
Note to the Designer/Architect/Engineer: These Specifications are basic minimum criteria to be met in preparing the final project specifications for this section, which is the responsibility of the Designer

York University Building Standards

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1.0 GENERAL

1.1 Scope of Work

- .1 This York University Building Standard includes, covers:
 - .1 General design principles and attributes for the deployment of solid (non hazardous) waste, recyclable and compostable materials containers in exterior areas of the university campus
 - .2 Waste compactor types and deployment
 - .3 Waste management service area (at building loading dock or service area) for solid waste, recyclable and compostable waste

1.2 General Design Attributes and Design Guideline Principles

1.2.1 All new buildings and major renovations to existing buildings are required to include as part of the project work and project budget the deployment of solid waste collection and handling equipment including containers for waste and recyclables collection for interior and exterior areas. Additionally, depending on building use (for instance, if the new or renovated building is planned to include a food service area such as a food court, cafeteria or other food preparation area, and/or the projected building occupancy levels warrant a new building may require a solid waste and/or a recyclables horizontal or vertical compactors.

1.2.2 York University's Grounds, Fleet & Waste Management, CSBO must be consulted as part of the new building or major renovation design and planning phase to select the most appropriate solid waste, recycling and compostable handling equipment for the new facility. This consultation is also required where the use of compactors is warranted.

1.2.3 York University's Grounds, Fleet & Waste Management, CSBO specifications on the following:

- 1. Concrete pads for placement of front load waste containers
- 2. Storage areas (enclosures) for recycling and waste containers where a loading dock is not planned for the new building containers
- 3. Concrete pads for compactors define: characteristics of service area in terms of existing front load waste containers ... turning radii, grade, height clearance, service lane width,

1.3 Design Requirements

1. The planning of new buildings and major renovations must take into consideration and accommodate for waste and recycling containers that are serviced by the university's fleet of rear and front loading waste management service vehicles, and side loading recycling vehicles.
2. Weight of waste management and recycling service vehicles must be taken into consideration for the construction of concrete pads, services areas and loading dock access for waste and recycling containers as well as compactors
3. Solid waste and recycling service vehicle turning radius, overhead clearance and operator controls must be taken into consideration in the design of solid waste and recycling
4. University owned or managed buildings are required to use solid waste, recycling and composting containers defined in this specification and approved by York University's Grounds, Fleet & Waste Management, CSBO. For operational reasons, deviations from this specification are not permitted
5. York University is responsible for its own solid waste management and recycling diversion programs. The university has adopted a multi stream solid waste diversion approach where paper products are commingled in a dedicated container; recyclable food and beverage containers (metal, plastic or glass) are also comingled in dedicated containers. Corrugated cardboard containers are either collected flattened in dedicated containers, or in compactors located at loading docs or service areas for each building. Solid waste is collected in metal front load containers located at loading docks or service areas. Totes are deployed to collect organic waste for composting.

1.4 Submittals

1.4.1 Product Data Sheets:

- .1 provide product data sheets with specifications for interior and exterior solid waste and recycling containers
- .2 provide product data sheets with specifications for vertical and horizontal compactors

1.4.2 Operation and Maintenance Manual:

1. Provide operational instructions hard copy and electronic copy of service manual and user manual to Grounds, Fleet & Waste Management, CSBO

2. If a compactor is activated by key, the compactor supplier is required to provide five (5) keys to Grounds, Fleet & Waste Management, CSBO

1.5 Related York University Standards

1.5.1 Section 11 13 00 Loading Dock Equipment

1.6 Performance Standards References

- .1 this section is not applicable

1.7 Maintenance Documentation

- .1 Provide container and compactor maintenance documentation

1.8 Warranty (Standard Warranty and Extended Warranty)

- 1.8.1 Compactors and containers must carry a one-year warranty against material defects and workmanship under normal use and service.
- 1.8.2 Solid waste and recycling containers must carry a

2.0 PRODUCTS

- 2.1 Containers for office and interior common spaces
 - 2.1.1 TECHSTAR – EZ – Sorter, model number EZ-200 2 litre capacity, and EZ-400 4 litre capacity intended use solid waste collection at desk side
 - 2.1.2 Office paper collection container TECHSTAR – Desksider, model number 7001, and 7002 13 litre and 26 litre capacity



