

**SECTION 22 42 26
COMMERCIAL DISPOSERS**

SPEC WRITER NOTES:

1. Delete between // ____ // if not applicable to project.
2. Delete other items or paragraphs in the section that are not applicable and renumber the paragraphs.
3. Select waste machines according to usage requirements and local plumbing codes.

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies food waste machines as follows:

- //1. Food waste disposers.//
- //2. Food and paper waste pulper and water extractor systems.//
- //3. Food waste grinder and water extractor systems.//
- //4. Water recirculating food waste disposer systems.//
- //5. Water recirculating food waste separator systems.//

B. A complete listing of all acronyms and abbreviations are included in Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

1.2 RELATED WORK

SPEC WRITER NOTE: Retain paragraph below if food waste machines are mounted on custom-fabricated, stainless steel tables with sinks, etc.

A. Equipment with Food Waste Machines:

B. Section 01 00 00, GENERAL REQUIREMENTS.

C. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

D. Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.

//E. Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.//

SPEC WRITER NOTE: Retain first paragraph below if required for project location.

//F. Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS: Seismic Restraint of Equipment.//

G. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

//H. SECTION 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS: Requirements for commissioning, systems readiness checklist, and training.//

I. Section 22 13 00, FACILITY SANITARY AND VENT PIPING: Plumbing Connections.

J. Section 26 05 19, LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES:
Electrical Connections.

K. Section 26 29 21, ENCLOSED SWITCHES AND CIRCUIT BREAKERS: Electrical
Disconnect Switches.

1.3 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by their basic designation only.

B. American Welding Society (AWS):
D9.1M/D9.1-2012Sheet Metal Welding Code

C. NSF International (NSF):
13-2012Refuse Processors and Processing Equipment

D. Sheet Metal and Air Conditioning Contractors National Association
(SMACNA):
Document 1767: Kitchen Ventilation Systems and Food Service Equipment
Fabrication and Installation Guidelines, 2001.

E. Underwriters Laboratories Inc. (UL):
430-2009 (R2011).....Standard for Waste Disposers
UL Directory KVP-2010...Flammable and Combustible Liquids and Gases
Equipment, Heating, Cooling, Ventilating,
Cooking Equipment, Food Safety Equipment,
Plumbing and Associated Products

1.4 SUBMITTALS

A. Submittals, including number of required copies, shall be submitted in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Information and material submitted under this section shall be marked "SUBMITTED UNDER SECTION 22 42 26, COMMERCIAL DISPOSERS", with applicable paragraph identification.

C. Manufacturer's Literature and Data including: Full item description and optional features and accessories. Include dimensions, weights, materials, applications, standard compliance, model numbers, size, and capacity.

1. Include manufacturer's address and telephone number.

2. Include catalog or model numbers, illustrations and descriptions of food waste machines and accessories.

- D. Installation Drawings: Show dimensions; method of assembly; and details of installation, adjoining construction, coordination with plumbing and electrical work, and other work required for a complete installation.
- E. Operating Instructions: Comply with requirements in Section 01 00 00, GENERAL REQUIREMENTS.
- //F. Completed System Readiness Checklist provided by the CxA and completed by the contractor, signed by a qualified technician and dated on the date of completion, in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//
- //G. Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Licensed electrician and plumber experienced with food service equipment installation or supervised by an experienced food service equipment installer.

SPEC WRITER NOTE: UL Environmental and Public Health (EPH) Classification Mark is currently used by UL to certify compliance with NSF/ANSI standards. Equipment evaluated by UL before 2001 may bear the UL Food Service Product Certification Mark.

- B. NSF Compliance: Equipment bears NSF Certification Mark or UL Classification Mark indicating compliance with NSF 13.
- C. UL Listing: Equipment is evaluated according to UL 430 and listed in UL's Directory KVP and labeled for intended use.
 - 1. Products that contain features, characteristics, components, materials, or systems different from those covered by UL 430 shall be evaluated by UL using appropriate additional component and end-product requirements to maintain the level of safety anticipated by the intent of UL 430.
- D. Welding: Perform welding according to AWS D9.1M/D9.1.

