

ELECTRICAL SPECIFICATIONS

SECTION 16010 – ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements. The Contractor, having read the same and being familiar with the contents, shall be responsible for and governed by all requirements thereunder. This SECTION applies to all SECTIONS of DIVISION 16000.

1.2 CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS

- A. It is the intent of the Specifications and Drawings to describe a completed project to be performed under the Contract.
- B. The Contract Documents are complementary, what is called for by one is as binding as if called for by all. If the Contractor finds a conflict, error or discrepancy in the Contract Documents, he shall call it to the Architect's attention in writing before proceeding with the work affected thereby. Any work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards. The Contractor assumes full responsibility for having familiarized himself with the nature and extent of the Contract Documents, work, locality and local conditions that may in any manner affect the work to be done.
- C. The Drawings are, in general, made to scale and the Contractor may obtain approximate distances and dimensions by scaling the Drawings. It is distinctly understood, however, that he does so entirely on his own responsibility. The accuracy of the Drawings is not guaranteed. Refer to Architect's Drawings, Specifications and Room Schedules for construction details which will affect this work and equipment. Examine the Plumbing, Heating and Ventilating Drawings and Specifications to ensure that this work does not conflict with the above trades. Mechanical and Electrical Drawings are largely schematic and, therefore, do not necessarily represent the exact installations; it shall remain the Contractor's responsibility to cover all conditions on his prepared Shop Drawings and by arrangement in the field.

1.3 REGULATIONS

- A. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the work and safety. These authorities include, but are not limited to:
 - 1. The latest revision of the State of California Electrical Code
 - 2. The applicable Rules and Regulations of the National Fire Protection Association
 - 3. State Fire Marshal
 - 4. The National Electric Code
 - 5. Any other applicable Federal, State, County or City Codes or Regulations, including OSHA
- B. Nothing in these Drawings or Specifications shall be construed to permit work not conforming to the above Regulations and Codes.

1.4 PERMITS, LAWS AND TAXES

- A. The Contractor shall secure and pay for all permits, licenses, inspection fees and all governmental and public utility charges necessary for the completion of the work. See DIVISION 1.

1.5 EXAMINATION OF SITE

- A. The Contractor shall examine the site and familiarize himself with the existing conditions and make allowances therefore in preparing his proposal. He shall verify existing conditions, and in the event of discrepancies between existing conditions and the Drawings, the Contractor shall bid new conditions, wires and necessary equipment in order to complete the job and

provide a fully operable and acceptable system. Extras will not be allowed for work not indicated or noted on the Drawings and/or required in Specifications when such work is apparent from an inspection of the premises at that time.

1.6 DRAWINGS AND SPECIFICATIONS

- A. All Drawings and all DIVISIONS of these Specifications shall be considered as a whole and work of this DIVISION shown anywhere therein shall be furnished under this DIVISION.
- B. Drawings are diagrammatic and indicate the general arrangement of equipment and wiring. Exact requirements shall be governed architectural, structural and mechanical conditions of the job. Consult all other drawings in preparation of the bid. Extra lengths of wiring or addition of pull or junction boxes, etc., necessitated by such conditions shall be included in the bid. Check all information and report any apparent discrepancies before submitted bid.
- C. Right is reserved to make changes of up to ten feet in location of any outlet or equipment prior to roughing-in without increasing contract cost.

1.7 SAFETY AND INDEMNITY

- A. Safety: The Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. See DIVISION 1 and General Conditions.
- B. No act, service, drawing review or construction review by the Owner, the Architect, the Engineers or their Consultants is intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

1.8 RECORD DRAWINGS

- A. See DIVISION 1.

1.9 GUARANTEE

- A. See DIVISION 1.

PART 2 PRODUCTS

2.1 MATERIAL APPROVAL

- A. The design, manufacture and testing of electrical equipment and materials shall conform to or exceed latest applicable NEMA, IEEE and ANSI standards.
- B. All materials must be new and bear UL label. Materials that are not covered by UL testing standards shall be tested and approved by an independent testing laboratory or a governmental agency, which laboratory shall be acceptable to the Engineer, Owner and code enforcing authority.

2.2 SUBSTITUTIONS

- A. See DIVISION 1.
- B. A list of materials, methods and/or equipment proposed as substitutes for that specified shall be submitted as required for shop drawings in DIVISION 1. Where proposed substitutions are disapproved, the specified materials, methods and/or equipment shall be provided.
- C. All subsequent changes and substitutions shall be requested in letters from the Contractor to the Architect and shall be considered as authorized only upon written approval from the Architect.
- D. Any item which is proposed as a substitute shall be accompanied by Drawings and/or data giving sizes, capacities and all other necessary information for determining equality. When Drawings are submitted to the Architect for the purpose of showing the installation in greater detail, their approval shall not excuse the Contractor from the requirements of the Plans or Specifications.
- E. No work involving materials submitted for substitution shall proceed until written approval is received from the Architect.

2.3 SHOP DRAWINGS AND MATERIALS LIST

- A. Submit Shop Drawings for all equipment and material as required in DIVISION 1.
- B. Submittals shall be required for the following:

1. Material List: Identifying materials proposed for installation.
2. Lighting Fixtures: Catalog cuts and ETL photometric data.
3. Signal systems equipment and wiring diagrams.
4. Panelboards and Switchboards: Shop fabrication details and components.

2.4 OPERATING AND MAINTENANCE MANUALS

- A. Submit three sets of Operating and Maintenance Manuals of equipment as specified in DIVISION 1.

2.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle materials in a manner to prevent damage. Any cost from damage shall be borne by the Contractor.
- B. Protect equipment from weather and dampness.

PART 3 EXECUTION

3.1 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS

- A. Only quality workmanship will be accepted. Haphazard or poor installation practice shall be cause for rejection of work.
- B. Provide foreman in charge of this work at all times.

3.2 COORDINATION

- A. Coordinate work with other trades to avoid conflict and to provide correct rough-in and connection for equipment furnished under trades that require electrical connections. Inform Contractors of other trades of the required access to and clearances around electrical equipment to maintain serviceability and code compliance.
- B. Follow manufacturer's instructions where they cover points not specifically indicated on drawings and specifications. If they are in conflict with the drawings and specifications, obtain clarification from the Architect before starting work.

3.3 QUALITY ASSURANCE

- A. Provide a meaningful Quality Assurance program. To assist the Contractor in this program, the specifications contained herein are set forth as the minimum acceptable requirements. This does not relieve the Contractor from executing other Quality Assurance measures to obtain a complete operating facility within the scope of this project.
- B. The Contractor shall insure that all workmanship, all materials employed, all required equipment and the manner and method of installation conforms to accepted construction and engineering practices, and that each piece of equipment is in satisfactory working condition to satisfactorily perform its functional operation.
- C. Quality Assurance Tests and Operational Check:
 1. Provide Quality Assurance Tests and Operational Check as specified in SECTION 16040.

3.4 CUTTING AND PATCHING

- A. The Contractor shall do all cutting and patching and shall provide all openings and supports which may be required for the installation of the work under this DIVISION of the Specifications. Patching shall be of the same workmanship, materials and finish as, and shall match accurately, all surrounding construction. No cutting of the structure shall be permitted without written permission of the Architect.

3.5 ACCEPTANCE DEMONSTRATION

- A. Upon completion of work, at a time to be designated by the Architect, the Contractor shall demonstrate for the Owner, the operation of the electrical installation, including any and all special items installed by him or installed under his supervision. A minimum of sixteen (16) hours of time must be allowed for this purpose.
- B. The demonstrations shall be held by this Contractor in the presence of the Owner's plant facilities manager or his designated representative and the manufacturer's representative.
- C. Demonstrate the function and location (in the structure) of each system and indicate its relationship to the single line diagrams and drawings.

- D. Demonstrate by "start-stop operation" how to work the controls, how to reset protective devices, how to replace fuses and what to do in case of emergency.
- E. Demonstrate how maintenance and spare parts manuals are related to the equipment and systems installed.

3.6 CLOSING IN UNINSPECTED WORK

- A. The Contractor shall not allow or cause any of his work to be covered up or enclosed until it has been inspected, tested and approved by the Architect. This inspection does not waive the inspections required by the Building Permit and performed by the local inspection authority.
- B. Should any of the work be enclosed or covered up prior to inspection and testing, the contractor shall uncover the work at his own expense, and after it has been tested, inspected and approved, make all repairs with such materials as may be necessary to restore all work disturbed by him to its original and proper condition.

3.7 PRELIMINARY OPERATION

- A. Should the Owner demand that any portion of the plant, apparatus or equipment be operated prior to final completion and acceptance of the work, the Contractor shall consent, and such operation shall be under the supervision and direction of the Contractor, but all expense thereof will be paid by the Owner, separate and distinct from money paid on account of the Contract. Such preliminary operation and payment thereof shall not be construed as an acceptance of any of the work of this Contract.

3.8 POWER INTERRUPTIONS

- A. The facility will be in operation during construction.
- B. Electrical circuits shall be interrupted only with prior written consent. Such interruptions shall be preceded by all possible preparations by the Contractor which are necessary to keep the electrical circuits off for a minimum period in an expeditious manner pursuant with good workmanship. If required, this work shall be done on weekends with no added expense to the Owner.
- C. Written requests for outages shall be submitted 7 calendar days in advance of the outage date. This request will delineate the particular circuits in question, the time of day the power should be removed, and an approximate number of hours the power shall be off.
- D. All work on service conductors and other such equipment shall be done only when such conductors and equipment are de-energized. The foreman of the work must disconnect the voltage from these circuits himself, install his own padlock and keep the key. In addition, a safety warning tag shall be affixed to the switch. This tag shall describe the work being done and the location of the job. The padlock shall be removed at the earliest possible moment after the line has been cleared of all personnel.

3.9 DEMOLITION

- A. Under this SECTION, the Contractor before submitting his bid, shall visit the site, review the existing drawings and allow for all demolition that is necessary for complete installation of new Electrical work. Demolition work is either partially shown or not shown on drawings. See architectural demolition drawings for extent of demolition.
- B. Remove all abandoned wiring, electrical equipment and fixtures. Such items will either be stored at a predetermined location or removed from the premises as directed by the Owner.
- C. Existing conduit, fittings, wire, etc., removed from the existing facility shall not be re-used unless specifically approved by the Architect.
- D. Wherever existing wiring or equipment is abandoned as a result of this Contract, it shall be removed insofar as possible. This includes, but is not limited to:
 - 1. Remove all wire and cable.
 - 2. Remove all devices and equipment.
 - 3. Remove all exposed conduit as far as possible.
 - 4. Cut off and cap all abandoned conduit. Stubs shall not be extended above floor.
 - 5. Provide closure plates for all abandoned flush outlets.

- E. Where removal of an existing outlet will result in loss of circuit continuity, the isolated portions of the circuit shall be reconnected to provide service to all outlets. If site conditions make a reconnection impossible, connection shall be made from an adjacent available outlet as noted and/or as directed.

3.10 SITE WORK AND PROTECTION

- A. The nature of the work requires disturbances of existing site surface installations by trenching. Contractor shall consult with Owner's representative a minimum of seven days prior to opening any trench or doing any excavation in order that Owner may take proper step to protect or temporarily remove existing plantings in the area to be disturbed.
- B. The routing of trenching is generally shown on the Drawings, which were prepared without indication of existing vegetation. Contractor, consulting with the Architect where necessary, shall route trenches to avoid trees, and where possible, shrubbery. The route of trenches shall be staked, and sufficient time allowed prior to excavation for Owner's forces to remove shrubs and sodding which are to be retained.
- C. Except for trees, which will not be disturbed, it shall be solely the responsibility of the Owner to remove, replant and/or protect site vegetation. Contractor shall, however, plan his operation to avoid damage to adjacent plantings. Do not disturb existing earth grades within the drip line of existing trees to remain.

3.11 TESTS

- A. Where the Contract Documents, laws, ordinances or any public authority requires any work to be tested specifically or reviewed by another authority, the Contractor shall give the Architect timely notice of readiness therefore. The Contractor shall furnish the Architect the required certificates of testing or review. If any such work required to be tested is covered up without written approval or consent of the Architect, it must, if directed by the Architect, be uncovered for examination at the Contractor's expense.
- B. The cost of all such tests shall be borne by the Contractor.
- C. Any work which fails to meet the requirements of any such test or review and any work which meets the requirements of any such test or review but does not meet the requirements of the Contract Documents shall be considered defective or may be rejected. Rejected work shall be removed promptly from the site by the Contractor unless the deficiencies are corrected promptly by him.

END OF SECTION

SECTION 16040 – FIELD TEST AND OPERATION CHECK

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements.

1.2 DESCRIPTION

- A. Work included in this SECTION, but not limited to:
 1. Ground resistance test.
 2. 600V cable insulation test.
 3. Operational check of selected equipment.

1.3 GENERAL SCOPE

- A. Where the Contract Documents, the Architect's instructions, laws, ordinances or any public authority requires any work to be tested specifically or approved by another authority, the Contractor shall give the Architect timely notice of readiness therefore. The Contractor shall furnish the Architect the required certificates of testing for approval. All such tests shall be in accordance with the methods prescribed by the American Society for Testing and this Specification. If any such work required to be tested is covered up without written approval or consent of the Architect, it must if directed by the Architect, be uncovered for examination at the Contractor's expense. The cost of all such tests shall be borne by the Contractor, provided that, if any such test is called for only by the Architect's instructions (and not required by the Contract Documents or otherwise) and if the test reveals that the work involved meets the requirements of the Contract Documents, the Contractor shall be allowed an increase in the Contract Price or an extension of the Contract time directly attributable to making the test if he makes claim therefore as provided under the General Conditions.
- B. All wiring and equipment including Owner-furnished equipment shall be tested for continuity and short circuits before the circuits are energized. The Contractor shall furnish all test equipment and materials and labor that are required to perform the tests. The Contractor shall advise the Architect of date of each test at least five (5) days prior to the performance of the test. The Architect reserves the right to witness all or any test.

1.4 FAILURE TO MEET TEST

- A. In the event that the results obtained in the tests are not satisfactory, the Contractor shall make such adjustments, replacements and changes as are necessary and shall then repeat the test or tests which disclosed the faulty or defective work or equipment and shall make such additional tests as the Owner's representatives deem necessary without additional charge to this Contract.

1.5 OWNER'S OPTIONAL TESTING

- A. If the Owner requires additional testing that is not part of this Contract, the Owner shall cover such testing costs.
- B. If additional tests disclose defective workmanship and equipment, it shall be replaced under this Contract at no extra cost to the Owner.

PART 2 EXECUTION

2.1 GROUND RESISTANCE TEST

- A. Building ground electrode resistance testing shall be accomplished with a ground resistance direct-reading single test meter utilizing the Fall-of-Potential Method and two reference electrodes. Perform test prior to interconnection to other grounding systems. Orient the ground electrode to be tested and the two reference electrodes to be tested and the two reference electrodes in a straight line spaced fifty (50) feet apart. Drive the two reference electrodes five (5) feet deep.

- B. Test results shall be in writing, and shall show temperature, humidity and condition of the soil at the time of the tests. In the case where the ground resistance exceeds 1 ohm, Owner will issue additional instructions.

2.2 600 VOLT CABLE INSULATION TEST

- A. All conductors shall receive an insulation resistance test and the values shall not be less than the following:

- | | |
|---|-----------|
| 1. Lighting circuit with fixtures connected | 1 Megohm |
| 2. Lighting panels | 1 megohm |
| 3. Distribution panels, bus bars | 5 Megohms |
| 4. Motors (cold condition) | 5 Megohms |

- B. The insulation resistance per 1,000 feet for type THW wire, 600 volt, single conductor (not connected to devices), shall not be less than the following:

- | | |
|--|-------------|
| 1. No. 14 through No. 10 AWG | 700 Megohms |
| 2. No. 8 through No. 2 AWG | 500 Megohms |
| 3. No. 1 through No. 4/0 AWG | 300 Megohms |
| 4. No. 250 MCM through No. 500 MCM AWG | 200 Megohms |
| 5. No. 501 MCM through No. 1,000 MCM AWG | 150 Megohms |

2.3 OPERATIONAL CHECK OF SELECTED EQUIPMENT

- A. The following tests and checks shall be performed before equipment is placed in operation.

1. Check all equipment for mechanical adjustments, lubrication, and freedom of operation. Remove all shipping blocks.
2. Operate all breakers in distribution panels.
3. Operate all motor starters. Test all control circuits for correct connection and operation.
4. Test all circuits for correct connection and operation.
5. Perform rotation checks on all motors to make sure that rotation is as required for the driven equipment.
6. Check the polarity of all receptacles.
7. Check all branch circuits on lighting and distribution panels.

END OF SECTION

SECTION 16050 – BASIC CONSTRUCTION MATERIALS AND METHODS

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements.

1.2 DESCRIPTION

- A. Work included in this SECTION are conduits, wires and other miscellaneous materials not specifically mentioned in other SECTIONS of DIVISION 16000, but necessary or required for equipment or system operation or function and the labor to install them.
- B. Related work included in other SECTIONS: All other SECTIONS of DIVISION 16.

1.3 INCORPORATED DOCUMENTS

- A. SECTION 16010, Electrical Requirements, applies to this SECTION.

1.4 SUBMITTALS

- A. Materials list with manufacturer, style, series or model identified.
- B. Manufacturer's descriptive literature and/or sample if requested by the Architect.
- C. Dimensioned cable tray shop drawings and descriptive literature.

1.5 MATERIALS AND WORKMANSHIP

- A. Materials, workmanship and installation shall conform to all requirements of the legally constituted authorities having jurisdiction.
- B. Where larger sizes or better grade materials than required by the Regulations or Codes are specified herein, the Specifications shall have precedence.
- C. All electrical equipment and material shall be new, unless otherwise noted or indicated on the Drawings, and all new equipment and material shall be as recognized by the Underwriters' Laboratories, Inc., and/or be listed by the laboratories, wherever applicable, and shall be in perfect condition after installation.
- D. All material furnished under these Specifications shall be the standard products of manufacturers regularly engaged in the production of such equipment, and shall be that manufacturer's latest standard design. All similar items for similar uses shall be identical insofar as practical, and shall be the product of one manufacturer.
- E. Workmanship shall be of the best standard practice of the trade.

PART 2 PRODUCTS

2.1 BRANCH CIRCUIT RACEWAYS

- A. Conduits shall be rigid steel (not intermediate steel conduit), hot dipped galvanized or sherardized of approved type and manufacture. Rigid conduit shall be used in all cases where circuits are to be buried in earth, concrete, or installed in wet locations except as hereinafter indicated.
- B. Branch circuit raceways shall be sized based on THW wire insulation conduit fill. The minimum conduit size shall be ½".
- C. All metallic conduit when run in earth, or in sand or gravel fill (not concrete encased), shall be protected by 3M Scotchrap No. 50 applied to clean degreased pipe in a Helical wrap, half-lap. Individual joint wrap shall overlap conduit wrap by 3" minimum.
- D. Electrical Metallic Tubing (EMT) 2" maximum, shall be hot dipped galvanized or sherardized of approved type and manufacture. EMT may be used in stud walls, above drop ceiling and for exposed wiring in dry locations more than 7 feet above the floor.
- E. Couplings, connectors, and fittings shall be approved type specifically designed and manufactured for the purpose. They shall be installed expertly to provide a firm mechanical assembly and electrical conductivity. All conduit fittings shall be steel of the threaded type for rigid conduit, and EMT fittings shall be steel of the threadless type.

2.2 WIREWAY

- A. Code gauge steel, with knockouts and hinged cover. Corrosion resistant gray baked enamel finish.

2.3 BRANCH CIRCUIT CONDUCTORS

- A. All conductors in raceways for branch circuits shall be of the AWG sizes noted and insulated for 600 volts; shall be soft drawn copper; No. 10 and smaller shall be solid; No. 8 and larger stranded with THHN/THWN insulation. Where conductor size is not indicated on the Drawings, the wire shall be No. 12 minimum.
- B. Wire size, insulation type and the manufacturer's name shall be permanently marked on the conductor jacket at regular intervals.
- C. All wire shall be delivered to the job site in complete coils containing the manufacturer's name with an approval tag indicating wire size and type of insulation.
- D. Branch circuit wiring within lighting fixtures shall have Type RHH or THHN insulation.
- E. All branch circuit wires shall be identified by using factory colored wires, color-coded, with a separate color for each phase. The neutral insulation shall be white and the equipment ground shall be green.

CABLE COLOR CODE CHART

CONDUCTOR	120/208	277/480
Phase A	Black	Brown
Phase B	Red	Purple
Phase C	Blue	Yellow
Neutral	White	or Light Grey
Equipment Ground	Green	

2.4 PANEL BOARDS AND BRANCH PANELS

All panels shall have copper bus one each for the phases, neutral and ground with plug-in or bolt-on type breakers to match existing. The minimum AIC rating is 10kA. See drawings for additional information. Perform arc flash study and affix arc-flash labels per code.

2.5 OUTLET BOXES, JUNCTION AND PULL BOXES

- A. Outlet boxes shall be hot dipped galvanized or sherardized. Boxes for lighting fixtures shall be strongly secured using screws or equal type fasteners. Boxes shall have only the holes necessary to accommodate the conduits of point of installation. All boxes shall have lugs or ears to secure covers.
- B. Surface mounted receptacles and switches shall be installed in cast boxes (FS or FSD type).
- C. Ceiling outlet boxes where conduit is concealed shall not be less than 4" in diameter by 1-1/2" deep.
- D. Outlet boxes for wall fixtures where conduit is concealed shall be deep type, 4" in diameter, and have covers with center opening 3" in diameter.
- E. Outlet boxes for switches and receptacles in finished walls shall be of one piece standard galvanized steel, code gauge boxes, 4"x4"x1-1/2" minimum. They shall have covers with rectangular openings of proper size and shape. Outlet boxes for telephone system shall be 4-11/16"x4-11/16"x2-1/8" deep minimum with single gang ring. All boxes shall be flush with finished wall or ceiling line, not more than 1/4" back of same. All boxes shall be rigidly secured in position using screws or equal type fasteners. Bracket outlets shall be set as directed by Architect. When located on beams, columns or over doors, they shall be set symmetrical with beam, column or door. Receptacles and junction boxes shall be 18", switches 48" above finish floor, unless otherwise noted, and set flush in walls. Receptacle outlets for electric water coolers (EWC) shall be installed so they are concealed behind the water cooler or as inconspicuous as possible. Single gang rings to have long axis vertical wherever possible.
- F. Junction and pull boxes shall be installed as noted on the Drawings and at other locations where necessary or convenient for installing wires. Junction and pull boxes shall be of the sizes indicated on the Drawings and/or sizes proportionate to the sizes of conduit and conductors served, but in no case shall junction boxes be less than 4" square by 1-1/2" deep.

- G. No outlets shall be mounted back-to-back on any common wall unless otherwise noted.

2.6 WIRING DEVICES

- A. Device plates shall be satin finish, stainless steel, type 302/304, alloy 18-8 for all interior flush type outlets, unless otherwise noted. Where two or more devices occur together, gang plates shall be used. Plates shall be Hubbell "S" series, Bryant or Arrow-Hart.
- B. Weatherproof covers shall be cast aluminum and hinged. Device plates for walls having wood paneling shall match the paneling finish. Submit samples for approval by Architect.
- C. Provide blank stainless steel covers on all flush junction boxes and future outlet boxes.
- D. Switches and receptacles shall be Hospital Specification grade as noted on the Drawings. Color of devices shall be coordinated with wall finish and Architect; ivory for light walls, brown for dark and paneled walls.
- E. Install receptacles with grounding pole on bottom or right hand side.
- F. All floor outlets shall have tapping as required (3/4" minimum) and must be perfectly flush with finish floor.
- G. Provide carpet flange for all floor outlets located in areas to be provided with carpet.
- H. Provide Brother P-System nameplates on all switches and receptacles indicating panel and circuit number to which the device is connected.
- I. Provide engraved device plate reading "Exhaust Fan" for all switches controlling exhaust fans.
- J. Attachment plug caps shall be provided with all receptacle outlets other than 15 and 20 amps – 120 volt, unless otherwise noted.
- K. All grouped switches (2 or more) shall be labeled with engraved device plate. Coordinate with Architect and/or Owner for proper identification prior to ordering.
- L. Provide Lew #530-R rubber bell nozzle for all telephone floor outlets.
- M. Cover plates for telephone system wall outlets shall be coordinated with the telephone company. Contractor shall provide suitable stainless steel cover plate.

2.7 SUPPORTS AND FASTENING

- A. Conduit and equipment shall be supported from structural elements (not suspended ceilings, etc.); hangers, brackets, beam clamps, etc., shall be manufactured products designed for purpose used (Kindorf, Unistrut, Superstrut, etc.) Wire, wire cinch clamps and perforated strap iron shall not be used.
- B. Fasteners shall be of a type approved by the Engineer (having a safety factor of 4).
 1. Concrete: Rawl "6000 series" self-drill or equal.
 2. Steel: Beam clamps (drill and tap or punch holes only if approved by Structural Engineer). Beam clamps shall have seismic retaining clips.
 3. Wood: Wood screws (use nails only in shear). Power driven anchors, nail straps, "nailin" anchors, plastic or fiber plugs shall not be used.
- C. Hangers shall be provided with the necessary diagonal bracings, retaining clips, etc., in order to meet the requirements of the guidelines of "SMACNA" (Sheet Metal and Air Conditioning Contractors National Association Inc.) manual.

2.8 MISCELLANEOUS EQUIPMENT

- A. Where disconnect devices are required at the Heating and Ventilating units, etc., furnish a manual motor starter. Manual starters shall be Square D, Class 2510, Allan-Bradley, Cutler-Hammer, or G.E., mounted in the appropriate enclosures. Provide a manual starter with overload protection for all motors provided without built-in overload protection.
- B. Where motor sizes exceed manual motor starter switch ratings, a safety switch shall be provided. Safety switches shall be Square D, Type HD, Cutler-Hammer, or G.E., sized in accordance with individual load to be served, mounted in appropriate enclosures. All switches shall have a short circuit rating of 35,000 rms amperes with Class J spacing feature installed in the fuse holders.
- C. Where individual magnetic starters are required, provide Square D, Class 8536 or 8539, Allan-Bradley, Cutler-Hammer, or G.E., mounted in the appropriate enclosures. Minimum

size 1. All starters shall have three (3) overloads, H-O-A and transformer style push-to-test pilot light (unless otherwise noted), 120 volt control transformer with secondary fuse and disconnect for control circuit. The Contractor shall be responsible for reviewing the circuit diagrams and the associated schedules on the Mechanical and Plumbing Drawings to insure that additional auxiliary contacts are provided as required.

- D. At all packaged mechanical equipment provide a disconnect switch or switches, fused with time delay current limiting fuses. Fuses shall be sized per unit label. A main disconnect shall be provided for each unit and subdisconnect switches shall be provided where required by the manufacturer. Package equipment shall be considered on any equipment with integral starters and controls.
- E. Provide a Zerust vapor capsule Model VC2-1 in each disconnect switch and in each starter compartment.

2.9 EQUIPMENT FINISH

- A. Coordinate the final finish on all equipment and devices with Architect. Actual finish for electrical equipment and devices shall match other equipment in the room as directed by Architect.

PART 3 EXECUTION

3.1 GENERAL

- A. The electrical systems indicated on the drawings are generally diagrammatic, and shall be followed as closely as actual construction and work of other trades will permit. Govern the exact routing of wiring and the locations of outlets by the structure and the equipment served. Take all dimensions from architectural drawings.
- B. Consult all other Contract Drawings. Verify all scales and report any dimensional discrepancies or other conflicts to Architect before submitting bid.
- C. All homeruns to panelboards are indicated as starting from the outlet nearest the panel and continuing in the general direction of that panel. Continue such circuits to the panel as though the routes were completely indicated. Terminate homeruns of signal, alarm and communication systems in a similar manner.
- D. Avoid cutting and boring holes through structure or structural members wherever possible. Obtain prior approved of Architect and conform to all structural requirements when cutting or boring the structure is necessary and permitted.
- E. Furnish and install all necessary hardware, hangers, blocking, brackets, bracing, runners, etc., required for equipment specified under this SECTION and DIVISION.
- F. Provide necessary backing required to insure rigid mounting of outlet boxes.

3.2 WIRING METHOD

- A. Install all wiring in raceway, unless specifically shown otherwise.
- B. Minimum conduit size shall be 1/2" for interior lighting circuits or where shown otherwise on drawings.
- C. Size all 120 volt branch circuit conductors as follows to limit voltage drop:
 - 1. Use #12 AWG for circuits up to 80 feet long.
 - 2. Use #10 AWG for circuits up to 120 feet long.
 - 3. Use #8 AWG for circuits up to 200 feet long.
 - 4. Length will be measured from the branch panelboard branch breaker to the center of the load.
- D. Conduit shall be rigid steel, EMT or PVC as follows:
 - 1. Above Ground: Use rigid steel (not intermediate steel), hot dipped galvanized or EMT.
 - a) Wet Locations: Rigid steel.
 - b) Hazardous Locations: Rigid steel conforming to NEC requirements.
 - c) Locations Subject to Mechanical Injury: Rigid steel.
 - d) In Concrete Floors, Ceilings, Walls or Block Walls: Rigid steel.

- e) Dry Locations and Those Not Subject to Mechanical Injury: EMT, above 7'-0", 2" maximum size, or rigid steel conduit. EMT shall be used for branch circuits only, all feeders shall be rigid steel.
- 2. Make all risers to grade with rigid steel conduit, including elbows and fittings. All stubs shall have couplings.

E. Use flexible conduits in the following applications:

- 1. Recessed lighting fixtures in T-bar ceilings.
- 2. Motor connections.
- 3. Connection between fan plenum and structure.
- 4. At expansion joints or seismic joints, Sealtite only.
- 5. At transformers and other equipment which produces vibration.

At wet locations and motor connections, flexible conduit shall be liquid tight type. In all cases, the flexible conduit shall be standard or reduced wall (RW) steel galvanized.

3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Rigid conduit and Electrical Metallic Tubing conduit shall be installed in a workmanlike manner and shall conform to the best modern practice. All raceways shall be installed with long radius bends and where more than four 90 degree radius bends are required, pullboxes shall be installed. Raceways shall be tightly corked and shall be otherwise well protected during construction and shall be blown out and swabbed prior to wires being pulled. After cutting conduit and EMT, all ends shall be properly reamed to prevent damage to conductor insulation.
- B. Running threads shall not be used for connecting conduits. If required, approved conduit unions shall be used.
- C. All conduit, unless otherwise noted on Drawings or Specifications shall be ½" with 2#12 AWG.
- D. Conduit with number of conductors indicated shall be sized in accordance with codes, except in all cases for conduit in or under floor slabs, the minimum size shall be ¾", or underground conduit for outside lighting the minimum size shall be 1", unless otherwise noted.
- E. All conduit shall be concealed except where specifically noted on the Drawings.
- F. All conduit risers out of concrete floor shall be provided with a threaded coupling at floor line. This also applies at all interior walls and partitions. See detail on the Drawings.
- G. All exposed raceway runs indicated on the Drawings shall be routed at right angles to or parallel with the structure. Conduits shall be secured at 8'-0" maximum intervals and within 3'-0" of every outlet or termination.
- H. Flashing and sleeves for roof penetrations shall comply with the architectural requirement. Refer to architectural specifications.
- I. All conduit risers inside concrete columns or walls shall be verified with Architect prior to installation.
- J. Structure shall not be cut without authorization from Architect. Sleeves through concrete floor shall be acceptable to the Architect. All holes in block walls or concrete floors shall be core drilled. Chipping of block or concrete is not permitted.
- K. All electrical equipment in mechanical rooms shall be installed so that Code required clearances are maintained.
- L. Conduits shall be run parallel to walls, either below slab or overhead, and as near as possible to the indicated location.
- M. A No. 12 AWG Type TW copper pull wire or a 3/16" diameter nylon pull rope shall be left in each empty conduit run installed under this Contract. This includes all telephone conduits.
- N. Switches shall not be grouped or ganged in outlet boxes unless they can be arranged so that the voltage between exposed live metal parts does not exceed 300 volts. Use separate outlet boxes and covers for switches on different phases of a 277/480 volt system.
- O. All necessary sleeves and chases required where conduits pass through floors, footings, walls or ceiling beams, shall be coordinated by and the responsibility of this SECTION. Any

other openings or spaces found necessary shall be arranged for in time to prevent any unnecessary cutting. All cutting shall be done by the craft involved and paid for by this SECTION.

- P. All metallic conduit when run in earth, or in sand or gravel fill (not concrete encased), shall be protected by 3M Scotchrap No. 50 applied to clean degreased pipe in Helical wrap, half-lap. Individual joint wrap shall overlap conduit wrap by 3" minimum.
- Q. Provide Seal-Tite flex connections and/or expansion fittings for all conduits between building separations, at expansion joints or seismic joints to conform with the Codes.
- R. Not more than three (3) lighting or convenience outlet branch circuits in one (1) conduit unless otherwise indicated on the drawings or approved by the Architect.
- S. The following details shall be required of each PVC conduit installation:
 - 1. No PVC conduit shall extend above finish grade. The final fittings on raceways which extend above finish floor level shall consist of rigid steel conduit extending into the concrete duct bank for at least a minimum of 1 ft. (12"). Rigid steel 90 degree elbows or long sweep bends shall be used for extending conduits above finish grade.
 - 2. All changes in direction under the concrete slab shall be accomplished by recognized and UL labeled fittings, or by large sweep bends of the conduit lengths.
 - 3. Each panelboard which has branch circuits which are routed through PVC raceways shall be provided with a separate bond conductor bus which is secured directly to the interior of the panelboard cabinet. This bond shall be constructed in the same manner as the standard neutral bus, yet it shall be securely bonded to the enclosure.
 - 4. PVC conduit, when routed through interior footings in the project shall be properly sleeved to provide an opening, which is two (2) times the outside diameter of the PVC conduit, in order to prevent any damage to conduit during differential settling on the project.
 - 5. Each PVC raceway shall be provided with a bonding conductor No. 12 AWG minimum, which is continuous from the bond bus previously required in the panelboard, to the end of the branch circuit raceway. This bonding conductor shall be secured to each of the branch circuit outlets or boxes by a separate terminal device specifically recognized for this application. This especially prohibits the use of mounting screws or other components in the boxes as methods of terminating the bonding conductor. Bonding conductor shall be bare copper.

3.4 INSTALLATION OF WIRES

- A. All wire shall be continuous from outlet to outlet and/or terminal to terminal, and shall be identified by suitable tags indicating circuit connections.
- B. Wire shall not be pulled into any portion of the raceway system until all construction work which might cause damage to the conductors has been completed. Mechanical means shall not be used to pull wires unless approved by the Architect. Provide Kellems cable grips in each feeder riser for support of feeder cables.
- C. Splices in wires and cables, except as herein before mentioned, shall be spliced by approved solderless connectors of proper size. All splices shall be provided with insulation equal to or greater than the insulation of the wire. Splices in outlet boxes for fixture or receptacles shall be completed by the use of the proper size "Scotch-Lok" insulated electrical spring connector as manufactured by the 3M Company. A minimum of 12" free length shall be provided for each conductor to be spliced in an outlet box.
- D. All cables and wires passing through manholes and handholes shall be full looped inside the manhole and handhole and supported by galvanized steel racks.
- E. Make all ground, neutral and line connections to receptacle and wiring device terminals as recommended by manufacturer. Provide ground jumper from outlet box to ground terminal of devices when the device is not approved for grounding through the mounting screws.
- F. All cable shall be installed per manufacturer's recommendations. Methods of gripping cables, tension limitations shall be coordinated prior to pulling all cables. To limit sidewall pressure at

bends in ducts and conduit runs, the pulling force in pounds shall not exceed values set forth by the cable manufacturer.

3.5 CONNECTIONS TO EQUIPMENT

A. General

1. Furnish and install required power supply conduit and wiring to all equipment. See below for other wiring required.
2. Mount all motor starters and provide all power wiring to them, including those furnished under other Sections of Specifications.
3. Install all rough-in work for equipment from approved shop drawings to suit the specific requirements of the equipment.
4. Furnish and install all magnetic motor starters that are shown on the electrical drawings or specified under other Divisions to be furnished under this DIVISION of work. Verify equipment nameplate ratings prior to installation and furnish adequately rated starters for the loads.
5. Furnish 120 volt power to each control panel and time clock requiring a source of power to operate.

B. Heating, Ventilating and Air Conditioning Equipment

1. Connection of all heating, ventilating and air conditioning equipment, provision and installation of all motor controllers, all disconnects and all associated line voltage wiring and conduit shall be completed by this SECTION.
2. The furnishings of all motors, thermostats, temperature controllers, control wiring and control panels is included as a part of other SECTIONS of this Specification.
3. The temperature control system outlines several associated interlocks for the heating and ventilating equipment. The Contractor shall be responsible for reviewing the circuit diagrams and the associated schedules on the Mechanical Drawings to insure the necessary auxiliary contacts are provided on the line voltage starters to complete the interlocks as indicated.
4. Provide a 120 volt receptacle within 25 ft. of mechanical equipment for service and maintenance purposes, whether shown on Drawings or not.

3.6 ANCHORING

- #### A.
- Anchor all floor standing electrical equipment to floor or concrete housekeeping pads with anchor bolts. Bolts and washers shall be galvanized. Strength of materials used to secure the equipment shall be sufficient to resist shear and uplift produced by force equal to the equipment mass applied horizontally at center of gravity. Submit shop drawings of seismic requirement anchoring methods for approval by the structural engineer.

3.7 IDENTIFICATION

- #### A.
- Provide engraved lamicoid nameplates for switchgear, panels, motor starters, disconnect switches, relay cabinets, signal cabinets, telephone cabinets, time switches and all associated devices.
- #### B.
- Provide Brother P-Touch System or equal self-adhesive labels of clear tape with 1/8" black letters on all switches, convenience outlets and special purpose receptacles indicating panel and circuit number to which the device is connected.
- #### C.
- Provide label on all motors: "Caution. Automatic equipment. May start at any time."
- #### D.
- Covers for precast boxes and vaults shall have hold-down bolts and engraved system name such as: Site Lighting, Fire Alarm, Electrical, Telephone, TV, Security or Grounding.
- #### E.
- Identify manhole covers for Electrical System such as: High Voltage, Telephone or Electrical.

END OF SECTION

SECTION 16060 – GROUNDING

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements.

1.2 DESCRIPTION

- A. Work included in this SECTION: Conduits, wires, ground rods and other miscellaneous materials for the electrical grounding system.
- B. Related work included in other SECTIONS;
 - 1. SECTION 16040, Field Test and Operation Check
 - 2. SECTION 16050, Basic Construction Materials and Methods

1.3 INCORPORATED DOCUMENTS

- A. SECTION 16010, Electrical Requirements, applies to this SECTION.

1.4 SUBMITTALS

- A. Material List: Shall be included in SECTION 16050, Submittals.

PART 2 EXECUTION

2.1 GROUNDING AND BONDING

- A. Grounding and bonding shall be as required by codes and local authorities.
- B. All electrical equipment shall be grounded and shall specifically include the main switchboard, panelboards, cabinets, outlet boxes, transformers and motor cases of refrigeration, heating and ventilating equipment.
- C. Grounding of the service and each of the distribution panels shall be completed as indicated on the Plans. The continuous grounding electrode conductor used to ground system neutral shall be connected to the grounding electrode as directed by the local authorities, verify prior to installation. Where the cold water pipe is used for neutral ground connection shall be 1" or larger and shall meet code requirements.
- D. Water pipe connections shall be made with a T&B ground fitting which bonds both conduit and conductor to water pipe. Ground connections shall be accessible to inspection (extension of a water line, inclusion of an access panel or ground rod well), at all times, shall be unobtrusive as possible, and shall be verified with the Architect prior to installation.
- E. Internal ground bonding jumpers shall be provided for all lengths of flexible metallic conduit, unless it is U.L. listed for grounding. All equipment provided with two conductor cords shall be rewired to provide three (3) conductor Type "S" cord and grounding attachment plug caps.
- F. A bare copper ground conductor shall be provided in all non-metallic raceways sized in accordance with the codes. This conductor may not be shown on the Plans.
- G. All branch circuits and feeders shall include a ground conductor. Feeder and motor circuit grounds shall be sized in accordance with code requirements. This conductor may not be shown on the Plans.
- H. All metal parts of pull boxes or manholes shall be grounded as per code requirements.
- I. The ground system shall be tested for resistance before the ground loop is connected. Maximum ground system resistance shall be 5 ohms.
- J. All ground conductors shall be copper, and shall be bare for non-metallic raceways, and green insulated for metallic raceways.
- K. Connect wiring device grounding terminal to branch circuit equipment grounding conductor, when provided with circuit conductors.

END OF SECTION

SECTION 16322

POWER TRANSFORMER

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. This section covers the design, manufacturing, shop testing, shipment, delivery of and Special Services for two substation class, oil-immersed power transformers to be manufactured and tested in accordance with the latest applicable NEMA, ANSI, and IEEE Standards for power transformers. Furnish transformers built in accordance with ANSI C57.12.00, ANSI C57.12.10, and ANSI Appendix C57.92, except where specific requirements of this Section take precedence
- B. The VENDOR shall furnish the transformers (also referred to as power transformers) complete with tank-mounted surge arresters, features, and accessories as specified.
- C. The transformer will be utilized in a low resistance ground application with the XO bushing grounded through a 6 ohm grounding resistor furnished by others. The H0 and tertiary will not be brought out.

1.2 SPECIFIC CODES AND STANDARDS

- A. The equipment shall meet the performance requirements of, and be designed, manufactured, and tested (including all auxiliary equipment) in accordance with the latest applicable standards of:
 - 1. NESC: National Electrical Safety Code
 - 2. ANSI: American National Standards Institute
 - 3. IEEE: Institute of Electrical and Electronics Engineers
 - 4. NEMA: National Electrical Manufacturing Association
 - 5. ASME: American Society of Mechanical Engineers
 - 6. AISC: American Institute of Steel Construction
 - 7. ASTM: American Society of Testing and Materials
- B. The above listed codes and standards are referenced to establish minimum requirements, and wherever these specifications require higher grades of materials or workmanship than required by the codes and standards, these specifications shall apply. In the event a conflict occurs between the above listed codes and standards and these specifications, the more stringent requirements shall govern.

- C. The transformers, including bushings and all accessories, shall be capable of operating with all loadings and temperature rise limitations of the IEEE C57.92 - Guide for Loading Mineral Oil - Immersed Power Transformers (65°C Winding Rise). As specified in 2.2 A.10., this power transformer shall have an average winding temperature rise of 55°C rise under the specified conditions.
- D. The transformers minimum clearance from live parts shall be in accordance with ANSI C2, National Electrical Safety Code (Latest Edition).

