/15/2018	146.85	98.98	114.18	47.87
MW-7S	1/15/2018	146.84	Dry	99	-

TABLE 3a

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Sampling Laboratory Analytical Results (µg/L)
TestAmerica, Inc.
Method: SW8260C

Location	Date Collected	Acetone	Chloromethane	Tetrachloroethene	Toluene	Total BTEX	Total VOCs
MW-2D	11/02/20	<5	<1	<1	**0.54 J**	**0.54**	**0.54**
MW-2I	11/02/20	<5	<1	<1	<1	<5	<121
MW-3D	11/02/20	<5	**0.71 J**	**1.00**	<1	<5	**2.00**
MW-3I	11/02/20	<5	<1	<1	**0.40 J**	**0.40**	**0.40**
MW-6D	11/02/20	**10.00**	<1	<1	**0.70 J**	**0.70**	**11.00**
MW-8D	11/02/20	<5	<1	<1	**0.55 J**	**0.55**	**0.55**
MW-8S	11/02/20	<5	<1	**0.52 J**	**0.55 J**	**0.55**	**1.00**
NYSDEC TOGS 1.1.1 Class GA Standard/Guidance		**50.00**	**5.00**	**5.00**	**5.00**	nv	nv

Notes:
J - Laboratory estimated value.
nv - No established value.

The chemicals listed below were reported below the LRL:

1,1 Dichloroethane	Benzene	Dichlorodifluoromethane	Dichlorodifluoromethane
1,1 Dichloroethene	Bromochloromethane	Ethylbenzene	Ethylbenzene
1,1,1 Trichloroethane	Bromodichloromethane	Freon 113	Freon 113
1,1,2 Trichloroethane	Bromoform	Isopropylbenzene	Isopropylbenzene
1,1,2,2 Tetrachloroethane	Bromomethane	m + p Xylene	m + p Xylene
1,2 Dibromoethane	c 1,3 Dichloropropene	Methyl acetate	Methyl acetate
1,2 Dichlorobenzene	Carbon Disulfide	Methyl Ethyl Ketone	Methyl Ethyl Ketone
1,2 Dichloroethane	Carbon Tetrachloride	Methylene Chloride	Methylene Chloride
1,2 Dichloropropane	Chlorobenzene	MTBE	MTBE
1,2,3 Trichlorobenzene	Chloroethane	o-Xylene	o-Xylene
1,2,4 Trichlorobenzene	Chloroform	Styrene	Styrene
1,3 Dichlorobenzene	cis-1,2-Dichloroethene	t 1,3 Dichloropropene	t 1,3 Dichloropropene
1,4 Dichlorobenzene	Cyclohexane	trans-1,2-Dichloroethene	trans-1,2-Dichloroethene
1,4-Dioxane	Cyclohexane, methyl-	Trichloroethylene	Trichloroethylene
2-Hexanone	Dibromochloromethane	Trichlorofluoromethane	Trichlorofluoromethane
4-Methyl-2-Pentanone	Dibromochloropropane	Vinyl Chloride	Vinyl Chloride

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Air Flow Rates (cfm)

Date	Air Flow (cfm)						
	PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust	
				Pre-KO	Post-KO	Pre-Carbon	Post-Carbon
01/29/18	-	-	-	-	-	-	-
02/27/18	-	-	-	-	-	-	-
03/29/18	-	-	-	-	-	-	-
04/25/18	65.0	36.0	32.5	126.0	-	-	111.0
04/27/18	-	34.0	50.0	over	-	-	-
07/25/18	56.0	36.0	33.0	**125.0**	-	-	127.0
08/23/18	50.0	30.0	31.0	**111.0**	-	-	over
09/13/18	-	-	-	-	-	-	-
09/25/18	48.0	mst	60.0	over	-	93.0	79.0
10/25/18	49.0	31.0	28.0	**108.0**	-	110.0	-
11/30/18	65.0	48.0	31.0	**144.0**	-	103.0	68.5
12/28/18	80.0	60.0	54.0	**194.0**	-	over	over
02/06/19	51.0	29.0	30.0	**110.0**	-	over	over
03/01/19	60.0	mst	34.0	over	-	over	over
03/28/19	60.0	38.0	35.0	**133.0**	-	over	-
04/25/19	62.0	60.0	34.0	**156.0**	-	over	-
05/31/19	60.0	34.0	54.0	**148.0**	-	over	-
06/27/19	57.0	32.0	35.0	**124.0**	-	over	-
08/01/19	60.0	26.0	28.0	**114.0**	-	over	-
08/28/19	33.0	60.0	62.0	188.0	202.0	134.0	93.0
09/26/19	30.0	39.0	-	over	130.0	-	127.0
* 10/31/19	57.0	32.0	36.0	**125.0**	-	over	
12/05/19	64.0	36.0	30.0	**130.0**	183.0	201.0	
01/03/20	58.0	33.0	37.0	**128.0**	over	over	
02/14/20	14.0	7.0	6.0	16.0	over	over	
07/16/20	28.0	52.0	34.0	**114.0**	over	over	
08/27/20	67.0	over	over	128.0	154.0	119.0	
09/24/20	54.0	35.0	41.0	**130.0**	over	-	
11/05/20	64.0	52.0	31.0	152.0	158.0	157.0	
12/10/20	90.0	mst	40.0	125.0	166.0	126.0	
01/14/21	71.0	mst	60.0	131.0	165.0	157.0	
02/25/21	61.0	44.0	46.0	138.0	177.0	142.0	
03/25/21	60.0	33.0	48.0	127.0	160.0	130.0	
04/22/21	59.0	38.0	30.0	160.0	162.0	165.0	
05/20/21	62.0	53.0	39.0	**154.0**	-	148.0	
06/24/21	40.0	38.0	61.0	161.0	170.0	158.0	
07/29/21	38.0	59.0	35.0	138.0	142.0	150.0	
08/24/21	38.0	60.0	44.0	132.0	150.0	161.0	
09/23/21	38.0	60.0	44.0	130.0	148.0	165.0	
10/21/21	59.0	57.0	42.0	**158.0**	-	164.0	

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Air Flow Rates (cfm)

Date	Air Flow (cfm)						
	PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust	
				Pre-KO	Post-KO	Pre-Carbon	Post-Carbon
11/18/21	66.0	34.0	58.0	127.0	165.0	172.0	
12/16/21	61.0	32.0	45.0	126.0	157.0	140.0	
01/20/22	60.0	32.0	51.0	124.0	162.0	144.0	
02/17/22	58.0	34.0	49.0	130.0	161.0	147.0	
03/17/22	61.0	37.0	46.0	140.0	162.0	138.0	
04/28/22	58.0	37.0	61.0	138.0	149.0	144.0	
05/26/22	61.0	42.0	60.0	130.0	149.0	161.0	
06/23/22	38.0	57.0	42.0	133.0	152.0	160.0	
07/28/22	40.0	61.0	33.0	138.0	155.0	160.0	
08/25/22	58.0	34.0	42.0	133.0	155.0	160.0	
09/22/22	58.0	42.0	61.0	139.0	152.0	177.0	
10/27/22	58.0	34.0	62.0	135.0	142.0	155.0	
11/23/22	42.0	61.0	39.0	133.0	152.0	160.0	
12/22/22	55.0	38.0	47.0	133.0	152.0	161.0	

Notes:
over - measurement exceeds meter's measurable range
mst - moisture reported in line
Dash indicates no reading was recorded.
Bold values indicate estimated combined influent flow rate based upon summation of individual vent points. Unable to record flow rate with field instrument.
*Carbon drum was removed from SVE system on 10/17/19.
Air flow sample ports were not installed prior to 04/25/18.
Unable to obtain air flow readings on 09/13/18 due to equipment malfunction.
O+M events were not conducted 02/15/20 – 07/15/20 due to COVID-19 pandemic.

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Vacuum Readings ("H2O)

	Date	Vacuum ("H2O)						
		PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust	
					Pre-KO	Post-KO	Pre-Carbon	Post-Carbon
	01/29/18	-22.0	*	-44.0	-25.9	-	-	-
	02/27/18	-26.0	*	-48.0	-54.0	-	-	0.0
	03/29/18	-20.0	*	-40.0	-25.0	-	-	8.6
	04/25/18	-22.0	0.0	-45.0	-49.5	-	-	-
	04/27/18	-20.1	-20.0	-19.8	-49.3	-	-	6.8
	07/25/18	-16.7	-20.0	-20.3	-49.7	-	-	6.1
	08/23/18	-16.5	-19.4	-19.7	-51.0	-	-	9.8
	09/13/18	-17.8	-20.8	-21.4	-27.3	-	16.5	10.4
	09/25/18	-21.3	-21.4	-21.7	-52.8	-	16.5	10.7
	10/25/18	-15.9	-14.7	-15.0	-59.9	-	12.1	6.8
	11/30/18	-15.5	-13.2	-15.0	-59.4	-	11.4	0.2
	12/28/18	-15.8	-15.7	-17.0	-56.3	-	13.1	7.8
	02/06/19	-21.4	-20.6	-20.9	-52.9	-	19.1	11.2
	03/01/19	-22.9	-22.8	-23.0	-49.6	-	20.0	12.7
	03/28/19	-23.6	-22.9	-21.8	-46.6	-	21.3	13.8
	04/25/19	-21.4	-20.1	-22.3	-45.6	-	20.5	12.7
	05/31/19	-21.8	-21.7	-21.8	-45.5	-	20.1	12.6
	06/27/19	-19.6	-20.6	-20.8	-44.2	-	19.2	12.0
	08/01/19	-12.5	-12.6	-12.8	-37.4	-40.1	21.9	14.0
	08/28/19	-14.3	-14.4	-14.2	-18.3	-42.5	21.6	13.4
	09/26/19	-13.7	-13.8	-14.0	-18.0	-43.0	22.0	-
**	10/31/19	-18.6	-17.4	-18.1	-21.0	-48.5	14.0	
	12/05/19	-27.9	-28.9	-26.1	-29.2	-40.1	15.4	
	01/03/20	*Unable to measure, due to equipment malfunction*						
	02/14/20	-0.7	-1.2	-0.9	-1.1	-15.9	24.8	
	07/16/20	-1.3	-1.1	-1.9	-1.1	-16.4	12.3	
	08/27/20	-39.4	-39.2	-38.1	-46.8	-55.2	10.1	
	09/24/20	-24.9	-24.5	-24.7	-32.0	-46.8	15.6	
	11/05/20	-25.2	-24.1	-25.3	-31.1	-46.3	8.8	
	12/10/20	-26.2	-24.6	-25.1	-31.9	-48.7	15.7	
	01/14/21	-24.6	-24.7	-25.1	-25.6	-45.6	15.8	
	02/25/21	-26.1	-22.6	-22.8	-32.6	-47.8	15.7	
	03/25/21	-25.1	-24.8	-25.0	-31.4	-46.3	15.8	
	04/22/21	-22.9	-23.4	-23.5	-28.9	-50.3	13.6	
	05/20/21	-22.6	-22.5	-22.8	-29.9	-50.3	7.8	
	06/24/21	-23.4	-23.8	-24.1	-30.1	-50.2	14.4	
	07/29/21	-23.5	-23.6	-23.1	-29.5	-50.5	13.6	
	08/24/21	-22.1	-20.2	-21.0	-29.3	-53.0	16.0	
	09/23/21	-22.9	-23.0	-23.3	-29.0	-43.6	13.9	
	10/21/21	-25.6	-25.9	-26.2	-32.4	-45.7	15.8	

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Vacuum Readings ("H2O)

Date	Vacuum ("H2O)						
	PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust	
				Pre-KO	Post-KO	Pre-Carbon	Post-Carbon
11/18/21	-27.0	-27.7	-27.2	-32.8	-46.4	15.0	
12/16/21	-26.1	-25.8	-26.4	-32.2	-45.4	15.4	
01/20/22	-24.2	-25.1	-25.7	-33.1	-44.0	15.2	
02/17/22	-26.0	-26.2	-26.1	-33.0	-45.5	15.0	
03/17/22	-25.7	-25.3	-25.9	-30.0	-44.2	14.8	
04/28/22	-23.8	-23.9	-24.2	-29.7	-47.5	16.0	
05/26/22	-23.5	-23.8	-23.9	-29.9	-46.1	15.2	
06/23/22	-23.8	-23.9	-23.7	-29.3	-47.8	14.9	
07/28/22	-23.3	-23.4	-24.0	-28.6	-44.7	14.9	
08/25/22	-23.1	-23.4	-24.1	-29.0	-46.1	15.2	
09/22/22	-23.9	-24.0	-24.4	-29.0	-46.0	15.4	
10/27/22	-25.7	-26.6	-26.0	-31.5	-42.8	14.5	
11/23/22	-25.8	-25.9	-26.2	-34.1	-44.2	15.0	
12/22/22	-27.1	-28.2	-28.6	-35.9	-46.1	15.2	

Notes:

Dash indicates no reading was recorded.

*Unable to record, vacuum gauge inoperable.

**Carbon drum was removed from SVE system on 10/17/19.

O+M events were not conducted 02/15/20 – 07/15/20 due to COVID-19 pandemic.

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Total VOCs via PID (ppm) & Temp (°F)

	Date	Total VOCs (ppm)							Temp (°F)
		PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust		SVE Exhaust
					Pre-KO	Post-KO	Pre-Carbon	Post-Carbon	
	01/29/18	*	*	*	1.8	*	*	0.7	140.0
	02/27/18	*	*	*	0.0	*	*	1.5	130.0
	03/29/18	*	*	*	2.2	*	*	1.2	150.0
	04/25/18	-	-	-	-	-	-	-	127.0
	04/27/18	0.1	0.7	0.0	0.7	-	-	0.1	140.0
	07/25/18	3.4	1.7	0.6	2.7	-	-	2.8	155.0
	08/23/18	2.2	1.7	0.8	1.7	-	-	2.8	156.0
	09/13/18	1.8	3.2	1.2	4.1	-	2.8	0.0	110.0
	09/25/18	0.4	0.5	0.3	0.5	-	0.7	0.0	156.0
	10/25/18	6.8	3.5	1.5	2.9	-	0.8	0.0	140.0
	11/30/18	2.0	1.8	2.4	1.8	-	2.0	2.0	160.0
	12/28/18	9.4	4.4	3.8	11.1	-	21.1	0.0	145.0
	02/06/19	23.2	21.7	19.8	21.8	-	21.3	6.6	140.0
	03/01/19	23.9	22.2	21.4	30.2	-	23.8	1.8	132.0
	03/28/19	10.1	9.8	9.2	5.8	-	1.6	0.1	139.0
	04/25/19	0.8	0.7	0.3	1.4	-	0.9	0.0	152.0
	05/31/19	0.0	0.2	0.3	0.1	-	0.1	0.2	160.0
	06/27/19	4.6	7.1	5.5	7.7	-	7.9	14.2	170.0
	08/01/19	0.9	0.6	0.7	1.0	1.1	1.4	3.4	166.0
	08/28/19	2.1	7.9	4.7	18.0	18.1	16.8	20.3	154.0
	09/26/19	0.4	0.5	0.3	-	0.9	0.6	1.1	154.0
**	10/31/19	0.8	1.0	0.7	1.4	1.9	3.2		-
	12/05/19	0.0	0.1	0.4	0.1	0.1	0.2		132.0
	01/03/20	0.4	0.3	0.7	1.2	1.3	1.0		122.0
	02/14/20	0.2	0.7	0.4	0.5	0.5	0.6		120.0
	07/16/20	1.6	2.0	1.7	1.9	1.7	1.5		144.0
	08/27/20	*Unable to measure, due to equipment malfunction*							170.0
	09/24/20	0.0	0.0	0.1	0.3	0.0	0.0		152.0
	11/05/20	0.1	0.0	0.7	0.6	0.6	0.4		140.0
	12/10/20	1.0	2.6	2.4	2.1	2.0	6.8		130.0
	01/14/21	0.2	0.2	0.3	0.3	0.7	0.6		126.0
	02/25/21	0.3	0.9	0.4	1.1	1.2	1.1		126.0
	03/25/21	0.8	1.1	0.9	1.8	1.7	1.6		140.0
	04/22/21	0.2	0.1	0.7	1.7	1.7	1.6		145.0
	05/20/21	3.9	5.6	6.3	6.7	-	6.1		162.0
	06/24/21	0.0	0.3	0.1	0.1	0.1	0.0		162.0
	07/29/21	1.0	0.8	0.6	2.1	2.1	1.5		168.0
	08/24/21	0.4	0.8	1.0	1.7	1.7	1.4		172.0
	09/23/21	0.9	5.4	0.8	2.4	2.4	2.1		164.0
	10/21/21	3.1	4.4	3.2	3.6	2.3	5.1		150.0
	11/18/21	0.8	1.2	5.4	6.1	7.2	7.0		142.0
	12/16/21	0.0	1.1	0.0	1.2	1.1	0.9		140.0
	01/20/22	0.4	3.6	0.0	1.5	1.4	1.1		124.0

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Total VOCs via PID (ppm) & Temp (°F)

Date	Total VOCs (ppm)							Temp (°F)
	PT-1	PT-2	SD-1	Combined Influent		SVE Exhaust		SVE Exhaust
				Pre-KO	Post-KO	Pre-Carbon	Post-Carbon	
02/17/22	0.8	1.3	1.7	1.8	1.8	1.0		134.0
03/17/22	0.9	0.1	0.1	1.2	1.1	1.0		138.0
04/28/22	0.8	1.2	0.6	2.3	2.0	2.4		150.0
05/26/22	1.2	0.0	1.1	1.1	1.1	1.0		158.0
06/23/22	0.8	2.9	1.4	1.4	1.3	1.1		160.0
07/28/22	0.7	0.8	1.1	2.4	2.4	2.3		168.0
08/25/22	1.8	5.6	3.2	5.1	5.0	4.9		166.0
09/22/22	1.0	0.9	-	0.9	1.1	0.9		156.0
10/27/22	0.4	0.2	1.6	1.5	1.5	1.4		142.0
11/23/22	0.4	1.2	1.3	1.1	1.1	1.0		138.0
12/22/22	0.0	0.3	0.2	0.3	0.3	0.1		126.0

Notes:

Dash indicates no reading was recorded.

*PID sample ports were not installed prior to 04/25/18.

**Carbon drum was removed from SVE system on 10/17/19.

O+M events were not conducted 02/15/20 – 07/15/20 due to COVID-19 pandemic.

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Duration of Operation

Date	Time Elapsed (hours)	Cumulative Time Elapsed (hours)	Hour Meter	Percent Operation
04/25/18	0	0	0	-
04/27/18	47	47	47	100%
07/25/18	2,136	2,182	2,161	99%
08/23/18	696	2,878	2,854	100%
09/13/18	505	3,383	3,358	100%
09/25/18	286	3,670	3,645	100%
10/25/18	712	4,382	4,358	100%
11/30/18	873	5,255	5,230	100%
12/28/18	671	5,926	5,854	93%
02/06/19	959	6,885	6,790	97%
03/01/19	552	7,438	7,338	99%
03/28/19	648	8,086	7,985	100%
04/25/19	672	8,758	8,657	100%
05/31/19	864	9,622	9,521	100%
06/27/19	648	10,270	10,168	100%
08/01/19	839	11,109	10,990	98%
08/28/19	649	11,758	11,638	100%
09/26/19	697	12,455	12,335	100%
10/31/19	839	13,294	13,173	100%
12/05/19	840	14,134	14,013	100%
01/03/20	696	14,830	14,709	100%
02/14/20	1,008	15,838	15,711	99%
07/16/20	3,672	19,510	18,956	88%
08/27/20	1,009	20,519	19,962	100%
09/24/20	670	21,188	20,476	77%
11/05/20	1,009	22,198	21,109	63%
12/10/20	840	23,038	21,750	76%
01/14/21	840	23,878	22,247	59%
02/25/21	1,008	24,886	23,252	100%
03/18/21	504	25,390	23,755	100%
03/25/21	167	25,557	23,922	100%
04/01/21	168	25,725	24,089	100%
04/08/21	167	25,893	24,256	100%
04/22/21	337	26,229	24,593	100%
05/11/21	456	26,686	25,049	100%
05/20/21	214	26,899	25,262	100%
06/24/21	842	27,741	26,102	100%

TABLE 3b

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Soil Vapor Extraction System
Duration of Operation

Date	Time Elapsed (hours)	Cumulative Time Elapsed (hours)	Hour Meter	Percent Operation
07/29/21	840	28,582	26,941	100%
08/26/21	672	29,254	27,614	100%
09/08/21	312	29,566	27,926	100%
09/23/21	360	29,926	28,286	100%
10/21/21	670	30,596	28,956	100%
11/18/21	674	31,270	29,631	100%
12/16/21	672	31,942	30,303	100%
01/20/22	840	32,781	31,142	100%
02/17/22	672	33,453	31,813	100%
03/17/22	672	34,125	32,476	99%
04/28/22	1,008	35,133	33,483	100%
05/26/22	673	35,805	34,156	100%
06/23/22	671	36,477	34,827	100%
07/28/22	841	37,318	35,667	100%
08/25/22	672	37,989	36,336	100%
09/22/22	671	38,661	36,905	85%
10/27/22	841	39,501	37,745	100%
11/23/22	646	40,148	38,392	100%
12/22/22	697	40,845	39,081	99%

Average percent operation since April 25, 2018: 97%
Average percent operation, January – December 2022: 98%

Notes:

Soil Vapor Extraction (SVE) System was installed and operated by property owner prior to 2018.

Hour meter installed on 04/25/18.

O+M events were not conducted 02/15/20 – 07/15/20 due to COVID-19 pandemic.

Table 5. Post Remediation Sampling Requirements and Schedule
Beau Brummel Cleaners
Site 152211

Sampling Location	Analytical Parameters	Schedule
Monitoring Well MW-1 through MW-8 S, I, D (select wells as necessary)	VOCs, EPA Method 8260	As Necessary
SVE Influent and Effluent	VOCs, Method TO-15	Quarterly

Table 6. Monitoring Well Construction Details
Beau Brummel Cleaners
Site 152211

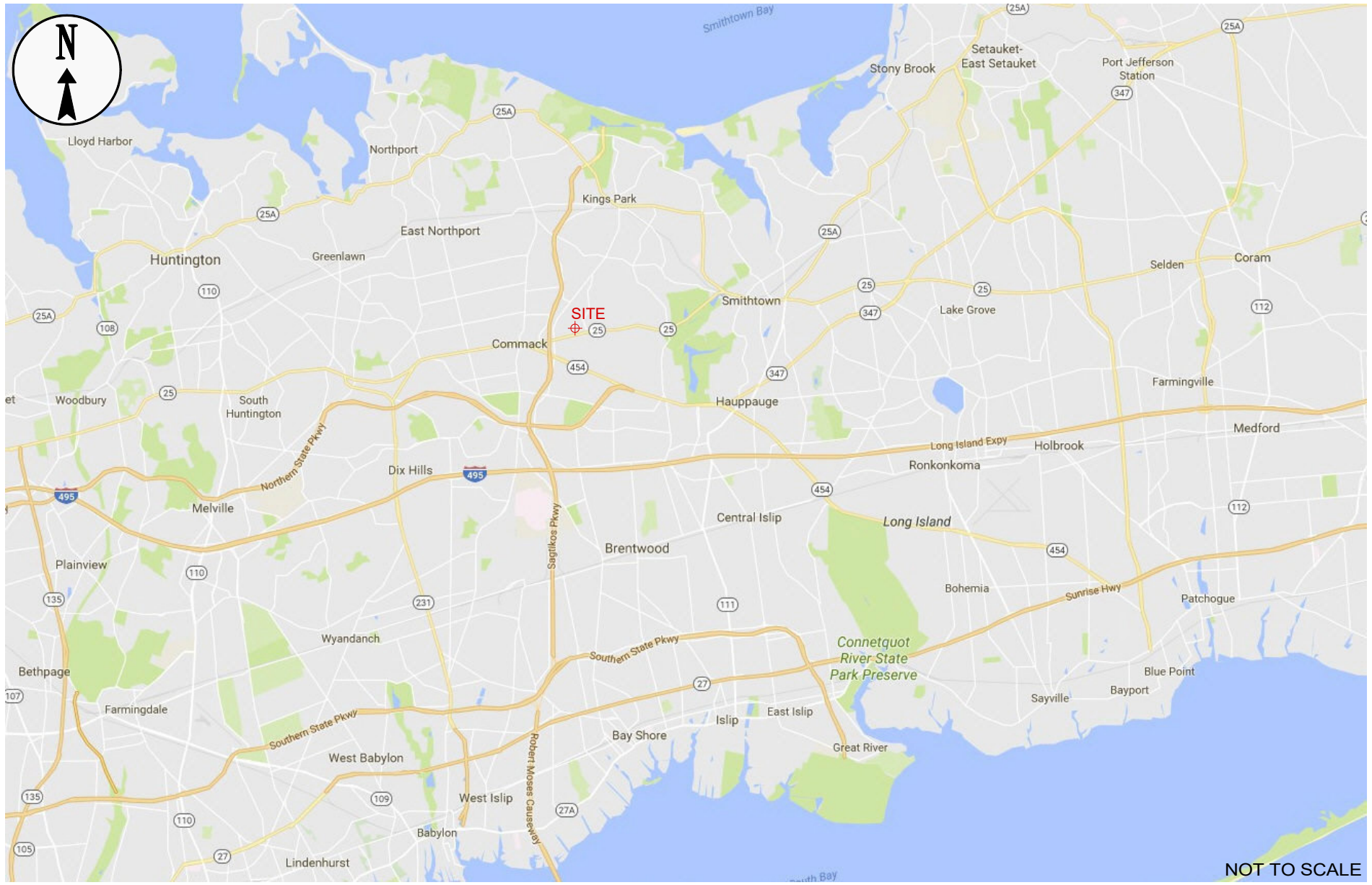
Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-1S	Upgradient	40-50-43.58 73-16-28.51	1	150.37	150.5	97.85	102.85
MW-1I	Upgradient	40-50-43.55 73-16-28.45	1	150.07	150.32	109	114
MW-1D	Upgradient	40-50-43.61 73-16-28.45	1	150.5	150.5	124.06	129.06
MW-2S	On-Site	40-50-43.06 73-16-26.97	1	150.52	150.6	97.29	102.29
MW-2I	On-Site	40-50-43.18 73-16-26.88	1	150.65	150.9	109.4	114.4
MW-2D	On-Site	40-50-43.23 73-16-26.87	1	150.72	150.93	123.83	128.83
MW-3S	On-Site	40-50-42.52 73-16-26.31	1	149.01	149.3	96	101
MW-3I	On-Site	40-50-42.43 73-16-26.28	1	148.53	148.82	109.13	114.13
MW-3D	On-Site	40-50-42.48 73-16-26.32	1	148.85	149.06	124.12	129.12
MW-4S	Cross-Gradient	40-50-41.20 73-16-26.23	1	148.65	148.82	95.44	100.44
MW-4I	Cross-Gradient	40-50-41.25 73-16-26.25	1	148.71	148.85	107.87	112.87
MW-4D	Cross-Gradient	40-50-41.31 73-16-26.27	1	148.6	148.88	122.31	127.31
MW-5S	Downgradient	40-50-41.83 73-16-22.41	1	147.29	147.41	94.44	99.44
MW-5I	Downgradient	40-50-41.92 73-16-22.44	1	147.26	147.5	108.54	113.54
MW-5D	Downgradient	40-50-41.99 73-16-22.46	1	147.62	147.8	122.98	127.98
MW-6S	Downgradient	40-50-43.08 73-16-21.90	1	146.39	146.63	93.68	98.68
MW-6I	Downgradient	40-50-43.08 73-16-21.82	1	146.39	146.63	104.13	109.13
MW-6D	Downgradient	40-50-43.13 73-16-21.91	1	146.41	146.61	119.28	124.28
MW-7S	Downgradient	40-50-39.98 73-16-24.06	1	146.89	147.07	93.97	98.97

Table 6. Monitoring Well Construction Details
Beau Brummel Cleaners
Site 152211

Monitoring Well ID	Well Location	Coordinates (longitude/ latitude)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
MW-7I	Downgradient	40-50-40.02 73-16-24.08	1	146.9	147.11	109.17	114.17
MW-7D	Downgradient	40-50-40.07 73-16-24.09	1	146.96	147.17	117.46	122.46
MW-8S	Downgradient	248181.2058 1185294.618	2	148.47	148.94	95	105
MW-8D	Downgradient	248183.5058 1185301.085	2	148.28	148.82	120	130

Figures

FIGURE 1



ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Site Location Map

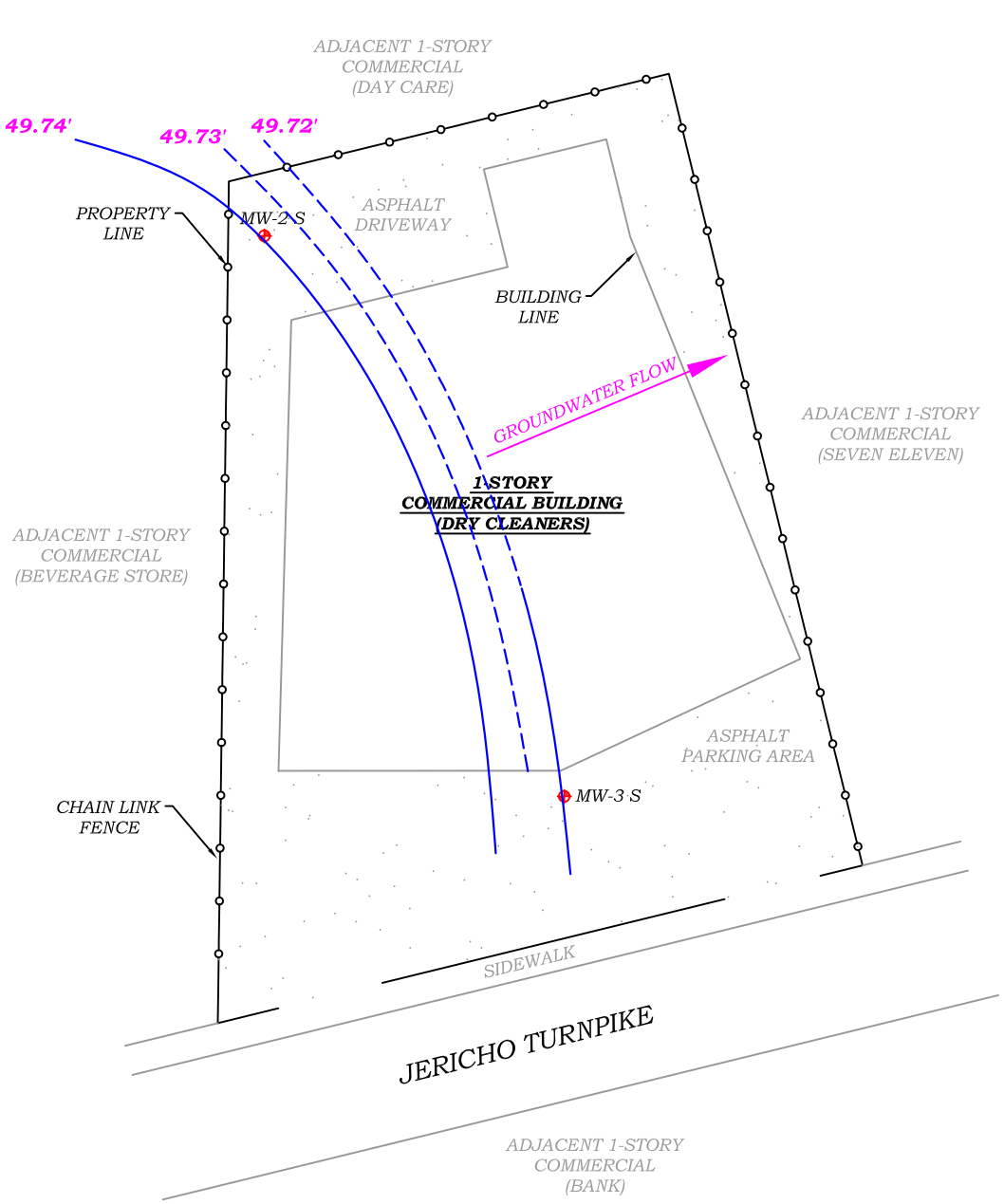
Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

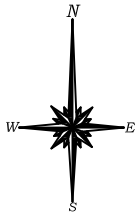
FIGURE 2

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Site Map

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211





LEGEND:

- MONITORING WELL LOCATION (MW)
- GROUNDWATER CONTOUR LINE
- DASHED WHERE INFERRED
- C.I. CONTOUR INTERVAL
- DIRECTION OF GROUNDWATER FLOW

C.I. = 0.01 FEET	
MONITORING WELL I.D.	GROUNDWATER ELEVATION (FT)
MW-2S	49.74
MW-3S	49.72

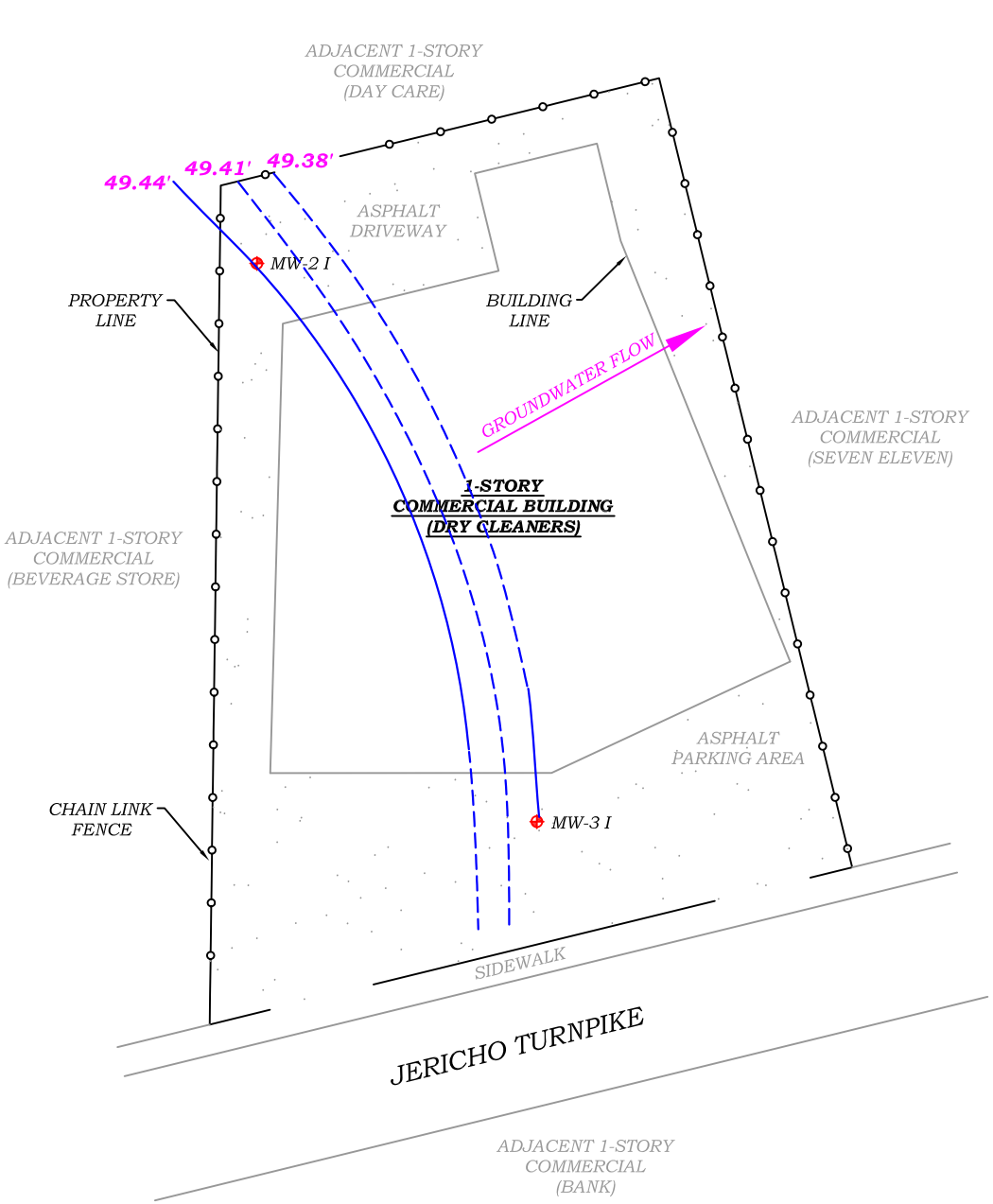
* GROUNDWATER ELEVATIONS ADOPTED FROM SITE CHARACTERIZATION REPORT DATED FEBRUARY 2016

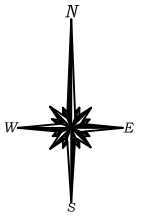
0' 20' 40'

SCALE IN FEET (FT.)

2094 Jericho Tpke, Commack, NY.

FIGURE 3a: GROUNDWATER FLOW DIAGRAM (SHALLOW ZONE)
BEAU BRUMMEL CLEANERS
SITE ID # 152211





LEGEND:

- MONITORING WELL LOCATION (MW)
- GROUNDWATER CONTOUR LINE
- DASHED WHERE INFERRED
- C.I. CONTOUR INTERVAL
- DIRECTION OF GROUNDWATER FLOW

C.I. = 0.03 FEET	
MONITORING WELL I.D.	GROUNDWATER ELEVATION (FT)
MW-2I	49.44
MW-3I	49.38

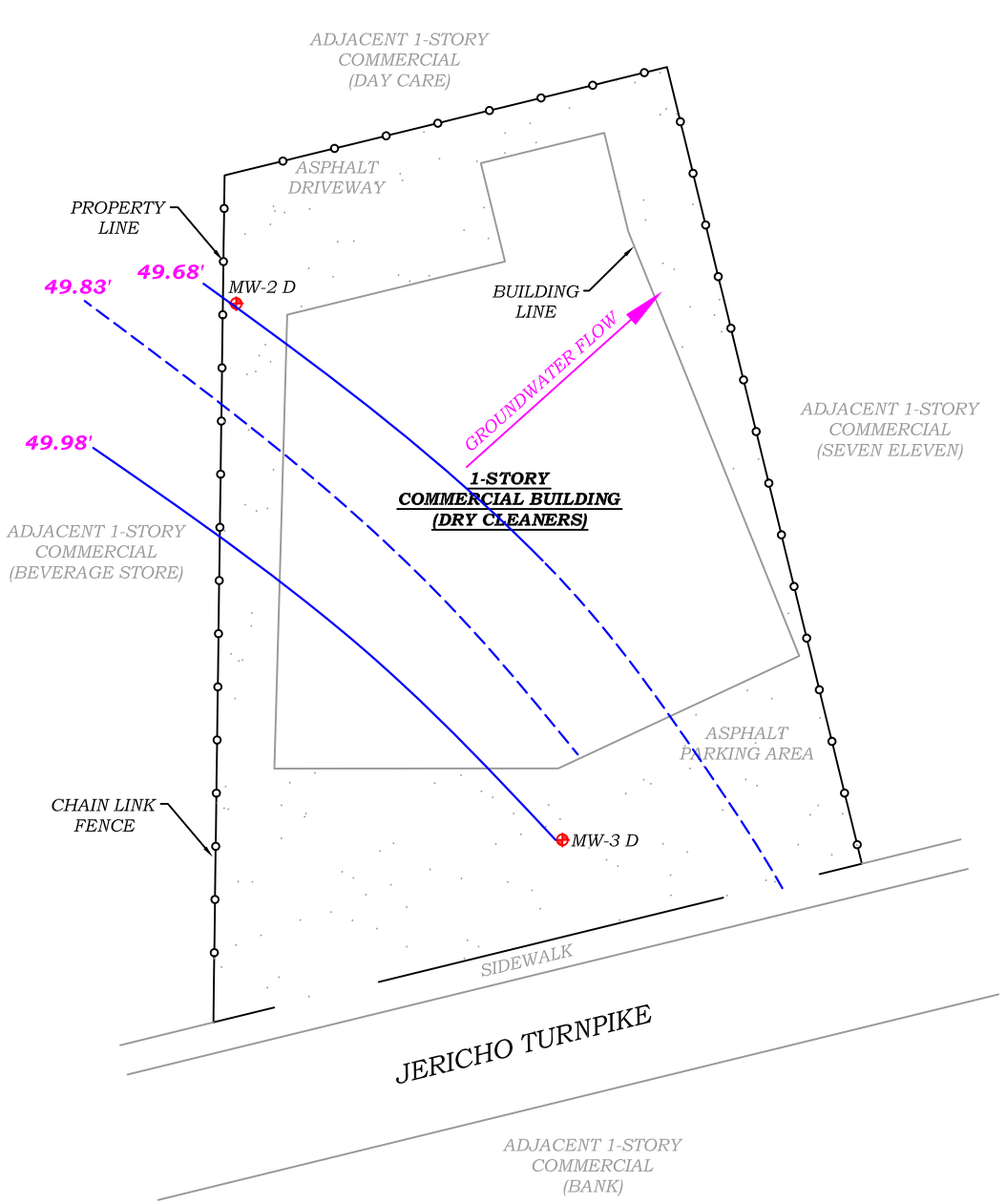
* GROUNDWATER ELEVATIONS ADOPTED FROM SITE CHARACTERIZATION REPORT DATED FEBRUARY 2016

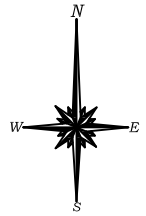
0' 20' 40'

SCALE IN FEET (FT.)

2094 Jericho Tpke, Commack, NY.

FIGURE 3b: GROUNDWATER FLOW DIAGRAM (INTERMEDIATE ZONE)
BEAU BRUMMEL CLEANERS
SITE ID # 152211





LEGEND:

- MONITORING WELL LOCATION (MW)
- GROUNDWATER CONTOUR LINE
- DASHED WHERE INFERRED
- C.I. CONTOUR INTERVAL
- DIRECTION OF GROUNDWATER FLOW

C.I. = 0.15 FEET	
MONITORING WELL I.D.	GROUNDWATER ELEVATION (FT)
MW-2D	49.68
MW-3D	49.98

* GROUNDWATER ELEVATIONS ADOPTED FROM SITE CHARACTERIZATION REPORT DATED FEBRUARY 2016

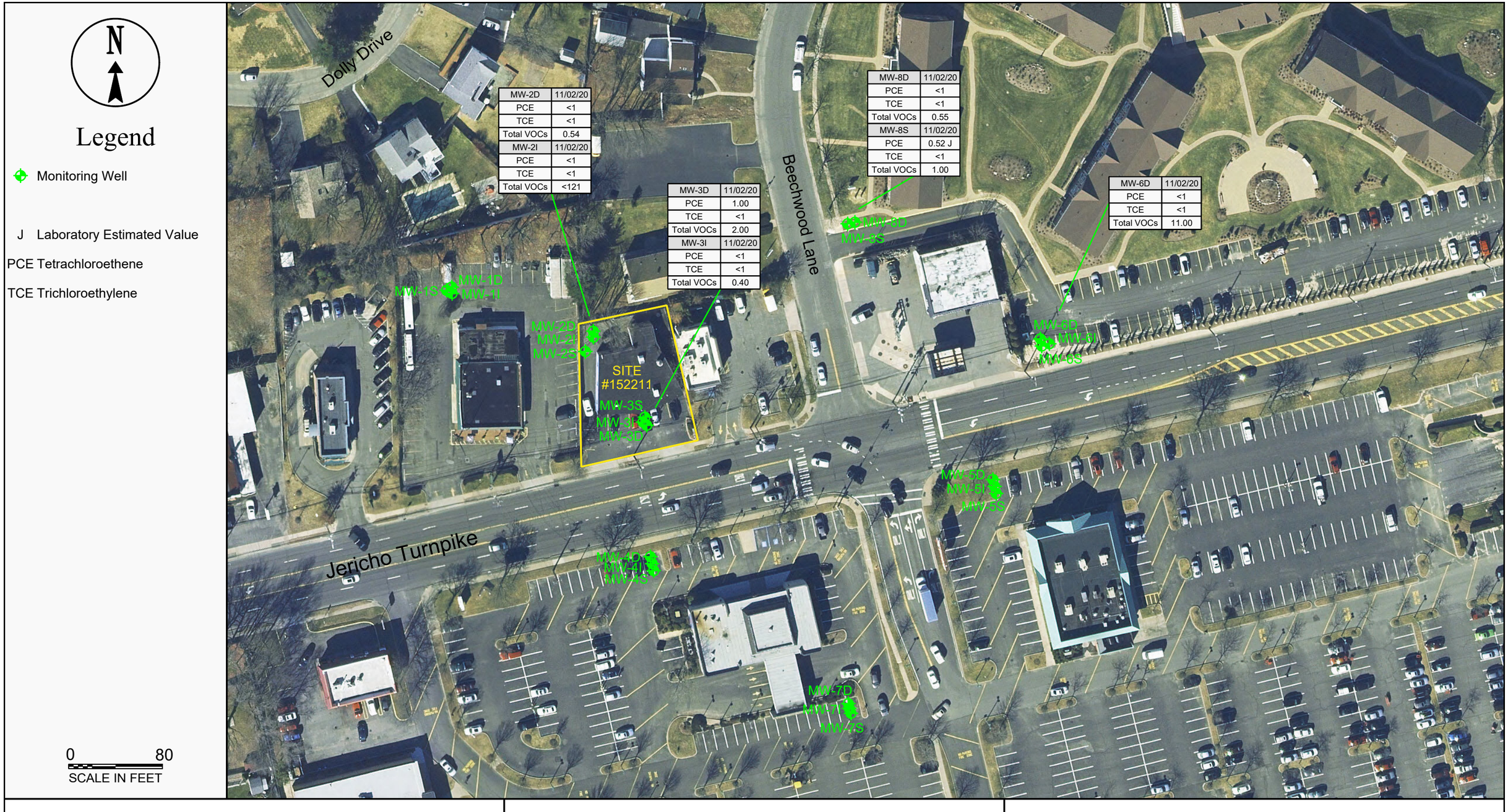
0' 20' 40'

SCALE IN FEET (FT.)

2094 Jericho Tpke, Commack, NY.

FIGURE 3c: GROUNDWATER FLOW DIAGRAM (DEEP ZONE)
BEAU BRUMMEL CLEANERS
SITE ID # 152211

FIGURE 3



ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Analytical Results (µg/L)
Monitoring Well Network Samples
November 2020
TestAmerica Laboratories, Inc.

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

FIGURE 5

N

Legend

Monitoring Well

J Laboratory Estimated Value

nd Not Detected

na Not Analyzed

ns Not Sampled

PCE Tetrachloroethene

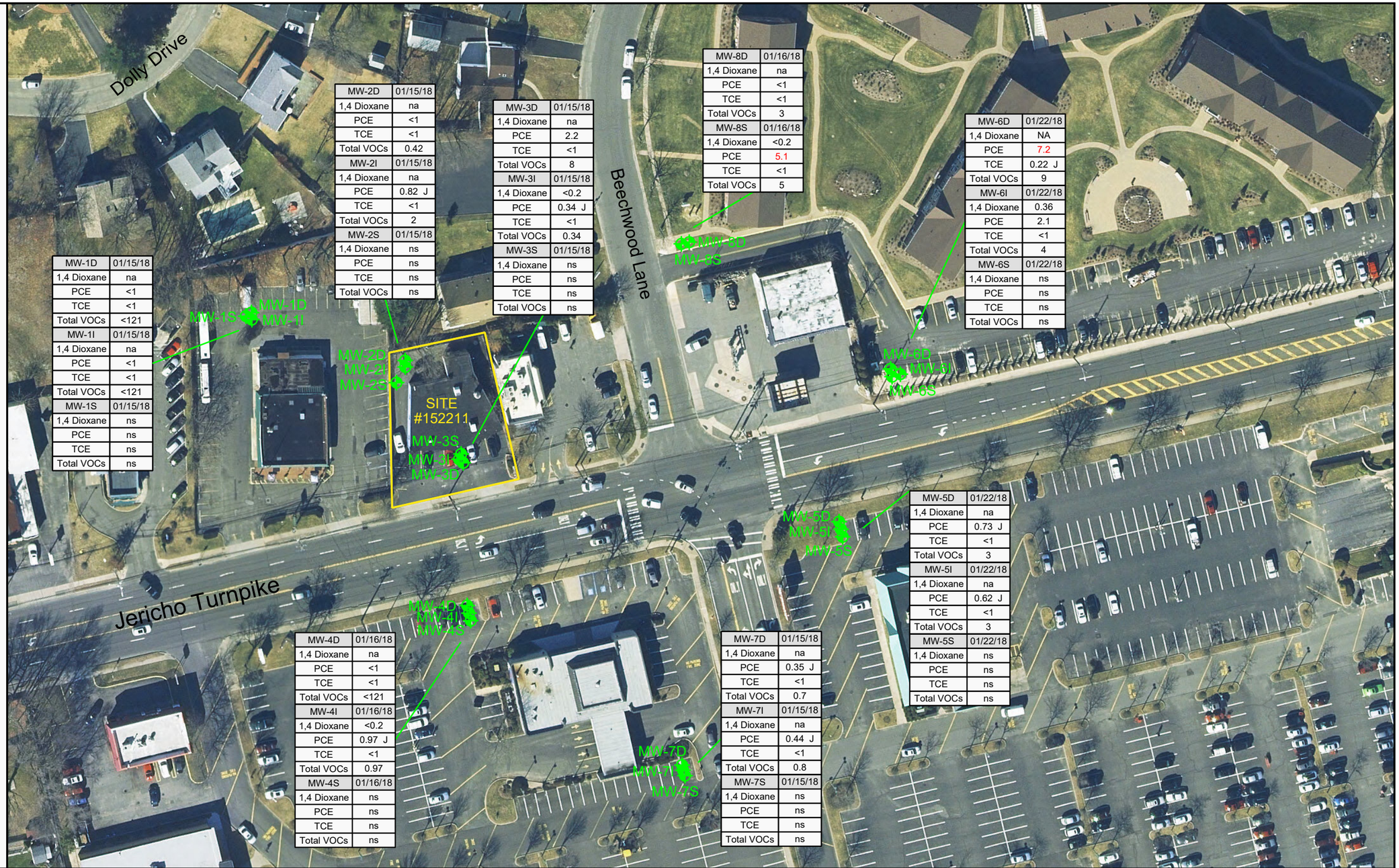
TCE Trichloroethylene

Notes:

-Red values exceed NYSDEC TOGS standard/guidance values.

0 80

SCALE IN FEET



MW-1D	01/15/18
1,4 Dioxane	na
PCE	<1
TCE	<1
Total VOCs	<121
MW-1I	01/15/18
1,4 Dioxane	na
PCE	<1
TCE	<1
Total VOCs	<121
MW-1S	01/15/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-2D	01/15/18
1,4 Dioxane	na
PCE	<1
TCE	<1
Total VOCs	0.42
MW-2I	01/15/18
1,4 Dioxane	na
PCE	0.82 J
TCE	<1
Total VOCs	2
MW-2S	01/15/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-3D	01/15/18
1,4 Dioxane	na
PCE	2.2
TCE	<1
Total VOCs	8
MW-3I	01/15/18
1,4 Dioxane	<0.2
PCE	0.34 J
TCE	<1
Total VOCs	0.34
MW-3S	01/15/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-8D	01/16/18
1,4 Dioxane	na
PCE	<1
TCE	<1
Total VOCs	3
MW-8S	01/16/18
1,4 Dioxane	<0.2
PCE	5.1
TCE	<1
Total VOCs	5

MW-6D	01/22/18
1,4 Dioxane	NA
PCE	7.2
TCE	0.22 J
Total VOCs	9
MW-6I	01/22/18
1,4 Dioxane	0.36
PCE	2.1
TCE	<1
Total VOCs	4
MW-6S	01/22/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-5D	01/22/18
1,4 Dioxane	na
PCE	0.73 J
TCE	<1
Total VOCs	3
MW-5I	01/22/18
1,4 Dioxane	na
PCE	0.62 J
TCE	<1
Total VOCs	3
MW-5S	01/22/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-4D	01/16/18
1,4 Dioxane	na
PCE	<1
TCE	<1
Total VOCs	<121
MW-4I	01/16/18
1,4 Dioxane	<0.2
PCE	0.97 J
TCE	<1
Total VOCs	0.97
MW-4S	01/16/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

MW-7D	01/15/18
1,4 Dioxane	na
PCE	0.35 J
TCE	<1
Total VOCs	0.7
MW-7I	01/15/18
1,4 Dioxane	na
PCE	0.44 J
TCE	<1
Total VOCs	0.8
MW-7S	01/15/18
1,4 Dioxane	ns
PCE	ns
TCE	ns
Total VOCs	ns

ENVIRONMENTAL ASSESSMENT & REMEDIATIONS

Groundwater Analytical Results (µg/L)
Monitoring Well Network Samples
January 2018
TestAmerica Laboratories, Inc.

Beau Brummel Cleaners
2049 Jericho Turnpike
Commack, NY
NYSDEC Site #152211

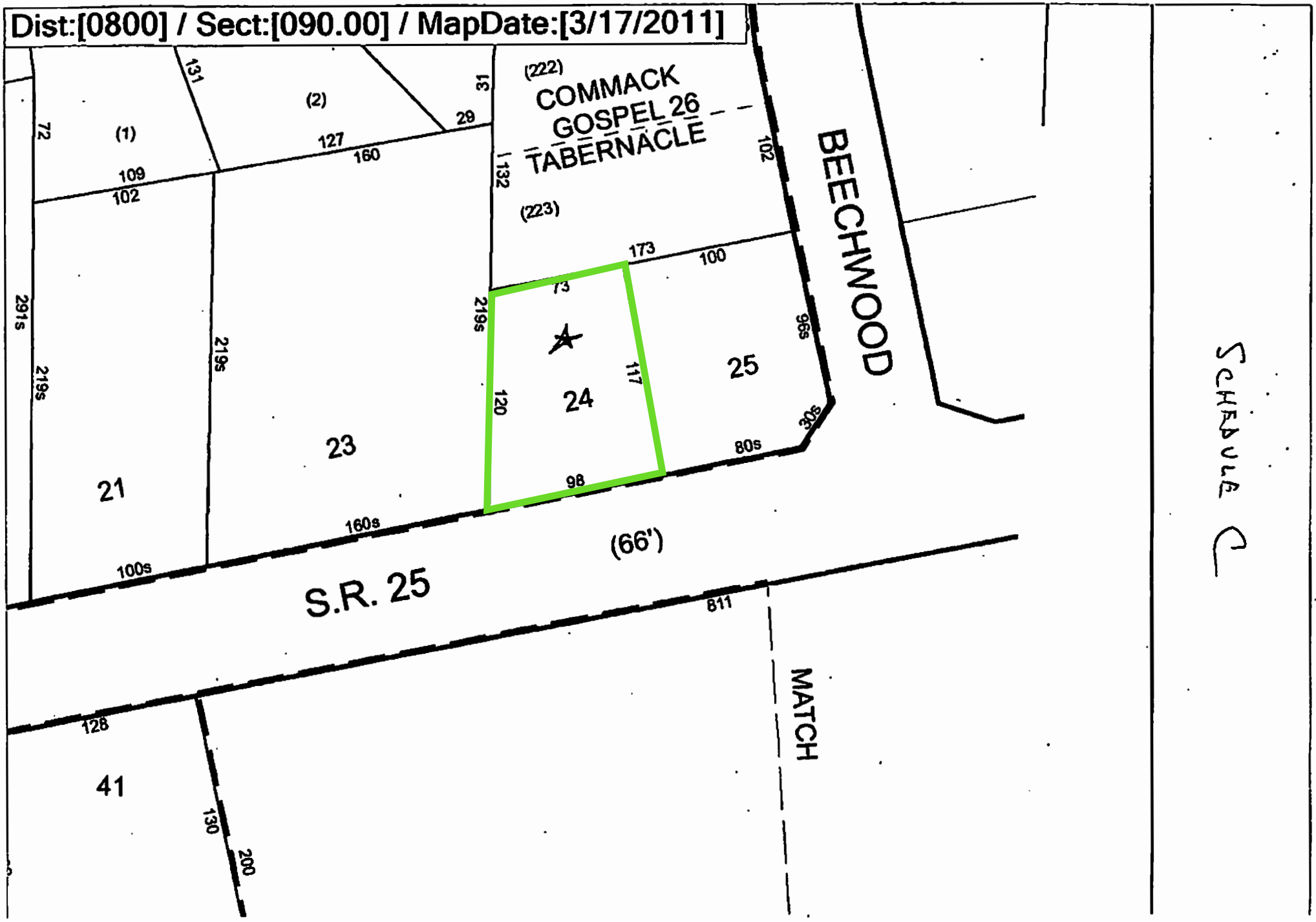
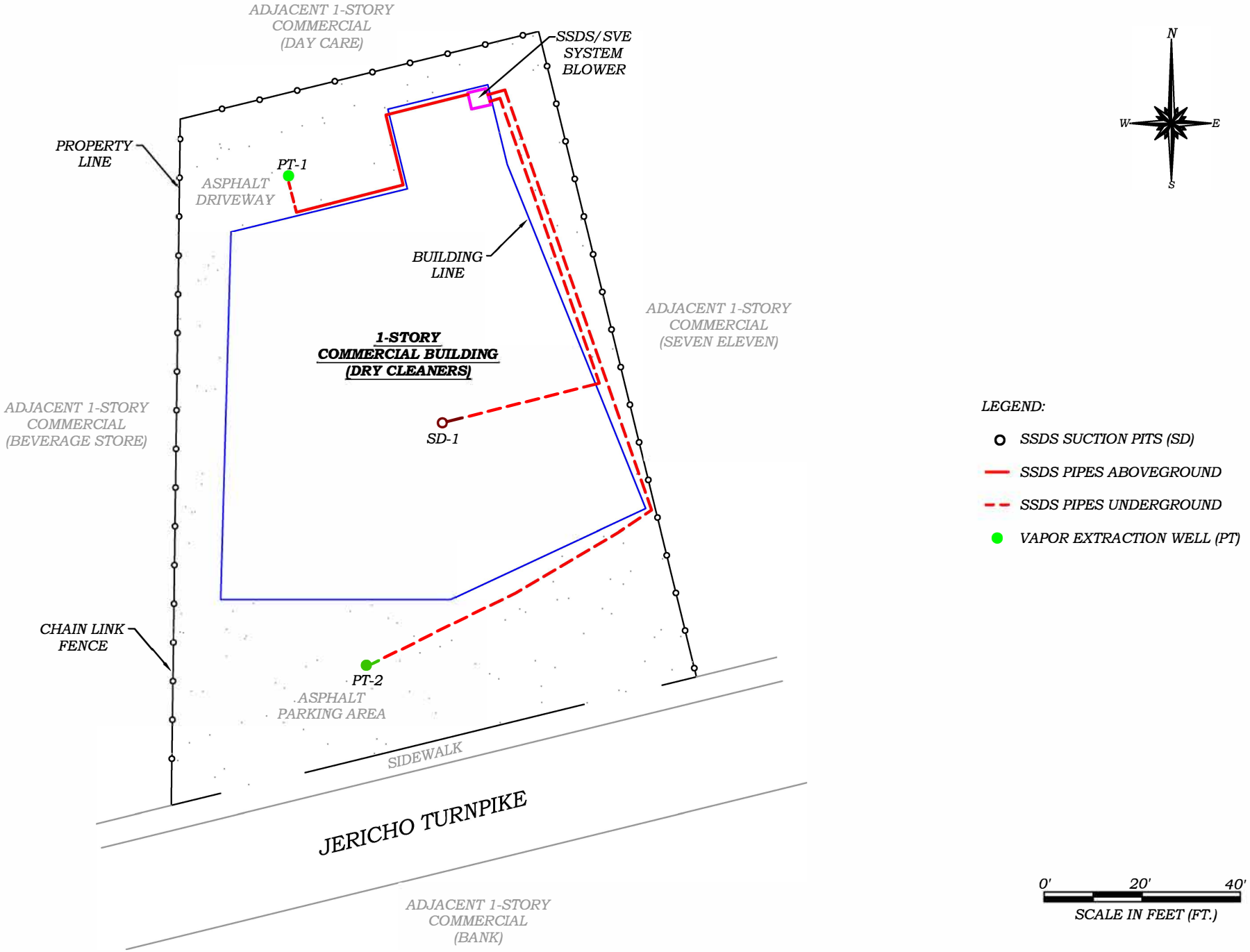
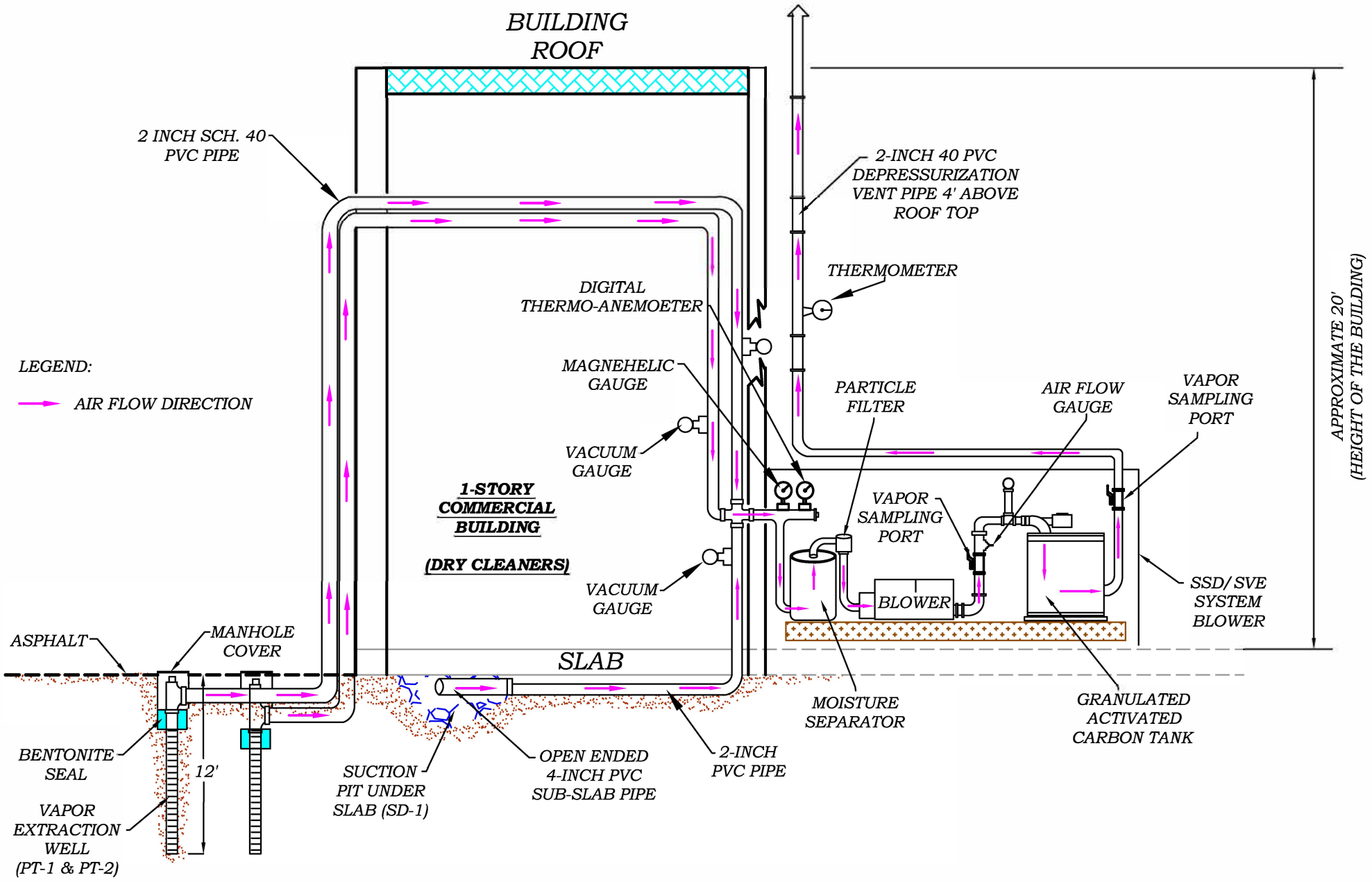


Figure 5: Institutional Control Boundaries



2049 Jericho Tpke, Commack, NY.

FIGURE 6a: PLAN OF INSTALLED SSDS/SVE SYSTEM
NETWORK BEAU BRUMMEL CLEANERS
SITE ID # 152211



2049 Jericho Tpke, Commack, NY.

FIGURE 6b: AS-BUILD VAPOR EXTRACTION WELL & SUCTION PITS
DETAILS OF SSDS/ SVE SYSTEMS
BEAU BRUMMEL CLEANERS
SITE ID # 152211

APPENDIX A – EXCAVATION WORK PLAN (EWP)

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the site owner or their representative will notify the NYSDEC. Table A-1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information.