SPEC WRITER NOTE: Retain paragraph and subparagraphs below if required for project location.

- //E. Seismic Restraint:
 - 1. Comply with requirements in Section 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS.

2. Comply with applicable guidelines for seismic restraint of kitchen equipment contained in SMACNA's "Kitchen Ventilation Systems and Food Service Equipment Fabrication and Installation Guidelines," Appendix A.//

F. Bio-Based Materials: For products designated by the USDA's Bio-Preferred Program, provide products that meet or exceed USDA recommendations for bio-based content, so long as products meet all performance requirements in this specifications section. For more information regarding the product categories covered by the Bio-Preferred Program, visit <http://www.biopreferred.gov>.

1.6 AS-BUILT DOCUMENTATION

SPEC WRITER NOTE: Coordinate O&M Manual requirements with Section 01 00 00, GENERAL REQUIREMENTS. O&M manuals shall be submitted for content review as part of the close-out documents.

- A. Submit manufacturer's literature and data updated to include submittal review comments and any equipment substitutions.
- B. Submit operation and maintenance data updated to include submittal review comments, substitutions and construction revisions shall be // in electronic version on compact disc or DVD // inserted into a three ring binder. All aspects of system operation and maintenance procedures, including piping isometrics, wiring diagrams of all circuits, a written description of system design, control logic, and sequence of operation shall be included in the operation and maintenance manual. The operations and maintenance manual shall include troubleshooting techniques and procedures for emergency situations. Notes on all special systems or devices such as damper and door closure interlocks shall be included. A List of recommended spare parts (manufacturer, model number, and quantity) shall be furnished. Information explaining any special knowledge or tools the owner will be required to employ shall be inserted into the As-Built documentation.
- C. The installing contractor shall maintain as-built drawings of each completed phase for verification; and, shall provide the complete set at the time of final systems certification testing. As-built drawings are to be provided, and a copy of them on AutoCAD version //____// provided on compact disc or DVD. Should the installing contractor engage the testing company to provide as-built or any portion thereof,

it shall not be deemed a conflict of interest or breach of the 'third party testing company' requirement.

- D. Certification documentation shall be provided to COR 10 working days prior to submitting the request for final inspection. The documentation shall include all test results, the names of individuals performing work for the testing agency on this project, detailed procedures followed for all tests, and certification that all results of tests were within limits specified.

PART 2 - PRODUCTS

2.1 FOOD WASTE DISPOSER

- A. Food Waste Disposer Unit:
1. Corrosion-proof construction housing and dual-direction shredding elements.
 2. Flow control.
 3. Solenoid valve.
 4. Vacuum breaker.
 5. Fixed nozzle.
- B. Motor:
1. TEFC Motor (Totally Enclosed Fan Cooled) Construction.
 2. Built-In Thermal Overload Protection.
 3. Bearings sealed and lubricated.
- C. Control Panel:
1. Autoreversing and internal time water flush.
 2. Stainless-steel mounting bracket.
- D. Pre-rinse:
1. Backsplash mounted with hot- and cold-water mixing valve.
 2. Wall support bracket.
 3. Flexible 10 mm (3/8 inch) metal-encased hose supported by spiral spring, minimum length 737 mm (29 inches).
 4. Spray head assembly with lockable lever handle.
 5. Exposed metal parts are chrome plated or stainless steel.
- E. Accessories:
1. Collar adaptor for sink.
 2. Collar adaptor for trough.
 3. Cone with adaptor ring.
 4. Cone cover.
 5. Silverware accumulator.

