

TENDER SPECIFICATIONS

IMPORTANT

The vendor must complete this section in full. Descriptions of items as shall be, to be and must be mandatory and no deviations will be accepted. Non mandatory items that do not meet specifications must be described in the right column or in addenda in such a way that the purchaser can reasonably determine whether the deviation is acceptable, in the purchaser's sole judgement, without the need to call the vendor for additional information.

State;

MAKE _____ MODEL _____ YEAR _____

Of equipment offered.

AIRPORT SPECIFICATIONS

VENDOR SPECIFICATIONS

1.0 General

The sweeper supplied under this specification shall be the manufacturer's latest model standard commercial product and shall have demonstrated industry acceptance by having been manufactured and sold in significant number to the commercial trade and shall have been proven in service for the application specified, for at least 3 years prior to the request for proposal.	Comply: Yes _____ No _____ MAKE _____ MODEL _____
Each sweeper supplied under this specification shall be a straight pintle hitch towed runway sweeper, heavy duty, capable of operating at a minimum 40 km/h.	Comply: Yes _____ No _____
The unit shall be equipped with a minimum 14 ft (4.23m) wide horizontal rotating broom, a minimum 360 hp engine, and an air Sweeper of minimum 23,500 cu. ft./min output.	Comply: Yes _____ No _____
The sweeper supplied is to be complete with all accessories customarily furnished and installed on this type of unit, whether specified herein or not, to enable the sweeper to function reliably and efficiently under all conditions of service.	Comply: Yes _____ No _____

The sweeper must be used by at least 5 airports in North America	Comply: Yes_____ No_____
<p>Manufacturer or dealer must have a parts warehouse and service shop in Canada with full-time service manager and parts manager. Relying on drop shipping parts from outside of Canada is not acceptable.</p> <p>Service shop must be fully staffed during standard workweek and accept support phone calls 24/7/365</p>	<p>Warehouse Address: _____</p> <p>_____</p> <p>Service Shop Address (if different from above): _____</p> <p>_____</p> <p>Parts Manager: _____</p> <p>Service Manager: _____</p>

2.0 Operating Conditions

Each sweeper must be new and ready for operation when delivered to destination.	Comply: Yes_____ No_____
No failure of components shall occur when being continuously operated for a 24-hour period, at a speed of 40 km/h at the maximum specified HP, with a broom pattern setting of 8 to 10 cm (3 to 4 in.)	Comply: Yes_____ No_____
The sweeper must not experience any broom bounce or wheel shimmy when removing snow, slush or remains at 40 km/h, with a broom pattern setting of 8 to 10 cm (3 to 4 in)	Comply: Yes_____ No_____
The sweeper must be able to reliably operate in ambient air temperature to -50C	Comply: Yes_____ No_____ Actual _____

3.0 Regulations and Standards

All standards and specifications referenced herein refer to the latest editions.	Comply: Yes_____ No_____
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4.0 Delivery

A pre-delivery service must be completed by the manufacturer prior to delivery.	State: Factory Authorized PDI Representative _____ Address _____ _____ _____ Contact: Contact Tel. # _____
The unit is to be lubricated and serviced with all associated products suitable for the climatic conditions in the area where the unit will operate.	Comply: Yes _____ No _____
All necessary documentation shall be provided to the consignee when the unit is delivered.	Comply: Yes _____ No _____
The prime contractor is responsible to ensure that the towed runway sweeper has been thoroughly tested and inspected, and that all deviations from the specification, are corrected prior to delivery.	Comply: Yes _____ No _____
A final inspection shall be completed by the consignee at time of delivery.	Comply: Yes _____ No _____
<i>Delivery availability must be no later than 31 March 2025. Unless otherwise agreed to.</i>	Comply: Yes _____ No _____