Table A-1: Notifications*

Melissa Sweet, Project Manager	(518) 402-9614, Melissa.sweet@dec.ny.gov
Girish Desai, Regional Hazardous Waste Remediation Engineer	(631) 444-0243 girish.desai@dec.ny.gov
NYSDEC Site Control	(518) 402-9553 Kelly.lewanowski@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;

- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix D of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed by a qualified environmental professional during all excavations into known or potentially contaminated material (remaining contamination). Soil screening will be performed when invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. Further discussion of off-site disposal of materials and on-site reuse is provided in Section A-7 of this Appendix.

A-3 SOIL STAGING METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

A-4 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and remedial party (if applicable) and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site.

Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete Truck wash waters will be collected and disposed of off-site in an appropriate manner.

Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks loaded with site materials will exit the vicinity of the site using only approved truck routes. The most appropriate route takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

A-6 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-site management of materials from this site will not occur without formal NYSDEC approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

'Reuse on-site' means reuse on-site of material that originates at the site and which does not leave the site during the excavation. Material reuse on-site will comply with the requirements of NYSDEC DER-10 Section 5.4(e)4.

The qualified environmental professional will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the Record of Decision. The existing cover system is comprised of a minimum of 24 inches of clean soil, asphalt pavement, concrete covered sidewalks and/or concrete building, etc.. A demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, etc. will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

A-10 BACKFILL FROM OFF-SITE SOURCES

The requirements for backfill used at the site should be consistent with the backfill requirements provided in DER-10 (e.g., Appendix 5).

All materials proposed for import onto the site will be approved by the qualified environmental professional and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6NYCRR 375-6.7(d). Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards must meet Commercial SCOs. Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC’s Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

A-13 COMMUNITY AIR MONITORING PLAN

The Community Air Monitoring Plan shall be accordance with DER-10, Appendix 1A ,Generic Community Air Monitoring Plan. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-14 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors on- and off-site. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

A-15 DUST CONTROL PLAN

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.

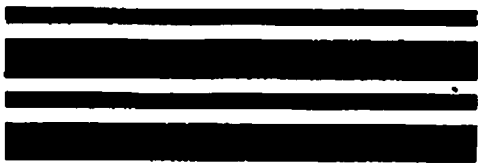
APPENDIX B – ENVIRONMENTAL EASEMENT

RECEIPT
Suffolk County Clerk
Vincent Puleo
County Clerk

Receipt Number : 23-0040208
Payor Name : FRONTIER ABSTRACT & RESEARCH SERVICES INC

DESCRIPTION	TRANS AMOUNT
Type of Instrument: EASEMENT	
Page/Filing	$65.00
Handling	$20.00
COE	$5.00
NYS SRCHG	$15.00
TP-584	$5.00
Notation	$0.00
Cert.Copies	$16.25
RPT	$200.00
Transfer tax	$0.00
Fees Paid	$326.25
Conveyance Amt:	$0.00
Transfer Tax Number	22-21921
LIBER	D00013194
PAGE	417
DATE: 03/22/2023	TIME: 10:04:19 AM
RECEIPT TOTAL	$326.25
CHECK AMT PAID	$326.25
TOTAL AMOUNT PAID	$326.25
CHECK REFUND	$0.00

COMMENTS



SUFFOLK COUNTY CLERK
RECORDS OFFICE
RECORDING PAGE

Type of Instrument: EASEMENT — **Recorded: 03/22/2023**
Number of Pages: 13 — **At: 10:04:19 AM**
Receipt Number : 23-0040208
TRANSFER TAX NUMBER: 22-21921 — **LIBER: D00013194**
PAGE: 417

District:	Section:	Block:	Lot:
0800	090.00	02.00	024.000

EXAMINED AND CHARGED AS FOLLOWS

Deed Amount: $0.00

Received the Following Fees For Above Instrument

		Exempt			Exempt
Page/Filing	$65.00	NO	Handling	$20.00	NO
COE	$5.00	NO	NYS SRCHG	$15.00	NO
TP-584	$5.00	NO	Notation	$0.00	NO
Cert.Copies	$16.25	NO	RPT	$200.00	NO
Transfer tax	$0.00	NO			
			Fees Paid	$326.25	

TRANSFER TAX NUMBER: 22-21921

THIS PAGE IS A PART OF THE INSTRUMENT
THIS IS NOT A BILL

Vincent Puleo
County Clerk, Suffolk County

1 | 2

Number of pages 13

This document will be public record. Please remove all Social Security Numbers prior to recording.

RECORDED
2023 Mar 22
CLERK OF
SUFFOLK COUNTY
L D00013194
P417
DT# 22-21921

Deed / Mortgage Instrument	Deed / Mortgage Tax Stamp	Recording / Filing Stamps

3 FEES

Page / Filing Fee	105.00	Mortgage Amt.	
Handling	20.00	1. Basic Tax	
TP-584	5.00	2. Additional Tax	
Notation		Sub Total	
EA-52 17 (County)		Spec./Assit. or Spec./Add.	
EA-5217 (State)		TOT. MTG. TAX	
R.P.T.S.A.	200.00	Dual Town ___ Dual County ___	
Comm. of Ed.	5.00	Held for Appointment	
Affidavit		Transfer Tax	
Certified Copy	110.25	Mansion Tax	
NYS Surcharge	15.00		
Other			
Sub Total	90.00		
Sub Total	230.25		
Grand Total	326.25		

The property covered by this mortgage is or will be improved by a one or two family dwelling only.
YES _____ or NO _____
If NO, see appropriate tax clause on page # _____ of this instrument.

10/24/22

4 Dist 0800 | Section 090.00 | Block 02.00 | Lot 024.000

5 **Community Preservation Fund**

Consideration Amount $ 0

CPF Tax Due $ _____

Real Property Tax Service Agency Verification — REAL PROPERTY TAX SERVICE AGENCY SUFFOLK COUNTY — 1-31-23

Improved _____
Vacant Land _____
TD _____
TD _____
TD _____

6 Satisfactions/Discharges/Releases List Property Owners Mailing Address
RECORD & RETURN TO:

FRONTIER ABSTRACT & RESEARCH SERVICES, INC.
69 CASCADE DRIVE, SUITE 101
ROCHESTER, NEW YORK
14614

Mail to: Clerk 11901

7 **Title Company Information**

Co. Name FRONTIER ABSTRACT & RESEARCH SERVICES, INC.
Title # S162808

8 **Suffolk County Recording & Endorsement Page**

This page forms part of the attached EASEMENT made by:
(SPECIFY TYPE OF INSTRUMENT)

SANG OK HAN

The premises herein is situated in SUFFOLK COUNTY, NEW YORK.

TO NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION "NYSDEC"

In the TOWN of SMITHTOWN
In the VILLAGE or HAMLET of _____

BOXES 6 THRU 8 MUST BE TYPED OR PRINTED IN BLACK INK ONLY PRIOR TO RECORDING OR FILING.

12-0104.10/0813

(over)

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 24th day of October, 2022, between Owner(s) Sang Ok Han, having an office at 2049 Jericho Turnpike, County of Suffolk, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 2049 Jericho Turnpike in the Town of Smithtown, County of Suffolk and State of New York, known and designated on the tax map of the County Clerk of Suffolk as tax map parcel numbers: Section 0800 Block 090.00 Lot 02.00, being the same as that property conveyed to Grantor by deed dated September 27, 2004 and recorded in the Suffolk County Clerk's Office in Liber and Page 10-25. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.25 +/- acres, and is hereinafter more fully described in the Land Title Survey dated D00012350 901 prepared by Enter revised surveyor's name or original surveyor's name if not revised, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: A1-0656012-10, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) Commercial

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Suffolk County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a

defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 152211
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed

by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Sang Ok Han:

By: _____

Print Name: SANG OK HAN

Title: ~~President~~ OWNER Date: 9/23/22

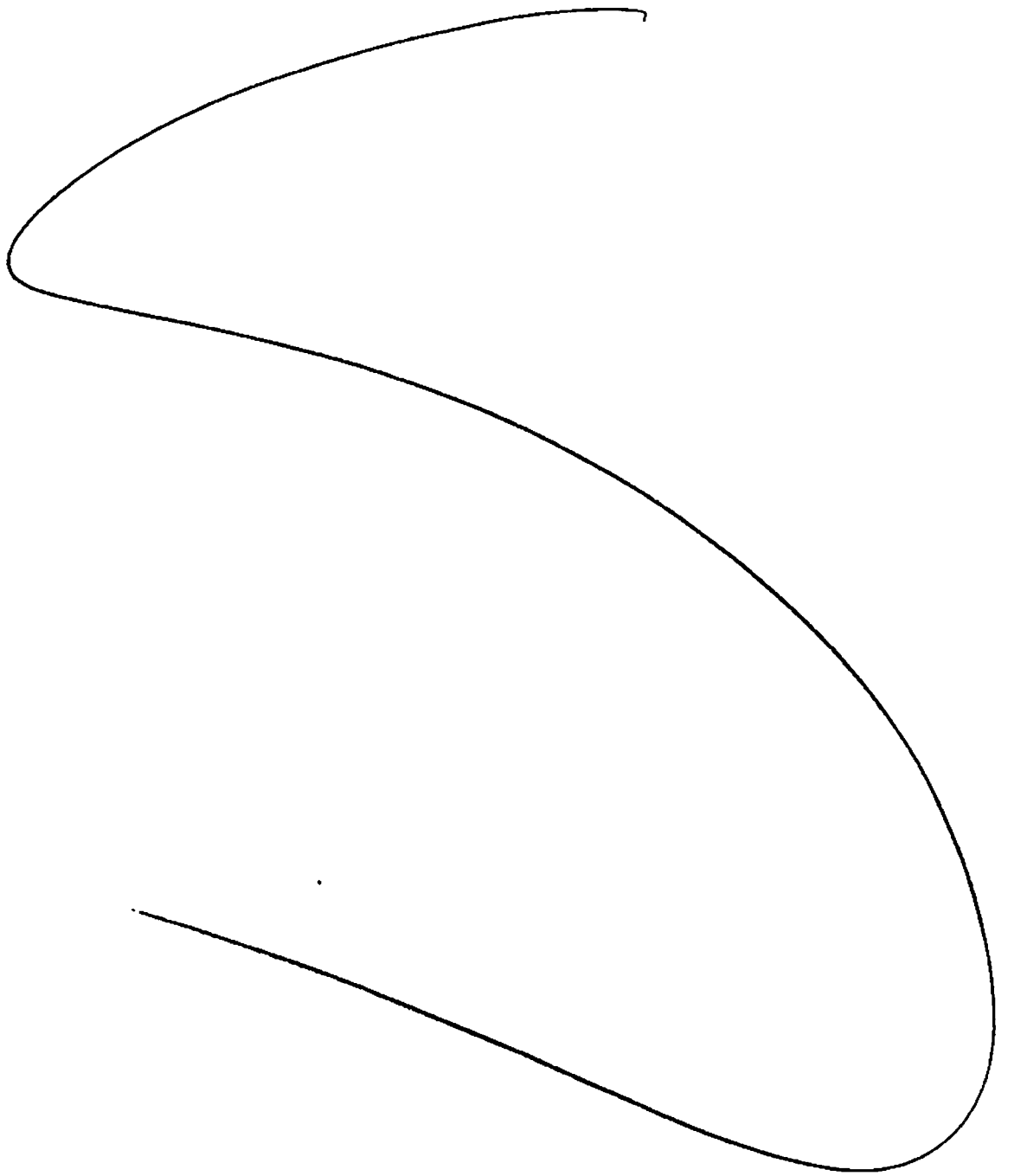
Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF SUFFOLK)

On the 23rd day of September, in the year 2022, before me, the undersigned, personally appeared Sang Ok Han, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of New York

DAVID S. RUBINTON
Notary Public-State of New York
No. 02RU6064476
Qualified in Nassau County
Commission Expires Sept 24, 2025



THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: Andrew Guglielmi
Andrew O. Guglielmi, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 24th day of October, in the year 2022 before me, the undersigned, personally appeared Andrew O. Guglielmi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Jennifer Andaloro
Notary Public - State of New York

JENNIFER ANDALORO
Notary Public, State of New York
No. 02AN6098246
Qualified in Albany County
Commission Expires January 14, 2024

SCHEDULE "A" PROPERTY DESCRIPTION

Enter Property Description

TAX MAPS

SCHEDULE B INS

SCHEDULE C

SCHEDULE A

ALL that certain plot, piece or parcel of land, situate, lying and being at Commack, Town of Smithtown, County of Suffolk and State of New York, bounded and described as follows:

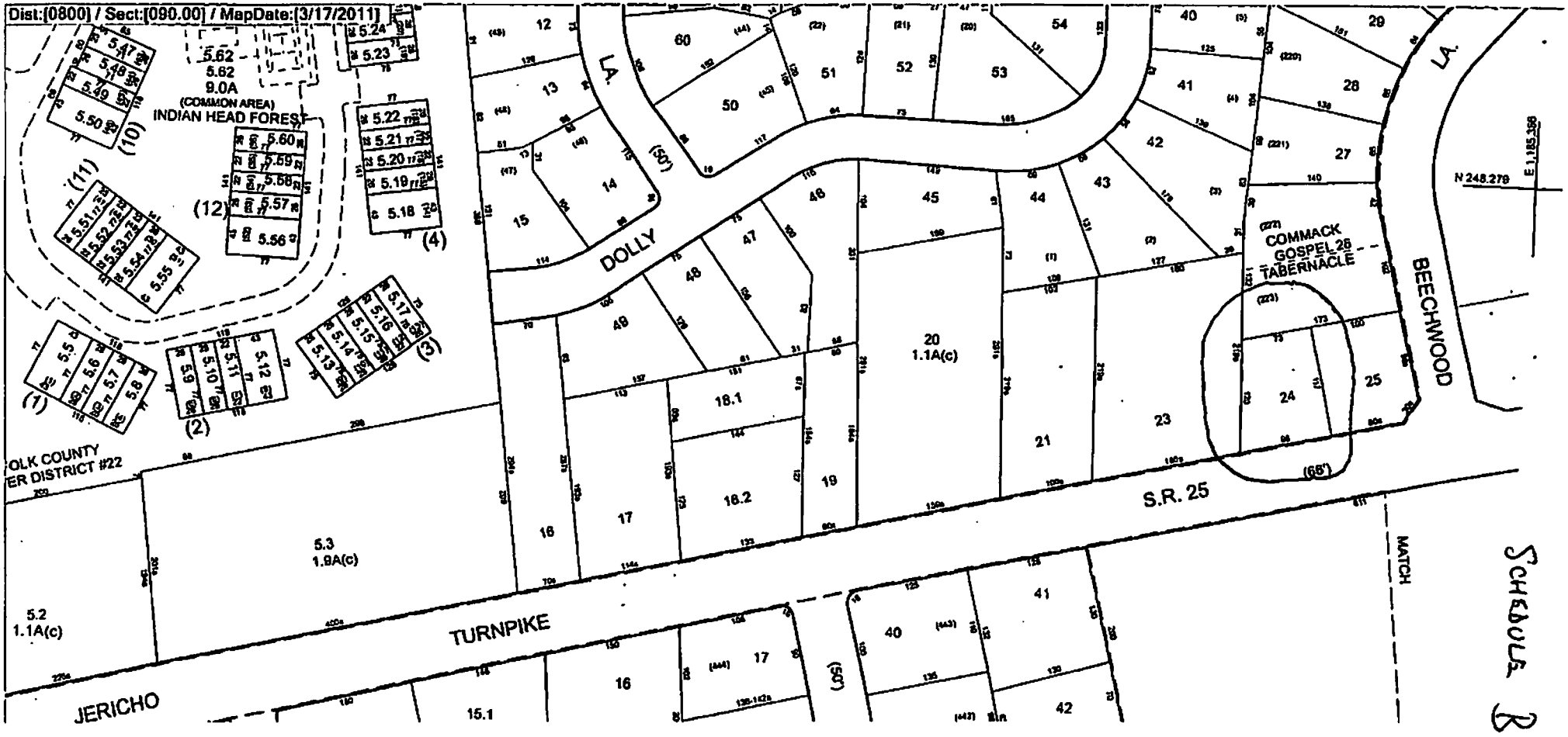
BEGINNING at a point on the Northerly side of Jericho Turnpike (S.R. 25) distant 76.90 feet Westerly from the extreme Southwesterly end of a perpendicular line which connects the Westerly side of Beechwood Lane with the Northerly side of Jericho Turnpike (S.R. 25);

RUNNING THENCE along the Northerly side of Jericho Turnpike (S.R. 25) South 87 degrees 06 minutes 33 seaconds West 98.30 feet;

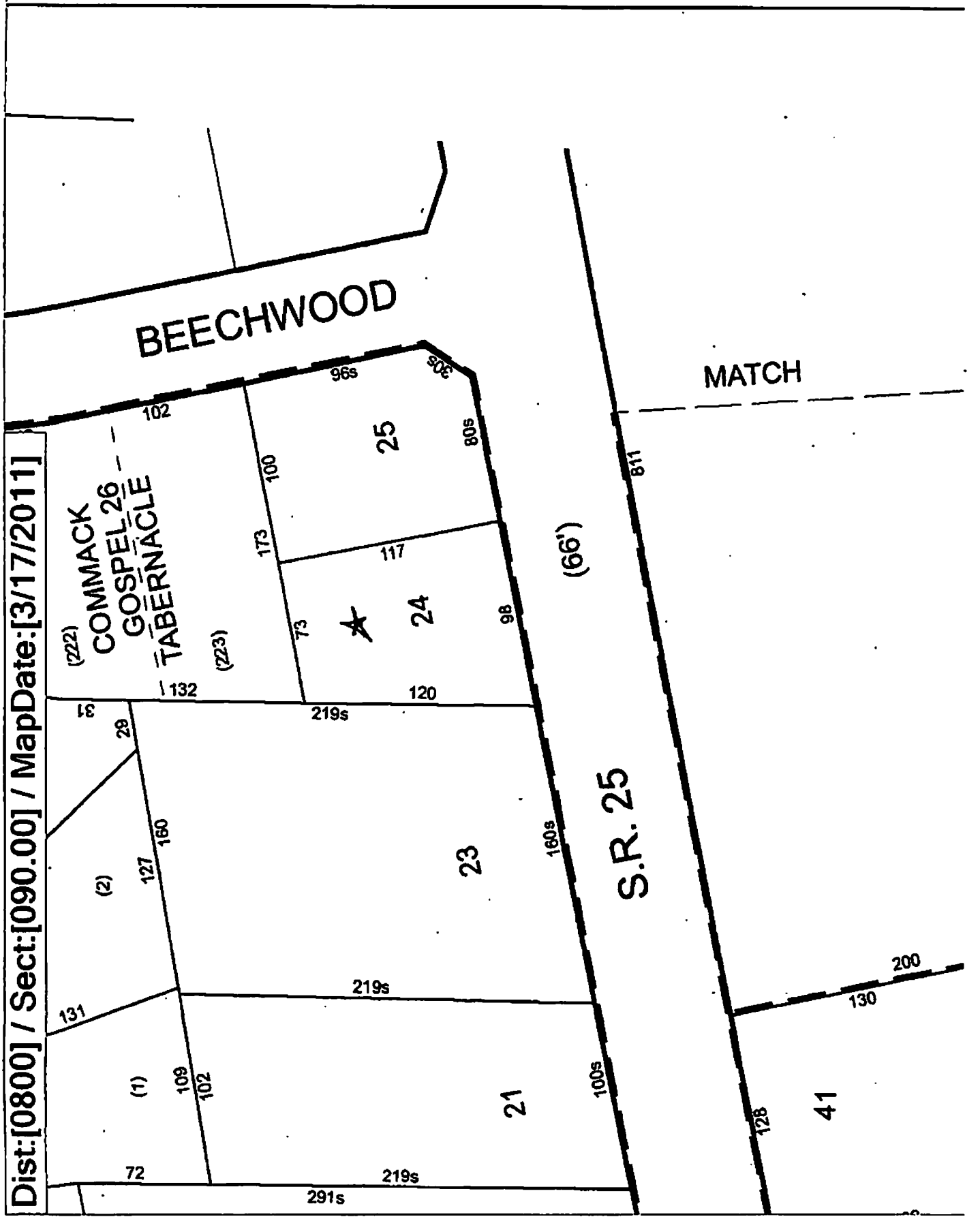
THENCE North 9 degrees 05 minutes 40 seconds East 119.61 feet;

THENCE North 87 degrees 06 minutes 33 seconds East 73.46 feet;

THENCE South 2 degrees 53 minutes 27 seconds East 117.00 feet to the Northerly side of Jericho Turnpike (S.R. 25) at the point or place of BEGINNING.


Dist:[0800] / Sect:[090.00] / MapDate:[3/17/2011]
INDIAN HEAD FOREST
(COMMON AREA)
9.0A
5.62
5.62
(10)
(11)
(12)
(4)
(1)
(2)
(3)
DOLLY
LA.
(50)
BEECHWOOD
COMMACK GOSPEL 26 TABERNACLE
N 248.278
E 1,185,368
S.R. 25
TURNPIKE
JERICHO
(65')
MATCH
OLK COUNTY
ER DISTRICT #22
5.3
1.9A(c)
5.2
1.1A(c)
20
1.1A(c)
SCHEDULE B

SCHEDULE C


BEECHWOOD
MATCH
S.R. 25
(66')
COMMACK GOSPEL TABERNACLE
(222)
(223)
25
24
23
21
41
(2)
(1)
102
96s
80s
100
173
117
73
98
811
132
120
219s
31
29
160
127
160s
131
109
102
100s
72
291s
200
130
128
Dist:[0800] / Sect:[090.00] / MapDate:[3/17/2011]

APPENDIX C – QUALITY ASSURANCE PROJECT PLAN

- QA/QC Objectives for Data Measurement: ensure data collected during monitoring/inspection events are of suitable quality and quantity.
- Sampling Program:
  - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
  - Sample holding times will be in accordance with the Method specific requirements.
  - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody: All samples will be identified with a sample label attached to each bottle with a unique sample number. They will be packed in a cooler with ice to preserve the sample and shipped to the laboratory or transferred to a courier. A chain-of-custody will be completed for each cooler, signed and dated by the sample collector, and all recipients of the samples.
- Calibration Procedures:
  - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
  - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures: All analytical procedures will follow USEPA SW-846.
- Preparation of a Data Usability Summary Report (DUSR), which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method will be prepared by a third party apart from the laboratory.
- QA Performance and System Audits: Audit reports may be generated during the conduct of activities that includes assessment of measurement accuracy, precision, and completeness, results of performance/system audits, significant QA problems and recommended solutions for future projects, and status of solutions to any problems previously identified.
- Preventative Maintenance Procedures and Schedules: The Preventative Maintenance program consists of normal upkeep, service and repair, and formal record keeping. Normal upkeep consists of daily procedures (i.e. cleaning, lubrication, battery check/charge, and inspection). Service and repair is performed by the Equipment Manager or for more complex repair, the manufacturer. All maintenance, service and repair shall be recorded and kept on file.
- Corrective Action Measures: Corrective actions will be taken when QA objectives for precision, accuracy, completeness, representativeness or comparability are not met or when procedural practices or other conditions are not acceptable. A non-conformance report will be prepared that describes the unacceptable condition, nature of the corrective measures and a schedule for compliance. A Stop Work Order can be issued if corrective action does not adequately address the problem.
- Reporting requirements: Project management will be informed of QA activities through the receipt, review, and/or approval of Project-specific QA project plans, Corporate and project-specific QA/QC plans and procedures, Corrective action notices, Non-conformance records.

APPENDIX D – HEALTH AND SAFETY PLAN

Beau Brummel Cleaners
Address: 2049 Jericho Turnpike, Commack, NY
Suffolk County, Region 1
Site No.: 152211

Proposed date of sampling: The inspection of the SVE system occurs on a monthly basis. The system effluent is sampled quarterly.

The Record of Decision was issued March 2016.

The contaminants of concern at this site include PCE and TCE.

The overall hazard level anticipated on-site and off-site for the sampling activities are low.

ON-SITE ACTIVITIES

Has this site been sampled and/or investigated before?	☒Yes ☐ No
Has the site perimeter been identified?	☒Yes ☐ No
Is the site fenced?	☒Yes ☐ No
Is a site map/sketch available?	☒Yes ☐ No
Have areas of contamination been identified?	☒Yes ☐ No
Will air quality monitoring be done on-site?	☒Yes ☐ No
Is sampling planned at this site?	☒Yes ☐ No

System Effluent air will be sampled for VOC via TO-15.
Groundwater sampling would occur as necessary to confirm effectiveness of the SVE system.

The proposed sampling activities include:

- Opening of monitoring well covers, gauging the monitoring well
- Purging the monitoring well and sampling with pump.
- Collection of system effluent from sample port to Summa canister.
- Evaluation of air quality and effluent VOCs with PID.

Respiratory Protection Required?	☐Yes ☒ No
Personnel Protection anticipated:	modified Level D (no external respiratory protection)
Personal Protection Equipment for Level D:	work clothes, Steel-toed boots, nitrile gloves, safety glasses
Air quality monitoring equipment to be used:	PID

General Safety Practices

All project personnel shall follow the following safety practices:

- Avoid skin exposure to groundwater and surface water.
- No eating or drinking in designated work areas. Thoroughly wash hands prior to these activities outside the work area. Avoid sitting on the ground during breaks or while eating and drinking. Thoroughly wash all exposed body areas at the end of the workday.
- Be aware of site conditions (slips trips and falls) and climatic conditions (heat and cold) when performing site activities.

EMERGENCY PLANNING

	Address	Phone
Hospital	Huntington Hospital 270 Park Ave Huntington, NY 11743	911 (631)351-2000
Police	Suffolk County Police District 1071 Park Avenue Huntington, NY 11743	911 (631) 854-8200
NYSDEC	Melissa Sweet, Project Manager 625 Broadway Albany, NY 12233-7015	(518) 402-9614
NYSDOH	Bureau of Environmental Exposure Investigation Empire State Plaza, Corning Tower Room 1787 Albany, NY 12237	(518) 402-7860

The Community Air Monitoring Plan for this site should be referenced in DER-10, Appendix 1A.

APPENDIX E

SITE MANAGEMENT FORMS

This Appendix includes all site management forms including site inspection form, routine operation and maintenance forms and non-routine operations and maintenance forms for the site. The forms should be completed during site maintenance activities and provided to the NYSDEC in electronic format in accordance with the reporting requirements specified in Section 7.0 of the SMP.

DAILY INSPECTION REPORT

Site Code #:	Date:	Report #:

Site Name:
Location:
DEC Project Manager:
DEC Consultant Project Manager:
Contractor:

	AM	PM
Weather		
Temperature		
Wind Direction		

Description of work performed by contractor this report period:

Discussions/comments regarding visitors, contractor and/or engineer:

Sampling this report period:

Health & Safety:
Level of protection:

Is the level of protection in conformance with the approved Health & Safety Plan?

List deviations:

Are atmospheric monitoring results acceptable?

Site Visitors	Representing	Entered Exclusion Zone

Contractor's Information:

Prime contractor worked from:

Subcontractor	Activity	Hours Worked

Equipment	P	1	2	3	4	Personnel	P	1	2	3	4

Site Representative:

Date:

Representative's Signature:

Photo Log

SITE DATA AND INFORMATION SHEET

SITE ID:	**DEC-COMMACK2049**	**BILLABLE ITEMS**		
DATE:		**EQUIPMENT**		**MATERIALS**
START TIME:		**DM**	**SPL Meter (EAR)**	
END TIME:		**AVM**		
PROJECT MANAGER:	**Stephen Goetz**	**PID**		
TECHNICIAN(s):		**SKC Pump**		

Please strikethrough parameters below that cannot be obtained and note why.

		Flow Rate	Vacuum	PID	Temp
Vent System (SVE)	**Vent Point**	**(cfm)**	**("H_2O)**	**(ppm)**	**(°F)**
	PT-1				
	PT-2				
	SD-1				
	Combined Influent (Pre-KO)				
	Combined Influent (Post-KO)				
	Exhaust				

Air Sample Details		
Location	**ID**	**Sample Time**
SVE Effluent	SVE_Exhaust	

Hour Meter Reading		
Location	**Hours**	**Time**
SVE		

SPL Meter Readings	
Location	**Reading (dB)**
In Room, System On	
In Room, System Off	
Outside, System On	
Outside, System Off	

CHECK THE COMMENTS THAT APPLY.

- [ ] **1. The On Site SVE system was operating upon arrival and departure.**
- [ ] **2. Collected effluent air sample from SVE system.**
- [ ] **3. Samples were delivered to a certified lab for analysis.**
- [ ] **4. Recorded PID, Flow Rate & Vacuum readings from the SVE Manifold.**
- [ ] **5. Recorded SVE exhaust temperature reading.**
- [ ] **6. Moisture separator was inspected — approximately _____ gallons of liquid in drum.**
- [ ] **7. Air filter was inspected, noted filter condition below.**

OTHER COMMENTS:

-Note any problems/observations below and contact EAR PM prior to leaving site.

Semi-Annual Site Inspection Form

Beau Brummel Cleaners, 2049 Jericho Turnpike, Commack, NY

Inspector Name: Inspection Date : Inspection Time : Comments:	Weather conditions : Air Temperature (°F) :

A- SSD/SVE SYSTEM INSPECTION

- Inspect Blower unit.
- Record vacuum gauge readings mounted on influent SSD and SVE piping
- Inspect for cleanliness. Clean exterior surfaces only. Remove dust on motor housing
- Confirm spare parts of the blower are available and properly stored
- Confirm spare blower system parts are available and in good condition
- Check if the SSV/SVE system malfunctioning indicators working properly (alarm, vacuum gauges)?
- Comments:- see or hear anything unusual

B- COVER SYSTEM

- Walk and inspect the entire perimeter of the Site
- Walk and inspect all of the paved areas (concrete and asphalt) of the Site
- Are there any signs of significant cracks, settlement or deterioration of the paved areas?
- Has any of the pavement material been removed?
- Are the flush-mounted manhole covers for the 2 monitoring wells nests secured?
- Are there any signs of intrusive activities (drilling, digging, trenching, grading, excavating, etc.)?
- Comments:

D – Monitoring Wells Nests

- Inspect whether the flush-mounted manhole cover of each well is secured with screw bolts
- Inspect for evidence of standing water marks around the well casing in the well manhole
- Inspect if the cap at the top of well casing is tightened in place
- Check for the presence of free product and the depth to groundwater using interface probe
- Check for the total depth of the well (after well sampling)

E- Repair

- Summarize needed/completed repairs to Engineering Controls
- Summarize needed well development of re-installation of monitoring wells

APPENDIX F

O&M MANUAL

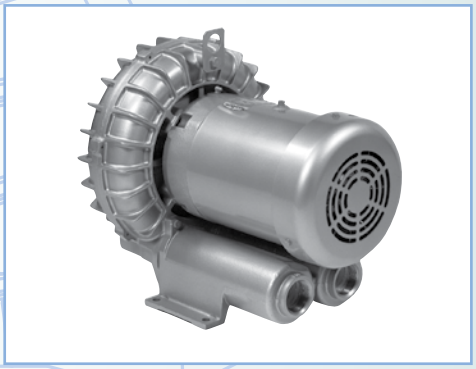
The O&M Manual includes as-built drawings and catalog-cuts on all fixed and mobile equipment necessary to operate and maintain the remedial system including any pumps, blower, etc. Catalog-cuts include maintenance procedures, spare parts lists, and any special tool requirement as well as vendor/service contact/local dealer information, including address and telephone numbers.

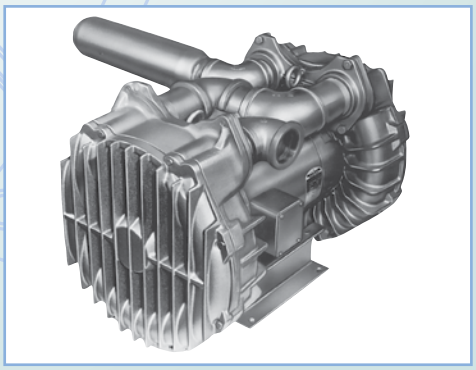
8. SVE/SSDS Equipment Catalogue Cut Sheets

GAST

Regenair®

Regenerative Blowers





The Gast Group **Difference**

For over 90 years, Gast Manufacturing has been providing innovative air solutions to a broad breadth of customers. With the relatively recent addition of JUN-AIR, we have expanded our capabilities and formed, “The Gast Group.” Together, our diverse engineering background and pneumatic experience allow us to provide both component and system solutions to meet all of your pneumatic needs...all backed by our strong commitment to quality and customer support.

Products for Almost Any Application – Worldwide

We offer an extensive and versatile line of air-moving products, including vacuum pumps, compressors, air motors, gearmotors, vacuum generators, and regenerative blowers. We design and build these components for original equipment manufacturers worldwide, but we also develop complete pneumatic solutions to solve tough customer challenges.

To ensure fast, efficient delivery of products, Gast has a vast network of sales representatives/distributors throughout the United States and the world. Plus, we maintain direct sales and service facilities in Europe, Hong Kong, and Shanghai, China.

Unparalleled Design Expertise

Unlike other manufacturers, who might expect you to modify your pneumatic system to fit their available product(s), Gast is committed to finding the right product to meet your specific needs. If we don’t have a high-quality, off-the-shelf product to fit your existing application or meet your anticipated needs, we’ll propose customized cost-effective design options that will serve your special requirements. We can even develop and produce your complete pneumatic system for you.

Our experienced Research and Development engineers and Product engineers work together to analyze customer needs and use computer-aided design to generate timely solutions for air-handling problems. The design team has one goal: to create problem-solving solutions that capitalize on the latest available technology, meet all application requirements, and benefit from cost-effective production methods. The end result: products and solutions that are the best value in the marketplace for our customers.

A Lasting Commitment to Quality

We invest heavily in both equipment and people to maintain the consistent quality for which our products are known worldwide, and we have done so since day one. As early as 1983, we implemented a total quality process designed to ensure the quality of our products. In keeping with that tradition, Gast has achieved ISO 9001 certification, making us a member of the elite group of manufacturing companies in the world to receive that certification.

European Community Directives CE

With extensive sales outside the United States, Gast has pledged to conform to the European Community Directives. These directives contain essential requirements concerning health, safety, environment, and consumer protection for all products targeted for the European Community market. Currently, all Gast products available for sale in the European Community are in compliance with the Machinery, Low Voltage, and Electromagnetic Compatibility Directives.

Why use a Regenair® Regenerative Blower?

Features and Benefits

Standard Motor Mounted Models

- Rugged construction of cast aluminum or cast iron, depending on model size
- UL and CSA approved motors; TEFC on single-ended models, OPEN on dual-ended models. Permanently sealed ball bearings incorporate new polyurea grease that extends bearing life and offers superior resistance to washout, rust, and corrosion. Integrated mufflers on single-ended models minimize operating noise

Explosion-Proof Motor Series

- UL and CSA approved explosion-proof multi-voltage motors with thermal protection
- Double sealed ball bearings with a B10 life exceeding 30,000 hours of continuous operation at the maximum rated continuous blower load
- Sealed air streams; leak tested to less than 5 cc/min

Separate Drive Series

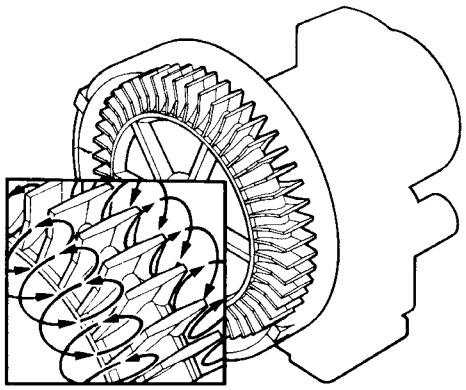
- Drive pulley size can be changed to lower speeds and adjust performance
- Built-in acoustical muffling reduces operation noise
- Precision balanced impellers provide low vibration operation

The Regenerative Principle

In a regenerative blower, the compression space consists of a hollow, circular ring between the tips of the impeller blades and the walls of the housing. In operation, the rotating impeller draws in air from the inlet port into the compression space and moves it radially outward to the curved housing by centrifugal force.

The action is called “regenerative” because a certain amount of air slips past each impeller blade during rotation and returns to the base of a succeeding blade for reacceleration.

Because of this dynamic principle, regenerative blowers can generate pressure and vacuum performance comparable to many multi-stage or positive displacement blowers.



Regenair® Regenerative Blowers Performance Overview

MODEL/ SERIES	POWER RATING @ 60 Hz HP	kW	FREE AIR FLOW CFM 50 Hz	CFM 60 Hz	M^3/h 50 Hz	M^3/h 60 Hz	MAXIMUM PRESSURE inH_2O 50 Hz	inH_2O 60 Hz	mbar 50 Hz	mbar 60 Hz	MAXIMUM VACUUM inH_2O 50 Hz	inH_2O 60 Hz	mbar 50 Hz	mbar 60 Hz
Standard Motor Mounted Models														
R1*	1/8	0,09	23	27	39	46	21	28.5	52	71	20	26.5	50	66
R2*	1/3, 1/2	0,25, 0,37	33	42	56	71	30	39	75	97	25	35	62	87
R3*	1/2	0,37	43-44	52-53	73-75	88-90	31-40	43-55	77-100	107-137	28-35	40-50	70-87	100-125
R4*	1	0,75	75	92	127	156	38	52	95	130	35	48	87	120
R4P*	1 1/2	1,1	110	127	187	216	50	65	125	162	45	60	112	149
R5*	2 1/2	1,86	133	160	226	272	50	65	125	162	47	60	117	149
R6*	2 1/2- 5	1,86- 3,73	180	207- 215	306	352- 365	40- 78	45- 105	100- 194	112- 262	50- 70	55- 88	125- 194	137- 262
R6P*	3 1/2- 5 1/2	2,6- 4,1	225- 245	265- 290	382- 416	450- 493	50- 85	30- 110	125- 212	75- 274	50- 85	35- 90	126- 212	87- 224
R6PP*	11	8,2	420	520	714	884	75	95	187	237	65	80	162	199
R7*	10	7,46	350	420	595	714	115	125	286	311	90	110	224	274
R7P*	18	13,4	666	795	1132	1351	90	105	284	262	85	95	212	237
R9*	15	11,3	585	680	994	1155	125	125	311	311	105	115	262	286
R9P*	30	22,4	1140	1350	1937	2294	110	125	274	311	100	110	249	274
High Pressure Motor Mounted Models														
R4H*	6	4,5	107	128	182	217	284	284	707	707	183	183	456	456
R6PS*	11	8,2	230	280	391	476	145	170	361	423	110	130	274	324
R7S*	18	13,4	350	420	595	714	170	200	423	498	130	150	324	374
R9S*	30	22,4	585	660	994	1121	208	222	518	553	142	149	354	371
Explosion Proof Motor Models														
R3105N-50	1/2	0,37	44	53	75	90	31	43	77	107	28	40	70	100
R4110N-50	1	0,75	74	92	126	156	38	51	95	127	35	48	87	120
R4310P-50	1	0,75	74	92	126	156	38	51	95	127	35	48	87	120
R4P115N-50	1 1/2	1,1	112	133	190	226	45	65	112	162	40	60	100	149
R5125Q-50	2	1,5	—	160	—	272	—	55	—	137	—	60	—	149
R5325R-50	2	1,5	133	160	226	272	50	65	125	162	47	65	117	162
R6130Q-50	3	2,2	180	215	306	365	75	60	187	149	65	70	162	174
R6340R-50	4	3,0	180	215	306	365	75	100	187	249	65	80	162	199
R6P155Q-50	5 1/2	4,1	235	280	399	476	80	95	199	237	65	85	162	212
R6P355R-50	6	4,5	232	280	394	476	80	100	199	249	65	85	162	212
R7100R-50	10	7,5	350	425	595	722	90	100	224	249	85	110	212	274
Separate Drive Models														
SDR4	4	3,0	147		250		110		274		90		224	
SDR5	10	7,5	240		408		152		379		120		299	
SDR6	15	11,2	300		510		155		386		135		336	

*Models equipped with UL and CSA certified motors. (except R1102K (12v DC))

Catalog Performance Specifications

The specifications listed are that of a unit at sea level with an ambient temperature of 70 °F (21 °C), operating with normal electrical current conditions. The figures stated in this catalog are nominal approximations for models without accessories. Intake filters and exhaust mufflers, and the accumulation of contaminants in them during operation, will decrease the flow of air as well as the achievable pressure.

The units that we list in this catalog are a small portion of what we actually make. Those listed are considered “standard units” and are normally available from stock in small quantities. Variations are produced for many customers and by informing us of the application specifications we might find an existing unit that fits your requirement. If we don’t and the quantity is sufficient, we will design a “special unit” for the application.

Pictorial and dimensional data is subject to change without notice.

The information presented in this catalog is based on technical data and test results of nominal units. It is believed to be accurate and is offered as an aid in the selection of Gast products. It is the user’s responsibility to determine suitability of the product for intended use and the user assumes all risk and liability whatsoever in connection therewith.

Blower System **Design Tips**

In order to utilize your regenerative blower most efficiently, proper system design is essential. The most important thing to recognize is that by utilizing large diameter plumbing, friction losses in plumbing can be greatly reduced. Here are some guidelines to use when setting up your blower system:

1. The plumbing should at least be the same size as the blower port or ideally one size larger (example - blower has ports that are 1-1/2" NPT, plumbing should be 2" NPT). The plumbing should remain this size until it has reached the location of the work area.
2. Plumbing for Separate Drive Blowers operating above 3500 RPM should be at least one pipe size larger than the blower ports.
3. Elbows create additional friction which causes pressure loss and back pressure. Plumbing at least one pipe size larger than the blower pipe ports minimizes the friction loss they create.
4. The pressure/vacuum relief valve should be installed in a "T" which is at least one pipe size larger than that of the exhaust of the blower. To properly protect a large horsepower blower, set the relief value to limit the blowers duty to 5 inH_2O below its continuous duty rating.
5. Operating the blowers at high altitude decreases their maximum pressure or vacuum duty rating. If this is a consideration, review the information on Fan Laws in the Application Engineering section of this catalog.
6. The exhaust air temperature of the blowers increases with increasing duty. At duties over 70 inH_2O it is too hot for most plastic pipe. Metal pipe must be considered. To prevent danger of burns, access to these pipes should be limited, guarded, or marked "Danger Hot."

Performance Data

The performance data shown in this catalog was determined under the following conditions:

- Line voltage @ 60 Hz 230V or 460V for three-phase units. 115V or 230V for single-phase units.
- Line voltage @ 50Hz 220V for three-phase or single-phase units.
- Units in a temperature stable condition.
- Delivery measurements made with output port throttled.
- Suction measurements made with input port throttled.
- Test Conditions: Inlet air density at 0.075 lbs per cu ft. [20 °C (68 °F), 29.92 inHg (14.7 PSIA)].
- Normal performance variations on the resistance curve within ± 10% of supplied data can be expected.

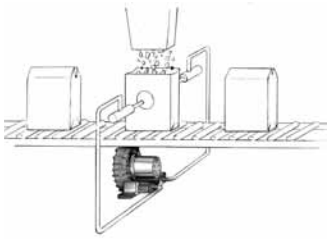
Typical Applications – Imagine what you can do with air,

We offer cost-effective solutions to blower applications for both OEMs and end-users. Gast's Regenerative Blower line of products are designed and built to meet the changing needs of industry and are ideally suited for a number of blower applications. These are examples of many applications where Gast's Regenerative Blowers are widely used.

PRESSURE APPLICATIONS

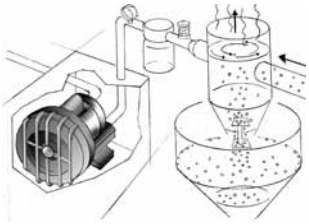
Bag Packaging Equipment

Vacuum is often used to open, hold, and close bags in filling machines.



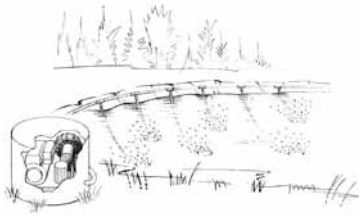
Vacuum Conveying

Plastic pellets, grain, powder, and other bulk dry materials can be transported from one container to another easily using vacuum. They are pulled into a transport tube and delivered to a separator before being deposited in the final storage container.



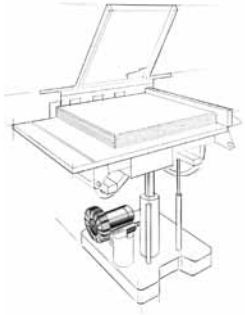
Pond Aeration

Pond aeration is done for two basic reasons. One is aquaculture, where large numbers of fish are "farmed" in a single pond. The second is ecological. As a pond or lake ages, it can lose its oxygen supply and may die. When air is introduced into a pond or lake, oxygen becomes plentiful again and life in and around the water can flourish.



Paper Stack Air Table

The stacks of paper in all graphic arts applications are extremely heavy. To make matters more difficult, the combination of high speed presses and the various types of paper make it necessary to handle these stacks frequently. To make the job easier, these stacks are floated on an air table so they can be manipulated with very little effort.



Agricultural equipment
- Aquaculture/pond aeration
- Fish hatchery equipment

Transportation equipment
- Suspension systems, tire inflators

Medical equipment
- Medical and dental sterilizing equipment
- Dental hand tools, air mattress

Industrial tools and machinery
- Fiberglass choppers
- Liquid/hydraulic pump drives
- Industrial cleaning equipment
- Chip removal/parts blowoff
- Engraving machinery

Material handling equipment
- Lift tables
- Pneumatic conveying systems and drives
- Automated assembly machines/robotics

Computer, business, office machines, and equipment
- Envelope opening/inserting/labeling equipment
- Document scanning equipment

Graphic arts equipment
- Folders, presses, counters
- Photo processing equipment
- Corrugated cutting/printing equipment
- Ink jet printer/post press printing equipment
- Collating/inserting equipment
- Ink drying equipment
- Air table

Sports and leisure equipment
- Spa and hot tub aeration, aquarium aeration
- Handicap tub door seals, boat/pond deicing

Food, drug, and chemical equipment
- Ice cream/yogurt/frosting dispensers
- Pharmaceutical manufacturing equipment
- Automated food preparation equipment

Electronics and communications equipment
- Cable pressurization/cable slicing equipment
- Circuit board processing equipment

Environment, pollution, and safety equipment
- Air/water purifiers
- Gas generators (ozone, nitrogen)
- Sewage treatment
- Smoke evacuation
- Pest control equipment
- Soil/groundwater remediation equipment

Packaging equipment
- Marking/labeling equipment
- Filling equipment
- Food packaging/bag making equipment
- Can/bottle making equipment
- Liquid packaging equipment
- Corrugated sheet making equipment

Textile industry equipment
- Sewing machine equipment, scrap collection equipment

Processing equipment
- Mixing equipment
- Vibrators/tumblers
- Plating tank agitation
- Laundry equipment
- Forming equipment
- Parts washers/parts drying equipment/air knives
- Plastic pellet drying/conveying

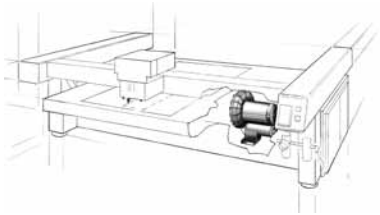
Energy equipment
- Oil atomization, industrial burners

Mining and construction equipment
- Texture spraying, concrete aeration

VACUUM APPLICATIONS

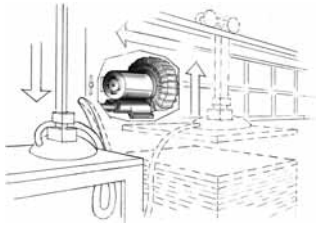
Vacuum Holding of Automated Cutting

Lasers, water jets, and knives are all precision tools for cutting a wide variety of materials automatically. These computer driven machines use vacuum to hold materials being cut in place.



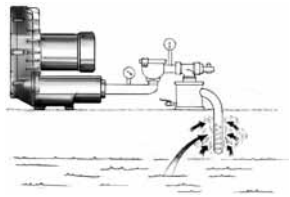
Automated Product Feeding

Vacuum force is used to automatically stack product as it is received or to move the product from one process to another.



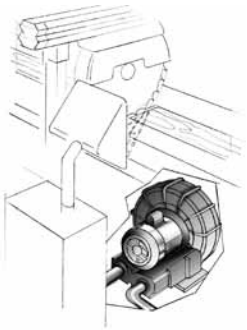
Soil Vapor Extraction

Contaminated soil is often treated by pulling the contaminants, usually gasoline or other hydrocarbons, out of the soil with vacuum.



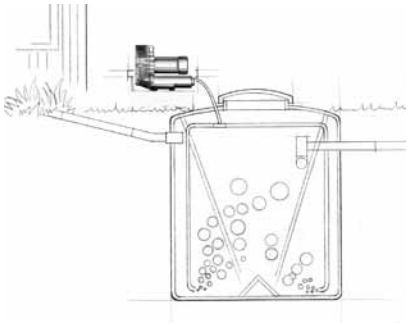
Dust and Chip Collection

Vacuum power is used to collect dust and/or chips from saws, mills, and other cutting machines.



Home Aerobic Sewage Treatment

Some parts of the country where city sewerage is not available and high water tables exist, household waste must be treated aerobically. This means air is mixed into a solution which activates microbes that feed on the waste, speeding up the naturally occurring organic breakdown.



Agricultural equipment
- Inoculation equipment

Medical equipment
- Dental vacuum ovens, dental aspiration

Industrial tools and machinery
- Gas reclaiming equipment
- House air/vacuum
- Industrial vacuum systems
- Industrial cleaning equipment
- Vacuum table/hold down
- Dust collection equipment
- Chip removal
- Engraving machinery

Material handling equipment
- Vacuum hoist
- Pneumatic conveying systems
- Pneumatic tube systems
- Automated assembly machines

Computer, business, office machines, and equipment
- Envelope opening/inserting/labeling equipment
- Vacuum feed, document scanning equipment

Graphic arts equipment
- Folders, presses
- Vacuum frames
- Photo processing equipment
- Paper counters
- Camera/exposure equipment
- Corrugated cutting/printing equipment
- Collating equipment
- Inserting equipment
- Post press printing equipment

Food, drug and chemical equipment
- Pharmaceutical manufacturing equipment
- Automated food preparation equipment
- Electronics and communications equipment
- Circuit board processing equipment
- Cable splicing equipment

Environment, pollution, and safety equipment
- Air sampling/monitoring equipment
- Toilet systems
- Fume extraction
- Vapor recovery
- Smoke evacuation
- Pest control equipment
- Soil vapor extraction
- Weather prediction equipment

Packaging equipment
- Case erectors/packers
- Marking/labeling equipment
- Bag making equipment
- Filling equipment
- Food packaging equipment
- Can/bottle making equipment
- Liquid packaging equipment
- Corrugated sheet making equipment
- Packing fill removal equipment

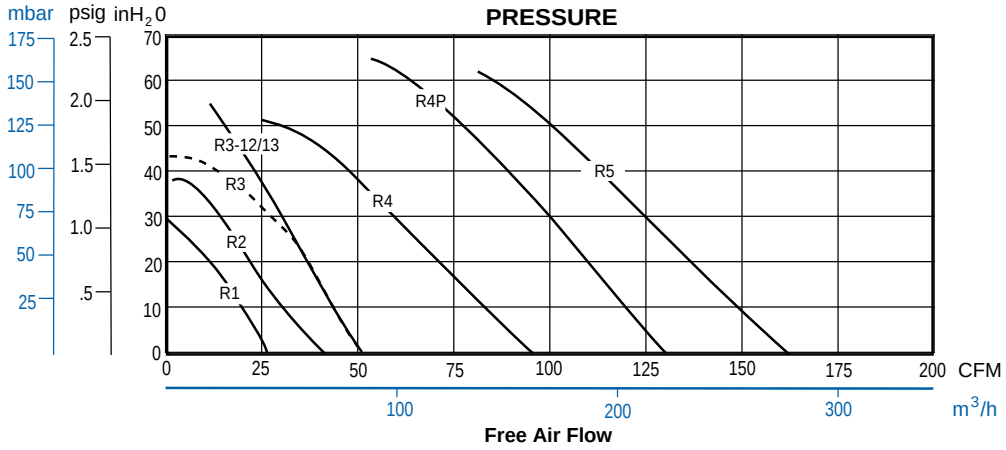
Textile industry equipment
- Sewing machine equipment
- Scrap collection equipment
- Garment vacuum tables
- Trim removal

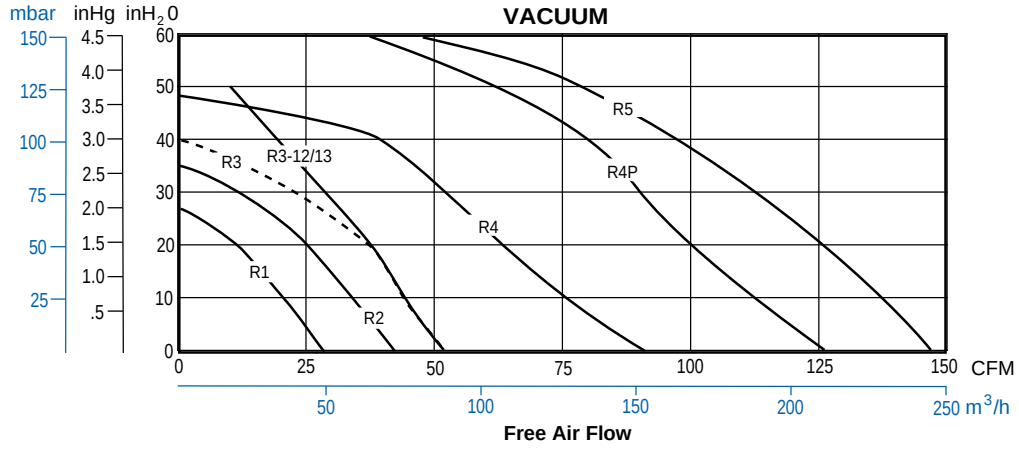
Processing equipment
- Vibrators/tumblers, non-medical lab equipment
- Forming equipment, plastic pellet drying/conveying

Performance Curves - Low Range for Pressure/Vacuum

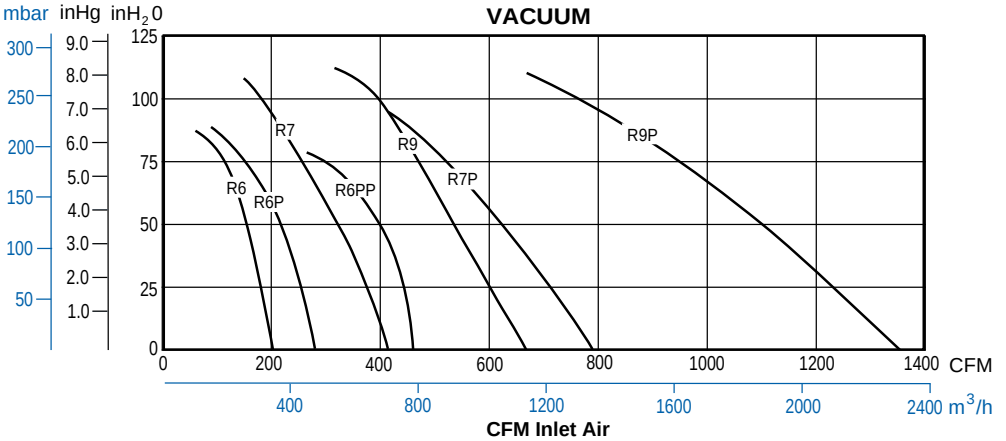
Motor mounted series R1, R2, R3, R4, R4P, R5

Performance at 60 Hz





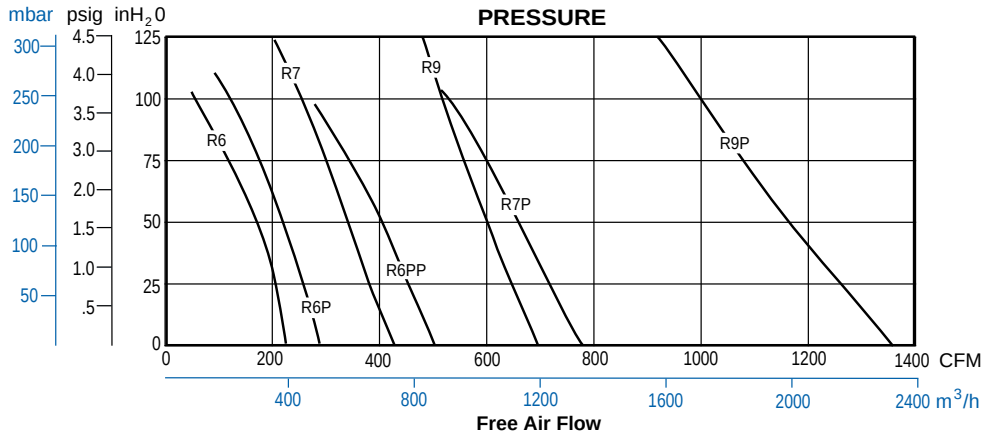
Gast advertises blower performance in Free Air Flow, or air subjected to only atmospheric pressure. (See above curves)
Some blower manufacturers advertise vacuum performance in CFM Inlet Air - measurement of the suction of air at a specific temperature at the inlet port and a specific discharge pressure at the exhaust port, which can be perceived as enhanced performance over Free Air Flow rated blowers. Therefore, we are also providing the following vacuum performance for Gast blowers in CFM Inlet Air for comparison to other blower manufacturer's advertising.