SPEC WRITER NOTES:

1. Select W (HP) for units based on size of facility and anticipated use as follows:
 - a. 2238 W (3 HP) - Light Use:
 - Small and medium-size facility - pot and pan sinks.
 - Small facility - warewashing.
 - Small and large-size facility - prep sinks.
 - b. 3730 W (5 HP) - Medium Use:
 - Medium facility - warewashing.
 - Large facility - pot and pan sinks.
 - c. 5222 W (7 HP) - Heavy Use:
 - Large facility - warewashing.
2. Symbols below correspond with "Room Equipment Guide" identification system. Verify project requirements before specifying equipment that deviates from "Room Equipment Guide."
3. Edit symbols to coordinate with identification shown on drawings.

F. Disposer Nomenclature:

SYMBOL	UNIT SIZE	CONE AND COVER SIZE	ACCESSORIES
K2331	2238 W (3 HP)	300 mm (12 inches)	Control panel spray rinse assembly
K2332	2238 W (3 HP)	381 mm (15 inches)	Control panel spray rinse assembly
K2333	2238 W (3 HP)	450 mm (18 inches)	Control panel spray rinse assembly
K2334	2238 W (3 HP)	381 mm (15 inches)	Trough connection control panel spray rinse assembly
K2335	2238 W (3 HP)	450 mm (18 inches)	Trough connection control panel spray rinse assembly
K2351	3730 W (5 HP)	300 mm (12 inches)	Control panel spray rinse assembly
K2352	3730 W (5 HP)	381 mm (15 inches)	Control panel spray rinse assembly
K2353	3730 W (5 HP)	450 mm (18 inches)	Control panel spray rinse assembly
K2354	3730 W (5 HP)	381 mm (15 inches)	Trough connection control panel spray rinse assembly
K2355	3730 W (5 HP)	450 mm (18 inches)	Trough connection control panel spray rinse assembly

K2371	5222 W (7 HP)	300 mm (12 inches)	Control panel spray rinse assembly
K2372	5222 W (7 HP)	381 mm (15 inches)	Control panel spray rinse assembly
K2373	5222 W (7 HP)	450 mm (18 inches)	Control panel spray rinse assembly
K2374	5222 W (7 HP)	381 mm (15 inches)	Trough connection control panel spray rinse assembly
K2375	5222 W (7 HP)	450 mm (18 inches)	Trough connection control panel spray rinse assembly

2.2 FOOD AND PAPER WASTE PULPER AND WATER EXTRACTOR SYSTEM

SPEC WRITER NOTE: Waste-pulping system is used where there is more paper waste than food waste.

- A. Construction of Pulper: Stainless steel tank with water flushed feed, hinged lid with limit switch, slurry chamber and internal junk box with cutters.
- B. Construction of Extractor:
 - 1. Housing assembly to be stainless steel.
 - 2. 6 inch diameter gear driven helical screw with attaché nylon brush mounted in a perforated cylindrical screen.
 - 3. Stainless steel discharge housing, complete with stainless steel discharge chute, and gear reducer.
 - 4. Structural base constructed of tubular stainless steel all welded with stainless steel flanged feet for bolting to the floor.
- C. Control Panel: Stainless steel NEMA 4 enclosure with prewired terminal strip, water-level control, push-button station, main circuit breaker interlocked with door handle. Magnetic starters, and individual three leg thermal overload protection for each motor.
- D. Motors: TEFC and sized for operation as indicated by facility needs.
- E. Accessories:
 - 1. Feed trough connection.
 - 2. Feed tray.
 - 3. Feed hood assembly.
 - 4. Under-dishtable lid.
 - 5. Remote water extractor:
 - a. Dam, to prevent siphoning of water from pulper tank.

- b. Remote piping system (overhead or below floor) // with pump //.
6. Extended discharge chute.
7. Extended stand.
8. Pulp level detection.
9. Bus Communication.

SPEC WRITER NOTE: Select size according to anticipated use; actual use should not exceed 90% of capacity of unit.