5.0 MANUALS

Each towed sweeper shall be delivered with one paper copy and an electronic copy of an English version of each of the operator and maintenance manuals and all other manuals identified in this section. The maintenance manual must indicate the proper maintenance procedures for all component installations. The manuals must include assembly drawings of all components.	Comply: Yes _____ No _____
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Each towed runway sweeper shall be delivered with an English version of the parts manual. All parts manuals must list each of the individual components manufacturer's part number along with the manufacturer's address and contact phone number.	Comply: Yes_____ No_____
Each towed runway sweeper shall be delivered with an English version of the maintenance and parts manuals of the respective manufacturer (OEM), for each of the major components installed in the sweeper.	Comply: Yes_____ No_____
If available, provide a minimum 20-minute training video, in English, showing the proper operations and preventive maintenance procedures.	Comply: Yes_____ No_____
Manuals – Provide paper and digital copy of the shop/service repair manual.	Comply: Yes_____ No_____

6.0 WARRANTY

An unconditional warranty on all major components (engine, axles, gear boxes, differentials, air Sweeper, clutch assemblies (except normal wear), broom drive system, and repair labor for a minimum of 2,000 hours or 24 months, from the date the sweeper is initiated into service must be provided.	Comply: Yes_____ No_____
If requested warranty repairs have not commenced within a 48-hour period following notification, YQZ Airport reserves the right to complete repairs and bill the supplier for the repair parts and labour in accordance with their standard repair time and rate.	WARRANTY OFFERED: Comply: Yes_____ No_____

Specify the dealer responsible for performing any required warranty repairs and provide the name and phone number of the person to be contacted should warranty repairs be required.

DEALER _____

NAME _____

TEL. _____

SWEEPER

7.0 General Specifications and Conditions

The unit must be a Pintle-hitch, towed type runway sweeper.	Comply: Yes_____ No_____
The broom assembly must be driven by a closed loop hydrostatic drive.	Comply: Yes_____ No_____
All bushings, pivot points, and any moving parts subject to wear shall be sealed against ingress of dirt and moisture and be fitted with a means of lubrication.	Comply: Yes_____ No_____
The sweeper must be able to be towed in line with the truck.	Comply: Yes_____ No_____
The unit must be designed to operate in ambient conditions from minus 50 degrees to plus 40 degrees Celsius.	Comply: Yes_____ No_____
The unit must be capable of operating on concrete and asphalt surfaces at full rated capacities.	Comply: Yes_____ No_____
The maximum allowable sweeper weight is 26,500 lbs. (12,021 kg)	Comply: Yes_____ No_____ STATE ACTUAL WEIGHT _____LBS _____KG
Excepting broom pattern adjustment, the sweeper must be capable of completing a turn in a 20 m (65 ft.) diameter clearance circle.	Comply: Yes_____ No_____
The unit must be capable of operating a minimum of 24 hours without adjustment and lubrication.	Comply: Yes_____ No_____

8.0 Performance

The Sweeper must be capable of operating without a broom bounce or wheel shimmy up to 40 km/h at an 8 to 10 cm (3 to 4 in) pattern.	Comply: Yes_____ No_____
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The minimum broom speed must be between 0 and 900 RPM.	Comply: Yes_____ No_____ STATE ACTUAL: _____-_____RPM
The broom must have a minimum width of 14 ft. (4.23 m).	Comply: Yes_____ No_____ STATE ACTUAL WIDTH: _____ft.
The sweeping angle must be a minimum of 30 degrees right to 30 degrees left of the transverse position.	Comply: Yes_____ No_____
The sweeper must be capable of removing a minimum of 80% of the slush and snow left by a plow, up to 13 mm (1/2 inch) for snow density of 128 to 240 kg/cu m (8 to 15 lb./cu ft.) and when traveling at 40 km/h, at an 8 to 10 cm (3 to 4 in) pattern.	Comply: Yes_____ No_____
The sweeper must be capable of sweeping light deposits of dry sand, dust, water, and other debris from runway surfaces at full sweeping speed of 40 km/h, at an 8 to 10 cm (3 to 4 in) pattern.	Comply: Yes_____ No_____
To maximize lifetime of bristles/brushes, broom pattern must adjust based on pressure on the bristles/brushes and not based on time used	Comply: Yes_____ No_____