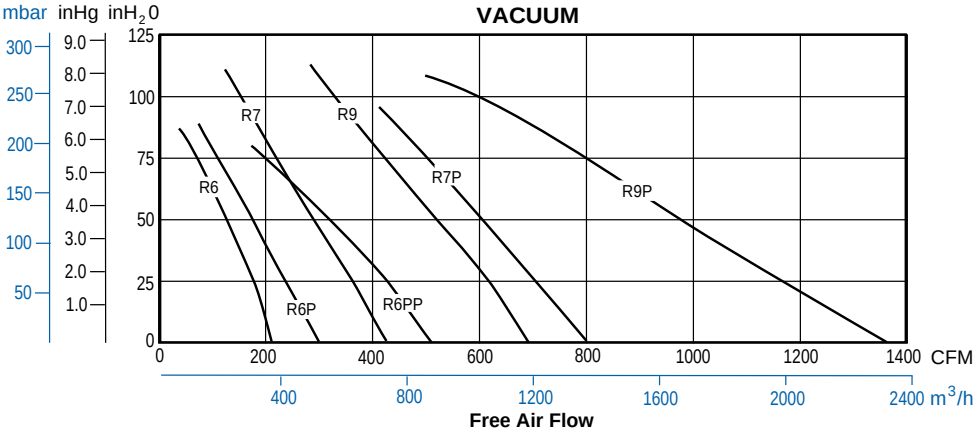


Performance Curves - Mid Range for Pressure/Vacuum

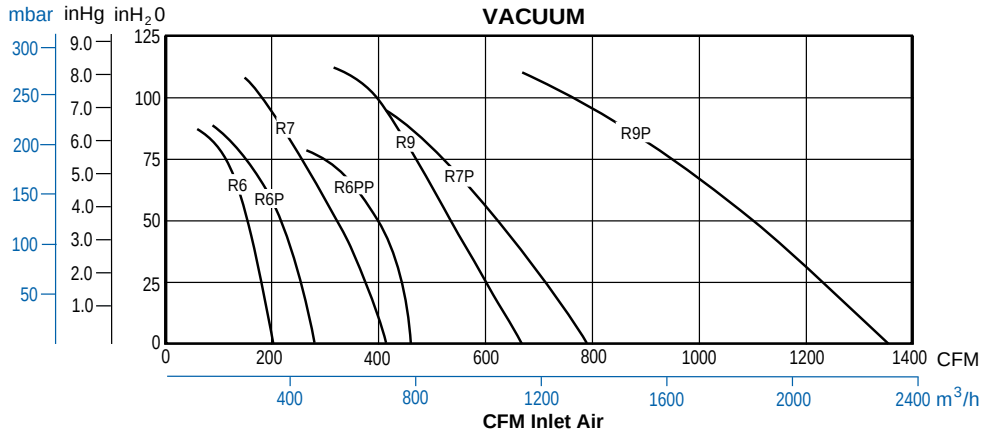
Motor mounted series R6, R6P, R6PP, R7, R7P, R9, R9P

Performance at 60 Hz





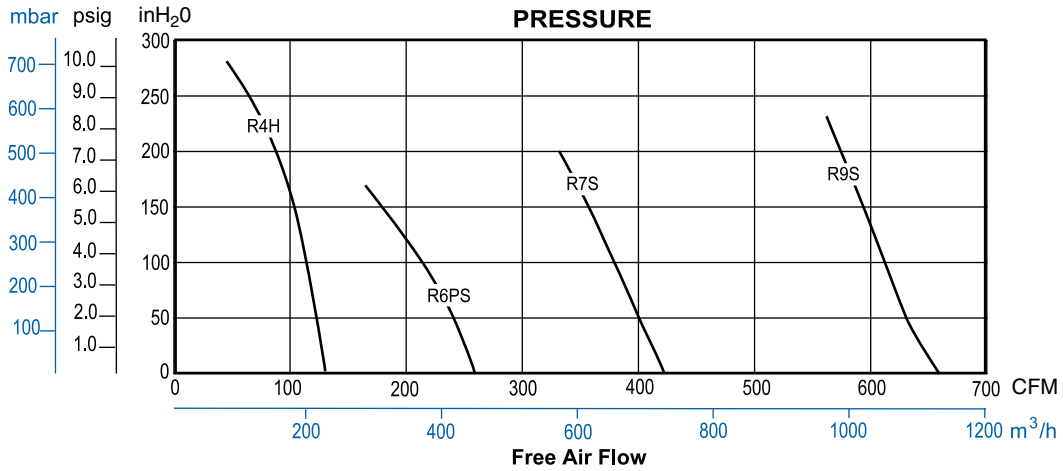
Gast advertises blower performance in Free Air Flow, or air subjected to only atmospheric pressure. (See above curves)
Some blower manufacturers advertise vacuum performance in CFM Inlet Air - measurement of the suction of air at a specific temperature at the inlet port and a specific discharge pressure at the exhaust port, which can be perceived as enhanced performance over Free Air Flow rated blowers. Therefore, we are also providing the following vacuum performance for Gast blowers in CFM Inlet Air for comparison to other blower manufacturer's advertising.

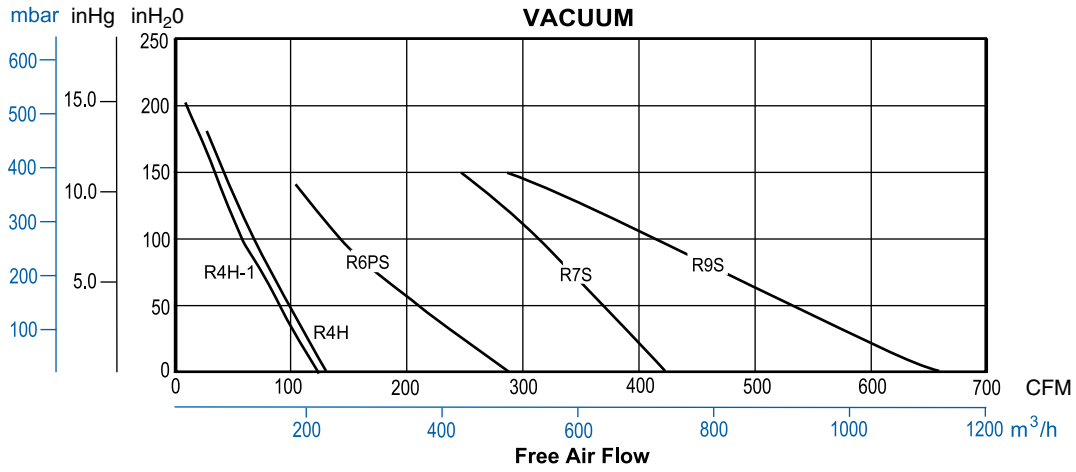


Performance Curves - High Range for Pressure/Vacuum

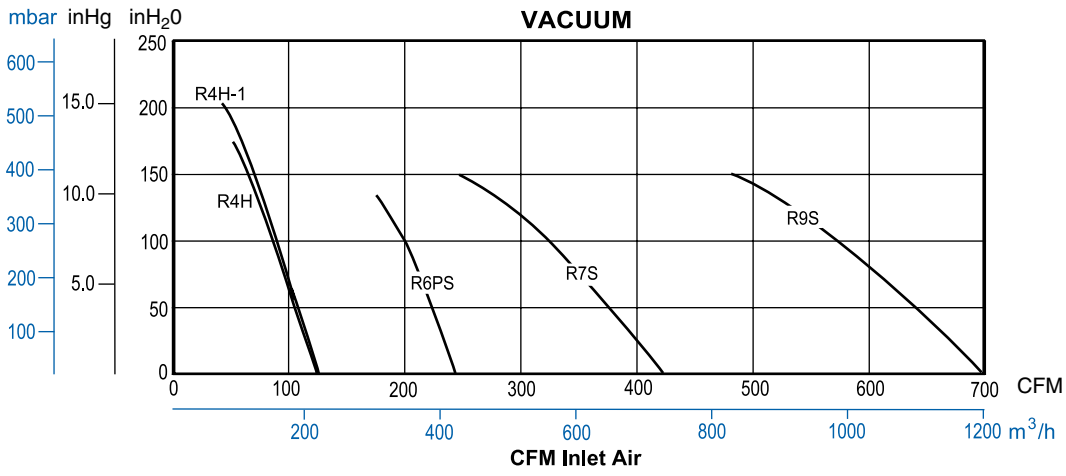
Motor mounted series R4H, R4H-1, R6PS, R7S, R9S

Performance at 60 Hz





Gast advertises blower performance in Free Air Flow, or air subjected to only atmospheric pressure. (See above curves)
Some blower manufacturers advertise vacuum performance in CFM Inlet Air - measurement of the suction of air at a specific temperature at the inlet port and a specific discharge pressure at the exhaust port, which can be perceived as enhanced performance over Free Air Flow rated blowers. Therefore, we are also providing the following vacuum performance for Gast blowers in CFM Inlet Air for comparison to other blower manufacturer's advertising.

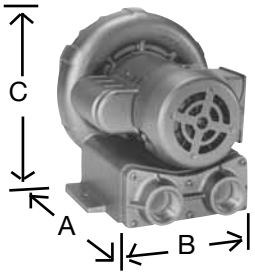


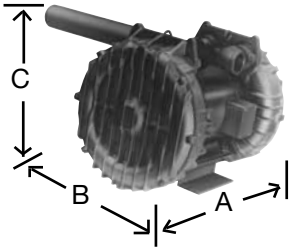
Envelope Dimensions

Model #	Net Wt. (lbs)	A Length (inches)	B Width (inches)	C Height (inches)	Inlet/Outlet Connections
STANDARD MOTOR MOUNTED					
R1102	16	8.86	7.80	8.51	1”
R1102C	16	8.86	7.80	8.51	1”
R1102K	16	9.21	7.80	8.51	1”
R2103	21	9.90	8.93	9.29	1”
R2105	23	10.57	8.93	9.29	1”
R2303A	23	9.90	8.93	9.29	1”
R2305B	23	10.85	8.93	9.29	1”
R3105-1	29	10.94	9.72	10.15	1 1/4”
R3105-12	29	10.94	9.72	10.15	1 1/4”
R3305A-1	29	10.94	9.72	1015	1 1/4”
R3305A-13	29	10.94	9.72	10.15	1 1/4”
R4110-2	41	12.82	11.25	11.80	1 1/2”
R4310A-2	41	12.82	11.25	11.80	1 1/2”
R4310B-1	41	12.82	11.25	11.80	1 1/2”
R4P115	61	15.46	13.26	13.61	1 1/2”
R4P315A	43	11.38	13.26	13.61	1 1/2”
R5125-2	76	16.14	13.56	13.80	1 1/2”
R5325A-2	65	15.23	13.56	13.80	1 1/2”
R5325B-1	65	14.73	13.56	13.80	1 1/2”
R6125-2	87	16.45	15.17	15.38	2”
R6325A-2	76	15.53	15.17	15.38	2”
R6135J-10	112	15.86	15.17	15.38	2”
R6335A-2	82	16.59	15.17	15.38	2”
R6335B	82	16.00	15.17	15.38	2”
R6150J-2	125	17.46	15.17	15.38	2”
R6350A-2	112	17.35	15.17	15.38	2”
R6350B-2	112	17.35	15.17	15.38	2”
R6P335A	150	16.69	16.75	18.15	2”
R6P350A	176	17.75	16.75	18.15	2”
R6P350B	176	17.75	16.75	18.15	2”
R6P355A	215	19.92	16.75	18.15	2”
R6PP3110M	309	23.19	16.75*	18.21	2”/ 3”
R7100A-3	293	22.58	18.00	20.03	2 1/2”
R7100B-1	290	21.58	18.00	20.03	2 1/2”
R7P3180M	438	28.47	18.00*	20.12	2 1/2”/ 4”
R93150A	452	26.13	20.63	22.63	3”
R9P3300M	622	32.78	20.63*	22.54	3”/ 5”
HIGH PRESSURE MODELS					
R4H3060A	200	21.47	16.90	18.82	2”
R4H3060A-1	200	21.47	16.90	18.82	2”
R6PS3110M	309	23.19	16.75	18.21	2”
R7S3180M	431	28.47	18.00	20.12	2 1/2”
R9S3300M	606	32.78	20.63*	22.54	3”
EXPLOSION PROOF MOTOR MODELS					
R3105N-50	52	12.3	12.75	10.15	1 1/4”
R4110N-50	60	15.34	12.34	11.80	1 1/2”
R4310P-50	58	14.09	12.34	11.80	1 1/2”
R4P115N-50	79	17.41	13.75	13.61	1 1/2”
R5125Q-50	77	17.59	13.72	13.80	1 1/2”
R5325R-50	75	16.75	13.56	13.80	1 1/2”
R6130Q-50	129	18.97	15.17	15.34	2”
R6340R-50	112	18.82	15.17	15.34	2”
R6P155Q-50	243	22.81	16.75	18.14	2”
R6P355R-50					
R7100R-50	297	22.77	18.00	20.03	2 1/2”
SEPARATE DRIVE MODELS					
SDR4	27	12.44	11.25	11.80	1 1/2”
SDR5	37	14.22	13.56	13.78	1 1/2”
SDR6	70	15.89	15.17	15.34	2”

*Less muffler(s)

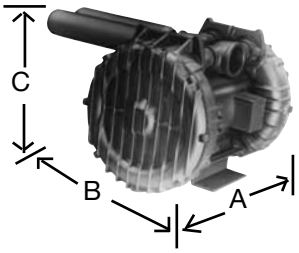
BASIC STYLE
R1, R2, R3, R4, R4H, R4P, R5, R6, R6P, R7, R9

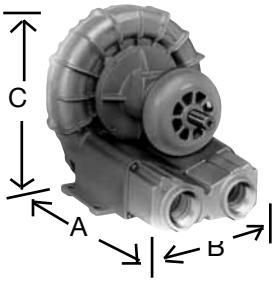




STAGED
R6PS, R7S, R9S

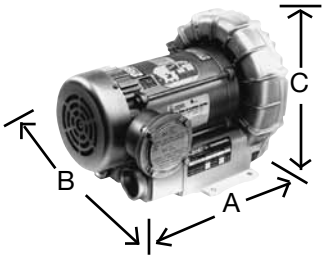
PARALLEL
R6PP, R7P, R9P





SEPARATE DRIVE
SDR4, SDR5, SDR6,

EXPLOSION PROOF MOTOR MODELS
R3, R4, R4P, R5, R6, R6P, R7



AC Motor

DC Motor

Models R1102, R1102C, R1102K

Max. Pressure – 28.5 inH_2O (60 Hz), 21 inH_2O (50 Hz)
Max. Vacuum – 26.5 inH_2O (60 Hz), 20 inH_2O (50 Hz)
Max. Air flow – 27 CFM (60 Hz), 23 CFM (50 Hz)

PRODUCT FEATURES

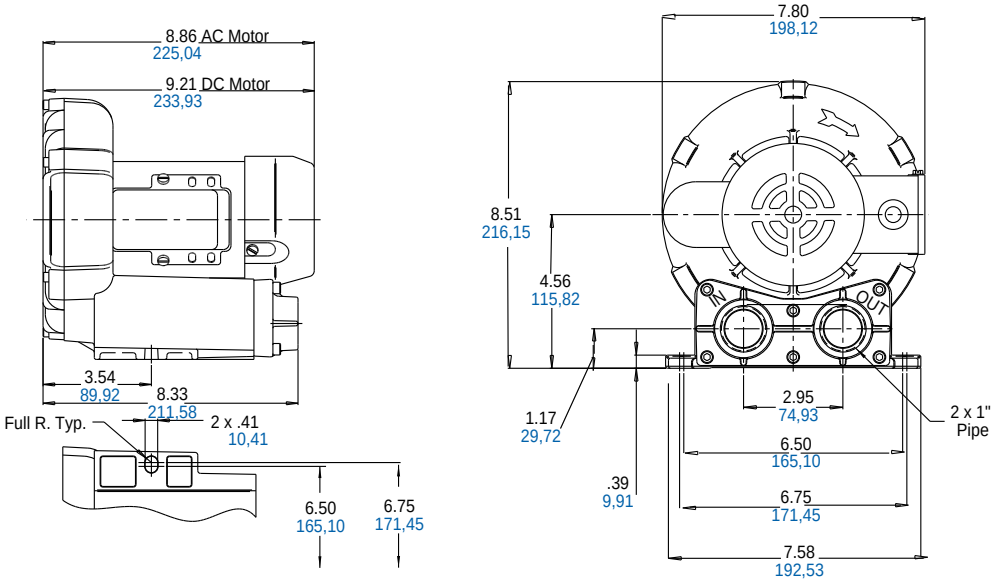
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase AC motors
- Estimated 3,000 hour brush life on 12 volt DC motor
- Can be operated with no air flow through unit.
- Aluminum blower housing, impeller, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AJ496
- Inlet filter AJ126B (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151A (vacuum)
- Muffler AJ121B
- K899 foam replacement kit for R1102

Product Dimensions (inches, mm)

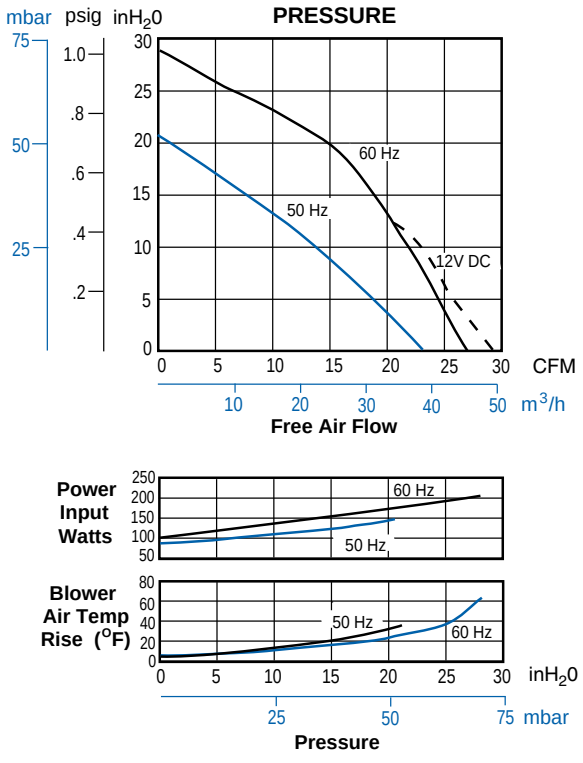
Models R1102, R1102C, R1102K,

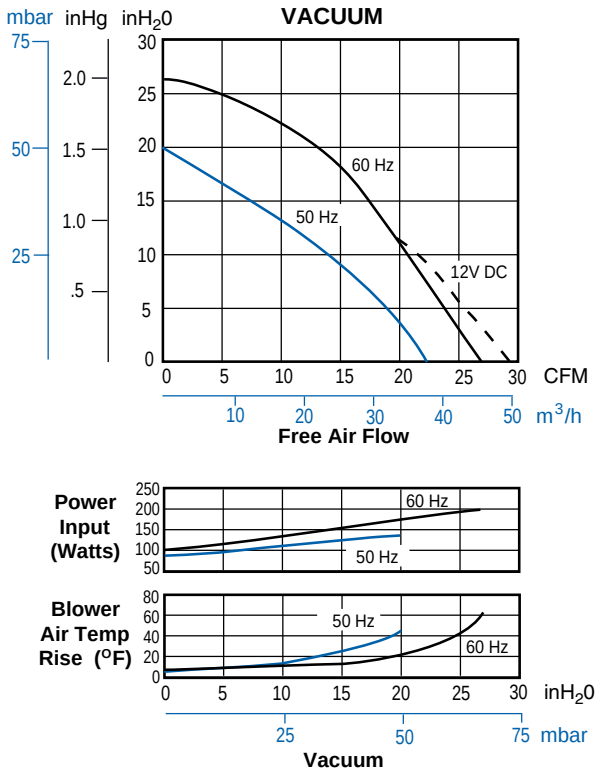


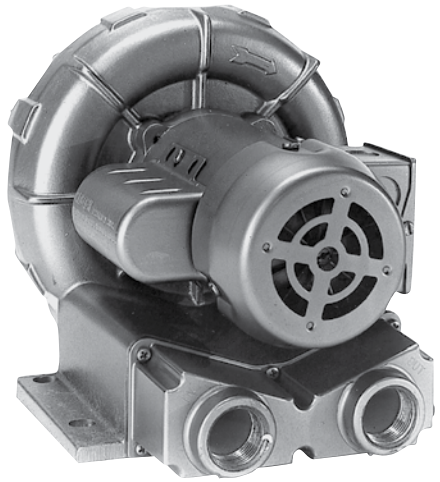
Product Specifications

MODEL NUMBER		R1102	R1102C	R1102K	R1302
Motor Enclosure		TEFC	TEFC	TEFC	TEFC
HP/kW	60 Hz	.125/0,09	.125/0,09	.125/0,09	.125/0.09
	50 Hz	.10/0,07	-	-	.10/0,07
Voltage	60 Hz	115/208-230-1	115-1	12V DC	208-230/460-3
	50 Hz	110/220-240-1	-	-	190-220/380-415-3
Amps	60 Hz	2.0/1.1-1.0	1.8	19 @ 12V DC	1.0-1.1/5
	50 Hz	2.0/1.1-1.0	-	-	1.0-1.1/.5-.6
Starting Amps	60 Hz	8.5 @ 115V	9.7	145 @ 12V DC	3.7 @ 230
	50 Hz	8.6 @ 220V	-	-	3.6 @ 220
Insulation Class		B	B	H	B
Recommended NEMA Starter Size		00/00	00	-	00/00
Net Weight (lbs/kg)		16/7,3	16/7,3	16/7,3	16/7,3

Product Performance







Models R2103, R2105, R2303A, R2305B

Max. Pressure – 39 inH_2O (60 Hz), 30 inH_2O (50 Hz)
Max. Vacuum – 35 inH_2O (60 Hz), 25 inH_2O (50 Hz)
Max. air flow – 42 CFM (60 Hz), 33 CFM (50 Hz)

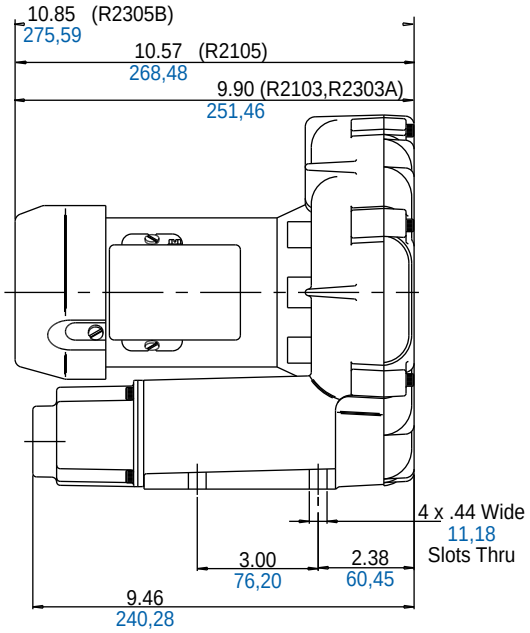
PRODUCT FEATURES

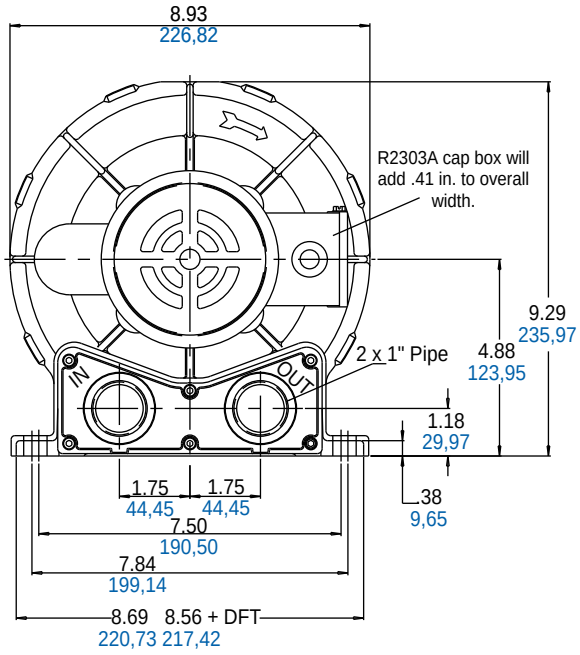
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be operated with no air flow through unit
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AJ496
- Inlet filter AJ126B (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151B (vacuum)
- Muffler AJ121B
- Foam replacement kit K900

Product Dimensions (inches, mm)

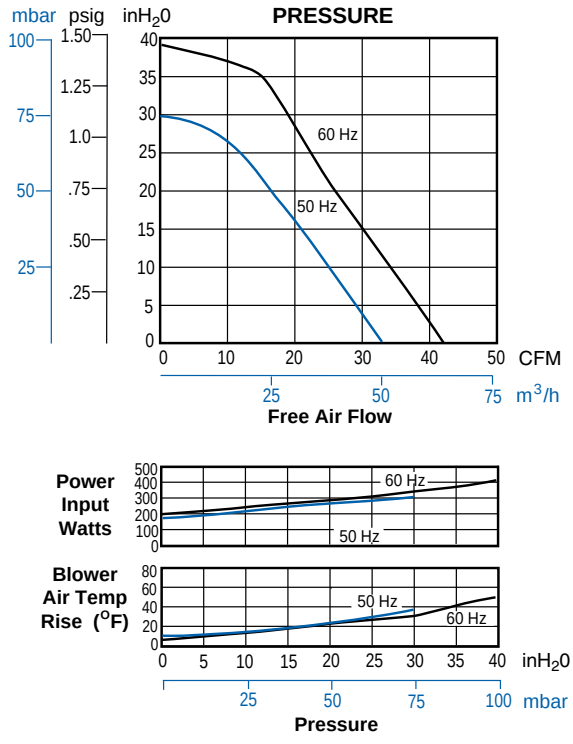


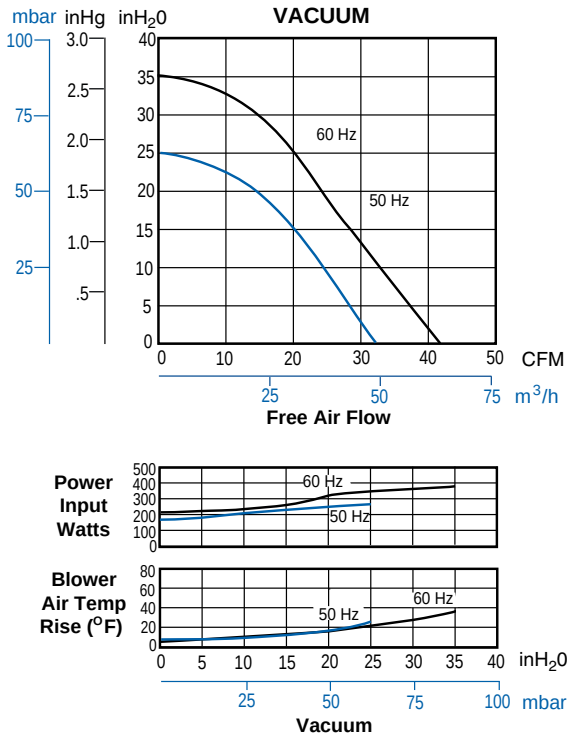


Product Specifications

MODEL NUMBER		R2103	R2105	R2303A	R2305B
Motor Enclosure		TEFC	TEFC	TEFC	TEFC
HP/kW	60 Hz	.33/0,25	.50/0,37	.33/0,25	.50/0,37
	50 Hz	.20/0,15	.33/0,25	.20/0,15	-
Voltage	60 Hz	115/208-230-1	115/208-230-1	208-230/460-3	575-3
	50 Hz	110/220-1	110/220-240-1	190-220/380-415-3	-
Amps	60 Hz	3.8/2.0-1.9	5.6/3.0-2.8	1.2-1.2/6	.7
	50 Hz	3.8/1.9	5.2/2.6-3.1	1.0-1.2/.5-.53	-
Starting Amps	60 Hz	9.3 @ 230V	23.2 @ 115V	8.0 @ 230V	4.2
	50 Hz	17.6 @ 220V	23 @ 220V	8.1 @ 220V	-
Insulation Class		B	B	B	B
Recommended NEMA Starter Size		00/00	00/00	00/00	00/00
Net Weight (lbs/kg)		21/9,5	23/10,4	23/10,4	23/10,4

Product Performance





Models R3105-1, R3305A-1

Max. pressure – 43 inH_2O (60 Hz), 31 inH_2O (50 Hz)
Max. vacuum – 40 inH_2O (60 Hz), 28 inH_2O (50 Hz)
Max. air flow – 53 CFM (60 Hz), 44 CFM (50 Hz)

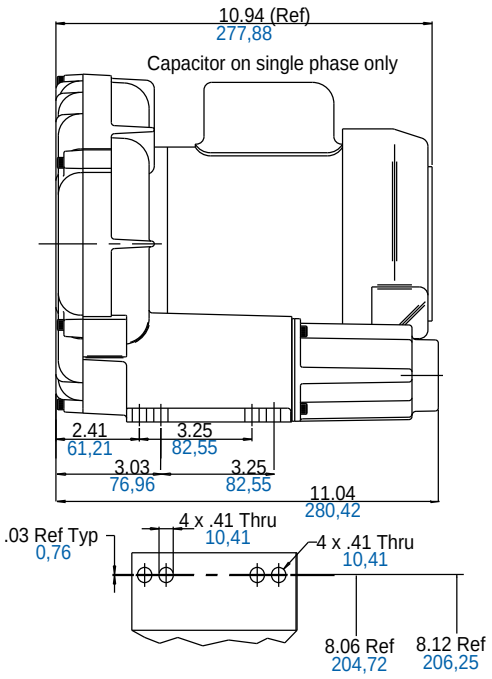
PRODUCT FEATURES

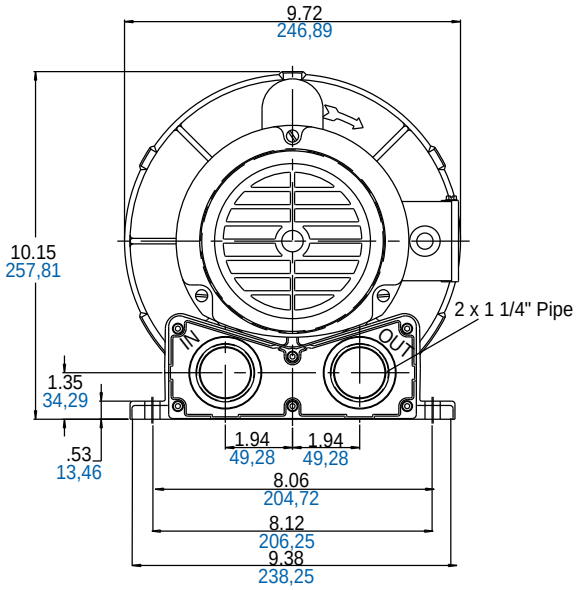
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be operated with no air flow through unit
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AJ496
- Inlet filter AJ126C (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151C (vacuum)
- Muffler AJ121C
- Foam replacement kit K901

Product Dimensions (inches, mm)

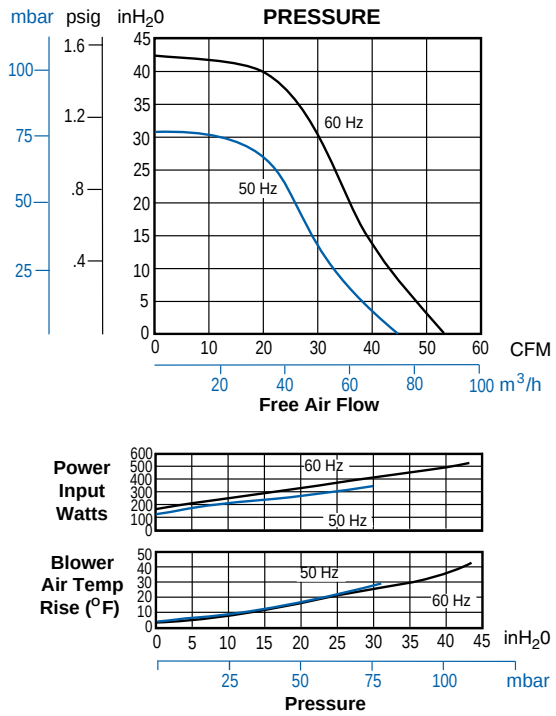


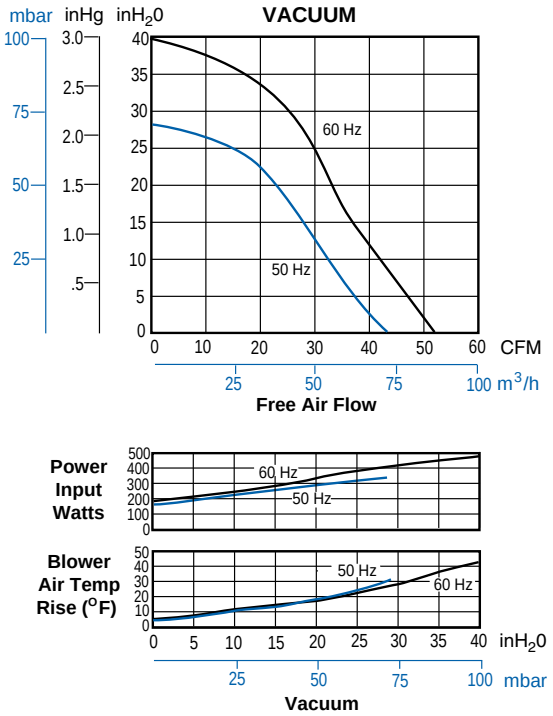


Product Specifications

MODEL NUMBER		R3105-1	R3305A-1
Motor Enclosure		TEFC	TEFC
HP/kW	60 Hz	.50/0,37	.50/0,37
	50 Hz	.33/0,25	.33/0,25
Voltage	60 Hz	115/208-230-1	208-230/460-3
	50 Hz	110/220-240-1	190-220/380-415-3
Amps	60 Hz	5.6/3.0-2.8	2.0-2.0/1.0
	50 Hz	5.2/2.6-3.1	1.6-1.8/.8-.84
Starting Amps	60 Hz	23.2 @ 115V	10.0 @ 230V
	50 Hz	23 @ 220V	7.9 @ 220V
Insulation Class		B	B
Recommended NEMA Starter Size		00/00	00/00
Net Weight (lbs/kg)		29/13,2	29/13,2

Product Performance





Models R3105-12, R3305A-13

Max. pressure – 55 inH_2O (60 Hz), 40 inH_2O (50 Hz)
Max. vacuum – 50 inH_2O (60 Hz), 35 inH_2O (50 Hz)
Max. air flow – 52 CFM (60 Hz), 43 CFM (50 Hz)

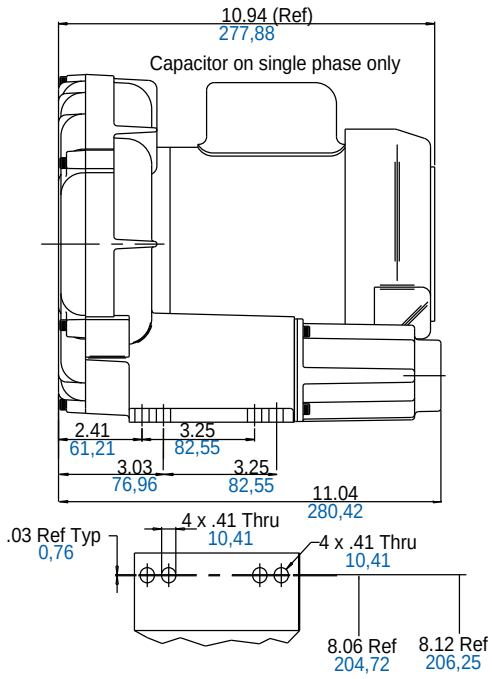
PRODUCT FEATURES

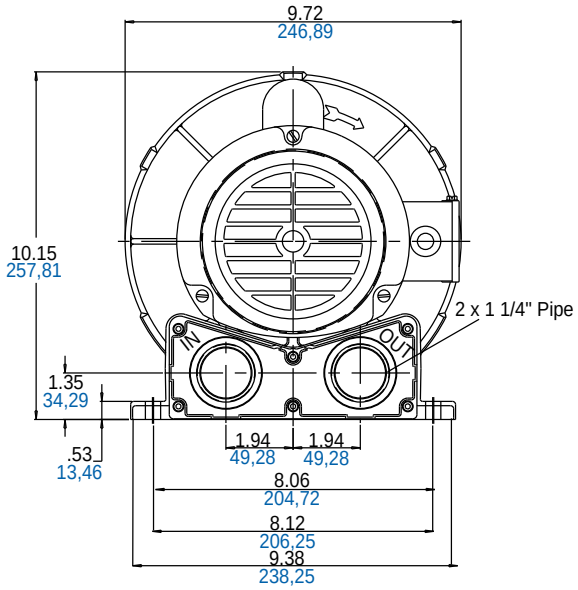
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AJ496
- Inlet filter AJ126C (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151C (vacuum)
- Muffler AJ121C

Product Dimensions (inches, mm)

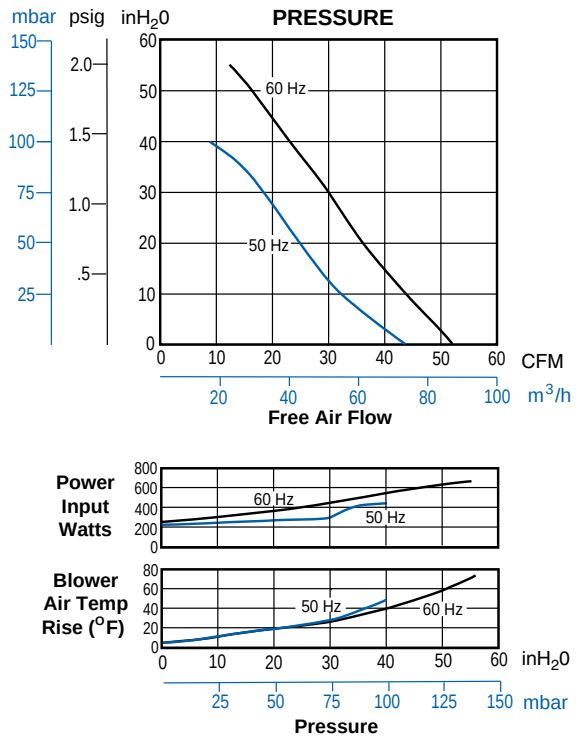


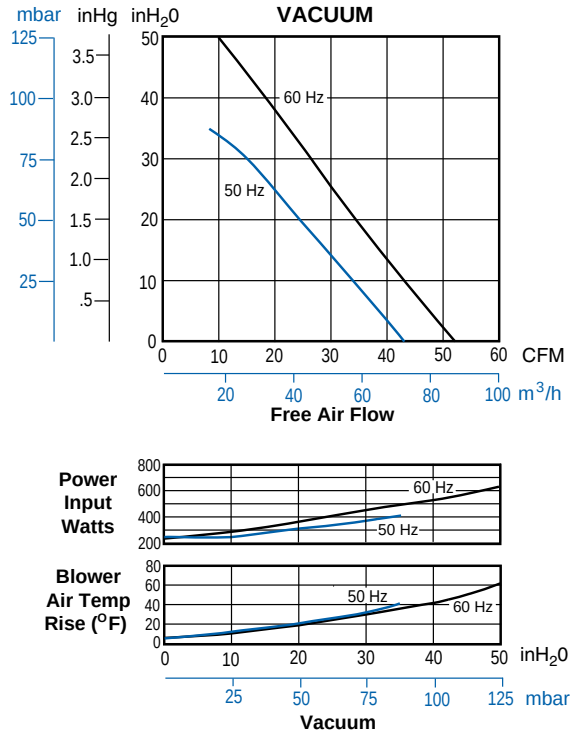


Product Specifications

MODEL NUMBER		R3105-12	R3305A-13
Motor Enclosure		TEFC	TEFC
HP/kW	60 Hz	.50/0,37	.50/0,37
	50 Hz	.33/0,25	.33/0,25
Voltage	60 Hz	115/208-230-1	208-230/460-3
	50 Hz	110/220-240-1	190-220/380-415-3
Amps	60 Hz	5.6/3.0-2.8	2.0-2.0/1.0
	50 Hz	5.2/2.6-3.1	1.6-1.8/.8-.84
Starting Amps	60 Hz	23.2 @ 115V	10.0 @ 230V
	50 Hz	23 @ 220V	7.9 @ 220V
Insulation Class		B	B
Recommended NEMA Starter Size		00/00	00/00
Net Weight (lbs/kg)		29/13,2	29/13,2

Product Performance





Models R4110-2, R4310A-2, R4310B-1

Max. pressure – 52 inH_2O (60 Hz), 38 inH_2O (50 Hz)
Max. vacuum – 48 inH_2O (60 Hz), 35 inH_2O (50 Hz)
Max. air flow – 92 CFM (60 Hz), 75 CFM (50 Hz)

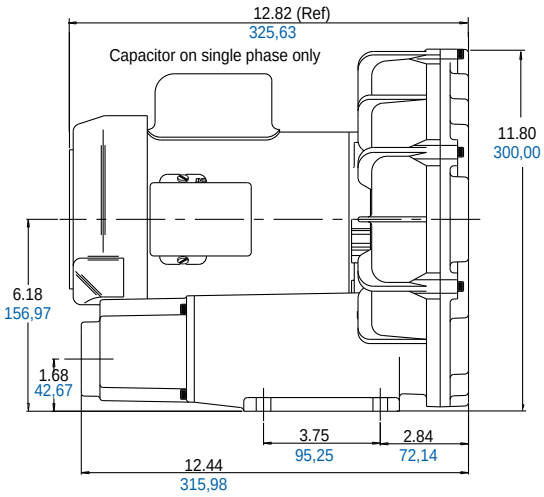
PRODUCT FEATURES

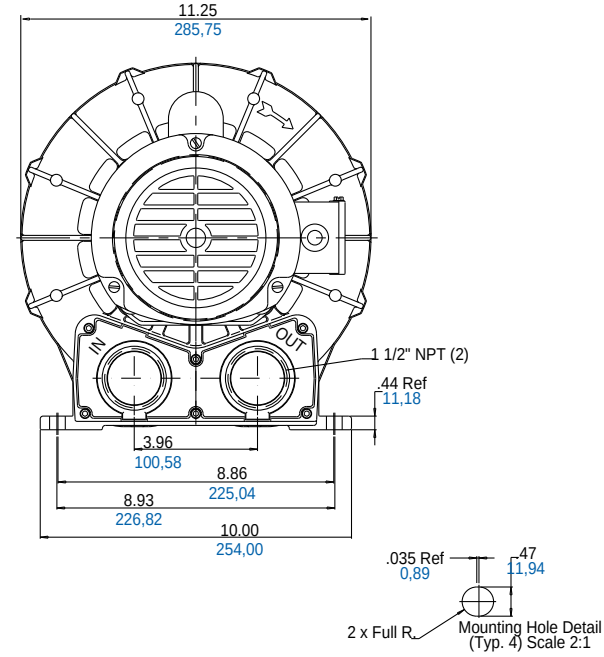
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be operated with no air flow through unit
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AJ496
- Inlet filter AJ126D (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151D (vacuum)
- Muffler AJ121D
- Relief valve AG258
- Liquid separator RMS160 (vacuum)
- Foam replacement kit K902

Product Dimensions (inches, mm)

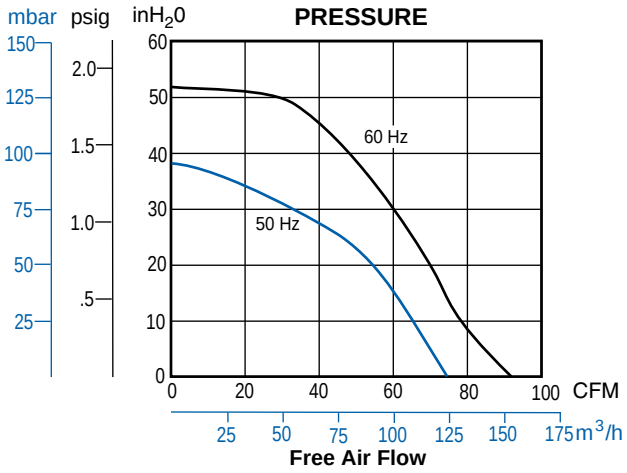


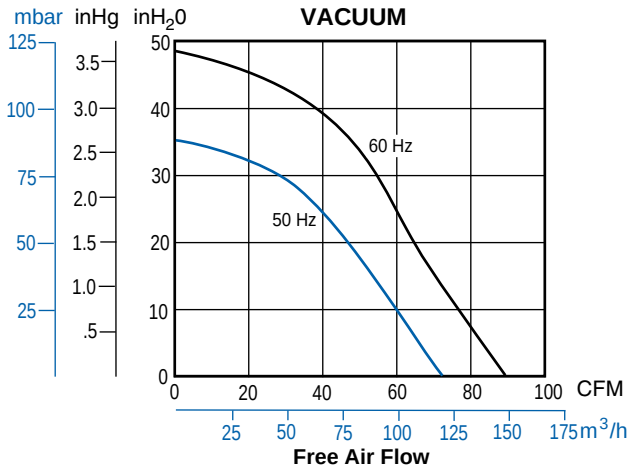


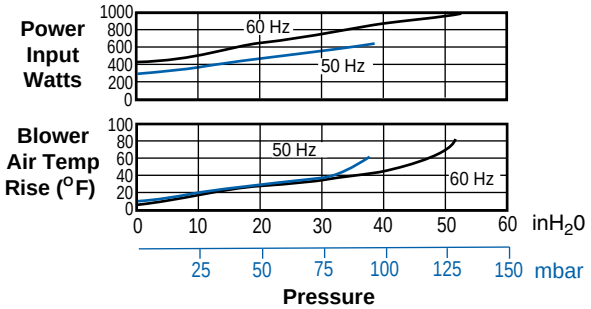
Product Specifications

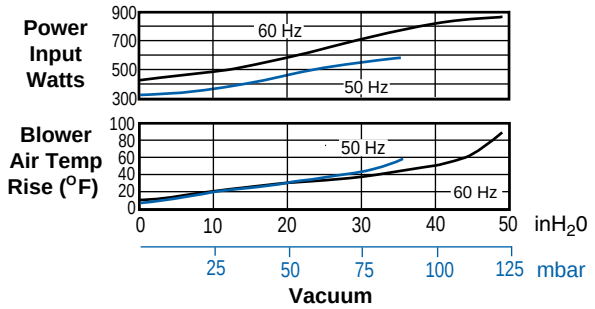
MODEL NUMBER		R4110-2	R4310A-2	R4310B-1
Motor Enclosure		TEFC	TEFC	TEFC
HP/kW	60 Hz	1.0/0,75	1.0/0,75	1.0/0,75
	50 Hz	.6/0,45	.6/0,45	-
Voltage	60 Hz	115/208-230-1	208-230/460-3	575-3
	50 Hz	110/220-240-1	190-220/380-415-3	-
Amps	60 Hz	9.8/5.2-4.9	3.4-3.2/1.6	1.25
	50 Hz	9.0/4.5-5.7	2.6-3.3/1.3-1.4	-
Starting Amps	60 Hz	31.2 @ 230V	26.5 @ 230V	7.6
	50 Hz	34 @ 220V	28.4 @ 220V	-
Insulation Class		B	B	B
Recommended NEMA Starter Size		0/00	00/00	00
Net Weight (lbs/kg)		41/18,6	41/18,6	41/18,6

Product Performance









Models R4P115, R4P315A

Max. pressure – 65 inH_2O (60 Hz), 50 inH_2O (50 Hz)
Max. vacuum – 60 inH_2O (60 Hz), 45 inH_2O (50Hz)
Max. air flow – 127 CFM (60 Hz), 110 CFM (50 Hz)

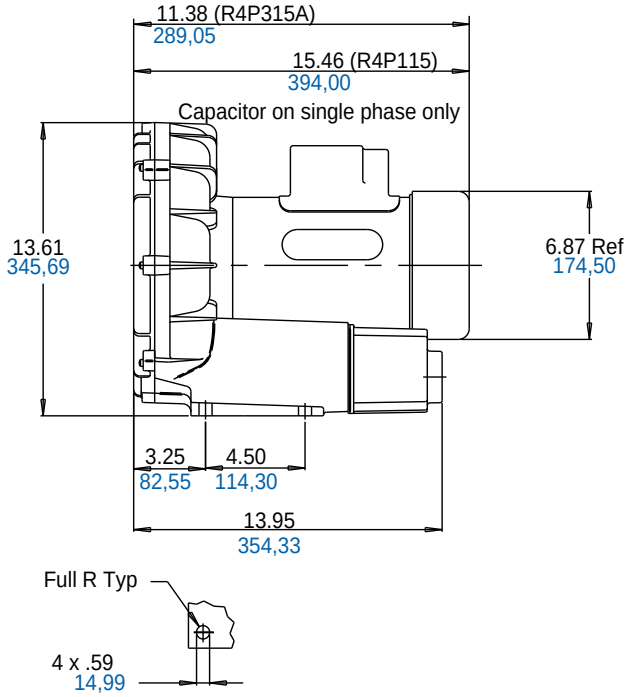
PRODUCT FEATURES

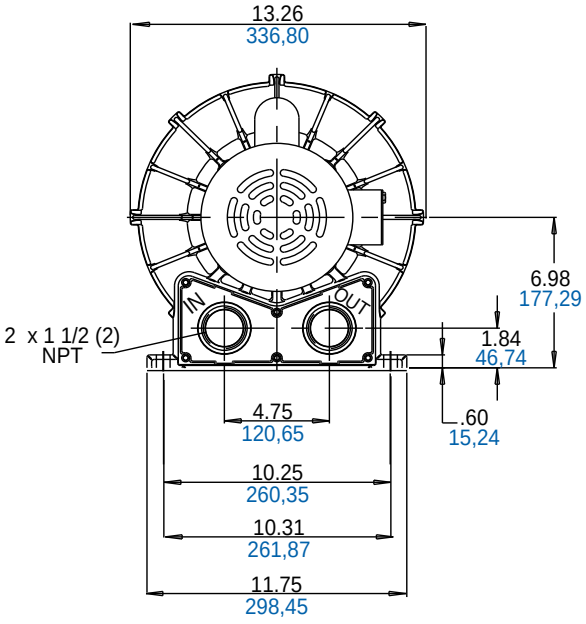
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet filter AJ126D (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151E (vacuum)
- Muffler AJ121D
- Relief valve AG258
- Liquid separator RMS200 (vacuum)
- Foam replacement kit K906

Product Dimensions (inches, mm)

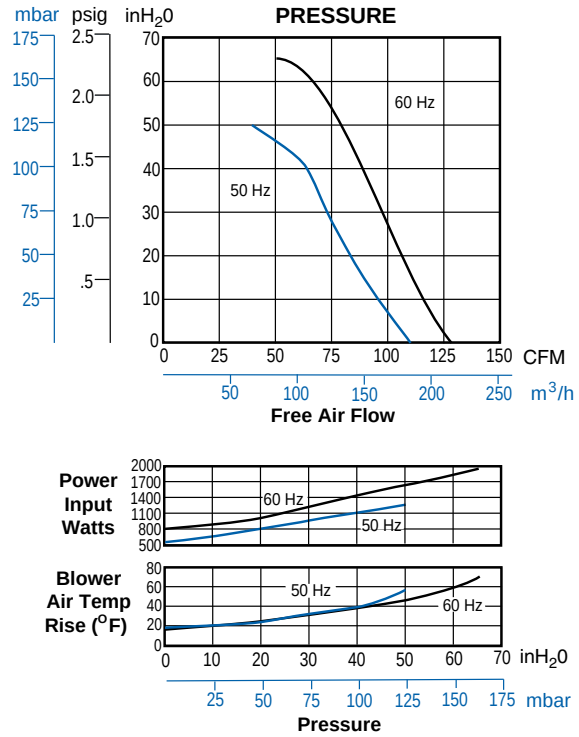


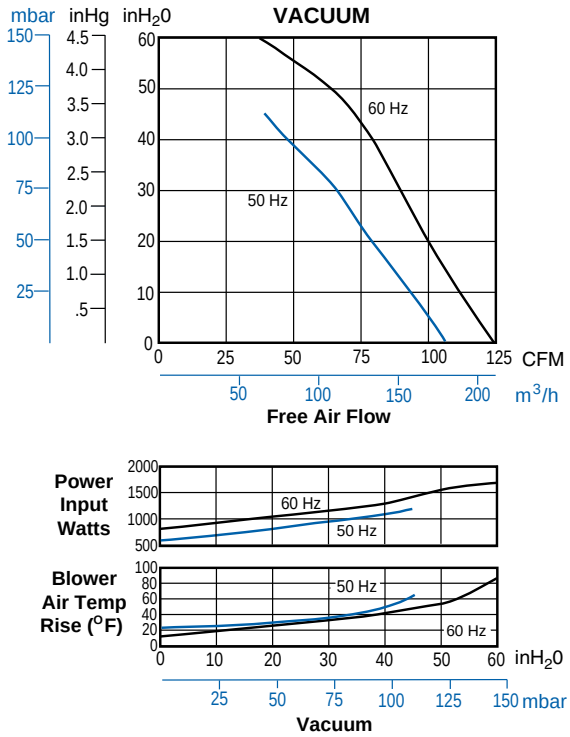


Product Specifications

MODEL NUMBER		R4P115	R4P315A
Motor Enclosure		TEFC	TEFC
HP/kW	60 Hz	1.5/1,1	1.5/1,1
	50 Hz	1.0/0,75	1.0/0,75
Voltage	60 Hz	115/208-230-1	208-230/460-3
	50 Hz	110/220-240-1	190-220/380-415-3
Amps	60 Hz	17.5/10-9	5.1-4.9/2.5
	50 Hz	14.2/8.1	3.9-4.3/1.9-2.0
Starting Amps	60 Hz	58 @ 230V	18.5 @ 460V
	50 Hz	56 @ 220V	19 @ 380V
Insulation Class		F	B
Recommended NEMA Starter Size		1/0	00/00
Net Weight (lbs/kg)		61/27,7	43/24,1

Product Performance





Models R5125-2, R5325A-2, R5325B-1

Max. pressure – 65 inH_2O (60 Hz), 50 inH_2O (50 Hz)
Max. vacuum – 60 inH_2O (60 Hz), 47 inH_2O (50 Hz)
Max. air flow – 160 CFM (60 Hz), 133 CFM (50 Hz)

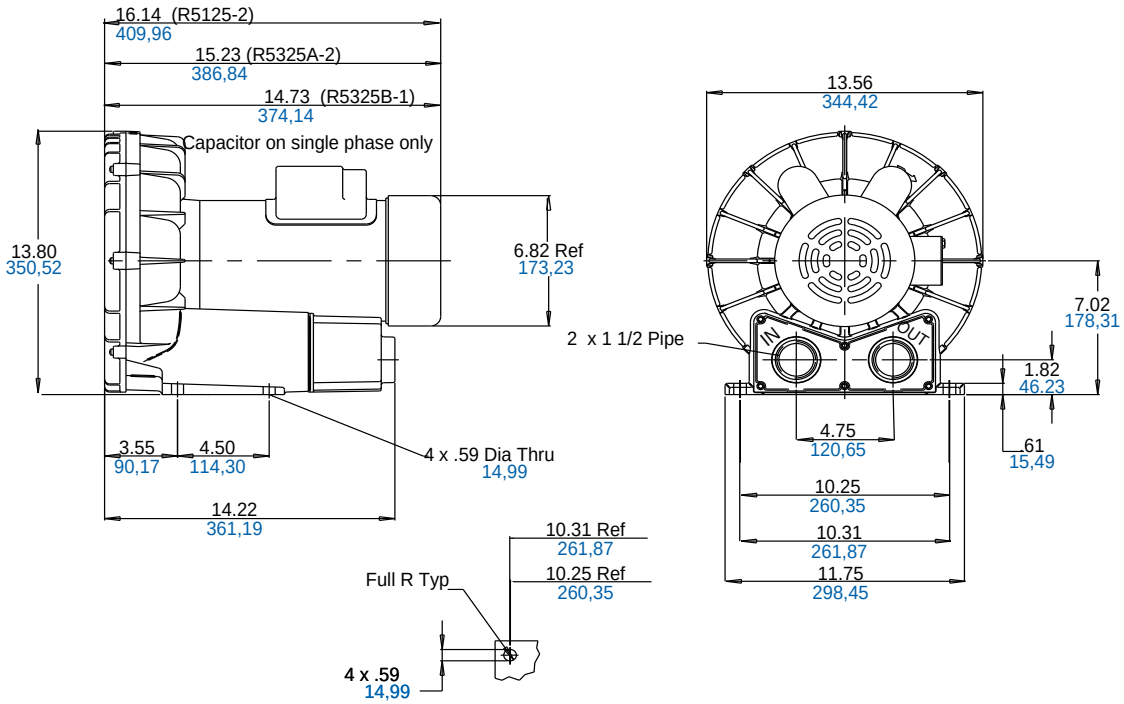
PRODUCT FEATURES

- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Automatic restart thermal protection on single phase motors
- Aluminum blower housing, impeller, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet Filter AJ126D (pressure)
- Vacuum gauge AJ497
- Inline filter AJ151E (vacuum)
- Muffler AJ121D
- Relief valve AG258
- Liquid separator RMS200 (vacuum)
- Foam replacement kit K903

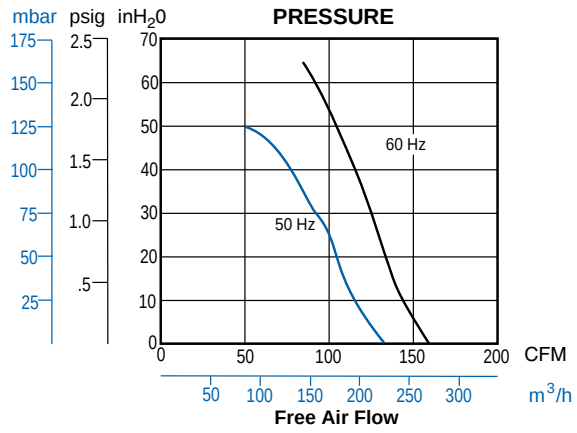
Product Dimensions (inches, mm)

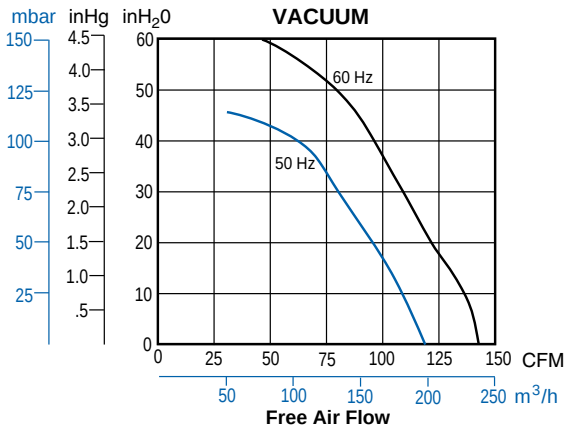


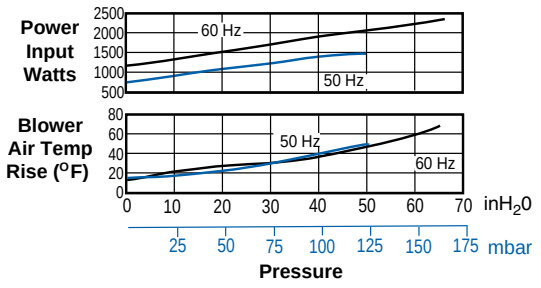
Product Specifications

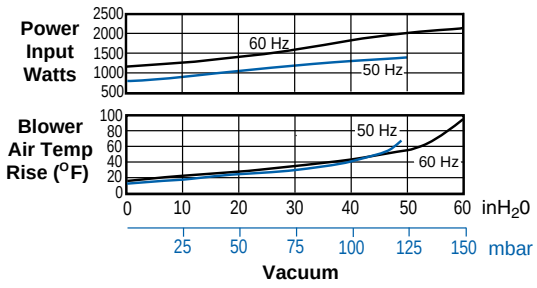
MODEL NUMBER		R5125-2	R5325A-2	R5325B-1
Motor Enclosure		TEFC	TEFC	TEFC
HP/kW	60 Hz	2.5/1,9	2.5/1,9	2.5/1,9
	50 Hz	1.5/1,1	1.85/1,38	-
Voltage	60 Hz	115/208-230-1	208-230/460-3	575-3
	50 Hz	110/220-240-1	190-220/380-415-3	-
Amps	60 Hz	21/12-10	6.9-6.9/3.45	2.9
	50 Hz	16.5/8.6	6.6-6.7/3.3-3.5	-
Starting Amps	60 Hz	58 @ 230V	58 @ 230V	23.4
	50 Hz	42 @ 230V	23 @ 380V	-
Insulation Class		F	B	B
Recommended NEMA Starter Size		1/0	0/00	0
Net Weight (lbs/kg)		76/34,5	65/29,5	65/29,5

Product Performance









Models R6125-2, R6325A-2, R6135J-10, R6335A-2, R6335B, R6150J-2, R6350A-2, R6350B-2

Maximum pressure, vacuum, and air flow varies for the r6 series, depending on the model(s). Reference the chart for the specific model performance.