1.3 SUBMITTALS

- A. Submittals shall provide complete information required to complete the design of facilities or work to be provided by others, including interconnection wiring. The submittals shall provide information and drawings necessary for field erection and installation and operation and maintenance for the life of the equipment.
- B. Production and Delivery Schedule
 - 1. Prepare, update and submit a production and delivery schedule monthly. Identify status and completion dates. Schedule to include:
 - a) Design and shop drawing review and approval.
 - b) Material ordering and delivery dates.
 - c) Fabrication.
 - d) Drying.
 - e) Testing.
 - f) Delivery.
 - 2. Submit copies of suppliers' and sub-suppliers' requisitions, purchase orders, and packing slips, or other documentation confirming ordering and delivery of material.
- C. Shop Drawings
 - 1. VENDOR shall submit six sets (one reproducible and five copies) of Shop Drawings in standard "A", "B", or "D" size drawings. The final set of approved drawings shall be submitted with electronic copy of the all equipment outline drawings, one line drawings, schematic drawings, connection wiring diagrams, and three line diagrams in AutoCAD 14.0 format on 3 1/2 inch PC diskettes. Final "Approved" Shop Drawings shall be submitted with electronic copy of drawing as well as hard copies of the drawing specified. Schematic and wiring diagrams shall be arranged to allow for addition of the interconnecting devices and wiring. Interconnecting terminal blocks shall allow space for all external interconnecting wiring on one side of the column of terminal blocks.
 - 2. VENDOR shall submit to AMAT the VENDOR's accepted schedule of shop drawings. Shop drawings will have been checked by and bear a specific notation or indication of approval of VENDOR and shall be identified as AMAT may require. The data shown on the Shop Drawings will be complete

with respect to dimensions, design criteria, and materials and like information to enable AMAT to review the information as needed. In addition to VENDOR's standard drawings the shop drawings shall include the following:

- a) Transformer outline showing physical dimensions and center of gravity (shipping and installed), both horizontal and vertical, and the location of accessories. Indicate phase-to-phase and phase-to-ground dimensions.
- b) Dimension plan and section views (each face).
- c) Nameplate and connection diagram.
- d) Bushing and surge arrester outlines (not catalog sheets).
- e) Current transformer ratio correction factor and secondary excitation curves, polarity, nameplate, and connection diagrams.
- f) Itemized list of connected load KW of all accessories.
- g) Bill of material, keyed to plan and section drawings.
- h) Schematic and connection diagrams of all terminal boards, panels, control circuits, and others.

3. Drawing Format

- a) Shop drawings shall, as a minimum, show the following:
 - 1) Clearly identify elements by device number for this project.
 - 2) Identify terminal numbers for external contacts both in the schematic and for spare device contacts.
 - 3) Identify all the relay contacts, both used and spares.
 - 4) Provide control switch and limit switch developments.
 - 5) Title block shall define specific element by project element, device or function name.
 - 6) Identify all SCADA and indication.
 - 7) Identify dc source breaker number.
- b) Wiring diagrams shall, as a minimum, show the following:
 - 1) Clearly identify elements by device number for this project.
 - 2) Elements shall be located in physical representation.
 - 3) Terminate and identify all spare contacts on terminal blocks.
 - 4) All outgoing Applied Materials (AMAT) interconnections to be terminated on terminal in one area and on one side of the terminal blocks. Clearly identify customer interconnections. Identify device name and contact on manufacturer's side of terminal block.
 - 5) At customer interconnection terminal blocks, allow space for customer to add interconnection cables, wire numbers, cable numbers and termination designation.

D. Certified Test Reports

1. Submit copies of certified test reports for all other tests required in this Section. Test reports shall be dated and signed by a responsible person at the test location.

E. Operations and Maintenance Manuals

1. Include with the four sets of the final copies of the Operations and Maintenance Manuals, one set of eight-inch by ten-inch glossy photographs showing the following:
 - a) Core and coil assembly just prior to placing the complete core and coil assembly into the tank H.V. and L.V. sides. Top view showing core ground strap.
 - b) H.V. and L.V. sides - transformer completely assembled.
 - c) Each end view - transformer completely assembled.

1.4 SHIPMENT, DELIVERY, HANDLING AND STORAGE

- A. Ship and deliver transformers in accordance with the terms and conditions below:
1. All Goods will be delivered f.o.b. point of delivery. VENDOR shall select the means and methods of transportation. All transportation charges, including but not limited to switching, trucking, lighter-age and special handling will be paid by VENDOR.
 2. VENDOR shall give AMAT at least fifteen days' prior written notice of the date when the Goods will be ready for shipment and the manner of shipment. Such notice will include instructions concerning any special equipment or services required at the point of delivery to unload and care for the Goods. VENDOR also shall require the carrier to give AMAT not less than 24 hours notice by telephone of the anticipated hour of delivery.
 3. AMAT shall provide facilities for receipt and unloading of the Goods. If the point of delivery is a construction site, AMAT shall provide the carrier reasonable access within the site to the point of delivery.
 4. VENDOR shall deliver the Goods to the point of delivery within a period of fifteen days (the "delivery period") prior to expiration of the Contract Time for delivery specified in the Procurement Agreement.
 - a) AMAT will not be obligated to accept any delivery of goods not made within the delivery period. Additional costs arising from delivery prior to or after the delivery period will be the responsibility of VENDOR.
 - b) AMAT may by Change Order direct VENDOR to ship to another point of delivery or to accelerate or postpone the delivery period. AMAT shall be responsible for all additional expenses incurred by VENDOR as a result of any such direction, including but not limited to charges for storage, reconditioning, handling, overtime and insurance. If VENDOR believes that any such direction justifies an increase in the Contract Price or Contract Time, VENDOR may make a claim therefor as provided in Article 11 or Article 12.
 5. AMAT shall inspect the Goods upon delivery for the sole purpose of identifying the Goods and general verification of quantities in order to provide a basis for a progress payment. Such inspection will not be construed as final or as acceptance of any Goods not in conformance with the Procurement Documents. If, when delivered, there are apparent defects in the

Goods (through damage or otherwise), ENGINEER will give prompt written notice thereof to VENDOR. VENDOR shall without cost to AMAT correct the defect or replace the Goods with non-defective Goods. If VENDOR does not do so promptly and to the satisfaction of AMAT, AMAT may accept delivery of the defective Goods and remedy the defect as appropriate with an appropriate reduction in the Contract Price instead of requiring removal or replacement. AMAT may refuse to accept delivery of any Goods that are apparently defective. If there are no apparent defects, AMAT shall accept delivery.

6. Notice of AMAT's acceptance of delivery will be provided to VENDOR by a receipted copy of the shipping documents or as otherwise provided.

PART 2 PRODUCTS

2.1 OPERATING CONDITIONS

- A. Furnish transformers suitable for outdoor service at the ratings specified herein and operating under the special condition that the transformer will be located in a seismic zone 4 area.

2.2 RATINGS AND CHARACTERISTICS

- A. The power transformers shall have the following ratings and features:
 1. Type: Three phase, 60Hz, outdoor
 2. Class: OA/FA/FA
 3. Rated Output:
 - a) High Voltage: 30/40/50 mVA
 - b) Low Voltage: 30/40/50 mVA
 - c) Tertiary Voltage: 10.5/14/17.5 mVA
 4. Rated voltage and BIL Levels: Rated voltage and basic impulse insulation levels, all in kilovolts, of windings and bushings:

Winding or Bushing	Rated Voltage (Kilovolts L-L)	Winding BIL (Kilovolts)	*Bushing BIL (Kilovolts)
High Voltage	60 grounded wye	350	350
Secondary Voltage	12 grounded wye	110	110
Tertiary Voltage	4.16 delta	60	N/A (Note 1)
Neutral Low Voltage	15	110	110
Note 1. The H0, Y1, Y2, and Y3 tertiary windings will not be brought out.			
*Bushings shall be suitable for operation at an elevation of 3,300 feet.			

5. Externally Operating Fixed Taps: Externally operated, full kilovolt-ampere capacity, fixed taps, equivalent to the following:
 - a) High voltage 2-1/2% taps; 2 above and 2 below 60-kilovolts

6. Load-tap-changer Equipment: Automatic load-tap-changer equipment which shall regulate the voltage of the nominally 12-kV output (plus and minus 10% range). Load Tap changer equipment located in the neutral end of the winding is not acceptable.
7. Impedances: Design impedances (positive sequence) on a 30-megavolt-ampere base:
 - a) High voltage to low voltage: 6.9%
8. Loading Conditions: Loading conditions for full cooling operation:

Winding	Design Loading Condition
High Voltage 60-kilovolt	50 mVA input at 0.85 power factor lagging
Secondary Voltage 12-kilovolt	50 mVA output at 0.85 power factor lagging

9. Short-Circuit Withstand Capability: The power transformer shall be capable of withstanding the short-circuit requirements and tests of ANSI C57.12.00, Section 7. The VENDOR shall supply a certified test report of a similar unit with his bid to demonstrate capability.
 - a) In addition, when the impedance and connections of the transformer and the impedance of the connected systems listed below can result in fault current greater than 25 times the base current in any winding, the transformers shall be capable of withstanding, thermally and mechanically, the maximum short-circuit currents that can flow, due to a fault in any location.
 - b) The duration of time which the transformer shall be capable of withstanding fault current in excess of 25 times the base current of any winding, are as follows:

RMS Symmetrical Current in winding	Time in Seconds
25 times base current	2.00
35 times base current	1.00
40 times base current	0.75
50 times base current	0.05

- c) The positive sequence impedances (on a 100-megavolt-ampere base) of the systems to which the transformer is to be connected are as follows:
 - 1) 60-kilovolt terminals -
 - 2) 12-kilovolt terminals - no source
 - d) The zero sequence impedance at the fault current sources may be assumed equal to the positive sequence impedance.
 - e) The transformer shall be designed to be self-protecting.

10. Operating Temperatures

- a) The transformer shall be capable of operating at the specified loading and temperature rises and under no-load conditions when installed in the following ambient temperatures:
 - 1) Minimum ambient temperatures -10°C
 - 2) Average ambient temperatures for 24 hours 30°C
 - 3) Maximum ambient temperature 40°C
- b) The transformer shall be designed for operation at the specified ratings and under the specified conditions with an average winding temperature rise of 55°C.
- c) Other associated temperature rises shall be in accordance with ANSI C57.12.00.

2.3 SURGE ARRESTERS

- A. The metal-oxide surge arresters shall meet all applicable requirements of ANSI C62.11 and the following specifications. The primary arresters shall be mounted on the transformer cover and the secondary arresters shall be mounted in the throat of the tank. Each station-type arrester unit shall be provided with a pressure-relief diaphragm which will rupture, in the event of excessive current, causing high internal pressure, to prevent explosive shattering of the porcelain housing. Color of the porcelain shall be gray. Each surge arrester shall be provided with a discharge counter equipped with a leakage current ammeter.
- B. The surge arresters shall have sufficient mechanical strength to withstand, without damage, repeated earthquake accelerations of 0.5G in any direction.
- C. The VENDOR shall furnish the following listed metal-oxide station-class surge arresters or arresters having equivalent or better protective characteristics for each system listed below:

Arrester Ratings (kV)

System kV (L-L)	MCOV Rating (kV)	Duty-Cycle Rating (kV)	Maximum Discharge Voltage (kV) at 20 kA Discharge Current
60	42.0	54	138
12	10.0	15	43.9

- D. The maximum discharge voltage shown in the above table is based on a 20,000 ampere discharge current for an 8 X 20 microsecond impulse wave.
- E. Each arrester shall be capable of withstanding 1.4 times the MCOV rating for one second at 60°C ambient temperature.
- F. Each 60-kV and 12-kV arrester shall be furnished complete with insulated base, hardware, line and ground terminals (350Kcmil minimum size).

- G. One lightning discharge counter with leakage current indicator shall be provided for each 60-kV and 12-kV arrester. The counter shall be Bowthorpe EMP Cat #24-51-21 or equal. The 60-kV counter shall be mounted at a height not to exceed eight (8) feet above the base of the transformer. 5-kV insulated cable or copper-bar with proper supports shall be furnished for all arrester ground connections. The insulated ground system shall be extended to the base of the transformer for connection to the station ground bus.

2.4 TERMINAL CONNECTORS

- A. All bushings and surge arresters on top of the transformer tank shall be furnished with removable NEMA standard 4-hole pads and tinned plated on both sides for aluminum or copper connection.
- B. The terminals shall be corona free and of sufficient size to continuously carry the rated current.

2.5 AUDIBLE SOUND LEVEL

- A. The audible sound level shall not exceed the value given in NEMA Standard Table 0-2 TR1, Section 05, when measured in accordance with the procedure established in ANSI/IEEE C57.12.190-93, Section 13.

2.6 IN-SERVICE OIL DIELECTRIC

- A. Refiltering of the transformer oil in service will not be performed until it reaches a dielectric test level of 25-kilovolts when tested by ASTM Method D877. Therefore, the transformer will be designed to operate satisfactorily with oil of this dielectric strength.

2.7 CURRENT TRANSFORMERS

- A. All current transformers shall be in accordance with ANSI C57.13.
- B. All secondary leads shall be brought to short-circuiting-type terminal blocks.
- C. All current transformers specified are in addition to those which may be required for operation of temperature relays, or its internal use.
- D. On bushing type current transformers, the turns between any two taps on the secondary winding shall be uniformly distributed along the entire core.

- E. The transformer shall be furnished with multi-ratio bushing current transformers as follows:

Quantity	Maximum Ratio	Accuracy	Location
3	600 to 5	C800	1 per high voltage bushing (upper)
3	1,200 to 5	C800	1 per high voltage bushing (lower)
6	3,000 to 5	C800	12 per low voltage line bushing
1	600 to 5	C800	1 per tertiary bushing (lower)

- F. Each bushing current transformer shall have a continuous thermal current rating factor of one.
- G. Each current transformer shall have the ratios pertaining to its ampere class as listed in ANSI C57.13, Table 10.
- H. In addition to the above, the transformer shall be equipped with multi-ratio wound or bushing-type current transformers as follows:
1. Each current transformer shall have a minimum continuous thermal current rating factor of one.

2.8 INTERNAL IONIZATION

- A. Internal ionization within the transformer shall not cause ratio influence voltages that exceed the values given in subparagraph 2.1.17 when measured in accordance with the procedures established in the paragraph.

2.9 DE-ENERGIZED TAP CHANGER

- A. An externally operated, manual tap changer shall be furnished with the power transformer to be operated only when the transformer is de-energized.
- B. The tap changer shall be designed for convenient operation by a person standing on the same level as the transformer base.
- C. It shall include an operating level or handwheel, tap position indicator, and a means for locking the tap changer in any tap position.
- D. The locking device shall be arranged to prevent locking the tap changer in an off-tap position.

2.10 LOAD-TAP-CHANGER

- A. The transformer shall have a load-tap-changer (LTC) capable of operating in parallel with other transformer.

- B. LTC Controls: The LTC controls shall include the following equipment (no substitutions) installed in a NEMA 4X weatherproof control cabinet.
 - 1. Beckwith Electric Company, Model M-0067 tap changer control unit.
 - 2. Beckwith, Model M-0115A parallel balancing module. Transformer shall be provided with necessary equipment for parallel operation by the circulating current method utilizing the Beckwith M-0115 module.
 - 3. Beckwith Model M-0127 circulating current relay.
- C. The tap-changer equipment shall provide regulation of the nominal 12-kV output over a range of plus or minus 10% automatic adjustment in steps of approximately 5/8% each with 16 steps above and 16 steps below rated low voltage.
- D. The LTC shall have local and future remote electrical, manually actuated and automatic control.
- E. The transformer shall be capable of delivering rated kilovolt-amperes at the rated low-voltage position and on all positions above rated low voltage.
- F. Provisions shall be made on the transformer for manually moving the tap-changer for adjustment and test.
- G. Facilities shall also be furnished for remote and local tap position indication of the transformer.
- H. The design of the tap-changer mechanism shall be such that the mechanism will not stop in an intermediate position. However, if the mechanism through mis-operation does stop in an intermediate position, the design shall be such that full load can be carried by the transformer continuously without injury to any component.
- I. The moving contact assembly shall be self-aligning and when in closed position, heavy contact pressure shall be applied.
- J. All current-carrying parts shall be of sufficient areas and cross section to ensure a temperature rise under full-load conditions not to exceed 10°C.
- K. The tap-changing device shall be designed to withstand the applied potential test of the winding to which it is connected.
- L. The load tap-changing equipment shall consist of a liquid-immersed tap selector with a vacuum interrupting device and motor-driven mechanism.
- M. Each tap-changer mechanism shall be motor driven and shall be mechanically capable of performing 400,000 operations at full load without the necessity of replacing or rebuilding any of the parts.

- N. Each completely assembled tap-changer shall be capable of withstanding, without damage, the maximum short-circuit stresses which would be imposed upon it when the transformer itself is subjected to short-circuit current in accordance with the requirements of subparagraph 2.2 A.9 above.
- O. Those elements of the tap-changing under load mechanism which may cause arcing during operation shall not be placed in the transformer main tank but must be located in a separate compartment to exclude the possibility of contamination of the oil in the main tank.
- P. Connections from the main tank to the tap-changer compartment shall be made by means of entrance bushing with compressions flanges or other equally effective method of preventing interchange of oil between the transformer main tank and the tap-changer compartment.
- Q. Vacuum interrupter shall be used in lieu of arcing contacts.
- R. Positive control of the tap-changer shall be provided such that a tap-changer operation, once initiated, will be automatically completed, and then stopped, until the control switch is again operated to continue or reverse the operation.
- S. An operation counter shall be furnished to record the number of tap changes.
- T. Control switches associated with the tap-changer shall be in accordance with subparagraph 2.19D below (Control Equipment for Oil Pumps and Fans).

2.11 BUSHINGS

- A. All transformer bushings rated above 110-kV BIL shall be oil-filled and shall be in accordance with ANSI C76.2/IEEE 24.
- B. The oil-filled bushings shall be equipped with a sight gauge to indicate oil level and a capacitance or power factor test tap.
- C. All bushings shall be constructed using porcelain materials and the color of the bushings shall be ANSI 70 gray. Porcelain parts of each bushing shall be one piece.
- D. The bushing nameplate shall state that the bushing contains no PCBs.
- E. Bushing stud diameter, length, and threading shall be stated on the drawings.
- F. All winding leads shall be brought out through bushings.
- G. Phase bushings of like voltage shall be interchangeable.

- H. All bushings shall be so designed that there will be no undue stresses on any parts due to temperature changes. Adequate means shall be provided to accommodate conductor expansion.
- I. High voltage bushings shall be cover mounted with 4-hole NEMA pads included.
- J. Low voltage bushings shall be in a throat conveniently mounted for underground cable access and provided with 4-hole spades to accommodate three 1000 kcmil cables per phase.
- K. Current Ratings: Bushing current ratings shall be based on the continuous line current rating at maximum MVA. Provide bushings with sufficient excess capacity as tabulated in ANSI Appendix C57.92, without exceeding temperature rise requirements as defined by ANSI C76.1.
- L. All bushings supplied with the transformer shall be used for all tests performed by the manufacturer. Transformer to be shipped with low voltage bushings installed.

2.12 WINDINGS

- A. Winding conductors shall be free from scale, burrs, and splinters, and shall be insulated with paper, except that the insulation on the tertiary-voltage winding of 60-kilovolt BIL and below may be polyvinyl acetal or formal film.
- B. Permanent current-carrying joints or splices shall be welded or brazed, properly formed, finished and insulated, except that compression-type fittings may be used outside of the core winding.
- C. Transformer shall utilize conductor and lead insulation of specially treated paper to increase the thermal stability of the insulation; to maintain the required tensile, bending, and bursting strengths; and to insure normal life expectancy.
- D. If transposed conductor is utilized for the transformer windings, polyvinyl acetal or formal film insulation may be used to insulate the strands of the transposed conductor provided the specially treated paper is used as the main conductor insulation.
- E. The specially treated paper will not apply to low voltage windings which are insulated with polyvinyl acetal or formal film as permitted above. In addition, any other insulation shall be specially treated in order to insure normal life of the insulation where it is necessary to expose the insulation to high temperatures.
- F. The completed winding assembly shall be securely held in place so that there will be no disarrangement or deformation by stresses incident to shipment.

2.13 CORE

- A. Nuts, bolts, and clamps of the core assembly shall be provided with positive locking devices to prevent loosening by vibration or change of shape or position during transportation or operation.
- B. The core shall be securely grounded to the tank at one point. The grounding location shall be accessible from hand hole on tank cover.

2.14 OIL PRESERVATION EQUIPMENT

- A. The oil preservation system provided shall operate under the pressure limitations outlined under subparagraph 2.15 TANK without loss of inert nitrogen gas or dry air over the entire range specified. The use of auxiliary apparatus to compress or chill the gas will not be permitted.
- B. Sufficient nitrogen gas, shall be furnished for the initial flushing, filling, and operation of the transformer.
- C. The transformer shall be equipped with one of the following systems of oil preservation as defined in ANSI C57.12.80.
 - 1. Sealed Tank System: Paragraph 6.5.1
 - 2. Gas-Oil Sealed System: Paragraph 6.5.2
 - 3. Constant Pressure System:
 - a) If a constant pressure system is furnished, separation of oil from the atmosphere shall be accomplished by means of inflatable and deflatable cells or diaphragms.
 - b) The cells or diaphragms shall be confined to auxiliary tanks.
 - c) The cells or diaphragms shall vent air to the atmosphere by means of a weather-tight breather.
 - d) If a cell or diaphragm is damaged, the unit shall be fail-safe, by acting as a conservator.
 - e) A sinking cell or broken diaphragm shall activate an alarm.
 - f) The transformer shall have means of isolating the auxiliary tanks during installation and inspections.
 - g) The auxiliary tanks shall be equipped with a sump chamber and drain valve.
 - h) A pressure-vacuum bleeder shall protect the system in the event of incorrect overfilling or under-filling during installation.
 - i) The VENDOR shall furnish evidence showing that the material used in the cells or diaphragms has a demonstrated useful life of 5 years or more for this application.

2.15 TANK

- A. The shell, cover, and bottom of each tank, including auxiliary tanks, shall be of welded steel plate construction with all seams welded so as to remain oil-tight and gas-tight.
- B. During welding of the transformer cover, an inorganic gasket shall be permanently located between the cover and the tank flange to prevent weld spatter from entering the tank.
- C. Flanged horizontal joints that must be broken to untank the core and coil shall be designed for breaking and remaking in the field.
- D. The tanks, except auxiliary tanks vented to the atmosphere, shall be capable of withstanding, without leakage or permanent distortion, an internal pressure of 14.7-pounds-per-square-inch gauge and of withstanding a vacuum which produces a differential pressure of 15 pounds per square inch across the tank wall.
- E. Auxiliary tanks shall be capable of withstanding a differential pressure of 5 pounds per square inch.
- F. All flanged joints shall be provided with gaskets set in grooves or held in position by stops to prevent over-compression of the gaskets. The gaskets shall be of resilient material that will not deteriorate under the action of hot oil and will remain oil-tight.
- G. Stiffeners required for the tank shall be selected and arranged in order to minimize the collection of dirt particles, rain, or snow.
- H. Lug or jacking pads shall be provided for moving and lifting the transformer either by crane or jacks. Jacking pads shall be suitable for jacking the completed transformer filled with oil. Jacking pad dimensions shall be shown on the transformer outline drawing.
- I. VENDOR shall furnish hold-down clamping lugs for securing the transformers to foundation skids. Required number and dimensions shall be established by the manufacturer and provided in the bid packages.
- J. A manhole of sufficient size to permit the removal of the bushing current transformers shall be furnished in the tank cover.

- K. The construction of the main tank, auxiliary tanks, and the oil-preservation apparatus shall be such as to insure an adequate cushion of gas in applicable parts of the apparatus for the following conditions:
1. Internal Gas Pressure: For any of the systems of oil preservation, except the sealed tank system, the internal gas pressure shall be not less than 0 pounds per square inch with transformer temperature changes attained between de-energized condition and up to 110% maximum rated load condition with an ambient air temperature range as given in paragraph 2.1 J. For the sealed tank system, the internal gas pressure limits may be increased to those given in ANSI C57.12.10, paragraph 5.7.1.
 2. Loss of Gas or Oil: If a gas-oil seal system or a constant pressure system is furnished, either system shall operate without loss of gas or oil and without loss of the seal between the transformer interiors and atmosphere over the entire temperature range and operating conditions specified in subparagraph a. above.

2.16 BASE

- A. The transformer tank shall be provided with a fabricated or structural steel base.
- B. The base shall be provided with pulling eyes to permit pulling the transformer.
- C. The base shall be designed and built so as to allow skidding or moving on rollers in either direction.
- D. Flat plate bases without internal or external reinforcing structural members are not acceptable.

2.17 GROUND CONNECTION

- A. The transformer shall have the following grounding pad provisions:
 1. Provide two ground pads on opposite sides of the transformer near the base on the HV side of the tank.
 2. Provide ground pads in transformer throat near X1 and X3 phase arresters for secondary.
 3. Provide necessary ground cable support brackets on transformer case for grounding of XO bushing through a 6 ohm grounding resistor.
 4. Manufacturer shall furnish all necessary copper bus and connectors to connect the XO bushing and facilitate connection to the substation copper ground system, 250 kcmil through 500 kcmil. All connectors and pads shall be NEMA standard drilling pattern.
 5. Refer to Section 2.3, Surge Arresters, paragraphs F and G for 60-kV and 12-kV arrester grounding requirements in conjunction with discharge counters.

2.18 EARTHQUAKE AND WIND DESIGN LOADS

- A. Equipment shall be located in a seismic zone 4. Unless otherwise specified the equipment shall be designed in accordance with IEEE 693 using the characteristics of the Loma Prieta 1989 earthquake as recorded at the Corralitos station. Equipment shall be designed to withstand seismic forces equivalent to 0.63g horizontally and 0.50 vertically, applied individually or simultaneously at the base of the mounting surface without damage. In addition wind loads of 20 pounds per square foot on the projected area (non-simultaneous with earthquakes), without damage to component parts and without impairment of operation.

2.19 COOLING

A. Cooling Units or Radiators

1. The transformer shall be designed with radiators for cooling to provide for operation at ratings and temperature rises indicated in this solicitation. Particular attention shall be addressed to paragraph 2.18 EARTHQUAKE AND WIND DESIGN LOADS in the cooling unit design.
2. The cooling units shall be connected to the tank by bolted, machined steel flanges, with the flanges welded to the cooling units and to the tank.
3. Flanges shall be provided with gaskets and valves shall be installed on each cooling unit connection, so that any individual cooling unit may be removed without taking the transformer out of service.
4. An oil-tight, blank flange shall be provided for each connection, for use when cooling units are detached.
5. Each cooling unit shall have a lifting eye, an oil drain, and a vent.

B. Fans

1. Fan motors shall be of the totally enclosed design.
2. Fan motors shall operate from a 208-volt, single-phase, 60 Hz power supply.

- C. The leads for the fan motors shall be enclosed in liquid tight, flexible conduit. As an alternate, the connections to the supply circuits may be made by means of watertight plugs and receptacles, provided the interconnecting cables are mechanically protected by use of ducts or flexible conduits.

D. Control Equipment for Fans

1. The control equipment shall include a circuit breaker for each group of fan contactors with overload protection in each phase, selector test switches for TEST-AUTOMATIC-OFF, and any other necessary devices.
2. The VENDOR shall furnish all control transformers, fuses, circuit breakers, indicating lamps, terminal blocks, magnetic-type starters, and unfused disconnect switches, test push buttons or switches, and auxiliary and timing relays for the control, protection, annunciation and remote indication of the fans.

3. AMAT will furnish 208-volt, 60-Hz and 125-volt D.C. power supplies for the transformer.
4. The control switches shall be equal to General Electric Type SB1, or Electro-switch Series 24, switches. Control switches shall have at least one spare contact in each switch position, provided the spare contacts do not require an additional gang of switches. The switch identification shall be engraved on the escutcheon plate, or if necessary, on a separate adjacent nameplate furnished by the VENDOR.
5. Fuse cartridges and their clips shall be mounted inside the cover of the fuse enclosure, and shall be disconnected from the circuit when the cover is removed for fuse replacement.

2.20 ACCESSORIES

A. Standard Accessories

1. Furnish all standard accessories located in accordance with ANSI Standard C57.12.10.
2. None of these items shall protrude beyond the floor space determined by the radiating surfaces.
3. Wells for thermometer bulbs and liquid-level gauge floats shall be outside the main tank so as not to require un tanking for removal.
4. All gauges shall have drag-hands to show peak readings. Gauge resetting shall be accomplished by an external push rod.
5. General requirements for all accessories are as follows:
 - a) Service life of accessories shall be comparable to that of the transformer.
 - b) All gauges, meters, relays, recorders, thermal breakers, other instruments, and cabinets constituting or associated with the control fans, inert gas equipment, and all other temperature and pressure alarm systems shall be either "shock-mounted" to protect them from damage or wear that could be caused by normal transformer vibration, or they shall be sufficiently rugged and durable in construction to be functionally unaffected by transformer shock and vibration.
 - c) Contacts on all devices shall be ungrounded, rated for 250 volt DC.
 - d) All wire for alarm and auxiliary circuits shall be stranded, not less than No. 12 AWG copper, of high quality, and suitable for the specific purpose for which used.
 - e) All valves shall hold hot oil without leaking and shall withstand, when submerged, an air test of 125 pound per square inch gauge pressure.
6. Magnetic Liquid Level Gauge - A main tank liquid level gauge with high and low level alarm contacts shall be installed on the main tank or on the conservator or ancillary tank. A second identical gauge shall be installed on the LTC compartment.

7. Top Oil, Hot Spot, and Other Gauges - The top oil and hot spot maximum-minimum temperature gauges shall be mounted a maximum of six feet above the base of the transformer and shall have manual reset. The operating temperatures shall be included on the gauge nameplate and shall be readily visible without dismantling the gauge. A separate nameplate listing actuating and alarm settings is also acceptable.
 8. Pressure Relief Devices - Each transformer shall be equipped with fault pressure-relief devices in main transformer tank. Device shall be complete with visual indicator and alarm contacts and shall be of self-resealing type. Locate devices as close to the HV bushings as practical for maximum protection to tank in the event of bushing failure. Relief devices shall be mounted on tank cover; standpipes are not acceptable. The alarm shall be manual reset capability while the transformer is energized.
- B. The transformer shall be equipped with the following additional accessories.
1. Winding Temperature Relays
 - a) A winding temperature relay plus a current transformer and a heater well shall be installed in each winding of at least one phase of the three-phase power transformer and shall be responsive to the loading in such winding.
 - b) Each relay shall be equipped with four electrically separate, adjustable sequence contacts set to represent hotspot winding temperatures of 85°, 105°, 115°, and 125°C.
 - c) Each relay shall be furnished with a dial-type thermometer on the tank for hotspot indication.
 - d) Accessory equipment shall also be furnished for automatic control of the cooling equipment from the winding temperature relays.
 2. Sudden Pressure Relay
 - a) A separate sudden pressure relay Qualitrol model 910-101-03 shall be provided for the transformer.
 - b) The relay shall be actuated by sudden pressure rise inside the main tank and shall not operate on gradual pressure change within the normal operating range of the transformer.
 - c) The sudden pressure relays, auxiliary relays, and the control switches shall be mounted in such a way that mechanical vibration, such as that due to a close-in fault, will not cause false operation of the relay scheme.
 - d) The relaying scheme shall provide a Qualitrol model 909-010-03 seal-in relay with two normally open, electrically separate contacts, one for tripping and one for the alarm.
 - e) A control switch shall be mounted in the terminal cabinet on the transformer and shall be wired in series with the tripping contact to cut out the tripping function of the sudden pressure relay during maintenance. This switch shall be a miniature-type switch for 125-volt, direct-current operation with maintaining type contacts, with two-position

"OFF-ON" with at least two electrically separate contacts close in the "ON" position, and with contact capable of interrupting at least a 1.0-ampere inductive load.

- f) The tripping of circuit will operate a hand-reset auxiliary tripping relay located in the service building.
 - g) The relaying scheme shall contain time delay or seal-in features as required to insure proper tripping and to prevent false tripping.
 - h) An operations indicator or target shall be furnished with the auxiliary relay to provide positive indication of the operation of the sudden pressure relay.
 - i) If possible flashover of the sudden pressure relay contacts due to voltage transients is inherent in the scheme, a normally closed contact from the sudden pressure relay shall shunt the coil of the trip or seal-in relay.
 - j) Surge protectors shall be provided across the external tripping contact in order to prevent false operation of the auxiliary tripping relay in the service building.
 - k) The scheme shall be self-resetting at the transformer for all operations of the sudden pressure relay.
3. Winding Hotspot Temperature Detector
- a) On each winding of at least one phase of the three-phase transformer, a detector of the resistance-type shall be furnished with the necessary accessories, arranged for remote indication for use with temperature indicators and AMAT furnished data logging equipment.
 - b) Each detector shall be a standard 10-ohm copper unit (10-ohm at 25°C), 3 or 4 wire sensor having an accuracy of plus or minus 0.3°C and a sensitivity of 0.04 ohms/°C.

2.21 TERMINAL BLOCKS

- A. Terminal blocks for power wiring shall be of the heavy-duty type for insulated copper cable.
- B. The size of this cable will be determined by AMAT after actual power requirements of the transformer are known.
- C. Terminal blocks for control wiring shall be rated at least 600 volts and 25 amperes and shall be suitable for use with No. 10 AWG wire. Blocks shall be molded-block type to accommodate ring lugs 1/2 inch wide (outer diameter) at the terminal screws and shall be furnished with binding-head or washer-head screws having serrated or grooved contact surfaces or having lockwashers. Blocks shall be furnished with molded insulating barriers between terminals.
- D. Each terminal block shall have a removable marking strip.

- E. Examples of terminal blocks meeting the above requirements are:
 - 1. Buchanan Catalog No. B112
 - 2. General Electric Company Type EB-25A12W
- F. The arrangement and location of the blocks shall be such that incoming or outgoing cables can be supported.
- G. Adjacent rows of terminal blocks shall be separated at least 6 inches, edge-to-edge and shall be at least 6 inches from sides, top, or bottom of cabinet for all wiring that will be made in the field.
- H. Wiring that will be done at the factory may be made in a space which is not less than 3-inches instead of the preceding 6-inch space requirement provided that the factory wiring will not share common space with the field wiring.
- I. Approximately 25% spare terminals shall be provided for terminating spare conductors in each control cable and for possible future use.
- J. Preliminary terminal block layouts shall be provided with approval drawings.

2.22 CONTROL WIRING

- A. Control wiring shall be performed with switchboard type, No. 12 AWG, Class K stranded, copper conductor, rated for 600-volt service, with insulation equal to General Electric Co. Vulkene (SIS). Wiring for annunciator and temperature recorder wiring, shall be switchboard type, No. 14 AWG, Class K stranded.
- B. Provide approximately 20% spare terminals.
- C. The current transformer secondary leads shall not be less than No. 10 AWG.
- D. All terminations of wire shall be made with pre-insulated, pressure-crimp-type terminal connectors with ring tongues equal to AMP "Plastic-Grip" terminals manufactured by Aircraft-Marine Products, Harrisburg, Pennsylvania.
- E. Exposed wiring shall be kept to a minimum, and where used, shall be formed into compact groups bound together and firmly supported and shall be run straight, horizontally, or vertically with short radius right-angle bends.
- F. Hinge wiring shall be twisted around the longitudinal axis of the wire, whenever possible, instead of being bent laterally.
- G. Each wire shall be protected from abrasion where it leaves a channel or duct.

- H. There shall be no splices in the wiring and all connections shall be made at device studs or terminal blocks.
- I. There shall be no more than two wires terminated at each terminal point.
- J. No. 8 AWG wiring, or smaller, shall be connected directly to terminal studs.
- K. Wiring shall be trained neatly in insulated type wiring ducts with covers. The sum of the cross-sectional area the conductors shall not exceed thirty percent (30%) of the interior cross-sectional area of the wiring duct.
- L. All conductors shall be labeled at all terminations with terminal numbers corresponding to the connection diagrams. Labels that shall show destination, not origin, shall be machine imprinted and permanently held in place so as to be readable when the wire is secured to the terminal point.

2.23 INSULATING OIL

A. General

- 1. All electrical equipment shall be designed to operate with oil which conforms to the requirements of the latest revision on ANSI/ASTM D 3487 (or per ANSI C57.12.00), "Mineral Insulating Oil Used in Electrical Apparatus," except that for oil-filled bushings the manufacturer's standard insulating oil is acceptable.
- 2. Furnish Shell Oil Company, type Dialax mineral insulating oil with antioxidantizing and anti-foaming additives.
- 3. Electrical equipment with insulating liquids containing polychlorinated biphenyl (PCB) shall not be accepted.
- 4. Equipment requiring insulating oil shall be permanently marked and certification furnished to AMAT to certify that there are no more than one (1) part per million PCB present when the equipment is manufactured.
- 5. If the oil is shipped separately, the VENDOR shall also furnish certification that the oil meets the EPA requirements or the State requirement (whichever is more stringent) for non-PCB when the oil is delivered to AMAT.
- 6. The oil truck driver shall have in his possession and furnish this certification to AMAT upon arrival at the delivery site.

B. Sampling and Testing

- 1. Certified results of tests which demonstrate compliance with ANSI/ASTM D 3487 and this solicitation shall be furnished.
- 2. Copies of a certified report of the tests shall be furnished.
- 3. AMAT shall be furnished testing documentation of a sample of the oil directly from the shipping container at its receiving facility to demonstrate that the following requirement is met:

Type of Test	ASTM Method	Test Limit
Dielectric Strength	D877	30-kV minimum

- C. Delivery
 - 1. The oil shall be delivered in accordance with Section 1.4 (Shipment, Delivery, Handling and Storage).
- D. Oil Filling Procedure
 - 1. The VENDOR shall be responsible for filling the transformer with oil at the substation in accordance with his recommended procedures.
 - 2. It is expected that the dielectric strength will be approximately 30-kilovolts when tested in accordance with ASTM D 1816 (0.040 in gap).
 - 3. The VENDOR shall provide a complete description of the transformer oil-filling procedure with his bid.

2.24 FACTORY ASSEMBLY, INSPECTION, AND TESTS

- A. General: The transformers shall be completely assembled and adjusted at the factory and given the manufacturer's standard shop tests and other tests as specified below. All parts shall be marked for ease of field assembly. AMAT reserves the right to observe the core and coils prior to drying and to witness all transformer testing. Written notice shall be received by AMAT at least 30 calendar days prior to drying and prior to testing. Notice of testing shall include a schedule of daily tests to be performed. Certified test reports are required whether witnessed by AMAT or not.
- B. Tests: The transformers shall receive manufacturer's standard commercial tests in accordance with ANSI C57.12.90.
 - 1. Dielectric Tests
 - a) Impulse Test: Each transformer shall receive a complete impulse test to demonstrate its impulse insulation level. The test shall consist of one reduced full wave, two chopped waves, and one full wave applied to each terminal, one at a time without 60Hz excitation.
 - b) Applied Potential Tests: These tests shall be applied to demonstrate the insulation strength from the windings to the core and the tank, and the ability to withstand normal frequency over-voltages. In addition, the neutral (XO) bushing shall be tested.
 - c) Induced Voltage Tests: These tests shall be made as specified in the above standard, sufficient voltage being applied to the low-voltage terminals to induce the specified test voltage for 7,200 Hertz at the high-voltage terminals.
 - d) Insulation Resistance: The insulation resistance shall be determined for each winding on the rated voltage connection and at the tap extremes.
 - e) Insulation Power Factor: The insulation power factor shall be determined for each winding at room temperature and shall not exceed 0.5%.

2. Noise Level: The noise level shall be measured in accordance with NEMA TR-1, latest revision at OA and maximum FA ratings. Also measure and report noise level without the FA coolers running at 12 equally spaced points around the transformer, their distance from transformer being determined by TR-1, above. These measurements shall be made at no-load with 100% rated voltage, then 110% of rated voltage.
3. Loss Tests, Regulation, and Efficiency
 - a) Exciting Current and Excitation Loss: These values shall be measured at 100 and 110% of rated voltage.
 - b) Impedance: The impedance shall be determined at rated current with the taps set for nominal voltage ratings.
 - c) Regulation: The regulation shall be determined in accordance with the ANSI standards, for unity power factor and .9 power factor and .8 power factor.
 - d) Efficiency and Losses: The efficiency and losses shall be determined in accordance with ANSI Standards at 25%, 50%, 75%, and 100% of rated load.
4. Resistance: The resistance of the windings shall be measured hot and cold.
5. Winding and Polarity Ratios: The winding ratios, polarity, and phase relation shall be determined.
6. Temperature Rise Tests: The temperature tests shall be made in accordance with the ANSI Standards.
7. Pressure and Vacuum Tests: Pressure and vacuum tests of the tank shall be made to demonstrate freedom from oil and air leaks.
8. Bushing Power Factor Test: 60-kV and 12-kV bushings shall be power factor tested in accordance with the applicable sections of ANSI C76.1, "General Requirements and Test Procedure for Outdoor Apparatus Bushings."
9. Bushing Current Transformer Tests: Bushing current transformers shall be tested in accordance with applicable sections of ANSI C57.13 and shall be checked for proper nameplate and polarity markings. To ensure correct installation, they shall be given a polarity check and ammeter ratio check after mounting in the transformers. Bushing current transformers shall be capable of continuous loading of 150% of full load. The following performance data shall be furnished:
 - a) Typical excitation curves.
 - b) Typical ratio correction factor curves.
 - c) The resistance of the secondary winding at 75°C., including the approximate resistance of the secondary leads internal to the transformer.
 - d) The thermal and mechanical short-time current ratings.
10. Short-Circuit Strength: Transformer shall be designed and constructed to be completely self-protected by its ability to withstand a through fault, without failure and in accordance with Section 2.2 A.9. of this specification. There will be sufficient time between faults to permit cooling of the windings. Four of the above external short circuits are to be considered completely offset as defined in ANSI C57.12.00, Paragraph 7.1.

11. Short-Circuit Certified Test: The factory location furnishing the proposed transformers shall prove construction capability by certified test data showing that a transformer with a core and coil identical in design and construction, and identical or similar with respect to kVA capacity, kV ratings, BIL, impedance, and voltage taps, has been tested without failure for short-circuit strength. A description of the test code under which the transformer was tested for short circuit shall be provided by the manufacturer as a submittal prior to fabrication.
12. Certified Test Reports: All tests required in this part shall be submitted to AMAT in triplicate. All test reports shall be dated and signed by a responsible person at the test location. All other tests of components, assemblies, floor checks, or other tests required by this Specification, shall be submitted to AMAT in triplicate.

2.25 FIELD ACCEPTANCE TESTS

- A. The VENDOR shall complete the following tests after delivery of the power transformer to the substation site, and other tests that are recommended by the VENDOR, to ensure the integrity of the power transformer, its load tap changer (LTC) and its associated equipment.
 1. Insulation resistance
 2. Insulation power factor - bushings and transformer and its LTC
 3. Winding resistance
 4. Insulating oil dielectric strength and water content
 5. Winding turns ratio - all positions

2.26 TOOLS AND APPLIANCES

- A. The VENDOR shall furnish and include in the price offered, all special tools and appliances that are required for satisfactory installation, operation, and maintenance of the transformer, including any special wrenches or appliances that are necessary for assembling and disassembling the transformer. When shipping the transformer, the VENDOR shall ship and submit a complete list of the tools and appliances that he is furnishing.