9.0 Dimensions

The maximum overall length from the hitch to rear of the sweeper, to be 12m (40 ft.).	Comply: Yes_____ No_____ STATE ACTUAL: _____ft.
The maximum overall width with all components installed to be 4.9 m (16 ft.).	Comply: Yes_____ No_____ STATE ACTUAL: _____ft.
With a new broom installed there must be a minimum of 10 cm (4 in.) ground clearance with the broom in the raised (traveling) position.	Comply: Yes_____ No_____ STATE ACTUAL: _____in

The maximum overall height of all components to be 3 m (10 ft.)	Comply: Yes_____ No_____ STATE ACTUAL: _____ft.
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10.0 Frame

The sweeper shall be designed with a heavy duty welded frame.	Comply: Yes_____ No_____
The frame must be constructed from structural steel.	Comply: Yes_____ No_____
The cross-section modulus (CSM) must be sufficient to prevent frame distortion.	Comply: Yes_____ No_____
All nuts and bolts must be non-rusting quality. Zinc is not permitted.	Comply: Yes_____ No_____

11.0 Engine

The engine must be a liquid cooled diesel in current production.	Comply: Yes_____ No_____
The engine must have a minimum of 360 HP (268 KW) continuous rating. Manufacturer's published literature or performance tests must be supplied indicating the HP and torque noted, including performance curve diagram of engine.	Comply: Yes_____ No_____
The minimum continuous engine torque rating to be 850 lb./ft.	Comply: Yes_____ No_____ STATE ACTUAL: _____lb./ft.
Provide wireless remote engine start system.	Comply: Yes_____ No_____
Provide a two stage, heavy-duty air cleaner.	Comply: Yes_____ No_____
Provide a heated engine fuel filter/water separator, complete with a glass bowl, and a replaceable element.	Comply: Yes_____ No_____

Provide a thermostatically controlled fan clutch for the cooling system if not "Air to Air".	Comply: Yes_____ No_____ STATE ACTUAL: _____
Provide a severe duty radiator	Comply: Yes_____ No_____
Provide a minimum 110V, 1,500-watt electric coolant heater. The heater is to be complete with a conveniently located exterior plug and a minimum 4.6 m (15 ft.) removable cord.	Comply: Yes_____ No_____
Provide a vertical exhaust complete with a muffler installed horizontally on the engine enclosure, and an elbow rain cap.	Comply: Yes_____ No_____
The engine must be equipped with automatic shut down for all of the following conditions: low engine oil pressure, engine coolant high temperature and low level and low hydraulic oil level.	Comply: Yes_____ No_____

12.0 Fuel Tank

Provide a minimum 500 litre capacity fuel tank.	Comply: Yes_____ No_____
The filler must be exterior and accessible from both sides of the machine in front of the wheels to help prevent debris build up on the opening.	Comply: Yes_____ No_____
The inscription DIESEL FUEL ONLY must be marked in minimum 50 mm (2 in) letters near the filler.	Comply: Yes_____ No_____

13.0 Tow Hitch

The sweeper must be equipped with a Pintle hitch to fit YQZ Airport's chassis.	Comply: Yes_____ No_____
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14.0 Cowling

Provide a durable enclosure, which protects the major components from the elements.	CO Comply: Yes_____ No_____
The enclosure on the engine hood must be lift-able with a safe method to hold hood it in place. Doors are not permitted for safety, user friendly and space saving reasons.	Comply: Yes_____ No_____
The top of the cowling must either fold open or be easily removed to allow the engine to be easily removed from the sweeper.	Comply: Yes_____ No_____
Provide a positive latching mechanism to secure the doors in the closed position.	Comply: Yes_____ No_____
Provide an easy positive mechanical means of holding the doors (and roof if folding type) open.	Comply: Yes_____ No_____
Must be a minimum of three working lights in the engine compartment to allow work to be performed at night	Comply: Yes_____ No_____

15.0 Power Take Off

The sweeper is to be driven by relief valve and pump management protected closed loop hydrostatic drive via a direct drive (gear driven, not belt) pump.	Comply: Yes_____ No_____
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16.0 Electrical System