Image: depicts desk side bins

- 2.1.3 Interior recycling and waste collection – medium use
Product: TECHSTAR – 16 Gallon Bullseyes, Model number 549A is designated for source separation of recyclables bottles and cans.
Model 549B is designated for source separation of fine paper and newspaper. Capacity 73 litre



Image: of indoor recycling bins

- 2.1.4 Interior large recycling containers – for collection of recyclables in offices, cafeterias and other high volume areas.
Product: TECHSTAR 30 Gallon Bullseyes
Model: 559A Two lid configurations: round hole for cans,

Model: 559B – square hole for paper, 136 litre capacity



Image: of large interior waste bin

2.2.1 For Interior solid waste and recyclables handling - for collection and transportation of solid waste bags, and recyclables.

Product: TECHSTAR – Next Generation Utility Starcarts

Features: heavy duty casters up front and two poly-core, steel undercarriage, single wall body with a double wall box-style lip.

Model Numbers: 730B (453 litre),

Model: 750B (680 litre),

Model: 770B (906 litre)



Image: of Interior waste bin

2.2 Exterior solid waste and recyclables collection and handling

2.2.1 Large Recycling Bins Primarily at Loading Docks

Product: Otto Environmental Systems – Classic Roll-Out Cart

Features: One-piece attached lid requires no assembly, Strong walls increase cart durability and wind stability, dual reinforced wear strip designed to extend the life of the cart's underside. Water tight lid designed to fit all lifter types. Lid Options include: recycling lid with circular opening, Slot lid for disposal of paper. Security lockable lid for document security.

Model: 32,65 and 95 Gallon with Blue lid for collection of bottles and cans recyclables

Model: 32, 65 and 95 Gallon with Green lid for collection of food waste

Model: 32, 65 and 95 Gallon with Orange lid for the collection of Science Autoclaves



Image: large recycling bin loading docks

2.2.2 Interior/Exterior use Large Garbage Bins

Product: Rubbermaid Brute

Features: Secure liners for efficient knot-free liner changes

Contoured base handles improve grip, reduce strain and improve efficiency. Integrated rib structure increases strength and resists crushing.

Built to withstand rough surfaces for extended life

Model: FG261000GRAY capacity 38 litre

Model: FG262000GRAY capacity 76 litre

Model: FG263200GRAY capacity 121 litre

Model: FG264360GRAY capacity 167 litre

Model: FG265500GRAY capacity 208 litre



Image: interior/exterior large waste bin

2.2.3 Loading dock bins for paper, cardboard and garbage

Product: TECHSTAR – Regular Duty Techtruck

Features: enables operator to handle large quantities easily, rotationally molded from FDA approved polyethylene, Large rubber (recessed) wheels and swivel casters enable maneuverability. Nestable to minimize shipping and storage costs.

Model: 420 LT - 986litre capacity

Model: 441 LT - 841litre capacity

Model: 460 LT - 1,147litre capacity

Model: 480 LT - 1,529litre capacity



Image: large loading dock bins

2.2.4 Exterior Tri-bin

Product: ENVYROZONE – LaSalle Flat Top

Last update: 2016-05-18

Features: Developed for exterior deployment where durability and easy content removal are critical. Available in brushed #4 stainless steel or powder coat finish in various colours. @8" x 41": advertisement space available. Openings have interchangeable stream inserts. Universal key cam lock. Free standing with leveling 4 guides
Model: CA-192-P



Image: exterior tri bin

2.2.5 Temporary Use for Exterior Events

Product: Universal Drum – Open head steel drums

Features: 210 litre open top clean steel drum

Available unlined or lined epoxy or phenolic coating

Variety of head gaskets and closing rings available depending on specific handling needs



Image: temporary steel drums for waste

2.2.6 Loading Dock Waste bin for organics collection

Last update: 2016-05-18

Product: ECCO Technologies – Norseman Curbside Container
Features: 270 degree throwback stays open while emptying
360 degree double rim closure
Upper rim side handles for additional strength
Wide bottom grip facilitates emptying, BPA free
Model: NPL 281 capacity 49 litre



