

SPECIFICATION OF LIFTMAK 15M WORKING HEIGHT HYDRAULIC TELESCOPIC, ZERO ELBOW PLATFORM MODEL LMTHP15 ON EICHER 10.90F/11.10/EQUIVALENT MMV TRUCK CHASSIS

1. SCOPE

The design of Liftmak model **LMTHP15** telescopic platform incorporates several advantageous features as under:

- * Ease of operation by virtue of telescopic boom, with inching capability, which enables operator to zoom-out to point to be accessed.
- * Long reach as compared to articulated platforms
- * Compact stowed length, reduces traveling length making the unit more maneuverable
- * Easy entry/exit into/from cage, which rests on chassis deck during transportation
- * Hydraulic cage leveling with additional cage level control in cage/basket
- * 4-point outriggers for stabilizing vehicle with optional single push-button outrigger auto-levelling system



Action photographs of Liftmak LMTHP15 Hydraulic Telescopic Platform

Left: Booms in extended position. Notice the telescopic booms, 4 nos. independently controlled outriggers and the 'zero-elbow' design

Bottom: Equipment in transport position. Notice easy entry to cage and small collapsed length, made possible by telescopic booms



2. TRUCK CHASSIS

Liftmak model **LMTHP15** telescopic platform is mountable on any MMV chassis having a wheel-base exceeding 3750mm

3. POWER SUPPLY

Power for the hydraulic platform is provided by a hydraulic pump driven from chassis power take off unit only. The pump is of ample and sufficient output for normal smooth operation of the platform with low engine speed.

Hydraulic reservoir is incorporated in the main frame and hydraulic circuit is fully protected by efficient filters.

Pump and motor is of reputed make such as Dowty, Vickers, Danfoss or equivalent

4. HYDRAULIC HOSES

The hydraulic hoses are located so that they do not interfere with the movement of the platform, booms etc. Make of hoses offered is Dunlop/Swastik/Superseal or equivalent.

5. STRUCTURE

The booms are made from MS structural steel of good quality. Telescopic boom (as offered) sections are rigid, reinforced box section. All fabricated sections are rust inhibited from the inside while the exterior surfaces are pretreated and finished to give a glossy look.

6. STABILIZERS

Four swing out stabilizers, hydraulically powered, are provided, two at rear & two in front. Each of the stabilizers is operated independently, to allow levelling on uneven ground. Suitable level indicators are provided to check the level, both along the length as well as along the width of the chassis/vehicle.

When stowed, no part of the stabilizers protrude beyond the chassis

Suitable interlocks are provided to ensure that the stabilizers cannot be retracted until platform booms are stowed and also to ensure that booms cannot be operated until stabilizers are deployed.

As an option, a single push-button outrigger auto-levelling system is available, which automatically commands the outriggers to level the vehicle. The auto-levelling mechanism eliminates the possibility of human error in leveling the machine. Levelling of the vehicle before use is most important, to prevent the possibility of accident/toppling.

7. HYDRAULIC CYLINDERS

All platform motions are performed either by double acting hydraulic cylinders or hydraulic motors with automatic brake.

- The cylinder tubes are of ST52, cold drawn seamless tubes conforming to DIN 2391, having H8 tolerance and surface roughness Ra0.2 microns
- The piston rods are of CK45, hard chrome plated and ground steel rods having minimum 20 microns hard chrome plating and surface roughness Ra0.2 microns and corrosion resistance NSS ISO 3768 & ASS/ISO3769
- Piston glands are from EN8
- Seals are of Bushak, Shamban
- U-cup seal are of Polyurethane
- Hoses are tested to twice rated pressure and the bursting pressure shall be at least four times the rated pressure.

8. SLEWING

The hydraulic telescopic platform model **LMTHP15** is designed for continuous slewing by a high torque, low speed motor, through reduction gear box up to and beyond 360° in either direction – continuous, unlimited. Slewing speed is precisely controlled by using fine restrictors in the circuit.

9. PERSONNEL CAGE

A special designed reinforced fibre-glass basket of size 1.1x0.7x1.1M approx. is provided. All attachment points are bonded to withstand most arduous use. The non-slip floor with drain holes is provided to give the operator safe working condition. The basket is insulated to withstand 600 volts, even though the platform is not to be used on live line and hoses/links/controls are not be insulated. The basket is designed to carry a safe working load of 200 kgs. The hydraulic platform design is such that entry and exit into/from cage is easy.

10. CAGE LEVELLING

The cage is level in all positions, achieved through a hydraulic levelling system.

Additional hydraulic control is provided in the cage to correct any leveling error, should it occur, thus providing the operator total safety and operational control

11. PLATFORM CONTROLS

The hydraulic controls for all functions (except outriggers) are in cage. All control levers shall be self-centering and hooded for protection against accidental operations. A hand pump permitting lowering of the boom is provided at the base in case of vehicle engine/electrical system failure. The stabilizer controls are provided only at base, at rear of vehicle.

12. TRAVELLING DIMENSIONS

No part of the hydraulic telescopic platform model **LMTHP15** protrudes beyond outrigger position, during operation. In other words, design is based on 'zero elbow' concept during operation to avoid accident/collision with road-side traffic.

13. SAFETY DEVICES

The hydraulic platform model **LMTHP15** is incorporated with special overcenter valves in the hydraulic circuit to ensure that all boom movements are accurate and precise. In addition, these valves safeguard the operator in the event of hydraulic hose failure or engine/electrical system failure or leakage, by preventing creeping or collapsing of boom.

Pilot operated lock valves are incorporated in the stabilizer hydraulics, to prevent sinking of stabilizers while in operation.

Other safety features provided are -

- ◆ Automatic stops to prevent platform from reaching unstable areas of operation
- ◆ Interlocks to ensure that stabilizers are not retractable as long as boom is in elevated position and reciprocally to ensure that boom cannot be operated unless stabilizers are deployed
- ◆ Lock valves provided on all load bearing cylinders (overcenter valves on main lift and telescopic cylinder) to ensure that there is no mishap/boom/outrigger collapse in the event of hose failure
- ◆ Automatic overload protection
- ◆ Cage insulated to 600V – even though this platform is not a 'hotline' machine and is not recommended for use on live line
- ◆ Relief valve/ oil bye-pass system to bring down main boom, in event of hose failure during operation.
- ◆ Safety belt anchorage points at cage
- ◆ Optional single button outrigger auto-levelling mechanism to automatically command the outriggers to level the vehicle

14. OPERATING DATA**Model LMTHP15**

- Maximum height of cage floor from Ground level..... 13.5M
- Maximum working height (taken as cage base +1.50M) 15.0M
- Minimum operating radius corresponding to 10M working height 9.0M
- Cage capacity (tested for stability at 50% overload) 200 kgs.
- Outriggers (Hydraulically operated) 4 Nos.
- "Zero-Elbow" of boom on opposite side of cage (within outrigger width) Zero
- Levelling of cage..... Positive hydraulic
- Lock valves provided on all cylinders Yes
- Slew (continuous & unlimited in both directions) 360°+ endless
- Hydraulic pump drive through chassis PTO Yes
- Cage insulation..... 600 volts

Other parameters :

- Boom to stabilizer and stabilizer to boom interlocks provided for safety
- Controls provided as follows –
Stabilizer controls on rear side of chassis,
Slew, boom elevation and boom telescoping controls at cage
- Emergency hand pump to stow platform in case of main system failure.