The sweeper must be equipped with a 12 - volt electrical and starting system.	Comply: Yes_____ No_____
Provide a minimum of three batteries with total 3,000 CCA	Comply: Yes_____ No_____
Provide a "DELCO" type 25 or 30 SI alternator or equivalent having a minimum of 85-amp output.	Comply: Yes_____ No_____ Provide details:

Shall provide an LED heavy duty amber strobe light, double flash, high and low intensity. No deviation will be accepted. The light is to be mounted as high as possible on the rear engine enclosure.	Comply: Yes_____ No_____
Provide a minimum of four LED spotlights capable of illuminating the broom.	Comply: Yes_____ No_____
Provide rear stop and three-way LED lamps. Tail lamps shall be conventional positions lamps. Everything shall be waterproof and shockproof.	Comply: Yes_____ No_____
All wiring is to be installed inside of loom. All looms are to be protected from damage and to be complete with sufficient frame connectors.	Comply: Yes_____ No_____
The wiring must be marked with numbers to provide identification. Circuit identifiers must be attached to each end of the wire	Comply: Yes_____ No_____
The engine is to be complete with a 12-volt starter.	Comply: Yes_____ No_____
All circuits must be protected with either fuses or manual reset circuit breakers which are to be in a common area at the control panel.	Comply: Yes_____ No_____
Provide a 110-volt battery heater complete with an external plug. Provide a minimum of 4.6 m (15 feet) of cord. This plug should be common or be co-located with the engine coolant heater.	Comply: Yes_____ No_____

17.0 PAINTING

Factory Installed proven and heavy-duty paint. Colour RAL 1004, Airport Yellow	Comply: Yes_____ No_____
Due to aggressive nature of chemicals used on airport runways, all steel components must be sandblasted after welding, primed at minimum of two times, and have a minimum of two layers of paint.	Comply: Yes_____ No_____

Paint thickness must be minimum 200µm	Comply: Yes_____ No_____
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18.0 Broom Drive

The broom must be directly hydraulically driven via a closed loop hydrostatic system with one hydraulic motor	Comply: Yes_____ No_____
The broom speed must be variable speed with a minimum of 0-500 RPM.	Comply: Yes_____ No_____
Broom RPM must automatically adjust according to operating speed (RPMs too lower when vehicle speed lowers and increase when vehicle speed increases)	Comply: Yes_____ No_____
Broom RPM must automatically adjust when the brush wears (RPM must increase as the brush wears to keep constant tip speed)	Comply: Yes_____ No_____

19.0 Broom Frame

The broom frame must be supported on two caster wheels. The caster wheels must swivel 180 degrees.	Comply: Yes_____ No_____
When reversing, the broom must automatically lift off the ground to prevent damage.	Comply: Yes_____ No_____
The caster wheels must be complete with a mechanical brake to prevent wheel shimmy up to 50 km/h.	Comply: Yes_____ No_____
The broom must be complete with a cover, consisting of a fixed plate over the top of the broom. This cover must be designed to minimize the accumulation of snow anywhere in or on the sweeper by automatically adjusting to the diameter of the broom as it wears.	Comply: Yes_____ No_____
The cover must be made of glass fiber to prevent snow built up.	Comply: Yes_____ No_____
The broom frame must be designed to withstand the weight of the broom with a full set of steel wafers or cassettes and a full snow load on the cover.	Comply: Yes_____ No_____

The broom frame must be adjustable from 30 degrees right to 30 degrees left.	Comply: Yes_____ No_____
The broom stops shall be sufficiently designed to withstand the full dynamic loading of the broom hydraulic angling cylinders.	Comply: Yes_____ No_____

20.0 Axles

The axle is to be a heavy-duty type rated for a minimum of 110 percent of the maximum axle weight. The axle bearings must be lubricated with oil bath.	Comply: Yes_____ No_____
The sweeper must be complete with a minimum of two wheels which may have brakes.	Comply: Yes_____ No_____