- F. Size: Manufacturer rates waste-processing capacity at not less than // 272 kg (600 lb) // 317 kg (700 lb) // 408 kg (900 lb) // of waste per hour.

SPEC WRITER NOTES:

1. Symbols below correspond with "Room Equipment Guide" identification system. Verify project requirements before specifying equipment that deviates from "Room Equipment Guide."
2. Edit symbols to coordinate with identification shown on drawings.

G. Pulper/Water Extractor Equipment Nomenclature:

SYMBOL	PULPER/WATER EXTRACTOR DESCRIPTION
K2401	Cover Trough connection Slurry pump Control panel Extractor
K2402	Feed hood Slurry pump Control panel Extractor
K2403	Feed hood and tray Slurry pump Control panel Extractor
K2404	Cover Trough connection Slurry pump Control panel Remote extractor

2.3 FOOD WASTE GRINDER AND WATER EXTRACTOR SYSTEM

SPEC WRITER NOTE: Food waste grinder is used where there is a higher percentage of food waste than paper waste.

- A. Food Waste Grinder/Water Extractor:
 - 1. Stainless-steel construction, food waste hopper, silver saver, internal disposal, removable water extraction auger with internal water sprays, discharge chute, and off and on controls on unit.
 - 2. Accessories:
 - a. Reel rinse unit with spray valve.
 - b. Recirculation water pump.
 - c. Trough mount.
- B. Undercounter Food Waste Grinder and Water Extractor:
 - 1. Stainless-steel fabricated undercounter water extractor (cleanable).
 - 2. Separate disposer, corrosion-proof construction housing, and dual-direction shredding elements.
 - 3. Pre-piped valve package with all valves for operation of unit, including pump.
 - 4. Required Accessories:
 - a. Vacuum breaker.
 - b. Solenoid valve.
 - c. Flow control.
 - d. Time-delayed relay.
 - 5. Mounting Assembly Accessories:
 - a. // 300 mm (12 inch) // 381 mm (15 inch) // 450 mm (18 inch) // cone with adaptor ring.
 - b. Cone cover in size that matches cone.
 - c. Silverware sorter.
 - d. Trough collar connection.
 - 6. Control Panel:
 - a. Autoreversing and internal time water flush.
 - b. Stainless-steel mounting bracket.
 - c. NEMA 4 stainless steel enclosure.
 - d. Control and water level components pre-wire to terminal strip.
 - e. Push button.
- C. Prerinse:
 - 1. Backsplash mounted with hot- and cold-water mixing valve.
 - 2. Wall support bracket.

3. Flexible 10 mm (3/8 inch) metal-encased hose supported by spiral spring, minimum length 737 mm (29 inches).
4. Spray head assembly with lockable lever handle.
5. Exposed metal parts are chrome plated or stainless steel.

SPEC WRITER NOTE: Select size according to anticipated use; actual use should not exceed 90 percent of capacity of unit.

- D. Size: Manufacturer rates waste-processing capacity at not less than // 272 kg (600 lb) // 317 kg (700 lb) // of waste per hour.

SPEC WRITER NOTES:

1. Symbols below correspond with "Room Equipment Guide" identification system. Verify project requirements before specifying equipment that deviates from "Room Equipment Guide."
2. Edit symbols to coordinate with identification shown on drawings.

- E. Food Waste Grinder and Water Extractor Equipment Nomenclature:

SYMBOL	FOOD WASTER GRINDER/WATER EXTRACTOR DESCRIPTION
K2501	Trough connection Control panel
K2502	Undercounter type Cone connection Control panel

2.4 WATER RECIRCULATING FOOD WASTE DISPOSER SYSTEM

- A. Disposer: Corrosion-proof construction housing and dual-direction shredding elements, salvage basin, and disposer safety cover.

1. Required Accessories:

- a. Solenoid valve.
- b. Time-delayed relay.
- c. Vacuum breaker.
- d. Check valves.
- e. Automatic water blender.
- f. Incoming water valve.
- g. Quick opening drain valve.