MODELS	Maximum Pressure (inH_2O) 60 Hz	50 Hz	Maximum Vacuum (inH_2O) 60 Hz	50 Hz	Maximum Air Flow (CFM) 60 Hz	50 Hz
R6125-2 R6325A-2	45	40	55	50	215	180
R6135J-10 R6335A-2 R6335B	80	75	80	65	215	180
R6150J-2 R6350A-2 R6350B-2	105	78	88	70	207	180

PRODUCT FEATURES

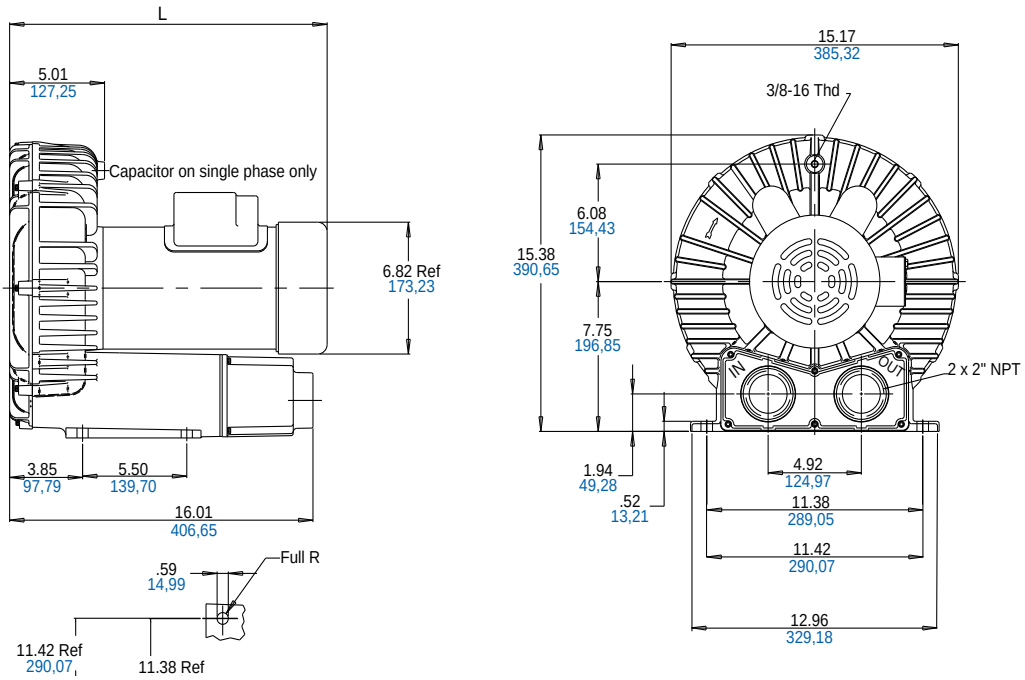
- Made in the U.S.A.
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings (R6150J-2 and R6135J-10 has ODP motor)
- Automatic restart thermal protection on R6150J-2, R6125-2, R6335A-2, R6325A-2
- Aluminum cover, impeller, and housing
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet filter AJ126F (pressure)
- Vacuum gauge AE134
- Inline filter AJ151G (vacuum)
- Muffler AJ121F
- Relief valve AG258
- Liquid separator RMS300 (vacuum)
- Foam replacement kit K904

Product Dimensions (inches, mm)

Note: Unit must be mounted horizontally, foot pad down



MODEL	L (in)	L (mm)
R6125-2	16.45	418
R6325A-2	15.53	394
R6135J-10	15.86	403
R6335A-2	16.59	421
R6335B	16.00	406
R6150J-2	17.46	443
R6350A-2 R6350B-2	17.35	441

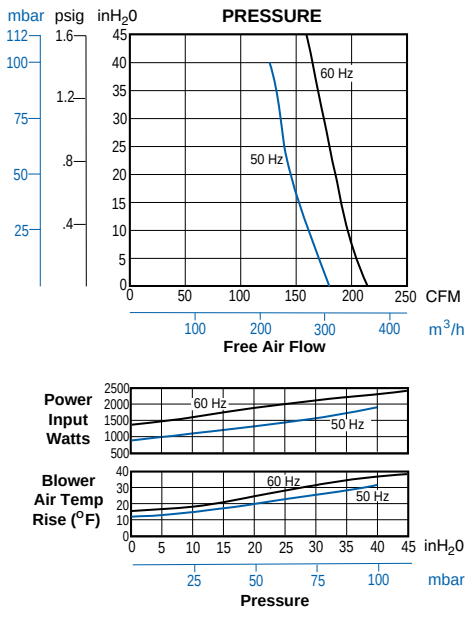
Product Specifications

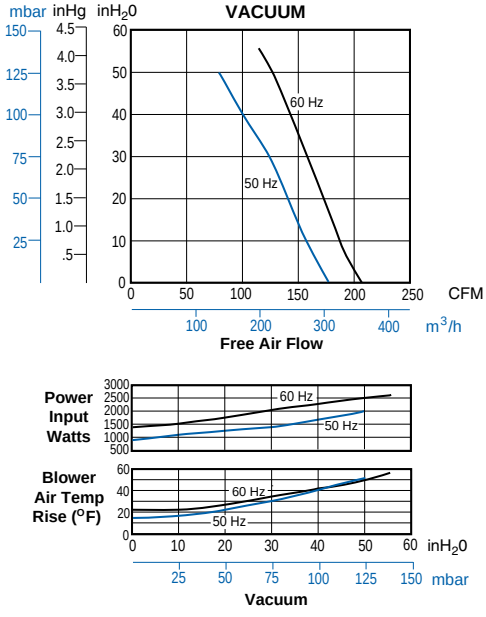
MODEL NUMBER		R6125-2	R6325A-2	R6135J-10	R6335A-2
Motor Enclosure		TEFC	TEFC	ODP	TEFC
HP/kW	60 Hz	2.5/1,9	2.5/1,9	3.5/2,6	3.5/2,6
	50 Hz	1.5/1,1	1.85/1,38	-	2.5/1,9
Voltage	60 Hz	115/208-230-1	208-230/460-3	230-1	208-230/460-3
	50 Hz	110/220-240-1	190-220/380-415-3	-	190-220/380-415-3
Amps	60 Hz	22/12.5-11	6.9-6.9/3.45	19	9.7-8.8/4.4
	50 Hz	18/9.5	6.6-6.7/3.3-3.5	-	8.8/4-3.9
Starting Amps	60 Hz	58 @ 230V	58 @ 230V	125 @ 230V	50 @ 460V
	50 Hz	42 @ 240V	23.5 @ 380V	-	40.5 @ 380V
Insulation Class		F	B	F	F
Recommended NEMA Starter Size		1/0	0/00	1P	1/0
Net Weight (lbs/kg)		87/39,5	76/34,5	112/50,8	82/37,2

MODEL NUMBER		R6335B	R6150J-2	R6350A-2	R6350B-2
Motor Enclosure		TEFC	ODP	TEFC	TEFC
HP/kW	60 Hz	3.5/2,6	5.0/3,7	5.0/3,7	5.0/3,7
	50 Hz	-	-	4.8/3,6	-
Voltage	60 Hz	575-3	230-1	208-230/460-3	575-3
	50 Hz	-	-	190-220/380-415-3	-
Amps	60 Hz	3.6	22.3	13.0-12.0/6.0	4.8
	50 Hz	-	-	14.4-13.4/7.2-6.8	-
Starting Amps	60 Hz	34.9 @ 575V	96 @ 230V	125 @ 230V	35 @ 575V
	50 Hz	-	-	57 @ 380V	-
Insulation Class		F	F	F	F
Recommended NEMA Starter Size		0	1P	1/0	0
Net Weight (lbs/kg)		82/37,2	125/56,8	112/50,8	112/50,8

Product Performance

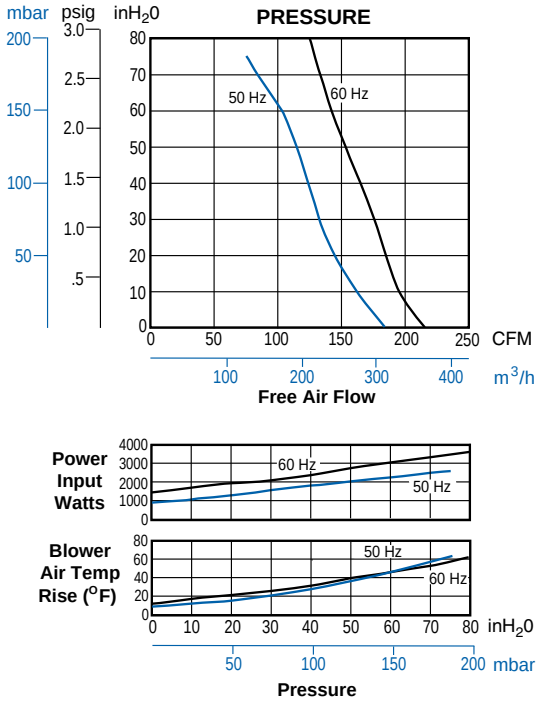
Models R6125-2, R6325A-2

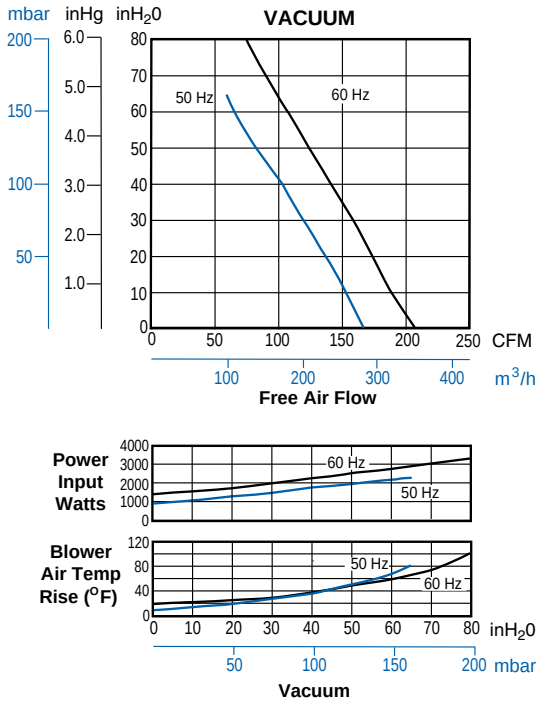




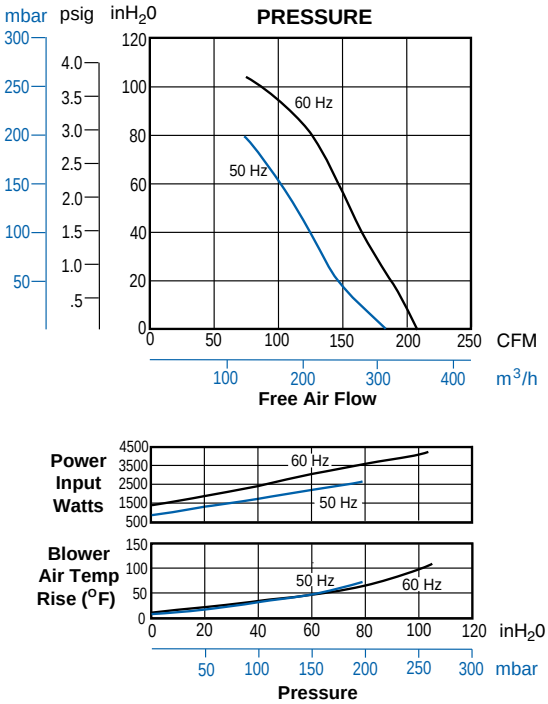
Product Performance

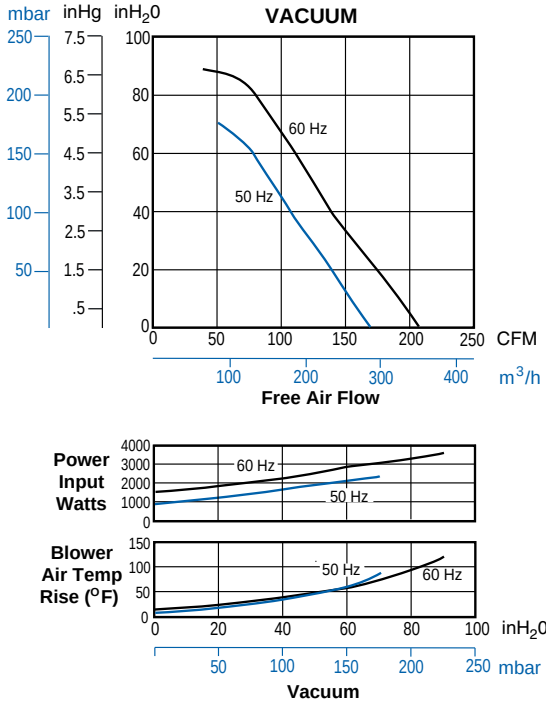
Models R6135J-10, R6335A-2, R6335B





Models R6150J-2, R6350A-2, R6350B-2





Models R6P335A, R6P350A, R6P350B, R6P355A

Maximum pressure, vacuum, and air flow varies for the r6p series, depending on the model(s). Reference the chart for the specific model performance.

PRODUCT FEATURES

- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- Aluminum cover, impeller, and housing
- Inlet and outlet have internal muffling

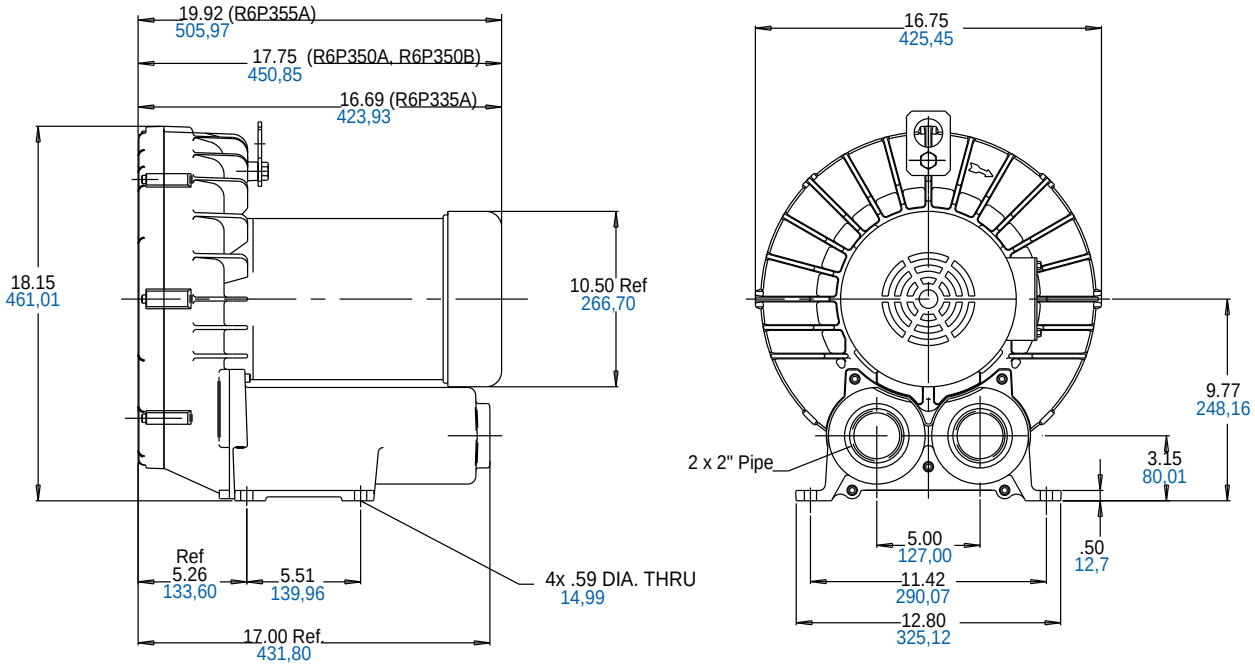
RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet filter AJ126F (pressure)
- Vacuum gauge AE134
- Inline filter AJ151G (vacuum)
- Muffler AJ121F
- Relief valve AG258
- Liquid separator RMS300 (vacuum)
- Foam replacement kit K907

MODELS	Maximum Pressure (inH_2O) 60 Hz	50 Hz	Maximum Vacuum (inH_2O) 60 Hz	50 Hz	Maximum Air Flow (CFM) 60 Hz	50 Hz
R6P335A	30	50	35	60	265	230
R6P350A R6P350B	60	70	70	70	290	245
R6P355A	110	85	90	70	265	225

Product Dimensions (inches, mm)

Note: Unit must be mounted horizontally, foot pad down

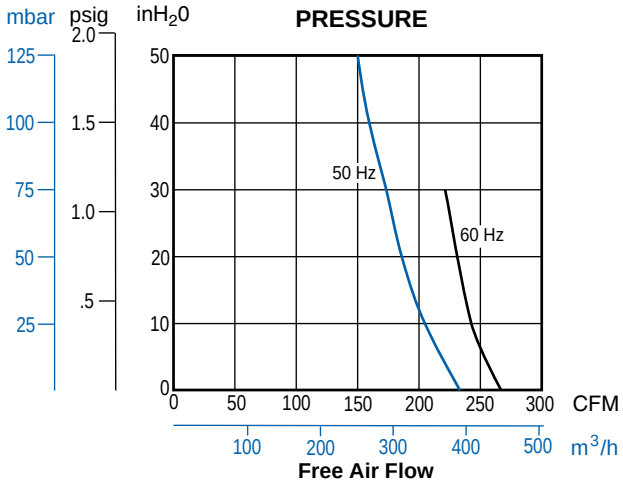


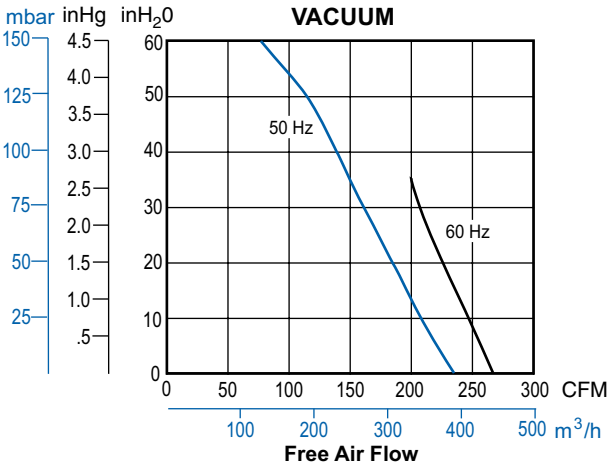
Product Specifications

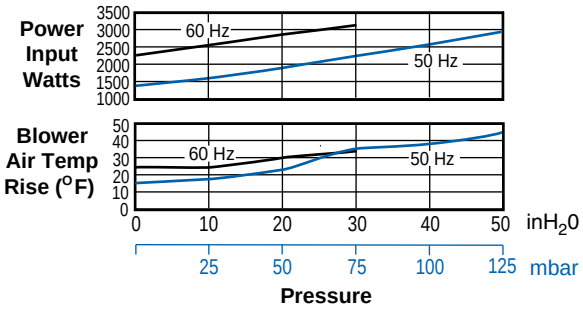
MODEL NUMBER		R6P335A	R6P350A	R6P350B	R6P355A
Motor Enclosure		TEFC	TEFC	TEFC	TEFC
HP/kW	60 Hz	3.5/2,6	5.0/3,7	5.0/3,7	5.5/4,1
	50 Hz	2.5/1,9	4.8/3,6	-	5.0/3,7
Voltage	60 Hz	208-230/460-3	208-230/460-3	575-3	208-230/460-3
	50 Hz	190-220/380-415-3	190-220/380-415-3	-	190-220/380-415-3
Amps	60 Hz	9.7-8.8/4.4	13.0-12.0/6.0	4.8	19.5-18.2/9.1
	50 Hz	8-8/4-3.9	14.4-13.4/7.2-6.8	-	14.2-13.4/7.1
Starting Amps	60 Hz	50 @ 460V	125 @ 230V	35 @ 575V	83 @ 460V
	50 Hz	40.5 @ 380V	57 @ 380V	-	72 @ 380V
Insulation Class		F	F	F	F
Recommended NEMA Starter Size		1/0	1/0	0	1/0
Net Weight (lbs/kg)		150/68	176/80	176/80	215/98

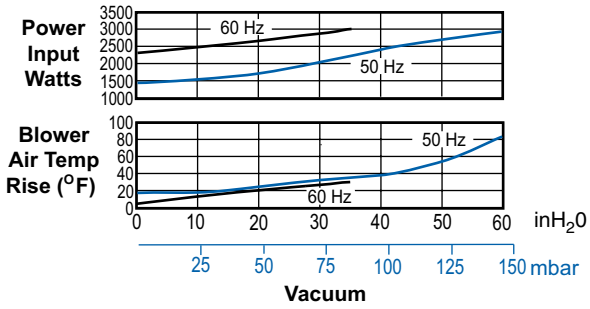
Product Performance

Model R6P335A



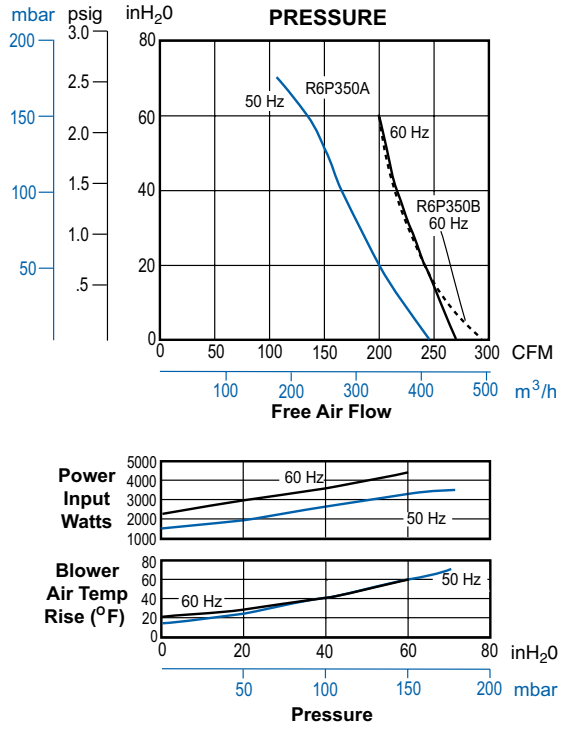


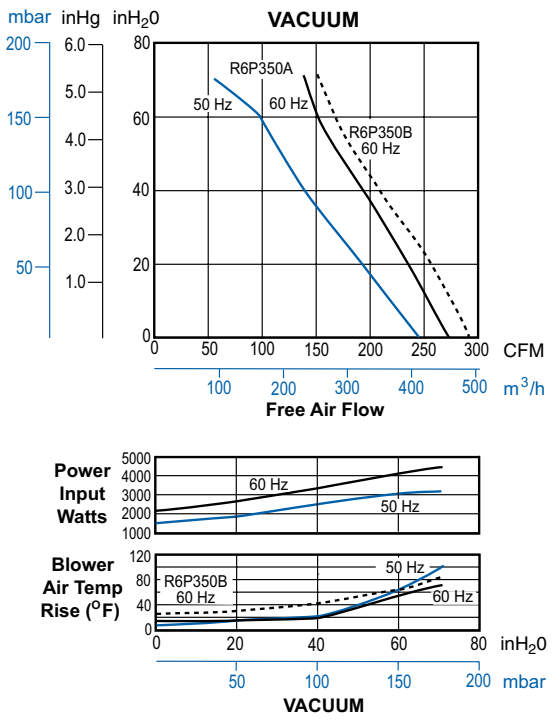




Product Performance

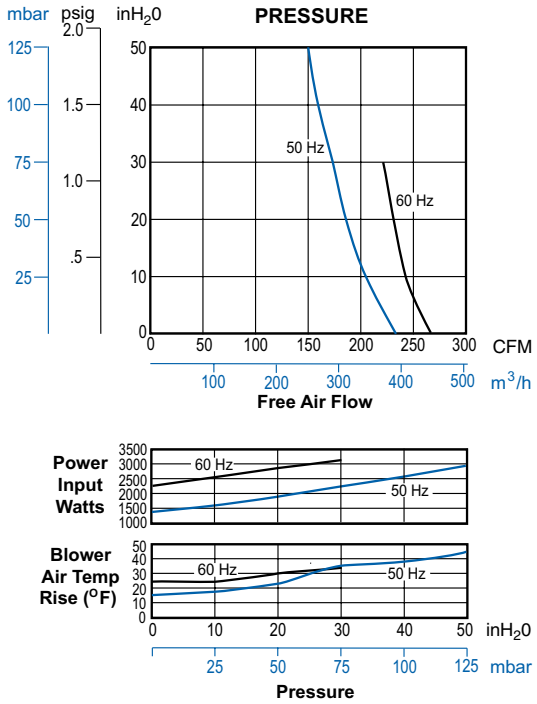
Models R6P350A, R6P350B

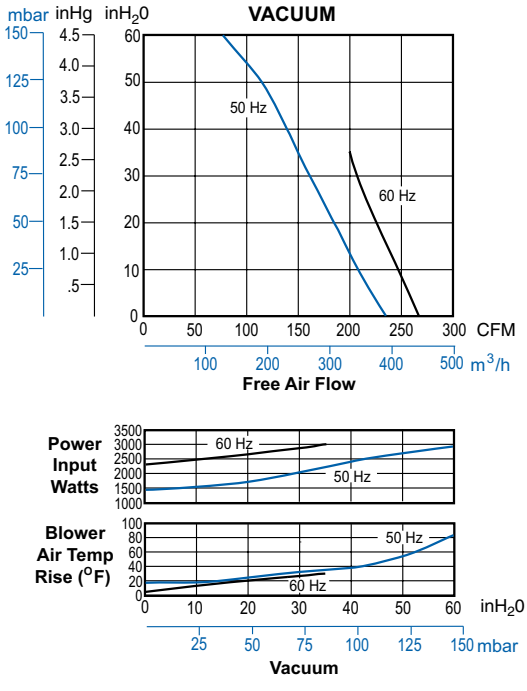




Product Performance

Model R6P355A





Models R6PP3110M (Parallel)

Max. pressure – 95 inH_2O (60 Hz), 75 inH_2O (50 Hz)
Max. vacuum – 80 inH_2O (60 Hz), 65 inH_2O (50 Hz)
Max. air flow – 520 CFM (60 Hz), 420 CFM (50 Hz)

PRODUCT FEATURES

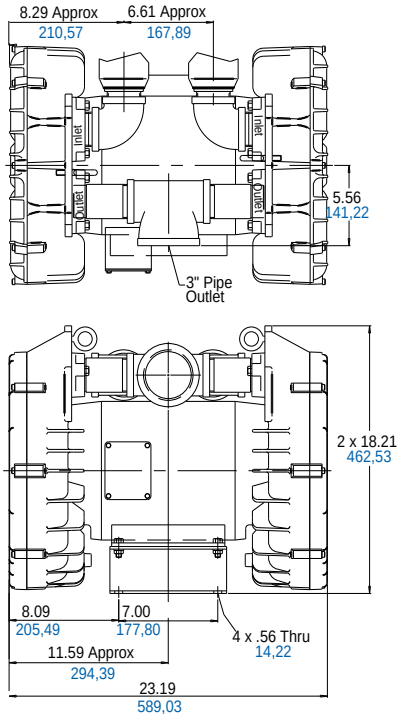
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved motors with permanently sealed ball bearings
- Class F insulation on motors
- Aluminum impeller; cast iron cover and housing
- Includes (2) muffler AJ121F
- Smaller and less costly than two motor-mounted units

RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet Filter AJ126F (pressure), use (2)
- Vacuum gauge AE134
- Inline filter AJ151H (vacuum)
- Relief valve AG258F
- Liquid separator RMS400 (vacuum)
- Muffler AJ121H (for exhaust)

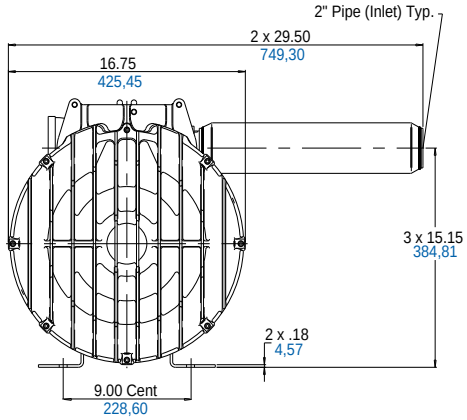
Product Dimensions (inches, mm)

TOP VIEW



Note: Unit must be mounted with shaft horizontal.

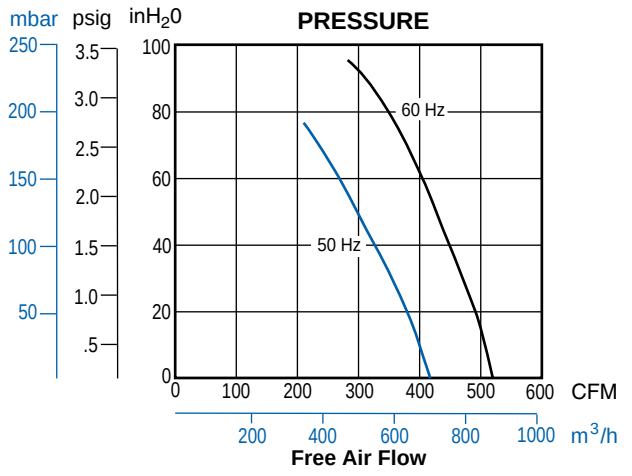
Note: Unit is stocked with plumbing arrangement of parallel compressor. The end user may reverse intake and exhaust plumbing or tie the inlets together with 2” pipe to make a vacuum unit.

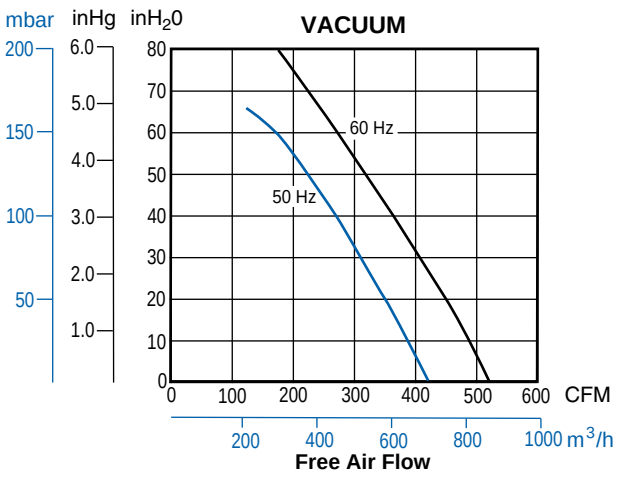


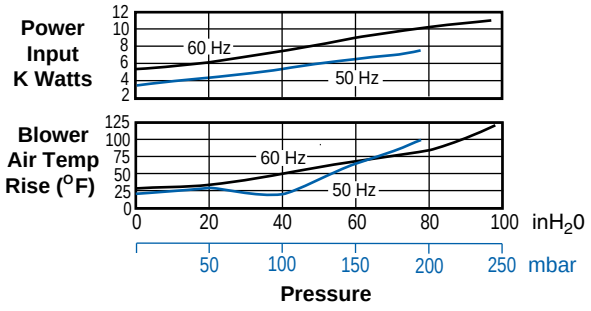
Product Specifications

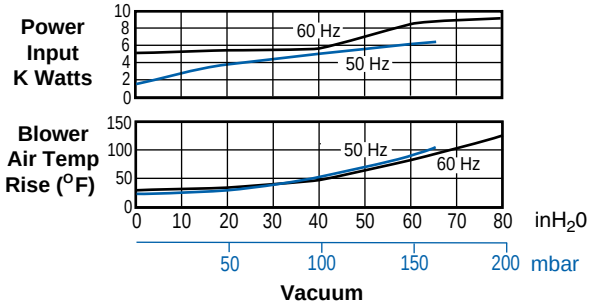
MODEL NUMBER		R6PP3110M
Motor Enclosure		ODP
HP/kW	60 Hz	11/8,2
	50 Hz	7/5,2
Voltage	60 Hz	208-230/460-3
	50 Hz	220/380-415-3
Amps	60 Hz	36-35/17.5
	50 Hz	32/15.5-13
Starting Amps	60 Hz	181 @ 460V
	50 Hz	176 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		2/2
Net Weight (lbs/kg)		309/140

Product Performance









Models R7100A-3, R7100B-1

Max. pressure – 125 inH_2O (60 Hz), 115 inH_2O (50 Hz)
Max. vacuum – 110 inH_2O (60 Hz), 90 inH_2O (50 Hz)
Max. air flow – 420 CFM (60 Hz), 350 CFM (50 Hz)

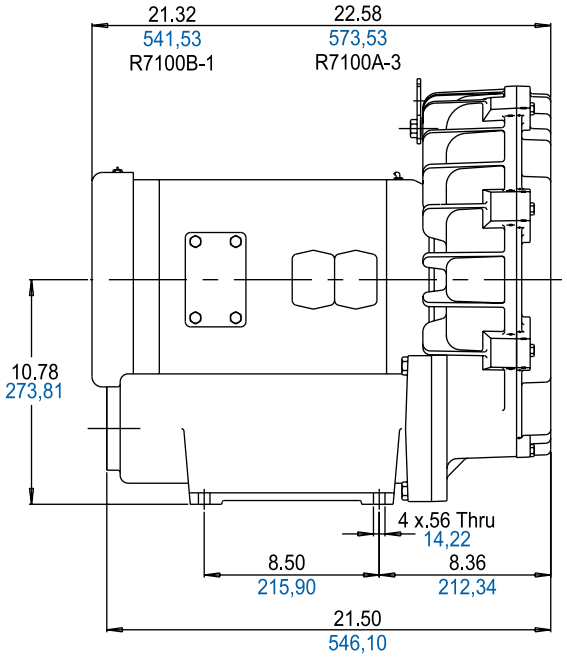
PRODUCT FEATURES

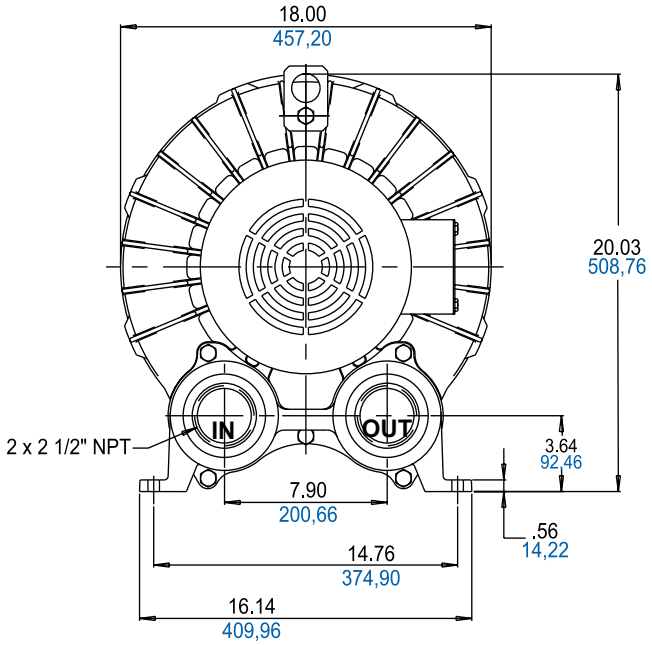
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motors with permanently sealed ball bearings
- IP54 rated enclosure on motors
- Aluminum impeller; cast iron cover and housing
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AE133A
- Inlet filter AJ126G (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Pressure/vacuum relief valve AG258
- Silencer for vacuum relief valve AJ121D
- Inline filter AJ151H (vacuum)
- External muffler for additional silencing AJ121G
- Liquid separator RMS400 (vacuum)
- Foam replacement kit K827

Product Dimensions (inches, mm)

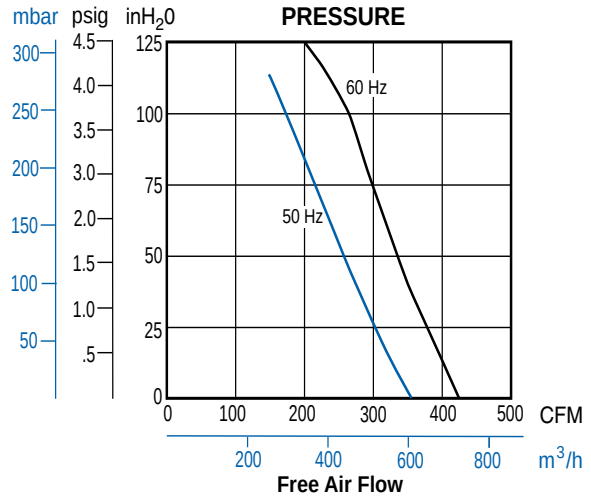


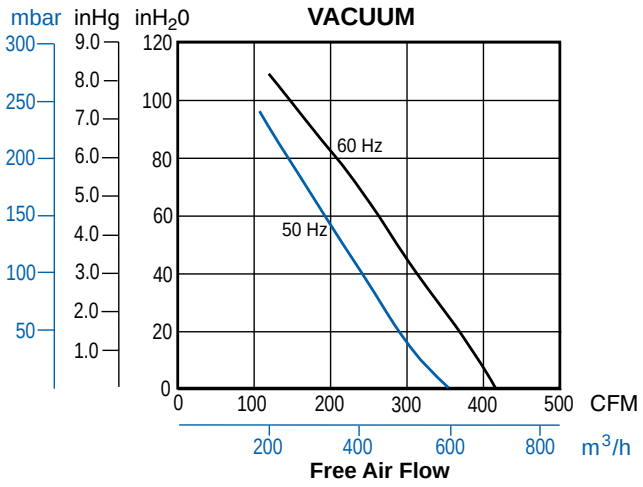


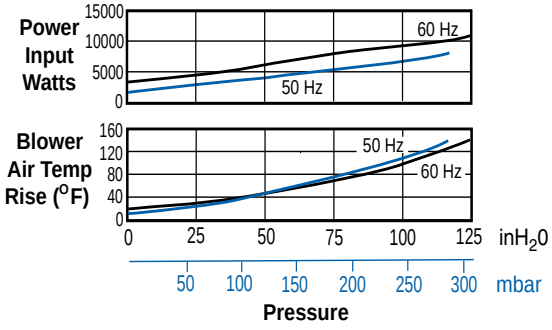
Product Specifications

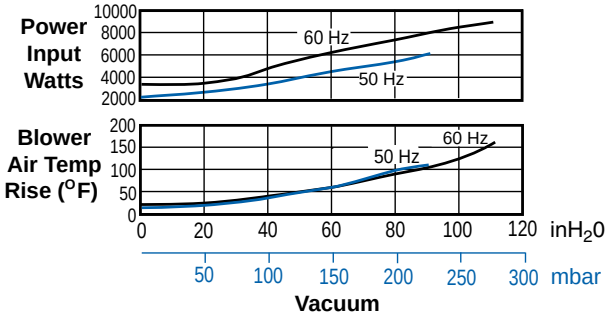
MODEL NUMBER		R7100A-3	R7100B-1
Motor Enclosure		TEFC	TEFC
HP/kW	60 Hz	10/7,5	10/7,5
	50 Hz	8/6	-
Voltage	60 Hz	208-230/460-3	575-3
	50 Hz	190-220/380-440-3	-
Amps	60 Hz	35-29.5/15	9.6
	50 Hz	27-23/13.5-12.3	-
Starting Amps	60 Hz	120 @ 460V	84 @ 575V
	50 Hz	143 @ 380V	-
Insulation Class		F	F
Recommended NEMA Starter Size		2/1	1
Net Weight (lbs/kg)		293/133	290/131

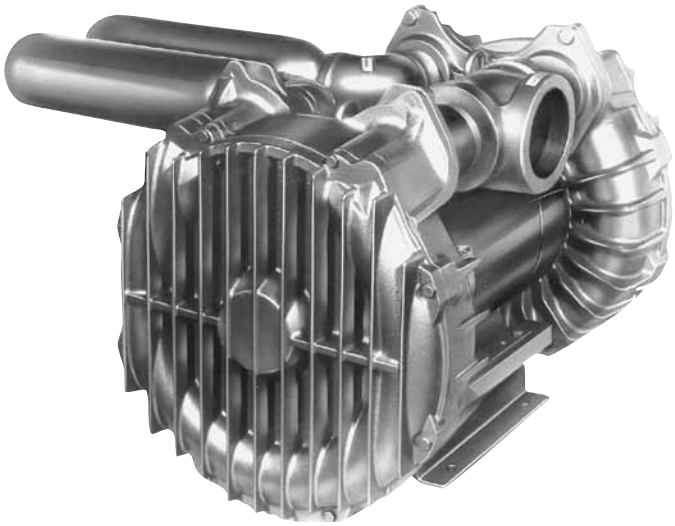
Product Performance











Model R7P3180M (parallel)

Max. pressure – 105 inH_2O (60 Hz), 90 inH_2O (50 Hz)
Max. vacuum – 95 inH_2O (60 Hz), 85 inH_2O (50 Hz)
Max. air flow – 795 CFM (60 Hz), 666 CFM (50 Hz)

PRODUCT FEATURES

- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved motor with permanently sealed ball bearings
- Cast iron blower housing and cover. Cast aluminum impeller
- Smaller and less costly than two blowers
- Includes external mufflers for additional silencing AJ121M (2)

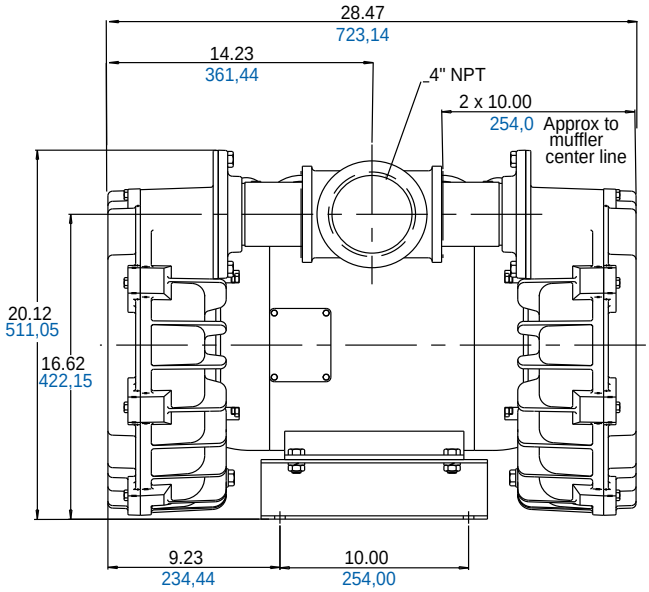
RECOMMENDED ACCESSORIES

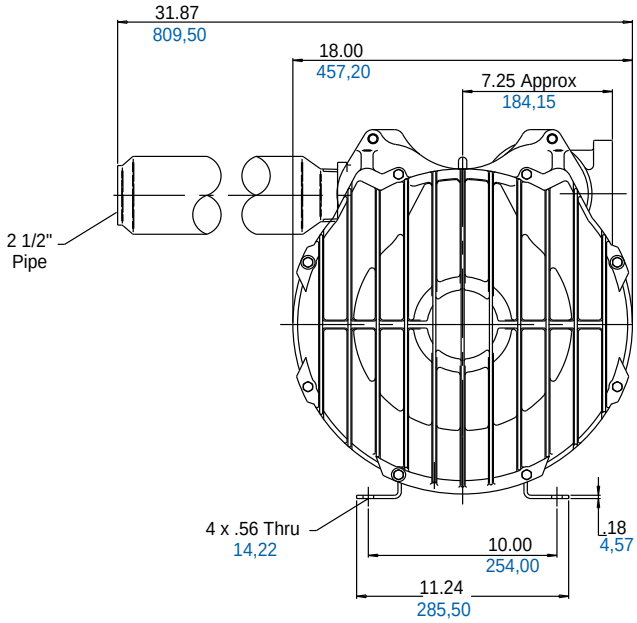
- Pressure gauge AE133
- Two inlet filters AJ126G (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Pressure/vacuum relief valve AG258F
- Silencer for vacuum relief valve AJ121G
- Inline filter AJ151M (vacuum)
- Liquid separator RMS400 (for vacuum line)

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal.

Note: Unit is stocked with plumbing arrangement of parallel compressor.
The end user may reverse intake and exhaust plumbing to make a vacuum unit.

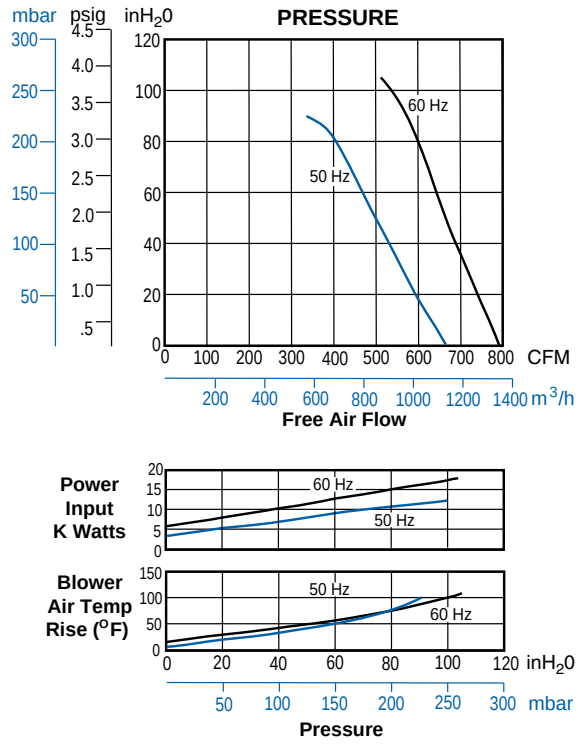


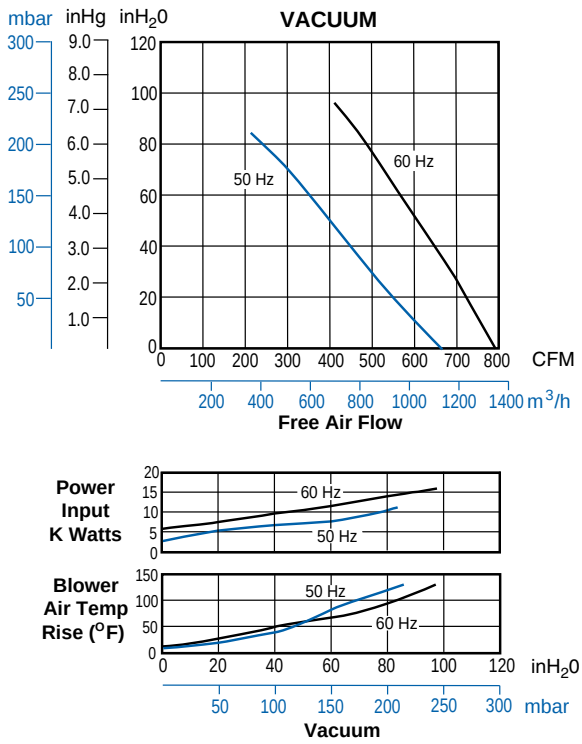


Product Specifications

MODEL NUMBER		R7P3180M
Motor Enclosure		ODP
HP/kW	60 Hz	18/13,4
	50 Hz	12/9
Voltage	60 Hz	230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	52/26
	50 Hz	52-45/26-23
Starting Amps	60 Hz	238 @ 460V
	50 Hz	Consult Factory
Insulation Class		F
Recommended NEMA Starter Size		3/2
Net Weight (lbs/kg)		438/198

Product Performance





Model R93150A

Max. pressure – 125 inH_2O (60 Hz), 125 inH_2O (50 Hz)
Max. vacuum – 115 inH_2O (60 Hz), 105 inH_2O (50 Hz)
Max. air flow – 680 CFM (60 Hz), 585 CFM (50 Hz)

PRODUCT FEATURES

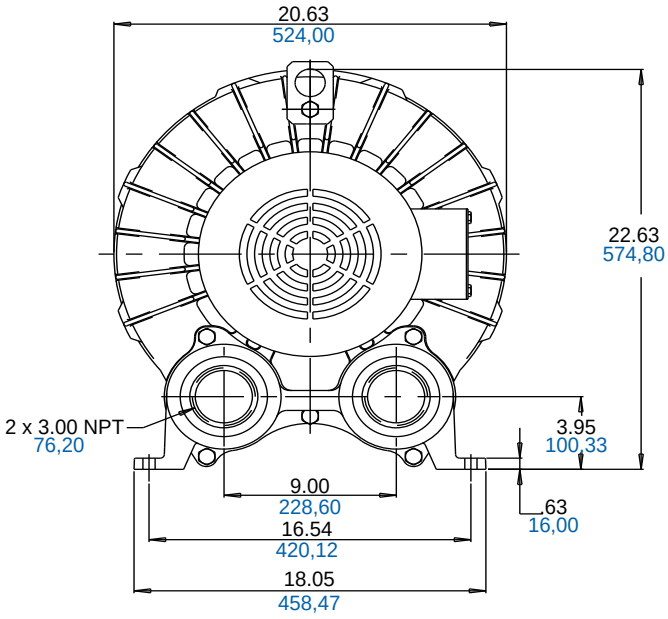
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motor with permanently sealed ball bearings
- IP54 rated enclosure on motors
- Cast iron housing, cover, and muffler enclosure.
- Cast aluminum impeller
- Inlet and outlet have internal muffling

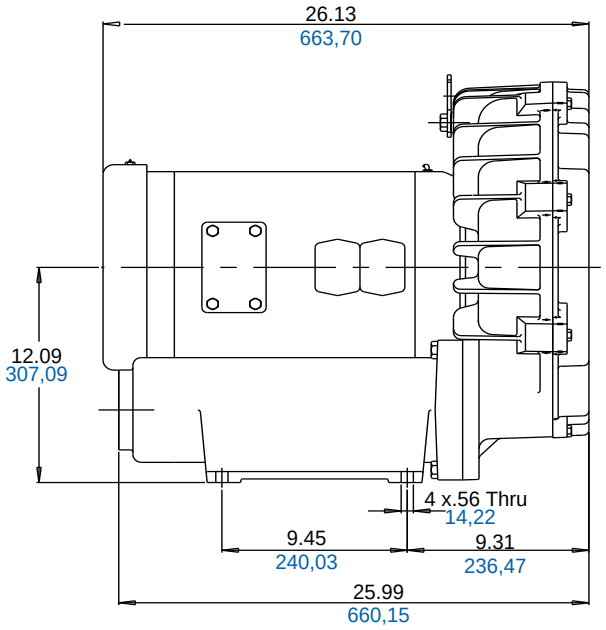
RECOMMENDED ACCESSORIES

- Pressure gauge AE133
- Inlet filter AJ126M (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Pressure/vacuum relief valve AG258F
- Silencer for vacuum relief valve AJ121G
- Inline filter AJ151M (vacuum)
- External muffler for additional silencing AJ121H
- Foam replacement kit K829

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal.

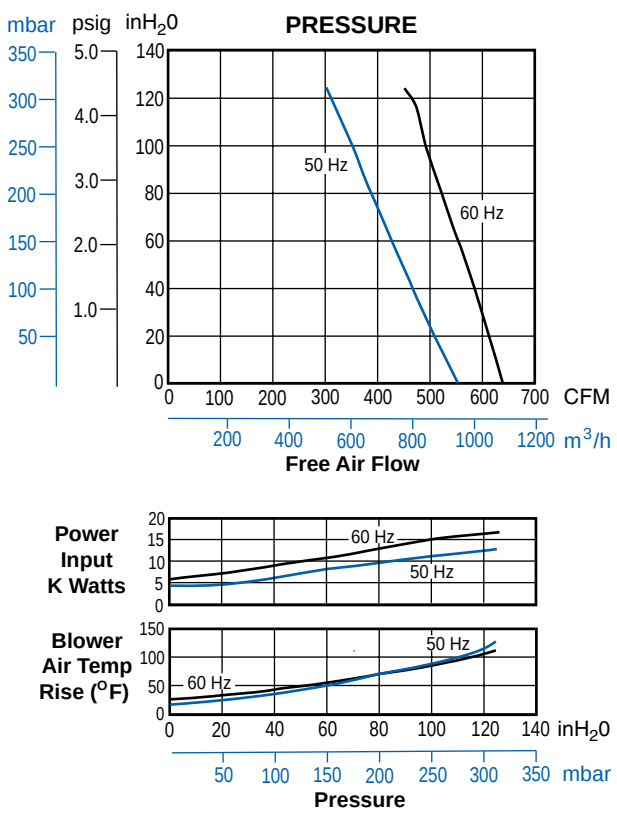


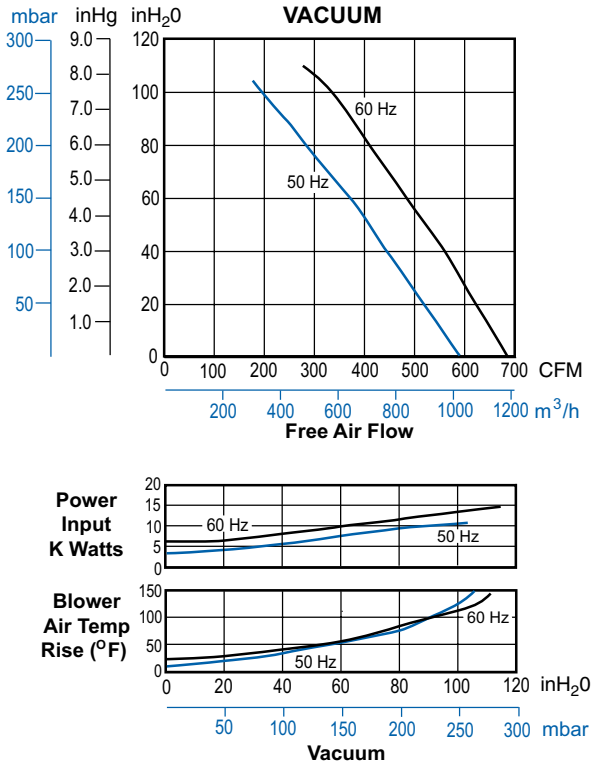


Product Specifications

MODEL NUMBER		R93150A
Motor Enclosure		TEFC
HP/kW	60 Hz	15/11,1
	50 Hz	10/7,5
Voltage	60 Hz	208-230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	50-50/25
	50 Hz	46-42/23-21
Starting Amps	60 Hz	173 @ 460V
	50 Hz	185 @ 440V
Insulation Class		F
Recommended NEMA Starter Size		2/2
Net Weight (lbs/kg)		452/204

Product Performance





Model R9P3300M

Max. pressure – 125 inH_2O (60 Hz), 110 inH_2O (50 Hz)
Max. vacuum – 110 inH_2O (60 Hz), 100 inH_2O (50 Hz)
Max. air flow – 1350 CFM (60 Hz), 1140 CFM (50 Hz)

PRODUCT FEATURES

- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved ODP motor with permanently sealed ball bearings
- Cast iron blower housing and covers. Cast aluminum impellers
- Smaller and less costly than two motor-mounted units
- Includes external mufflers for additional silencing AJ121H (2)

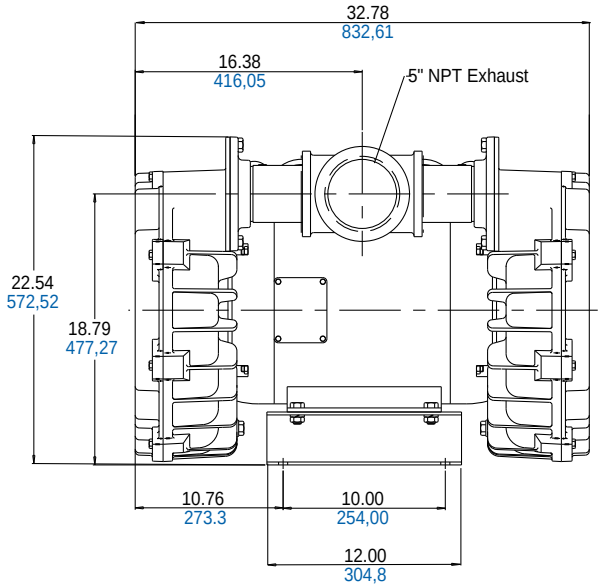
RECOMMENDED ACCESSORIES

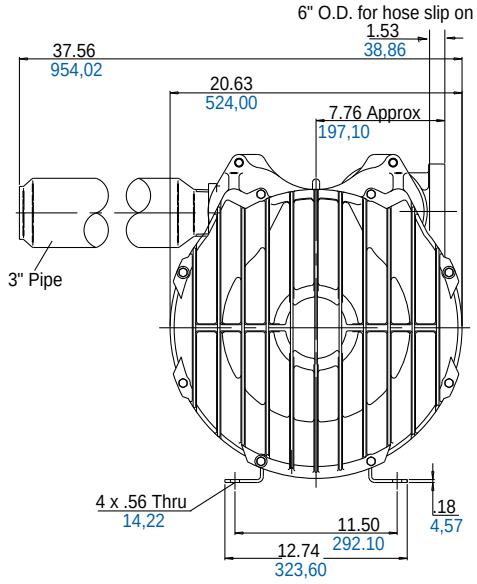
- Pressure gauge AE133
- Two inlet filters AJ126M (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Two pressure/vacuum relief valves AG258F mounted in customer supplied plumbing
- Silencer for each vacuum relief valve AJ121G
- External muffler for additional silencing AJ121N
- Two inline filters (vacuum) AJ151M mounted in parallel in customer provided plumbing

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal.