21.0 Broom

The sweeper is to be complete with a minimum 4.23 m (14 ft.) wide horizontal rotating broom.	Comply: Yes_____ No_____
The broom core is to be balanced	Comply: Yes_____ No_____
Provide a complete set of steel broom wafers and spacers at 1 to 1 spacing.	Comply: Yes_____ No_____
The broom shall be complete with bearings and supports at both ends. The bearings must be easily replaceable. The bearings must be complete with easily accessible grease points.	Comply: Yes_____ No_____
The broom must have a minimum of 10 cm (4 in) ground clearance with new broom wafers installed.	Comply: Yes_____ No_____
The broom must be automatically adjusting	Comply: Yes_____ No_____

22.0 Wheels and Tires

The tires and wheels weight rating must be a minimum of the axle rating.	Comply: Yes _____ No _____
All chassis tires must be tubeless radial ply type construction, winter tires.	Comply: Yes _____ No _____
The tires must be available from one of the major tire manufacturers and must be available at any of the manufacturer's outlets in Canada.	Comply: Yes _____ No _____
The maximum tire load shall be 500 lbs. per inch of tread width.	Comply: Yes _____ No _____
During the normal operation of the sweeper there shall be no side load on the caster tires.	Comply: Yes _____ No _____
The caster wheels shall be designed to eliminate any wheel shimmy while allowing enough free movement to always run parallel to the sweeper axis.	Comply: Yes _____ No _____
The caster wheels shall be designed to be easily removed and replaced.	Comply: Yes _____ No _____

23.0 Instruction Identification

Provide permanently installed ISO written instructions, diagrams and warning plates where required to ensure efficient operation and servicing with maximum safety.	Comply: Yes _____ No _____
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24.0 Air Sweeper

Provide an air Sweeper to clean the residue left from the broom assembly. The air intake for the Sweeper <u>must</u> be inside the engine compartment to prevent any snow, ice or other debris being drawn into the fan.	Comply: Yes _____ No _____
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The output of the air Sweeper must be adjustable between 0%-100%. A simple on/off is not acceptable.	Comply: Yes_____ No_____
The air Sweeper is to have a minimum output capacity of 24,000 SCFM at the Sweeper outlet.	Comply: Yes_____ No_____
The air Sweeper assembly shall be directly mounted. The fan shall be driven by a variable speed, hydrostatic motor.	Comply: Yes_____ No_____
The air Sweeper nozzles must automatically rotate allowing the working nozzle to be in line with the leading edge of the broom (2 air Sweeper nozzles, 1 on each side).	Comply: Yes_____ No_____
The air outlet velocity of each nozzle must be a minimum of 325 MPH.	Comply: Yes_____ No_____
The nozzles must be capable of being lowered to a minimum of 10cm (4 in) off the runway surface.	Comply: Yes_____ No_____
The nozzles must raise automatically to a minimum of 25 cm (10 in) from the ground level when the broom is raised to transport position.	Comply: Yes_____ No_____
Option: Snozzle system on side of broom that allows the operator to approach runway lights to blow snow off.	Comply: Yes_____ No_____ Optional Price:

25.0 Control Panel

The Control panel must be robust and easy to use complete with bright control panel display.	Comply: Yes_____ No_____
The control panel must have an emergency stop button that is red and easily in view and accessible to the operator	Comply: Yes_____ No_____
The control panel must have the following functions: <ul style="list-style-type: none"> - Warning status - Sweeper position indicator - Working mode indicator - Battery voltage - Brush adjustment menu option - Brush mode menu button - Engine tachometer - Brush speed indicator 	Comply: Yes_____ No_____

<ul style="list-style-type: none"> - Fan speed indicator - Select and confirm button - Escape and abort button - Diesel tank level - Settings menu button - Brush indicator - Working lights on/off - Temperature - Rotating beacon on/off - Front air - Engine stop/start - Warning status 	
<p>Must have an engine information button to access engine information. Must provide the following engine information:</p> <ul style="list-style-type: none"> - Total operating hours - Engine oil pressure - Engine oil temperature - Coolant temperature - Engine load - Battery voltage - Fuel consumable litres/hour - Fuel consumable grams/hour 	<p>Comply: Yes_____ No_____</p>