Image: Loading dock Food Waste Bin

2.2.7 Interior Kitchenette Food Bin

Product: ECCO Technologies – Norseman Kitchen Collector
Features: 70 degree throwback stays open while emptying
360 degree double rim closure
Upper rim side handles for additional strength
Wide bottom grip facilitates emptying, BPA free
Model: NPL 290 capacity 7.2 litre



Image: Interior Kitchenette Food Bin

2.2.8 Outdoor Composter

Product: Techstar – The Bardmatic Digester
Features: Molded of 100% black recycled polyethylene



Image: Outdoor composter

2.2.9 Front Load Bins – Garbage collection with front-load truck

Product: OTTO Environmental Systems – Steelite

Features: Plastic molded body is surrounded by a steel frame and base

Body made of strong, durable molded plastic construction

Weighs significantly less than same size steel containers, improving worker's safety

Liquids inside never touch the steel, preventing rust and corrosion issues

Reinforced caster plate allows for faster caster replacement from outside of the container

Coated steel pocket guides are standard on all front load bins for added protection during fork entry

Bins must have moldon polyolefin urethane (MPU) 2" x 6" swivel castor wheels.

All 4 wheels to be bolted using 5 bolts

Model: 4 yard FL STL 4 yard capacity

Model: 3 yard FL STL 3 yard capacity

Model: 2 yard FL STL 2 yard capacity



2YD FL

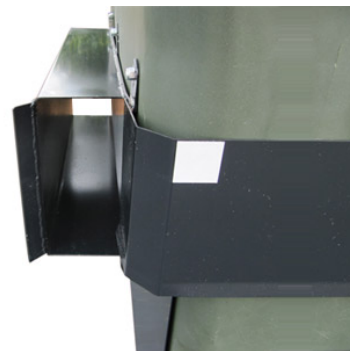


Image: Front-load waste container Image: Front-Load waste container detail

2.2.10 Front-load containers for compactors

Product: Automatic Compactors – Front-load bin

Features: 12 gauge sheet steel walls and 10 gauge sheet steel floor
C/W 7 gauge reinforced and 38" long step proof top gusset fork pockets
All solid welds, $\frac{3}{4}$ " threaded pipe drain, all metal is industry standard mild steel, plastic lids

Model: CR-2, 2 cubic yards

Model: CR-3, 3 cubic yards

Model: CR-4, 4 cubic yards

Model: CR-6, 6 cubic yards

Model: CR-8, 8 cubic yards

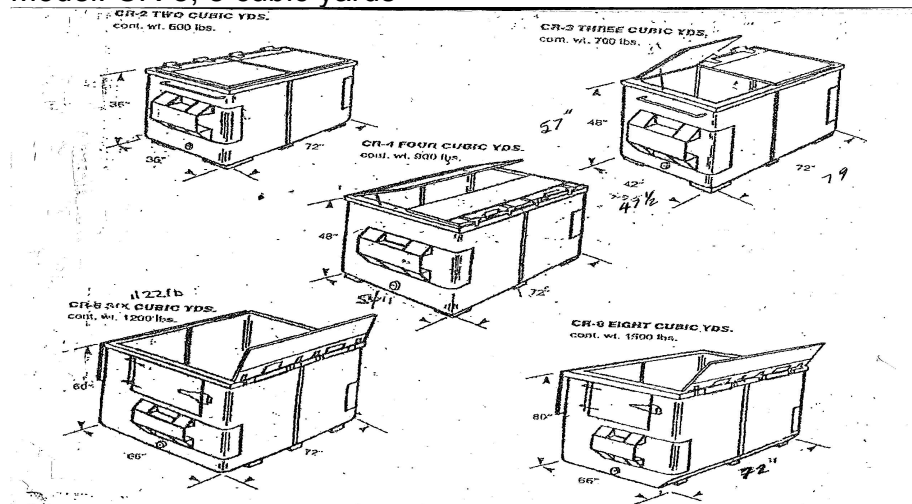


Image: Front-load metal waste containers

2.2.11 Rear-load ground level corrugated cardboard containers

Product: Nedland Industries – Poly Dura Kan

Features: High quality, high-density polyethylene

$\frac{3}{16}$ " top rail on sides and back

Stainless steel fasteners for long life

Powder coated steel parts for longevity

2 yard plastic containers have a $1\frac{1}{2}$ " solid trunnion

Both trunnion are 78" long with $\frac{3}{16}$ " gussetts welded solid from side rail to trunnion and $\frac{3}{16}$ " formed steel caster channels with belly pan and front bumper channels