2.27 PAINTING

- A. Metal Surfaces: Bare metal surfaces shall be painted one prime coat, one body coat and one finish coat unless otherwise required to obtain proper hiding and specified film thickness. Paint color shall be ANSI 70 light grey.
- B. Preparation of Surface for Painting
 1. Prior to painting, all surfaces shall be dry and free of dirt, dust, sand, grit, mud, oil, grease, rust, loose mill scale, or other objectionable substances.

2. Cleaning and painting shall be done in a manner that will prevent dust or other airborne particles from contaminating freshly painted surfaces.
3. Oil or grease shall be removed with solvents before mechanical cleaning is started.
4. Clean cloths and clean fluids shall be used to avoid leaving a film of greasy residue on the surface being cleaned.
5. Surfaces not intended to be painted, shall be adequately protected from contamination, discoloration, or other damage resulting from cleaning or painting operations.
6. Surfaces shall be free of cracks, pits, projections, or other imperfections that would prevent the formation of a smooth unbroken paint film.

C. Paint Application

1. Surface to be painted shall be at a temperature not less than the minimum surface temperature recommended by the paint manufacturer. In no case shall paint be applied under any of the following conditions:
 - a) When the surface temperature or air temperature is below 45°F.
 - b) When atmospheric conditions are causing condensation on the surface.
 - c) When exterior surfaces are wet or damp.
2. The manufacturer and his personnel shall be constantly aware that they are applying the complete protective coating system to the equipment. Their skill is required to secure the highest quality protection and appearance for each surface.
 - a) All painting materials shall be applied in accordance with the manufacturer's recommendations by competent and experienced painters.

D. Mixing

1. Paint shall be thoroughly mixed each time any is withdrawn from the container.
2. Paint containers shall be kept tightly closed at all times, except while paint is being withdrawn.

E. Thinning

1. Paint shall not be thinned except as recommended by the manufacturer of the paint.

F. Applying

1. Paint shall be flow coated or spray applied except as otherwise specified or as otherwise approved in writing by the AMAT.
2. Application of paint shall continue without interruption to all surfaces between corners, seams, or other surface breaks.
3. No laps will be permitted except at such surface breaks.
4. Air spray equipment shall be provided with pressure gauges, pressure regulators, and moisture traps or separators.

5. Nozzles shall be of proper size and type for the paint being applied in each case.
6. Air delivered to the spray nozzle shall be dry and of sufficient and suitable pressure for the proper application of the paint used.
7. Spray application of paint shall be followed immediately with a paint brush applied along vertical and lower horizontal edges of steel members, abutting surfaces, edges of connections, and between and beneath bolt heads and nuts, to remove all surplus paint and to smooth out all runs.
8. All sags in paint films shall be brushed out immediately.
9. Each coat of paint shall be of a visibly different color or shade from the preceding coat. Paints shall be factory tinted.
10. Paint systems applied under these specifications, whether flow coat or spray applied, shall have a dry film thickness of not less than five mils nor more than ten mils.
11. Each coat shall be applied to yield from 1.5 to two mils in dry film thickness, and the total dry film thickness of three coats shall be a minimum of five mils.

G. Curing

1. All paint in any one-paint coat shall be hard and dry through the entire paint film before the next coat is applied.
2. In no case shall the elapsed time between application of successive coats of paint to any surface be less than that recommended by the paint manufacturer.
3. In order to ensure that all parts of the paint are dry when repainted, all paint shall be applied in a film of uniform thickness at all points.
4. In no case shall paint be applied at a rate of coverage per gallon which is greater than the maximum rate recommended for that paint by its manufacturer.

2.28 SPARE PARTS

- A. The VENDOR shall furnish the following spare parts:
1. One bushing of each voltage class, including neutral bushing.
 2. One complete set of gaskets for one transformer.
 3. One complete extra relay and contactor, of each relay type and of each contactor type and size.
 4. One complete set of motor assemblies (including contactors) for one transformer.
 5. Six cooling fans, complete with blades, guard, and motor assembly.
 6. Three complete sets (one per phase) of tap changer contacts and associated contact assemblies.
- B. In addition to the above required spare parts, the VENDOR shall include a list of any additional recommended spare parts in the transformer instruction book.

- C. The VENDOR shall include unit prices for the list of spare parts listed in above paragraph 2.28 A and for the VENDOR's recommended spare parts in the bid.

PART 3 EXECUTION

3.1 SPECIAL SERVICES

A. General

1. VENDOR shall furnish a field service representative during transformer oil filling, assembly, testing and training. Field service representative shall:
 - a) Provide technical advice
 - b) Inspect and test the equipment
 - c) Direct changes and/or adjustments required for proper operation
 - d) Provide technical direction
 - e) Direct changes for design or manufacturing corrections
 - f) Provide services necessary as a condition to furnish specified warranties
 - g) Provide training in operation and maintenance
 - h) Furnish written documentation and certification for field inspections, tests performed, modifications made, adjustments and settings, and certify equipment ready for operation prior to initial operation

B. Fill Transformer with oil

1. VENDOR shall furnish services to fill the transformer, once delivered on placed on the transformer foundation, with transformer oil. VENDOR shall provide all oil filling and testing equipment including the oil filter press. AMAT will provide for labor support through the Construction VENDOR.

C. Direct and Coordinate Transformer Assembly

1. VENDOR shall furnish direction and coordination to the Construction Contractor to assemble power transformer.

D. Direct and Coordinate Transformer Testing

1. VENDOR shall furnish direction and coordination to the Construction Contractor and the Test Firm to perform Acceptance tests and energization. The following Acceptance tests shall be performed and certified test reports submitted to AMAT:
 - a) Insulation resistance on each winding to ground and between windings
 - b) Power factor test on the high-voltage bushings
 - c) Winding ratio test on each tap
 - d) Hotspot and oil temperature indicating and control devices calibration tests
 - e) Oil dielectric and power factor tests

E. Furnish Training

1. VENDOR shall furnish power transformer operations and maintenance training to CUSTOMER operation and maintenance staff. Trainer shall be knowledgeable of the transformer operations and maintenance and shall have training experience and training material in a classroom and "hands on" training services.

END OF SECTION

SECTION 16500 – LIGHTING

PART 1 GENERAL

1.1 CONDITIONS AND REQUIREMENTS

- A. Refer to the General Conditions, Supplementary General Conditions and Division 1 – General Requirements.

1.2 DESCRIPTION

- A. Work included in this SECTION;
 - 1. Lighting fixtures and installation.
- B. Related work included in other SECTION;
 - 1. SECTION 16050, Basic Construction Materials and Methods
 - 2. SECTION 16060, Grounding

1.3 INCORPORATED DOCUMENTS

- A. SECTION 16010, Electrical Requirements, applies to all work in this SECTION.

1.4 SUBMITTALS

- A. Shop drawings and/or manufacturer's literature describing product.
- B. Photometric test data by an independent testing laboratory when requested.

PART 2 PRODUCTS

2.1 GENERAL

- A. All fixtures shall be complete, including lamps and ready for service and shall bear the label of Underwriters' Laboratories, Inc. All fixtures shall be wired in accordance with the manufacturer's recommendations and shall be hung earthquake-resistant in accordance with the State of California Title 24, Basic Electrical Regulations.
- B. Substitution of fixtures from those specified will be judged on the basis of equal or better efficiency, appearance, construction, and photometric data. The only photometric data acceptable will be that certified by the Electrical Testing Laboratories. All decisions relative to substitution on fixtures will be made by the Architect.
- C. Incandescent lamps shall be rated at 125 volts as manufactured by General Electric, Sylvania or Philips.
- D. Electronic fluorescent ballasts must be fully electronic and have a minimum life of 50,000 hours, a power factor >0.85 and must be UL and ETL/CBM listed. Electronic ballasts must have a total harmonic distortion <20% and a ballast efficacy factor, ballast factor divided by input power, >0.6 to meet PG&E rebate program requirements, as manufactured by Advance, Magnetic-Triad, or Motorola. Verify connection voltage prior to ordering.
- E. All fluorescent lamps shall be energy saving type, T8 Octron or approved equal (F036/835).
- F. Fluorescent fixtures shall be designed for 40 degrees C ambient.
- G. Recessed fixtures in suspended ceilings shall be supported from roof structure by wires at diagonal corners and on four ft. centers along row of fixtures, and two diagonal wires at 45 degrees on four ft. centers for lateral bracing. Wire shall be same as ceiling support, #12 gauge minimum.
- H. Exact location of all fixtures shall be coordinated with the Architect during construction.
- I. All lighting fixtures shall comply with California Electrical Code.
- J. Recessed fixtures shall be equipped with plaster rings and gaskets as required. Check room finish schedule on Architectural Drawings.
- K. Fixtures which are exposed to weather shall be weatherproof.
- L. All flex connections between J-boxes and recessed fluorescent fixtures in T-bar ceiling areas shall be six ft. long with #12 THHN conductors.
- M. Locate lighting fixtures in mechanical rooms to clear all ductwork, piping, etc.
- N. Each lighting fixture shall be grounded with a green insulated copper ground wire which extends from the panel ground bus to fixture body via branch circuit raceways and fixture

channels. Ground wire shall be sized in accordance with Code, minimum size #12. This ground wire may not be shown on the Plans.

- O. Recessed fixtures shall be complete with appropriate mounting devices and trim. Check room finish schedule on Architectural Drawings for exact details prior to ordering fixtures.
- P. In all areas which require fire rated ceilings or walls, the Contractor shall be responsible to provide continuous fire rating construction behind all recessed fixtures.
- Q. Fluorescent fixtures shall be aligned and bolted together with two (2) ¼" bolts.
- R. Where a fixture containing a ballast is to be installed on combustible low-density cellulose fiberboard, it shall where surface mounted:
 - 1. Be approved for this condition, OR
 - 2. Be installed as detailed on the Drawings, or with sheetrock backing, or spacers as directed.
- S. All open tube fluorescent lighting fixtures shall be provided with lamp retaining clips to secure lamps in place.
- T. The exact location, height, and/or stem length of fixtures shall be determined finally by the Structural and Mechanical limitations of the building. The Contractor shall work with the Architect to avoid any obstructions and to insure the proper illumination results.

END OF SECTION

KITCHEN EQUIPMENT CATALOG CUTS

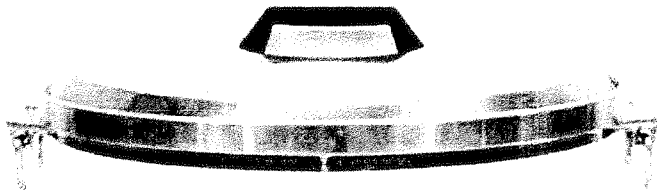


TOWN

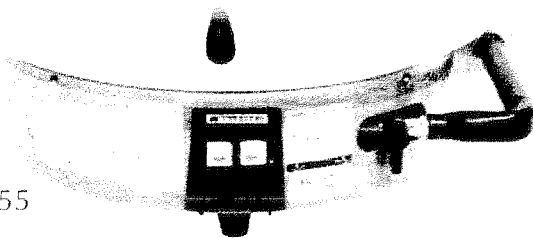
公司

TOWN FOOD SERVICE EQUIPMENT CO., INC.
 72 BEADEL STREET, BROOKLYN, NY 11222
 Ph. (718) 388-5650 Fax (718) 388-5860
 (800) 221-5032 www.townfood.com

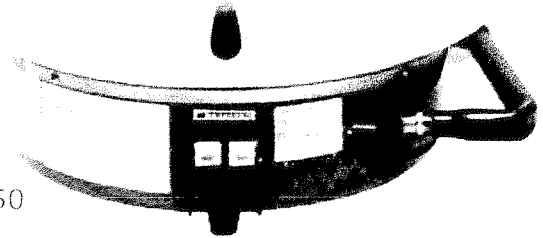
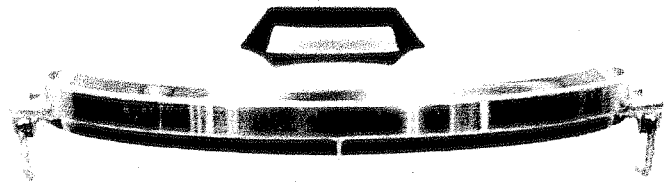
RICEMASTER GAS RICE COOKERS



RICEMASTER



RM-55



RM-50



GENERAL

This specification lists the standard and optional features of Town Rice Master gas rice cookers. The units are extremely reliable; simple to maintain; automatic gas rice cookers. Town Rice Master cookers can be used to cook many varied foods. A bimetallic temperature sensor mounted in the base of the rice pot provides optimum control and temperature accuracy. The rice is kept hot after cooking via the internal pilot burner. A thick wall, cast aluminum rice pot, with plated steel drop handles insures even cooking and is extremely durable. A standard Rear gas feed on all units allows for easy connection and eliminates stress on the gas valve body. A regulator is supplied with the unit. Available in Natural and Propane gas models. Available in listed and unlisted designs.

MODELS

RM-55N-R FOR NATURAL GAS &
 RM-55P-R FOR PROPANE GAS
**LISTED BY ETL AND NSF, 6
 MONTH LIMITED WARRANTY**

RM-50N-R FOR NATURAL GAS &
 RM-50P-R FOR PROPANE GAS
**NOT LISTED WITH ETL/NSF, 6
 MONTH LIMITED WARRANTY**

STANDARD FEATURES

- RM-55 models are design certified by ETL to conform to ANSI Z83.11-2007
- RM-55 models are design certified by NSF Intl. to conform to ANSI/NSF4
- Rear gas connection allows for simple connection and relieves stress on the valve.
- Bimetallic temperature sensor mounted in base of rice pot-for accurate and reliable operation; easy to clean and replace without special tools
- Heavy duty cast aluminum rice pot with steel drop handles-lifts out for cleaning or rice washing
- Piezo ignition with Pilot gas safety system

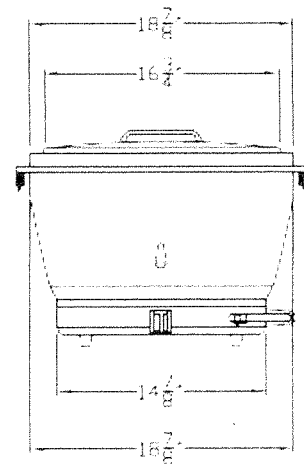
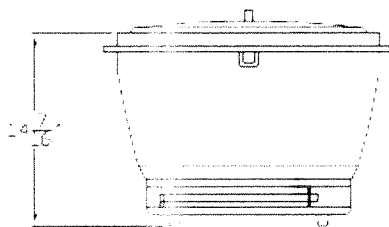
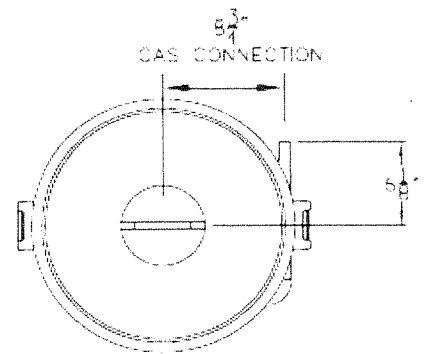
- Stainless Steel lid with durable high temperature themoset plastic handle
- 6 month limited warranty on all gas units
- Pilot burner keeps rice hot for serving after cook cycle is completed
- Fool Proof Pushbutton operation- two buttons control entire cook cycle.
- Rapid production times- 22 minutes for Natural gas, 27 minutes for Propane gas

OPTIONS

- There are currently no options available for these units.

Model	Type	Wt.
RM-50N-R	55 cup, Natural Gas w/ rear connection	46lb
RM-50P-R	55 cup, Propane Gas w/rear connection	46lb
56853	55 cup replacement rice pot	15lb
RM-55N-RC KIT	55 cup Rear Connection Kit, Natural Gas	2lb
RM-55P-RC KIT	55 cup Rear Connection Kit, Propane Gas	2lb

Model	Type	Wt.
RM-55N-R	55 cups, NSF/ETL Natural Gas w/ rear connection	46lb
RM-55P-R	55 cups, NSF/ETL Propane Gas w/rear connection	46lb
56853	55 cup replacement rice pot	15lb
RM-55N-RC KIT	55 cup Rear Connection Kit, Natural Gas	2lb
RM-55P-RC KIT	55 cup Rear Connection Kit, Propane Gas	2lb



no.	description	gas	Btu	cook time	capacities*		sizes diam x height
					raw rice	cooked rice	
RM-50N-R	55 cup, economy	natural	34,600	22 min	18 lb	43 lb	22" x 17"
RM-50P-R	55 cup, economy	propane	27,300	27 min	(55cups)	(110 cups)	
RM-55N-R	55 cup, NSF/ETL	natural	34,600	22 min			
RM-55P-R	55 cup, NSF/ETL	propane	27,300	27 min			
connection	liquid capacity	carton size	cu ft	pack	ship wt		
1/4" NPTM	24 qts.	21" x 21" x 18"	4.4	1	46 lb		

*Capacities are approximate.

IMPORTANT

Commercial gas appliance(s) must be installed in accordance with state and local codes, or in the absence of local code with the NATIONAL FUEL GAS CODE- ANSI Z223.1. COMPLIANCE WITH ALL CODES IS THE RESPONSIBILITY OF THE OWNER AND THE INSTALLER.

COMMERCIAL GAS UNITS NEED ADEQUATE VENTILATION SYSTEMS. REFER TO NATIONAL FIRE PROTECTION ASSOCIATION STANDARD NO 96- "VAPOR REMOVAL FROM COOKING EQUIPMENT"

CERTIFIED BY ETL TO CONFORM TO ANSI Z83.11- "GAS FOODSERVICE EQUIPMENT."
NOT INTENDED FOR HOUSEHOLD USE FOR USE BY PROFESSIONAL TRAINED PERSONNEL ONLY.

CERTIFIED BY ETL/NSF TO NSF4/ANSI-4-COMMERCIAL COOKING, RETHERMALIZATION AND HOT FOOD EQUIPMENT- "SANITATION."

MINIMUM CLEARANCES- COMBUSTIBLE AND NON COMBUSTIBLE:

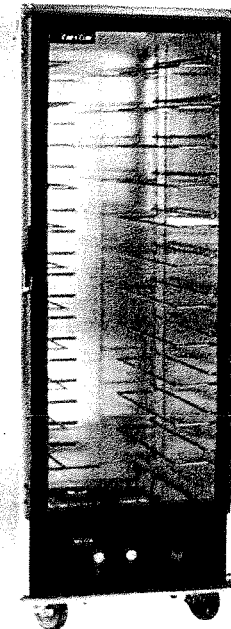
Back Wall- 6" Left and Right Sides- 6" For use on non combustible floors or table surfaces only.

Town reserves the right to change design without notification.

NON-INSULATED PROOF/HOT CABINET MODEL 121-PH-UA-11D

FEATURES AND BENEFITS:

- Non-Insulated versatile proof/hot cabinet. Use as proofer to produce quantities of uniformly raised dough or as a holding cabinet to keep prepared foods at serving temperatures.
- Powerful, yet efficient, heating system maintains the right combination of heat and humidity to properly proof or hold products.
- 1920 Watts of heat holds foods at up to 180°F. (82°C.); proofing with 960 Watts allows for temperatures of 80°F (26.5°C) to 95°F (35°C), with relative humidity of 95%.
- Body constructed of non-corrosive, Hi-Tensile aluminum for strength and ease of mobility.
- Field reversible Lexan door allows for viewing products. Perimeter door gasket minimizes heat loss. Standard with right hand hinging; left hand hinging available upon request.
- Magnetic latch secures door during transport.
- Eleven sets of chrome plated wire universal angles accommodate a large variety of pan sizes enters.



121-PH-UA-11D



ACCESSORIES and OPTIONS (Available at extra cost):

- Dutch Doors
- Extra Universal Angles
- Corner Bumpers
- Perimeter Bumper (three sided)
- Various Caster Options
- Digital Thermometer
- Push Handle
- Bail Handles
- Lock Hasp
- 208 or 240 Volt Service

See page D-4 for accessory details.

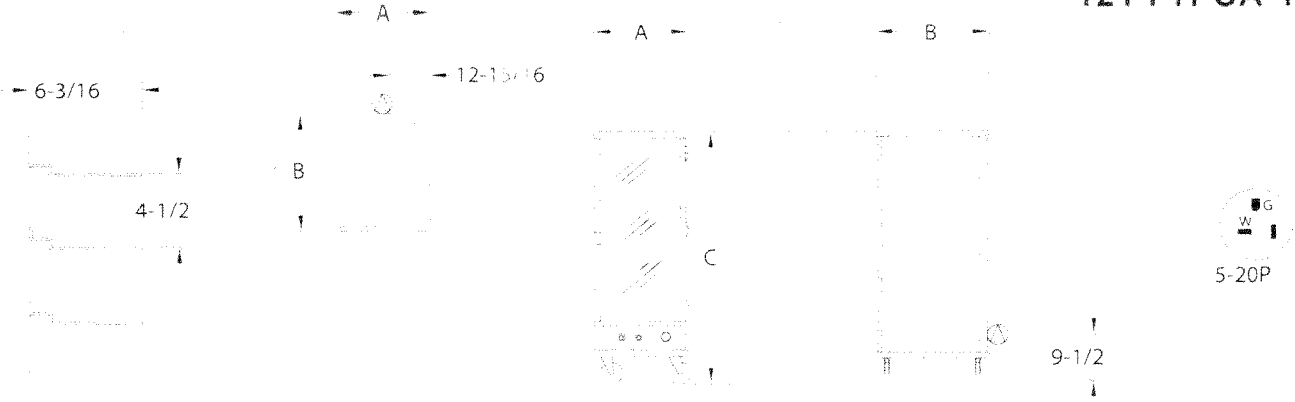
[Click Here for Hubert Online](http://www.hubert.com)



www.hubert.com

without opening door; allows interrupting process.

- Slanted control panel has easy-to-read thermometer; entire power assembly removable for cleaning and maintenance.
- Integral drip trough on front keeps traffic area dry, safer.
- Heavy duty 5" swivel casters, two with brakes. Provides mobility when fully loaded



DETAIL OF PAN SLIDE

CRES COR MODEL NO.	PAN			DIM "A"	DIM "B"	DIM "C"	INSIDE DIMENSIONS				WEIGHT ACT.
	CAP/ANGLES	SIZE		WIDTH	DEPTH	HEIGHT	WIDTH	DEPTH	HEIGHT		
121-PH-UA-11D	11 SETS	SEE NOTE BELOW	IN	24-1/4	32	69-3/4	21-1/4	28-1/4	54-3/8	LBS	160
			MM	620	815	1775	540	718	1385	KG	73

NOTES: 1. Pan sizes 22" x 20" (560 x 510) Roast & Bake Pans, 10" x 20" (255 x 510) Roast & Bake Pans, 18" x 26" (460 x 660) Bun Pans, 14" x 18" (355 x 460) Service Trays, 12" x 20" (305 x 510) Steam Table Pans. Refer to Pan Size Chart at end of section.
 2. When ordering bumpers, add 2" to overall dimensions.

ALL ALUMINUM CONSTRUCTION IS RIVETED, WELDED AND FINISHED

CABINET:

- Top: One piece .063 aluminum, riveted to sides and back.
- Side panels: Formed .063 aluminum; fastened to base and top.
- Back panel: .063 aluminum; fastened to base and top.
- Air tunnel: .063 aluminum, lift-out type, mounted on back panel.

BASE:

- One piece construction, .125 aluminum
- Drip trough: Formed 18 ga. 304 stainless steel mounted to front of base; removable drip pan.
- Casters: 5" dia., swivel, modulus tires, 1-1/4 wide, load cap. 250 lbs. each, temp. range -45°/+180°F Delrin bearings. Front casters equipped with brakes.

DOOR:

- Field reversible.
- Frame: Black powder coated extruded aluminum, 1-1/16 x 1-11/16; fastened together.
- Panel: 3/16 clear Lexan, fitted into door frame.
- Latch: Magnetic type with pull handle.
- Hinges (2): Chrome plated steel.
- Gasket: Perimeter type, Santoprene rubber.

PAN SLIDES:

- Wire angles (306 dia.) nickel chrome plated steel; mounted on lift-out posts.
- Spaced on 4-1/2" centers, adjustable on 1-1/2" centers.

PROOF/HOT UNIT COMPONENTS:

- Removable bottom mount proof/hot unit.
- Body: Formed .063 aluminum with black control panel.
- Thermostat (holding): Mechanical, room ambient to 180 F. (82 C).
- Thermostat (humidity): Mechanical, room ambient to 95%.
- Pilot lights.

PROOF/HOT UNIT COMPONENTS (CONT.):

- Switches (2): Rocker type.
- Power cord: Permanent, 6 ft., 12/3 ga. with molded plug.
- Heaters (2): 960 Watts for holding.
- Blower motor.
- Thermometer.
- Water pan: 3-1/2 quart, 22 ga. 304 stainless steel with 960 Watt heater for humidity.

POWER REQUIREMENTS:

- 1920 Watts, 120 Volts, 60 Hz., single phase, 16 Amps, 20 Amp service.

SHORT FORM SPECIFICATIONS

Cres Cor Proof/Hot Cabinet Model 121-PH-UA-11D. Formed and welded .063 aluminum top, .125 aluminum base, 11 sets wire universal angles for multiple pan sizes, adjustable spacing every 1-1/2". Field reversible Lexan door with magnetic pull latch. Removable 1920 Watt, 120 Volt power unit. Controls accessible without opening door. 5" swivel modulus casters, Delrin bearings. Load capacity 250 lbs. each. 2 year parts warranty. Provide the following accessories: _____ CSA-US, CSA-C, CSA to NSF4 listed.



5925 Heisley Road • Mentor, OH 44060-1833
 Phone 877/CRESCOR • Fax 440/350-7267
 www.crescor.com

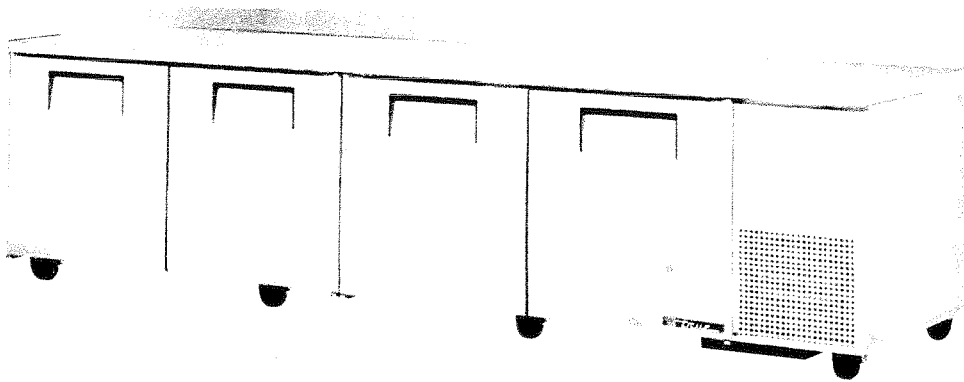
© Crescent Metal Products, Inc. 2009 All rights reserved

In line with its policy to continually improve its products, CRES COR reserves the right to change materials and specifications without notice.

R-3

 TRUE FOOD SERVICE EQUIPMENT, INC. 2001 East Terra Lane • P.O. Box 970 • O'Fallon, Missouri 63366 (636)240-2400 • Fax (636)272-2408 • (800)325-6152 • Intl Fax# (001)636-272-7546 Parts Dept. (800)424-TRUE • Parts Dept. Fax# (636)272-9471 • www.truemfg.com	Project Name: _____ Location: _____ Item #: _____ Qty: _____ Model #: _____	AIA # _____ SIS # _____
---	--	----------------------------

Model: **TWT-119** **Deep Worktop:**
Solid Door Refrigerator



TWT-119





- ▶ True's deep worktop units are designed with enduring quality that protects your long term investment.
- ▶ True's deep worktop units feature the combined advantage of convenient worktop prep space with deeper refrigerated storage.
- ▶ Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- ▶ Oversized, environmentally friendly (134A) forced-air refrigeration system holds 33°F to 38°F (1.5°C to 3.3°C).
- ▶ All stainless steel front, top and ends. Matching aluminum finished back. Top and backsplash are one piece formed construction. Bacteria and food particles cannot be trapped underneath as with other two-piece worktop units.
- ▶ NSF approved, white aluminum interior liner. 300 series stainless floor with covered corners.
- ▶ Heavy duty PVC coated wire shelves.
- ▶ Foamed-in-place, high density polyurethane insulation (CFC free).

ROUGH-IN DATA

Specifications subject to change without notice.
 Chart dimensions rounded up to the nearest 1/8" (millimeters rounded up to next whole number).

Model	Doors	Capacity (Cu. Ft.) (liters)	Shelves	Cabinet Dimensions (inches) (mm)			HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
				L	D†	H*						
TWT-119	4	43.9 1244	8	119 1/4	32 3/8	33 3/8	1/2	115/60/1	12	5-15P	7	660
				3029	823	848	1/2	230-240/50/1	5.2	▲	2.13	300

† Depth does not include 1" (26 mm) for rear bumpers and 1/2" (13 mm) for front bumper.
 * Height does not include 6 1/4" (159 mm) for castors or 6" (152 mm) for optional legs. ▲ Plug type varies by country

   	APPROVALS: _____ _____	AVAILABLE AT: _____ _____
Printed in U.S.A.		

Model:
TWT-119

Deep Worktop:
Solid Door Refrigerator



STANDARD FEATURES

DESIGN

- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM

- Factory engineered, self-contained, capillary tube system using environmentally friendly (CFC free) 134A refrigerant.
- Oversized, factory balanced refrigeration system with guided airflow to provide uniform product temperatures.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser; maintains cabinet temperatures of 33°F to 38°F (5°C to 3.3°C) for the best in food preservation.
- Sealed, cast iron, self-lubricating evaporator fan motor(s) and larger fan blades give True worktop units a more efficient low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of foodservice environments.
- Condensing unit is accessed from behind front grill; slides out for easy maintenance.

CABINET CONSTRUCTION

- Exterior - stainless steel front, top and ends. Matching aluminum finished back. Top and backsplash are one piece formed construction. Bacteria and food particles cannot be trapped underneath as with other two-piece worktop units.
- Interior - attractive, NSF approved, white aluminum liner. 300 series stainless steel floor with coved corners.
- Insulation - entire cabinet structure and solid door(s) are foamed-in-place using high density, CFC free, polyurethane insulation.
- 5" (127 mm) diameter stem castors - locks provided on front set. 36" (915 mm) work surface height.

DOORS

- Stainless steel exterior with white aluminum liner to match cabinet interior.

- Each door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal doors swing within cabinet dimensions.
- Magnetic door gaskets of one piece construction, removable without tools for ease of cleaning.

SHELVING

- Eight (8) adjustable, heavy duty PVC coated wire shelves. Two (2) left and two (2) right door shelf dimensions are 23 1/2" L x 28" D (601 mm x 712 mm). Four (4) center door shelf dimensions are 25 1/2" L x 28" D (648 mm x 712 mm).
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on 1/2" (13 mm) increments.

MODEL FEATURES

- Evaporator - epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

ELECTRICAL

- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.



115/60/1
NEMA-5-15R

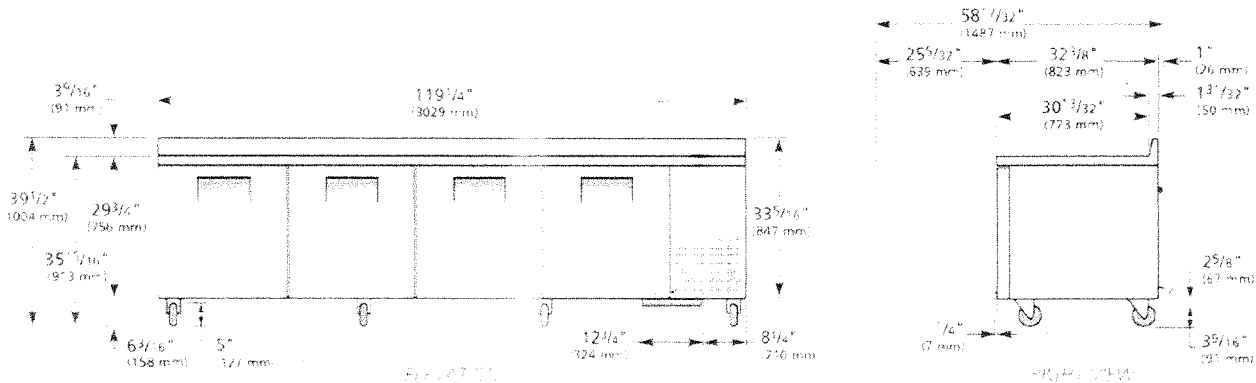
OPTIONAL FEATURES/ACCESSORIES

Upcharge and lead times may apply.

- ┆ 230 - 240V - 50 Hz.
- ┆ 6" (153 mm) standard legs.
- ┆ 6" (153 mm) seismic/flanged legs.
- ┆ 2 1/2" (64 mm) diameter castors.
- ┆ 3" (85 mm) diameter castors.
- ┆ Barrel lock(s) (factory installed). Requires one per door.
- ┆ Single overshelf.
- ┆ Double overshelf.
- ┆ Heavy duty 16 gauge tops.
- ┆ Heavy duty package - 16 gauge tops, 20 gauge door, sides and back with stainless interior.

- ┆ Half door bun tray racks. Each holds up to eleven 18" L x 26" D (458 mm x 661 mm) sheet pans (sold separately).
- ┆ Exterior round digital temperature display (factory installed).
- ┆ Remote cabinets (condensing unit supplied by others; system comes standard with 404A expansion valve and requires R404A refrigerant). Consult factory technical service department for BTU information.

PLAN VIEW



WARRANTY

One year warranty on all parts and labor and an additional 4 year warranty on compressor. (U.S.A. only)

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE



Model	Elevation	Right	Plan	3D	Back
TWT-119	TFPY50E	TFPY50S	TFPY50P	TFPY503	

TRUE FOOD SERVICE EQUIPMENT

2001 East Terra Lane • P.O. Box 970 • O'Fallon, Missouri 63366 • (636)240-2400 • Fax (636)272-2408 • (800)325-6152 • Intl. Fax# (001)636-272-7546 • www.truefmfg.com

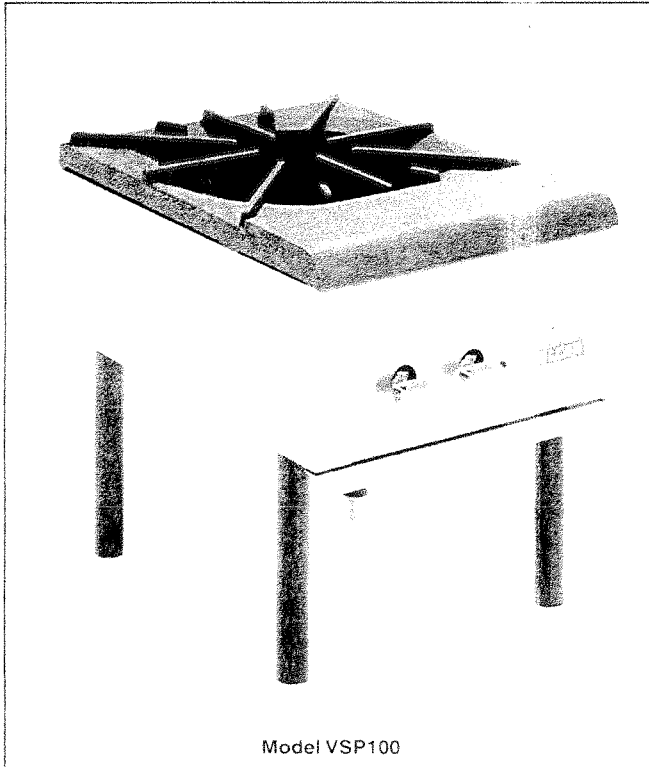
K-4

VULCAN

Item # _____

C.S.I. Section 11420

VSP SERIES STOCK POT STOVES



Model VSP100



SPECIFICATIONS:

Heavy duty gas stock pot stove. Vulcan-Hart Model No. (VSP100) (VSP200). Stainless steel front and sides. Black painted legs adjustable from 11^{1/8}" to 13^{1/8}". Heavy cast iron top with integral spider grate. Each section consists of two heavy cast iron burners rated at 55,000 BTU/hr. each. Burners arranged with one in center and one surrounding for maximum flame control. Each burner controlled by a heavy duty gas infinite gas valve. 3/4" (19mm) rear gas connection and gas pressure regulator per section. Gas supply to be (Natural) (Propane).

Exterior dimensions: VSP100 - 18"W x 24^{1/2}"D x 22^{1/2}" - 24"H.
 VSP200 - 36"W x 24^{1/2}"D x 22^{1/2}" - 24"H.
 VSP200F - 18"W x 49"D x 24"H.

CSA design certified. NSF listed.

STANDARD FEATURES

- Stainless steel front and sides. Legs finished in black epoxy powdercoat paint.
- Heavy cast iron top grate(s).
- Two concentric 55,000 BTU/hr ring-type burners per section; 110,000 BTU/hr input per section.
- Standing pilot ignition system.
- Two infinite heat control valves per section.
- Heat shield to protect control valves.
- 3/4" rear gas connection and gas pressure regulator per section (only one for VSP200F).
- One year limited parts and labor warranty.

OPTIONS

- Stainless steel legs.

IMPORTANT

1. A pressure regulator sized for this unit is included. Natural gas 5" W.C., Propane gas 10" W.C.
2. An adequate ventilation system is required for Commercial Cooking Equipment. Information may be obtained by writing to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02169. When writing refer to NFPA No. 96.
3. These units are manufactured for installation in accordance with National Fuel Gas Code, ANSI-Z223.1/NFPA #54 (latest edition). Copies may be obtained from The American Gas Association, Accredited Standards Committee Z223 @ 400N, Capital St. NW, Washington, DC 20001, or the Secretary Standards Council, NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471.

NOTE: In the Commonwealth of Massachusetts

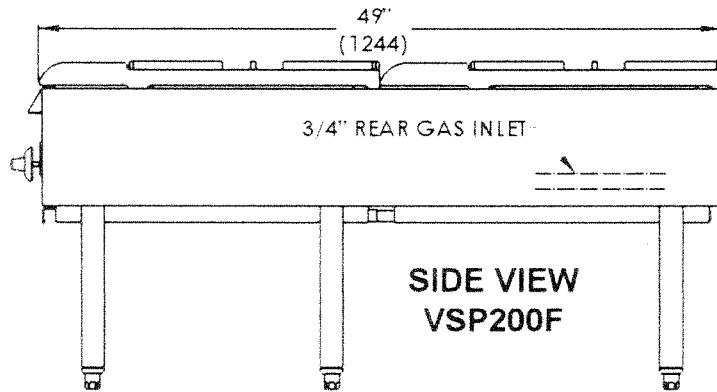
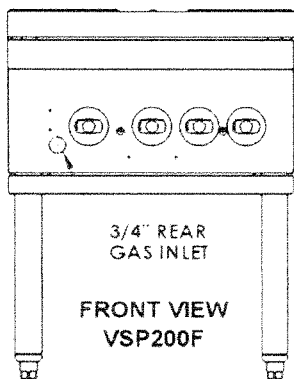
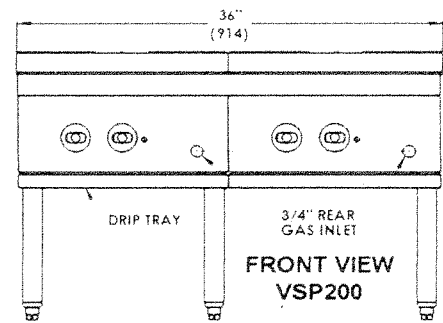
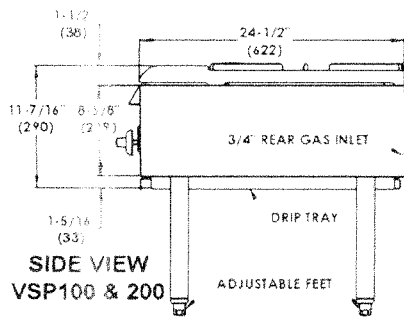
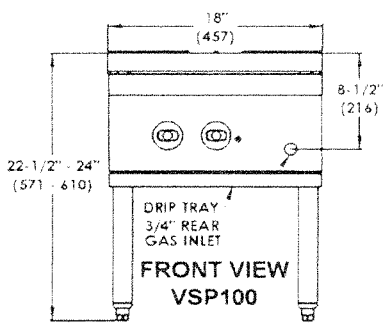
All gas appliances vented through a ventilation hood or exhaust system equipped with a damper or with a power means of exhaust shall comply with 248 CMR.

NOTE: This appliance must be installed with a six inch clearance at both sides and the rear adjacent to combustible construction.

VULCAN
 ISO 9001
 Vulcan-Hart Co.
MODEL: VSP SERIES Stock Pot Stoves

VULCAN

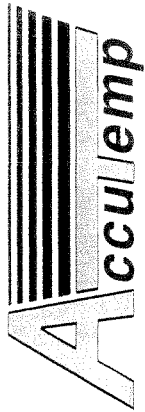
VSP SERIES STOCK POT STOVES



MODEL	TOTAL BTU/HR.	WIDTH	DEPTH	HEIGHT	APPROX SHP WT (LB/KG)
VSP100	110,000	18"	24 1/2"	22 1/2"	160/72
VSP200	220,000	36"	24 1/2"	22 1/2"	290/131
VSP200F	220,000	36"	49"	22 1/2"	290/131

NOTE: In line with its policy to continually improve its products, Vulcan-Hart Company reserves the right to change materials and specifications without notice.

VULCAN-HART COMPANY, P.O. BOX 696, LOUISVILLE, KY 40201, TEL. 1-800-814-2028



TABLETOP STEAM'N'HOLD™ 6 Pan, Electric Heated, Vacuum Capable, Connectionless Countertop Steamer

Steamer shall be an **AccuTemp STEAM'N'HOLD Model**

Specify	6 kW	8 kW	10 kW	10.7 kW	12 kW	14.4 kW	17 kW	18 kW
208	✓	✓	✓	✓	✓	N/A	✓	N/A
240	✓	✓	N/A	N/A	✓	N/A	✓	N/A
480	N/A	N/A	N/A	✓	N/A	✓	N/A	✓

Short Specification

each with 6 (2 1/2" deep) pan capacity, vacuum pump and reinforced cooking chamber capable of making steam and cooking at temperatures between 150–212°F (66–100°C) and holding foods at temperatures between 100–200°F (38–93°C). Steam to be produced inside cooking compartment with NO water or drain connection required. Door to have easy-open, heavy duty refrigerator type handle. Steamer to include low-water warning and auto-shutdown system. Unit to be NSF and U.L. listed and manufactured in the U.S.A.