Note: Unit is stocked with plumbing arrangement of parallel compressor.
End user may reverse intake and exhaust plumbing to make a vacuum unit.

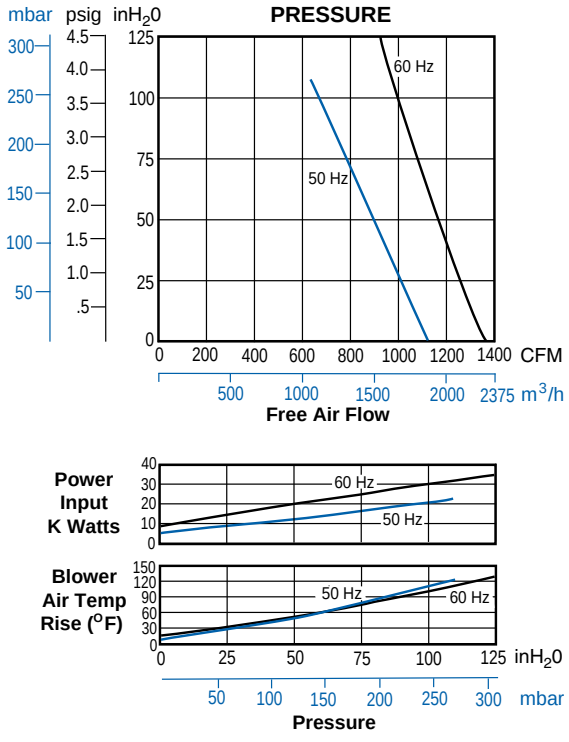


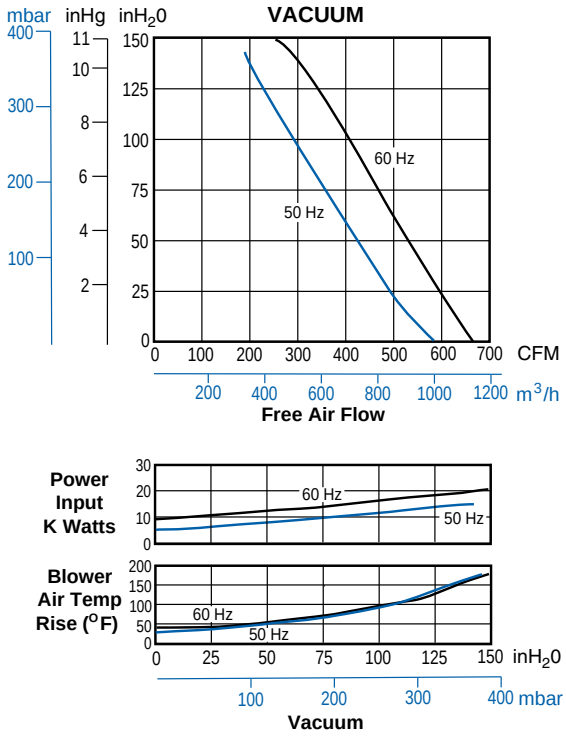


Product Specifications

MODEL NUMBER		R9P3300M
Motor Enclosure		ODP
HP/kW	60 Hz	30/22,3
	50 Hz	19/14,1
Voltage	60 Hz	230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	78/39
	50 Hz	76-70/38-35
Starting Amps	60 Hz	280 @ 460V
	50 Hz	185 @ 440V
Insulation Class		F
Recommended NEMA Starter Size		3/3
Net Weight (lbs/kg)		622/327

Product Performance





High Pressure Models

Models R4H3060A

Max. pressure – 284 inH_2O (60 Hz), 284 inH_2O (50 Hz)
Max. vacuum – 183 inH_2O (60 Hz), 183 inH_2O (50 Hz)
Max. air flow – 128 CFM (60 Hz), 107 CFM (50 Hz)

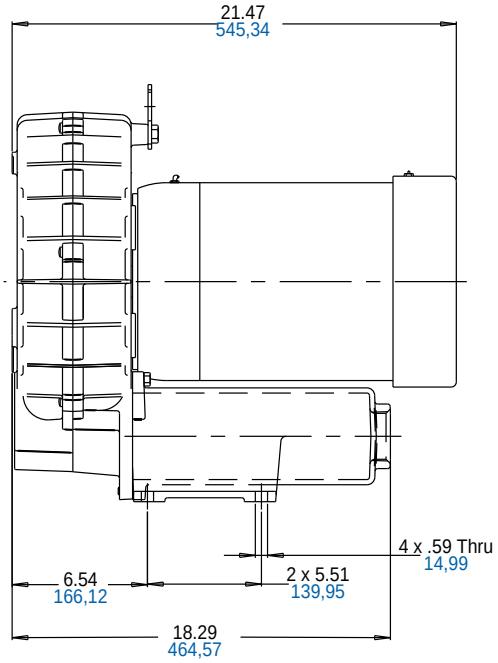
PRODUCT FEATURES

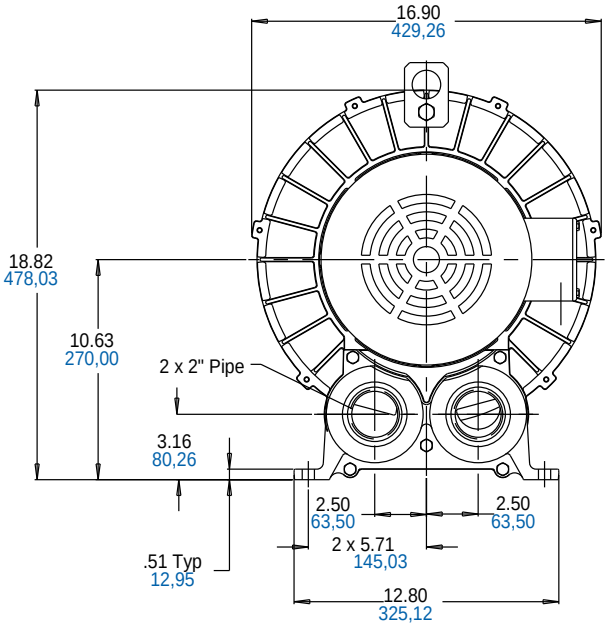
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motor with permanently sealed ball bearings
- IP54 rated enclosure on motors
- Cast aluminum dual impeller, blower housing, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Pressure gauge AE133F
- Inlet filter AJ126D (pressure)
- Pressure relief valve PV102 (60Hz), PV098 (50Hz)
- Vacuum gauge AE134F
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Vacuum relief valve AG258
- Silencer for vacuum relief valve AJ121D
- Inline filter AJ151E (vacuum)
- External muffler for additional silencing AJ121F
- Foam replacement kit K905

Product Dimensions (inches, mm)

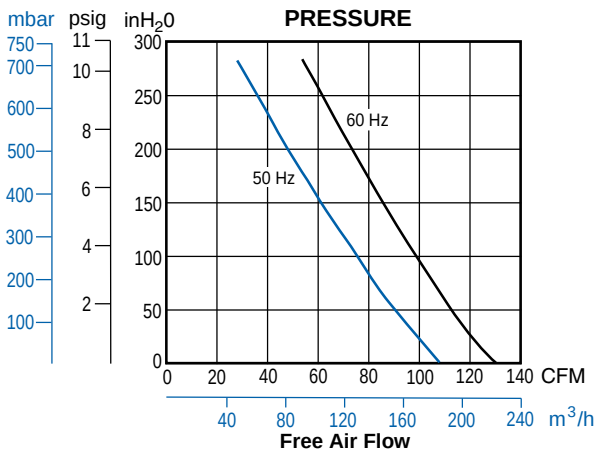


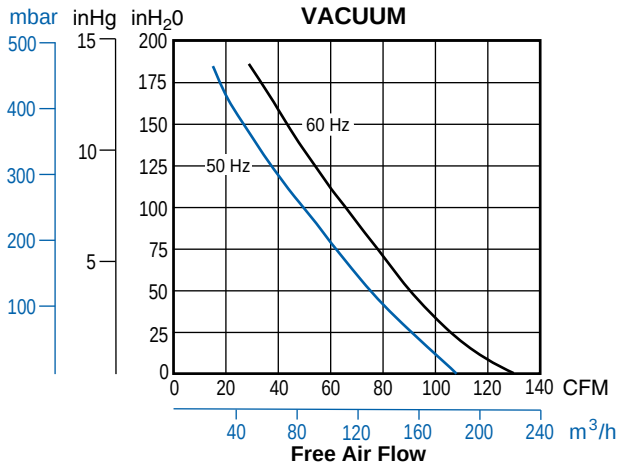


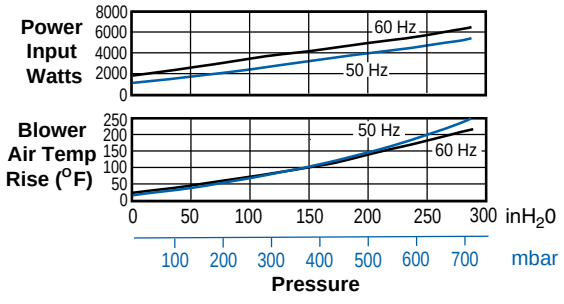
Product Specifications

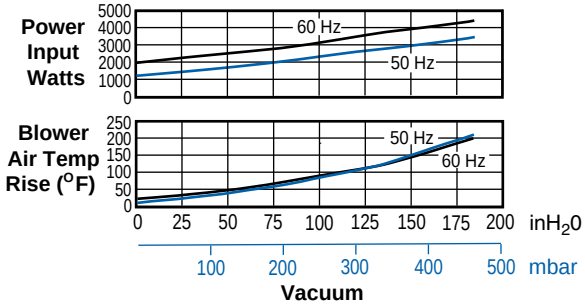
MODEL NUMBER		R4H3060A	R4H3060B
Motor Enclosure		TEFC	TEFC
HP/kW	60 Hz	6/4.4	6/4,4
	50 Hz	5/3.7	-
Voltage	60 Hz	208-230/460-3	575-3
	50 Hz	190-220/380-440-3	-
Amps	60 Hz	19.5-18.2/9.1	7.3
	50 Hz	16.8-16.0/8.4-8.0	-
Starting Amps	60 Hz	83 @ 460V	67 @ 575V
	50 Hz	72 @ 380V	-
Insulation Class		F	F
Recommended NEMA Starter Size		1/0	0
Net Weight (lbs/kg)		200/91	200/91

Product Performance









High Pressure Models

Model R4H3060A-1 (vacuum only)

Max. vacuum – 204 inH_2O (60 Hz), 176 inH_2O (50 Hz)
Max. air flow – 121 CFM (60 Hz), 101 CFM (50 Hz)

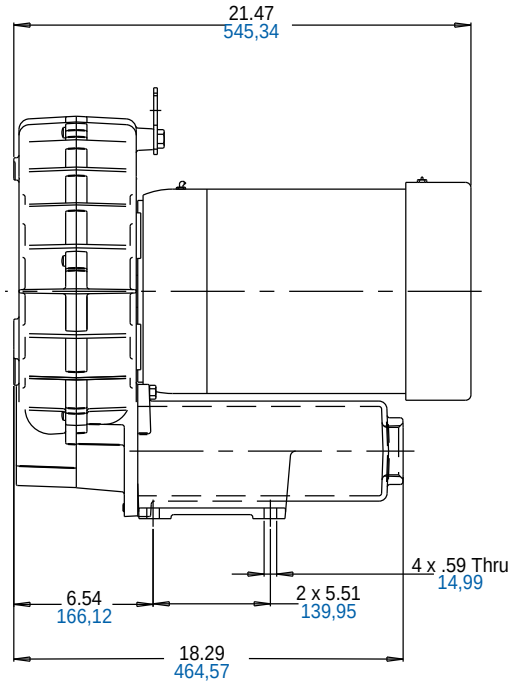
PRODUCT FEATURES

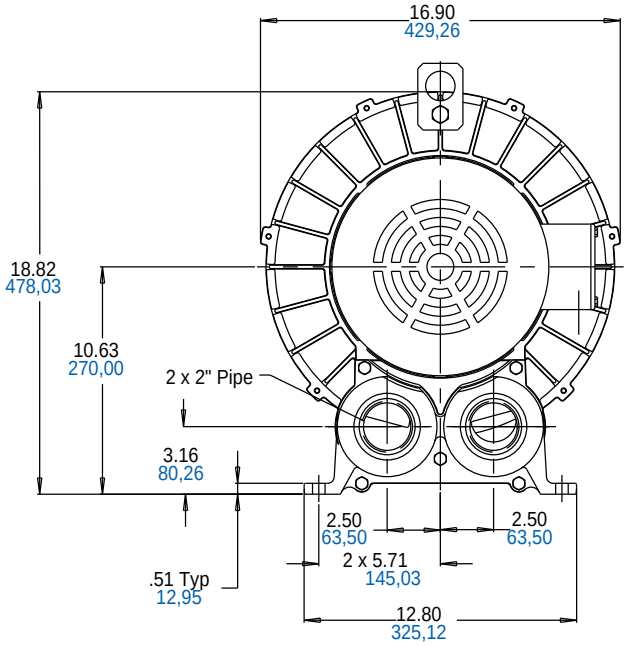
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved TEFC motor with permanently sealed ball bearings
- IP54 rated enclosure on motors
- Cast aluminum dual impeller, blower housing, and cover
- Can be mounted in any plane
- Inlet and outlet have internal muffling

RECOMMENDED ACCESSORIES

- Vacuum gauge AE134F
- Vacuum relief valve AG258
- Silencer for vacuum relief valve AJ121D
- Inline filter AJ151E (vacuum)
- External muffler for additional silencing AJ121F

Product Dimensions (inches, mm)

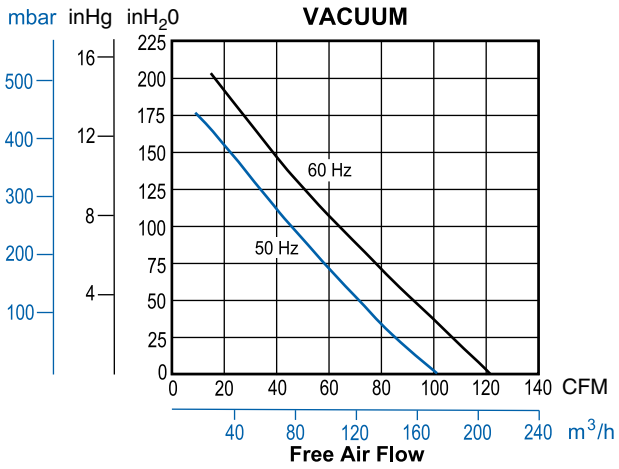


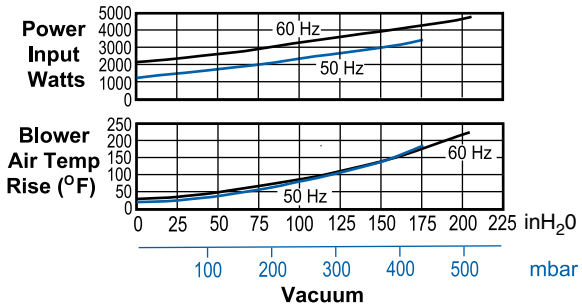


Product Specifications

MODEL NUMBER		R4H3060A-1
Motor Enclosure		TEFC
HP/kW	60 Hz	6/4,5
	50 Hz	5/3,7
Voltage	60 Hz	208-230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	19.5-18.2/9.1
	50 Hz	16.8-16.0/8.4-8.0
Starting Amps	60 Hz	83 @ 460V
	50 Hz	72 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		1/0
Net Weight (lbs/kg)		200/91

Product Performance





High Pressure Models

Model R6PS3110M (staged)

Max. pressure – 170 inH_2O (60 Hz),145 inH_2O (50 Hz)
Max. vacuum – 130 inH_2O (60 Hz),110 inH_2O (50 Hz)
Max. air flow – 280 CFM (60 Hz), 230 CFM (50 Hz)

PRODUCT FEATURES

- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved motor with permanently sealed ball bearings
- Aluminum impeller; cast iron cover and housing
- Includes muffler AJ121F
- Smaller and less costly than two motor-mounted units

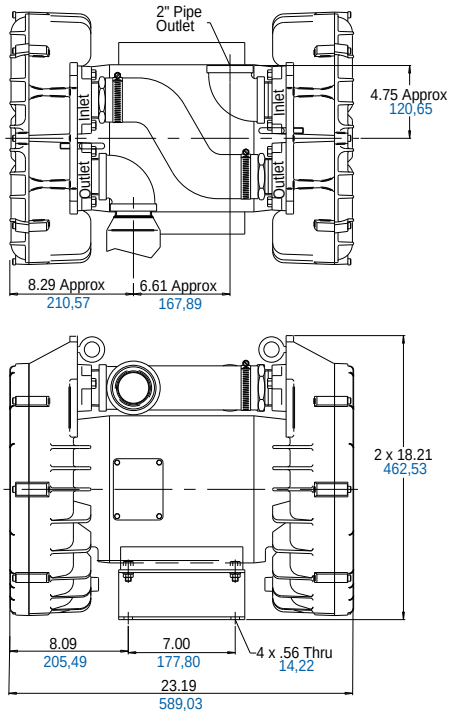
RECOMMENDED ACCESSORIES

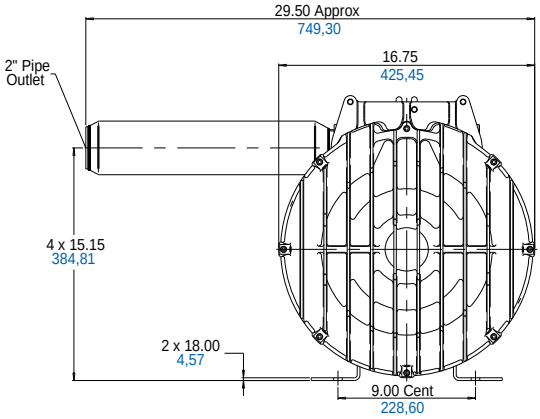
- Pressure gauge AE133A
- Inlet filter AJ126F (pressure)
- Vacuum gauge AE134
- Inline filter AJ151H (vacuum)
- Relief valve AG258
- Liquid separator RMS300 (vacuum)

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal.

TOP VIEW

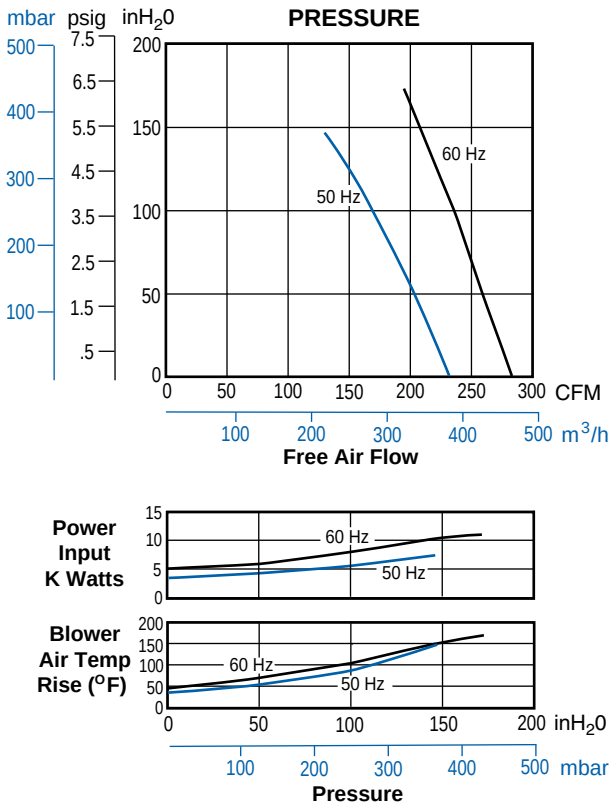


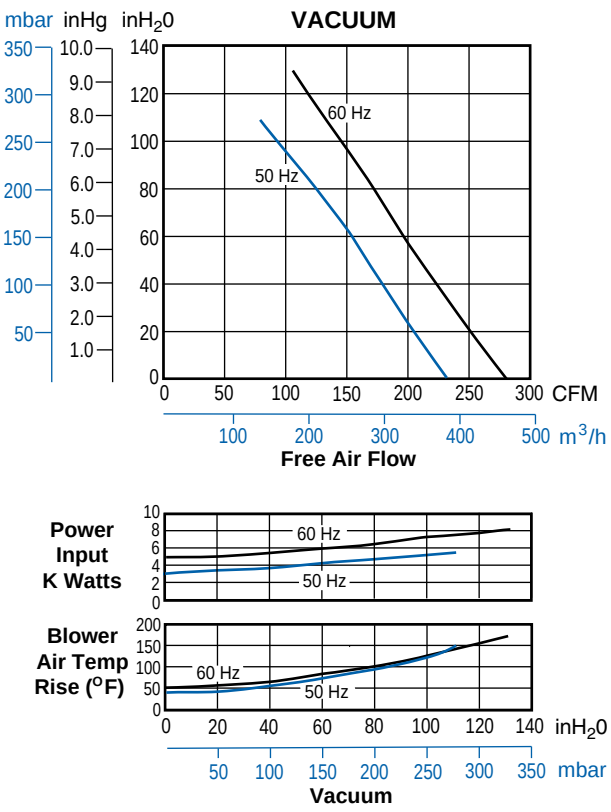


Product Specifications

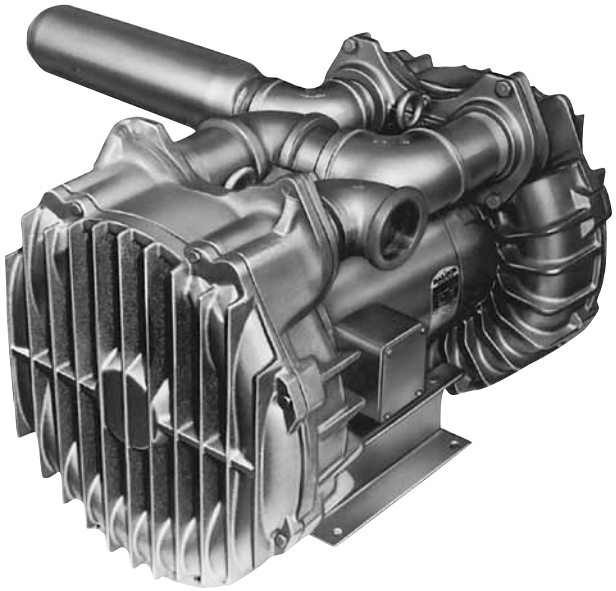
MODEL NUMBER		R6PS3110M
Motor Enclosure		OPEN
HP/kW	60 Hz	11/8,2
	50 Hz	7/5,2
Voltage	60 Hz	208-230/460-3
	50 Hz	220/380-415-3
Amps	60 Hz	36-35/17.5
	50 Hz	32/15.5-13
Starting Amps	60 Hz	181 @ 460V
	50 Hz	176 @ 380V
Insulation Class		F
Recommended NEMA Starter Size		2/2
Net Weight (lbs/kg)		309/140

Product Performance





High Pressure Models



Model R7S3180M (staged)

Max. pressure – 200 inH_2O (60 Hz), 170 inH_2O (50 Hz)
Max. vacuum – 150 inH_2O (60 Hz), 130 inH_2O (50 Hz)
Max. air flow – 430 CFM (60 Hz), 350 CFM (50 Hz)

PRODUCT FEATURES

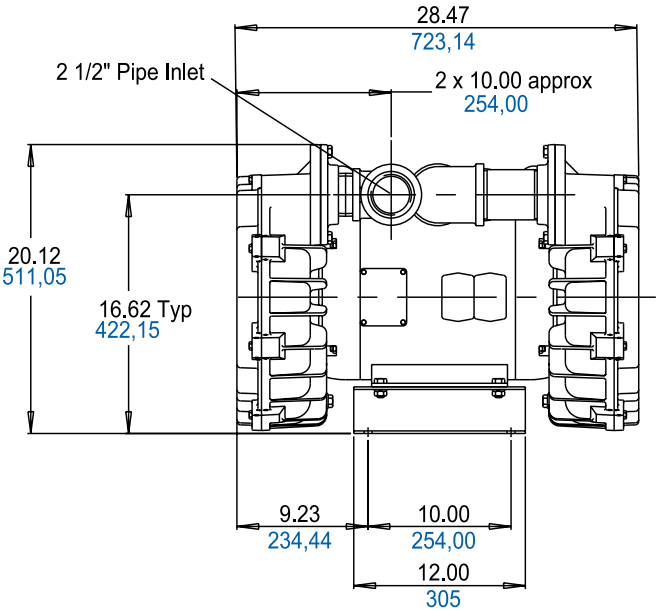
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved motor with permanently sealed ball bearings
- Cast iron blower housing and cover. Cast aluminum impeller
- Includes external muffler for additional silencing AJ121G

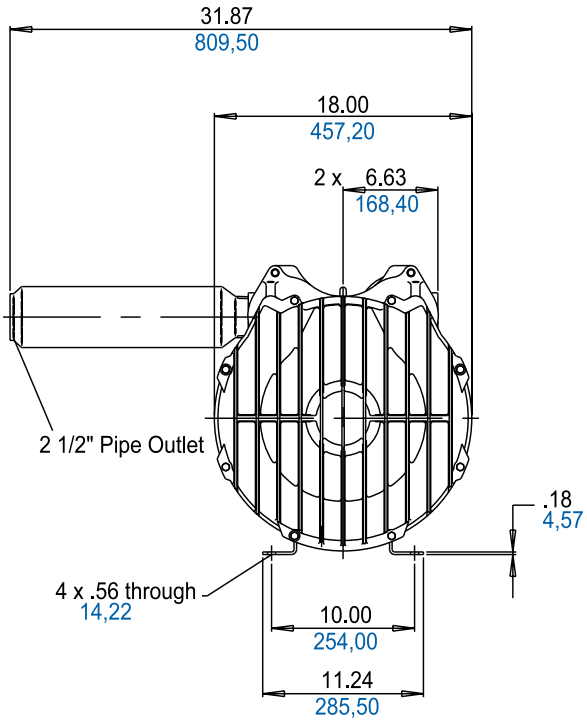
RECOMMENDED ACCESSORIES

- Pressure gauge AE133A
- Inlet filter AJ126G (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Pressure/vacuum relief valve AG258F
- Silencer for vacuum relief valve AJ121G
- Inline filter AJ151H (vacuum)
- Liquid separator RMS400 (for vacuum line)

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal

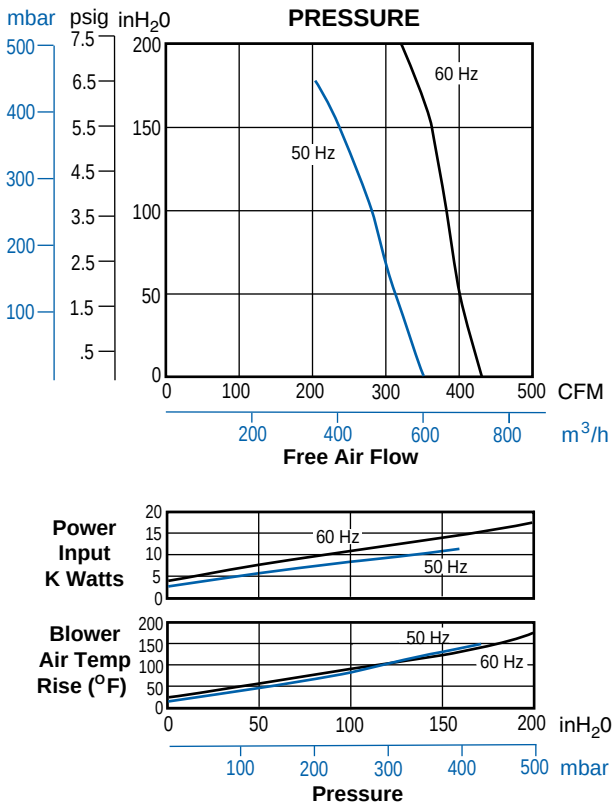


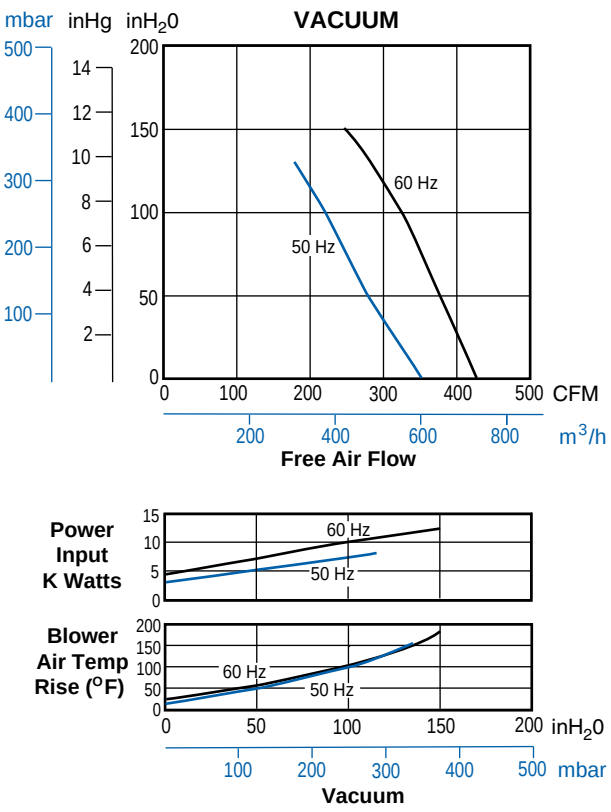


Product Specifications

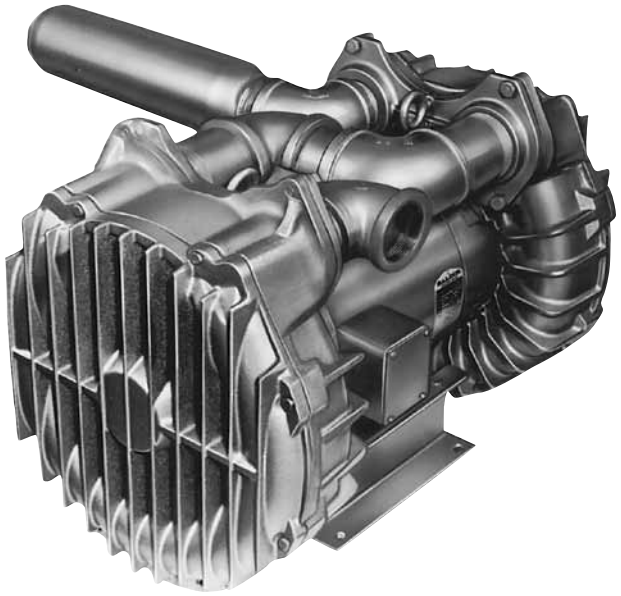
MODEL NUMBER		R7S3180M
Motor Enclosure		ODP
HP/kW	60 Hz	18/13,4
	50 Hz	12/9
Voltage	60 Hz	230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	52/26
	50 Hz	52-45/26-23
Starting Amps	60 Hz	238 @ 460V
	50 Hz	Consult Factory
Insulation Class		F
Recommended NEMA Starter Size		3/2
Net Weight (lbs/kg)		431/195,7

Product Performance





High Pressure Models



Model R9S3300M

Max. pressure – 222 inH_2O (60 Hz), 208 inH_2O (50 Hz)
Max. vacuum – 149 inH_2O (60 Hz), 142 inH_2O (50 Hz)
Max. air flow – 660 CFM (60 Hz), 585 CFM (50 Hz)

PRODUCT FEATURES

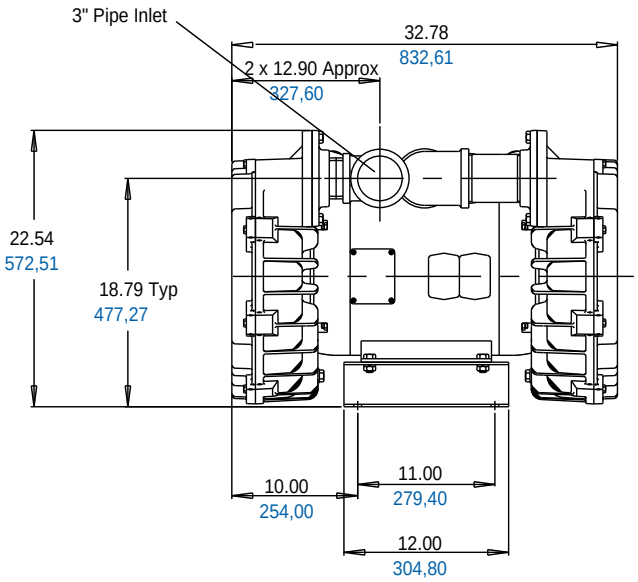
- Rugged construction, low maintenance
- Oilless operation
- UL and CSA approved motor with permanently sealed ball bearings
- Cast iron housing, cover and muffler enclosure. Cast aluminum impeller
- External muffler for additional silencing AJ121H
- Smaller and less costly than two motor-mounted units

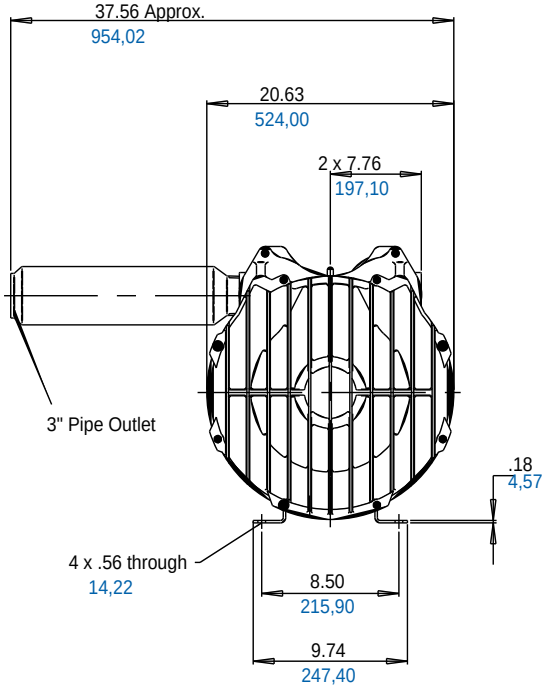
RECOMMENDED ACCESSORIES

- Pressure gauge AE133F
- Inlet filter AJ126M (pressure)
- Vacuum gauge AE134
- Vacuum gauge for monitoring inlet filter restriction AJ497
- Pressure/vacuum relief valve AG258F
- Silencer for vacuum relief valve AJ121G
- Inline filter AJ151M (vacuum)

Product Dimensions (inches, mm)

Note: Unit must be mounted with shaft horizontal

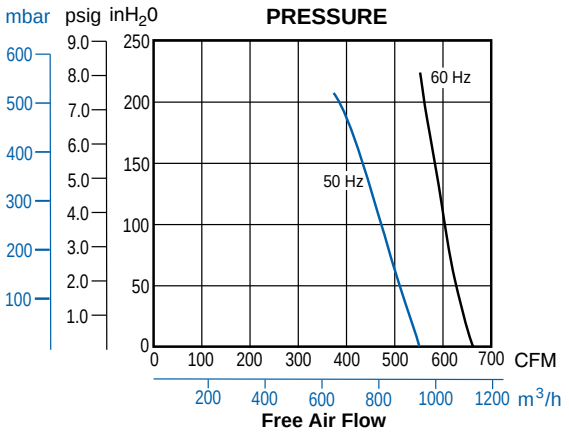


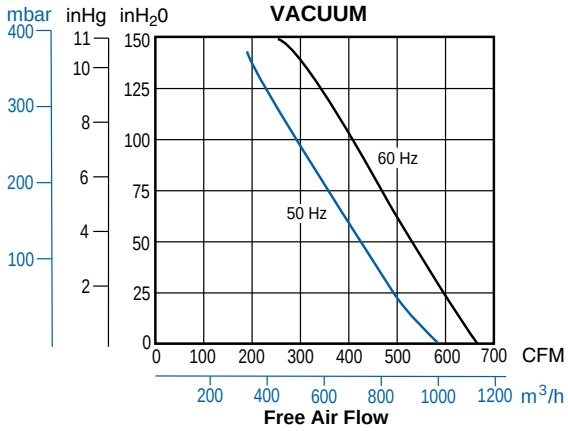


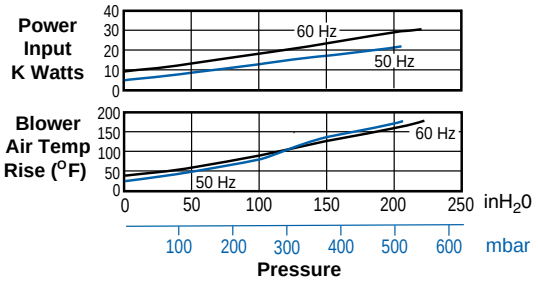
Product Specifications

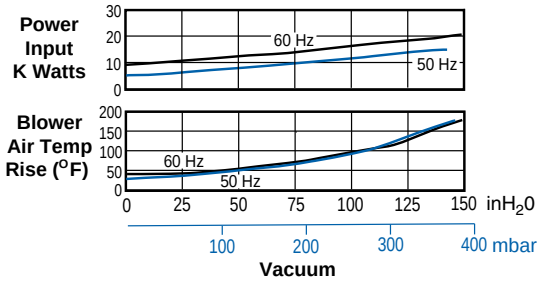
MODEL NUMBER		R9S3300M
Motor Enclosure		ODP
HP/kW	60 Hz	30/22,3
	50 Hz	19/14,3
Voltage	60 Hz	230/460-3
	50 Hz	190-220/380-440-3
Amps	60 Hz	98/49
	50 Hz	82-47/41-39
Starting Amps	60 Hz	320 @ 460V
	50 Hz	308 @ 440V
Insulation Class		F
Recommended NEMA Starter Size		3/3
Net Weight (lbs/kg)		606,275

Product Performance









R3105N-50

R4 - R7 Series

Explosion Proof Motors

MODELS	Maximum Pressure (inH_2O) 60 Hz	50 Hz	Maximum Vacuum (inH_2O) 60 Hz	50 Hz	Maximum Air Flow (CFM) 60 Hz	50 Hz
R3105N-50	43	31	40	28	53	44
R4110N-50 R4310P-50	51	38	48	35	92	74
R4P115N-50	65	45	60	40	133	112
R5125Q-50	55	—	60	—	160	—
R5325R-50	65	50	65	47	160	133
R6130Q-50	60	75	70	65	215	180
R6340R-50	100	75	80	65	215	180
R6P155Q-50	95	80	85	65	280	235
R6P355R-50	100	80	85	65	280	232
R7100R-50	100	90	110	85	425	350

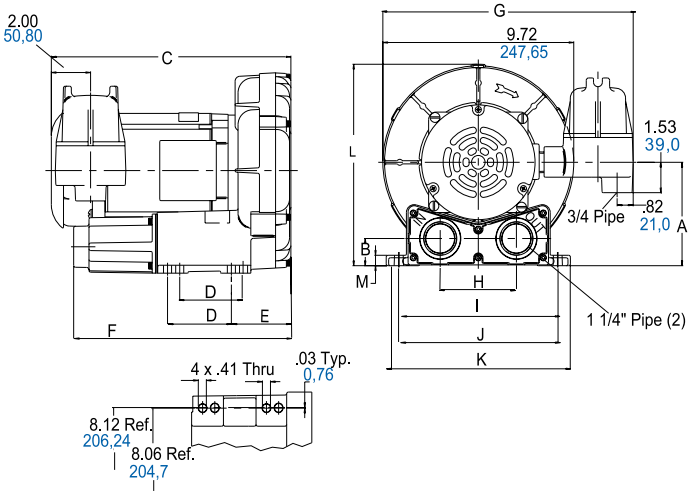
PRODUCT FEATURES

- Rugged design, maintenance free
- Quiet operation within OSHA standards
- Blowers and motors rated for continuous duty
- UL and CSA approved multi-voltage motors, incorporating approved thermal protection
- Motors classified as Explosion Proof Division 1 and 2, for Group D explosive atmospheres
- Motors carry full rated load at temperatures below Class B motor insulation limits
- Class F motor insulation used in motors larger than 1 HP
- Motors conform to NEMA frame sizes; motor enclosures conform to IP54 (suitable for outdoor use)
- Pilot duty thermal overload protection is standard on all 1 HP and larger motors
- Double sealed motor ball bearings with a B10 life exceeding 30,000 hours of continuous operation at the maximum rated continuous blower load
- Sealed air streams
- Aluminum impeller, housing, and cover; viton shaft seal
- Pressurized and leak-tested to less than 5 cc/minute

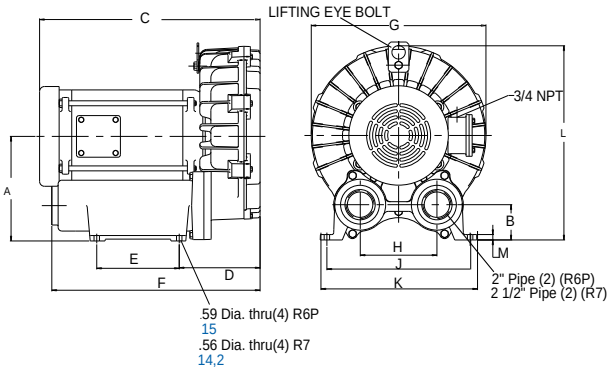
Recommended Accessories	R3 Series	R4 Series	R4P Series	R5 Series	R6 Series	R6P Series	R7 Series
Pressure Gauge	AJ496	AJ496	AE133	AE133	AE133	AE133	AE133
Vacuum Gauge	AJ497	AJ497	AE134	AE134	AE134	AE134	AE134
Pressure Filter	AJ126C	AJ126D	AJ126D	AJ126D	AJ126F	AJ126F	AJ126G
Vacuum Filter (Inline)	AJ151C	AJ151D	AJ151D	AJ151E	AJ151G	AJ151G	AJ151H

Product Dimensions (inches, mm)

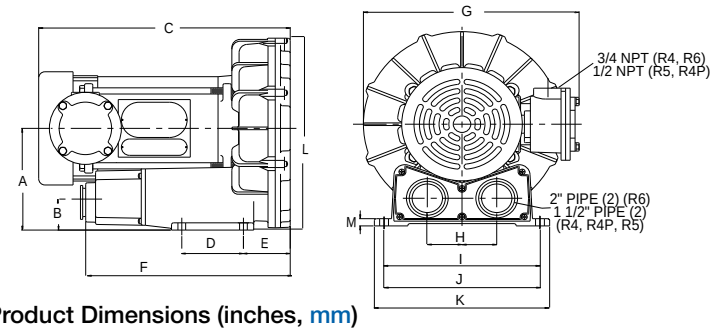
Model R3



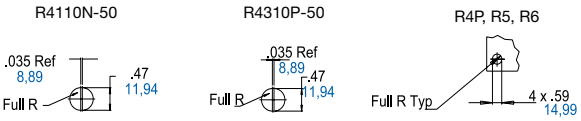
Models R6P, R7



Models R4, R4P, R5, R6



Mounting Hole Detail



Product Dimensions (inches, mm)

Model	A	B	C	D	E	F	G	H	I	J	K	L	M
R3105N-50	5.21	1.37	12.3	3.25	3.06	11.06	12.75	3.88	8.06	8.12	9.38	10.15	.53
	132	35	312	83	78	281	324	99	205	206	238	258	13
R4110N-50	6.18	1.68	15.34	3.75	2.85	12.44	12.34	3.96	8.86	8.93	10.00	11.80	.44
	157	43	390	95	72	316	313	101	225	227	254	300	11
R4310P-50	6.18	1.68	14.09	3.75	2.84	12.44	12.34	3.96	8.86	8.93	10.00	11.80	.44
	157	43	358	95	74	316	313	101	225	227	254	300	11
R4P115N-50	6.98	1.84	17.41	4.50	3.25	13.93	13.75	4.75	10.25	10.31	11.75	13.61	.60
	177	47	442	114	83	354	349	121	260	262	298	346	15
R5125Q-50	7.02	1.82	17.59	4.50	3.55	14.22	13.72	4.75	10.25	10.31	11.75	13.80	.59
	178	46	447	114	90	361	348	121	260	262	298	351	15
R5325R-50	7.02	1.82	16.75	4.50	3.55	14.22	13.56	4.75	10.25	10.31	11.75	13.80	.59
	178	46	1425	114	90	361	344	121	260	262	298	351	15
R6130Q-50	7.75	1.94	18.97	5.50	3.85	16.02	15.17	4.92	11.38	11.42	12.96	15.34	.52
	197	49	482	140	98	407	385	125	289	290	329	390	13
R6340R-50	7.75	1.94	18.82	5.50	3.85	15.89	15.17	4.92	11.38	11.42	12.96	15.34	.52
	197	49	478	140	98	404	385	125	298	290	329	390	13
R6P155Q-50	9.77	3.15	22.81	5.12	5.51	16.85	16.75	5.00	-	11.42	12.80	18.14	.50
	248	80	579	130	140	428	425	127	-	290	325	461	13
R6P355R-50	9.77	3.15	19.92	5.12	5.51	16.85	16.75	5.00	-	11.42	12.80	18.14	.50
	248	80	506	130	140	428	425	127	-	290	325	461	13
R7100R-50	10.79	3.64	22.77	8.36	8.50	21.50	18.00	7.90	-	14.76	16.14	20.03	.56
	274	92	578	212	216	546	457	201	-	375	410	509	14

Notice: Specifications subject to change without notice.

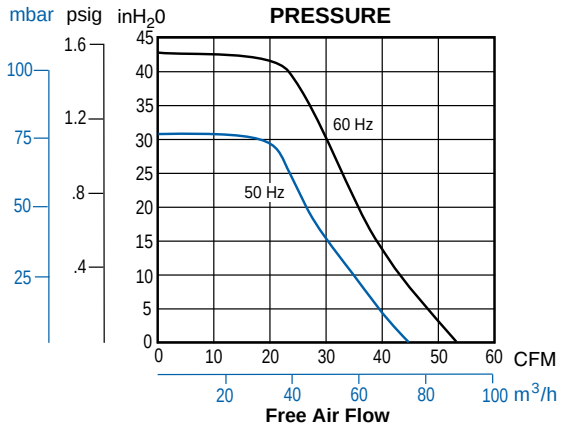
Product Specifications

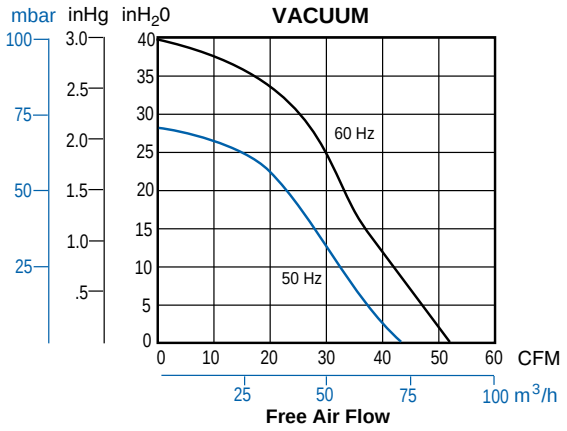
MODEL NUMBER		R3105N-50	R4110N-50	R4310P-50	R4P115N-50
Motor Enclosure		XPFC	XPFC	XPFC	XPFC
HP/kW	60 Hz	.50/0,37	1.0/0,75	1.0/0,75	1.5/1,1
	50 Hz	.33/0,25	.60/0,45	.60/0,45	1.0/0,75
Voltage	60 Hz	115/208-230-1	115/208-230-1	208-230/460-3	115/208-230-1
	50 Hz	110/220-240-1	110/220-240-1	220/380-3	110/220-240-1
Amps	60 Hz	5.2/2.9-2.6	11.4/6.2-5.6	3.4-3.3/1.6	20.3/11.2-10.6
	50 Hz	4.8/2.4-2.2	9.2/5.2-4.6	3.2/1.6	15.2/7.6-8
Starting Amps	60 Hz	12.5 @ 230V	36.5 @ 230V	19.7 @ 230V	60.6 @ 230V
	50 Hz	13 @ 220V	40.6 @ 240V	23.3 @ 220V	Consult Factory
Insulation Class		B	B	B	F
Recommended NEMA Starter Size		00/00	0/00	0/0	1/0
Net Weight (lbs/kg)		52/24	60/28	58/27	79/36

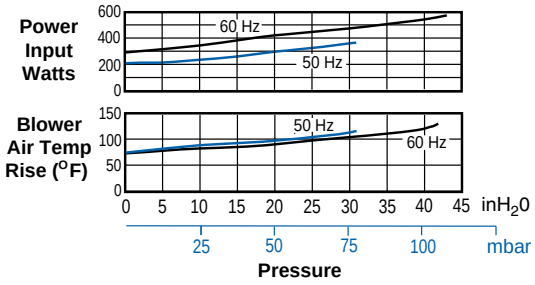
MODEL NUMBER		R5125Q-50	R5325R-50	R6130Q-50	R6340R-50
Motor Enclosure		XPFC	XPFC	XPFC	XPFC
HP/kW	60 Hz	2.0/1,5	2.0/1,5	3.0/2,2	4.0/3,0
	50 Hz	-	1.5/1,1	2.5/1,9	3.0/2,2
Voltage	60 Hz	115/230-1	208-230/460-3	230-1	208-230/460-3
	50 Hz	-	190-220/380-415-3	220-240-1	190-220/380-415-3
Amps	60 Hz	25/12.5	6.6-6.1/3.05	16.3	13-12/6
	50 Hz	-	5.0-4.4/2.5-2.6	14.7-13.5	14.4-13.4/7.2-6.8
Starting Amps	60 Hz	78 @ 230V	48 @ 230V	64 @ 230V	125 @ 230V
	50 Hz	-	Consult Factory	Consult Factory	Consult Factory
Insulation Class		F	F	F	F
Recommended NEMA Starter Size		1/0	0/0	1	1/0
Net Weight (lbs/kg)		77/35	75/34	129/59	112/51

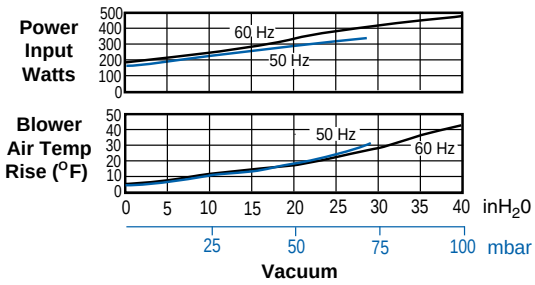
MODEL NUMBER		R6P155Q-50	R6P355R-50	R7100R-50
Motor Enclosure		XPFC	XPFC	XPFC
HP/kW	60 Hz	5.5/4,1	6.0/4,5	10/7,5
	50 Hz	4.0/3,0	4.5/3,4	8.0/6,0
Voltage	60 Hz	230-1	208-230/460-3	208-230/460-3
	50 Hz	220-240-1	190-220/380-415-3	190-220/380-415-3
Amps	60 Hz	29.9	20-18/9	26.5-24/12
	50 Hz	20.8-19.1	14.9-11/7.45-5.8	23.2-21.0/11.6-10.9
Starting Amps	60 Hz	198.4 @ 230V	59 @ 460V	105 @ 460V
	50 Hz	189 @ 240V	Consult Factory	Consult Factory
Insulation Class		F	F	F
Recommended NEMA Starter Size		0/2	1/0	2/1
Net Weight (lbs/kg)		243/110	233/105	297/134

R3105N-50

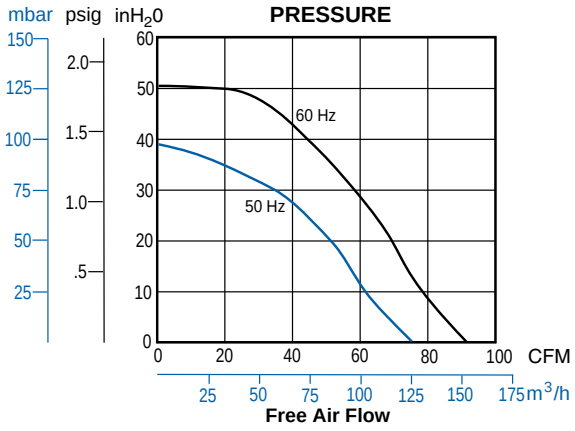


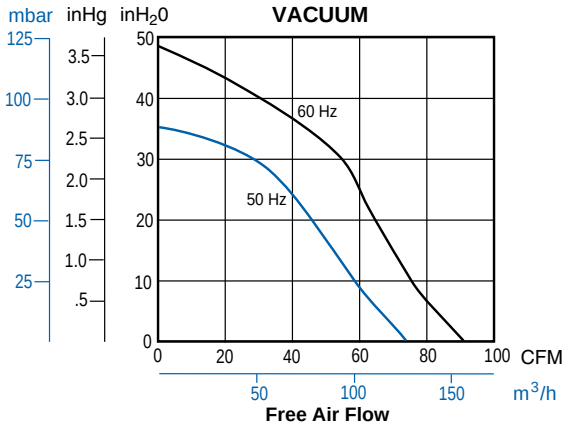


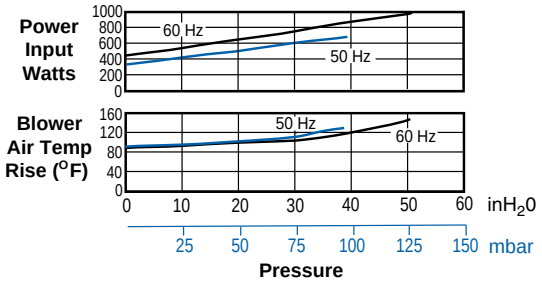


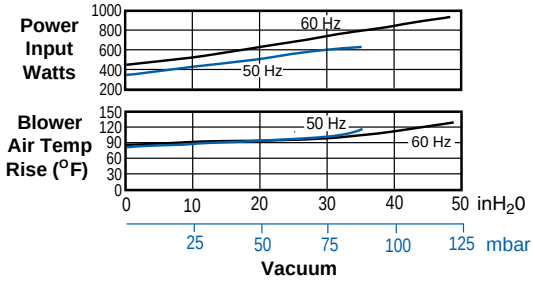


R4110N-50/R4310P-50

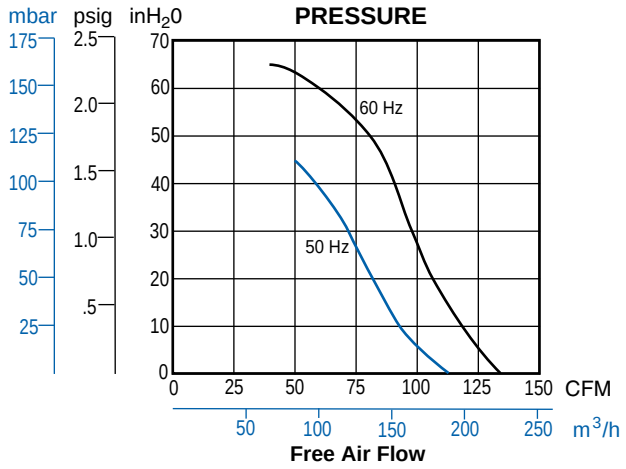


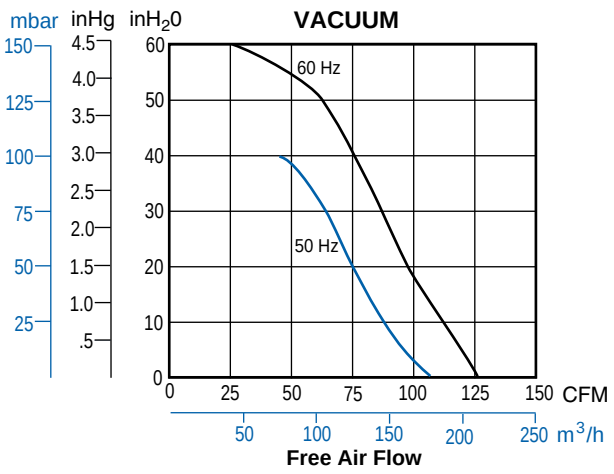


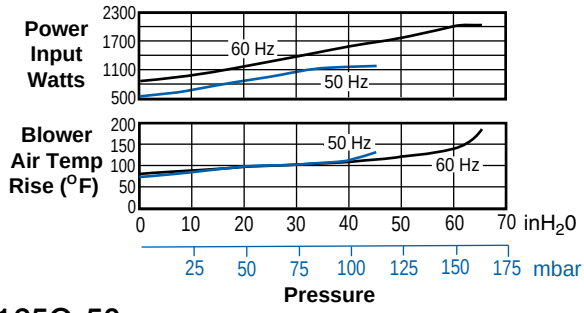


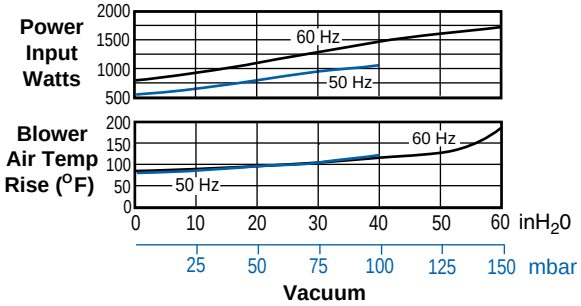


R4P115N-50

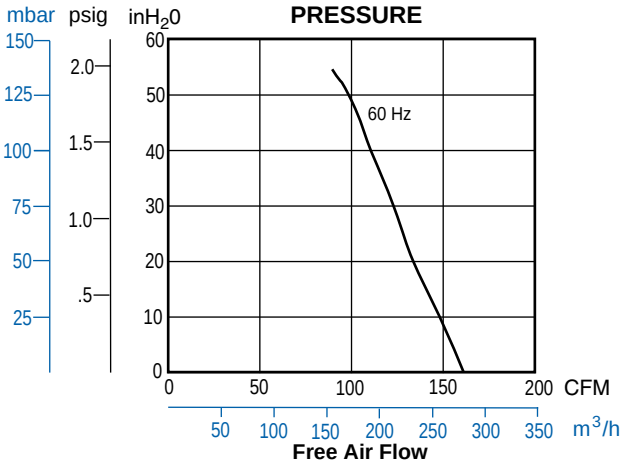


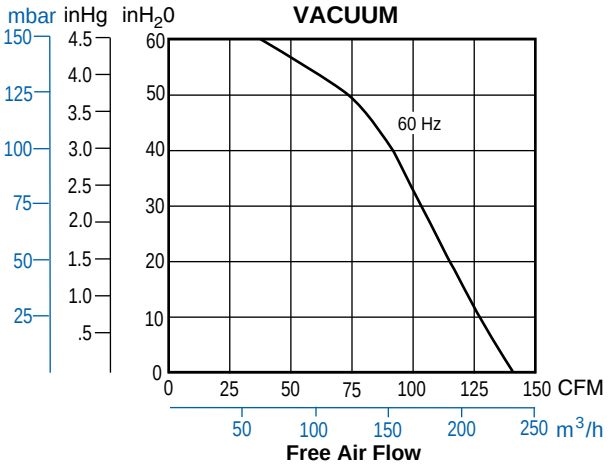


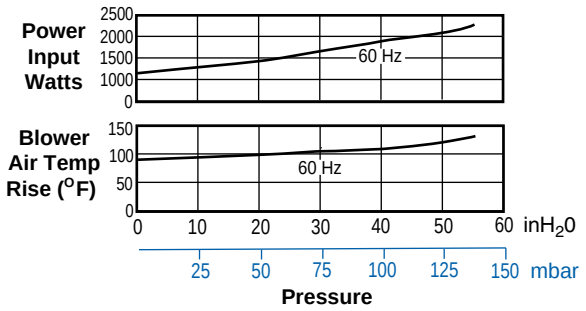


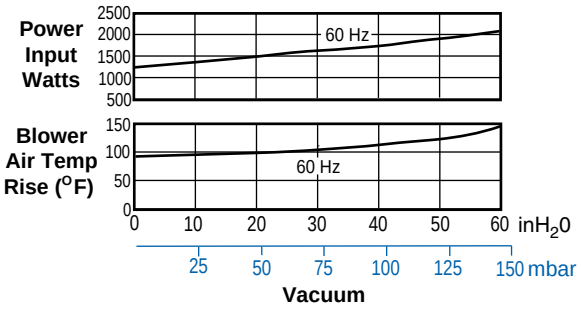


R5125Q-50

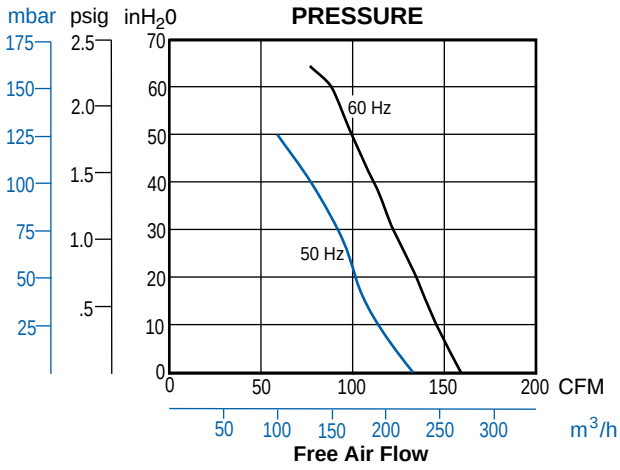


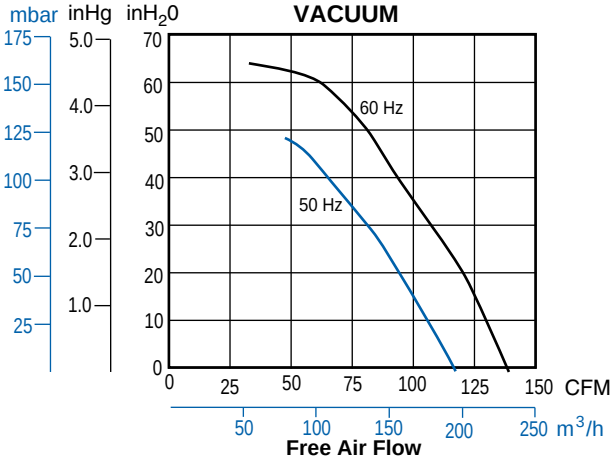


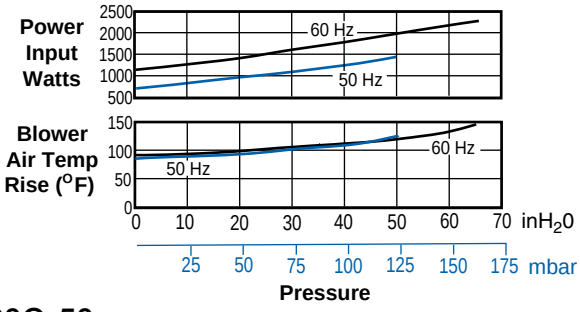


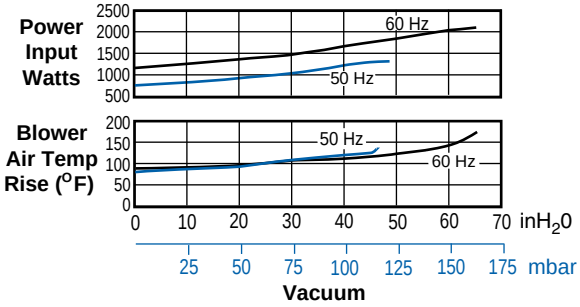


R5325R-50









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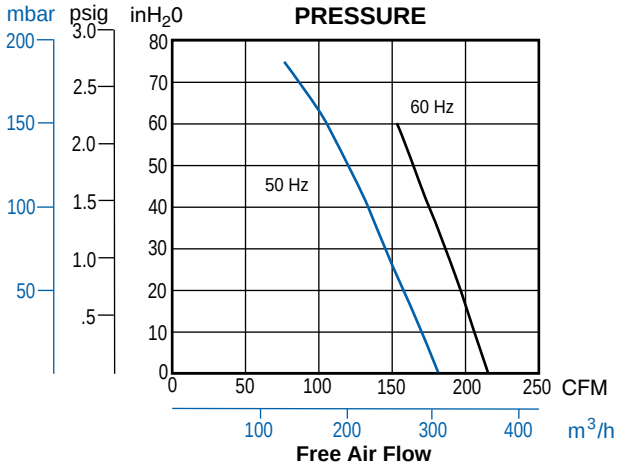