Model: N-150RLP 1.5 cubic yard capacity

Model: N-200RLP 2 cubic yard capacity

Model: N-300RLP 3 cubic yard capacity



Image: Ground level rear-load container

2.3 Compactors

Product: Automatic Compactors – Superior Dry Waste Systems

Primary use: Garbage and Cardboard compaction

Features: Heavy-duty construction, Automatic multi-cycle operation, low maintenance

Options: pin-off system, odor control equipment, oil heater, remote jog controls, enclosures

Specifications	Model 200S	Model 200
Length x Width x Height	76" x 102" x 47"	132" x 102" x 43"
Charging Area	2 CU. YDS.	2 CU. YDS
Clear Top Opening	47" x 57"	48" x 59"
Frame – Floor	3/8"	3/8"
Side	5/16"	5/16"
Ram – Face – WXH	57" x 24"	59" x 24"
Floor	3/8"	3/8"
Top	5/16"	5/16"
Sides	5/16"	5/16"
Guides	2" x 2" x 1/4" TB	1" x 1" FB
Penetration	10"	12"
Breaker Bars	6" x 5" x 1" FB	6" x 5" x 1" FB
Cylinder – Bore	4" Dual	6"
Stroke	40"	60"
Motor Rating	10 HP	10 HP
Cycle Time	48 Sec	48 Sec
Electrical Requirements	208/230/460/575	208/230/460/575
Ram Force	42500 LB	56000 LB
System Pressure	2000 psi	2000 psi