Construction Features

- 14 gauge reinforced stainless steel steamer cavity
 - Insulated cavity and double panel door
 - Heavy refrigeration style door handle with magnetic latch and quick vacuum release system
 - Front mounted manual water reservoir drain valve
 - Left side-mounted control panel with smudge resistant overlay
 - Removable stainless steel "L" brackets provided and positioned to support 2 1/4, 4 or 6" deep steamer pans
- ### Performance Features
- Vacuum pump capable of pulling 23 inches of mercury vacuum in cooking compartment.
 - Choice of Power Input to match cooking requirements
 - Accurate thermostat control of steam temperature between 150–212°F (66–100°C).
 - Food holding capability with accurate temperature control between 100–200°F (38–93°C).
 - Low watt density heating element external to compartment and not exposed to water

- Full three gallon capacity water reservoir provides hours of steaming capability without refilling

Standard Control Features

- Power ON and OFF buttons
- Power-On, Heat, and Cook & Hold mode indicator lights
- Low-water protection system with dual sensors, warning light and auto-shutdown
- Vacuum and cook Temperature gauges
- Your choice of:
 - ↳ 90 minute timer [Type 3 Controls]
 - ↳ 180 minute timer [Type 4 Controls]
- Continuous Cook and Hold settings on Timer Dial
- Fast Cook [212°F/100°C] or Slow Cook [under vacuum] Switch
- 100–200°F (38–93°C) thermostat for low-temp/vacuum cooking

Cooking Capacity & Applications

- Pan Capacity [12 X 20"]:

Pan Size	Number of Pans	2 oz.* Portions	4 oz.* Portions	6 oz.* Portions	8 oz.* Portions
2-1/2"	6	768	384	256	192
4"	4	896	448	298	224
6"	3	1152	576	384	288

* Total Liquid Portions, all pans

Applications

- Fresh or frozen vegetables
- Fresh or frozen seafood
- Starches including rice, pasta, potatoes and beans
- Meats including poultry, hamburgers, hotdogs, sausage

Reheating

- Vendor prepared foods
- Cook-Chill foods
- Freshening bakery goods

Holding

- Any steamed item listed above
- Foods prepared in other equipment

Approvals

- Steamer to be NSF Listed as both steamer & holding cabinet
- Steamer to be U.L. Listed
- Steamer to be ENERGY STAR qualified

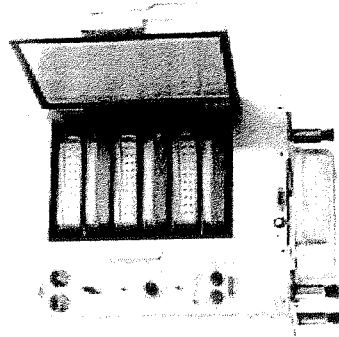


Installation Requirements

- ↳ 208/3
- ↳ 240/3
- ↳ 480/3 Power Source
- ↳ 240/1 [6 kW unit only]
- ↳ 208/1 [6 kW unit only]
- (See other side for AMP requirements)
- 5 power cord with plug comes standard [See other side for plug configuration]
- * NO drain line required
- * NO water line required
- * NO water treatment system required
- * NO deliming or descaling required

Options & Accessories:

- ↳ Stainless steel support stand
- ↳ Hinged-left/open-left door
- ↳ Factory pre-set temperature - Control behind panel [Chain Package - Type 1 Control]
- ↳ Correctional Package
- ↳ 4" deep bottom drain pan
- ↳ Bullet Feet



S6 Model shown with 4" drain pan (optional), and 4" bullet feet (optional)

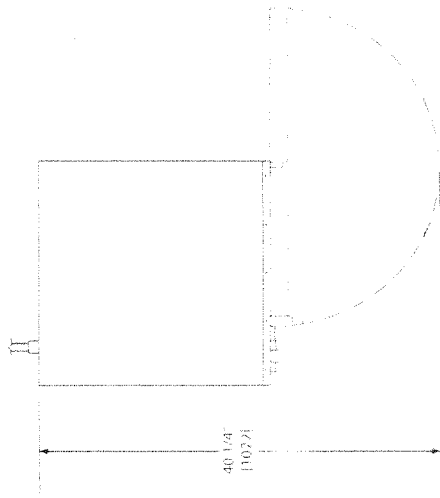
MM4204-0505



TABLETOP STEAM 'N' HOLD™

6 Pan, Electric Heated, Vacuum Capable,
Connectionless Countertop Steamer

TOP VIEW

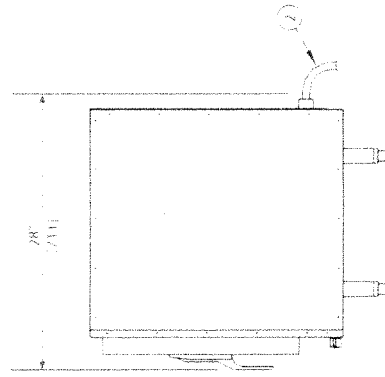


Steamer Model "D" Specifications

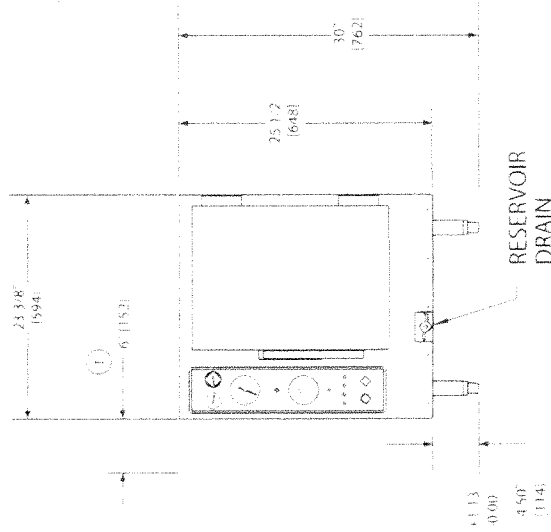
Model #	20806-000	24006-000	20808-000	20810-000	24008-000	24012-000	20812-000	20817-000	24017-000	44008-000	4800107-000	4800144-000	480018-000
Volts AC	208	240	208	208	240	240	208	208	240	440	480	480	480
Phase	1	1	3	3	3	3	3	3	3	3	3	3	3
Amps	28.9	25.0	22.2	27.2	19.2	28.9	33.3	47.2	38.5	11.4	12.83	17.09	21.95
Watts	6 kW	6 kW	8 kW	10 kW	8 kW	12 kW	12 kW	17 kW	16 kW	9.5 kW	10.7 kW	14.4 kW	18 kW
NEMA Plug	L6-30P	L6-30P	L15-30P	L15-30P	L15-30P	L15-30P	L15-50P	L15-50P	L15-50P	L16-20P	L16-20P	L16-20P	L16-30P
Receptacle Type													

Notes:

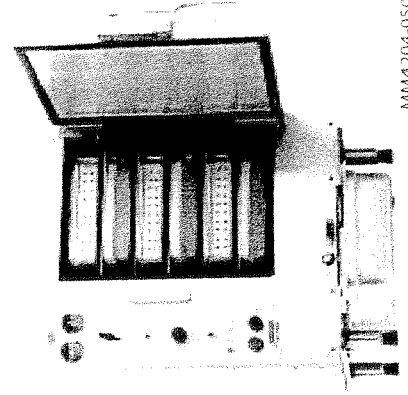
1. Allow 6" between fryer, ranges and other hot surfaces side as shown.
2. 5 foot power cord supplied with single and 3 phase units.
3. For use on individual branch circuit only.
4. Do not connect to a circuit operating at more than 150V to ground.
5. Dimensions in brackets are metric.



RIGHT SIDE VIEW



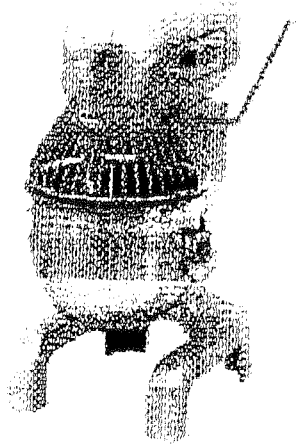
FRONT VIEW



S6 Model shown with 4" drain pan (optional) and 4" buffer feet (optional)

MM4204-0505

K-SR-K-6



Model PM20



Features

Berkel Models PM10 and PM20 planetary mixers are heavy duty, precision crafted, versatile machines. These all-purpose mixers use a powerful, planetary mixing action to thoroughly blend, mix and aerate all ingredients with consistent and predictable results. The wide-faced, hardened alloy steel helical gears deliver energy at pre-selected fixed speeds. Models are available in 10 and 20-quart sizes with a selection of optional bowls to provide additional capacity and flexibility. Each mixer comes standard with a stainless steel bowl, spiral dough hook, batter beater and wire whip. The heavy duty, stainless steel, wire front bowl guard opens easily for adding ingredients. The bowl guard interlock prevents the mixer from running if guard is opened or the bowl is lowered. The units feature moisture resistant switches and No-Volt Release. The PM20 has a 15-minute timer that automatically shuts off the machine in any speed after the predetermined time has elapsed.

Accessories

- VSPH - #12 Taper Hub Vegetable Shredder/Pate Hamer
- FCMC - #12 Taper Hub Meat Grinder
- Bowl Dolly
- Reduction Set (PM20 only)

Approved By: _____
 Date _____

Item #

Models PM10/PM20 Planetary Mixers

- PM10 - 10 Qt. Table Model
- PM20 - 20 Qt. Model

Food Dough Mixer

Standard Features

- > Model PM10 20 Qt. Mixer with 3-speed, 1/2 HP (continuous duty), totally enclosed, and permanently lubricated, thermally protected motor; furnished in 115/60/1, 6 amp, AC, ETL listed
- > Model PM20 20-Qt. Mixer with 3-speed, 3/4 HP (continuous duty), totally enclosed, and permanently lubricated, thermally protected motor; furnished in 115/60/1, 8.5 amp, AC, ETL listed; also available in 220/60/1 and 220/60/1
- > Wide-faced, hardened alloy steel, helical gears fully sealed in lubricant with heavy-duty ball bearings and clutch combine for highly dependable, quiet operation
- > 3 pre-selected, fixed speeds
- > Manual bowl lift is lever operated, interlocked and self-locking in top position
- > 15-minute timer for continuous or timed operation, automatically shuts off the machine in any speed after the pre-determined time has elapsed on PM20 only
- > #12 Taper hub on the PM20 for use with any #12 size attachments; #8 taper hub on the PM10
- > Flat Batter Beater, Wire Whip and Spiral Dough Hook
- > Bowl Guard with interlock prevents the mixer from running if guard is opened
- > No-Volt Release prevents activation of the mixer in the event of a power interruption; operator must restart the mixer
- > Highly reliable, moisture resistant stop and start switches
- > Cast base construction; finish is silver metallic epoxy powder coat enamel for easy cleaning
- > Attached 6-foot, flexible, 3-wire cord and plug for grounded receptacle

Options

- 220/60/1 AC, ETL listed (PM20 only)
- 220/60/1 AC, ETL listed (PM20 only)

6A



Planetary Mixers Models PM10/PM20

Berkel Company • 4406 Technology Drive • South Bend, IN 46628-9700
574-232-8222 • 800-348-0251 • FAX 888-888-2838 • www.berkel.com



Models PM10/PM20

Planetary Mixers

K-CPK-6

Model No.	Bowl Capacity	Product Dimensions		
		Width A	Depth B	Height C
PM10	10-Qts (10.5 Liters)	14" (360 mm)	18" (460 mm)	24" (610 mm)
PM20	20-Qts (21 Liters)	15" (380 mm)	22" (560 mm)	32" (815 mm)

	Motor	Electrical	Speed Range		Weight		Box Dimensions		
			Beater	Hub	Net	Ship	Width	Depth	Height
PM10	3-speed 1/2 HP	115/60/1	40-143	97-344	74 lbs. (34 kg.)	83 lbs. (38 kg.)	19" (485 mm)	19" (485 mm)	29" (740 mm)
PM20	3-speed 3/4 HP	115/60/1	46-155	106-357	225 lbs. (102 kg.)	250 lbs. (113 kg.)	22" (560 mm)	22" (560 mm)	38" (965 mm)

Specifications

Design: Heavy-duty, all purpose mixers use a powerful, planetary mixing action to thoroughly blend, mix and aerate all ingredients with consistent and predictable results.

Motor/Electrical: Model PM10 10-Qt. Mixer with 3-speed, 1/2 HP (continuous duty), totally enclosed, and permanently lubricated, thermally protected motor; furnished in 115/60/1, 6 amp, AC, ETL listed.

Model PM20 20-Qt. Mixer with 3-speed, 3/4 HP (continuous duty), totally enclosed, and permanently lubricated, thermally protected motor; furnished in 115/60/1, 8.5 amp, AC, ETL listed. Also available in 220/60/1, ETL listed.

Finish/construction: Cast base finished in metallic silver, epoxy powder coat enamel for easy cleaning.

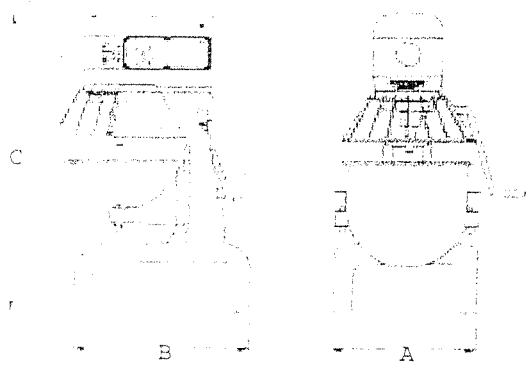
Transmission: Wide-faced, hardened alloy steel, helical gears fully sealed in transmission lubricant with heavy-duty ball bearings and clutch combine for highly dependable, quiet operation.

Speeds: 3 Pre-selected, fixed speeds.

Bowl Guard: Bowl Guard with interlock prevents the mixer from running if guard is opened.

Power Hub: #12 Taper hub for use with any optional #12 size attachment on the PM20. A #8 taper hub on the PM10.

Controls: Highly reliable, moisture resistant switches, provide for continuous operation and on the PM20, a 15-minute timer automatically shuts off the machine in any speed after the pre-determined time has elapsed.



Models PM10/PM20

No-Volt Release: Prevents activation of the mixer in the event of a power interruption; operator must restart the mixer.

Standard Equipment: The mixing unit with one stainless steel bowl, bowl guard, flat batter beater, wire whip and spiral dough hook.

Bowl Lift: Manual bowl lift is lever operated and self-locking in top position.

Cord and Plug: Attached 6-foot flexible 3-wire cord and plug for grounded receptacle.

Warranty: All parts, service and travel coverage for one year, exclusive of wear items.

As we continually strive to improve our products, specifications are necessarily subject to change without notice.

Berkel Company • 4406 Technology Drive • South Bend, IN 46628-9700
574-232-8222 • 800-348-0251 • FAX 888-888-2838 • www.berkel.com

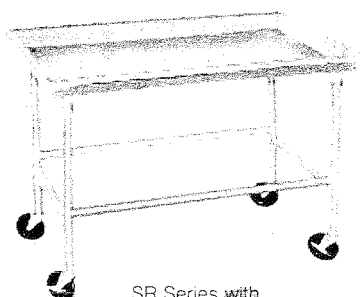


STAINLESS STEEL SORTING TABLES



K-7

Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____



SR Series with
Optional Casters



BSR Series

FEATURES:

- SR Series** - TOP features 3" raised edge. Stainless steel cross bracing all sides.
- BSR Series** - TOP features 3" raised edge. Stainless steel cross bracing 3 sides.
10 1/2" backplash standard with tile edge.

Optional casters and drain hole available

CONSTRUCTION:

- SR SERIES:** TIG welded. Welded side cross bracing, bolted front and rear cross bracing
- BSR SERIES:** All TIG welded. Welded side cross bracing, bolted rear cross bracing

MATERIAL:

TOP: 16 gauge stainless steel type "304" series
LEGS and GUSSETS: Stainless steel legs & gussets

3"
Raised
Edge

10 1/2"
Backplash

MODEL #	Length	Width	Wt.
SR-48	48"	30"	63 lbs.
SR-60	60"	30"	77 lbs.
SR-72	72"	30"	83 lbs.
SR-96	96"	30"	90 lbs.
BSR-48	48"	30"	69 lbs.
BSR-60	60"	30"	84 lbs.
BSR-72	72"	30"	91 lbs.
BSR-96	96"	30"	99 lbs.

ACCESSORIES	Model #	Qty
Drain Hole	DTA-40	
Casters	TA-255	



NEW YORK
 (800) 645-3166
 Fax: (631) 242-6900

GEORGIA
 (800) 832-1218
 Fax: (770) 775-5625

TEXAS
 (800) 527-0353
 Fax: (972) 932-4795

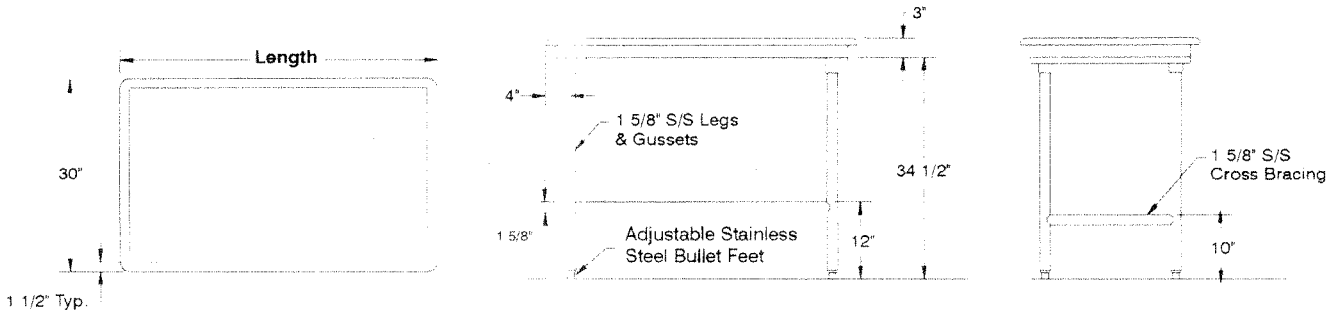
NEVADA
 (800) 446-8684
 Fax: (775) 972-1578

DIMENSIONS and SPECIFICATIONS

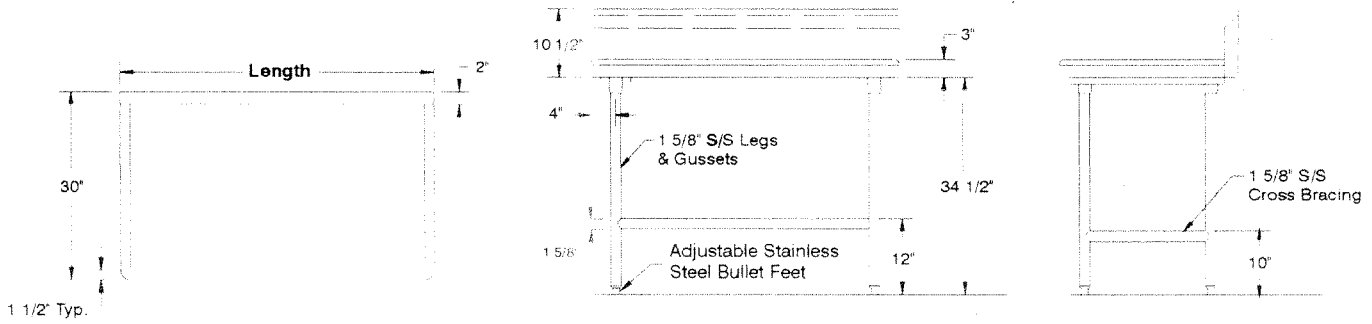
TOL ± .500"

ALL DIMENSIONS ARE TYPICAL

SR Series



BSR Series



Anets GoldenGrill™ Chrome Gas Grills

24" and 30" SGC Models

Item No.

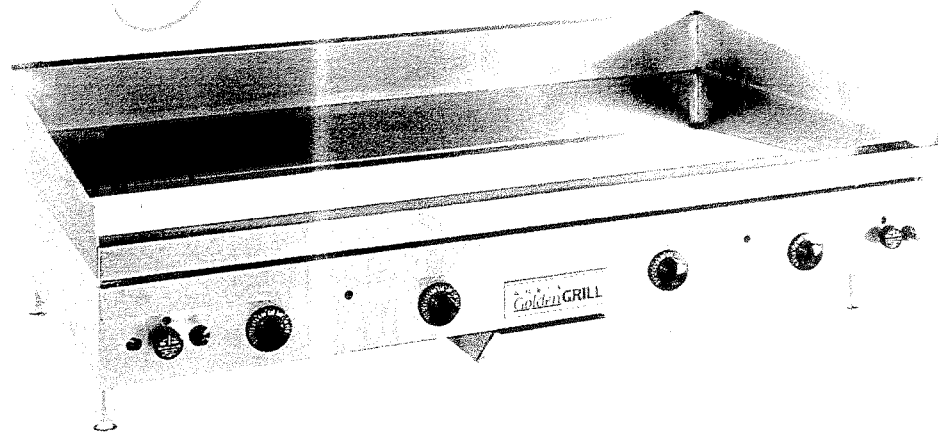
Superior Hard Chrome Finish Makes The Grill Plate Cleanup Like New, Day After Day, Year After Year

Keep your kitchen operation at peak efficiency with the Anets GoldenGrill™ Chrome Grills. Special advantages of the highly polished chrome finish include superior cleanability, minimal heat radiation from grill surface, and maximum heat transfer into food.

Individual thermostatically controlled burners every 12 inches. Cook a variety of products with no flavor transfer. Invest in the Anets GoldenGrill™ Chrome Grill and save on labor and energy costs.

STANDARD FEATURES

- 3/4" steel plate precision ground, highly polished and plated with a hard chrome finish
- One burner per foot:
30,000 BTUH per burner (24" Models)
40,000 BTUH per burner (30" Models)
- Stainless steel front, sides, grease trough, and splashguards
- Spark ignitor for lighting pilots
- Snap action type thermostats
- 100% gas safety valve shut-off
- Double wall construction keeps the operator and kitchen cool
- No electrical connections required
- Front grease trough allows for more useable griddle surface
- Extra large grease chute opening equipped with built in spatula scraper
- Large capacity 5.7 quart grease drawer easily accessible under cabinet and is equipped with anti-splash guards (72" model is equipped with 2 drawers)



SGC24X48 shown on stainless steel stand with undershelf.

ANETS
GoldenGRILL™



ANETS

Anetsberger Brothers, Inc. ■ Foodservice Equipment That Turns Food Into Gold
180 North Anets Drive ■ Northbrook, Illinois 60062
1-800-837-2638 ■ Fax 847-272-1943 ■ www.anetsberger.com

Anets GoldenGrill™ Chrome Gas Grills

24" and 30" SGC Models

ANETS GoldenGRILL™

SPECIFICATIONS

- Model SGC Models (See chart below)
- Certification ETL, CETA, NSF
- BTUH input 30,000 per burner (foot), 24" Deep Models
40,000 per burner (foot), 30" Deep Models
- Gas Pressure NG 3.5" WC, LP 10" WC, Pressure regulator included
- Gas Connection 3/4" NPT
- Electrical None
- Thermostats Gas operated, snap action 200-550F (93-288C)
- Plate 3/4" high nickel content steel plate precision ground, highly polished and plated with a hard chrome finish
- Burners Aluminized steel
- Safety Pilots 100% gas shut-off valve
- Spark Ignitor Piezo electric
- Cabinet Front, sides, trough, and splashguard, stainless steel
Back, aluminized steel

STANDARD ACCESSORIES

- Safety pilots
- Stainless steel sides
- Spark ignitor
- Pressure regulator
- 4" Adjustable chrome plated legs

DIMENSIONS

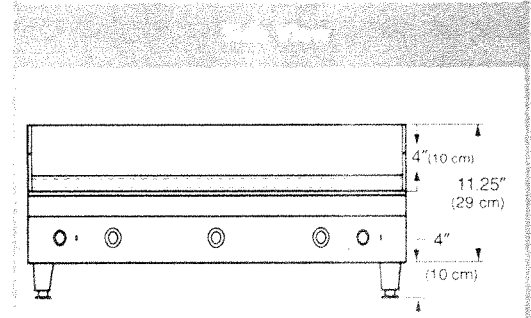
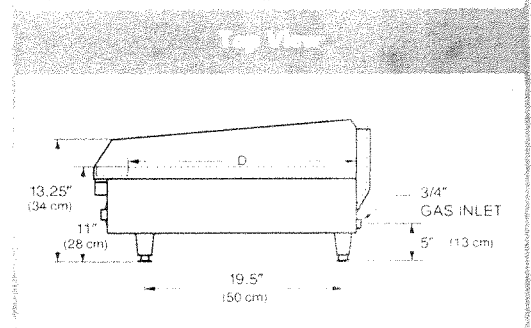
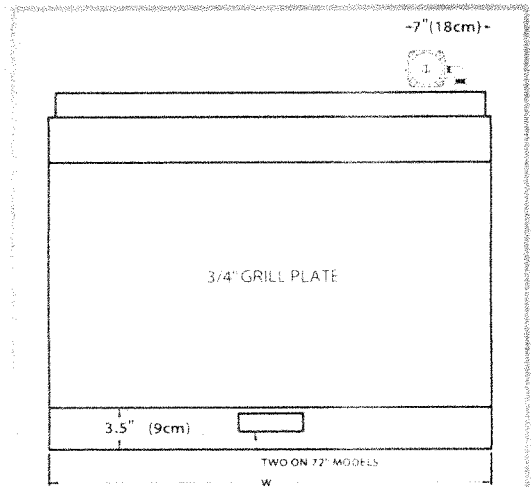
24" MODELS

	SGC 24X24	SGC 24X36	SGC 24X48	SGC 24X60	SGC 24X72
Overall					
(W) Width	24.25"	36.25"	48.25"	60.25"	72.25"
Height	15.25"	15.25"	15.25"	15.25"	15.25"
Depth	29.75"	29.75"	29.75"	29.75"	29.75"
Plate					
Width	24"	36"	48"	60"	72"
(D) Depth	24"	24"	24"	24"	24"
NG BTUH	60,000	90,000	120,000	150,000	180,000
LP BTUH	60,000	90,000	120,000	150,000	180,000

Specifications subject to change without notice.
S/N# 231 Revised 11/02
Printed in the U.S.A.

OPTIONS AND ACCESSORIES

- Removable cutting board bracket assembly
- Stainless steel stands
- 11" High backsplash



30" MODELS

	SGC 30X24	SGC 30X36	SGC 30X48	SGC 30X60	SGC 30X72
Overall					
(W) Width	24.25"	36.25"	48.25"	60.25"	72.25"
Height	15.25"	15.25"	15.25"	15.25"	15.25"
Depth	35.75"	35.75"	35.75"	35.75"	35.75"
Plate					
Width	24"	36"	48"	60"	72"
(D) Depth	30"	30"	30"	30"	30"
NG BTUH	80,000	120,000	160,000	200,000	240,000
LP BTUH	72,000	108,000	144,000	180,000	216,000



Anetsberger Brothers, Inc. ■ Foodservice Equipment That Turns Food Into Gold
180 North Anets Drive ■ Northbrook, Illinois 60062
1-800-837-2638 ■ Fax 847-272-1943 ■ www.anetsberger.com



K-9
K-9

Project _____
Item No. _____
Quantity _____

Model FBG18 and FBG24 Flat Bottom Gas Fryers

Model FBG18 and FBG24 Flat Bottom Gas Fryer

STANDARD SPECIFICATIONS

CONSTRUCTION

- Fry tank constructed of heavy gauge mild steel for stickless wet batter frying
- Welded tank with an extra smooth peened finish ensures easy cleaning
- Stainless steel cabinet front, door, side and splash back
- Heavy duty 3/16" (4.8 cm) door hinges
- Marine front edge to hold wet batter trays
- Front 1 1/4" (3.2 cm) full port drain for quick draining
- 9" (22.9 cm) bottom clearance allows for ease of cleaning

CONTROLS

- Blower Free Burner Technology provides dependable heat transfer without the need for complex power blowers.
- Integrated gas control valve acts as a manual valve, safety pilot valve, main valve, gas filter and pressure regulator
- Gas control valve prevents gas flow to the main burner until pilot is established and shuts off all gas flow automatically if the pilot flame goes out.
- Temperature limit switch safely shuts off all gas flow if the fryer temperature exceeds the upper limit.
- Solid State Thermostat mounted behind the front door. A temperature controller incorporating automatic melt cycle, system indicator lights and power switch.
- Matchless ignition ignites a standing pilot once a day when the power is turned on. Less wear and tear on components and faster recovery when the controller calls for heat.
- Drain valve interlock switch is hermetically sealed switch that automatically shuts down the heating system if the drain valve is opened.

Unit shown is FBG24

STANDARD FEATURES & ACCESSORIES

- Tank - heavy duty gauge mild steel
- Cabinet-stainless steel front, door, sides & splash back.
- Blower Free Burner Technology
- Solid State Temperature Controller with matchless ignition, melt cycle, and drain valve interlock switch.
- 1 1/4" (3.2 cm) Full port drain valve
- Manual gas shutoff and Rear gas connection
- Built-in integrated flue deflector
- 8" (22.9 cm) Legs
- Drain plug
- Removable flue splash guard
- Drain Line Clean out rod
- Drain Extension
- Fryer cleaner sample

OPTIONS & ACCESSORIES AT ADDITIONAL COST

- Stainless Steel back
- 8" (22.9 cm) swivel adjustable rear and front casters
- Flexible gas hose with disconnect
- Tank cover
- Crumb Tray - rear mount
- Perforated pan divider
- Channel strip
- Filter System, please refer to Flat Bottom Fryer with Filtration specification sheet for additional details

Vada Fryer

QA



Pitco Frialator, Inc • P.O. Box 501, Concord, NH 03302-0501 • 509 Route 3A, Bow, NH 03304

603-225-6684 • FAX: 603-225-8497 • www.pitco.com

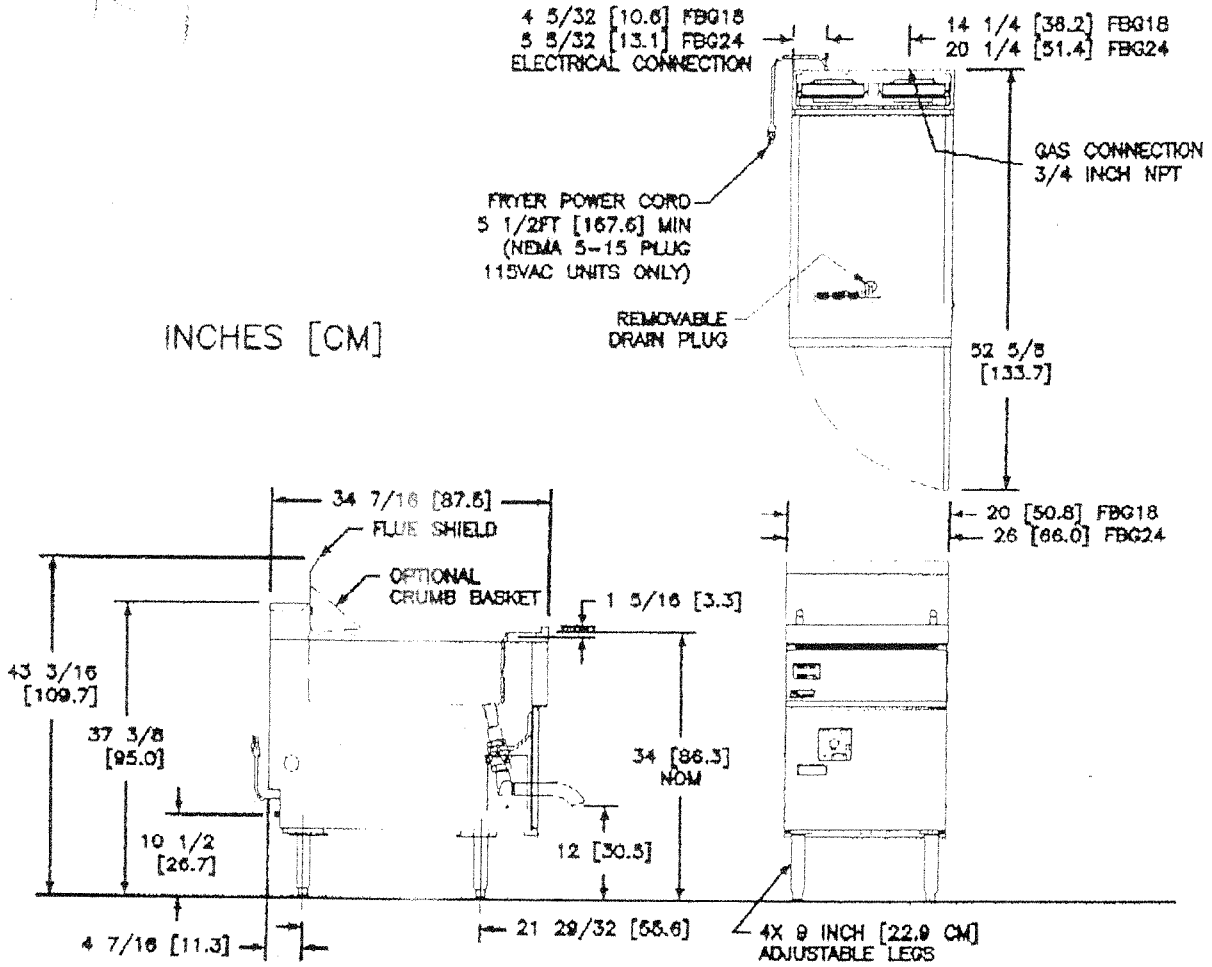
L10-218 Rev 2 03/07

Printed in the USA



Model FBG18 and FBG24 Flat Bottom Gas Fryer

Model FBG18 and FBG24 Flat Bottom Gas Fryer



INDIVIDUAL FRYER SPECIFICATIONS					
Models	Frying Area	Cook Depth	Oil Capacity	Gas Input Rate / Hr	Burner Pressure
FBG18	18 x 24 in (45.7 x 61cm)	3-1/2 - 5 in (9.3 - 12.7cm)	42 - 65 Lbs (19 - 29.5 kg)	100,000 BTUs (29.3kW) (105MJ)	Nat LP
✓ FBG24	24 x 24 in (61 x 61cm)	3-1/2 - 5 in (9.3 - 12.7cm)	57 - 87 Lbs (25.8 - 39.5 kg)	120,000 BTUs (35.1kW) (127MJ)	4" W.C. (10 mbars/1kPa) 10" W.C. (25 mbars/2.4kPa)
FRYER SHIPPING INFORMATION (Approximate)					
Models	Shipping Weight	Shipping Crate Size H x W x L		Shipping Cube	
FBG18	270 Lbs (122.5 kg)	59 x 22 x 44 in (144.7 x 104.1 x 112.0 cm)		32.5 ft ³ (0.9 m ³)	
FBG24	316 Lbs (142.9 kg)	68 x 35 x 47 in (142.2 x 89.9 x 119.3 cm)		33.3 ft ³ (1.6 m ³)	
INSTALLATION INFORMATION					
GAS REQUIREMENTS			ELECTRIC SYSTEM REQUIREMENTS		
Natural Gas		LP Gas	115V 60Hz		208 / 220-240V 60-90 hz
Supply Pressure *		7 - 10" W.C. (17.4 mbars/1.74 kPa)	11 - 13" W.C. (27.4 mbars/2.74 kPa)	Fryer Cord (Total Amps per Fryer)	0.7 0.4
* Check plumbing / gas codes for proper gas supply line sizing to sustain burner pressure when all gas appliances are full on.					
CLEARANCES					
Front min.	Floor min.	Combustible material		Non-Combustible material	
30" (76.2 cm)	5" (15.25 cm)	Sides min.	Rear min.	Sides min.	Rear min.
		8" (15.2cm)	6" (15.2cm)	0"	0"
Do not block / restrict flue gases from flowing into hood or install vent hood directly over the flue					
SHORT FORM SPECIFICATION					
Provide Pitco model FBG18 and FBG24 Flat Bottom Gas Fryer. Fryer shall have a blower free burner technology system. Unit shall have a deep flat bottom cook depth up to 5" (12.7 cm). Fryer cooking area shall be 18 x 24 (45.7 x 61 cm) for a FBG18 or 24 x 24 (61 x 61 cm) for a FBG24. Heat transfer area shall be a minimum of 864 sq. inches (5574 sq. cm) for the FBG18 and 1162 sq. inches (7432 sq. cm) for the FBG24.					
TYPICAL APPLICATION					
Offers versatile cooking of wet batter products like fish & chips, tempura, funnel cakes, and other non-traditional fried products.					



Pitco Frialator, Inc • P.O. Box 501, Concord, NH 03302-0501 • 509 Route 3A, Bow, NH 03304
 603-225-6684 • FAX: 603-225-6497 • www.pitco.com L10-218 Rev 2 03/07 Printed in the USA
 We reserve the right to change specifications without notice and without incurring any obligation for equipment previously or subsequently sold.



9B



STAINLESS STEEL
POT RACKS

K-10

Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

CEILING MOUNTED



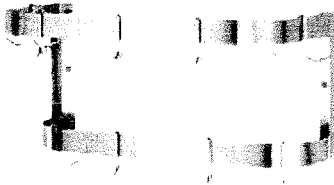
Ceiling Mounted

L	S/S	POWDER COATED	# of Hooks	Wt
36"	SC-36	GC-36	12	23 lbs.
48"	SC-48	GC-48	12	26 lbs.
60"	SC-60	GC-60	18	29 lbs.
72"	SC-72	GC-72	18	32 lbs.
84"	SC-84	GC-84	18	36 lbs.
96"	SC-96	GC-96	18	44 lbs.
108"	SC-108	GC-108	18	48 lbs.
120"	SC-120	GC-120	18	51 lbs.
132"	SC-132	GC-132	18	55 lbs.
144"	SC-144	GC-144	18	58 lbs.

Wall Mounted

L	S/S	POWDER COATED	# of Hooks	Wt
24"	SW-24	GW-24	12	20 lbs.
36"	SW-36	GW-36	12	23 lbs.
48"	SW-48	GW-48	12	26 lbs.
60"	SW-60	GW-60	18	29 lbs.
72"	SW-72	GW-72	18	32 lbs.
84"	SW-84	GW-84	18	36 lbs.
96"	SW-96	GW-96	18	44 lbs.
108"	SW-108	GW-108	18	48 lbs.
120"	SW-120	GW-120	18	51 lbs.
132"	SW-132	GW-132	18	55 lbs.
144"	SW-144	GW-144	18	58 lbs.

WALL MOUNTED



Shelf with Pot Rack

L	12" Wide	Wt	15" Wide	Wt	18" Wide	Wt	# of Hooks
36"	PS-12-36	20 lbs.	PS-15-36	25 lbs.	PS-18-36	30 lbs.	6
48"	PS-12-48	30 lbs.	PS-15-48	35 lbs.	PS-18-48	40 lbs.	6
60"	PS-12-60	40 lbs.	PS-15-60	45 lbs.	PS-18-60	50 lbs.	9
72"	PS-12-72	50 lbs.	PS-15-72	55 lbs.	PS-18-72	60 lbs.	9
84"	PS-12-84	60 lbs.	PS-15-84	65 lbs.	PS-18-84	70 lbs.	9
96"	PS-12-96	70 lbs.	PS-15-96	75 lbs.	PS-18-96	80 lbs.	9
108"	PS-12-108	80 lbs.	PS-15-108	85 lbs.	PS-18-108	90 lbs.	9
120"	PS-12-120	90 lbs.	PS-15-120	95 lbs.	PS-18-120	100 lbs.	9
132"	PS-12-132	100 lbs.	PS-15-132	105 lbs.	PS-18-132	110 lbs.	9
144"	PS-12-144	110 lbs.	PS-15-144	115 lbs.	PS-18-144	120 lbs.	9

Units 8 ft. and larger are furnished with three (3) sets of supports brackets.

FEATURES: (Ceiling Mounted)

Ceiling suspension with chain hangers. Optional stainless steel Flat Bar in lieu of Chain available. Use TA-98.

MATERIAL:

Flat steel bar is 2" x 1/4", either stainless steel or powder coated (as specified).

Pot hooks are plated.

24" long chain hangers are plated.

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.

All powder coated units are coated with FDA approved material.

FEATURES: (Wall Mounted)

Secured to wall by means of bolts through welded brackets. (Hardware not provided)

MATERIAL:

Flat steel bar is 2" x 1/4", either stainless steel or powder coated (as specified).

Pot hooks are plated.

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.

All powder coated units are coated with FDA approved material.

FEATURES: (Shelf/Pot Rack)

A dual purpose unit for shelf and utensil storage.

Secured to wall by means of bolts through welded brackets. (Hardware not provided)

MATERIAL:

Flat stainless steel bar is 2" x 1/4". Pot hooks are plated. Type "430" stainless steel shelf

CONSTRUCTION:

All welded stainless steel units are blended to a satin finish.



Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T.

Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes. Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK
Fax: (631) 242-6900

GEORGIA
Fax: (770) 775-5625

TEXAS
Fax: (972) 932-4795

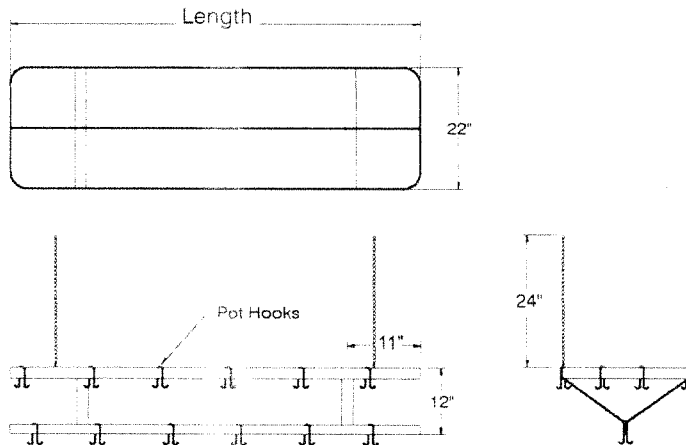
NEVADA
Fax: (775) 972-1578

DETAILS and SPECIFICATIONS

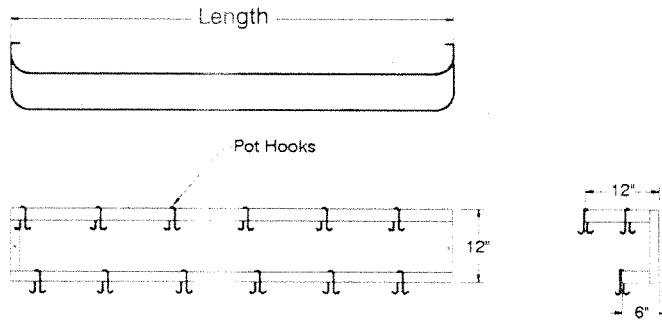
TOL \pm .500"

ALL DIMENSIONS ARE TYPICAL

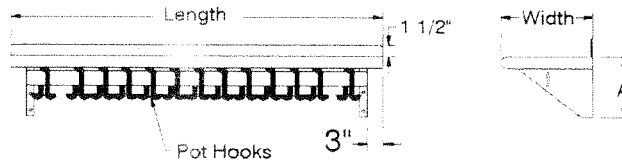
Ceiling Mounted



Wall Mounted



Shelf with Pot Rack



Width	A
12"	10"
15"	10"
18"	10"





SUPPLIERS OF HIGH QUALITY EQUIPMENT
TO THE FOOD INDUSTRY



Process Flow >> Stage 1 >> Stage 2 >> Stage 3 >> Rice Mixing

K-11

RICE MIXER

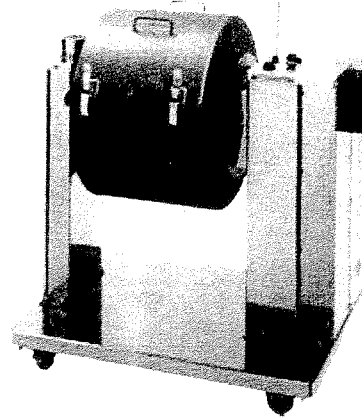
Turn the most delicate aspect of sushi preparation, vinegar and rice mixing into an automatic process that yields perfect soft fluffy rice

Rice Mixer MCR-UNC

This model makes the process of mixing sushi vinegar with cooked sushi rice quick and easy. This is a delicate part of the process and is vital to making delicious rice. The mixer distinguishes itself by gently feeding air into the centre of the drum, creating a light and fluffy texture similar to that found with hand mixing.