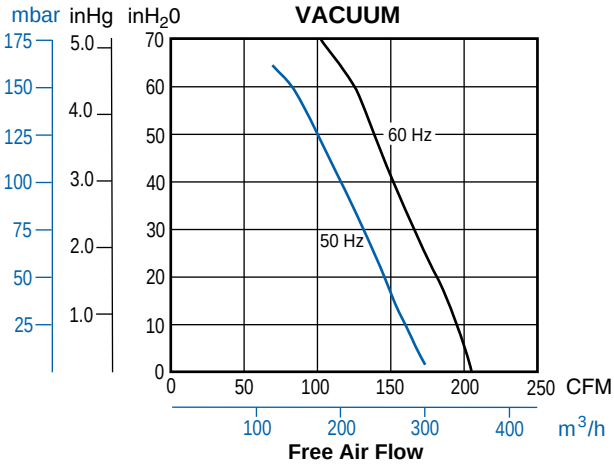

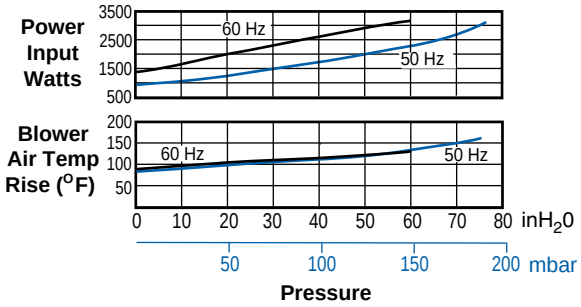

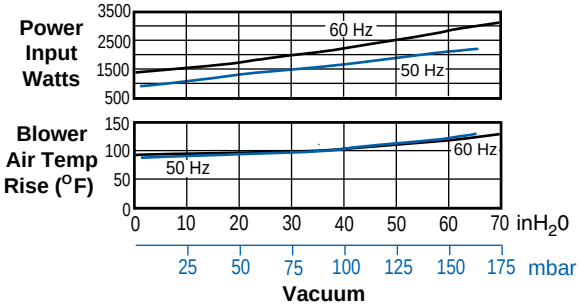

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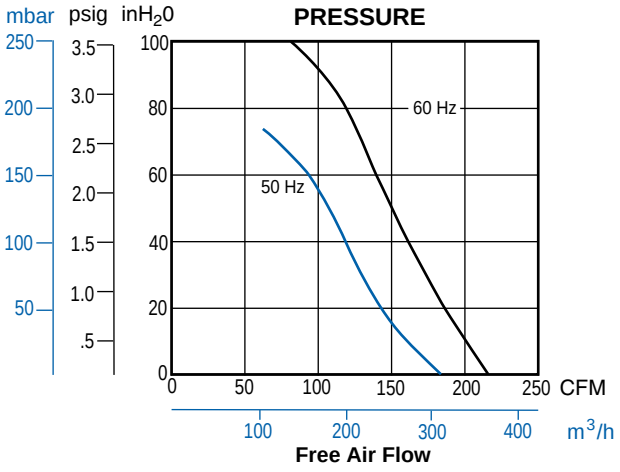

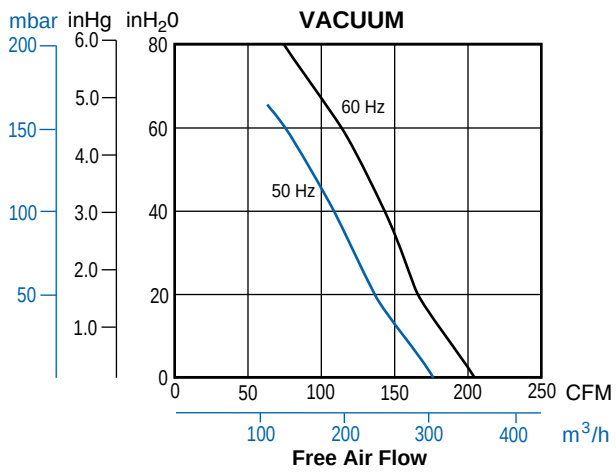

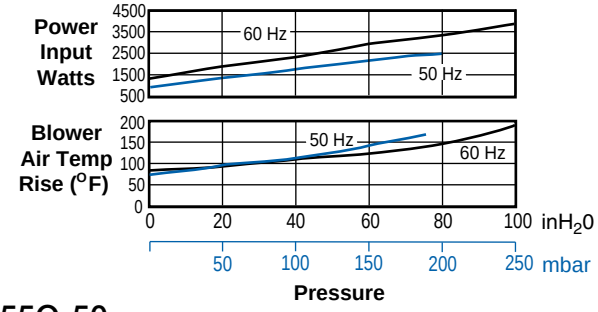

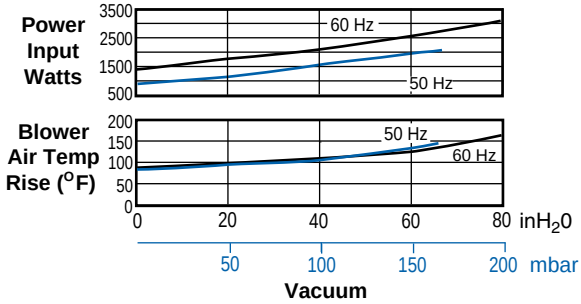

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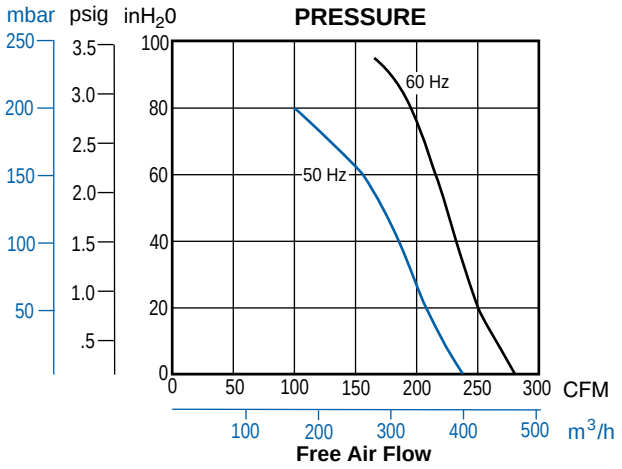

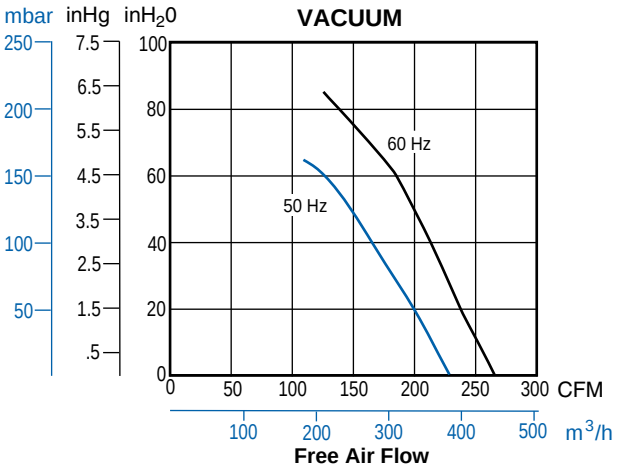

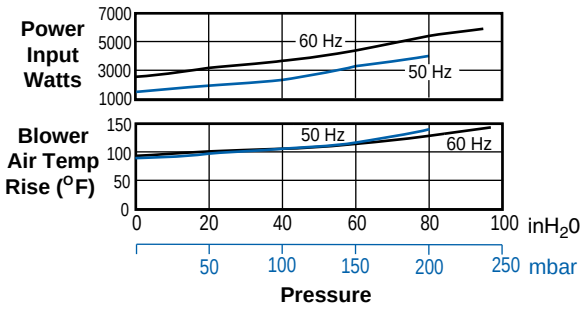

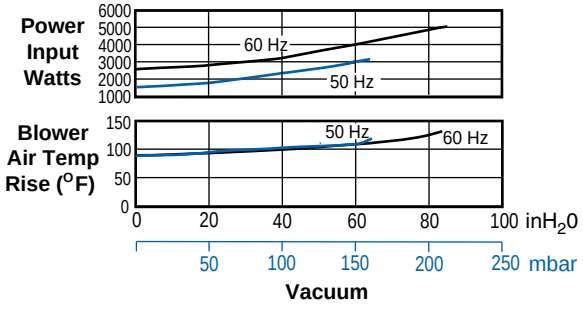

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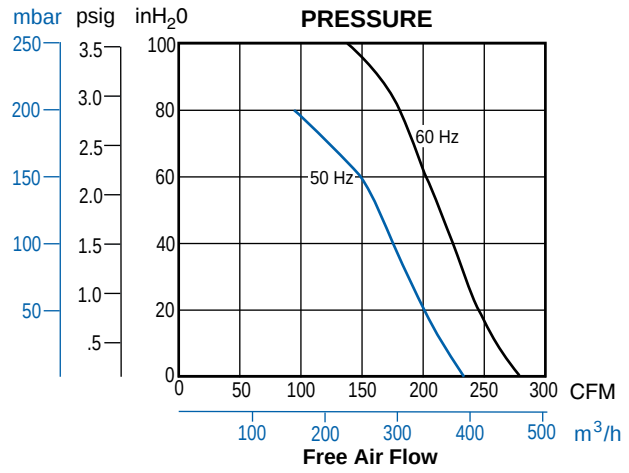

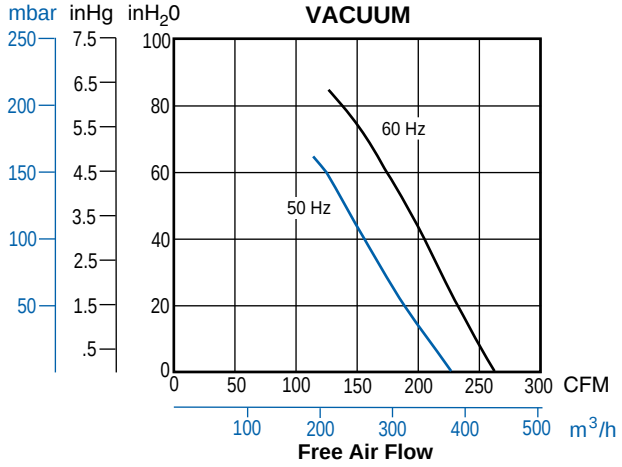

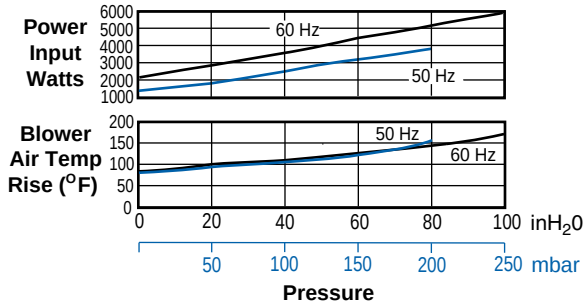

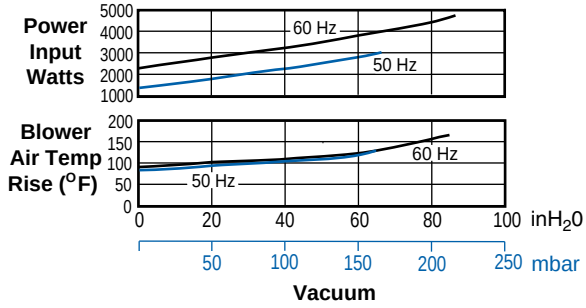

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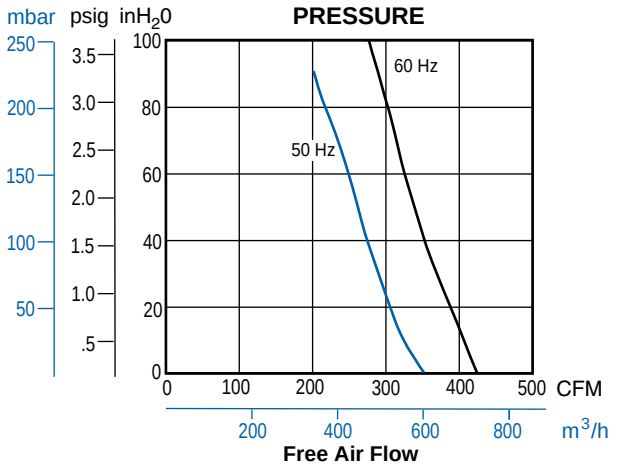
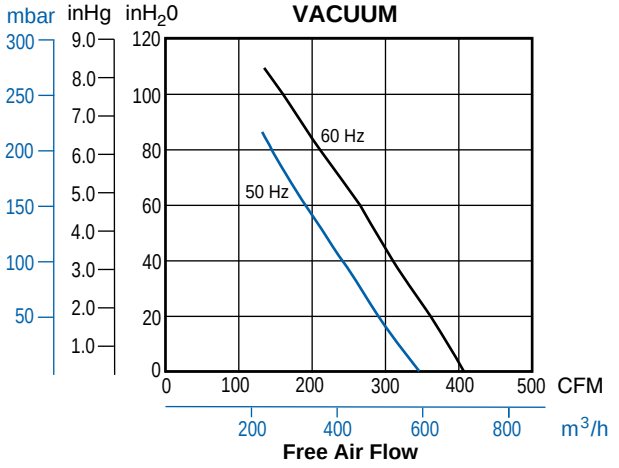
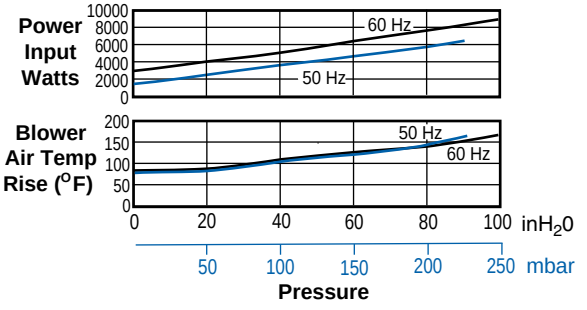
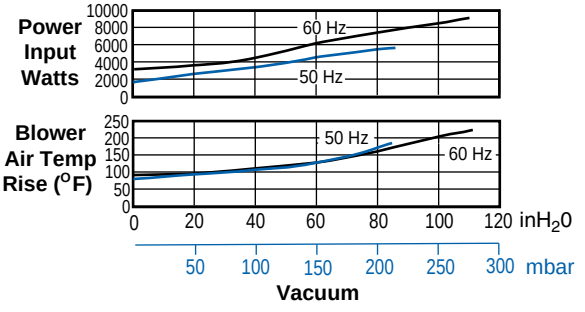
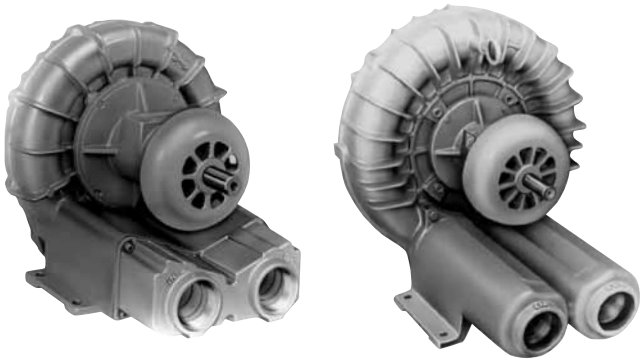










Separate Drive Models
Models SDR4, SDR5, SDR6, SDR6P

Pressure, vacuum, and air flow varies for these models, depending on the RPM. Reference the individual model's performance grids for specific data. The performance charts below reflect maximum duty for each model.

MODELS	Maximum Pressure (inH_2O)	Maximum Vacuum (inH_2O)	Maximum Air Flow (CFM)
SDR4	110	90	147
SDR5	152	120	240
SDR6	155	135	300
SDR6P	150	125	360

PRODUCT FEATURES

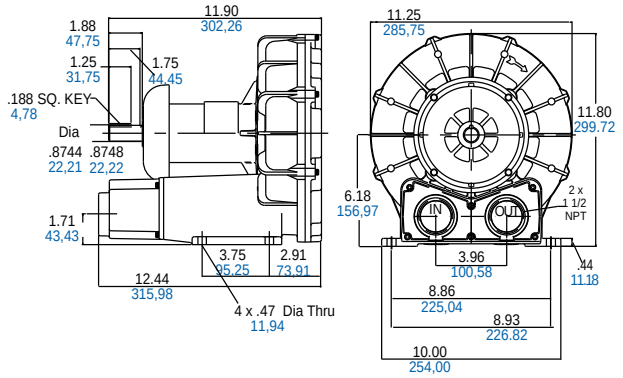
- Oilless operation
- Rugged construction, low maintenance
- Drive pulley size can be changed to lower the speed and change blower performance
- Aluminum cover, impeller, and housing on models SDR4, SDR5, SDR6
- Aluminum impeller, cast iron, and housing on model SDR6P

RECOMMENDED ACCESSORIES

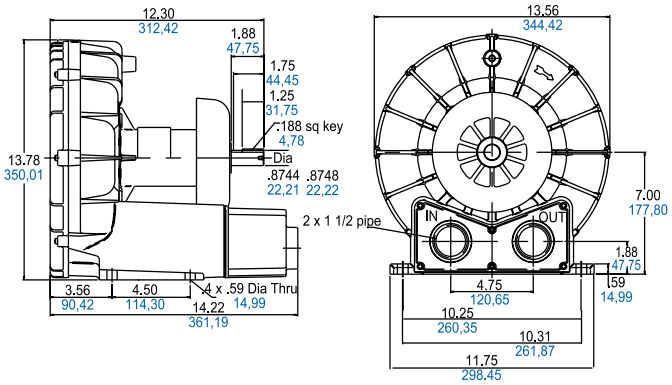
- Pressure gauge AE133
- Inlet filter AJ126D (SDR4)
  AJ126F (SDR5 - SDR6)
  AJ126G (SDR6P)
- Vacuum gauge AE134
- Vacum in-line filter AJ151E (SDR4)
  AJ151G (SDR5 - SDR6), AJ151H (SDR6P)
- Muffler AJ121D (SDR4, SDR5)
  AJ121F (SDR6, SDR6P)
- Relief valve AG258

Product Dimensions (inches, mm)

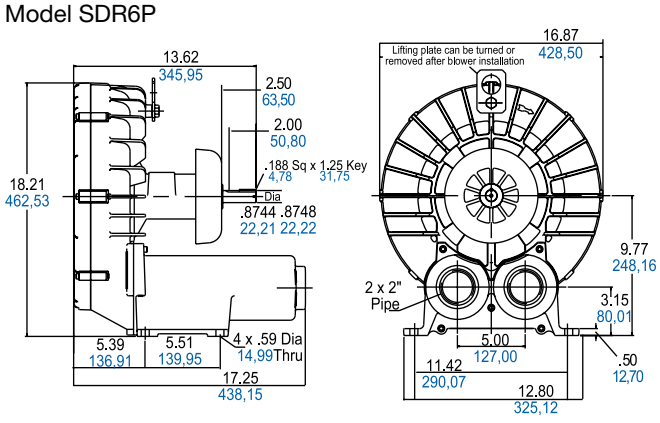
Model SDR4

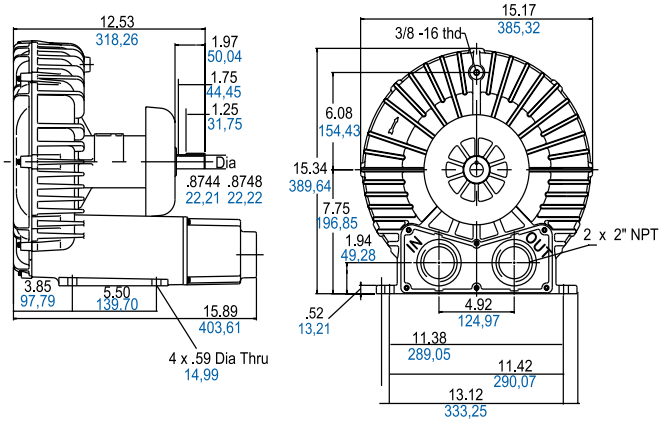


Model SDR5



Model SDR6P

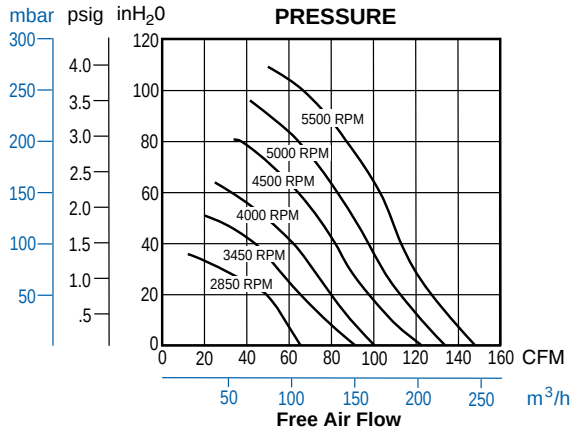


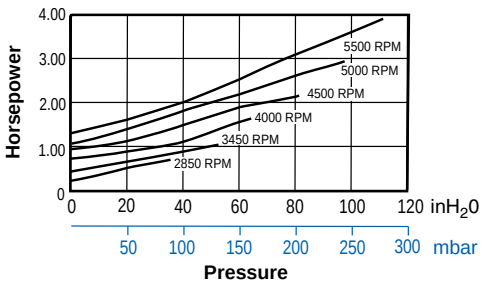


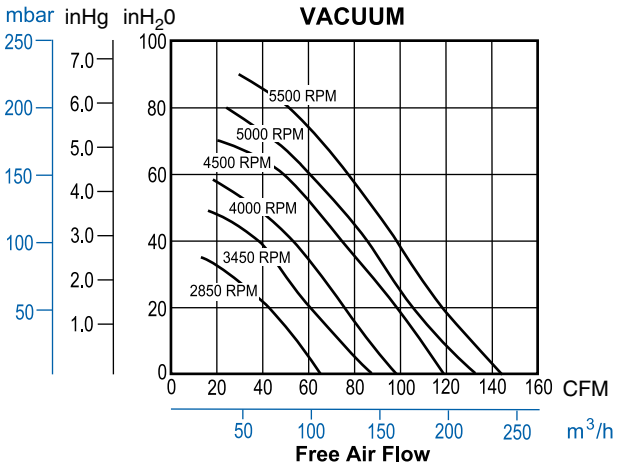
Product Specifications

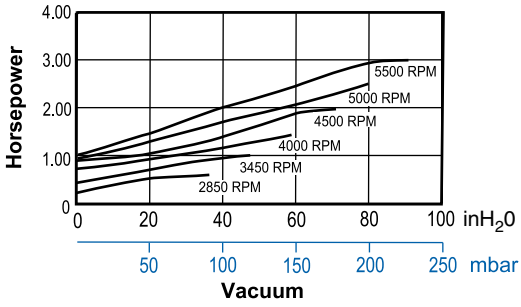
MODEL NUMBER	SDR4	SDR5	SDR6	SDR6P
Maximum RPM	5500	5500	5500	4500
HP/kW required at maximum RPM and Vacuum	3/2,2	8/6	11.5/8,6	10.6/7,9
HP/kW required at maximum RPM and Pressure	4/3	10/7,5	15/11,1	15/11,1
Net Weight (lbs/kg)	27/12	37/17	70/32	111/50

SDR4

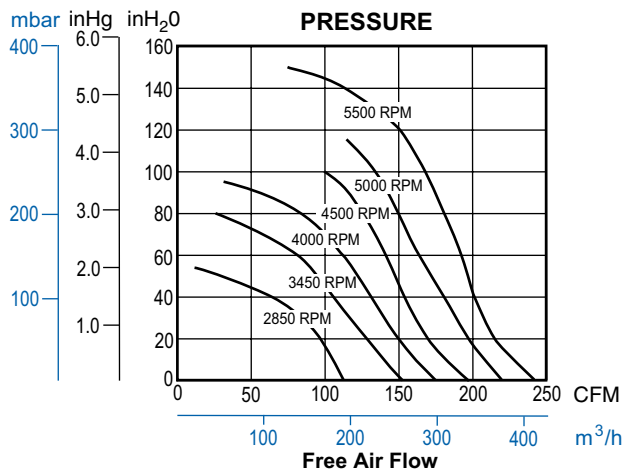


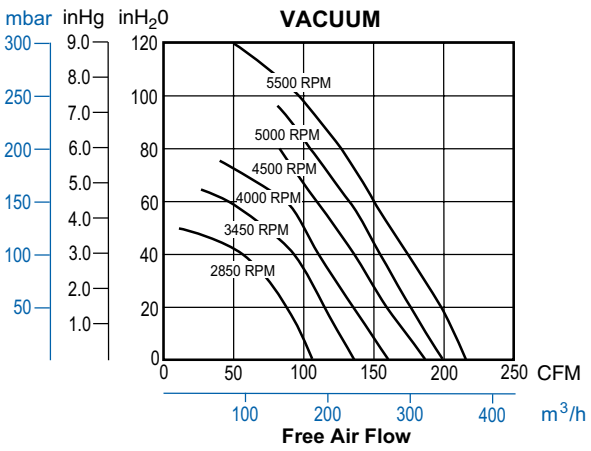


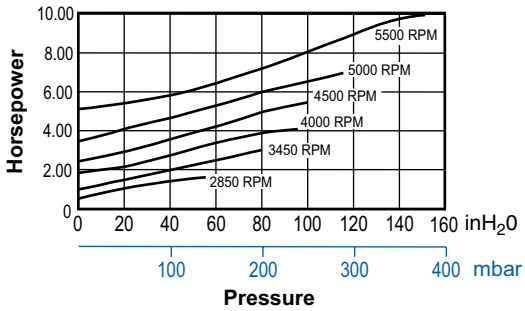


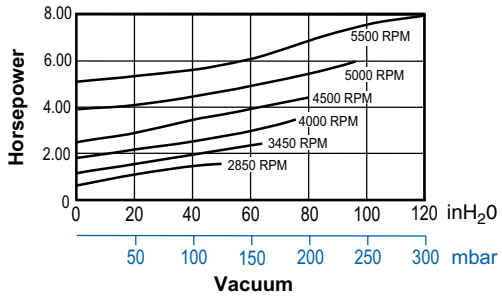


SDR5

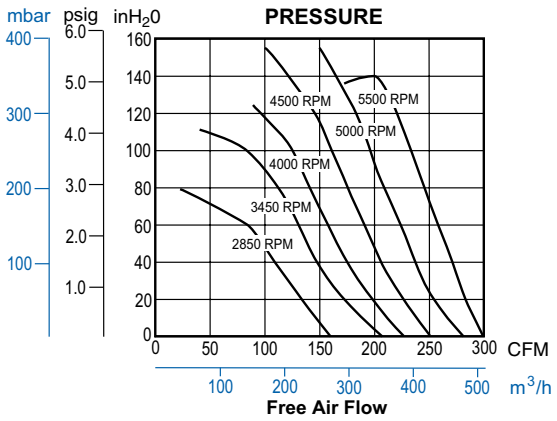

PRESSURE
mbar inHg inH20
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow

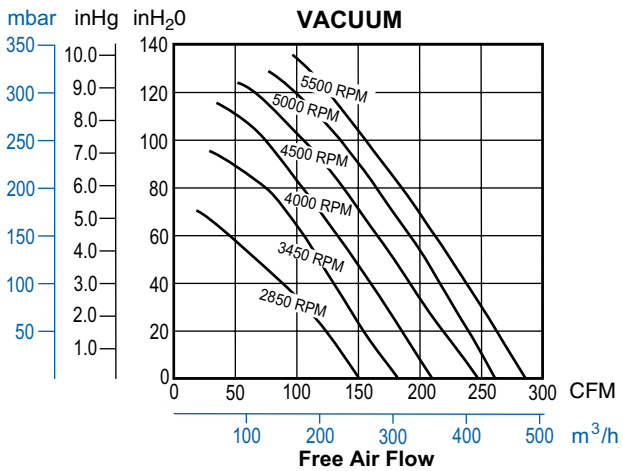

VACUUM
mbar inHg inH20
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow

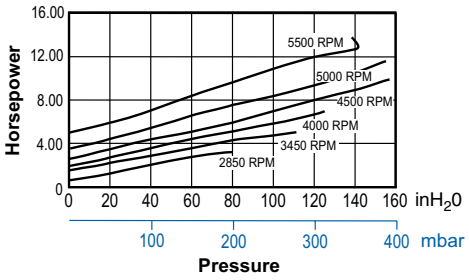

Horsepower
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
inH20
mbar
Pressure

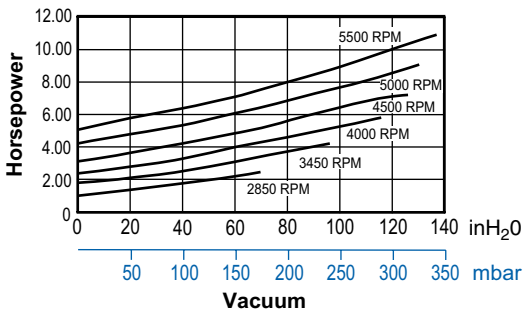

Horsepower
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
inH20
mbar
Vacuum

SDR6

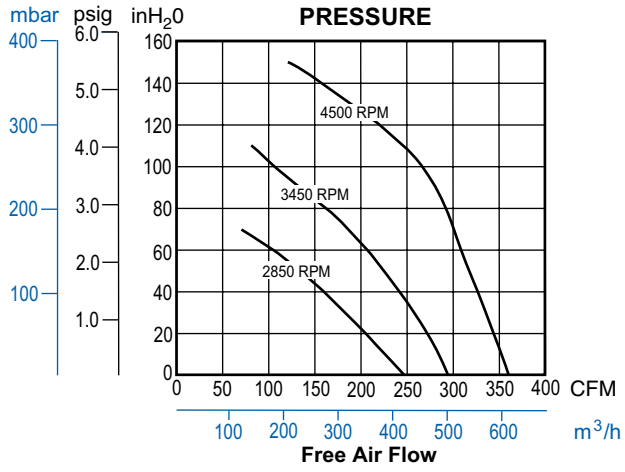

PRESSURE
mbar psig inH20
4500 RPM
5500 RPM
5000 RPM
4000 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow

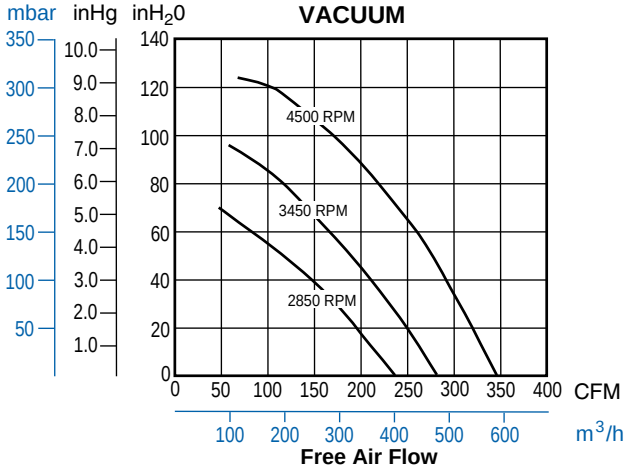

VACUUM
mbar inHg inH20
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow

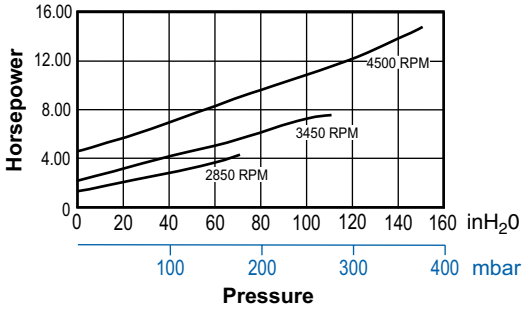

Horsepower
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
inH20
mbar
Pressure

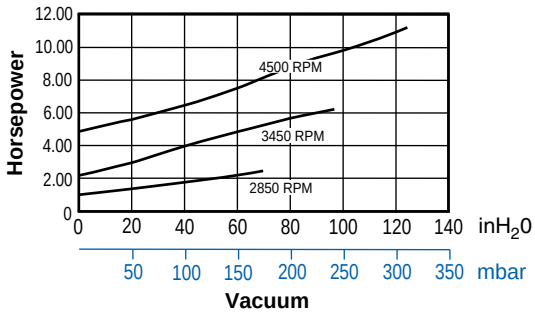

Horsepower
5500 RPM
5000 RPM
4500 RPM
4000 RPM
3450 RPM
2850 RPM
inH20
mbar
Vacuum

SDR6P


mbar
psig
inH20
PRESSURE
4500 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow


mbar
inHg
inH20
VACUUM
4500 RPM
3450 RPM
2850 RPM
CFM
m3/h
Free Air Flow

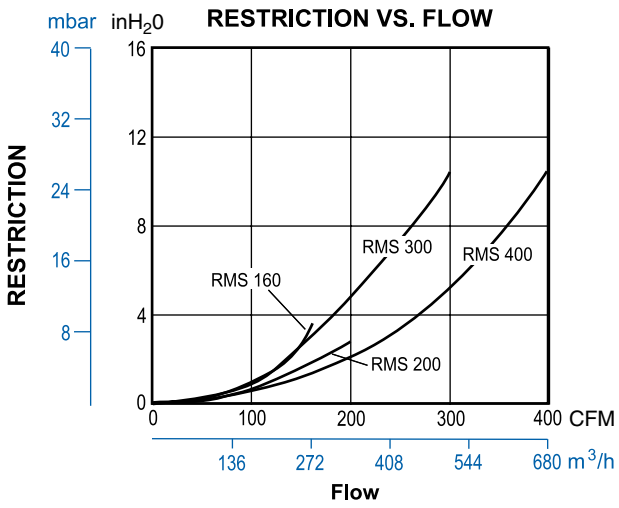

Horsepower
4500 RPM
3450 RPM
2850 RPM
inH20
mbar
Pressure


Horsepower
4500 RPM
3450 RPM
2850 RPM
inH20
mbar
Vacuum

Regenair® Liquid Separator

The separator removes liquids from the gas stream in a soil vapor extraction process, to help protect both blower and vapor treatment system from corrosion and mineral deposit buildup. The separator is located between the extraction wells and the blower. An inline filter is installed between separator and blower.

Cut away to show ball float. Above model shows optional explosion proof float switch AJ213

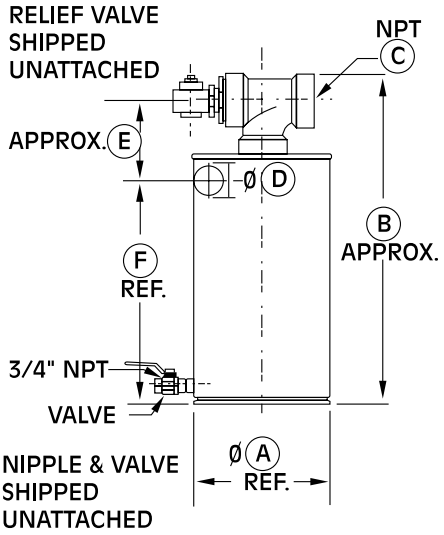


Specifications

Practical Design Engineered to remove and contain moisture ranging from a fine mist to slugs of water from blower inlet air streams, Gast separators incorporate a cyclonic action which results in a very high degree of efficiency. A floating ball valve which closes when the liquid level becomes too high prevents collected liquid from overflowing back into the air stream. When the float valve closes an integral vacuum relief valve opens, admitting air to cool the blower and prevent overheating.

Rugged Construction Gast separator drums are made from ribbed heavy gauge cold-rolled steel, with heavy steel inlet, drain and float switch ports welded to the drum wall. Drum interiors are epoxy coated to resist abrasion, corrosion and chemicals, while the drum exterior is coated with durable urethane. For ease of connection, the outlet port of female pipe threaded. The heavy-duty 304 stainless steel ball float resists chemicals. Maximum rated vacuum is 22 inHg (299 inH_2O).

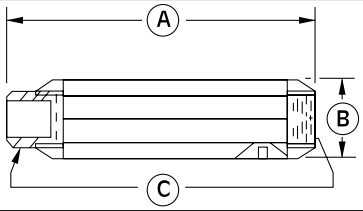
Included is a pilot operated precision relief valve capable of functioning over a wide duty range. This vacuum relief valve is designed and built to proven reliability and durability standards. Moving parts are nickelplated for corrosion resistance and smooth operation. Explosion proof AJ213 float switch is optional; single pole double throw, electrical rating 5 amp @ 125/250 VAC, 1" NPT mounting.



Part No.	Liq. Cap.(gal.)	A(dia.)	Dim. B	C(NPT)	D(dia.)	Dim. E	Dim. F	Used On
RMS160	10	14.8"	37.5"	2"	2"	7.5"	26.6"	R3, R4, R5
RMS200	19	19.7"	35"	2"	2"	7.5"	26.6"	R4, R4H, R4P, R5
RMS300	19	19.7"	35"	2.5"	2.5"	7.5"	26.6"	R4H, R4M, R5, R6, R6P, R6PS, R7H
RMS400	40	24"	44"	3"	3"	9.7"	29"	R6PP, R4M, R6, R6P, R7, R7S, R7P, R7H,R9, R9S

Mufflers

Designed to reduce noise by 5-8 dBa and remove high frequency sound associated with all blowers.



Part No.	Dim. A	Dim. B	Dim. C	Used On
AJ121B	7.46”	2.38”	1” NPT	R1, R2
AJ121C	7.94”	2.62”	1 1/4” NPT	R3
AJ121D	12.75”	3.25”	1 1/2” NPT	R4, R5, R4P, R4H, R7
AJ121F	17.05”	3.63”	2” NPT	R4H, R6, R6P, R6PP, R6PS
AJ121G	17.44”	4.25”	2 1/2” NPT	R7, R7P, R7S,
AJ121H	20.25”	4.75”	3” NPT	R6PP (Exhaust), R9, R9P, R9S
AJ121M	33.50”	6.00”	4” NPT	R7P (Exhaust)

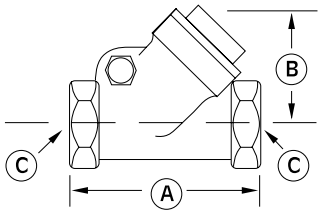
Pressure-Vacuum Gauge

To monitor the system performance so maximum duties are not exceeded. Using two gauges (one on each side of the filter) is a great way to know when the filter needs servicing.

Part No.			Used On
AJ497	Vacuum gauge	0-60 inH_2O, 1/4” NPT connection	R1, R2, R3, R4 R4H, R4P, R5, R7, R7P, R7S, R9, R9P, R9S
AE134	Vacuum gauge	0-160 inH_2O, 1/4” NPT connection	R4P, R6PP, R6PS, R6P, R4M, R6, R7, R7S, R7P, R9, R9P, R9S
AE134F	Vacuum gauge	0-15 inHg, 1/4” NPT connection	R4H,
AE133	Pressure gauge	0-160 inH_2O, 1/4” NPT connection	R6PP, R6P, R5, R4P, R6, R7P, R9, R9P
AE133A	Pressure gauge	0-200 inH_2O, 1/4” NPT connection	R6PS, R7, R7S
AE133F	Pressure gauge	0-15 psi, 1/4” NPT connection	R4H, R9S
AJ496	Pressure gauge	0-60 inH_2O, 1/4” NPT connection	R1, R2, R3, R4

Check Valve

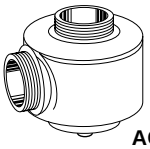
Designed to prevent back-wash of fluids that would enter the blower. Also prevents air back-streaming if needed. Can be mounted with discharge either vertical or horizontal. Valve will open with 3” of water pressure.



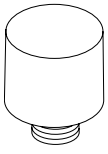
Part No.	Dim. A	Dim. B	Dia. C
AH326B	3.57”	2.32”	1” NPT
AH326C	4.19”	2.69”	1 1/4” NPT
AH326D	4.50”	2.94”	1 1/2” NPT
AH326F	5.25”	3.82”	2” NPT

Relief Valve

By setting a relief valve at a given pressure/vacuum you can ensure excessive duties will not harm the blower or products in your application.



AG258 Series



PV Series

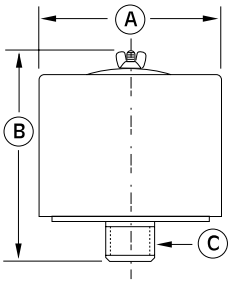
Part No.		Used On	
AG258	Relief valve	1-1/2” NPT adjustable 30-200 inH_2O, vac. or press., 200 CFM max.	R4, R4H, R4P, R5, R6, R6P, R6PS, R7
AG258F	Relief valve	2-1/2” NPT adjustable 25-200 inH_2Os, vacuum or pressure, 570 CFM	R6PP, R7P, R7S, R9, R9P, R9S
PV102	Relief valve	For pressure, pre-set for 10.2 psi, 1-1/4” NPT connection (60 Hz)	R4H

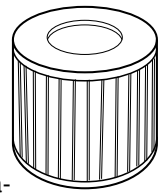
Filters

Inlet filters (for pressure)

Part No.	Dim. A	Dim. B	Dim. C	Filter Replacement	Used On
AJ126B	6.00”	4.62”	1” MPT	AJ134B (10 micron)	R1, R2
AJ126C	6.00”	7.12”	1 1/4” MPT	AJ134C (10 micron)	R3
AJ126D	7.70”	7.25”	1 1/2” MPT	AJ134E (10 micron)	R4, R4H, R4P, R5
AJ126F	10.63”	4.81”	2” MPT	AG340 (10 micron)	R6, R6P, R6PS, R6PP, R9
AJ126G	10.00”	13.12”	2 1/2” MPT	AJ135A (10 micron)	R7, R7P,
AJ126L	10.00”	14.62”	4” MPT	AJ135C (10 micron)	Consult factory
AJ126M	16.00”	14.62”	5” MPT	AJ135H (10 micron)	Consult factory

MPT = Male Pipe Thread. FPT = Female Pipe Thread. All are heavy-duty for high amounts of particulates.
Inlet filters for REGENAIR® blowers are drip-proof when mounted as shown.





Filters

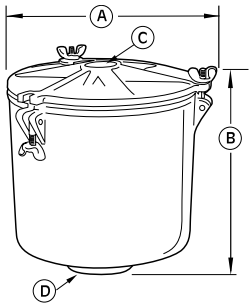
In locations where there are high amounts of dust, powder, or dirt suspended in the air, inline filters (for vacuum applications) and inlet filters (pressure applications), should be used. Keeping particulates from entering the blower will ensure smooth operation and trouble free service life.

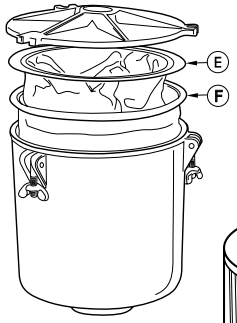
Inline filters (for vacuum)

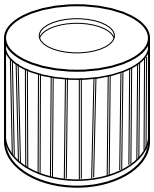
AV series

Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Used On
AV460	8 1/4”	8 7/8”	1” FPT	1” FPT	R1, R2
AV460C	8 1/4”	8 7/8”	1 1/4” FPT	1 1/4” FPT	R3

Replacement elements for AV460 and AV460C:
AV463A - Cloth bag, 50 micron, sold in 3 pack (letter F on diagram).
AV469A - Paper filter, 5-10 micron, sold in 12 pack (letter E on diagram).



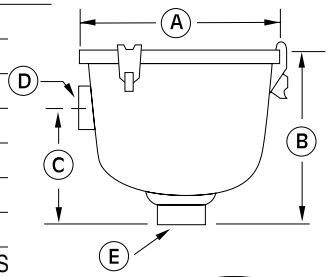


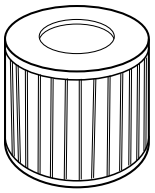


AJ series

Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim.E	Filter Replacement	Used On
AJ151A	5.88”	4.50”	2.75”	1” FPT	1” FPT	AJ135D (10 micron)	R1
AJ151B	7.38”	6.81”	4.62”	1” FPT	1” FPT	AJ135E (10 micron)	R2
AJ151C	7.38”	6.81”	4.62”	1 1/4” FPT	1 1/4” FPT	AJ135E (10 micron)	R3
AJ151D	7.38”	6.81”	4.62”	1 1/2” FPT	1 1/2” FPT	AJ135E (10 micron)	R4, R4P
AJ151E	8.75”	10.25”	5.00”	2” FPT	2” FPT	AJ135F (10 micron)	R4H, R4P, R5
AJ151G	8.75”	10.50”	5.50”	2 1/2” FPT	2 1/2” FPT	AJ135G (10 micron)	R6, R6P,
AJ151H	14.00”	27.13”	18.50”	3” MPT	3” MPT	AJ135C (10 micron)	R6PP, R6PS, R7
AJ151M	18.50”	28.13”	19.50”	5” MPT	5” MPT	AJ135H (10 micron)	R7P, R7S, R9, R9P, R9S

MPT = Male Pipe Thread. FPT = Female Pipe Thread. All are heavy-duty for high amounts of particulates.
Inline filters for REGENAIR® blowers are drip-proof when mounted as shown.





Regenair® Filter Restrictions with Clean Element

Inlet Filters

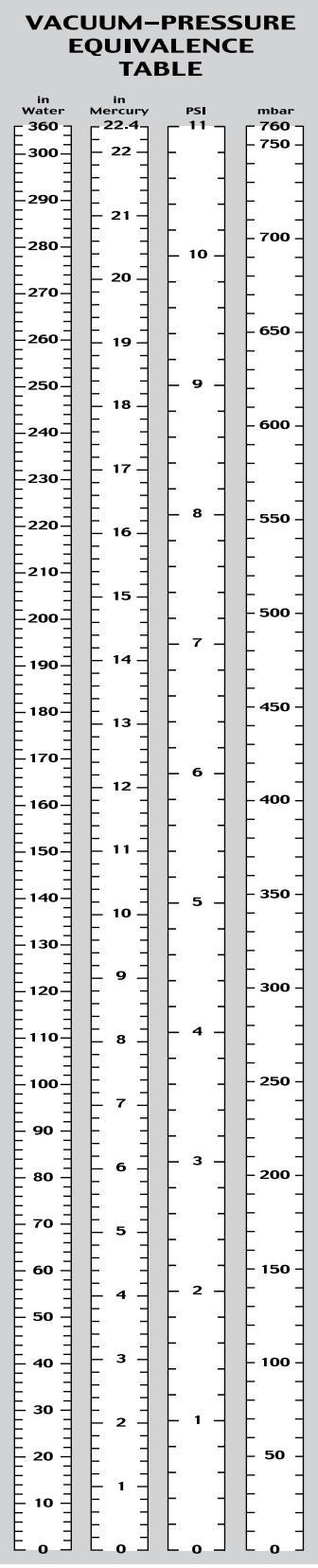
Blower	Filter	Restriction in inH_2O at CFM Flow Indicated
R1	AJ126B	2.2” @ 27 CFM
R2	AJ126B	4.5” @ 40 CFM
R3	AJ126C	2.5” @ 50 CFM
R4H	AJ126D	8” @ 120 CFM
R4	AJ126D	4” @ 85 CFM
R4P	AJ126D	8” @ 120 CFM
R5	AJ126D	11” @ 146 CFM
R6	AJ126F	7” @ 200 CFM
R6P/R6PS	AJ126F	11” @ 265 CFM
R6PP	(2) AJ126F	10” @ 240 CFM
R7/R7S	AJ126G	12” @ 400 CFM
R7P	(2) AJ126G	12”@ 400 CFM
R9S	AJ126M	Consult factory
R9P	AJ126M	Consult factory

Inline Filters

Blower Size	Filter Number	Restriction in inH_2O at CFM Flow Indicated
R1	AJ151A	1” @ 25 CFM
	AV460	2” @ 25 CFM
R2	AJ151B	2” @ 40 CFM
	AV460	5” @ 40 CFM
R3	AJ151C	2” @ 50 CFM
	AV460C	3” @ 50 CFM
R4	AJ151D	3” @ 100 CFM
R4P	AJ151E	3” @ 100 CFM
R4H	AJ151E	3” @ 120 CFM
R5	AJ151E	4” @ 160 CFM
R6	AJ151G	2” @ 200 CFM
R6P/R6PS	AJ151G	3” @ 300 CFM
6PP	AJ151H	8”@ 400 CFM
R9S	AJ151 M	Consult factory
R9P	AJ151 M	Consult factory

Standard Conversions

Multiply	By	To Get
Atmospheres	29.92	Inches of Mercury
Atmospheres	14.70	Psi
Atomspheres	76.0	Cms of Mercury
Bars	0.9869	Atmospheres
Bars	14.50	Psi
British Thermal Units	3.927×10^{-4}	Horsepower-Hours
British Thermal Units	2.928×10^{-4}	Kilowatt-Hours
Centimeters of Mercury	0.1934	Psi
Cubic Feet	7.481	Gallons
Cubic Feet	28.32	Liters
Cubic Feet/Minute	1.6992	Cubic Meters/Hour
Cubic Meters/Hour	.5886	Cubic Feet/Minute
Cubic Meters	35.31	Cubic Feet
Cubic Meters	61,023	Cubic Inches
Cubic Meters	1.308	Cubic Yards
Horsepower	42.44	British Thermal Units/Min.
Horsepower	745.7	Watts
Horsepower	.746	Kilowatts
Horsepower-Hours	2547	British Thermal Units
Inches	2.540	Centimeters
Inches	25.40	Millimeters
Inches of Mercury	0.03342	Atomspheres
Inches of Mercury	13.60	Inches of Water
Inches of Mercury	0.4912	Psi
Inches of Water	0.07355	Inches of Mercury
Inches of Water	25.40	Kgs/Sq. Meter
Inches of Water	0.03613	Psi
Inches of Water	1.868	Mm of Mercury
Inches of Water	2.491	mbar
Kilograms/Sq. cm	14.22	Psi
Kilopascals (kpa)	0.145	Psi
Kilowatts	1.341	Horsepower
Kilowatts	56.92	British Thermal Units/Min.
Kilowatt-Hours	3415	British Thermal Units
Liters	61.02	Cubic Inches
Liters	0.03531	Cubic Feet
Millibar	.0145	Psi
Millibar	.402	Inches of Water
Mms. of Mercury	0.0394	Inches of Mercury
Mms. of Mercury	0.01934	Psi
Psi	0.06804	Atmospheres
Psi	27.7	Inches of Water
Psi	2.036	Inches of Mercury
Psi	.07031	Kgs/Sq. Centimeter
Psi	6.895	Kilopascals (kpa)
Psi	68.95	mbar
Psi	.069	bar
Pounds of Water	27.68	Cubic Inches
Pounds of Water Evaporated at 212° F	970.3	British Thermal Units
Temp. (Degs.C.) + 273	1	Abs. Temp. (Degs.C.)
Temp. (Degs.C.) + 17.8	1.8	Temp. (Degs. Fahr.)
Temp. (Degs. F.) + 460	1	Abs. Temp. (Degs F.)
Temp. (Degs. F.) - 32	5/9	Temp. (Degs. Cent.)
Watts	0.05692	British Thermal Units/Min.
Watts	1.341×10^{-3}	Horsepower
Watts	10^{-3}	Kilowatts
Watts-Hour	3.415	British Thermal Units
Watts-Hour	1.341 x 10-	Horsepower/Hours
Watts-Hour	10^{-3}	Kilowatt-Hours



IP Codes (Ingress Protection)

IEC 60529 outlines an international classification system for the sealing effectiveness of enclosures of electrical equipment against the intrusion into the equipment of foreign bodies (i.e., tools, dust, fingers) and moisture. This classification system utilizes the letters “IP” (“Ingress Protection”) followed by two digits. (An “X” is used for one of the digits if there is only one class of protection; i.e., IP X 4 which addresses moisture resistance only.)

Degrees of Protection - First Digit

The first digit of the IP code indicates the degree that persons are protected against contact with moving parts (other than smooth rotating shafts, etc.) and the degree that equipment is protected against solid foreign bodies intruding into an enclosure.

0 No special protection
1 Protection from a large part of the body such as a hand (but no protection from deliberate access); from solid objects greater than 50 mm in diameter
2 Protection against fingers or other objects not greater than 80mm in length and 12 mm in diameter
3 Protection from entry by tools, wires, etc., with a diameter or thickness greater than 2.5 mm
4 Protection from entry by solid objects with a diameter or thickness greater than 1.0 mm
5 Protection from the amount of dust that would interfere with the operation of the equipment
6 Dust-tight

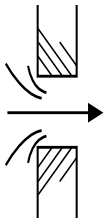
Degrees of Protection - Second Digit

The second digit indicates the degree of protection of the equipment inside the enclosure against the harmful entry of various forms of moisture (e.g. dripping, spraying, submersion, etc.).

0 No special protection
1 Protection from dripping water
2 Protection from vertically dripping water
3 Protection from sprayed water
4 Protection from splashed water
5 Protection from water projected from a nozzle
6 Protection against heavy seas, or powerful jets of water
7 Protection against immersion
8 Protection against complete, continuous submersion in water

Air Flow Through An Orifice (in CFM)

- Downstream pressure = 14.7 psia (standard atmospheric pressure)
- Air Temperature = 70 °F (21 °C)
- Cd (discharge coefficient) = 0.65 (for sharp edge orifice — See drawing)



Up Stream Pressure — **Orifice Diameters (in Inches)**

in. H_2O	1/32	1/16	1/8	3/16	1/4	5/16	3/8	7/16	1/2	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
1.00	0.014	0.054	0.217	0.489	0.869	1.36	1.96	2.66	3.48	7.82	13.9	21.7	31.3	42.6	55.6	70.4	86.9	105	125
2.00	0.019	0.077	0.307	0.691	1.23	1.92	2.76	3.76	4.92	11.1	19.7	30.7	44.2	60.2	78.6	99.5	123	149	177
3.00	0.024	0.094	0.376	0.846	1.50	2.35	3.39	4.61	6.02	13.5	24.1	37.6	54.2	73.7	96.3	122	150	182	217
4.00	0.027	0.109	0.434	0.977	1.74	2.71	3.91	5.32	6.95	15.6	27.8	43.4	62.6	85.1	111	141	174	210	250
5.00	0.030	0.121	0.486	1.09	1.94	3.04	4.37	5.95	7.77	17.5	31.1	48.6	69.9	95.2	124	157	194	235	280
10.00	0.043	0.172	0.686	1.54	2.75	4.29	6.18	8.41	11.0	24.7	43.9	68.6	98.9	135	176	222	275	332	395
15.00	0.053	0.210	0.840	1.89	3.36	5.25	7.56	10.3	13.4	30.3	53.8	84.0	121	165	215	272	336	407	484
20.00	0.061	0.242	0.970	2.18	3.88	6.06	8.73	11.9	15.5	34.9	62.1	97.0	140	190	248	314	388	469	559
25.00	0.068	0.271	1.08	2.44	4.34	6.77	9.76	13.3	17.3	39.0	69.4	108	156	212	277	351	434	525	624
30.00	0.074	0.297	1.19	2.67	4.75	7.42	10.7	14.5	19.0	42.7	76.0	119	171	233	304	385	475	574	684
35.00	0.080	0.320	1.28	2.88	5.13	8.01	11.5	15.7	20.5	46.1	82.0	128	185	251	328	415	513	620	738
40.00	0.086	0.342	1.37	3.08	5.48	8.56	12.3	16.8	21.9	49.3	87.6	137	197	268	351	444	548	663	789
45.00	0.091	0.363	1.45	3.27	5.81	9.07	13.1	17.8	23.2	52.3	92.9	145	209	285	372	470	581	703	836
50.00	0.096	0.382	1.53	3.44	6.12	9.56	13.8	18.7	24.5	55.1	97.9	153	220	300	392	496	612	740	881
55.00	0.100	0.401	1.60	3.61	6.41	10.0	14.4	19.6	25.7	57.7	10.3	160	231	314	411	520	641	776	924
60.00	0.105	0.419	1.67	3.77	6.70	10.5	15.1	20.5	26.8	60.3	107	167	241	328	429	542	670	810	964
65.00	0.109	0.435	1.74	3.92	6.97	10.9	15.7	21.3	27.9	62.7	111	174	251	341	446	564	697	843	1003
70.00	0.113	0.452	1.81	4.06	7.23	11.3	16.3	22.1	28.9	65.0	116	181	260	354	463	585	723	874	1041
75.00	0.117	0.467	1.87	4.21	7.48	11.7	16.8	22.9	29.9	67.3	120	187	269	366	479	606	748	905	1077
80.00	0.121	0.482	1.93	4.34	7.72	12.1	17.4	23.6	30.9	69.5	124	193	278	378	494	625	772	934	1112
85.00	0.124	0.497	1.99	4.47	7.95	12.4	17.9	24.4	31.8	71.6	127	199	286	390	509	644	795	962	1145
90.00	0.128	0.511	2.04	4.60	8.18	12.8	18.4	25.1	32.7	73.6	131	204	294	401	524	663	818	990	1178
95.00	0.131	0.525	2.10	4.73	8.40	13.1	18.9	25.7	33.6	75.6	134	210	302	412	538	680	840	1016	1210
100.00	0.135	0.538	2.15	4.85	8.61	13.5	19.4	26.4	34.5	77.5	138	215	310	422	551	698	861	1042	1241
105.00	0.138	0.551	2.21	4.96	8.82	13.8	19.9	27.0	35.3	79.4	141	221	318	432	565	7151	882	1068	1271
110.00	0.141	0.564	2.26	5.08	9.03	14.1	20.3	27.6	36.1	81.2	144	226	325	442	578	731	903	1092	1300

Technical Information and Definitions

Definitions:

CFM – cubic feet of air per minute
SP – static pressure inches of water
HP – horsepower
RPM – speed in revolutions per minute
d – density in pounds per cubic foot
1 – known conditions
2 – desired conditions

Standard Air-air at 68 °F (absolute temperature 528°) and 29.92 inHg. (barometric pressure at sea level). The density of such air is 0.075 lbs/cu ft. and the specific volume is 13.29 cu ft./lb The specific gravity is 1.0.

H_2O CFM vs SCFM
The difference between “Cubic Feet Per Minute” and “Standard Cubic Feet Per Minute” is simply one of air density. The word “Standard”, in this unit of measure, refers to the air being at standard temperature and pressure. In this case it will have standard air density. Regenair blowers performance is stated in terms of CFM, the volume of air they move.

Fan Laws

The following fan laws apply for the range of air performance where induction motor-driven blowers operate, that is, under 100 inches of water static pressure or vacuum (where it may be assumed that air is incompressible). The fan laws may also be used if the pressure of both fan conditions is over 100 inches of water but the pressure change is less than 30%.

1. Effect Of A Speed Change

CFM is proportional to Speed	$CFM_2 = CFM_1 \times (RPM_2/RPM_1)$
(The volume changes in direct ratio to the speed)	
SP is proporational to Speed^2	$SP_2 = SP_1 \times (RPM_2/RPM_1)^2$
(The pressure changes as the square of the speed ratio)	
HP is proportional to Speed^3	$HP_2 = HP_1 \times (RPM_2/RPM_1)^3$
(The horsepower changes as the cube of the speed ratio)	(Also known as the 1-2-3 rule of blowers)

2. Altitude And Temperature Change The Density Of Air

CFM is constant	$CFM_2 = CFM_1$
SP is proportional to density	$SP_2 = SP_1 (d_2/d_1)$
HP is proportional to density	$HP_2 = HP_1 (d_2/d_1)$

Volume Changes In Direct Ratio To Speed

For example, a blower is operating at 3500 RPM and delivering 800 cfm. If the speed is reduced to 3000 RPM, what is the new volume?

Let:

V_1 – original volume
V_2 – new volume
RPM_1 – orginal speed
RPM_2 – new speed

$V_2 = V_1 \times (RPM_2/RPM_1)^1$

$V_2 = 800 \times (3000/3500)^1 = 800 \times .857 = 686$ CFM

Pressure Changes As The Square Of The Speed Ratio

For example, a blower is operating at a speed of 3500 RPM and delivering air at 3 psi. If the speed is reduced to 3000 RPM, what is the new pressure?

Let:

P_1 – orginal pressure (3 psi)
P_2 –new pressure
RPM_1 – original speed
RPM_2 – new speed

$P_2 = P_1 \times (RPM_2/RPM_1)^2$

$P_2 = 3 \times (3000/3500)^2 = 3 \times .735 = 2.21$ psig = 83 inches of water pressure

Air Density Varies In Inverse Proportion To Absolute Temperature

For example, a blower is to handle 150 °F air at 40 inches of water pressure. What pressure (standard air) blower is required?

Let:

P_1 – pressure hot air (40 inches of water)

P_2 – pressure standard air

AT_1 – absolute temperature hot air (150+460=610°)

AT_2 – absolute temperature standard air (68+460=528°)

$P_2 = P_1 \times (AT_1/AT_2)$

$P_2 = 40 \times (610/528) = 40 \times 1.15 = 46$ inches of water

Temperature in Degrees of Fahrenheit	% Of Change In Air Density Compared to 70°
100	–5
90	–4
70	0
60	+2
50	+4
40	+6
30	+8
20	+10
10	+13

If a blower is capable of delivering 30 inches of water pressure with standard air, what pressure will it develop handling 150 °F inlet air?

$P_1 = P_2 \times (AT_2/AT_1)$

$P_1 = 30 \times (528/610) = 30 \times .866 = 26$ inches of water pressure

Relation Of Density To Inlet Volume

At high altitudes it is frequently specified that a specific blower must be capable of handling a given volume of "standard air". For example, a blower is to operate at 5000 feet and is to handle 500 CFM of standard air. To determine the equivalent volume of air the blower must handle at the higher altitude:

Let:

V_1 – volume of standard air (500 CFM)

V_2 – volume of thinner air

Hg_1 – barometric pressure sea level (29.92)

Hg_2 – barometric pressure at altitude (24.89 for 5000 feet)

$V_2 = V_1 \times (Hg1/Hg2)$

$V_2 = 500 \times (29.92/24.89) = 601$ CFM of air at 5000 feet altitude

Pressure Varies In Direct Proportion To Density

For example, a blower operating at 80 inches of water with standard air is to be used to handle air having a specific gravity of 0.8. What pressure does the blower create when handling the air?

Let:

Pa – air pressure

Pg – gas pressure

SG – specific gravity of gas

$Pg = Pa \times SG$

$Pg = 80 \times 0.8 = 64$ inches of water

Horsepower Changes As The Cube Of The Speed Ratio

For example, a blower is operating at a speed of 3500 RPM and requiring 5 horsepower. If the speed is reduced to 3000 RPM, what is the new required horsepower?

Let:

HP_1 – original horsepower

HP_2 – new horsepower

RPM_1 – original speed

RPM_2 – new speed

$HP_2 = HP_1 \times (RPM_2/RPM_1)^3$ $HP_2 = 5 \times (3000/3500)^3 = 5 \times .630 = 3.15$ horsepower

Pressure Varies In Direct Proportion To Altitude

At low altitudes in an indoor environment, the small changes in Regenair® Blower performance are usually ignored. At high altitudes, these changes become significant and should not be ignored.

The performance of all regenerative blowers varies directly with changes in air density according to the Fan Laws. These Fan Laws don't apply to our positive displacement pumps. Altitude changes air density as well as air temperature.

All the catalog performance tests for Regenair® Blowers were conducted at an altitude of 635 ft. This makes the Regenair® Blowers capable of 2% more pressure than the nominal advertising indicates. So in predicting changes in performance we should use the 635 ft. altitude as a starting point.

A 10% decrease in air density reduces pressure performance by 10%. For example: if a blower like the R5 produces 110 CFM at 40 inches of water pressure, with a 10% decrease in air density, it will produce this same air flow at 90% of 40" or 36" of water pressure. The open, no duty flow ratings of any of the blower don't change with air density changes. The maximum rated pressure or vacuum changes the most.

For example, a blower is to operate at an elevation of 5000 feet and is to deliver 60 inches of water pressure gage. What pressure at standard air is required?

Let:

PB – pressure (standard air) blower = 60 inches of water

inH_2O – inches of water pressure

PSL – absolute pressure at sea level, inHg. = 29.92 inches Hg.

PA – absolute pressure at altitude, inHg. = 24.89 inches Hg. from table for 5000 feet altitude.

$PB = InH_2O \times (PSL/PA)$

PB = 60 X (29.92/24.89) = 72 inches of water at standard conditions

To determine what pressure a 90 inches of water (standard air) blower will deliver at 5000 feet:

Let:

PD – pressure delivered by a 90 inches of water (standard air) blower

$PD = InH_2O \times (PA/PSL)$

PD = 90 X (24.89/29.92) = 74.9 inches of water

Gast offers a program called "REGPER" that calculates changes in performance at 60 Hz. for changes in altitude or air temperature and the effect of operating with both pressure and vacuum on a blower at the same time. This program can be found on Gast's Web Site, **www.gastmfg.com**; you may also contact your Gast Representative for more information on this program.

Ft. Altitude	InHg	inH_2O	PSIA
0	29.92	406.73	14.69
500	29.39	399.53	14.43
1000	28.86	392.32	14.17
1500	28.34	385.25	13.91
2000	27.82	378.19	13.66
2500	27.32	371.39	13.41
3000	26.82	364.59	13.17
3500	26.33	357.93	12.93
4000	25.84	351.27	12.69
4500	25.37	344.88	12.46
5000	24.89	338.49	12.23
5500	24.44	332.24	12.00
6000	23.98	325.98	11.77
6500	23.53	319.87	11.55
7000	23.09	313.89	11.34
7500	22.66	308.04	11.13
8000	22.23	302.19	10.91
8500	21.81	296.49	10.71
9000	21.39	290.78	10.50
9500	20.98	285.20	10.30
10000	20.58	279.76	10.10

Calculating System Friction Loss

Friction causes pressure loss in all systems. Plumbing design and length affect this loss in air flow.

1. Determine total straight pipe equivalent.
List number of each fitting in system. Circle the column under the supply pipe size. Multiply the number of each item by the pipe size conversion factor to find the equivalent amount of straight pipe. Add equivalent figures to actual straight pipe figures.

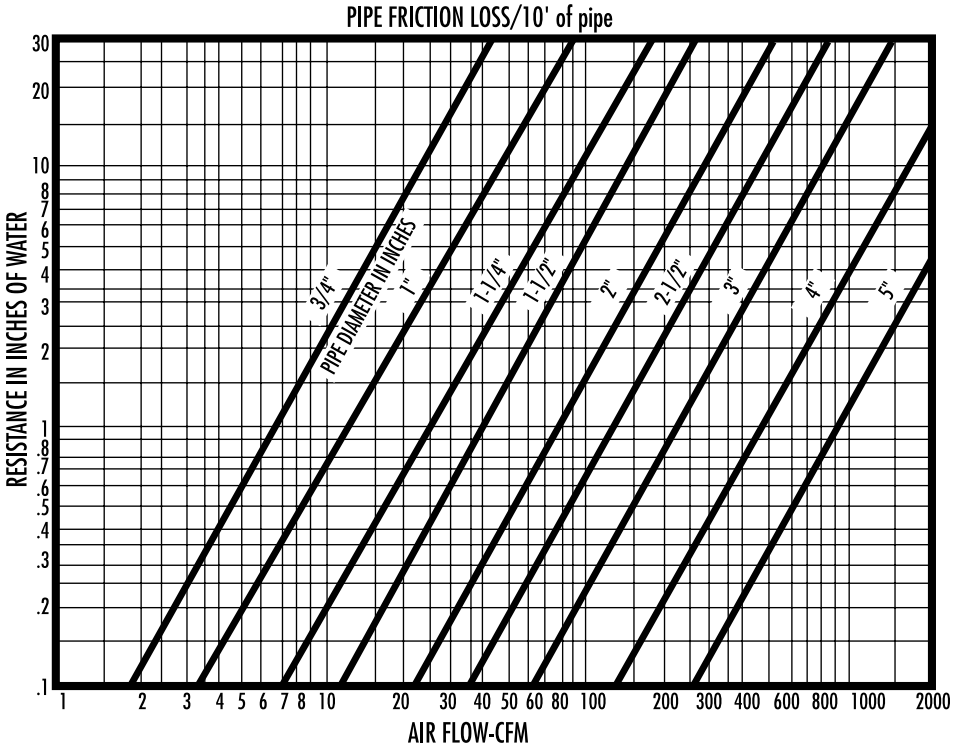
Friction loss in pipe fittings equivalent length of straight pipe

Fitting	#	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	Equivalent Ft.
90° Elbows	___x	2.0	3.0	3.5	4.0	5.0	6.0	8.0	10.0	12.6	=
Std. through tees	___x	1.5	2.0	2.5	3.0	3.5	4.0	5.0	7.0	8.4	=
Std. branch tees	___x	4.0	5.0	7.0	8.0	10.5	12.5	15.5	20.0	25.2	=
Check valves	____x	7.0	9.0	11.5	13.5	17.0	20.5	25.5	34.0	42.0	=
Gate Valves	____x	0.55	0.7	0.9	1.0	1.5	2.0	2.0	3.0	3.4	=

Total length of straight pipe = _____ft.

Total straight pipe equivalent = _____ft.

2. Determine total friction loss in pipe system.
On bottom line of the pipe friction loss chart, mark the air flow needed. Using a ruler, scan vertically from the CFM figure to the diagonal line for the proper pipe size. Mark the intersection and then scan to the left (vertical) axis to find the friction loss figure.



3. Divide the Total straight pipe equivalent from step 1 by 10; multiply by friction loss figure just determined to get the total friction loss in the pipe system.

_____ ÷ 10 x _____ = _____

Total feet of pipe in system Friction loss factor Total friction loss in system in inches of H_2O

Sound Pressure Level Decreases With Distance According To This Formula:

(SPL)2 = (SPL)1 - 20LOG (d2/d1)

Where:

(SPL)2 = New Sound Pressure Level
(SPL)1 = Original Sound Pressure Level
d2 = New distance from sound generator
d1 = Original distance from sound generator

Thus, each doubling of distance results in 6 dBa reduction in Sound Pressure Level

NOTE: this formula assumes that no noise is reflected. In a room that reflects most sound energy (having walls with a low noise reduction co-efficient) much less reduction in noise level with increased distance will be observed than is predicted with this formula.

Noise Q & A

Q. How do I decrease blower noise?

A. Common methods used to decrease blower noise include:

- Having the cover side face where you want the reduction in noise to be and having sound absorbing material diminish sound reflected from the motor side of the blower
- Checking the supporting structure for rattling
- Controlling reflected noise with sound absorbing material
- Moving the blower away from the operator, in another room, possibly in a different area or outside.

Q. Typically how much does the noise output of Gast blowers vary with changes in pressure or vacuum?

A. This varies a lot from model to model with some models little or no change and with others, as much as 9 dBa.

Q. Tyically how much does the noise output of Gast blowers change between 60 Hz and 50 Hz?

A. Generally 50 Hz is 3 dBa quieter than 60Hz but this varies from model to model.

Q. On Gast dual blowers when do I need the large accessory muffler?

A. These blowers provide silencing for either the inlet or exhaust but not both. If, for example, the discharge of the blower is underwater or in some location where the noise passing through the pipe is contained and not objectionable no additional silencer is needed. Where this ringing noise is not contained and noise control is needed, we manufacture accessory mufflers to greatly reduce noise levels.

Q. What happens to the noise when I locate two blowers close together?

A. If the blowers are of the same design they produce sound frequencies that are close together. These may cause a “beating” change in volume of the blower noise. This is because the units are not synchronized. If two small blowers are needed this change in volume can be reduced by moving them further apart. With larger blowers a dual blower with two blowers on one motor will solve this problem.

Q. What causes the noise relief valves make?

A. Air rush through the valve.

Q. How do I control relief valve or bleed off valve noise?

A. Attach AJ121 Series silencer on the port of the relief valve that is open to atmosphere.

Contact Gast at 269-926-6171 or www.gastmfg.com with any further questions you may have on reducing blower noise in your application.

Blower Sound Levels of Gast Blowers

Data is highest sound level out of 4 places around the blower at 1 meter.

Data represents average of several units run at nominal voltage.

Lowest to highest maximum dba level throughout performance range is shown.

Readings at other than the maximum around the blower at 1 meter may be from 2 to 10 dba less than data shown.

Readings taken in a laboratory sound room that does not reflect much noise.

Note: For comparison purposes, some blower manufacturers show sound data from 1–1/2 meters instead of from 1 meter; also, some blower manufacturers show an “average” sound level across performance instead of the full range between minimum and maximum sound levels; either of these methods will provide different and usually lower sound levels compared to Gast’s sound level method.

60Hz	dBa at Pressure	50Hz	dBa at Pressure
R1	59-67	R1	59-64
R2	66	R2	61-63
R3	67-70	R3	63-68
R4	69-73	R4	64-69
R4P	69-75	R4P	64-71
R5	73-77	R5	71-77
R6	73-79	R6	70-79
R6P	82-83	R6P	77-80
R6PP	77-79	R6PP	73-76
R6PS	76-77	R6PS	72-75
R7	82-84	R7	77-79
R7P	77-80	R7P	74-79
R7H	83	R7H	79-81

60Hz	dBa at Vacuum	50Hz	dBa at Vacuum
R1	58-63	R1	54-60
R2	67	R2	63-64
R3	67-71	R3	64-69
R4	70-72	R4	66-70
R4P	73-74	R4P	68-71
R5	75-76	R5	71-73
R6	78-80	R6	74-77
R6P	81-85	R6P	79-81
R6PP	81-83	R6PP	78-79
R6PS	79-81	R6PS	76-77
R7	85-87	R7	79-84
R7P	84-86	R7P	80-83
R7S	82-83	R7S	78-80
R9	85-90	R9	83-84
R9P	88-90	R9P	84-87
R9S	87-88	R9S	83-86
R4H	82-89	R4H	79-88
R4M	85-89	R4M	80-85
R7H	82-91	R7H	80-90
R7S	75-77	R7S	72-76
R9	82-85	R9	78-85
R9P	81-88	R9P	79-86
R9S	79-81	R9S	77-81
R4H	80-82	R4H	75-81
R4M	82-83	R4M	78-79

Gast Manufacturing, Inc.
A Unit of IDEX Corporation
Post Office Box 97
2300 M-139 Highway
Benton Harbor, Michigan 49023-0097
Phone 269-926-6171
Fax 269-925-8288
www.gastmfg.com

Gast Hong Kong
Room 6, 9/F, New Commerce Centre
19 On Sum Street, Shatin
Hong Kong
Phone 852-2690-1008
Fax 852-2690-1012

Gast Group Ltd.
A Unit of IDEX Corporation
Unit 11, The I O Centre
Nash Road
Redditch, B98 7AS
United Kingdom
Phone +44 (0)1527-504040
Fax +44 (0)1527-525262

Back to Product: R6 Series Explosion-Proof

Click Image to Zoom

R6 Series Explosion-Proof

Gast Regenair® Explosion-Proof Regenerative Blower

Part #: R6P355R-50 **Manufacturer:** Gast

In-Stock:

Add to Cart to view price **UOM:** EA

In-Stock Symbol Meaning:

- Normally ships in 1-2 days
- Normally ships in 2-3 weeks
- Some items will ship in 1-2 days, some ship in 2-3 weeks

Description: Features - UL & CSA approved multi-voltage motors, approved thermal protection, motors classified as Explosion Proof Div 1 & 2, for Group D explosive atmospheres, carry full rated load at temperatures below Class B motor insulation limits, Class F motor insulation used in motors larger than 1 HP, conform to NEMA frame sizes; enclosures conform to IP54, aluminum impeller, housing, cover.

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0

Product Attributes

UOM:	EA
Amps (60/50 Hz):	20-18/9 / 14.9-11/7.45-5.8
Power rating (60/50 Hz):	6 hp (4.5 kw) / 4.5 hp (3.4 kw)
Net weight:	233 lbs (105 kg)
Manufacturer:	Gast
Trade Name:	Regenair®
Series:	R6 Explosion-Proof
Inch/Metric:	Inch
Maximum Vacuum:	85 InH2O (60 Hz) 65 InH2O (50 Hz)

Maximum pressure:	100 InH2O (60 Hz) 80 InH2O (50 Hz)
Maximum air flow:	280 cfm (60 Hz) 232 cfm (50 Hz)
Starting Amps (60/50 Hz):	59 @ 460V / n/a
Voltage (60/50 Hz):	208-230/460-3 / 190-220/380-415-3
Insulation Class:	F
Recommended NEMA Starter Size:	1/0
Motor enclosure:	XPFC
Application:	Air tables, solution and media agitation, vacuum hold-down and pickup, air blow-off, soil and ground water remediation, carton forming and packaging, lab filtration, sewage aeration, materials handling, aquaculture, pneumatic conveying.

Accessories

Part Number Tags: N/A

Product Resources

Regenair® Regenerative Blowers

Accessories

Hazardous Duty Blower Series Operation & Maintenance Manual

customer.service@rg-group.com
Toll Free: 1.877.870.2692
650 North State Street, York, PA 17403

Post Office Box 97
Benton Habor, MI 49023-0097
Ph: 616-926-6171
Fax: 616-925-8288

70-6100/F2-205
AK811 (Rev. G)

INSTALLATION AND OPERATING INSTRUCTIONS FOR GAST HAZARDOUS DUTY REGENAIR BLOWERS

This instruction applies to the following models ONLY: R3105N-50, R4110N-50, R4310P-50, R4P115N-50, R5125Q-50, R5325R-50, R6130Q-50, R6P155Q-50, R6340R-50, R6P355R-50 and R7100R-50.

AUTHORIZED SERVICE FACILITIES

Gast Manufacturing Inc.
2550 Meadowbrook Road
Benton Harbor, MI 49022
TEL: 616-926-6171
FAX: 616-925-8288
www.gastmfg.com

Wainbee Limited
215 boul Brunswick
Pointe Claire, Quebec
Canada H9R 4R7
TEL: 514-697-8810
FAX: 514-697-3070

Gast Manufacturing Inc.
505 Washington Avenue
Carlstadt, NJ 07072
TEL: 201-933-8484
FAX: 201-933-5545
www.gastmfg.com

Wainbee Limited
5789 Coopers Avenue
Mississauga, Ontario
Canada L4Z 3S6
TEL: 905/568-1700
FAX: 905/568-0083
http://www.wainbee.ca

Brenner Fiedler & Assoc
13824 Bentley Place
Cerritos, CA 90701
TEL: 800-843-5558
TEL: 310-404-2721
FAX: 310-404-7975
www.brenner-fiedler.com

Japan Machinery Co., Ltd
Central PO Box 1451
Tokyo, 100-91 Japan
TEL: 813 3573 5421
FAX: 813 3571 7865
or: 81-3-3571-7896

Gast Manufacturing Co., Ltd.
Beech House
Knaves Beech Business Centre
Loudwater, High Wycombe
Bucks, England HP10 9SD
TEL: 011-44 1628 532600
FAX: 011-44 1628 532470
http://www.gastltd.com

NOTE: *General correspondence should be sent to—*
Gast Mfg. Inc./A Unit of IDEX Corporation
P O Box 97
Benton Harbor, MI 49023-0097

SAFETY

This is the safety alert symbol: ⚠. When you see this symbol, be aware that personal injury or property damage is possible. The hazard is explained in the text following the symbol.

The following is an explanation of the three different types of hazards:

⚠ **DANGER**	Severe personal injury or death will occur if hazard is ignored.
⚠ **WARNING**	Severe personal injury or death can occur if hazard is ignored.
⚠ **CAUTION**	Minor injury or property damage can occur if hazard is ignored.

Read the information carefully before operating.

GENERAL INFORMATION

This instruction applies to the following models ONLY: R3105N-50, R4110N-50, R4310P-50, R4P115N-50, R5125Q-50, R5325R-50, R6130Q-50, R6P155Q-50, R6340R-50, R6P355R-50 and R7100R-50. These blowers are intended for use in Soil Vapor Extraction Systems. The blowers are sealed at the factory for very low leakage. They are powered with a U.L. listed electric motor Class 1 Div. 1 Group D for Hazardous Duty locations. Ambient temperature for normal full load operation should not exced 40^{C} (105^{0}F). For higher ambient operation, contact the factory.

Gast Manufacturing Incorporated may offer general application guidance: however, suitability of the particular blower and/or accessories is ultimately the responsibility of the user, not the manufacturer of the blower.

INSTALLATION

⚠ **DANGER** Models R5325R-50, R6130Q-50, R6340R-50, R5125Q-50, R6P155Q-50, R6P355R-50 and R7100R-50 use Pilot Duty Thermal Overload Protection. Connecting this protection to the proper control circuitry is mandated by UL674 and NEC501. Failure to do so could/may result in an EXPLOSION. Se pages 3 and 4 for recommended wiring schematic for these models.

⚠ **WARNING** Electric shock can result from bad wiring. A qualified person must install all wiring, conforming to all required safety codes. Grounding is necessary.

⚠ **WARNING** This blower is intended for use on soil vapor extraction equipment. Any other use must be approved in writing by Gast Manufacturing, Inc.

Install this blower in any mounting position. Do no block the flow of cooling air over the blower and motor.

PLUMBING

Use the threaded pipe ports for connection only. They will not support the plumbing. Be sure to use the same or larger size pipe to prevent air flow restriction and overheating of the blower. When installing fittings, be sure to use pipe thread sealant. This protects the threads in the blower housing and prevents leakage. Dirt and chips are often found in new plumbing. Do not allow them to enter the blower.

NOISE

Mount the unit on a solid surface that will not increase the sound. This will reduce noise and vibration. We suggest the use of shock mounts or vibration isolation material for mounting.

ROTATION

The Gast Regenair Blower should only rotate clockwise as viewed from the electric motor side. The casting has an arrow showing the correct direction. Confirm the proper rotation by checking air flow at the IN and OUT ports. If needed reverse rotation of three phase motors by changing the position of any two of the power line wires.

OPERATION

⚠ **WARNING** Solid or liquid material exiting the blower or piping can cause eye damage or skin cuts. Keep away from air stream.

⚠ **WARNING** Gast Manufacturing, Incorporated will not knowingly specify, design or build any blower for installation in a hazardous, combustible or explosive location without a motor conforming to the proper NEMA or U.L. standards.

Blowers with standard TEFC motors should never be utilized for soil vapor extraction applications or where local, state and / or Federal codes specify the use of explosion-proof motors (as defined by the National Electric Code, Articles 100,500 c1990).

⚠ **CAUTION** Attach blower to solid surface before starting to prevent injury or damage from unit movement.

Air containing solid particles or liquid must pass through a filter before entering the blower. Blowers must have filters, other accessories and all piping attached before starting. Any foreign material passing through the blower may cause internal damage to the blower.

⚠ **CAUTION** Outlet piping can burn skin. Guard or limit access. Mark **"CAUTION Hot Surface. Can Cause Burns."**

Air temperature increases when passing through the blower. When run at duties above 50 in. H_20, metal pipe may be required for hot exhaust air. The blower must not be operated above the limits for continuous duty. Only models R3105N-50, R4110N-50 and R4310P-50 can be operated continuously with no air flowing through the blower. Other units can only be run at the rating shown on the model number label. Do not close off inlet (for vacuum) to reduce extra air flow. This will cause added heat and motor load. Blower exhaust air in excess of 230^0F indicates operation in excess of rating which can cause the blower to fail.

ACCESSORIES

Gast pressure gauge AJ496 and vacuum gauges AJ497 or AE134 show blower duty. The Gast pressure/vacuum relief valve, AG258 will limit the operating duty by admitting or relieving air. It also allows full flow through the blower when the relief valve closes.

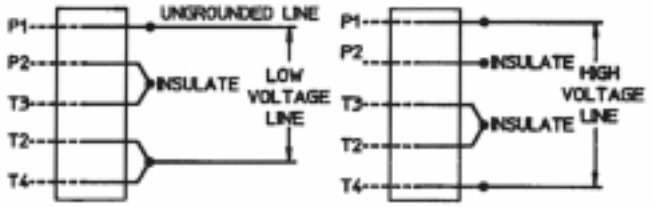
SERVICING

⚠ **WARNING** To retain their sealed construction they should be serviced by Gast authorized service centers ONLY. These models are sealed at the factory for very low leakage.

⚠ **WARNING** Turn off electric power before removing blower from service. Be sure rotating parts have stopped. Electric shock or severe cuts can result.

Inlet and exhaust filters attached to the blower may need cleaning or replacement of the elements. Failure to do so will result in more pressure drop, reduced air flow and hotter operation of the blower. The outside of the unit requires cleaning of dust and dirt. The inside of the blower also may need cleaning to remove foreign material coating the impeller and housing. This should be done at a Gast Authorized Service Center. This buildup can cause vibration, failure of the motor to operate or reduced flow.

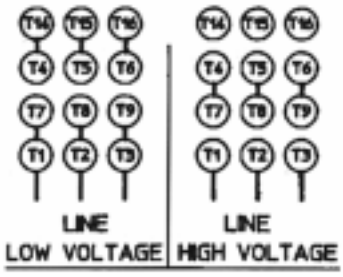
Motor Wiring Diaphragm for R4110N-50 & R3105N-50



>>* WARNING
This motor is thermally protected and will automatically restart when protector resets. Always disconnect power supply before servicing.

Motor Wiring Diaphragm for R4310P-50

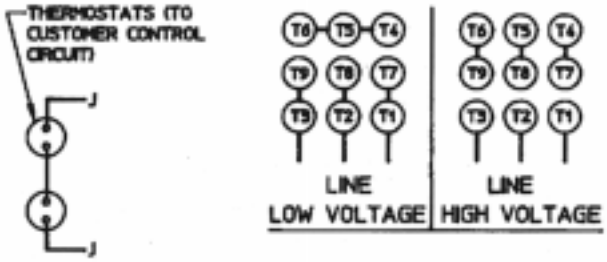
To reverse rotation, interchange the external connections to any two leads.



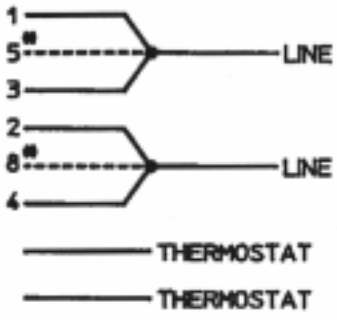
>>* WARNING
This motor is thermally protected and will automatically restart when protector resets. Always disconnect power supply before servicing.

Motor Wiring Diaphragm for R5325R-50, R6340R-50, R6P355R-50 & R7100R-50

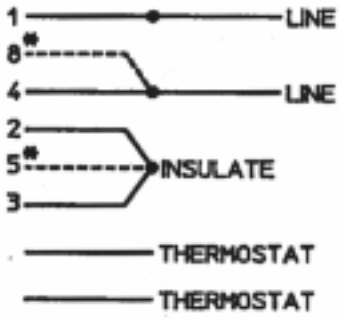
To reverse rotation, interchange the external connections to any two leads.



Motor Wiring Diaphragm for R5125Q-50 & R4P115N-50



LOW VOLTAGE

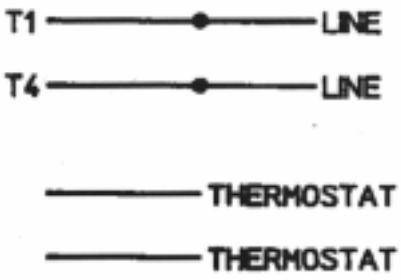


HIGH VOLTAGE

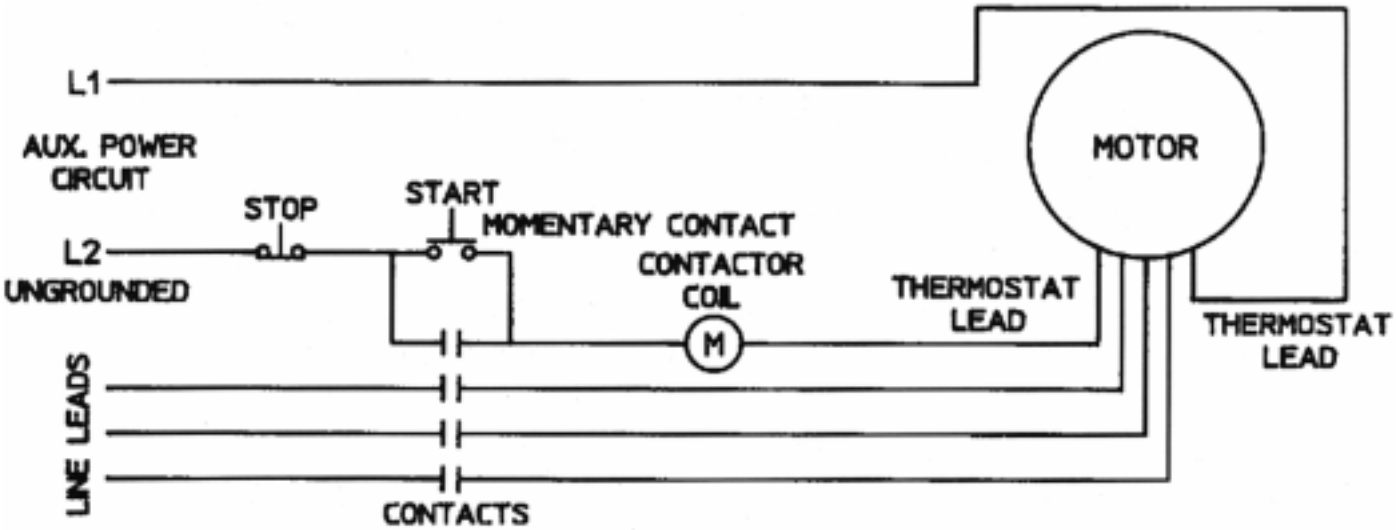
*R5125Q-50 Blowers produced after September 1992 (Serial No. 0992) do not have motor leads 5 & 8.

Motor Wiring Diaphragm forR6130Q-50 & R6P155Q-50

Connect Thermostat to Motor Proection Circuit



Connection for Thermostat Motor Protection



Thermostats to be connected in series with control as shown. Motor furnished with automatic thermostats rated A.C. 115-600V. 720VA circuit shown is for 3 phase motor. Single phase motor has two line leads in the above circuit.

Checkpoint IIA Mitigation System Alarm

Item # 28001-2

Description - Audible alarm; green and red LED lights; factory preset to activate at .25" WC vacuum pressure; low voltage

RadonAway is a B2B business only. You must be an approved RadonAway customer to purchase products through this website. If you are an existing RadonAway customer and need a website login, click here. If you are a professional and would like to become a RadonAway customer, click here.

Technical Specifications:

Additional Checkpoint Alarm Information:

- Downloadable Checkpoint Alarm Installation Instructions (PDF format)

INSTALLATION & OPERATING INSTRUCTIONS
Instruction P/N IN015 Rev E
FOR *CHECKPOINT IIa*™ P/N 28001-2 & 28001-3
RADON SYSTEM ALARM

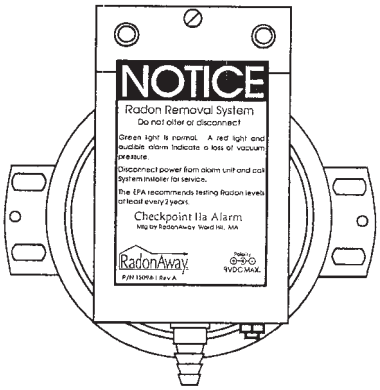
INSTALLATION INSTRUCTIONS
(WALL MOUNTING)

Select a suitable wall location near a vertical section of the suction pipe. The unit should be mounted about four or five feet above the floor and as close to the suction pipe as possible. Keep in mind that with the plug-in transformer provided, the unit must also be within six feet of a 120V receptacle. **NOTE: The Checkpoint IIa is calibrated for vertical mounting, horizontal mounting will affect switchpoint calibration.**

Drill two ¼" holes 4" apart horizontally where the unit is to be mounted.

Install the two ¼" wall anchors provided.

Hang the CHECKPOINT IIa from the two mouting holes located on the mounting bracket. Tighten the mounting screws so the unit fits snugly and securely against the wall.



Drill a 5/16" hole into the side of the vent pipe about 6" higher than the top of the unit.

Insert the vinyl tubing provided about 1" inside the suction pipe.

Cut a suitable length of vinyl tubing and attach it to the pressure switch connector on the CHECKPOINT IIa.

CALIBRATION AND OPERATION.

The CHECKPOINT IIa units are calibrated and sealed at the factory to alarm when the vacuum pressure falls below the factory setting and should not normally require field calibration. Factory Settings are:
28001-2 -.25" WC Vacuum
28001-3 -.10" WC Vacuum

To Verify Operation:

With the exhaust fan off or the pressure tubing disconnected and the CHECKPOINT IIa plugged in, both the red indicator light and the audible alarm should be on.

Turn the fan system on or connect the pressure tubing to the fan piping. The red light and the audible alarm should go off. The green light should come on.

Now turn the fan off. The red light and audible alarm should come on in about two or three seconds and the green light should go out.

WARRANTY INFORMATION

Subject to applicable consumer protection legislation, RadonAway warrants that the CHECKPOINT IIa will be free from defective material and workmanship for a period of (1) year from the date of purchase. Warranty is contingent on installation in accordance with the instructions provided. This warranty does not apply where repairs or alterations have been made or attempted by others; or the unit has been abused or misused. Warranty does not include damage in shipment unless the damage is due to the negligence of RadonAway. All other warranties, expressed or written, are not valid. To make a claim under these limited warranties, you must return the defective item to RadonAway with a copy of the purchase receipt. RadonAway is not responsible for installation or removal cost associated with this warranty. In no case is RadonAway liable beyond the repair or replacement of the defective product FOB RadonAway.

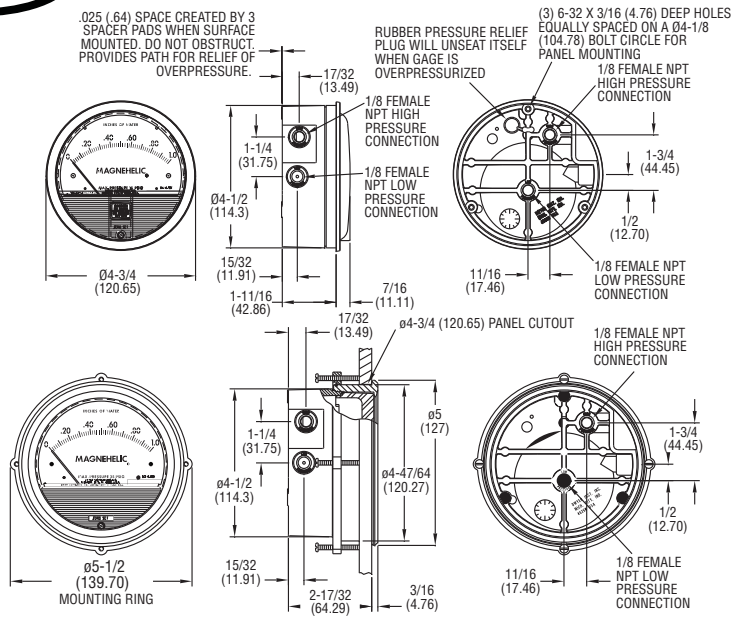
THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THERE IS NO WARRANTY OF MERCHANTIBILITY. ALL OTHER WARRANTIES, EXPRESSED OR WRITTEN, ARE NOT VALID.

For service under these warranties, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. **No returns can be accepted without an RMA.** If factory return is required, the customer assumes all shipping costs to and from factory.

Manufactured by:
RadonAway
Ward Hill, MA
(978)-521-3703

Bulletin A-27

Magnehelic® Differential Pressure Gage



**The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.*

STANDARD GAGE ACCESSORIES: Two 1/8˝ NPT plugs for duplicate pressure taps, two 1/8˝ pipe thread to rubber tubing adapters and three flush mounting adapters with screws.

MP AND HP GAGE ACCESSORIES: Mounting ring and snap ring retainer substituted for 3 adaptors, 1/4" compression fittings replace 1/8" pipe thread to rubber tubing adaptors.

OVERPRESSURE PROTECTION: Standard Magnehelic® Differential Pressure Gages are rated for a maximum pressure of 15 psig and should not be used where that limit could be exceeded. Models employ a rubber plug on the rear which functions as a relief valve by unseating and venting the gage interior when over pressure reaches approximately 25 psig (excludes MP and HP models). To provide a free path for pressure relief, there are four spacer pads which maintain .023˝ clearance when gage is surface mounted. Do not obstruct the gap created by these pads.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases. (Natural Gas option available.)
Wetted Materials: Consult factory.
Housing: Die cast aluminum case and bezel, with acrylic cover. (MP model has polycarbonate cover).
Accuracy: ±2% of full scale (±3% on - 0, -100 Pa, -125 Pa, 10MM and ±4% on -00, - 00N, -60 Pa, -6MM ranges), throughout range at 70°F (21.1°C).
Pressure Limits: -20˝ Hg to 15 psig.† (-0.677 bar to 1.034 bar); MP option: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).
Overpressure: Relief plug opens at approximately 25 psig (1.72 bar), standard gages only. The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.
Temperature Limits: 20 to 140°F (-6.67 to 60°C). *Low temperature models available as special option.
Size: 4˝ (101.6 mm) diameter dial face.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Process Connections: 1/8˝ female NPT duplicate high and low pressure taps - one pair side and one pair back.
Weight: 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).
Agency Approvals: RoHS.

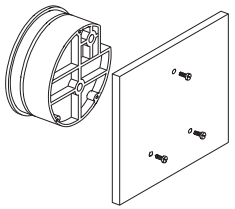
†For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options.

Note: May be used with hydrogen when ordering Buna-N diaphragm. Pressure must be less than 35 psi.

INSTALLATION

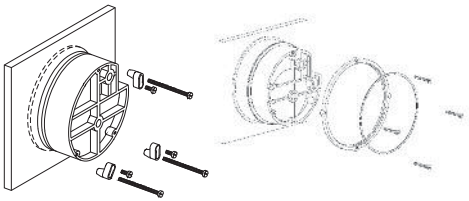
Select a location free from excessive vibration and where the ambient temperature will not exceed 140°F (60°C). Also, avoid direct sunlight which accelerates discoloration of the clear plastic cover. Sensing lines may be run any necessary distance. Long tubing lengths will not affect accuracy but will increase response time slightly. Do not restrict lines. If pulsating pressures or vibration cause excessive pointer oscillation, consult the factory for ways to provide additional damping.
All standard Magnehelic® Differential Pressure Gages are calibrated with the diaphragm vertical and should be used in that position for maximum accuracy. If gages are to be used in other than vertical position, this should be specified on the order. Many higher range gages will perform within tolerance in other positions with only rezeroing. Low range models of 0.5" w.c. plus 0.25" w.c. and metric equivalents must be used in the vertical position only.

SURFACE MOUNTING



Locate mounting holes, 120° apart on a 4-1/8" dia. circle. Use No. 6-32 machine screws of appropriate length.

FLUSH MOUNTING



Provide a 4-9/16" dia. (116 mm) opening in panel. Provide a 4-3/4" dia. (120 mm) opening for MP and HP models. Insert gage and secure in place with No. 6-32 machine screws of appropriate length, with adapters, firmly secured in place.

PIPE MOUNTING

To mount gage on 1-1/4" - 2" pipe, order optional A-610 pipe mounting kit.

TO ZERO GAGE AFTER INSTALLATION

Set the indicating pointer exactly on the zero mark, using the external zero adjust screw on the cover at the bottom. Note that the zero check or adjustment can only be made with the high and low pressure taps both open to atmosphere.

OPERATION

Positive Pressure: Connect tubing from source of pressure to either of the two high pressure ports. Plug the port not used. Vent one or both low pressure ports to atmosphere.
Negative Pressure: Connect tubing from source of vacuum or negative pressure to either of the two low pressure ports. Plug the port not used. Vent one or both high pressure ports to atmosphere.
Differential Pressure: Connect tubing from the greater of two pressure sources to either high pressure port and the lower to either low pressure port. Plug both unused ports.
When one side of the gage is vented in dirty, dusty atmosphere, we suggest an A-331 Filter Vent Plug be installed in the open port to keep inside of gage clean.

A. For portable use of temporary installation use 1/8" pipe thread to rubber tubing adapter and connect to source of pressure with flexible rubber or vinyl tubing.
B. For permanent installation, 1/4" O.D., or larger, copper or aluminum tubing is recommended.

MAINTENANCE

No lubrication or periodic servicing is required. Keep case exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gage to atmosphere and re-zero. Optional vent valves should be used in permanent installations. The Series 2000 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

WARNING

Attempted field repair may void your warranty. Recalibration or repair by the user is not recommended.

TROUBLE SHOOTING TIPS

Gage won't indicate or is sluggish.

1. Duplicate pressure port not plugged.
2. Diaphragm ruptured due to overpressure.
3. Fittings or sensing lines blocked, pinched, or leaking.
4. Cover loose or "O"ring damaged, missing.
5. Pressure sensor, (static tips, Pitot tube, etc.) improperly located.
6. Ambient temperature too low. For operation below 20°F (-7°C), order gage with low temperature, (LT) option.

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P.O. BOX 373 • MICHIGAN CITY, INDIANA 46360 U.S.A.
Phone: 219/879-8000 Fax: 219/872-9057
www.dwyer-inst.com e-mail: info@dwyer-inst.com

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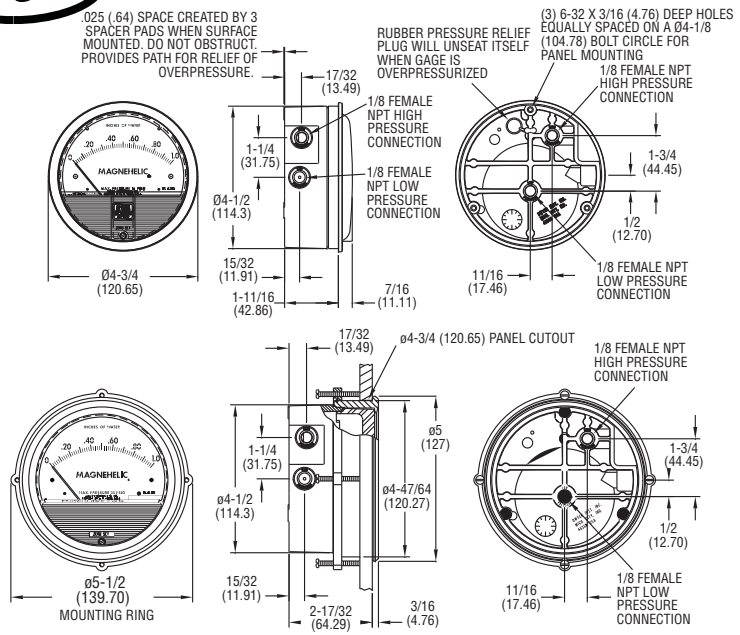
Magnehelic® Differential Pressure Gage
INSTRUCCIONES Y LISTA DE PARTES



(El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicona para el diafragma.)

Accesorios: Tapones 1/8" NPT para las conexiones duplicadas, dos adaptadores de rosca 1/8" NPT a tubo de goma; y tres adaptadores para montaje al ras y tornillos.

Accesorios para Los Modelos MP y HP: El anillo de montaje y el retensor del anillo de presión son substituidos por 3 adaptadores, accesorios de compresión de 1/4" remplazan a los adaptadores de rosca 1/8" a tubo de goma.

Protección Para Sobrepresión: Los Manómetros Diferenciales Magnehelic Estándar están clasificados para una presión máxima de 15 psi y no se deberían de usar donde el límite puede excederse. Los modelos emplean un tapón de goma en el trasero que funciona como una válvula de alivio desmontándose y ventilando el interior del instrumento cuando la sobrepresión alcanza aproximadamente 25 psig. (Los modelos MP y HP son excluidos) Para proveer un camino libre para el alivio de presión, el instrumento viene con rodilleras que mantienen un espacio de .023" cuando el instrumento es montado en superficie. No bloque el espacio creado por estas rodilleras.

† Para aplicaciones con alto ciclo de velocidad dentro de la clasificación de presión total del instrumento, la próxima clasificación mas alta es recomendada. Vea las opciones de media y alta presión.

El instrumento puede ser usado con hidrogeno cuando se ordena con diafragma de Buna-N. La presion tiene que ser menos de 35 psi.

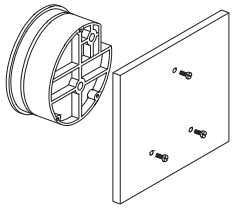
ESPECIFICACIONES

Servicio: aire y gases no combustibles, gases compatibles. (ópcion disponible para uso con gas natural).
Materiales Mojados: Consulte con la fábrica.
Carcasa: Caja y anillo de retención de aluminio fundido a presión con tapadera de acrílico. (El modelo MP tiene la tapadera de policarbonato.)
Exactitud: ±2% de fondo de escala a 21 °C
Mod. 2000-0 ±3%; Mod. 2000-00 ±4%
Límite de Presión: -20 Hg. a 15 psig. † (-0.677 bar a 1,034 bar); opción MP: 35 psig (2.41 bar), opción HP: 80 psig (5.52 bar).
Sobrepresión: El tapón de alivio se abre aproximadamente a los 25 psig, modelos estandard únicamente. El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicio para el diafragma.
Límite de Temperatura: -6.67 a 60ºC. * Modelos de baja temperatura disponibles como opción especial.
Dimensiones: diám. 120,65 mm x 55,6 prof.
Orientación de Montaje: El diafragma debe ser usado solo en posición vertical. Consulte con la fábrica para otras orientaciones de posición.
Conexiones: 1/8" NPT para alta y baja presión, duplicadas (atrás, a los lados).
Peso: 510 g, MP y HP 963 g.
Aprobación de la agencia: RoHS.

Instalacion

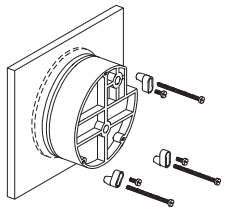
Seleccione un lugar libe de exceso de vibraciones, y donde la temperatura ambiente no supere los 60°C. Evite luz solar directa, para evitar decoloración de la cubierta plástica. Las conexiones de proceso pueden tener cualquier longitud sin afectar la exactitud, pero pueden extender el tiempo de respuesta del instrumento. Si hay pulsación de presión o vibración, consulte a fábrica sobre medios de amortiguación.
Los MAGNEHELIC han sido calibrados con el diafragma vertical, y deben ser usados en esas condiciones. Para otras posiciones, se debe especificar en la orden de provisión. Los de rango elevado pueden ser usados en diversas posiciones, pero se debe reajustar el cero. Los modelos de la serie 2000-00 y equivalentes métricos deben ser usados solo verticalmente.

Montaje en Superficie



Perfore tres orificios separados 120° sobre una circunferencia de 105 mm de diám. y sostenga el instrumento con tres tornillos 6-32 de long. apropiada.

Montaje alineado



Perfore un circulo de 115 mm de diám. en el panel, y sostenga el instrumento mediante los.

Montaje Sobre Pipa

Para montar el instrumento sobre pipas de 32 a 50 mm de diám., ordene el adaptador opcional A-610.

Puesta a Cero Después de Instalar

Deje las conexiones de presión abiertas a atmósfera y ajuste a cero desde tornillo del panel frontal.

Operacion

Presión Positiva: Conecte la tubería desde la fuente de presión a cualquiera de las dos conexiones de alta presión (HIGH), bloqueando la no usada; Las conexiones de baja (LOW) presión pueden dejarse uno o los dos abiertos a la atmósfera.
Presión Negativa: Repita el procedimiento anterior, conectado en este caso las conexiones de baja presión (LOW). Deje las otras conexiones abiertas.
Presión diferencial: Conecte el tubo correspondiente a la presión más positiva al cualquiera de los conectores de alta presión (HIGH) bloqueando el no usado, y la más baja presión o presión negativa (vacío) al conector de baja presión (LOW). Puede usarse cualquier conector de cada par, dejando siempre uno bloqueado. Si se deja una conexión abierta a la atmósfera, se recomienda el uso de un filtro tipo A-331 en el lugar correspondiente para mantener limpio el interior del instrumento. Para uso portable, o instalación temporaria, uso adapta dores para rosca de tubo de 1/89 a tubo flexible, y conecte a proceso mediante una tubería de goma, o equivalente. Para instalación permanente, se recomienda el uso de tubo de cobre o aluminio de por lo menos 1/4" de diám. exterior.

No se requiere mantenimiento específico alguno, ni lubricación. Periódicamente, desconecte el instrumento, ventee la presión acumulada, y reajuste el cero. Para instalaciones permanentes, se debe usar un juego de válvulas de montaje permanente para el venteo.
El instrumento de Serie 2000 no puede ser re parado en el campo y debería de ser regresado si reparos son necesarios (Reparos en el campo no deben de ser intentados y pueden cancelar la garantía.). Asegurarse de incluir una descripción breve del problema más cualquier notas pertinentes a la aplicación para devolución de productos antes de enviar el instrumento.

Cuidado! : La recalibración en campo puede invalidar la garantía. No se recomienda la recalibracion por parte del usuario. En caso necesario envie el instrumento con transporte pago a:

Localización De Fallas

• *El instrumento no indica, o es lento en reacción.*
1. Conexión duplicada abierta.
2. Diafragma roto por sobrepresión.
3. Tubería de conexión perforada, con pérdidas o pinchazos.
4. Anillo de retención flojo, u "O " ring dañado.
5. Conexión a proceso indebida o inadecuada.
6. Temperatura muy baja. Para este caso ordene tipos LT (baja temperatura).