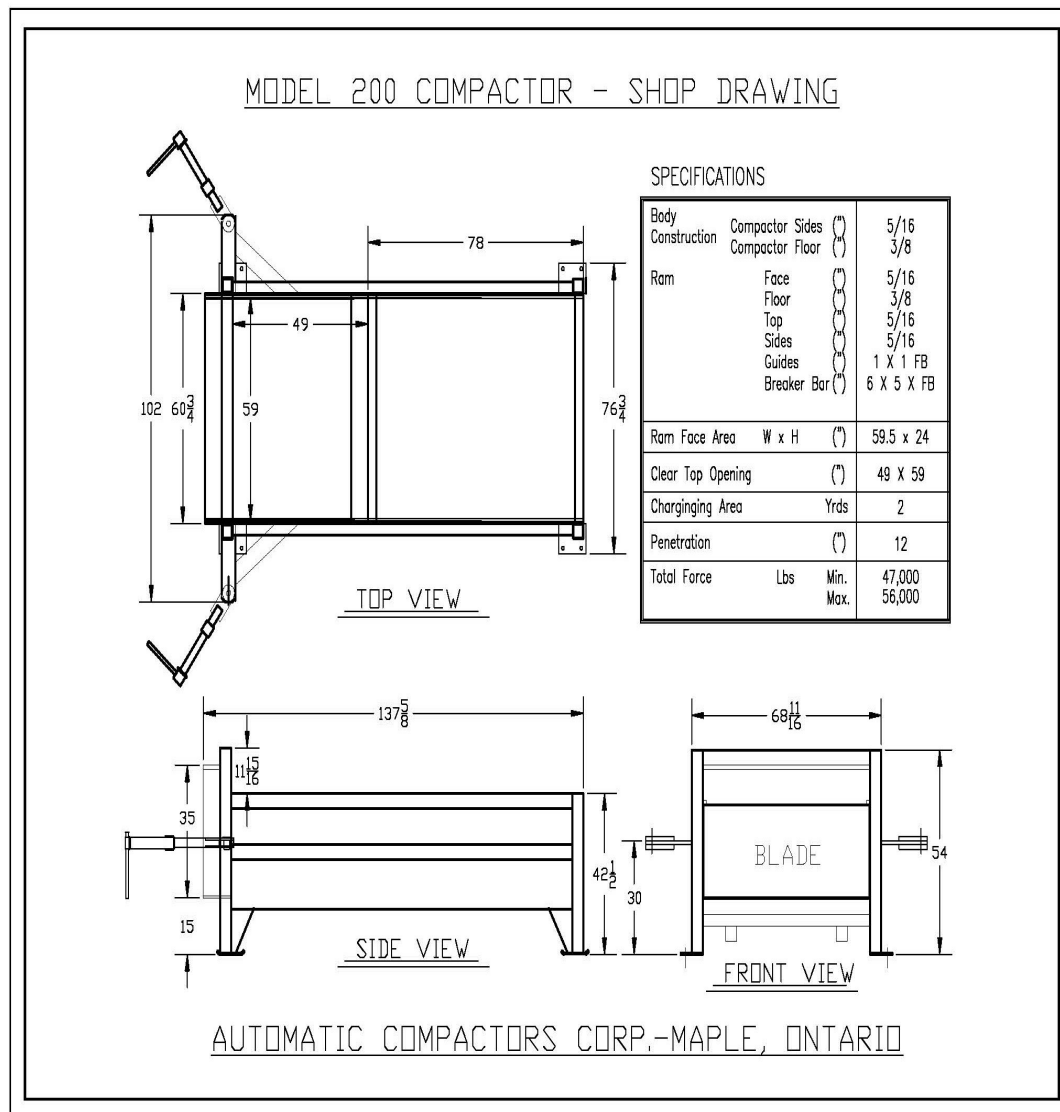


Image: Waste and cardboard compactor

2.3.1 Garbage and cardboard compactor

Product: Automatic Compactors – Superior Wet Waste Systems

Features: Large feed opening for bulky items and full door seal for liquid tight system. Easily customized to special applications. High force and extra ram penetration. Unique scissor cylinder system. Quick disconnect fittings and heavy duty hinges. Self-Cleaning floor and large liquid sump

Specifications	Model 200-SC
Charge Box Capacity	2 CU. YDS.
Clear Top Opening	47" x 57"
Cycle Time	48
Force – Normal LBS	42500
Maximum LBS	50150
Ram Penetration	6"
Electric Motor	10 HP
Hydraulic Pump	8 GPM
Pressure – Normal psi	2000
Maximum psi	2400
Cylinder	4" dual



Image: Wet waste compactor

3.0 EXECUTION

3.1 General Requirements

3.1.1 For front load solid waste containers and for horizontal or vertical compactors the following are installation requirements:

1. A concrete pad or apron is required, the apron must be sufficiently large to accommodate the rear and front tire axels of waste collection vehicles
2. Concrete apron must be flat and level with minim dimension to cover the waste container foot print area completely with a minim of 50 cm overhang all round typical front load container dimension are:

	Length	Depth	Height
1. 2 cubic yard dumpster	206cm	102cm	107cm
2. 3 cubic yard dumpster	206cm	122cm	122cm
3. 4 cubic yard dumpster	206cm	168cm	152cm

3. For ease of cleaning of the apron and area immediately around the apron, the placement of container apron must be near or adjacent to a storm drain grill
4. Required clearances for Front Loading waste vehicles
 1. Vertical approach and exit 15' high
 2. Vertical when dumping a bin 25' high
 3. Lateral 16' wide
 4. Turning radius 26' inside and 46' outside
 5. Length of vehicle approx. 34' to front forks + 6' with forks extended
 6. Service length 52' (34'vehicle length, 6'forks, 6'container, 5' for backing)
- 3.1.2. Concrete apron requirements for compactors
 1. The concrete compactor pad should measure approximately 12m long x 3m wide (with 0.3m on each side of compactor and 1.5m beyond)
 2. Two steel skid plates (one for each wheel) the length of the bin travel area
 3. Guide rails should be 2 x 2 heavy gauge square tubing, 8 ft. long with 5 cross members, each secured with 2" x 1" anchors to the concrete pad
 4. The compactor unit (ram/hopper) should be secured to the concrete pad with 4" x 1" anchors at all feet.