- B. Control Panel:

1. Autoreversing and internal time water flush.
2. Stainless-steel mounting bracket.
3. Flow control.
4. NEMA 4 with watertight conduit and fittings.

5. Safety switch.
 6. Operating light.
 7. 24-volt safety circuitry.
- C. Mounting Assembly Accessories:
1. Tray unit.
 2. Silverware sorter.
 3. Trough collar connection.
- D. Size: // 2238 W (3 HP) // 3730 W (5 HP) // 5595 W (7-1/2 HP) //.

SPEC WRITER NOTES:

1. Symbols below corresponds with "Room Equipment Guide" identification system. Verify project requirements before specifying equipment that deviates from "Room Equipment Guide."
2. Edit symbols to coordinate with identification shown on drawings.

E. Water Recirculating Food Waste Disposer Equipment Nomenclature:

SYMBOL	WATER RECIRCULATING FOOD WASTE DISPOSER DESCRIPTION
K2601	Tray Control panel
K2602	Trough connection Control panel

2.5 WATER RECIRCULATING FOOD WASTE SEPARATOR SYSTEM

- A. Food Waste Separator:
1. Noncorrosive construction.
 2. Salvage basin - high impact polymer.
 3. Water inlet with water blender.
 4. Safety cover.
 5. Nonclogging pump.
 6. Overflow pipe.
 7. Incoming water valves.
 8. All electrical components to have separate grounding.
 9. Motor to be thermally protected with safety line disconnects.
 10. Solenoid valves, unions, check valves and backflow preventer.
- B. Control Panel:
1. Recirculating water in unit, automatic reversal.
 2. NEMA 4 with watertight conduit and fittings.
 3. Safety switch.
 4. Operating light.

C. Accessories:

1. Tray pan.
2. Trough collar connection; various widths.
3. Water inlets along length of trough.

SPEC WRITER NOTES:

1. Symbol below corresponds with "Room Equipment Guide" identification system. Verify project requirements before specifying equipment that deviates from "Room Equipment Guide."
2. Edit symbol to coordinate with identification shown on drawings.

D. Water Recirculating Food Waste Separator Equipment Nomenclature:

SYMBOL	WATER RECIRCULATING FOOD WASTE SEPARATOR DESCRIPTION
K2701	Control panel Tray pan Trough connection

PART 3 - EXECUTION**3.1 INSTALLATION**

SPEC WRITER NOTE: Indicate requirements for mounting waste disposers on drawings.

- A. Install food waste machines, including controls and accessory equipment, arranged for safe and convenient operation and maintenance per the manufacturer's written requirements.
- B. Install food waste machines to prevent backflow of polluted water or waste into water supply system or on to food preparation work surfaces.
- C. Install and interconnect electrical controls and switches.

SPEC WRITER NOTE: Retain paragraph below if required for project location.

//D. Install seismic restraints for equipment.//

- E. If an installation is unsatisfactory to the COR, the contractor shall correct the installation at no cost or additional time to the Government.

3.2 PROTECTING AND CLEANING

- A. Protect equipment from dirt, water, and chemical or mechanical injury prior to beginning work and during the remainder of the construction period. Any damage to existing equipment or surfaces shall be repaired/replaced at no additional cost or time to the Government.

- B. At completion of work, clean, lubricate, and adjust food waste disposers as required to produce ready-for-use condition.

//3.3 COMMISSIONING

- A. Provide commissioning documentation in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.
- B. Components provided under this section of the specification will be tested as part of a larger system.//

3.4 DEMONSTRATION AND TRAINING

- A. Provide services of manufacturer's technical representative for //four// // // hours to instruct VA Personnel in operation and maintenance of the system.
- //B. Submit training plans and instructor qualifications in accordance with the requirements of Section 22 08 00, COMMISSIONING OF PLUMBING SYSTEMS.//

- - - E N D - - -