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Phone: 219/879-8000 Fax: 219/872-9057
www.dwyer-inst.com e-mail: info@dwyer-inst.com

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APPENDIX G

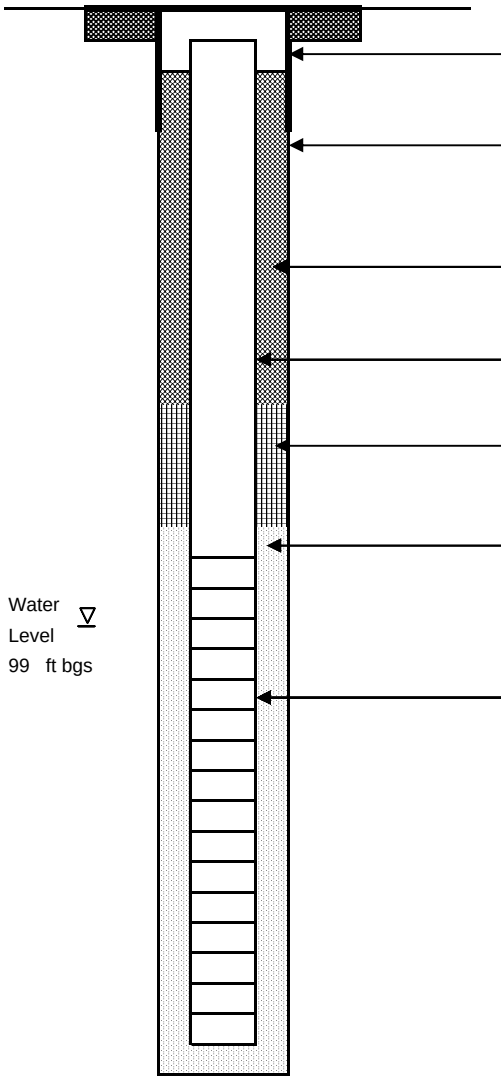
MONITORING WELL BORING AND CONSTRUCTION LOGS

AECOM

Well No. MW-1S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/25/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 74.0 ft to 1.0 ft

Riser Pipe from 98.0 ft to 0.5 ft

Slurry 94.0 ft to 74.0

Filter pack from 103.0 ft to 94.0 ft

Sand Size 0

Well screen from 103.0 ft to 98.0 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 103.0 ft

Bottom of Borehole at 103.0 ft

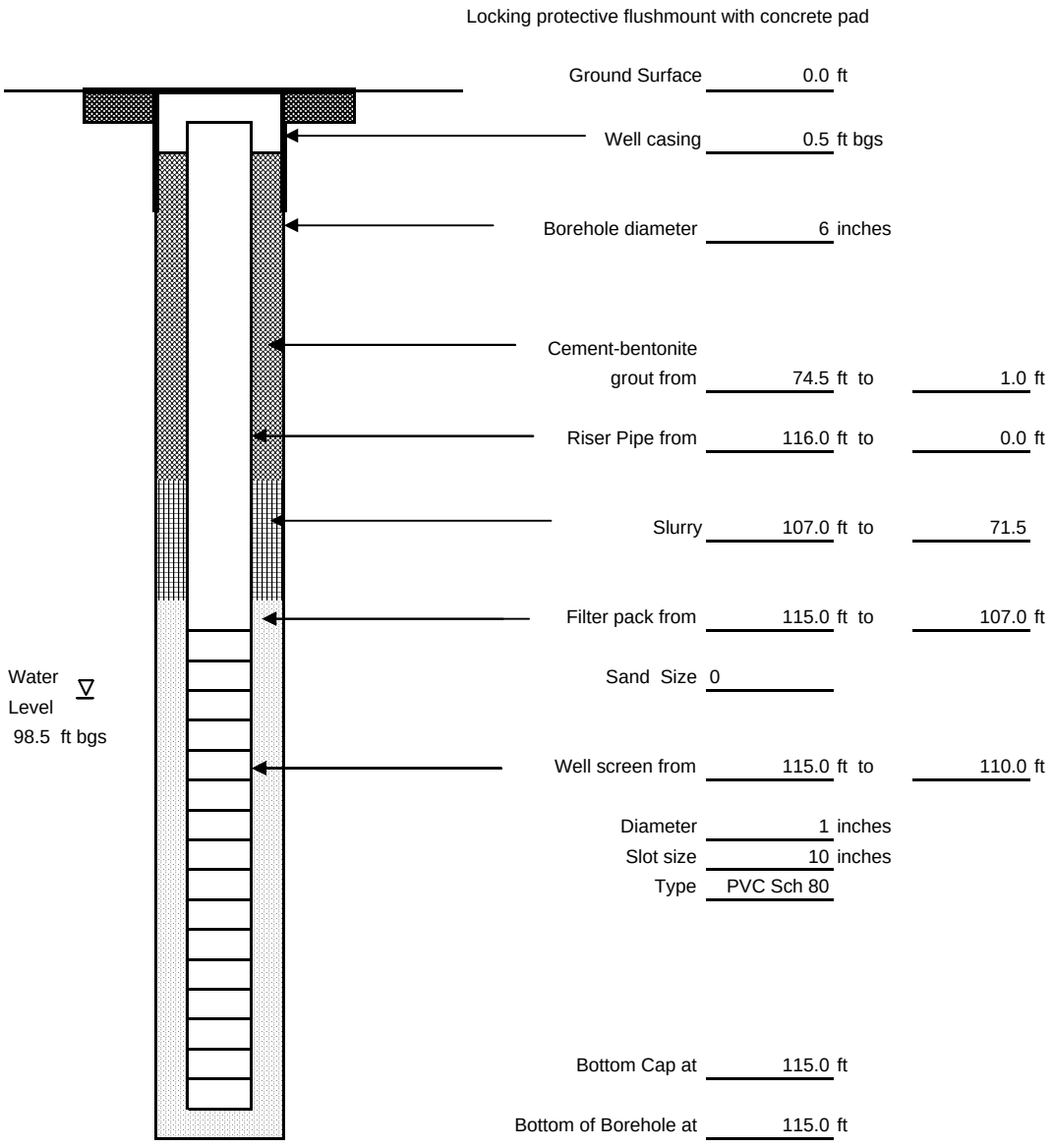
Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

AECOM

Well No. MW-1I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/24/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		



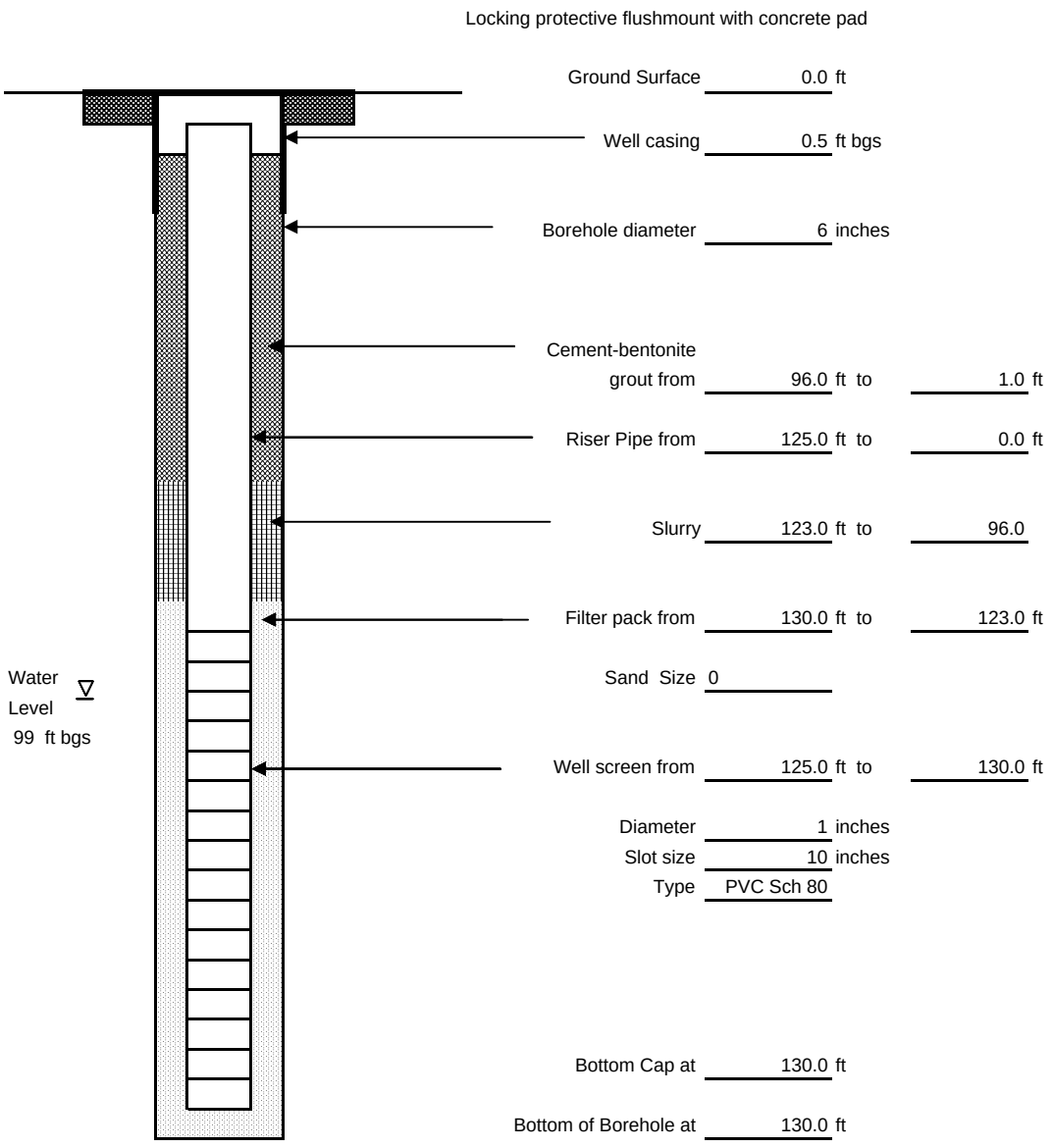
Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

AECOM

Well No. MW-1D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/25/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		



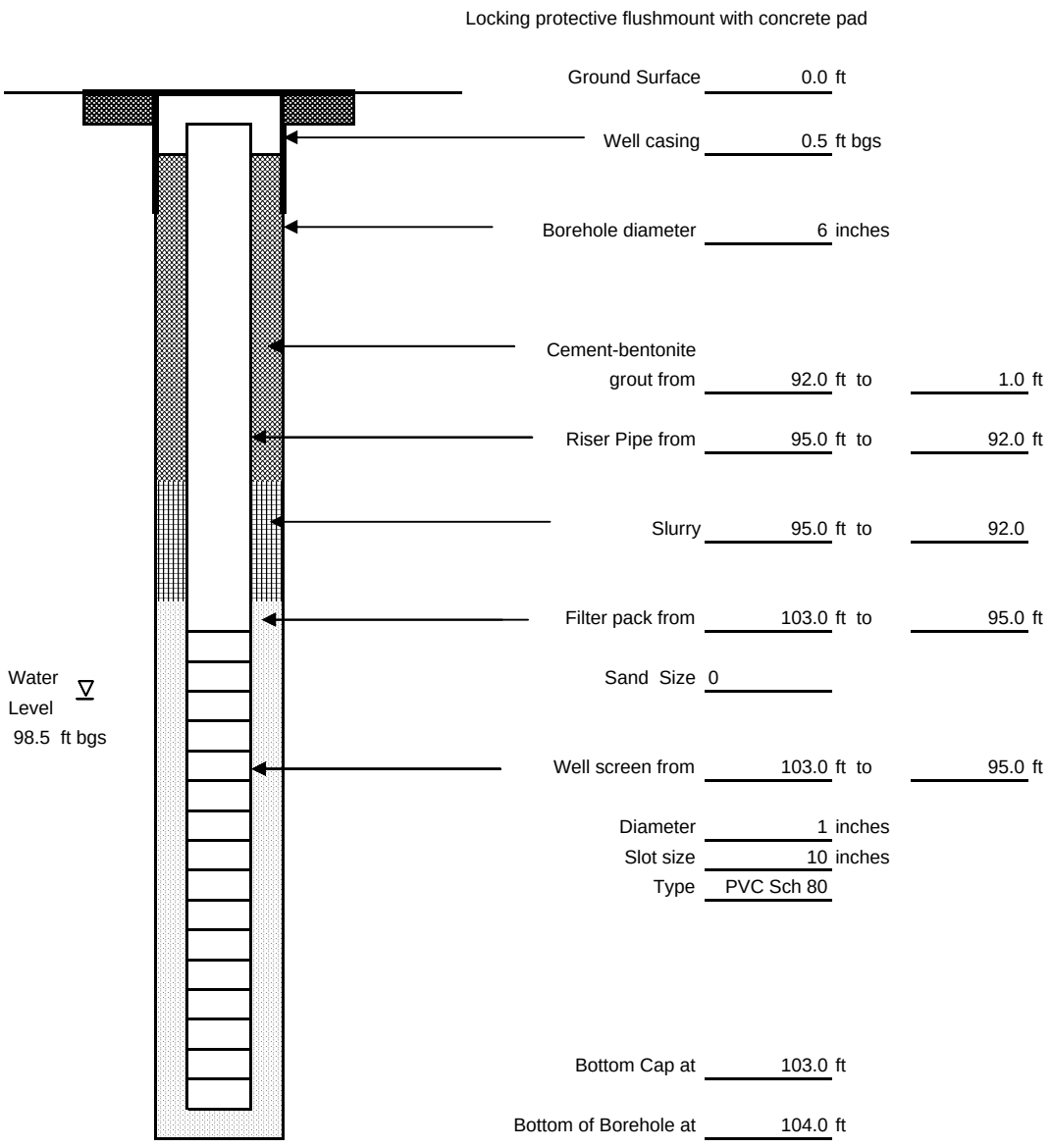
Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

AECOM

Well No. MW-2S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/13/09 (casing completed 4/16/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		



Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

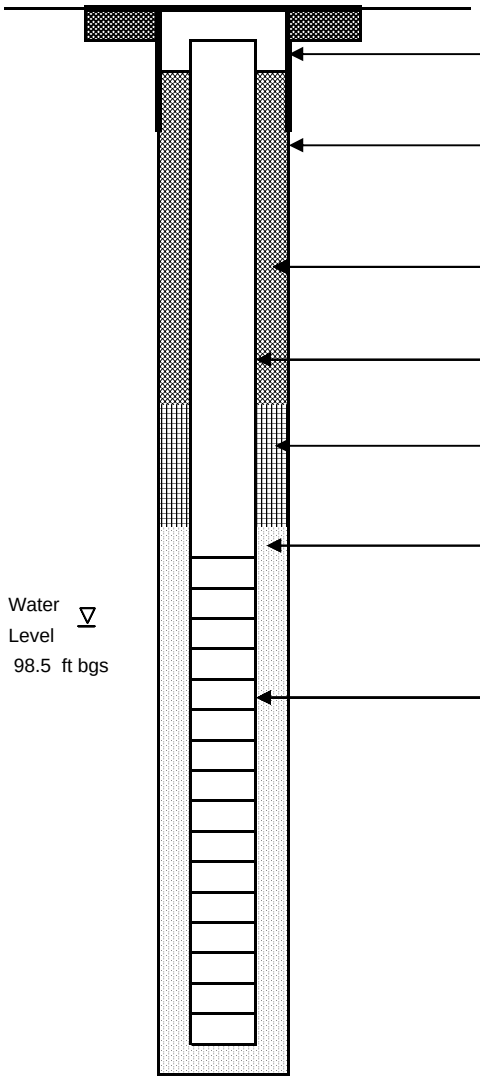
(NOT TO SCALE)

AECOM

Well No. MW-2S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/13/09 (abandoned 4/16/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 87.0 ft to 1.0 ft

Riser Pipe from 97.6 ft to 0.5 ft

Slurry 95.3 ft to 87.0

Filter pack from 102.6 ft to 95.3 ft

Sand Size 0

Well screen from 102.6 ft to 97.6 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 102.6 ft

Bottom of Borehole at 103.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

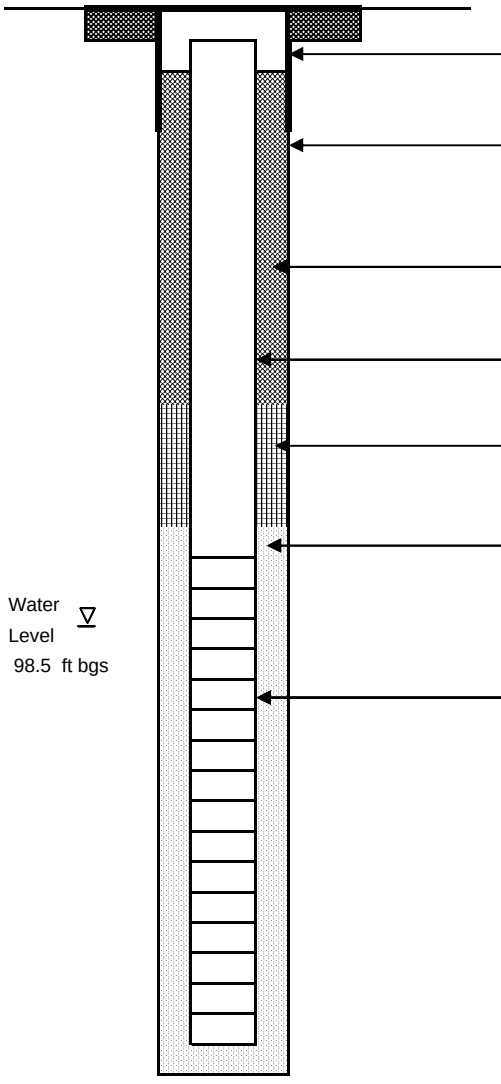
(NOT TO SCALE)

AECOM

Well No. MW-2I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/09/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.8 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 97.6 ft to 1.0 ft

Riser Pipe from 109.6 ft to 0.5 ft

Slurry 106.6 ft to 97.6

Filter pack from 114.6 ft to 106.6 ft

Sand Size 0

Well screen from 114.6 ft to 109.6 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 114.6 ft

Bottom of Borehole at 115.0 ft

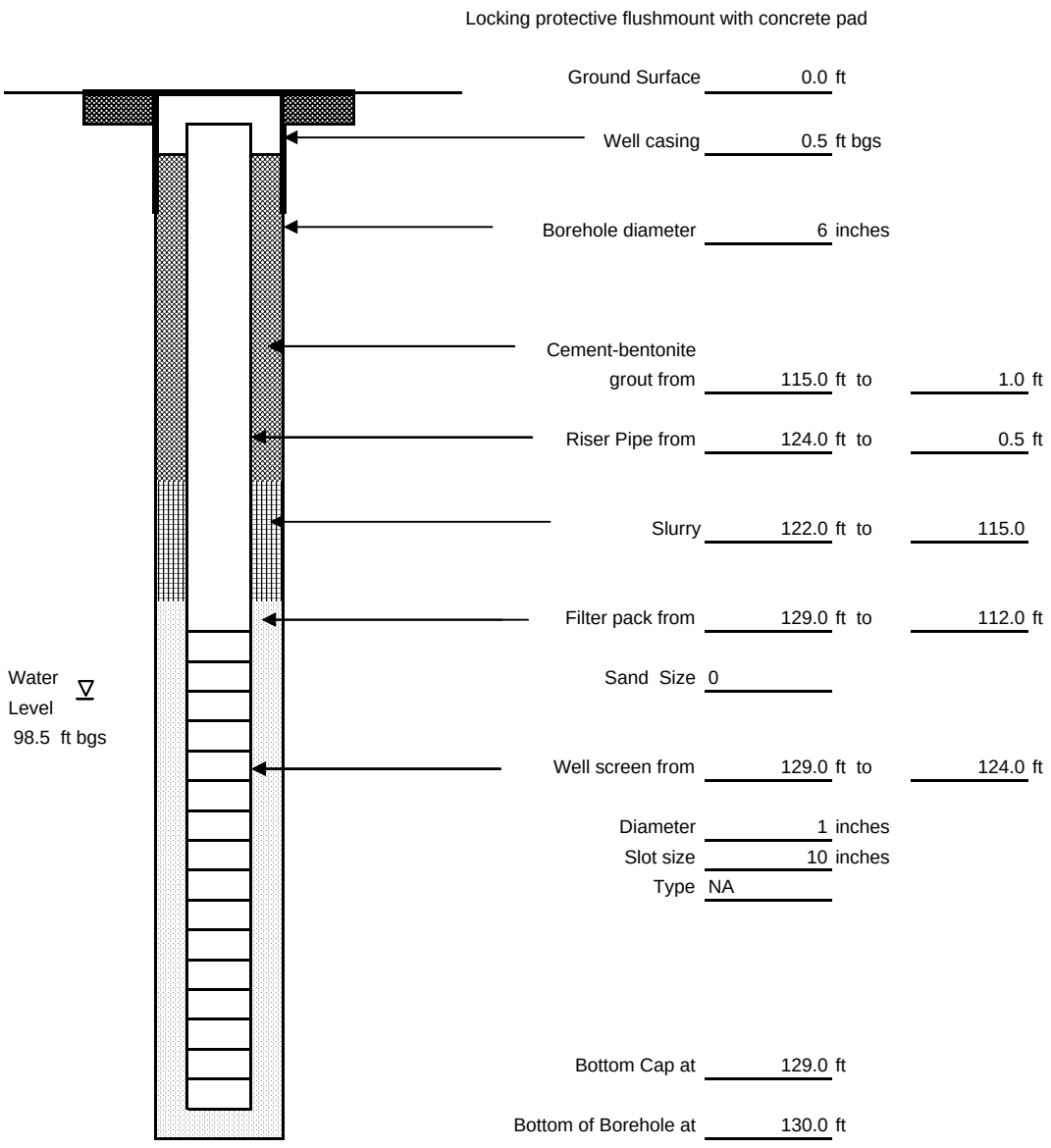
Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

AECOM

Well No. MW-2D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/9/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		



Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

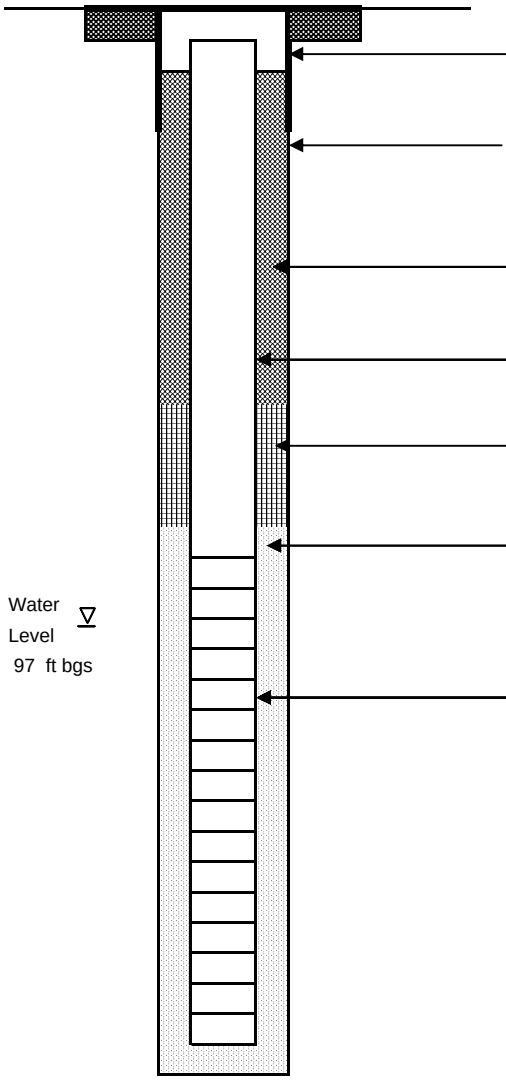
(NOT TO SCALE)

AECOM

Well No. MW-3S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/7/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 86.0 ft to 1.0 ft

Riser Pipe from ft to 0.5 ft
96

Slurry 93.5 ft to 86.0

Filter pack from 101.0 ft to 93.5 ft

Sand Size 0

Well screen from 101.0 ft to 96.0 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 101.0 ft

Bottom of Borehole at 105.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

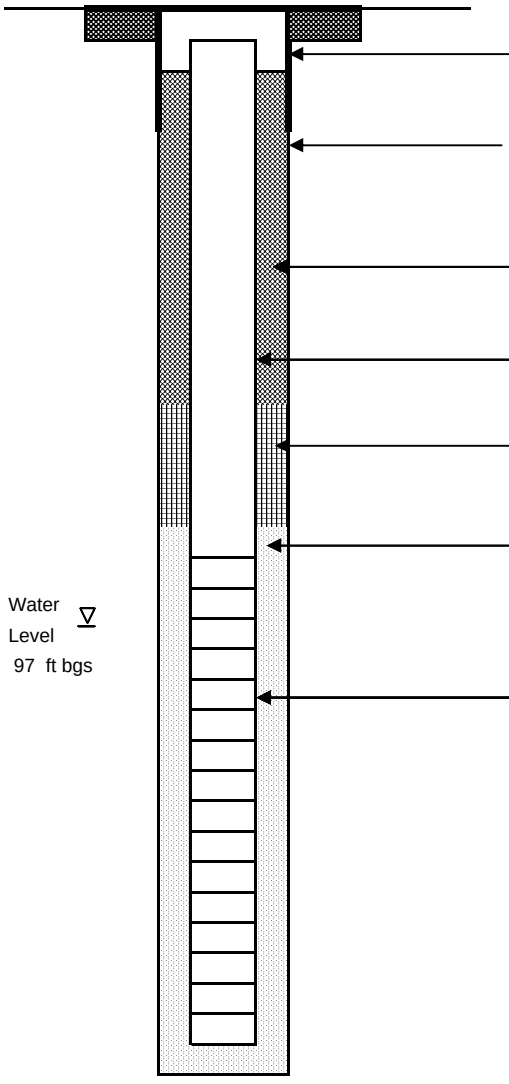
(NOT TO SCALE)

AECOM

Well No. MW-3I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/8/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 96.5 ft to 1.0 ft

Riser Pipe from 109.6 ft to 0.5 ft

Slurry 106.5 ft to 96.5

Filter pack from 114.6 ft to 106.5 ft

Sand Size 0

Well screen from 114.6 ft to 109.6 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 114.6 ft

Bottom of Borehole at 114.6 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

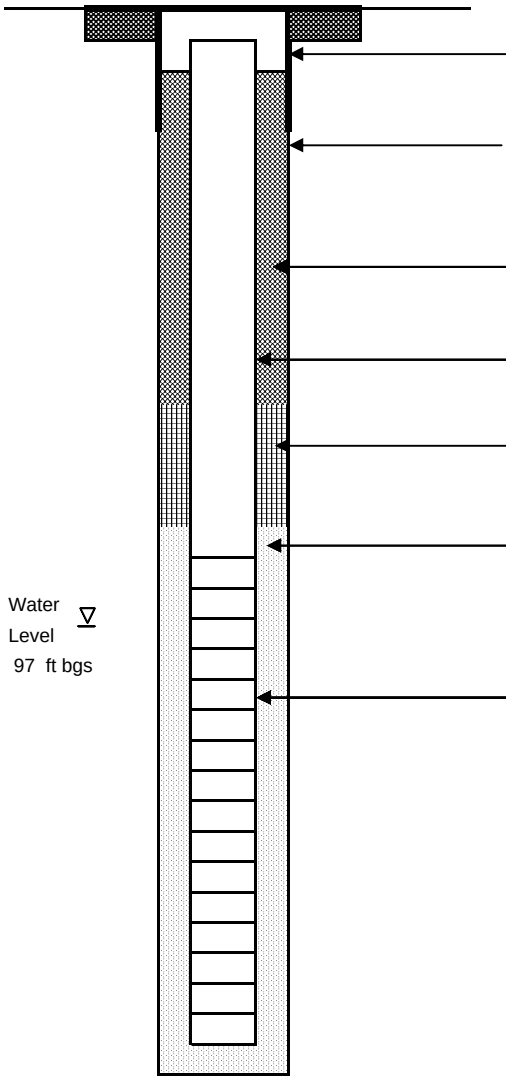
(NOT TO SCALE)

AECOM

Well No. MW-3D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/7/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 122.0 ft to 1.0 ft

Riser Pipe from 124.0 ft to 0.5 ft

Slurry 122.0 ft to 108.0

Filter pack from 129.0 ft to 122.0 ft

Sand Size 0

Well screen from 129.0 ft to 124.0 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 129.0 ft

Bottom of Borehole at 130.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

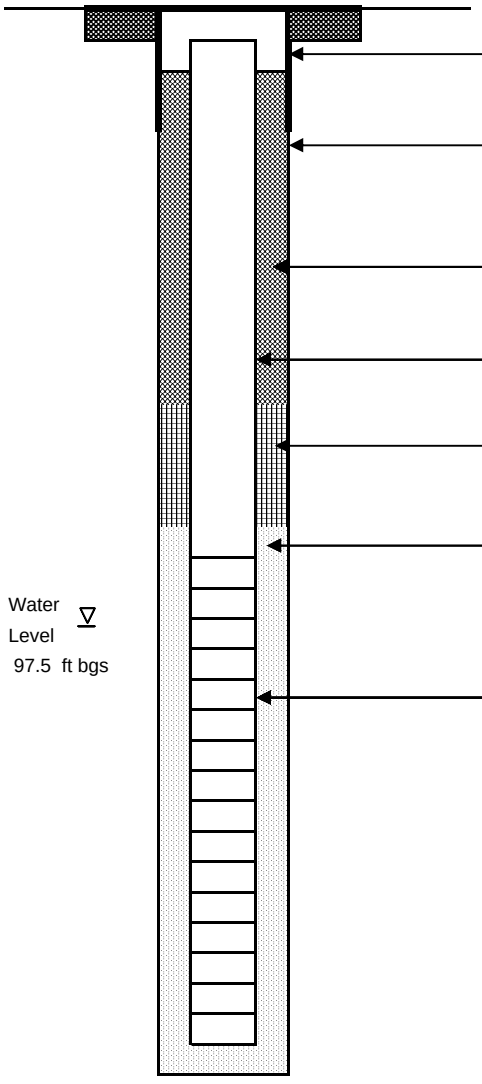
(NOT TO SCALE)

AECOM

Well No. MW-4S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/25/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 82.0 ft to 1.0 ft

Riser Pipe from 95.5 ft to 0.5 ft

Slurry 91.0 ft to 82.0

Filter pack from 100.5 ft to 91.0 ft

Sand Size 0

Well screen from 100.5 ft to 95.5 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 100.5 ft

Bottom of Borehole at 100.5 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

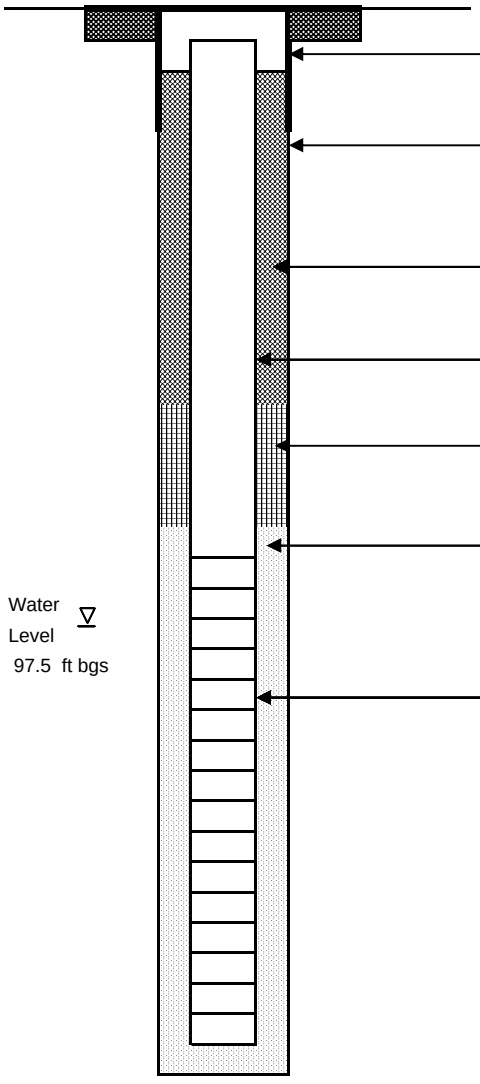
(NOT TO SCALE)

AECOM

Well No. MW-4I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/2/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 96.0 ft to 1.0 ft

Riser Pipe from 108.3 ft to 0.5 ft

Slurry 105.0 ft to 96.0

Filter pack from 113.3 ft to 105.0 ft

Sand Size 0

Well screen from 113.3 ft to 108.3 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 113.3 ft

Bottom of Borehole at 113.3 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

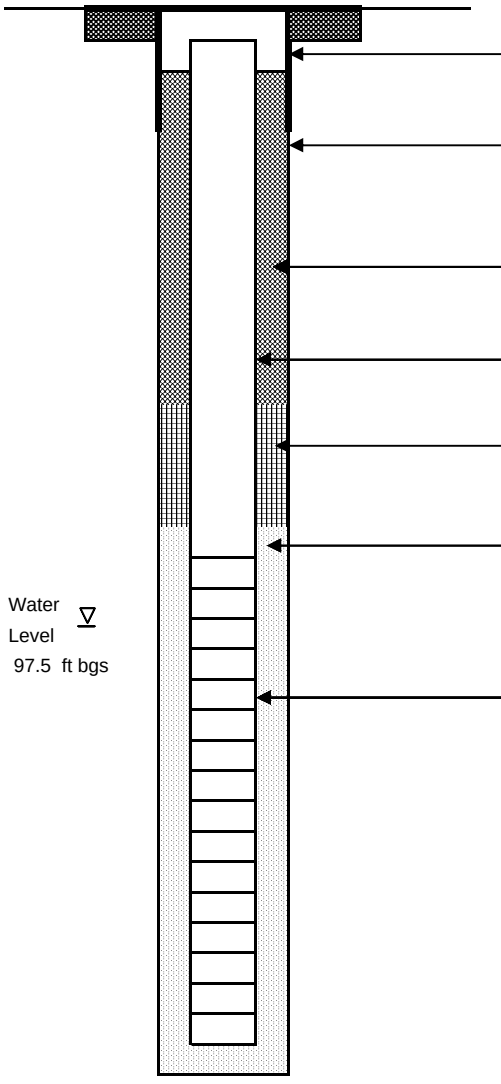
(NOT TO SCALE)

AECOM

Well No. MW-4D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/2/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.67 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 104.0 ft to 1.0 ft

Riser Pipe from 122.5 ft to 0.5 ft

Slurry 117.0 ft to 104.0

Filter pack from 127.5 ft to 117.0 ft

Sand Size 0

Well screen from 127.5 ft to 122.5 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 127.5 ft

Bottom of Borehole at 127.5 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

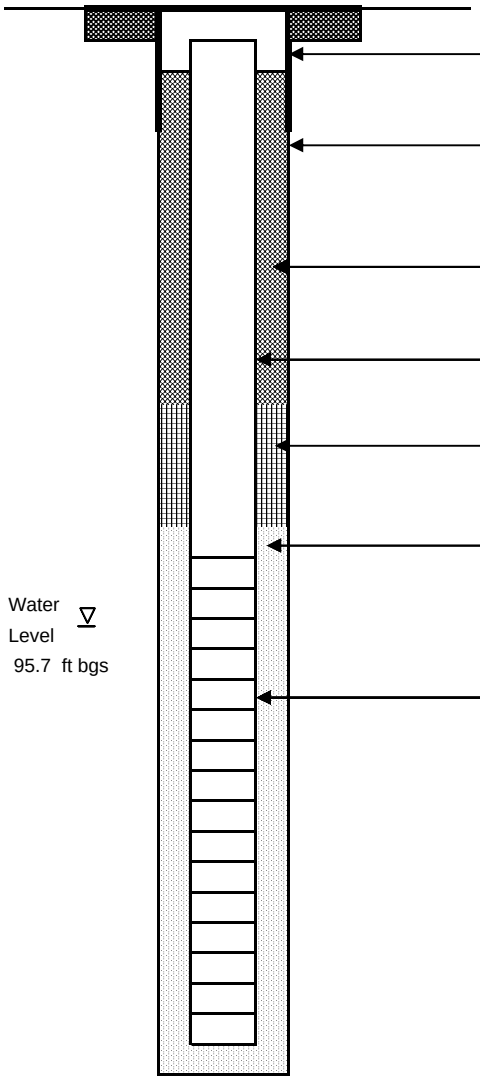
(NOT TO SCALE)

AECOM

Well No. MW-5S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/25/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 82.0 ft to 1.0 ft

Riser Pipe from 94.5 ft to 0.5 ft

Slurry 91.0 ft to 82.0

Filter pack from 99.5 ft to 91.0 ft

Sand Size 0

Well screen from 99.5 ft to 94.5 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 99.5 ft

Bottom of Borehole at 101.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

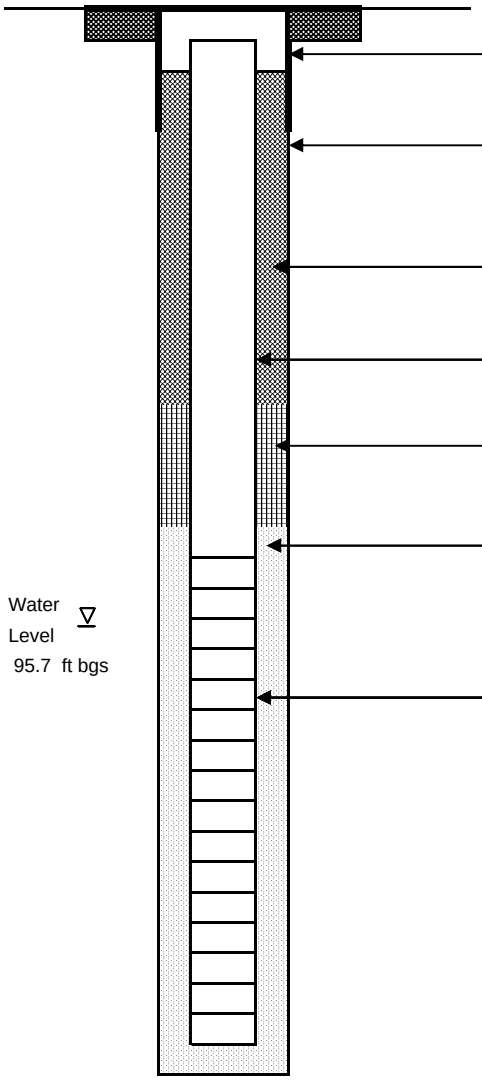
(NOT TO SCALE)

AECOM

Well No. MW-5I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/22/09 (casing completed 4/23/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 92.5 ft to 1.0 ft

Riser Pipe from 108.8 ft to 0.5 ft

Slurry 106.0 ft to 92.5

Filter pack from 113.8 ft to 106.0 ft

Sand Size 0

Well screen from 113.8 ft to 108.8 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 113.8 ft

Bottom of Borehole at 115.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

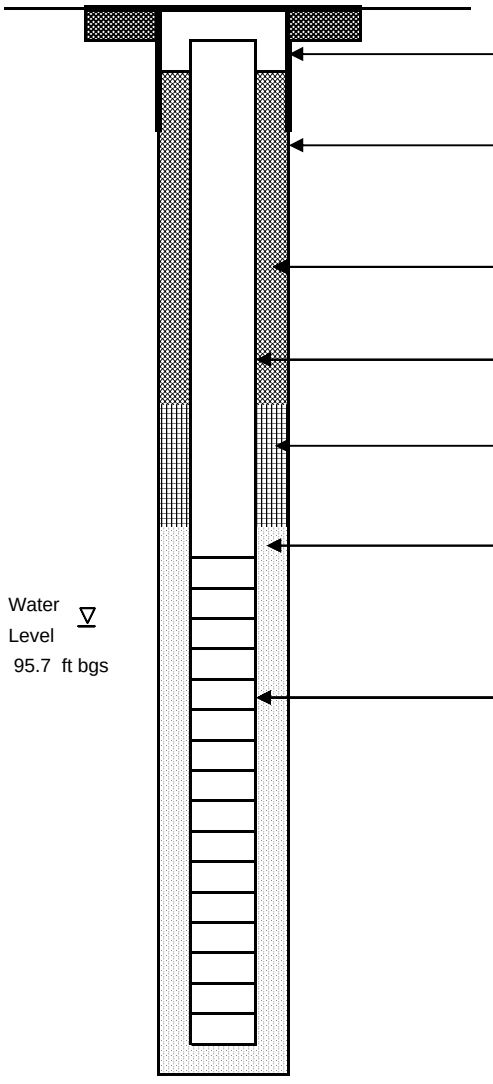
(NOT TO SCALE)

AECOM

Well No. MW-5D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/21/09 (casing completed 4/23/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 110.0 ft to 1.0 ft

Riser Pipe from 123.5 ft to 0.5 ft

Slurry 121.0 ft to 110.0

Filter pack from 128.5 ft to 121.0 ft

Sand Size 0

Well screen from 128.5 ft to 123.5 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 128.5 ft

Bottom of Borehole at 130.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

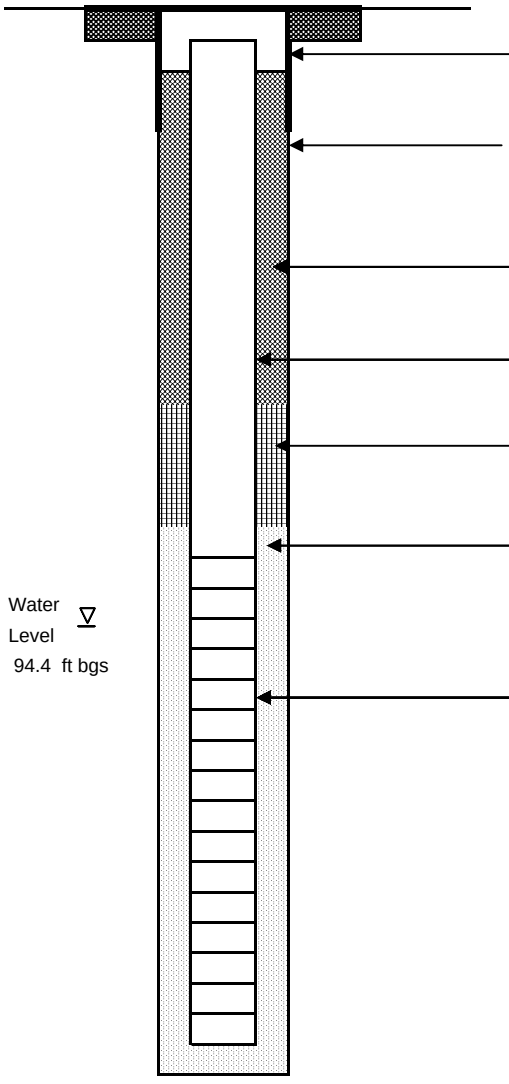
(NOT TO SCALE)

AECOM

Well No. MW-6S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/14/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 81.0 ft to 1.0 ft

Riser Pipe from 93.6 ft to 0.5 ft

Slurry 90.0 ft to 81.0

Filter pack from 98.6 ft to 90.0 ft

Sand Size 0

Well screen from 98.6 ft to 93.6 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 98.6 ft

Bottom of Borehole at 98.6 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

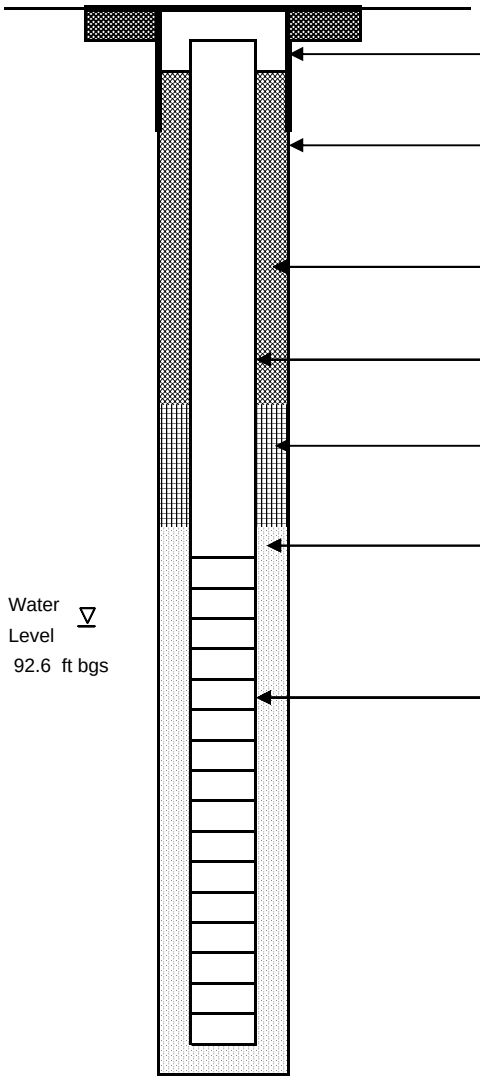
(NOT TO SCALE)

AECOM

Well No. MW-6I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/26/09 (casing completed 3/27/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 90.0 ft to 1.0 ft

Riser Pipe from 105.0 ft to 0.5 ft

Slurry 101.5 ft to 90.0

Filter pack from 110.0 ft to 101.5 ft

Sand Size 0

Well screen from 110.0 ft to 105.0 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 110.0 ft

Bottom of Borehole at 110.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

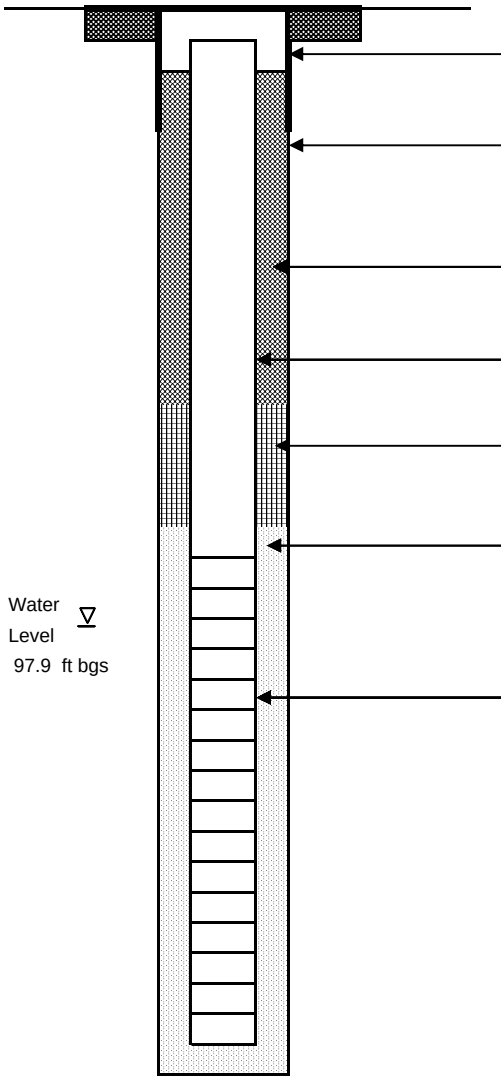
(NOT TO SCALE)

AECOM

Well No. MW-6D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/15/09	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 102.0 ft to 1.0 ft

Riser Pipe from 119.5 ft to 0.5 ft

Slurry 114.0 ft to 102.0

Filter pack from 124.4 ft to 114.3 ft

Sand Size 0

Well screen from 124.4 ft to 119.4 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 124.4 ft

Bottom of Borehole at 125.0 ft

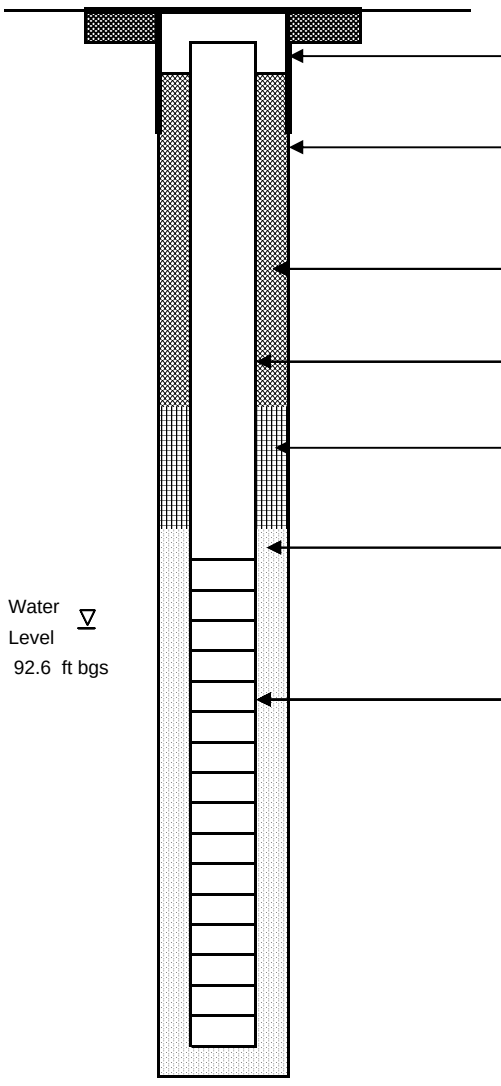
Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

AECOM

Well No. MW-6D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 4/15/09 (Abandoned)	
Well Permit No.: N/A	Well collapsed between 96 ft - 56 ft bgs	
Earth Tech Rep.: Celeste Foster		



Locking protective flushmount with concrete pad

Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 96.0 ft to 1.0 ft

Riser Pipe from 120.0 ft to 0.5 ft

Slurry 116.0 ft to 96.0

Filter pack from 125.0 ft to 116.0 ft

Sand Size 0

Well screen from 125.0 ft to 120.0 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 125.0 ft

Bottom of Borehole at 125.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

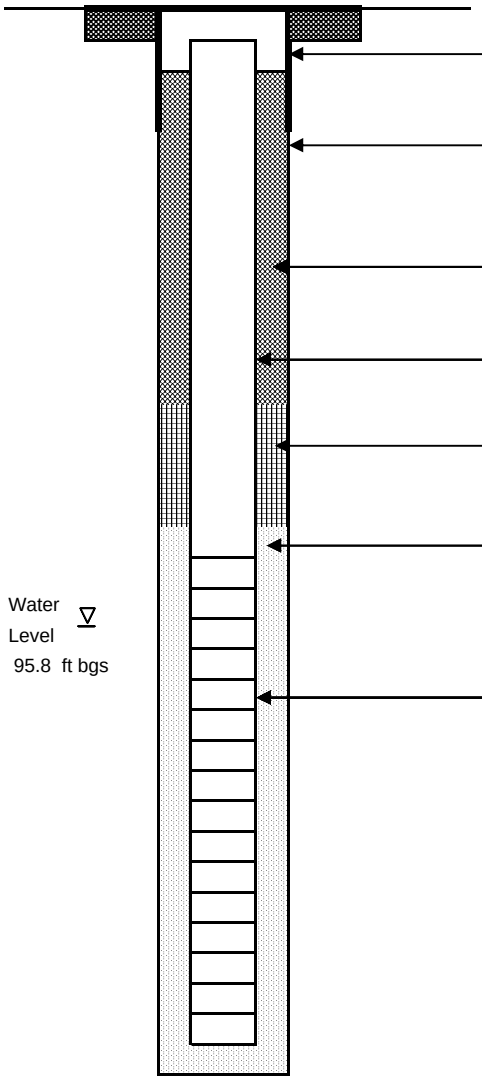
(NOT TO SCALE)

AECOM

Well No. MW-7S

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/21/09 (casing completed 4/1/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 82.0 ft to 1.0 ft

Riser Pipe from 94.0 ft to 0.5 ft

Slurry 90.0 ft to 82.0

Filter pack from 99.0 ft to 90.0 ft

Sand Size 0

Well screen from 99.0 ft to 94.0 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 99.0 ft

Bottom of Borehole at 99.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

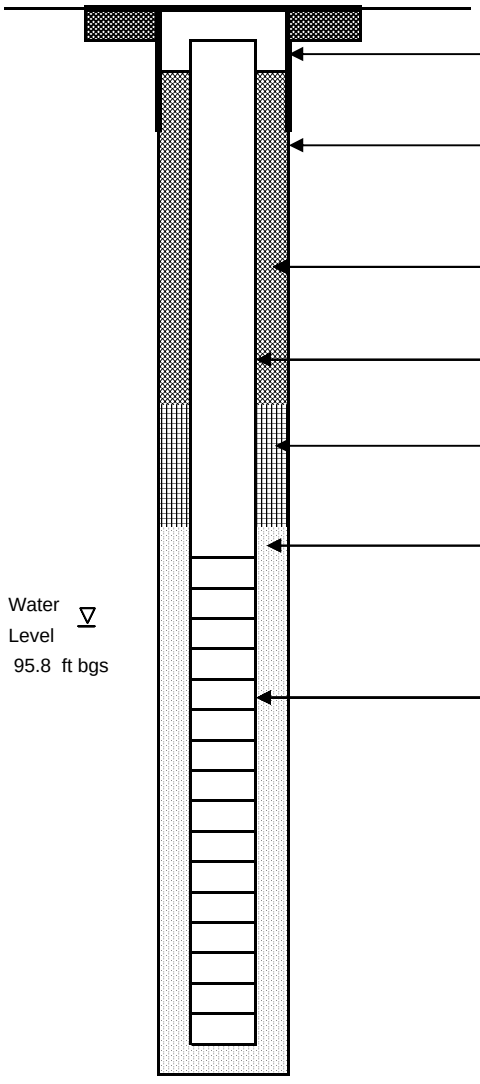
(NOT TO SCALE)

AECOM

Well No. MW-7I

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/31/09 (casing completed 4/1/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 93.0 ft to 1.0 ft

Riser Pipe from 110.0 ft to 0.5 ft

Slurry 106.0 ft to 93.0

Filter pack from 115.0 ft to 106.0 ft

Sand Size 0

Well screen from 115.0 ft to 110.0 ft

Diameter 1 inches
Slot size 10 inches
Type PVC Sch 80

Bottom Cap at 115.0 ft

Bottom of Borehole at 115.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

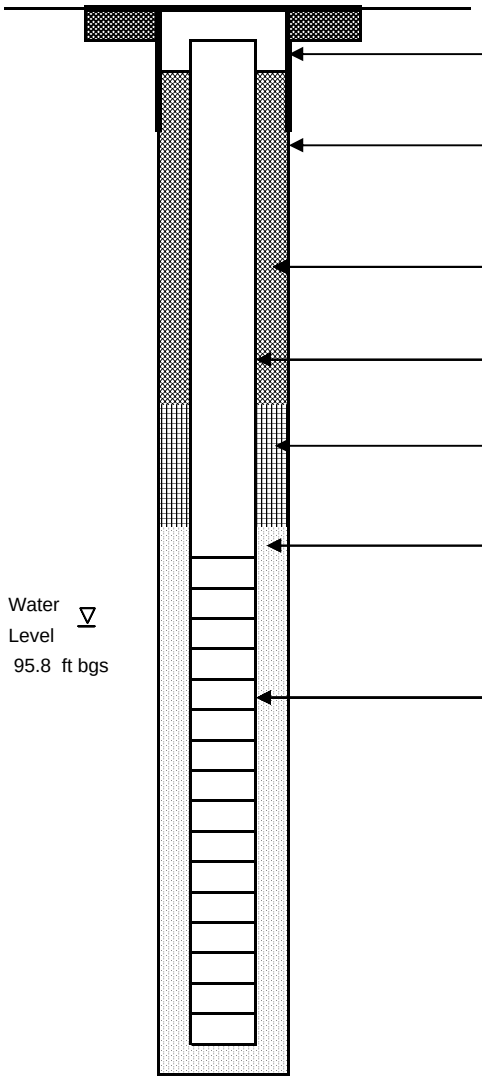
(NOT TO SCALE)

AECOM

Well No. MW-7D

Project: Beau Brummet Cleaners	Location: Commack, NY	Page 1 of 1
AECOM Project No.: 106123	Subcontractor: Aztech	
Driller: Marty H.	Date of Completion: 3/31/09 (casing completed 4/1/09)	
Well Permit No.: N/A Earth Tech Rep.: Celeste Foster		

Locking protective flushmount with concrete pad



Ground Surface 0.0 ft

Well casing 0.5 ft bgs

Borehole diameter 6 inches

Cement-bentonite grout from 93.0 ft to 1.0 ft

Riser Pipe from 120.0 ft to 0.5 ft

Slurry 117.0 ft to 93.0

Filter pack from 125.0 ft to 117.0 ft

Sand Size 0

Well screen from 125.0 ft to 120.0 ft

Diameter 1 inches

Slot size 10 inches

Type PVC Sch 80

Bottom Cap at 125.0 ft

Bottom of Borehole at 125.0 ft

Note: All measurements based on ground surface at 0.0 feet. (+) above grade. (-) below grade.

(NOT TO SCALE)

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Infrastructure · Water · Environment · Buildings

TEST BORING LOG

BORING No.MW-8D

PROJECT	**Beau Brummel Cleaners**	LOCATION	**Commack, NY**	SHEET	**1** OF **2**
CLIENT	**NYSDEC**			PROJECT No.	**00266423.0000**
DRILLING CONTRACTOR	**LAWES**			MEAS. PT. ELEV.	
PURPOSE	**Remedial Investigation**			GROUND ELEV.	
WELL MATERIAL	**Sch 40 PVC**			DATUM	
DRILLING METHOD(S)	**Hollow Stem Auger**	SAMPLE	CORE / CASING	DATE STARTED	**4/7/15**
DRILL RIG TYPE	**HSA**	TYPE	**PVC**	DATE FINISHED	**4/8/15**
GROUND WATER DEPTH	**99.0'**	DIA.	**"** / **2"**	DRILLER	**LAWES**
MEASURING POINT		WEIGHT	**#**	ARCADIS STAFF	**Amber Goodrich**
DATE OF MEASUREMENT		FALL	**"**		

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74			0.0 0.0			10.0		Cement Grout

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TEST BORING LOG

BORING No.MW-8D

PROJECT **Beau Brummel Cleaners** | LOCATION **Commack, NY** | SHEET **2** OF **2**

CLIENT **NYSDEC** | PROJECT No. **00266423.0000**

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
76								
78								
80								
82								
84								
86								
88								
90								
92								
94								
96								
98								▼
100								
102								
104								
106								
108								
110								
112								
114								115.0
116								117.0 Bentonite Morrie # 00 Fine Sand Gravel Pack
118								
120								
122								
124								
126								
128								
130						130.0		130.0

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TEST BORING LOG

BORING No.MW-8S

PROJECT	**Beau Brummel Cleaners**	LOCATION	**Commack, NY**	SHEET	**1** OF **2**
CLIENT	**NYSDEC**			PROJECT No.	**00266423.0000**
DRILLING CONTRACTOR	**LAWES**			MEAS. PT. ELEV.	
PURPOSE	**Remedial Investigation**			GROUND ELEV.	
WELL MATERIAL	**Sch 40 PVC**			DATUM	
DRILLING METHOD(S)	**Hollow Stem Auger**	SAMPLE	CORE / CASING	DATE STARTED	**4/8/15**
DRILL RIG TYPE	**HSA**	TYPE	**PVC**	DATE FINISHED	**4/9/15**
GROUND WATER DEPTH	**99.0'**	DIA.	**"** / **2"**	DRILLER	**LAWES**
MEASURING POINT		WEIGHT	**#**	ARCADIS STAFF	**Amber Goodrich**
DATE OF MEASUREMENT		FALL	**"**		

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. / DEPTH	WELL Constr.	REMARKS
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74			0.0 0.0			10.0		Cement Grout

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TEST BORING LOG

BORING No.MW-8S

PROJECT **Beau Brummel Cleaners** | LOCATION **Commack, NY** | SHEET **2** OF **2**

CLIENT **NYSDEC** | PROJECT No. **00266423.0000**

DEPTH FT.	SAMPLE TYPE, RECOVERY, NUMBER	BLOWS ON SAMPLE SPOON PER 6"	PID	GRAPHIC LOG	GEOLOGIC DESCRIPTION KEY - Color, Major, Minor Moisture, Etc.	ELEV. DEPTH	WELL Constr.	REMARKS
76								
78								
80								
82								
84								
86								
88								
90								
92								
94								
96								
98								
100								
102								
104								

Bentonite
00 Morrie Sand
Gravel Pack

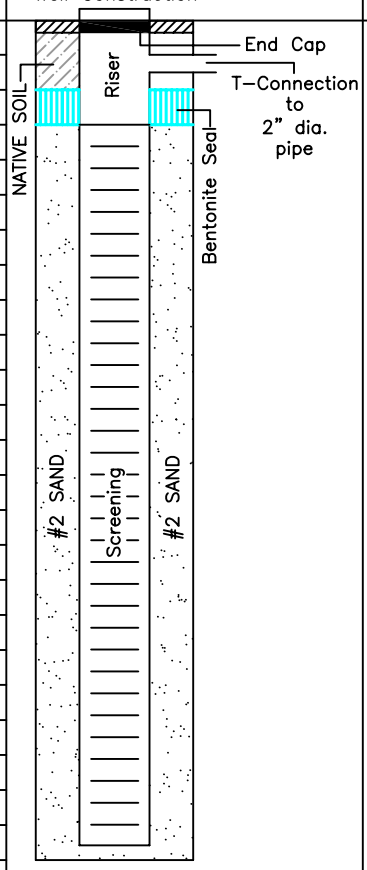
SOIL VAPOR EXTRACTION WELL
CONSTRUCTION LOG - TYPICAL

Job No: 110075 Page: 1 OF 1

Location: 2094 Jericho Turnpike, Commack NY

Well Name: PT-1
Drilling Method: DIRECT PUSH
Total Depth: 12.00'
Manhole Size: 8"

Screen Size: 0.020"
Screen Interval: 10.5'
Diameter: 3/4"
Riser Length: 1.5'
Sand Size: #2

Depth Below Grade (ft.)	Sample Interval (ft.)	Well Construction	Description
1			5" Manhole Cover. 0.00'-1.00' - Native Soil. 1.00'-1.5' - Bentonite Seal. 1.5'-12.00' - #2 Morie Sand. 0'-1.5 - Riser 1.5'-12.00' - Screen
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

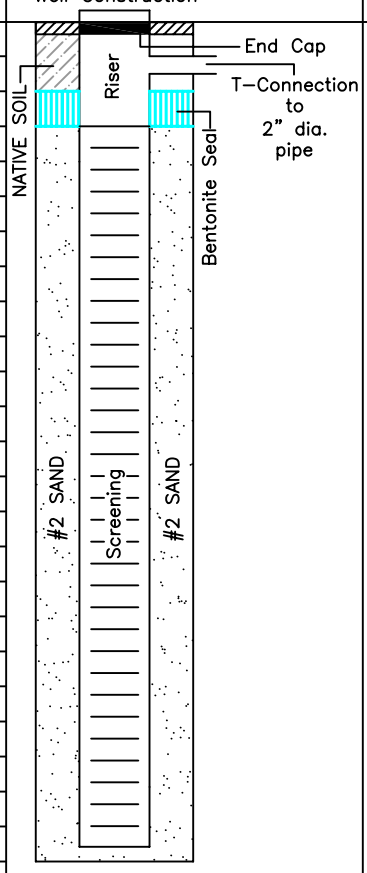
SOIL VAPOR EXTRACTION WELL
CONSTRUCTION LOG - TYPICAL

Job No: 110075 Page: 1 OF 1

Location: 2094 Jericho Turnpike, Commack NY

Well Name: PT-2
Drilling Method: DIRECT PUSH
Total Depth: 12.00'
Manhole Size: 5"

Screen Size: 0.020"
Screen Interval: 10.5'
Diameter: 3/4"
Riser Length: 1.5'
Sand Size: #2

Depth Below Grade (ft.)	Sample Interval (ft.)	Well Construction	Description
1 2 3 4 5 6 7 8 9 10 11 12			5" Manhole Cover. 0.00'–1.00' – Native Soil. 1.00'–1.5' – Bentonite Seal. 1.5'–12.00' – #2 Morie Sand. 0'–1.5 – Riser 1.5'–12.00' – Screen

APPENDIX H

REMEDIAL SYSTEM OPTIMIZATION TABLE OF CONTENTS

REMEDIAL SYSTEM OPTIMIZATION

TABLE OF CONTENTS