Specification:

- **Power** - 220-240V, 50/60Hz, Single phase, 130W
- **Capacity** -Max 15kg/cycle.
- **Size** -810mm (W) x 645mm (D) x 1120mm (H) x 100kg



K-14

Item # _____

Quantity _____

C.S.I. Section 11400

HOBART

701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com

AM SELECT DISHWASHER

HOBART

STANDARD FEATURES

- .74 gallons per rack final rinse water
- 58 racks per hour – hot water sanitizing
- 65 racks per hour – chemical sanitizing
- NSF pot and pan listed for 2-, 4- & 6- minute cycles
- Timed wash cycles for 1, 2, 4 or 6 minutes
- Solid state, integrated controls with digital status indicators
- Self-draining, high efficiency stainless steel pump and stainless steel impeller
- Stainless steel drawn tank, tank shell, chamber, trim panels, frame and feet
- Spring counterbalanced chamber with polyethylene guides
- Revolving, interchangeable upper and lower anti-clogging wash arms
- Revolving, interchangeable upper and lower rinse arms
- Slanted, self-locating, one-piece scrap screen and basket system
- Automatic fill
- Door actuated start
- Automatic drain closure
- Vent fan control
- External booster activation
- Delime cycle
- Service diagnostics
- NAFEM Data Protocol capable
- Straight-through or corner installation
- Hot water or chemical sanitation

VOLTAGE

- ┘ 208-240/60/1
- ┘ 208-240/60/3
- ┘ 480/60/3
- ┘ 200-240/50/3*
- ┘ 380-415/50/3*

*Not submitted for UL/CUL Listing

MODEL

- ┘ AM15

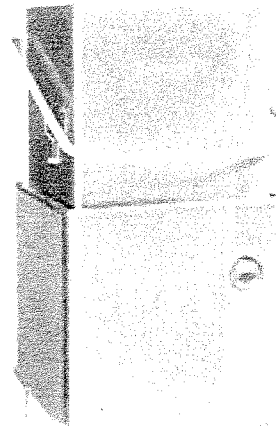
OPTIONS AT EXTRA COST

- ┘ Gas heat
- ┘ Sense-A-Temp™ 70°F rise electric booster heater
- ┘ Single point electrical connection for booster equipped machines (3 phase only)

ACCESSORIES

- ┘ 3/4" pressure regulator valve
- ┘ Peg rack
- ┘ Combination rack
- ┘ Splash shield for corner installations
- ┘ Flanged and seismic feet
- ┘ End of cycle audible alarm (field activated)
- ┘ Delime notification (field activated)
- ┘ Drain water tempering kit

Specifications, Details and Dimensions on Inside and Back.

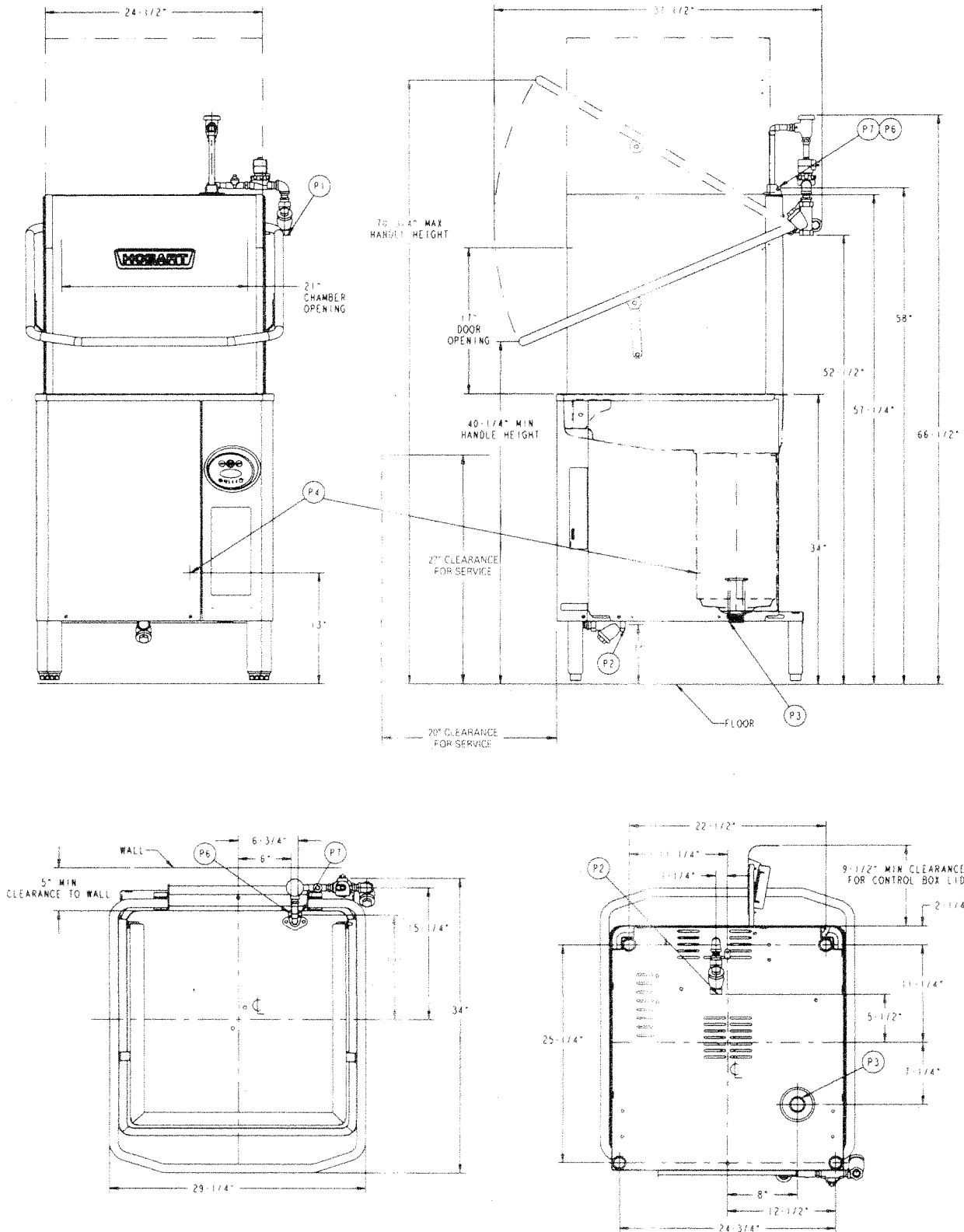


AM SELECT DISHWASHER

AM SELECT DISHWASHER - ELECTRIC

HOBART

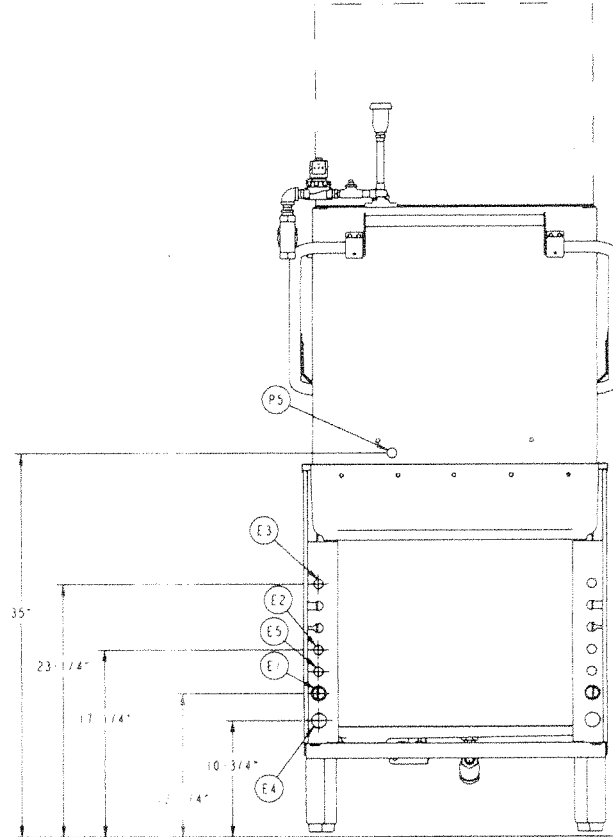
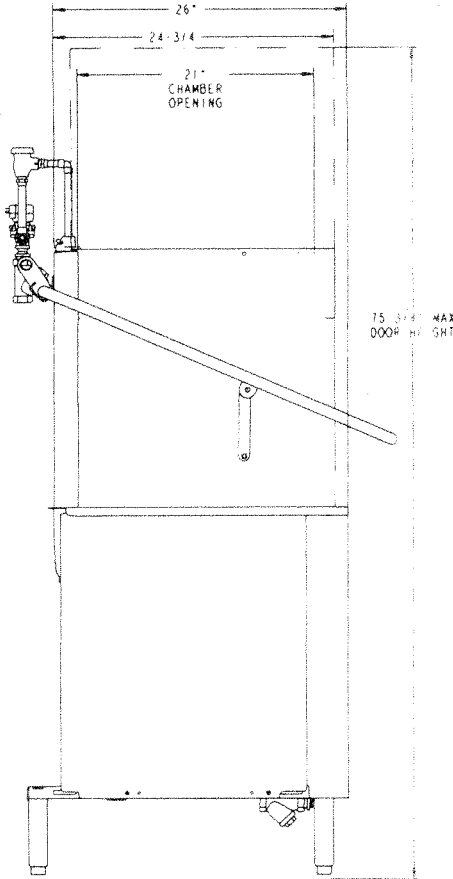
701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com



HOBART

701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com

AM SELECT DISHWASHER – ELECTRIC



WARNING

ELECTRICAL AND GROUNDING CONNECTIONS MUST COMPLY WITH THE APPLICABLE PORTIONS OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER LOCAL ELECTRICAL CODES.

PLUMBING CONNECTIONS MUST COMPLY WITH APPLICABLE SANITARY, SAFETY, AND PLUMBING CODES.

AM-15 WITH ELECTRIC HEAT			
ELEC SPECS	RATED AMPS	MINIMUM SUPPLY CIRCUIT CONDUCTOR AMPACITY	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
208-240/60/1	43.0	50	50
208-240/60/3	24.6	30	30
480/60/3	11.6	15	15
*200-240/50/3	25.2	35	35
*380-415/50/3	12.5	15	15

BOOSTER AMPACITY RATINGS 8.5KW (NOT AVAILABLE WITH GAS HEAT)			
ELEC SPECS	RATED AMPS	MINIMUM SUPPLY CIRCUIT CONDUCTOR AMPACITY	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
208-240/60/1	35.4	50	50
208-240/60/3	20.4	30	30
480/60/3	10.2	15	15
*200-240/50/3	20.4	30	30
*380-415/50/3	11.8	15	15

MACHINE ELECTRICAL SPECIFICATIONS

208-240/60/1

208-240/60/3

480/60/3

* 200-240/50/3

* 380-415/50/3

* THESE ELECTRICAL SPECIFICATIONS ARE NOT SUBMITTED FOR UL OR CUL LISTING

BOOSTER ELECTRICAL SPECIFICATIONS

208-240/60/1

208-240/60/3

480/60/3

* 200-240/50/3

* 380-415/50/3

* THESE ELECTRICAL SPECIFICATIONS ARE NOT SUBMITTED FOR UL OR CUL LISTING

CONNECTION INFORMATION (+AFF = ABOVE FINISHED FLOOR)

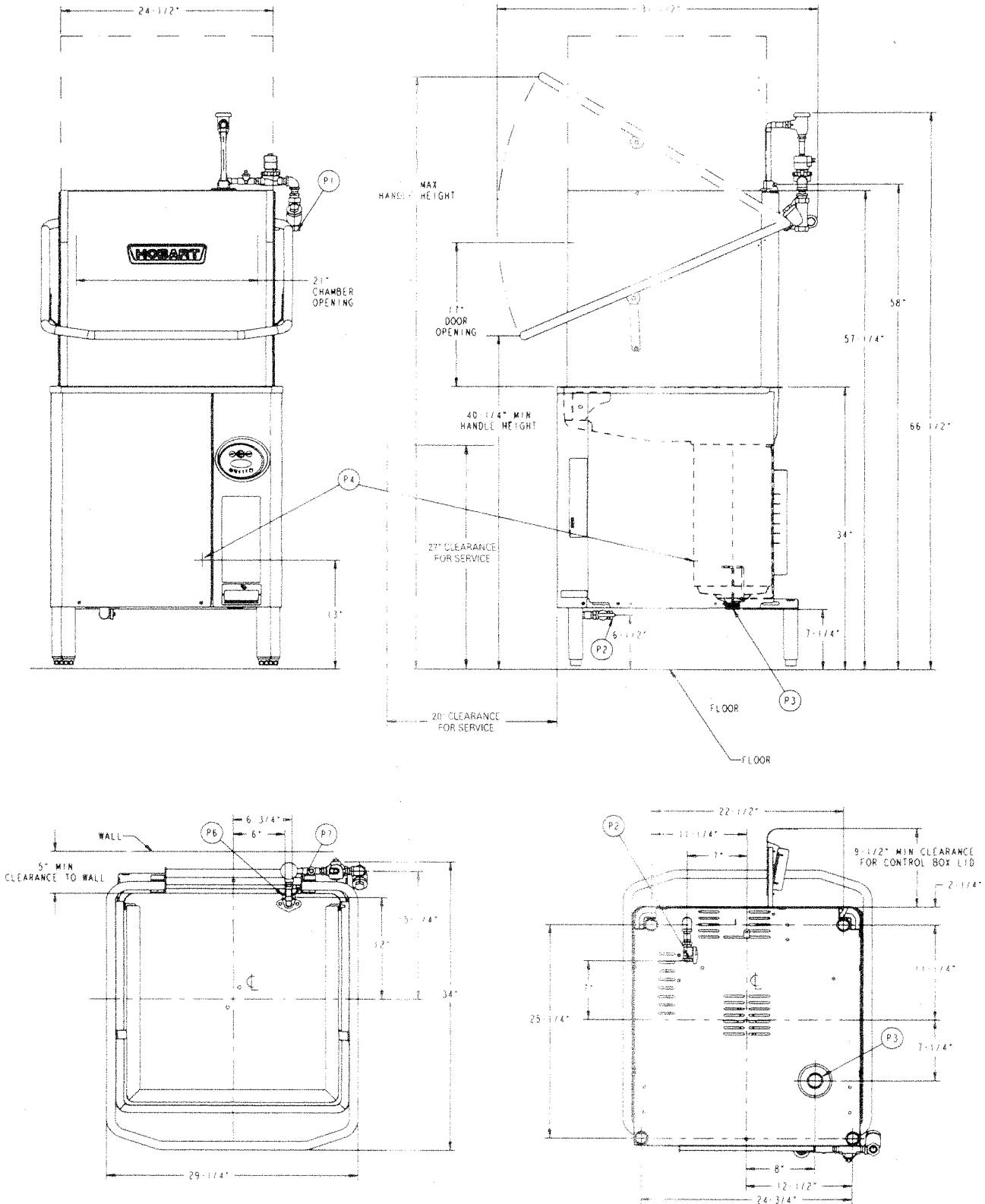
LEGEND (see page 6 for further details)

- E1 ELECTRICAL CONNECTION: MOTORS & CONTROLS (INCLUDING ELECTRIC HEAT) 1/2" CONDUIT HOLE
- E2 ELECTRICAL CONNECTION: VENT FAN CONTROL 1/2" CONDUIT HOLE (VFC1 & VFC2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE, 10W
- E3 ELECTRICAL CONNECTION: RINSE AGENT & SANITIZER FEEDERS 1/2" CONDUIT HOLE (DPS1 & DPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE (RPS1 & RPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE
- E4 ELECTRICAL CONNECTION: ELECTRIC BOOSTER (NOT AVAILABLE WITH GAS HEAT MACHINE) 1/2" CONDUIT HOLE
- E5 ELECTRICAL CONNECTION: EXTERNAL BOOSTER CONTROL 1/2" CONDUIT HOLE (BST1 & BST2) 0.1 AMPS @ 120 VAC
- P1 COMMON WATER CONNECTION (W/O ELECTRIC BOOSTER) 1/2" WATER MIN. CHEMICAL SANITIZING; 3/4" IPT
- P2 COMMON WATER CONNECTION (W/ELECTRIC BOOSTER) 1/2" WATER MIN. HOT WATER SANITIZING; 3/4" IPT
- P3 DRAIN 1-1/2" NPT
- P4 DETERGENT PROBE SENSOR: REMOVE CAP AND STUD ASSEMBLY TO ACCESS 1/8" HOLE
- P5 DETERGENT FEEDER: REMOVE CAP PLUG TO ACCESS 1/8" HOLE
- P6 RINSE AGENT FEEDER: 1/8" NPT. REMOVE 1/8" NPT. PLUG TO ACCESS TAPPED HOLE
- P7 SANITIZER FEEDER (LOW TEMP MODE): 1/8" NPT. REMOVE 1/8" NPT. PLUG TO ACCESS TAPPED HOLE

AM SELECT DISHWASHER – GAS

HOBART

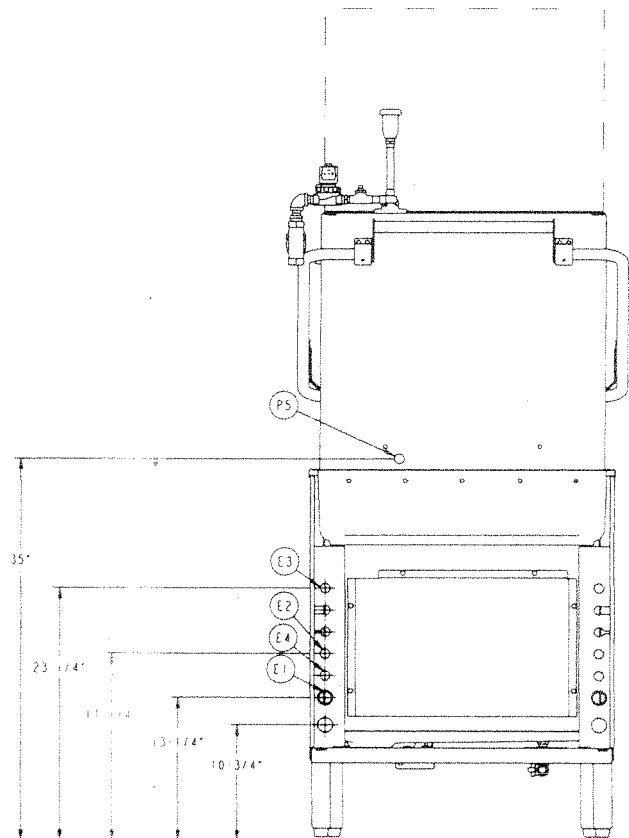
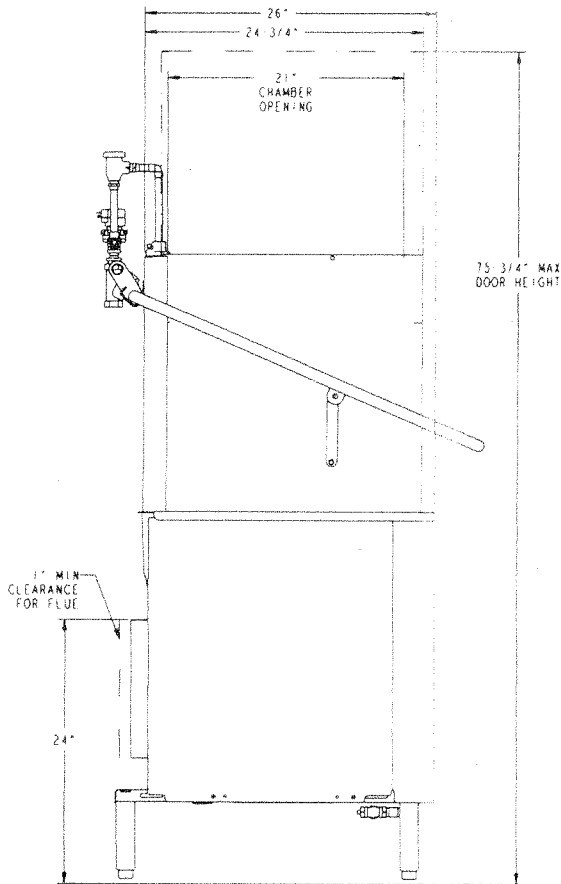
701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com



HOBART

701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com

AM SELECT DISHWASHER – GAS



CONNECTION INFORMATION (*AFF. = ABOVE FINISHED FLOOR)

LEGEND (See page 6 for further details)

- E1 ELECTRICAL CONNECTION, MOTORS & CONTROLS
1" OR 1 1/4" CONDUIT HOLE
- E2 ELECTRICAL CONNECTION, VENT FAN CONTROL
1/2" CONDUIT HOLE. (VFC1 & VFC2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE.
ON WHEN MACHINE IS ON.
- E3 ELECTRICAL CONNECTION, RINSE AGENT & SANITIZER FEEDERS.
1/2" CONDUIT HOLE. (DPS1 & DPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE.
(RPS1 & RPS2) 1.5 AMPS @ NAMEPLATE SUPPLY VOLTAGE
- E4 ELECTRICAL CONNECTION, EXTERNAL BOOSTER CONTROL.
1/2" CONDUIT HOLE. (BSTR1 & BSTR2) 0.1 AMPS @ 120 VAC
- P1 COMMON WATER CONNECTION.
(180° WATER MIN. HOT WATER SANITIZING)
(120° WATER MIN. CHEMICAL SANITIZING)
3/4" FEP
- P2 GAS CONNECTION - NAT. OR L.P. (WHEN ORDERED)
1/2" EP
- P3 DRAIN - 1/2" NPT
- P4 DETERGENT PROBE SENSOR. REMOVE CAP AND STUD ASSEMBLY
TO ACCESS. 7/8" HOLE
- P5 DETERGENT FEEDER. REMOVE CAP PLUG TO ACCESS
7/8" HOLE
- P6 RINSE AGENT FEEDER. 1/8" NPT. REMOVE 1/8" NPT
PIPE PLUG TO ACCESS TAPPED HOLE
- P7 SANITIZER FEEDER. 1/8" NPT. REMOVE 1/8" NPT
PIPE PLUG TO ACCESS TAPPED HOLE

WARNING

ELECTRICAL AND GROUNDING CONNECTIONS
MUST COMPLY WITH THE APPLICABLE
PORTIONS OF THE NATIONAL ELECTRICAL
CODE AND/OR OTHER LOCAL ELECTRICAL CODES

PLUMBING CONNECTIONS MUST COMPLY
WITH APPLICABLE SANITARY, SAFETY,
AND PLUMBING CODES

AM-15 WITH GAS HEAT			
ELEC. SPECS	RATED AMPS	MINIMUM SUPPLY CIRCUIT CONDUCTOR AMPACITY	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
208-240/60/1	15.5	20	20
208-240/60/3	10.0	15	15
480/60/3	6.3	15	15

MACHINE ELECTRICAL SPECIFICATIONS

208-240/60/1
208-240/60/3
480/60/3

AM SELECT DISHWASHER

HOBART

701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com

ELECTRIC TANK HEAT

PLUMBING NOTES

WATER HAMMER ARRESTOR (MEETING ASSE 1010 STANDARD OR EQUIVALENT) TO BE SUPPLIED (BY OTHERS) IN COMMON WATER SUPPLY LINE AT SERVICE CONNECTION

RECOMMENDED WATER HARDNESS TO BE 4-6 GRAINS FOR BEST RESULTS

RECOMMENDED BUILDING FLOWING WATER PRESSURE TO THE DISHWASHER IS 5-25 PSI. IF PRESSURES HIGHER THAN 25 PSI ARE PRESENT, A PRESSURE REGULATING VALVE WITH INTERNAL THERMAL EXPANSION BY PASS, MUST BE SUPPLIED (BY OTHERS) IN THE WATER LINE TO THE DISHWASHER

FOR CONVENIENCE WHEN CLEANING, WATER TAP SHOULD BE INSTALLED NEAR MACHINE WITH HEAVY DUTY HOSE AND SQUEEZE VALVE

MISCELLANEOUS NOTES

ALL DIMENSIONS TAKEN FROM FLOOR LINE MAY INCREASE 3/4" OR DECREASE 1/2" DEPENDING ON LEG ADJUSTMENT

NET WEIGHT OF MACHINE 274 LBS W/O BOOSTER

DOMESTIC SHIPPING WEIGHT 354 LBS W/O BOOSTER

NET WEIGHT OF MACHINE 304 LBS W/BOOSTER

DOMESTIC SHIPPING WEIGHT 384 LBS W/BOOSTER

SIZE OF RACKS 19-3/4" x 19-3/4"

DRAIN LEVER LOCATED INSIDE TANK

VENT HOOD (IF REQUIRED) TO PROVIDE A MINIMUM 450 CFM EXHAUST

(REF. INSTALLATION INSTRUCTIONS)

SINGLE POINT ELECTRICAL CONNECTION AVAILABLE ON 3 PH MACHINES ONLY WITH INTEGRATED BOOSTER HEATER

OPTIONAL AM SELECT SINGLE POINT ELECTRICAL SERVICE CONNECTION AS SHOWN BELOW

ELEC SPECS	RATED AMPS	MINIMUM SUPPLY CONDUCT OR AMPACITY	MAXIMUM PROTECTIVE DEVICE
208-240/60/3	45.4	60	60
480/60/3	23.6	30	30
200-240/50/3	45.7	60	60
380-415/50/3	25.2	30	30

GAS TANK HEAT

GAS HEATED DISHWASHERS

FOR NATURAL GAS, PRESSURE TO THE BURNER (CUSTOMER CONNECTION) SHOULD NOT EXCEED 7" W.C.

FOR LIQUIFIED PETROLEUM GAS, PRESSURE TO THE BURNER (CUSTOMER CONNECTION) SHOULD NOT EXCEED 11" W.C.

IF GAS PRESSURE IS HIGHER THAN 7" (NATURAL GAS) OR 11" (L.P.G.) W.C., A PRESSURE REGULATING VALVE MUST BE INSTALLED (BY OTHERS) IN THE GAS LINE TO THE DISHWASHER

GAS HEAT BTU INPUT 25,000 NATURAL
25,000 PROPANE

PLUMBING NOTES

WATER HAMMER ARRESTOR (MEETING ASSE 1010 STANDARD OR EQUIVALENT) TO BE SUPPLIED (BY OTHERS) IN COMMON WATER SUPPLY LINE AT SERVICE CONNECTION

RECOMMENDED WATER HARDNESS TO BE 4-6 GRAINS FOR BEST RESULTS

RECOMMENDED BUILDING FLOWING WATER PRESSURE TO THE DISHWASHER IS 5-25 PSI. IF PRESSURES HIGHER THAN 25 PSI ARE PRESENT, A PRESSURE REGULATING VALVE WITH INTERNAL THERMAL EXPANSION BY PASS, MUST BE SUPPLIED (BY OTHERS) IN THE WATER LINE TO THE DISHWASHER

FOR CONVENIENCE WHEN CLEANING, WATER TAP SHOULD BE INSTALLED NEAR MACHINE WITH HEAVY DUTY HOSE AND SQUEEZE VALVE

MISCELLANEOUS NOTES

ALL DIMENSIONS TAKEN FROM FLOOR LINE MAY INCREASE 3/4" OR DECREASE 1/2" DEPENDING ON LEG ADJUSTMENT

NET WEIGHT OF MACHINE 306 LBS

DOMESTIC SHIPPING WEIGHT 386 LBS

SIZE OF RACKS 19-3/4" x 19-3/4"

DRAIN LEVER LOCATED INSIDE TANK

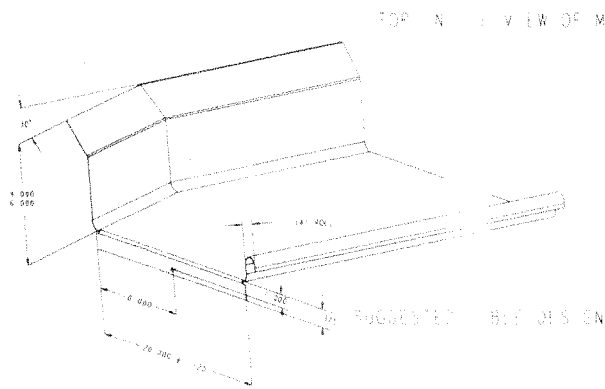
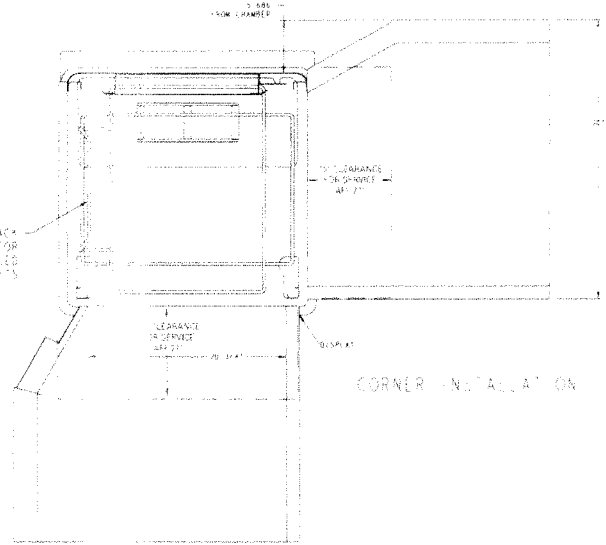
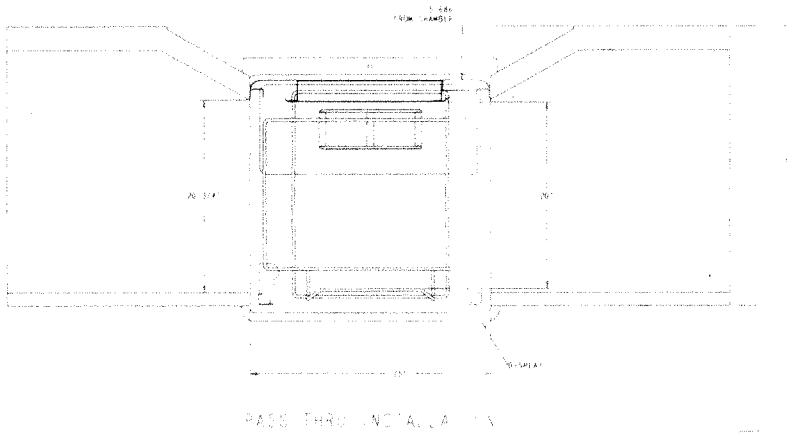
VENT HOOD (IF REQUIRED) TO PROVIDE A MINIMUM 450 CFM EXHAUST (REF. INSTALLATION INSTRUCTIONS)

	AM Select	
	Hot Water Sanitizing	Chemical Sanitizing
Machine Ratings (Mechanical)		
Racks per Hour (Max.)	36	65
Dishes per Hour (Average 25 per rack)	900	1,625
Glasses per Hour (Average 45 per rack)	1,350	2,925
Table to Table - Inside Tank at Table Connection (Inches)	67"	25 1/4"
Overall Dimensions - (H x W x D) (Inches)	66.5" x 27" x 28.5"	
Wash Motor H.P.	2	2
Wash Tank Capacity - Gallons	14	14
Wash Pump Capacity - Gallons per Minute - Water Test	160	160
Heating Equipment - (For keeping power wash water hot)		
Gas Burner (Regulated) Natural/LP Gas BTU/Hr	25,000	25,000
Electric Heating Unit (Regulated)	5 kw	5 kw
Rinse - Minutes operated during hour of capacity operation	6.6	10.83
Seconds of rinse per rack	10	10
Rate of Rinse Flow - Gallons per Minute - at 20 lbs. Flow Pressure	4.4	4.4
Rinse Consumption - Gallons per Hour - Maximum - at 20 lbs. Flow Pressure	264	48.1
Rinse Cycle - Gallons per Rack - at 20 PSI Flow	.74 - 60°F Min.	.74 - 140°F Min.
Steam Booster, if used based on 20 PSI steam - 20 PSI water flowing 130°F entering water raised to 180°F min. 50°F rise) - Lbs. per Hour	40	40
Peak Rate of Drain Flow - Gallons per Minute (Initial rate with full tank)	36	38
Exhaust Requirements	450	450
Shipping Weight Crated - Approx. lbs. - Unit only, with booster	304 - Booster 384 - Booster	354

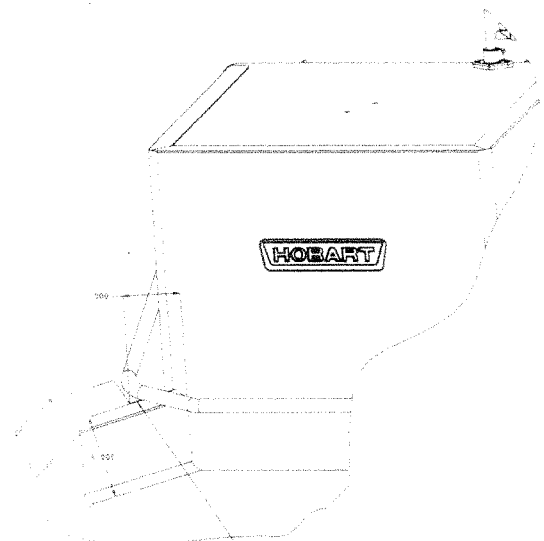
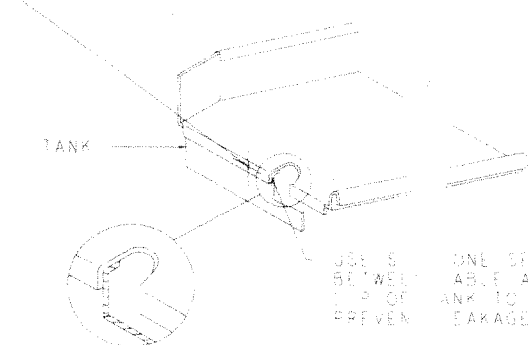
HOBART

701 S Ridge Avenue, Troy, OH 45374
 1-888-4HOBART • www.hobartcorp.com

AM SELECT DISHWASHER



- DRILL Ø .344 HOLE THROUGH TANK AND
- 5/16" x 8 S&S TRUSS HEAD SCREW
- 5/16" x 8 S&S LOCKWASHER
- 5/16" x 8 S&S HEX HD NUT



AM SELECT DISHWASHER

HOBART

701 S Ridge Avenue, Troy, OH 45374
1-888-4HOBART • www.hobartcorp.com

The microcomputer-based control system is built into the AM Select dishwasher. It is available in standard electrical specifications of 208-240/60/1, 208-240/60/3, 480/60/3, 200-240/50/3, 380-415/50/3 and is equipped with a reduced voltage pilot circuit transformer.

***CAUTION: CERTAIN MATERIALS, INCLUDING SILVER, ALUMINUM AND PEWTER ARE ATTACKED BY SODIUM HYPOCHLORITE (LIQUID BLEACH) IN THE CHEMICAL SANITIZING DISHWASHER MODE OF OPERATION. WATER HARDNESS MUST BE CONTROLLED TO 4-6 GRAINS FOR BEST RESULTS.**

CONSTRUCTION: Drawn tank, tank shelf and feet constructed of 16 gauge stainless steel. Wash chamber and front trim panel above motor compartment are polished, satin finish. Frame is 12 gauge stainless steel, chamber is 18 gauge; and removable trim panels are 20 gauge.

CHAMBER LIFT: Chamber coupled by stainless steel handle, spring counterbalanced. Chamber guided for ease of operation and long life.

PUMP: With stainless steel pump and impeller, integral with motor assures alignment and quiet operation. Pump shaft seal with stainless steel parts and a carbon ceramic sealing interface. Easily removable impeller housing permits ease of inspection. Capacity 160 GPM. Pump is completely self-draining.

MOTOR: Built for Hobart, 2 H.P., with inherent thermal protection, grease-packed ball bearings, splash-proof design, ventilated. Single-phase is capacitor-start, induction-run type. Three-phase is squirrel-cage, induction type.

MICROCOMPUTER CONTROL SYSTEM: Hobart microcomputer controls, assembled within water-resistant enclosure, provide built-in performance and reliability.

The microcomputer control, relays and contactors are housed behind a stainless steel enclosure, hinged to provide easy access for servicing. The line voltage electrical components are completely wired with 105°C, 600V thermoplastic insulated wire with stranded conductors and routed through listed electrical conduit. Electrical components are wired with type ST cord. Line disconnect switch NOT furnished.

CYCLE OPERATION: The microcomputer-timing program is started by closing the doors, which actuates the door cycle switch. The microcomputer energizes the wash pump motor contactor during the wash portion of the program. After the wash, a dwell permits the upper wash manifold to drain. At the end of the dwell, the final rinse solenoid valve is energized. After the final rinse valve closes, Sani-Dwell (Hot Water Mode only) permits sanitization to continue. The Rinse display remains on during this period, completing the program. If the microcomputer is interrupted during a cycle by the door-cycle switch, the microcomputer is reset to the beginning of the program.

Hot Water Sanitizing (58 racks per hour) – 57 seconds: 38 Second Wash, 2 Second Dwell, 10 Second Rinse, 7 Second Sani-Dwell. **Chemical Sanitizing (65 racks per hour) – 50 Seconds:** 38 Second Wash, 2 Second Dwell, 10 Second Rinse. Other programs can be pre-selected by your Hobart service technician.

Manual wash cycle selector also provides selection of 2- 4- or 6-minute wash cycles for heavier washing applications.

WASH: Hobart revolving stainless steel wash arms with unrestricted openings above and below provide thorough distribution of water jets to all dishware surfaces. Arms are easily removable for cleaning and are interchangeable. Stainless steel tubing manifold connects upper and lower spray system.

RINSE: Rotating rinse arms, both upper and lower, feature 14 rinse nozzles. The stainless steel upper and lower rinse arms are easily removable without tools for inspection and are interchangeable. Diaphragm-type rinse control solenoid valve mounted outside machine. Machine is equipped with special hot water vacuum breaker on downstream side of rinse valve – mounted 6" above uppermost rinse opening. Easy open brass line strainer furnished.

FILL: Microcomputer controlled fill valve installed on upstream side of rinse vacuum breaker. Ratio fill method is used giving the correct fill at any flowing water pressure. (20 PSIG minimum necessary for proper rinsing.)

DRAIN AND OVERFLOW: Large bell type automatic overflow and drain valve controlled from inside of machine. Drain automatically closed by lowering chamber. Drain seal is large diameter, high temperature "O" ring. Cover for overflow is integral part of the standpipe.

STRAINER SYSTEM: Equipped with large, exclusive self-flushing, easily removable perforated stainless steel, one-piece strainer and large capacity scrap basket. Submerged scrap basket minimizes frequent removal and cleaning.

HEATING EQUIPMENT: Standard tank heat is 5KW electric immersion heating element. Regulated power infrared gas immersion tube system is optional at extra cost. A solid-state igniter board controls the gas valve and provides flame ignition. A transformer steps the control circuit voltage down to 24 volts to power the igniter board and gas valves.

Gas Heated Dishwasher: For natural gas, gas pressure (customer connection) not to exceed 7" W.C. For liquefied petroleum, gas pressure to burner (customer connection) not to exceed 11" W.C. If gas pressure is higher than 7" W.C. natural or 11" W.C. LP, a pressure regulating valve must be supplied (by others) in the gas line to the dishwasher. Water temperature regulation is controlled by thermistor sensor in combination with microcomputer controls. The tank heat and positive low water protection microcomputer circuits are automatically activated when the main power switch is turned "on". If tank is accidentally drained, low water protection device automatically turns heat off. Gas immersion tube is additionally protected by a high limit device mounted on the surface of the tube. These features are standard with the Hobart Microcomputer Control System.

OPTIONAL EQUIPMENT AT EXTRA COST – ELECTRIC BOOSTER HEATER: Electric booster with Sense-A-Temp™ technology adequately sized to raise 110°F inlet water to 180°F (not available on gas heat machines).

ACCESSORIES: 19" x 19" peg and combination dish racks. Splash shield for corner installations. End of cycle audible alarm (field activated). Delay notification (field activated). Desirable functional accessories can be furnished at added cost. See listed options and accessories on this specification sheet. Write to the factory for special requirements not listed above.

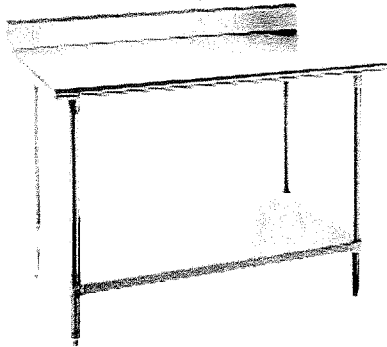
As continued product improvement is a policy of Hobart, specifications are subject to change without notice.

K-15



STAINLESS STEEL
WORK TABLES

STANDARD Series - 5" Backsplash - Undershelf Style



Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

FEATURES:

Top is furnished with a 1 5/8" sanitary rolled rim edge on front, 1 5/8" square side edges, and a 5" splash with a 1" return on the rear side.

TWO hat channels stud welded to reinforce and maintain a level working surface. 30" and 36" wide tables supplied with THREE hat channels.

Pre-engineered welded angle adapters insure ease of future drawer installation.

Aluminum die cast "leg-to-shelf" clamp secures shelf to leg eliminating unsightly nuts and bolts. Undershelf is adjustable.

CONSTRUCTION:

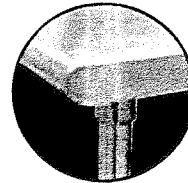
All TIG welded. Exposed weld areas polished to match adjacent surfaces.

Entire top mechanically polished to a satin finish.

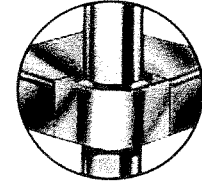
Top is sound deadened.

Roll formed embossed galvanized hat channels are secured to top by means of structural adhesive and weld studs.

Gussets welded to support hat sections.



NEW
 Rolled Rim Edges on
 Front & Splash on
 Back and Square
 Side Edges



Featuring as Standard:
"THE PROVEN"
 ORIGINAL ADVANCE TABCO
Adjustable Undershelf
 with Die Cast Leg Clamp

MATERIAL:

KMS-SERIES: Stainless Steel Legs & Undershelf

- TOP:** 16 gauge stainless steel type "304" series.
- SHELF:** 18 gauge stainless steel.
- LEGS:** 1 5/8" diameter tubular stainless steel.
1" adjustable stainless steel bullet feet.
Stainless steel gussets.