26.0 Hydraulic System

Hydraulic pump must be directly connected to the engine	Comply: Yes_____ No_____
Provide a nominal 150-litre hydraulic tank	Comply: Yes_____ No_____
Hydraulic fittings must be constructed with non-corrosive materials. Zinc not acceptable.	Comply: Yes_____ No_____
The hydraulic tank must be complete with a breather cap and a site level gauge.	Comply: Yes_____ No_____
Must have an electronic hydraulic emergency pump as standard. Hand pumps not permitted	Comply: Yes_____ No_____
The hydraulic system is to include adequate filtration (with replaceable filters), pressure control and relief devices, and other equipment necessary to ensure the satisfactory and safe operation of all hydraulic components.	Comply: Yes_____ No_____

The hydraulic fluid is to be provided in consideration of very cold weather.	Comply: Yes_____ No_____
Hydraulics shall control the angling and the elevation of the broom and the air nozzle assemblies.	Comply: Yes_____ No_____
All electrohydraulic valves, controls, and components shall be heavy duty industrial type sealed against the ingress of water, dirt, moisture, etc., and shall be suitable for the application.	Comply: Yes_____ No_____
All hydraulic lines shall be secured to the frame and shall be installed to prevent chafing and damage during sweeper use.	Comply: Yes_____ No_____
Must be able to operate all hydraulic functions without starting the engine by means of an electro-hydraulic pump	Comply: Yes_____ No_____

27.0 Remote Control

Provide a remote box to allow the sweeper to be operated from the cab of the truck. Preferably wireless.	Comply: Yes_____ No_____
The minimum gauges and controls to be supplied are tachometer, engine speed control, engine emergency stop, and angle and elevation controls for the broom and air nozzle(s).	Comply: Yes_____ No_____
The wiring (cable) for the remote box is to be complete with at least two sets of pin type connectors. One is to be located at the control box. The second connector in the cable is to be located so that there is 1.5 m (5 ft.) of slack at the pintle hitch.	Comply: Yes_____ No_____
The cable is to be at least 9.15 m (30 feet) long, weatherproof, ultraviolet resistant and is to be designed for the purpose intended.	Comply: Yes_____ No_____
Provide a weather resistant box for storage of the control box when not in use. The box shall be mounted on the front of the sweeper just rear of the fifth pintle hitch.	Comply: Yes_____ No_____

28. Remote Telematics System

Unit must come complete with onboard remote telematics system to allow the manufacturer/dealer to access and diagnose the sweeper remotely.	Comply: Yes_____ No_____
Data from the machine must be transferred to the cloud via a mobile connection.	Comply: Yes_____ No_____
The machine must have its' own account directly associated with it.	Comply: Yes_____ No_____
Must have option for airport to purchase access to the system later. Airport use of the system must include: <ul style="list-style-type: none">- Pre-programming the sweeper based on weather conditions- Pre-program the pattern of the sweeper from desktop- Pre-program air Sweeper speeds- Provide real-time parameters including fuel and chemical volumes- Allow critical engine information to be monitored and documented in reports	Comply: Yes_____ No_____

29.0 Training

A minimum of eight hours on-site training must be provided by the Blower manufacturer for operator and maintenance staff. Training must cover safe operation, basic introduction to the Blower, operational adjustments, service and maintenance activities, use of operations manual, new developments in any procedures relating to operation and maintenance of the new Blower, any other topics the manufacturer deems necessary	Details:
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30.0 Additional Features & Accessories

Provide a list of additional features and accessories not included in the above listed Specifications that are included with the Sweeper make this Sweeper desirable by Operational efficiency and ease of maintenance.	Details:
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END OF SPECIFICATION

TENDER BID (Sweeper)

Sweeper make and model:

Tender price in Canadian currency:

Shipping cost:

BC PST of 7%:

GST of 5%:

TOTAL TENDER PRICE

VENDOR SIGNATURE:

DATE:
