



Office of the  
**Kalyani Municipality**

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No. 5863 / KM

Date : 17 / 12 / 2014

**Quotation Notice**

Sealed Rate Quotations are invited from the experienced bonafide manufacture firms / Distributor for the supply and providing for 1. Portable Compactor-capacity 10 cum with Tip Cart Mechanism 2. Hook Loader of minimum 14 Ton Capacity mounted on a truck chassis of minimum 16 Ton GVW. The quotation paper will be received by Kalyani Municipal office upto 02.30 p.m. on 26.12.2014 and will be opened on the same date at 03.30 p.m. in presence of the quotationers.

SI No	Description	Quantity	Unit	Rate Rs	Amount Rs
1.	Portable Compactor-capacity 10 cum with Tip Cart Mechanism	1	No		
2	Hook Loader of minimum 14 Ton Capacity mounted on a truck chassis of minimum 16 Ton GVW	1	No		

**SCOPE OF SUPPLY:**

1. PORTABLE Compactor (complete Compactor unit should have portability) of capacity 10 cum with tip Cart mechanism without any reinforcement ribs on the body as per attached technical specification.
2. Hook loader of capacity minimum 14 ton capable of lifting fully filled 10 cum capacity portable compactor and to be mounted on a 16 Ton GVW Truck Chassis. Temporary & Permanent Registration of the Truck will be in suppliers 'scope. Truck should be with cabin & power steering.

**ELIGIBILITY CRITERIA**

1. The Bidder must have minimum 2yrs of experience of manufacturing portable Compactors & Hook Loaders. Only manufacturers and authorized distributors of portable compactor & Hook loader can quote.
2. The Bidder must have supplied minimum 20 no. of portable compactors & 10 no. of Hook loaders in last 3 years. Certificate of satisfactory performance of both the equipment for minimum 1 year to be submitted along with the Tender Bid. Experience of supply & performance certificate of only portable Compactor without any reinforcement ribs on the body (Where the complete Compactor unit is taken by the Hook Loader) will only be considered. Supply & performance of Static/Stationary/Moveable or any other type of compactors will not be accepted.
3. The Bidder Should have supplied Portable Compactor-Hook Loader combination to at least two Govt./Reputed Pvt. Organizations in India in last 2 years for similar kind of operations. Here also supply & performance of static/stationary/Moveable or any other type of Compactors will not be accepted. Order copies should be provided along with detail address of customer, contact no. etc.
4. Bidder should submit their own actual technical specification instead of only agreeing to compliance/confirming to the technical specifications of Portable Compactor & Hook Loader as mentioned in the Tender.

## TECHNICAL SPECIFICATION OF HOOK LOADER CAPABLE OF LIFTING PORTABLE COMPACTOR OF CAPACITY 10 CUM.

### A. GENERAL DESCRIPTION :

Manufacture and supply of specially designed Hook Loader capable of lifting fully filled 10 cum capacity portable compactor.

The machine should have self-loading & unloading features. The main structure of the equipment should be of a robust construction specially designed for heavy duty applications.

The unit to have one pair of specially articulated strengthened steel boom arms linked through a Tie-rod, that move about the hinged axis on the chassis, to load and unload the portable Compactor, filled with waste material.

The loading and unloading of the portable Compactor to be done by the reverse and forward movements of the hydraulic cylinders connected to the Hook Loader arms. Stabilizers are to be provided at suitable locations along the rear of the vehicle to ensure vehicle stability during the loading & unloading cycle of operation.

### B. SPECIFICATION OF HOOK LOADER:

1. Self-weight of the Hook Loader should be approx. 2 Ton
2. Hook height should be less than 1600 mm
3. Tipping time should be within 30-35 seconds.
4. Loading & unloading time should be approx. 30 & 35 seconds respectively.

### C. CONSTRUCTION OF HOOK LOADER :

1. **Bottom Frame:** The bottom frame should comprise of two longitudinal Domex/equivalent steel runners with a yield-strength of approx. 700 Mpa and key transverse reinforcements of the same material. To the rear of the system the pivot point of the tipping frame should be attached, using one chromed steel axle carried in bronze bearings. The pivot point should be situated as low as possible into the bottom frame, well beneath the separate axle carrying the rear rollers, which will support a container's lower frame. Hence the tipping capacity of the cylinders is augmented. To the front of the frame the cylinder bridge construction to be located, providing a strong and solid attachment for the main cylinders, while channeling the tipping forces to the truck's chassis via the bottom frame. The tipping frame should automatically lock onto the bottom frame during the dismounting procedure, in clasps located on the inner side of the bottom frame runners.
2. **Tipping Frame:** The tipping function should enable the system to empty containers with rear door. The tipping frame should pivot at the rear of the system's bottom frame and support the rear rollers made from steel or high-grade cast iron, which should rotate in bearings that do not require any lubrication. To the front of the tipping frame a steel locking plate to be welded, which catches a spring, activated locking bolt extending from the main frame, when tipping frame and main frame are locked jointly for tipping.
3. **Main Frame:** The main frame to house the hook mast sliding arm and should be able to enable the dismounting process. This frame should pivot around an axle which rotates in bearings, situated to the front of the tipping frame. During the dismounting process the rotation of the pivot axle should lock the tipping frame onto the bottom frame. A double action hydraulic cylinder placed in the sliding arm should forward and reverse movement.
4. **Sliding Arm :** The sliding arm should provide the possibility to transport containers of various lengths. To enhance the sliding action, maintenance and lubrication free PA6G oil filled polyamide synthetic would be utilized. To enable the dismounting operation, the