KMG-SERIES: Galvanized Legs & Undershelf

- TOP:** 16 gauge stainless steel type "304" series.
- SHELF:** 18 gauge galvanized steel.
- LEGS:** 1 5/8" diameter tubular galvanized steel.
1" adjustable plastic bullet feet.
Galvanized steel gussets.

**KMS-Series:
 Stainless Steel Legs & Undershelf**

L	24" Wide	30" Wide	36" Wide
30"	KMS-240	KMS-300	
24"	KMS-242	KMS-302	
36"	KMS-243	KMS-303	KMS-363
48"	KMS-244	KMS-304	KMS-364
60"	KMS-245	KMS-305	KMS-365
72"	KMS-246	KMS-306	KMS-366
84"	KMS-247	KMS-307	KMS-367
96"	KMS-248	KMS-308	KMS-368
108"	KMS-249	KMS-309	KMS-369
120"	KMS-2410	KMS-3010	KMS-3610
132"	KMS-2411	KMS-3011	KMS-3611
144"	KMS-2412	KMS-3012	KMS-3612



**KMG-Series:
 Galvanized Steel Legs & Undershelf**

L	24" Wide	30" Wide	36" Wide
30"	KMG-240	KMG-300	
24"	KMG-242	KMG-302	
36"	KMG-243	KMG-303	KMG-363
48"	KMG-244	KMG-304	KMG-364
60"	KMG-245	KMG-305	KMG-365
72"	KMG-246	KMG-306	KMG-366
84"	KMG-247	KMG-307	KMG-367
96"	KMG-248	KMG-308	KMG-368
108"	KMG-249	KMG-309	KMG-369
120"	KMG-2410	KMG-3010	KMG-3610
132"	KMG-2411	KMG-3011	KMG-3611
144"	KMG-2412	KMG-3012	KMG-3612

Create Your Own Efficient Workstation with the Available Standard Accessories (Visit Section K)



Customer Service Available To Assist You **1-800-645-3166** 8:30 am - 8:00 pm E.S.T.

Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK
 Fax: (631) 242-6900

GEORGIA
 Fax: (770) 775-5625

TEXAS
 Fax: (972) 932-4795

NEVADA
 Fax: (775) 972-1578

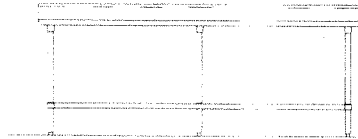
DETAILS and SPECIFICATIONS

ALL DIMENSIONS ARE TYPICAL TOL ± .500"

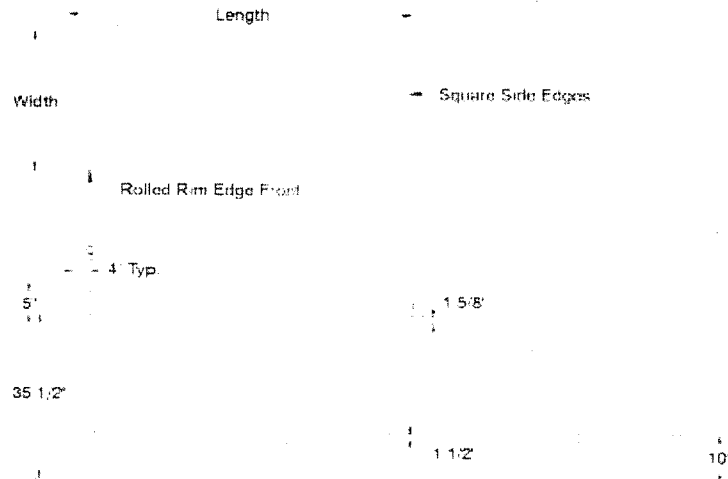
All Units Shipped Unassembled (KD) for Reduced Shipping Costs.

KMS & KMG Series Undershelf Style 5" Backsplash

Finished size of undershelf = Length minus 5 3/4"
Width minus 5 3/4"



Units 8ft. and larger are furnished with six (6) legs



KMS-Series: Stainless Steel Legs & Undershelf

L	24" Wide	Wt.	30" Wide	Wt.	36" Wide	Wt.
30"	KMS-240	55 lbs.	KMS-300	70 lbs.		
24"	KMS-242	50 lbs.	KMS-302	56 lbs.		
36"	KMS-243	66 lbs.	KMS-303	77 lbs.	KMS-363	92 lbs.
48"	KMS-244	81 lbs.	KMS-304	92 lbs.	KMS-364	101 lbs.
60"	KMS-245	95 lbs.	KMS-305	111 lbs.	KMS-365	121 lbs.
72"	KMS-246	113 lbs.	KMS-306	129 lbs.	KMS-366	142 lbs.
84"	KMS-247	135 lbs.	KMS-307	153 lbs.	KMS-367	169 lbs.
96"	KMS-248	150 lbs.	KMS-308	171 lbs.	KMS-368	189 lbs.
108"	KMS-249	165 lbs.	KMS-309	195 lbs.	KMS-369	260 lbs.
120"	KMS-2410	268 lbs.	KMS-3010	294 lbs.	KMS-3610	315 lbs.
132"	KMS-2411	301 lbs.	KMS-3011	331 lbs.	KMS-3611	358 lbs.
144"	KMS-2412	316 lbs.	KMS-3012	346 lbs.	KMS-3612	373 lbs.

KMG-Series: Galvanized Steel Legs & Undershelf

L	24" Wide	Wt.	30" Wide	Wt.	36" Wide	Wt.
30"	KMG-240	55 lbs.	KMG-300	70 lbs.		
24"	KMG-242	50 lbs.	KMG-302	56 lbs.		
36"	KMG-243	66 lbs.	KMG-303	77 lbs.	KMG-363	92 lbs.
48"	KMG-244	81 lbs.	KMG-304	92 lbs.	KMG-364	101 lbs.
60"	KMG-245	95 lbs.	KMG-305	111 lbs.	KMG-365	121 lbs.
72"	KMG-246	113 lbs.	KMG-306	129 lbs.	KMG-366	142 lbs.
84"	KMG-247	135 lbs.	KMG-307	153 lbs.	KMG-367	169 lbs.
96"	KMG-248	150 lbs.	KMG-308	171 lbs.	KMG-368	189 lbs.
108"	KMG-249	165 lbs.	KMG-309	195 lbs.	KMG-369	260 lbs.
120"	KMG-2410	268 lbs.	KMG-3010	294 lbs.	KMG-3610	315 lbs.
132"	KMG-2411	301 lbs.	KMG-3011	331 lbs.	KMG-3611	358 lbs.
144"	KMG-2412	316 lbs.	KMG-3012	346 lbs.	KMG-3612	373 lbs.



ADVANCE TABCO is constantly engaged in a program of improving our products. Therefore, we reserve the right to change specifications without prior notice.



STAINLESS STEEL & ALUMINUM
WALL SHELVES NSF

K-16

KD Wall Shelf



Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

FEATURES:

Furnished with a 1 1/2" sanitary rolled rim with a 1-1/4" turn-up edge on sides and rear.
 Unit is easily assembled employing the slip-fit TAB-LOK design.

CONSTRUCTION:

Shelf and brackets are die stamped and die formed.

MATERIAL:

WS-KD Series - 18 gauge stainless steel polished to a satin finish.
AWS-KD Series - Heavy gauge aluminum.

Requirements for NSF Installations

1. Install at least 60" above floor.
2. Limit to dry storage.
3. Avoid contact with liquids.
4. For "Ganging-Up" installation, allow at least 2" between units or mount units side by side and seal joints with an approved sealant.



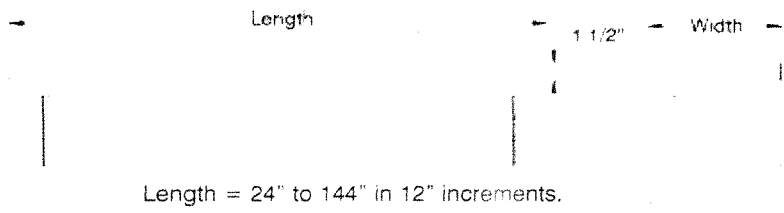
S/S	ALUMINUM	length
WS-KD-24	AWS-KD-24	24"
WS-KD-36	AWS-KD-36	36"
WS-KD-48	AWS-KD-48	48"
WS-KD-60	AWS-KD-60	60"

Standard Wall Shelf



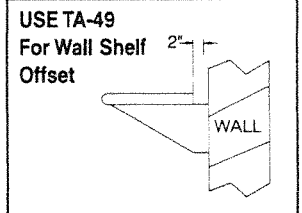
Furnished with a 1 1/2" sanitary rolled rim with a 1-1/2" turn-up edge at rear. Ends are turned down square.
 18 gauge type 304 stainless steel.
 Secured to wall by means of bolts through support brackets.
 Brackets can be positioned to accommodate wall studs.
 Units 7 ft. and larger are furnished with 3 brackets.

10" Wide	Qty	12" Wide	Qty	15" Wide	Qty	18" Wide	Qty
WS-10-24		WS-12-24		WS-15-24		WS-18-24	
WS-10-36		WS-12-36		WS-15-36		WS-18-36	
WS-10-48		WS-12-48		WS-15-48		WS-18-48	
WS-10-60		WS-12-60		WS-15-60		WS-18-60	
WS-10-72		WS-12-72		WS-15-72		WS-18-72	
WS-10-84		WS-12-84		WS-15-84		WS-18-84	
WS-10-96		WS-12-96		WS-15-96		WS-18-96	
WS-10-108		WS-12-108		WS-15-108		WS-18-108	
WS-10-120		WS-12-120		WS-15-120		WS-18-120	
WS-10-132		WS-12-132		WS-15-132		WS-18-132	
WS-10-144		WS-12-144		WS-15-144		WS-18-144	



Length = 24" to 144" in 12" increments.

Width	A
10"	8"
12"	10"
15"	10"
18"	10"



ADVANCE TABCO. SMART FABRICATION www.advancetabco.com

Customer Service Available To Assist You 1-800-645-3166 8:30 am - 8:00 pm E.S.T.
 Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

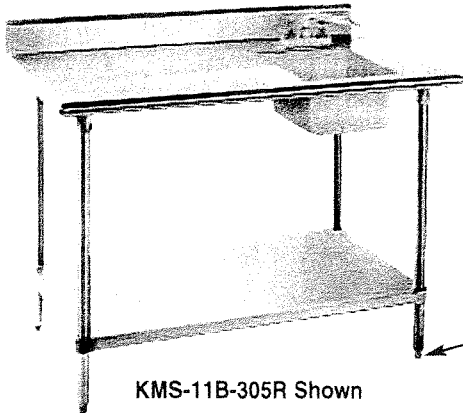
NEW YORK Fax: (631) 242-6900
GEORGIA Fax: (770) 775-5625
TEXAS Fax: (972) 932-4795
NEVADA Fax: (775) 972-1578



STAINLESS STEEL
TABLE WITH SINK

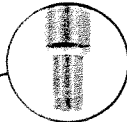
K-17

Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

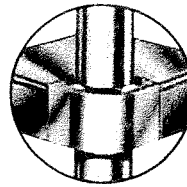


KMS-11B-305R Shown

NEW
 Rolled Rim Edge on
 Front & Square
 Edges on Side & Back



Bullet Feet



Featuring as Standard:
"THE PROVEN"
 ORIGINAL ADVANCE TABCO
**Adjustable Undershelf
 with Die Cast Leg Clamp**



FEATURES:

- Top is furnished with 1 5/8" sanitary rolled rim edge on front and square sides, and a 5" splash with a 1" return on the rear side.
- THREE hat channels stud welded to reinforce and maintain a level working surface.
- Pre-engineered welded angle adapters insure ease of future drawer installation.
- Aluminum die cast "leg-to-shelf" clamp secures shelf to leg eliminating unsightly nuts and bolts. Undershelf is adjustable.
- Stainless steel 16" x 20" x 12" sink integrally welded to top.
- K-50 Deck Mounted Faucet included.

CONSTRUCTION:

- All TIG welded. Exposed weld areas polished to match adjacent surfaces.
- Entire top mechanically polished to a satin finish.
- Top is sound deadened.
- Roll formed embossed galvanized hat channels are secured to top by means of structural adhesive and weld studs.
- Gussets welded to support hat channels.

MATERIAL:

- TOP is 16 gauge stainless steel type "304" series.
- SHELF is 18 gauge stainless steel type "430" series.
- LEGS are 1 5/8" diameter, tubular stainless steel with stainless steel gussets and 1" adjustable stainless steel bullet feet.

Model #	Length	Weight
KMS-11B-305L	30"X60"	140 lbs.
KMS-11B-305R	30"X60"	140 lbs.
KMS-11B-306L	30"X72"	165 lbs.
KMS-11B-306R	30"X72"	165 lbs.

Choose Left or Right Sink Position



Customer Service Available To Assist You **1-800-645-3166** 8:30 am - 8:00 pm E.S.T.
 Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK
 Fax (631) 242-6900

GEORGIA
 Fax: (770) 775-5625

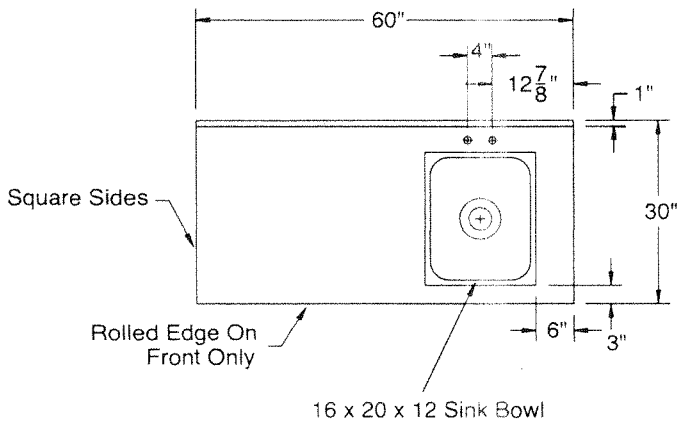
TEXAS
 Fax (972) 932-4795

NEVADA
 Fax (775) 972-1578

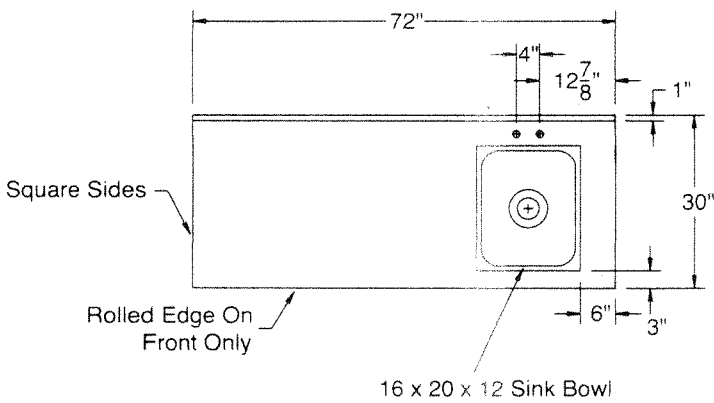
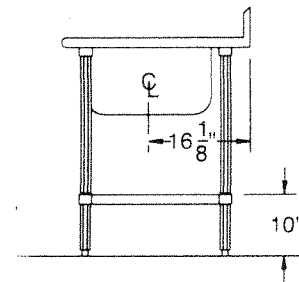
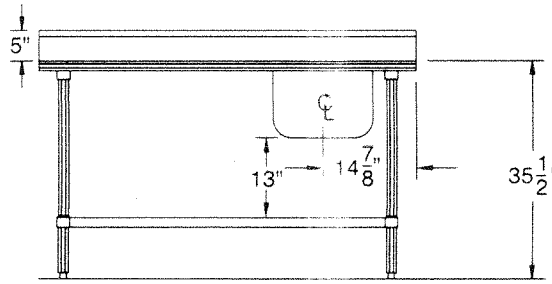
DETAILS and SPECIFICATIONS

TOL ± .500"

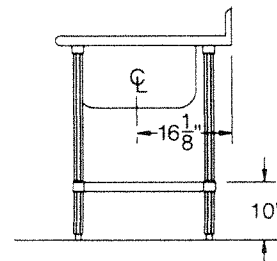
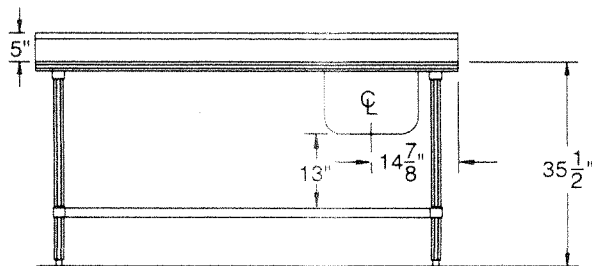
ALL DIMENSIONS ARE TYPICAL



KMS-11B-305R SHOWN



KMS-11B-306R SHOWN



K-19

Item # _____

ROYAL

Range of California, Inc.

Range Series 36

STANDARD FEATURES:

- ◆ Frame constructed of heavy gauge metal solidly welded.
- ◆ All stainless steel front, sides, valve cover and kick plate.
- ◆ Heavy gauge stainless steel plate ledge.
- ◆ 11" deep stainless steel high shelf on standard backguard with stainless steel splash panel.
- ◆ Cast iron top grates, 12" x 12", for open burners.
- ◆ Two piece, heavy duty lift off cast iron burner heads, rated at 30,000 BTU/hr.
- ◆ Spill protected standing pilot on each open burner for instant safe ignition.
- ◆ Oven contact surfaces have porcelain finish for easy maintenance.
- ◆ Oven door constructed for heavy use, easily removable for cleaning.
- ◆ Oven safety valve provides 100% shut down if pilot flame goes out.
- ◆ Piezo type, push button (matchless) ignition to light the standing pilot on the oven.
- ◆ "U" shape Oven Burner provides 35,000 BTU/hr for consistent heating. Oven design enhances airflow.
- ◆ 5/8" thick griddle plate, highly polished, with 3" wide 1-1/2 gallon capacity grease trough.
- ◆ Full width removable crumb/drip trays under open burners.



RR-6 Shown with optional casters

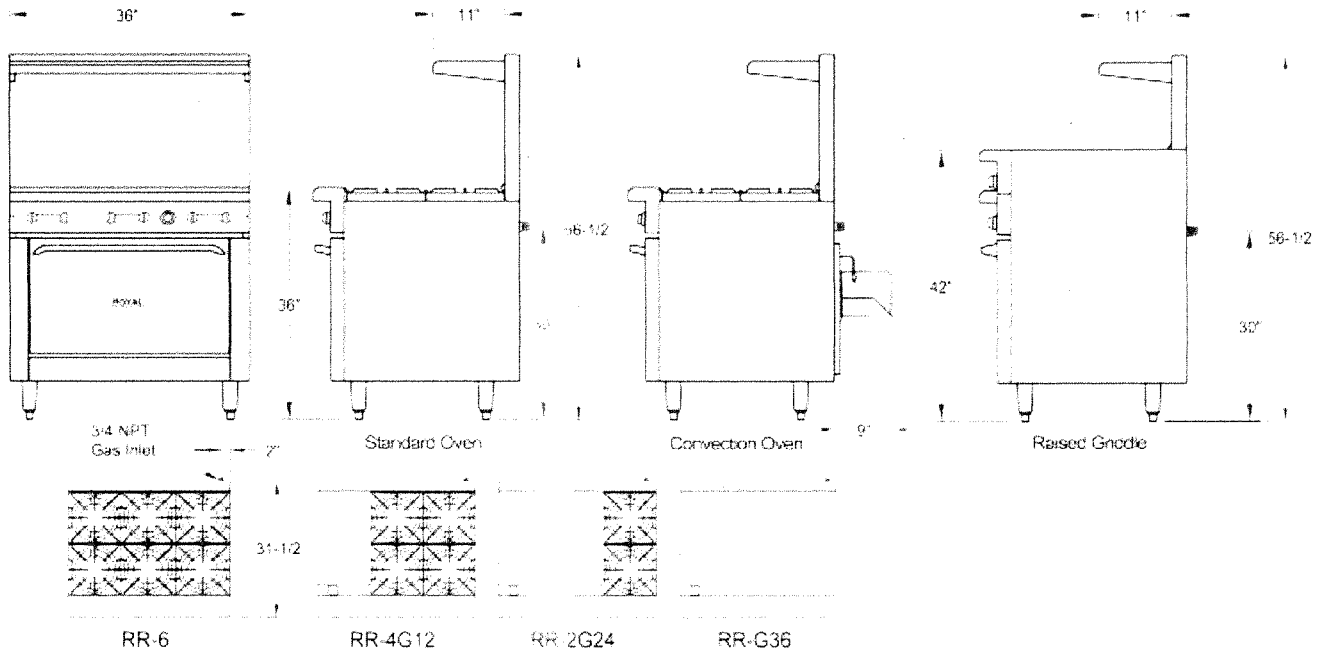
OPTIONS:

- ◆ Griddle section. Highly polished 3/4" thick plate, from 12" to 36" wide. *Note: Each 12" of griddle replaces one pair of open burners.*
- ◆ Thermostatic control for the griddle (3/4" thick plate).
- ◆ Extra oven rack (One per oven is standard).
- ◆ 6" High Casters (2 locking, 2 swivel).
- ◆ 6" High stainless steel stub back in lieu of the high shelf assembly.
- ◆ Saute or wok style burner heads.
- ◆ 10" diameter stainless steel wok ring (fits over top grate).
- ◆ Convection oven (add suffix -C)
- ◆ Hot Top section sections 12" wide x 24" deep each.
- ◆ Seismic Flanged Feet.

Royal Restaurant ranges have been designed to give the most useful features at an affordable cost. All stainless steel sides, and front panels, including the oven doors and kick plate are easily cleaned and rugged enough to withstand the constant heavy usage of a busy kitchen. Oven interiors are porcelain coated on all contact surfaces for fast and easy cleanup. The ovens are thermostatically controlled with 100% safety on the pilots to shut off the oven gas flow if the flame should go out. There is a push button ignitor for easy lighting of the oven pilot. 12" x 12" heavy cast iron grates cover the unique two piece lift off burners, rated at 30,000 BTU/hr. each.



36" Range Series Specifications



MODEL NUMBER ^{1,2}	OPEN BURNERS ³	GRIDDLE BURNERS ⁴	OVEN BURNERS ^{5, 1,2}	TOTAL BTU	SHIP WEIGHT
RR-6	6	0	1	215,000	600 Lbs.
RR-4G12	4	1	1	175,000	620 Lbs.
RR-2G24	2	2	1	135,000	630 Lbs.
RR-G36	0	3	1	95,000	650 Lbs.
RR-4RG12	4	1	1	175,000	655 Lbs.
RR-6SU	6	0	1	215,000	610Lbs.

NOTES:

1. For no oven (storage base) add suffix "-XB" and deduct 35,000 BTU's.
2. For Convection Oven (30,000 BTU/hr.) add suffix "-C" and deduct 5,000 BTU's.
3. Open Burners @ 30,000 BTU/HR. each.
4. Griddle Burners: 1 per 12" @ 20,000 BTU/HR. each.
5. Oven Burners @ 35,000 BTU/HR.

Electrical requirements convection oven: 120VAC 50-60hz, Single phase.
8 amps per oven (single).

Two speed motor (1725 / 1140 RPM) 1/2 HP.

Provided with 6' power cord fitted with a standard three prong grounded plug.

Gas Connection: 3/4" NPT on the right hand rear of the appliance
The pressure regulator (supplied) is to be connected here by the installer.

Gas pressure: 5" W.C. - Natural Gas
10" W.C. - Propane

Combustible Clearances:

15 inches sides
4 inches rear

Non-combustible Clearances:

0 inches sides
0 inches rear

Specify type of gas and altitude,
if over 2,000 feet, when ordering.

Due to continuing product development to ensure best possible performance, these specifications are subject to change without prior notification

3245 CORRIDOR DR. MIRALOMA, CA. 91752 951.360.1600 FAX 951.360.7500 (12/09)

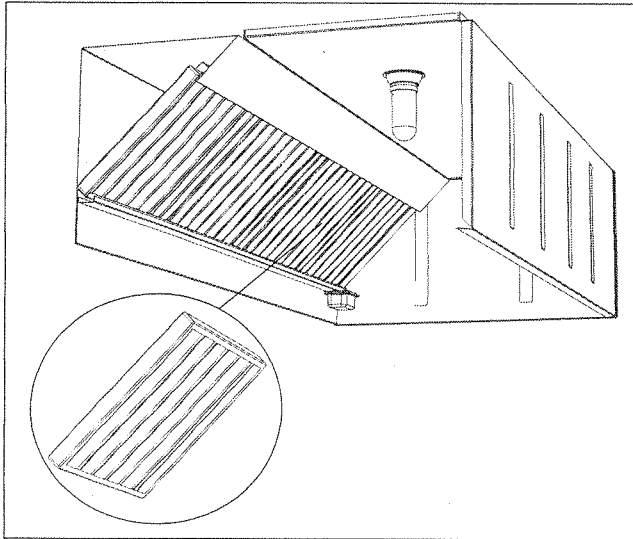
K-20,24



Project Name:	Item #
---------------	--------

Mar. 2000

Baffle Filter Hoods / Wall Style Canopy



APPLICATION AND SPECIFICATION:

Provide Greenheck Exhaust Hood Model GHEW as shown on plans and in accordance with the following specification:

Kitchen ventilation hood(s) shall be Type I, exhaust only canopy, suitable for all types of cooking applications. Hood(s) to be UL 710 Listed Without (With) Fire Dampers for 400°, 600°, or 700°F rated cooking appliances. Make-up to be independently provided.

Hood(s) shall be constructed of a minimum 18 gauge type 304 stainless steel, with a #4 finish. The hood(s) shall be constructed using the standing seam method for optimum strength. Front and end panels shall have stamped vertical ribs, evenly spaced, to add additional strength and rigidity. All external seams shall be welded liquid tight in accordance with NFPA # 96. Lighter material gauges, alternate material types, finishes, and nonliquid tight welded construction are not acceptable. All unexposed interior surfaces shall be constructed of a minimum 18 gauge corrosion resistant steel including, but not limited to ducts, plenum, and brackets.

Hood(s) shall include UL 1046 Classified aluminum baffle filters, in sufficient number and sizes to ensure optimum performance as specified by the filter manufacturer. The filter housing shall terminate in a pitched, full-length grease trough, which shall drain into a removable grease container.

Vaporproof, UL Listed incandescent light fixtures shall be prepwired to a junction box. Wiring shall conform to the requirements of the National Electrical Code (NEC #70 - Latest Edition).

MODEL GHEW

Type - Exhaust Only

- U.L. Listed without Fire Damper (UL File No. MH11726)
- U.L. Listed with Fire Damper (UL File No. MH10897)

STANDARD FEATURES:

- UL Listed and NSF Certified
- 18 Ga. 304 SS construction with continuously welded external seams in accordance with NFPA # 96
- UL 1046 Classified baffle filters
- Sizes - 36 in. to 192 in. lengths, 36 in. to 60 in. widths, 24in. or 30in. heights
- Vertical stamped ribs for added strength
- Complies with all National Codes and Standards, including UL / ULC, NSF, NFPA # 96, IMC, (including BOCA, SBCCI, and ICBO)

OPTIONS:

- Painted or galvanized hoods (stainless steel standard)*
- Stainless steel or non-stick baffle filters (aluminum baffle filters standard)
- All stainless steel construction (18 Ga. 304 SS where exposed construction standard)
- Duct collars shipped loose for field installation (factory attached standard)
- Tapered hood (18in. front) - Model GHEW-T, available on 24in. high only
- Stainless steel finished back (for single island applications)
- Recessed fluorescent or recessed incandescent lights (globe incandescent lights standard)

ACCESSORIES:

- On / Off switches, hood mounted or remote mounted
- Filler panels for clearance to combustibles
- Stainless steel backsplash panel, insulated or non-insulated
- Enclosure panels to span between hood and ceiling
- End skirts for improved capture and performance
- Thermostatically controlled automatic fire damper (fusible link fire damper standard for hoods UL Listed with Fire Dampers)
- Filter removal tool

Due to continuous research Greenheck reserves the right to change specifications without notice.

*Consult factory for possible restrictions

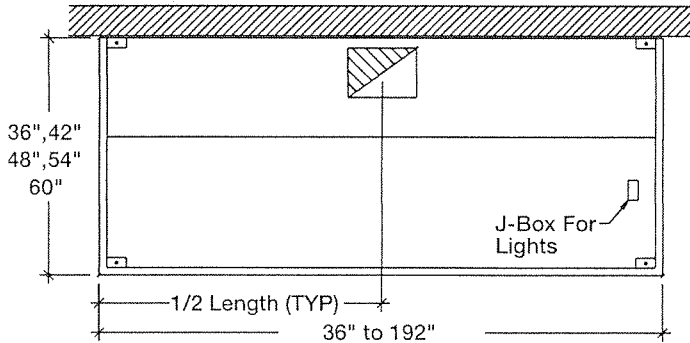
Code Information

Greenheck Kitchen Hoods are built in accordance with the following codes, standards, and recommended practices.

- UL 710 Listed
- NFPA 96
- BOCA
- NSF
- SBCCI
- IMC / UMC



Baffle Filter Hoods / Wall Style Canopy



* All dimensions appear in inches. *

CFM Requirements

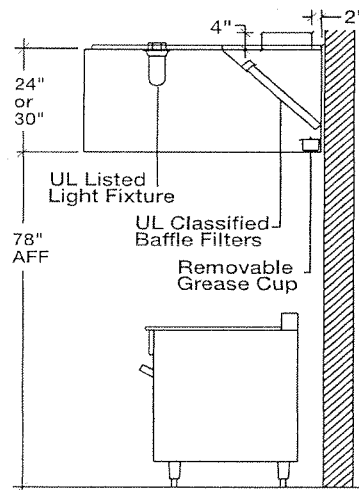
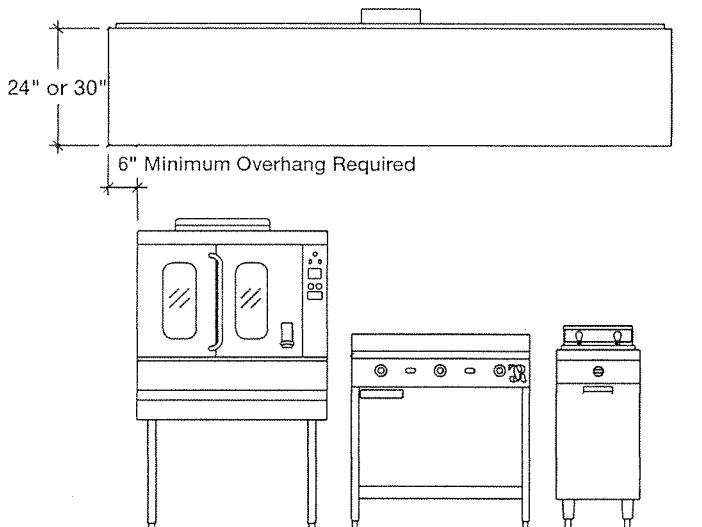
Exhaust air quantities vary depending on the type of cooking equipment used with the hood. Model GHEW meets UL minimum exhaust requirements for operation as follows:

400° F	135 CFM per lineal foot*
600° F	150 CFM per lineal foot*
700° F	270 CFM per lineal foot*

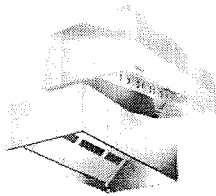
For the most efficient hood selection, the *Greenheck Cooking Equipment Ventilation Application and Design* manual should be consulted.

See the National Evaluation Report (NER) 436 for allowable values and/or conditions of use concerning materials presented in this document. (This report is subject to re-examination, revision, and possible closing.)

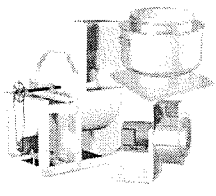
* Consult factory for possible restrictions



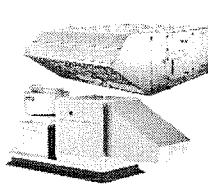
Complete Kitchen Ventilation Systems



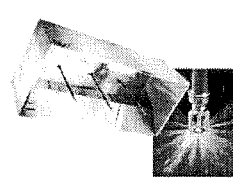
Exhaust Hoods



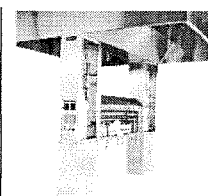
Exhaust Fans



Make-Up Air Units



Fire Suppression



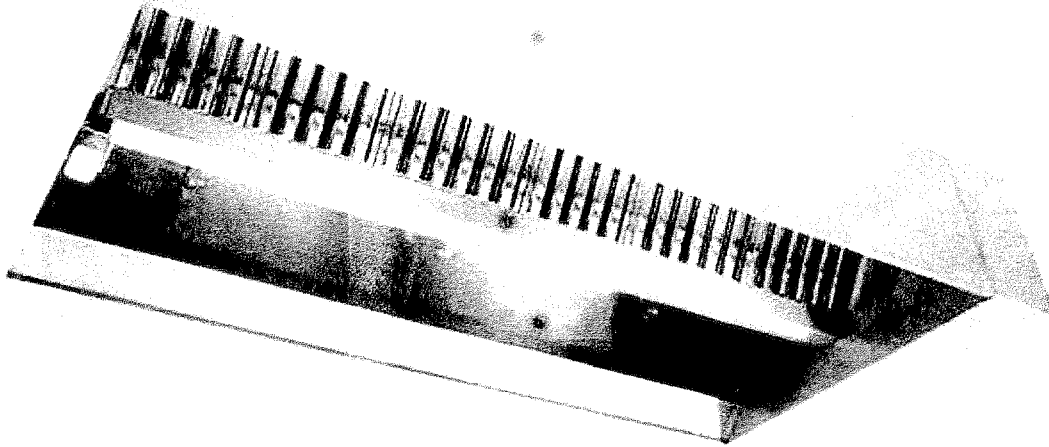
Utility Distribution

Visit the Greenheck website for the most current information available
www.greenheck.com

Greenheck • P.O. Box 410 • Schofield, WI 54476-0410 • Phone (715) 359-6171 • Fax (715) 355-2399 • www.greenheck.com

K-23

30'x10'
island hood



NDI Series

Exhaust Only Island Hood

Low exhaust flow rates make for superior efficiency! Use this Type I hood to meet the challenges of any island style cooking application.



Offering A Fully Integrated Package, Pre-Engineered For Optimum Performance

ADVANTAGES

- ETL Listed for use over 400°F, 600°F and 700°F cooking surface temperatures, providing flexibility in designing kitchen ventilation systems. ETL Listed to Canadian safety standards, ETL Sanitation Listed and built in accordance with NFPA 96.
- Sturdy stainless steel construction with double-wall, insulated front panel.
- Front design prohibits condensation and directs grease-laden vapors toward the exhaust filter bank. Polished stainless steel on the interior and exterior of the front enhance aesthetics.
- Factory pre-wired lighting to illuminate cooking surface.
- Hood comes standard with stainless steel baffle filters. Captrate Combo®, Captrate Solo®, high efficiency stainless steel baffle, aluminum baffle filters and are optional. High velocity cartridge filters are available on the CNDI series.
- Optional integral 3" air space to meet NFPA 96 requirements when the hood is against a limited combustible wall. Optional insulated 3" air space for combustible walls.
- Optional UL Listed light and fan control switches flush mounted and pre-wired through built-in electrical chaseway.
- Optional ETL Listed exhaust fire damper (Model NDI-100)

PERFORMANCE

Cooking Surfaces	Max. Avg. Cooking Surface Temp (°F)	Min. Exhaust CFM/ft.
Ovens, Steamers, Kettles, Open-Burner Ranges, Griddles, Fryers	400°F	346
Gas Charbroilers, Electric Charbroilers, Woks	600°F	422
Mesquite Grills, Charcoal Charbroilers, Gas Conveyor Charbroilers, Wood Burning Appliances	700°F	475

Recommended Duct Sizing:

- Exhaust: Based on 1500 FPM

FEATURES

- One piece V-Bank island hood.
- Fabricated of Type 430 stainless steel, #3 or #4 polish, on all exposed surfaces. Optional type 304 stainless steel available.
- Double-wall, insulated front increases rigidity.
- Front design prohibits condensation and directs grease-laden vapors toward the exhaust filter bank. Polished stainless steel on the interior and exterior of the front enhance aesthetics.
- Fitted with UL Classified, stainless steel baffle filters, removable for cleaning. Optional Captrate Combo®, Captrate Solo®, high efficiency stainless steel baffle, aluminum baffle and high velocity cartridge filters (Model CNDI) are available.
- Sloped grease drain system with removable 1/2 pint cup for easy cleaning.
- Pre-punched hanging angles on each end of hood. Additional set provided for hoods longer than 12'.
- Fitted with UL Listed, pre-wired, incandescent light fixtures and tempered glass globes to hold up to a standard 100 watt bulb. Recessed incandescent and recessed fluorescent lights optional.
- A built-in wiring chase provided for optimal positioning of electrical controls and outlets on the front face of the hood without penetrating capture area or requiring external chaseway.
- Optional integral 3" air space to meet NFPA 96 requirements when the hood is against a limited combustible wall. Optional insulated 3" air space for combustible walls.
- Optional ETL Listed exhaust fire damper (Model NDI-100).
- Model NDI is ETL Listed for 400°F, 600°F and 700°F cooking surfaces (File 3054804-001 without exhaust damper; File 3054804-002 with exhaust damper), ETL Sanitation Listed and built in accordance with NFPA Standard 96.

OPTIONS

UTILITY CABINET: ETL Listed for integral side mount on the CaptiveAire Systems ventilation hood...fabricated of same material as hood...the cabinet can house factory pre-piped UL Listed fire suppression system* and ETL Listed, pre-wired electrical controls...pre-wire package* contains light switches, lighted fan control switches and internal factory wiring and components (starters, relays, etc.) to reduce field wiring requirements. ETL tests confirm temperatures do not exceed 120°F inside the cabinet during fire condition. (120°F is the maximum allowed storage temperature for the UL Listed fire suppression system and the ETL Listed Industrial control panel.) (*Dimensional restrictions may apply)

REMOVABLE ETL LISTED HIGH-VELOCITY CARTRIDGE FILTER: Constructed of stainless steel...uses centrifugal force to remove grease and other particulates...National Institute of Standards and Technology methodology used by an independent agency to evaluate performance...tests indicate 95 percent extraction efficiency.

ENCLOSURE PANELS: Constructed of stainless steel...mounting channel factory-welded to hood for field installation of panels over 11" high...under 11", factory-welded and integrally installed into hood front and ends...sized to extend from hood top to ceiling, enclosing pipe and hanging parts.

END PANELS: Should be used to maximize hood performance and eliminate the effects of cross drafts in kitchen...units constructed of stainless steel and sized according to hood width and cooking equipment. Exposed edges hemmed for safety and rigidity.

EXHAUST FIRE DAMPER: ETL Listed. Installed in exhaust collar...activated by a UL Listed, 212°F, 10-lb. minimum rated fusible link.

ROOF TOP PACKAGE: Combination ETL Listed exhaust/supply air unit with factory prewired and mounted motors, trunkline and curb vented on exhaust side. Various models perform up to 14,000 CFM exhaust and up to 3 inches static pressure...weatherproofed...galvanized construction...washable mesh filters...exhaust/supply air fans share common roof penetration...internal wiring drops directly through curb, requiring no pitch pockets...exhaust outlets/air intakes spaced to conform to code regulations...automatic reset/thermal overload protection on all single phase motors and on three phase motors if pre-wire assembly is included in package...standard single-point power connections...UL 705, 762 Listed exhaust fans rated for high grease applications...optional backdraft dampers.

SEPARATE FANS: ETL Listed single exhaust fans and supply-air fans and curbs available...same features, construction methods and performance ratings as roof top package above.

HEATED MAKE-UP AIR: ETL Listed direct fired gas heated make-up air unit manufactured by CaptiveAire...ETL Listed for natural gas and propane...design integrates the blower and burner into a single package...heavy duty, weather resistant, galvanized steel construction...units available in Roof Top Package or as a stand alone heated make-up air module...several models available to meet almost any performance rating specification.

FULLY INTEGRATED PACKAGE

CaptiveAire offers a FULLY INTEGRATED PACKAGE, pre-engineered for OPTIMUM PERFORMANCE. The "package" consists of the hood and options to include an integral ETL Listed utility cabinet (as pictured), containing factory pre-wired, ETL Listed electrical controls and a factory pre-piped UL Listed fire suppression system. Other options include ETL Listed exhaust damper, ETL Listed exhaust/supply air fans in a "combination" Roof Top Package or sold separately, and ETL Listed direct-fired heated make-up air units. Fire suppression systems include final hookup and inspection.

CERTIFICATIONS

The NDI Model has been certified by ITS. This certification mark indicates that the product has been tested to and has met the minimum requirements of a widely recognized (consensus) U.S. and Canadian products safety standard, that the manufacturing site has been audited, and that the applicant has agreed to a program of periodic factory follow-up inspections to verify continued performance.

Models NDI are ETL Listed under file number 3054804-001 and complies with UL710 Standards and ULC710 Standards.

