SPECIFICATION FOR VEHICLE MOUNTED TWIN BINS DUMPER PLACER SKIPPER®

A) GENERAL:

The Twin Dumper Placer shall be useful for transportation of refuse, silt, grit or any other waste from the collection point to its disposal point by two containers at a time. The operation of lifting and placing the container on the vehicle, transporting to its disposal point and unloading shall be hydraulic. The lifting capacity of steel garbage container / bin shall be 2.5 cu.m. The equipment shall be operated hydraulically.

The operations of this unit shall be such that one driver assisted by one helpers shall be adequate.

The unit shall consist of:

a. Prime mover – engine of the chassis shall be used for driving other unit through appropriate power take-off unit (PTO).

b. Frame

c. Lifting arms

d. Tipping hooks

e. Stabiliser

f. Hydraulic system

g. Controls

h. Accessories

i. Suitable Indian Vehicle Chassis

The above equipment shall be mounted on 11 Ton GVW Cab Chassis with side PTO chassis like TATA / ASHOK Leyland / Eicher or equivalent. Bidder shall furnish full details of vehicle chassis. Bidder shall also make arrangements to procure the vehicle with cabin from the manufacturer. The client shall make direct payment to the chassis manufacturer / their dealer against their proforma invoice to avail Govt. Rates. The standard tools accessories and spares supplied with the chassis shall be handed over to the client at the time of delivery of the unit.

The Bidder shall make arrangements for mounting equipment on the chassis according to the rules laid down by the Regional transport Office, and loads recommended by the chassis manufacturer on the front and rear axles. The Client shall make arrangements for registration of the complete unit with the Regional Transport Office. The Government fees required for registration of the units shall be paid by the client.

B) DUMPER PLACER EQUIPMENT:

The unit comprises of two pairs of lift arms actuated by double acting high pressure cylinders, two sets of tipping hooks for operation of lifting, lowering and unloading of dual garbage containers / bins, two double acting independently hydraulic stabilizers, complete hydraulic system with oil tank, control valves. The components are to be mounted on all steel welded sub-frames.

Unit shall confirm to the best practice known to the body fabrication trade in design, quality of material and workmanship. Assemblies, subassemblies, components and accessories shall be standard and interchangeable.

Unit shall be side-loading type with loading height not more than 1.2 meter from ground level. The operation of lifting, lowering and unloading of garbage container / bin shall be hydraulic system. The system shall include the hydraulic pump, driven by the chassis engine, necessary filter, adjustable relief valves, directional control valves, restriction valves and associated pipelines.

The chain links shall be provided for lifting, lowering, unloading and holding both the containers.

a) PRIME MOVER:-

The unit shall be run on the power transmitted from vehicle engine through its P.T.O. (Power Take Off Unit). The P.T.O. shall be of sturdy design of reputed make and should be able to provide sufficient power to run the hydraulic system.

b) FRAME:-

The main frame shall be made out of suitability thick pressed steel channels and mounted on the vehicle chassis through rolled / pressed steel channel sub frame.

c) LIFTING ARMS:-

Two sets of lifting arms shall be of strong design made out of suitability thick steel box tube to withstand the operating load and shall be connected at ends through suitable bush / bearing joint. The distance between the lift arm and container, when the container is resting on the body, shall not be less than 200 mm. The lifting arm shall be connected on top through across boom pipe of minimum 90 mm dia & 5 mm thick. Each lift arms shall be hydraulically operated by two double acting cylinders of minimum 100 mm dia.

d) TIPPING HOOKS:-

Two sets of tipping hooks shall be provided for each container with proper space for easy and correct holding of the container for tipping purposes. All the pivot pins are to be high chromium plated and in jig bored holes with easy lubrication points to ensure accurate alignment and smooth operation. The chain links provided for lifting and holding the container shall be strong enough and shall be minimum 12mm thick.

e) STABILISER:-

The two hydraulically operated stabilizers on the side of the unit shall be designed in such a way to suit the requirement at transfer station and shall have arrangement for inclining them during the lifting and tipping operation. The stabilizer shall be minimum 100mm dia and shall be strong enough to provide continued stability and should not take undue time. The stabilizing should have locking arrangement so that no malfunction operation is possible.

f) HYDRAULIC SYSTEM:-

1. The hydraulic pump shall be designed to operate continuously with peak loading at frequent and short interval. The capacity of the hydraulic pump shall be about 32 lpm at 1500 rpm and maximum pressure of 207 bar (3000 psi).
2. The hydraulic system shall incorporate relief valves to protect all components from excessive pressure and overloads.
3. Hydraulic seamless pipes, hoses, couplings should be of high quality and standard to withstand high pressures. The pipe ends should be flared to ensure perfect seal and prevent leakage even at high pressure
4. A replaceable filter with by-pass should be provided in return line of hydraulic system.
5. All hydraulic components should be easily accessible for inspection.

HYDRAULIC VALVES:-

The spool type hydraulic control valve is to be provided for the lifting / tipping and stabilizing operations with levers accessible from drivers sent in the cabin or from outside for easy and comfortable operation. The spool shall be self centering types, with pressure relief valves.

The valves provided shall be of reputed make and of international standard. The valves shall be rated 140 kg/cm^2 pressure.

HYDRAULIC CYLINDERS:-

1. All cylinders must be tested at 1.5 times the rated working pressures.
2. Cylinder rods of all cylinders shall be constructed of high strength, hardened steel rods, centreless ground to an RMS smoothness rating of 8 and shall be hard chrome plated.
3. Where necessary, pin mounting connections of cylinders shall incorporate spherical bushings on pins.
4. The cylinders should be reputed make, such as Hydrodyne / Dantal / Fluid Impel or equivalent.

HYDRAULIC RESERVOIR AND FILTERS:-

The reservoir tank shall have 1.5 times capacity then the fluid required by the hydraulic system and includes a sight fluid level indicator, return line filter, suction line shut-off cock and filter cap with chain.

f) CONTROLS:-

The following controls shall be provided and located conveniently

1. Power take-off control shall be provided inside the cabin by the client's manufacturer.
2. Hydraulic control valve lever for both the lifting arms.
3. Hydraulic control valve lever for stabilizers.

h) ACCESSORIES:-

i) Reverse audio visual horn – 1No.
ii) Mud guards – 2 Nos.
iii) Mud flaps – 4 Nos.
iv) Al. chequered plate lockable tool box – 1 No.

i) VEHICLE CHASSIS:-

The complete equipment shall be mounted on a minimum 11 Ton GVW, BS III chassis Tata/Eicher/Ashok Leyland with standard day cabin and side PTO to be supplied. The chassis should be provided with front and rear shock absorbers with five forward and one reverse constant mesh gear box, complete original front show with headlights, starter, dynamo with batteries and fuel tank.

The truck chassis shall have the following general specifications:

Wheel Base	3800	mm approx
Max. GVW	11900	kgs approx

PAINTING:-

The entire unit shall be painted with two coats of superior quality anti-corrosive primer with two coats of approved quality paint. The bidder shall get the paints and shades approved from the Engineer.

TESTING AND INSPECTION: -

(i) Tests on equipment at manufacturer's premises as required will be carried out in accordance with the manufacturers standard. All inspection, examination and testing shall be carried out in presence of the Engineer's representative in accordance with the specification.

If the Engineer's Representative witnesses a test he shall be given a copy of the test results and certificates, upon request.