locking bolt that links main frame and tipping frame during tipping should be disengaged. Sliding into the main frame, at the end the sliding should reach the locking bolt and open it. Sliding out towards the front, the spring moves the locking bolt back into place.

5. **Containers Locking :** Automatic Container locking should be operated on hydraulics:
6. **Shot blasting and Painting :** Every component of the hook-loader should be separately shot blasted and thoroughly painted with a durable primer previous to final assembly, thus assuring superior corrosive protection and an extensive life span.
7. **Hydraulics :** The hydraulic system should comprise of two double action high-pressure main cylinders, one sliding cylinder, valve block and all necessary piping, hoses and connectors. Further an oil tank should be separately provided, including suction and return filters, Hook-loaders should be provided with hose-burst protection and an automatically hydraulic blocking of the sliding function during tipping operation. The main valve-block should be operated with an emergency handle in case of malfunction of the in-cab controls.

**D. LOAD DISTRIBUTION :**

Load Distribution of fully loaded Portable Compactor & Hook Loading system mounted on Truck should be within tolerable limit of axle in a range of 30% on front axle & 70% on rear axle of the total payload. Bidder needs to provide calculation regarding the same. Temporary & Permanent Registration of the Truck will be suppliers' scope. Truck should be with Cabin & power Steering.

The authority of Kalyani Municipality reserves the right to accept or reject any quotation without assigning any reason.

*Bakerin 17/12/14*  
Executive Officer  
Kalyani Municipality

No. 5863(1-9) KM

Date : 17 / 12 / 2014

Copy forwarded for information / circulation:

1. The Chairman, Gayeshpur Municipality, Kataganj, Nadia
2. The Chairman, Kanchrapara, Municipality, Kanchrapara, 24 Pgs (N)
3. The Chairman, Halisahar Municipality, Halishaha, 24 Pgs (N)
4. The Chairman, Chakdah Municipality, Chakdah, Nadia
5. The Sub-Divisional officer, Kalyani, Nadia.
6. The Estate Manager, U.D. Deptt. Govt. of W.B. D.C. Building, Kalyani, Nadia.
7. The Executive Engineer Road Dept. P.W.D., City Centre Complex, Kalyani, Nadia,
8. The Executive Engineer P.H.E., Nadia Division, D.C. Building, Kalyani, Nadia.
9. Notice Board Kalyani Municipality Kalyani, Nadia.

*Bakerin 17/12/14*  
Executive Officer  
Kalyani Municipality

Sealed Tenders are invited from reputed manufacturers/authorized distributors for :

1. Portable Compactor – capacity 10 Cum with Tip Cart Mechanism - 1 no.
2. Hook Loader of minimum 14 Ton capacity mounted on a Truck Chassis of minimum 16 Ton GVW - 1 no.

**SCOPE OF SUPPLY :**

1. Portable Compactor (complete Compactor unit should have portability) of capacity 10 Cum with Tip Cart mechanism without any reinforcement ribs on the body as per our technical specification
2. Hook Loader of capacity minimum 14 Ton capable of lifting fully filled 10 Cum capacity Portable Compactor and to be mounted on a 16 Ton GVW Truck Chassis.

Detail Technical Specification & Eligibility Criteria are available at Municipality office.

Last date of Purchase of Tender :

Last date of Submission of Tender :

Date of Opening of Tender :

## **TECHNICAL SPECIFICATION OF PORTABLE COMPACTOR OF CAPACITY 10 CUM**

### **A. General Description :**

Portable Compactor is a compactor capable of being transported from one location to another and placable at any place for the refuse collection, compaction & transferring. It should come as an integral unit incorporating the container and the compaction unit.

The compactor should be such that can be lifted by a specially designed Hook Loader unit mounted on a Truck chassis for transportation and unloading of Compacted garbage at the dumping ground.

One hydraulically operated device to receive and unload the waste in to container – which is called Tip Cart.