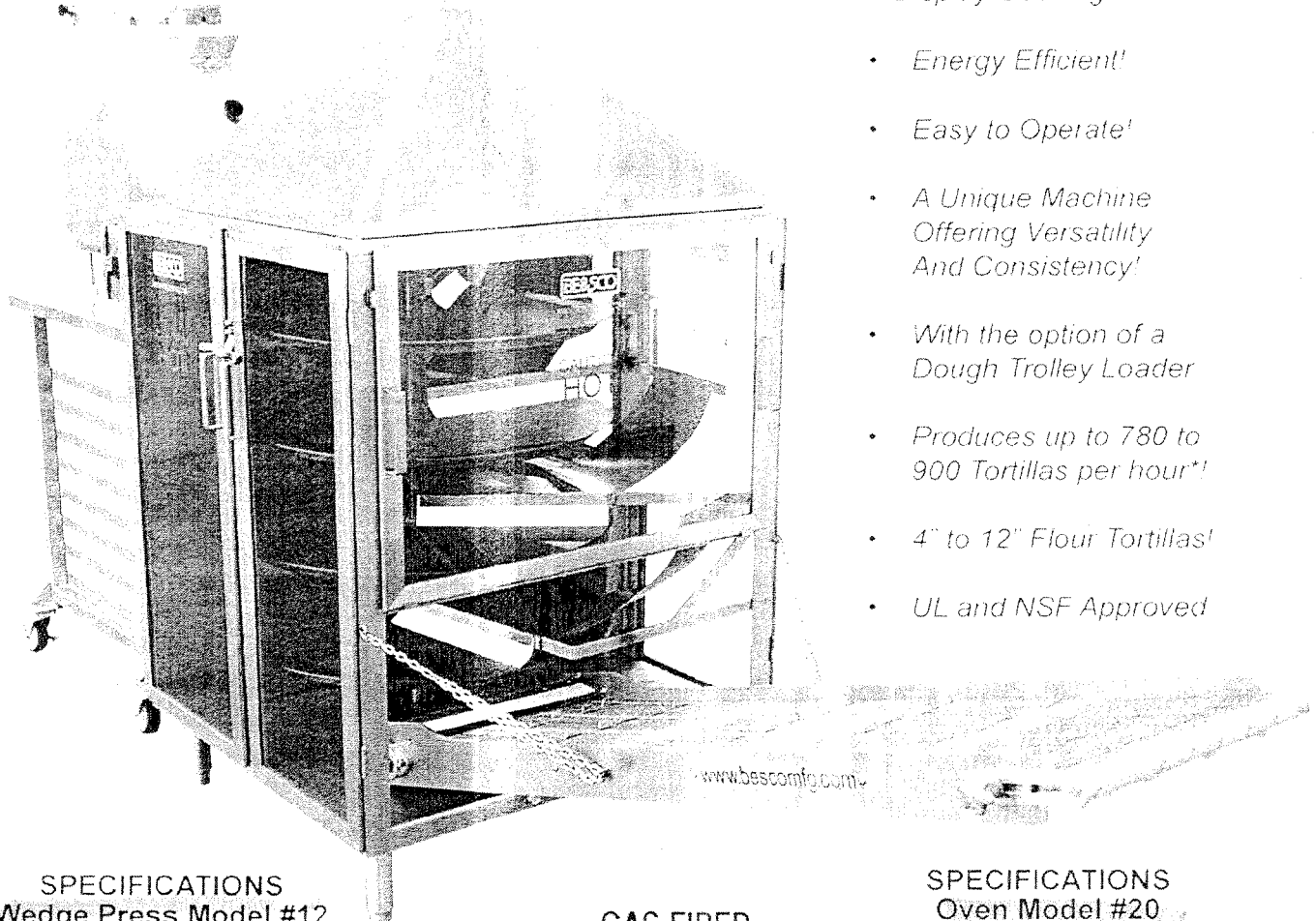


THE BETAMAX COMBO

FLOUR TORTILLA MACHINE

K-25

Shown with optional
Dough Trolley Loader
Model 77.



- The Ultimate In Display Cooking!
- Energy Efficient!
- Easy to Operate!
- A Unique Machine Offering Versatility And Consistency!
- With the option of a Dough Trolley Loader
- Produces up to 780 to 900 Tortillas per hour*
- 4" to 12" Flour Tortillas!
- UL and NSF Approved

SPECIFICATIONS Wedge Press Model #12

Electric: 220/240AC,
60Hz,
23.4amps
Single Phase

Total Heating
Elements 5200

Shipping Weight 200 lbs

GAS-FIRED



SPECIFICATIONS Oven Model #20

Electric 120V 60Hz 14.5 Amps.
Single Phase

Natural Gas 65,000 BTU's
Liquid Propane Optional (not UL listed)

Dimensions Straight Exit with DTL,
Doors closed 60" conveyor

Width 38 3/4"

Height 67 3/4"

Length 135 9/16"

Shipping Weight 830 lbs

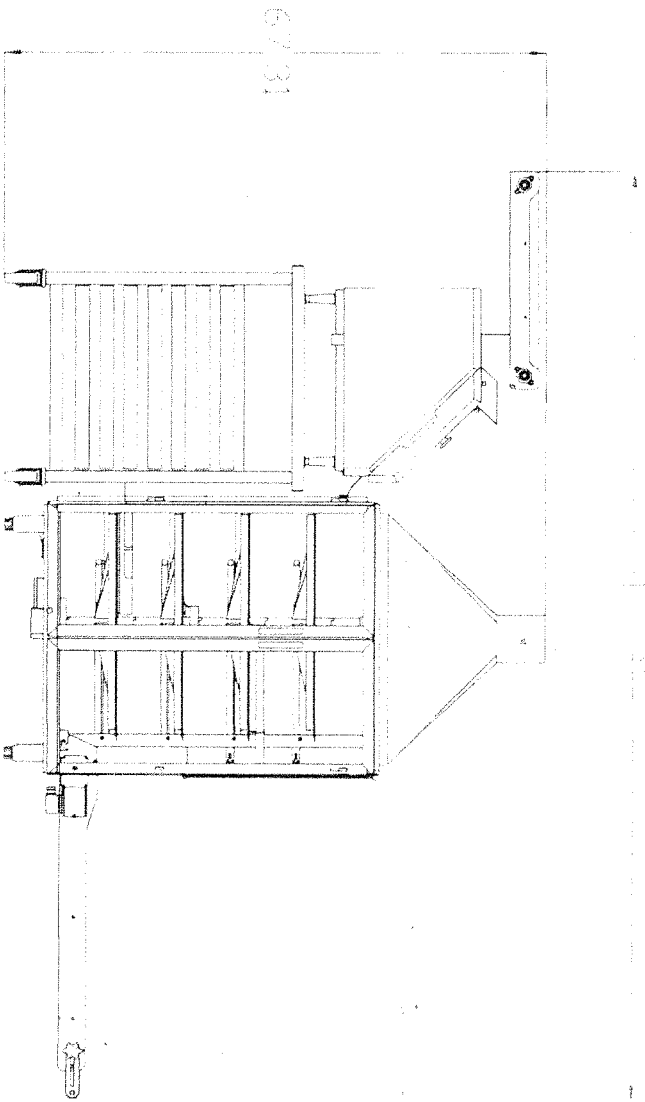
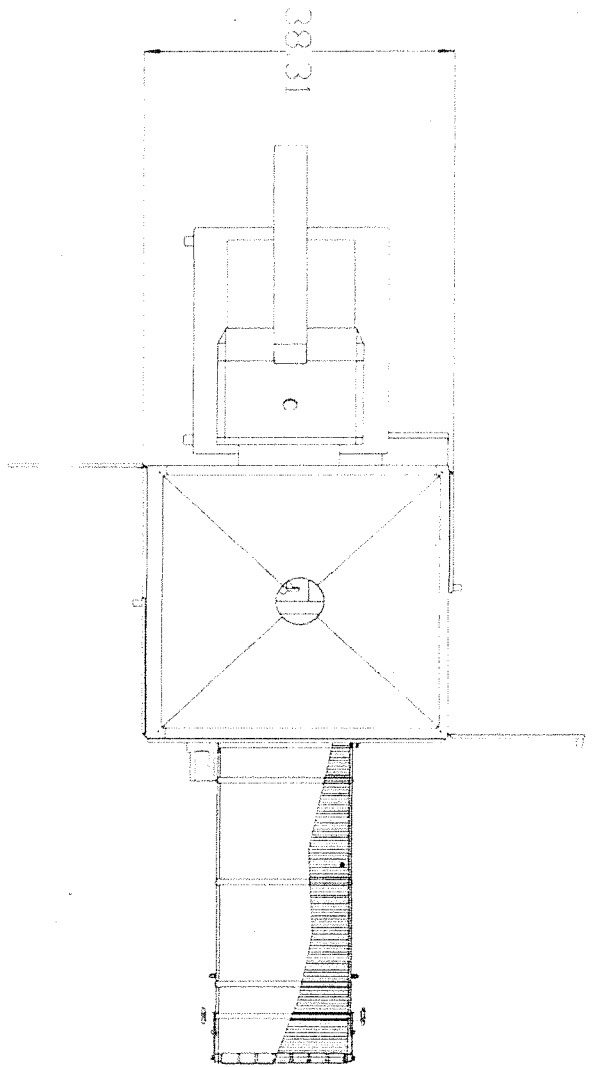
* Tortilla production will vary depending upon diameter and thickness of tortillas and the experience of the equipment operator **



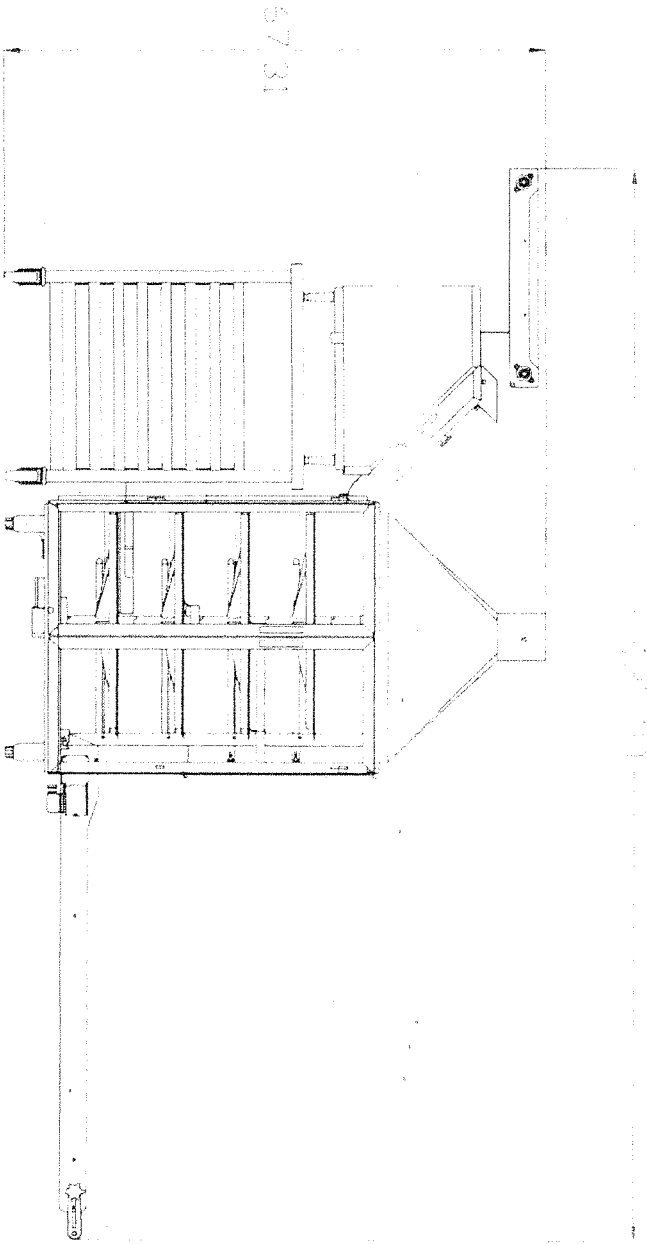
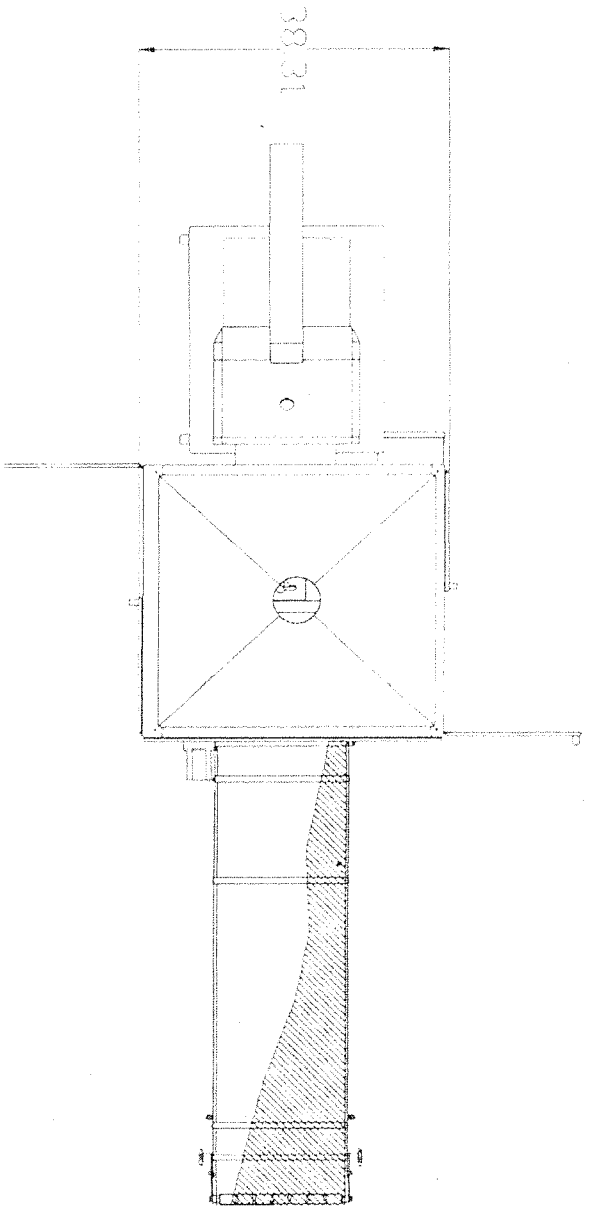
View video of the Betamax on our website: www.bescocomfg.com

1-800-683-0928

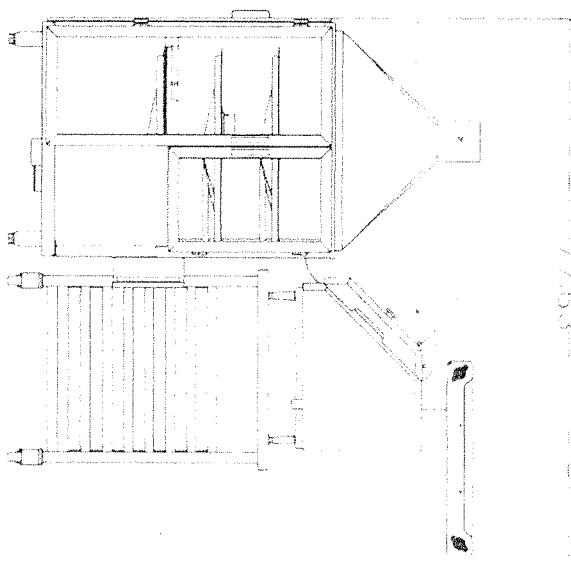
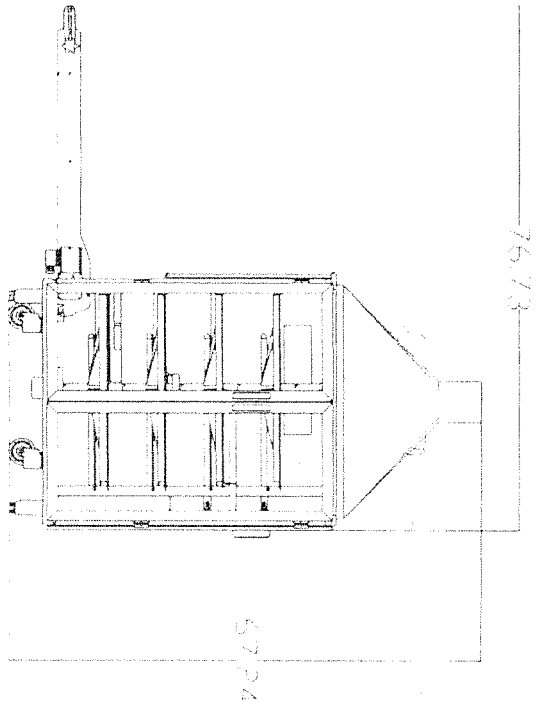
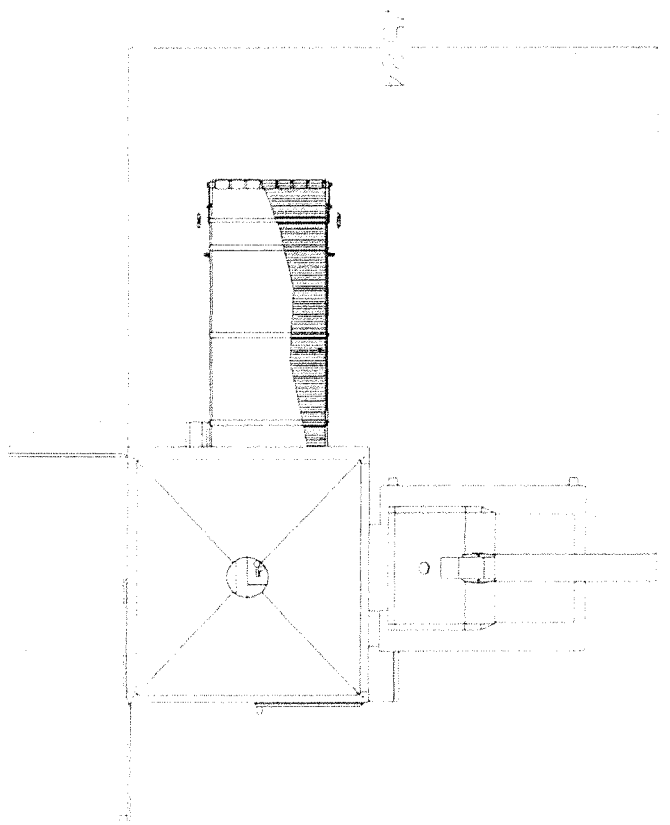
1623 N. San Marcos • San Antonio TX 78201 • (210) 734-5124 • FAX (210) 737-3925



BETAMAX STRAIGHT EXIT
W/ 42IN CONVEYOR

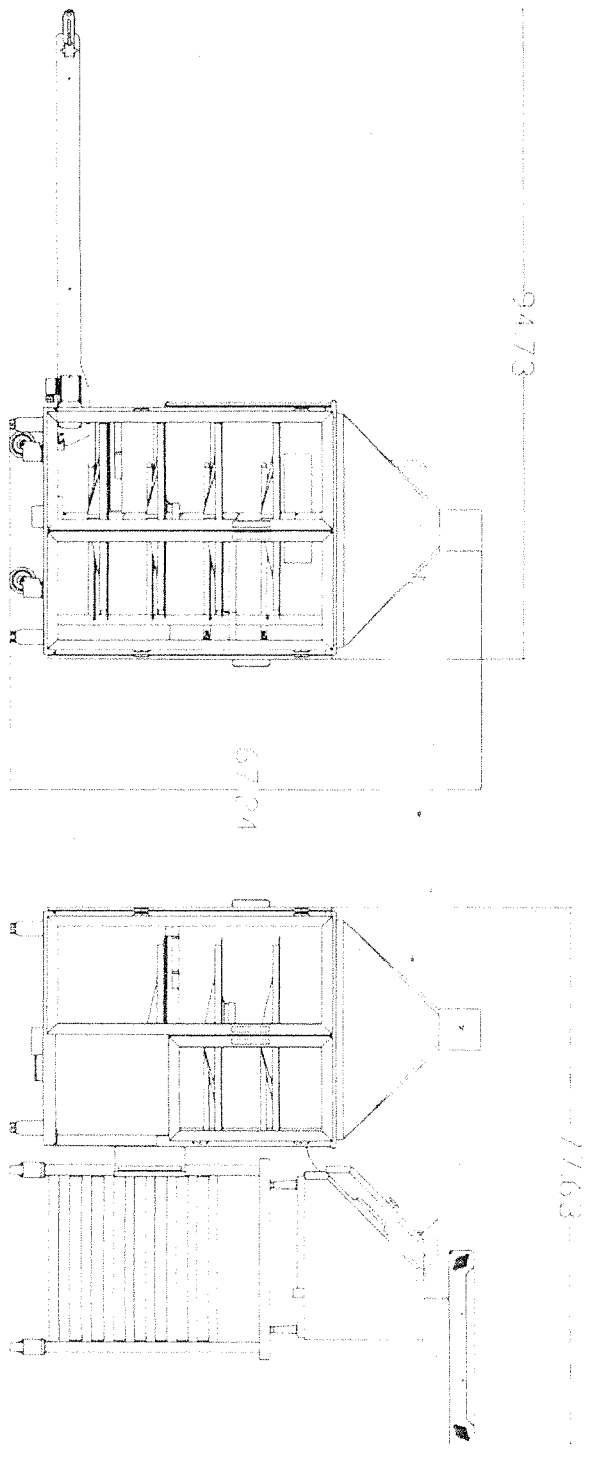
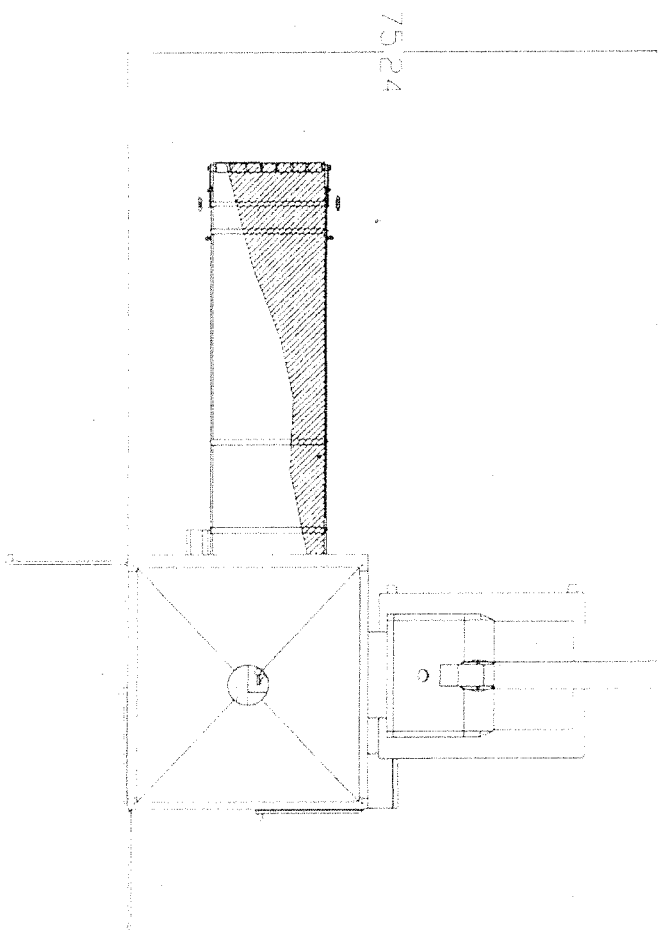


BETAMAX STRAIGHT EXIT
W/ 60IN CONVEYOR



BETAMAX RIGHT EXIT

W/ 42IN CONVEYOR



BETAMAX RIGHT EXIT

W/ 60IN CONVEYOR

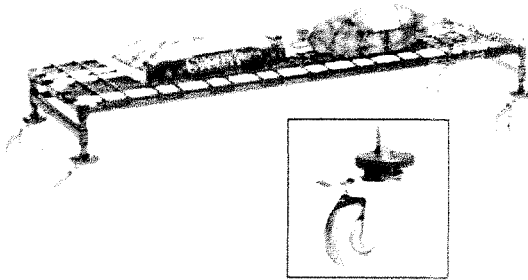


Call To Order: 1.888.978.7759
 Fax#: 1.678.969.6699

K-27

Mobile Dunnage Rack 36"W X 24"D

Availability: Usually ships same day
 Stock No: T9A561959AB
 Our Price: \$179.95



Product Information

**Mobile Dunnage Racks
 Nexelon Finish & Braking Casters**

Low profile rack maximizes storage space, while allowing you to keep the floor clear. The open front, 3 sided frame design allows for easy cleaning underneath. Includes a removable top deck, frame, post caps and adjustable floor levelers. Includes 5"H x 1-1/4" diameter polyurethane stem casters with protective bumpers. 2 casters include brakes. Measures 12"H. Our exclusive, premium Nexelon epoxy finish is so tough it's backed by a **lifetime warranty** against corrosion and includes an anti microbial finish that fights mold and bacteria growth.

Product Specifications

WIDTH INCHES	.36
DEPTH INCHES	24
HEIGHT INCHES	12
CAPACITY LBS	1200
COLOR FINISH	Nexelon
ASSEMBLY	Unassembled
CONSTRUCTION	Steel
MODEL	561959AB
SHELF QUANTITY	1
WEIGHT LBS	38.22
WHEEL TYPE	Polyurethane 4 stem (2 with brakes)

General Sales

For product information or to place an order, please contact us at sales@globalindustrial.com, or 1-888-978-7759.

Customer Support

For assistance regarding an order already placed or received, please contact us at 1-888-628-3466 or service@globalindustrial.com.

For information on an outstanding invoice, please email our Accounts Receivable Department at AR@globalindustrial.com

Mail your remittances to:

Global Industrial
PO Box 905713
Charlotte, NC 28290-5713

Web Site Assistance

If you need assistance with our site, from registration and ordering to shopping cart management and checkout, please contact our Web Support team at 1-888-381-2861 or service@globalindustrial.com.

Government & Education Sales

Global Industrial has dedicated significant resources to ensure that educational and governmental institutions have total access to our wide range of office and industrial equipment. You will find highly competitive prices at Global - designed to earn your business and meet your budget conscious needs.

For more information about Education Sales, please call 1-888-978-7759 or email educationsales@globalindustrial.com.

For more information about Government Sales, please call 1-800-806-5984 or email governmentsales@globalindustrial.com.

International Customers

Ordering is available to residents of the US, US territories and customers with APO/FPO addresses. For information or to place an order, please call 1-888-277-6995.

Mailing Addresses

You can contact us by mail at the following addresses:

Global Industrial
11 Harbor Park Drive
Port Washington, NY 11050

Global Industrial
2505 Mill Center Parkway
Suite 100
Buford, GA 30518-3700

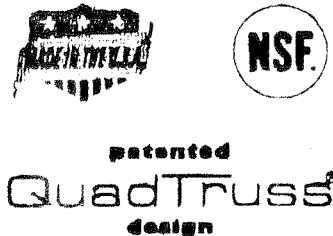
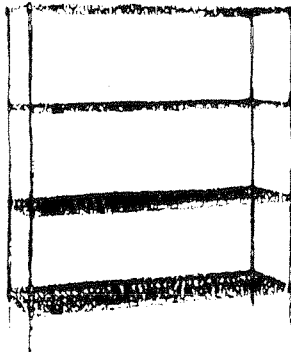
K-28



catalog sheet
EG01.00

Foodservice Equipment • Material Handling, Healthcare & Cleanroom Equipment • Retail Display

Wire Shelving



Item #: _____
 Model #: _____
 Project #: _____
 SIS #: _____

Optional Accessories:	Model #	Qty
Casters		
Foot plates		
S" hooks		
Ledges		
Dividers		
Rods & tabs		
Aluminum split sleeves		
Shelf markers		

Finishes available:

Stainless Steel finish — OUR BEST
 NSF-listed for all environments. Type 304 stainless steel. 15-Year Limited Warranty.
 Note: 8/3 shebang is electropolished.

EagleBard® hybrid epoxy
 NSF-listed for all environments. Zinc chloride plating followed by clear chromate plating with MasterSeal® sealer, and a final coat of hybrid translucent epoxy with MICROGARD™. 15-Year Limited Warranty.

Valu-Master® and Valu-Gard™ epoxies
 NSF-listed for wet or dry storage environments. Phosphate conversion coating followed by metallic epoxy coating. 5-Year Limited Warranty.

Chrome
 NSF-listed for dry storage environments. Bright nickel plating followed by chrome plating. 1-Year Limited Warranty.
 (NOTE: Optional clear hybrid epoxy, NSF-listed for all environments, is available.)

EagleBrite® zinc
 NSF-listed for dry storage environments. Bright zinc chloride plating followed by clear chromate plating with MasterSeal® sealer for improved rust protection. 5-Year Limited Warranty.
 (NOTE: Wire shelves feature MasterSeal® sealer. Posts feature air-dry lacquer. NSF-listed for all environments.)

- Stainless steel
- Zinc chloride
- Clear chromate
- MasterSeal® sealer
- Blue green hybrid epoxy with MICROGARD™
- Phosphate conversion coating
- MasterSeal® sealer
- Powder gray (Valu-Master®) or green (Valu-Gard™) epoxy
- Bright nickel
- Chrome
- Air-dry lacquer
- Zinc chloride
- Clear chromate
- MasterSeal® sealer
- Air-dry lacquer

- Patented QuadTruss® design (patent #5,390,803) makes EAGLE shelves up to 25% stronger and provides a retaining ledge for increased storage stability and product retention.
- Assembly — numerically calibrated grooved posts, tapered plastic split sleeves and shelf collars combine to make shelving assembly a simple two-step exercise: 1) snap the split sleeves onto a post over the number of your choice; and 2) slide a shelf collar over the split sleeves. A positive lock between shelf and post is created without the use of any tools.
- Open-wire construction promotes higher visibility, allows light to pass through the shelves, permits greater air circulation which helps reduce moisture and dust build-up, and increases the effectiveness of fire-suppression systems.
- Tapered split sleeves of high-temperature-resistant ABS plastic create a positive lock that becomes stronger as the load increases.
- Posts are numbered in increments of 1" (25mm) to ensure fast and level assembly.
- Leveling feet are provided to help compensate for uneven floor surfaces.
- Shelf strength — the mat on an EAGLE shelf utilizes a pincer-type design with the mat wire sandwiched between the two top truss wires, adding significant strength and distributing the entire load without stress and strain on the welds.

• MICROGARD™ is an antimicrobial agent which contains built-in protection to retard the growth of a broad range of bacteria, mold and mildew on the surface of the shelves that cause stains, odors and degradation. STANDARD ON ALL EAGLEBARD® SHELVING.

Spec sheets available for viewing, printing or downloading from our online literature library at www.eaglegrp.com



Foodservice Division: (800) 441-8440
 MHC/Retail Display Divisions: (800) 837-5100
 FAX: (302) 653-2065 or 653-3038

For custom configuration or fabrication needs, contact our **SpecFAB Division**.
 Phone: (302) 653-3000. FAX: (302) 653-3091.
 E-mail: specfab@eaglegrp.com

100 Industrial Boulevard • Clayton, DE 19938-8903 USA • (302) 653-3000 • www.eaglegrp.com

Eagle Foodservice Equipment, Eagle MHC, SpecFab, and Retail Display are divisions of Eagle Group. ©2003 by the Eagle Group

EG01.00 Rev. 012/03



Profit from the Eagle Advantage®

Details & Specifications

Wire Shelving

Design & Construction Features

- Wire shelf, constructed of carbon steel or type 304 stainless steel wire, consists of a top mat assembly using 10 gauge (.135" diameter) mat wires spaced on 1/4" centers and welded to full length 6 gauge (.187" diameter) inside support wires and serpentine trusses. Quantities of each are based on shelf size. Mat wires are welded to a four-wire truss assembly at front and rear of shelf. Front and rear four-wire truss assembly is constructed of a 2 gauge (.250" diameter) bottom wire, a 6 gauge (.187" diameter) serpentine truss wire which creates a bridge-like reinforcement providing increased strength, and two 6 gauge (.187" diameter) top wires — one directly below mat wires and one directly above — which provide a pincher hold on mat wires.
- Top mat assembly is supported on each end by a three-wire truss assembly consisting of a 2 gauge (.250" diameter) bottom wire, a 6 gauge (.187" diameter) serpentine truss, and one 6 gauge (.187" diameter) top wire.
- Entire wire mat and truss assembly is notched at outside corners to accept a 12 gauge conical shaped collar, 1 1/4" in height which is welded in place. Conical-shaped collar is designed to accept a tapered ABS plastic split sleeve, or aluminum split sleeve, which clips over 16 gauge, 1" diameter steel grooved post.
- Wire shelf and post are either plated or epoxy coated with applicable finish as specified and constructed in accordance with the National Sanitation Foundation (NSF) standards and bear its seal of approval.
- Wire shelf as specified will be QuadTruss® design as manufactured by EAGLE shelving, Clayton, DE.

Wire Shelves

Shelf meets U.S. Government specifications MIL-S-40144E

width x length		weight lb. kg	EAGLE		Valu- Master™	Valu- Card™	EAGLE gard™	EAGLE stainless steel
in.	mm		brite®	chrome				
14" x 24"	358 x 610	6 2.7	1424Z	1424C	1424V	1424VG	1424E	1424S
14" x 30"	358 x 762	7 3.2	1430Z	1430C	1430V	1430VG	1430E	1430S
14" x 36"	358 x 914	8 3.6	1436Z	1436C	1436V	1436VG	1436E	1436S
14" x 42"	358 x 1067	9 4.1	1442Z	1442C	1442V	1442VG	1442E	1442S
14" x 48"	358 x 1219	10 4.5	1448Z	1448C	1448V	1448VG	1448E	1448S
14" x 54"	358 x 1372	12 5.5	1454Z	1454C	1454V	1454VG	1454E	1454S
14" x 60"	358 x 1524	14 6.4	1460Z	1460C	1460V	1460VG	1460E	1460S
14" x 72"	358 x 1829	17 7.7	1472Z	1472C	1472V	1472VG	1472E	1472S
18" x 24"	457 x 610	7 3.2	1824Z	1824C	1824V	1824VG	1824E	1824S
18" x 30"	457 x 762	8 3.6	1830Z	1830C	1830V	1830VG	1830E	1830S
18" x 36"	457 x 914	9 4.1	1836Z	1836C	1836V	1836VG	1836E	1836S
18" x 42"	457 x 1067	11 5.0	1842Z	1842C	1842V	1842VG	1842E	1842S
18" x 48"	457 x 1219	12 5.5	1848Z	1848C	1848V	1848VG	1848E	1848S
18" x 54"	457 x 1372	15 6.8	1854Z	1854C	1854V	1854VG	1854E	1854S
18" x 60"	457 x 1524	17 7.7	1860Z	1860C	1860V	1860VG	1860E	1860S
18" x 72"	457 x 1829	20 9.1	1872Z	1872C	1872V	1872VG	1872E	1872S
21" x 24"	533 x 610	8 3.6	2124Z	2124C	2124V	2124VG	2124E	2124S
21" x 30"	533 x 762	9 4.1	2130Z	2130C	2130V	2130VG	2130E	2130S
21" x 36"	533 x 914	11 5.0	2136Z	2136C	2136V	2136VG	2136E	2136S
21" x 42"	533 x 1067	12 5.5	2142Z	2142C	2142V	2142VG	2142E	2142S
21" x 48"	533 x 1219	14 6.4	2148Z	2148C	2148V	2148VG	2148E	2148S
21" x 54"	533 x 1372	16 7.3	2154Z	2154C	2154V	2154VG	2154E	2154S
21" x 60"	533 x 1524	18 8.2	2160Z	2160C	2160V	2160VG	2160E	2160S
21" x 72"	533 x 1829	24 10.9	2172Z	2172C	2172V	2172VG	2172E	2172S
24" x 24"	610 x 610	9 4.1	2424Z	2424C	2424V	2424VG	2424E	2424S
24" x 30"	610 x 762	11 5.0	2430Z	2430C	2430V	2430VG	2430E	2430S
24" x 36"	610 x 914	13 5.9	2436Z	2436C	2436V	2436VG	2436E	2436S
24" x 42"	610 x 1067	15 6.8	2442Z	2442C	2442V	2442VG	2442E	2442S
24" x 48"	610 x 1219	16 7.3	2448Z	2448C	2448V	2448VG	2448E	2448S
24" x 54"	610 x 1372	19 8.6	2454Z	2454C	2454V	2454VG	2454E	2454S
24" x 60"	610 x 1524	21 9.5	2460Z	2460C	2460V	2460VG	2460E	2460S
24" x 72"	610 x 1829	28 11.8	2472Z	2472C	2472V	2472VG	2472E	2472S
30" x 36"	762 x 914	17 7.7	3036Z	3036C	3036V	3036VG	3036E	3036S
30" x 48"	762 x 1219	20 9.1	3048Z	3048C	3048V	3048VG	3048E	3048S
30" x 60"	762 x 1524	25 11.4	3060Z	3060C	3060V	3060VG	3060E	3060S
30" x 72"	762 x 1829	30 13.6	3072Z	3072C	3072V	3072VG	3072E	3072S
36" x 36"	914 x 914	21 9.5	3636Z	3636C	3636V	3636VG	3636E	3636S
36" x 48"	914 x 1219	26 11.8	3648Z	3648C	3648V	3648VG	3648E	3648S
36" x 60"	914 x 1524	34 15.4	3660Z	3660C	3660V	3660VG	3660E	3660S
36" x 72"	914 x 1829	43 19.5	3672Z	3672C	3672V	3672VG	3672E	3672S



Posts

Numerically grooved in 1" (25mm) increments. Includes post cap and leveling bolt.

height in. mm	weight lb. kg	EAGLE		Valu- Master™	Valu- Card™	EAGLE gard™	EAGLE stainless steel	
		brite® model	chrome model					
7"	178	1.0 0.5	P7-Z	P7-C	P7-V	P7-VG	P7-E	P7-S
14"	358	1.0 0.5	P14-Z	P14-C	P14-V	P14-VG	P14-E	P14-S
18"	457	1.5 0.7	P18-Z	P18-C	P18-V	P18-VG	P18-E	P18-S
33"	838	2.0 0.9	P33-Z	P33-C	P33-V	P33-VG	P33-E	P33-S
54"	1372	3.0 1.4	P54-Z	P54-C	P54-V	P54-VG	P54-E	P54-S
60"	1600	3.5 1.6	P60-Z	P60-C	P60-V	P60-VG	P60-E	P60-S
74"	1880	4.0 1.8	P74-Z	P74-C	P74-V	P74-VG	P74-E	P74-S
88"	2184	5.0 2.3	P88-Z	P88-C	P88-V	P88-VG	P88-E	P88-S

EAGLEbrite® posts are clear epoxy coated for use in dry or wet environments.

For mobile application, add prefix "C" to model number.

Example: CP14-E. See Catalog Sheet EG01.05 for information about casters available.

Packaging:

24" (610mm) through 48" (1219mm) lengths are packed four to a box. 54", 60" and 72" (1372, 1524 and 1829mm) lengths are packed two to a box.

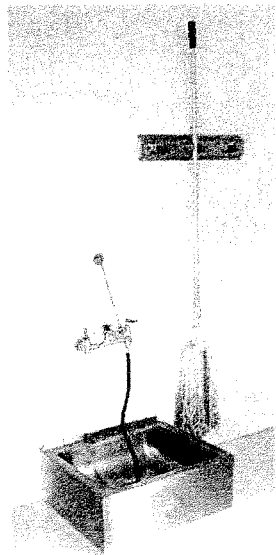
Foodservice Division: (800) 431-8441 • MHC/Retail Display Division: (800) 637-5100 • Fax: (302) 653-2065 • www.eaglegrp.com

Although every attempt has been made to ensure the accuracy of the information provided, we cannot be held responsible for typographical or printing errors. Information and specifications are subject to change without notice. Please confirm at time of order.

K-29

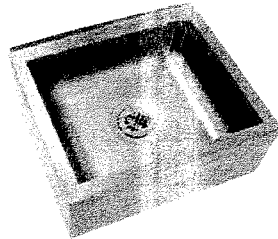


STAINLESS STEEL
SERVICE & MOP SINKS

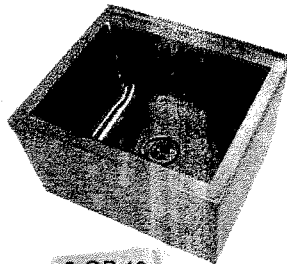


9-OP-20 shown with optional faucet, hose & hanger

Floor Mounted



9-OP-20



9-OP-40

Item #: _____ Qty #: _____
 Model #: _____
 Project #: _____

FEATURES:

Floor mounted unit eliminates the need of lifting heavy containers.
 Tile edge furnished on the rear.
 Bowls rectangular in design for increased capacity.

CONSTRUCTION:

All TIG welded.
 Welded areas blended to match adjacent surfaces and to a satin finish.

MATERIAL:

Heavy gauge type "304" series stainless steel.

SERVICE & MOP SINKS

FEATURES:

Leg mounted design.
 High back splash.

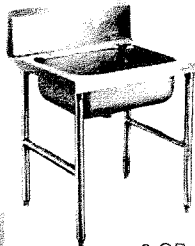
CONSTRUCTION:

All TIG welded.
 Welded areas blended to match adjacent surfaces and to a satin finish.

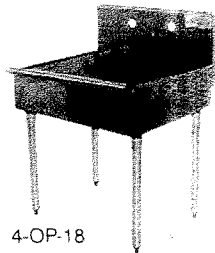
MATERIAL:

Heavy gauge type "304" series stainless steel.

Conventional

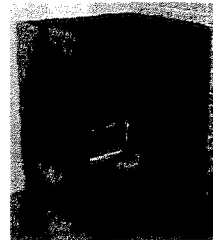


8-OP-16



4-OP-18

Economy

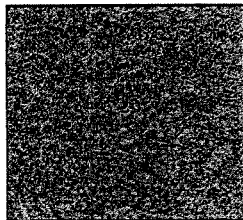


16" HIGH SIDE & BACK SPLASHES FOR 9-OP SERIES MOP SINKS

16 Gauge, 300 Series Stainless Steel
 Available with Back & Left Side,
 Back & Right Side or Back & Both Sides
 (Mounting Hardware Included)

MODEL	Fits Units:	Height Above Finished Floor (A.F.F.)
K-288LorR	9-OP-20	26"
	9-OP-40	32"
K-290LorR	9-OP-28	26"
	9-OP-48	32"
Splashes Available on All 3 Sides		
K-298	9-OP-20	26"
	9-OP-40	32"
K-299	9-OP-28	26"
	9-OP-48	32"

SERVICE & MOP SINK ACCESSORIES



MOP DRAINAGE TRAY

- 16 Gauge, 300 Series Stainless Steel
- Includes Cast 1/2" Drain & Plastic Hose
- Wall Mounted (Hardware not Included)
- 2" Tray Height with 6" Rear Splash (Overall Height)

MODEL	L x W x H	Approx. Wt.
K-243	32" x 4" x 6"	13 lbs.

FLOW RATE
9.6 GPM/
36.3 LPM



K-240 SERVICE FAUCET

8" O.C.



K-16 FLOOR MOP SINK REPLACEMENT DRAIN



K-242 MOP HANGER - 23" Wide



UTILITY SHELF - 8" WIDE

inches	mm	MODEL	Approx. Wt.	Approx. Cubes
24"	610	K-245	12 lbs.	1
36"	914	K-246	15 lbs.	2



K-244 HOSE & HANGER



Customer Service Available To Assist You **1-800-645-3166** 8:30 am - 8:00 pm E.S.T.

Email Orders To: customer@advancetabco.com. For Smart Fabrication™ Quotes, Email To: smartfab@advancetabco.com or Fax To: 631-586-2933

NEW YORK
Fax. (631) 242-6900

GEORGIA
Fax. (770) 775-5625

TEXAS
Fax. (972) 932-4795

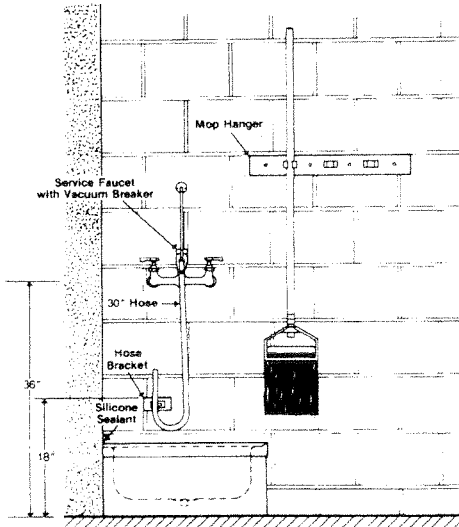
NEVADA
Fax. (775) 972-1578

DIMENSIONS

TOL Overall: $\pm .500"$
 Interior: $\pm .250"$

ALL DIMENSIONS ARE TYPICAL

SUGGESTED INSTALLATION

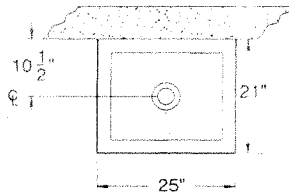


9-OP-20: 16" x 20" x 6" Bowl with 10" Overall Height.

