

SPECIFICATION FOR VEHICLE MOUNTED AUTO TIPPER **AUTOTIP®**

A) GENERAL_:

The Auto tipper shall be useful for transportation and refuse collection from narrow lanes, individual houses to its disposal point. The operation of unloading i.e. tilting of container to its disposal point shall be hydraulic. The capacity of FRP container / hopper shall be approximately 1.5 cu.m.

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 pulley drive.
- b. Frame
- c. Container / hopper
- d. Tipping arrangement
- e. Stabiliser
- e. Hydraulic system
- g. Controls
- h Accessories
- i. Suitable Indian Three wheeler Auto Chassis

The above equipment shall be mounted on three wheeler Auto chassis like Piaggio / Vikram or equivalent. Bidder shall furnish full details of three wheeler auto chassis. Bidder shall also make arrangements to procure the Auto with cabin from the manufacturer. The client will make direct payment to the chassis manufacturer/their dealer against their Proforma invoice to avail Govt. rate. 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. 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) AUTO TIPPER EQUIPMENT :

The unit comprises of a FRP container / hopper, tilting arrangement by single acting high pressure single stage telescopic cylinders, two double acting independently operated stabilizer, oil tank, control valves. The components are to be mounted on all steel welded sub- frames.

Unit shall conform 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.

The height of the top of the container shall not be more than 1.35 meter from ground level. The operation of tipping of container to its disposal point shall be hydraulic system. The system shall include the hydraulic pump, driven by the auto chassis engine, necessary filter, adjustable relief valves, directional control valves and associated pipelines.

a) PRIME MOVER :-

The unit shall be run on the power transmitted from auto engine through heavy duty flexible coupling & pulley. The coupling & pulley shall be of sturdy design & should be able to provide sufficient power to run the system

b) FRAME :-

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

c) CONTAINER / HOPPER :-

The container / hopper shall be made out of 4 mm thick FRP (UV resistant fibre glass) of approximately 1.5 cu.m. capacity. The FRP container shall be strong enough to take the operating load & shall be reinforced by stiffeners & steel section. The overall dimension of the container shall not be more than 1500 x 1470 x 800 mm

d) TIPPING ARRANGEMENT :-

Hydraulically operated tipping arrangement shall be provided. The tipping height should be minimum of 0.9 m from ground level. The angle of tilting shall be 80° to 90 °

e) STABILISER :-

The hydraulically operated stabilizer shall be designed in such a way to suit the requirement at transfer station. The stabilizer 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 maximum capacity of the hydraulic pump shall be 5 lpm at 1500 rpm.
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 :-

All the valves provided shall be of reputed make and of international standard. The valves shall be rated 140 kg/cm² 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 hardened spherical bushings on hardened pins.
4. The cylinders should be reputed make and should adhere to dimension given in technical schedule.

HYDRAULIC RESERVOIR TANK 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.

g) CONTROLS :-

The hydraulic control lever for tipping shall be provided & located conveniently

h) ACCESSORIES:-

- i) Reverse audio visual horn – 1No.
- ii) Mud guards – 2 Nos.
- iii) Mud flaps – 4 Nos.
- iv) Top cover of tarpaulin / Rexin with hooks
- v) Al. chequered plate lockable tool box – 1 No.

i) THREE WHEELER AUTO CHASSIS:-

The complete equipment shall be mounted on a suitable three wheeler auto chassis with standard day cabin to be supplied by the purchaser (Piaggio / Vikram). The three wheeler auto chassis should be provided with front and rear shock absorbers with four forward and one reverse constant mesh gear box, complete original front show with headlights, starter, with batteries and fuel tank.

The three wheeler auto chassis shall have the following general specifications :

Wheel Base	1920 mm
Max. GVW	975 kgs.

PAINTING :-

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

TRAINING :-

The successful bidder shall arrange at his own cost to train client's operators for operating and maintaining the unit. The training period shall be 2 days.

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