### **Features of Portable Compactor:**

1. The Compactor should be of front loading type with a hydraulic operated device to receive waste from hand cart / tricycle vans/ Tata ACE Tippers etc.
2. The compactor should be provided with leachate collection tray for collection of leachate during compaction of garbage & there should be suitable drainage system to the nearby drain. The leachate should not drop on road during transportation.
3. The size of the charge chamber of the compactor should be minimum 2 cum.
4. The floor of charge chamber should be approx. 8 mm thick wear resistance plate & should be supported by longitudinal members intermediate bracing. All side walls & top of the container must be strong enough for smooth service throughout it's service life.
5. The Compactor head should be powered by Hydraulic power unit.
6. Compactor body should be constructed with smooth curved sides and top.
7. Entire body should be in cylindrical shape, for an easy discharge of waste.
8. The body of the compactor should be completely smooth, without any reinforcement ribs on the body surface. This is to reduce material stress and keep the strength of the body intact and avoid deformation due to welding joints in the body.
9. Body shape should be completely Cylindrical, have curved surface at an appropriate radiuses throughout the length of the Body.
10. Body bottom should be flat enough to accommodate Body runner's bottom long members to support the Compactor Body on Hook Loader, Body runners should be minimum of ISMB 150.
11. Dish end type back door assembly should be top hinged with vertical travel.
12. Door assembly should have 180 degree swiveling movement with respect to top hinge and attached with bottom metallic rollers to avoid direct contact with garbage floor.
13. Automatic rear door locking arrangement should be equipped with four cams located at four corners of the door to ensure zero leakage. All four cams should be engaged with rear door by mechanical ratchet locking mechanism.
14. Compactor charge box should be incorporated with automatic operated covering system. While loading of waste it would open automatically and remain close when there is no loading of waste.

15. Compactor Tip cart mechanism should be equipped with Pneumatic locking, which holds the Tip cart positively by pneumatic actuated vacuum pads while unloading the garbage in to the Compactor.
16. Compactor body should be manufactured out of high tensile steel of ST52 or equivalent.
17. Compactor body should be provided with minimum two leachate drainage outlets with leak proof aluminum cam lock couplings of minimum 3 inch diameter.
18. After Compaction, garbage should achieve minimum density of 700-800 Kg/Cum.
19. All electro-hydraulic functions and working principle of compactor machine should be PLC based. Monitoring operational conditions, duration of operation, trouble shooting, loading percentage, periodic maintenance schedule etc. should be indicated on LCD screen as when required and the same should be warned at the time of requirement by visual or audible indicators.
20. Inspection door at one side of the compaction head should be provided; door should be equipped with sensors to ensure the door is in closed condition while the compaction is in progress and vice-versa.
21. Hydraulic Power Pack should be accommodated within the compaction head and same should be mounted on rails to facilitate maintenance & repair as & when required, from outside of the machine.
22. Control panel of operating system should be equipped with start key and lock, display screen, emergency stop, main switch, connecting socket and operating push buttons.
23. It should be a leak proof container while in transit on the chassis.
24. The portable compactor should operate only by a special electronic key to protect the machine from unauthorized operation.
25. The portable compactor should be equipped with hydraulic drive unit, protected in a separate tunnel, to ensure the daily operations in even severe conditions.
26. All electrical circuits should be enclosed in control box with start & stop buttons.
27. Construction of entire compactor should be robust and enough sturdy to maintain its structure throughout its service life.
28. Compaction unit should be powered by hydraulics.
29. External body – should be made up of high tensile smooth rolled steel of grade ST52.
30. Rear frame, front frame, rear door and structure of compaction unit should be of high strength steel of Y.S. 500-700 MPa.
31. Floor of charge chamber should be minimum 8 mm thick and made of high strength steel of Y.S. 500-700 MPa and should be supported by longitudinal members and intermediate bracing.
32. The crusher Block should have a scissor shaped head to crush the refuse inside the container. Special teeth inside the container to be provided to retain the refuse inside the container.
33. Container should be of cylindrical shape to ensure good compaction ratio, light weight, Hi-strength longer life, an easier discharging of all refuse after compaction.
34. The work flow of the arrangement shall be such that - loading the waste in to Tip Cart by collection vehicle - loading the waste in to Compactor by Tip Cart - handling the full container with hook loader - transport the container to dump yard - discharging the waste.

**B. SAFETY FEATURES :**

1. All safety features should be included in the unit like start/stop buttons.
2. The compaction should not start when the checking window/door is open.
3. Indicating lights should be provided to indicate the status of the operation.

**C. TECHNICAL PARAMETERS :**

Following technical parameters of Portable Compactors are required :

Item No.	Sl.	Description	MC 060
1		Body Volume in Cum	10
2		Compaction ratio base on Indian waste (approx.)	0.75
3		Pressure (Bar)	200 - 220
4		Power	Not more than 3 KW
5		Voltage (V)	220
7		Compaction Force (Kn)	230-250
8		Cycle time for Crusher (Seconds) (Approx.)	45
9		Cycle time for Tipping (Seconds) (Approx.)	20
10		Stroke Volume (cum)	0.8
11		Tip Cart capacity	1100 L
12		Compactor weight with Hydraulics(Kg)	4000 - 4200