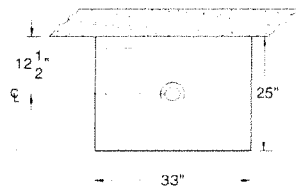
9-OP-28: 20" x 28" x 6" Bowl with 10" Overall Height.

9-OP-40: 16" x 20" x 12" Bowl with 16" Overall Height.

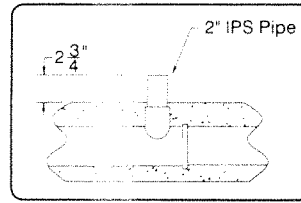
9-OP-48: 20" x 28" x 12" Bowl with 16" Overall Height.



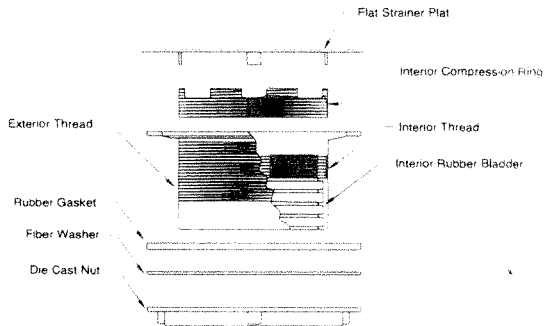
9-OP-20
9-OP-40



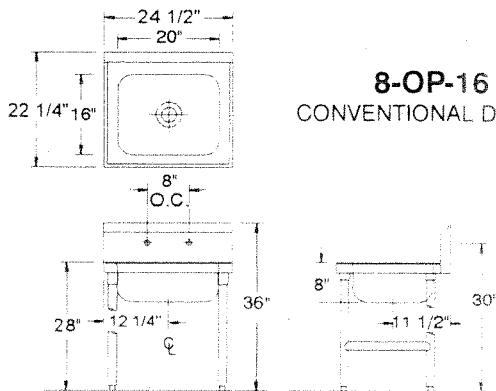
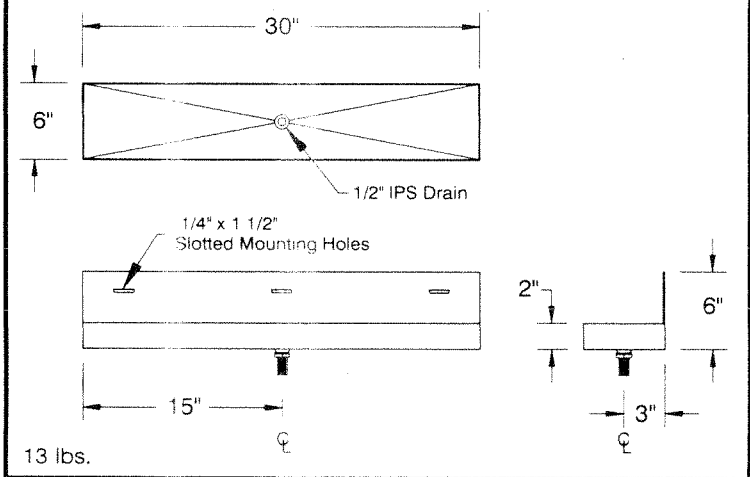
9-OP-28
9-OP-48



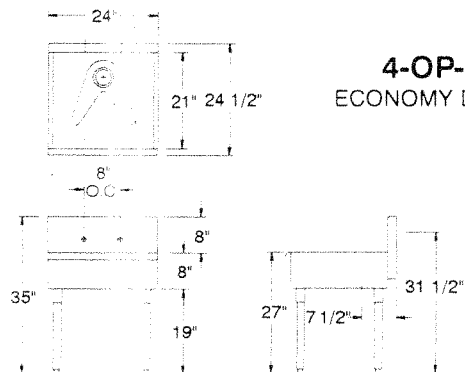
MOP SINK DRAIN ASSEMBLY



K-243 MOP DRAINAGE TRAY



8-OP-16
 CONVENTIONAL DESIGN



4-OP-18
 ECONOMY DESIGN

1 1/2" IPS





Since 1862, WARD'S has been the leading provider of the highest quality educational supplies that make teaching easier!

[VIEW CART](#) [PRINT CART](#) [HOME](#)

Your Shopping Cart:
Your Cart Contains **0** Items
Total \$0.00
100% SECURE SHOPPING

Products **Catalog Quick Shop** **Web Specials** **Support** **My Account**

[Biology](#) [Geology](#) [Chemistry](#) [Physical Science](#) [Environmental Science](#) [Forensics](#) [Lab Supplies](#)

K-30

July 19, 2010

Product Search

Sign-up and get special offers, sales & discounts

See current email promotion
Click here

Browse Products

- [Ag and Vet Science](#)
- [AP[®] Science](#)
- [AV Equipment](#)
- [AV Materials](#)
- [Biology](#)
- [Books](#)
- [Charts, Maps, and Posters](#)
- [Chemicals](#)
- [Chemistry](#)
- [Classroom and General Supplies](#)
- [Clearance Sale](#)
- [Collector's Corner](#)
- [Computer Software](#)
- [Earth Science](#)
- [Environmental Science](#)
- [Field Equipment](#)
- [Forensic Science](#)
- [Furniture](#)
- [Health Science](#)
- [Lab Equipment and Supplies](#)
- [Microscopes](#)
- [Optical Equipment](#)
- [Physical Science](#)
- [Probeware](#)

Highlights

- [New Products](#)
- [Web Specials](#)
- [Live Coupon](#)
- [Redemption](#)
- [Professional Development](#)
- [International Customers](#)
- [Homeschool Science](#)
- [GLOBE Program](#)

Support

Products

[Home](#) » [Chemical Shelving Unit \(Scholar\)](#)

Scholar[®] Chemical Shelving Unit

With the exclusive safety offered from Scholar Chemistry, these storage cabinets provide ample room to house your hazardous chemicals. The open-shelving style of each unit, allows for a clear view of all chemicals inside. For added safety, anti-roll lips are featured on each shelf. A UV chemical resistant finish coat the top, back, and sides of each unit. These Scholar cabinets can be custom designed to fit your laboratory; call for details.



(0 customer reviews)

[Larger image](#)

[Tell a Friend about this item](#)

Item #	Description	Price	Qty
949 V 9901	Scholar Chemical Shelving Unit, 36"H x 36"W x 16"D	\$529.00	
949 V 9902	Scholar Chemical Shelving Unit, 48"H x 36"W x 16"D	\$669.00	
949 V 9903	Scholar Chemical Shelving Unit, 72"H x 36"W x 16"D	\$829.00	

(0 customer reviews)

and share your thoughts with other customers

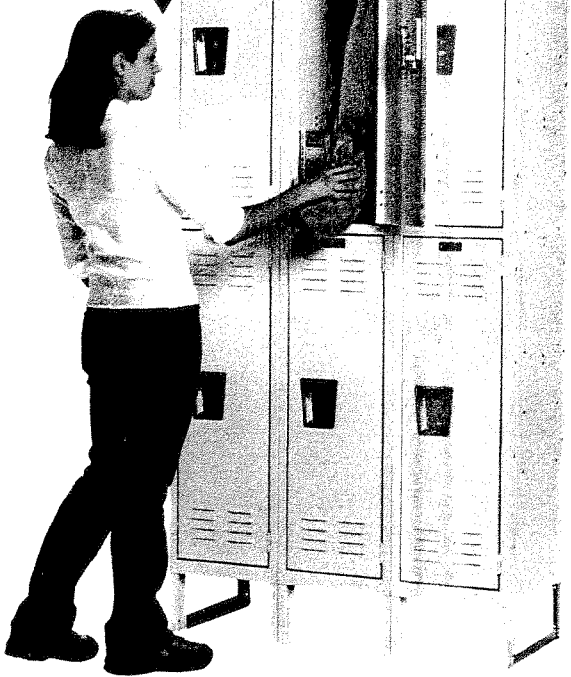
Clearance Sale
stretch your budget with sale pricing
Click here

CORNING
Hot Plates & Stirrers - Uniform heat transfer with easy to use features
[See all models](#)

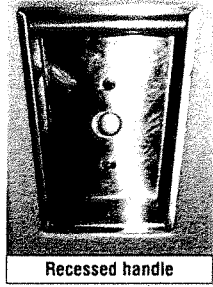
K-31

STORAGE

LOW AS
\$432
Unassembled



Three-Wide Lockers One-Wide Lockers



Recessed handle



Double-Tier Lockers

Mix Modern Design with Maximum Security

Storage for twice as many people in the same space. Each opening has three single prong wall hooks and one two-prong ceiling hook. 78" H overall. Heavy-duty steel Lockers make your room or hallway more attractive without sacrificing quality. Flush-front design combines strong, 24-ga. steel body, 16-ga. steel doors, 2" L full-loop hinges and stainless steel recessed handle on all models. Finger-lift door control with gravity latch accepts a padlock for security. All lockers include 6" H steel legs and number plates (specify starting number). Available unassembled or assembled in five colors. Body color is tan. Recessed handle with no moving parts means no maintenance.

Please Specify Frame Color: B (marine), BE (parchment), G (mist), GR (gray), MA (maroon).
FOB: TN via truck.

72-hour shipping for all colors; ship unassembled

Opening Dim. (in.) H x W x D	Unassembled No.	Each	Assembled No.	Each
Three Wide				
36 12 12	W-CN811DK31	\$432.00	W-CN811DA31	\$540.00
36 12 15	W-CN811DK32	458.00	W-CN811DA32	573.00
36 12 18	W-CN811DK33	472.00	W-CN811DA33	591.00
One Wide				
36 12 12	W-CN811DK11	162.00	W-CN811DA11	198.00
36 12 15	W-CN811DK12	173.00	W-CN811DA12	210.00
36 12 18	W-CN811DK13	176.00	W-CN811DA13	219.00



Optional Decorative End Panels for All Lockers

18-ga. finished End Panels attach to locker row ends for a finished look.

Please Specify Color: B (marine), BE (parchment), G (mist), GR (gray), MA (maroon).
FOB: TN via truck.

No.	Dim. (in.) H x D	Each
W-CN811DE12	72 12	\$37.60
W-CN811DE15	72 15	43.50
W-CN811DE18	72 18	51.80

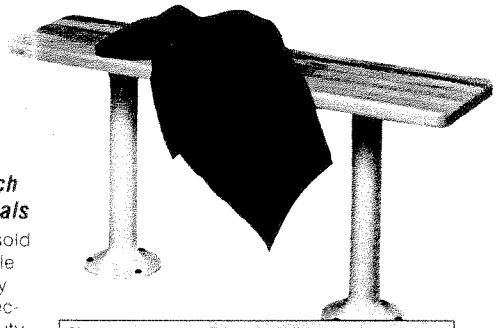
Locker Benches

Combine All-Maple Bench Tops with Sturdy Pedestals

Bench Tops and Pedestal sold separately. Laminated maple Benches measure 9 1/2"W by 1 1/4" thick with a clear, protective lacquer finish. Heavy-duty steel Pedestal has an enamel finish.

Please Specify Color for No. C76726: GR (gray), SA (sand).
FOB: TN via UPS.

Note: You must purchase two Pedestals for each Bench.



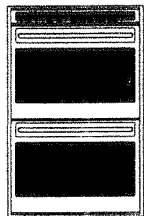
No.	Description	Each
W-C142250	36"L Top	\$56.80
W-C142251	48"L Top	74.60
W-C76722	60"L Top	92.30
W-C76723	72"L Top	110.00
W-C76724	84"L Top	127.00
W-C76725	96"L Top	160.00
W-C76726	16 1/4"H Pedestal	33.40

K-32

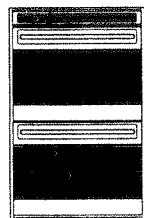
30" (762) Built-In Double Ovens

MODELS DO30F / DO30U

30" BUILT-IN DOUBLE OVENS



Model DO30F
Framed



Model DO30U
Unframed

Electronics and door cooling vents

Recessed broil element

Thermostat

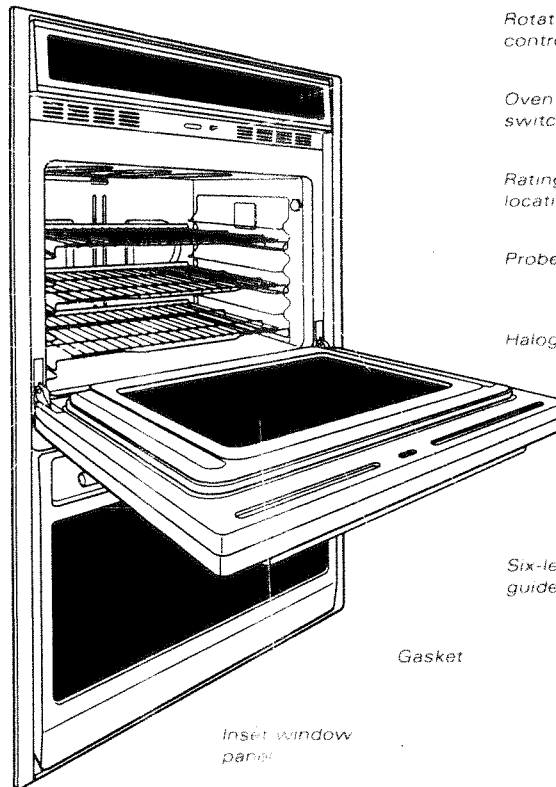
Bake stone element receptacle

Three removable racks per oven

Hidden bake element

Door hinge with hydraulic damper

Exhaust vent



Rotating electronic control panel

Oven door light switch

Rating plate location

Probe receptacle

Halogen lights

Six-level rack guide per oven

Gasket

Inset window panel

► The Wolf Model DO30F framed 30" (762) built-in double oven is available in the classic stainless steel finish. The Wolf Model DO30U unframed 30" (762) built-in double oven is available in classic, platinum or carbon stainless steel finishes.



This appliance is certified by Star-K to meet strict religious regulations in conjunction with specific instructions found on www.star-k.org

It's hard to put into a few words the differences you will see in Wolf compared to other cooking appliances. Some of those differences are very dramatic and some are very subtle. Suffice to say that you and your clients will notice the differences.

One of the more prominent highlights is the patent-pending Wolf Dual Convection System that is in all of our built-in ovens. It delivers even temperature and airflow throughout the oven. Two fans and four heating elements operate either simultaneously or in sequence, depending on which one of the eight different cooking modes your client chooses. The cooking modes include bake, roast, broil, convection bake, convection roast, convection broil, convection and bake stone. Bake stone mode requires a bake stone accessory, available from your Wolf dealer.

Let Wolf, the corporate companion and kitchen soul mate of Sub-Zero, fuel your passion for cooking and kitchen design.



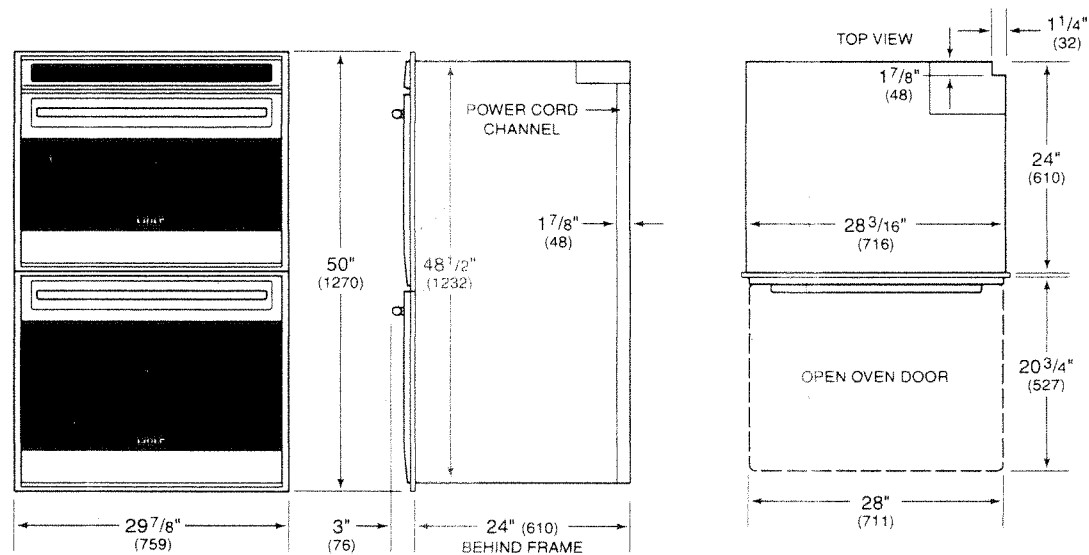
30" (762) Built-In Double Ovens

MODELS DO30F / DO30U

FEATURES

- ▶ Patent-pending dual convection logic control system
- ▶ Eight cooking modes - bake, roast, broil, convection bake, convection roast, convection broil, convection and bake stone (with bake stone accessory)
- ▶ Rotating glass touch control panel
- ▶ Cobalt blue porcelain oven interiors
- ▶ Three removable racks, six-level rack guide and full-extension bottom rack in each oven
- ▶ Large viewing triple pane windows
- ▶ Dual interior halogen lighting
- ▶ Hidden, dual ribbon bake element in each oven, makes it easy to clean any spillover
- ▶ Recessed broil element in each oven
- ▶ Temperature probe and receptacle in each oven
- ▶ Delayed start, self-clean and sabbath features
- ▶ Patent-pending, door hinge with hydraulic damper assures smooth opening and closing of the doors
- ▶ Factory installed trim
- ▶ Certified by Star-K to meet religious regulations
- ▶ UL certified for US and Canada
- ▶ Two and five year residential warranty - exclusions apply, see warranty at the end of this guide

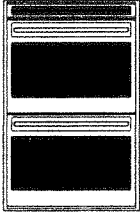
OVERALL DIMENSIONS



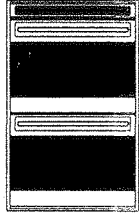
- ▶ Dimensions may vary by $\pm 1/8"$ (3).
- ▶ Dimensions in parentheses are in millimeters unless otherwise specified.

30" (762) Built-In Double Ovens

MODELS DO30F / DO30U



Model DO30F
Framed



Model DO30U
Unframed

FINISHES - FRAMED ▼

Classic Stainless Steel DO30F/S

FINISHES - UNFRAMED ▼

Classic Stainless Steel DO30U/S

Platinum Stainless Steel DO30U/P

Carbon Stainless Steel DO30U/B

ACCESSORIES

- ▶ Bake stone accessory, includes stone, element, rack and peel
- ▶ Set of three oven racks
- ▶ Two-piece broiler pan

Contact your Wolf dealer for additional information on accessories.

SPECIFICATIONS ▼

Overall Oven Width	29 ⁷ / ₈ " (759)
Overall Oven Height	50" (1270)
Overall Oven Depth	24" (610)
Open Oven Door Clearance	20 ³ / ₄ " (527)
Oven Interior Capacity (per oven)	4.5 cu ft (127 L)
Oven Interior Dimensions (per oven)	25" (635) W x 16 ¹ / ₄ " (413) H x 19" (483) D
Recommended Cabinet Width	33" (838)
Minimum Cabinet Width	30" (762)
Minimum Cabinet Depth	24" (610)
Electrical Supply Requirements	120/240 V AC, 60 Hz, 50 amp dedicated circuit
Conduit	5 ft (1.5 m) flexible 4-wire
Total Connected Load	8.9 Kw at 240 V 6.7 Kw at 208 V
Total Amps	37
Shipping Weight	466 lbs (211 kg)
Special Note	Maintain a minimum clearance to adjacent cabinet doors/drawers of 1/8" (3)

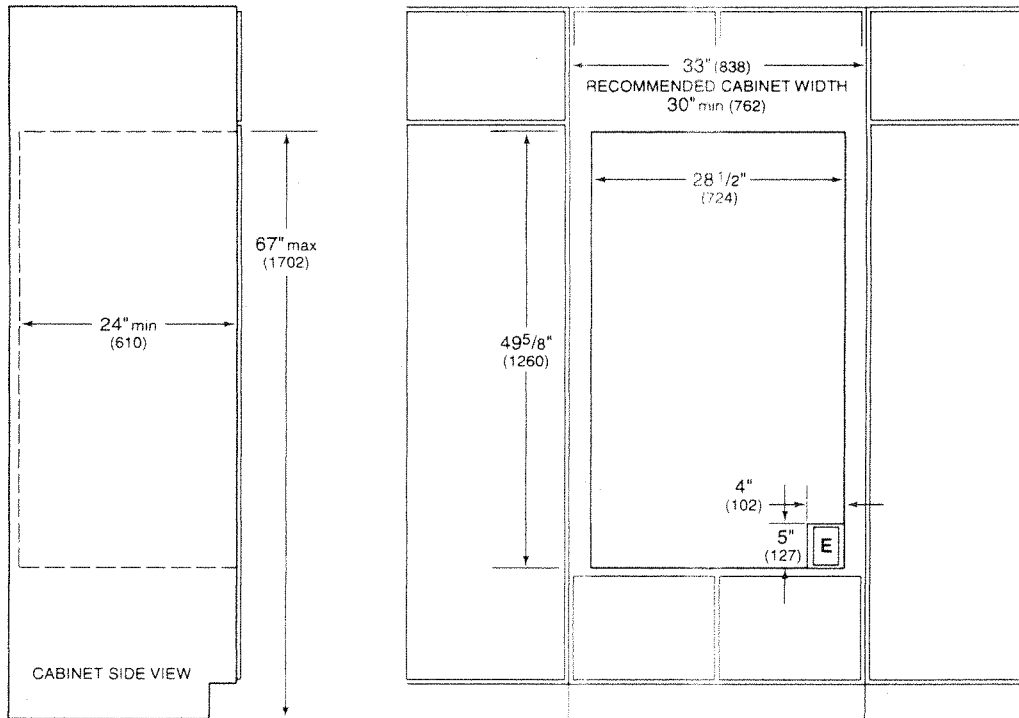
- ▶ Specifications are subject to change without notice.

▶ Dimensions in parentheses are in millimeters unless otherwise specified

30" (762) Built-In Double Ovens

INSTALLATION

WALL INSTALLATION



► Dimensions may vary by $\pm 1/8"$ (3).

DIMENSIONS

Rough Opening Width	28 1/2" (724)
Rough Opening Height	49 5/8" (1260)
Recommended Cabinet Width	33" (838)
Minimum Cabinet Width	30" (762)
Minimum Cabinet Depth	24" (610)
Location of Electrical	Within shaded area

- See Installation Instructions shipped with unit for detailed specifications.
- Dimensions in parentheses are in millimeters unless otherwise specified.

30" (762) Built-In Double Ovens

INSTALLATION

INSTALLATION NOTES

- ▶ Wolf recommends using 33" (838) cabinets with the 30" (762) double oven. Also, you need a minimum 24" (610) of usable cabinet depth.
- ▶ The bottom cabinet support must be able to support 400 lbs (181 kg).
- ▶ Door clearance for the 30" (762) double oven is 20-3/4" (527).
- ▶ The Wolf 30" (762) double oven has a face trim on all four sides and will overlap stiles and rails. The trim overlaps 3/16" (5) on the bottom, 5/16" (8) on the top and 3/4" (19) on each side.
- ▶ The 30" (762) double oven requires a separate, grounded 4-wire 240V, 50 amp service with its own circuit breaker. It is provided with a 5' (1.5 m) flexible 4-wire conduit, which can make a connection at a junction box. Locate electrical within the shaded area shown in the illustration.
- ▶ The electrical outlet must be flush with the back wall to allow for proper installation. The outlet can be placed in an adjacent cabinet as long as it is within reach of the 5' (1.5 m) conduit, and a 2" (51) diameter hole is provided. For a 24" (610) depth cabinet application, electrical conduit must be kept to the right (viewed from front of cabinet) for a flush installation.
- ▶ You must follow all National Electrical Code regulations. In addition, be aware of local codes and ordinances when installing your service.

▶ *Dimensions in parentheses are in millimeters unless otherwise specified.*

Restaurant Equipment & Supply: New & Used

My Account | About Us | Buyers Guide | FAQ / Help | My Cart

ACityDiscount.com
Your source for food service equipment
404-752-6715 8:30am - 6:30pm M-F
Hablamos Español



Search [Advanced](#)

Used Restaurant Equipment | **Home & Kitchen Appliances** | **Specials & Liquidations** | **ATLANTA Showroom**

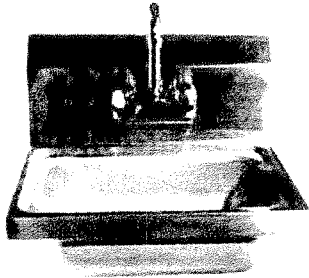
- Commercial Kitchen Equipment
- Refrigeration & Ice Machines
- Bar & Beverage Equipment
- Catering & Dining Equipment
- Concession Equipment
- Restaurant Furniture
- Customized Equipment
- Kitchen Tools & Smallwares

Sign In or Register

Jul 16, 2010

Home » Commercial Kitchen Equipment » Commercial Dishwashers, Sinks & Faucets » Sinks » 1-Compartment Sinks

Coldtech Hand Sink 14 x 10 NSF SSH-14



Mfg.: Coldtech
Model #: SSH-14
Inventory #: 33531

- ▶ [Ask a Question](#)
- ▶ [Spec Sheet](#)
- ▶ [More Images](#)

We are not currently offering this item!
Please take a look at our replacement recommendation



Extra Wide S/s Drop-In Hand Sink 20.25" W x 17" L x 7.25" D HS-2017I by Allstrong, Inc. Inventory # 76567 **\$97.67**

PEACH POINTS REWARDS PROGRAM
Enroll Today!
Start earning points with your next ACityDiscount purchase.



Additional Categories:

- Commercial Kitchen Equipment » Commercial Dishwashers, Sinks & Faucets » Sinks » Hand Sinks
- Kitchen Appliances » Plumbing & Fixtures » Home Sinks

Product Specifications | **Customer Feedbacks** | **Related Items Accessories**
Manufacturer and Shipping Information

In an attempt to keep shipping costs down, Coldtech products are shipped from several points across the country. Normally they ship quickly, however recently they have been experiencing delays. Most items will still ship in 2 weeks, but please call to check this item if shipping time is important to you.

This item is BRAND NEW shipped directly from the manufacturer and comes with a warranty.

This Coldtech One Compartment sink is constructed of 304 stainless steel. Includes a welded tub, a gooseneck faucet and a drainbasket. Also includes a wall mount bracket. The dimensions of this sink are 14" x 10" x 4" deep.

- All Coldtech sinks come complete with the drain assembly

CONTINUE SHOPPING

Manufacturer Information	
Manufacturer:	Coldtech
Model:	SSH-14
List price:	\$198.00
Dimensions	
Weight:	20 lbs.
Width:	17 in.
Depth:	16 in.
Height:	12 in.
Shipping Information	
Packing Charge:	\$0.00
Customer Pick Up	

<p>Product Listings</p> <ul style="list-style-type: none"> Restaurant Equipment Used Restaurant Equipment Restaurant Equipment Auctions Home & Kitchen Appliances Atlanta Restaurant Equipment ShowRoom Restaurant Equipment Categories Restaurant Equipment Manufacturers Restaurant Supply eBay Store 	<p>Need Help?</p> <ul style="list-style-type: none"> Restaurant Equipment Financing Sell your Restaurant Equipment Check our Recent Purchases Make an Offer Specials & Liquidations Free Shipping Peach Points Rewards Program Buyers Guide 	<p>Customer Area</p> <ul style="list-style-type: none"> Registration My Account Summary My Orders History My Profile My Message Center My Peach Points Mailing List 	<p>Information</p> <ul style="list-style-type: none"> About Us Privacy Policy Terms & Conditions Links & Resources Career Center SiteMap Contact Us Help 	<p>Become a Fan</p> <p> facebook</p> <p> twitter</p> <p> YouTube</p>
--	--	---	---	---

Restaurant Equipment & Supply: New & Used

My Account | About Us | Buyers Guide | FAQ / Help | My Cart



Search [Advanced](#)

404-752-6715 8:30am - 6:30pm M-F
Hablamos Español

- Used Restaurant Equipment
- Home & Kitchen Appliances
- Specials & Liquidations
- ATLANTA Showroom

- Commercial Kitchen Equipment
- Refrigeration & Ice Machines
- Bar & Beverage Equipment
- Catering & Dining Equipment
- Concession Equipment
- Restaurant Furniture
- Customized Equipment
- Kitchen Tools & Smallwares

Sign In or Register

Jul 16, 2010

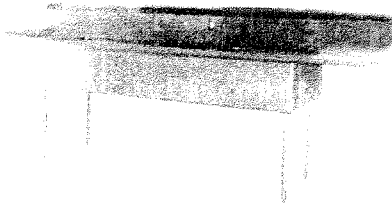
Home » Commercial Kitchen Equipment » Commercial Dishwashers, Sinks & Faucets » Sinks » 3-Compartment Sinks

Coldtech 3 Compartment Sink 18x18 NSF 2-24in Drainboards SS3-1824



Mfg.: Coldtech
Model #: SS3-1824
Inventory #: 36039

- ▶ [Ask a Question](#)
- ▶ [More Images](#)



We are not currently offering this item!
Please take a look at our replacement recommendation



3 Compartment Sink 18x18
Stainless W/ Two 18in
Drainboards SE18183D
by Allstrong, Inc
Inventory #: 72253
\$513.05

PEACH POINTS REWARDS PROGRAM

Enroll Today!

Start earning points with your next ACityDiscount purchase.



- Product Specifications
- Customer Feedbacks
- Related Items Accessories

Manufacturer and Shipping Information

In an attempt to keep shipping costs down, Coldtech products are shipped from several points across the country. Normally they ship quickly, however recently they have been experiencing delays. Most items will still ship in 2 weeks, but please call to check this item if shipping time is important to you.

This item is BRAND NEW and shipped directly from the manufacturer with a full warranty

This Coldtech Three Compartment Sink is constructed of 304 stainless steel. Durable stainless steel commercial sink with galvanized legs, adjustable bullet feet and polished to a #4 finish

The specifications of this sink are as follows:


- Durable 304 series stainless steel
- 18 x 18 x 12in Deep welded tubs
- 2, 24" drainboard
- 9" backsplash
- 18 gauge stainless steel top
- Galvanized legs
- Adjustable bullet feet
- #4 polished finish
- NSF Approved
- All Coldtech sinks come complete with the drain assembly


This item weighs 90 lbs. but we have added 110 lbs. to the weight for packing and shipping.


CONTINUE SHOPPING


Manufacturer Information	
Manufacturer:	Coldtech
Model:	SS3-1824
List price:	\$1,129.00
Dimensions	
Weight:	90 lbs.
Width:	102 in.
Depth:	24 in.
Height:	45 in.
Shipping Information	
Packing Charge:	\$50.00
Customer Pick Up	
Handling Fee:	\$0.00


People Who Viewed This Also Viewed


- 

10in Spout Faucet 8in Center Wall Mount Commercial AA-710 by Allstrong, Inc Inventory #: 70616
\$46.42
- 

14in Spout Faucet 8in Center Wall Mount Commercial AA-714 by Allstrong, Inc Inventory #: 70612
\$48.41
- 

16in Commercial Spout Faucet Wall Mount 8in Center AA-716 by Allstrong, Inc Inventory #: 70618
\$50.91
- 

6in Spout Faucet 8in Center Wall Mount Commercial AA-706 by Allstrong, Inc Inventory #: 70614
\$43.26
- 

8in Spout Faucet 8in Center Wall Mount Commercial AA-708 by Allstrong, Inc Inventory #: 70615
\$46.42
- 

8in Spout NO LEAD Commercial Faucet Wall Mount 8in Center AA-708G by Allstrong, Inc Inventory #: 106259
\$62.18

K-35

ELKAY[®]

SPECIFICATIONS

Rigidbilt[®] Single Compartment Scullery Sink 3-1/2" (89mm) Radius Coved Corner Construction

GENERAL

Model RNSF_____ #16 gauge, type 304, stainless steel scullery sink. Seamless drawn 3-1/2" (89mm) radius coved corner construction. Full length 8" (203mm) high backsplash with 45° sloped top. 1-1/2" (38mm) wide inward sloping top channel rims. Drainboards have a conical-shaped pitch for maximum drainage. Welded areas blended into the existing satin finish.

Sink is situated on (4) stainless steel, 1-5/8" (41mm) O.D. tubular legs with cross-braces for optimal support. Adjustable bullet shaped feet. Rigidbilt sinks carry the NSF International Certification.

OPTIONAL FEATURES*

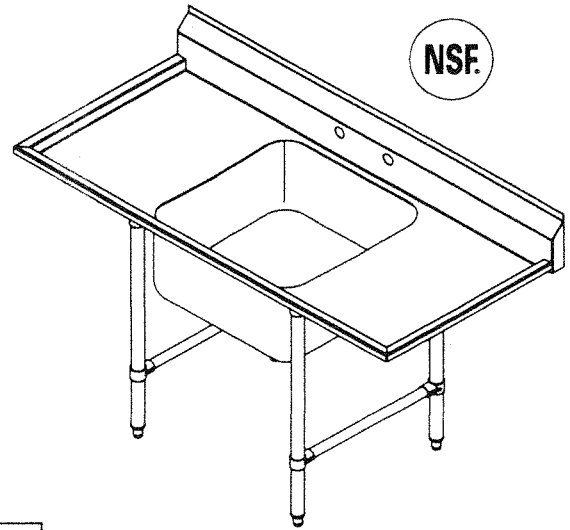
- Undercoating to provide a sound and condensation barrier.
- Left or right integral drainboards.

*Allow 4-6 weeks for lead time.

RECOMMENDED

FAUCET: Models RNSF8118/RNSF8118LR: LK940AT08L2H;
Models RNSF8124/RNSF8124LR: LK940AT10L2H.

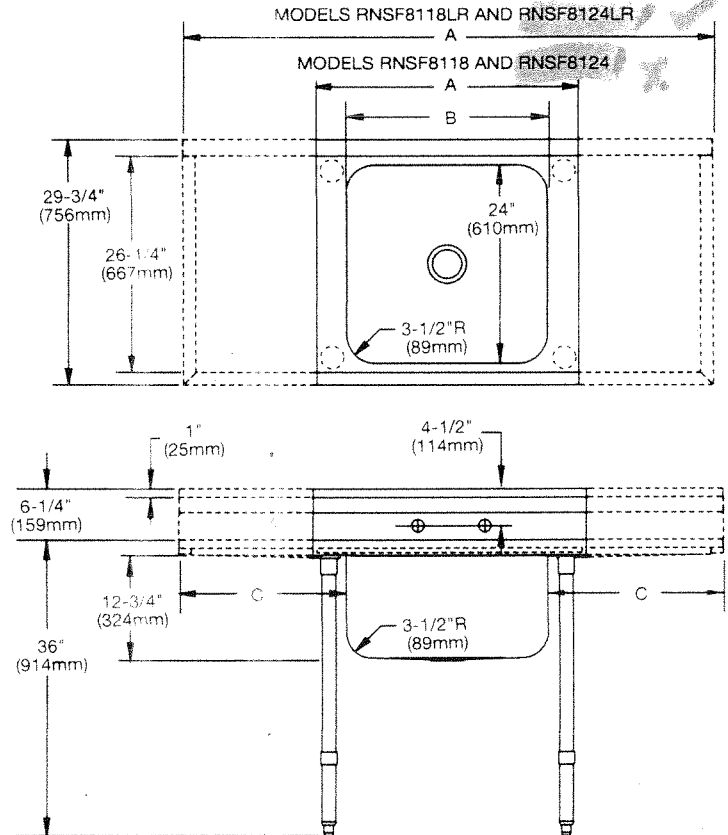
DRAIN: All Models: LK24RT or LK18B.



Model RNSF8124LR2 (shown)
(Faucet Drillings and Location as Illustrated)

(CHECK MODEL SPECIFIED):

Model Number	A		B		C		APPROX. WT.	
	in	mm	in	mm	in	mm	lbs	kgs
RNSF8118	27	686	18	457	N/A	N/A	46	21
RNSF8118LR	57	1448	18	457	19 1/2	495	67	30
RNSF8124	33	838	24	610	N/A	N/A	52	24
RNSF8124LR	63	1600	24	610	19 1/2	495	72	33



K-36

SEARCH :

GO

PRODUCTS DOWNLOADS SERVICE NEWS BUY NOW

Products



Q-1800 Series Stackable Ice Cube Machine
Highly reliable, high capacity, "stackable" ice machine



S-0300 Ice Cube Machine
Low profile, compact ice maker



S-0322 Ice Cube Machine
Large ice capacity with a narrow footprint



S-0422 Ice Cube Machine
Large ice capacity with a narrow footprint



S-0450 Ice Cube Machine
Ideal for almost any ice making application

[Click for More](#)

Model Home Features Downloads Technical Specifications Accessories

Catalog Home: Ice machines > Ice machines - Cubers > Modular > S-1400 Ice Cube Machine



S-1400 Ice Cube Machine

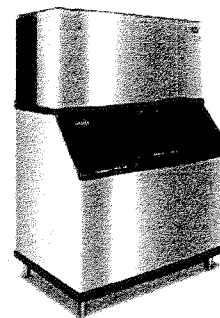
Highly reliable, high capacity ice machine

SD-1402A | SY-1404A | SD-1403W | SY-1405W | SD-1492N | SY-1494N

Available in air, water or remote air cooled condensing systems.

Click the image below to enlarge.

Model	Ice Production 24 Hours				Power Usage 480V/100 Hz/60Hz/3Phase				Water Usage/100 Lb. of Ice	
	1/2" Cube	3/4" Cube Water	3/4" Cube NoF Water	1" Cube	CEE Tier 1 Pk	CEE Tier 2 Pk	CEE Tier 3 Pk	Power Water	CEE Tier 1 Pk	ENERGY STAR
SD-1402A	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0
SY-1404A	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0
SD-1403W	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0
SY-1405W	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0
SD-1492N	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0
SY-1494N	100	100	100	100	1.0	1.0	1.0	1.0	1.0	1.0



S-1400

Energy Efficiency Rating

NOTE: Energy efficiency and rebate information may differ with various options available for this product. Please check Technical Specifications tab for additional information.

- Energy Use : 4.88 KWh/100 lb ice



Certifications

NOTE: Certifications may differ with various options available for this product. Please check Technical Specifications tab for additional information.



Model	Ice Shape	Ice Production 24 Hours		Power Usage kWh/100 lbs. @ 90°F Air/70°F				Water Usage/100 lbs. 45.4 kgs. of Ice		ENERGY STAR		
		70°F Air/ 50°F Water	90°F Air/ 70°F Water	1 Ph	CEE Tier	3 Ph	CEE Tier	Potable Water	CEE Tier			
SD1402A	dice	1440 lbs	1170 lbs	4.88	2	4.83	2	22.5 gal	2	*		
		653 kgs	531 kgs					85.2 l				
SY1405A	half-dice	1450 lbs	1072 lbs	4.88	2	4.83	2	22.5 gal	2	*		
		658 kgs	544 kgs					85.2 l				
SD1403W	dice	1450 lbs	1100 lbs	4.78	2	4.75	2	22.5 gal	2	NA		
		649 kgs	585 kgs					85.2 l				
SY1405W	half-dice	1460 lbs	1310 lbs	4.78	2	4.75	2	22.5 gal	2	NA		
		662 kgs	594 kgs					85.2 l				
* Energy Star qualified condenser. Water consumption per gallon of production is 1.49 gal/gal.												
2017 Energy Star qualified condenser. Water consumption per gallon of production is 1.49 gal/gal.												
2018 Energy Star qualified condenser. Water consumption per gallon of production is 1.49 gal/gal.												
REMOTE-COOLED		SD1492N	dice	1380 lbs	1210 lbs	4.52	2	4.45	2	22.5 gal	2	*
				626 kgs	549 kgs					85.2 l		
		SY1494N	half-dice	1430 lbs	1240 lbs	4.52	2	4.45	2	22.5 gal	2	*
				649 kgs	558 kgs					85.2 l		

Order ice storage bin separately. Ice storage bin and R-135SA remote condenser must be ordered separately. Consult remote condenser specification sheet for details. To order 3 phase add "3" suffix to model # (SD 1402A3)

SEARCH :

GO

[PRODUCTS](#) [DOWNLOADS](#) [SERVICE](#) [NEWS](#) [BUY NOW](#)

Products



Q-1800 Series Stackable Ice Cube Machine

Highly reliable, high capacity, "stackable" ice machine



S-0300 Ice Cube Machine

Low profile, compact ice maker



S-0322 Ice Cube Machine

Large ice capacity with a narrow footprint



S-0422 Ice Cube Machine

Large ice capacity with a narrow footprint



S-0450 Ice Cube Machine

Ideal for almost any ice making application

[Click for More](#)

[Model Home](#) [Features](#) [Downloads](#) [Technical Specifications](#) [Accessories](#)

[Catalog Home](#) [Ice machines](#) > [Ice machines numbers](#) > [Modular](#) > [S-1400 Ice Cube Machine](#)



S-1400 Ice Cube Machine

Product Features

- Up to 1,460 lbs. (662 kgs.) daily ice production
- Removable water distribution tube with no tools
- Food zone designed with soft rounded corners
- Patented cleaning and sanitizing technology
- Select components compounded with AlphaSan® antimicrobial
- Patented ice harvest technology reduces energy requirements
- Hinged front door for easy access
- R-404A CFC-free refrigerant
- 5-year parts and 5-year labor coverage on ice machine evaporator
- 5-year parts and 3-year labor coverage on ice machine compressor
- 3-year parts-and-labor coverage on all other ice machine, dispenser, and storage bin components

SEARCH :

GO

PRODUCTS DOWNLOADS SERVICE NEWS BUY NOW

Model Home Features Downloads Technical Specifications Accessories

Catalog Home / Ice machines > Ice machines, Cubers > Modular > S-1400 Ice Cube Machine



Products



Q-1800 Series Stackable Ice Cube Machine

Highly reliable, high capacity, "stackable" ice machine



S-0300 Ice Cube Machine

Low profile, compact ice maker



S-0322 Ice Cube Machine

Large ice capacity with a narrow footprint



S-0422 Ice Cube Machine

Large ice capacity with a narrow footprint



S-0450 Ice Cube Machine

Ideal for almost any ice making application

[Click for More](#)

S-1400 Ice Cube Machine

Technical Specifications

• SD-1402A

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 4.88 KWh/100 lb ice

Certifications



• SY-1404A

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 4.88 KWh/100 lb ice

Certifications



• SD-1403W

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 3.78 KWh/100 lb ice

Certifications



• SY-1405W

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 3.78 KWh/100 lb ice

Certifications



• SD-1492N

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 4.52 KWh/100 lb ice

Certifications



• SY-1494N

S-1400 Ice Cube Machine

Width x Depth x Height 48" x 24½" x 26½" (121.92 cm x 62.23 cm x 67.31 cm)

Primary Power Input Rating 208-230/60/1
208-230/60/3
220-240/50/1

Energy Use 4.52 KWh/100 lb ice

Certifications