5. The compactor bin should have a 30 CU. YD. capacity, interchangeable with the bin on the Stong College compactor
6. Power requirement is 557V, 30 AMP., 3 phase
7. The loading deck should lead directly to the hopper and be constructed of extruded steel to prevent slipping and the deck should have a railing with balusters and a slip plate or solid siding to comply with building code
8. The compactor hopper should allow for a tilt cart to be emptied directly into it. There should be no need to lift bags etc.
9. The hopper gate should be hinged on one side only, lockable by padlock and comply with all necessary regulations
10. The control panel and shut off switch should be in close proximity and easily accessible from the hopper loading area
11. The compactor control panel must be secured within a box lockable by a standard 455 key
12. The compactor should feature a manual cycle/override similar to the Scott dock
13. The loading area and hopper should be covered by an overhang for protection from the elements
14. The compactor should not be placed in a high pedestrian or vehicular traffic area
15. The compactor should be accessed directly off the loading dock (e.g. Scott dock). If separate from the dock, it should be accessible through a motorized roll-up door (e.g. Stong College dock) with a key operated mortise-style switch to open and close the door
16. Avoid enclosing the compactor in a gated enclosure as this causes issues for the waste haulage contractor

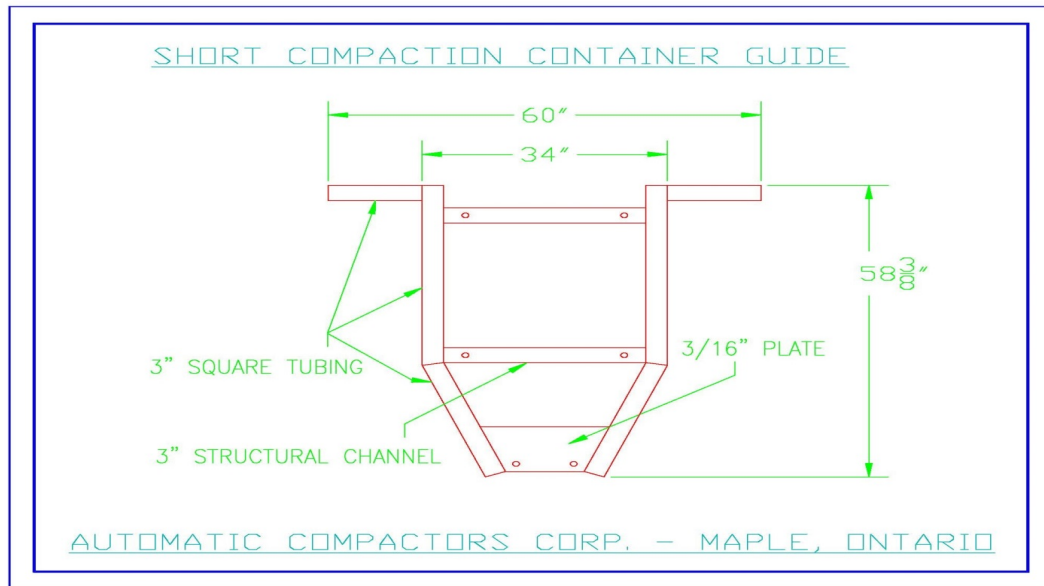


Image: Shot compaction container guide

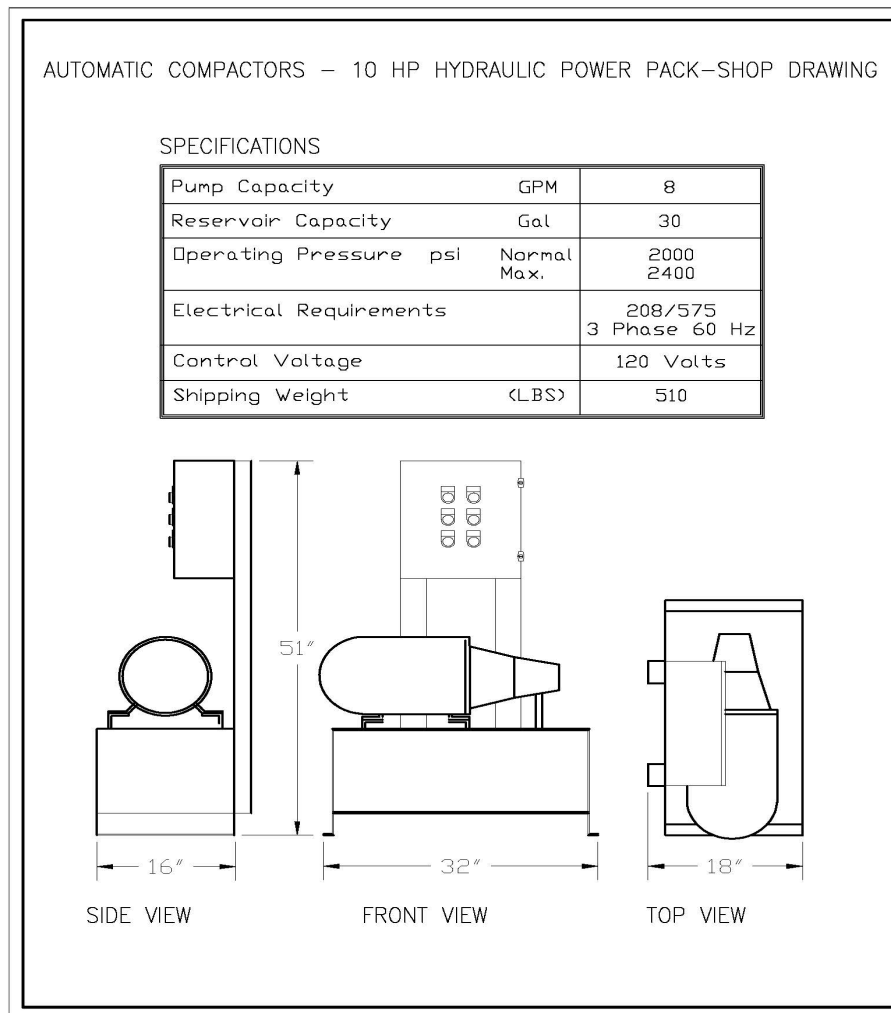


Image: Compactors 10 HP hydraulic power

3. 2 Waste container enclosures

1. Solid waste and recycling container enclosures may be required for a new building or major renovation if a loading dock is not planned. In such cases, the solid waste and recycling containers enclosures must include the following requirements:
 1. Enclosures must be located within an enclosed metal, wood or masonry area that is consistent with the architecture of the project having a surrounding wall at least 152cm high and not higher than 244cm
 2. Enclosure must include a gate that should be able to open more than 90°
 3. The landscaping surrounding the solid waste and recycling enclosures must be consistent with adjoining landscaping for the building
 4. The Enclosure space must be allocated 60% to recycling containers and 40% to solid waste containers
 5. The enclosure space must be easily accessible by both service vehicles and pedestrian. Consideration for grade must be made to ensure ease of travel for custodial staff to transport waste and recycling containers to and from the enclosure
 6. Enclosures must be designed and constructed with commercial – institutional grade components and materials so that the facility is able to accommodate repeated and long term use

3.3 Solid waste and recycling vehicle specifications

Required clearances for Front Loading waste vehicles

1. Vertical approach and exit 15'high
2. Vertical when dumping a bin 25'high
3. Lateral 16'wide, the width of the trucks are 10 feet
4. Turning radius 26'inside and 46'outside 29 feet inside and 46 feet outside
5. Length of vehicle approx. 34'to front forks + 6'with forks extended 35 feet to front forks plus 7 feet with

forks, so total of 42 feet

6. Service length 52' (34' vehicle length, 6' forks, 6' container, 5' for backing 53 feet (35 feet vehicle length, 7 feet forks, 6 feet container, 5 feet for backing)

3.2 Coordination

- .1 Coordinate with CSBO Custodial Services for the selection placement and quantities of interior waste and recycling containers
- .2 Coordinate with CSBO Grounds Services for the selection, placement and quantities of outdoor waste and recycling containers

End of Section